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Huawei Antenna & Antenna line Products Catalogue 2017

HUAWEI TECHNOLOGIES CO., LTD.
Issue 01

Antenna Modernization, Road Ahead of 4.5G/5G Network Evolution

—— Full series of 4.5G/5G-oriented antenna solutions

The growing breadth and diversification of mobile internet applications impose increasingly higher requirements for MBB network capacity, coverage, delay, and user experience. MBB network development also faces many challenges such as spectrum usage, efficiency improvement, site diversification, and network complexity. Modern antenna systems that support multi-band multi-port compact design, TDD, One LTE, multi-sector networking, site simplification, massive MIMO, and highly efficient O&M are now the foundation for future MBB network development. Network cloudification enables self-repairing, self-organization, and improves the efficiency of future MBB networks.

Based on years of expertise in network deployment and development, Huawei has launched a series of innovative active and passive antenna solutions, to help operators to achieve their business goals during the global evolution to 5G.

Multi-band multi-port compact antennas to support full-band 4T4R deployment

As 700 MHz, L band, 3.5 GHz, and other new spectrums are issued on top of existing requirements for 1.8 GHz/2.1 GHz/2.6 GHz multi-band full 4T4R configuration, antennas need to provide increasingly more ports. However, as the antenna platform space is limited, applications of new spectrums and technologies need to be considered for antennas to support more frequency bands and more compact port layout.

Huawei's innovative GDP+ series antennas support 700 MHz, 800 MHz, and 900 MHz three-low-band independent-port co-antenna deployment, multiple-high-band deployment, and low/high-band 4T4R deployment. Employing a compact side-by-side (SBS) structure, antenna size is significantly reduced to achieve superior MIMO performance. It has become a general trend for most mainstream manufacturers and operators to use 4.3-10 connectors with a smaller size and better performance to replace 7/16" connectors.

GDP+ series multi-band antennas

Advanced features to accelerate TDD deployment

With the release of TDD spectrums and increasing popularity of TDD terminals, deploying TDD networks has become a global trend. TDD 8T8R solves problems of transmission attenuation of high bands and poor indoor coverage, and addresses the large-capacity requirements of dense urban areas.

Huawei's TDD antennas support 8T8R deployment with mainstream bands such as 2.3–2.6 GHz or 3.3–3.8 GHz.

Advanced 8T8R beamforming provides high coverage gains and improves network capacity. Unlike traditional 4T4R configurations, TDD antennas also support soft splitting, increasing network capacity by 50% to 90%. Easybeam simultaneously supports remote independent adjustment of the electrical tilt, and remote adjustment of the TDD horizontal azimuth and horizontal beamwidth, to achieve precise network coverage.

TDD/FDD converged networking to support One LTE

TDD and FDD have different strengths and weaknesses in terms of technology and cost. Thus, TDD/FDD convergence possesses obvious advantages in terms of rate improvement, network capacity expansion, OPEX reduction, and future evolution.

Huawei is launching a series of One LTE-capable antennas to support TDD/FDD convergence. Among them, the 22-port TDD/FDD converged antenna achieves Band 3, Band 8, and Band 34/39/41 co-antenna deployment, accommodating the increase of bands without increasing the size. The TDD bands support 8T8R and soft splitting with each band simultaneously supporting remote independent adjustment of the electrical tilt and EasyBeam, to achieve precise network coverage and highly efficient O&M.

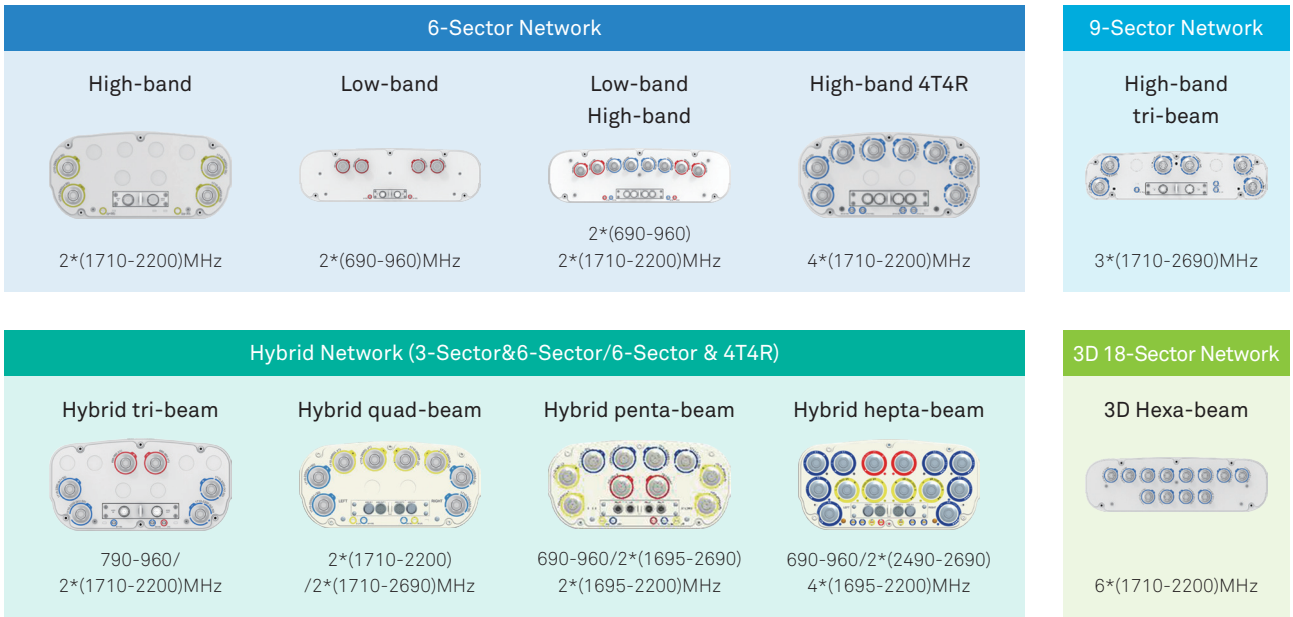
Huawei 22-port TDD/FDD converged antenna

Multi-beam antennas to support flexible multi-sector networking

Multi-sector networking featuring "zero new spectrums, zero new sites" has proved to be one of the most effective means of reusing spectrum resources and increasing capacity. In some hotspot areas, a simple 6-sector solution cannot meet the fast-growing capacity needs. 9-sector, and sometimes even 18-sector, expansion solutions are required. With spectrum and RAT diversification, the traditional antenna platform space is not enough to accommodate new RATs and bands beyond multi-sector configuration, raising the requirements of multi-sector and GSM/LTE hybrid networking.

Huawei's full series of multi-beam antennas support low-band 6-sector networking, high-band 6-sector networking, and low/high-band 6-sector hybrid networking as well 3-sector and 6-sector hybrid

networking, three-dimensional 18-sector networking, and multi-sector and LTE 4T4R hybrid networking. These networking modes can save antenna platform space to the greatest extent and improve spectral efficiency.



Full series of multi-beam antennas

Compact active antennas to simplify sites

Site acquisition for traditional macro sites is difficult, the approval cycle is long, and the site rent is high. Compact, multi-band AAUs simplify antenna platforms, improve spectral efficiency, and protect operator investment. New pole-mounted sites boast easy site acquisition and fast, agile deployment.

With an integrated design, Huawei multi-band AAU products simplify sites and antenna platforms, reducing the number of site devices by 60% and the TCO by 30%. In addition, multi-band AAUs support 4T4R, improving spectral efficiency and protecting operator investment.

With its cylindrical design, Easy Macro can be effortlessly installed on a pole in just 2 hours, reducing the construction cost of a single site by 40%. In addition, the pole-mounted site resources can be obtained in batches, reducing site acquisition time by 60% and achieving rapid site deployment.

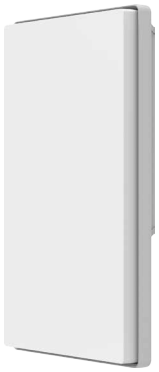
(Easy Macro™ 2.0)

Huawei AAU products

Massive MIMO oriented to 5G network evolution

The rapid growth of data services poses higher requirements for the mobile network capacity and rate. The new sub-6 GHz spectrum has been issued, and 30 GHz, 60 GHz, and other UHF bands are expected to be available in the future. Massive MIMO is an important feature of wireless network evolution that supports flexible networking, facilitates site acquisition, enhances coverage, reduces interference, and improves capacity.

In January 2016, Huawei worked alongside a leading Japanese operator to complete testing of the world's first commercial massive MIMO site. The peak rate reached 650 Mbps at 20 MHz and, without the addition of sites and spectrum resources, the capacity increased by 6-fold. Huawei massive MIMO antennas enable a smooth evolution to 5G in terms of hardware.

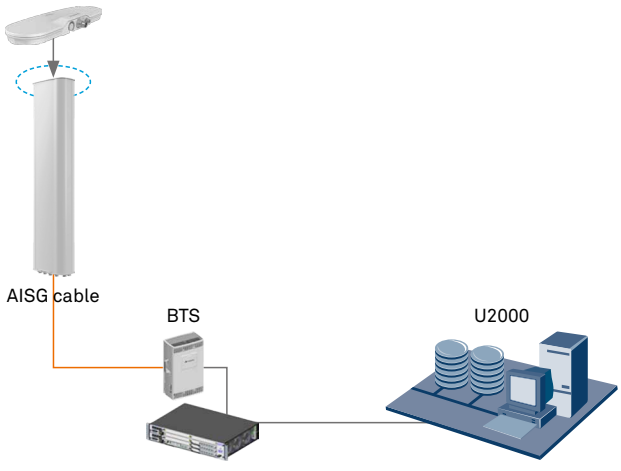


Huawei massive MIMO antenna

Digital antenna system to achieve highly efficient O&M

Diversified services pose challenges to network construction and maintenance. It is important to improve O&M efficiency and reduce OPEX by simplifying antenna parameter query and adjustment, and by reducing in-person site visits. The digital antenna system enables remote observation and O&M of the antenna system, and supports coordination with a self-organizing network (SON). The digital antenna system improves network planning, optimization efficiency, and provides a highly efficient and intelligent O&M experience.

Huawei digital antenna system 1.0 solution provides intelligent topology management, remote self-aware, RET solution, and a variety of intelligent components. The innovative EasyRET plug-and-play RET solution increases the RET system deployment efficiency by 40% and improves reliability by 200%. The self-aware antenna (SAA) solution enables operators to remotely query antenna mechanical downtilt, azimuth, height, latitude, and longitude in real time, facilitating network O&M and improving SON performance. The EasyBeam solution enables operators to remotely adjust the downtilt, azimuth, and horizontal beamwidth, reducing weak coverage and overshoot coverage, and improving network performance.



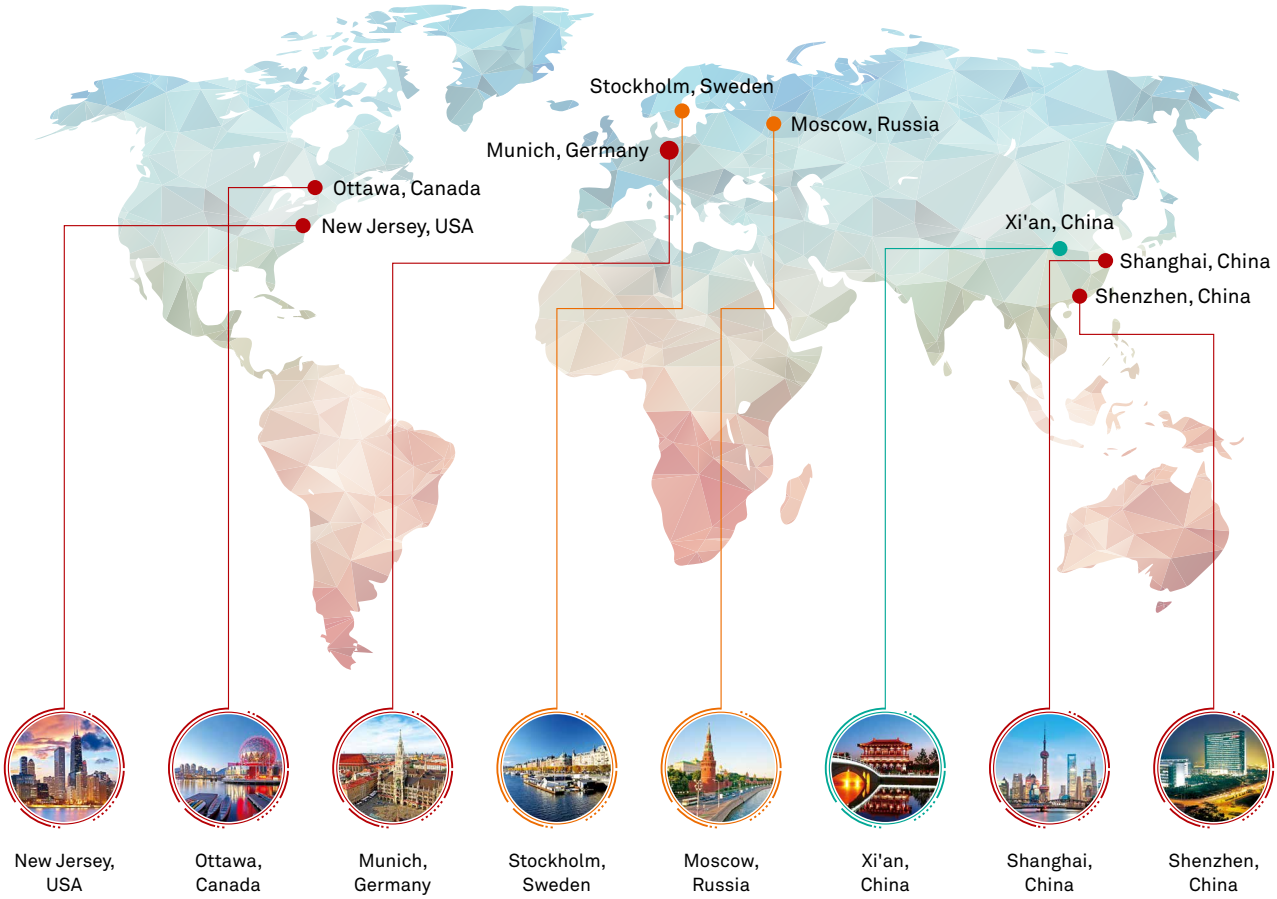
Self-aware Antenna solution

Leading the Future through Continuous Innovation

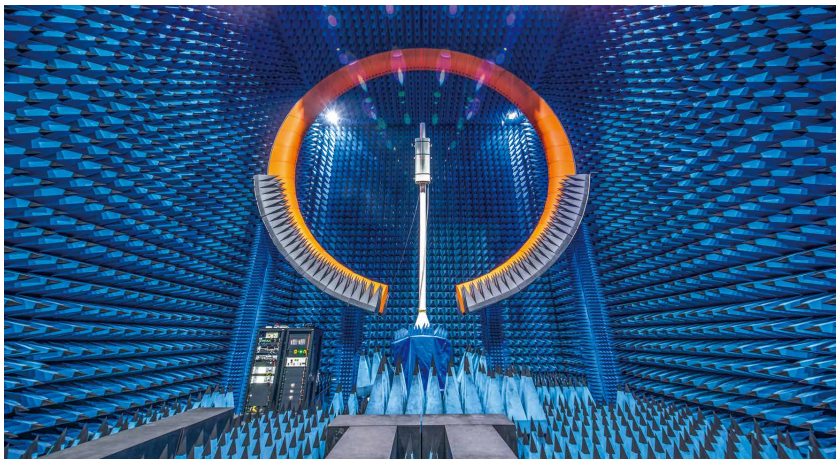
In-house innovation

Due to the key role antennas play in wireless networks, Huawei continues to invest in antenna-related R&D with eight R&D centers currently committed to active and passive antenna technology research around the world.

Based on more than 20 years of experience in wireless network development, Huawei uses synergy design between the antennas and RAN to ensure optimal antenna performance within the network.



Distribution of Huawei antenna R&D centers around the world



Huawei SG178 near-field testing lab

Joint innovation

Huawei participates in more than 50 separate standards organizations aimed at promoting the development of the antenna industry. In 2014 and 2015, the EasyBeam and SAA solutions jointly launched by Huawei and an operator won GTB's Mobile Network Infrastructure Innovation Award. In 2016, both the 9-sector solution, jointly launched with Telenor Myanmar, and the 4.5G antenna, launched with Türk Telekom, also won this award.

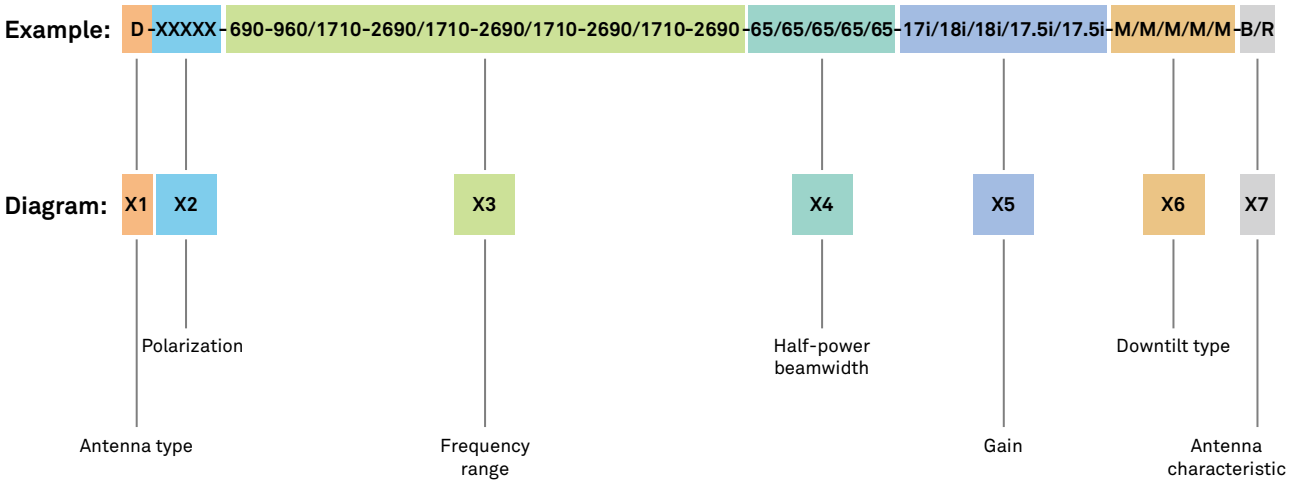
GTB trophy

Ecosystem innovation

Alongside global leading operators, Huawei has held five Annual Global Antenna & AAU Forums since 2012. The forums attracted the world's top operators, third-party analysts, industry organizations, industry media, and vertical channel vendors to discuss the future development of the antenna industry. Recently, Huawei joined the NGMN 4.3-10 task force to promote 4.3-10 connector switching.

The 5th Annual Global Antenna & AAU Forum was held in Paris

Antenna Type Naming Rule

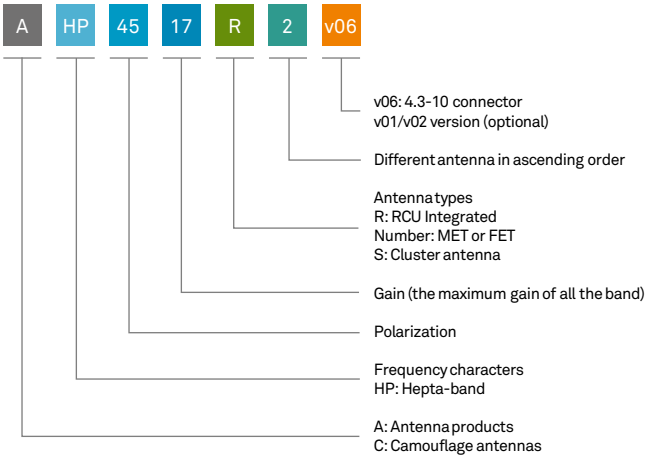


X1	D	Directional
	O	Omni-directional
	C	Cluster
	I	Indoor
	Number + M	Multi Beam, 3M means three beams
	CP	Camouflage Pipe
	CS	Camouflage Square Column
X2	X	X Polarization
	V	Vertical Polarization
	H	Horizontal Polarization
	C	Circular Polarization
X3	Number	Frequency Bandwidth
X4	Number	Half-power Beam Width
X5	Number	Gain(dBi)
X6	Number + Letter	0F: Fixed Downtilt
	Letter	M: Electrical Downtilt
X7	C	Combiner Integrated
	B	Bias Tee Integrated
	T	TMA Integrated
	R	RCU Integrated
	AS	Azimuth Steering
	HE	High Efficiency
	ESLS	Enhanced Side Lobe Suppression
	AISU	Antenna Information Sensor Unit

** For antennas with 14 or more ports, the same letters are represented in the “Number + Letter" format for the X2, X3, X4, and X6 bits. For example, for the "X2" bit, "7X" indicates "XXXXXXX".

Product Model Naming Rule

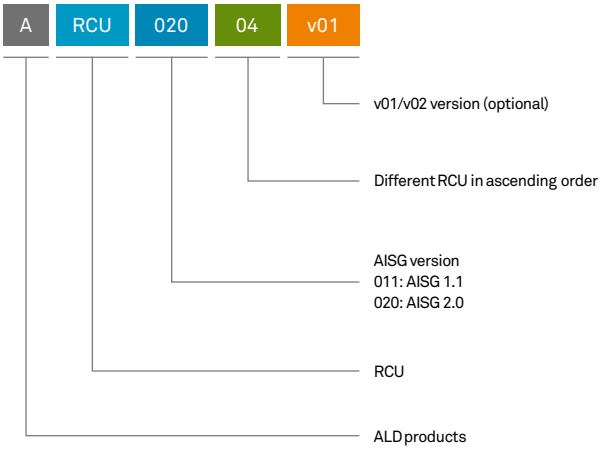
Antenna Model Naming Example:



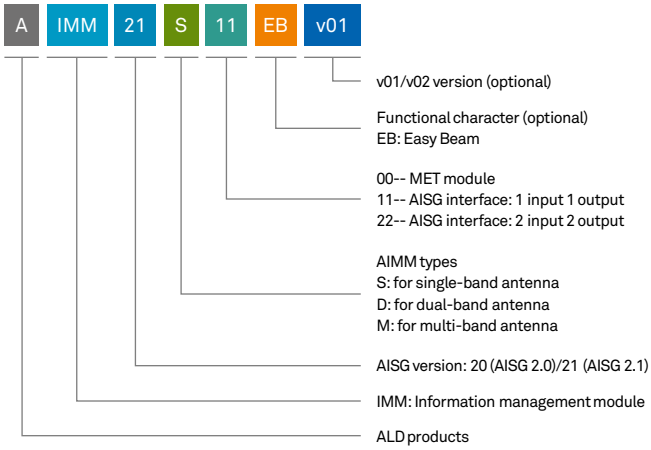
Notes for frequency characters:

45: Single-band antennas (450-470 MHz)
70: Single-band antennas (690-960 MHz)
79: Single-band antennas (790-960 MHz)
19: Single-band antennas (1710-2200 MHz or 1710-2170 MHz)
26: Single-band antennas (1710-2690 MHz)
DU: Dual-band antennas
TR: Tri-band antennas
QU: Quad-band antennas
PE: Penta-band antennas
SI: Six-band antennas
HP: Hepta-band antennas
OC: Octa-band antennas
TD: TDD antennas
MB: Multi-beam antennas

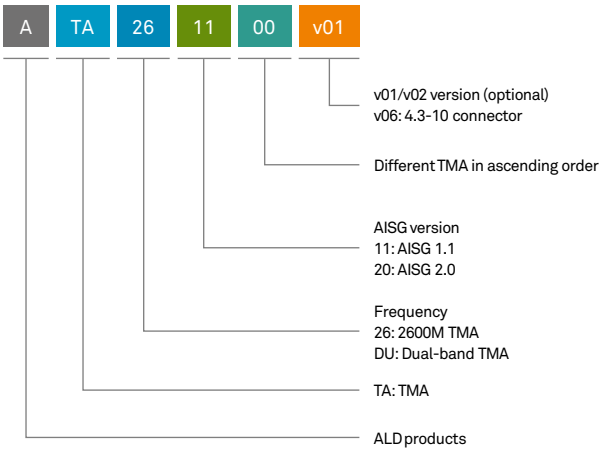
RCU Model Naming Example:



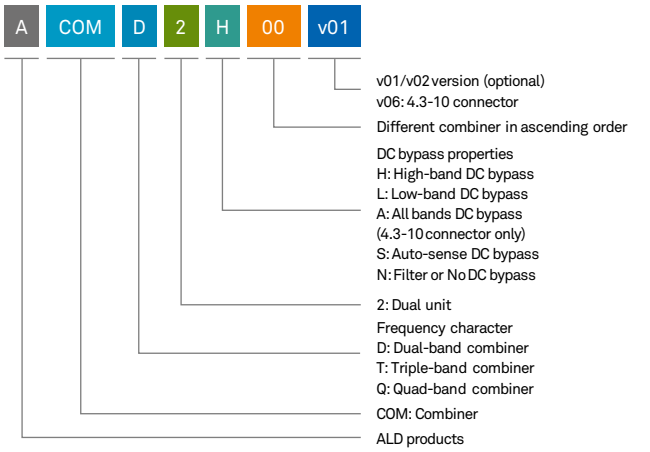
AIMM Model Naming Example:



TMA Model Naming Example:



Combiner Model Naming Example:



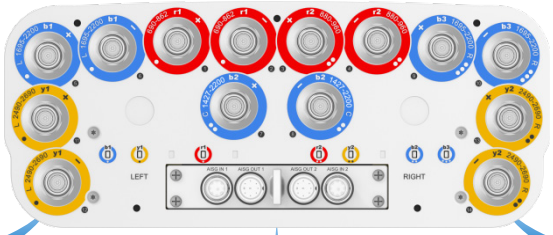
AISG Colour Coding Technology

Antenna Port Colour Coding

Colour coding is used to identify antenna RF ports and also for RET remote identification. Colour coding consists of five parts generally: colour code, pattern coding, array numbering, array symbol and RCU serial number.
14-Port EasyRET antenna is used as an example to illustrate colour coding:

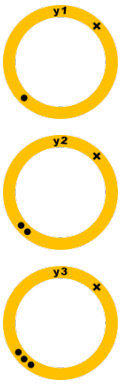
1. Colour Code

(Used to distinguish different bands. For details, please see chapter 1.)



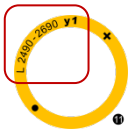
2. Pattern Coding

(Used to differentiate array ports carrying the same colour code. For details, please see chapter 2.)



3. Array Numbering

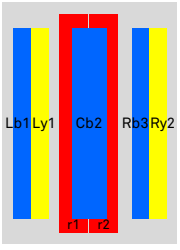
(Used to mark different array ID and array positions. For details, please see chapter 3.)



4. Array Symbol

(Used to display the physical structure of the antennas. For details, please see chapter 4.)
Two types of array symbol are used (Type 1 and Type 2). Which type is used depends on specific antennas. This also applies to chapter 3 Array numbering and chapter 7 RCU serial number.

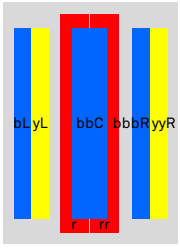
Type 1



2 Low Bands Filtered
r1: 690-862MHz
r2: 880-960MHz
r1 and r2 share the same low-band array

5 high-band arrays
Cb2: 1427-2200MHz
Lb1, Rb3: 1695-2200MHz
Ly1, Ry2: 2490-2690MHz
Lb1 and Ly1 share the same high-band array
Rb3 and Ry2 share the same high-band array

Type 2



2 Low Bands Filtered
r: 690-862MHz
rr: 880-960MHz
r and rr share the same low-band array

5 high-band arrays
bbC: 1427-2200MHz
bL, bbbR: 1695-2200MHz
yL, yyR: 2490-2690MHz
bL and yL share the same high-band array
bbbR and yyR share the same high-band array

5. Integrated RCU Serial Number

(Used to distinguish RCUs of different bands to support remote RCU identification. For details, please see chapter 5.)

Type 1:

HWMxxx.....r1
HWMxxx.....r2
HWMxxx.....Lb1
HWMxxx.....Ly1
HWMxxx.....Cb2
HWMxxx.....Rb3
HWMxxx.....Ry2

Type 2:

HWMxxx.....r
HWMxxx.....rr
HWMxxx.....bL
HWMxxx.....yL
HWMxxx.....bbC
HWMxxx.....bbbR
HWMxxx.....yyR

AISG Colour Coding Technology

1. Colour Code

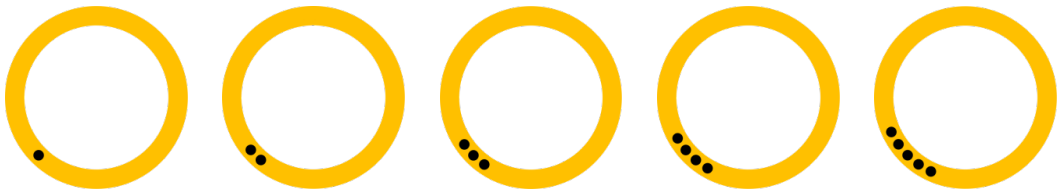
According to AISG, the upper band edge ranges of the antenna port are represented by red, green, blue, and yellow in sequence from the low band range to the high band range. The following table shows the definition of the frequency range and the associated colour code abbreviation.

Upper Band Edge Range	Assigned Colour Code	Colour Code Abbreviation
700MHz to 1000MHz	RAL 3020	r
1001MHz to 1700MHz	RAL 6029	g
1701MHz to 2300MHz	RAL 5015	b
2301MHz to 4000MHz	RAL 1023	y

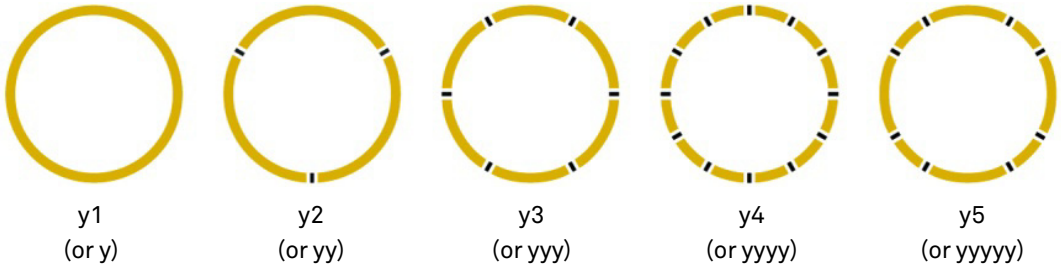
2. Pattern Coding

Pattern coding is used to differentiate array ports carrying the same colour code.
Two types of pattern coding are used (Type A and Type B). Which type is used depends on specific antennas.

Type A:
The number of dots is shown in the following figure.
Note: The dot may be black or white.



Type B:
Different segments of colour and gaps are shown in the following figure.
Note: Gaps between coloured segments may be white gaps or black lines.



3. Array Numbering

For multi-band antennas, different arrays are indicated by their colour code abbreviations, array IDs, as well as array positions. There are two types of array numbering.
Array ID: e.g. “y1” or “y” for the first high-band array, ”y2” or ”yy” for the second high-band array.

AISG Colour Coding Technology

Array position is represented by abbreviation (e.g. L, C, R, T, M, and B), the following table shows the details.

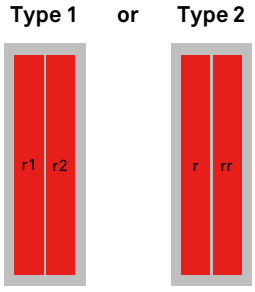
Array Horizontal Definition		Array Vertical Definition	
Abbreviation	Full Name	**Abbreviation**	Full Name
L	Left Array	T	Top Array
C	Center Array	M	Middle Array
R	Right Array	B	Bottom Array

Take 14-port antenna for example, array with Ry2 or yyR means the second high-band array and located at right position inside of antenna.

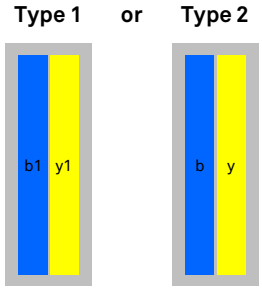
4. Array Symbol

In order to better display the physical structure of Huawei antennas, the array symbol corresponding to the array ID and array position is shown in the catalogue.
The following figures show the physical structures of different antennas as examples:

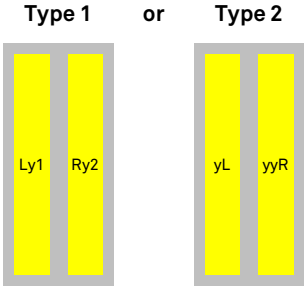
I. 4-Port Antenna
2 Filtered Low Bands ("Dipole reuse")
e.g. 790-862/880-960 or 690-803/824-960 MHz



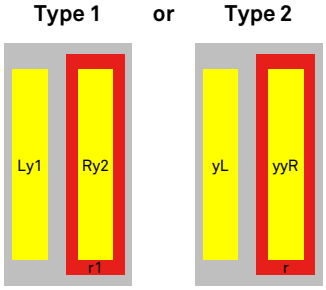
II. 4-Port Antenna
2 Filtered High Bands ("Dipole reuse")
e.g. 1710-2170/2490-2690 MHz



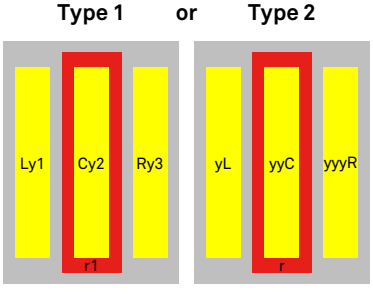
III.4-Port Antenna
2 Side-by-side High-band Arrays
e.g. 1710-2690/1710-2690 MHz



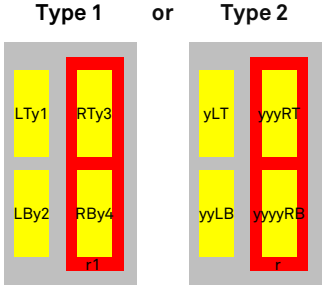
IV.6-Port Antenna
1 Low Band
2 Side-by-side High-band Arrays
e.g. 790-960/1710-2690/1710-2690 or 690-960/1710-2690/1710-2690 MHz



V. 8-Port Antenna
1 Low Band
3 Side-by-side High-band Arrays
e.g. 690-960/1710-2690/1710-2690/1710-2690 MHz



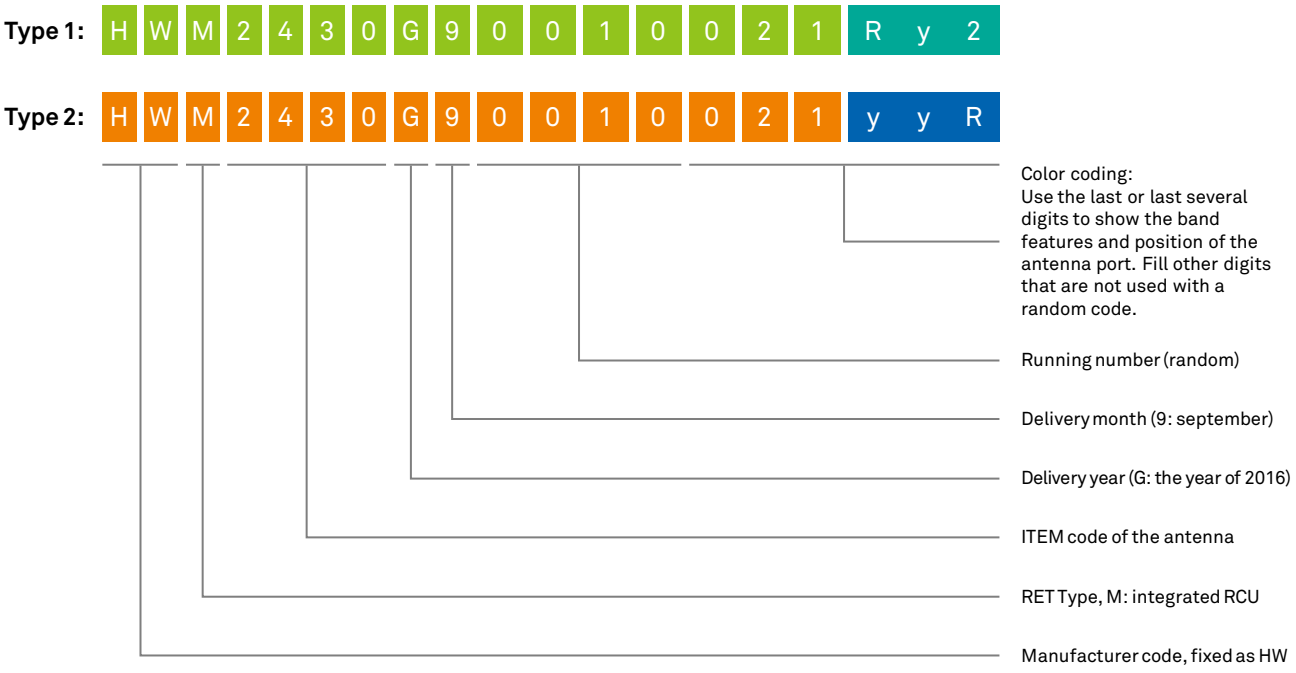
VI.10-Port Antenna
1 Low Band and
4 High-bands
e.g. 690-960/1695-2690/1695-2690/1695-2690/1695-2690 MHz



AISG Colour Coding Technology

5. RCU Serial Number

The SN (serial number) of integrated RCU contains colour coding information, EasyRET antennas support remote RCU identification by colour coding.
The SN of an integrated RCU contains 19 digits. The following describes a hexa-band EasyRET antenna's SN as an example:



L: Low Band, ≤960MHz; H: High Band, >960MHz
1LnH: means 1 Low Band and n High Bands, n: 1, 2, 3...

A Active Antenna — AAU

B Passive Antenna

- Multi-band
  - B - 1 Low Band — 2 Ports, 4 Ports
  - B - 2 High Band — 2 Ports, 4 Ports, 6 Ports, 8 Ports
  - B - 3 1LnH — 4 Ports - 1L1H, 6 Ports - 1L2H, 8 Ports - 1L3H, 10 Ports - 1L4H
  - B - 4 2LnH — 6 Ports - 2L1H, 8 Ports - 2L2H, 10 Ports - 2L3H, 12 Ports - 2L4H, 14 Ports - 2L5H
  - B - 5 3LnH — 10 Ports - 3L2H, 14 Ports - 3L4H, 16 Ports - 3L5H
- Multi-beam
- TDD Antenna
  Camouflage Antenna

C Digital Antenna System
- C - 1 RET System
- C - 2 Intelligent Management

D Antenna Line Product
- D - 1 TMA
- D - 2 Combiner
- D - 3 Filter

E Bracket & Installation Guide
- E - 1 Bracket
- E - 2 Installation Guide

AAU
Low Band 2-4 Ports
High Band 2-8 Ports
1LnH Band 4-10 Ports
2LnH Band 6-14 Ports
3LnH Band 10-16 Ports
Multi-beam
TDD Camouflage
Digital
TMA
Combiner Filter
Bracket & Installation Guide

Product Replacement List 1

Overview of Huawei Antennas Switching to Those with 4.3-10 Connectors

To meet the requirements of mobile communications evolution, Huawei antennas with the 7/16 DIN connector will switch to those with the 4.3-10 connector. Antenna line devices, such as TMAs and combiners, will also switch to those with this new connector.

The following provides a product replacement list. Huawei will deliver only the antennas with the 4.3-10 connector after June 30, 2017.

Ensure that your planning team, installation companies, and technical staff are informed in time about this issue, to avoid any misunderstandings and unexpected delays during site installation and commissioning. For more information, see *Huawei Antenna & Antenna Line Product Catalogue* or contact the local product manager.

Product in the catalogue 2016	Product in the catalogue 2017
L	
A79451500v01	A79451500v06
A794515R0	A794515R0v06
A79451600v02	A79451600v06
A794516R0	A794516R0v06
A79451700v02	A79451700v06
A794517R0	A794517R0v06
A79451503	A79451503v06
A794515R1	A794515R1v06
A79451702	A79451702v06
A704515R0	A704515R0v06
A704516R0	A704516R0v06
A704517R0	A704517R0v06
A704521R0	A704521R0v06
ADU4515R0v01	ADU4515R0v06
ADU4516R0v01	ADU4516R0v06
ADU4517R0v01	ADU4517R0v06
ADU4515R5	ADU4515R5v06
ADU4516R6	ADU4516R6v06
ADU4517R6	ADU4517R6v06
H	
A19451505	A19451505v06
A19451811v01	A19451811v06
A194518R0v01	A194518R0v06
A19451902	A19451902v06
A26451500	A26451500v06
A26451800v02	A26451800v06
A264518R0v01	A264518R0v06

Product Replacement List 2

Product in the catalogue 2016	Product in the catalogue 2017
H	
ADU451819v01	ADU451819v06
ADU4518R1v01	ADU4518R1v06
ADU451902	ADU451902v06
ADU451507	ADU451507v06
ADU451816v02	ADU451816v06
ADU4518R6v01	ADU4518R6v06
ATR451807	ATR451807v06
ATR4518R15	ATR4518R15v06
ATR4518R3	ATR4518R3v06
ATR451714v01	ATR451714v06
ATR4518R14	ATR4518R14v06
AQU4518R8	AQU4518R8v06
AQU4518R21	AQU4518R21v06
1LnH	
ADU451503	ADU451503v06
ADU4517R3	ADU4517R3v06
ADU451602v01	ADU451602v06
ADU4518R3	ADU4518R3v06
ADU451807v01	ADU451807v06
ADU4518R0	ADU4518R0v06
ADU451716v01	ADU451716v06
ADU4518R10	ADU4518R10v06
ADU451604v01	ADU451604v06
ADU4518R11	ADU4518R11v06
ADU451712v01	ADU451712v06
ADU4518R12	ADU4518R12v06
ADU4518R9	ADU4518R9v06
ADU4518R7	ADU4518R7v06
ADU4518R8	ADU4518R8v06
ATR451602v01	ATR451602v06
ATR4516R0	ATR4516R0v06
ATR451715	ATR451715v06
ATR4517R3	ATR4517R3v06
ATR451704v01	ATR451704v06
ATR4517R0	ATR4517R0v06
ATR4517R1	ATR4517R1v06
ATR4518R4	ATR4518R4v06
ATR4518R7	ATR4518R7v06
ATR451709	ATR451709v06

Product Replacement List 3

Product in the catalogue 2016	Product in the catalogue 2017
1LnH	
ATR451606	ATR451606v06
ATR451607	ATR451607v06
ATR4518R13	ATR4518R13v06
ATR4518R6	ATR4518R6v06
ATR4518R11	ATR4518R11v06
AQU4518R22	AQU4518R22v06
AQU4518R7	AQU4518R7v06
AQU4518R0	AQU4518R0v06
AQU4518R1	AQU4518R1v06
AQU4518R9	AQU4518R9v06
AQU4518R14	AQU4518R14v06
AQU4518R11	AQU4518R11v06
APE4517R0	APE4517R0v06
2LnH	
ATR4518R2	ATR4518R2v06
ATR4518R12	ATR4518R12v06
ATR4517R5	ATR4517R5v06
AQU4518R5	AQU4518R5v06
AQU4518R4	AQU4518R4v06
AQU4517R4	AQU4517R4v06
AQU4518R19	AQU4518R19v06
AQU4518R17	AQU4518R17v06
AQU4518R24	AQU4518R24v06
AQU4518R25	AQU4518R25v06
APE4518R0	APE4518R0v06
APE4518R1	APE4518R1v06
APE4518R12	APE4518R12v06
ASI4518R11	ASI4518R11v06
ASI4518R4	ASI4518R4v06
ASI4518R10	ASI4518R10v06
Multi-beam Antenna	
AMB4519R0	AMB4519R0v06
AMB452000	AMB452000v06
AMB4520R0	AMB4520R0v06
AMB4520R1	AMB4520R1v06
AMB4519R2	AMB4519R2v06
AMB4521R0	AMB4521R0v06

Index of Antenna and Antenna Line Product

The products are listed in an alphabetical & numeric order. **New or changed product.**

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AAU3920	8	ADU4516R0v06	39	**AMB4520R4v06**	215	AQU4518R17v06	163
AAU3940	11	ADU4516R6v06	33	**AMB4520R5v06**	205	AQU4518R19v06	161
AAU3961	2	ADU4517R0v06	41	**AMB4520R6v06**	218	AQU4518R1v06	125
AAU5940	10	ADU4517R3v06	77	**AMB4521R0v06**	220	AQU4518R21v06	65
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A194518R0v06	45	**ADU4518R13**	232	***APE...***		AQU4518R4v06	159
		ADU4518R1v06	51	**APE4516R1v06**	130	AQU4518R5v06	157
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A264518R0v06	47	ADU4518R6v06	53	**APE4517R4v06**	134	AQU4518R8v06	63
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A264521R1v06	49	ADU4518R9v06	71	**APE4518R13v06**	165	***ASI...***	
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EasyRET and MET Antenna Corresponding List

EasyRET Antenna	MET Antenna (Corresponding to EasyRET)
Model	Model
A794515R0v06	A79451500v06
A794516R0v06	A79451600v06
A794517R0v06	A79451700v06
A794515R1v06	A79451503v06
A704515R0v06	A79451702v06
A704521R0v06	A70452100v06
A194518R0v06	A19451811v06
A264518R0v06	A26451800v06
ADU4518R1v06	ADU451819v06
ADU4518R6v06	ADU451816v06
ATR4518R15v06	ATR451807v06
ATR4518R14v06	ATR451714v06
ADU4517R3v06	ADU451503v06
ADU4518R3v06	ADU451602v06
ADU4518R0v06	ADU451807v06
ADU4518R10v06	ADU451716v06
ADU4518R11v06	ADU451604v06
ADU4518R12v06	ADU451712v06
ATR4516R0v06	ATR451602v06
ATR4517R3v06	ATR451715v06
ATR4517R0v06	ATR451704v06
ATR4517R1v06	ATR451709v06
ATR4518R4v06	ATR451606v06
ATR4518R7v06	ATR451607v06
AMB4520R5v06	AMB452003v06
AMB4520R0v06	AMB452000v06

A. Active Antenna

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Model: AAU5953

Product Description

- AAU5953 features the highest integration. It supports all the mainstream bands available. Within one radio unit, both 1.8GHz 4T4R and 2.6GHz 4T4R can be enabled. In addition, this type of AAU supports both 2 low frequency bands and 1 high frequency band (1.4~2.1GHz) as passive. The Advanced Beamforming feature is introduced to bring 15% additional capacity gains.

AAU5953 Properties	
Active & Passive Configuration	2A+3P
Frequency(Hz)	Active: 1.8G, 2.6G Passive: 700-800MHz(2 Ports), 900MHz(2 Ports),1400-2100MHz(2 Ports)
TX/RX	4T4R
EIRP	4*62.3dBm
Technology	GSM, LTE
Dimensions (H x W x D)	2099mm(H)*370mm(W)*258mm(D)
Weight	60kg
Temperature	-40℃~55℃
Heat Dissipation	Natural Cooling
Wind load	Frontal/lateral/rearside:830N/460N/1310N at 150km/h
Passive Connector	6 x 4.3-10 Connector Female
Electrical downtilt	2 - 12°, continuously adjustable(High frequency bands)

Model: AAU3961

Product Description

- AAU3961, which is based on 3 side-by-side high bands and 1 low band antenna platform, can support dual active high frequency bands with 4T4R as well as 1 high and 1 low passive frequency bands with 2T2R. It is the best choice for operators in 4*4 MIMO network deployment. With the highly integrated design, AAU3961 also helps operators to simplify sites.

AAU3961 Properties	
Active & Passive Configuration	2A+2P
Frequency(Hz)	Active: 1.8G, 2.6G Passive: 1.8G, 2.1G, 2.6G, 700M, 800M, 850M, 900M
TX/RX	4T4R
EIRP	4*63dBm
Technology	GSM, LTE
Dimensions (H x W x D)	1550mm(H)*370mm(W)*230mm(D)
Weight	45kg(1A), 63kg(2A)
Temperature	- 40℃~50℃
Heat Dissipation	Natural Cooling
Wind load	Frontal/lateral/rearside:665N/500N/985N at 150km/h
Passive Connector	4 x 4.3-10 Connector Female
Electrical downtilt	2 - 12°, continuously adjustable(High frequency bands) 0 - 14°, continuously adjustable(Low frequency bands)

Antenna Specifications

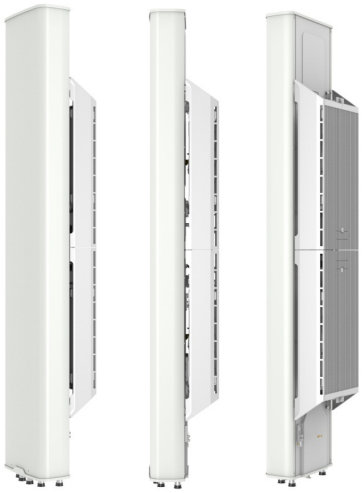
Electrical Properties					
Frequency range (MHz)		690-803	790-862	824-894	880-960
Polarization		+45°, -45°			
Electrical downtilt (°)		0 - 14, continuously adjustable			
Gain (dBi)	at mid Tilt	14.1	14.2	14.3	14.6
	over all Tilts	14±0.4	14.1±0.4	14.2±0.4	14.5±0.4
Side lobe suppression for first side lobe above main beam (dB)		> 15			
Horizontal 3dB beam width (°)		68±3	67±3	66±4	65±3
Vertical 3dB beam width (°)		15.7±1.5	13.9±1.5	13.2±1.2	12.6±1.2
VSWR		< 1.5			
Cross polar isolation (dB)		≥ 28			
Interband isolation (dB)		≥ 28			
Front to back ratio , ±30° (dB)		>23	>25	> 25	>25
Cross polar ratio (dB)	0°	> 18	>20	> 20	>20
Max. power per input (W)		120			
Impedance (Ω)		50			
Grounding		DC Ground			

Electrical Properties								
Frequency range (MHz)		1710 - 2690 (Passive)				2* 1710 - 2170 (Active)		2* 2500 - 2690 (Active)
		1710 - 1990	1920 - 2170	2300 - 2400	2500 - 2690	1710 - 1880	1920 - 2170	
Polarization		+45°, -45°						
Electrical downtilt (°)		2 - 12, continuously adjustable						
Gain (dBi)	at mid Tilt	16.7	17.1	17.1	17.3	17.1	17.6	18.0
	over all Tilts	16.6±0.5	17±0.5	17.1±0.4	17.2±0.3	17±0.5	17.5±0.5	18±0.4
Side lobe suppression for first side lobe above main beam (dB)		> 15	> 15	> 15	> 15	> 17	> 17	> 16
Horizontal 3dB beam width (°)		68±4	65±4	61±4	59±3	67±4	64±4	59±3
Vertical 3dB beam width (°)		6.4±0.6	5.6±0.6	5.1±0.65	4.9±0.4	6.6±0.6	6±0.5	4.8±0.3
VSWR		< 1.5						
Cross polar isolation (dB)		≥ 28						
Interband isolation (dB)		≥ 28						
Front to back ratio , ±30° (dB)		>26	>28	>28	>28	> 25	> 25	>25
Cross polar ratio (dB)	0°	>18	>16	>15	>18	> 18	> 18	>18
Max. power per input (W)		80						
Impedance (Ω)		50						
Grounding		DC Ground						

Model: AAU3911

Product Description

- Multi-band and multi-mode AAU391X series can effectively solve the problem of limited site space in the era of multi-band and multi-mode and simplify the antenna installation platform .
- AAU3911 support both high and low frequency bands.



AAU3911	
Active & Passive Configuration	2A+2P
Frequency	Active: 1.8G, 2.1G, AWS, 2.6G Passive: 1.8G, PCS, 2.1G, 2.6G, 700M, 800M, 850M, 900M
TX/RX	2T4R/4T4R
EIRP	2*64.8dBm / 4*63dBm
Technology	GSM, UMTS, LTE
Dimensions (H x W x D)	2020mm(H)*359mm(W)*290mm(D)
Weight	49kg/54kg(1A), 64kg(2A)
Temperature	- 40℃~55℃
Heat Dissipation	Natural Cooling
Wind load	Frontal/lateral/rearside:990N/740N/965N at 150km/h
Passive Connector	6 x 7/16 DIN Female
Electrical downtilt	0 - 10° , continuously adjustable

Antenna Specifications

Electrical Properties					
Frequency range (MHz)		690-803	790-862	824-894	880-960
Polarization		+45°, -45°			
Electrical downtilt (°)		0 - 10, continuously adjustable			
Gain (dBi)	at mid Tilt	15.4	15.7	15.8	16
	over all Tilts	15.4±0.4	15.6±0.4	15.6±0.3	15.8±0.3
Side lobe suppression for first side lobe above main beam (dB)		> 18			
Horizontal 3dB beam width (°)		65±1.7	65±1.4	65±1.7	65±2.4
Vertical 3dB beam width (°)		10.3±0.7	9.5±0.5	9.2±0.6	8.6±0.5
VSWR		< 1.5			
Cross polar isolation (dB)		≥ 28			
Interband isolation (dB)		≥ 28			
Front to back ratio , ±30° (dB)		>26			
Max. power per input (W)		120			
Impedance (Ω)		50			
Grounding		DC Ground			

Electrical Properties				
Frequency range (MHz)		1710 - 1880	1920 - 2170	2500 - 2690
Polarization		+45°, -45°		
Electrical downtilt (°)		0 - 10, continuously adjustable		
Gain (dBi)	at mid Tilt	16.8	17.2	17.8
	over all Tilts	16.7±0.6	17.1±0.6	17.7±0.6
Side lobe suppression for first side lobe above main beam (dB)		> 17		
Horizontal 3dB beam width (°)		65±4.3	64±3.2	60±5.0
Vertical 3dB beam width (°)		7.1±0.5	6.5±0.5	5.2±0.3
VSWR		< 1.5		
Cross polar isolation (dB)		≥ 28		
Interband isolation (dB)		≥ 28		
Front to back ratio , ±30° (dB)		> 27		
Max. power per input (W)		80		
Impedance (Ω)		50		
Grounding		DC Ground		

Model: AAU3910

Product Description

- Multi-band and multi-mode AAU391X series can effectively solve the problem of limited site space in the era of multi-band and multi-mode and simplify the antenna installation platform .
- AAU3910 support high frequency bands.

AAU3910	
Active & Passive Configuration	2A+1P
Frequency	Active: 1.8G, 2.1G, 2.6G, AWS Passive: 1.8G, PCS, 2.1G, 2.6G
TX/RX	2T4R/4T4R
EIRP	2*65.3dBm / 4x63.5dBm
Technology	GSM, UMTS, LTE
Dimensions (H x W x D)	1450mm(H)*320mm(W)*230mm(D)
Weight	39.5kg(1A), 53.5kg(2A)
Temperature	- 40℃~55℃
Heat Dissipation	Natural Cooling
Wind load	Frontal/lateral/rearside:660N/420N/710N at 150km/h
Passive Connector	4 x 7/16 DIN Female
Electrical downtilt	0 - 12° , continuously adjustable

Antenna Specifications

Electrical Properties				
Frequency range (MHz)		1710 - 1880	1920 - 2170	2500 - 2690
Polarization		+45°, -45°		
Electrical downtilt (°)		0 - 12, continuously adjustable		
Gain (dBi)	at mid Tilt	17.5	18	18.4
	over all Tilts	17.4±0.4	17.8±0.5	18.2±0.6
Side lobe suppression for first side lobe above main beam (dB)		> 17	> 18	> 16
Horizontal 3dB beam width (°)		64±3.5	63±3.5	60±6.0
Vertical 3dB beam width (°)		6.4±0.4	5.8±0.4	4.6±0.3
VSWR		< 1.5		
Cross polar isolation (dB)		≥ 30		
Interband isolation (dB)		≥ 28		
Front to back ratio , ±30° (dB)		> 27	> 28	>28
Cross polar ratio (dB)	0°	> 24	> 25	>24
Max. power per input (W)		80		
Impedance (Ω)		50		
Grounding		DC Ground		

Model: AAU3920

Product Description

- AAU3920 supports multi-band, using SDR (Software Define Radio) and SDB (Software Define Band) technology to adjust frequency and mode by software. It can help operators to realize long-term multi-mode and multi-band network evolution strategy. The power can be allocated between different bands and modes based on the capacity and user distribution. It can be adjusted remotely by software, which eliminates the need for site visiting and significantly reduces the TCO.

AAU3920	
Active & Passive Configuration	2A+1P
Frequency(Hz)	Active: 1.8G, 2.1G Passive: 2.3~2.6G
TX/RX	2T4R
EIRP	2*66.5dBm
Technology	GSM, UMTS, LTE
Dimensions (H x W x D)	1450mm(H)*320mm(W)*188mm(D)
Weight	35kg
Temperature	- 40℃~55℃
Heat Dissipation	Natural Cooling
Wind load	Frontal/lateral/rearside:710N/400N/830N at 150km/h
Passive Connector	4 x 7/16 DIN Female
Electrical downtilt	0 - 12° , continuously adjustable

Antenna Specifications

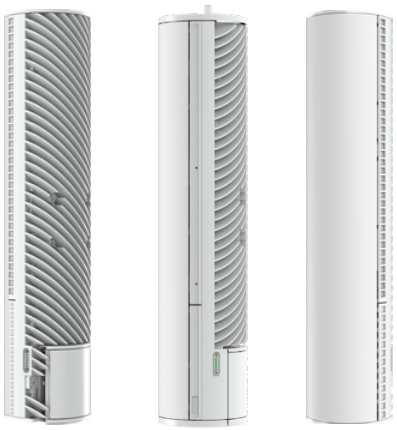
Electrical Properties			
Frequency range (MHz)		1710 - 1880	1920 - 2170
Polarization		+45° , -45°	
Electrical downtilt (°)		0 - 12 , continuously adjustable	
Gain (dBi)	at mid Tilt	17.3	17.9
	over all Tilts	17.2±0.5	17.8±0.5
Side lobe suppression for first side lobe above main beam (dB)		>17	
Horizontal 3dB beam width (°)		66±4.3	64±3.2
Vertical 3dB beam width (°)		6.5±0.5	6.0±0.5
Isolation between ports (dB)		≥30	
Front to back ratio , ±30° (dB)		>28	
Cross polar ratio (dB)	0°	>20	
Max. power total input (W)		160 (at 50℃ ambient temperature)	
Impedance (Ω)		50	
Grounding		DC Ground	

Electrical Properties		
Frequency range (MHz)		2300 - 2690
Polarization		+45° , -45°
Electrical downtilt (°)		0 - 12 , continuously adjustable
Gain (dBi)	at mid Tilt	18.3
	over all Tilts	18.1±0.5
Side lobe suppression for first side lobe above main beam (dB)		>17
Horizontal 3dB beam width (°)		60±4.2
Vertical 3dB beam width (°)		4.8±0.3
Isolation between ports (dB)		≥30
Front to back ratio , ±30° (dB)		>28
Cross polar ratio (dB)	0°	>20
Max. power total input (W)		160 (at 50℃ ambient temperature)
Impedance (Ω)		50
Grounding		DC Ground

Model: AAU5940

Product Description

- AAU5940 is powerful (2x60 W) and supports GSM/UMTS/LTE. It can support both horizontal and vertical installation. With AAU5940, VBW (Vertical Beam Width) can be adjusted, which implements the deep coverage of tall buildings. AAU5940 also supports HVDC (high-voltage direct current). The aggregation site solution can provide power supply to AAU5940s over a long distance.



AAU5940 Properties	
Active & Passive Configuration	2A
Frequency(Hz)	Active: 1.8G, 2.1G
TX/RX	2T2R
EIRP	2*60dBm or 2*60.5dBm
Technology	GSM, UMTS, LTE
Dimensions (H x W x D)	750mm x 165mm
Weight	17kg
Temperature	–40°C to +55°C
Heat Dissipation	Natural Cooling
Wind load	Frontal/lateral/rearside:108N/108N/124N at 150km/h
Passive Connector	NULL
Electrical downtilt	-3 - 12°

Model: AAU3940

Product Description

- AAU3940 (Easy Macro™) cylindrical design with the perfect blend of the surrounding environment, small size but with macro-level power, supports flexible installation on lamppost, utility pole, wall and other scenes, which greatly reduces the difficulty of site acquisition, and improves the efficiency of network deployment.

AAU3940		
Active & Passive Configuration	2A	
Frequency	Active: 1.8G, 2.1G	Active: PCS, AWS
TX/RX	2T2R	
EIRP	2*58.8dBm	
Technology	UMTS, LTE	
Dimensions (H x W x D)	750mm (H)*150mm(Ø)	
Weight	15kg	
Temperature	–40°C to +50°C (2*30W) –40°C to +40°C (2*40W)	
Heat Dissipation	Natural Cooling	
Wind load	Frontal/lateral/rearside:100N/100N/115N at 150km/h	
Passive Connector	NULL	
Power Type	AC / DC	DC
Electrical downtilt	-3 - 12° , continuously adjustable	

Antenna Specifications

Electrical Properties (1.8-2.1GHz)			
Frequency range (MHz)		1710~1880	1920~2170
Polarization		+45°, -45°	
Electrical downtilt (°)		-3 - 12°, continuously adjustable	
Gain (dBi)	at mid Tilt	14	14.5
	over all Tilts	14.0±0.5	14.5±0.4
Horizontal 3dB beam width (°)		70±5.2	70±3.6
Vertical 3dB beam width (°)		13±0.8	12±0.9
Front to back ratio, ±30° (dB)		>25	
Horizontal Adjustment		+/-30	

Electrical Properties (PCS-AWS)			
Frequency range (MHz)		1710~1910	1930~2155
Polarization		+45°, -45°	
Electrical downtilt (°)		-3 - 12°, continuously adjustable	
Gain (dBi)	at mid Tilt	14	14.5
	over all Tilts	14.0±0.5	14.5±0.4
Horizontal 3dB beam width (°)		70±5.2	70±3.6
Vertical 3dB beam width (°)		13±0.8	12±0.9
Front to back ratio, ±30° (dB)		>25	
Horizontal Adjustment		+/-30	

B. Passive Antenna

Multi-band

B - 1 Low Band

2 Ports

Frequency Range (MHz)	3dB Horizontal beam width (°)	Gain (dBi)	Electrical downtilt (°)	Tilt Method	Connector	Dimension(mm)	Model	Page	Array symbol
690-960	65	15	0-14	EasyRET2.0	2 x 4.3-10	1415 x 298 x 149	A704515R0v06	15	A
690-960	65	16.5	0-12	EasyRET2.0	2 x 4.3-10	1936 x 298 x 149	A704516R0v06	17	A
690-960	65	17.5	0-10	EasyRET2.0	2 x 4.3-10	2535 x 298 x 149	A704517R0v06	19	A
690-960	33	20.5	0-10	EasyRET2.0	2 x 4.3-10	2580 x 590 x 169	A704521R0v06	21	A
790-960	65	15	0-14	EasyRET2.0	2 x 4.3-10	1356 x 259 x 135	A794515R0v06	23	A
790-960	65	16.5	0-12	EasyRET2.0	2 x 4.3-10	1936 x 259 x 135	A794516R0v06	25	A
790-960	65	17.5	0-10	EasyRET2.0	2 x 4.3-10	2535 x 259 x 135	A794517R0v06	27	A
790-960	90	15	0-12	EasyRET2.0	2 x 4.3-10	1936 x 259 x 135	A794515R1v06	29	A

*** Preliminary Issue*

Multi-band

B - 1 Low Band

4 Ports

Frequency Range (MHz)	3dB Horizontal beam width (°)	Gain (dBi)	Electrical downtilt (°)	Tilt Method	Connector	Dimension(mm)	Model	Page	Array symbol
690-960/ 690-960	65/65	14.5/14.5	0-14/0-14	EasyRET2.0	4 x 4.3-10	1499 x 429 x 196	ADU4515R5v06	31	E
690-960/ 690-960	65/65	16/16	0-10/0-10	EasyRET2.0	4 x 4.3-10	1999 x 429 x 196	ADU4516R6v06	33	E
690-960/ 690-960	65/65	17/17	0-10/0-10	EasyRET2.0	4 x 4.3-10	2550 x 429 x 196	ADU4517R6v06	35	E
790-862/ 880-960	65/65	14.5/15	0-14/0-14	EasyRET2.0	4 x 4.3-10	1490 x 298 x 150	ADU4515R0v06	37	D
790-862/ 880-960	65/65	16/16.5	0-12/0-12	EasyRET2.0	4 x 4.3-10	1999 x 259 x 150	ADU4516R0v06	39	D
790-862/ 880-960	65/65	17/17.5	0-10/0-10	EasyRET2.0	4 x 4.3-10	2538 x 259 x 150	ADU4517R0v06	41	D

*** Preliminary Issue*

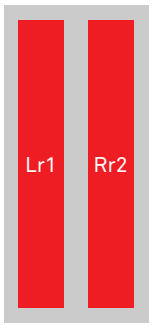
Array Symbol Type

Type A

Type D

2 Low-bands filtered

Type E



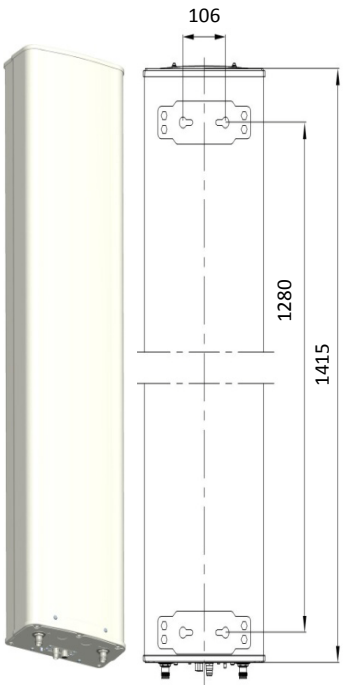
2 Low-bands array side-by-side

Antenna Specifications

Electrical Properties					
Frequency range (MHz)		690 - 960			
		690 - 803	790 - 862	824 - 894	880 - 960
Polarization		+45° , -45°			
Electrical downtilt (°)		0 - 14 , continuously adjustable			
Gain (dBi)	at mid Tilt	13.9	14.4	14.6	14.8
	over all Tilts	13.9 ±0.3	14.3 ±0.3	14.5 ±0.3	14.7 ±0.4
Side lobe suppression for first side lobe above main beam (dB)		> 15	> 15	> 15	> 17
Horizontal 3dB beam width (°)		69 ±1.4	68 ±1.0	67 ±1.0	65 ±2.0
Vertical 3dB beam width (°)		16.4 ±1.0	15.0 ±1.0	14.5 ±0.7	13.2 ±0.9
VSWR		< 1.5			
Cross polar isolation (dB)		≥ 30			
Front to back ratio , ±30° (dB)		> 24	> 25	> 25	> 25
Cross polar ratio (dB)	0°	> 17	> 17	> 17	> 17
Max. power per input (W)		500 (at 50℃ ambient temperature)			
Intermodulation IM3 (dBc)		≤ -153 (2 x 43 dBm carrier)			
Impedance (Ω)		50			
Grounding		DC Ground			

1. Values based on NGMN recommendations on Base Station Antenna Standards (BASTA).
2. Electrical datasheet in XML format is available.

Mechanical Properties	
Antenna dimensions (H x W x D) (mm)	1415 x 298 x 150
Packing dimensions (H x W x D) (mm)	1835 x 360 x 225
Antenna weight (kg)	12.3
Clamps weight (kg)	2.9 (2 units)
Antenna packing weight (kg)	21.3 (Included clamps)
Mast diameter supported (mm)	50 - 115
Radome material	Fiberglass
Radome colour	Light grey
Operational temperature (℃)	-40 .. +65
Wind load (N)	Frontal: 550 (at 150 km/h) Lateral: 235 (at 150 km/h) Rear side: 660 (at 150 km/h)
Max. operational wind speed (km/h)	200
Survival wind speed (km/h)	250
Connector	2 x 4.3-10 Female
Connector position	Bottom



Accessories

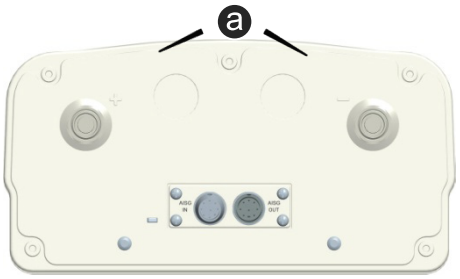
Item	Model	Description	Weight	Units per antenna
Downtilt kit	ASMDT0B01	Mechanical downtilt: 0 - 16 °	1.3 kg	1 (Separate packing)

Integrated RET Specifications

Properties								
RET type	Integrated RET							
RET protocols*	AISG 2.0 / 3GPP							
Input voltage range (V)	10 - 30 DC							
Power consumption (W)	< 5 (motor activated, 12V) < 0.5 (stand by, 12V)							
Adjustment time (full range) (s)	< 50 (typically, depending on antenna type)							
RET connector	2 x 8 pin connector according to IEC 60130-9 Daisy chain in: Male / Daisy chain out: Female							
Pin assignment according AISG	1	2	3	4	5	6	7	8
	DC	n/c	RS-485B	n/c	RS-485A	DC	DC return	n/c
Lightning protection (kA)	3 (10/350 µs) 10 (8/20 µs)							

* Please confirm the AISG protocol of primary station is compatible with RET antenna protocol interface. The protocol of RET antenna software interface is switchable between AISG 2.0/3GPP and AISG 1.1 with a vendor defined command. For more details about protocol switching function, contact Huawei before system installation.

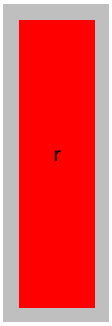
Standards: UL 60950-1 (Safety), UL 60950-22 (Safety – Equipment installed outdoor), EN 55022 (Emission), EN 55024 (Immunity), ETSI EN 301 489, FCC Part15, ICES-003
Certification: CE, FCC, IC, RCM



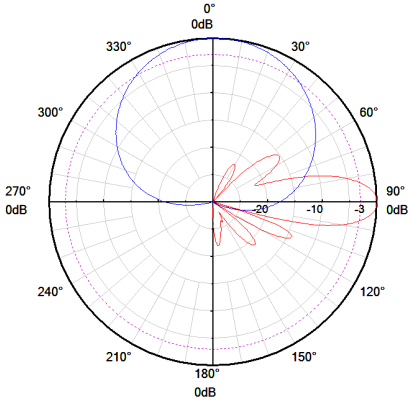
Integrated RET S/N:

ⓐ HWMxxx.....r

r - Red



Pattern sample for reference



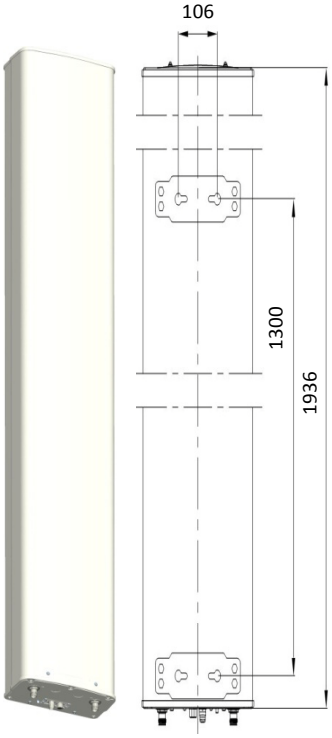
690 - 960 MHz

Antenna Specifications

Electrical Properties					
Frequency range (MHz)		690 - 960			
		690 - 803	790 - 862	824 - 894	880 - 960
Polarization		+45° , -45°			
Electrical downtilt (°)		0 - 12 , continuously adjustable			
Gain (dBi)	at mid Tilt	15.5	15.9	16.1	16.4
	over all Tilts	15.4 ±0.3	15.7 ±0.4	15.9 ±0.5	16.1 ±0.5
Side lobe suppression for first side lobe above main beam (dB)		> 15	> 15	> 15	> 15
Horizontal 3dB beam width (°)		69 ±1.0	68 ±1.2	67 ±1.2	65 ±1.8
Vertical 3dB beam width (°)		11.3 ±0.8	10.3 ±0.5	9.8 ±0.6	9.2 ±0.5
VSWR		< 1.5			
Cross polar isolation (dB)		≥ 30			
Front to back ratio , ±30° (dB)		> 24	> 25	> 25	> 25
Cross polar ratio (dB)	0°	> 18	> 18	> 18	> 18
Max. power per input (W)		500 (at 50℃ ambient temperature)			
Intermodulation IM3 (dBc)		≤ -153 (2 x 43 dBm carrier)			
Impedance (Ω)		50			
Grounding		DC Ground			

1. Values based on NGMN recommendations on Base Station Antenna Standards (BASTA).
2. Electrical datasheet in XML format is available.

Mechanical Properties	
Antenna dimensions (H x W x D) (mm)	1936 x 298 x 149
Packing dimensions (H x W x D) (mm)	2365 x 360 x 230
Antenna weight (kg)	15.3
Clamps weight (kg)	3.0 (2 units)
Antenna packing weight (kg)	25.8 (Included clamps)
Mast diameter supported (mm)	50 - 115
Radome material	Fiberglass
Radome colour	Light grey
Operational temperature (℃)	-40 .. +65
Wind load (N)	Frontal: 810 (at 150 km/h) Lateral: 345 (at 150 km/h) Rear side: 970 (at 150 km/h)
Max. operational wind speed (km/h)	200
Survival wind speed (km/h)	250
Connector	2 x 4.3-10 Female
Connector position	Bottom



Accessories

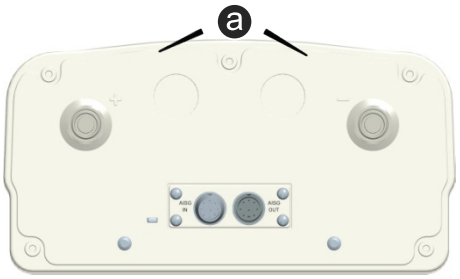
Item	Model	Description	Weight	Units per antenna
Downtilt kit	ASMDT0C01	Mechanical downtilt: 0 - 12 °	2.1 kg	1 (Separate packing)

Integrated RET Specifications

Properties								
RET type	Integrated RET							
RET protocols*	AISG 2.0 / 3GPP							
Input voltage range (V)	10 - 30 DC							
Power consumption (W)	< 5 (motor activated, 12V) < 0.5 (stand by, 12V)							
Adjustment time (full range) (s)	< 50 (typically, depending on antenna type)							
RET connector	2 x 8 pin connector according to IEC 60130-9 Daisy chain in: Male / Daisy chain out: Female							
Pin assignment according AISG	1	2	3	4	5	6	7	8
	DC	n/c	RS-485B	n/c	RS-485A	DC	DC return	n/c
Lightning protection (kA)	3 (10/350 µs) 10 (8/20 µs)							

* Please confirm the AISG protocol of primary station is compatible with RET antenna protocol interface. The protocol of RET antenna software interface is switchable between AISG 2.0/3GPP and AISG 1.1 with a vendor defined command. For more details about protocol switching function, contact Huawei before system installation.

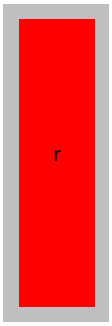
Standards: UL 60950-1 (Safety), UL 60950-22 (Safety – Equipment installed outdoor), EN 55022 (Emission), EN 55024 (Immunity), ETSI EN 301 489, FCC Part15, ICES-003
Certification: CE, FCC, IC, RCM



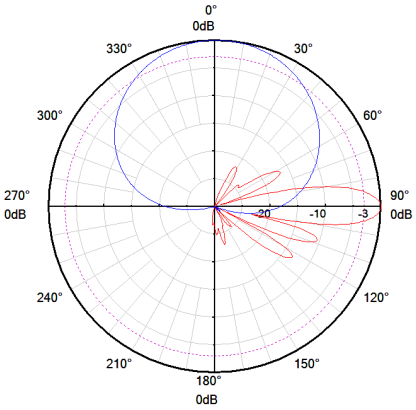
Integrated RET S/N:

ⓐ HWMxxx.....r

r - Red



Pattern sample for reference



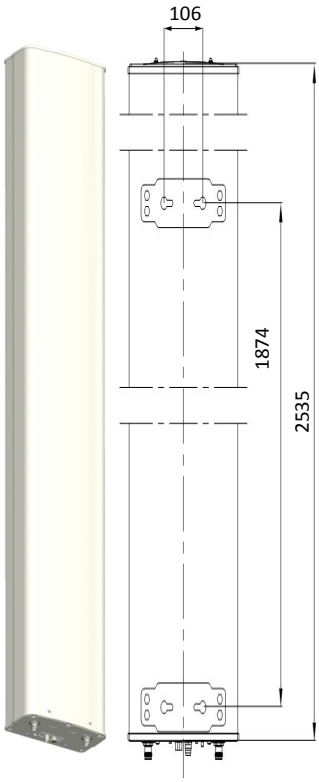
690 - 960 MHz

Antenna Specifications

Electrical Properties					
Frequency range (MHz)		690 - 960			
		690 - 803	790 - 862	824 - 894	880 - 960
Polarization		+45° , -45°			
Electrical downtilt (°)		0 - 10 , continuously adjustable			
Gain (dBi)	at mid Tilt	16.5	16.7	17.0	17.2
	over all Tilts	16.4 ±0.3	16.6 ±0.4	16.7 ±0.4	16.9 ±0.5
Side lobe suppression for first side lobe above main beam (dB)		> 17	> 18	> 18	> 17
Horizontal 3dB beam width (°)		69 ±1.0	68 ±1.2	67 ±1.2	65 ±2.0
Vertical 3dB beam width (°)		8.7 ±0.6	8.0 ±0.5	7.7 ±0.4	7.2 ±0.5
VSWR		< 1.5			
Cross polar isolation (dB)		≥ 30			
Front to back ratio , ±30° (dB)		> 25	> 26	> 26	> 26
Cross polar ratio (dB)	0°	> 18	> 18	> 18	> 18
Max. power per input (W)		500 (at 50℃ ambient temperature)			
Intermodulation IM3 (dBc)		≤ -153 (2 x 43 dBm carrier)			
Impedance (Ω)		50			
Grounding		DC Ground			

1. Values based on NGMN recommendations on Base Station Antenna Standards (BASTA).
2. Electrical datasheet in XML format is available.

Mechanical Properties	
Antenna dimensions (H x W x D) (mm)	2535 x 298 x 149
Packing dimensions (H x W x D) (mm)	2885 x 365 x 235
Antenna weight (kg)	19.3
Clamps weight (kg)	3.0 (2 units)
Antenna packing weight (kg)	32.3 (Included clamps)
Mast diameter supported (mm)	50 - 115
Radome material	Fiberglass
Radome colour	Light grey
Operational temperature (℃)	-40 .. +65
Wind load (N)	Frontal: 1060 (at 150 km/h) Lateral: 455 (at 150 km/h) Rear side: 1265 (at 150 km/h)
Max. operational wind speed (km/h)	200
Survival wind speed (km/h)	250
Connector	2 x 4.3-10 Female
Connector position	Bottom



Accessories

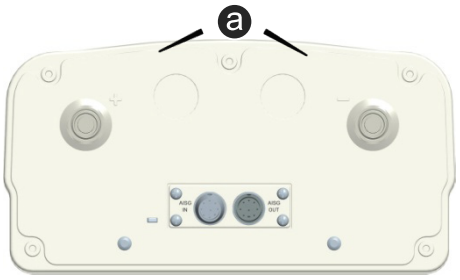
Item	Model	Description	Weight	Units per antenna
Downtilt kit	ASMDT0C01	Mechanical downtilt: 0 - 8 °	2.1 kg	1 (Separate packing)

Integrated RET Specifications

Properties								
RET type	Integrated RET							
RET protocols*	AISG 2.0 / 3GPP							
Input voltage range (V)	10 - 30 DC							
Power consumption (W)	< 5 (motor activated, 12V) < 0.5 (stand by, 12V)							
Adjustment time (full range) (s)	< 50 (typically, depending on antenna type)							
RET connector	2 x 8 pin connector according to IEC 60130-9 Daisy chain in: Male / Daisy chain out: Female							
Pin assignment according AISG	1	2	3	4	5	6	7	8
	DC	n/c	RS-485B	n/c	RS-485A	DC	DC return	n/c
Lightning protection (kA)	3 (10/350 µs) 10 (8/20 µs)							

* Please confirm the AISG protocol of primary station is compatible with RET antenna protocol interface. The protocol of RET antenna software interface is switchable between AISG 2.0/3GPP and AISG 1.1 with a vendor defined command. For more details about protocol switching function, contact Huawei before system installation.

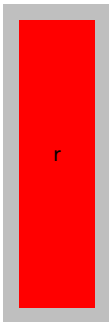
Standards: UL 60950-1 (Safety), UL 60950-22 (Safety – Equipment installed outdoor), EN 55022 (Emission), EN 55024 (Immunity), ETSI EN 301 489, FCC Part15, ICES-003
Certification: CE, FCC, IC, RCM



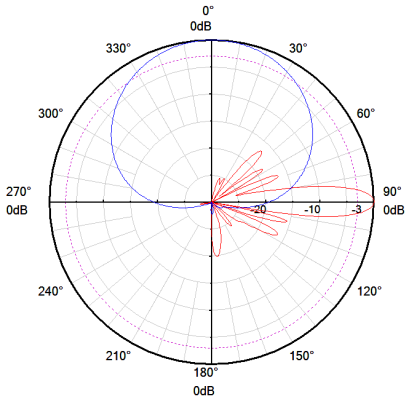
Integrated RET S/N:

ⓐ HWMxxx……r

r - Red



Pattern sample for reference



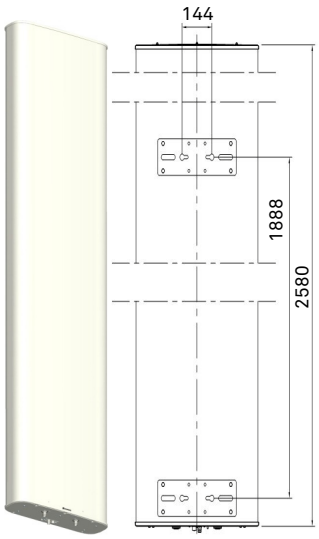
690 - 960 MHz

Antenna Specifications

Electrical Properties					
Frequency range (MHz)		690 - 960			
		690 - 803	790 - 862	824 - 894	880 - 960
Polarization		+45°, -45°			
Electrical downtilt (°)		0 - 10, continuously adjustable			
Gain (dBi)	at mid Tilt	19.1	19.7	20.0	20.3
	over all Tilts	19.0 ±0.5	19.6 ±0.4	19.9 ±0.5	20.2 ±0.3
Side lobe suppression for first side lobe above main beam (dB)		> 19	> 21	> 21	> 19
Azimuth side lobe suppression(dB)		> 18	> 18	> 19	> 19
Horizontal 3dB beam width (°)		35 ±1.5	32.5 ±1.0	31.5 ±1.5	29 ±1.0
Vertical 3dB beam width (°)		8.8 ±0.5	8.0 ±0.5	7.7 ±0.3	7.2 ±0.5
VSWR		< 1.5			
Cross polar isolation (dB)		≥ 28	≥ 30		
Front to back ratio , ±30°(dB)		> 32	> 35	> 33	> 32
Cross polar ratio (dB)	0°	> 21	> 28	> 26	> 24
Max. power per input (W)		500 (at 50℃ ambient temperature)			
Intermodulation IM3 (dBc)		≤ -153 (2 x 43 dBm carrier)			
Impedance (Ω)		50			
Grounding		DC Ground			

1. Values based on NGMN recommendations on Base Station Antenna Standards (BASTA).
2. Electrical datasheet in XML format is available.

Mechanical Properties	
Antenna dimensions (H x W x D) (mm)	2580 x 590 x 169
Packing dimensions (H x W x D) (mm)	2875 x 770 x 300
Antenna weight (kg)	44.8
Clamps weight (kg)	5.8 (2 units)
Antenna packing weight (kg)	64.2 (Included clamps)
Mast diameter supported (mm)	50 - 115
Radome material	Fiberglass
Radome colour	Light grey
Operational temperature (℃)	-40 .. +65
Wind load (N)	Frontal: 1885 (at 150 km/h) Lateral: 255 (at 150 km/h) Rear side: 1730 (at 150 km/h)
Max. operational wind speed (km/h)	200
Survival wind speed (km/h)	250
Connector	2 x 4.3-10 Female
Connector position	Bottom



Accessories

Item	Model	Description	Weight	Units per antenna
Downtilt kit	ASMDT0F01	Mechanical downtilt: 0 - 8 °	3.1 kg	1 (Separate packing)

Integrated RET Specifications

Properties								
RET type	Integrated RET							
RET protocols*	AISG 2.0 / 3GPP							
Input voltage range (V)	10 - 30 DC							
Power consumption (W)	< 5 (motor activated, 12V) < 0.5 (stand by, 12V)							
Adjustment time (full range) (s)	< 50 (typically, depending on antenna type)							
RET connector	2 x 8 pin connector according to IEC 60130-9 Daisy chain in: Male / Daisy chain out: Female							
Pin assignment according AISG	1	2	3	4	5	6	7	8
	DC	n/c	RS-485B	n/c	RS-485A	DC	DC return	n/c
Lightning protection (kA)	3 (10/350 μs) 10 (8/20 μs)							

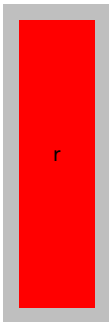
* Please confirm the AISG protocol of primary station is compatible with RET antenna protocol interface. The protocol of RET antenna software interface is switchable between AISG 2.0/3GPP and AISG 1.1 with a vendor defined command. For more details about protocol switching function, contact Huawei before system installation.

Standards: UL 60950-1 (Safety), UL 60950-22 (Safety – Equipment installed outdoor), EN 55022 (Emission), EN 55024 (Immunity), ETSI EN 301 489, FCC Part15, ICES-003
Certification: CE, FCC, IC, RCM

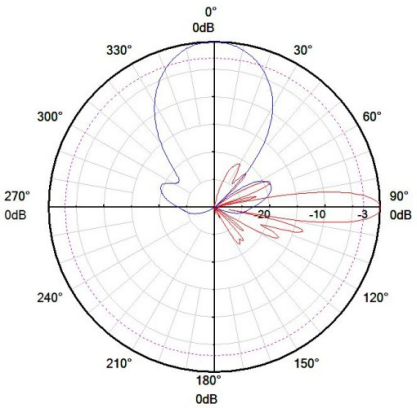
Integrated RET S/N:

ⓐ HWMxxx.....r

r - Red



Pattern sample for reference



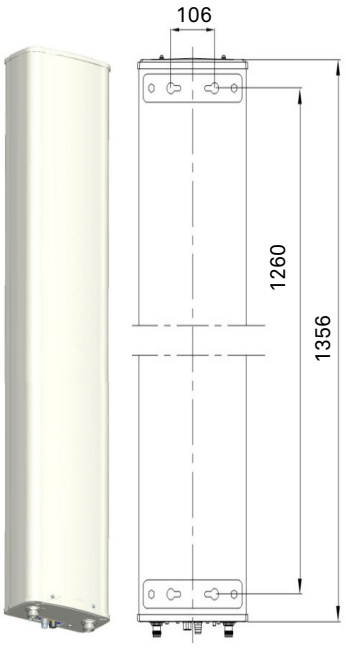
690 - 960 MHz

Antenna Specifications

Electrical Properties				
Frequency range (MHz)		790 - 960		
		790 - 862	824 - 894	880 - 960
Polarization		+45° , -45°		
Electrical downtilt (°)		0 - 14 , continuously adjustable		
Gain (dBi)	at mid Tilt	14.6	14.8	15.1
	over all Tilts	14.5 ±0.3	14.8 ±0.3	15.1 ±0.4
Side lobe suppression for first side lobe above main beam (dB)		> 18	> 18	> 17
Horizontal 3dB beam width (°)		68 ±1.4	67 ±1.6	65 ±2.3
Vertical 3dB beam width (°)		16.0 ±0.8	15.3 ±0.7	14.5 ±0.8
VSWR		< 1.5		
Cross polar isolation (dB)		≥ 30		
Front to back ratio , ±30°(dB)		> 25	> 24	> 24
Cross polar ratio (dB)	0°	> 25	> 25	> 25
Max. power per input (W)		500 (at 50℃ ambient temperature)		
Intermodulation IM3 (dBc)		≤ -153 (2 x 43 dBm carrier)		
Impedance (Ω)		50		
Grounding		DC Ground		

1. Values based on NGMN recommendations on Base Station Antenna Standards (BASTA).
2. Electrical datasheet in XML format is available.

Mechanical Properties	
Antenna dimensions (H x W x D) (mm)	1356 x 259 x 135
Packing dimensions (H x W x D) (mm)	1635 x 300 x 190
Antenna weight (kg)	10.6
Clamps weight (kg)	2.9 (2 units)
Antenna packing weight (kg)	17.1 (Included clamps)
Mast diameter supported (mm)	50 - 115
Radome material	Fiberglass
Radome colour	Light grey
Operational temperature (℃)	-40 .. +65
Wind load (N)	Frontal: 440 (at 150 km/h) Lateral: 230 (at 150 km/h) Rear side: 585 (at 150 km/h)
Max. operational wind speed (km/h)	200
Survival wind speed (km/h)	250
Connector	2 x 4.3-10 Female
Connector position	Bottom



Accessories

Item	Model	Description	Weight	Units per antenna
Downtilt kit	ASMDT0B01	Mechanical downtilt: 0 - 16 °	1.3 kg	1 (Separate packing)

Integrated RET Specifications

Properties								
RET type	Integrated RET							
RET protocols*	AISG 2.0 / 3GPP							
Input voltage range (V)	10 - 30 DC							
Power consumption (W)	< 5 (motor activated, 12V) < 0.5 (stand by, 12V)							
Adjustment time (full range) (s)	< 50 (typically, depending on antenna type)							
RET connector	2 x 8 pin connector according to IEC 60130-9 Daisy chain in: Male / Daisy chain out: Female							
Pin assignment according AISG	1	2	3	4	5	6	7	8
	DC	n/c	RS-485B	n/c	RS-485A	DC	DC return	n/c
Lightning protection (kA)	3 (10/350 µs) 10 (8/20 µs)							

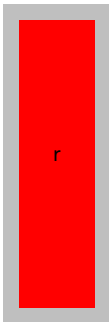
* Please confirm the AISG protocol of primary station is compatible with RET antenna protocol interface. The protocol of RET antenna software interface is switchable between AISG 2.0/3GPP and AISG 1.1 with a vendor defined command. For more details about protocol switching function, contact Huawei before system installation.

Standards: UL 60950-1 (Safety), UL 60950-22 (Safety – Equipment installed outdoor), EN 55022 (Emission), EN 55024 (Immunity), ETSI EN 301 489, FCC Part15, ICES-003
Certification: CE, FCC, IC, RCM

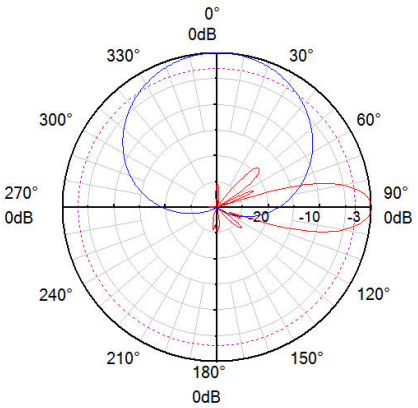
Integrated RET S/N:

ⓐ HWMxxx.....r

r - Red



Pattern sample for reference



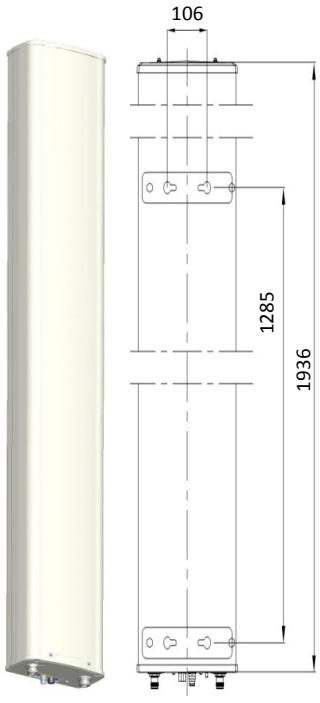
790 - 960 MHz

Antenna Specifications

Electrical Properties				
Frequency range (MHz)		790 - 960		
		790 - 862	824 - 894	880 - 960
Polarization		+45° , -45°		
Electrical downtilt (°)		0 - 12 , continuously adjustable		
Gain (dBi)	at mid Tilt	16.3	16.5	16.8
	over all Tilts	16.2 ±0.4	16.4 ±0.4	16.6 ±0.4
Side lobe suppression for first side lobe above main beam (dB)		> 17	> 17	> 18
Horizontal 3dB beam width (°)		69 ±1.2	68 ±1.8	65 ±2.6
Vertical 3dB beam width (°)		10.1 ±0.6	9.8 ±0.5	9.2 ±0.5
VSWR		< 1.5		
Cross polar isolation (dB)		≥ 30		
Front to back ratio , ±30° (dB)		> 25	> 25	> 25
Cross polar ratio (dB)	0°	> 25	> 25	> 25
Max. power per input (W)		500 (at 50℃ ambient temperature)		
Intermodulation IM3 (dBc)		≤ -153 (2 x 43 dBm carrier)		
Impedance (Ω)		50		
Grounding		DC Ground		

1. Values based on NGMN recommendations on Base Station Antenna Standards (BASTA).
2. Electrical datasheet in XML format is available.

Mechanical Properties	
Antenna dimensions (H x W x D) (mm)	1936 x 259 x 135
Packing dimensions (H x W x D) (mm)	2255 x 305 x 190
Antenna weight (kg)	13.3
Clamps weight (kg)	3.0 (2 units)
Antenna packing weight (kg)	22.4 (Included clamps)
Mast diameter supported (mm)	50 - 115
Radome material	Fiberglass
Radome colour	Light grey
Operational temperature (℃)	-40 .. +65
Wind load (N)	Frontal: 665 (at 150 km/h) Lateral: 345 (at 150 km/h) Rear side: 880 (at 150 km/h)
Max. operational wind speed (km/h)	200
Survival wind speed (km/h)	250
Connector	2 x 4.3-10 Female
Connector position	Bottom



Accessories

Item	Model	Description	Weight	Units per antenna
Downtilt kit	ASMDT0C01	Mechanical downtilt: 0 - 12 °	2.1 kg	1 (Separate packing)

Integrated RET Specifications

Properties								
RET type	Integrated RET							
RET protocols*	AISG 2.0 / 3GPP							
Input voltage range (V)	10 - 30 DC							
Power consumption (W)	< 5 (motor activated, 12V) < 0.5 (stand by, 12V)							
Adjustment time (full range) (s)	< 50 (typically, depending on antenna type)							
RET connector	2 x 8 pin connector according to IEC 60130-9 Daisy chain in: Male / Daisy chain out: Female							
Pin assignment according AISG	1	2	3	4	5	6	7	8
	DC	n/c	RS-485B	n/c	RS-485A	DC	DC return	n/c
Lightning protection (kA)	3 (10/350 μs) 10 (8/20 μs)							

* Please confirm the AISG protocol of primary station is compatible with RET antenna protocol interface. The protocol of RET antenna software interface is switchable between AISG 2.0/3GPP and AISG 1.1 with a vendor defined command. For more details about protocol switching function, contact Huawei before system installation.

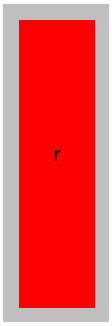
Standards: UL 60950-1 (Safety), UL 60950-22 (Safety – Equipment installed outdoor), EN 55022 (Emission), EN 55024 (Immunity), ETSI EN 301 489, FCC Part15, ICES-003

Certification: CE, FCC, IC, RCM

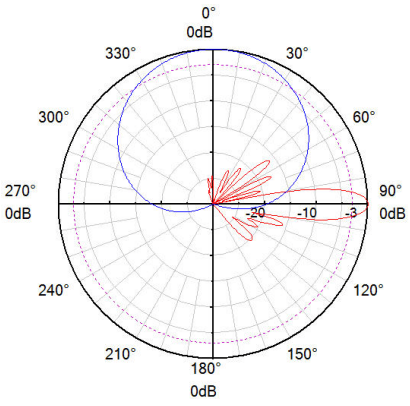
Integrated RET S/N:

ⓐ HWMxxx……r

r - Red



Pattern sample for reference



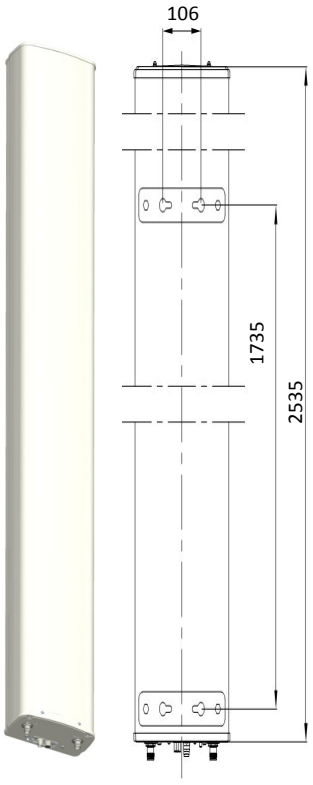
790 - 960 MHz

Antenna Specifications

Electrical Properties				
Frequency range (MHz)		790 - 960		
		790 - 862	824 - 894	880 - 960
Polarization		+45° , -45°		
Electrical downtilt (°)		0 - 10 , continuously adjustable		
Gain (dBi)	at mid Tilt	17.1	17.3	17.6
	over all Tilts	16.9 ±0.4	17.1 ±0.3	17.4 ±0.5
Side lobe suppression for first side lobe above main beam (dB)		> 18	> 18	> 19
Horizontal 3dB beam width (°)		69 ±1.2	68 ±1.3	65 ±3.0
Vertical 3dB beam width (°)		8.3 ±0.5	7.9 ±0.5	7.3 ±0.5
VSWR		< 1.5		
Cross polar isolation (dB)		≥ 30		
Front to back ratio , ±30° (dB)		> 26	> 26	> 26
Cross polar ratio (dB)	0°	> 25	> 25	> 25
Max. power per input (W)		500 (at 50℃ ambient temperature)		
Intermodulation IM3 (dBc)		≤ -153 (2 x 43 dBm carrier)		
Impedance (Ω)		50		
Grounding		DC Ground		

1. Values based on NGMN recommendations on Base Station Antenna Standards (BASTA).
2. Electrical datasheet in XML format is available.

Mechanical Properties	
Antenna dimensions (H x W x D) (mm)	2535 x 259 x 135
Packing dimensions (H x W x D) (mm)	2810 x 300 x 190
Antenna weight (kg)	16.3
Clamps weight (kg)	3.0 (2 units)
Antenna packing weight (kg)	25.8 (Included clamps)
Mast diameter supported (mm)	50 - 115
Radome material	Fiberglass
Radome colour	Light grey
Operational temperature (℃)	-40 .. +65
Wind load (N)	Frontal: 910 (at 150 km/h) Lateral: 470 (at 150 km/h) Rear side: 1200 (at 150 km/h)
Max. operational wind speed (km/h)	200
Survival wind speed (km/h)	250
Connector	2 x 4.3-10 Female
Connector position	Bottom



Accessories

Item	Model	Description	Weight	Units per antenna
Downtilt kit	ASMDT0C01	Mechanical downtilt: 0 - 8 °	2.1 kg	1 (Separate packing)

Integrated RET Specifications

Properties								
RET type	Integrated RET							
RET protocols*	AISG 2.0 / 3GPP							
Input voltage range (V)	10 - 30 DC							
Power consumption (W)	< 5 (motor activated, 12V) < 0.5 (stand by, 12V)							
Adjustment time (full range) (s)	< 50 (typically, depending on antenna type)							
RET connector	2 x 8 pin connector according to IEC 60130-9 Daisy chain in: Male / Daisy chain out: Female							
Pin assignment according AISG	1	2	3	4	5	6	7	8
	DC	n/c	RS-485B	n/c	RS-485A	DC	DC return	n/c
Lightning protection (kA)	3 (10/350 μs) 10 (8/20 μs)							

* Please confirm the AISG protocol of primary station is compatible with RET antenna protocol interface. The protocol of RET antenna software interface is switchable between AISG 2.0/3GPP and AISG 1.1 with a vendor defined command. For more details about protocol switching function, contact Huawei before system installation.

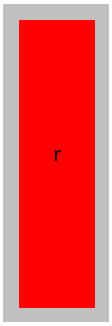
Standards: UL 60950-1 (Safety), UL 60950-22 (Safety – Equipment installed outdoor), EN 55022 (Emission), EN 55024 (Immunity), ETSI EN 301 489, FCC Part15, ICES-003

Certification: CE, FCC, IC, RCM

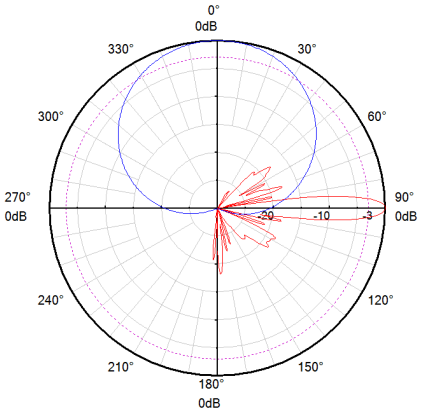
Integrated RET S/N:

ⓐ HWMxxx……r

r - Red



Pattern sample for reference



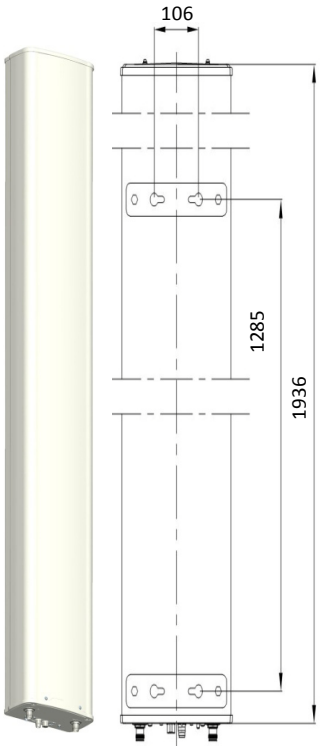
790 - 960 MHz

Antenna Specifications

Electrical Properties				
Frequency range (MHz)		790 - 960		
		790 - 862	824 - 894	880 - 960
Polarization		+45° , -45°		
Electrical downtilt (°)		0 - 12 , continuously adjustable		
Gain (dBi)	at mid Tilt	15.0	15.2	15.3
	over all Tilts	14.8 ±0.3	15.0 ±0.3	15.0 ±0.4
Side lobe suppression for first side lobe above main beam (dB)		> 18	> 18	> 18
Horizontal 3dB beam width (°)		86 ±1.0	85 ±1.0	85 ±1.5
Vertical 3dB beam width (°)		10.0 ±0.4	9.8 ±0.4	9.3 ±0.3
VSWR		< 1.5		
Cross polar isolation (dB)		≥ 30		
Front to back ratio , ±30° (dB)		> 24	> 24	> 24
Cross polar ratio (dB)	0°	> 20	> 20	> 20
Max. power per input (W)		500 (at 50℃ ambient temperature)		
Intermodulation IM3 (dBc)		≤ -153 (2 x 43 dBm carrier)		
Impedance (Ω)		50		
Grounding		DC Ground		

1. Values based on NGMN recommendations on Base Station Antenna Standards (BASTA).
2. Electrical datasheet in XML format is available.

Mechanical Properties	
Antenna dimensions (H x W x D) (mm)	1936 x 259 x 135
Packing dimensions (H x W x D) (mm)	2255 x 305 x 190
Antenna weight (kg)	13.5
Clamps weight (kg)	3.0 (2 units)
Antenna packing weight (kg)	22.4 (Included clamps)
Mast diameter supported (mm)	50 - 115
Radome material	Fiberglass
Radome colour	Light grey
Operational temperature (℃)	-40 .. +65
Wind load (N)	Frontal: 665 (at 150 km/h) Lateral: 345 (at 150 km/h) Rear side: 880 (at 150 km/h)
Max. operational wind speed (km/h)	200
Survival wind speed (km/h)	250
Connector	2 x 4.3-10 Female
Connector position	Bottom



Accessories

Item	Model	Description	Weight	Units per antenna
Downtilt kit	ASMDT0C01	Mechanical downtilt: 0 - 12 °	2.1 kg	1 (Separate packing)

Integrated RET Specifications

Properties								
RET type	Integrated RET							
RET protocols*	AISG 2.0 / 3GPP							
Input voltage range (V)	10 - 30 DC							
Power consumption (W)	< 5 (motor activated, 12V) < 0.5 (stand by, 12V)							
Adjustment time (full range) (s)	< 50 (typically, depending on antenna type)							
RET connector	2 x 8 pin connector according to IEC 60130-9 Daisy chain in: Male / Daisy chain out: Female							
Pin assignment according AISG	1	2	3	4	5	6	7	8
	DC	n/c	RS-485B	n/c	RS-485A	DC	DC return	n/c
Lightning protection (kA)	3 (10/350 μs) 10 (8/20 μs)							

* Please confirm the AISG protocol of primary station is compatible with RET antenna protocol interface. The protocol of RET antenna software interface is switchable between AISG 2.0/3GPP and AISG 1.1 with a vendor defined command. For more details about protocol switching function, contact Huawei before system installation.

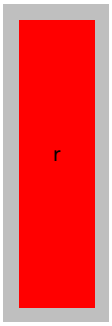
Standards: UL 60950-1 (Safety), UL 60950-22 (Safety – Equipment installed outdoor), EN 55022 (Emission), EN 55024 (Immunity), ETSI EN 301 489, FCC Part15, ICES-003

Certification: CE, FCC, IC, RCM

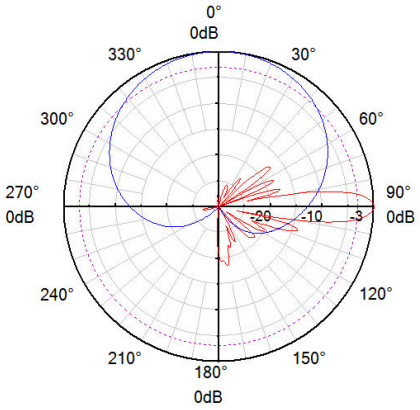
Integrated RET S/N:

ⓐ HWMxxx……r

r - Red



Pattern sample for reference



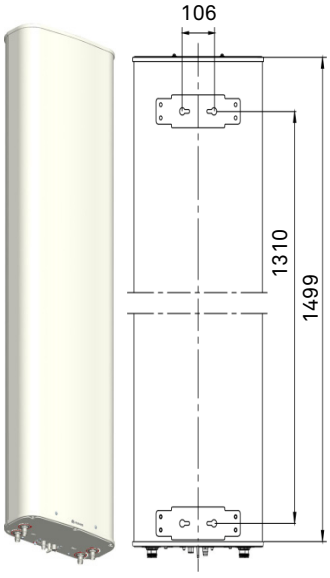
790 - 960 MHz

Antenna Specifications

Electrical Properties					
Frequency range (MHz)		2 x (690 - 960)			
		690 - 803	790 - 862	824 - 894	880 - 960
Polarization		+45° , -45°			
Electrical downtilt (°)		0 - 14 , continuously adjustable , each band separately			
Gain (dBi)	at mid Tilt	13.8	14.2	14.4	14.5
	over all Tilts	13.7 ±0.5	14.1 ±0.5	14.3 ±0.5	14.4 ±0.5
Side lobe suppression for first side lobe above main beam (dB)		> 15	> 17	> 17	> 16
Horizontal 3dB beam width (°)		66 ±5	63 ±5	62 ±5	60 ±5
Vertical 3dB beam width (°)		15.3 ±1.2	14.0 ±1.1	13.3 ±1.0	12.2 ±0.8
VSWR		< 1.5			
Cross polar isolation (dB)		≥ 28			
Interband isolation (dB)		≥ 28			
Front to back ratio , ±30° (dB)		> 22	> 24	> 24	> 25
Cross polar ratio (dB)	0°	> 16	> 18	> 19	> 20
Max. power per input (W)		400 (at 50℃ ambient temperature)			
Intermodulation IM3 (dBc)		≤ -153 (2 x 43 dBm carrier)			
Impedance (Ω)		50			
Grounding		DC Ground			

1. Values based on NGMN recommendations on Base Station Antenna Standards (BASTA).
2. Electrical datasheet in XML format is available.

Mechanical Properties	
Antenna dimensions (H x W x D) (mm)	1499 x 429 x 196
Packing dimensions (H x W x D) (mm)	1695 x 530 x 270
Antenna weight (kg)	22.4
Clamps weight (kg)	3.6 (2 units)
Antenna packing weight (kg)	33.8 (Included clamps)
Mast diameter supported (mm)	50 - 115
Radome material	Fiberglass
Radome colour	Light grey
Operational temperature (℃)	-40 .. +65
Wind load (N)	Frontal: 670 (at 150 km/h) Lateral: 190 (at 150 km/h) Rear side: 670 (at 150 km/h)
Max. operational wind speed (km/h)	200
Survival wind speed (km/h)	250
Connector	4 x 4.3-10 Female
Connector position	Bottom



Accessories

Item	Model	Description	Weight	Units per antenna
Downtilt kit	ASMDT0D01	Mechanical downtilt: 0 - 16 °	2.1 kg	1 (Separate packing)

Integrated RET Specifications

Properties								
RET type	Integrated RET							
RET protocols*	AISG 2.0 / 3GPP							
Input voltage range (V)	10 - 30 DC							
Power consumption (W)	< 5 (motor activated, 12V) < 0.5 (stand by, 12V)							
Adjustment time (full range) (s)	< 50 (typically, depending on antenna type)							
RET connector	2 x 8 pin connector according to IEC 60130-9 Daisy chain in: Male / Daisy chain out: Female							
Pin assignment according AISG	1	2	3	4	5	6	7	8
	DC	n/c	RS-485B	n/c	RS-485A	DC	DC return	n/c
Lightning protection (kA)	3 (10/350 μs) 10 (8/20 μs)							

* Please confirm the AISG protocol of primary station is compatible with RET antenna protocol interface. The protocol of RET antenna software interface is switchable between AISG 2.0/3GPP and AISG 1.1 with a vendor defined command. For more details about protocol switching function, contact Huawei before system installation.

Standards: UL 60950-1 (Safety), UL 60950-22 (Safety – Equipment installed outdoor), EN 55022 (Emission), EN 55024 (Immunity), ETSI EN 301 489, FCC Part15, ICES-003

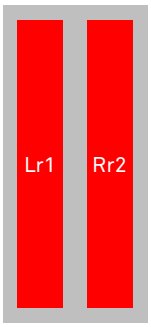
Certification: CE, FCC, IC, RCM

Integrated RET S/N:

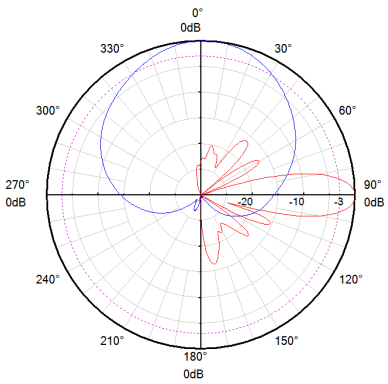
ⓐ HWMxxx.....Lr1

ⓑ HWMxxx.....Rr2

r - Red
L - Left array R - Right array



Pattern sample for reference



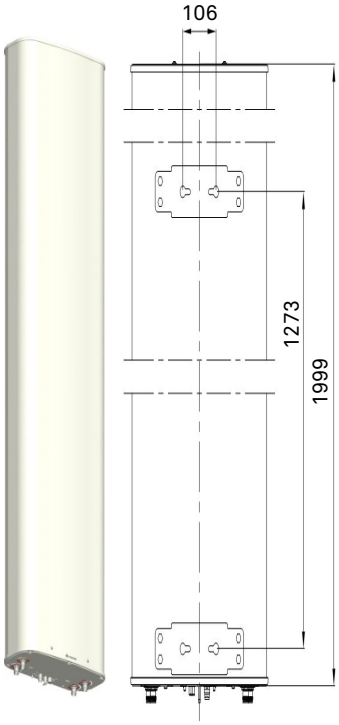
690 - 960 MHz

Antenna Specifications

Electrical Properties					
Frequency range (MHz)		2 x (690 - 960)			
		690 - 803	790 - 862	824 - 894	880 - 960
Polarization		+45° , -45°			
Electrical downtilt (°)		0 - 10 , continuously adjustable , each band separately			
Gain (dBi)	at mid Tilt	15.0	15.5	15.8	16.0
	over all Tilts	14.8 ±0.5	15.3 ±0.5	15.6 ±0.5	15.8 ±0.5
Side lobe suppression for first side lobe above main beam (dB)		> 16	> 17	> 17	> 17
Horizontal 3dB beam width (°)		68 ±5	65 ±5	62 ±5	60 ±5
Vertical 3dB beam width (°)		10.5 ±0.9	9.5 ±0.8	9.2 ±0.7	8.5 ±0.7
VSWR		< 1.5			
Cross polar isolation (dB)		≥ 28			
Interband isolation (dB)		≥ 28			
Front to back ratio , ±30° (dB)		> 23	> 24	> 25	> 26
Cross polar ratio (dB)	0°	> 17	> 18	> 19	> 20
Max. power per input (W)		400 (at 50℃ ambient temperature)			
Intermodulation IM3 (dBc)		≤ -150 (2 x 43 dBm carrier)			
Impedance (Ω)		50			
Grounding		DC Ground			

1. Values based on NGMN recommendations on Base Station Antenna Standards (BASTA).
2. Electrical datasheet in XML format is available.

Mechanical Properties	
Antenna dimensions (H x W x D) (mm)	1999 x 429 x 196
Packing dimensions (H x W x D) (mm)	2195 x 530 x 270
Antenna weight (kg)	28.2
Clamps weight (kg)	3.6 (2 units)
Antenna packing weight (kg)	41.9 (Included clamps)
Mast diameter supported (mm)	50 - 115
Radome material	Fiberglass
Radome colour	Light grey
Operational temperature (℃)	-40 .. +65
Wind load (N)	Frontal: 910 (at 150 km/h) Lateral: 265 (at 150 km/h) Rear side: 910 (at 150 km/h)
Max. operational wind speed (km/h)	200
Survival wind speed (km/h)	250
Connector	4 x 4.3-10 Female
Connector position	Bottom



Accessories

Item	Model	Description	Weight	Units per antenna
Downtilt kit	ASMDT0D01	Mechanical downtilt: 0 - 12 °	2.1 kg	1 (Separate packing)

Integrated RET Specifications

Properties								
RET type	Integrated RET							
RET protocols*	AISG 2.0 / 3GPP							
Input voltage range (V)	10 - 30 DC							
Power consumption (W)	< 5 (motor activated, 12V) < 0.5 (stand by, 12V)							
Adjustment time (full range) (s)	< 50 (typically, depending on antenna type)							
RET connector	2 x 8 pin connector according to IEC 60130-9 Daisy chain in: Male / Daisy chain out: Female							
Pin assignment according AISG	1	2	3	4	5	6	7	8
	DC	n/c	RS-485B	n/c	RS-485A	DC	DC return	n/c
Lightning protection (kA)	3 (10/350 μs) 10 (8/20 μs)							

* Please confirm the AISG protocol of primary station is compatible with RET antenna protocol interface. The protocol of RET antenna software interface is switchable between AISG 2.0/3GPP and AISG 1.1 with a vendor defined command. For more details about protocol switching function, contact Huawei before system installation.

Standards: UL 60950-1 (Safety), UL 60950-22 (Safety – Equipment installed outdoor), EN 55022 (Emission), EN 55024 (Immunity), ETSI EN 301 489, FCC Part15, ICES-003

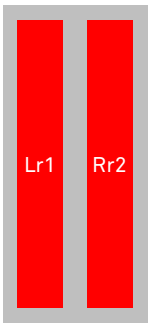
Certification: CE, FCC, IC, RCM

Integrated RET S/N:

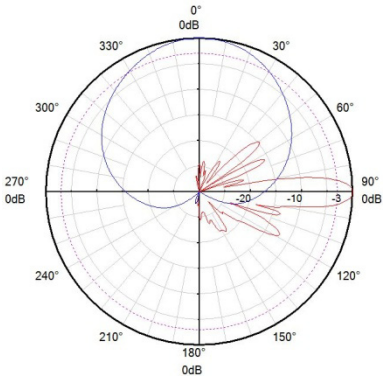
ⓐ HWMxxx.....Lr1

ⓑ HWMxxx.....Rr2

r - Red
L - Left array R - Right array



Pattern sample for reference



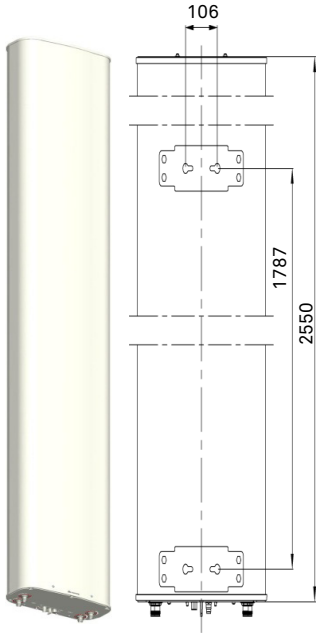
690 - 960 MHz

Antenna Specifications

Electrical Properties					
Frequency range (MHz)		2 x (690 - 960)			
		690 - 803	790 - 862	824 - 894	880 - 960
Polarization		+45° , -45°			
Electrical downtilt (°)		0 - 10 , continuously adjustable , each band separately			
Gain (dBi)	at mid Tilt	15.8	16.4	16.7	17.2
	over all Tilts	15.5 ±0.5	16.2 ±0.5	16.4 ±0.5	16.9 ±0.5
Side lobe suppression for first side lobe above main beam (dB)		> 16	> 17	> 17	> 17
Horizontal 3dB beam width (°)		68 ±5	65 ±5	62 ±5	60 ±5
Vertical 3dB beam width (°)		8.8 ±0.7	8.0 ±0.6	7.8 ±0.5	7.5 ±0.5
VSWR		< 1.5			
Cross polar isolation (dB)		≥ 28			
Interband isolation (dB)		≥ 28			
Front to back ratio , ±30° (dB)		> 23	> 24	> 25	> 26
Cross polar ratio (dB)	0°	> 17	> 18	> 19	> 20
Max. power per input (W)		400 (at 50℃ ambient temperature)			
Intermodulation IM3 (dBc)		≤ -153 (2 x 43 dBm carrier)			
Impedance (Ω)		50			
Grounding		DC Ground			

1. Values based on NGMN recommendations on Base Station Antenna Standards (BASTA).
2. Electrical datasheet in XML format is available.

Mechanical Properties	
Antenna dimensions (H x W x D) (mm)	2550 x 429 x 196
Packing dimensions (H x W x D) (mm)	2770 x 530 x 275
Antenna weight (kg)	33.4
Clamps weight (kg)	5.8 (2 units)
Antenna packing weight (kg)	55.0 (Included clamps)
Mast diameter supported (mm)	50 - 115
Radome material	Fiberglass
Radome colour	Light grey
Operational temperature (℃)	-40 .. +65
Wind load (N)	Frontal: 1200 (at 150 km/h) Lateral: 345 (at 150 km/h) Rear side: 1200 (at 150 km/h)
Max. operational wind speed (km/h)	200
Survival wind speed (km/h)	250
Connector	4 x 4.3-10 Female
Connector position	Bottom



Accessories

Item	Model	Description	Weight	Units per antenna
Downtilt kit	ASMDT0F01	Mechanical downtilt: 0 - 8 °	3.1 kg	1 (Separate packing)

Integrated RET Specifications

Properties								
RET type	Integrated RET							
RET protocols*	AISG 2.0 / 3GPP							
Input voltage range (V)	10 - 30 DC							
Power consumption (W)	< 5 (motor activated, 12V) < 0.5 (stand by, 12V)							
Adjustment time (full range) (s)	< 50 (typically, depending on antenna type)							
RET connector	2 x 8 pin connector according to IEC 60130-9 Daisy chain in: Male / Daisy chain out: Female							
Pin assignment according AISG	1	2	3	4	5	6	7	8
	DC	n/c	RS-485B	n/c	RS-485A	DC	DC return	n/c
Lightning protection (kA)	3 (10/350 μs) 10 (8/20 μs)							

* Please confirm the AISG protocol of primary station is compatible with RET antenna protocol interface. The protocol of RET antenna software interface is switchable between AISG 2.0/3GPP and AISG 1.1 with a vendor defined command. For more details about protocol switching function, contact Huawei before system installation.

Standards: UL 60950-1 (Safety), UL 60950-22 (Safety – Equipment installed outdoor), EN 55022 (Emission), EN 55024 (Immunity), ETSI EN 301 489, FCC Part15, ICES-003

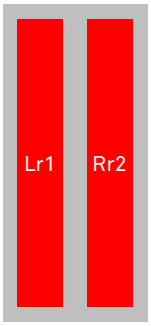
Certification: CE, FCC, IC, RCM

Integrated RET S/N:

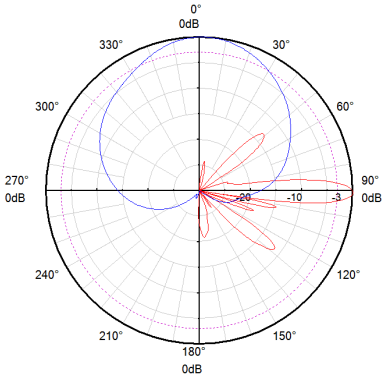
ⓐ HWMxxx.....Lr1

ⓑ HWMxxx.....Rr2

r - Red
L - Left array R - Right array



Pattern sample for reference



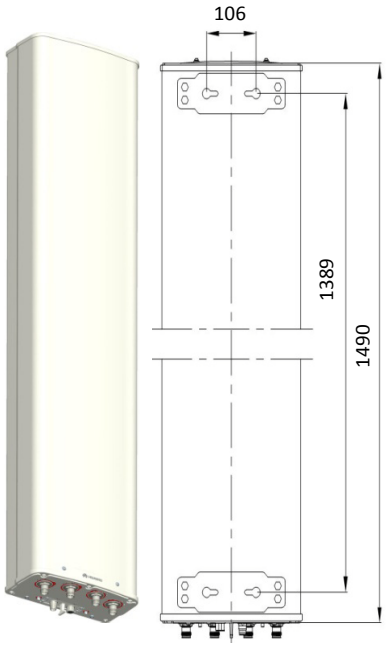
690 - 960 MHz

Antenna Specifications

Electrical Properties			
Frequency range (MHz)		790 - 862	880 - 960
Polarization		+45°, -45°	
Electrical downtilt (°)		0 - 14, continuously adjustable, each band separately	
Gain (dBi)	at mid Tilt	14.3	14.8
	over all Tilts	14.2 ±0.3	14.7 ±0.3
Side lobe suppression for first side lobe above main beam (dB)		> 17	> 17
Horizontal 3dB beam width (°)		65 ±2.0	61 ±2.0
Vertical 3dB beam width (°)		13.5 ±0.8	12.1 ±0.8
VSWR		< 1.5	
Cross polar isolation (dB)		≥ 30	≥ 30
Interband isolation (dB)		≥ 30	
Front to back ratio, ±30° (dB)		> 24	> 23
Cross polar ratio (dB)	0°	> 25	> 23
Max. power per input (W)		400 (at 50℃ ambient temperature)	
Intermodulation IM3 (dBc)		≤ -150 (2 x 43 dBm carrier)	
Impedance (Ω)		50	
Grounding		DC Ground	

1. Values based on NGMN recommendations on Base Station Antenna Standards (BASTA).
2. Electrical datasheet in XML format is available.

Mechanical Properties	
Antenna dimensions (H x W x D) (mm)	1490 x 298 x 150
Packing dimensions (H x W x D) (mm)	1835 x 360 x 225
Antenna weight (kg)	17.7
Clamps weight (kg)	3.0 (2 units)
Antenna packing weight (kg)	27.2 (Included clamps)
Mast diameter supported (mm)	50 - 115
Radome material	Fiberglass
Radome colour	Light grey
Operational temperature (℃)	-40 .. +65
Wind load (N)	Frontal: 580 (at 150 km/h) Lateral: 250 (at 150 km/h) Rear side: 695 (at 150 km/h)
Max. operational wind speed (km/h)	200
Survival wind speed (km/h)	250
Connector	4 x 4.3-10 Female
Connector position	Bottom



Accessories

Item	Model	Description	Weight	Units per antenna
Downtilt kit	ASMDT0C01	Mechanical downtilt: 0 - 16 °	2.1 kg	1 (Separate packing)

Integrated RET Specifications

Properties								
RET type	Integrated RET							
RET protocols*	AISG 2.0 / 3GPP							
Input voltage range (V)	10 - 30 DC							
Power consumption (W)	< 5 (motor activated, 12V) < 0.5 (stand by, 12V)							
Adjustment time (full range) (s)	< 50 (typically, depending on antenna type)							
RET connector	2 x 8 pin connector according to IEC 60130-9 Daisy chain in: Male / Daisy chain out: Female							
Pin assignment according AISG	1	2	3	4	5	6	7	8
	DC	n/c	RS-485B	n/c	RS-485A	DC	DC return	n/c
Lightning protection (kA)	3 (10/350 μs) 10 (8/20 μs)							

* Please confirm the AISG protocol of primary station is compatible with RET antenna protocol interface. The protocol of RET antenna software interface is switchable between AISG 2.0/3GPP and AISG 1.1 with a vendor defined command. For more details about protocol switching function, contact Huawei before system installation.

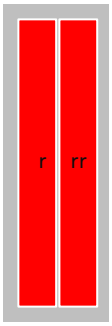
Standards: UL 60950-1 (Safety), UL 60950-22 (Safety – Equipment installed outdoor), EN 55022 (Emission), EN 55024 (Immunity), ETSI EN 301 489, FCC Part15, ICES-003
Certification: CE, FCC, IC, RCM

Integrated RET S/N:

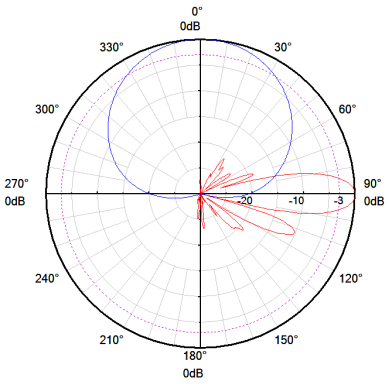
ⓐ HWMxxx.....r

ⓑ HWMxxx.....rr

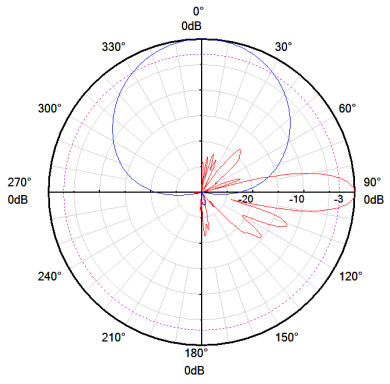
r - Red



Pattern sample for reference



790 - 862 MHz



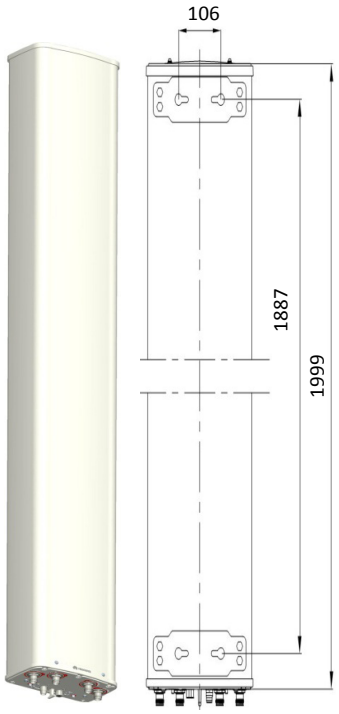
880 - 960 MHz

Antenna Specifications

Electrical Properties			
Frequency range (MHz)		790 - 862	880 - 960
Polarization		+45°, -45°	
Electrical downtilt (°)		0 - 12, continuously adjustable, each band separately	
Gain (dBi)	at mid Tilt	15.8	16.3
	over all Tilts	15.6 ±0.3	16.0 ±0.3
Side lobe suppression for first side lobe above main beam (dB)		> 17	> 17
Horizontal 3dB beam width (°)		68 ±2.0	65 ±2.0
Vertical 3dB beam width (°)		10.5 ±0.5	9.4 ±0.5
VSWR		< 1.5	
Cross polar isolation (dB)		≥ 30	≥30
Interband isolation (dB)		≥ 30	
Front to back ratio, ±30° (dB)		> 24	> 24
Cross polar ratio (dB)	0°	> 25	> 26
Max. power per input (W)		500 (at 50℃ ambient temperature)	
Intermodulation IM3 (dBc)		≤ -150 (2 x 43 dBm carrier)	
Impedance (Ω)		50	
Grounding		DC Ground	

1. Values based on NGMN recommendations on Base Station Antenna Standards (BASTA).
2. Electrical datasheet in XML format is available.

Mechanical Properties	
Antenna dimensions (H x W x D) (mm)	1999 x 259 x 150
Packing dimensions (H x W x D) (mm)	2290 x 305 x 205
Antenna weight (kg)	21.4
Clamps weight (kg)	3.0 (2 units)
Antenna packing weight (kg)	29.7 (Included clamps)
Mast diameter supported (mm)	50 - 115
Radome material	Fiberglass
Radome colour	Light grey
Operational temperature (℃)	-40 .. +65
Wind load (N)	Frontal: 700 (at 150 km/h) Lateral: 320 (at 150 km/h) Rear side: 805 (at 150 km/h)
Max. operational wind speed (km/h)	200
Survival wind speed (km/h)	250
Connector	4 x 4.3-10 Female
Connector position	Bottom



Accessories

Item	Model	Description	Weight	Units per antenna
Downtilt kit	ASMDT0C01	Mechanical downtilt: 0 - 12°	2.1 kg	1 (Separate packing)

Integrated RET Specifications

Properties								
RET type	Integrated RET							
RET protocols*	AISG 2.0 / 3GPP							
Input voltage range (V)	10 - 30 DC							
Power consumption (W)	< 5 (motor activated, 12V) < 0.5 (stand by, 12V)							
Adjustment time (full range) (s)	< 50 (typically, depending on antenna type)							
RET connector	2 x 8 pin connector according to IEC 60130-9 Daisy chain in: Male / Daisy chain out: Female							
Pin assignment according AISG	1	2	3	4	5	6	7	8
	DC	n/c	RS-485B	n/c	RS-485A	DC	DC return	n/c
Lightning protection (kA)	3 (10/350 μs) 10 (8/20 μs)							

* Please confirm the AISG protocol of primary station is compatible with RET antenna protocol interface. The protocol of RET antenna software interface is switchable between AISG 2.0/3GPP and AISG 1.1 with a vendor defined command. For more details about protocol switching function, contact Huawei before system installation.

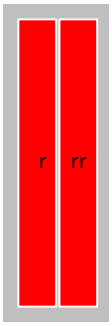
Standards: UL 60950-1 (Safety), UL 60950-22 (Safety – Equipment installed outdoor), EN 55022 (Emission), EN 55024 (Immunity), ETSI EN 301 489, FCC Part15, ICES-003
Certification: CE, FCC, IC, RCM

Integrated RET S/N:

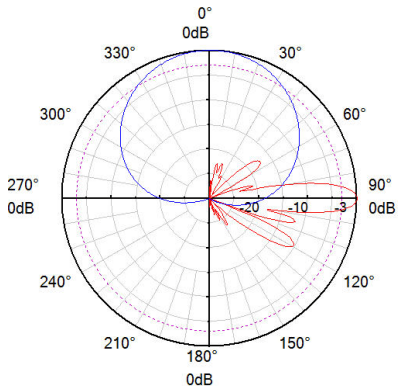
ⓐ HWMxxx.....r

ⓑ HWMxxx.....rr

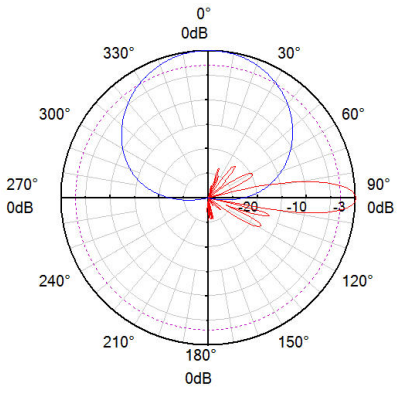
r - Red



Pattern sample for reference



790 - 862 MHz



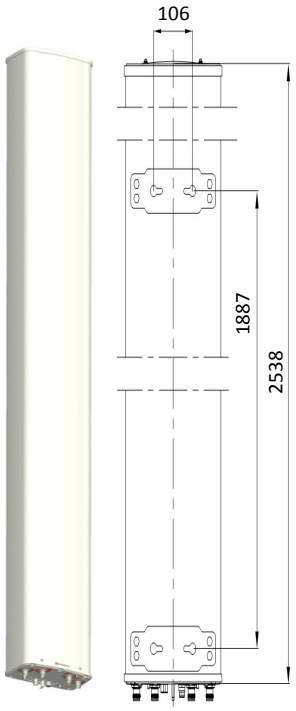
880 - 960 MHz

Antenna Specifications

Electrical Properties			
Frequency range (MHz)		790 - 862	880 - 960
Polarization		+45°, -45°	
Electrical downtilt (°)		0 - 10, continuously adjustable, each band separately	
Gain (dBi)	at mid Tilt	16.8	17.3
	over all Tilts	16.5 ±0.4	17.1 ±0.5
Side lobe suppression for first side lobe above main beam (dB)		> 18	> 18
Horizontal 3dB beam width (°)		68 ±2.0	65 ±2.0
Vertical 3dB beam width (°)		8.3 ±0.6	7.2 ±0.6
VSWR		< 1.5	
Cross polar isolation (dB)		≥ 30	≥ 30
Interband isolation (dB)		≥ 30	
Front to back ratio, ±30° (dB)		> 25	> 25
Cross polar ratio (dB)	0°	> 25	> 25
Max. power per input (W)		500 (at 50℃ ambient temperature)	
Intermodulation IM3 (dBc)		≤ -150 (2 x 43 dBm carrier)	
Impedance (Ω)		50	
Grounding		DC Ground	

1. Values based on NGMN recommendations on Base Station Antenna Standards (BASTA).
2. Electrical datasheet in XML format is available.

Mechanical Properties	
Antenna dimensions (H x W x D) (mm)	2538 x 259 x 150
Packing dimensions (H x W x D) (mm)	2960 x 305 x 205
Antenna weight (kg)	25.2
Clamps weight (kg)	3.6 (2 units)
Antenna packing weight (kg)	36.5 (Included clamps)
Mast diameter supported (mm)	50 - 115
Radome material	Fiberglass
Radome colour	Light grey
Operational temperature (℃)	-40 .. +65
Wind load (N)	Frontal: 920 (at 150 km/h) Lateral: 420 (at 150 km/h) Rear side: 1055 (at 150 km/h)
Max. operational wind speed (km/h)	200
Survival wind speed (km/h)	250
Connector	4 x 4.3-10 Female
Connector position	Bottom



Accessories

Item	Model	Description	Weight	Units per antenna
Downtilt kit	ASMDT0D01	Mechanical downtilt: 0 - 8°	2.1 kg	1 (Separate packing)

Integrated RET Specifications

Properties								
RET type	Integrated RET							
RET protocols*	AISG 2.0 / 3GPP							
Input voltage range (V)	10 - 30 DC							
Power consumption (W)	< 5 (motor activated, 12V) < 0.5 (stand by, 12V)							
Adjustment time (full range) (s)	< 50 (typically, depending on antenna type)							
RET connector	2 x 8 pin connector according to IEC 60130-9 Daisy chain in: Male / Daisy chain out: Female							
Pin assignment according AISG	1	2	3	4	5	6	7	8
	DC	n/c	RS-485B	n/c	RS-485A	DC	DC return	n/c
Lightning protection (kA)	3 (10/350 μs) 10 (8/20 μs)							

* Please confirm the AISG protocol of primary station is compatible with RET antenna protocol interface. The protocol of RET antenna software interface is switchable between AISG 2.0/3GPP and AISG 1.1 with a vendor defined command. For more details about protocol switching function, contact Huawei before system installation.

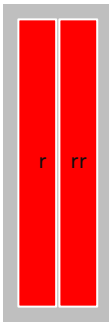
Standards: UL 60950-1 (Safety), UL 60950-22 (Safety – Equipment installed outdoor), EN 55022 (Emission), EN 55024 (Immunity), ETSI EN 301 489, FCC Part15, ICES-003
Certification: CE, FCC, IC, RCM

Integrated RET S/N:

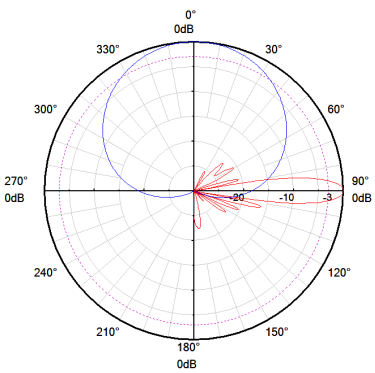
ⓐ HWMxxx.....r

ⓑ HWMxxx.....rr

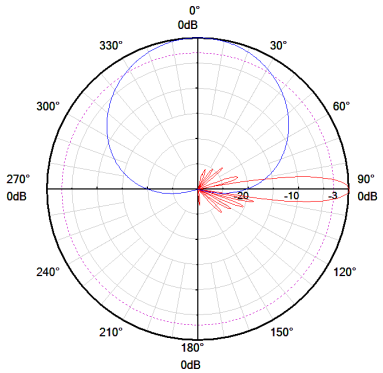
r - Red



Pattern sample for reference



790 - 862 MHz



880 - 960 MHz

Multi-band

B - 2 High Band

2 Ports

Frequency Range (MHz)	3dB Horizontal beam width (°)	Gain (dBi)	Electrical downtilt (°)	Tilt Method	Connector	Dimension(mm)	Model	Page	Array symbol
1710-2200	65	18	0-10	EasyRET2.0	2 x 4.3-10	1365 x 155 x 89	A194518R0v06	45	B
1710-2690	65	18	0-12	EasyRET2.0	2 x 4.3-10	1365 x 155 x 89	A264518R0v06	47	C
1695-2690	65	21	0-6	EasyRET2.0	2 x 4.3-10	2099 x 155 x 89	**A264521R1v06	49	C
1695-2690	33	21	2-12	EasyRET2.0	2 x 4.3-10	1365 x 299 x 109	**A264521R0v06	50	C

4 Ports

Frequency Range (MHz)	3dB Horizontal beam width (°)	Gain (dBi)	Electrical downtilt (°)	Tilt Method	Connector	Dimension(mm)	Model	Page	Array symbol
1710-2200/ 1710-2200	65/65	18/18	0-10/0-10	EasyRET2.0	4 x 4.3-10	1365 x 269 x 86	ADU4518R1v06	51	H
1710-2690/ 1710-2690	65/65	18/18	0-12/0-12	EasyRET2.0	4 x 4.3-10	1365 x 269 x 86	ADU4518R6v06	53	I
1695-2690/ 1695-2690	65/65	21/21	0-6/0-6	EasyRET2.0	4 x 4.3-10	2099 x 269 x 86	ADU4521R0v06	55	I

6 Ports

Frequency Range (MHz)	3dB Horizontal beam width (°)	Gain (dBi)	Electrical downtilt (°)	Tilt Method	Connector	Dimension(mm)	Model	Page	Array symbol
1710-2200/ 1710-2200/ 1710-2200	65/65/65	18/18/18	0-10/0-10/ 0-10	EasyRET2.0	6 x 4.3-10	1365 x 376 x 99	ATR4518R15v06	57	O
1710-2690/ 1710-2170/ 2490-2690	65/65/65	18/18/18	0-12/0-12/ 0-12	EasyRET1.0	6 x 4.3-10	1445 x 299 x 109	ATR4518R3v06	59	Q
1710-2690/ 1710-2690/ 1710-2690	65/65/65	18/18/18	0-12/0-12/ 0-12	EasyRET2.0	6 x 4.3-10	1365 x 376 x 99	ATR4518R14v06	61	P

*** Preliminary Issue*

Multi-band

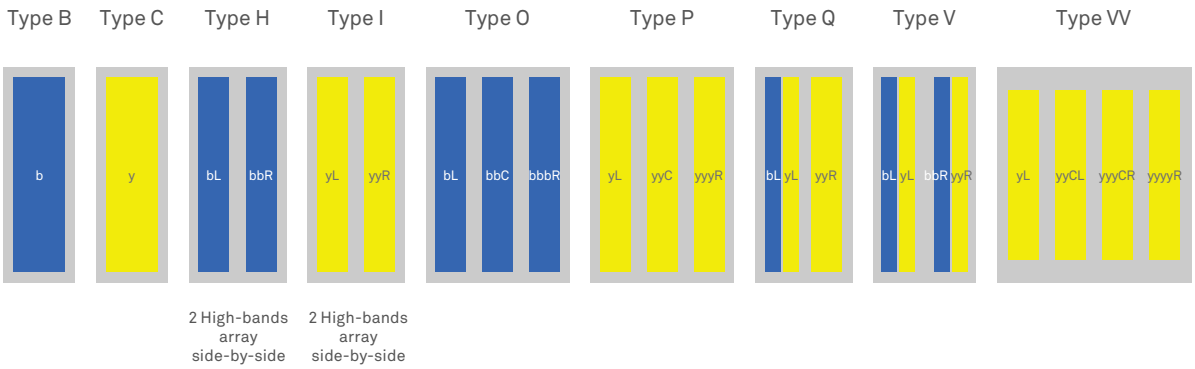
B - 2 High Band

8 Ports

Frequency Range (MHz)	3dB Horizontal beam width (°)	Gain (dBi)	Electrical downtilt (°)	Tilt Method	Connector	Dimension(mm)	Model	Page	Array symbol
1710-2170/ 1710-2170/ 2490-2690/ 2490-2690	65/65/65/65	18/18/ 18/18	0-12/0-12/ 0-12/0-12	EasyRET1.0	8 x 4.3-10	1490 x 299 x 109	AQU4518R8v06	**63**	V
1710-2690/ 1710-2690/ 1710-2690/ 1710-2690	65/65/65/65	18/18/ 18/18	0-12/0-12/ 0-12/0-12	EasyRET2.0	8 x 4.3-10	1499 x 449 x 115	AQU4518R21v06	**65**	VV

*** Preliminary Issue*

Array Symbol Type

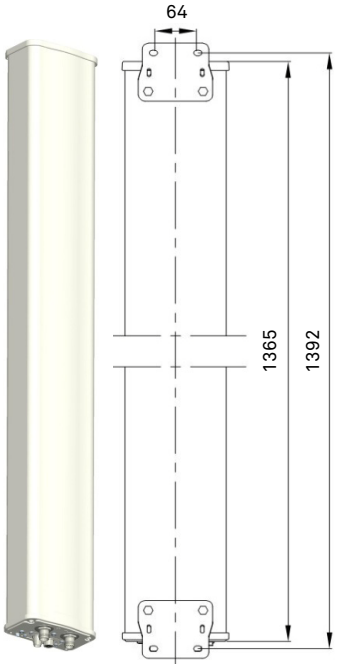


Antenna Specifications

Electrical Properties					
Frequency range (MHz)		1710 - 2200			
		1710 - 1880	1850 - 1990	1920 - 2170	2170 - 2200
Polarization		+45° , -45°			
Electrical downtilt (°)		0 - 10 , continuously adjustable			
Gain (dBi)	at mid Tilt	17.4	17.8	18.0	17.9
	over all Tilts	17.2 ±0.4	17.6 ±0.4	17.7 ±0.4	17.8 ±0.4
Side lobe suppression for first side lobe above main beam (dB)		> 19	> 19	> 18	> 17
Horizontal 3dB beam width (°)		68 ±1.5	67 ±1.5	66 ±2	63 ±2
Vertical 3dB beam width (°)		7.4 ±0.4	6.9 ±0.4	6.5 ±0.4	6.0 ±0.3
VSWR		< 1.5			
Cross polar isolation (dB)		≥ 30			
Front to back ratio, ±30° (dB)		> 28	> 28	> 27	> 27
Cross polar ratio (dB)	0°	> 22	> 22	> 22	> 18
Max. power per input (W)		300 (at 50℃ ambient temperature)			
Intermodulation IM3 (dBc)		≤ -153 (2 x 43 dBm carrier)			
Impedance (Ω)		50			
Grounding		DC Ground			

1. Values based on NGMN recommendations on Base Station Antenna Standards (BASTA).
2. Electrical datasheet in XML format is available.

Mechanical Properties	
Antenna dimensions (H x W x D) (mm)	1365 x 155 x 89
Packing dimensions (H x W x D) (mm)	1695 x 195 x 155
Antenna weight (kg)	6.2
Clamps weight (kg)	2.0 (2 units)
Antenna packing weight (kg)	10.7 (Included clamps)
Mast diameter supported (mm)	38 - 115
Radome material	Fiberglass
Radome colour	Light grey
Operational temperature (℃)	-40 .. +65
Wind load (N)	Frontal: 330 (at 150 km/h) Lateral: 165 (at 150 km/h) Rear side: 375 (at 150 km/h)
Max. operational wind speed (km/h)	200
Survival wind speed (km/h)	250
Connector	2 x 4.3-10 Female
Connector position	Bottom



Accessories

Item	Model	Description	Weight	Units per antenna
Downtilt kit	ASMDT0A01	Mechanical downtilt: 0 - 12 °	0.6 kg	1 (Separate packing)

Integrated RET Specifications

Properties								
RET type	Integrated RET							
RET protocols*	AISG 2.0 / 3GPP							
Input voltage range (V)	10 - 30 DC							
Power consumption (W)	< 5 (motor activated, 12V) < 0.5 (stand by, 12V)							
Adjustment time (full range) (s)	< 65 (typically, depending on antenna type)							
RET connector	2 x 8 pin connector according to IEC 60130-9 Daisy chain in: Male / Daisy chain out: Female							
Pin assignment according AISG	1	2	3	4	5	6	7	8
	DC	n/c	RS-485B	n/c	RS-485A	DC	DC return	n/c
Lightning protection (kA)	3 (10/350 μs) 10 (8/20 μs)							

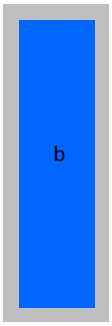
* Please confirm the AISG protocol of primary station is compatible with RET antenna protocol interface. The protocol of RET antenna software interface is switchable between AISG 2.0/3GPP and AISG 1.1 with a vendor defined command. For more details about protocol switching function, contact Huawei before system installation.

Standards: UL 60950-1 (Safety), UL 60950-22 (Safety – Equipment installed outdoor), EN 55022 (Emission), EN 55024 (Immunity), ETSI EN 301 489, FCC Part15, ICES-003
Certification: CE, FCC, IC, RCM

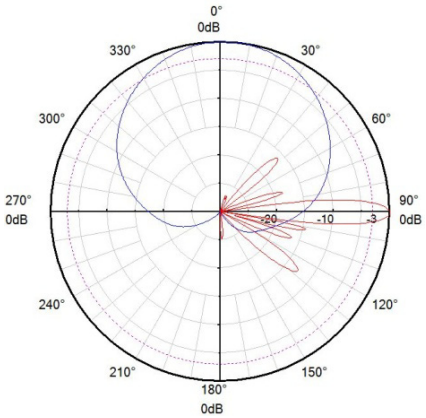
Integrated RET S/N:

ⓐ HWMxxx……b

b - Blue



Pattern sample for reference



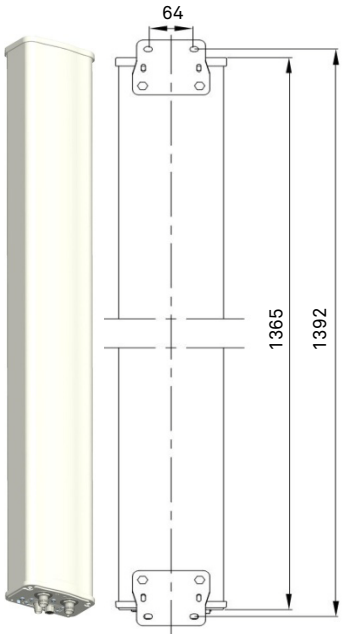
1710 - 2200 MHz

Antenna Specifications

Electrical Properties					
Frequency range (MHz)		1710 - 2690			
		1710 - 1990	1920 - 2200	2200 - 2490	2490 - 2690
Polarization		+45°, -45°			
Electrical downtilt (°)		0 - 12, continuously adjustable			
Gain (dBi)	at mid Tilt	17.4	18.0	18.5	18.6
	over all Tilts	17.2 ±0.3	17.6 ±0.5	18.3 ±0.4	18.4 ±0.4
Side lobe suppression for first side lobe above main beam (dB)		> 18	> 18	> 18	> 18
Horizontal 3dB beam width (°)		68 ±2.0	65 ±2.4	62 ±2.7	60 ±1.5
Vertical 3dB beam width (°)		6.8 ±0.4	6.1 ±0.4	5.5 ±0.4	5.0 ±0.3
VSWR		< 1.5			
Cross polar isolation (dB)		≥ 30			
Front to back ratio, ±30° (dB)		> 28	> 29	> 29	> 29
Cross polar ratio (dB)	0°	> 20	> 20	> 20	> 20
Max. power per input (W)		250 (at 50℃ ambient temperature)			
Intermodulation IM3 (dBc)		≤ -153 (2 x 43 dBm carrier)			
Impedance (Ω)		50			
Grounding		DC Ground			

1. Values based on NGMN recommendations on Base Station Antenna Standards (BASTA).
2. Electrical datasheet in XML format is available.

Mechanical Properties	
Antenna dimensions (H x W x D) (mm)	1365 x 155 x 89
Packing dimensions (H x W x D) (mm)	1695 x 195 x 155
Antenna weight (kg)	7.0
Clamps weight (kg)	2.0 (2 units)
Antenna packing weight (kg)	11.5 (included clamps)
Mast diameter supported (mm)	38 - 115
Radome material	Fiberglass
Radome colour	Light grey
Operational temperature (℃)	-40 .. +65
Wind load (N)	Frontal: 330 (at 150 km/h) Lateral: 165 (at 150 km/h) Rear side: 375 (at 150 km/h)
Max. operational wind speed (km/h)	200
Survival wind speed (km/h)	250
Connector	2 x 4.3-10 Female
Connector position	Bottom



Accessories

Item	Model	Description	Weight	Units per antenna
Downtilt kit	ASMDT0A01	Mechanical downtilt: 0 - 12 °	0.6 kg	1 (Separate packing)

Integrated RET Specifications

Properties								
RET type	Integrated RET							
RET protocols*	AISG 2.0 / 3GPP							
Input voltage range (V)	10 - 30 DC							
Power consumption (W)	< 5 (motor activated, 12V) < 0.5 (stand by, 12V)							
Adjustment time (full range) (s)	< 65 (typically, depending on antenna type)							
RET connector	2 x 8 pin connector according to IEC 60130-9 Daisy chain in: Male / Daisy chain out: Female							
Pin assignment according AISG	1	2	3	4	5	6	7	8
	DC	n/c	RS-485B	n/c	RS-485A	DC	DC return	n/c
Lightning protection (kA)	3 (10/350 μs) 10 (8/20 μs)							

* Please confirm the AISG protocol of primary station is compatible with RET antenna protocol interface. The protocol of RET antenna software interface is switchable between AISG 2.0/3GPP and AISG 1.1 with a vendor defined command. For more details about protocol switching function, contact Huawei before system installation.

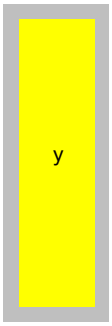
Standards: UL 60950-1 (Safety), UL 60950-22 (Safety – Equipment installed outdoor), EN 55022 (Emission), EN 55024 (Immunity), ETSI EN 301 489, FCC Part15, ICES-003

Certification: CE, FCC, IC, RCM

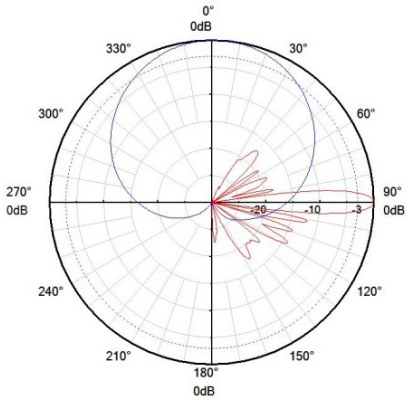
Integrated RET S/N:

ⓐ HWMxxx……y

y - Yellow



Pattern sample for reference



1710 - 2690 MHz

Preliminary Issue

Electrical Properties					
Frequency range (MHz)		1695 - 1990	1920- 2200	2200 - 2490	2490 - 2690
Electrical downtilt (°)		0 - 6			
Gain (dBi)		20	20.5	20.7	21
Side lobe suppression for first side lobe above main beam (Typ.) (dB)		16			
Horizontal 3dB beam width (°)		65			
Vertical 3dB beam width (°)		4			
VSWR		< 1.5			
Front to back ratio, copolar (dB)		Typ. 26			
Cross polar ratio (dB)	0°	Typ. 19			
Intermodulation IM3 (dBc)		≤ -153 (2 x 43 dBm carrier)			

Mechanical Properties	
Antenna dimensions (H x W x D) (mm)	2099 x 155 x 89
Packing dimensions (H x W x D) (mm)	2550 x 220 x 180
Antenna net weight (kg)	10.3
Mechanical downtilt (°)	0 - 12
Connector	2 x 4.3-10 Female
RET type	Integrated RET
RET protocols	AISG 2.0 / 3GPP

Preliminary Issue

Electrical Properties		
Frequency range (MHz)		1695 - 2690
Electrical downtilt (°)		2 - 12
Gain (dBi)		20.5
Side lobe suppression for first side lobe above main beam (Typ.) (dB)		16
Horizontal 3dB beam width (°)		32
Vertical 3dB beam width (°)		6.5
VSWR		< 1.5
Front to back ratio, copolar (dB)		Typ. 28
Cross polar ratio (dB)	0°	Typ. 17
Intermodulation IM3 (dBc)		≤ -153 (2 x 43 dBm carrier)

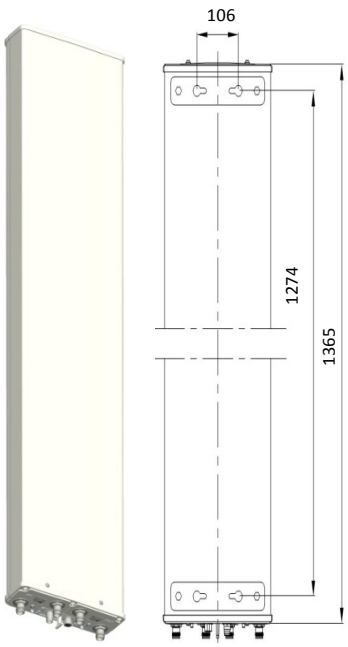
Mechanical Properties	
Antenna dimensions (H x W x D) (mm)	1365 x 299 x 109
Packing dimensions (H x W x D) (mm)	1660 x 347 x 180
Antenna net weight (kg)	12.5
Mechanical downtilt (°)	0 -16
Connector	2 x 4.3-10 Female
RET type	Integrated RET
RET protocols	AISG 2.0 / 3GPP

Antenna Specifications

Electrical Properties					
Frequency range (MHz)		2 x (1710 - 2200)			
		1710 - 1880	1850 - 1990	1920 - 2170	2170 - 2200
Polarization		+45° , -45°			
Electrical downtilt (°)		0 - 10 , continuously adjustable, each band separately			
Gain (dBi)	at mid Tilt	17.6	18.0	18.2	18.1
	over all Tilts	17.5 ±0.5	17.8 ±0.4	18.0 ±0.4	17.9 ±0.4
Side lobe suppression for first side lobe above main beam (dB)		> 20	> 18	> 18	> 17
Horizontal 3dB beam width (°)		67 ±3	66 ±3	64 ±5	61 ±4
Vertical 3dB beam width (°)		7.4 ±0.4	6.9 ±0.4	6.5 ±0.6	6.0 ±0.3
VSWR		< 1.5			
Cross polar isolation (dB)		≥ 30			
Interband isolation (dB)		≥ 30 (1710 - 2200 // 1710 - 2200 MHz)			
Front to back ratio, ±30° (dB)		> 27	> 27	> 26	> 26
Cross polar ratio (dB)	0°	> 22	> 22	> 21	> 18
Max. power per input (W)		300 (at 50℃ ambient temperature)			
Intermodulation IM3 (dBc)		≤ -153 (2 x 43 dBm carrier)			
Impedance (Ω)		50			
Grounding		DC Ground			

1. Values based on NGMN recommendations on Base Station Antenna Standards (BASTA).
2. Electrical datasheet in XML format is available.

Mechanical Properties	
Antenna dimensions (H x W x D) (mm)	1365 x 269 x 86
Packing dimensions (H x W x D) (mm)	1680 x 340 x 155
Antenna weight (kg)	10.6
Clamps weight (kg)	2.9 (2 units)
Antenna packing weight (kg)	17.6 (Included clamps)
Mast diameter supported (mm)	50 - 115
Radome material	Fiberglass
Radome colour	Light grey
Operational temperature (℃)	-40 .. +65
Wind load (N)	Frontal: 540 (at 150 km/h) Lateral: 75 (at 150 km/h) Rear side: 510 (at 150 km/h)
Max. operational wind speed (km/h)	200
Survival wind speed (km/h)	250
Connector	4 x 4.3-10 Female
Connector position	Bottom



Accessories

Item	Model	Description	Weight	Units per antenna
Downtilt kit	ASMDT0B01	Mechanical downtilt: 0 - 16 °	1.3 kg	1 (Separate packing)

Integrated RET Specifications

Properties								
RET type	Integrated RET							
RET protocols*	AISG 2.0 / 3GPP							
Input voltage range (V)	10 - 30 DC							
Power consumption (W)	< 5 (motor activated, 12V) < 0.5 (stand by, 12V)							
Adjustment time (full range) (s)	< 50 (typically, depending on antenna type)							
RET connector	2 x 8 pin connector according to IEC 60130-9 Daisy chain in: Male / Daisy chain out: Female							
Pin assignment according AISG	1	2	3	4	5	6	7	8
	DC	n/c	RS-485B	n/c	RS-485A	DC	DC return	n/c
Lightning protection (kA)	3 (10/350 μs) 10 (8/20 μs)							

* Please confirm the AISG protocol of primary station is compatible with RET antenna protocol interface. The protocol of RET antenna software interface is switchable between AISG 2.0/3GPP and AISG 1.1 with a vendor defined command. For more details about protocol switching function, contact Huawei before system installation.

Standards: UL 60950-1 (Safety), UL 60950-22 (Safety – Equipment installed outdoor), EN 55022 (Emission), EN 55024 (Immunity), ETSI EN 301 489, FCC Part15, ICES-003

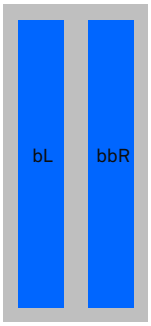
Certification: CE, FCC, IC, RCM

Integrated RET S/N:

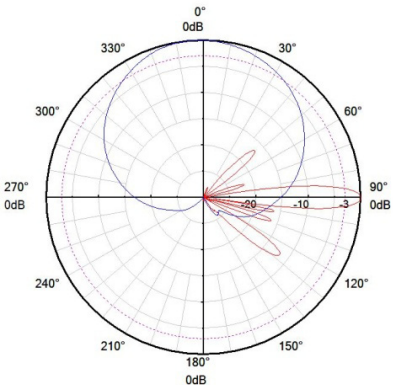
ⓐ HWMxxx.....bL

ⓑ HWMxxx.....bbR

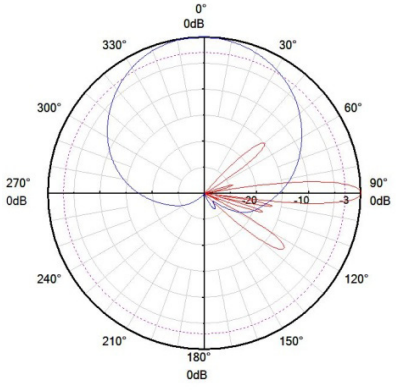
L - Left array R - Right array



Pattern sample for reference



1710 - 2200 MHz
(Left)



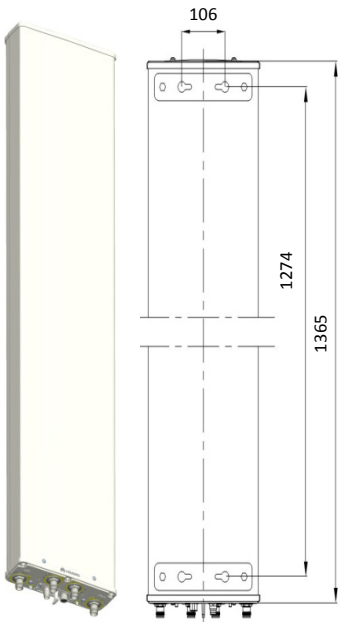
1710 - 2200 MHz
(Right)

Antenna Specifications

Electrical Properties					
Frequency range (MHz)		2 x (1710 - 2690)			
		1710 - 1990	1920 - 2200	2200 - 2490	2490 - 2690
Polarization		+45° , -45°			
Electrical downtilt (°)		0 - 12 , continuously adjustable, each band separately			
Gain (dBi)	at mid Tilt	17.4	17.9	18.2	18.4
	over all Tilts	17.3 ±0.3	17.7 ±0.4	18.0 ±0.3	18.2 ±0.4
Side lobe suppression for first side lobe above main beam (dB)		> 18	> 18	> 18	> 18
Horizontal 3dB beam width (°)		66 ±2.7	65 ±2.7	63 ±2.8	61 ±2.6
Vertical 3dB beam width (°)		6.9 ±0.3	6.3 ±0.3	5.5 ±0.3	5.0 ±0.3
VSWR		< 1.5			
Cross polar isolation (dB)		≥ 30			
Interband isolation (dB)		≥ 30 (1710 - 2690 // 1710 - 2690 MHz)			
Front to back ratio, ±30° (dB)		> 27	> 27	> 27	> 27
Cross polar ratio (dB)	0°	> 20	> 20	> 20	> 20
Max. power per input (W)		250 (at 50℃ ambient temperature)			
Intermodulation IM3 (dBc)		≤ -153 (2 x 43 dBm carrier)			
Impedance (Ω)		50			
Grounding		DC Ground			

1. Values based on NGMN recommendations on Base Station Antenna Standards (BASTA).
2. Electrical datasheet in XML format is available.

Mechanical Properties	
Antenna dimensions (H x W x D) (mm)	1365 x 269 x 86
Packing dimensions (H x W x D) (mm)	1680 x 340 x 155
Antenna weight (kg)	11.8
Clamps weight (kg)	2.9 (2 units)
Antenna packing weight (kg)	18.8 (included clamps)
Mast diameter supported (mm)	50 - 115
Radome material	Fiberglass
Radome colour	Light grey
Operational temperature (℃)	-40 .. +65
Wind load (N)	Frontal: 540 (at 150 km/h) Lateral: 75 (at 150 km/h) Rear side: 510 (at 150 km/h)
Max. operational wind speed (km/h)	200
Survival wind speed (km/h)	250
Connector	4 x 4.3-10 Female
Connector position	Bottom



Accessories

Item	Model	Description	Weight	Units per antenna
Downtilt kit	ASMDT0B01	Mechanical downtilt: 0 - 16 °	1.3 kg	1 (Separate packing)

Integrated RET Specifications

Properties								
RET type	Integrated RET							
RET protocols*	AISG 2.0 / 3GPP							
Input voltage range (V)	10 - 30 DC							
Power consumption (W)	< 5 (motor activated, 12V) < 0.5 (stand by, 12V)							
Adjustment time (full range) (s)	< 65 (typically, depending on antenna type)							
RET connector	2 x 8 pin connector according to IEC 60130-9 Daisy chain in: Male / Daisy chain out: Female							
Pin assignment according AISG	1	2	3	4	5	6	7	8
	DC	n/c	RS-485B	n/c	RS-485A	DC	DC return	n/c
Lightning protection (kA)	3 (10/350 μs) 10 (8/20 μs)							

* Please confirm the AISG protocol of primary station is compatible with RET antenna protocol interface. The protocol of RET antenna software interface is switchable between AISG 2.0/3GPP and AISG 1.1 with a vendor defined command. For more details about protocol switching function, contact Huawei before system installation.

Standards: UL 60950-1 (Safety), UL 60950-22 (Safety – Equipment installed outdoor), EN 55022 (Emission), EN 55024 (Immunity), ETSI EN 301 489, FCC Part15, ICES-003

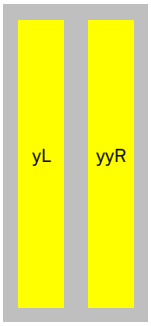
Certification: CE, FCC, IC, RCM

Integrated RET S/N:

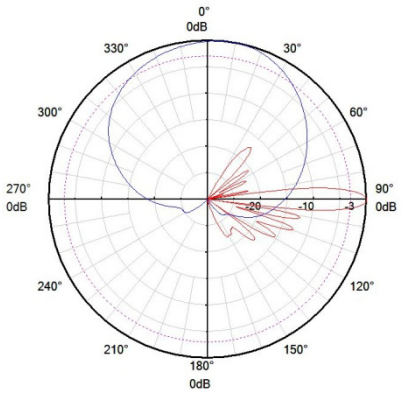
ⓐ HWMxxx.....yL

ⓑ HWMxxx.....yyR

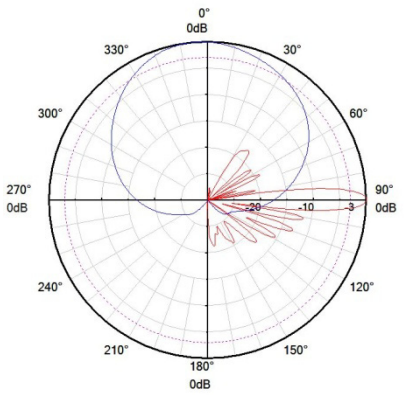
y - Yellow
L - Left array
R - Right array



Pattern sample for reference



1710 - 2690 MHz
(Left)



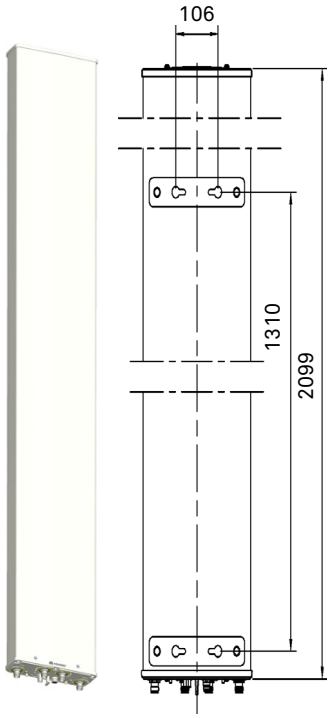
1710 - 2690 MHz
(Right)

Antenna Specifications

Electrical Properties					
Frequency range (MHz)		2 x (1695 - 2690)			
		1695 - 1990	1920 - 2200	2200 - 2490	2490 - 2690
Polarization		+45°, -45°			
Electrical downtilt (°)		0 - 6, continuously adjustable, each band separately			
Gain (dBi)	at mid Tilt	20.0	20.5	20.7	21.0
	over all Tilts	20.0 ±0.5	20.5 ±0.5	20.7 ±0.5	21.0 ±0.5
Side lobe suppression for first side lobe above main beam (dB)		> 18	> 17	> 17	> 16
Horizontal 3dB beam width (°)		65 ±4	62 ±3	60 ±3	58 ±5
Vertical 3dB beam width (°)		4.4 ±0.4	4.0 ±0.4	3.5 ±0.2	3.3 ±0.3
VSWR		< 1.5			
Cross polar isolation (dB)		≥ 28			
Interband isolation (dB)		≥ 28			
Front to back ratio, ±30° (dB)		> 26	> 26	> 26	> 26
Cross polar ratio (dB)	0°	> 20	> 20	> 20	> 20
Max. power per input (W)		250 (at 50℃ ambient temperature)*			
Intermodulation IM3 (dBc)		≤ -153 (2 x 43 dBm carrier)			
Impedance (Ω)		50			
Grounding		DC Ground			

1. Values based on NGMN recommendations on Base Station Antenna Standards (BASTA).
2. Electrical datasheet in XML format is available.

Mechanical Properties	
Antenna dimensions (H x W x D) (mm)	2099 x 269 x 86
Packing dimensions (H x W x D) (mm)	2415 x 340 x 160
Antenna weight (kg)	16.2
Clamps weight (kg)	3.6 (2 units)
Antenna packing weight (kg)	26.8 (Included clamps)
Mast diameter supported (mm)	50-115
Radome material	Fiberglass
Radome colour	Light grey
Operational temperature (℃)	-40 .. +65
Wind load (N)	Frontal: 895 (at 150 km/h) Lateral: 125 (at 150 km/h) Rear side: 840 (at 150 km/h)
Max. operational wind speed (km/h)	200
Survival wind speed (km/h)	250
Connector	4 x 4.3-10 Female
Connector position	Bottom



Accessories

Item	Model	Description	Weight	Units per antenna
Downtilt kit	ASMDT0D01	Mechanical downtilt: 0 - 12°	2.1 kg	1 (Separate packing)

Integrated RET Specifications

Properties								
RET type	Integrated RET							
RET protocols*	AISG 2.0 / 3GPP							
Input voltage range (V)	10 - 30 DC							
Power consumption (W)	< 5 (motor activated, 12V) < 0.5 (stand by, 12V)							
Adjustment time (full range) (s)	< 65 (typically, depending on antenna type)							
RET connector	2 x 8 pin connector according to IEC 60130-9 Daisy chain in: Male / Daisy chain out: Female							
Pin assignment according AISG	1	2	3	4	5	6	7	8
	DC	n/c	RS-485B	n/c	RS-485A	DC	DC return	n/c
Lightning protection (kA)	3 (10/350 μs) 10 (8/20 μs)							

* Please confirm the AISG protocol of primary station is compatible with RET antenna protocol interface. The protocol of RET antenna software interface is switchable between AISG 2.0/3GPP and AISG 1.1 with a vendor defined command. For more details about protocol switching function, contact Huawei before system installation.

Standards: UL 60950-1 (Safety), UL 60950-22 (Safety – Equipment installed outdoor), EN 55022 (Emission), EN 55024 (Immunity), ETSI EN 301 489, FCC Part15, ICES-003

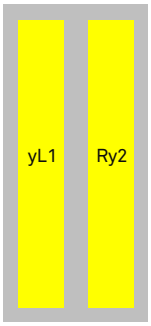
Certification: CE, FCC, IC, RCM

Integrated RET S/N:

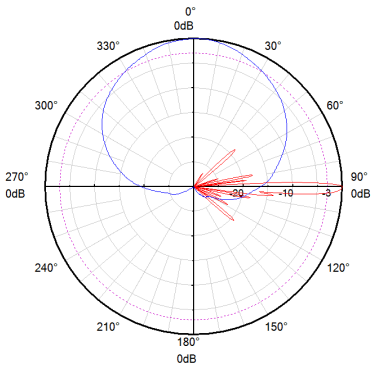
ⓐ HWMxxx.....Ly1

ⓑ HWMxxx.....Ry2

y - Yellow
L - Left array R - Right array



Pattern sample for reference



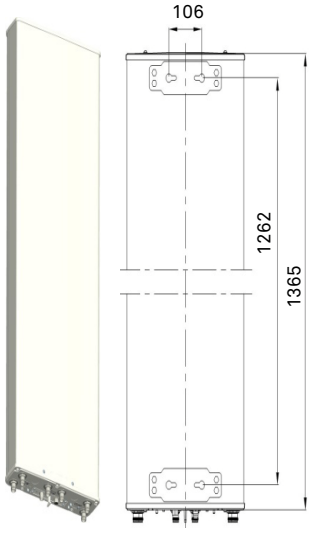
1695 - 2690 MHz

Antenna Specifications

Electrical Properties					
Frequency range (MHz)		3 x (1710 - 2200)			
		1710 - 1880	1850 - 1990	1920 - 2170	2170 - 2200
Polarization		+45° , -45°			
Electrical downtilt (°)		0 - 10 , continuously adjustable , each band separately			
Gain (dBi)	at mid Tilt	17.4	17.7	17.9	17.9
	over all Tilts	17.3 ±0.4	17.5 ±0.4	17.7 ±0.4	17.7 ±0.4
Side lobe suppression for first side lobe above main beam (dB)		> 20	> 18	> 18	> 17
Horizontal 3dB beam width (°)		66 ±3	65 ±3	63 ±4	61 ±3
Vertical 3dB beam width (°)		7.4 ±0.4	6.9 ±0.4	6.5 ±0.6	6.0 ±0.3
VSWR		< 1.5			
Cross polar isolation (dB)		≥ 30			
Interband isolation (dB)		≥ 28			
Front to back ratio, ±30° (dB)		> 25	> 26	> 27	> 27
Cross polar ratio (dB)	0°	> 21	> 21	> 20	> 18
Max. power per input (W)		300 (at 50℃ ambient temperature)			
Intermodulation IM3 (dBc)		≤ -153 (2 x 43 dBm carrier)			
Impedance (Ω)		50			
Grounding		DC Ground			

1. Values based on NGMN recommendations on Base Station Antenna Standards (BASTA).
2. Electrical datasheet in XML format is available.

Mechanical Properties	
Antenna dimensions (H x W x D) (mm)	1365 x 376 x 99
Packing dimensions (H x W x D) (mm)	1680 x 440 x 170
Antenna weight (kg)	16.2
Clamps weight (kg)	3.0 (2 units)
Antenna packing weight (kg)	25.4 (Included clamps)
Mast diameter supported (mm)	50 - 115
Radome material	Fiberglass
Radome colour	Light grey
Operational temperature (℃)	-40 .. +65
Wind load (N)	Frontal: 735 (at 150 km/h) Lateral: 70 (at 150 km/h) Rear side: 690 (at 150 km/h)
Max. operational wind speed (km/h)	200
Survival wind speed (km/h)	250
Connector	6 x 4.3-10 Female
Connector position	Bottom



Accessories

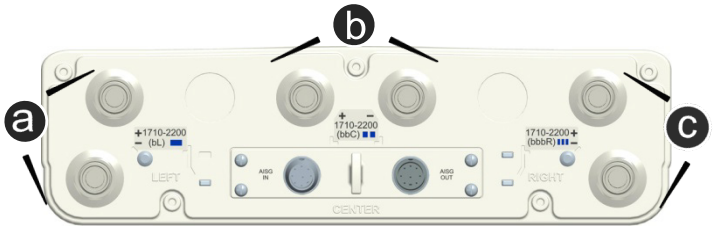
Item	Model	Description	Weight	Units per antenna
Downtilt kit	ASMDT0C01	Mechanical downtilt: 0 - 16 °	2.1 kg	1 (Separate packing)

Integrated RET Specifications

Properties								
RET type	Integrated RET							
RET protocols*	AISG 2.0 / 3GPP							
Input voltage range (V)	10 - 30 DC							
Power consumption (W)	< 6 (motor activated, 12V) < 1.5 (stand by, 12V)							
Adjustment time (full range) (s)	< 65 (typically, depending on antenna type)							
RET connector	2 x 8 pin connector according to IEC 60130-9 Daisy chain in: Male / Daisy chain out: Female							
Pin assignment according AISG	1	2	3	4	5	6	7	8
	DC	n/c	RS-485B	n/c	RS-485A	DC	DC return	n/c
Lightning protection (kA)	3 (10/350 μs) 10 (8/20 μs)							

* Please confirm the AISG protocol of primary station is compatible with RET antenna protocol interface. The protocol of RET antenna software interface is switchable between AISG 2.0/3GPP and AISG 1.1 with a vendor defined command. For more details about protocol switching function, contact Huawei before system installation.

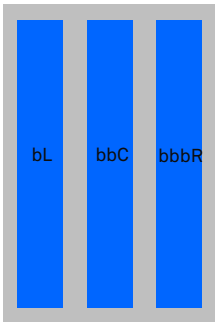
Standards: UL 60950-1 (Safety), UL 60950-22 (Safety – Equipment installed outdoor), EN 55022 (Emission), EN 55024 (Immunity), ETSI EN 301 489, FCC Part15, ICES-003
Certification: CE, FCC, IC, RCM



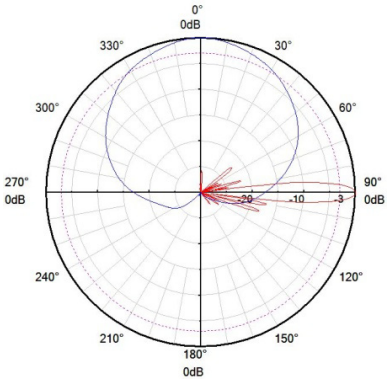
Integrated RET S/N:

ⓐ HWMxxx.....bL
ⓑ HWMxxx.....bbC
ⓒ HWMxxx.....bbbR

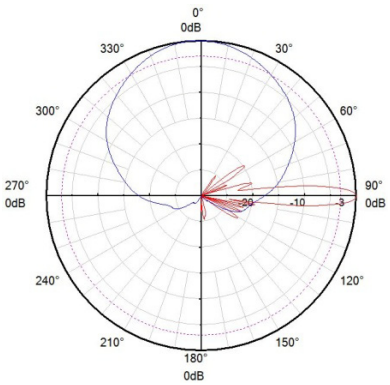
b – Blue L - Left array
R - Right array C - Center array



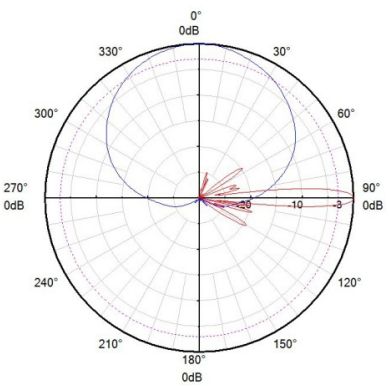
Pattern sample for reference



1710 - 2200 MHz
(Left)



1710 - 2200 MHz
(Center)



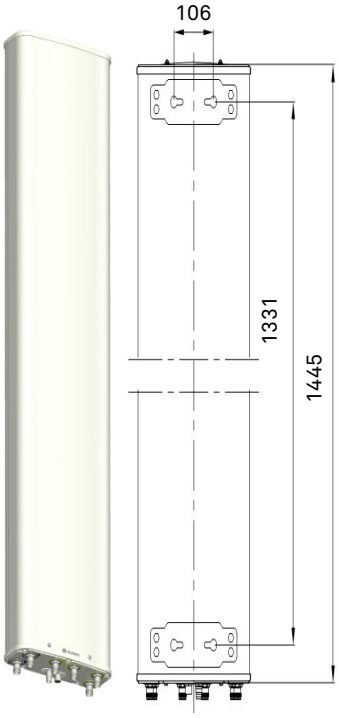
1710 - 2200 MHz
(Right)

Antenna Specifications

Electrical Properties								
Frequency range (MHz)		1710 - 2690				1710 - 2170		2490 - 2690
		1710 - 1990	1920 - 2200	2200 - 2490	2490 - 2690	1710 - 1990	1920 - 2170	
Polarization		+45° , -45°						
Electrical downtilt (°)		0 - 12 , continuously adjustable , each band separately						
Gain (dBi)	at mid Tilt	17.5	17.9	18.2	18.2	17.5	17.8	18.2
	over all Tilts	17.3 ±0.5	17.7 ±0.5	18.0 ±0.5	18.1 ±0.5	17.4 ±0.4	17.6 ±0.4	18.0 ±0.5
Side lobe suppression for first side lobe above main beam (dB)		> 17	> 17	> 18	> 17	> 17	> 18	> 18
Horizontal 3dB beam width (°)		66 ±3.8	64 ±3.2	62 ±2.3	60 ±3.8	66 ±3.4	64 ±3.1	60 ±3.5
Vertical 3dB beam width (°)		6.5 ±0.4	6.0 ±0.5	5.3 ±0.3	4.8 ±0.3	6.4 ±0.5	5.9 ±0.4	4.6 ±0.3
VSWR		< 1.5						
Cross polar isolation (dB)		≥ 30						
Interband isolation (dB)		≥ 30 (1710 - 2170 // 1710 - 2690 MHz) ≥ 30 (1710 - 2170 // 2490 - 2690 MHz) ≥ 30 (1710 - 2690 // 2490 - 2690 MHz)						
Front to back ratio, ±30° (dB)		> 25	> 25	> 26	> 25	> 25	> 26	> 25
Cross polar ratio (dB)	0°	> 18	> 18	> 18	> 18	> 18	> 18	> 18
Max. power per input (W)		250 (at 50℃ ambient temperature)						
Intermodulation IM3 (dBc)		≤ -153 (2 x 43 dBm carrier)						
Impedance (Ω)		50						
Grounding		DC Ground						

1. Values based on NGMN recommendations on Base Station Antenna Standards (BASTA).
2. Electrical datasheet in XML format is available.

Mechanical Properties	
Antenna dimensions (H x W x D) (mm)	1445 x 299 x 109
Packing dimensions (H x W x D) (mm)	1735 x 350 x 180
Antenna weight (kg)	15.7
Clamps weight (kg)	2.9 (2 units)
Antenna packing weight (kg)	23.5 (Included clamps)
Mast diameter supported (mm)	50 - 115
Radome material	Fiberglass
Radome colour	Light grey
Operational temperature (℃)	-40 .. +65
Wind load (N)	Frontal: 520 (at 150 km/h) Lateral: 105 (at 150 km/h) Rear side: 600 (at 150 km/h)
Max. operational wind speed (km/h)	200
Survival wind speed (km/h)	250
Connector	6 x 4.3-10 Female
Connector position	Bottom



Accessories

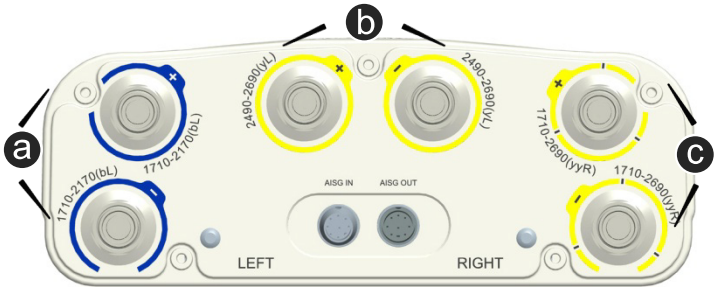
Item	Model	Description	Weight	Units per antenna
Downtilt kit	ASMDT0B01	Mechanical downtilt: 0 - 16 °	1.3 kg	1 (Separate packing)

Integrated RET Specifications

Properties								
RET type	Integrated RET							
RET protocols*	AISG 2.0/3GPP							
Input voltage range (V)	10 - 30 DC							
Power consumption (W)	< 10 (motor activated) < 0.5 (stand by)							
Adjustment time (full range) (s)	< 50 (typically, depending on antenna type)							
RET connector	2 x 8 pin connector according to IEC 60130-9 Daisy chain in: Male / Daisy chain out: Female							
Pin assignment according AISG	1	2	3	4	5	6	7	8
	DC	n/c	RS-485B	n/c	RS-485A	DC	DC return	n/c
Lightning protection (kA)	3 (10/350 μs) 10 (8/20 μs)							

* Please confirm the AISG protocol of primary station is compatible with RET antenna protocol interface. The protocol of RET antenna software interface is switchable between AISG 2.0/3GPP and AISG 1.1 with a vendor defined command. For more details about protocol swithing function, contact Huawei before system installation.

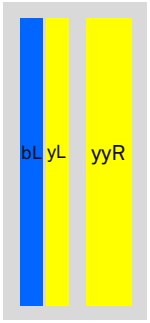
Standards: EN 60950-1 (Safety), EN 55022 (Emission), EN 55024 (Immunity), ETSI EN 301 489, FCC part15
Certification: CE, FCC, RoHS, WEEE



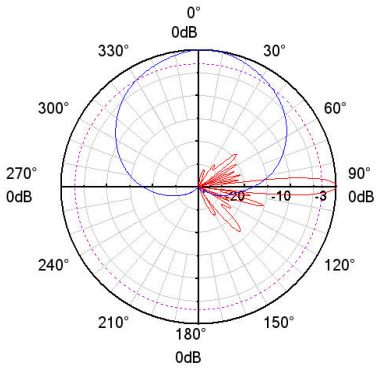
Integrated RET S/N:

- a HWMxxx....bL
- b HWMxxx....yL
- c HWMxxx...yyR

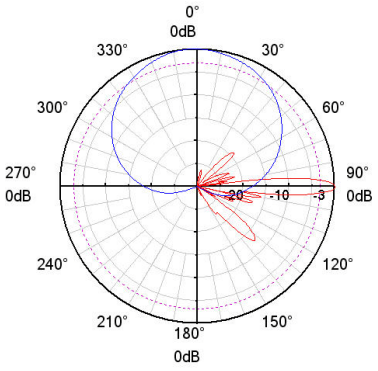
b - Blue y - Yellow
L - Left array R - Right array



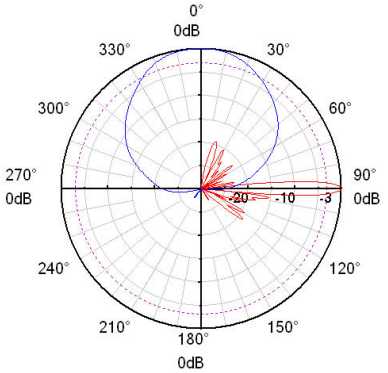
Pattern sample for reference



1710 - 2690 MHz



1710 - 2170 MHz



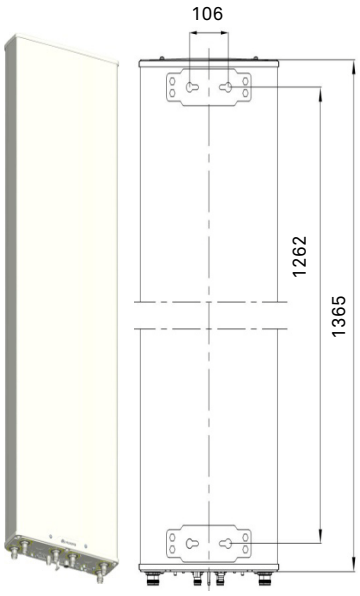
2490 - 2690 MHz

Antenna Specifications

Electrical Properties					
Frequency range (MHz)		3 x (1710 - 2690)			
		1710 - 1990	1920 - 2200	2200 - 2490	2490 - 2690
Polarization		+45° , -45°			
Electrical downtilt (°)		0 - 12 , continuously adjustable, each band separately			
Gain (dBi)	at mid Tilt	17.6	18.0	18.4	18.6
	over all Tilts	17.4 ±0.4	17.8 ±0.4	18.1 ±0.4	18.3 ±0.5
Side lobe suppression for first side lobe above main beam (dB)		> 19	> 22	> 20	> 19
Horizontal 3dB beam width (°)		66 ±5.5	65 ±4.2	64 ±3.8	60 ±3.2
Vertical 3dB beam width (°)		6.7 ±0.5	6.1 ±0.3	5.4 ±0.4	5.0 ±0.2
VSWR		< 1.5			
Cross polar isolation (dB)		≥ 30			
Interband isolation (dB)		≥ 30			
Front to back ratio, ±30° (dB)		> 27	> 27	> 29	> 29
Cross polar ratio (dB)	0°	> 26	> 25	> 23	> 23
Max. power per input (W)		250 (at 50℃ ambient temperature)			
Intermodulation IM3 (dBc)		≤ -153 (2 x 43 dBm carrier)			
Impedance (Ω)		50			
Grounding		DC Ground			

1. Values based on NGMN recommendations on Base Station Antenna Standards (BASTA).
2. Electrical datasheet in XML format is available.

Mechanical Properties	
Antenna dimensions (H x W x D) (mm)	1365 x 376 x 99
Packing dimensions (H x W x D) (mm)	1680 x 440 x 170
Antenna weight (kg)	17.3
Clamps weight (kg)	3.0 (2 units)
Antenna packing weight (kg)	27.0 (included clamps)
Mast diameter supported (mm)	50 - 115
Radome material	Fiberglass
Radome colour	Light grey
Operational temperature (℃)	-40 .. +65
Wind load (N)	Frontal: 735 (at 150 km/h) Lateral: 70 (at 150 km/h) Rear side: 690 (at 150 km/h)
Max. operational wind speed (km/h)	200
Survival wind speed (km/h)	250
Connector	6 x 4.3-10 Female
Connector position	Bottom



Accessories

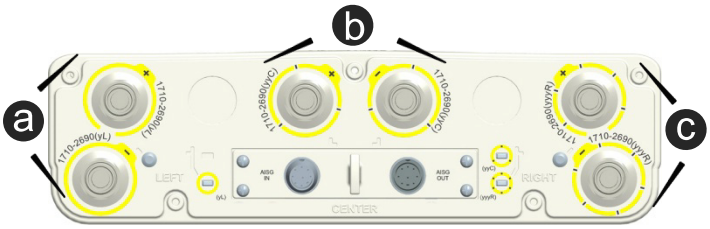
Item	Model	Description	Weight	Units per antenna
Downtilt kit	ASMDT0C01	Mechanical downtilt: 0 - 16 °	2.1 kg	1 (Separate packing)

Integrated RET Specifications

Properties								
RET type	Integrated RET							
RET protocols*	AISG 2.0 / 3GPP							
Input voltage range (V)	10 - 30 DC							
Power consumption (W)	< 6 (motor activated, 12V) < 1.5 (stand by, 12V)							
Adjustment time (full range) (s)	< 65 (typically, depending on antenna type)							
RET connector	2 x 8 pin connector according to IEC 60130-9 Daisy chain in: Male / Daisy chain out: Female							
Pin assignment according AISG	1	2	3	4	5	6	7	8
	DC	n/c	RS-485B	n/c	RS-485A	DC	DC return	n/c
Lightning protection (kA)	3 (10/350 µs) 10 (8/20 µs)							

* Please confirm the AISG protocol of primary station is compatible with RET antenna protocol interface. The protocol of RET antenna software interface is switchable between AISG 2.0/3GPP and AISG 1.1 with a vendor defined command. For more details about protocol switching function, contact Huawei before system installation.

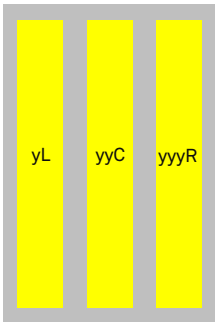
Standards: UL 60950-1 (Safety), UL 60950-22 (Safety – Equipment installed outdoor), EN 55022 (Emission), EN 55024 (Immunity), ETSI EN 301 489, FCC Part15, ICES-003
Certification: CE, FCC, IC, RCM



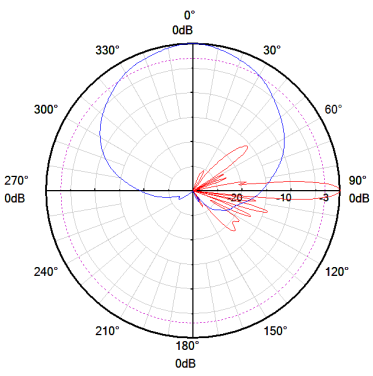
Integrated RET S/N:

ⓐ HWMxxx.....yL
ⓑ HWMxxx.....yyC
ⓒ HWMxxx....yyyR

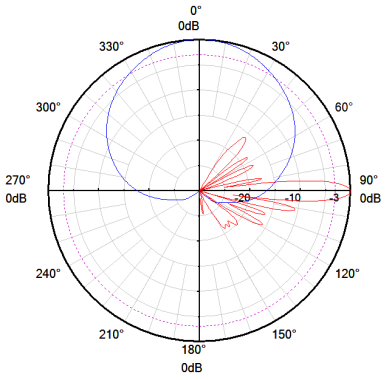
y – Yellow L - Left array
R - Right array C - Center array



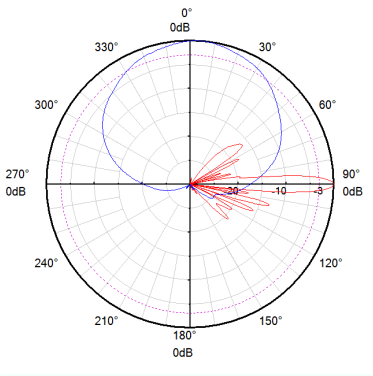
Pattern sample for reference



1710 - 2690 MHz
(Left)



1710 - 2690 MHz
(Center)



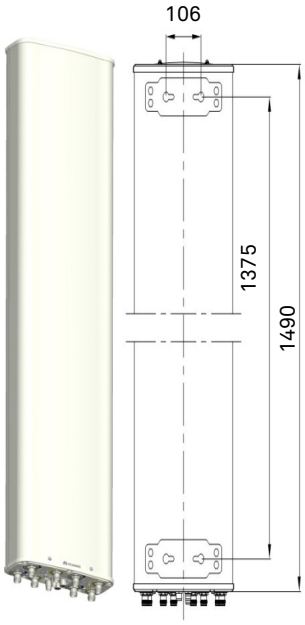
1710 - 2690 MHz
(Right)

Antenna Specifications

Electrical Properties				
Frequency range (MHz)		2 x (1710 - 2170)		2 x (2490 - 2690)
		1710 - 1990	1920 - 2170	
Polarization		+45° , -45°		
Electrical downtilt (°)		0 - 12 , continuously adjustable, each band separately		
Gain (dBi)	at mid Tilt	17.5	17.8	18.2
	over all Tilts	17.4 ±0.4	17.7 ±0.4	18.1 ±0.5
Side lobe suppression for first side lobe above main beam (dB)		> 17	> 18	> 18
Horizontal 3dB beam width (°)		66 ±3.5	64 ±4.1	60 ±3.4
Vertical 3dB beam width (°)		6.4 ±0.5	5.9 ±0.4	4.6 ±0.3
VSWR		< 1.5		
Cross polar isolation (dB)		≥ 30		
Interband isolation (dB)		≥ 30 (1710 - 2170 // 1710 - 2170 MHz) ≥ 30 (1710 - 2170 // 2490 - 2690 MHz) ≥ 30 (2490 - 2690 // 2490 - 2690 MHz)		
Front to back ratio, ±30° (dB)		> 25	> 25	> 25
Cross polar ratio (dB)	0°	> 20	> 20	> 20
Max. power per input (W)		250 (at 50℃ ambient temperature)		
Total power (W)		500 (at 50℃ ambient temperature)		
Intermodulation IM3 (dBc)		≤ -153 (2 x 43 dBm carrier)		
Impedance (Ω)		50		
Grounding		DC Ground		

1. Values based on NGMN recommendations on Base Station Antenna Standards (BASTA).
2. Electrical datasheet in XML format is available.

Mechanical Properties	
Antenna dimensions (H x W x D) (mm)	1490 x 299 x 109
Packing dimensions (H x W x D) (mm)	1790 x 350 x 180
Antenna weight (kg)	18.1
Clamps weight (kg)	3.0 (2 units)
Antenna packing weight (kg)	25.3 (Included clamps)
Mast diameter supported (mm)	50 - 115
Radome material	Fiberglass
Radome colour	Light grey
Operational temperature (℃)	-40 .. +65
Wind load (N)	Frontal: 535 (at 150 km/h) Lateral: 110 (at 150 km/h) Rear side: 615 (at 150 km/h)
Max. operational wind speed (km/h)	200
Survival wind speed (km/h)	250
Connector	8 x 4.3-10 Female
Connector position	Bottom



Accessories

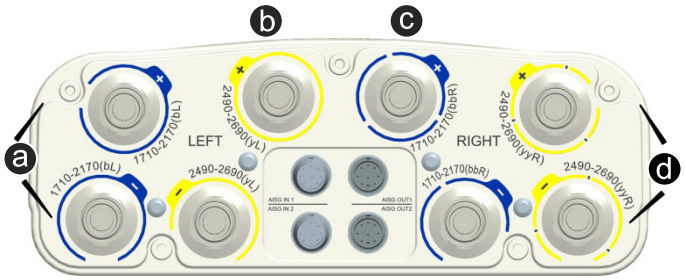
Item	Model	Description	Weight	Units per antenna
Downtilt kit	ASMDT0C01	Mechanical downtilt: 0 - 16 °	2.1 kg	1 (Separate packing)

Integrated RET Specifications

Properties								
RET type	Integrated RET							
RET protocols*	AISG 2.0 / 3GPP							
Input voltage range (V)	10 - 30 DC							
Power consumption (W)	< 10 (motor activated) < 0.5 (stand by)							
Adjustment time (full range) (s)	< 50 (typically, depending on antenna type)							
RET connector	4 x 8 pin connector according to IEC 60130-9 Daisy chain in: Male / Daisy chain out: Female							
Pin assignment according AISG	1	2	3	4	5	6	7	8
	DC	n/c	RS-485B	n/c	RS-485A	DC	DC return	n/c
Lightning protection (kA)	3 (10/350 μs) 10 (8/20 μs)							

* Please confirm the AISG protocol of primary station is compatible with RET antenna protocol interface. The protocol of RET antenna software interface is switchable between AISG 2.0/3GPP and AISG 1.1 with a vendor defined command. For more details about protocol switching function, contact Huawei before system installation.

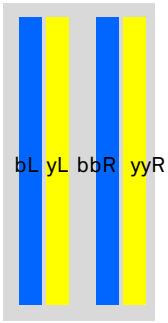
Standards: EN 60950-1 (Safety), EN 55022 (Emission), EN 55024 (Immunity), ETSI EN 301 489, FCC part15
Certification: CE, FCC, RoHS, WEEE



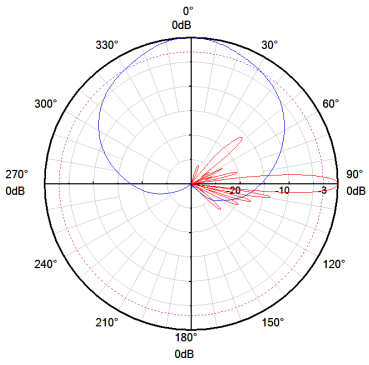
Integrated RET S/N:

- a HWMxxx.....bL
- b HWMxxx.....yL
- c HWMxxx...bbR
- d HWMxxx....yyR

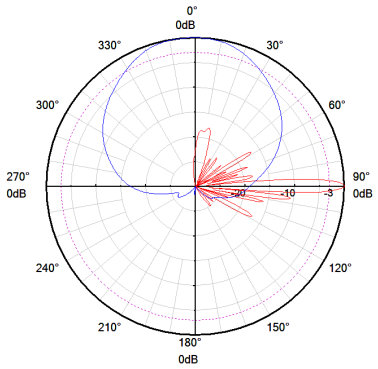
b - Blue y - Yellow
L - Left array R - Right array



Pattern sample for reference



1710 - 2170 MHz



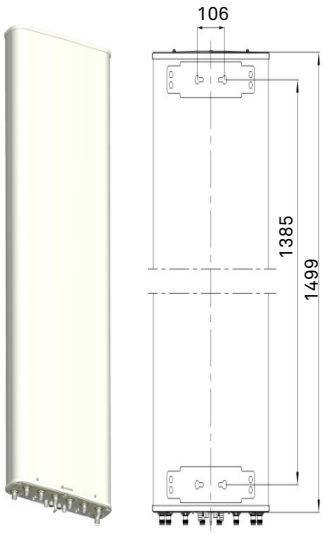
2490 - 2690 MHz

Antenna Specifications

Electrical Properties					
Frequency range (MHz)		4 x (1710 - 2690)			
		1710 - 1990	1920 - 2200	2200 - 2490	2490 - 2690
Polarization		+45°, -45°			
Electrical downtilt (°)		0 - 12, continuously adjustable, each band separately			
Gain (dBi)	at mid Tilt	17.4	17.7	17.9	18.3
	over all Tilts	17.2 ±0.5	17.5 ±0.5	17.7 ±0.5	18.0 ±0.5
Side lobe suppression for first side lobe above main beam (dB)		> 18	> 18	> 19	> 20
Horizontal 3dB beam width (°)		68 ±5	64 ±5	61 ±5	60 ±5
Vertical 3dB beam width (°)		6.8 ±0.5	6.1 ±0.4	5.4 ±0.4	5.0 ±0.3
VSWR		< 1.5			
Cross polar isolation (dB)		≥ 28			
Interband isolation (dB)		≥ 28 (1710 - 2690 // 1710 - 2690 MHz)			
Front to back ratio, ±30° (dB)		> 27	> 28	> 28	> 28
Cross polar ratio (dB)	0°	> 22	> 22	> 22	> 23
Max. power per input (W)		250 (at 50℃ ambient temperature)			
Total power (W)		800 (at 50℃ ambient temperature)			
Intermodulation IM3 (dBc)		≤ -153 (2 x 43 dBm carrier)			
Impedance (Ω)		50			
Grounding		DC Ground			

1. Values based on NGMN recommendations on Base Station Antenna Standards (BASTA).
2. Electrical datasheet in XML format is available.

Mechanical Properties	
Antenna dimensions (H x W x D) (mm)	1499 x 449 x 115
Packing dimensions (H x W x D) (mm)	1835 x 510 x 185
Antenna weight (kg)	23.9
Clamps weight (kg)	3.6 (2 units)
Antenna packing weight (kg)	35.8 (included clamps)
Mast diameter supported (mm)	50 - 115
Radome material	Fiberglass
Radome colour	Light grey
Operational temperature (℃)	-40 .. +65
Wind load (N)	Frontal: 775 (at 150 km/h) Lateral: 90 (at 150 km/h) Rear side: 870 (at 150 km/h)
Max. operational wind speed (km/h)	200
Survival wind speed (km/h)	250
Connector	8 x 4.3-10 Female
Connector position	Bottom



Accessories

Item	Model	Description	Weight	Units per antenna
Downtilt kit	ASMDT0D01	Mechanical downtilt: 0 - 16 °	2.1 kg	1 (Separate packing)

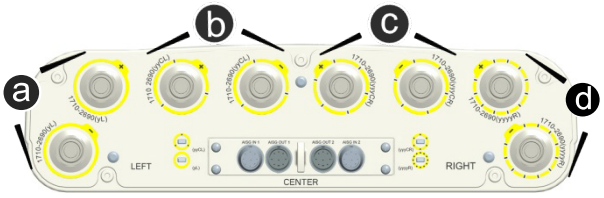
Integrated RET Specifications

Properties								
RET type	Integrated RET							
RET protocols*	AISG 2.0 / 3GPP							
Input voltage range (V)	10 - 30 DC							
Power consumption (W)	< 6 (motor activated, 12V) < 1.5 (stand by, 12V)							
Adjustment time (full range) (s)	< 65 (typically, depending on antenna type)							
RET connector	4 x 8 pin connector according to IEC 60130-9 Daisy chain in: Male / Daisy chain out: Female							
Pin assignment according AISG	1	2	3	4	5	6	7	8
	DC	n/c	RS-485B	n/c	RS-485A	DC	DC return	n/c
Lightning protection (kA)	3 (10/350 μs) 10 (8/20 μs)							

* Please confirm the AISG protocol of primary station is compatible with RET antenna protocol interface. The protocol of RET antenna software interface is switchable between AISG 2.0/3GPP and AISG 1.1 with a vendor defined command. For more details about protocol switching function, contact Huawei before system installation.

Standards: UL 60950-1 (Safety), UL 60950-22 (Safety – Equipment installed outdoor), EN 55022 (Emission), EN 55024 (Immunity), ETSI EN 301 489, FCC Part15, ICES-003

Certification: CE, FCC, IC, RCM



Integrated RET S/N:

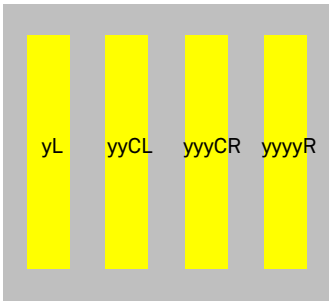
ⓐ HWMxxx.....yL

ⓑ HWMxxx.....yyCL

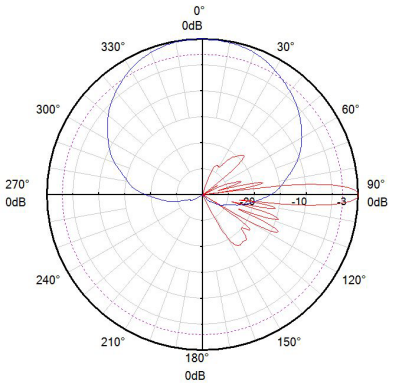
ⓒ HWMxxx.....yyyCR

ⓓ HWMxxx.....yyyyR

y – Yellow L - Left array
R - Right array C - Center array

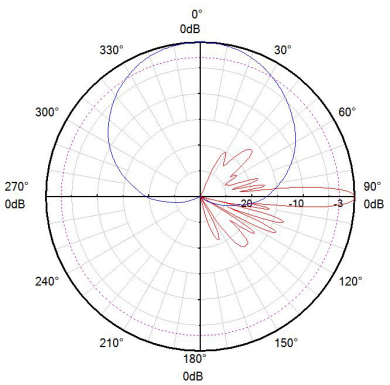


Pattern sample for reference



1710 - 2690 MHz

(Left)



1710 - 2690 MHz

(Center Left)

Multi-band

B - 3 1LnH

4 Ports - 1L1H

Frequency Range (MHz)	3dB Horizontal beam width (°)	Gain (dBi)	Electrical downtilt (°)	Tilt Method	Connector	Dimension(mm)	Model	Page	Array symbol
690-960/ 1710-2690	65/65	15/17.5	0-15/2-12	EasyRET2.0	4 x 4.3-10	1499 x 259 x 135	ADU4518R9v06	71	G
690-960/ 1710-2690	65/65	16/18	0-12/2-12	EasyRET2.0	4 x 4.3-10	2087 x 259 x 135	ADU4518R7v06	73	G
690-960/ 1710-2690	65/65	17/18	0-10/2-12	EasyRET2.0	4 x 4.3-10	2555 x 259 x 135	ADU4518R8v06	75	G
790-960/ 1710-2180	65/65	15/17.5	0-14/0-10	EasyRET2.0	4 x 4.3-10	1360 x 259 x 135	ADU4517R3v06	77	F
790-960/ 1710-2180	65/65	16.5/18.5	0-12/0-8	EasyRET1.0	4 x 4.3-10	1936 x 259 x 135	ADU4518R3v06	79	F
790-960/ 1710-2180	65/65	17.5/18.5	0-10/0-8	EasyRET1.0	4 x 4.3-10	2535 x 259 x 135	ADU4518R0v06	81	F
790-960/ 1710-2690	65/65	15/17.5	0-15/2-12	EasyRET2.0	4 x 4.3-10	1499 x 259 x 135	ADU4518R10v06	83	G
790-960/ 1710-2690	65/65	16/18	0-12/2-12	EasyRET2.0	4 x 4.3-10	2087 x 259 x 135	ADU4518R11v06	85	G
790-960/ 1710-2690	65/65	17/18	0-10/2-12	EasyRET2.0	4 x 4.3-10	2555 x 259 x 135	ADU4518R12v06	87	G

*** Preliminary Issue*

Multi-band

B - 3 1LnH

---

6 Ports - 1L2H

Frequency Range (MHz)	3dB Horizontal beam width (°)	Gain (dBi)	Electrical downtilt (°)	Tilt Method	Connector	Dimension(mm)	Model	Page	Array symbol
690-960/ 1695-2690/ 1695-2690	65/65/65	15/18/18	0-14/0-10/ 0-10	EasyRET2.0	6 x 4.3-10	1499 x 349 x 166	ATR4518R13v06	**89**	N
690-960/ 1695-2690/ 1695-2690	65/65/65	16/18/18	0-10/0-10/ 0-10	EasyRET2.0	6 x 4.3-10	1999 x 349 x 166	ATR4518R6v06	**91**	N
690-960/ 1695-2690/ 1695-2690	65/65/65	17/18/18	0-10/0-10/ 0-10	EasyRET2.0	6 x 4.3-10	2528 x 349 x 166	ATR4518R11v06	**93**	N
790-960/ 1710-2180/ 1710-2180	65/65/65	15/17.5/ 17.5	0-14/0-10/ 0-10	EasyRET2.0	6 x 4.3-10	1497 x 349 x 166	ATR4517R3v06	**95**	M
790-960/ 1710-2180/ 1710-2180	65/65/65	16.5/16.5/ 16.5	0-12/0-12/ 0-12	EasyRET1.0	6 x 4.3-10	2098 x 259 x 135	ATR4516R0v06	**97**	L
790-960/ 1710-2180/ 1710-2180	65/65/65	17.5/17.5/ 17.5	0-10/0-10/ 0-10	EasyRET1.0	6 x 4.3-10	2680 x 259 x 135	ATR4517R0v06	**99**	L
790-960/ 1710-2690/ 1710-2690	65/65/65	15/17.5/ 17.5	0-14/0-10/ 0-10	EasyRET1.0	6 x 4.3-10	1499 x 349 x 166	ATR4517R1v06	**101**	N
790-960/ 1710-2690/ 1710-2690	65/65/65	16/18/18	0-10/0-10/ 0-10	EasyRET1.0	6 x 4.3-10	1999 x 349 x 166	ATR4518R4v06	**103**	N
790-960/ 1710-2690/ 1710-2690	65/65/65	17/18/18	0-10/0-10/ 0-10	EasyRET1.0	6 x 4.3-10	2528 x 349 x 166	ATR4518R7v06	**105**	N

*** Preliminary Issue*

Multi-band

B - 3 1LnH

8 Ports - 1L3H

Frequency Range (MHz)	3dB Horizontal beam width (°)	Gain (dBi)	Electrical downtilt (°)	Tilt Method	Connector	Dimension(mm)	Model	Page	Array symbol
690-960/ 1710-2690/ 1710-2690/ 1710-2690	65/65/65/65	15/17.5/ 17.5/17.5	0-14/2-12/ 2-12/2-12	EasyRET2.0	8 x 4.3-10	1520 x 369 x 149	AQU4518R14v06	**107**	TT
690-960/ 1710-2690/ 1710-2690/ 1710-2690	65/65/65/65	16/18/ 18/18	0-10/2-12/ 2-12/2-12	EasyRET2.0	8 x 4.3-10	2000 x 369 x 149	AQU4518R11v06	**110**	TT
690-960/ 1695-2690/ 1695-2690/ 1695-2690	65/65/65/65	17/18/ 18/17.5	0-10/0-10/ 0-10/0-10	EasyRET2.0	8 x 4.3-10	2528 x 349 x 166	AQU4518R9v06	**113**	U
690-960/ 1427-2200/ 1695-2690/ 1695-2690	65/65/65/65	15/17.5/ 18/18	2-14/2-12/ 2-12/2-12	EasyRET2.0	8 x 4.3-10	1499 x 369 x 149	**AQU4518R27v06	**115**	SS
690-960/ 1427-2200/ 1695-2690/ 1695-2690	65/65/65/65	16/17/ 18/18	2-12/2-12/ 2-12/2-12	EasyRET2.0	8 x 4.3-10	1999 x 369 x 149	AQU4518R22v06	**116**	SS
790-960/ 1710-2690/ 1710-2170/ 2490-2690	65/65/65/65	15/17.5/ 17.5/17.5	0-14/0-10/ 0-10/0-10	EasyRET1.0	8 x 4.3-10	1499 x 349 x 166	AQU4518R7v06	**119**	T
790-960/ 1710-2690/ 1710-2170/ 2490-2690	65/65/65/65	16/18/ 18/18	0-10/0-10/ 0-10/0-10	EasyRET1.0	8 x 4.3-10	1999 x 349 x 166	AQU4518R0v06	**122**	T
790-960/ 1710-2690/ 1710-2170/ 2490-2690	65/65/65/65	17/18/ 18/18	0-10/0-10/ 0-10/0-10	EasyRET1.0	8 x 4.3-10	2528 x 349 x 166	AQU4518R1v06	**125**	T

*** Preliminary Issue*

Multi-band

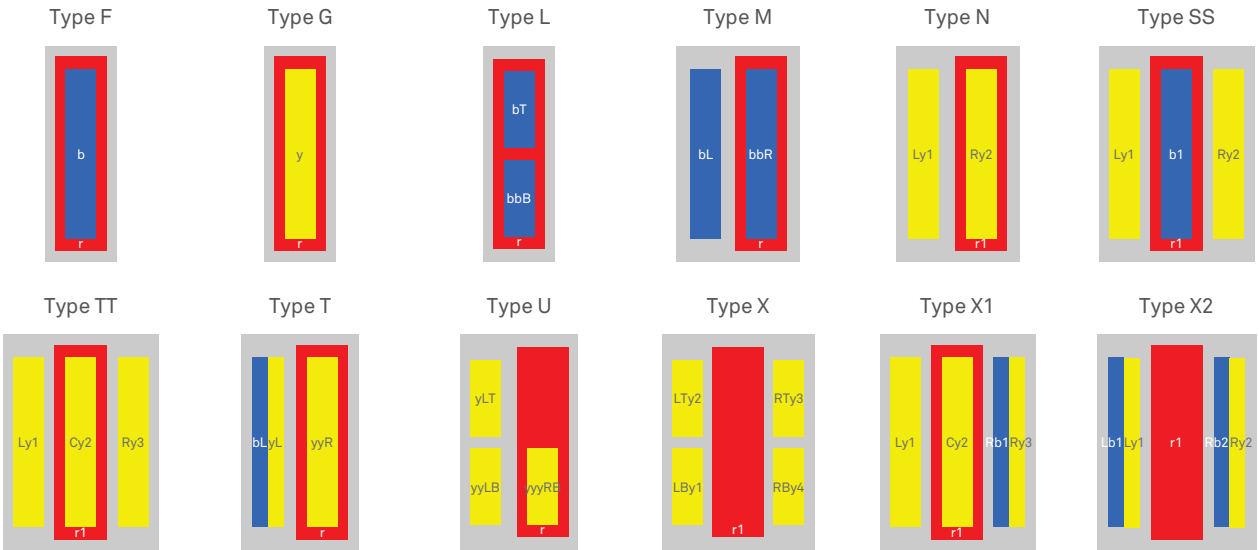
B - 3 1LnH

10 Ports - 1L4H

Frequency Range (MHz)	3dB Horizontal beam width (°)	Gain (dBi)	Electrical downtilt (°)	Tilt Method	Connector	Dimension(mm)	Model	Page	Array symbol
690-960/ 1695-2200/ 1695-2200/ 2490-2690/ 2490-2690	65/65/65/ 65/65	16/17.5/ 17.5/18/ 18	0-10/0-10/ 0-10/0-10/ 0-10	EasyRET2.0	10 x 4.3-10	1999 x 349 x 166	APE4518R19v06	**128**	X2
690-960/ 1695-2690/ 1695-2690/ 1695-2690/ 1695-2690	65/65/65/ 65/65	16/16.5/ 16.5/16/16	0-10/0-10/ 0-10/0-10/ 0-10	EasyRET2.0	10 x 4.3-10	1999 x 349 x 166	APE4516R1v06	**130**	X
690-960/ 1695-2690/ 1695-2690/ 1695-2690/ 1695-2690	65/65/65/ 65/65	17/18/18 /17.5/17.5	0-10/0-10/ 0-10/0-10/ 0-10	EasyRET2.0	10 x 4.3-10	2528 x 349 x 166	APE4517R0v06	**132**	X
690-960/ 1710-2690/ 1710-2690/ 1710-2200/ 2490-2690	65/65/65/ 65/65	15/17.5/ 17.5/17/ 17.5	0-14/2-12/ 2-12/2-12/ 2-12	EasyRET2.0	10 x 4.3-10	1520 x 369 x 149	APE4517R4v06	**134**	X1

*** Preliminary Issue*

Array Symbol Type

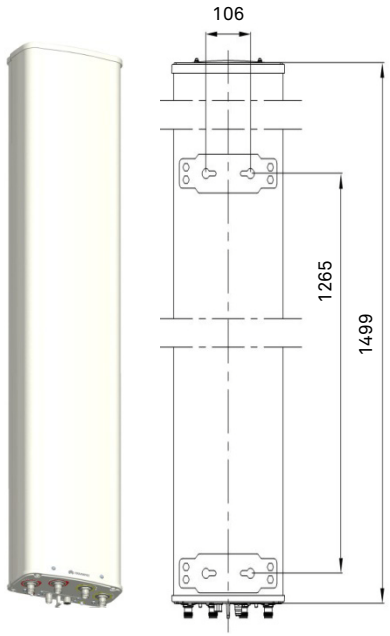


Antenna Specifications

Electrical Properties									
Frequency range (MHz)		690 - 960				1710 - 2690			
		690 - 803	790 - 862	824 - 894	880 - 960	1710 - 1990	1920 - 2200	2200 - 2490	2490 - 2690
Polarization		+45°, -45°							
Electrical downtilt (°)		0 - 15, continuously adjustable				2 - 12, continuously adjustable			
Gain (dBi)	at mid Tilt	14.5	14.5	14.6	14.7	16.8	17.2	17.4	18.1
	over all Tilts	14.5 ±0.3	14.5 ±0.3	14.6 ±0.4	14.7 ±0.4	16.7 ±0.5	17.1 ±0.5	17.4 ±0.5	17.9 ±0.5
Side lobe suppression for first side lobe above main beam (dB)		> 17	> 18	> 18	> 17	> 17	> 18	> 18	> 18
Horizontal 3dB beam width (°)		68 ±5	66 ±4	64 ±3	62 ±3	60 ±5	62 ±5	60 ±5	60 ±5
Vertical 3dB beam width (°)		15.3 ±1	14.0 ±0.7	13.3 ±0.6	12.3 ±0.7	7.2 ±0.7	6.5 ±0.6	5.7 ±0.5	5.3 ±0.3
VSWR		< 1.5							
Cross polar isolation (dB)		≥ 28				≥ 28			
Interband isolation (dB)		≥ 28 (690 - 960 // 1710 - 2690 MHz)							
Front to back ratio, ±30° (dB)		> 25	> 26	> 26	> 25	> 26	> 28	> 28	> 29
Cross polar ratio (dB)	0°	> 20	> 26	> 23	> 20	> 25	> 26	> 24	> 21
Max. power per input (W)		500 (at 50℃ ambient temperature)				250 (at 50℃ ambient temperature)			
Intermodulation IM3 (dBc)		≤ -153 (2 x 43 dBm carrier)							
Impedance (Ω)		50							
Grounding		DC Ground							

1. Values based on NGMN recommendations on Base Station Antenna Standards (BASTA).
2. Electrical datasheet in XML format is available.

Mechanical Properties	
Antenna dimensions (H x W x D) (mm)	1499 x 259 x 135
Packing dimensions (H x W x D) (mm)	1835 x 360 x 225
Antenna weight (kg)	16.5
Clamps weight (kg)	3.0 (2 units)
Antenna packing weight (kg)	25.5 (Included clamps)
Mast diameter supported (mm)	50 - 115
Radome material	Fiberglass
Radome colour	Light grey
Operational temperature (℃)	-40 .. +65
Wind load (N)	Frontal: 495 (at 150 km/h) Lateral: 225 (at 150 km/h) Rear side: 615 (at 150 km/h)
Max. operational wind speed (km/h)	200
Survival wind speed (km/h)	250
Connector	4 x 4.3-10 Female
Connector position	Bottom



Accessories

Item	Model	Description	Weight	Units per antenna
Downtilt kit	ASMDT0C01	Mechanical downtilt: 0 - 16 °	2.1 kg	1 (Separate packing)

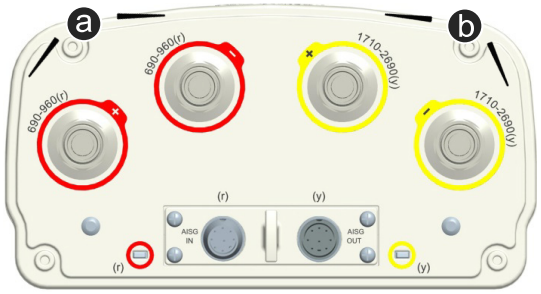
Integrated RET Specifications

Properties								
RET type	Integrated RET							
RET protocols*	AISG 2.0 / 3GPP							
Input voltage range (V)	10 - 30 DC							
Power consumption (W)	< 5 (motor activated, 12V) < 0.5 (stand by, 12V)							
Adjustment time (full range) (s)	< 65 (typically, depending on antenna type)							
RET connector	2 x 8 pin connector according to IEC 60130-9 Daisy chain in: Male / Daisy chain out: Female							
Pin assignment according AISG	1	2	3	4	5	6	7	8
	DC	n/c	RS-485B	n/c	RS-485A	DC	DC return	n/c
Lightning protection (kA)	3 (10/350 μs) 10 (8/20 μs)							

* Please confirm the AISG protocol of primary station is compatible with RET antenna protocol interface. The protocol of RET antenna software interface is switchable between AISG 2.0/3GPP and AISG 1.1 with a vendor defined command. For more details about protocol switching function, contact Huawei before system installation.

Standards: UL 60950-1 (Safety), UL 60950-22 (Safety – Equipment installed outdoor), EN 55022 (Emission), EN 55024 (Immunity), ETSI EN 301 489, FCC Part15, ICES-003

Certification: CE, FCC, IC, RCM

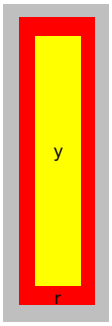


Integrated RET S/N:

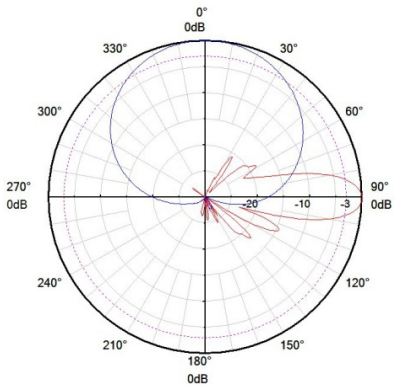
ⓐ HWMxxx.....r

ⓑ HWMxxx.....y

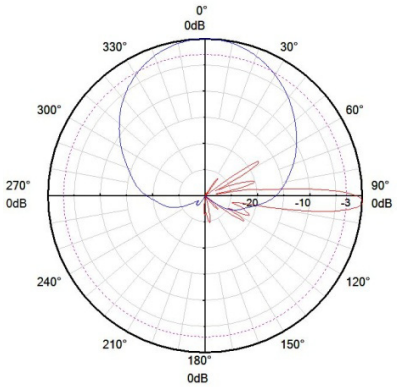
r - Red y - Yellow



Pattern sample for reference



690 - 960 MHz



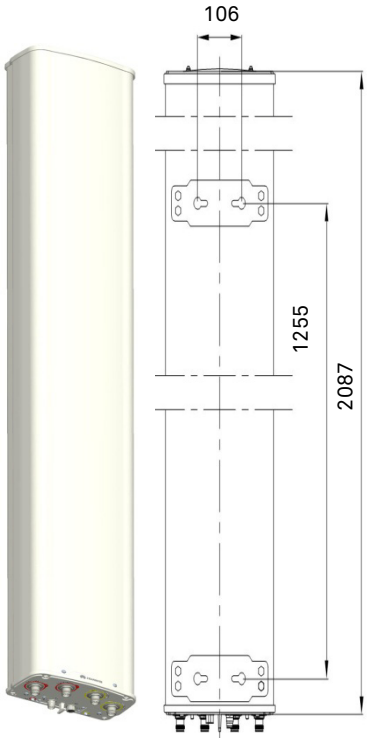
1710 - 2690 MHz

Antenna Specifications

Electrical Properties									
Frequency range (MHz)		690 - 960				1710 - 2690			
		690 - 803	790 - 862	824 - 894	880 - 960	1710 - 1990	1920 - 2200	2200 - 2490	2490 - 2690
Polarization		+45°, -45°							
Electrical downtilt (°)		0 - 12, continuously adjustable				2 - 12, continuously adjustable			
Gain (dBi)	at mid Tilt	15.5	15.9	16.0	16.1	17.1	17.5	17.8	18.3
	over all Tilts	15.5 ±0.4	15.7 ±0.4	15.8 ±0.3	16.0 ±0.3	17.0 ±0.5	17.4 ±0.5	17.7 ±0.3	18.1 ±0.4
Side lobe suppression for first side lobe above main beam (dB)		> 18	> 18	> 18	> 18	> 17	> 17	> 17	> 17
Horizontal 3dB beam width (°)		69 ±2.4	66 ±1.6	64 ±1.5	63 ±2.1	63 ±4.8	61 ±4.0	60±2.2	60 ±4.0
Vertical 3dB beam width (°)		10.5 ±0.5	9.8 ±0.4	9.5 ±0.4	8.9 ±0.4	7.2 ±0.5	6.5 ±0.5	5.6 ±0.3	5.5 ±0.3
VSWR		< 1.5							
Cross polar isolation (dB)		≥ 28							
Interband isolation (dB)		≥ 28 (690 - 960 // 1710 - 2690 MHz)							
Front to back ratio, ±30° (dB)		> 24	> 25	> 25	> 25	> 24	> 25	> 25	> 26
Cross polar ratio (dB)	0°	> 20	> 20	> 20	> 20	> 20	> 20	> 20	> 20
Max. power per input (W)		500 (at 50℃ ambient temperature)				250 (at 50℃ ambient temperature)			
Intermodulation IM3 (dBc)		≤ -153 (2 x 43 dBm carrier)							
Impedance (Ω)		50							
Grounding		DC Ground							

1. Values based on NGMN recommendations on Base Station Antenna Standards (BASTA).
2. Electrical datasheet in XML format is available.

Mechanical Properties	
Antenna dimensions (H x W x D) (mm)	2087 x 259 x 135
Packing dimensions (H x W x D) (mm)	2380 x 315 x 220
Antenna weight (kg)	20.2
Clamps weight (kg)	3.0 (2 units)
Antenna packing weight (kg)	28.2 (Included clamps)
Mast diameter supported (mm)	50 - 115
Radome material	Fiberglass
Radome colour	Light grey
Operational temperature (℃)	-40 .. +65
Wind load (N)	Frontal: 725 (at 150 km/h) Lateral: 330 (at 150 km/h) Rear side: 900 (at 150 km/h)
Max. operational wind speed (km/h)	200
Survival wind speed (km/h)	250
Connector	4 x 4.3-10 Female
Connector position	Bottom



Accessories

Item	Model	Description	Weight	Units per antenna
Downtilt kit	ASMDT0C01	Mechanical downtilt: 0 - 12 °	2.1 kg	1 (Separate packing)

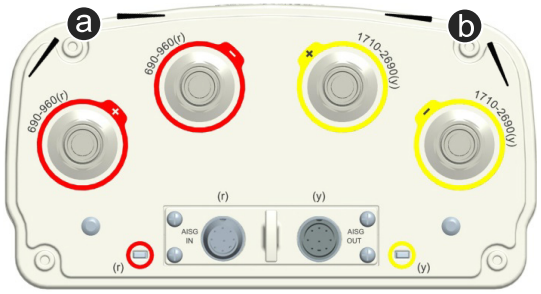
Integrated RET Specifications

Properties								
RET type	Integrated RET							
RET protocols*	AISG 2.0 / 3GPP							
Input voltage range (V)	10 - 30 DC							
Power consumption (W)	< 5 (motor activated, 12V) < 0.5 (stand by, 12V)							
Adjustment time (full range) (s)	< 65 (typically, depending on antenna type)							
RET connector	2 x 8 pin connector according to IEC 60130-9 Daisy chain in: Male / Daisy chain out: Female							
Pin assignment according AISG	1	2	3	4	5	6	7	8
	DC	n/c	RS-485B	n/c	RS-485A	DC	DC return	n/c
Lightning protection (kA)	3 (10/350 μs) 10 (8/20 μs)							

* Please confirm the AISG protocol of primary station is compatible with RET antenna protocol interface. The protocol of RET antenna software interface is switchable between AISG 2.0/3GPP and AISG 1.1 with a vendor defined command. For more details about protocol switching function, contact Huawei before system installation.

Standards: UL 60950-1 (Safety), UL 60950-22 (Safety – Equipment installed outdoor), EN 55022 (Emission), EN 55024 (Immunity), ETSI EN 301 489, FCC Part15, ICES-003

Certification: CE, FCC, IC, RCM

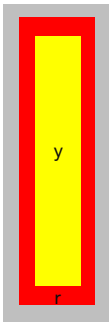


Integrated RET S/N:

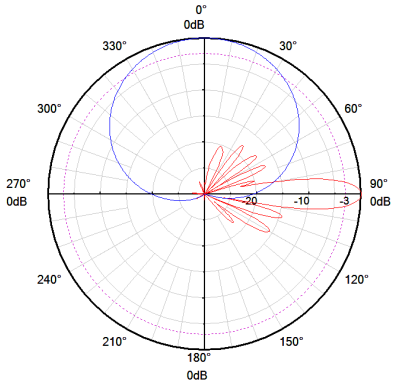
ⓐ HWMxxx……r

ⓑ HWMxxx……y

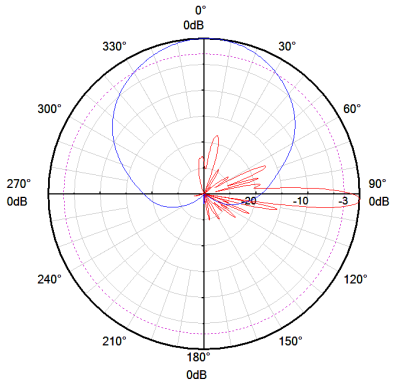
r - Red y - Yellow



Pattern sample for reference



690 - 960 MHz



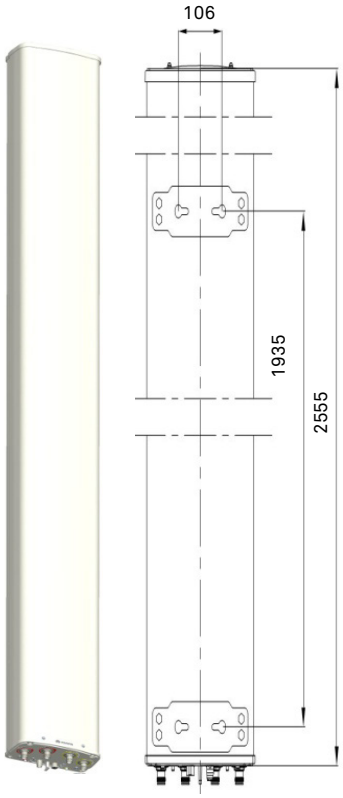
1710 - 2690 MHz

Antenna Specifications

Electrical Properties									
Frequency range (MHz)		690 - 960				1710 - 2690			
		690 - 803	790 - 862	824 - 894	880 - 960	1710 - 1990	1920 - 2200	2200 - 2490	2490 - 2690
Polarization		+45° , -45°							
Electrical downtilt (°)		0 - 10 , continuously adjustable				2 - 12 , continuously adjustable			
Gain (dBi)	at mid Tilt	16.6	16.7	17.1	17.3	17.1	17.5	17.8	18.3
	over all Tilts	16.5 ±0.3	16.6 ±0.4	17.0 ±0.4	17.2 ±0.4	17.0 ±0.5	17.4 ±0.5	17.7 ±0.3	18.1 ±0.4
Side lobe suppression for first side lobe above main beam (dB)		> 17	> 18	> 18	> 18	> 17	> 17	> 17	> 17
Horizontal 3dB beam width (°)		69 ±2.5	66 ±2.5	64 ±2.3	63 ±2.0	63 ±4.8	61 ±4.0	60 ±2.2	60 ±4.0
Vertical 3dB beam width (°)		8.9 ±0.5	8.3 ±0.4	7.9 ±0.4	7.3 ±0.4	7.2 ±0.5	6.5 ±0.5	5.6 ±0.3	5.5 ±0.3
VSWR		< 1.5							
Cross polar isolation (dB)		≥ 28							
Interband isolation (dB)		≥ 28 (690 - 960 // 1710 - 2690 MHz)							
Front to back ratio, ±30° (dB)		> 24	> 25	> 25	> 26	> 24	> 25	> 25	> 26
Cross polar ratio (dB)	0°	> 20	> 20	> 20	> 20	> 20	> 20	> 20	> 20
Max. power per input (W)		500 (at 50℃ ambient temperature)				250 (at 50℃ ambient temperature)			
Intermodulation IM3 (dBc)		≤ -153 (2 x 43 dBm carrier)							
Impedance (Ω)		50							
Grounding		DC Ground							

1. Values based on NGMN recommendations on Base Station Antenna Standards (BASTA).
2. Electrical datasheet in XML format is available.

Mechanical Properties	
Antenna dimensions (H x W x D) (mm)	2555 x 259 x 135
Packing dimensions (H x W x D) (mm)	2970 x 315 x 220
Antenna weight (kg)	23.0
Clamps weight (kg)	3.6 (2 units)
Antenna packing weight (kg)	33.2 (Included clamps)
Mast diameter supported (mm)	50 - 115
Radome material	Fiberglass
Radome colour	Light grey
Operational temperature (℃)	-40 .. +65
Wind load (N)	Frontal: 915 (at 150 km/h) Lateral: 415 (at 150 km/h) Rear side: 1135 (at 150 km/h)
Max. operational wind speed (km/h)	200
Survival wind speed (km/h)	250
Connector	4 x 4.3-10 Female
Connector position	Bottom



Accessories

Item	Model	Description	Weight	Units per antenna
Downtilt kit	ASMDT0D01	Mechanical downtilt: 0 - 8 °	2.1 kg	1 (Separate packing)

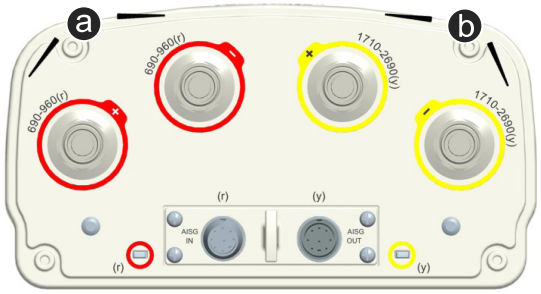
Integrated RET Specifications

Properties								
RET type	Integrated RET							
RET protocols*	AISG 2.0 / 3GPP							
Input voltage range (V)	10 - 30 DC							
Power consumption (W)	< 5 (motor activated, 12V) < 0.5 (stand by, 12V)							
Adjustment time (full range) (s)	< 65 (typically, depending on antenna type)							
RET connector	2 x 8 pin connector according to IEC 60130-9 Daisy chain in: Male / Daisy chain out: Female							
Pin assignment according AISG	1	2	3	4	5	6	7	8
	DC	n/c	RS-485B	n/c	RS-485A	DC	DC return	n/c
Lightning protection (kA)	3 (10/350 μs) 10 (8/20 μs)							

* Please confirm the AISG protocol of primary station is compatible with RET antenna protocol interface. The protocol of RET antenna software interface is switchable between AISG 2.0/3GPP and AISG 1.1 with a vendor defined command. For more details about protocol switching function, contact Huawei before system installation.

Standards: UL 60950-1 (Safety), UL 60950-22 (Safety – Equipment installed outdoor), EN 55022 (Emission), EN 55024 (Immunity), ETSI EN 301 489, FCC Part15, ICES-003

Certification: CE, FCC, IC, RCM

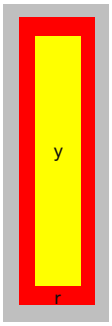


Integrated RET S/N:

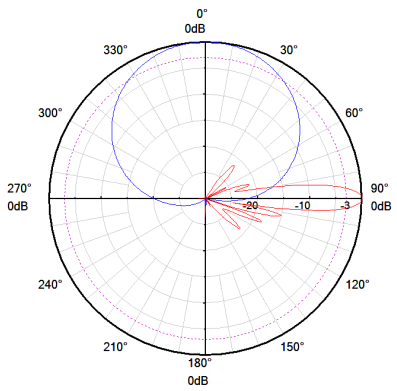
ⓐ HWMxxx.....r

ⓑ HWMxxx.....y

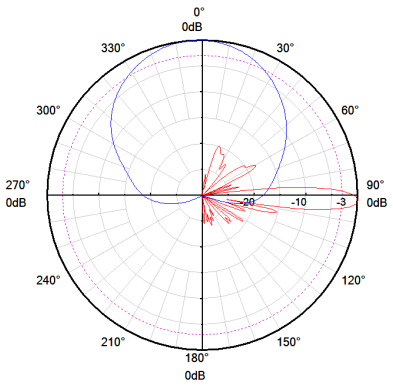
r - Red y - Yellow



Pattern sample for reference



690 - 960 MHz



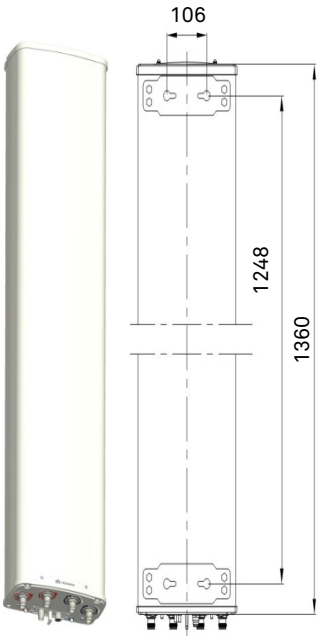
1710 - 2690 MHz

Antenna Specifications

Electrical Properties							
Frequency range (MHz)		790 - 960			1710 - 2180		
		790 - 862	824 - 894	880 - 960	1710 - 1880	1850 - 1990	1920 - 2180
Polarization		+45° , -45°					
Electrical downtilt (°)		0 - 14 , continuously adjustable			0 - 10 , continuously adjustable		
Gain (dBi)	at mid Tilt	14.5	14.7	15.0	16.8	17.3	17.6
	over all Tilts	14.5 ±0.5	14.7 ±0.4	14.9 ±0.4	16.8 ±0.5	17.1 ±0.5	17.4 ±0.4
Side lobe suppression for first side lobe above main beam (dB)		> 18	> 18	> 16	> 17	> 17	> 17
Horizontal 3dB beam width (°)		69 ±1.1	66 ±1.3	64 ±2.7	65 ±2.1	63 ±1.4	60±3.7
Vertical 3dB beam width (°)		15.7 ±0.8	15.0 ±0.9	14.0 ±1.0	7.5 ±0.4	7.1 ±0.3	6.6 ±0.5
VSWR		< 1.5					
Cross polar isolation (dB)		≥ 30					
Interband isolation (dB)		≥ 30 (790 - 960 // 1710 - 2180 MHz)					
Front to back ratio, ±30° (dB)		> 24	> 24	> 24	> 25	> 25	> 25
Cross polar ratio (dB)	0°	> 25	> 25	> 25	> 20	> 20	> 20
Max. power per input (W)		500 (at 50℃ ambient temperature)			300 (at 50℃ ambient temperature)		
Intermodulation IM3 (dBc)		≤ -153 (2 x 43 dBm carrier)					
Impedance (Ω)		50					
Grounding		DC Ground					

1. Values based on NGMN recommendations on Base Station Antenna Standards (BASTA).
2. Electrical datasheet in XML format is available.

Mechanical Properties	
Antenna dimensions (H x W x D) (mm)	1360 x 259 x 135
Packing dimensions (H x W x D) (mm)	1655 x 315 x 195
Antenna weight (kg)	14.0
Clamps weight (kg)	2.9 (2 units)
Antenna packing weight (kg)	20.8 (Included clamps)
Mast diameter supported (mm)	50 - 115
Radome material	Fiberglass
Radome colour	Light grey
Operational temperature (℃)	-40 .. +65
Wind load (N)	Frontal: 440 (at 150 km/h) Lateral: 230 (at 150 km/h) Rear side: 555 (at 150 km/h)
Max. operational wind speed (km/h)	200
Survival wind speed (km/h)	250
Connector	4 x 4.3-10 Female
Connector position	Bottom



Accessories

Item	Model	Description	Weight	Units per antenna
Downtilt kit	ASMDT0B01	Mechanical downtilt: 0 - 16°	1.3 kg	1 (Separate packing)

Integrated RET Specifications

Properties								
RET type	Integrated RET							
RET protocols*	AISG 2.0 / 3GPP							
Input voltage range (V)	10 - 30 DC							
Power consumption (W)	< 5 (motor activated, 12V) < 0.5 (stand by, 12V)							
Adjustment time (full range) (s)	< 65 (typically, depending on antenna type)							
RET connector	2 x 8 pin connector according to IEC 60130-9 Daisy chain in: Male / Daisy chain out: Female							
Pin assignment according AISG	1	2	3	4	5	6	7	8
	DC	n/c	RS-485B	n/c	RS-485A	DC	DC return	n/c
Lightning protection (kA)	3 (10/350 µs) 10 (8/20 µs)							

* Please confirm the AISG protocol of primary station is compatible with RET antenna protocol interface. The protocol of RET antenna software interface is switchable between AISG 2.0/3GPP and AISG 1.1 with a vendor defined command. For more details about protocol switching function, contact Huawei before system installation.

Standards: UL 60950-1 (Safety), UL 60950-22 (Safety – Equipment installed outdoor), EN 55022 (Emission), EN 55024 (Immunity), ETSI EN 301 489, FCC Part15, ICES-003

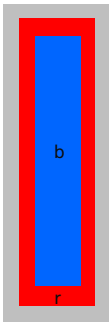
Certification: CE, FCC, IC, RCM

Integrated RET S/N:

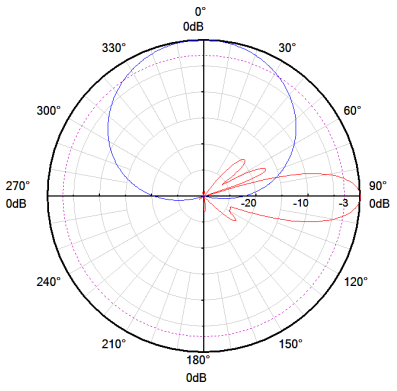
ⓐ HWMxxx.....r

ⓑ HWMxxx.....b

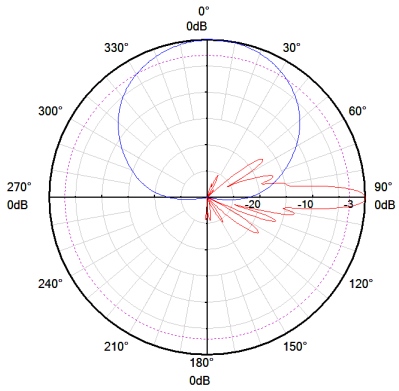
r - Red b - Blue



Pattern sample for reference



790 - 960 MHz



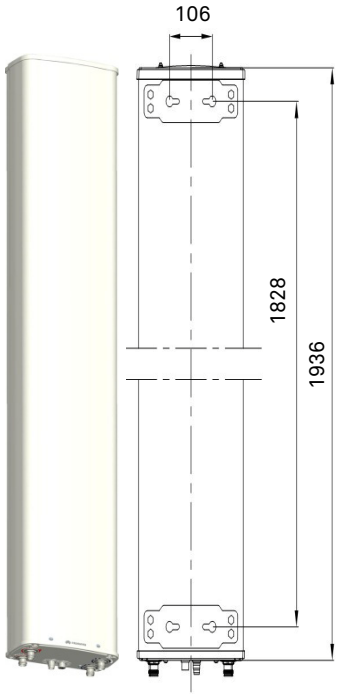
1710 - 2180 MHz

Antenna Specifications

Electrical Properties							
Frequency range (MHz)		790 - 960			1710 - 2180		
		790 - 862	824 - 894	880 - 960	1710 - 1880	1850 - 1990	1920 - 2180
Polarization		+45° , -45°					
Electrical downtilt (°)		0 - 12 , continuously adjustable			0 - 8 , continuously adjustable		
Gain (dBi)	at mid Tilt	15.7	16.0	16.0	18.5	18.7	18.7
	over all Tilts	15.6 ±0.4	15.8 ±0.3	15.9 ±0.3	18.4 ±0.4	18.6 ±0.4	18.5 ±0.5
Side lobe suppression for first side lobe above main beam (dB)		> 17	> 17	> 17	> 18	> 18	> 18
Horizontal 3dB beam width (°)		69 ±1.5	66 ±1.5	64 ±1.5	65 ±2.5	63 ±2.5	60±1.5
Vertical 3dB beam width (°)		10.6 ±0.5	10.2 ±0.5	9.5 ±0.5	5.2 ±0.3	5.0 ±0.3	4.7 ±0.3
VSWR		< 1.5					
Cross polar isolation (dB)		≥ 30					
Interband isolation (dB)		≥ 40 (790 - 960 // 1710 - 2180 MHz)					
Front to back ratio, ±30° (dB)		> 24	> 25	> 25	> 25	> 25	> 25
Cross polar ratio (dB)	0°	> 25	> 25	> 25	> 20	> 20	> 20
Max. power per input (W)		500 (at 50℃ ambient temperature)			300 (at 50℃ ambient temperature)		
Intermodulation IM3 (dBc)		≤ -153 (2 x 43 dBm carrier)					
Impedance (Ω)		50					
Grounding		DC Ground					

1. Values based on NGMN recommendations on Base Station Antenna Standards (BASTA).
2. Electrical datasheet in XML format is available.

Mechanical Properties	
Antenna dimensions (H x W x D) (mm)	1936 x 259 x 135
Packing dimensions (H x W x D) (mm)	2255 x 305 x 190
Antenna weight (kg)	18.0
Clamps weight (kg)	2.9 (2 units)
Antenna packing weight (kg)	26.0 (Included clamps)
Mast diameter supported (mm)	50 - 115
Radome material	Fiberglass
Radome colour	Light grey
Operational temperature (℃)	-40 .. +65
Wind load (N)	Frontal: 665 (at 150 km/h) Lateral: 345 (at 150 km/h) Rear side: 880 (at 150 km/h)
Max. operational wind speed (km/h)	200
Survival wind speed (km/h)	250
Connector	4 x 4.3-10 Female
Connector position	Bottom



Accessories

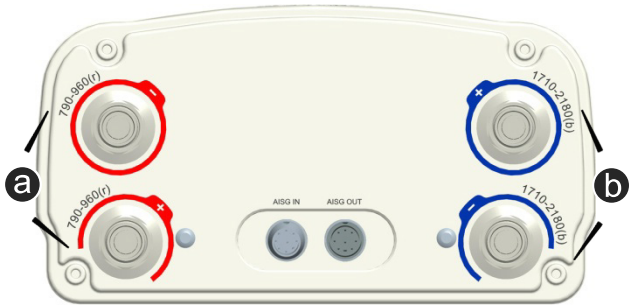
Item	Model	Description	Weight	Units per antenna
Downtilt kit	ASMDT0B01	Mechanical downtilt: 0 - 12 °	1.3 kg	1 (Separate packing)

Integrated RET Specifications

Properties								
RET type	Integrated RET							
RET protocols*	AISG 2.0 / 3GPP							
Input voltage range (V)	10 - 30 DC							
Power consumption (W)	< 10 (motor activated) < 0.5 (stand by)							
Adjustment time (full range) (s)	< 37 (typically, depending on antenna type)							
RET connector	2 x 8 pin connector according to IEC 60130-9 Daisy chain in: Male / Daisy chain out: Female							
Pin assignment according AISG	1	2	3	4	5	6	7	8
	DC	n/c	RS-485B	n/c	RS-485A	DC	DC return	n/c
Lightning protection (kA)	3 (10/350 μs) 10 (8/20 μs)							

* Please confirm the AISG protocol of primary station is compatible with RET antenna protocol interface. The protocol of RET antenna software interface is switchable between AISG 2.0/3GPP and AISG 1.1 with a vendor defined command. For more details about protocol switching function, contact Huawei before system installation.

Standards: EN 60950-1 (Safety), EN 55022 (Emission), EN 55024 (Immunity), ETSI EN 301 489, FCC part15
Certification: CE, FCC, RoHS, WEEE

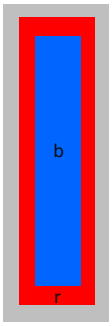


Integrated RET S/N:

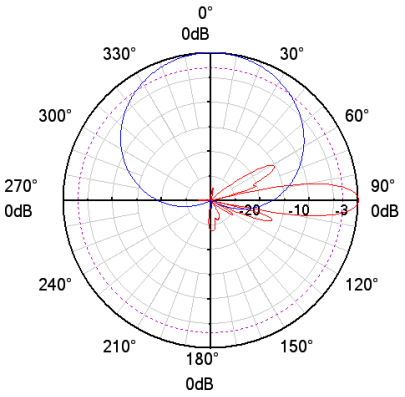
ⓐ HWMxxx...r

ⓑ HWMxxx...b

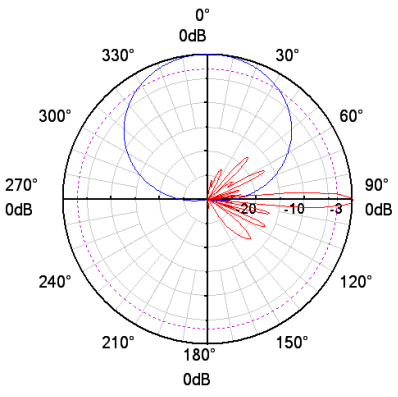
r - Red b - Blue



Pattern sample for reference



790 - 960 MHz



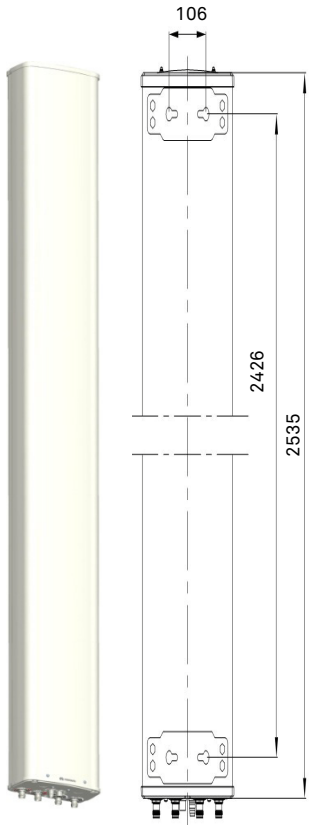
1710 - 2180 MHz

Antenna Specifications

Electrical Properties							
Frequency range (MHz)		790 - 960			1710 - 2180		
		790 - 862	824 - 894	880 - 960	1710 - 1880	1850 - 1990	1920 - 2180
Polarization		+45°, -45°					
Electrical downtilt (°)		0 - 10, continuously adjustable			0 - 8, continuously adjustable		
Gain (dBi)	at mid Tilt	16.7	17.0	17.2	18.4	18.6	18.6
	over all Tilts	16.6 ±0.4	16.9 ±0.3	17.0 ±0.3	18.2 ±0.4	18.4 ±0.4	18.3 ±0.5
Side lobe suppression for first side lobe above main beam (dB)		> 19	> 19	> 19	> 16	> 16	> 18
Horizontal 3dB beam width (°)		69 ±1.5	66 ±1.5	65 ±1.0	64 ±1.5	62 ±1.5	60±2.0
Vertical 3dB beam width (°)		8.4 ±0.5	8.0 ±0.5	7.5 ±0.5	5.2 ±0.3	4.9 ±0.3	4.6 ±0.4
VSWR		< 1.5					
Cross polar isolation (dB)		≥ 30					
Interband isolation (dB)		≥ 40 (790 - 960 // 1710 - 2180 MHz)					
Front to back ratio, ±30° (dB)		> 25	> 25	> 25	> 25	> 25	> 26
Cross polar ratio (dB)	0°	> 30	> 30	> 30	> 20	> 20	> 20
Max. power per input (W)		500 (at 50℃ ambient temperature)			300 (at 50℃ ambient temperature)		
Intermodulation IM3 (dBc)		≤ -153 (2 x 43 dBm carrier)					
Impedance (Ω)		50					
Grounding		DC Ground					

1. Values based on NGMN recommendations on Base Station Antenna Standards (BASTA).
2. Electrical datasheet in XML format is available.

Mechanical Properties	
Antenna dimensions (H x W x D) (mm)	2535 x 259 x 135
Packing dimensions (H x W x D) (mm)	2815 x 305 x 190
Antenna weight (kg)	21.9
Clamps weight (kg)	3.0 (2 units)
Antenna packing weight (kg)	32.2 (Included clamps)
Mast diameter supported (mm)	50 - 115
Radome material	Fiberglass
Radome colour	Light grey
Operational temperature (℃)	-40 .. +65
Wind load (N)	Frontal: 910 (at 150 km/h) Lateral: 470 (at 150 km/h) Rear side: 1200 (at 150 km/h)
Max. operational wind speed (km/h)	200
Survival wind speed (km/h)	250
Connector	4 x 4.3-10 Female
Connector position	Bottom



Accessories

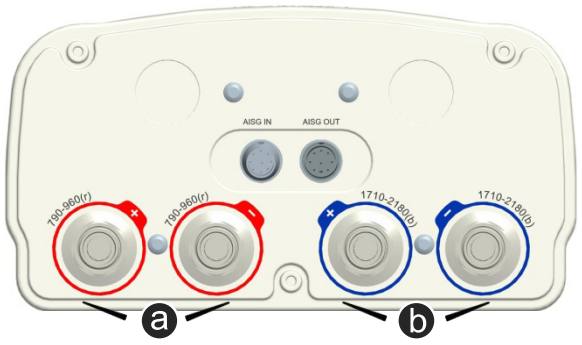
Item	Model	Description	Weight	Units per antenna
Downtilt kit	ASMDT0C01	Mechanical downtilt: 0 - 8 °	2.1 kg	1 (Separate packing)

Integrated RET Specifications

Properties								
RET type	Integrated RET							
RET protocols*	AISG 2.0 / 3GPP							
Input voltage range (V)	10 - 30 DC							
Power consumption (W)	< 10 (motor activated) < 0.5 (stand by)							
Adjustment time (full range) (s)	< 37 (typically, depending on antenna type)							
RET connector	2 x 8 pin connector according to IEC 60130-9 Daisy chain in: Male / Daisy chain out: Female							
Pin assignment according AISG	1	2	3	4	5	6	7	8
	DC	n/c	RS-485B	n/c	RS-485A	DC	DC return	n/c
Lightning protection (kA)	3 (10/350 µs) 10 (8/20 µs)							

* Please confirm the AISG protocol of primary station is compatible with RET antenna protocol interface. The protocol of RET antenna software interface is switchable between AISG 2.0/3GPP and AISG 1.1 with a vendor defined command. For more details about protocol switching function, contact Huawei before system installation.

Standards: EN 60950-1 (Safety), EN 55022 (Emission), EN 55024 (Immunity), ETSI EN 301 489, FCC part15
Certification: CE, FCC, RoHS, WEEE

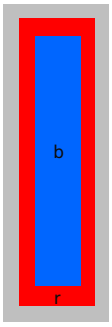


Integrated RET S/N:

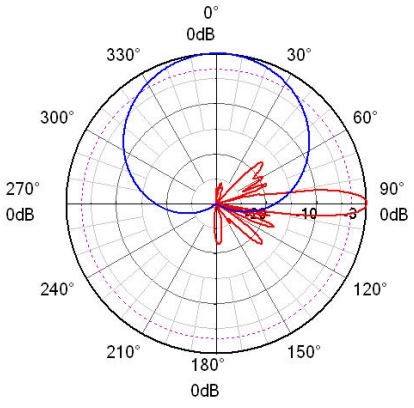
ⓐ HWMxxx...r

ⓑ HWMxxx...b

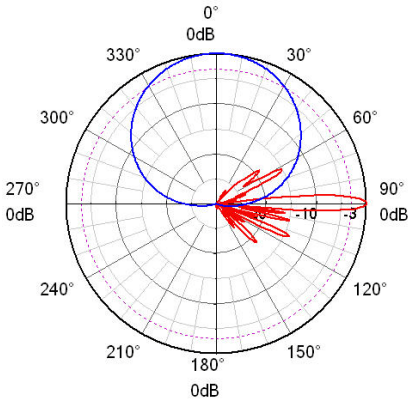
r - Red b - Blue



Pattern sample for reference



790 - 960 MHz



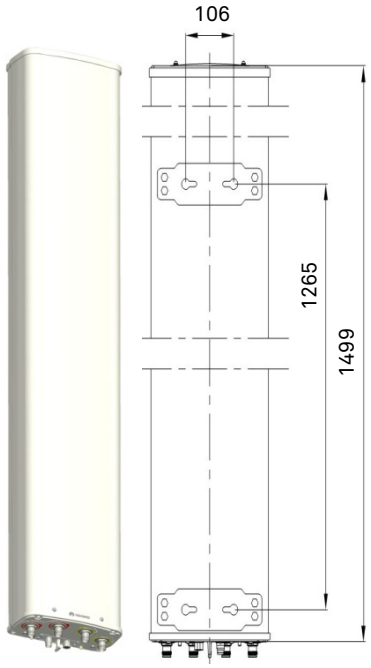
1710 - 2180 MHz

Antenna Specifications

Electrical Properties								
Frequency range (MHz)		790 - 960			1710 - 2690			
		790 - 862	824 - 894	880 - 960	1710 - 1990	1920 - 2200	2200 - 2490	2490 - 2690
Polarization		+45° , -45°						
Electrical downtilt (°)		0 - 15 , continuously adjustable			2 - 12 , continuously adjustable			
Gain (dBi)	at mid Tilt	14.5	14.6	14.7	16.8	17.2	17.4	18.1
	over all Tilts	14.5 ±0.3	14.6 ±0.4	14.7 ±0.4	16.7 ±0.5	17.1 ±0.5	17.4 ±0.5	17.9 ±0.5
Side lobe suppression for first side lobe above main beam (dB)		> 18	> 18	> 17	> 17	> 18	> 18	> 18
Horizontal 3dB beam width (°)		66 ±4	64 ±3	62 ±3	60 ±5	62 ±5	60 ±5	60 ±5
Vertical 3dB beam width (°)		14.0 ±0.7	13.3 ±0.6	12.3 ±0.7	7.2 ±0.7	6.5 ±0.6	5.7 ±0.5	5.3 ±0.3
VSWR		< 1.5						
Cross polar isolation (dB)		≥ 28			≥ 28			
Interband isolation (dB)		≥ 28						
Front to back ratio , ±30° (dB)		> 26	> 26	> 25	> 26	> 28	> 28	> 29
Cross polar ratio (dB)	0°	> 26	> 23	> 20	> 25	> 26	> 24	> 21
Max. power per input (W)		500 (at 50℃ ambient temperature)			250 (at 50℃ ambient temperature)			
Intermodulation IM3 (dBc)		≤ -153 (2 x 43 dBm carrier)						
Impedance (Ω)		50						
Grounding		DC Ground						

1. Values based on NGMN recommendations on Base Station Antenna Standards (BASTA).
2. Electrical datasheet in XML format is available.

Mechanical Properties	
Antenna dimensions (H x W x D) (mm)	1499 x 259 x 135
Packing dimensions (H x W x D) (mm)	1835 x 360 x 225
Antenna weight (kg)	16.5
Clamps weight (kg)	3.0 (2 units)
Antenna packing weight (kg)	25.5 (Included clamps)
Mast diameter supported (mm)	50 - 115
Radome material	Fiberglass
Radome colour	Light grey
Operational temperature (℃)	-40 .. +65
Wind load (N)	Frontal: 495 (at 150 km/h) Lateral: 225 (at 150 km/h) Rear side: 615 (at 150 km/h)
Max. operational wind speed (km/h)	200
Survival wind speed (km/h)	250
Connector	4 x 4.3-10 Female
Connector position	Bottom



Accessories

Item	Model	Description	Weight	Units per antenna
Downtilt kit	ASMDT0C01	Mechanical downtilt: 0 - 16 °	2.1 kg	1 (Separate packing)

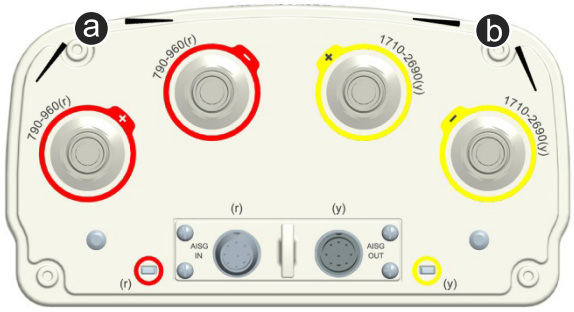
Integrated RET Specifications

Properties								
RET type	Integrated RET							
RET protocols*	AISG 2.0 / 3GPP							
Input voltage range (V)	10 - 30 DC							
Power consumption (W)	< 5 (motor activated, 12V) < 0.5 (stand by, 12V)							
Adjustment time (full range) (s)	< 65 (typically, depending on antenna type)							
RET connector	2 x 8 pin connector according to IEC 60130-9 Daisy chain in: Male / Daisy chain out: Female							
Pin assignment according AISG	1	2	3	4	5	6	7	8
	DC	n/c	RS-485B	n/c	RS-485A	DC	DC return	n/c
Lightning protection (kA)	3 (10/350 μs) 10 (8/20 μs)							

* Please confirm the AISG protocol of primary station is compatible with RET antenna protocol interface. The protocol of RET antenna software interface is switchable between AISG 2.0/3GPP and AISG 1.1 with a vendor defined command. For more details about protocol switching function, contact Huawei before system installation.

Standards: UL 60950-1 (Safety), UL 60950-22 (Safety – Equipment installed outdoor), EN 55022 (Emission), EN 55024 (Immunity), ETSI EN 301 489, FCC Part15, ICES-003

Certification: CE, FCC, IC, RCM

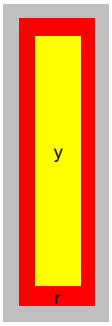


Integrated RET S/N:

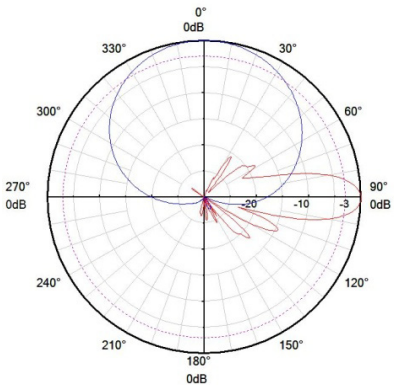
ⓐ HWMxxx.....r

ⓑ HWMxxx.....y

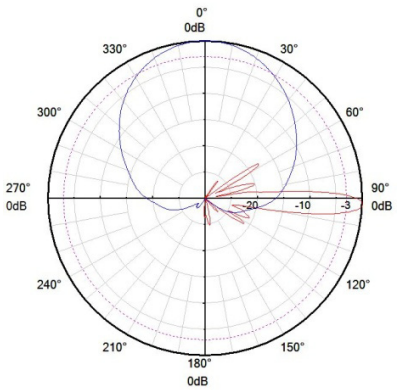
r - Red y - Yellow



Pattern sample for reference



790 - 960 MHz



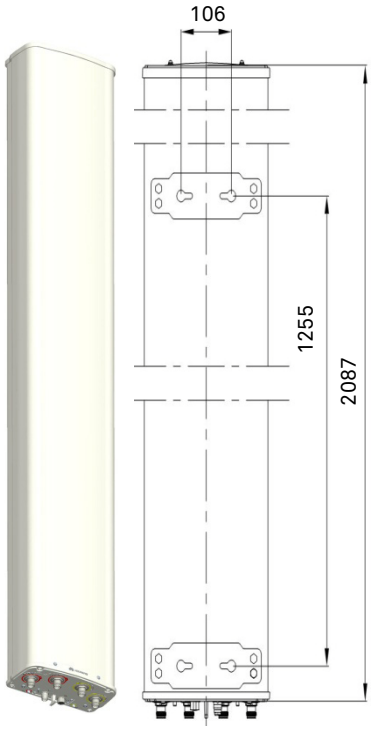
1710 - 2690MHz

Antenna Specifications

Electrical Properties								
Frequency range (MHz)		790 - 960			1710 - 2690			
		790 - 862	824 - 894	880 - 960	1710 - 1990	1920 - 2200	2200 - 2490	2490 - 2690
Polarization		+45°, -45°						
Electrical downtilt (°)		0 - 12, continuously adjustable			2 - 12, continuously adjustable			
Gain (dBi)	at mid Tilt	15.9	16.0	16.1	17.1	17.5	17.8	18.3
	over all Tilts	15.7 ±0.4	15.8 ±0.3	16.0 ±0.3	17.0 ±0.5	17.4 ±0.5	17.7 ±0.3	18.1 ±0.4
Side lobe suppression for first side lobe above main beam (dB)		> 18	> 18	> 18	> 17	> 17	> 17	> 17
Horizontal 3dB beam width (°)		66 ±1.6	64 ±1.5	63 ±2.1	63 ±4.8	61 ±4.0	60 ±2.2	60 ±4.0
Vertical 3dB beam width (°)		9.8 ±0.4	9.5 ±0.4	8.9 ±0.4	7.2 ±0.5	6.5 ±0.5	5.6 ±0.3	5.5 ±0.3
VSWR		< 1.5						
Cross polar isolation (dB)		≥ 28						
Interband isolation (dB)		≥ 28 (790 - 960 // 1710 - 2690 MHz)						
Front to back ratio, ±30° (dB)		> 25	> 25	> 25	> 24	> 25	> 25	> 26
Cross polar ratio (dB)	0°	> 20	> 20	> 20	> 20	> 20	> 20	> 20
Max. power per input (W)		500 (at 50℃ ambient temperature)			250 (at 50℃ ambient temperature)			
Intermodulation IM3 (dBc)		≤ -153 (2 x 43 dBm carrier)						
Impedance (Ω)		50						
Grounding		DC Ground						

1. Values based on NGMN recommendations on Base Station Antenna Standards (BASTA).
2. Electrical datasheet in XML format is available.

Mechanical Properties	
Antenna dimensions (H x W x D) (mm)	2087 x 259 x 135
Packing dimensions (H x W x D) (mm)	2380 x 315 x 220
Antenna weight (kg)	20.2
Clamps weight (kg)	3.0 (2 units)
Antenna packing weight (kg)	28.2 (Included clamps)
Mast diameter supported (mm)	50 - 115
Radome material	Fiberglass
Radome colour	Light grey
Operational temperature (℃)	-40 .. +65
Wind load (N)	Frontal: 725 (at 150 km/h) Lateral: 330 (at 150 km/h) Rear side: 900 (at 150 km/h)
Max. operational wind speed (km/h)	200
Survival wind speed (km/h)	250
Connector	4 x 4.3-10 Female
Connector position	Bottom



Accessories

Item	Model	Description	Weight	Units per antenna
Downtilt kit	ASMDT0C01	Mechanical downtilt: 0 - 12°	2.1 kg	1 (Separate packing)

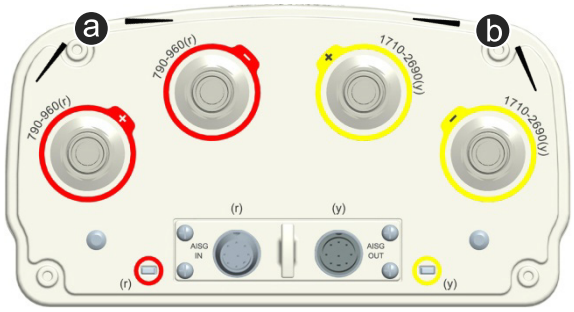
Integrated RET Specifications

Properties								
RET type	Integrated RET							
RET protocols*	AISG 2.0 / 3GPP							
Input voltage range (V)	10 - 30 DC							
Power consumption (W)	< 5 (motor activated, 12V) < 0.5 (stand by, 12V)							
Adjustment time (full range) (s)	< 65 (typically, depending on antenna type)							
RET connector	2 x 8 pin connector according to IEC 60130-9 Daisy chain in: Male / Daisy chain out: Female							
Pin assignment according AISG	1	2	3	4	5	6	7	8
	DC	n/c	RS-485B	n/c	RS-485A	DC	DC return	n/c
Lightning protection (kA)	3 (10/350 μs) 10 (8/20 μs)							

* Please confirm the AISG protocol of primary station is compatible with RET antenna protocol interface. The protocol of RET antenna software interface is switchable between AISG 2.0/3GPP and AISG 1.1 with a vendor defined command. For more details about protocol switching function, contact Huawei before system installation.

Standards: UL 60950-1 (Safety), UL 60950-22 (Safety – Equipment installed outdoor), EN 55022 (Emission), EN 55024 (Immunity), ETSI EN 301 489, FCC Part15, ICES-003

Certification: CE, FCC, IC, RCM

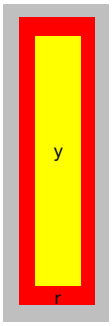


Integrated RET S/N:

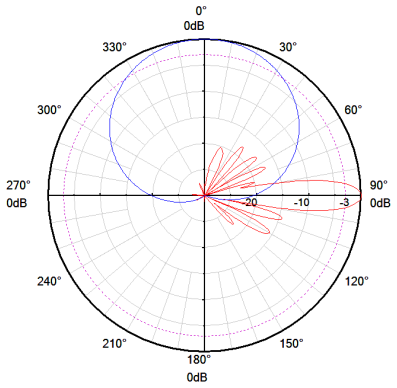
ⓐ HWMxxx.....r

ⓑ HWMxxx.....y

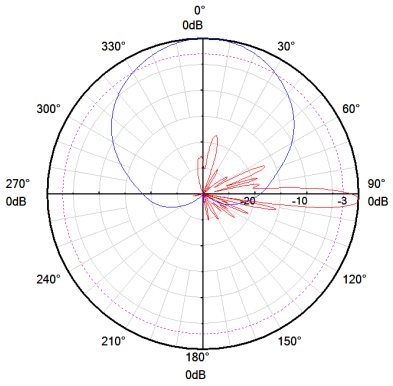
r - Red y - Yellow



Pattern sample for reference



790 - 960 MHz



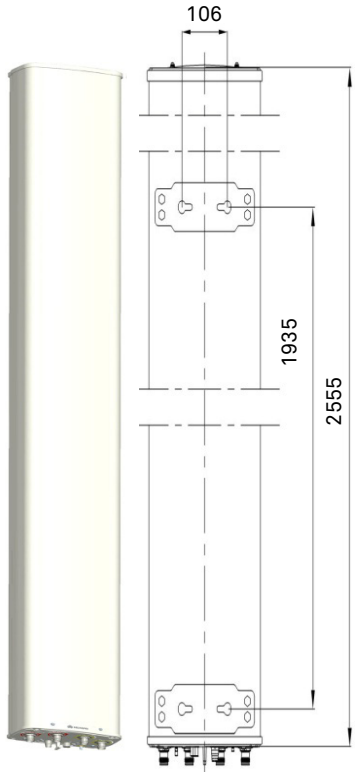
1710 - 2690 MHz

Antenna Specifications

Electrical Properties								
Frequency range (MHz)		790 - 960			1710 - 2690			
		790 - 862	824 - 894	880 - 960	1710 - 1990	1920 - 2200	2200 - 2490	2490 - 2690
Polarization		+45° , -45°						
Electrical downtilt (°)		0 - 10 , continuously adjustable			2 - 12 , continuously adjustable			
Gain (dBi)	at mid Tilt	16.7	17.1	17.3	17.1	17.5	17.8	18.3
	over all Tilts	16.6 ±0.4	17.0 ±0.4	17.2 ±0.4	17.0 ±0.5	17.4 ±0.5	17.7 ±0.3	18.1 ±0.4
Side lobe suppression for first side lobe above main beam (dB)		> 18	> 18	> 18	> 17	> 17	> 17	> 17
Horizontal 3dB beam width (°)		66 ±2.5	64 ±2.3	63 ±2.0	63 ±4.8	61 ±4.0	60 ±2.2	60 ±4.0
Vertical 3dB beam width (°)		8.3 ±0.4	7.9 ±0.4	7.3 ±0.4	7.2 ±0.5	6.5 ±0.5	5.6 ±0.3	5.5 ±0.3
VSWR		< 1.5						
Cross polar isolation (dB)		≥ 28						
Interband isolation (dB)		≥ 28 (790 - 960 // 1710 - 2690 MHz)						
Front to back ratio, ±30° (dB)		> 25	> 25	> 26	> 24	> 25	> 25	> 26
Cross polar ratio (dB)	0°	> 20	> 20	> 20	> 20	> 20	> 20	> 20
Max. power per input (W)		500 (at 50℃ ambient temperature)			250 (at 50℃ ambient temperature)			
Intermodulation IM3 (dBc)		≤ -153 (2 x 43 dBm carrier)						
Impedance (Ω)		50						
Grounding		DC Ground						

1. Values based on NGMN recommendations on Base Station Antenna Standards (BASTA).
2. Electrical datasheet in XML format is available.

Mechanical Properties	
Antenna dimensions (H x W x D) (mm)	2555 x 259 x 135
Packing dimensions (H x W x D) (mm)	2970 x 315 x 220
Antenna weight (kg)	23.0
Clamps weight (kg)	3.6 (2 units)
Antenna packing weight (kg)	33.2 (Included clamps)
Mast diameter supported (mm)	50 - 115
Radome material	Fiberglass
Radome colour	Light grey
Operational temperature (℃)	-40 .. +65
Wind load (N)	Frontal: 915 (at 150 km/h) Lateral: 415 (at 150 km/h) Rear side: 1135 (at 150 km/h)
Max. operational wind speed (km/h)	200
Survival wind speed (km/h)	250
Connector	4 x 4.3-10 Female
Connector position	Bottom



Accessories

Item	Model	Description	Weight	Units per antenna
Downtilt kit	ASMDT0D01	Mechanical downtilt: 0 - 8 °	2.1 kg	1 (Separate packing)

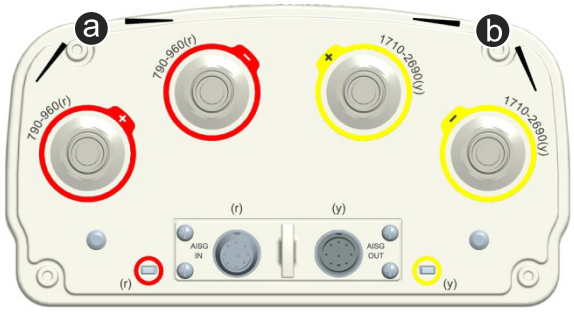
Integrated RET Specifications

Properties								
RET type	Integrated RET							
RET protocols*	AISG 2.0 / 3GPP							
Input voltage range (V)	10 - 30 DC							
Power consumption (W)	< 5 (motor activated, 12V) < 0.5 (stand by, 12V)							
Adjustment time (full range) (s)	< 65 (typically, depending on antenna type)							
RET connector	2 x 8 pin connector according to IEC 60130-9 Daisy chain in: Male / Daisy chain out: Female							
Pin assignment according AISG	1	2	3	4	5	6	7	8
	DC	n/c	RS-485B	n/c	RS-485A	DC	DC return	n/c
Lightning protection (kA)	3 (10/350 μs) 10 (8/20 μs)							

* Please confirm the AISG protocol of primary station is compatible with RET antenna protocol interface. The protocol of RET antenna software interface is switchable between AISG 2.0/3GPP and AISG 1.1 with a vendor defined command. For more details about protocol switching function, contact Huawei before system installation.

Standards: UL 60950-1 (Safety), UL 60950-22 (Safety – Equipment installed outdoor), EN 55022 (Emission), EN 55024 (Immunity), ETSI EN 301 489, FCC Part15, ICES-003

Certification: CE, FCC, IC, RCM

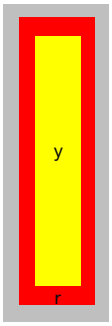


Integrated RET S/N:

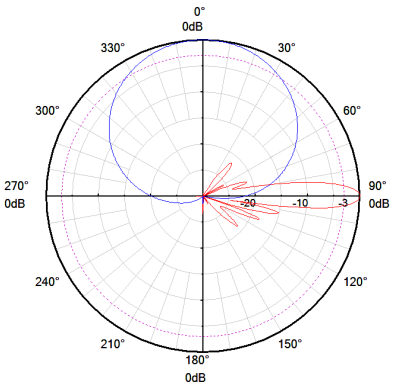
ⓐ HWMxxx.....r

ⓑ HWMxxx.....y

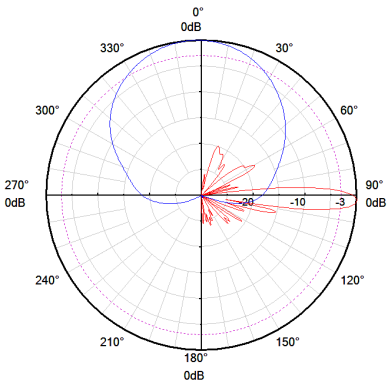
r - Red y - Yellow



Pattern sample for reference



790 - 960 MHz



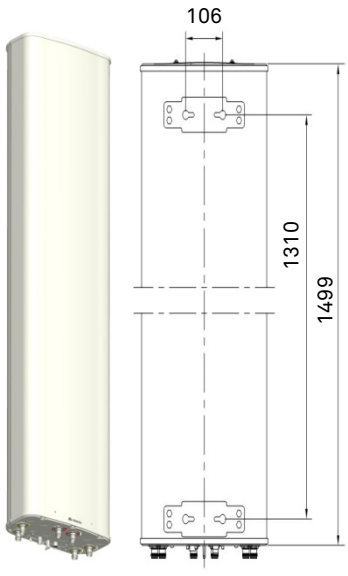
1710 - 2690 MHz

Antenna Specifications

Electrical Properties									
Frequency range (MHz)		690 - 960				2 x (1695 - 2690)			
		690 - 803	790 - 862	824 - 894	880 - 960	1695 - 1990	1920 - 2200	2200 - 2490	2490 - 2690
Polarization		+45°, -45°							
Electrical downtilt (°)		0 - 14, continuously adjustable				0 - 10, continuously adjustable, each band separately			
Gain (dBi)	at mid Tilt	14.4	14.5	14.7	15.1	17.5	17.8	18.2	18.3
	over all Tilts	14.3 ±0.5	14.5 ±0.5	14.8 ±0.5	15.0 ±0.5	17.3 ±0.6	17.7 ±0.5	18.1 ±0.6	18.2 ±0.5
Side lobe suppression for first side lobe above main beam (dB)		> 16	> 17	> 17	> 17	> 19	> 19	> 19	> 19
Horizontal 3dB beam width (°)		65 ±2.5	64 ±2.0	64 ±2.0	64 ±3.2	65 ±3.9	63 ±3.3	62 ±4.8	60 ±4.5
Vertical 3dB beam width (°)		15.6 ±1.2	13.7 ±0.9	13.1 ±0.8	12.2 ±0.8	7.1 ±0.6	6.5 ±0.5	5.8 ±0.5	5.2 ±0.3
VSWR		< 1.5							
Cross polar isolation (dB)		≥ 28							
Interband isolation (dB)		≥ 30							
Front to back ratio, ±30° (dB)		> 23	> 24	> 24	> 23	> 25	> 27	> 26	> 25
Cross polar ratio (dB)	0°	> 19	> 20	> 20	> 22	> 18	> 19	> 20	> 19
Max. power per input (W)		500 (at 50℃ ambient temperature)				250 (at 50℃ ambient temperature)			
Intermodulation IM3 (dBc)		≤ -153 (2 x 43 dBm carrier)							
Impedance (Ω)		50							
Grounding		DC Ground							

1. Values based on NGMN recommendations on Base Station Antenna Standards (BASTA).
2. Electrical datasheet in XML format is available.

Mechanical Properties	
Antenna dimensions (H x W x D) (mm)	1499 x 349 x 166
Packing dimensions (H x W x D) (mm)	1880 x 425 x 250
Antenna weight (kg)	19.7
Clamps weight (kg)	3.6 (2 units)
Antenna packing weight (kg)	28.9 (included clamps)
Mast diameter supported (mm)	50 - 115
Radome material	Fiberglass
Radome colour	Light grey
Operational temperature (℃)	-40 .. +65
Wind load (N)	Frontal: 510 (at 150 km/h) Lateral: 165 (at 150 km/h) Rear side: 530 (at 150 km/h)
Max. operational wind speed (km/h)	200
Survival wind speed (km/h)	250
Connector	6 x 4.3-10 Female
Connector position	Bottom



Accessories

Item	Model	Description	Weight	Units per antenna
Downtilt kit	ASMDT0D01	Mechanical downtilt: 0 - 16°	2.1 kg	1 (Separate packing)

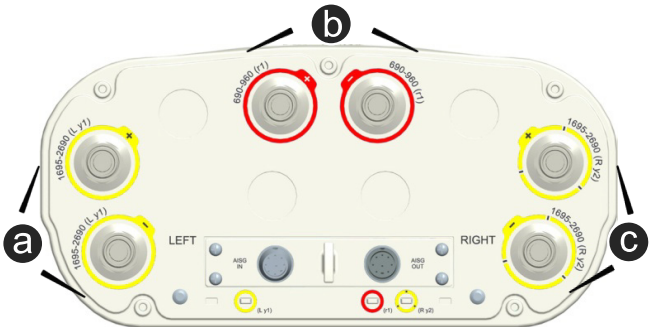
Integrated RET Specifications

Properties								
RET type	Integrated RET							
RET protocols*	AISG 2.0 / 3GPP							
Input voltage range (V)	10 - 30 DC							
Power consumption (W)	< 6 (motor activated, 12V) < 1.5 (stand by, 12V)							
Adjustment time (full range) (s)	< 65 (typically, depending on antenna type)							
RET connector	2 x 8 pin connector according to IEC 60130-9 Daisy chain in: Male / Daisy chain out: Female							
Pin assignment according AISG	1	2	3	4	5	6	7	8
	DC	n/c	RS-485B	n/c	RS-485A	DC	DC return	n/c
Lightning protection (kA)	3 (10/350 µs) 10 (8/20 µs)							

* Please confirm the AISG protocol of primary station is compatible with RET antenna protocol interface. The protocol of RET antenna software interface is switchable between AISG 2.0/3GPP and AISG 1.1 with a vendor defined command. For more details about protocol switching function, contact Huawei before system installation.

Standards: UL 60950-1 (Safety), UL 60950-22 (Safety – Equipment installed outdoor), EN 55022 (Emission), EN 55024 (Immunity), ETSI EN 301 489, FCC Part15, ICES-003

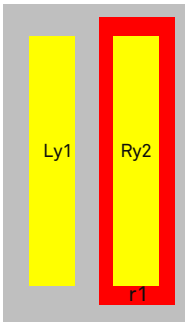
Certification: CE, FCC, IC, RCM



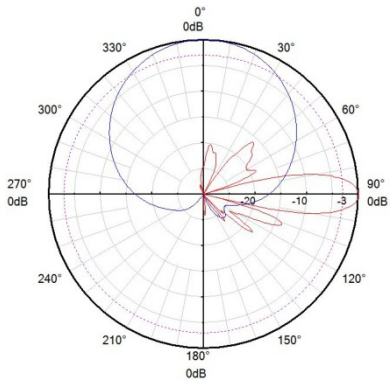
Integrated RET S/N:

- a HWMxxx.....Ly1
- b HWMxxx.....r1
- c HWMxxx.....Ry2

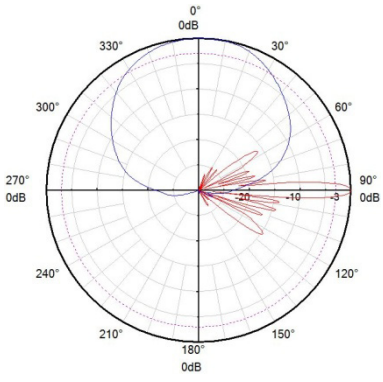
r - Red y - Yellow
L - Left array R - Right array



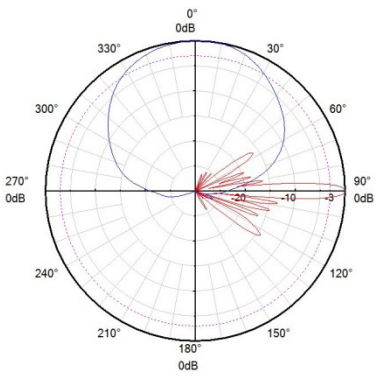
Pattern sample for reference



690 - 960 MHz



1695 - 2690 MHz
(Left)



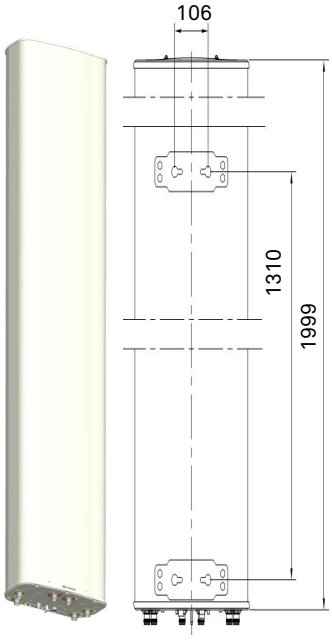
1695 - 2690 MHz
(Right)

Antenna Specifications

Electrical Properties									
Frequency range (MHz)		690 - 960				2 x (1695 - 2690)			
		690 - 803	790 - 862	824 - 894	880 - 960	1695 - 1990	1920 - 2200	2200 - 2490	2490 - 2690
Polarization		+45°, -45°							
Electrical downtilt (°)		0 - 10, continuously adjustable				0 - 10, continuously adjustable, each band separately			
Gain (dBi)	at mid Tilt	15.5	15.9	16.0	16.1	17.1	17.5	17.8	18.3
	over all Tilts	15.5 ±0.5	15.8 ±0.5	15.8 ±0.5	16.0 ±0.6	17.1 ±0.5	17.5 ±0.4	17.8 ±0.5	18.2 ±0.4
Side lobe suppression for first side lobe above main beam (dB)		> 18	> 18	> 18	> 18	> 19	> 19	> 19	> 19
Horizontal 3dB beam width (°)		65 ±1.7	65 ±1.4	65 ±1.7	65 ±2.4	65 ±4.3	64 ±3.2	63 ±4.4	62 ±4.1
Vertical 3dB beam width (°)		10.3 ±0.7	9.5 ±0.5	9.2 ±0.6	8.6 ±0.5	7.1 ±0.5	6.5 ±0.5	5.8 ±0.4	5.3 ±0.2
VSWR		< 1.5							
Cross polar isolation (dB)		≥ 28							
Interband isolation (dB)		≥ 30							
Front to back ratio, ±30° (dB)		> 25	> 25	> 25	> 25	> 25	> 27	> 26	> 25
Cross polar ratio (dB)	0°	> 18	> 18	> 18	> 18	> 18	> 18	> 17	> 17
Max. power per input (W)		500 (at 50℃ ambient temperature)				250 (at 50℃ ambient temperature)			
Intermodulation IM3 (dBc)		≤ -153 (2 x 43 dBm carrier)							
Impedance (Ω)		50							
Grounding		DC Ground							

1. Values based on NGMN recommendations on Base Station Antenna Standards (BASTA).
2. Electrical datasheet in XML format is available.

Mechanical Properties	
Antenna dimensions (H x W x D) (mm)	1999 x 349 x 166
Packing dimensions (H x W x D) (mm)	2350 x 415 x 240
Antenna weight (kg)	23.4
Clamps weight (kg)	3.6 (2 units)
Antenna packing weight (kg)	35.7 (included clamps)
Mast diameter supported (mm)	50 - 115
Radome material	Fiberglass
Radome colour	Light grey
Operational temperature (℃)	-40 .. +65
Wind load (N)	Frontal: 705 (at 150 km/h) Lateral: 230 (at 150 km/h) Rear side: 730 (at 150 km/h)
Max. operational wind speed (km/h)	200
Survival wind speed (km/h)	250
Connector	6 x 4.3-10 Female
Connector position	Bottom



Accessories

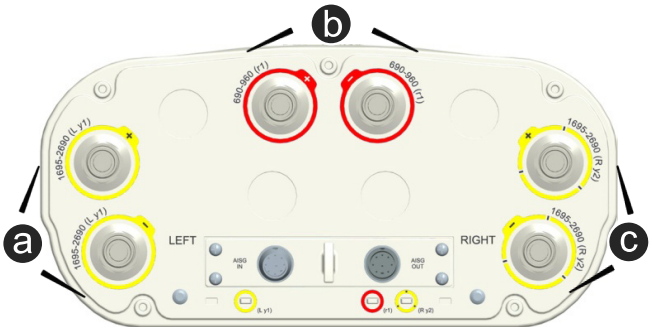
Item	Model	Description	Weight	Units per antenna
Downtilt kit	ASMDT0D01	Mechanical downtilt: 0 - 12 °	2.1 kg	1 (Separate packing)

Integrated RET Specifications

Properties								
RET type	Integrated RET							
RET protocols*	AISG 2.0 / 3GPP							
Input voltage range (V)	10 - 30 DC							
Power consumption (W)	< 6 (motor activated, 12V) < 1.5 (stand by, 12V)							
Adjustment time (full range) (s)	< 65 (typically, depending on antenna type)							
RET connector	2 x 8 pin connector according to IEC 60130-9 Daisy chain in: Male / Daisy chain out: Female							
Pin assignment according AISG	1	2	3	4	5	6	7	8
	DC	n/c	RS-485B	n/c	RS-485A	DC	DC return	n/c
Lightning protection (kA)	3 (10/350 μs) 10 (8/20 μs)							

* Please confirm the AISG protocol of primary station is compatible with RET antenna protocol interface. The protocol of RET antenna software interface is switchable between AISG 2.0/3GPP and AISG 1.1 with a vendor defined command. For more details about protocol switching function, contact Huawei before system installation.

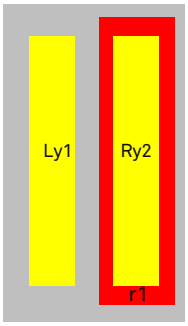
Standards: UL 60950-1 (Safety), UL 60950-22 (Safety – Equipment installed outdoor), EN 55022 (Emission), EN 55024 (Immunity), ETSI EN 301 489, FCC Part15, ICES-003
Certification: CE, FCC, IC, RCM



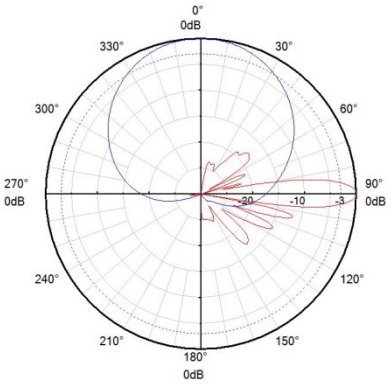
Integrated RET S/N:

- a HWMxxx.....Ly1
- b HWMxxx.....r1
- c HWMxxx.....Ry2

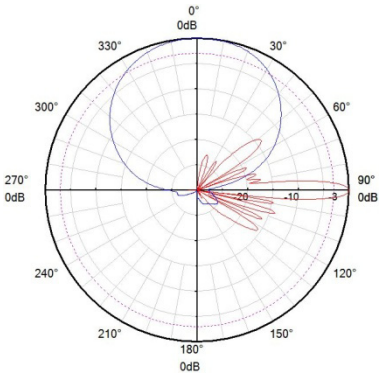
r - Red y - Yellow
L - Left array R - Right array



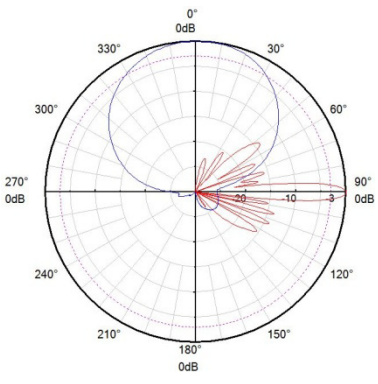
Pattern sample for reference



790 - 960 MHz



1710 - 2690 MHz
(Left)



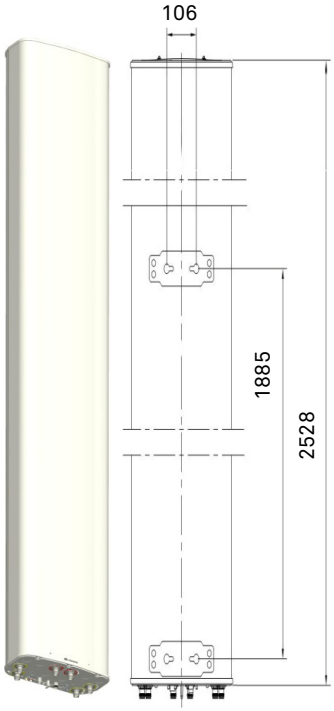
1710 - 2690 MHz
(Right)

Antenna Specifications

Electrical Properties									
Frequency range (MHz)		690 - 960				2 x (1695 - 2690)			
		690 - 803	790 - 862	824 - 894	880 - 960	1695 - 1990	1920 - 2200	2200 - 2490	2490 - 2690
Polarization		+45°, -45°							
Electrical downtilt (°)		0 - 10, continuously adjustable				0 - 10, continuously adjustable, each band separately			
Gain (dBi)	at mid Tilt	16.5	16.7	16.8	17.0	17.1	17.5	17.8	18.2
	over all Tilts	16.4 ±0.4	16.6 ±0.3	16.7 ±0.2	16.8 ±0.4	17.1 ±0.5	17.5 ±0.4	17.8 ±0.5	18.2 ±0.3
Side lobe suppression for first side lobe above main beam (dB)		> 17	> 17	> 17	> 17	> 19	> 19	> 19	> 19
Horizontal 3dB beam width (°)		66 ±1.3	66 ±1.4	65 ±1.3	65 ±1.9	65 ±4.6	64 ±4.1	63 ±3.4	62 ±4.1
Vertical 3dB beam width (°)		9.0 ±0.6	8.3 ±0.4	7.5 ±0.4	7.2 ±0.4	7.1 ±0.5	6.5 ±0.5	5.8 ±0.3	5.3 ±0.2
VSWR		< 1.5							
Cross polar isolation (dB)		≥ 28							
Interband isolation (dB)		≥ 30							
Front to back ratio, ±30° (dB)		> 25	> 26	> 27	> 26	> 25	> 27	> 26	> 25
Cross polar ratio (dB)	0°	> 18	> 18	> 18	> 18	> 18	> 18	> 18	> 18
Max. power per input (W)		500 (at 50℃ ambient temperature)				250 (at 50℃ ambient temperature)			
Intermodulation IM3 (dBc)		≤ -153 (2 x 43 dBm carrier)							
Impedance (Ω)		50							
Grounding		DC Ground							

1. Values based on NGMN recommendations on Base Station Antenna Standards (BASTA).
2. Electrical datasheet in XML format is available.

Mechanical Properties	
Antenna dimensions (H x W x D) (mm)	2528 x 349 x 166
Packing dimensions (H x W x D) (mm)	2880 x 415 x 245
Antenna weight (kg)	27.4
Clamps weight (kg)	3.6 (2 units)
Antenna packing weight (kg)	43.1 (included clamps)
Mast diameter supported (mm)	50 - 115
Radome material	Fiberglass
Radome colour	Light grey
Operational temperature (℃)	-40 .. +65
Wind load (N)	Frontal: 920 (at 150 km/h) Lateral: 305 (at 150 km/h) Rear side: 955 (at 150 km/h)
Max. operational wind speed (km/h)	200
Survival wind speed (km/h)	250
Connector	6 x 4.3-10 Female
Connector position	Bottom



Accessories

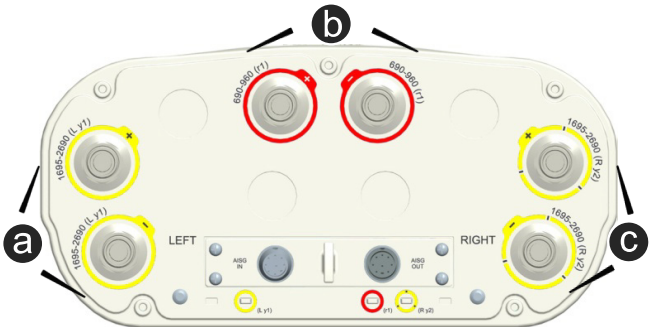
Item	Model	Description	Weight	Units per antenna
Downtilt kit	ASMDT0D01	Mechanical downtilt: 0 - 8 °	2.1 kg	1 (Separate packing)

Integrated RET Specifications

Properties								
RET type	Integrated RET							
RET protocols*	AISG 2.0 / 3GPP							
Input voltage range (V)	10 - 30 DC							
Power consumption (W)	< 6 (motor activated, 12V) < 1.5 (stand by, 12V)							
Adjustment time (full range) (s)	< 65 (typically, depending on antenna type)							
RET connector	2 x 8 pin connector according to IEC 60130-9 Daisy chain in: Male / Daisy chain out: Female							
Pin assignment according AISG	1	2	3	4	5	6	7	8
	DC	n/c	RS-485B	n/c	RS-485A	DC	DC return	n/c
Lightning protection (kA)	3 (10/350 μs) 10 (8/20 μs)							

* Please confirm the AISG protocol of primary station is compatible with RET antenna protocol interface. The protocol of RET antenna software interface is switchable between AISG 2.0/3GPP and AISG 1.1 with a vendor defined command. For more details about protocol switching function, contact Huawei before system installation.

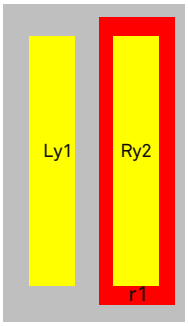
Standards: UL 60950-1 (Safety), UL 60950-22 (Safety – Equipment installed outdoor), EN 55022 (Emission), EN 55024 (Immunity), ETSI EN 301 489, FCC Part15, ICES-003
Certification: CE, FCC, IC, RCM



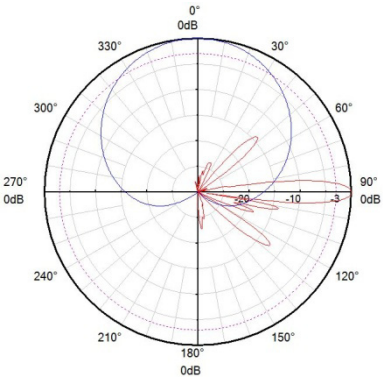
Integrated RET S/N:

- a HWMxxx.....Ly1
- b HWMxxx.....r1
- c HWMxxx.....Ry2

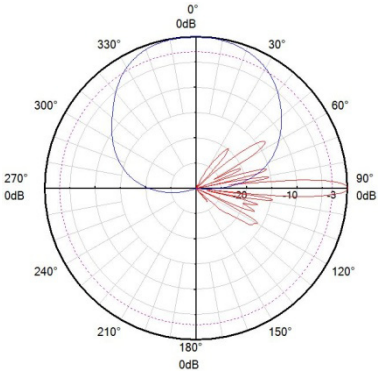
r - Red y - Yellow
L - Left array R - Right array



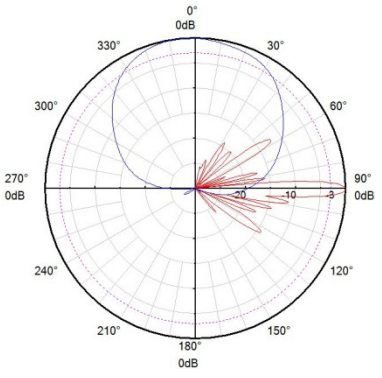
Pattern sample for reference



690 - 960 MHz



1710 - 2690 MHz
(Left)



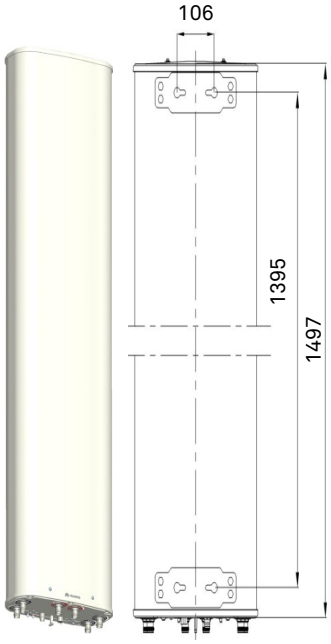
1710 - 2690 MHz
(Right)

Antenna Specifications

Electrical Properties							
Frequency range (MHz)		790 - 960			2 x (1710 - 2180)		
		790 - 862	824 - 894	880 - 960	1710 - 1880	1850 - 1990	1920 - 2180
Polarization		+45° , -45°					
Electrical downtilt (°)		0 - 14 , continuously adjustable			0 - 10 , continuously adjustable , each band separately		
Gain (dBi)	at mid Tilt	14.5	15.0	15.0	17.1	17.3	17.4
	over all Tilts	14.5 ±0.5	14.8 ±0.4	15.1 ±0.5	16.9 ±0.4	17.2 ±0.4	17.2 ±0.4
Side lobe suppression for first side lobe above main beam (dB)		> 17	> 17	> 16	> 16	> 16	> 16
Horizontal 3dB beam width (°)		66 ±3.0	64 ±3.0	62 ±3.0	66 ±4.0	64 ±4.0	63±4.0
Vertical 3dB beam width (°)		15.2 ±0.8	14.8 ±0.8	13.7 ±0.8	7.2 ±0.5	7.0 ±0.3	6.6 ±0.4
VSWR		< 1.5					
Cross polar isolation (dB)		≥ 30					
Interband isolation (dB)		≥ 30 (790 - 960 // 1710 - 2180 MHz) ≥ 30 (1710 - 2180 // 1710 - 2180 MHz)					
Front to back ratio, ±30° (dB)		> 24	> 24	> 25	> 26	> 26	> 26
Cross polar ratio (dB)	0°	> 20	> 20	> 20	> 18	> 18	> 18
Max. power per input (W)		500 (at 50℃ ambient temperature)			300 (at 50℃ ambient temperature)		
Intermodulation IM3 (dBc)		≤ -153 (2 x 43 dBm carrier)					
Impedance (Ω)		50					
Grounding		DC Ground					

1. Values based on NGMN recommendations on Base Station Antenna Standards (BASTA).
2. Electrical datasheet in XML format is available.

Mechanical Properties	
Antenna dimensions (H x W x D) (mm)	1497 x 349 x 166
Packing dimensions (H x W x D) (mm)	1825 x 415 x 240
Antenna weight (kg)	19.7
Clamps weight (kg)	3.0 (2 units)
Antenna packing weight (kg)	28.9 (Included clamps)
Mast diameter supported (mm)	50 - 115
Radome material	Fiberglass
Radome colour	Light grey
Operational temperature (℃)	-40 .. +65
Wind load (N)	Frontal: 505 (at 150 km/h) Lateral: 165 (at 150 km/h) Rear side: 540 (at 150 km/h)
Max. operational wind speed (km/h)	200
Survival wind speed (km/h)	250
Connector	6 x 4.3-10 Female
Connector position	Bottom



Accessories

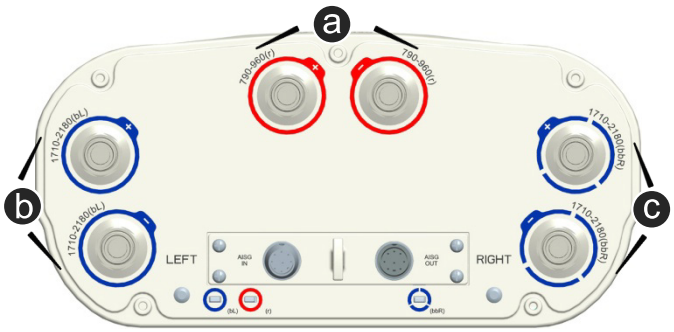
Item	Model	Description	Weight	Units per antenna
Downtilt kit	ASMDT0C01	Mechanical downtilt: 0 - 16 °	2.1 kg	1 (Separate packing)

Integrated RET Specifications

Properties								
RET type	Integrated RET							
RET protocols*	AISG 2.0 / 3GPP							
Input voltage range (V)	10 - 30 DC							
Power consumption (W)	< 6 (motor activated, 12V) < 1.5 (stand by, 12V)							
Adjustment time (full range) (s)	< 65 (typically, depending on antenna type)							
RET connector	2 x 8 pin connector according to IEC 60130-9 Daisy chain in: Male / Daisy chain out: Female							
Pin assignment according AISG	1	2	3	4	5	6	7	8
	DC	n/c	RS-485B	n/c	RS-485A	DC	DC return	n/c
Lightning protection (kA)	3 (10/350 μs) 10 (8/20 μs)							

* Please confirm the AISG protocol of primary station is compatible with RET antenna protocol interface. The protocol of RET antenna software interface is switchable between AISG 2.0/3GPP and AISG 1.1 with a vendor defined command. For more details about protocol switching function, contact Huawei before system installation.

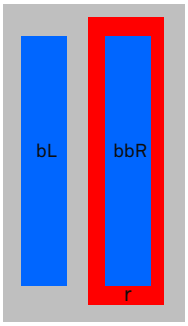
Standards: UL 60950-1 (Safety), UL 60950-22 (Safety – Equipment installed outdoor), EN 55022 (Emission), EN 55024 (Immunity), ETSI EN 301 489, FCC Part15, ICES-003
Certification: CE, FCC, IC, RCM



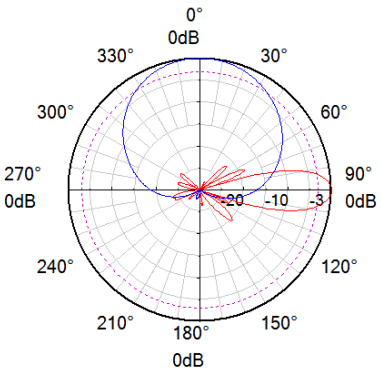
Integrated RET S/N:

- a HWMxxx……r
- b HWMxxx….bL
- c HWMxxx..bbR

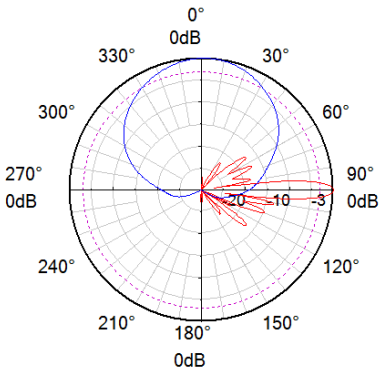
r - Red b - Blue
L - Left array R - Right array



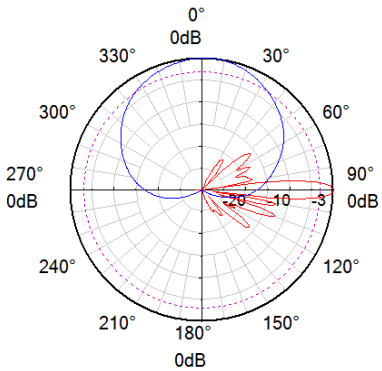
Pattern sample for reference



790 - 960 MHz



1710 - 2180 MHz
(Left)



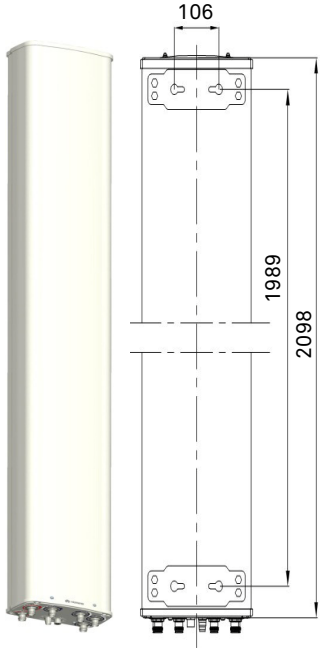
1710 - 2180 MHz
(Right)

Antenna Specifications

Electrical Properties								
Frequency range (MHz)			790 - 960			2 x (1710 - 2180)		
			790 - 862	824 - 894	880 - 960	1710 - 1880	1850 - 1990	1920 - 2180
Polarization			+45°, -45°					
Electrical downtilt (°)			0 - 12, continuously adjustable, each band separately					
Gain (dBi)		at mid Tilt	16.0	16.3	16.2			
		over all Tilts	15.9 ±0.5	16.0 ±0.4	16.1 ±0.4			
	Bottom	at mid Tilt				16.2	16.4	16.5
	Bottom	over all Tilts				16.0 ±0.4	16.2 ±0.4	16.3 ±0.4
	Top	at mid Tilt				16.0	16.4	16.5
	Top	over all Tilts				15.8 ±0.4	16.2 ±0.4	16.3 ±0.4
Side lobe suppression for first side lobe above main beam (dB)			> 18	> 19	> 19	> 17	> 18	> 17
Horizontal 3dB beam width (°)			69 ±2.0	66 ±2.0	65 ±3.0	64 ±4.0	60 ±5.0	60 ±5.0
Vertical 3dB beam width (°)			10.7 ±0.5	10.1 ±0.5	9.4 ±0.5	Bottom: 9.6 ±0.6	Bottom: 8.9 ±0.5	Bottom: 8.3 ±0.6
						Top: 8.5 ±0.6	Top: 8.0 ±0.5	Top: 7.5 ±0.6
VSWR			< 1.5					
Cross polar isolation (dB)			≥ 30					
Interband isolation (dB)			≥ 40 (790 - 960 // 1710 - 2180 MHz) ≥ 35 (1710 - 2180 // 1710 - 2180 MHz)					
Front to back ratio, ±30° (dB)			> 24	> 25	> 25	> 25	> 25	> 24
Cross polar ratio (dB)	0°		> 26	> 26	> 26	> 20	> 20	> 20
Max. power per input (W)			500 (at 50℃ ambient temperature)			300 (at 50℃ ambient temperature)		
Intermodulation IM3 (dBc)			≤ -153 (2 x 43 dBm carrier)					
Impedance (Ω)			50					
Grounding			DC Ground					

1. Values based on NGMN recommendations on Base Station Antenna Standards (BASTA).
2. Electrical datasheet in XML format is available.

Mechanical Properties	
Antenna dimensions (H x W x D) (mm)	2098 x 259 x 135
Packing dimensions (H x W x D) (mm)	2380 x 305 x 190
Antenna weight (kg)	20.2
Clamps weight (kg)	3.0 (2 units)
Antenna packing weight (kg)	29.4 (Included clamps)
Mast diameter supported (mm)	50 - 115
Radome material	Fiberglass
Radome colour	Light grey
Operational temperature (℃)	-40 .. +65
Wind load (N)	Frontal: 730 (at 150 km/h) Lateral: 380 (at 150 km/h) Rear side: 965 (at 150 km/h)
Max. operational wind speed (km/h)	200
Survival wind speed (km/h)	250
Connector	6 x 4.3-10 Female
Connector position	Bottom



Accessories

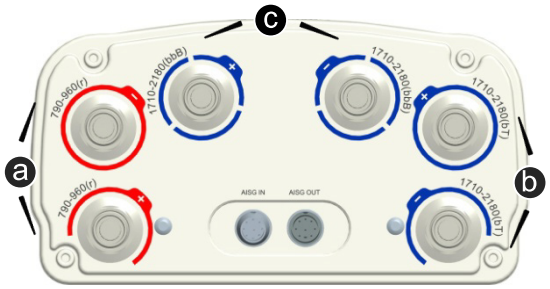
Item	Model	Description	Weight	Units per antenna
Downtilt kit	ASMDT0C01	Mechanical downtilt: 0 - 12 °	2.1 kg	1 (Separate packing)

Integrated RET Specifications

Properties								
RET type	Integrated RET							
RET protocols*	AISG 2.0 / 3GPP							
Input voltage range (V)	10 - 30 DC							
Power consumption (W)	< 10 (motor activated) < 0.5 (stand by)							
Adjustment time (full range) (s)	< 37 (typically, depending on antenna type)							
RET connector	2 x 8 pin connector according to IEC 60130-9 Daisy chain in: Male / Daisy chain out: Female							
Pin assignment according AISG	1	2	3	4	5	6	7	8
	DC	n/c	RS-485B	n/c	RS-485A	DC	DC return	n/c
Lightning protection (kA)	3 (10/350 μs) 10 (8/20 μs)							

* Please confirm the AISG protocol of primary station is compatible with RET antenna protocol interface. The protocol of RET antenna software interface is switchable between AISG 2.0/3GPP and AISG 1.1 with a vendor defined command. For more details about protocol switching function, contact Huawei before system installation.

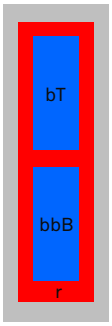
Standards: EN 60950-1 (Safety), EN 55022 (Emission), EN 55024 (Immunity), ETSI EN 301 489, FCC part15
Certification: CE, FCC, RoHS, WEEE



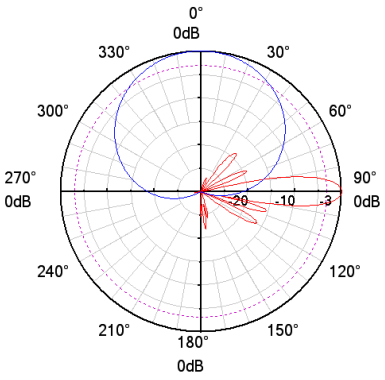
Integrated RET S/N:

- a HWMxxx.....r
- b HWMxxx.....bT
- c HWMxxx...bbB

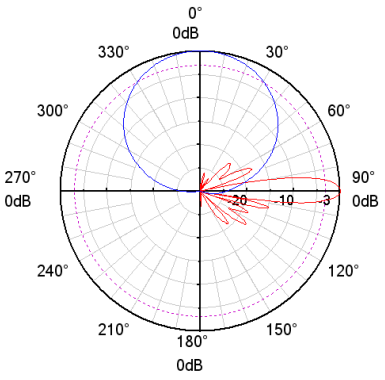
r - Red
T - Top array
b - Blue
B - Bottom array



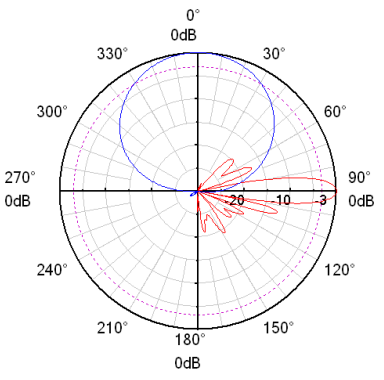
Pattern sample for reference



790 - 960MHz



1710 - 2180 MHz
(Bottom)



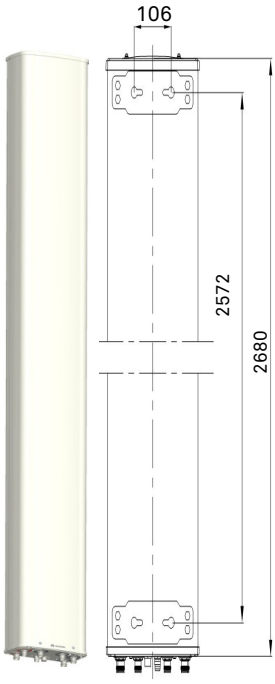
1710 - 2180 MHz
(Top)

Antenna Specifications

Electrical Properties								
Frequency range (MHz)			790 - 960			2 x (1710 - 2180)		
			790 - 862	824 - 894	880 - 960	1710 - 1880	1850 - 1990	1920 - 2180
Polarization			+45°, -45°					
Electrical downtilt (°)			0 - 10, continuously adjustable, each band separately					
Gain (dBi)		at mid Tilt	16.8	17.1	17.3			
		over all Tilts	16.7 ±0.4	16.9 ±0.4	17.1 ±0.4			
	Bottom	at mid Tilt				17.1	17.6	17.6
		over all Tilts				16.9 ±0.4	17.4 ±0.4	17.4 ±0.4
	Top	at mid Tilt				17.1	17.3	17.3
		over all Tilts				16.8 ±0.4	17.1 ±0.4	17.0 ±0.5
Side lobe suppression for first side lobe above main beam (dB)			> 19	> 19	> 19	> 18	> 16	> 15
Horizontal 3dB beam width (°)			69 ±2.0	66 ±2.0	65 ±3.0	63 ±4.0	62 ±3.0	60 ±4.0
Vertical 3dB beam width (°)			8.4 ±0.4	8.0 ±0.4	7.5 ±0.4	Bottom: 7.5 ±0.3	Bottom: 7.0 ±0.3	Bottom: 6.6 ±0.4
						Top: 7.0 ±0.3	Top: 6.5 ±0.3	Top: 6.1 ±0.4
VSWR			< 1.5					
Cross polar isolation (dB)			≥ 30					
Interband isolation (dB)			≥ 40 (790 - 960 // 1710 - 2180 MHz) ≥ 40 (1710 - 2180 // 1710 - 2180 MHz)					
Front to back ratio, ±30° (dB)			> 25	> 25	> 26	> 26	> 26	> 26
Cross polar ratio (dB)	0°		> 28	> 28	> 28	> 20	> 20	> 20
Max. power per input (W)			500 (at 50℃ ambient temperature)			300 (at 50℃ ambient temperature)		
Intermodulation IM3 (dBc)			≤ -153 (2 x 43 dBm carrier)					
Impedance (Ω)			50					
Grounding			DC Ground					

1. Values based on NGMN recommendations on Base Station Antenna Standards (BASTA).
2. Electrical datasheet in XML format is available.

Mechanical Properties	
Antenna dimensions (H x W x D) (mm)	2680 x 259 x 135
Packing dimensions (H x W x D) (mm)	2965 x 305 x 190
Antenna weight (kg)	24.5
Clamps weight (kg)	3.0 (2 units)
Antenna packing weight (kg)	32.5 (Included clamps)
Mast diameter supported (mm)	50 - 115
Radome material	Fiberglass
Radome colour	Light grey
Operational temperature (℃)	-40 .. +65
Wind load (N)	Frontal: 970 (at 150 km/h) Lateral: 500 (at 150 km/h) Rear side: 1285 (at 150 km/h)
Max. operational wind speed (km/h)	200
Survival wind speed (km/h)	250
Connector	6 x 4.3-10 Female
Connector position	Bottom



Accessories

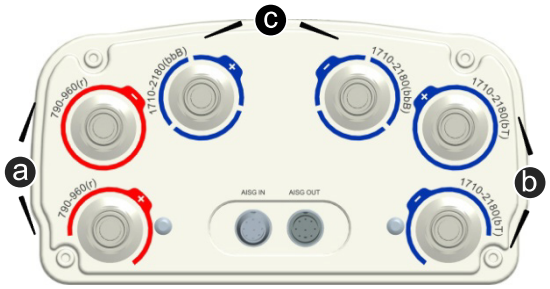
Item	Model	Description	Weight	Units per antenna
Downtilt kit	ASMDT0C01	Mechanical downtilt: 0 - 8 °	2.1 kg	1 (Separate packing)

Integrated RET Specifications

Properties								
RET type	Integrated RET							
RET protocols*	AISG 2.0 / 3GPP							
Input voltage range (V)	10 - 30 DC							
Power consumption (W)	< 10 (motor activated) < 0.5 (stand by)							
Adjustment time (full range) (s)	< 37 (typically, depending on antenna type)							
RET connector	2 x 8 pin connector according to IEC 60130-9 Daisy chain in: Male / Daisy chain out: Female							
Pin assignment according AISG	1	2	3	4	5	6	7	8
	DC	n/c	RS-485B	n/c	RS-485A	DC	DC return	n/c
Lightning protection (kA)	3 (10/350 μs) 10 (8/20 μs)							

* Please confirm the AISG protocol of primary station is compatible with RET antenna protocol interface. The protocol of RET antenna software interface is switchable between AISG 2.0/3GPP and AISG 1.1 with a vendor defined command. For more details about protocol switching function, contact Huawei before system installation.

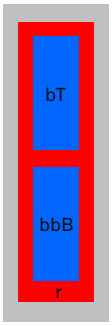
Standards: EN 60950-1 (Safety), EN 55022 (Emission), EN 55024 (Immunity), ETSI EN 301 489, FCC part15
Certification: CE, FCC, RoHS, WEEE



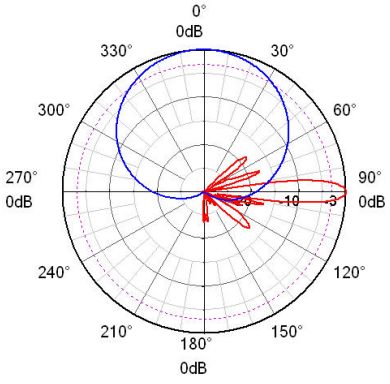
Integrated RET S/N:

- a HWMxxx.....r
- b HWMxxx.....bT
- c HWMxxx...bbB

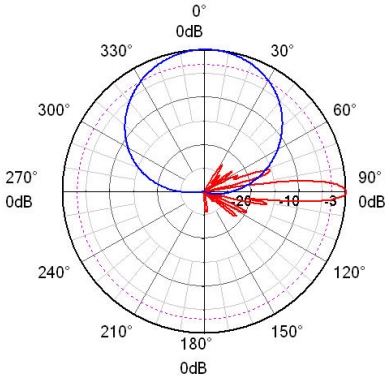
r - Red
b - Blue
T - Top array
B - Bottom array



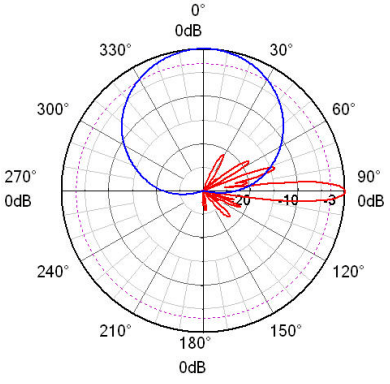
Pattern sample for reference



790 - 960MHz



1710 - 2180 MHz
(Bottom)



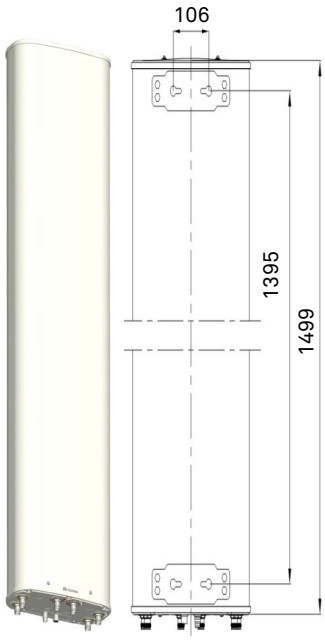
1710 - 2180 MHz
(Top)

Antenna Specifications

Electrical Properties								
Frequency range (MHz)		790 - 960			2 x (1710 - 2690)			
		790 - 862	824 - 894	880 - 960	1710 - 1990	1920 - 2200	2200 - 2490	2490 - 2690
Polarization		+45°, -45°						
Electrical downtilt (°)		0 - 14, continuously adjustable			0 - 10, continuously adjustable, each band separately			
Gain (dBi)	at mid Tilt	14.3	14.5	14.7	17.3	17.8	18.0	17.9
	over all Tilts	14.2 ±0.4	14.4 ±0.4	14.6 ±0.5	17.2 ±0.5	17.6 ±0.4	17.8 ±0.4	17.8 ±0.5
Side lobe suppression for first side lobe above main beam (dB)		> 17	> 16	> 16	> 16	> 16	> 16	> 15
Horizontal 3dB beam width (°)		66 ±3.4	64 ±3.7	62 ±4.8	63 ±5.0	62 ±5.0	60 ±4.3	60 ±5.0
Vertical 3dB beam width (°)		16.0 ±0.9	15.6 ±0.9	14.6 ±1.0	6.4 ±0.4	5.7 ±0.4	5.1 ±0.3	4.6 ±0.4
VSWR		< 1.5						
Cross polar isolation (dB)		≥ 28						
Interband isolation (dB)		≥ 30 (790 - 960 // 1710 - 2690 MHz) ≥ 30 (1710 - 2690 // 1710 - 2690 MHz)						
Front to back ratio, ±30° (dB)		> 24	> 24	> 24	> 25	> 25	> 25	> 25
Cross polar ratio (dB)	0°	> 20	> 20	> 20	> 20	> 20	> 20	> 20
Max. power per input (W)		500 (at 50℃ ambient temperature)			250 (at 50℃ ambient temperature)			
Intermodulation IM3 (dBc)		≤ -153 (2 x 43 dBm carrier)						
Impedance (Ω)		50						
Grounding		DC Ground						

1. Values based on NGMN recommendations on Base Station Antenna Standards (BASTA).
2. Electrical datasheet in XML format is available.

Mechanical Properties	
Antenna dimensions (H x W x D) (mm)	1499 x 349 x 166
Packing dimensions (H x W x D) (mm)	1825 x 415 x 240
Antenna weight (kg)	20.5
Clamps weight (kg)	3.0 (2 units)
Antenna packing weight (kg)	29.8 (Included clamps)
Mast diameter supported (mm)	50 - 115
Radome material	Fiberglass
Radome colour	Light grey
Operational temperature (℃)	-40 .. +65
Wind load (N)	Frontal: 505 (at 150 km/h) Lateral: 165 (at 150 km/h) Rear side: 540 (at 150 km/h)
Max. operational wind speed (km/h)	200
Survival wind speed (km/h)	250
Connector	6 x 4.3-10 Female
Connector position	Bottom



Accessories

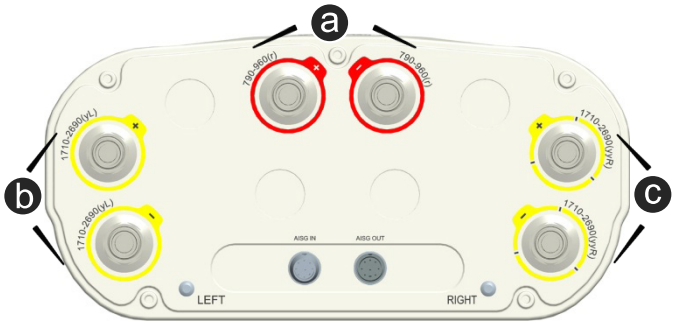
Item	Model	Description	Weight	Units per antenna
Downtilt kit	ASMDT0C01	Mechanical downtilt: 0 - 16°	2.1 kg	1 (Separate packing)

Integrated RET Specifications

Properties								
RET type	Integrated RET							
RET protocols*	AISG 2.0 / 3GPP							
Input voltage range (V)	10 - 30 DC							
Power consumption (W)	< 10 (motor activated) < 0.5 (stand by)							
Adjustment time (full range) (s)	< 50 (typically, depending on antenna type)							
RET connector	2 x 8 pin connector according to IEC 60130-9 Daisy chain in: Male / Daisy chain out: Female							
Pin assignment according AISG	1	2	3	4	5	6	7	8
	DC	n/c	RS-485B	n/c	RS-485A	DC	DC return	n/c
Lightning protection (kA)	3 (10/350 μs) 10 (8/20 μs)							

* Please confirm the AISG protocol of primary station is compatible with RET antenna protocol interface. The protocol of RET antenna software interface is switchable between AISG 2.0/3GPP and AISG 1.1 with a vendor defined command. For more details about protocol switching function, contact Huawei before system installation.

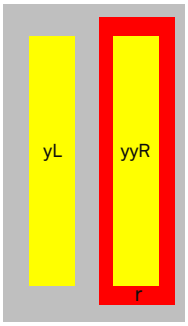
Standards: EN 60950-1 (Safety), EN 55022 (Emission), EN 55024 (Immunity), ETSI EN 301 489, FCC part15
Certification: CE, FCC, RoHS, WEEE



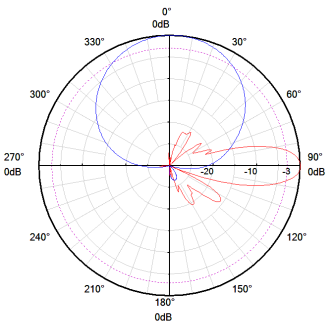
Integrated RET S/N:

ⓐ HWMxxx……r
ⓑ HWMxxx….yL
ⓒ HWMxxx…yyR

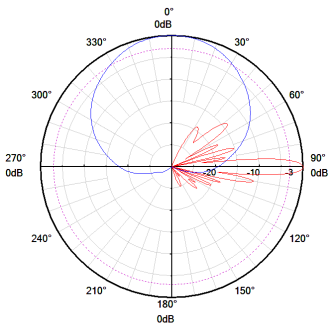
r - Red
L - Left array
y - Yellow
R - Right array



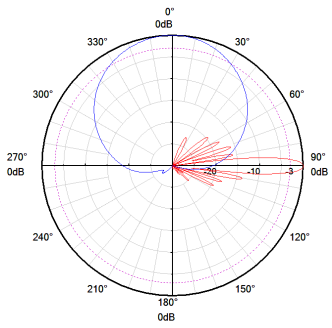
Pattern sample for reference



790 - 960MHz



1710 - 2690 MHz
(Left)



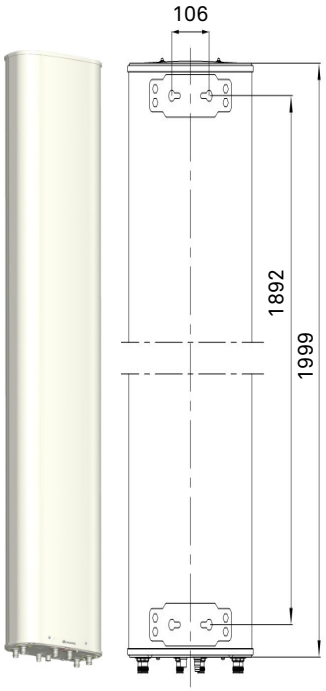
1710 - 2690 MHz
(Right)

Antenna Specifications

Electrical Properties								
Frequency range (MHz)		790 - 960			2 x (1710 - 2690)			
		790 - 862	824 - 894	880 - 960	1710 - 1990	1920 - 2200	2200 - 2490	2490 - 2690
Polarization		+45°, -45°						
Electrical downtilt (°)		0 - 10, continuously adjustable, each band separately						
Gain (dBi)	at mid Tilt	15.9	16.1	16.3	17.5	17.8	18.0	18.2
	over all Tilts	15.8 ±0.4	16.0 ±0.4	16.2 ±0.5	17.4 ±0.4	17.6 ±0.5	17.9 ±0.5	18.0 ±0.5
Side lobe suppression for first side lobe above main beam (dB)		> 17	> 17	> 17	> 16	> 16	> 16	> 16
Horizontal 3dB beam width (°)		65 ±1.5	64 ±3.0	62 ±4.1	65 ±4.8	62 ±3.7	60 ±4.3	60 ±4.5
Vertical 3dB beam width (°)		10.1 ±0.4	9.8 ±0.5	9.3 ±0.5	5.8 ±0.3	5.4 ±0.3	4.8 ±0.3	4.3 ±0.3
VSWR		< 1.5						
Cross polar isolation (dB)		≥ 28						
Interband isolation (dB)		≥ 30 (790 - 960 // 1710 - 2690 MHz) ≥ 30 (1710 - 2690 // 1710 - 2690 MHz)						
Front to back ratio, ±30° (dB)		> 25	> 25	> 25	> 25	> 25	> 25	> 25
Cross polar ratio (dB)	0°	> 18	> 18	> 18	> 18	> 18	> 18	> 18
Max. power per input (W)		500 (at 50℃ ambient temperature)			250 (at 50℃ ambient temperature)			
Intermodulation IM3 (dBc)		≤ -153 (2 x 43 dBm carrier)						
Impedance (Ω)		50						
Grounding		DC Ground						

1. Values based on NGMN recommendations on Base Station Antenna Standards (BASTA).
2. Electrical datasheet in XML format is available.

Mechanical Properties	
Antenna dimensions (H x W x D) (mm)	1999 x 349 x 166
Packing dimensions (H x W x D) (mm)	2350 x 415 x 240
Antenna weight (kg)	24.5
Clamps weight (kg)	3.6 (2 units)
Antenna packing weight (kg)	39.3 (Included clamps)
Mast diameter supported (mm)	50 - 115
Radome material	Fiberglass
Radome colour	Light grey
Operational temperature (℃)	-40 .. +65
Wind load (N)	Frontal: 705 (at 150 km/h) Lateral: 230 (at 150 km/h) Rear side: 730 (at 150 km/h)
Max. operational wind speed (km/h)	200
Survival wind speed (km/h)	250
Connector	6 x 4.3-10 Female
Connector position	Bottom



Accessories

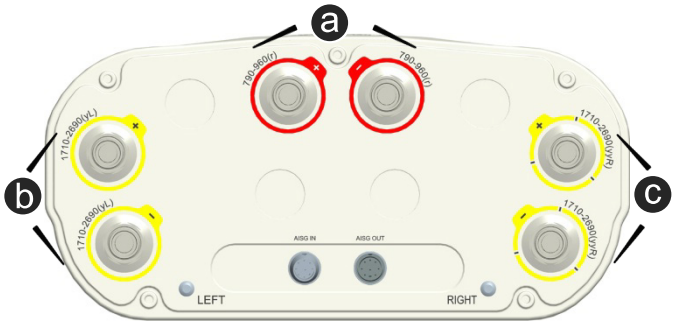
Item	Model	Description	Weight	Units per antenna
Downtilt kit	ASMDT0D01	Mechanical downtilt: 0 - 12 °	2.1 kg	1 (Separate packing)

Integrated RET Specifications

Properties								
RET type	Integrated RET							
RET protocols*	AISG 2.0 / 3GPP							
Input voltage range (V)	10 - 30 DC							
Power consumption (W)	< 10 (motor activated) < 0.5 (stand by)							
Adjustment time (full range) (s)	< 50 (typically, depending on antenna type)							
RET connector	2 x 8 pin connector according to IEC 60130-9 Daisy chain in: Male / Daisy chain out: Female							
Pin assignment according AISG	1	2	3	4	5	6	7	8
	DC	n/c	RS-485B	n/c	RS-485A	DC	DC return	n/c
Lightning protection (kA)	3 (10/350 μs) 10 (8/20 μs)							

* Please confirm the AISG protocol of primary station is compatible with RET antenna protocol interface. The protocol of RET antenna software interface is switchable between AISG 2.0/3GPP and AISG 1.1 with a vendor defined command. For more details about protocol switching function, contact Huawei before system installation.

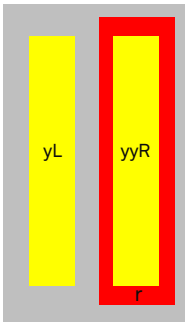
Standards: EN 60950-1 (Safety), EN 55022 (Emission), EN 55024 (Immunity), ETSI EN 301 489, FCC part15
Certification: CE, FCC, RoHS, WEEE



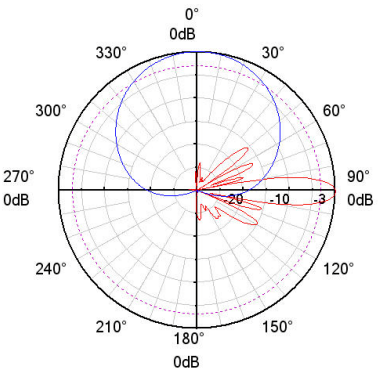
Integrated RET S/N:

- ⓐ HWMxxx.....r
- ⓑ HWMxxx....yL
- ⓒ HWMxxx..yyR

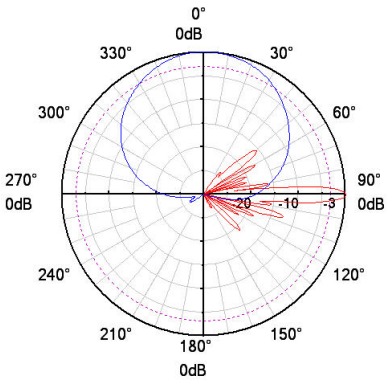
r - Red
L - Left array
y - Yellow
R - Right array



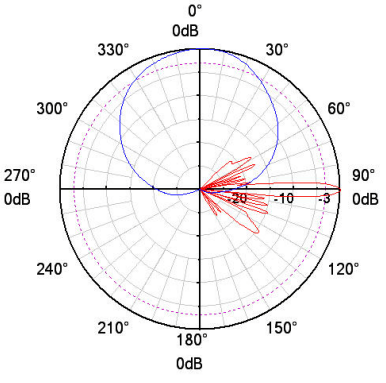
Pattern sample for reference



790 - 960 MHz



1710 - 2690 MHz
(Left)



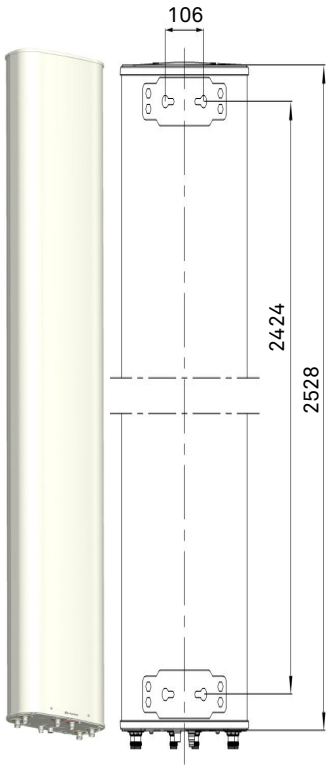
1710 - 2690 MHz
(Right)

Antenna Specifications

Electrical Properties								
Frequency range (MHz)		790 - 960			2 x (1710 - 2690)			
		790 - 862	824 - 894	880 - 960	1710 - 1990	1920 - 2200	2200 - 2490	2490 - 2690
Polarization		+45° , -45°						
Electrical downtilt (°)		0 - 10 , continuously adjustable, each band separately						
Gain (dBi)	at mid Tilt	16.8	17.0	17.3	17.5	17.8	18.0	18.2
	over all Tilts	16.7 ±0.4	17.0 ±0.3	17.2 ±0.5	17.4 ±0.5	17.6 ±0.5	17.9 ±0.5	18.0 ±0.5
Side lobe suppression for first side lobe above main beam (dB)		> 17	> 17	> 17	> 16	> 16	> 16	> 16
Horizontal 3dB beam width (°)		65 ±2.0	64 ±2.0	62 ±4.1	65 ±4.8	62 ±3.7	60 ±4.3	60 ±4.5
Vertical 3dB beam width (°)		8.6 ±0.5	8.2 ±0.5	7.6 ±0.5	5.8 ±0.3	5.4 ±0.3	4.8 ±0.3	4.3 ±0.3
VSWR		< 1.5						
Cross polar isolation (dB)		≥ 28						
Interband isolation (dB)		≥ 30 (790 - 960 // 1710 - 2690 MHz) ≥ 30 (1710 - 2690 // 1710 - 2690 MHz)						
Front to back ratio, ±30° (dB)		> 25	> 25	> 25	> 25	> 25	> 25	> 25
Cross polar ratio (dB)	0°	> 18	> 18	> 18	> 18	> 18	> 18	> 18
Max. power per input (W)		500 (at 50℃ ambient temperature)			250 (at 50℃ ambient temperature)			
Intermodulation IM3 (dBc)		≤ -153 (2 x 43 dBm carrier)						
Impedance (Ω)		50						
Grounding		DC Ground						

1. Values based on NGMN recommendations on Base Station Antenna Standards (BASTA).
2. Electrical datasheet in XML format is available.

Mechanical Properties	
Antenna dimensions (H x W x D) (mm)	2528 x 349 x 166
Packing dimensions (H x W x D) (mm)	2885 x 420 x 240
Antenna weight (kg)	29.0
Clamps weight (kg)	3.6 (2 units)
Antenna packing weight (kg)	43.5 (Included clamps)
Mast diameter supported (mm)	50 - 115
Radome material	Fiberglass
Radome colour	Light grey
Operational temperature (℃)	-40 .. +65
Wind load (N)	Frontal: 920 (at 150 km/h) Lateral: 305 (at 150 km/h) Rear side: 955 (at 150 km/h)
Max. operational wind speed (km/h)	200
Survival wind speed (km/h)	250
Connector	6 x 4.3-10 Female
Connector position	Bottom



Accessories

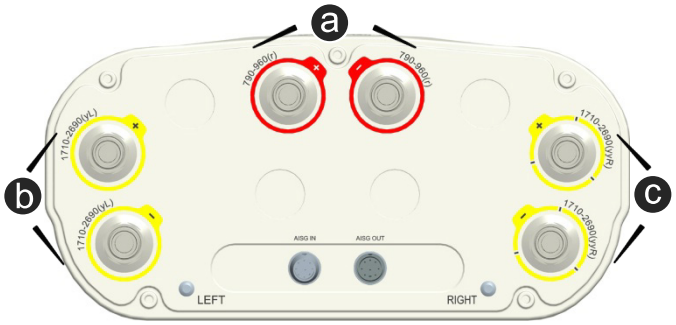
Item	Model	Description	Weight	Units per antenna
Downtilt kit	ASMDT0D01	Mechanical downtilt: 0 - 8 °	2.1 kg	1 (Separate packing)

Integrated RET Specifications

Properties								
RET type	Integrated RET							
RET protocols*	AISG 2.0 / 3GPP							
Input voltage range (V)	10 - 30 DC							
Power consumption (W)	< 10 (motor activated) < 0.5 (stand by)							
Adjustment time (full range) (s)	< 50 (typically, depending on antenna type)							
RET connector	2 x 8 pin connector according to IEC 60130-9 Daisy chain in: Male / Daisy chain out: Female							
Pin assignment according AISG	1	2	3	4	5	6	7	8
	DC	n/c	RS-485B	n/c	RS-485A	DC	DC return	n/c
Lightning protection (kA)	3 (10/350 μs) 10 (8/20 μs)							

* Please confirm the AISG protocol of primary station is compatible with RET antenna protocol interface. The protocol of RET antenna software interface is switchable between AISG 2.0/3GPP and AISG 1.1 with a vendor defined command. For more details about protocol switching function, contact Huawei before system installation.

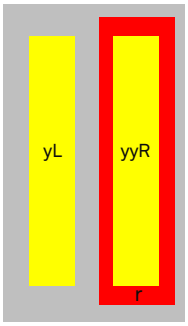
Standards: EN 60950-1 (Safety), EN 55022 (Emission), EN 55024 (Immunity), ETSI EN 301 489, FCC part15
Certification: CE, FCC, RoHS, WEEE



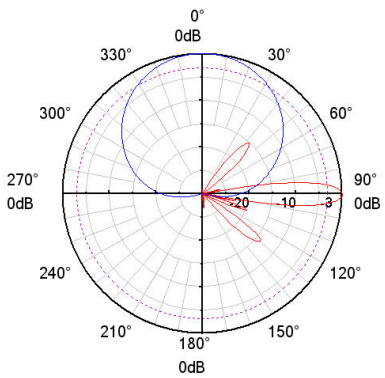
Integrated RET S/N:

- a HWMxxx……r
- b HWMxxx….yL
- c HWMxxx…yyR

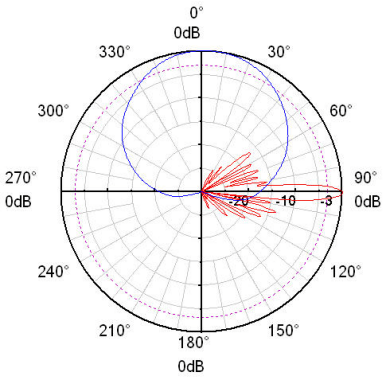
r - Red
L - Left array
y - Yellow
R - Right array



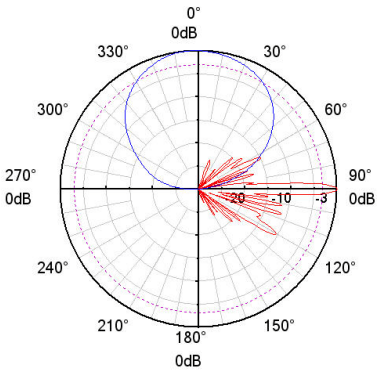
Pattern sample for reference



790 - 960 MHz



1710 - 2690 MHz
(Left)



1710 - 2690 MHz
(Right)

Antenna Specifications

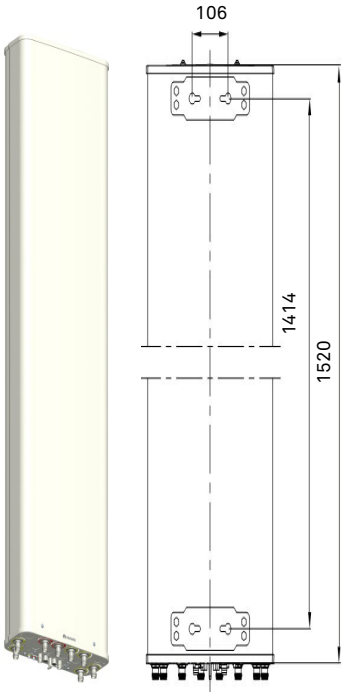
Electrical Properties					
Frequency range (MHz)		690 - 960 (r)			
		690 - 803	790 - 862	824 - 894	880 - 960
Polarization		+45° , -45°			
Electrical downtilt (°)		0 - 14 , continuously adjustable			
Gain (dBi)	at mid Tilt	14.3	14.2	14.2	14.5
	over all Tilts	14.2 ±0.3	14.2 ±0.2	14.2 ±0.2	14.4 ±0.3
Side lobe suppression for first side lobe above main beam (dB)		> 15	> 15	> 17	> 17
Horizontal 3dB beam width (°)		66 ±1.1	67 ±0.8	65 ±1.4	65 ±1.2
Vertical 3dB beam width (°)		15.3 ±0.9	13.7 ±0.4	13.0 ±0.6	12.1 ±0.5
VSWR		< 1.5			
Cross polar isolation (dB)		≥ 28			
Interband isolation (dB)		≥ 28 (690 - 960 // 1710 - 2690 MHz)			
Front to back ratio, ±30° (dB)		> 25	> 26	> 26	> 25
Cross polar ratio (dB)	0°	> 21	> 16	> 16	> 16
Max. power per input (W)		300 (at 50℃ ambient temperature) *			
Intermodulation IM3 (dBc)		≤ -153 (2 x 43 dBm carrier)			
Impedance (Ω)		50			
Grounding		DC Ground			

Electrical Properties									
Frequency range (MHz)		1710 - 2690 (yL) / 1710 - 2690 (yyyR)				1710 - 2690 (yyC)			
		1710 - 1990	1920 - 2200	2200 - 2490	2490 - 2690	1710 - 1990	1920 - 2200	2200 - 2490	2490 - 2690
Polarization		+45° , -45°				+45° , -45°			
Electrical downtilt (°)		2 - 12 , continuously adjustable, each band separately							
Gain (dBi)	at mid Tilt	17.2	17.8	17.8	18.2	17.0	17.0	17.5	18.0
	over all Tilts	17.0 ±0.5	17.7 ±0.4	17.5 ±0.3	18.1 ±0.3	16.8 ±0.5	16.8 ±0.4	17.2 ±0.4	17.8 ±0.3
Side lobe suppression for first side lobe above main beam (dB)		> 15	> 15	> 16	> 16	> 15	> 15	> 16	> 16
Horizontal 3dB beam width (°)		66 ±5.0	63 ±3.0	60 ±3.0	60 ±2.0	64 ±4.0	63 ±3.0	63 ±3.0	60 ±4.0
Vertical 3dB beam width (°)		7.2 ±0.4	6.5 ±0.3	5.8 ±0.3	5.3 ±0.2	7.2 ±0.4	6.5 ±0.3	5.8 ±0.3	5.3 ±0.2
VSWR		< 1.5							
Cross polar isolation (dB)		≥ 28							
Interband isolation (dB)		≥ 28 (690 - 960 // 1710 - 2690 MHz) ≥ 30 (1710 - 2690 // 1710 - 2690 MHz)							
Front to back ratio, ±30° (dB)		> 25	> 25	> 25	> 25	> 25	> 25	> 25	> 25
Cross polar ratio (dB)	0°	> 16	> 16	> 16	> 16	> 16	> 16	> 16	> 16
Max. power per input (W)		250 (at 50℃ ambient temperature)							
Intermodulation IM3 (dBc)		≤ -153 (2 x 43 dBm carrier)							
Impedance (Ω)		50							
Grounding		DC Ground							

* Total power： 700 W (at 50℃ ambient temperature)

1. Values based on NGMN recommendations on Base Station Antenna Standards (BASTA).
2. Electrical datasheet in XML format is available.

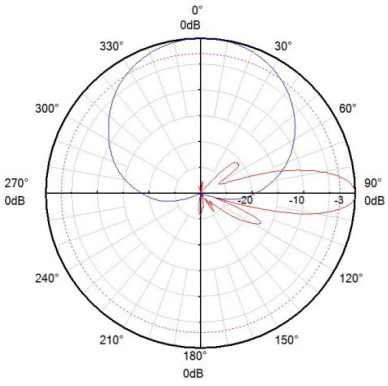
Mechanical Properties	
Antenna dimensions (H x W x D) (mm)	1520 x 369 x 149
Packing dimensions (H x W x D) (mm)	1850 x 450 x 230
Antenna net weight (kg)	26.2
Clamps weight (kg)	3.6 (2 units)
Antenna packing weight (kg)	36.4 (Included clamps)
Mast diameter supported (mm)	50 - 115
Radome material	Fiberglass
Radome colour	Light grey
Operational temperature (℃)	-40 .. +65
Wind load (N)	Frontal: 730 (at 150 km/h) Lateral: 145 (at 150 km/h) Rear side: 725 (at 150 km/h)
Max. operational wind speed (km/h)	200
Survival wind speed (km/h)	250
Connector	8 x 4.3-10 Female
Connector position	Bottom



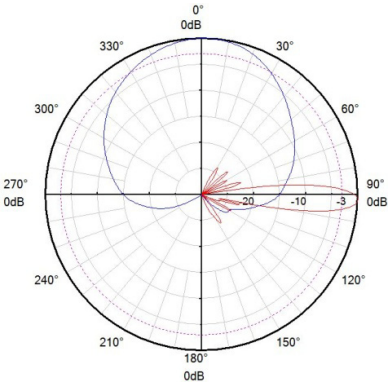
Accessories

Item	Model	Description	Weight	Units per antenna
Downtilt kit	ASMDT0D01	Mechanical downtilt: 0 - 16 °	2.1 kg	1 (Separate packing)

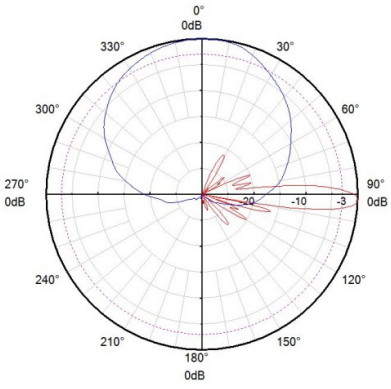
Pattern sample for reference



690 - 960 MHz



1710 - 2690 MHz
(Left & Right)



1710 - 2690 MHz
(Center)

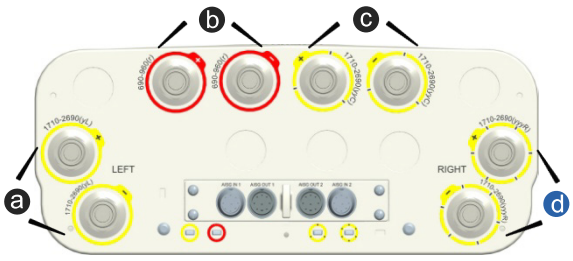
Integrated RET Specifications

Properties								
RET type	Integrated RET							
RET protocols*	AISG 2.0 / 3GPP							
Input voltage range (V)	10 - 30 DC							
Power consumption (W)	< 6 (motor activated, 12V) < 1.5 (stand by, 12V)							
Adjustment time (full range) (s)	< 65 (typically, depending on antenna type)							
RET connector	4 x 8 pin connector according to IEC 60130-9 Daisy chain in: Male / Daisy chain out: Female							
Pin assignment according AISG	1	2	3	4	5	6	7	8
	DC	n/c	RS-485B	n/c	RS-485A	DC	DC return	n/c
Lightning protection (kA)	3 (10/350 μs) 10 (8/20 μs)							

* Please confirm the AISG protocol of primary station is compatible with RET antenna protocol interface. The protocol of RET antenna software interface is switchable between AISG 2.0/3GPP and AISG 1.1 with a vendor defined command. For more details about protocol switching function, contact Huawei before system installation.

Standards: UL 60950-1 (Safety), UL 60950-22 (Safety – Equipment installed outdoor), EN 55022 (Emission), EN 55024 (Immunity), ETSI EN 301 489, FCC Part15, ICES-003

Certification: CE, FCC, IC, RCM



Integrated RET S/N:

ⓐ HWMxxx……..yL

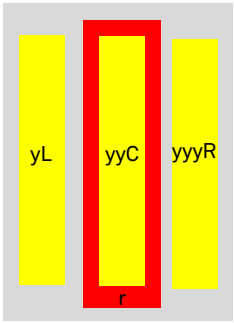
ⓑ HWMxxx…….r

ⓒ HWMxxx……yyC

ⓓ HWMxxx…..yyyR

r - Red
L - Left array
R - Right array

y - Yellow
C - Center array



Antenna Specifications

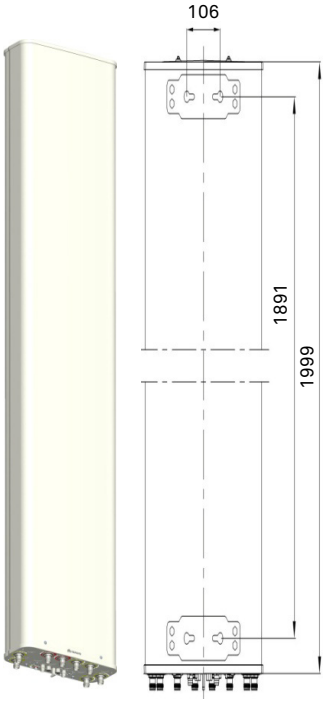
Electrical Properties					
Frequency range (MHz)		690 - 960 (r1)			
		690 - 803	790 - 862	824 - 894	880 - 960
Polarization		+45°, -45°			
Electrical downtilt (°)		0 - 10, continuously adjustable			
Gain (dBi)	at mid Tilt	15.4	15.7	15.9	16.1
	over all Tilts	15.3 ±0.3	15.6 ±0.2	15.8 ±0.3	16.0 ±0.4
Side lobe suppression for first side lobe above main beam (dB)		> 15	> 15	> 15	> 15
Horizontal 3dB beam width (°)		68 ±1.0	67 ±1.0	67 ±1.1	65 ±2.0
Vertical 3dB beam width (°)		10.8 ±0.9	9.5 ±0.3	9.2 ±0.3	8.5 ±0.3
VSWR		< 1.5			
Cross polar isolation (dB)		≥ 26	≥ 28		
Interband isolation (dB)		≥ 28 (690 - 960 // 1710 - 2690 MHz)			
Front to back ratio, ±30° (dB)		> 25	> 25	> 25	> 25
Cross polar ratio (dB)	0°	> 20	> 20	> 20	> 20
Max. power per input (W)		300 (at 50℃ ambient temperature) *			
Intermodulation IM3 (dBc)		≤ -153 (2 x 43 dBm carrier)			
Impedance (Ω)		50			
Grounding		DC Ground			

Electrical Properties									
Frequency range (MHz)		1710 - 2690 (Ly1) / 1710 - 2690 (Ry3)				1710 - 2690 (Cy2)			
		1710 - 1990	1920 - 2200	2200 - 2490	2490 - 2690	1710 - 1990	1920 - 2200	2200 - 2490	2490 - 2690
Polarization		+45°, -45°							
Electrical downtilt (°)		2 - 12, continuously adjustable, each band separately							
Gain (dBi)	at mid Tilt	17.4	17.8	18.0	18.4	17.1	17.6	17.7	18.2
	over all Tilts	17.3 ±0.4	17.7 ±0.4	17.9 ±0.4	18.3 ±0.3	17.0 ±0.4	17.5 ±0.4	17.6 ±0.4	18.0 ±0.4
Side lobe suppression for first side lobe above main beam (dB)		> 15	> 15	> 15	> 15	> 15	> 15	> 15	> 15
Horizontal 3dB beam width (°)		68 ±2.0	66 ±2.0	61 ±3.0	60 ±2.0	68 ±3.0	65 ±4.0	62 ±3.0	56 ±3.0
Vertical 3dB beam width (°)		6.9 ±0.3	5.9 ±0.3	5.3 ±0.2	4.8 ±0.2	6.4 ±0.4	5.8 ±0.3	5.7 ±0.3	4.7 ±0.2
VSWR		< 1.5							
Cross polar isolation (dB)		≥ 28							
Interband isolation (dB)		≥ 28 (690 - 960 // 1710 - 2690 MHz) ≥ 30 (1710 - 2690 // 1710 - 2690 MHz)							
Front to back ratio, ±30° (dB)		> 25	> 25	> 25	> 25	> 25	> 25	> 25	> 25
Cross polar ratio (dB)	0°	> 15	> 15	> 15	> 15	> 15	> 15	> 15	> 15
Max. power per input (W)		250 (at 50℃ ambient temperature)							
Intermodulation IM3 (dBc)		≤ -153 (2 x 43 dBm carrier)							
Impedance (Ω)		50							
Grounding		DC Ground							

* Total power： 700 W (at 50℃ ambient temperature)

1. Values based on NGMN recommendations on Base Station Antenna Standards (BASTA).
2. Electrical datasheet in XML format is available.

Mechanical Properties	
Antenna dimensions (H x W x D) (mm)	1999 x 369 x 149
Packing dimensions (H x W x D) (mm)	2265 x 435 x 240
Antenna net weight (kg)	28.2
Clamps weight (kg)	3.6 (2 units)
Antenna packing weight (kg)	43.0 (Included clamps)
Mast diameter supported (mm)	50 - 115
Radome material	Fiberglass
Radome colour	Light grey
Operational temperature (℃)	-40 .. +65
Wind load (N)	Frontal: 985 (at 150 km/h) Lateral: 195 (at 150 km/h) Rear side: 980 (at 150 km/h)
Max. operational wind speed (km/h)	200
Survival wind speed (km/h)	250
Connector	8 x 4.3-10 Female
Connector position	Bottom

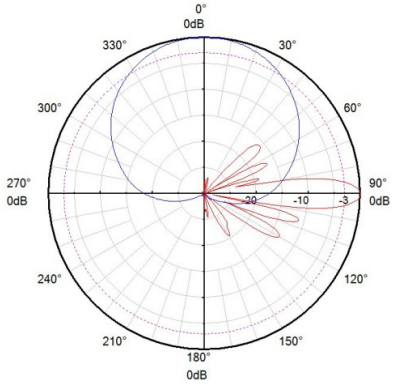


1LnH Band
4-10Ports

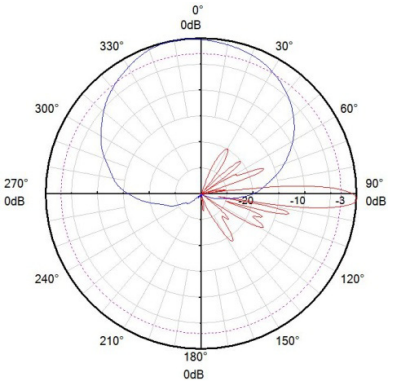
Accessories

Item	Model	Description	Weight	Units per antenna
Downtilt kit	ASMDT0D01	Mechanical downtilt: 0 - 12 °	2.1 kg	1 (Separate packing)

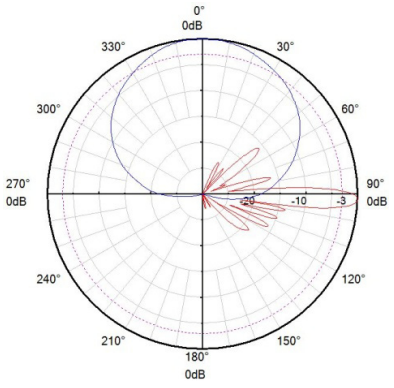
Pattern sample for reference



690 - 960 MHz



1710 - 2690 MHz
(Left & Right)



1710 - 2690 MHz
(Center)

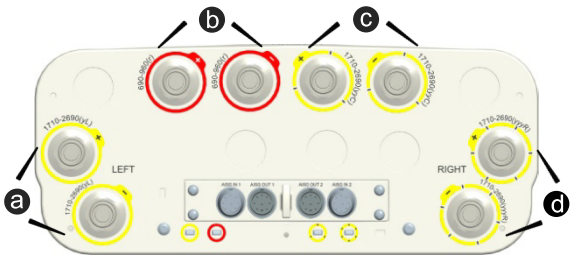
Integrated RET Specifications

Properties								
RET type	Integrated RET							
RET protocols*	AISG 2.0 / 3GPP							
Input voltage range (V)	10 - 30 DC							
Power consumption (W)	< 6 (motor activated, 12V) < 1.5 (stand by, 12V)							
Adjustment time (full range) (s)	< 65 (typically, depending on antenna type)							
RET connector	4 x 8 pin connector according to IEC 60130-9 Daisy chain in: Male / Daisy chain out: Female							
Pin assignment according AISG	1	2	3	4	5	6	7	8
	DC	n/c	RS-485B	n/c	RS-485A	DC	DC return	n/c
Lightning protection (kA)	3 (10/350 μs) 10 (8/20 μs)							

* Please confirm the AISG protocol of primary station is compatible with RET antenna protocol interface. The protocol of RET antenna software interface is switchable between AISG 2.0/3GPP and AISG 1.1 with a vendor defined command. For more details about protocol switching function, contact Huawei before system installation.

Standards: UL 60950-1 (Safety), UL 60950-22 (Safety – Equipment installed outdoor), EN 55022 (Emission), EN 55024 (Immunity), ETSI EN 301 489, FCC Part15, ICES-003

Certification: CE, FCC, IC, RCM



Integrated RET S/N:

ⓐ HWMxxx…….yL

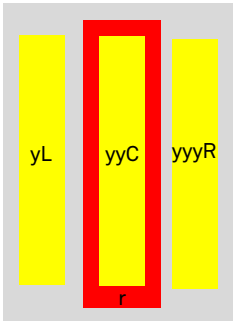
ⓑ HWMxxx…….r

ⓒ HWMxxx……yyC

ⓓ HWMxxx…..yyyR

r - Red
L - Left array
R - Right array

y - Yellow
C - Center array

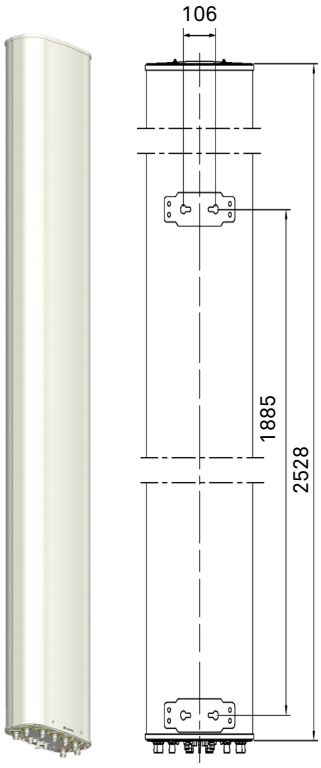


Antenna Specifications

Electrical Properties									
Frequency range (MHz)			690 - 960				3 x (1695 - 2690)			
			690 - 803	790 - 862	824 - 894	880 - 960	1695 - 1990	1920 - 2200	2200 - 2490	2490 - 2690
Polarization			+45°, -45°							
Electrical downtilt (°)			0 - 10, continuously adjustable, each band separately							
Gain (dBi)		at mid Tilt	16.2	16.5	16.7	17.0				
		over all Tilts	16.1 ±0.5	16.3 ±0.4	16.5 ±0.4	16.8 ±0.4				
	Bottom	at mid Tilt					17.1	17.3	17.1	17.6
		over all Tilts					16.9 ±0.5	17.1 ±0.3	17.0 ±0.4	17.4 ±0.5
	Top	at mid Tilt					16.8	17.1	16.8	17.3
		over all Tilts					16.7 ±0.5	17.0 ±0.4	16.7 ±0.4	17.1 ±0.5
Side lobe suppression for first side lobe above main beam (dB)			> 17	> 18	> 17	> 17	> 17	> 17	>17	> 16
Horizontal 3dB beam width (°)			67 ±1.9	66 ±3.5	65 ±2.4	62 ±3.3	63 ±3.4	62 ±2.8	61 ±3.7	60 ±3.1
Vertical 3dB beam width (°)			8.8 ±0.6	8.5 ±0.4	8.0 ±0.3	7.4 ±0.3	7.4 ±0.5	6.8 ±0.5	6.0 ±0.4	5.5 ±0.4
VSWR			< 1.5							
Cross polar isolation (dB)			≥ 28							
Interband isolation (dB)			≥ 30							
Front to back ratio, ±30° (dB)			> 25	> 25	> 25	> 25	> 24	> 24	> 25	> 25
Cross polar ratio (dB)	0°		> 20	> 20	> 20	> 20	> 17	> 17	> 17	> 17
Max. power per input (W)			500 (at 50℃ ambient temperature)				250 (at 50℃ ambient temperature)			
Total power (W)			960 (at 50℃ ambient temperature)							
Intermodulation IM3 (dBc)			≤ -153 (2 x 43 dBm carrier)							
Impedance (Ω)			50							
Grounding			DC Ground							

1. Values based on NGMN recommendations on Base Station Antenna Standards (BASTA).
2. Electrical datasheet in XML format is available.

Mechanical Properties	
Antenna dimensions (H x W x D) (mm)	2528 x 349 x 166
Packing dimensions (H x W x D) (mm)	2880 x 415 x 245
Antenna weight (kg)	29.7
Clamps weight (kg)	3.6 (2 units)
Antenna packing weight (kg)	45.2 (Included clamps)
Mast diameter supported (mm)	50 - 115
Radome material	Fiberglass
Radome colour	Light grey
Operational temperature (℃)	-40 .. +65
Wind load (N)	Frontal: 920 (at 150 km/h) Lateral: 305 (at 150 km/h) Rear side: 955 (at 150 km/h)
Max. operational wind speed (km/h)	200
Survival wind speed (km/h)	250
Connector	8 x 4.3-10 Female
Connector position	Bottom



Accessories

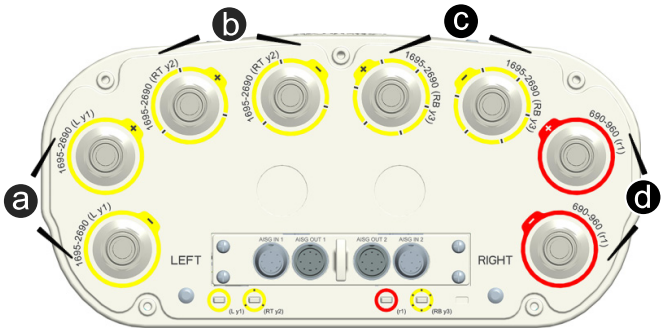
Item	Model	Description	Weight	Units per antenna
Downtilt kit	ASMDT0D01	Mechanical downtilt: 0 - 8 °	2.1 kg	1 (Separate packing)

Integrated RET Specifications

Properties								
RET type	Integrated RET							
RET protocols*	AISG 2.0 / 3GPP							
Input voltage range (V)	10 - 30 DC							
Power consumption (W)	< 6 (motor activated, 12V) < 1.5 (stand by, 12V)							
Adjustment time (full range) (s)	< 65 (typically, depending on antenna type)							
RET connector	4 x 8 pin connector according to IEC 60130-9 Daisy chain in: Male / Daisy chain out: Female							
Pin assignment according AISG	1	2	3	4	5	6	7	8
	DC	n/c	RS-485B	n/c	RS-485A	DC	DC return	n/c
Lightning protection (kA)	3 (10/350 μs) 10 (8/20 μs)							

* Please confirm the AISG protocol of primary station is compatible with RET antenna protocol interface. The protocol of RET antenna software interface is switchable between AISG 2.0/3GPP and AISG 1.1 with a vendor defined command. For more details about protocol switching function, contact Huawei before system installation.

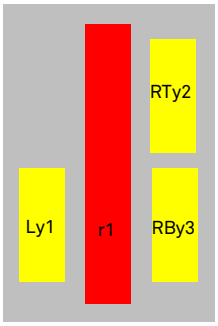
Standards: EN 60950-1 (Safety), EN 55022 (Emission), EN 55024 (Immunity), ETSI EN 301 489, FCC part15
Certification: CE, FCC, RoHS, WEEE



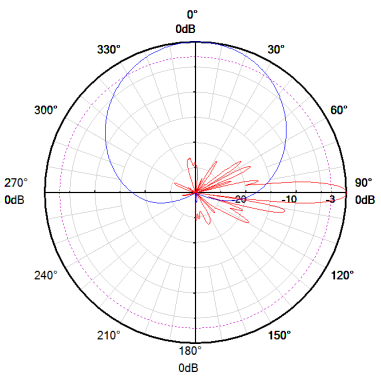
Integrated RET S/N:

- a HWMxxx.....Ly1
- b HWMxxx.....RTy2
- c HWMxxx.....RBy3
- d HWMxxx.....r1

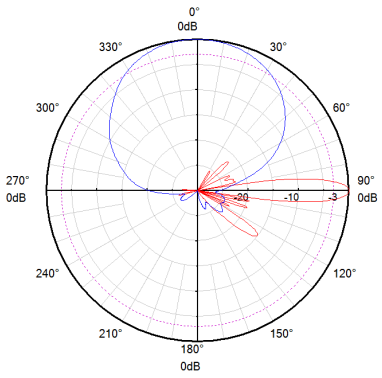
r - Red y - Yellow
L - Left array R - Right array
T - Top array B - Bottom array



Pattern sample for reference



690 - 960 MHz



1695 - 2690 MHz

Preliminary Issue

Electrical Properties				
Frequency range (MHz)		690 - 960	1427 - 2200	2 x (1695 - 2690)
Electrical downtilt (°)		2 - 14	2 - 12	2 - 12
Gain (dBi)		15.0	17.5	18.0
Side lobe suppression for first side lobe above main beam (Typ.) (dB)		17	17	17
Horizontal 3dB beam width (°)		65	65	65
Vertical 3dB beam width (°)		15	6.5	6.0
VSWR		< 1.5		
Front to back ratio, copolar (dB)		Typ. 26	Typ. 27	Typ. 28
Cross polar ratio (dB)	0°	Typ. 18	Typ. 19	Typ. 19
Intermodulation IM3 (dBc)		≤ -153 (2 x 43 dBm carrier)		

Mechanical Properties	
Antenna dimensions (H x W x D) (mm)	1499 x 369 x 149
Packing dimensions (H x W x D) (mm)	1790 x 435 x 240
Antenna net weight (kg)	28
Mechanical downtilt (°)	0 - 16
Connector	8 x 4.3-10 Female
RET type	Integrated RET
RET protocols	AISG 2.0 / 3GPP

Antenna Specifications

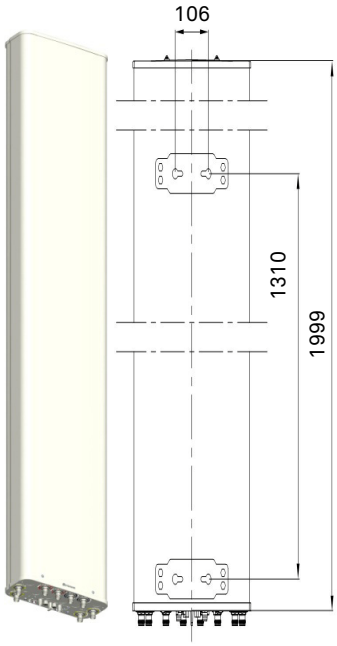
Electrical Properties								
Frequency range (MHz)		690 - 960				1427 - 2200		
		690 - 803	790 - 862	824 - 894	880 - 960	1427 - 1518	1695 - 1990	1920 - 2200
Polarization		+45°, -45°				+45°, -45°		
Electrical downtilt (°)		2 - 12, continuously adjustable				2 - 12, continuously adjustable		
Gain (dBi)	at mid Tilt	15.2	15.6	15.8	16.0	16.0	17.0	17.3
	over all Tilts	15.1 ±0.5	15.5 ±0.5	15.7 ±0.5	15.7 ±0.5	15.9 ±0.5	16.8 ±0.5	17.0 ±0.5
Side lobe suppression for first side lobe above main beam (dB)		> 15	> 16	> 16	> 15	> 17	> 16	> 16
Horizontal 3dB beam width (°)		67 ±2.0	66 ±1.0	66 ±2.0	64 ±3.0	64 ±5.0	67 ±4.0	65 ±4.0
Vertical 3dB beam width (°)		10.8 ±1.1	9.8 ±0.5	9.5 ±0.5	8.9 ±0.4	8.3 ±0.4	6.8 ±0.6	6.1 ±0.5
VSWR		< 1.5				< 1.5		
Cross polar isolation (dB)		≥ 28				≥ 28		
Interband isolation (dB)		≥ 28				≥ 28		
Front to back ratio, ±30° (dB)		> 23	> 25	> 25	> 25	> 24	> 26	> 26
Cross polar ratio (dB)	0°	> 18	> 17	> 17	> 16	> 15	> 20	> 20
Max. power per input (W)		500 (at 50℃ ambient temperature)*				250 (at 50℃ ambient temperature)*		
Intermodulation IM3 (dBc)		≤ -153 (2 x 43 dBm carrier)				≤ -153 (2 x 43 dBm carrier)		
Impedance (Ω)		50						
Grounding		DC Ground						

Electrical Properties					
Frequency range (MHz)		2 x (1695 - 2690)			
		1695 - 1990	1920 - 2200	2200 - 2490	2490 - 2690
Polarization		+45°, -45°			
Electrical downtilt (°)		2 - 12, continuously adjustable, each band separately			
Gain (dBi)	at mid Tilt	17.2	17.5	18.0	18.4
	over all Tilts	17.0 ±0.5	17.4 ±0.5	17.8 ±0.4	18.1 ±0.5
Side lobe suppression for first side lobe above main beam (dB)		> 17	> 17	> 17	> 16
Horizontal 3dB beam width (°)		67 ±5.0	65 ±3.0	62 ±2.0	59 ±4.0
Vertical 3dB beam width (°)		6.6 ±0.5	6.0 ±0.5	5.2 ±0.4	5.0 ±0.4
VSWR		< 1.5			
Cross polar isolation (dB)		≥ 28			
Interband isolation (dB)		≥ 28			
Front to back ratio, ±30° (dB)		> 25	> 25	> 26	> 26
Cross polar ratio (dB)	0°	> 19	> 19	> 17	> 17
Max. power per input (W)		250 (at 50℃ ambient temperature)*			
Intermodulation IM3 (dBc)		≤ -153 (2 x 43 dBm carrier)			
Impedance (Ω)		50			
Grounding		DC Ground			

* Total power : 700 W (at 50℃ ambient temperature)

1. Values based on NGMN recommendations on Base Station Antenna Standards (BASTA).
2. Electrical datasheet in XML format is available.

Mechanical Properties	
Antenna dimensions (H x W x D) (mm)	1999 x 369 x 149
Packing dimensions (H x W x D) (mm)	2265 x 435 x 240
Antenna weight (kg)	27.7
Clamps weight (kg)	3.6 (2 units)
Antenna packing weight (kg)	40.5 (Included clamps)
Mast diameter supported (mm)	50 - 115
Radome material	Fiberglass
Radome colour	Light grey
Operational temperature (℃)	-40 .. +65
Wind load (N)	Frontal: 985 (at 150 km/h) Lateral: 195 (at 150 km/h) Rear side: 980 (at 150 km/h)
Max. operational wind speed (km/h)	200
Survival wind speed (km/h)	250
Connector	8 x 4.3-10 Female
Connector position	Bottom

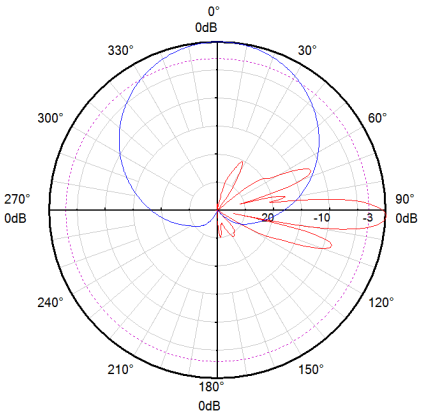


1 LnH Band
4-10 Ports

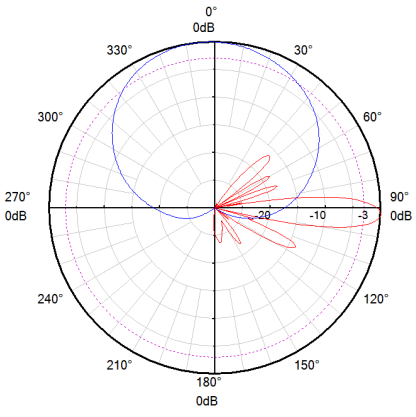
Accessories

Item	Model	Description	Weight	Units per antenna
Downtilt kit	ASMDT0D01	Mechanical downtilt: 0 - 12 °	2.1 kg	1 (Separate packing)

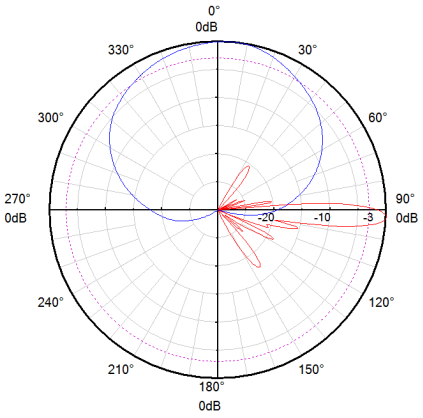
Pattern sample for reference



690 - 960 MHz



1427 - 2200 MHz



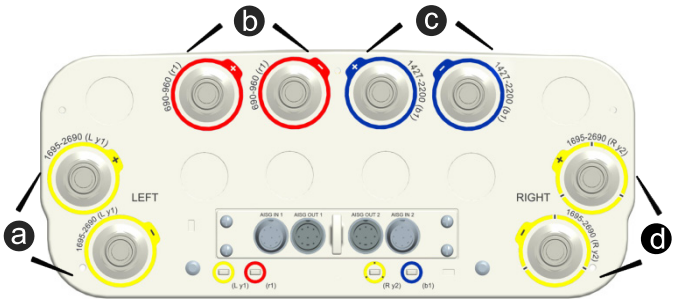
1695 - 2690 MHz

Integrated RET Specifications

Properties								
RET type	Integrated RET							
RET protocols*	AISG 2.0 / 3GPP							
Input voltage range (V)	10 - 30 DC							
Power consumption (W)	< 6 (motor activated, 12V) < 1.5 (stand by, 12V)							
Adjustment time (full range) (s)	< 65 (typically, depending on antenna type)							
RET connector	4 x 8 pin connector according to IEC 60130-9 Daisy chain in: Male / Daisy chain out: Female							
Pin assignment according AISG	1	2	3	4	5	6	7	8
	DC	n/c	RS-485B	n/c	RS-485A	DC	DC return	n/c
Lightning protection (kA)	3 (10/350 μs) 10 (8/20 μs)							

* Please confirm the AISG protocol of primary station is compatible with RET antenna protocol interface. The protocol of RET antenna software interface is switchable between AISG 2.0/3GPP and AISG 1.1 with a vendor defined command. For more details about protocol switching function, contact Huawei before system installation.

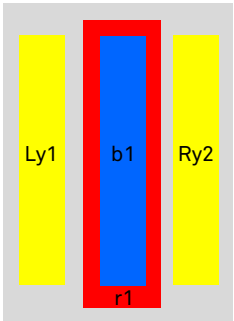
Standards: EN 60950-1 (Safety), EN 55022 (Emission), EN 55024 (Immunity), ETSI EN 301 489, FCC part15
Certification: CE, FCC, RoHS, WEEE



Integrated RET S/N:

- a HWMxxx.....Ly1
- b HWMxxx.....r1
- c HWMxxx.....b1
- d HWMxxx.....Ry2

r - Red y - Yellow
b - Blue
L - Left array R - Right array



Antenna Specifications

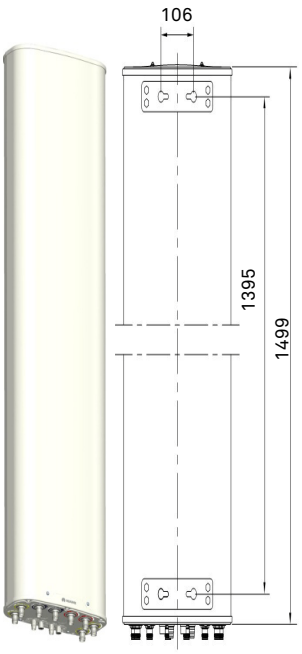
Electrical Properties				
Frequency range (MHz)		790 - 960 (r)		
		790 - 862	824 - 894	880 - 960
Polarization		+45°, -45°		
Electrical downtilt (°)		0 - 14, continuously adjustable		
Gain (dBi)	at mid Tilt	14.3	14.5	14.7
	over all Tilts	14.2 ±0.4	14.4 ±0.4	14.6 ±0.5
Side lobe suppression for first side lobe above main beam (dB)		> 16	> 16	> 16
Horizontal 3dB beam width (°)		65 ±3.4	64 ±3.7	62 ±4.8
Vertical 3dB beam width (°)		15.5 ±0.9	15.0 ±0.9	14.0 ±1.0
VSWR		< 1.5		
Cross polar isolation (dB)		≥ 28		
Interband isolation (dB)		≥ 30		
Front to back ratio, ±30° (dB)		> 24	> 24	> 24
Cross polar ratio (dB)	0°	> 20	> 20	> 20
Max. power per input (W)		500 (at 50℃ ambient temperature) *		
Intermodulation IM3 (dBc)		≤ -153 (2 x 43 dBm carrier)		
Impedance (Ω)		50		
Grounding		DC Ground		

Electrical Properties								
Frequency range (MHz)		1710 - 2690 (yyR)				1710 - 2170 (bL)		2490 - 2690 (yL)
		1710 - 1990	1920 - 2200	2200 - 2490	2490 - 2690	1710 - 1990	1920 - 2170	
Polarization		+45°, -45°						
Electrical downtilt (°)		0 - 10, continuously adjustable, each band separately						
Gain (dBi)	at mid Tilt	17.2	17.8	18.0	17.9	17.1	17.5	17.3
	over all Tilts	17.1 ±0.4	17.6 ±0.4	17.9 ±0.4	17.7 ±0.5	17.0 ±0.4	17.3 ±0.4	17.3 ±0.5
Side lobe suppression for first side lobe above main beam (dB)		> 16	> 16	> 16	> 15	> 16	> 16	> 16
Horizontal 3dB beam width (°)		63 ±4.0	62 ±4.0	60 ±2.3	60 ±4.8	63 ±4.8	62 ±3.7	60 ±4.5
Vertical 3dB beam width (°)		6.2 ±0.4	5.8 ±0.4	5.2 ±0.3	4.7 ±0.4	6.2 ±0.5	5.8 ±0.5	4.7 ±0.3
VSWR		< 1.5						
Cross polar isolation (dB)		≥ 28						
Interband isolation (dB)		≥ 30						
Front to back ratio, ±30° (dB)		> 25	> 25	> 25	> 25	> 25	> 25	> 25
Cross polar ratio (dB)	0°	> 20	> 20	> 20	> 20	> 20	> 20	> 20
Max. power per input (W)		250 (at 50℃ ambient temperature) *						
Intermodulation IM3 (dBc)		≤ -153 (2 x 43 dBm carrier)						
Impedance (Ω)		50						
Grounding		DC Ground						

* Total power: 1000 W (at 50℃ ambient temperature)

1. Values based on NGMN recommendations on Base Station Antenna Standards (BASTA).
2. Electrical datasheet in XML format is available.

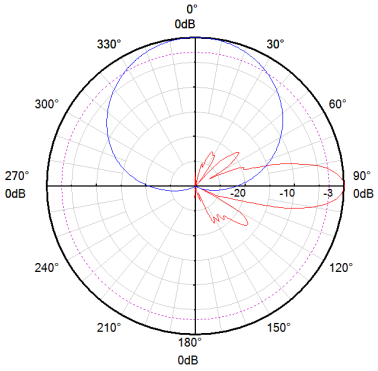
Mechanical Properties	
Antenna dimensions (H x W x D) (mm)	1499 x 349 x 166
Packing dimensions (H x W x D) (mm)	1825 x 410 x 235
Antenna weight (kg)	22.6
Clamps weight (kg)	3.0 (2 units)
Antenna packing weight (kg)	31.7 (Included clamps)
Mast diameter supported (mm)	50 - 115
Radome material	Fiberglass
Radome colour	Light grey
Operational temperature (℃)	-40 .. +65
Wind load (N)	Frontal: 505 (at 150 km/h) Lateral: 165 (at 150 km/h) Rear side: 540 (at 150 km/h)
Max. operational wind speed (km/h)	200
Survival wind speed (km/h)	250
Connector	8 x 4.3-10 Female
Connector position	Bottom



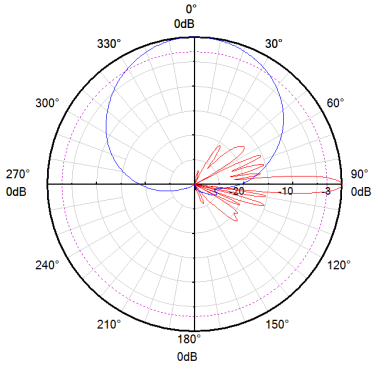
Accessories

Item	Model	Description	Weight	Units per antenna
Downtilt kit	ASMDT0C01	Mechanical downtilt: 0 - 16 °	2.1 kg	1 (Separate packing)

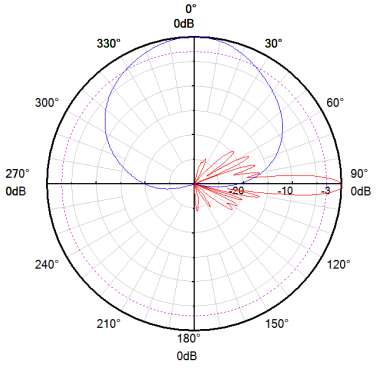
Pattern sample for reference



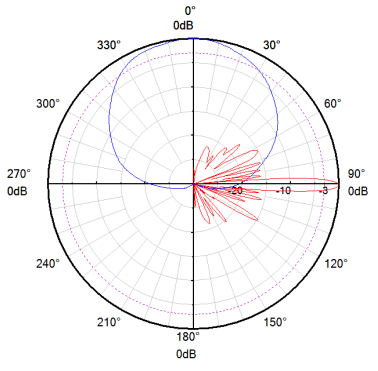
790 - 960 MHz



1710 - 2690 MHz



1710 - 2170 MHz



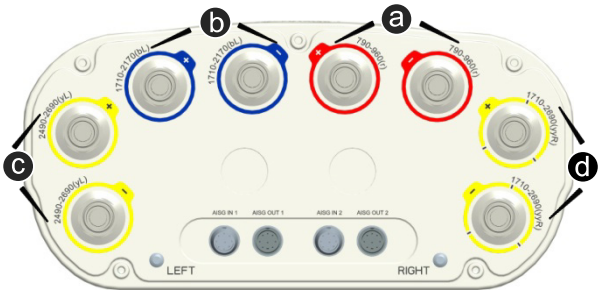
2490 - 2690 MHz

Integrated RET Specifications

Properties								
RET type	Integrated RET							
RET protocols*	AISG 2.0 / 3GPP							
Input voltage range (V)	10 - 30 DC							
Power consumption (W)	< 10 (motor activated) < 0.5 (stand by)							
Adjustment time (full range) (s)	< 50 (typically, depending on antenna type)							
RET connector	4 x 8 pin connector according to IEC 60130-9 Daisy chain in: Male / Daisy chain out: Female							
Pin assignment according AISG	1	2	3	4	5	6	7	8
	DC	n/c	RS-485B	n/c	RS-485A	DC	DC return	n/c
Lightning protection (kA)	3 (10/350 μs) 10 (8/20 μs)							

* Please confirm the AISG protocol of primary station is compatible with RET antenna protocol interface. The protocol of RET antenna software interface is switchable between AISG 2.0/3GPP and AISG 1.1 with a vendor defined command. For more details about protocol switching function, contact Huawei before system installation.

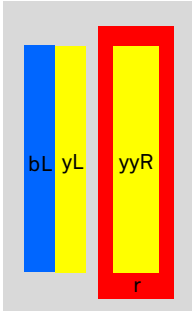
Standards: EN 60950-1 (Safety), EN 55022 (Emission), EN 55024 (Immunity), ETSI EN 301 489, FCC part15
Certification: CE, FCC, RoHS, WEEE



Integrated RET S/N:

- a HWMxxx……r
- b HWMxxx….bL
- c HWMxxx….yL
- d HWMxxx...yyR

r - Red b - Blue y - Yellow
L - Left array R - Right array



Antenna Specifications

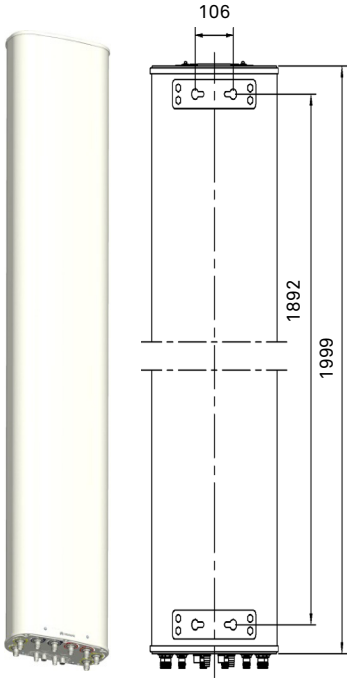
Electrical Properties					
Frequency range (MHz)		790 - 960 (r)			
		790 - 862	824 - 894	880 - 960	
Polarization		+45°, -45°			
Electrical downtilt (°)		0 - 10, continuously adjustable			
Gain (dBi)	at mid Tilt	15.9	16.1	16.3	
	over all Tilts	15.8 ±0.4	16.0 ±0.4	16.2 ±0.5	
Side lobe suppression for first side lobe above main beam (dB)		> 17	> 17	> 17	
Horizontal 3dB beam width (°)		65 ±1.5	64 ±2.0	62 ±3.1	
Vertical 3dB beam width (°)		10.1 ±0.4	9.8 ±0.5	9.3 ±0.5	
VSWR		< 1.5			
Cross polar isolation (dB)		≥ 28			
Interband isolation (dB)		≥ 30			
Front to back ratio , ±30° (dB)		> 25	> 25	> 25	
Cross polar ratio (dB)	0°	> 18	> 18	> 18	
Max. power per input (W)		500 (at 50℃ ambient temperature) *			
Intermodulation IM3 (dBc)		≤ -153 (2 x 43 dBm carrier)			
Impedance (Ω)		50			
Grounding		DC Ground			

Electrical Properties								
Frequency range (MHz)		1710 - 2690 (yyR)				1710 - 2170 (bL)		2490 - 2690 (yL)
		1710 - 1990	1920 - 2200	2200 - 2490	2490 - 2690	1710 - 1990	1920 - 2170	
Polarization		+45°, -45°						
Electrical downtilt (°)		0 - 10, continuously adjustable, each band separately						
Gain (dBi)	at mid Tilt	17.3	17.8	18.0	18.2	17.2	17.7	17.7
	over all Tilts	17.1 ±0.5	17.7 ±0.5	17.9 ±0.5	18.1 ±0.5	17.0 ±0.4	17.5 ±0.4	17.6 ±0.5
Side lobe suppression for first side lobe above main beam (dB)		> 17	> 17	> 18	> 18	> 17	> 17	> 17
Horizontal 3dB beam width (°)		65 ±2.5	62 ±4.3	60 ±4.4	60 ±5.0	65 ±3.8	62 ±4.0	60 ±5.0
Vertical 3dB beam width (°)		5.8 ±0.3	5.4 ±0.4	4.8 ±0.2	4.3 ±0.3	5.8 ±0.3	5.4 ±0.4	4.3 ±0.3
VSWR		< 1.5						
Cross polar isolation (dB)		≥ 28						
Interband isolation (dB)		≥ 30						
Front to back ratio , ±30° (dB)		> 25	> 25	> 25	> 25	> 25	> 25	> 25
Cross polar ratio (dB)	0°	> 18	> 18	> 18	> 18	> 18	> 18	> 18
Max. power per input (W)		250 (at 50℃ ambient temperature) *						
Intermodulation IM3 (dBc)		≤ -153 (2 x 43 dBm carrier)						
Impedance (Ω)		50						
Grounding		DC Ground						

* Total power : 800 W (at 50℃ ambient temperature)

1. Values based on NGMN recommendations on Base Station Antenna Standards (BASTA).
2. Electrical datasheet in XML format is available.

Mechanical Properties	
Antenna dimensions (H x W x D) (mm)	1999 x 349 x 166
Packing dimensions (H x W x D) (mm)	2350 x 415 x 240
Antenna weight (kg)	27.4
Clamps weight (kg)	3.6 (2 units)
Antenna packing weight (kg)	39.7 (Included clamps)
Mast diameter supported (mm)	50 - 115
Radome material	Fiberglass
Radome colour	Light grey
Operational temperature (℃)	-40 .. +65
Wind load (N)	Frontal: 705 (at 150 km/h) Lateral: 230 (at 150 km/h) Rear side: 730 (at 150 km/h)
Max. operational wind speed (km/h)	200
Survival wind speed (km/h)	250
Connector	8 x 4.3-10 Female
Connector position	Bottom

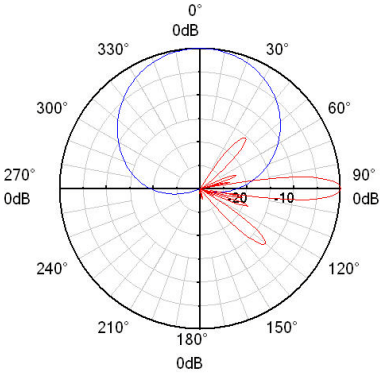


1 LnH Band
4-10 Ports

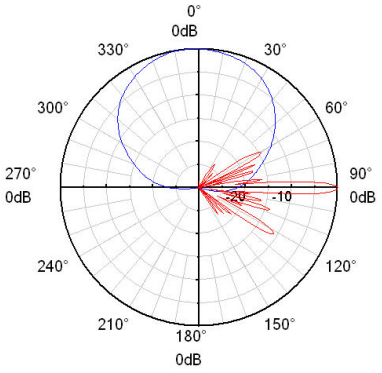
Accessories

Item	Model	Description	Weight	Units per antenna
Downtilt kit	ASMDT0D01	Mechanical downtilt: 0 - 12 °	2.1 kg	1 (Separate packing)

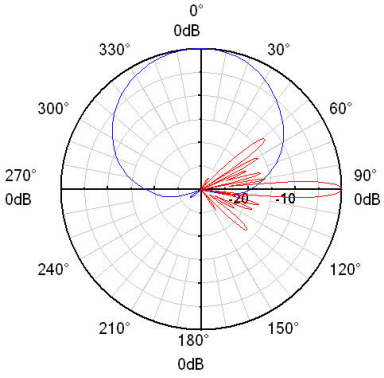
Pattern sample for reference



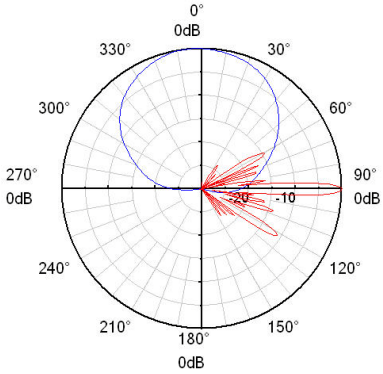
790 - 960 MHz



1710 - 2690 MHz



1710 - 2170 MHz



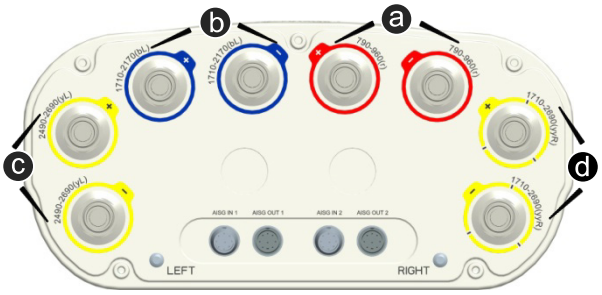
2490 - 2690 MHz

Integrated RET Specifications

Properties								
RET type	Integrated RET							
RET protocols*	AISG 2.0 / 3GPP							
Input voltage range (V)	10 - 30 DC							
Power consumption (W)	< 10 (motor activated) < 0.5 (stand by)							
Adjustment time (full range) (s)	< 50 (typically, depending on antenna type)							
RET connector	4 x 8 pin connector according to IEC 60130-9 Daisy chain in: Male / Daisy chain out: Female							
Pin assignment according AISG	1	2	3	4	5	6	7	8
	DC	n/c	RS-485B	n/c	RS-485A	DC	DC return	n/c
Lightning protection (kA)	3 (10/350 μs) 10 (8/20 μs)							

* Please confirm the AISG protocol of primary station is compatible with RET antenna protocol interface. The protocol of RET antenna software interface is switchable between AISG 2.0/3GPP and AISG 1.1 with a vendor defined command. For more details about protocol switching function, contact Huawei before system installation.

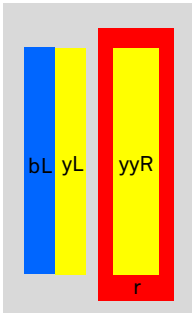
Standards: EN 60950-1 (Safety), EN 55022 (Emission), EN 55024 (Immunity), ETSI EN 301 489, FCC part15
Certification: CE, FCC, RoHS, WEEE



Integrated RET S/N:

- a HWMxxx……r
- b HWMxxx….bL
- c HWMxxx….yL
- d HWMxxx...yyR

r - Red b - Blue y - Yellow
L - Left array R - Right array



Antenna Specifications

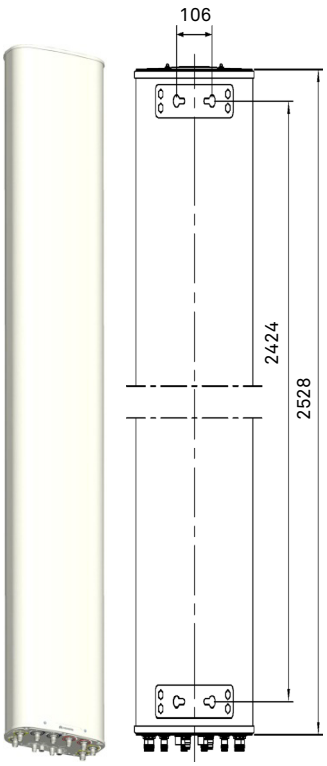
Electrical Properties					
Frequency range (MHz)		790 - 960 (r)			
		790 - 862	824 - 894	880 - 960	
Polarization		+45° , -45°			
Electrical downtilt (°)		0 - 10 , continuously adjustable			
Gain (dBi)	at mid Tilt	16.8	17.0	17.3	
	over all Tilts	16.6 ±0.4	16.9 ±0.4	17.2 ±0.5	
Side lobe suppression for first side lobe above main beam (dB)		> 17	> 17	> 17	
Horizontal 3dB beam width (°)		65 ±2.0	64 ±2.5	62 ±2.8	
Vertical 3dB beam width (°)		8.6 ±0.4	8.2 ±0.4	7.6 ±0.4	
VSWR		< 1.5			
Cross polar isolation (dB)		≥ 28			
Interband isolation (dB)		≥ 28			
Front to back ratio , ±30° (dB)		> 28	> 28	> 28	
Cross polar ratio (dB)	0°	> 18	> 18	> 18	
Max. power per input (W)		500 (at 50℃ ambient temperature) *			
Intermodulation IM3 (dBc)		≤ -153 (2 x 43 dBm carrier)			
Impedance (Ω)		50			
Grounding		DC Ground			

Electrical Properties								
Frequency range (MHz)		1710 - 2690 (yyR)				1710 - 2170 (bL)		2490 - 2690 (yL)
		1710 - 1990	1920 - 2200	2200 - 2490	2490 - 2690	1710 - 1990	1920 - 2170	
Polarization		+45° , -45°						
Electrical downtilt (°)		0 - 10 , continuously adjustable , each band separately						
Gain (dBi)	at mid Tilt	17.3	17.8	18.0	18.2	17.2	17.7	17.7
	over all Tilts	17.3 ±0.6	17.6 ±0.6	17.9 ±0.6	18.1 ±0.6	17.1 ±0.5	17.5 ±0.5	17.5 ±0.4
Side lobe suppression for first side lobe above main beam (dB)		> 16	> 17	> 18	> 18	> 16	> 17	> 17
Horizontal 3dB beam width (°)		65 ±5.0	62 ±4.8	60 ±3.9	60 ±5.0	65 ±3.7	62 ±4.3	60 ±4.8
Vertical 3dB beam width (°)		5.8 ±0.3	5.4 ±0.4	4.8 ±0.2	4.3 ±0.3	5.8 ±0.4	5.3 ±0.4	4.3 ±0.3
VSWR		< 1.5						
Cross polar isolation (dB)		≥ 28						
Interband isolation (dB)		≥ 30						
Front to back ratio , ±30° (dB)		> 28	> 28	> 28	> 28	> 28	> 28	> 28
Cross polar ratio (dB)	0°	> 18	> 18	> 18	> 18	> 18	> 18	> 18
Max. power per input (W)		250 (at 50℃ ambient temperature) *						
Intermodulation IM3 (dBc)		≤ -153 (2 x 43 dBm carrier)						
Impedance (Ω)		50						
Grounding		DC Ground						

* Total power : 1000 W (at 50℃ ambient temperature)

1. Values based on NGMN recommendations on Base Station Antenna Standards (BASTA).
2. Electrical datasheet in XML format is available.

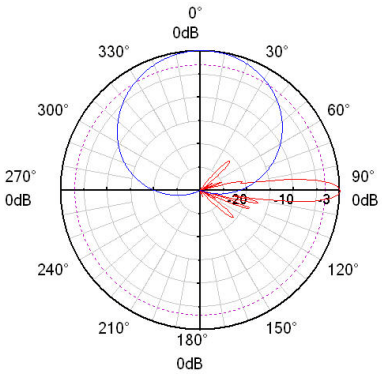
Mechanical Properties	
Antenna dimensions (H x W x D) (mm)	2528 x 349 x 166
Packing dimensions (H x W x D) (mm)	2885 x 420 x 240
Antenna weight (kg)	31.4
Clamps weight (kg)	3.6 (2 units)
Antenna packing weight (kg)	46.6 (Included clamps)
Mast diameter supported (mm)	50 - 115
Radome material	Fiberglass
Radome colour	Light grey
Operational temperature (℃)	-40 .. +65
Wind load (N)	Frontal: 920 (at 150 km/h) Lateral: 305 (at 150 km/h) Rear side: 955 (at 150 km/h)
Max. operational wind speed (km/h)	200
Survival wind speed (km/h)	250
Connector	8 x 4.3-10 Female
Connector position	Bottom



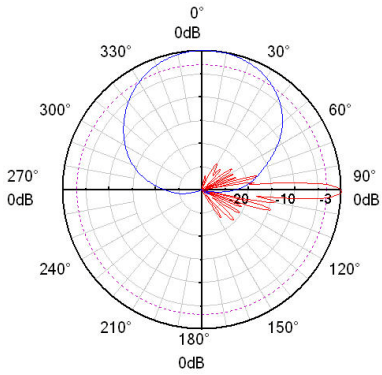
Accessories

Item	Model	Description	Weight	Units per antenna
Downtilt kit	ASMDT0D01	Mechanical downtilt: 0 - 8 °	2.1 kg	1 (Separate packing)

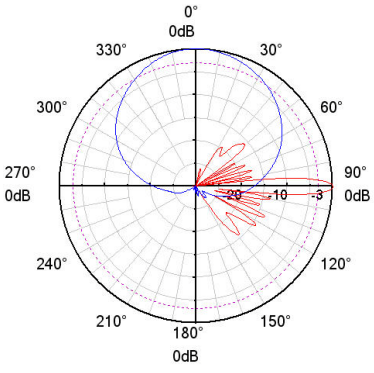
Pattern sample for reference



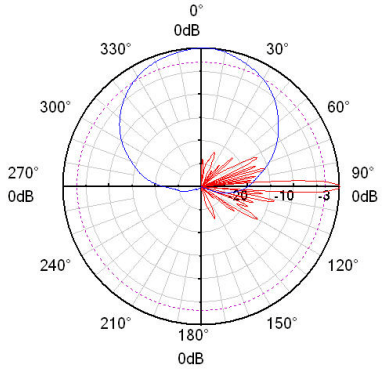
790 - 960 MHz



1710 - 2690 MHz



1710 - 2170 MHz



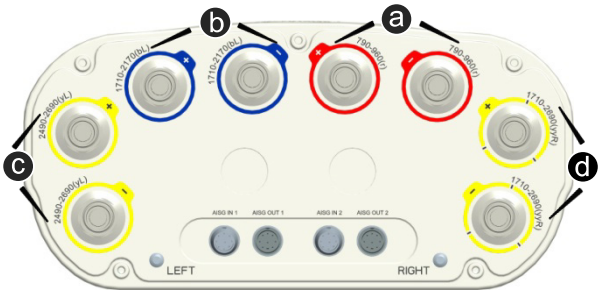
2490 - 2690 MHz

Integrated RET Specifications

Properties								
RET type	Integrated RET							
RET protocols*	AISG 2.0 / 3GPP							
Input voltage range (V)	10 - 30 DC							
Power consumption (W)	< 10 (motor activated) < 0.5 (stand by)							
Adjustment time (full range) (s)	< 50 (typically, depending on antenna type)							
RET connector	4 x 8 pin connector according to IEC 60130-9 Daisy chain in: Male / Daisy chain out: Female							
Pin assignment according AISG	1	2	3	4	5	6	7	8
	DC	n/c	RS-485B	n/c	RS-485A	DC	DC return	n/c
Lightning protection (kA)	3 (10/350 µs) 10 (8/20 µs)							

* Please confirm the AISG protocol of primary station is compatible with RET antenna protocol interface. The protocol of RET antenna software interface is switchable between AISG 2.0/3GPP and AISG 1.1 with a vendor defined command. For more details about protocol switching function, contact Huawei before system installation.

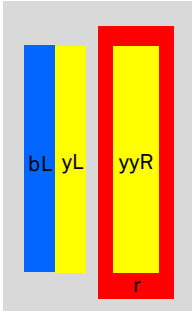
Standards: EN 60950-1 (Safety), EN 55022 (Emission), EN 55024 (Immunity), ETSI EN 301 489, FCC part15
Certification: CE, FCC, RoHS, WEEE



Integrated RET S/N:

- ⓐ HWMxxx……r
- ⓑ HWMxxx….bL
- ⓒ HWMxxx….yL
- ⓓ HWMxxx…yyR

r - Red b - Blue y - Yellow
L - Left array R - Right array

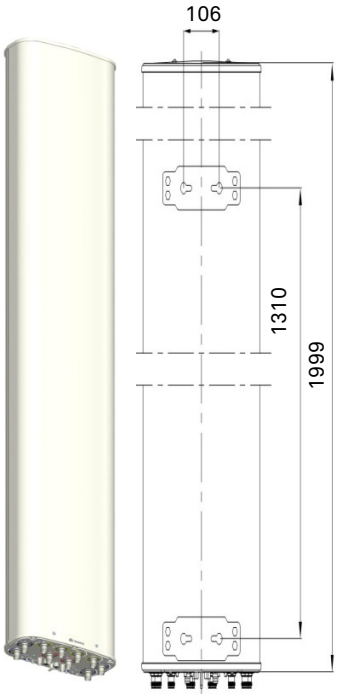


Antenna Specifications

Electrical Properties								
Frequency range (MHz)		690 - 960				2 x (1695 - 2200)		2 x (2490 - 2690)
		690 - 803	790 - 862	824 - 894	880 - 960	1695 - 1920	1920 - 2200	
Polarization		+45°, -45°						
Electrical downtilt (°)		0 - 10, continuously adjustable, each band separately						
Gain (dBi)	at mid Tilt	15.4	15.7	16.0	16.1	17.0	17.3	18.0
	over all Tilts	15.3 ±0.5	15.6 ±0.5	15.8 ±0.5	16.0 ±0.5	16.9 ±0.4	17.2 ±0.4	17.9 ±0.5
Side lobe suppression for first side lobe above main beam (dB)		> 17	> 17	> 17	> 17	> 17	> 17	> 16
Horizontal 3dB beam width (°)		67 ±2	67 ±3	66 ±3	64 ±4	63 ±4	61 ±4	60 ±5
Vertical 3dB beam width (°)		10.3 ±0.7	9.5 ±0.5	9.2 ±0.6	8.6 ±0.5	6.4 ±0.7	5.8 ±0.4	4.9 ±0.4
VSWR		< 1.5						
Cross polar isolation (dB)		≥ 28						
Interband isolation (dB)		≥ 30						
Front to back ratio, ±30° (dB)		> 23	> 24	> 24	> 24	> 25	> 26	> 24
Cross polar ratio (dB)	0°	> 18	> 18	> 18	> 17	> 18	> 18	> 18
Max. power per input (W)		500 (at 50℃ ambient temperature)				250 (at 50℃ ambient temperature)		
Total power (W)		1000 (at 50℃ ambient temperature)						
Intermodulation IM3 (dBc)		≤ -153 (2 x 43 dBm carrier)						
Impedance (Ω)		50						
Grounding		DC Ground						

1. Values based on NGMN recommendations on Base Station Antenna Standards (BASTA).
2. Electrical datasheet in XML format is available.

Mechanical Properties	
Antenna dimensions (H x W x D) (mm)	1999 x 349 x 166
Packing dimensions (H x W x D) (mm)	2350 x 415 x 240
Antenna weight (kg)	26.5
Clamps weight (kg)	3.6 (2 units)
Antenna packing weight (kg)	40.0 (included clamps)
Mast diameter supported (mm)	50 - 115
Radome material	Fiberglass
Radome colour	Light grey
Operational temperature (℃)	-40 .. +65
Wind load (N)	Frontal: 705 (at 150 km/h) Lateral: 230 (at 150 km/h) Rear side: 730 (at 150 km/h)
Max. operational wind speed (km/h)	200
Survival wind speed (km/h)	250
Connector	10 x 4.3-10 Female
Connector position	Bottom



Accessories

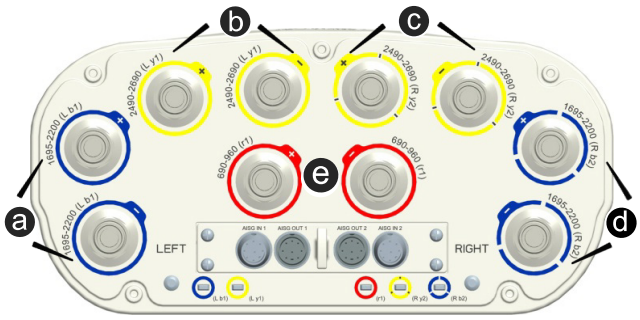
Item	Model	Description	Weight	Units per antenna
Downtilt kit	ASMDT0D01	Mechanical downtilt: 0 - 12 °	2.1 kg	1 (Separate packing)

Integrated RET Specifications

Properties								
RET type	Integrated RET							
RET protocols*	AISG 2.0 / 3GPP							
Input voltage range (V)	10 - 30 DC							
Power consumption (W)	< 6 (motor activated, 12V) < 1.5 (stand by, 12V)							
Adjustment time (full range) (s)	< 65 (typically, depending on antenna type)							
RET connector	4 x 8 pin connector according to IEC 60130-9 Daisy chain in: Male / Daisy chain out: Female							
Pin assignment according AISG	1	2	3	4	5	6	7	8
	DC	n/c	RS-485B	n/c	RS-485A	DC	DC return	n/c
Lightning protection (kA)	3 (10/350 μs) 10 (8/20 μs)							

* Please confirm the AISG protocol of primary station is compatible with RET antenna protocol interface. The protocol of RET antenna software interface is switchable between AISG 2.0/3GPP and AISG 1.1 with a vendor defined command. For more details about protocol switching function, contact Huawei before system installation.

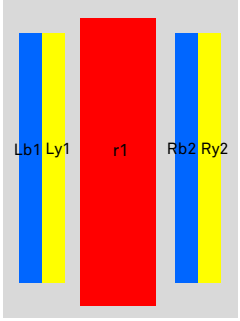
Standards: EN 60950-1 (Safety), EN 55022 (Emission), EN 55024 (Immunity), ETSI EN 301 489, FCC part15
Certification: CE, FCC, RoHS, WEEE



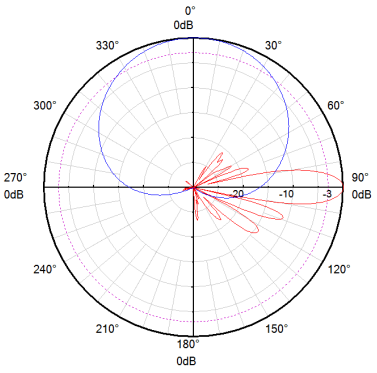
Integrated RET S/N:

- a HWMxxx.....Lb1
- b HWMxxx.....Ly1
- c HWMxxx.....Ry2
- d HWMxxx.....Rb2
- e HWMxxx.....r1

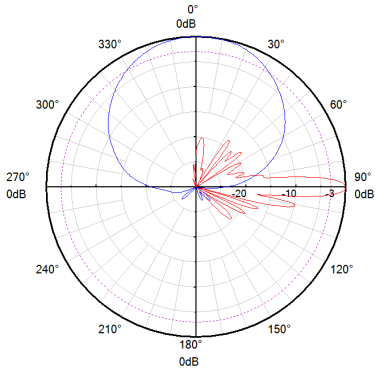
r - Red y - Yellow b - Blue
L - Left array R - Right array



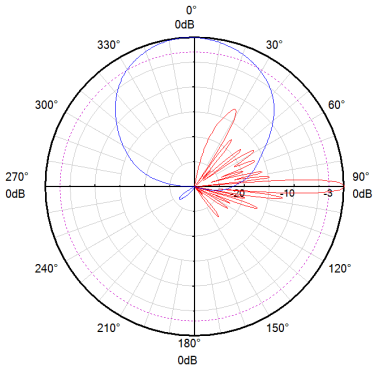
Pattern sample for reference



690 - 960 MHz



1695 - 2200 MHz



2490 - 2690 MHz

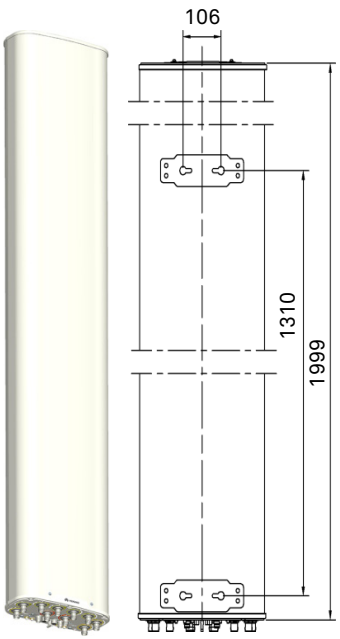
DXXXXX-690-960/1695-2690/1695-2690/1695-2690/1695-2690-65/65/65/65/65-16i/16.5i/16.5i/16i/16i-M/M/M/M/M-R
EasyRET 10-Port Antenna with 5 Integrated RCUs - 2.0m
Model: APE4516R1v06

Antenna Specifications

Electrical Properties									
Frequency range (MHz)			690 - 960				4 x (1695 - 2690)			
			690 - 803	790 - 862	824 - 894	880 - 960	1695 - 1990	1920 - 2200	2200 - 2490	2490 - 2690
Polarization			+45°, -45°							
Electrical downtilt (°)			0 - 10, continuously adjustable, each band separately							
Gain (dBi)		at mid Tilt	15.4	15.7	16.0	16.1				
		over all Tilts	15.3±0.5	15.6±0.5	15.8±0.5	16.0±0.5				
	Bottom	at mid Tilt					15.8	16.2	16.5	16.7
		over all Tilts					15.8±0.5	16.2±0.5	16.5±0.4	16.6±0.6
	Top	at mid Tilt					15.4	15.8	15.9	16.2
		over all Tilts					15.3±0.5	15.7±0.5	15.8±0.5	16.0±0.6
Side lobe suppression for first side lobe above main beam (dB)			>17	>17	>17	>17	>17	>17	>17	>17
Horizontal 3dB beam width (°)			67±3.0	67±3.0	66±3.0	64±4.0	63±4.0	61±4.0	60±4.0	61±5.0
Vertical 3dB beam width (°)			10.3±0.7	9.3±0.5	9.1±0.6	8.4±0.6				
	Bottom						10.3±0.7	9.4±0.6	8.1±0.5	7.5±0.5
	Top						9.9±0.8	8.9±0.6	7.8±0.3	7.1±0.5
VSWR			<1.5							
Cross polar isolation (dB)			≥28				≥28			
Interband isolation (dB)			≥30							
Front to back ratio, ±30° (dB)			>25	>24	>24	>24	>24	>26	>25	>25
Cross polar ratio (dB)	0°		>18	>18	>18	>17	>18	>18	>18	>20
Max. power per input (W)			500 (at 50℃ ambient temperature)				250 (at 50℃ ambient temperature)			
Total power (W)			1000 (at 50℃ ambient temperature)							
Intermodulation IM3 (dBc)			≤-153 (2 x 43 dBm carrier)							
Impedance (Ω)			50							
Grounding			DC Ground							

1. Values based on NGMN recommendations on Base Station Antenna Standards (BASTA).
2. Electrical datasheet in XML format is available.

Mechanical Properties	
Antenna dimensions (H x W x D) (mm)	1999 x 349 x 166
Packing dimensions (H x W x D) (mm)	2350 x 435 x 250
Antenna weight (kg)	26.5
Clamps weight (kg)	3.6 (2 units)
Antenna packing weight (kg)	40.0 (Included clamps)
Mast diameter supported (mm)	50 - 115
Radome material	Fiberglass
Radome colour	Light grey
Operational temperature (℃)	-40 .. +65
Wind load (N)	Frontal: 705 (at 150 km/h) Lateral: 230 (at 150 km/h) Rear side: 730 (at 150 km/h)
Max. operational wind speed (km/h)	200
Survival wind speed (km/h)	250
Connector	10 x 4.3-10 Female
Connector position	Bottom



Accessories

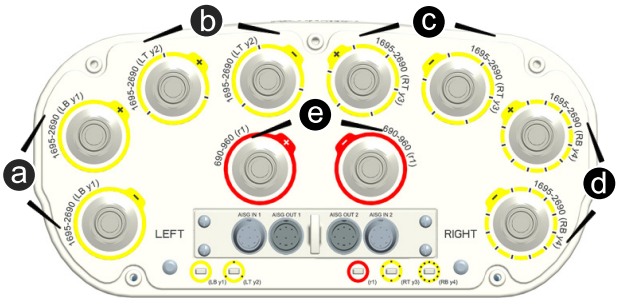
Item	Model	Description	Weight	Units per antenna
Downtilt kit	ASMDT0D01	Mechanical downtilt: 0 - 8 °	2.1 kg	1 (Separate packing)

Integrated RET Specifications

Properties								
RET type	Integrated RET							
RET protocols*	AISG 2.0 / 3GPP							
Input voltage range (V)	10 - 30 DC							
Power consumption (W)	< 6 (motor activated, 12V) < 1.5 (stand by, 12V)							
Adjustment time (full range) (s)	< 65 (typically, depending on antenna type)							
RET connector	4 x 8 pin connector according to IEC 60130-9 Daisy chain in: Male / Daisy chain out: Female							
Pin assignment according AISG	1	2	3	4	5	6	7	8
	DC	n/c	RS-485B	n/c	RS-485A	DC	DC return	n/c
Lightning protection (kA)	3 (10/350 μs) 10 (8/20 μs)							

* Please confirm the AISG protocol of primary station is compatible with RET antenna protocol interface. The protocol of RET antenna software interface is switchable between AISG 2.0/3GPP and AISG 1.1 with a vendor defined command. For more details about protocol switching function, contact Huawei before system installation.

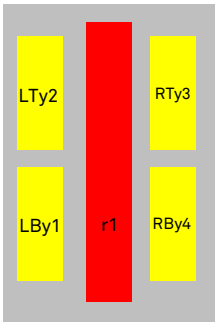
Standards: EN 60950-1 (Safety), EN 55022 (Emission), EN 55024 (Immunity), ETSI EN 301 489, FCC part15
Certification: CE, FCC, RoHS, WEEE



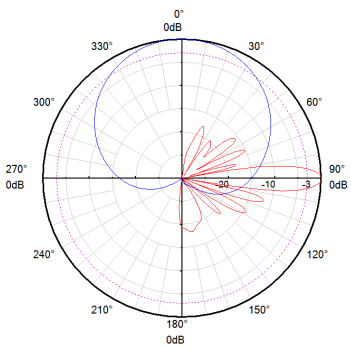
Integrated RET S/N:

ⓐ HWMxxx.....LBy1
ⓑ HWMxxx.....LTy2
ⓒ HWMxxx.....RTy3
ⓓ HWMxxx.....RBy4
ⓔ HWMxxx.....r1

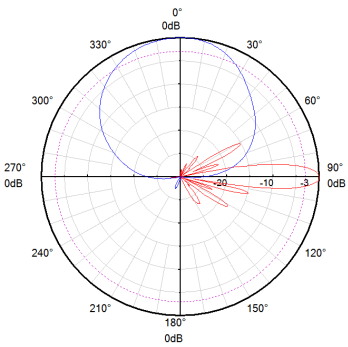
r - Red y - Yellow
L - Left array R - Right array
T - Top array B - Bottom array



Pattern sample for reference



690 - 960 MHz



1695 - 2690 MHz

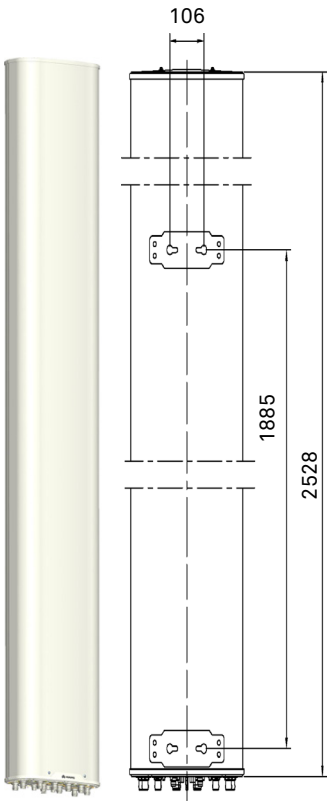
DXXXXX-690-960/1695-2690/1695-2690/1695-2690/1695-2690-65/65/65/65/65-17i/18i/18i/17.5i/17.5i-M/M/M/M/M-R
EasyRET 10-Port Antenna with 5 Integrated RCUs - 2.6m
Model: APE4517R0v06

Antenna Specifications

Electrical Properties									
Frequency range (MHz)			690 - 960				4 x (1695 - 2690)			
			690 - 803	790 - 862	824 - 894	880 - 960	1695 - 1990	1920 - 2200	2200 - 2490	2490 - 2690
Polarization			+45°, -45°							
Electrical downtilt (°)			0 - 10, continuously adjustable, each band separately							
Gain (dBi)		at mid Tilt	16.2	16.5	16.7	17.0				
		over all Tilts	16.1 ±0.5	16.3 ±0.4	16.5 ±0.4	16.8 ±0.4				
	Bottom	at mid Tilt					17.1	17.3	17.1	17.6
		over all Tilts					16.9 ±0.5	17.1±0.3	17.0 ±0.4	17.4 ±0.5
	Top	at mid Tilt					16.8	17.1	16.8	17.3
		over all Tilts					16.7 ±0.5	17.0 ±0.4	16.7 ±0.4	17.1 ±0.5
Side lobe suppression for first side lobe above main beam (dB)			> 17	> 17	> 17	> 17	> 17	> 17	> 17	> 16
Horizontal 3dB beam width (°)			67 ±1.9	66 ±3.5	65 ±2.4	62 ±3.3	63 ±3.4	62 ±2.8	61 ±3.7	60 ±3.1
Vertical 3dB beam width (°)			8.8 ±0.6	8.5 ±0.4	8.0 ±0.3	7.4 ±0.3	7.4 ±0.5	6.8 ±0.5	6.0 ±0.4	5.5 ±0.2
VSWR			< 1.5							
Cross polar isolation (dB)			≥ 28				≥ 28			
Interband isolation (dB)			≥ 30							
Front to back ratio, ±30° (dB)			> 25	> 25	> 25	> 25	> 24	> 24	> 25	> 25
Cross polar ratio (dB)		0°	> 20	> 20	> 20	> 20	> 17	> 17	> 17	> 17
Max. power per input (W)			500 (at 50℃ ambient temperature)				250 (at 50℃ ambient temperature)			
Total power (W)			1000 (at 50℃ ambient temperature)							
Intermodulation IM3 (dBc)			≤ -153 (2 x 43 dBm carrier)							
Impedance (Ω)			50							
Grounding			DC Ground							

1. Values based on NGMN recommendations on Base Station Antenna Standards (BASTA).
2. Electrical datasheet in XML format is available.

Mechanical Properties	
Antenna dimensions (H x W x D) (mm)	2528 x 349 x 166
Packing dimensions (H x W x D) (mm)	2880 x 415 x 245
Antenna weight (kg)	32.0
Clamps weight (kg)	3.6 (2 units)
Antenna packing weight (kg)	47.5 (Included clamps)
Mast diameter supported (mm)	50 - 115
Radome material	Fiberglass
Radome colour	Light grey
Operational temperature (℃)	-40 .. +65
Wind load (N)	Frontal: 920 (at 150 km/h) Lateral: 305 (at 150 km/h) Rear side: 955 (at 150 km/h)
Max. operational wind speed (km/h)	200
Survival wind speed (km/h)	250
Connector	10 x 4.3-10 Female
Connector position	Bottom



Accessories

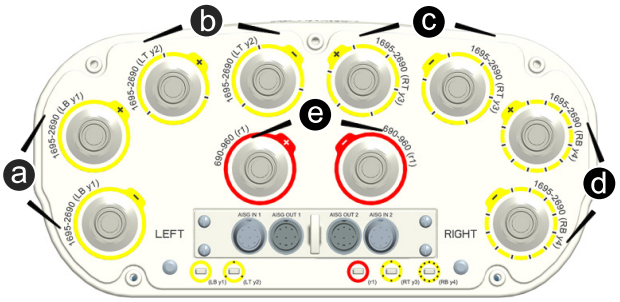
Item	Model	Description	Weight	Units per antenna
Downtilt kit	ASMDT0D01	Mechanical downtilt: 0 - 8 °	2.1 kg	1 (Separate packing)

Integrated RET Specifications

Properties								
RET type	Integrated RET							
RET protocols*	AISG 2.0 / 3GPP							
Input voltage range (V)	10 - 30 DC							
Power consumption (W)	< 6 (motor activated, 12V) < 1.5 (stand by, 12V)							
Adjustment time (full range) (s)	< 65 (typically, depending on antenna type)							
RET connector	4 x 8 pin connector according to IEC 60130-9 Daisy chain in: Male / Daisy chain out: Female							
Pin assignment according AISG	1	2	3	4	5	6	7	8
	DC	n/c	RS-485B	n/c	RS-485A	DC	DC return	n/c
Lightning protection (kA)	3 (10/350 μs) 10 (8/20 μs)							

* Please confirm the AISG protocol of primary station is compatible with RET antenna protocol interface. The protocol of RET antenna software interface is switchable between AISG 2.0/3GPP and AISG 1.1 with a vendor defined command. For more details about protocol switching function, contact Huawei before system installation.

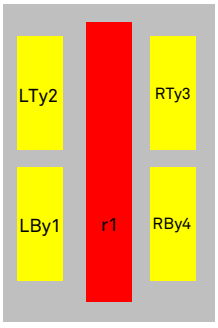
Standards: EN 60950-1 (Safety), EN 55022 (Emission), EN 55024 (Immunity), ETSI EN 301 489, FCC part15
Certification: CE, FCC, RoHS, WEEE



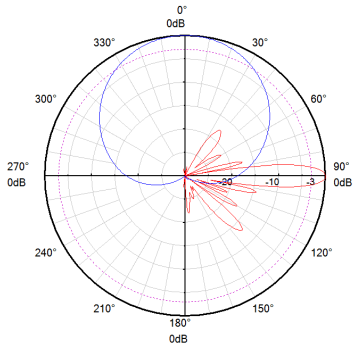
Integrated RET S/N:

ⓐ HWMxxx.....LBy1
ⓑ HWMxxx.....LTy2
ⓒ HWMxxx.....RTy3
ⓓ HWMxxx.....RBy4
ⓔ HWMxxx.....r1

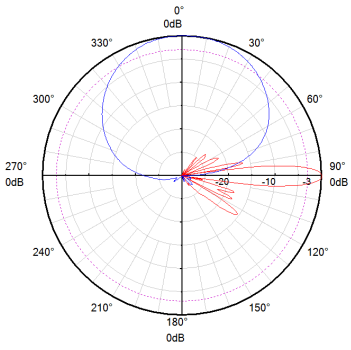
r - Red y - Yellow
L - Left array R - Right array
T - Top array B - Bottom array



Pattern sample for reference



690 - 960 MHz



1695 - 2690 MHz

Antenna Specifications

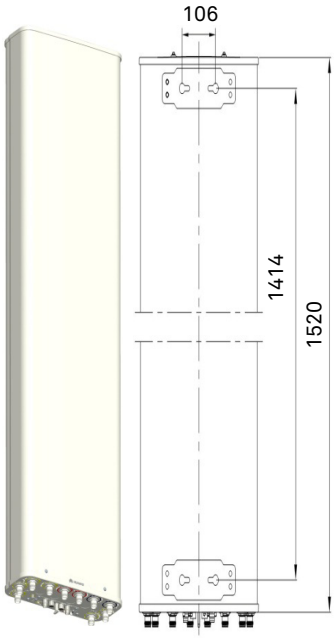
Electrical Properties									
Frequency range (MHz)		690 - 960 (r1)				1710 - 2690 (Cy2)			
		690 - 803	790 - 862	824 - 894	880 - 960	1710 - 1990	1920 - 2200	2200 - 2490	2490 - 2690
Polarization		+45°, -45°				+45°, -45°			
Electrical downtilt (°)		0 - 14, continuously adjustable				2 - 12, continuously adjustable			
Gain (dBi)	at mid Tilt	14.4	14.6	14.7	14.8	17.0	17.2	17.7	18.2
	over all Tilts	14.3 ±0.4	14.5 ±0.5	14.6 ±0.5	14.7 ±0.4	16.7 ±0.5	17.0 ±0.4	17.6 ±0.5	17.8 ±0.5
Side lobe suppression for first side lobe above main beam (dB)		> 15	> 15	> 17	> 17	> 15	> 16	> 16	> 15
Horizontal 3dB beam width (°)		67 ±2.0	67 ±2.0	65 ±2.0	64 ±2.5	65 ±5.0	62 ±5.0	62 ±4.0	58 ±5.0
Vertical 3dB beam width (°)		14.8 ±1.2	13.4 ±0.8	13.2 ±0.6	11.7 ±0.5	6.5 ±0.4	5.8 ±0.3	5.3 ±0.4	4.7 ±0.3
VSWR		< 1.5				< 1.5			
Cross polar isolation (dB)		≥ 28				≥ 28			
Interband isolation (dB)		≥ 28				≥ 28			
Front to back ratio , ±30° (dB)		> 22	> 25	> 25	> 25	> 25	> 27	> 27	> 27
Cross polar ratio (dB)	0°	> 21	> 19	> 19	> 17	> 18	> 16	> 15	> 16
Max. power per input (W)		500 (at 50℃ ambient temperature) *				250 (at 50℃ ambient temperature) *			
Intermodulation IM3 (dBc)		≤ -153 (2 x 43 dBm carrier)				≤ -153 (2 x 43 dBm carrier)			
Impedance (Ω)		50							
Grounding		DC Ground							

Electrical Properties								
Frequency range (MHz)		1710 - 2690 (Ly1)				1710 - 2200 (b1)		2490 - 2690 (Ry3)
		1710 - 1990	1920 - 2200	2200 - 2490	2490 - 2690	1710 - 1990	1920 - 2200	
Polarization		+45°, -45°						
Electrical downtilt (°)		2 - 12, continuously adjustable, each band separately						
Gain (dBi)	at mid Tilt	17.2	17.8	18.0	18.2	16.9	17.5	18.0
	over all Tilts	17.0 ±0.5	17.7 ±0.4	17.7 ±0.3	18.1 ±0.3	16.7 ±0.5	17.4 ±0.4	17.8 ±0.4
Side lobe suppression for first side lobe above main beam (dB)		> 16	> 17	> 17	> 16	> 15	> 16	> 16
Horizontal 3dB beam width (°)		68 ±3.0	64 ±4.0	61 ±5.0	58 ±4.0	68 ±3.0	64 ±3.0	58 ±3.0
Vertical 3dB beam width (°)		6.6 ±0.4	6.1 ±0.4	5.4 ±0.4	4.9 ±0.4	6.4 ±0.5	5.8 ±0.5	4.8 ±0.4
VSWR		< 1.5						
Cross polar isolation (dB)		≥ 28						
Interband isolation (dB)		≥ 28						
Front to back ratio , ±30° (dB)		> 27	> 27	> 27	> 27	> 25	> 26	> 25
Cross polar ratio (dB)	0°	> 20	> 18	> 15	> 17	> 18	> 16	> 18
Max. power per input (W)		250 (at 50℃ ambient temperature) *						
Intermodulation IM3 (dBc)		≤ -153 (2 x 43 dBm carrier)						
Impedance (Ω)		50						
Grounding		DC Ground						

* Total power : 1000 W (at 50℃ ambient temperature)

1. Values based on NGMN recommendations on Base Station Antenna Standards (BASTA).
2. Electrical datasheet in XML format is available.

Mechanical Properties	
Antenna dimensions (H x W x D) (mm)	1520 x 369 x 149
Packing dimensions (H x W x D) (mm)	1790 x 435 x 240
Antenna weight (kg)	25.8
Clamps weight (kg)	3.6 (2 units)
Antenna packing weight (kg)	37.3 (Included clamps)
Mast diameter supported (mm)	50 - 115
Radome material	Fiberglass
Radome colour	Light grey
Operational temperature (℃)	-40 .. +65
Wind load (N)	Frontal: 730 (at 150 km/h) Lateral: 145 (at 150 km/h) Rear side: 725 (at 150 km/h)
Max. operational wind speed (km/h)	200
Survival wind speed (km/h)	250
Connector	10 x 4.3-10 Female
Connector position	Bottom

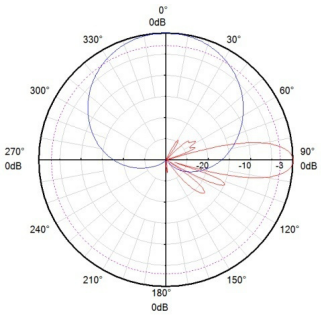


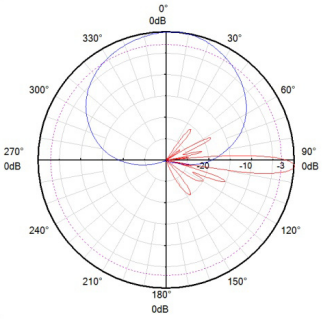
1 LnH Band
4-10 Ports

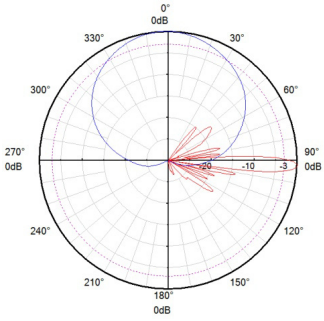
Accessories

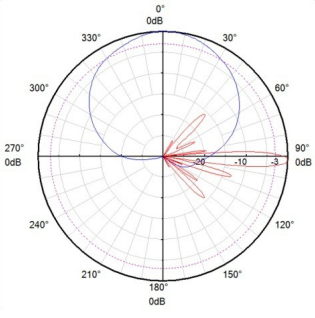
Item	Model	Description	Weight	Units per antenna
Downtilt kit	ASMDT0D01	Mechanical downtilt: 0 - 16 °	2.1 kg	1 (Separate packing)

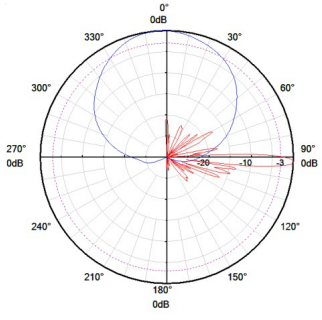
Pattern sample for reference


690 - 960 MHz


1710 - 2690 MHz
(Cy2)


1710 - 2690 MHz
(Ly1)


1710 - 2200 MHz

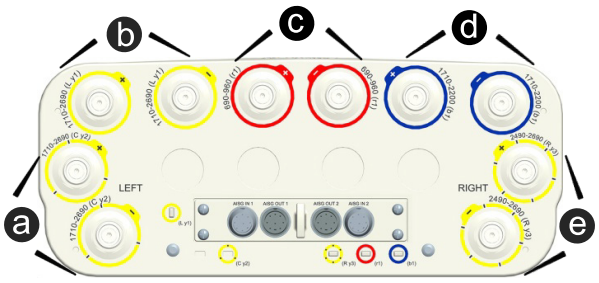

2490 - 2690 MHz

Integrated RET Specifications

Properties								
RET type	Integrated RET							
RET protocols*	AISG 2.0 / 3GPP							
Input voltage range (V)	10 - 30 DC							
Power consumption (W)	< 6 (motor activated, 12V) < 1.5 (stand by, 12V)							
Adjustment time (full range) (s)	< 65 (typically, depending on antenna type)							
RET connector	4 x 8 pin connector according to IEC 60130-9 Daisy chain in: Male / Daisy chain out: Female							
Pin assignment according AISG	1	2	3	4	5	6	7	8
	DC	n/c	RS-485B	n/c	RS-485A	DC	DC return	n/c
Lightning protection (kA)	3 (10/350 μs) 10 (8/20 μs)							

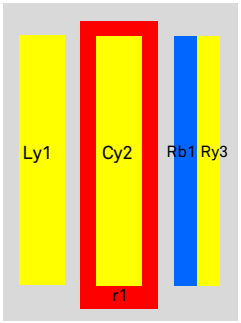
* Please confirm the AISG protocol of primary station is compatible with RET antenna protocol interface. The protocol of RET antenna software interface is switchable between AISG 2.0/3GPP and AISG 1.1 with a vendor defined command. For more details about protocol switching function, contact Huawei before system installation.

Standards: EN 60950-1 (Safety), EN 55022 (Emission), EN 55024 (Immunity), ETSI EN 301 489, FCC part15
Certification: CE, FCC, RoHS, WEEE



Integrated RET S/N:

- ⓐ HWMxxx.....Cy2
- ⓑ HWMxxx.....Ly1
- ⓒ HWMxxx.....r1
- ⓓ HWMxxx.....b1
- ⓔ HWMxxx.....Ry3



r - Red y - Yellow b - Blue
L - Left array R - Right array C - Center array

Multi-band

B - 4 2LnH

6 Ports - 2L1H

Frequency Range (MHz)	3dB Horizontal beam width (°)	Gain (dBi)	Electrical downtilt (°)	Tilt Method	Connector	Dimension(mm)	Model	Page	Array symbol
690-960/ 690-960/ 1695-2690	65/65/65	14.5/14.5/ 18	0-14/0-14/ 2-12	EasyRET2.0	6 x 4.3-10	1499 x 429 x 196	**ATR4518R24v06	141	KK
690-960/ 690-960/ 1695-2690	65/65/65	16/16/18	0-10/0-10/ 2-12	EasyRET2.0	6 x 4.3-10	1999 x 429 x 196	**ATR4518R25v06	142	KK
690-862/ 880-960/ 1710-2690	65/65/65	14/14.5/ 17.5	0-12/0-12/ 2-12	EasyRET2.0	6 x 4.3-10	1490 x 298 x 150	ATR4517R5v06	143	K
790-862/ 880-960/ 1710-2690	65/65/65	15.5/16/18	0-10/0-10/ 0-10	EasyRET2.0	6 x 4.3-10	2020 x 298 x 150	ATR4518R2v06	145	K
790-862/ 880-960/ 1710-2690	65/65/65	16.5/17/18	0-10/0-10/ 0-10	EasyRET2.0	6 x 4.3-10	2520 x 298 x 150	ATR4518R12v06	147	K

8 Ports - 2L2H

Frequency Range (MHz)	3dB Horizontal beam width (°)	Gain (dBi)	Electrical downtilt (°)	Tilt Method	Connector	Dimension(mm)	Model	Page	Array symbol
690-960/ 690-960/ 1695-2690/ 1695-2690	65/65/65/65	14.5/14.5/ 18/18	0-14/0-14/ 2-12/2-12	EasyRET2.0	8 x 4.3-10	1499 x 429 x 196	AQU4518R23v06	149	S
690-960/ 690-960/ 1695-2690/ 1695-2690	65/65/65/65	16/16/ 18/18	0-10/0-10/ 2-12/2-12	EasyRET2.0	8 x 4.3-10	1999 x 429 x 196	AQU4518R24v06	151	S
690-960/ 690-960/ 1695-2690/ 1695-2690	65/65/65/65	17/17/ 18/18	0-10/0-10/ 2-12/2-12	EasyRET2.0	8 x 4.3-10	2550 x 429 x 196	AQU4518R25v06	153	S
690-862/ 880-960/ 1710-2690/ 1710-2690	65/65/65/65	14/14.5/ 17.5/17.5	0-12/0-12/ 0-10/0-10	EasyRET2.0	8 x 4.3-10	1499 x 359 x 178	AQU4517R4v06	155	R
790-862/ 880-960/ 1710-2690/ 1710-2690	65/65/65/65	15.5/16/ 18/18	0-10/0-10/ 0-10/0-10	EasyRET2.0	8 x 4.3-10	1999 x 349 x 166	AQU4518R5v06	157	R

*** Preliminary Issue*

Multi-band

B - 4 2LnH

Frequency Range (MHz)	3dB Horizontal beam width (°)	Gain (dBi)	Electrical downtilt (°)	Tilt Method	Connector	Dimension(mm)	Model	Page	Array symbol
790-862/ 880-960/ 1710-2690/ 1710-2690	65/65/65/65	16.5/17/ 18/18	0-10/0-10/ 0-10/0-10	EasyRET2.0	8 x 4.3-10	2528 x 349 x 166	AQU4518R4v06	**159**	R
690-803/ 824-960/ 1710-2690/ 1710-2690	65/65/65/65	14/14.5/ 17.5/17.5	0-12/0-12/ 0-10/0-10	EasyRET2.0	8 x 4.3-10	1499 x 359 x 178	AQU4518R19v06	**161**	R
690-803/ 824-960/ 1710-2690/ 1710-2690	65/65/65/65	15/16/ 18/18	0-10/0-10/ 0-10/0-10	EasyRET2.0	8 x 4.3-10	2022 x 359 x 178	AQU4518R17v06	**163**	R

10 Ports - 2L3H

Frequency Range (MHz)	3dB Horizontal beam width (°)	Gain (dBi)	Electrical downtilt (°)	Tilt Method	Connector	Dimension(mm)	Model	Page	Array symbol
690-960/ 690-960/ 1427-2690/ 1695-2690/ 1695-2690	65/65/65/ 65/65	14.5/14.5/ 17/17.5/ 17.5	0-14/0-14/ 0-10/2-12/ 2-12	EasyRET2.0	10 x 4.3-10	1499 x 469 x 206	**APE4518R13v06	**165**	W4
690-960/ 690-960/ 1427-2200/ 1695-2690/ 1695-2690	65/65/65/ 65/65	16/16/17/ 18/18	0-10/0-10/ 0-10/2-12/ 2-12	EasyRET2.0	10 x 4.3-10	2099 x 469 x 206	**APE4518R14v06	**166**	W4
790-862/ 880-960/ 1710-2690/ 1710-2170/ 2490-2690	65/65/65/ 65/65	15.5/16/18 /18/18	0-10/0-10/ 0-10/0-10/ 0-10	EasyRET2.0	10 x 4.3-10	1999 x 349 x 166	APE4518R0v06	**167**	W
790-862/ 880-960/ 1710-2690/ 1710-2170/ 2490-2690	65/65/65/ 65/65	16.5/17/ 18/18/18	0-10/0-10/ 0-10/0-10/ 0-10	EasyRET2.0	10 x 4.3-10	2528 x 349 x 166	APE4518R1v06	**170**	W
690-862/ 880-960/ 1427-2200/ 1695-2690/ 1695-2690	65/65/65/ 65/65	15/15.5/ 17/18/18	2-12/2-12/ 2-12/2-12/ 2-12	EasyRET2.0	10 x 4.3-10	1999 x 369 x 149	**APE4518R17v06	**173**	W3

*** Preliminary Issue*

Multi-band

B - 4 2LnH

Frequency Range (MHz)	3dB Horizontal beam width (°)	Gain (dBi)	Electrical downtilt (°)	Tilt Method	Connector	Dimension(mm)	Model	Page	Array symbol
690-862/ 880-960/ 1427-2200/ 1695-2690/ 1695-2690	65/65/65/ 65/65	16.5/17/17 .5/18i/18	2-12/2-12/ 2-12/2-12/ 2-12	EasyRET2.0	10 x 4.3-10	2769 x 369 x 149	**APE4518R21v06	**176**	W3
690-862/ 880-960/ 1710-2690/ 1710-2690/ 1710-2690	65/65/65/ 65/65	16.5/17/ 17.5/18/ 18	0-10/0-10/ 0-10/0-10/ 0-10	EasyRET2.0	10 x 4.3-10	2769 x 359 x 178	APE4518R12v06	**177**	W2
690-803/ 824-960/ 1710-2690/ 1710-2690/ 1710-2690	65/65/65/ 65/65	16.5/17/ 18/18/ 17.5	0-10/0-10/ 0-10/0-10/ 0-10	EasyRET2.0	10 x 4.3-10	2769 x 359 x 178	APE4518R16v06	**179**	W2
690-803/ 824-960/ 1427-2200/ 1695-2690/ 1695-2690	65/65/65/ 65/65	15/15.5/ 17/18/18	2-12/2-12/ 2-12/2-12/ 2-12	EasyRET2.0	10 x 4.3-10	1999 x 369 x 149	**APE4518R20v06	**181**	W3

12 Ports - 2L4H

Frequency Range (MHz)	3dB Horizontal beam width (°)	Gain (dBi)	Electrical downtilt (°)	Tilt Method	Connector	Dimension(mm)	Model	Page	Array symbol
690-960/ 690-960/ 1695-2200/ 1695-2200/ 2490-2690/ 2490-2690	65/65/65/ 65/65/65	14.5/14.5/ 17/17/ 17.5/17.5	0-14/0-14/ 2-12/2-12/ 2-12/2-12	EasyRET2.0	12 x 4.3-10	1499 x 429 x 196	**ASI4518R14v06	**184**	X3
690-960/ 690-960/ 1695-2690/ 1695-2690/ 1695-2690/ 1695-2690	65/65/65/ 65/65/65	16/16/16/ 16/16.5/ 16.5	0-10/0-10/ 2-12/2-12/ 2-12/2-12	EasyRET2.0	12 x 4.3-10	1999 x 429 x 196	**ASI4517R3v06	**185**	Z
690-960/ 690-960/ 1695-2690/ 1695-2690/ 1695-2690/ 1695-2690	65/65/65/ 65/65/65	17/17/ 17.5/17.5/ 17.5/17.5	0-10/0-10/ 2-12/2-12/ 2-12/2-12	EasyRET2.0	12 x 4.3-10	2769 x 429 x 196	ASI4518R10v06	**186**	Z

*** Preliminary Issue*

Multi-band

B - 4 2LnH

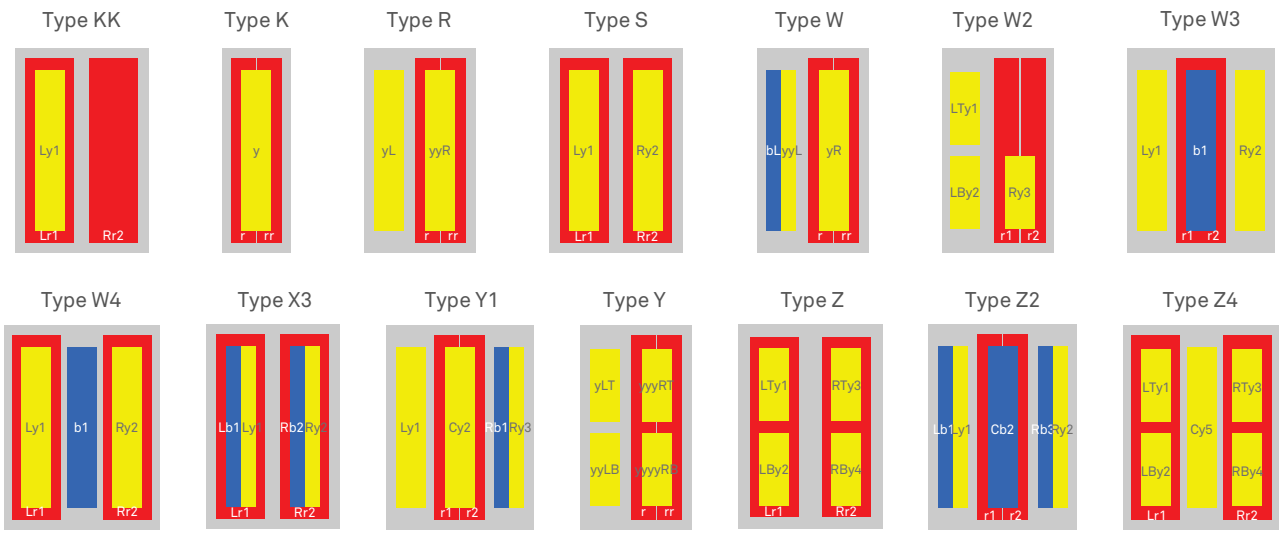
Frequency Range (MHz)	3dB Horizontal beam width (°)	Gain (dBi)	Electrical downtilt (°)	Tilt Method	Connector	Dimension(mm)	Model	Page	Array symbol
690-862/ 880-960/ 1710-2690/ 1710-2690/ 1710-2200/ 2490-2690	65/65/65/ 65/65/65	14/14.5/ 17.5/17.5/ 17/17.5	2-14/2-14/ 2-12/2-12/ 2-12/2-12	EasyRET2.0	12 x 4.3-10	1520 x 369 x 149	ASI4518R11v06	**188**	Y1
690-862/ 880-960/ 1710-2690/ 1710-2690/ 1710-2690/ 1710-2690	65/65/65/ 65/65/65	16.5/17/ 18/18/ 17.5/17.5	0-10/0-10/ 0-10/0-10/ 0-10/0-10	EasyRET2.0	12 x 4.3-10	2769 x 359 x 178	ASI4518R4v06	**191**	Y

14 Ports - 2L5H

Frequency Range (MHz)	3dB Horizontal beam width (°)	Gain (dBi)	Electrical downtilt (°)	Tilt Method	Connector	Dimension(mm)	Model	Page	Array symbol
690-862/ 880-960/ 1427-2200/ 2*1695-2200/ 2*2490-2690	7 x 65	15/15.5/ 17/17/17/ 17.5/17.5	2-12/2-12/ 2-12/2-12/ 2-12/2-12/ 2-12	EasyRET2.0	14 x 4.3-10	2000 x 369 x 149	**AHP4517R0v06	**193**	Z2
690-862/ 880-960/ 1427-2690/ 4x(1695-2690)	7 x 65	16.5/17/ 17.5/17.5/ 17.5/17.5/ 17.5	2-12/2-12/ 2-12/2-12/ 2-12/2-12/ 2-12	EasyRET2.0	14 x 4.3-10	2769 x 369 x 149	**AHP4517R2v06	**196**	Z4

*** Preliminary Issue*

Array Symbol Type



Preliminary Issue

Electrical Properties			
Frequency range (MHz)		2 x (690 - 960)	1695 - 2690
Electrical downtilt (°)		0 - 14	2 - 12
Gain (dBi)		14.5	18
Side lobe suppression for first side lobe above main beam (Typ.) (dB)		15	16
Horizontal 3dB beam width (°)		65	65
Vertical 3dB beam width (°)		13	6
VSWR		< 1.5	
Front to back ratio, copolar (dB)		Typ. 25	Typ. 26
Cross polar ratio (dB)	0°	Typ. 17	Typ. 17
Intermodulation IM3 (dBc)		≤ -153 (2 x 43 dBm carrier)	

Mechanical Properties	
Antenna dimensions (H x W x D) (mm)	1499 x 429 x 196
Packing dimensions (H x W x D) (mm)	1695 x 530 x 270
Antenna net weight (kg)	28
Mechanical downtilt (°)	0 - 16
Connector	6 x 4.3-10 Female
RET type	Integrated RET
RET protocols	AISG 2.0 / 3GPP

Preliminary Issue

Electrical Properties			
Frequency range (MHz)		2 x (690 - 960)	1695 - 2690
Electrical downtilt (°)		0 - 10	2 - 12
Gain (dBi)		16	18
Side lobe suppression for first side lobe above main beam (Typ.) (dB)		16	16
Horizontal 3dB beam width (°)		65	65
Vertical 3dB beam width (°)		9.5	6
VSWR		< 1.5	
Front to back ratio, copolar (dB)		Typ. 25	Typ. 26
Cross polar ratio (dB)	0°	Typ. 17	Typ. 17
Intermodulation IM3 (dBc)		≤ -153 (2 x 43 dBm carrier)	

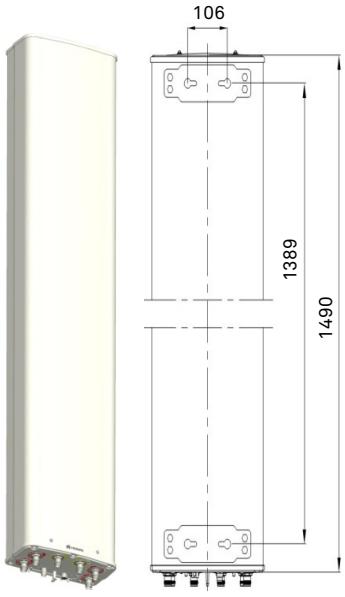
Mechanical Properties	
Antenna dimensions (H x W x D) (mm)	1999 x 429 x 196
Packing dimensions (H x W x D) (mm)	2195 x 530 x 270
Antenna net weight (kg)	30
Mechanical downtilt (°)	0 - 12
Connector	6 x 4.3-10 Female
RET type	Integrated RET
RET protocols	AISG 2.0 / 3GPP

Antenna Specifications

Electrical Properties								
Frequency range (MHz)		690 - 862		880 - 960	1710 - 2690			
		690 - 820	790 - 862	880 - 960	1710 - 1990	1920 - 2200	2200 - 2490	2490 - 2690
Polarization		+45°, -45°						
Electrical downtilt (°)		0 - 12, continuously adjustable, each band separately			2 - 12, continuously adjustable			
Gain (dBi)	at mid Tilt	13.8	13.8	14.3	16.8	17.0	17.2	17.5
	over all Tilts	13.7 ±0.3	13.7 ±0.3	14.1 ±0.5	16.6 ±0.4	16.8 ±0.4	17.1 ±0.4	17.4 ±0.4
Side lobe suppression for first side lobe above main beam (dB)		> 16	> 16	> 17	> 15	> 15	> 15	> 15
Horizontal 3dB beam width (°)		69 ±2.0	66 ±2.0	63 ±2.0	63 ±5.0	61 ±5.0	60 ±5.0	60 ±5.0
Vertical 3dB beam width (°)		15.3 ±1.0	13.5 ±1.0	12.0 ±1.0	6.5 ±0.5	6.0 ±0.5	5.2 ±0.3	4.8 ±0.3
VSWR		< 1.5						
Cross polar isolation (dB)		≥ 28			≥ 28			
Interband isolation (dB)		≥ 28 (690 - 862 // 880 - 960 MHz) ≥ 28 (690 - 862 // 1710 - 2690 MHz) ≥ 28 (880 - 960 // 1710 - 2690 MHz)						
Front to back ratio, ±30° (dB)		> 28	> 28	> 26	> 27	> 27	> 27	> 28
Cross polar ratio (dB)	0°	> 25	> 22	> 18	> 17	> 17	> 20	> 19
Max. power per input (W)		300 (at 50℃ ambient temperature)			250 (at 50℃ ambient temperature)			
Intermodulation IM3 (dBc)		≤ -150 (2 x 43 dBm carrier)						
Impedance (Ω)		50						
Grounding		DC Ground						

1. Values based on NGMN recommendations on Base Station Antenna Standards (BASTA).
2. Electrical datasheet in XML format is available.

Mechanical Properties	
Antenna dimensions (H x W x D) (mm)	1490 x 298 x 150
Packing dimensions (H x W x D) (mm)	1835 x 360 x 225
Antenna weight (kg)	20.3
Clamps weight (kg)	3.0 (2 units)
Antenna packing weight (kg)	30.0 (Included clamps)
Mast diameter supported (mm)	50 - 115
Radome material	Fiberglass
Radome colour	Light grey
Operational temperature (℃)	-40 .. +65
Wind load (N)	Frontal: 580 (at 150 km/h) Lateral: 250 (at 150 km/h) Rear side: 695 (at 150 km/h)
Max. operational wind speed (km/h)	200
Survival wind speed (km/h)	250
Connector	6 x 4.3-10 Female
Connector position	Bottom



Accessories

Item	Model	Description	Weight	Units per antenna
Downtilt kit	ASMDT0C01	Mechanical downtilt: 0 - 16 °	2.1 kg	1 (Separate packing)

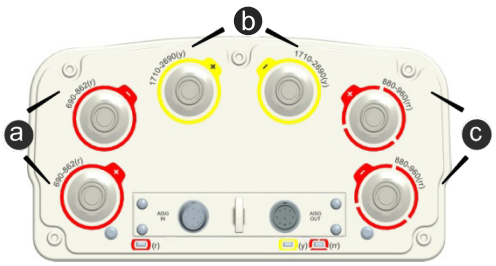
Integrated RET Specifications

Properties								
RET type	Integrated RET							
RET protocols*	AISG 2.0 / 3GPP							
Input voltage range (V)	10 - 30 DC							
Power consumption (W)	< 6 (motor activated, 12V) < 1.5 (stand by, 12V)							
Adjustment time (full range) (s)	< 65 (typically, depending on antenna type)							
RET connector	2 x 8 pin connector according to IEC 60130-9 Daisy chain in: Male / Daisy chain out: Female							
Pin assignment according AISG	1	2	3	4	5	6	7	8
	DC	n/c	RS-485B	n/c	RS-485A	DC	DC return	n/c
Lightning protection (kA)	3 (10/350 μs) 10 (8/20 μs)							

* Please confirm the AISG protocol of primary station is compatible with RET antenna protocol interface. The protocol of RET antenna software interface is switchable between AISG 2.0/3GPP and AISG 1.1 with a vendor defined command. For more details about protocol switching function, contact Huawei before system installation.

Standards: UL 60950-1 (Safety), UL 60950-22 (Safety - Equipment installed outdoor), EN 55022 (Emission), EN 55024 (Immunity), ETSI EN 301 489, FCC Part15, ICES-003

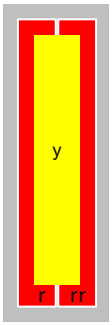
Certification: CE, FCC, IC, RCM



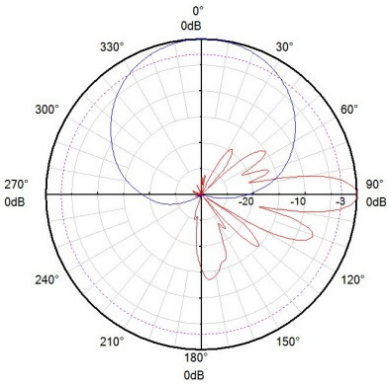
Integrated RET S/N:

- a HWMxxx.....r
- b HWMxxx.....y
- c HWMxxx.....rr

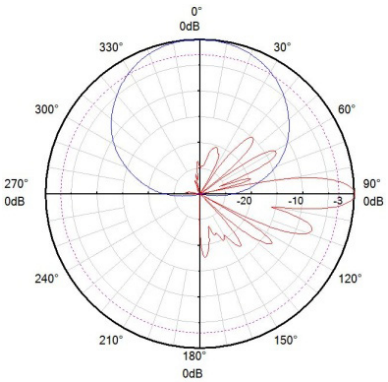
r - Red y - Yellow



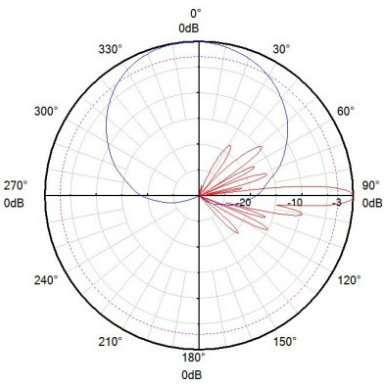
Pattern sample for reference



690 - 862 MHz



880 - 960 MHz



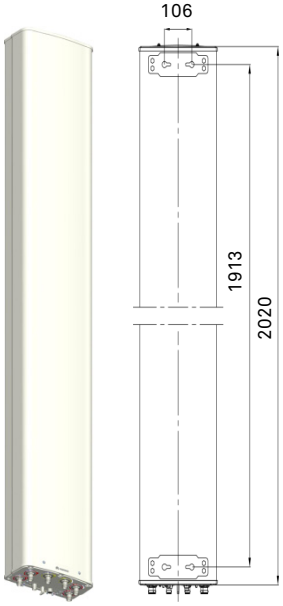
1710 - 2690 MHz

Antenna Specifications

Electrical Properties							
Frequency range (MHz)		790 - 862	880 - 960	1710 - 2690			
				1710 - 1990	1920 - 2200	2200 - 2490	2490 - 2690
Polarization		+45°, -45°					
Electrical downtilt (°)		0 - 10, continuously adjustable, each band separately					
Gain (dBi)	at mid Tilt	15.0	15.4	17.8	18.0	18.0	18.0
	over all Tilts	15.0 ±0.4	15.3 ±0.3	17.5 ±0.5	17.9 ±0.3	17.9 ±0.4	17.8 ±0.5
Side lobe suppression for first side lobe above main beam (dB)		> 16	> 16	> 16	> 17	> 17	> 16
Horizontal 3dB beam width (°)		68 ±2.0	65 ±2.0	61 ±3.0	60 ±3.0	60 ±5.0	61 ±5.0
Vertical 3dB beam width (°)		10.1 ±0.8	9.9 ±0.8	6.0 ±0.4	5.4 ±0.4	4.6 ±0.3	4.3 ±0.3
VSWR		< 1.5					
Cross polar isolation (dB)		≥ 28					
Interband isolation (dB)		≥ 28 (790 - 862 // 880 - 960 MHz) ≥ 30 (790 - 960 // 1710 - 2690 MHz)					
Front to back ratio, ±30° (dB)		> 26	> 26	> 27	> 27	> 26	> 26
Cross polar ratio (dB)	0°	> 18	> 18	> 18	> 18	> 18	> 18
Max. power per input (W)		500 (at 50℃ ambient temperature)		250 (at 50℃ ambient temperature)			
Intermodulation IM3 (dBc)		≤ -150 (2 x 43 dBm carrier)					
Impedance (Ω)		50					
Grounding		DC Ground					

1. Values based on NGMN recommendations on Base Station Antenna Standards (BASTA).
2. Electrical datasheet in XML format is available.

Mechanical Properties	
Antenna dimensions (H x W x D) (mm)	2020 x 298 x 150
Packing dimensions (H x W x D) (mm)	2365 x 360 x 230
Antenna weight (kg)	25.3
Clamps weight (kg)	3.6 (2 units)
Antenna packing weight (kg)	37.3 (Included clamps)
Mast diameter supported (mm)	50 - 115
Radome material	Fiberglass
Radome colour	Light grey
Operational temperature (℃)	-40 .. +65
Wind load (N)	Frontal: 825 (at 150 km/h) Lateral: 355 (at 150 km/h) Rear side: 990 (at 150 km/h)
Max. operational wind speed (km/h)	200
Survival wind speed (km/h)	250
Connector	6 x 4.3-10 Female
Connector position	Bottom



Accessories

Item	Model	Description	Weight	Units per antenna
Downtilt kit	ASMDT0D01	Mechanical downtilt: 0 - 12 °	2.1 kg	1 (Separate packing)

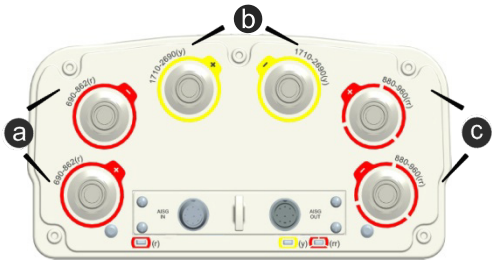
Integrated RET Specifications

Properties								
RET type	Integrated RET							
RET protocols*	AISG 2.0 / 3GPP							
Input voltage range (V)	10 - 30 DC							
Power consumption (W)	< 6 (motor activated, 12V) < 1.5 (stand by, 12V)							
Adjustment time (full range) (s)	< 65 (typically, depending on antenna type)							
RET connector	2 x 8 pin connector according to IEC 60130-9 Daisy chain in: Male / Daisy chain out: Female							
Pin assignment according AISG	1	2	3	4	5	6	7	8
	DC	n/c	RS-485B	n/c	RS-485A	DC	DC return	n/c
Lightning protection (kA)	3 (10/350 μs) 10 (8/20 μs)							

* Please confirm the AISG protocol of primary station is compatible with RET antenna protocol interface. The protocol of RET antenna software interface is switchable between AISG 2.0/3GPP and AISG 1.1 with a vendor defined command. For more details about protocol switching function, contact Huawei before system installation.

Standards: UL 60950-1 (Safety), UL 60950-22 (Safety - Equipment installed outdoor), EN 55022 (Emission), EN 55024 (Immunity), ETSI EN 301 489, FCC Part15, ICES-003

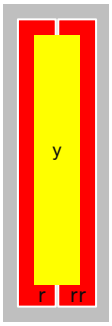
Certification: CE, FCC, IC, RCM



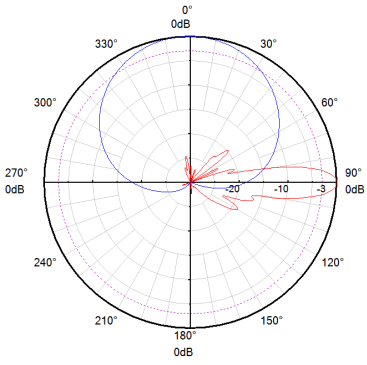
Integrated RET S/N:

- a HWMxxx.....r
- b HWMxxx.....y
- c HWMxxx.....rr

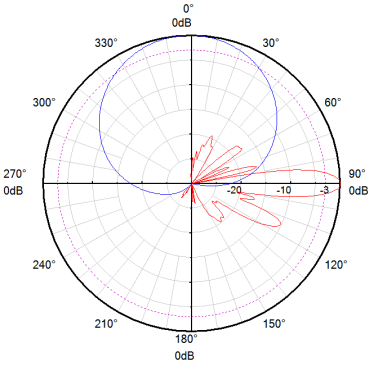
r - Red y - Yellow



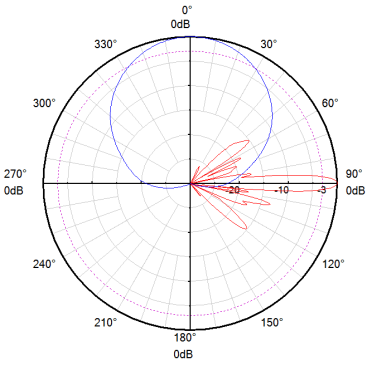
Pattern sample for reference



790 - 862 MHz



880 - 960 MHz



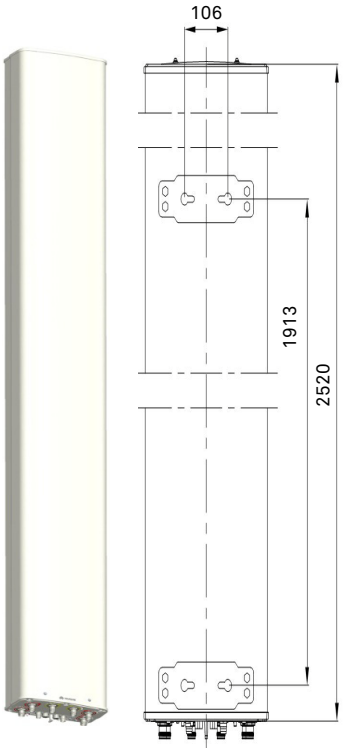
1710 - 2690 MHz

Antenna Specifications

Electrical Properties							
Frequency range (MHz)		790 - 862	880 - 960	1710 - 2690			
				1710 - 1990	1920 - 2200	2200 - 2490	2490 - 2690
Polarization		+45°, -45°					
Electrical downtilt (°)		0 - 10, continuously adjustable, each band separately					
Gain (dBi)	at mid Tilt	15.9	16.3	17.8	18.0	18.0	18.0
	over all Tilts	15.8 ±0.4	16.1 ±0.5	17.5 ±0.5	17.8 ±0.4	17.8 ±0.4	17.8 ±0.4
Side lobe suppression for first side lobe above main beam (dB)		> 16	> 16	> 16	> 17	> 17	> 16
Horizontal 3dB beam width (°)		67 ±2.0	64 ±2.0	61 ±4.0	60 ±4.0	60 ±4.0	61 ±5.0
Vertical 3dB beam width (°)		8.5 ±0.7	7.5 ±0.7	6.0 ±0.5	5.4 ±0.4	4.6 ±0.3	4.3 ±0.3
VSWR		< 1.5					
Cross polar isolation (dB)		≥ 28	≥ 28	≥ 28			
Interband isolation (dB)		≥ 28 (790 - 862 // 880 - 960 MHz) ≥ 30 (790 - 960 // 1710 - 2690 MHz)					
Front to back ratio, ±30° (dB)		> 28	> 28	> 28	> 28	> 28	> 28
Cross polar ratio (dB)	0°	> 18	> 18	> 18	> 18	> 18	> 18
Max. power per input (W)		500 (at 50℃ ambient temperature)		250 (at 50℃ ambient temperature)			
Intermodulation IM3 (dBc)		≤ -150 (2 x 43 dBm carrier)					
Impedance (Ω)		50					
Grounding		DC Ground					

1. Values based on NGMN recommendations on Base Station Antenna Standards (BASTA).
2. Electrical datasheet in XML format is available.

Mechanical Properties	
Antenna dimensions (H x W x D) (mm)	2520 x 298 x 150
Packing dimensions (H x W x D) (mm)	2885 x 365 x 235
Antenna weight (kg)	29.0
Clamps weight (kg)	3.6 (2 units)
Antenna packing weight (kg)	44.0 (Included clamps)
Mast diameter supported (mm)	50 - 115
Radome material	Fiberglass
Radome colour	Light grey
Operational temperature (℃)	-40 .. +65
Wind load (N)	Frontal: 1060 (at 150 km/h) Lateral: 455 (at 150 km/h) Rear side: 1265 (at 150 km/h)
Max. operational wind speed (km/h)	200
Survival wind speed (km/h)	250
Connector	6 x 4.3-10 Female
Connector position	Bottom



Accessories

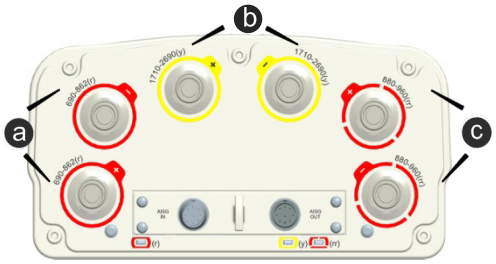
Item	Model	Description	Weight	Units per antenna
Downtilt kit	ASMDT0D01	Mechanical downtilt: 0 - 8 °	2.1 kg	1 (Separate packing)

Integrated RET Specifications

Properties								
RET type	Integrated RET							
RET protocols*	AISG 2.0 / 3GPP							
Input voltage range (V)	10 - 30 DC							
Power consumption (W)	< 6 (motor activated, 12V) < 1.5 (stand by, 12V)							
Adjustment time (full range) (s)	< 65 (typically, depending on antenna type)							
RET connector	2 x 8 pin connector according to IEC 60130-9 Daisy chain in: Male / Daisy chain out: Female							
Pin assignment according AISG	1	2	3	4	5	6	7	8
	DC	n/c	RS-485B	n/c	RS-485A	DC	DC return	n/c
Lightning protection (kA)	3 (10/350 μs) 10 (8/20 μs)							

* Please confirm the AISG protocol of primary station is compatible with RET antenna protocol interface. The protocol of RET antenna software interface is switchable between AISG 2.0/3GPP and AISG 1.1 with a vendor defined command. For more details about protocol switching function, contact Huawei before system installation.

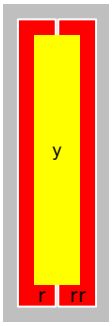
Standards: UL 60950-1 (Safety), UL 60950-22 (Safety - Equipment installed outdoor), EN 55022 (Emission), EN 55024 (Immunity), ETSI EN 301 489, FCC Part15, ICES-003
Certification: CE, FCC, IC, RCM



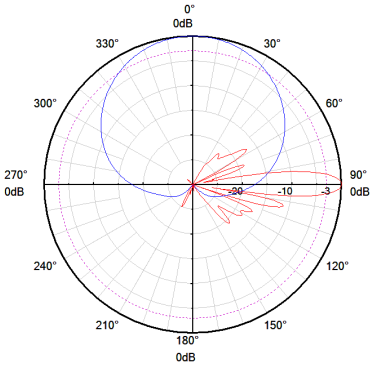
Integrated RET S/N:

- a HWMxxx.....r
- b HWMxxx.....y
- c HWMxxx.....rr

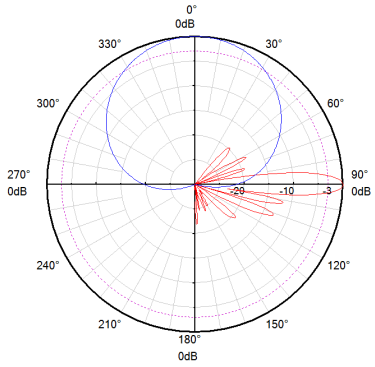
r - Red y - Yellow



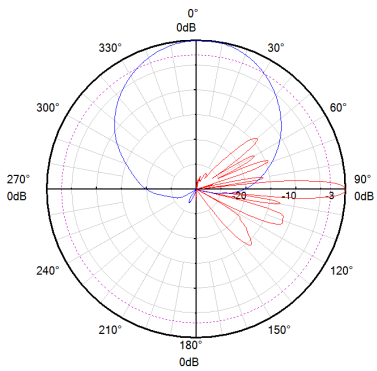
Pattern sample for reference



790 - 862 MHz



880 - 960 MHz



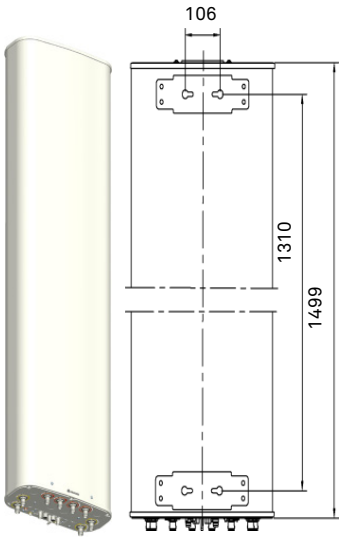
1710 - 2690 MHz

Antenna Specifications

Electrical Properties									
Frequency range (MHz)		2 x (690 - 960)				2 x (1695 - 2690)			
		690 - 803	790 - 862	824 - 894	880 - 960	1695 - 1990	1920 - 2200	2200 - 2490	2490 - 2690
Polarization		+45°, -45°							
Electrical downtilt (°)		0 - 14, continuously adjustable, each band separately				2 - 12, continuously adjustable, each band separately			
Gain (dBi)	at mid Tilt	13.8	14.2	14.4	14.5	17.0	17.2	17.4	18.1
	over all Tilts	13.7 ±0.5	14.1 ±0.5	14.3 ±0.5	14.4 ±0.5	16.8 ±0.5	17.1 ±0.5	17.3 ±0.5	17.9 ±0.5
Side lobe suppression for first side lobe above main beam (dB)		> 15	> 17	> 17	> 16	> 16	> 16	> 16	> 16
Horizontal 3dB beam width (°)		66 ±5	63 ±5	62 ±5	60 ±5	65 ±5	63 ±5	60 ±5	60 ±5
Vertical 3dB beam width (°)		15.3 ±1.2	14.0 ±1.1	13.3 ±1.0	12.2 ±0.8	6.8 ±0.7	5.8 ±0.5	5.3 ±0.4	5.0 ±0.5
VSWR		< 1.5							
Cross polar isolation (dB)		≥ 28							
Interband isolation (dB)		≥ 28							
Front to back ratio , ±30° (dB)		> 22	> 24	> 24	> 25	> 26	> 27	> 27	> 27
Cross polar ratio (dB)	0°	> 16	> 18	> 19	> 20	> 15	> 16	> 17	> 18
Max. power per input (W)		500 (at 50℃ ambient temperature)				250 (at 50℃ ambient temperature)			
Total power (W)		960 (at 50℃ ambient temperature)							
Intermodulation IM3 (dBc)		≤ -153 (2 x 43 dBm carrier)							
Impedance (Ω)		50							
Grounding		DC Ground							

1. Values based on NGMN recommendations on Base Station Antenna Standards (BASTA).
2. Electrical datasheet in XML format is available.

Mechanical Properties	
Antenna dimensions (H x W x D) (mm)	1499 x 429 x 196
Packing dimensions (H x W x D) (mm)	1695 x 530 x 270
Antenna weight (kg)	27.8
Clamps weight (kg)	3.6 (2 units)
Antenna packing weight (kg)	39.2 (Included clamps)
Mast diameter supported (mm)	50 - 115
Radome material	Fiberglass
Radome colour	Light grey
Operational temperature (℃)	-40 .. +65
Wind load (N)	Frontal: 670 (at 150 km/h) Lateral: 190 (at 150 km/h) Rear side: 670 (at 150 km/h)
Max. operational wind speed (km/h)	200
Survival wind speed (km/h)	250
Connector	8 x 4.3-10 Female
Connector position	Bottom



Accessories

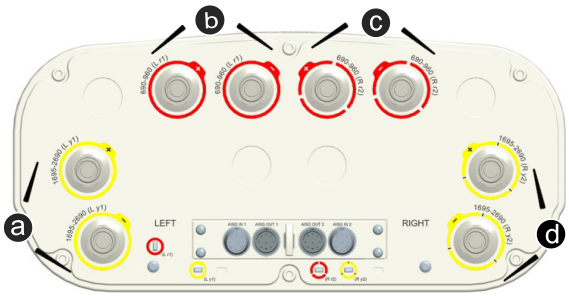
Item	Model	Description	Weight	Units per antenna
Downtilt kit	ASMDT0D01	Mechanical downtilt: 0 - 16 °	2.1 kg	1 (Separate packing)

Integrated RET Specifications

Properties								
RET type	Integrated RET							
RET protocols*	AISG 2.0 / 3GPP							
Input voltage range (V)	10 - 30 DC							
Power consumption (W)	< 6 (motor activated, 12V) < 1.5 (stand by, 12V)							
Adjustment time (full range) (s)	< 65 (typically, depending on antenna type)							
RET connector	4 x 8 pin connector according to IEC 60130-9 Daisy chain in: Male / Daisy chain out: Female							
Pin assignment according AISG	1	2	3	4	5	6	7	8
	DC	n/c	RS-485B	n/c	RS-485A	DC	DC return	n/c
Lightning protection (kA)	3 (10/350 μs) 10 (8/20 μs)							

* Please confirm the AISG protocol of primary station is compatible with RET antenna protocol interface. The protocol of RET antenna software interface is switchable between AISG 2.0/3GPP and AISG 1.1 with a vendor defined command. For more details about protocol switching function, contact Huawei before system installation.

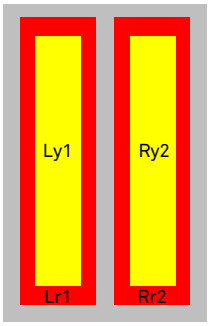
Standards: UL 60950-1 (Safety), UL 60950-22 (Safety - Equipment installed outdoor), EN 55022 (Emission), EN 55024 (Immunity), ETSI EN 301 489, FCC Part15, ICES-003
Certification: CE, FCC, IC, RCM



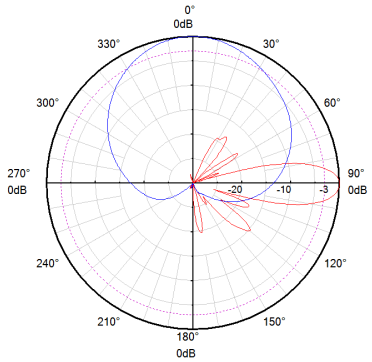
Integrated RET S/N:

- a HWMxxx.....Ly1
- b HWMxxx.....Lr1
- c HWMxxx.....Rr2
- d HWMxxx.....Ry2

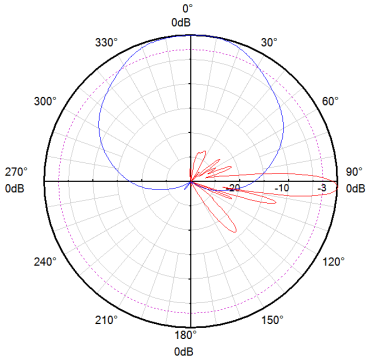
r - Red y - Yellow
L - Left array R - Right array



Pattern sample for reference



690 - 960 MHz



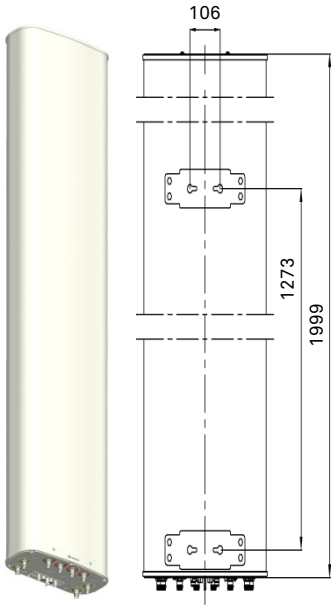
1695 - 2690 MHz

Antenna Specifications

Electrical Properties									
Frequency range (MHz)		2 x (690 - 960)				2 x (1695 - 2690)			
		690 - 803	790 - 862	824 - 894	880 - 960	1695 - 1990	1920 - 2200	2200 - 2490	2490 - 2690
Polarization		+45°, -45°							
Electrical downtilt (°)		0 - 10, continuously adjustable, each band separately				2 - 12, continuously adjustable, each band separately			
Gain (dBi)	at mid Tilt	15.0	15.5	15.8	16.0	17.0	17.2	17.7	18.1
	over all Tilts	14.7 ±0.5	15.3 ±0.5	15.6 ±0.5	15.8 ±0.5	16.8 ±0.5	17.1 ±0.5	17.5 ±0.5	17.9±0.5
Side lobe suppression for first side lobe above main beam (dB)		> 16	> 17	> 17	> 17	> 16	> 16	> 16	> 16
Horizontal 3dB beam width (°)		68 ±5	65 ±5	62 ±5	60 ±5	65 ±5	63 ±5	61 ±5	60 ±5
Vertical 3dB beam width (°)		10.5 ±0.9	9.5 ±0.8	9.2 ±0.7	8.5 ±0.7	6.8 ±0.7	5.8 ±0.5	5.3 ±0.4	5.0 ±0.5
VSWR		< 1.5							
Cross polar isolation (dB)		≥ 28							
Interband isolation (dB)		≥ 28							
Front to back ratio, ±30° (dB)		> 23	> 25	> 26	> 26	> 26	> 27	> 27	> 28
Cross polar ratio (dB)	0°	> 17	> 18	> 19	> 20	> 15	> 16	> 17	> 17
Max. power per input (W)		500 (at 50℃ ambient temperature)				250 (at 50℃ ambient temperature)			
Total power (W)		960 (at 50℃ ambient temperature)							
Intermodulation IM3 (dBc)		≤ -153 (2 x 43 dBm carrier)							
Impedance (Ω)		50							
Grounding		DC Ground							

1. Values based on NGMN recommendations on Base Station Antenna Standards (BASTA).
2. Electrical datasheet in XML format is available.

Mechanical Properties	
Antenna dimensions (H x W x D) (mm)	1999 x 429 x 196
Packing dimensions (H x W x D) (mm)	2195 x 530 x 270
Antenna weight (kg)	32.2
Clamps weight (kg)	3.6 (2 units)
Antenna packing weight (kg)	45.9 (Included clamps)
Mast diameter supported (mm)	50 - 115
Radome material	Fiberglass
Radome colour	Light grey
Operational temperature (℃)	-40 .. +65
Wind load (N)	Frontal: 910 (at 150 km/h) Lateral: 265 (at 150 km/h) Rear side: 910 (at 150 km/h)
Max. operational wind speed (km/h)	200
Survival wind speed (km/h)	250
Connector	8 x 4.3-10 Female
Connector position	Bottom



Accessories

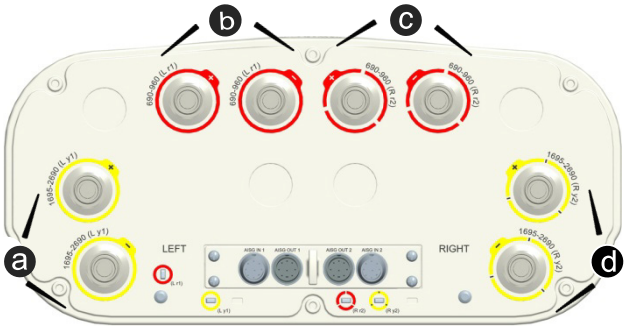
Item	Model	Description	Weight	Units per antenna
Downtilt kit	ASMDT0D01	Mechanical downtilt: 0 - 12 °	2.1 kg	1 (Separate packing)

Integrated RET Specifications

Properties								
RET type	Integrated RET							
RET protocols*	AISG 2.0 / 3GPP							
Input voltage range (V)	10 - 30 DC							
Power consumption (W)	< 6 (motor activated, 12V) < 1.5 (stand by, 12V)							
Adjustment time (full range) (s)	< 65 (typically, depending on antenna type)							
RET connector	4 x 8 pin connector according to IEC 60130-9 Daisy chain in: Male / Daisy chain out: Female							
Pin assignment according AISG	1	2	3	4	5	6	7	8
	DC	n/c	RS-485B	n/c	RS-485A	DC	DC return	n/c
Lightning protection (kA)	3 (10/350 µs) 10 (8/20 µs)							

* Please confirm the AISG protocol of primary station is compatible with RET antenna protocol interface. The protocol of RET antenna software interface is switchable between AISG 2.0/3GPP and AISG 1.1 with a vendor defined command. For more details about protocol switching function, contact Huawei before system installation.

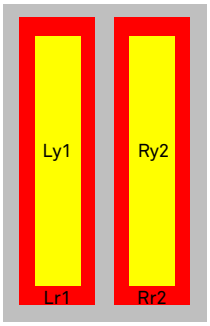
Standards: UL 60950-1 (Safety), UL 60950-22 (Safety - Equipment installed outdoor), EN 55022 (Emission), EN 55024 (Immunity), ETSI EN 301 489, FCC Part15, ICES-003
Certification: CE, FCC, IC, RCM



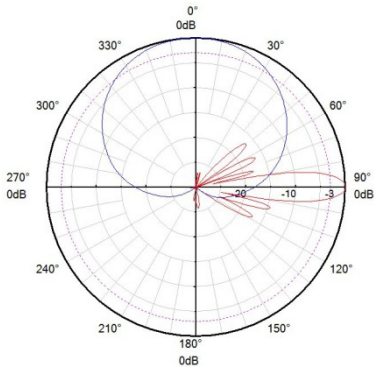
Integrated RET S/N:

- a HWMxxx.....Ly1
- b HWMxxx.....Lr 1
- c HWMxxx.....Rr 2
- d HWMxxx.....Ry2

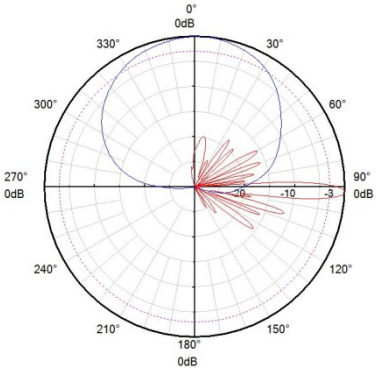
r - Red y - Yellow
L - Left array R - Right array



Pattern sample for reference



690 - 960 MHz



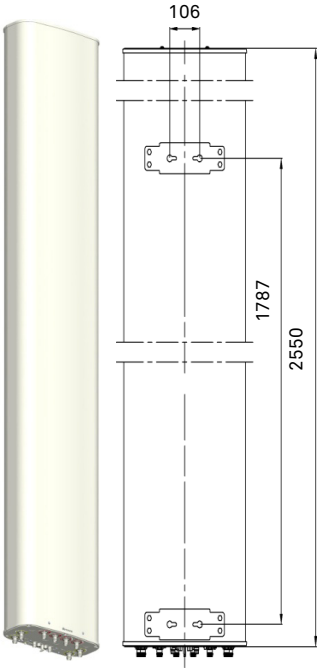
1695 - 2690 MHz

Antenna Specifications

Electrical Properties									
Frequency range (MHz)		2 x (690 - 960)				2 x (1695 - 2690)			
		690 - 803	790 - 862	824 - 894	880 - 960	1695 - 1990	1920 - 2200	2200 - 2490	2490 - 2690
Polarization		+45°, -45°							
Electrical downtilt (°)		0 - 10, continuously adjustable, each band separately				2 - 12, continuously adjustable, each band separately			
Gain (dBi)	at mid Tilt	15.8	16.4	16.7	17.0	17.0	17.2	17.7	18.1
	over all Tilts	15.5 ±0.5	16.3 ±0.5	16.5 ±0.5	16.7 ±0.5	16.8 ±0.5	17.1 ±0.5	17.5 ±0.5	17.9 ±0.5
Side lobe suppression for first side lobe above main beam (dB)		> 16	> 17	> 17	> 17	> 16	> 16	> 16	> 16
Horizontal 3dB beam width (°)		68 ±5	65 ±5	60 ±5	58 ±5	65 ±5	63 ±5	61 ±5	60 ±5
Vertical 3dB beam width (°)		8.8 ±0.7	8.0 ±0.6	7.8 ±0.5	7.5 ±0.5	6.8 ±0.7	5.8 ±0.5	5.3 ±0.4	5.0 ±0.5
VSWR		< 1.5							
Cross polar isolation (dB)		≥ 28							
Interband isolation (dB)		≥ 28							
Front to back ratio , ±30° (dB)		> 25	> 26	> 26	> 26	> 26	> 27	> 27	> 28
Cross polar ratio (dB)	0°	> 17	> 18	> 19	> 20	> 15	> 16	> 17	> 17
Max. power per input (W)		500 (at 50℃ ambient temperature)				250 (at 50℃ ambient temperature)			
Total power (W)		960 (at 50℃ ambient temperature)							
Intermodulation IM3 (dBc)		≤ -153 (2 x 43 dBm carrier)							
Impedance (Ω)		50							
Grounding		DC Ground							

1. Values based on NGMN recommendations on Base Station Antenna Standards (BASTA).
2. Electrical datasheet in XML format is available.

Mechanical Properties	
Antenna dimensions (H x W x D) (mm)	2550 x 429 x 196
Packing dimensions (H x W x D) (mm)	2770 x 530 x 275
Antenna weight (kg)	37.4
Clamps weight (kg)	5.8 (2 units)
Antenna packing weight (kg)	58.9 (Included clamps)
Mast diameter supported (mm)	50 - 115
Radome material	Fiberglass
Radome colour	Light grey
Operational temperature (℃)	-40 .. +65
Wind load (N)	Frontal: 1200 (at 150 km/h) Lateral: 345 (at 150 km/h) Rear side: 1200 (at 150 km/h)
Max. operational wind speed (km/h)	200
Survival wind speed (km/h)	250
Connector	8 x 4.3-10 Female
Connector position	Bottom



Accessories

Item	Model	Description	Weight	Units per antenna
Downtilt kit	ASMDT0F01	Mechanical downtilt: 0 - 8 °	3.1 kg	1 (Separate packing)

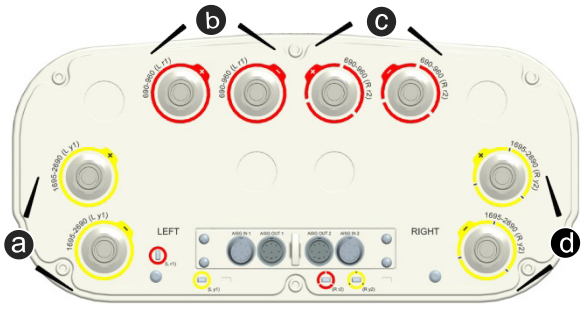
Integrated RET Specifications

Properties								
RET type	Integrated RET							
RET protocols*	AISG 2.0 / 3GPP							
Input voltage range (V)	10 - 30 DC							
Power consumption (W)	< 6 (motor activated, 12V) < 1.5 (stand by, 12V)							
Adjustment time (full range) (s)	< 65 (typically, depending on antenna type)							
RET connector	4 x 8 pin connector according to IEC 60130-9 Daisy chain in: Male / Daisy chain out: Female							
Pin assignment according AISG	1	2	3	4	5	6	7	8
	DC	n/c	RS-485B	n/c	RS-485A	DC	DC return	n/c
Lightning protection (kA)	3 (10/350 μs) 10 (8/20 μs)							

* Please confirm the AISG protocol of primary station is compatible with RET antenna protocol interface. The protocol of RET antenna software interface is switchable between AISG 2.0/3GPP and AISG 1.1 with a vendor defined command. For more details about protocol switching function, contact Huawei before system installation.

Standards: UL 60950-1 (Safety), UL 60950-22 (Safety - Equipment installed outdoor), EN 55022 (Emission), EN 55024 (Immunity), ETSI EN 301 489, FCC Part15, ICES-003

Certification: CE, FCC, IC, RCM



Integrated RET S/N:

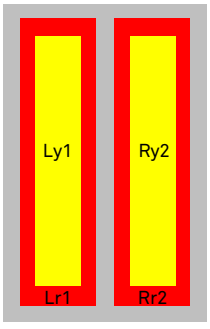
ⓐ HWMxxx.....Ly1

ⓑ HWMxxx.....Lr 1

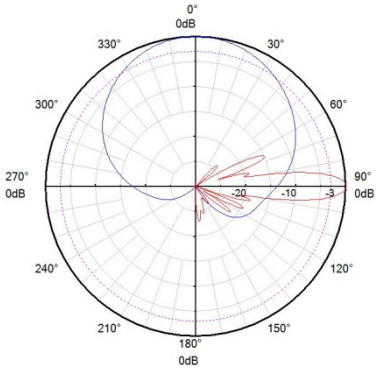
ⓒ HWMxxx.....Rr 2

ⓓ HWMxxx.....Ry2

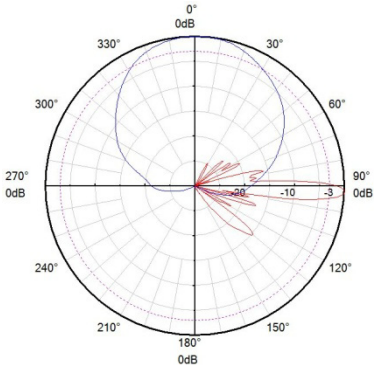
r - Red y - Yellow
L - Left array R - Right array



Pattern sample for reference



690 - 960 MHz



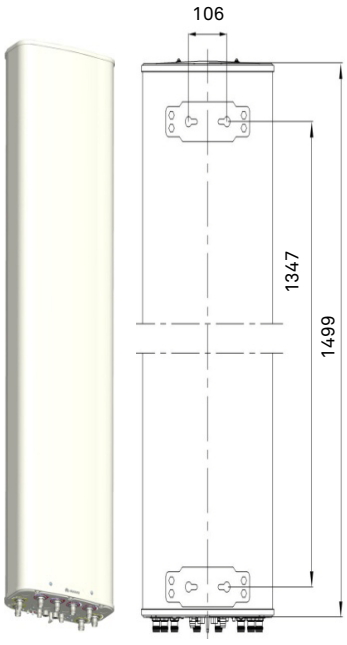
1695 - 2690 MHz

Antenna Specifications

Electrical Properties								
Frequency range (MHz)		690 - 862		880 - 960	2 x (1710 - 2690)			
		690 - 803	790 - 862		1710 - 1990	1920 - 2200	2200 - 2490	2490 - 2690
Polarization		+45° , -45°						
Electrical downtilt (°)		0 - 12 , continuously adjustable, each band separately			0 - 10 , continuously adjustable, each band separately			
Gain (dBi)	at mid Tilt	13.8	13.9	14.2	17.4	17.8	18.2	18.3
	over all Tilts	14.0 ±0.5	14.1 ±0.3	14.3 ±0.3	17.3 ±0.5	17.7 ±0.5	18.1 ±0.5	18.2 ±0.4
Side lobe suppression for first side lobe above main beam (dB)		> 16	> 16	> 15	> 18	> 18	> 18	> 18
Horizontal 3dB beam width (°)		66 ±1.7	64 ±2.6	64 ±3.5	65 ±3.9	63 ±3.3	62 ±4.8	60 ±4.5
Vertical 3dB beam width (°)		15.2 ±2.3	13.3 ±1.8	11.8 ±2.0	7.1 ±0.6	6.5 ±0.5	5.8 ±0.5	5.2 ±0.3
VSWR		< 1.5						
Cross polar isolation (dB)		≥ 28		≥ 28	≥ 28			
Interband isolation (dB)		≥ 28 (690 - 862 // 880 - 960 MHz) ≥ 30 (690 - 862 // 1710 - 2690 MHz) ≥ 30 (880 - 960 // 1710 - 2690 MHz) ≥ 30 (1710 - 2690 // 1710 - 2690 MHz)						
Front to back ratio, ±30° (dB)		> 25	> 25	> 25	> 30	> 28	> 28	> 28
Cross polar ratio (dB)	0°	> 18	> 20	> 20	> 19	> 19	> 20	> 20
Max. power per input (W)		300 (at 50℃ ambient temperature)			250 (at 50℃ ambient temperature)			
Total power (W)		700 (at 50℃ ambient temperature)						
Intermodulation IM3 (dBc)		≤ -150 (2 x 43 dBm carrier)						
Impedance (Ω)		50						
Grounding		DC Ground						

1. Values based on NGMN recommendations on Base Station Antenna Standards (BASTA).
2. Electrical datasheet in XML format is available.

Mechanical Properties	
Antenna dimensions (H x W x D) (mm)	1499 x 359 x 178
Packing dimensions (H x W x D) (mm)	1880 x 425 x 255
Antenna net weight (kg)	26.5
Bracket weight (kg)	3.6 (2 units)
Packing weight (kg)	40.3 (Included clamps)
Mast diameter supported (mm)	50 - 115
Radome material	Fiberglass
Radome colour	Light grey
Operational temperature (℃)	-40 .. +65
Wind load (N)	Frontal: 670 (at 150 km/h) Lateral: 180 (at 150 km/h) Rear side: 560 (at 150 km/h)
Max. operational wind speed (km/h)	200
Survival wind speed (km/h)	250
Connector	8 x 4.3-10 Female
Connector position	Bottom



Accessories

Item	Model	Description	Weight	Units per antenna
Downtilt kit	ASMDT0D01	Mechanical downtilt: 0 - 16°	2.1 kg	1 (Separate packing)

2LnH Band 6-14 Ports

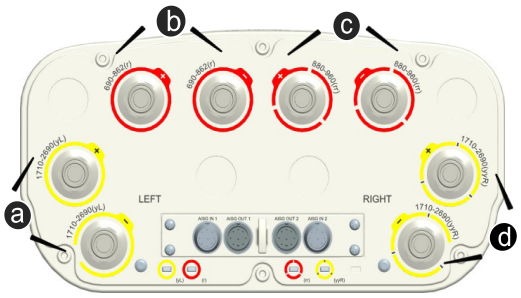
Integrated RET Specifications

Properties								
RET type	Integrated RET							
RET protocols*	AISG 2.0 / 3GPP							
Input voltage range (V)	10 - 30 DC							
Power consumption (W)	< 6 (motor activated, 12V) < 1.5 (stand by, 12V)							
Adjustment time (full range) (s)	< 65 (typically, depending on antenna type)							
RET connector	4 x 8 pin connector according to IEC 60130-9 Daisy chain in: Male / Daisy chain out: Female							
Pin assignment according AISG	1	2	3	4	5	6	7	8
	DC	n/c	RS-485B	n/c	RS-485A	DC	DC return	n/c
Lightning protection (kA)	3 (10/350 μs) 10 (8/20 μs)							

* Please confirm the AISG protocol of primary station is compatible with RET antenna protocol interface. The protocol of RET antenna software interface is switchable between AISG 2.0/3GPP and AISG 1.1 with a vendor defined command. For more details about protocol switching function, contact Huawei before system installation.

Standards: UL 60950-1 (Safety), UL 60950-22 (Safety - Equipment installed outdoor), EN 55022 (Emission), EN 55024 (Immunity), ETSI EN 301 489, FCC Part15, ICES-003

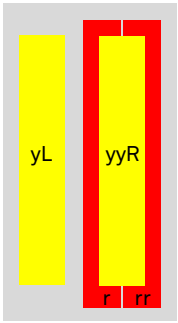
Certification: CE, FCC, IC, RCM



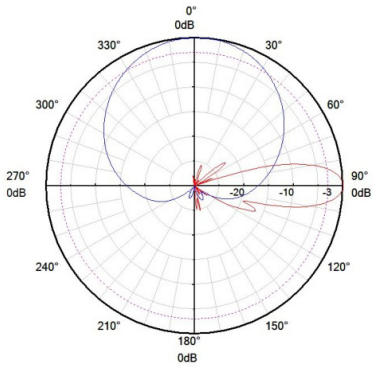
Integrated RET S/N:

- a HWMxxx.....yL
- b HWMxxx.....r
- c HWMxxx.....rr
- d HWMxxx...yyR

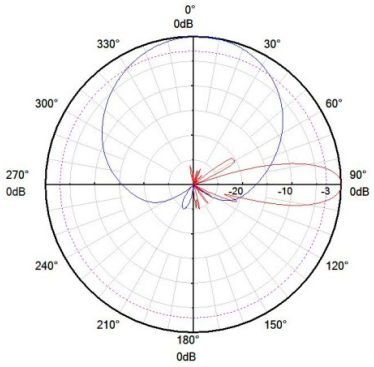
r - Red
y - Yellow
L - Left array
R - Right array



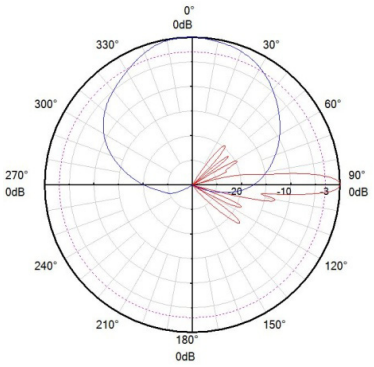
Pattern sample for reference



690 - 862 MHz



880 - 960 MHz



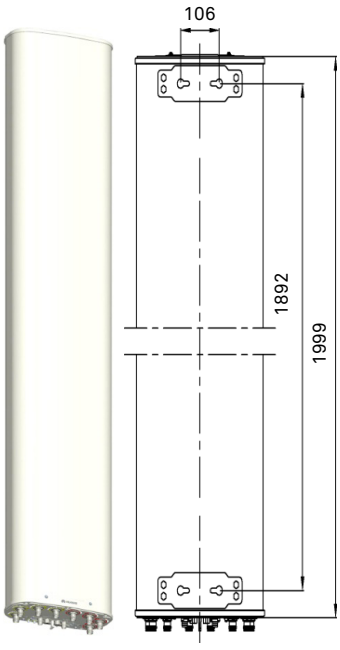
1710 - 2690 MHz

Antenna Specifications

Electrical Properties							
Frequency range (MHz)		790 - 862	880 - 960	2 x (1710 - 2690)			
				1710 - 1990	1920 - 2200	2200 - 2490	2490 - 2690
Polarization		+45°, -45°					
Electrical downtilt (°)		0 - 10, continuously adjustable, each band separately					
Gain (dBi)	at mid Tilt	15.5	15.8	17.3	17.8	18.0	18.2
	over all Tilts	15.3 ±0.3	15.7 ±0.4	17.2 ±0.5	17.6 ±0.4	17.9 ±0.4	18.1 ±0.5
Side lobe suppression for first side lobe above main beam (dB)		> 16	> 17	> 16	> 17	> 17	> 17
Horizontal 3dB beam width (°)		65 ±2.0	62 ±2.6	65 ±5.0	62 ±3.5	60 ±3.5	60 ±4.0
Vertical 3dB beam width (°)		10.5 ±0.7	9.4 ±0.6	5.8 ±0.3	5.4 ±0.4	4.8 ±0.2	4.3 ±0.2
VSWR		< 1.5					
Cross polar isolation (dB)		≥ 28	≥ 28	≥ 28			
Interband isolation (dB)		≥ 28 (790 - 862 // 880 - 960 MHz) ≥ 30 (790 - 960 // 1710 - 2690 MHz)					
Front to back ratio, ±30° (dB)		> 25	> 25	> 25	> 25	> 25	> 25
Cross polar ratio (dB)	0°	> 18	> 18	> 18	> 18	> 18	> 18
Max. power per input (W)		500 (at 50℃ ambient temperature)		250 (at 50℃ ambient temperature)			
Total power (W)		800 (at 50℃ ambient temperature)					
Intermodulation IM3 (dBc)		≤ -150 (2 x 43 dBm carrier)					
Impedance (Ω)		50					
Grounding		DC Ground					

1. Values based on NGMN recommendations on Base Station Antenna Standards (BASTA).
2. Electrical datasheet in XML format is available.

Mechanical Properties	
Antenna dimensions (H x W x D) (mm)	1999 x 349 x 166
Packing dimensions (H x W x D) (mm)	2350 x 415 x 240
Antenna weight (kg)	29.2
Clamps weight (kg)	3.6 (2 units)
Antenna packing weight (kg)	43.0 (Included clamps)
Mast diameter supported (mm)	50 - 115
Radome material	Fiberglass
Radome colour	Light grey
Operational temperature (℃)	-40 .. +65
Wind load (N)	Frontal: 705 (at 150 km/h) Lateral: 230 (at 150 km/h) Rear side: 730 (at 150 km/h)
Max. operational wind speed (km/h)	200
Survival wind speed (km/h)	250
Connector	8 x 4.3-10 Female
Connector position	Bottom



Accessories

Item	Model	Description	Weight	Units per antenna
Downtilt kit	ASMDT0D01	Mechanical downtilt: 0 - 12 °	2.1kg	1 (Separate packing)

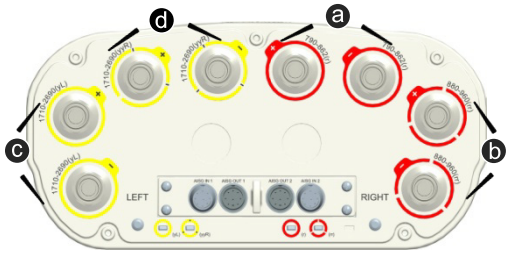
Integrated RET Specifications

Properties								
RET type	Integrated RET							
RET protocols*	AISG 2.0 / 3GPP							
Input voltage range (V)	10 - 30 DC							
Power consumption (W)	< 6 (motor activated, 12V) < 1.5 (stand by, 12V)							
Adjustment time (full range) (s)	< 65 (typically, depending on antenna type)							
RET connector	4 x 8 pin connector according to IEC 60130-9 Daisy chain in: Male / Daisy chain out: Female							
Pin assignment according AISG	1	2	3	4	5	6	7	8
	DC	n/c	RS-485B	n/c	RS-485A	DC	DC return	n/c
Lightning protection (kA)	3 (10/350 μs) 10 (8/20 μs)							

* Please confirm the AISG protocol of primary station is compatible with RET antenna protocol interface. The protocol of RET antenna software interface is switchable between AISG 2.0/3GPP and AISG 1.1 with a vendor defined command. For more details about protocol switching function, contact Huawei before system installation.

Standards: UL 60950-1 (Safety), UL 60950-22 (Safety - Equipment installed outdoor), EN 55022 (Emission), EN 55024 (Immunity), ETSI EN 301 489, FCC Part15, ICES-003

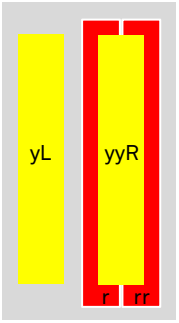
Certification: CE, FCC, IC, RCM



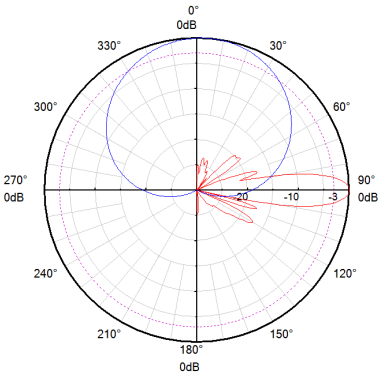
Integrated RET S/N:

- ⓐ HWMxxx.....r
- ⓑ HWMxxx.....rr
- ⓒ HWMxxx.....yL
- ⓓ HWMxxx...yyR

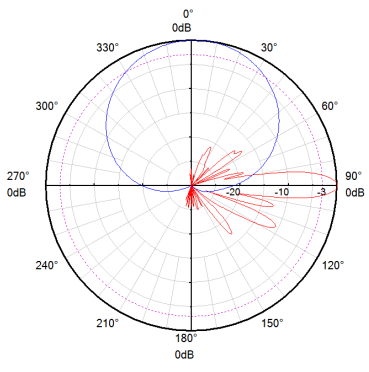
r - Red
y - Yellow
L - Left array
R - Right array



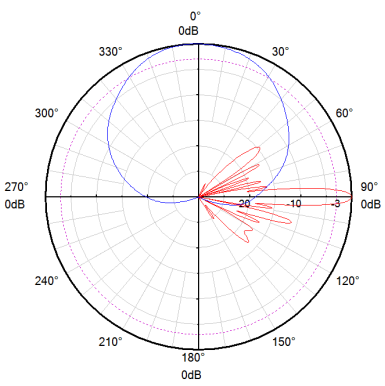
Pattern sample for reference



790 - 862 MHz



880 - 960 MHz



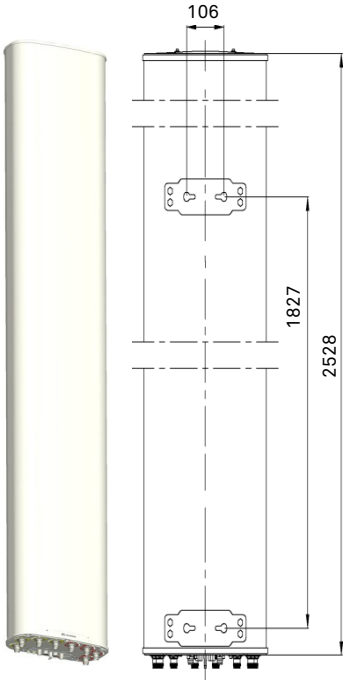
1710 - 2690 MHz

Antenna Specifications

Electrical Properties							
Frequency range (MHz)		790 - 862	880 - 960	2 x (1710 - 2690)			
				1710 - 1990	1920 - 2200	2200 - 2490	2490 - 2690
Polarization		+45°, -45°					
Electrical downtilt (°)		0 - 10, continuously adjustable, each band separately					
Gain (dBi)	at mid Tilt	16.2	16.7	17.3	17.8	18.0	18.2
	over all Tilts	16.1 ±0.5	16.5 ±0.4	17.2 ±0.5	17.6 ±0.4	17.8 ±0.4	18.1 ±0.5
Side lobe suppression for first side lobe above main beam (dB)		> 16	> 16	> 16	> 17	> 17	> 17
Horizontal 3dB beam width (°)		65 ±2.2	62 ±2.5	65 ±5.0	62 ±3.5	60 ±3.5	60 ±4.0
Vertical 3dB beam width (°)		8.6 ±0.7	7.6 ±0.6	5.8 ±0.4	5.4 ±0.4	4.8 ±0.2	4.3 ±0.2
VSWR		< 1.5					
Cross polar isolation (dB)		≥ 28	≥ 28	≥ 28			
Interband isolation (dB)		≥ 28 (790 - 862 // 880 - 960 MHz) ≥ 30 (790 - 862 // 1710 - 2690 MHz) ≥ 30 (880 - 960 // 1710 - 2690 MHz)					
Front to back ratio, ±30° (dB)		> 24	> 24	> 25	> 25	> 25	> 25
Cross polar ratio (dB)	0°	> 18	> 18	> 18	> 18	>18	> 18
Max. power per input (W)		500 (at 50℃ ambient temperature)		250 (at 50℃ ambient temperature)			
Total power (W)		1000 (at 50℃ ambient temperature)					
Intermodulation IM3 (dBc)		≤ -150 (2 x 43 dBm carrier)					
Impedance (Ω)		50					
Grounding		DC Ground					

1. Values based on NGMN recommendations on Base Station Antenna Standards (BASTA).
2. Electrical datasheet in XML format is available.

Mechanical Properties	
Antenna dimensions (H x W x D) (mm)	2528 x 349 x 166
Packing dimensions (H x W x D) (mm)	2885 x 420 x 245
Antenna weight (kg)	33.4
Clamps weight (kg)	3.6 (2 units)
Antenna packing weight (kg)	48.7 (Included clamps)
Mast diameter supported (mm)	50 - 115
Radome material	Fiberglass
Radome colour	Light grey
Operational temperature (℃)	-40 .. +65
Wind load (N)	Frontal: 920 (at 150 km/h) Lateral: 305 (at 150 km/h) Rear side: 955 (at 150 km/h)
Max. operational wind speed (km/h)	200
Survival wind speed (km/h)	250
Connector	8 x 4.3-10 Female
Connector position	Bottom



Accessories

Item	Model	Description	Weight	Units per antenna
Downtilt kit	ASMDT0D01	Mechanical downtilt: 0 - 8 °	2.1 kg	1 (Separate packing)

2LnH Band 6-14 Ports

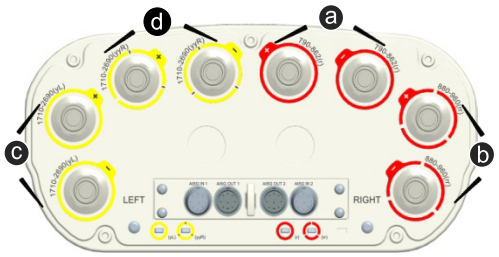
Integrated RET Specifications

Properties								
RET type	Integrated RET							
RET protocols*	AISG 2.0 / 3GPP							
Input voltage range (V)	10 - 30 DC							
Power consumption (W)	< 6 (motor activated, 12V) < 1.5 (stand by, 12V)							
Adjustment time (full range) (s)	< 65 (typically, depending on antenna type)							
RET connector	4 x 8 pin connector according to IEC 60130-9 Daisy chain in: Male / Daisy chain out: Female							
Pin assignment according AISG	1	2	3	4	5	6	7	8
	DC	n/c	RS-485B	n/c	RS-485A	DC	DC return	n/c
Lightning protection (kA)	3 (10/350 μs) 10 (8/20 μs)							

* Please confirm the AISG protocol of primary station is compatible with RET antenna protocol interface. The protocol of RET antenna software interface is switchable between AISG 2.0/3GPP and AISG 1.1 with a vendor defined command. For more details about protocol switching function, contact Huawei before system installation.

Standards: UL 60950-1 (Safety), UL 60950-22 (Safety - Equipment installed outdoor), EN 55022 (Emission), EN 55024 (Immunity), ETSI EN 301 489, FCC Part15, ICES-003

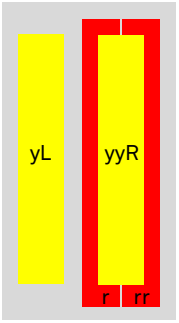
Certification: CE, FCC, IC, RCM



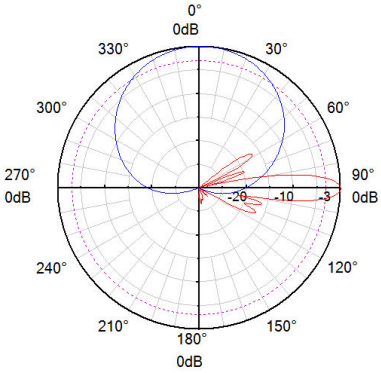
Integrated RET S/N:

- ⓐ HWMxxx.....r
- ⓑ HWMxxx.....rr
- ⓒ HWMxxx.....yL
- ⓓ HWMxxx...yyR

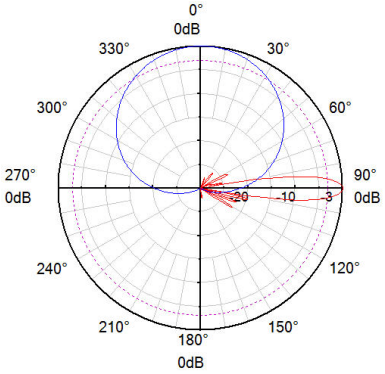
r - Red
L - Left array
y - Yellow
R - Right array



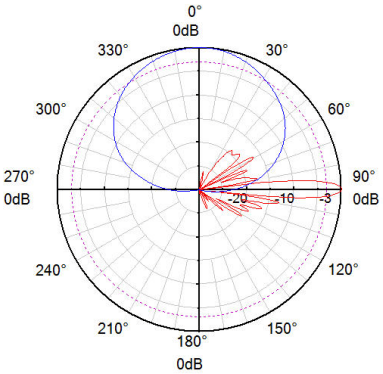
Pattern sample for reference



790 - 862 MHz



880 - 960 MHz



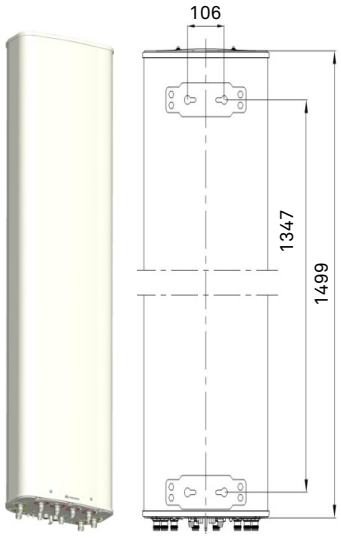
1710 - 2690 MHz

Antenna Specifications

Electrical Properties								
Frequency range (MHz)		690 - 803	824 - 960		2 x (1710 - 2690)			
			824 - 894	880 - 960	1710 - 1990	1920 - 2200	2200 - 2490	2490 - 2690
Polarization		+45° , -45°						
Electrical downtilt (°)		0 - 12 , continuously adjustable , each band separately			0 - 10 , continuously adjustable , each band separately			
Gain (dBi)	at mid Tilt	13.8	13.9	14.2	17.4	17.8	18.2	18.3
	over all Tilts	14.0 ±0.5	14.1 ±0.3	14.3 ±0.3	17.3 ±0.5	17.7 ±0.5	18.1 ±0.5	18.2 ±0.4
Side lobe suppression for first side lobe above main beam (dB)		> 16	> 16	> 15	> 18	> 18	> 18	> 18
Horizontal 3dB beam width (°)		66 ±1.7	65 ±2.3	64 ±3.5	65 ±3.9	63 ±3.3	62 ±4.8	60 ±4.5
Vertical 3dB beam width (°)		15.2 ±2.3	12.8 ±2.0	11.8 ±2.0	7.1 ±0.6	6.5 ±0.5	5.8 ±0.5	5.2 ±0.3
VSWR		< 1.5						
Cross polar isolation (dB)		≥ 28	≥ 28		≥ 28			
Interband isolation (dB)		≥ 28 (690 - 803 // 824 - 960 MHz) ≥ 30 (690 - 803 // 1710 - 2690 MHz) ≥ 30 (824 - 960 // 1710 - 2690 MHz) ≥ 30 (1710 - 2690 // 1710 - 2690 MHz)						
Front to back ratio, ±30° (dB)		> 25	> 25	> 25	> 30	> 28	> 28	> 28
Cross polar ratio (dB)	0°	> 18	> 18	> 20	> 19	> 19	> 20	> 20
Max. power per input (W)		300 (at 50℃ ambient temperature)			250 (at 50℃ ambient temperature)			
Total power (W)		700 (at 50℃ ambient temperature)						
Intermodulation IM3 (dBc)		≤ -150 (2 x 43 dBm carrier)						
Impedance (Ω)		50						
Grounding		DC Ground						

1. Values based on NGMN recommendations on Base Station Antenna Standards (BASTA).
2. Electrical datasheet in XML format is available.

Mechanical Properties	
Antenna dimensions (H x W x D) (mm)	1499 x 359 x 178
Packing dimensions (H x W x D) (mm)	1880 x 425 x 250
Antenna weight (kg)	27.4
Clamps weight (kg)	3.6 (2 units)
Antenna packing weight (kg)	41.1 (included clamps)
Mast diameter supported (mm)	50 - 115
Radome material	Fiberglass
Radome colour	Light grey
Operational temperature (℃)	-40 .. +65
Wind load (N)	Frontal: 670 (at 150 km/h) Lateral: 180 (at 150 km/h) Rear side: 560 (at 150 km/h)
Max. operational wind speed (km/h)	200
Survival wind speed (km/h)	250
Connector	8 x 4.3-10 Female
Connector position	Bottom



Accessories

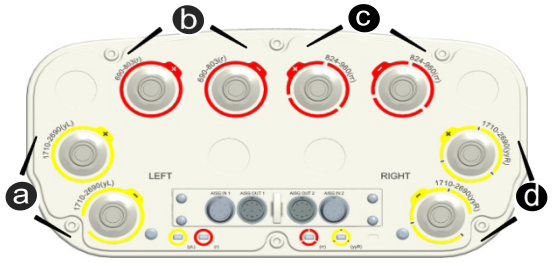
Item	Model	Description	Weight	Units per antenna
Downtilt kit	ASMDT0D01	Mechanical downtilt: 0 - 16 °	2.1 kg	1 (Separate packing)

Integrated RET Specifications

Properties								
RET type	Integrated RET							
RET protocols*	AISG 2.0 / 3GPP							
Input voltage range (V)	10 - 30 DC							
Power consumption (W)	< 6 (motor activated, 12V) < 1.5 (stand by, 12V)							
Adjustment time (full range) (s)	< 65 (typically, depending on antenna type)							
RET connector	4 x 8 pin connector according to IEC 60130-9 Daisy chain in: Male / Daisy chain out: Female							
Pin assignment according AISG	1	2	3	4	5	6	7	8
	DC	n/c	RS-485B	n/c	RS-485A	DC	DC return	n/c
Lightning protection (kA)	3 (10/350 μs) 10 (8/20 μs)							

* Please confirm the AISG protocol of primary station is compatible with RET antenna protocol interface. The protocol of RET antenna software interface is switchable between AISG 2.0/3GPP and AISG 1.1 with a vendor defined command. For more details about protocol switching function, contact Huawei before system installation.

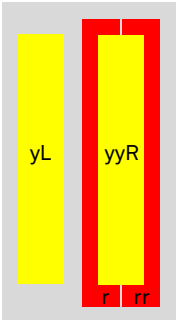
Standards: UL 60950-1 (Safety), UL 60950-22 (Safety - Equipment installed outdoor), EN 55022 (Emission), EN 55024 (Immunity), ETSI EN 301 489, FCC Part15, ICES-003
Certification: CE, FCC, IC, RCM



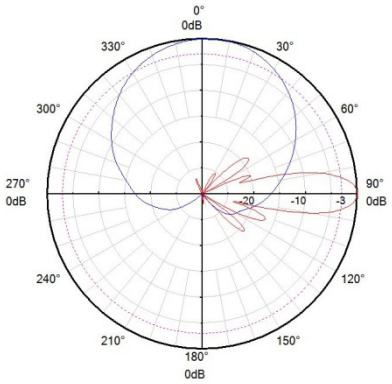
Integrated RET S/N:

- a HWMxxx.....yL
- b HWMxxx.....r
- c HWMxxx.....rr
- d HWMxxx...yyR

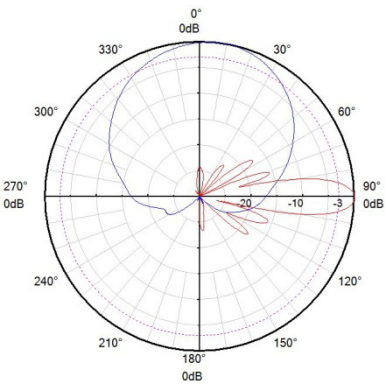
r - Red
y - Yellow
L - Left array
R - Right array



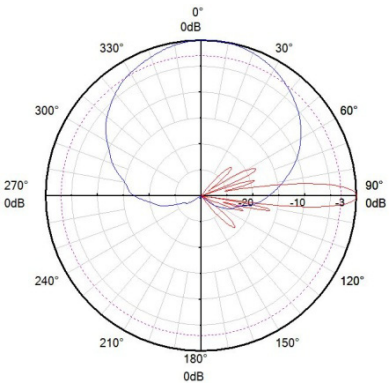
Pattern sample for reference



690 - 803 MHz



824 - 960 MHz



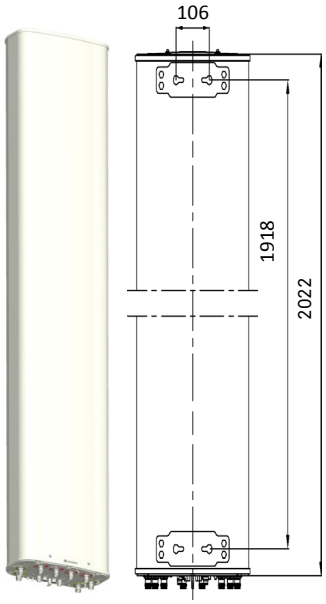
1710 - 2690 MHz

Antenna Specifications

Electrical Properties								
Frequency range (MHz)		690 - 803	824 - 960		2 x (1710 - 2690)			
			824 - 894	880 - 960	1710 - 1990	1920 - 2200	2200 - 2490	2490 - 2690
Polarization		+45° , -45°						
Electrical downtilt (°)		0 - 10 , continuously adjustable , each band separately						
Gain (dBi)	at mid tilt	14.7	15.1	15.4	17.2	17.5	17.8	17.9
	over all tilts	14.8 ±0.5	15.1 ±0.5	15.4 ±0.3	17.1 ±0.4	17.4 ±0.5	17.8 ±0.5	17.9 ±0.4
Side lobe suppression for first side lobe above main beam (dB)		> 18	> 18	> 18	> 18	> 17	> 17	> 17
Horizontal 3dB beam width (°)		67 ±3.0	63 ±2.7	63 ±3.0	66 ±3.9	64 ±3.3	63 ±4.8	60 ±4.5
Vertical 3dB beam width (°)		12.0 ±1.0	10.1 ±0.9	9.4 ±0.8	6.3 ±0.5	5.7 ±0.4	5.1 ±0.5	4.7 ±0.2
VSWR		< 1.5						
Cross polar isolation (dB)		≥ 28	≥ 28		≥ 28			
Interband isolation (dB)		≥ 28 (690 - 803 // 824 - 960 MHz) ≥ 30 (690 - 803 // 1710 - 2690 MHz) ≥ 30 (824 - 960 // 1710 - 2690 MHz) ≥ 30 (1710 - 2690 // 1710 - 2690 MHz)						
Front to back ratio, ±30° (dB)		> 27	> 25	> 27	> 30	> 29	> 27	> 26
Cross polar ratio (dB)	0°	> 16	> 19	> 19	> 18	> 18	> 18	> 18
Max. power per input (W)		360 (at 50℃ ambient temperature)			250 (at 50℃ ambient temperature)			
Total power (W)		700 (at 50℃ ambient temperature)						
Intermodulation IM3 (dBc)		≤ -150 (2 x 43 dBm carrier)						
Impedance (Ω)		50						
Grounding		DC Ground						

1. Values based on NGMN recommendations on Base Station Antenna Standards (BASTA).
2. Electrical datasheet in XML format is available.

Mechanical Properties	
Antenna dimensions (H x W x D) (mm)	2022 x 359 x 178
Packing dimensions (H x W x D) (mm)	2400 x 430 x 255
Antenna weight (kg)	32.1
Clamps weight (kg)	3.6 (2 units)
Antenna packing weight (kg)	46.8 (included clamps)
Mast diameter supported (mm)	50 - 115
Radome material	Fiberglass
Radome colour	Light grey
Operational temperature (℃)	-40 .. +65
Wind load (N)	Frontal: 930 (at 150 km/h) Lateral: 255 (at 150 km/h) Rear side: 755 (at 150 km/h)
Max. operational wind speed (km/h)	200
Survival wind speed (km/h)	250
Connector	8 x 4.3-10 Female
Connector position	Bottom



Accessories

Item	Model	Description	Weight	Units per antenna
Downtilt kit	ASMDT0D01	Mechanical downtilt: 0 - 12 °	2.1 kg	1 (Separate packing)

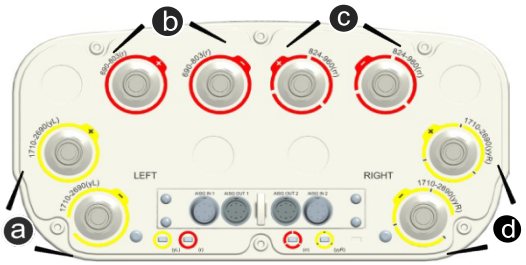
2LnH Band 6-14 Ports

Integrated RET Specifications

Properties								
RET type	Integrated RET							
RET protocols*	AISG 2.0 / 3GPP							
Input voltage range (V)	10 - 30 DC							
Power consumption (W)	< 6 (motor activated, 12V) < 1.5 (stand by, 12V)							
Adjustment time (full range) (s)	< 65 (typically, depending on antenna type)							
RET connector	4 x 8 pin connector according to IEC 60130-9 Daisy chain in: Male / Daisy chain out: Female							
Pin assignment according AISG	1	2	3	4	5	6	7	8
	DC	n/c	RS-485B	n/c	RS-485A	DC	DC return	n/c
Lightning protection (kA)	3 (10/350 μs) 10 (8/20 μs)							

* Please confirm the AISG protocol of primary station is compatible with RET antenna protocol interface. The protocol of RET antenna software interface is switchable between AISG 2.0/3GPP and AISG 1.1 with a vendor defined command. For more details about protocol switching function, contact Huawei before system installation.

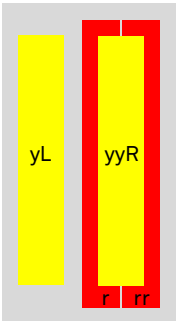
Standards: UL 60950-1 (Safety), UL 60950-22 (Safety - Equipment installed outdoor), EN 55022 (Emission), EN 55024 (Immunity), ETSI EN 301 489, FCC Part15, ICES-003
Certification: CE, FCC, IC, RCM



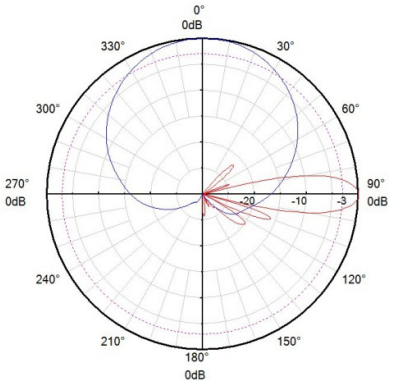
Integrated RET S/N:

ⓐ HWMxxx.....yL
ⓑ HWMxxx.....r
ⓒ HWMxxx.....rr
ⓓ HWMxxx...yyR

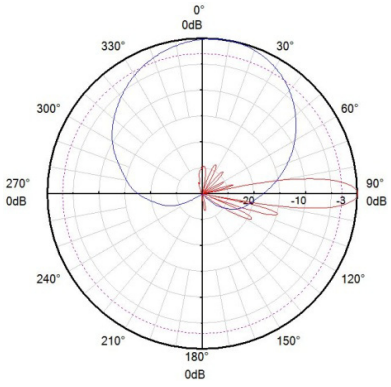
r - Red
y - Yellow
L - Left array
R - Right array



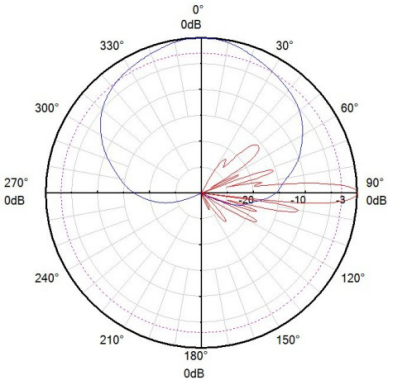
Pattern sample for reference



690 - 803 MHz



824 - 960 MHz



1710 - 2690 MHz

Preliminary Issue

Electrical Properties				
Frequency range (MHz)		2 x (690 - 960)	1427 - 2690	2 x (1695 - 2690)
Electrical downtilt (°)		0 - 14	0 - 10	2 - 12
Gain (dBi)		14.5	17.0	17.5
Side lobe suppression for first side lobe above main beam (Typ.) (dB)		15	16	16
Horizontal 3dB beam width (°)		65	65	65
Vertical 3dB beam width (°)		13	8	6
VSWR		< 1.5		
Front to back ratio, copolar (dB)		Typ. 25	Typ. 26	Typ. 25
Cross polar ratio (dB)	0°	Typ. 17	Typ. 17	Typ. 17
Intermodulation IM3 (dBc)		≤ -153 (2 x 43 dBm carrier)		

Mechanical Properties	
Antenna dimensions (H x W x D) (mm)	1499 x 469 x 206
Packing dimensions (H x W x D) (mm)	1680 x 560 x 278
Antenna net weight (kg)	33
Mechanical downtilt (°)	0 - 16
Connector	10 x 4.3-10 connector Female
RET type	Integrated RET
RET protocols	AISG 2.0 / 3GPP

Preliminary Issue

Electrical Properties				
Frequency range (MHz)		2 x (690 - 960)	1427- 2200	2 x (1695 - 2690)
Electrical downtilt (°)		0 - 10	0 - 10	2 - 12
Gain (dBi)		16.0	17.0	18.0
Side lobe suppression for first side lobe above main beam (Typ.) (dB)		16	16	16
Horizontal 3dB beam width (°)		65	65	65
Vertical 3dB beam width (°)		9	8	6
VSWR		< 1.5		
Front to back ratio, copolar (dB)		Typ. 25	Typ. 25	Typ. 26
Cross polar ratio (dB)	0°	Typ. 17	Typ. 17	Typ. 17
Intermodulation IM3 (dBc)		≤ -153 (2 x 43 dBm carrier)		

Mechanical Properties	
Antenna dimensions (H x W x D) (mm)	2099 x 469 x 206
Packing dimensions (H x W x D) (mm)	2290 x 560 x 278
Antenna net weight (kg)	36
Mechanical downtilt (°)	0 - 16
Connector	10 x 4.3-10 Female Connector
RET type	Integrated RET
RET protocols	AISG 2.0 / 3GPP

Antenna Specifications

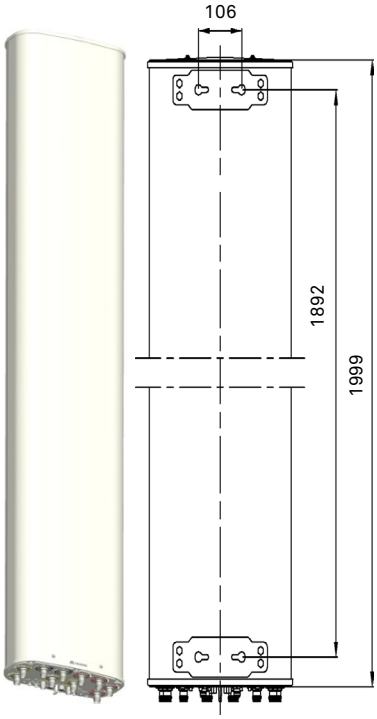
Electrical Properties			
Frequency range (MHz)		790 - 862 (r)	880 - 960 (rr)
Polarization		+45°, -45°	
Electrical downtilt (°)		0 - 10, continuously adjustable, each band separately	
Gain (dBi)	at mid Tilt	15.5	15.8
	over all Tilts	15.3 ±0.3	15.7 ±0.4
Side lobe suppression for first side lobe above main beam (dB)		> 16	> 17
Horizontal 3dB beam width (°)		65 ±2.7	62 ±3.7
Vertical 3dB beam width (°)		10.5 ±0.7	9.4 ±0.6
VSWR		< 1.5	
Cross polar isolation (dB)		≥ 28	
Interband isolation (dB)		≥ 28 (790 - 862 // 880 - 960 MHz)	
Front to back ratio , ±30° (dB)		> 25	> 25
Cross polar ratio (dB)	0°	> 18	> 18
Max. power per input (W)		500 (at 50℃ ambient temperature) *	
Intermodulation IM3 (dBc)		≤ -150 (2 x 43 dBm carrier)	
Impedance (Ω)		50	
Grounding		DC Ground	

Electrical Properties								
Frequency range (MHz)		1710 - 2690 (yR)				1710 - 2170 (bL)		2490 - 2690 (yyL)
		1710 - 1990	1920 - 2200	2200 - 2490	2490 - 2690	1710 - 1990	1920 - 2170	
Polarization		+45°, -45°						
Electrical downtilt (°)		0 - 10, continuously adjustable, each band separately						
Gain (dBi)	at mid Tilt	17.3	17.8	18.0	18.2	17.2	17.7	17.7
	over all Tilts	17.2 ±0.5	17.7 ±0.4	17.9 ±0.4	18.0 ±0.5	17.1 ±0.5	17.5 ±0.4	17.5 ±0.4
Side lobe suppression for first side lobe above main beam (dB)		> 16	> 17	> 17	> 17	> 16	> 17	> 17
Horizontal 3dB beam width (°)		65 ±5.0	62 ±3.5	60 ±3.5	60 ±4.0	65 ±3.8	62 ±3.2	60 ±3.6
Vertical 3dB beam width (°)		5.8 ±0.4	5.4 ±0.4	4.8 ±0.2	4.3 ±0.2	5.8 ±0.4	5.4 ±0.4	4.3 ±0.2
VSWR		< 1.5						
Cross polar isolation (dB)		≥ 28						
Interband isolation (dB)		≥ 30 (790 - 960 // 1710 - 2690 MHz)						
Front to back ratio , ±30° (dB)		> 25	> 25	> 25	> 25	> 25	> 25	> 25
Cross polar ratio (dB)	0°	> 18	> 18	> 18	> 18	> 18	> 18	> 18
Max. power per input (W)		250 (at 50℃ ambient temperature) *						
Intermodulation IM3 (dBc)		≤ -150 (2 x 43 dBm carrier)						
Impedance (Ω)		50						
Grounding		DC Ground						

* Total power : 1000 W (at 50℃ ambient temperature)

1. Values based on NGMN recommendations on Base Station Antenna Standards (BASTA).
2. Electrical datasheet in XML format is available.

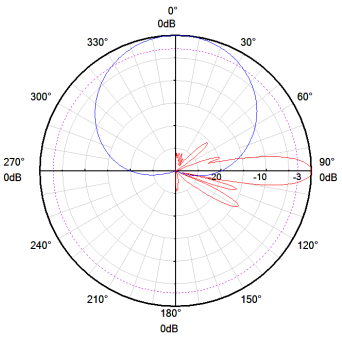
Mechanical Properties	
Antenna dimensions (H x W x D) (mm)	1999 x 349 x 166
Packing dimensions (H x W x D) (mm)	2350 x 415 x 240
Antenna weight (kg)	30.7
Clamps weight (kg)	3.6 (2 units)
Antenna packing weight (kg)	44.8 (Included clamps)
Mast diameter supported (mm)	50 - 115
Radome material	Fiberglass
Radome colour	Light grey
Operational temperature (℃)	-40 .. +65
Wind load (N)	Frontal: 705 (at 150 km/h) Lateral: 230 (at 150 km/h) Rear side: 730 (at 150 km/h)
Max. operational wind speed (km/h)	200
Survival wind speed (km/h)	250
Connector	10 x 4.3-10 Female
Connector position	Bottom

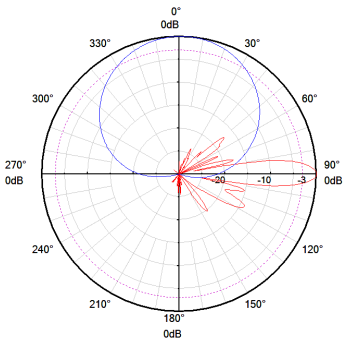


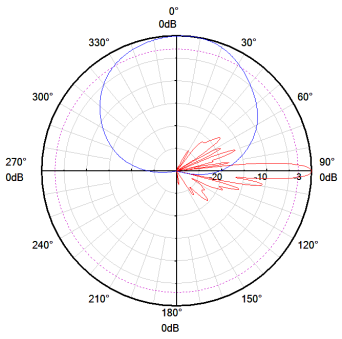
Accessories

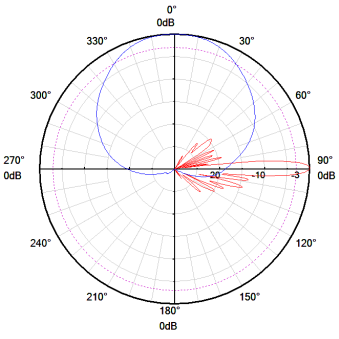
Item	Model	Description	Weight	Units per antenna
Downtilt kit	ASMDT0D01	Mechanical downtilt: 0 - 12 °	2.1 kg	1 (Separate packing)

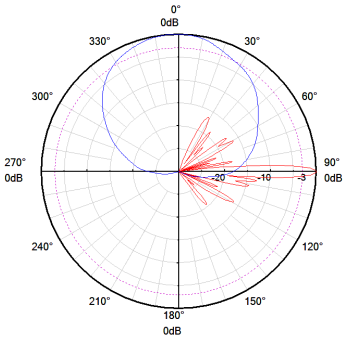
Pattern sample for reference


790 - 862 MHz


880 - 960 MHz


1710 - 2690 MHz


1710 - 2170 MHz

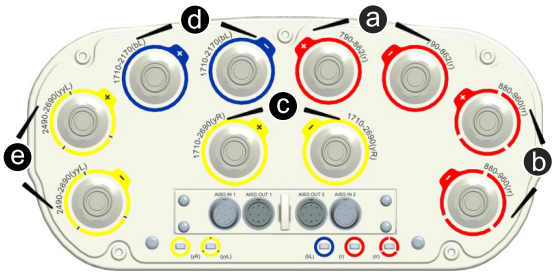

2490 - 2690 MHz

Integrated RET Specifications

Properties								
RET type	Integrated RET							
RET protocols*	AISG 2.0 / 3GPP							
Input voltage range (V)	10 - 30 DC							
Power consumption (W)	< 6 (motor activated, 12V) < 1.5 (stand by, 12V)							
Adjustment time (full range) (s)	< 65 (typically, depending on antenna type)							
RET connector	4 x 8 pin connector according to IEC 60130-9 Daisy chain in: Male / Daisy chain out: Female							
Pin assignment according AISG	1	2	3	4	5	6	7	8
	DC	n/c	RS-485B	n/c	RS-485A	DC	DC return	n/c
Lightning protection (kA)	3 (10/350 µs) 10 (8/20 µs)							

* Please confirm the AISG protocol of primary station is compatible with RET antenna protocol interface. The protocol of RET antenna software interface is switchable between AISG 2.0/3GPP and AISG 1.1 with a vendor defined command. For more details about protocol switching function, contact Huawei before system installation.

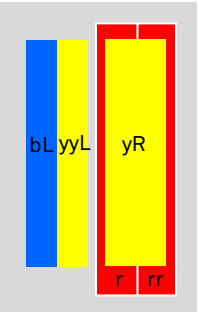
Standards: UL 60950-1 (Safety), UL 60950-22 (Safety - Equipment installed outdoor), EN 55022 (Emission), EN 55024 (Immunity), ETSI EN 301 489, FCC Part15, ICES-003
Certification: CE, FCC, IC, RCM



Integrated RET S/N:

- ⓐ HWMxxx……..…r
- ⓑ HWMxxx……..…rr
- ⓒ HWMxxx……...yR
- ⓓ HWMxxx…….bL
- ⓔ HWMxxx……yyL

r - Red b - Blue y - Yellow
L - Left array R - Right array



2LnH Band
6-14 Ports

Antenna Specifications

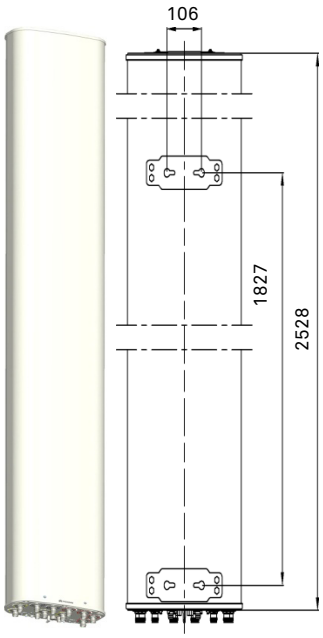
Electrical Properties			
Frequency range (MHz)		790 - 862 (r)	880 - 960 (rr)
Polarization		+45°, -45°	
Electrical downtilt (°)		0 - 10, continuously adjustable, each band separately	
Gain (dBi)	at mid Tilt	16.2	16.7
	over all Tilts	16.1 ±0.5	16.5 ±0.4
Side lobe suppression for first side lobe above main beam (dB)		> 16	> 16
Horizontal 3dB beam width (°)		65 ±1.9	62 ±3.8
Vertical 3dB beam width (°)		8.6 ±0.7	7.6 ±0.6
VSWR		< 1.5	
Cross polar isolation (dB)		≥ 28	
Interband isolation (dB)		≥ 28 (790 - 862 // 880 - 960 MHz)	
Front to back ratio , ±30° (dB)		> 24	> 24
Cross polar ratio (dB)	0°	> 18	> 18
Max. power per input (W)		500 (at 50℃ ambient temperature) *	
Intermodulation IM3 (dBc)		≤ -150 (2 x 43 dBm carrier)	
Impedance (Ω)		50	
Grounding		DC Ground	

Electrical Properties								
Frequency range (MHz)		1710 - 2690 (yR)				1710 - 2170 (bL)		2490 - 2690 (yyL)
		1710 - 1990	1920 - 2200	2200 - 2490	2490 - 2690	1710 - 1990	1920 - 2170	
Polarization		+45°, -45°						
Electrical downtilt (°)		0 - 10, continuously adjustable , each band separately						
Gain (dBi)	at mid Tilt	17.3	17.8	18.0	18.2	17.2	17.7	17.7
	over all Tilts	17.2 ±0.5	17.7 ±0.4	17.9 ±0.4	18.0 ±0.5	17.1 ±0.5	17.5 ±0.4	17.5 ±0.4
Side lobe suppression for first side lobe above main beam (dB)		> 16	> 17	> 17	> 17	> 16	> 17	> 17
Horizontal 3dB beam width (°)		65 ±5.0	62 ±3.5	60 ±3.5	60 ±4.0	65 ±3.8	62 ±3.2	60 ±3.6
Vertical 3dB beam width (°)		5.8 ±0.4	5.4 ±0.4	4.8 ±0.2	4.3 ±0.2	5.8 ±0.4	5.4 ±0.4	4.3 ±0.2
VSWR		< 1.5						
Cross polar isolation (dB)		≥ 28						
Interband isolation (dB)		≥ 30 (790 - 960 // 1710 - 2690 MHz)						
Front to back ratio , ±30° (dB)		> 25	> 25	> 25	> 25	> 25	> 25	> 25
Cross polar ratio (dB)	0°	> 18	> 18	> 18	> 18	> 18	> 18	> 18
Max. power per input (W)		250 (at 50℃ ambient temperature) *						
Intermodulation IM3 (dBc)		≤ -150 (2 x 43 dBm carrier)						
Impedance (Ω)		50						
Grounding		DC Ground						

* Total power : 1000 W (at 50℃ ambient temperature)

1. Values based on NGMN recommendations on Base Station Antenna Standards (BASTA).
2. Electrical datasheet in XML format is available.

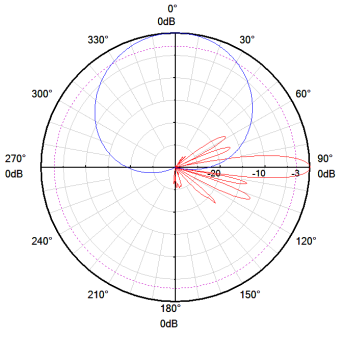
Mechanical Properties	
Antenna dimensions (H x W x D) (mm)	2528 x 349 x 166
Packing dimensions (H x W x D) (mm)	2885 x 420 x 245
Antenna weight (kg)	34.8
Clamps weight (kg)	3.6 (2 units)
Antenna packing weight (kg)	50.8 (Included clamps)
Mast diameter supported (mm)	50 - 115
Radome material	Fiberglass
Radome colour	Light grey
Operational temperature (℃)	-40 .. +65
Wind load (N)	Frontal: 920 (at 150 km/h) Lateral: 305 (at 150 km/h) Rear side: 955 (at 150 km/h)
Max. operational wind speed (km/h)	200
Survival wind speed (km/h)	250
Connector	10 x 4.3-10 Female
Connector position	Bottom

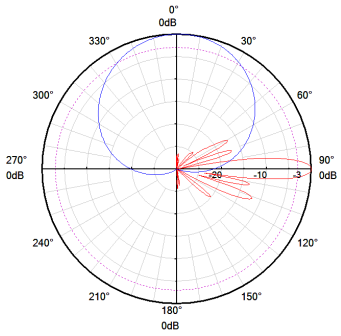


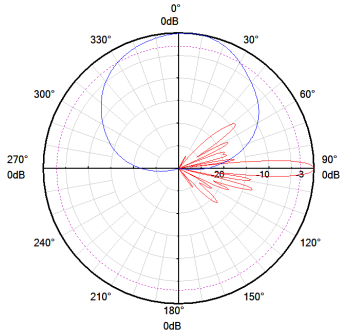
Accessories

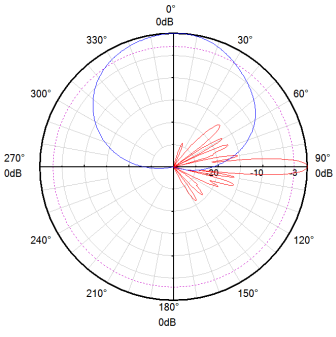
Item	Model	Description	Weight	Units per antenna
Downtilt kit	ASMDT0D01	Mechanical downtilt: 0 - 8 °	2.1 kg	1 (Separate packing)

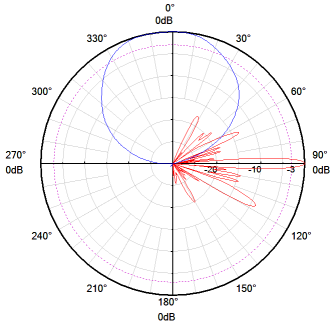
Pattern sample for reference


790 - 862 MHz


880 - 960 MHz


1710 - 2690 MHz


1710 - 2170 MHz


2490 - 2690 MHz

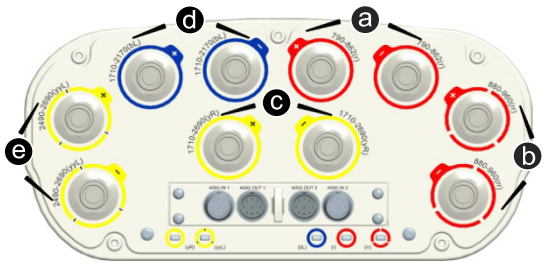
2LnH Band
6-14 Ports

Integrated RET Specifications

Properties								
RET type	Integrated RET							
RET protocols*	AISG 2.0 / 3GPP							
Input voltage range (V)	10 - 30 DC							
Power consumption (W)	< 6 (motor activated, 12V) < 1.5 (stand by, 12V)							
Adjustment time (full range) (s)	< 65 (typically, depending on antenna type)							
RET connector	4 x 8 pin connector according to IEC 60130-9 Daisy chain in: Male / Daisy chain out: Female							
Pin assignment according AISG	1	2	3	4	5	6	7	8
	DC	n/c	RS-485B	n/c	RS-485A	DC	DC return	n/c
Lightning protection (kA)	3 (10/350 μs) 10 (8/20 μs)							

* Please confirm the AISG protocol of primary station is compatible with RET antenna protocol interface. The protocol of RET antenna software interface is switchable between AISG 2.0/3GPP and AISG 1.1 with a vendor defined command. For more details about protocol switching function, contact Huawei before system installation.

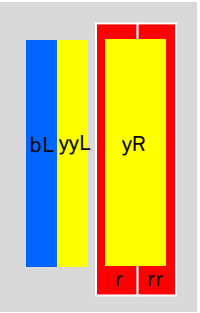
Standards: UL 60950-1 (Safety), UL 60950-22 (Safety - Equipment installed outdoor), EN 55022 (Emission), EN 55024 (Immunity), ETSI EN 301 489, FCC Part15, ICES-003
Certification: CE, FCC, IC, RCM



Integrated RET S/N:

- a HWMxxx……..r
- b HWMxxx……..rr
- c HWMxxx……..yR
- d HWMxxx……bL
- e HWMxxx……yyL

r - Red b - Blue y - Yellow
L - Left array R - Right array



Preliminary Issue

Antenna Specifications

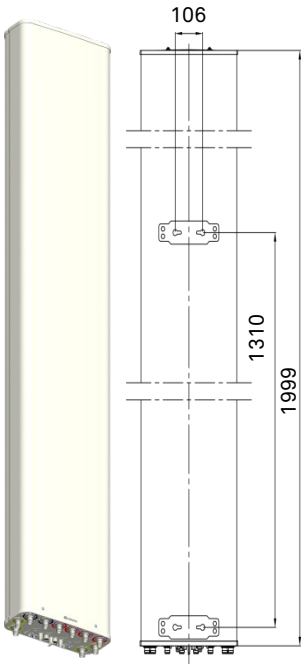
Electrical Properties							
Frequency range (MHz)		690 - 862		880 - 960	1427 - 2200		
		690 - 803	790 - 862		1427 - 1518	1695 - 1990	1920 - 2200
Polarization		+45°, -45°			+45°, -45°		
Electrical downtilt (°)		2 - 12, continuously adjustable, each band separately					
Gain (dBi)	at mid Tilt	15.0	15.5	15.9	16.1	17.3	17.4
	over all Tilts	14.9 ±0.5	15.3 ±0.5	15.6 ±0.5	16.0 ±0.5	17.2 ±0.5	17.3 ±0.5
Side lobe suppression for first side lobe above main beam (dB)		> 15	> 15	> 16	> 17	> 16	> 17
Horizontal 3dB beam width (°)		67 ±2.0	65 ±2.2	61 ±2.5	64 ±5.0	68 ±4.0	65 ±4.0
Vertical 3dB beam width (°)		11.6 ±1.0	10.4 ±0.5	9.0 ±0.4	8.3 ±0.4	6.8 ±0.6	6.1 ±0.5
VSWR		< 1.5			< 1.5		
Cross polar isolation (dB)		≥ 28			≥ 28		
Interband isolation (dB)		≥ 28			≥ 28		
Front to back ratio, ±30° (dB)		> 23	> 26	> 26	> 24	> 26	> 26
Cross polar ratio (dB)	0°	> 21	> 21	> 20	> 15	> 20	> 20
Max. power per input (W)		400 (at 50℃ ambient temperature)*			250 (at 50℃ ambient temperature)*		
Intermodulation IM3 (dBc)		≤ -150 (2 x 43 dBm carrier)			≤ -153 (2 x 43 dBm carrier)		
Impedance (Ω)		50					
Grounding		DC Ground					

Electrical Properties					
Frequency range (MHz)		2 x (1695 - 2690)			
		1695 - 1990	1920 - 2200	2200 - 2490	2490 - 2690
Polarization		+45°, -45°			
Electrical downtilt (°)		2 - 12, continuously adjustable, each band separately			
Gain (dBi)	at mid Tilt	17.4	17.7	18.1	18.4
	over all Tilts	17.2 ±0.5	17.6 ±0.5	17.9 ±0.4	18.2 ±0.5
Side lobe suppression for first side lobe above main beam (dB)		> 19	> 19	> 18	> 18
Horizontal 3dB beam width (°)		67 ±5.0	65 ±3.0	62 ±2.0	59 ±4.0
Vertical 3dB beam width (°)		6.6 ±0.5	6.0 ±0.5	5.2 ±0.4	5.0 ±0.4
VSWR		< 1.5			
Cross polar isolation (dB)		≥ 28			
Interband isolation (dB)		≥ 28			
Front to back ratio, ±30° (dB)		> 25	> 25	> 26	> 26
Cross polar ratio (dB)	0°	> 19	> 19	> 17	> 17
Max. power per input (W)		250 (at 50℃ ambient temperature)*			
Intermodulation IM3 (dBc)		≤ -153 (2 x 43 dBm carrier)			
Impedance (Ω)		50			
Grounding		DC Ground			

* Total power : 1000 W (at 50℃ ambient temperature)

1. Values based on NGMN recommendations on Base Station Antenna Standards (BASTA).
2. Electrical datasheet in XML format is available.

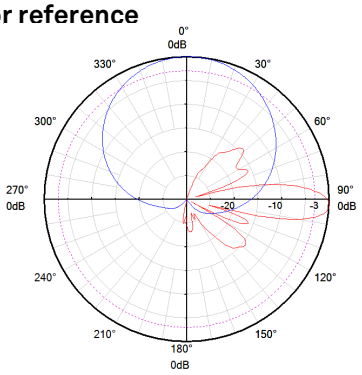
Mechanical Properties	
Antenna dimensions (H x W x D) (mm)	1999 x 369 x 149
Packing dimensions (H x W x D) (mm)	2265 x 435 x 240
Antenna weight (kg)	32.5
Clamps weight (kg)	3.6 (2 units)
Antenna packing weight (kg)	45.0 (Included clamps)
Mast diameter supported (mm)	50 - 115
Radome material	Fiberglass
Radome colour	Light grey
Operational temperature (℃)	-40 .. +65
Wind load (N)	Frontal: 985 (at 150 km/h) Lateral: 195 (at 150 km/h) Rear side: 975 (at 150 km/h)
Max. operational wind speed (km/h)	200
Survival wind speed (km/h)	250
Connector	10 x 4.3-10 Female
Connector position	Bottom



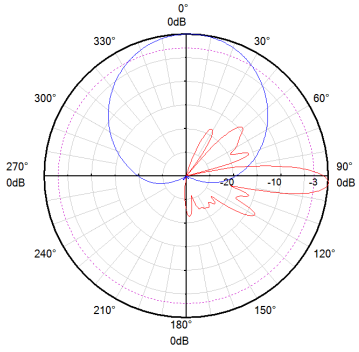
Accessories

Item	Model	Description	Weight	Units per antenna
Downtilt kit	ASMDT0D01	Mechanical downtilt: 0 - 12 °	2.1 kg	1 (Separate packing)

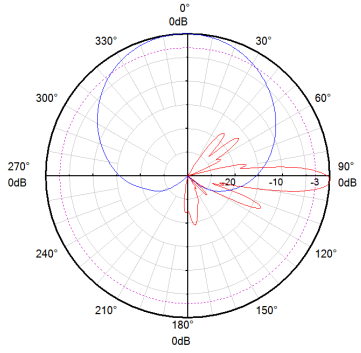
Pattern sample for reference



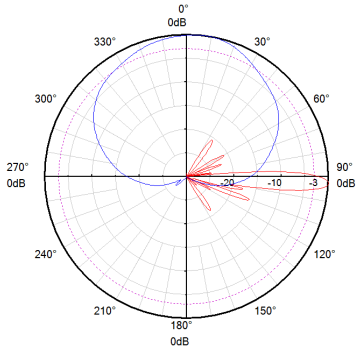
690 - 862 MHz



880 - 960 MHz



1427 - 2200 MHz



1695 - 2690 MHz

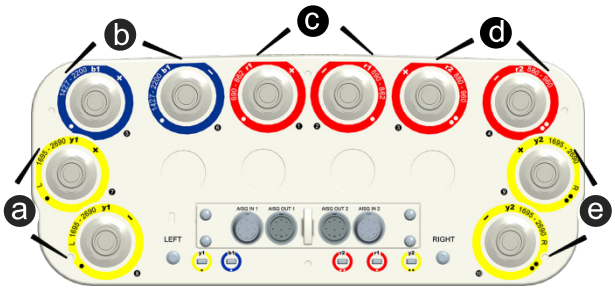
Integrated RET Specifications

Properties								
RET type	Integrated RET							
RET protocols*	AISG 2.0 / 3GPP							
Input voltage range (V)	10 - 30 DC							
Power consumption (W)	< 6 (motor activated, 12V) < 1.5 (stand by, 12V)							
Adjustment time (full range) (s)	< 65 (typically, depending on antenna type)							
RET connector	4 x 8 pin connector according to IEC 60130-9 Daisy chain in: Male / Daisy chain out: Female							
Pin assignment according AISG	1	2	3	4	5	6	7	8
	DC	n/c	RS-485B	n/c	RS-485A	DC	DC return	n/c
Lightning protection (kA)	3 (10/350 μs) 10 (8/20 μs)							

* Please confirm the AISG protocol of primary station is compatible with RET antenna protocol interface. The protocol of RET antenna software interface is switchable between AISG 2.0/3GPP and AISG 1.1 with a vendor defined command. For more details about protocol switching function, contact Huawei before system installation.

Standards: UL 60950-1 (Safety), UL 60950-22 (Safety - Equipment installed outdoor), EN 55022 (Emission), EN 55024 (Immunity), ETSI EN 301 489, FCC Part15, ICES-003

Certification: CE, FCC, IC, RCM



Integrated RET S/N:

ⓐ HWMxxx.....Ly1

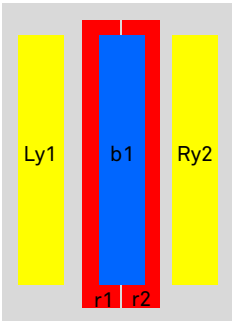
ⓑ HWMxxx.....b1

ⓒ HWMxxx.....r1

ⓓ HWMxxx.....r2

ⓔ HWMxxx.....Ry2

r - Red y - Yellow
b - Blue
L - Left array R - Right array



Preliminary Issue

Electrical Properties					
Frequency range (MHz)		690 - 862	880 - 960	1427 - 2200	2 x (1695 - 2690)
Electrical downtilt (°)		2 - 12	2 - 12	2 - 12	2 - 12
Gain (dBi)		16.5	17.0	17.5	18.0
Side lobe suppression for first side lobe above main beam (Typ.) (dB)		17	17	17	17
Horizontal 3dB beam width (°)		67	64	65	60
Vertical 3dB beam width (°)		8.7	7.3	6.5	6.0
VSWR		< 1.5			
Front to back ratio, copolar (dB)		Typ. 26	Typ. 26	Typ. 27	Typ. 28
Cross polar ratio (dB)	0°	Typ. 18	Typ. 18	Typ. 19	Typ. 19
Intermodulation IM3 (dBc)		≤ -150 (2 x 43 dBm carrier)			

Mechanical Properties	
Antenna dimensions (H x W x D) (mm)	2769 x 369 x 149
Packing dimensions (H x W x D) (mm)	3050 x 435 x 240
Antenna net weight (kg)	39
Mechanical downtilt (°)	0 - 8
Connector	10 x 4.3-10 Female
RET type	Integrated RET
RET protocols	AISG 2.0 / 3GPP

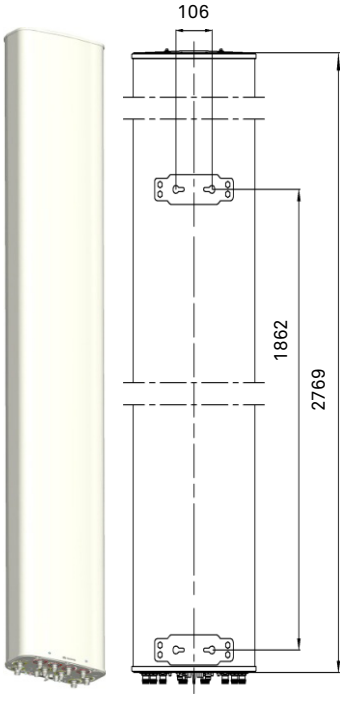
DXXXXX-690-862/880-960/1710-2690/1710-2690/1710-2690-65/65/65/65/65-16.5i/17i/17.5i/18i/18i-M/M/M/M/M-R
EasyRET 10-Port Antenna with 5 Integrated RCUs - 2.6m
Model: APE4518R12v06

Antenna Specifications

Electrical Properties									
Frequency range (MHz)			690 - 862		880 - 960	3 x (1710 - 2690)			
			690 - 803	790 - 862		1710 - 1990	1920 - 2200	2200 - 2490	2490 - 2690
Polarization			+45°, -45°						
Electrical downtilt (°)			0 - 10, continuously adjustable, each band separately						
Gain (dBi)		at mid Tilt	16.2	16.5	16.9				
		over all Tilts	16.0 ±0.5	16.3 ±0.5	16.8 ±0.6				
	Bottom	at mid Tilt				17.3	17.4	17.6	18.1
		over all Tilts				17.2 ±0.5	17.4 ±0.5	17.5 ±0.6	18.0 ±0.6
	Top	at mid Tilt				16.9	17.2	17.4	17.5
		over all Tilts				16.8 ±0.5	17.1 ±0.3	17.2 ±0.5	17.5 ±0.5
Side lobe suppression for first side lobe above main beam (dB)			> 20	> 18	> 17	> 20	> 20	> 19	> 19
Horizontal 3dB beam width (°)			66 ±2.7	65 ±2.9	63 ±4.1	66 ±4.7	63 ±3.3	61 ±5.2	60 ±4.4
Vertical 3dB beam width (°)			8.6 ±1.1	7.4 ±0.9	6.5 ±0.6	7.6 ±0.6	6.8 ±0.5	6.1 ±0.5	5.6 ±0.2
VSWR			< 1.5						
Cross polar isolation (dB)			≥ 28		≥ 28	≥ 28			
Interband isolation (dB)			≥ 28 (690 - 862 // 880 - 960 MHz) ≥ 30 (690 - 862 // 1710 - 2690 MHz) ≥ 30 (880 - 960 // 1710 - 2690 MHz) ≥ 30 (1710 - 2690 // 1710 - 2690 MHz)						
Front to back ratio, ±30° (dB)			> 25	> 27	> 26	> 30	> 30	> 27	> 27
Cross polar ratio (dB)	0°		> 18	> 22	> 22	> 19	> 19	> 21	> 20
Max. power per input (W)			400 (at 50℃ ambient temperature)			250 (at 50℃ ambient temperature)			
Total power (W)			1000 (at 50℃ ambient temperature)						
Intermodulation IM3 (dBc)			≤ -150 (2 x 43 dBm carrier)						
Impedance (Ω)			50						
Grounding			DC Ground						

1. Values based on NGMN recommendations on Base Station Antenna Standards (BASTA).
2. Electrical datasheet in XML format is available.

Mechanical Properties	
Antenna dimensions (H x W x D) (mm)	2769 x 359 x 178
Packing dimensions (H x W x D) (mm)	2980 x 425 x 255
Antenna weight (kg)	42.9
Clamps weight (kg)	5.8 (2 units)
Antenna packing weight (kg)	61.4 (included clamps)
Mast diameter supported (mm)	50 - 115
Radome material	Fiberglass
Radome colour	Light grey
Operational temperature (℃)	-40 .. +65
Wind load (N)	Frontal: 1335 (at 150 km/h) Lateral: 365 (at 150 km/h) Rear side: 1115 (at 150 km/h)
Max. operational wind speed (km/h)	200
Survival wind speed (km/h)	250
Connector	10 x 4.3-10 Female
Connector position	Bottom



Accessories

Item	Model	Description	Weight	Units per antenna
Downtilt kit	ASMDT0F01	Mechanical downtilt: 0 - 8°	3.1 kg	1 (Separate packing)

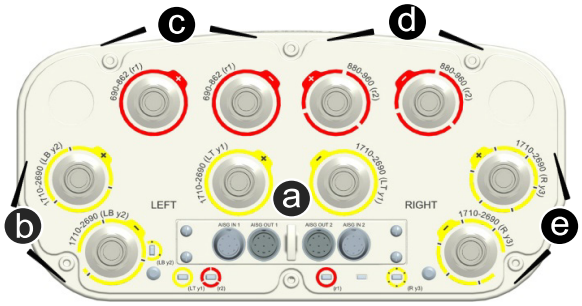
Integrated RET Specifications

Properties								
RET type	Integrated RET							
RET protocols*	AISG 2.0 / 3GPP							
Input voltage range (V)	10 - 30 DC							
Power consumption (W)	< 6 (motor activated, 12V) < 1.5 (stand by, 12V)							
Adjustment time (full range) (s)	< 65 (typically, depending on antenna type)							
RET connector	4 x 8 pin connector according to IEC 60130-9 Daisy chain in: Male / Daisy chain out: Female							
Pin assignment according AISG	1	2	3	4	5	6	7	8
	DC	n/c	RS-485B	n/c	RS-485A	DC	DC return	n/c
Lightning protection (kA)	3 (10/350 μs) 10 (8/20 μs)							

* Please confirm the AISG protocol of primary station is compatible with RET antenna protocol interface. The protocol of RET antenna software interface is switchable between AISG 2.0/3GPP and AISG 1.1 with a vendor defined command. For more details about protocol switching function, contact Huawei before system installation.

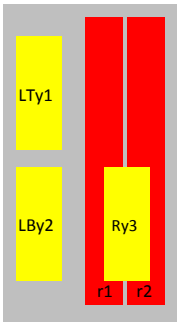
Standards: UL 60950-1 (Safety), UL 60950-22 (Safety - Equipment installed outdoor), EN 55022 (Emission), EN 55024 (Immunity), ETSI EN 301 489, FCC Part15, ICES-003

Certification: CE, FCC, IC, RCM



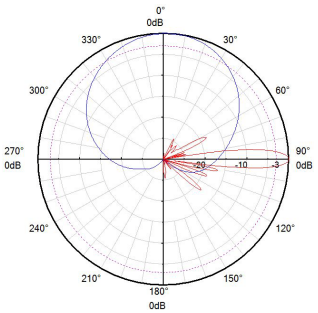
Integrated RET S/N:

- ⓐ HWMxxx.....LTy1
- ⓑ HWMxxx.....LBy2
- ⓒ HWMxxx.....r1
- ⓓ HWMxxx.....r2
- ⓔ HWMxxx.....Ry3

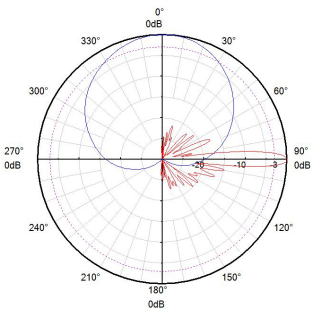


r - Red y - Yellow
L - Left array R - Right array
T - Top array B - Bottom array

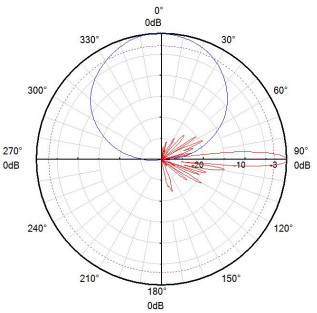
Pattern sample for reference



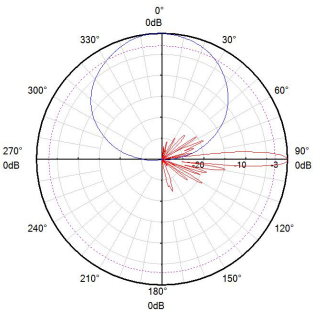
690 - 862 MHz



880 - 960 MHz



1710 - 2690 MHz (Bottom)



1710 - 2690 MHz (Top)

DXXXXX-690-803/824-960/1710-2690/1710-2690/1710-2690-65/65/65/65/65-16.5i/17i/18i/18i/17.5i/-M/M/M/M/M-R
EasyRET 10-Port Antenna with 5 Integrated RCUs - 2.6m
Model: APE4518R16v06

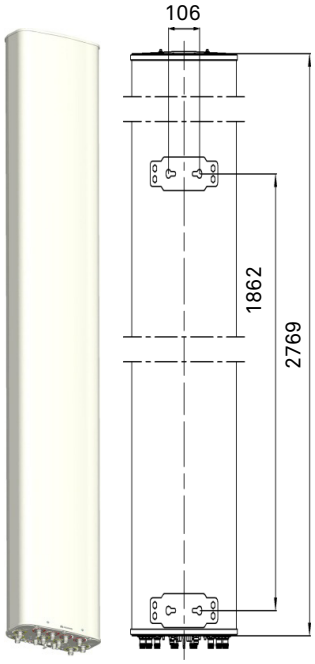
HUAWEI

Antenna Specifications

Electrical Properties									
Frequency range (MHz)			690 - 803	824 - 960		3 x (1710 - 2690)			
				824 - 894	880-960	1710 - 1990	1920 - 2200	2200 - 2490	2490 - 2690
Polarization			+45°, -45°						
Electrical downtilt (°)			0 - 10, continuously adjustable, each band separately						
Gain (dBi)		at mid Tilt	16.2	16.5	16.9				
		over all Tilts	16.0 ±0.5	16.3 ±0.5	16.8 ±0.6				
	Bottom	at mid Tilt				17.3	17.4	17.6	18.1
		over all Tilts				17.2 ±0.5	17.4 ±0.5	17.5 ±0.6	18.0 ±0.6
	Top	at mid Tilt				16.9	17.2	17.4	17.5
		over all Tilts				16.8 ±0.5	17.1 ±0.3	17.2 ±0.5	17.5 ±0.5
Side lobe suppression for first side lobe above main beam (dB)			> 20	> 18	> 17	> 20	> 20	> 19	> 19
Horizontal 3dB beam width (°)			66 ±2.7	65 ±2.9	63 ±4.1	66 ±4.7	63 ±3.3	61 ±5.2	60 ±4.4
Vertical 3dB beam width (°)			8.6 ±1.1	7.4 ±0.9	6.5 ±0.6	7.6 ±0.6	6.8 ±0.5	6.1 ±0.5	5.6 ±0.2
VSWR			< 1.5						
Cross polar isolation (dB)			≥ 28	≥ 28		≥ 28			
Interband isolation (dB)			≥ 28 (690 - 803 // 824 - 960 MHz) ≥ 30 (690 - 803 // 1710 - 2690 MHz) ≥ 30 (824 - 960 // 1710 - 2690 MHz) ≥ 30 (1710 - 2690 // 1710 - 2690 MHz)						
Front to back ratio, ±30° (dB)			> 25	> 27	> 26	> 30	> 30	> 27	> 27
Cross polar ratio (dB)	0°		> 18	> 22	> 22	> 19	> 19	> 21	> 20
Max. power per input (W)			400 (at 50℃ ambient temperature)			250 (at 50℃ ambient temperature)			
Total power per combined input (W)			1000 (at 50℃ ambient temperature)						
Intermodulation IM3 (dBc)			≤ -150 (2 x 43 dBm carrier)						
Impedance (Ω)			50						
Grounding			DC Ground						

1. Values based on NGMN recommendations on Base Station Antenna Standards (BASTA).
2. Electrical datasheet in XML format is available.

Mechanical Properties	
Antenna dimensions (H x W x D) (mm)	2769 x 359 x 178
Packing dimensions (H x W x D) (mm)	2980 x 425 x 255
Antenna weight (kg)	43.7
Clamps weight (kg)	5.8 (2 units)
Antenna packing weight (kg)	62.2 (included clamps)
Mast diameter supported (mm)	50 - 115
Radome material	Fiberglass
Radome colour	Light grey
Operational temperature (℃)	-40 .. +65
Wind load (N)	Frontal: 1335 (at 150 km/h) Lateral: 365 (at 150 km/h) Rear side: 1115 (at 150 km/h)
Max. operational wind speed (km/h)	200
Survival wind speed (km/h)	250
Connector	10 x 4.3-10 Female
Connector position	Bottom



Accessories

Item	Model	Description	Weight	Units per antenna
Downtilt kit	ASMDT0F01	Mechanical downtilt: 0 - 8 °	3.1 kg	1 (Separate packing)

2LnH Band 6-14 Ports

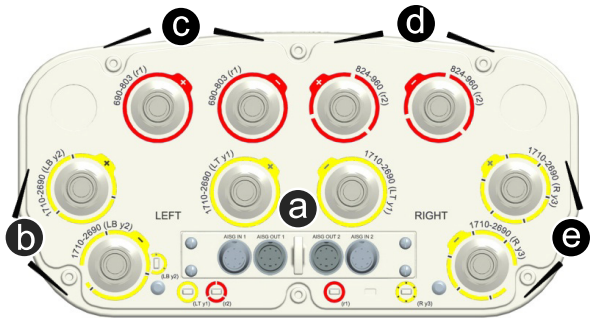
Integrated RET Specifications

Properties								
RET type	Integrated RET							
RET protocols*	AISG 2.0 / 3GPP							
Input voltage range (V)	10 - 30 DC							
Power consumption (W)	< 6 (motor activated, 12V) < 1.5 (stand by, 12V)							
Adjustment time (full range) (s)	< 65 (typically, depending on antenna type)							
RET connector	4 x 8 pin connector according to IEC 60130-9 Daisy chain in: Male / Daisy chain out: Female							
Pin assignment according AISG	1	2	3	4	5	6	7	8
	DC	n/c	RS-485B	n/c	RS-485A	DC	DC return	n/c
Lightning protection (kA)	3 (10/350 μs) 10 (8/20 μs)							

* Please confirm the AISG protocol of primary station is compatible with RET antenna protocol interface. The protocol of RET antenna software interface is switchable between AISG 2.0/3GPP and AISG 1.1 with a vendor defined command. For more details about protocol switching function, contact Huawei before system installation.

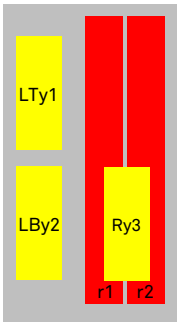
Standards: UL 60950-1 (Safety), UL 60950-22 (Safety - Equipment installed outdoor), EN 55022 (Emission), EN 55024 (Immunity), ETSI EN 301 489, FCC Part15, ICES-003

Certification: CE, FCC, IC, RCM



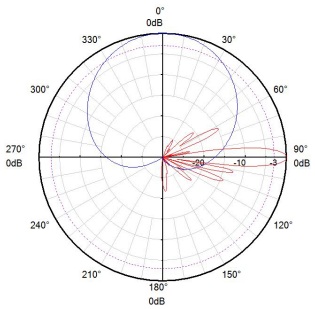
Integrated RET S/N:

- a HWMxxx.....LTy1
- b HWMxxx.....LBy2
- c HWMxxx.....r1
- d HWMxxx.....r2
- e HWMxxx.....Ry3

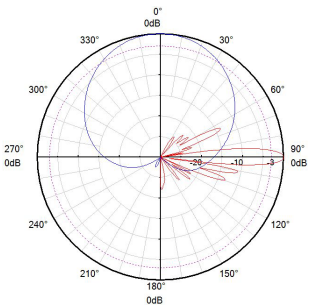


r - Red y - Yellow
L - Left array R - Right array
T - Top array B - Bottom array

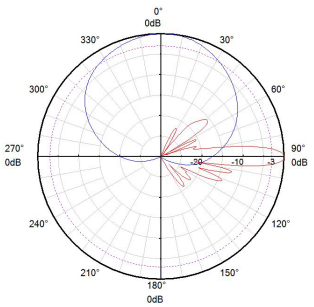
Pattern sample for reference



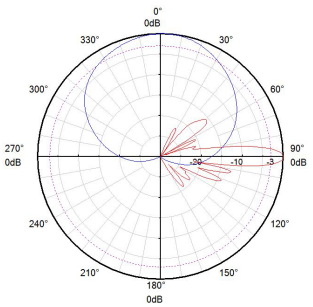
690 - 803 MHz



824 - 960 MHz



1710 - 2690 MHz
(Bottom)



1710 - 2690 MHz
(Top)

Preliminary Issue

Antenna Specifications

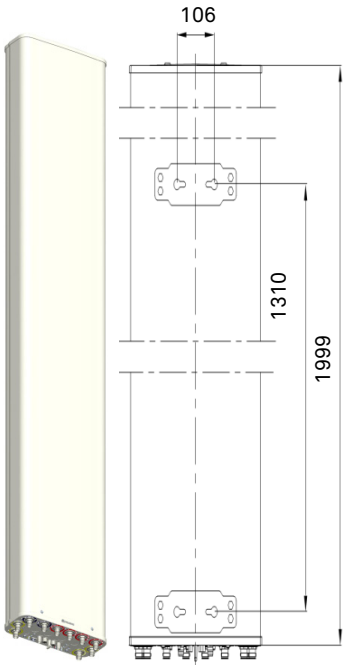
Electrical Properties							
Frequency range (MHz)		690 - 803	824 - 960		1427 - 2200		
			824 - 894	880 - 960	1427 - 1518	1695 - 1990	1920 - 2200
Polarization		+45° , -45°			+45° , -45°		
Electrical downtilt (°)		2 - 12 , continuously adjustable			2 - 12 , continuously adjustable		
Gain (dBi)	at mid Tilt	14.9	15.2	15.5	16.0	17.0	17.3
	over all Tilts	14.8 ±0.5	15.1 ±0.5	15.4 ±0.5	15.9 ±0.5	16.8 ±0.5	17.0 ±0.5
Side lobe suppression for first side lobe above main beam (dB)		> 16	> 15	> 15	> 17	> 16	> 16
Horizontal 3dB beam width (°)		67 ±2.0	65 ±2.2	63 ±2.5	64 ±5.0	67 ±4.0	65 ±4.0
Vertical 3dB beam width (°)		11.0 ±1.0	9.5 ±0.5	8.9 ±0.4	8.3 ±0.4	6.8 ±0.6	6.1 ±0.5
VSWR		< 1.5			< 1.5		
Cross polar isolation (dB)		≥ 28			≥ 28		
Interband isolation (dB)		≥ 28			≥ 28		
Front to back ratio , ±30° (dB)		> 23	> 26	> 26	> 24	> 26	> 26
Cross polar ratio (dB)	0°	> 19	> 18	> 17	> 15	> 20	> 20
Max. power per input (W)		500 (at 50℃ ambient temperature)*			250 (at 50℃ ambient temperature)*		
Intermodulation IM3 (dBc)		≤ -150 (2 x 43 dBm carrier)			≤ -153 (2 x 43 dBm carrier)		
Impedance (Ω)		50					
Grounding		DC Ground					

Electrical Properties					
Frequency range (MHz)		2 x (1695 - 2690)			
		1695 - 1990	1920 - 2200	2200 - 2490	2490 - 2690
Polarization		+45° , -45°			
Electrical downtilt (°)		2 - 12 , continuously adjustable , each band separately			
Gain (dBi)	at mid Tilt	17.2	17.5	18.0	18.4
	over all Tilts	17.0 ±0.5	17.4 ±0.5	17.8 ±0.4	18.1 ±0.5
Side lobe suppression for first side lobe above main beam (dB)		> 17	> 17	> 17	> 16
Horizontal 3dB beam width (°)		67 ±5.0	65 ±3.0	62 ±2.0	59 ±4.0
Vertical 3dB beam width (°)		6.6 ±0.5	6.0 ±0.5	5.2 ±0.4	5.0 ±0.4
VSWR		< 1.5			
Cross polar isolation (dB)		≥ 28			
Interband isolation (dB)		≥ 28			
Front to back ratio , ±30° (dB)		> 25	> 25	> 26	> 26
Cross polar ratio (dB)	0°	> 19	> 19	> 17	> 17
Max. power per input (W)		250 (at 50℃ ambient temperature)*			
Intermodulation IM3 (dBc)		≤ -153 (2 x 43 dBm carrier)			
Impedance (Ω)		50			
Grounding		DC Ground			

* Total power : 1000 W (at 50℃ ambient temperature)

1. Values based on NGMN recommendations on Base Station Antenna Standards (BASTA).
2. Electrical datasheet in XML format is available.

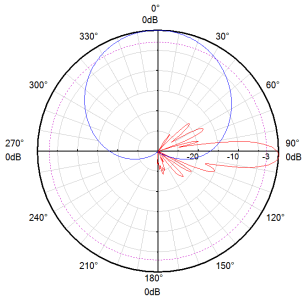
Mechanical Properties	
Antenna dimensions (H x W x D) (mm)	1999 x 369 x 149
Packing dimensions (H x W x D) (mm)	2265 x 435 x 240
Antenna weight (kg)	32.7
Clamps weight (kg)	3.6 (2 units)
Antenna packing weight (kg)	47.5 (Included clamps)
Mast diameter supported (mm)	50 - 115
Radome material	Fiberglass
Radome colour	Light grey
Operational temperature (℃)	-40 .. +65
Wind load (N)	Frontal: 985 (at 150 km/h) Lateral: 195 (at 150 km/h) Rear side: 980 (at 150 km/h)
Max. operational wind speed (km/h)	200
Survival wind speed (km/h)	250
Connector	10 x 4.3-10 Female
Connector position	Bottom

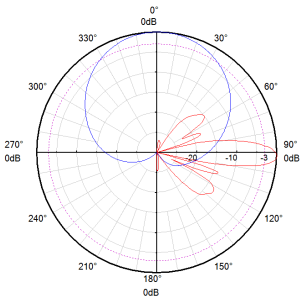


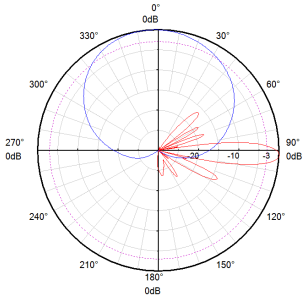
Accessories

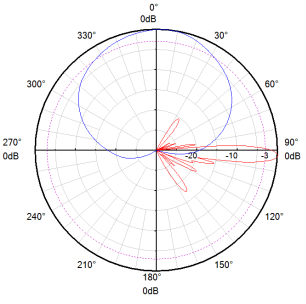
Item	Model	Description	Weight	Units per antenna
Downtilt kit	ASMDT0D01	Mechanical downtilt: 0 - 12 °	2.1 kg	1 (Separate packing)

Pattern sample for reference


690 - 803 MHz


824 - 960 MHz


1427 - 2200 MHz

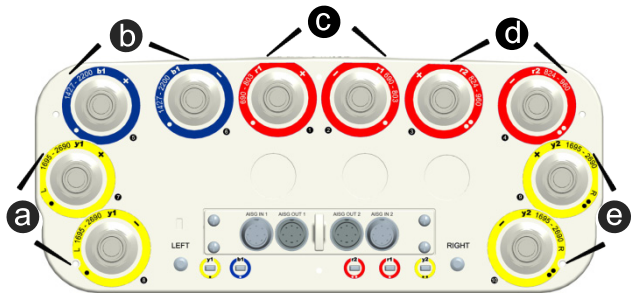

1695 - 2690 MHz

Integrated RET Specifications

Properties								
RET type	Integrated RET							
RET protocols*	AISG 2.0 / 3GPP							
Input voltage range (V)	10 - 30 DC							
Power consumption (W)	< 6 (motor activated, 12V) < 1.5 (stand by, 12V)							
Adjustment time (full range) (s)	< 65 (typically, depending on antenna type)							
RET connector	4 x 8 pin connector according to IEC 60130-9 Daisy chain in: Male / Daisy chain out: Female							
Pin assignment according AISG	1	2	3	4	5	6	7	8
	DC	n/c	RS-485B	n/c	RS-485A	DC	DC return	n/c
Lightning protection (kA)	3 (10/350 μs) 10 (8/20 μs)							

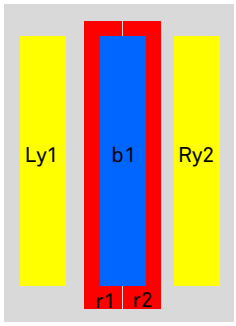
* Please confirm the AISG protocol of primary station is compatible with RET antenna protocol interface. The protocol of RET antenna software interface is switchable between AISG 2.0/3GPP and AISG 1.1 with a vendor defined command. For more details about protocol switching function, contact Huawei before system installation.

Standards: EN 60950-1 (Safety), EN 55022 (Emission), EN 55024 (Immunity), ETSI EN 301 489, FCC part15
Certification: CE, FCC, RoHS, WEEE



Integrated RET S/N:

ⓐ HWMxxx.....Ly1
ⓑ HWMxxx.....b1
ⓒ HWMxxx.....r1
ⓓ HWMxxx.....r2
ⓔ HWMxxx.....Ry2



r - Red y - Yellow
b - Blue
L - Left array R - Right array

Preliminary Issue

Electrical Properties				
Frequency range (MHz)		2 x (690 - 960)	2 x (1695 - 2200)	2 x (2490 - 2690)
Electrical downtilt (°)		0 - 14	2 - 12	2 - 12
Gain (dBi)		14.5	17.0	17.5
Side lobe suppression for first side lobe above main beam (Typ.) (dB)		15	16	16
Horizontal 3dB beam width (°)		65	65	62
Vertical 3dB beam width (°)		12	6.2	5
VSWR		< 1.5		
Front to back ratio, copolar (dB)		Typ. 25	Typ. 25	Typ. 26
Cross polar ratio (dB)	0°	Typ. 17	Typ. 17	Typ. 17
Intermodulation IM3 (dBc)		≤ -153 (2 x 43 dBm carrier)		

Mechanical Properties	
Antenna dimensions (H x W x D) (mm)	1499 x 429 x 196
Packing dimensions (H x W x D) (mm)	1695 x 530 x 270
Antenna net weight (kg)	39
Mechanical downtilt (°)	0 - 16
Connector	12 x 4.3-10 Female
RET type	Integrated RET
RET protocols	AISG 2.0 / 3GPP

Preliminary Issue

Electrical Properties			
Frequency range (MHz)		2 x (690 - 960)	4 x (1695 - 2690)
Electrical downtilt (°)		0 - 10	2 - 12
Gain (dBi)		16	16.5
Side lobe suppression for first side lobe above main beam (Typ.) (dB)		16	16
Horizontal 3dB beam width (°)		65	65
Vertical 3dB beam width (°)		9	8
VSWR		< 1.5	
Front to back ratio, copolar (dB)		Typ. 25	Typ. 26
Cross polar ratio (dB)	0°	Typ. 17	Typ. 17
Intermodulation IM3 (dBc)		≤ -153 (2 x 43 dBm carrier)	

Mechanical Properties	
Antenna dimensions (H x W x D) (mm)	1999 x 429 x 196
Packing dimensions (H x W x D) (mm)	2195 x 530 x 270
Antenna net weight (kg)	38
Mechanical downtilt (°)	0 - 12
Connector	12 x 4.3-10 Female
RET type	Integrated RET
RET protocols	AISG 2.0 / 3GPP

DXXXXXX-690-960/690-960/1695-2690/1695-2690/1695-2690/1695-2690-65/65/65/65/65/65-17i/17i/17.5i/17.5i/17.5i/17.5i-M/M/M/M/M/M-R
EasyRET 12-Port Antenna with Integrated RCUs - 2.6m
Model: ASI4518R10v06

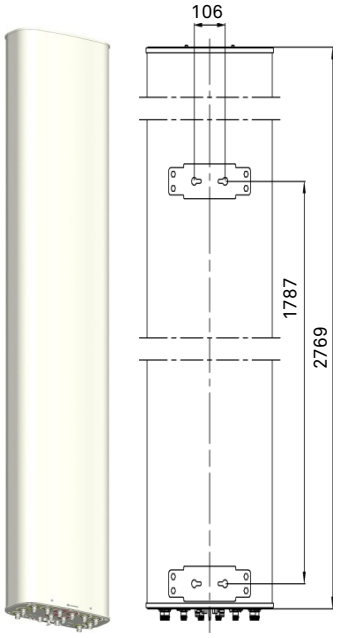
HUAWEI

Antenna Specifications

Electrical Properties									
Frequency range (MHz)			2 x (690 - 960)				4 x (1695 - 2690)			
			690 - 803	790 - 862	824 - 894	880 - 960	1695 - 1990	1920 - 2200	2200 - 2490	2490 - 2690
Polarization			+45°, -45°							
Electrical downtilt (°)			0 - 10, continuously adjustable, each band separately				2 - 12, continuously adjustable, each band separately			
Gain (dBi)		at mid Tilt	15.8	16.5	16.7	17.0				
		over all Tilts	15.5 ±0.5	16.3 ±0.5	16.5 ±0.5	16.7 ±0.5				
	Bottom	at mid Tilt					16.6	17.0	17.2	17.6
		over all Tilts					16.4 ±0.6	16.8 ±0.5	17.0 ±0.5	17.4 ±0.5
	Top	at mid Tilt					16.6	17.0	17.2	17.6
		over all Tilts					16.4 ±0.6	16.8 ±0.5	17.0 ±0.5	17.4 ±0.5
Side lobe suppression for first side lobe above main beam (dB)			> 16	> 17	> 17	> 17	> 16	> 16	> 16	> 16
Horizontal 3dB beam width (°)			68 ±5	65 ±5	62 ±5	60 ±5	65 ±5	63 ±5	61 ±5	60 ±5
Vertical 3dB beam width (°)			8.8 ±0.7	8.0 ±0.6	7.8 ±0.5	7.5 ±0.5	7.0 ±0.7	6.0 ±0.5	5.5 ±0.4	5.0 ±0.5
VSWR			< 1.5							
Cross polar isolation (dB)			≥ 28							
Interband isolation (dB)			≥ 28							
Front to back ratio, ±30° (dB)			> 23	> 26	> 26	> 26	> 26	> 27	> 27	> 28
Cross polar ratio (dB)		0°	> 17	> 18	> 19	> 20	> 15	> 16	> 17	> 17
Max. power per input (W)			500 (at 50℃ ambient temperature)				250 (at 50℃ ambient temperature)			
Total power (W)			1200 (at 50℃ ambient temperature)							
Intermodulation IM3 (dBc)			≤ -153 (2 x 43 dBm carrier)							
Impedance (Ω)			50							
Grounding			DC Ground							

1. Values based on NGMN recommendations on Base Station Antenna Standards (BASTA).
2. Electrical datasheet in XML format is available.

Mechanical Properties	
Antenna dimensions (H x W x D) (mm)	2769 x 429 x 196
Packing dimensions (H x W x D) (mm)	2980 x 530 x 275
Antenna weight (kg)	45.6
Clamps weight (kg)	5.8 (2 units)
Antenna packing weight (kg)	66.1 (Included clamps)
Mast diameter supported (mm)	50 - 115
Radome material	Fiberglass
Radome colour	Light grey
Operational temperature (℃)	-40 .. +65
Wind load (N)	Frontal: 1320 (at 150 km/h) Lateral: 380 (at 150 km/h) Rear side: 1320 (at 150 km/h)
Max. operational wind speed (km/h)	200
Survival wind speed (km/h)	250
Connector	12 x 4.3-10 Female
Connector position	Bottom



Accessories

Item	Model	Description	Weight	Units per antenna
Downtilt kit	ASMDT0F01	Mechanical downtilt: 0 - 8 °	3.1 kg	1 (Separate packing)

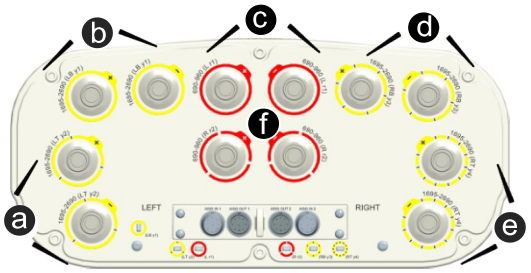
Integrated RET Specifications

Properties								
RET type	Integrated RET							
RET protocols*	AISG 2.0 / 3GPP							
Input voltage range (V)	10 - 30 DC							
Power consumption (W)	< 6 (motor activated, 12V) < 1.5 (stand by, 12V)							
Adjustment time (full range) (s)	< 65 (typically, depending on antenna type)							
RET connector	4 x 8 pin connector according to IEC 60130-9 Daisy chain in: Male / Daisy chain out: Female							
Pin assignment according AISG	1	2	3	4	5	6	7	8
	DC	n/c	RS-485B	n/c	RS-485A	DC	DC return	n/c
Lightning protection (kA)	3 (10/350 μs) 10 (8/20 μs)							

* Please confirm the AISG protocol of primary station is compatible with RET antenna protocol interface. The protocol of RET antenna software interface is switchable between AISG 2.0/3GPP and AISG 1.1 with a vendor defined command. For more details about protocol switching function, contact Huawei before system installation.

Standards: UL 60950-1 (Safety), UL 60950-22 (Safety - Equipment installed outdoor), EN 55022 (Emission), EN 55024 (Immunity), ETSI EN 301 489, FCC Part15, ICES-003

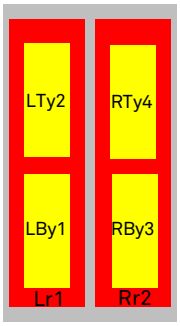
Certification: CE, FCC, IC, RCM



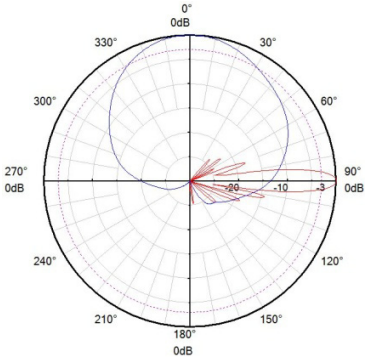
Integrated RET S/N:

ⓐ HWMxxx.....LTy2
ⓑ HWMxxx.....LBy1
ⓒ HWMxxx.....Lr1
ⓓ HWMxxx.....RBy3
ⓔ HWMxxx.....RTy4
ⓕ HWMxxx.....Rr2

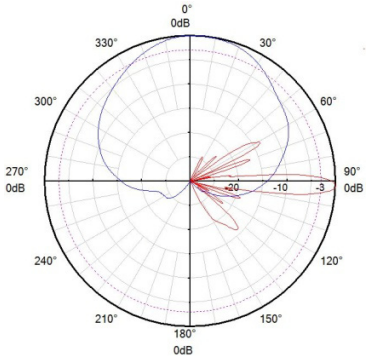
r - Red
y - Yellow
L - Left array
R - Right array
T - Top array
B - Bottom array



Pattern sample for reference



690 - 960 MHz



1695 - 2690 MHz

Antenna Specifications

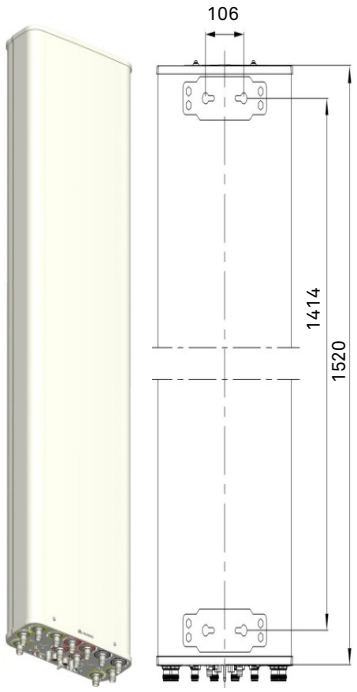
Electrical Properties								
Frequency range (MHz)		690 - 862 (r1)		880 - 960 (r2)	1710 - 2690 (Cy2)			
		690 - 803	790 - 862		1710 - 1990	1920 - 2200	2200 - 2490	2490 - 2690
Polarization		+45°, -45°			+45°, -45°			
Electrical downtilt (°)		2 - 14, continuously adjustable, each band separately			2 - 12, continuously adjustable			
Gain (dBi)	at mid Tilt	13.8	13.7	14.0	17.0	17.2	17.7	18.2
	over all Tilts	13.7 ±0.3	13.7 ±0.5	13.9 ±0.3	16.8 ±0.5	17.0 ±0.4	17.6 ±0.5	17.8 ±0.5
Side lobe suppression for first side lobe above main beam (dB)		> 16	> 16	> 15	> 15	> 16	> 16	> 15
Horizontal 3dB beam width (°)		68 ±3.0	65 ±2.6	64 ±3.2	63 ±5.1	62 ±5.0	63 ±4.0	58 ±3.0
Vertical 3dB beam width (°)		15.5 ±2.1	13.6 ±1.8	12.3 ±1.8	6.3 ±0.4	5.8 ±0.3	5.0 ±0.2	4.7 ±0.2
VSWR		< 1.5			< 1.5			
Cross polar isolation (dB)		≥ 28			≥ 28			
Interband isolation (dB)		≥ 28			≥ 28			
Front to back ratio, ±30° (dB)		> 23	> 25	> 25	> 25	> 27	> 27	> 27
Cross polar ratio (dB)	0°	> 18	> 20	> 20	> 18	> 16	> 15	> 16
Max. power per input (W)		500 (at 50℃ ambient temperature) *			250 (at 50℃ ambient temperature) *			
Intermodulation IM3 (dBc)		≤ -150 (2 x 43 dBm carrier)			≤ -153 (2 x 43 dBm carrier)			
Impedance (Ω)		50						
Grounding		DC Ground						

Electrical Properties								
Frequency range (MHz)		1710 - 2690 (Ly1)				1710 - 2200 (Rb1)		2490 - 2690 (Ry3)
		1710 - 1990	1920 - 2200	2200 - 2490	2490 - 2690	1710 - 1990	1920 - 2200	
Polarization		+45°, -45°						
Electrical downtilt (°)		2 - 12, continuously adjustable, each band separately						
Gain (dBi)	at mid Tilt	17.2	17.8	17.8	18.2	16.9	17.5	17.8
	over all Tilts	17.0 ±0.5	17.7 ±0.4	17.5 ±0.3	18.1 ±0.3	16.7 ±0.5	17.4 ±0.4	17.7 ±0.3
Side lobe suppression for first side lobe above main beam (dB)		> 16	> 17	> 17	> 16	> 15	> 16	> 16
Horizontal 3dB beam width (°)		68 ±3.0	66 ±3.0	63 ±3.0	60 ±2.0	68 ±3.0	66 ±3.0	60 ±3.0
Vertical 3dB beam width (°)		6.6 ±0.4	6.1 ±0.4	5.4 ±0.4	4.9 ±0.4	6.4 ±0.5	5.8 ±0.5	4.8 ±0.4
VSWR		< 1.5						
Cross polar isolation (dB)		≥ 28						
Interband isolation (dB)		≥ 28						
Front to back ratio, ±30° (dB)		> 27	> 27	> 27	> 27	> 25	> 25	> 25
Cross polar ratio (dB)	0°	> 20	> 18	> 15	> 17	> 18	> 16	> 18
Max. power per input (W)		250 (at 50℃ ambient temperature) *						
Intermodulation IM3 (dBc)		≤ -153 (2 x 43 dBm carrier)						
Impedance (Ω)		50						
Grounding		DC Ground						

* Total power : 1000 W (at 50℃ ambient temperature)

1. Values based on NGMN recommendations on Base Station Antenna Standards (BASTA).
2. Electrical datasheet in XML format is available.

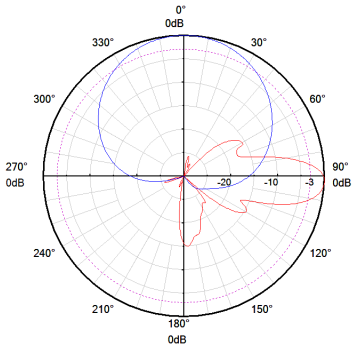
Mechanical Properties	
Antenna dimensions (H x W x D) (mm)	1520 x 369 x 149
Packing dimensions (H x W x D) (mm)	1790 x 435 x 240
Antenna weight (kg)	28.1
Clamps weight (kg)	3.6 (2 units)
Antenna packing weight (kg)	38.3 (Included clamps)
Mast diameter supported (mm)	50 - 115
Radome material	Fiberglass
Radome colour	Light grey
Operational temperature (℃)	-40 .. +65
Wind load (N)	Frontal: 730 (at 150 km/h) Lateral: 145 (at 150 km/h) Rear side: 725 (at 150 km/h)
Max. operational wind speed (km/h)	200
Survival wind speed (km/h)	250
Connector	12 x 4.3-10 Female
Connector position	Bottom

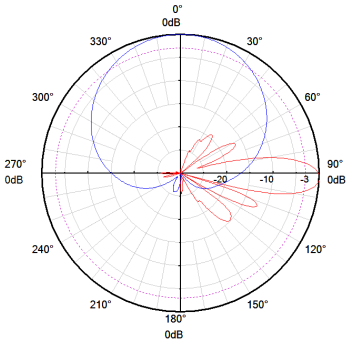


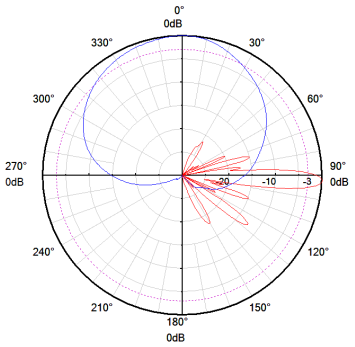
Accessories

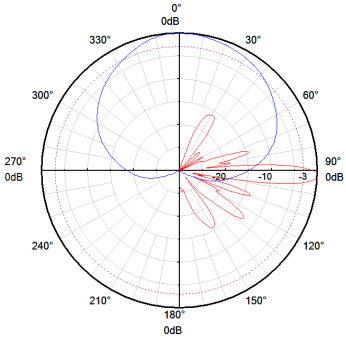
Item	Model	Description	Weight	Units per antenna
Downtilt kit	ASMDT0D01	Mechanical downtilt: 0 - 16 °	2.1 kg	1 (Separate packing)

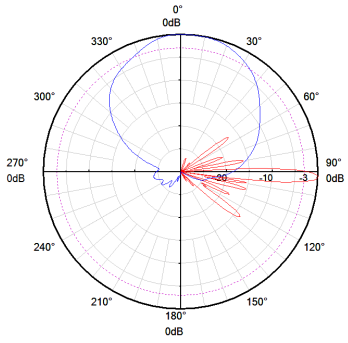
Pattern sample for reference


690 - 862 MHz


880 - 960 MHz


1710 - 2690 MHz


1710 - 2200 MHz


2490 - 2690 MHz

2LnH Band
6-14 Ports

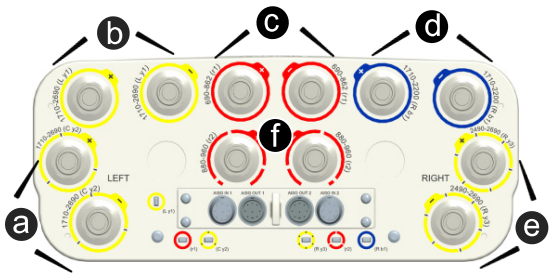
Integrated RET Specifications

Properties								
RET type	Integrated RET							
RET protocols*	AISG 2.0 / 3GPP							
Input voltage range (V)	10 - 30 DC							
Power consumption (W)	< 6 (motor activated, 12V) < 1.5 (stand by, 12V)							
Adjustment time (full range) (s)	< 65 (typically, depending on antenna type)							
RET connector	4 x 8 pin connector according to IEC 60130-9 Daisy chain in: Male / Daisy chain out: Female							
Pin assignment according AISG	1	2	3	4	5	6	7	8
	DC	n/c	RS-485B	n/c	RS-485A	DC	DC return	n/c
Lightning protection (kA)	3 (10/350 μs) 10 (8/20 μs)							

* Please confirm the AISG protocol of primary station is compatible with RET antenna protocol interface. The protocol of RET antenna software interface is switchable between AISG 2.0/3GPP and AISG 1.1 with a vendor defined command. For more details about protocol switching function, contact Huawei before system installation.

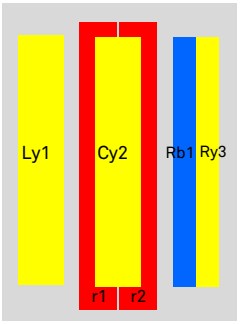
Standards: UL 60950-1 (Safety), UL 60950-22 (Safety - Equipment installed outdoor), EN 55022 (Emission), EN 55024 (Immunity), ETSI EN 301 489, FCC Part15, ICES-003

Certification: CE, FCC, IC, RCM



Integrated RET S/N:

- a HWMxxx.....Cy2
- b HWMxxx.....Ly1
- c HWMxxx.....r1
- d HWMxxx.....Rb1
- e HWMxxx.....Ry3
- f HWMxxx.....r2



r - Red y - Yellow b - Blue
L - Left array R - Right array C - Center array

DXXXXXX-690-862/880-960/1710-2690/1710-2690/1710-2690/1710-2690-65/65/65/65/65/65-16.5i/17i/18i/18i/17.5i/17.5i-M/M/M/M/M/M-R
EasyRET 12-Port Antenna with 6 Integrated RCUs - 2.6m
Model: ASI4518R4v06

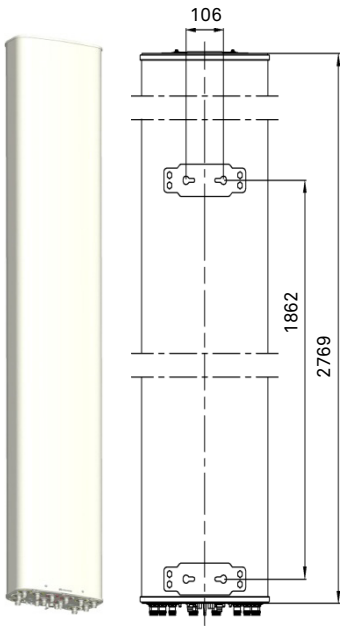
HUAWEI

Antenna Specifications

Electrical Properties									
Frequency range (MHz)			690 - 862		880 - 960	4 x (1710 - 2690)			
			690 - 803	790 - 862		1710 - 1990	1920 - 2200	2200 - 2490	2490 - 2690
Polarization			+45°, -45°						
Electrical downtilt (°)			0 - 10, continuously adjustable , each band separately						
Gain (dBi)		at mid Tilt	16.2	16.5	16.9				
		over all Tilts	16.0 ±0.5	16.3 ±0.5	16.8 ±0.6				
	Bottom	at mid Tilt				17.3	17.4	17.6	18.1
		over all Tilts				17.2 ±0.5	17.4 ±0.5	17.5 ±0.6	18.0 ±0.6
	Top	at mid Tilt				16.9	17.2	17.4	17.5
		over all Tilts				16.8 ±0.5	17.1 ±0.3	17.2 ±0.5	17.5 ±0.5
Side lobe suppression for first side lobe above main beam (dB)			> 20	> 18	> 17	> 20	> 20	> 19	> 19
Horizontal 3dB beam width (°)			66 ±2.7	65 ±2.9	63 ±4.1	66 ±4.7	63 ±3.3	61 ±5.2	60 ±4.4
Vertical 3dB beam width (°)			8.6 ±1.1	7.4 ±0.9	6.5 ±0.6	7.6 ±0.6	6.8 ±0.5	6.1 ±0.5	5.6 ±0.2
VSWR			< 1.5						
Cross polar isolation (dB)			≥ 28		≥ 28	≥ 28			
Interband isolation (dB)			≥ 28 (690 - 862 // 880 - 960 MHz) ≥ 30 (690 - 862 // 1710 - 2690 MHz) ≥ 30 (880 - 960 // 1710 - 2690 MHz) ≥ 30 (1710 - 2690 // 1710 - 2690 MHz)						
Front to back ratio, ±30° (dB)			> 25	> 27	> 26	> 30	> 30	> 27	> 27
Cross polar ratio (dB)	0°		> 18	> 22	> 22	> 19	> 19	> 21	> 20
Max. power per input (W)			400 (at 50℃ ambient temperature)			250 (at 50℃ ambient temperature)			
Total power (W)			1000 (at 50℃ ambient temperature)						
Intermodulation IM3 (dBc)			≤ -150 (2 x 43 dBm carrier)						
Impedance (Ω)			50						
Grounding			DC Ground						

1. Values based on NGMN recommendations on Base Station Antenna Standards (BASTA).
2. Electrical datasheet in XML format is available.

Mechanical Properties	
Antenna dimensions (H x W x D) (mm)	2769 x 359 x 178
Packing dimensions (H x W x D) (mm)	2980 x 425 x 255
Antenna weight (kg)	45.1
Clamps weight (kg)	5.8 (2 units)
Antenna packing weight (kg)	63.6 (included clamps)
Mast diameter supported (mm)	50 - 115
Radome material	Fiberglass
Radome colour	Light grey
Operational temperature (℃)	-40 .. +65
Wind load (N)	Frontal: 1335 (at 150 km/h) Lateral: 365 (at 150 km/h) Rear side: 1115 (at 150 km/h)
Max. operational wind speed (km/h)	200
Survival wind speed (km/h)	250
Connector	12 x 4.3-10 Female
Connector position	Bottom



Accessories

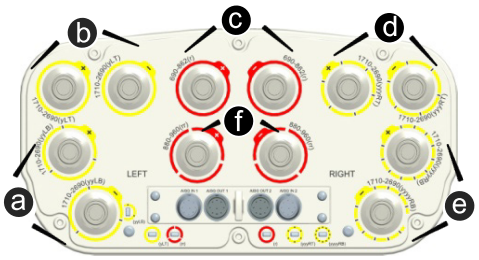
Item	Model	Description	Weight	Units per antenna
Downtilt kit	ASMDT0F01	Mechanical downtilt: 0 - 8 °	3.1 kg	1 (Separate packing)

Integrated RET Specifications

Properties								
RET type	Integrated RET							
RET protocols*	AISG 2.0 / 3GPP							
Input voltage range (V)	10 - 30 DC							
Power consumption (W)	< 6 (motor activated, 12V) < 1.5 (stand by, 12V)							
Adjustment time (full range) (s)	< 65 (typically, depending on antenna type)							
RET connector	4 x 8 pin connector according to IEC 60130-9 Daisy chain in: Male / Daisy chain out: Female							
Pin assignment according AISG	1	2	3	4	5	6	7	8
	DC	n/c	RS-485B	n/c	RS-485A	DC	DC return	n/c
Lightning protection (kA)	3 (10/350 μs) 10 (8/20 μs)							

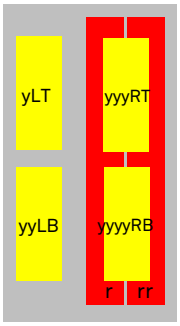
* Please confirm the AISG protocol of primary station is compatible with RET antenna protocol interface. The protocol of RET antenna software interface is switchable between AISG 2.0/3GPP and AISG 1.1 with a vendor defined command. For more details about protocol switching function, contact Huawei before system installation.

Standards: UL 60950-1 (Safety), UL 60950-22 (Safety - Equipment installed outdoor), EN 55022 (Emission), EN 55024 (Immunity), ETSI EN 301 489, FCC Part15, ICES-003
Certification: CE, FCC, IC, RCM



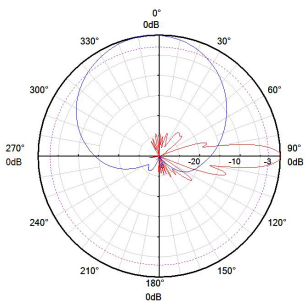
Integrated RET S/N:

- a HWMxxx.....yyLB
- b HWMxxx.....yLT
- c HWMxxx.....r
- d HWMxxx...yyyRT
- e HWMxxx..yyyyRB
- f HWMxxx.....rr

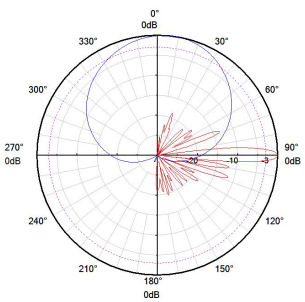


r - Red
L - Left array
T - Top array
y - Yellow
R - Right array
B -Bottom array

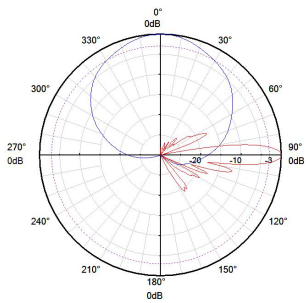
Pattern sample for reference



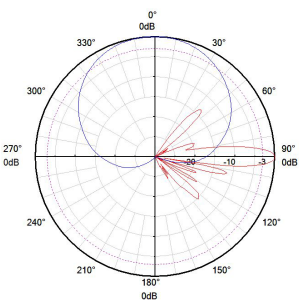
690 - 862 MHz



880 - 960 MHz



1710 - 2690 MHz
(Top)



1710 - 2690 MHz
(Bottom)

Preliminary Issue

Antenna Specifications

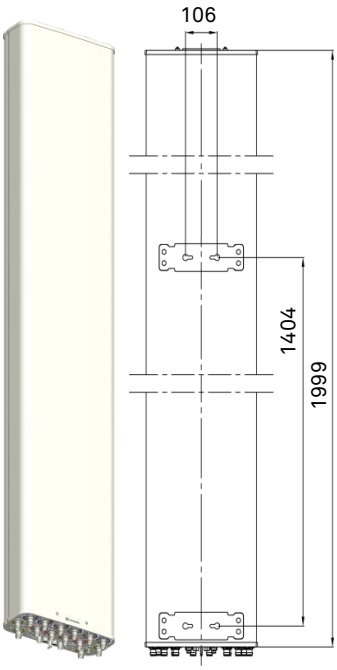
Electrical Properties							
Frequency range (MHz)		690 - 862		880 - 960	1427 - 2200		
		690 - 803	790 - 862		1427 - 1518	1695 - 1990	1920 - 2200
Polarization		+45°, -45°			+45°, -45°		
Electrical downtilt (°)		2 - 12, continuously adjustable, each band separately					
Gain (dBi)	at mid Tilt	15.0	15.4	15.7	16.1	17.3	17.4
	over all Tilts	14.9 ±0.5	15.3 ±0.5	15.6 ±0.5	16.0 ±0.5	17.2 ±0.5	17.3 ±0.5
Side lobe suppression for first side lobe above main beam (dB)		>15	>15	>16	> 17	> 16	> 17
Horizontal 3dB beam width (°)		67 ±2.0	65 ±2.2	61 ±2.5	64 ±5.0	68 ±4.0	65 ±4.0
Vertical 3dB beam width (°)		11.6 ±1.0	10.4 ±0.5	9.0 ±0.4	8.3 ±0.4	6.8 ±0.6	6.1 ±0.5
VSWR		< 1.5			< 1.5		
Cross polar isolation (dB)		≥ 28			≥ 28		
Interband isolation (dB)		≥ 28			≥ 28		
Front to back ratio, ±30° (dB)		> 23	> 26	> 26	> 24	> 26	> 26
Cross polar ratio (dB)	0°	> 21	> 21	> 20	> 15	> 20	> 20
Max. power per input (W)		400 (at 50℃ ambient temperature)*			250 (at 50℃ ambient temperature)*		
Intermodulation IM3 (dBc)		≤ -150 (2 x 43 dBm carrier)			≤ -153 (2 x 43 dBm carrier)		
Impedance (Ω)		50					
Grounding		DC Ground					

Electrical Properties				
Frequency range (MHz)		2 x (1695 - 2200)		2 x (2490 - 2690)
		1695 - 1990	1920 - 2200	2490 - 2690
Polarization		+45°, -45°		
Electrical downtilt (°)		2 - 12, continuously adjustable, each band separately		
Gain (dBi)	at mid Tilt	17.2	17.5	18.0
	over all Tilts	17.0 ±0.5	17.4 ±0.4	17.9 ±0.5
Side lobe suppression for first side lobe above main beam (dB)		> 18	> 18	> 16
Horizontal 3dB beam width (°)		67 ±5.0	62 ±3.0	60 ±3.0
Vertical 3dB beam width (°)		6.4 ±0.5	5.8 ±0.5	4.8 ±0.4
VSWR		< 1.5		
Cross polar isolation (dB)		≥ 28		
Interband isolation (dB)		≥ 28		
Front to back ratio, ±30° (dB)		> 27	> 27	> 26
Cross polar ratio (dB)	0°	> 19	> 20	> 18
Max. power per input (W)		250 (at 50℃ ambient temperature)*		
Intermodulation IM3 (dBc)		≤ -150 (2 x 43 dBm carrier)		
Impedance (Ω)		50		
Grounding		DC Ground		

* Total power : 1000 W (at 50℃ ambient temperature)

1. Values based on NGMN recommendations on Base Station Antenna Standards (BASTA).
2. Electrical datasheet in XML format is available.

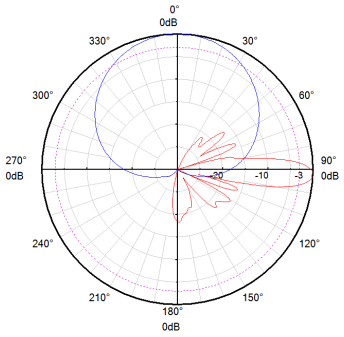
Mechanical Properties	
Antenna dimensions (H x W x D) (mm)	1999 x 369 x 149
Packing dimensions (H x W x D) (mm)	2265 x 435 x 240
Antenna weight (kg)	37.0
Clamps weight (kg)	5.8 (2 units)
Antenna packing weight (kg)	50.0 (Included clamps)
Mast diameter supported (mm)	50 - 115
Radome material	Fiberglass
Radome colour	Light grey
Operational temperature (℃)	-40 .. +65
Wind load (N)	Frontal: 985 (at 150 km/h) Lateral: 195 (at 150 km/h) Rear side: 975 (at 150 km/h)
Max. operational wind speed (km/h)	200
Survival wind speed (km/h)	250
Connector	14 x 4.3-10 Female
Connector position	Bottom

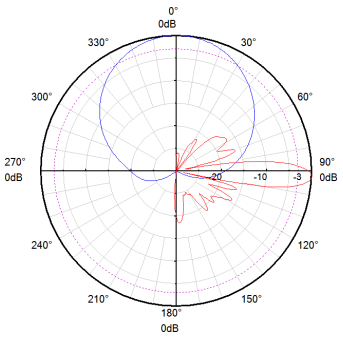


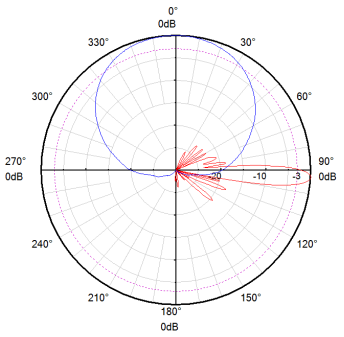
Accessories

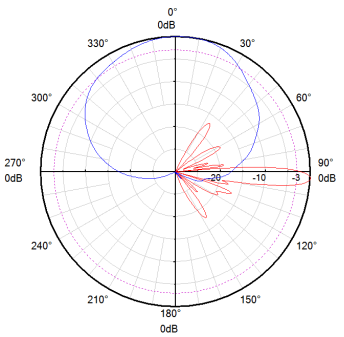
Item	Model	Description	Weight	Units per antenna
Downtilt kit	ASMDT0F01	Mechanical downtilt: 0 - 12 °	3.1 kg	1 (Separate packing)

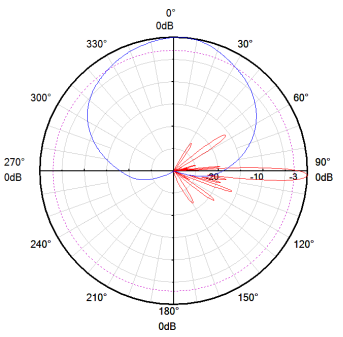
Pattern sample for reference


690 - 862 MHz


880 - 960 MHz


1427 - 2200 MHz


1695 - 2200 MHz

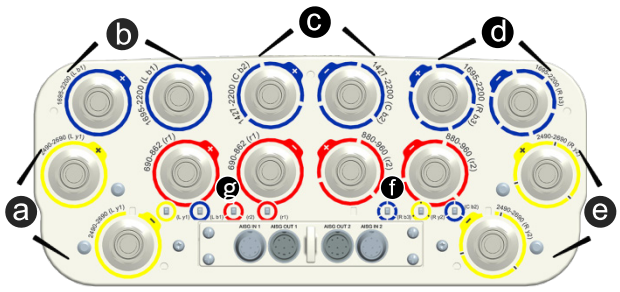

2490 - 2690 MHz

Integrated RET Specifications

Properties								
RET type	Integrated RET							
RET protocols*	AISG 2.0 / 3GPP							
Input voltage range (V)	10 - 30 DC							
Power consumption (W)	< 6 (motor activated, 12V) < 1.5 (stand by, 12V)							
Adjustment time (full range) (s)	< 65 (typically, depending on antenna type)							
RET connector	4 x 8 pin connector according to IEC 60130-9 Daisy chain in: Male / Daisy chain out: Female							
Pin assignment according AISG	1	2	3	4	5	6	7	8
	DC	n/c	RS-485B	n/c	RS-485A	DC	DC return	n/c
Lightning protection (kA)	3 (10/350 µs) 10 (8/20 µs)							

* Please confirm the AISG protocol of primary station is compatible with RET antenna protocol interface. The protocol of RET antenna software interface is switchable between AISG 2.0/3GPP and AISG 1.1 with a vendor defined command. For more details about protocol switching function, contact Huawei before system installation.

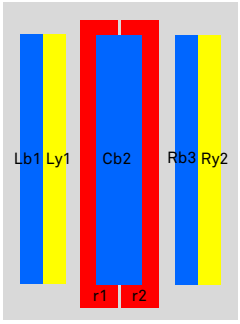
Standards: UL 60950-1 (Safety), UL 60950-22 (Safety - Equipment installed outdoor), EN 55022 (Emission), EN 55024 (Immunity), ETSI EN 301 489, FCC Part15, ICES-003
Certification: CE, FCC, IC, RCM



Integrated RET S/N:

- ⓐ HWMxxx.....Ly1
- ⓑ HWMxxx.....Lb1
- ⓒ HWMxxx.....Cb2
- ⓓ HWMxxx.....Rb3
- ⓔ HWMxxx.....Ry2
- ⓕ HWMxxx.....r2
- ⓖ HWMxxx.....r1

r - Red
b - Blue
L - Left array
y - Yellow
C - Center array
R - Right array



2LnH Band 6-14 Ports

Preliminary Issue

Electrical Properties					
Frequency range (MHz)		690 - 862	880 - 960	1427 - 2690	4 x (1695 - 2690)
Electrical downtilt (°)		2 - 12	2 - 12	2 - 12	2 - 12
Gain (dBi)		16.5	17.0	17.5	17.5
Side lobe suppression for first side lobe above main beam (Typ.) (dB)		17	17	17	17
Horizontal 3dB beam width (°)		67	64	65	60
Vertical 3dB beam width (°)		8.7	7.3	6.5	6.0
VSWR		< 1.5			
Front to back ratio, copolar (dB)		Typ. 26	Typ. 26	Typ. 27	Typ. 28
Cross polar ratio (dB)	0°	Typ. 18	Typ. 18	Typ. 19	Typ. 19
Intermodulation IM3 (dBc)		≤ -150 (2 x 43 dBm carrier)			

Mechanical Properties	
Antenna dimensions (H x W x D) (mm)	2769 x 369 x 149
Packing dimensions (H x W x D) (mm)	3050 x 435 x 240
Antenna net weight (kg)	45
Mechanical downtilt (°)	0 - 8
Connector	14 x 4.3-10 Female
RET type	Integrated RET
RET protocols	AISG 2.0 / 3GPP

Multi-band

B - 5 3LnH

10 Ports - 3L2H

Frequency Range (MHz)	3dB Horizontal beam width (°)	Gain (dBi)	Electrical downtilt (°)	Tilt Method	Connector	Dimension(mm)	Model	Page	Array symbol
690-862/ 880-960/ 690-960/ 1695-2690/ 1695-2690	65/65/65/65/65	16/16.5/17/18/18	2-12/2-12/2-12/2-12/2-12	EasyRET2.0	10 x 4.3-10	2550 x 429 x 196	**APE4518R18v06	**198**	W1

14 Ports - 3L4H

Frequency Range (MHz)	3dB Horizontal beam width (°)	Gain (dBi)	Electrical downtilt (°)	Tilt Method	Connector	Dimension(mm)	Model	Page	Array symbol
690-862/ 880-960/ 690-960/ 4*1695-2690	7 x 65	16/16.5/17/17.5/17.5/17.5/17.5	2-10/2-10/2-10/2-12/2-12/2-12/2-12/2-12	EasyRET2.0	14 x 4.3-10	2769 x 429 x 196	**AHP4518R0v06	**199**	Z1

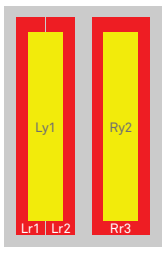
16 Ports - 3L5H

Frequency Range (MHz)	3dB Horizontal beam width (°)	Gain (dBi)	Electrical downtilt (°)	Tilt Method	Connector	Dimension(mm)	Model	Page	Array symbol
690-862/ 880-960/ 690-960/ 1427-2690/ 4*1695-2690	8 x 65	16/16.5/17/17.5/17/17/17.5/17.5	2-10/2-10/2-12/2-12/2-12/2-12/2-12/2-12	EasyRET2.0	16 x 4.3-10	2769 x 469 x 204	**AOC4518R0v06	**200**	Z3

*** Preliminary Issue*

Array Symbol Type

Type W1



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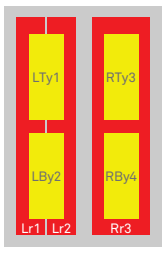
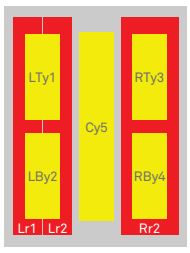


Type Z3



Preliminary Issue

Electrical Properties					
Frequency range (MHz)		690 - 862	880 - 960	690 - 960	2 x (1695 - 2690)
Electrical downtilt (°)		2 - 12	2 - 12	2 - 12	2 - 12
Gain (dBi)		16.0	16.5	17.0	18.0
Side lobe suppression for first side lobe above main beam (Typ.) (dB)		16	16	16	16
Horizontal 3dB beam width (°)		65	62	65	65
Vertical 3dB beam width (°)		9	7	8	6
VSWR		< 1.5			
Front to back ratio, copolar (dB)		Typ. 25	Typ. 26	Typ. 25	Typ. 26
Cross polar ratio (dB)	0°	Typ. 17	Typ. 17	Typ. 17	Typ. 17
Intermodulation IM3 (dBc)		≤ -150 (2 x 43 dBm carrier)		≤ -153 (2 x 43 dBm carrier)	

Mechanical Properties	
Antenna dimensions (H x W x D) (mm)	2550 x 429 x 196
Packing dimensions (H x W x D) (mm)	2770 x 530 x 275
Antenna net weight (kg)	50
Mechanical downtilt (°)	0 - 8
Connector	10 x 4.3-10 Female
RET type	Integrated RET
RET protocols	AISG 2.0 / 3GPP

Preliminary Issue

Electrical Properties					
Frequency range (MHz)		690 - 862	880 - 960	690 - 960	4 x (1695 - 2690)
Electrical downtilt (°)		2 - 10	2 - 10	2 - 10	2 - 12
Gain (dBi)		16.0	16.5	17.0	17.5
Side lobe suppression for first side lobe above main beam (Typ.) (dB)		16	16	16	16
Horizontal 3dB beam width (°)		65	62	65	65
Vertical 3dB beam width (°)		9	7	8	6
VSWR		< 1.5			
Front to back ratio, copolar (dB)		Typ. 25	Typ. 26	Typ. 25	Typ. 26
Cross polar ratio (dB)	0°	Typ. 17	Typ. 17	Typ. 17	Typ. 17
Intermodulation IM3 (dBc)		≤ -150 (2 x 43 dBm carrier)			

Mechanical Properties	
Antenna dimensions (H x W x D) (mm)	2769 x 429 x 196
Packing dimensions (H x W x D) (mm)	2980 x 530 x 275
Antenna net weight (kg)	58
Mechanical downtilt (°)	0 - 8
Connector	14 x 4.3-10 Female
RET type	Integrated RET
RET protocols	AISG 2.0 / 3GPP

Preliminary Issue

Electrical Properties						
Frequency range (MHz)		690 - 862	880 - 960	690 - 960	1427 - 2690	4 x (1695 - 2690)
Electrical downtilt (°)		2 - 10	2 - 10	2 - 12	2 - 12	2 - 12
Gain (dBi)		16	16.5	17	17.5	Top：17 Bottom：17.5
Side lobe suppression for first side lobe above main beam (Typ.) (dB)		16	16	16	16	16
Horizontal 3dB beam width (°)		68	64	65	65	65
Vertical 3dB beam width (°)		8.5	6.5	7	8	7
VSWR		< 1.5				
Front to back ratio, copolar (dB)		Typ. 25	Typ. 25	Typ. 25	Typ. 25	Typ. 25
Cross polar ratio (dB)	0°	Typ. 17	Typ. 17	Typ. 17	Typ. 17	Typ. 17
Intermodulation IM3 (dBc)		≤ -150 (2 x 43 dBm carrier)				

Mechanical Properties	
Antenna dimensions (H x W x D) (mm)	2769 x 469 x 204
Packing dimensions (H x W x D) (mm)	3060 x 560 x 278
Antenna net weight (kg)	55
Mechanical downtilt (°)	0 - 8
Connector	16 x 4.3-10 Female
RET type	Integrated RET
RET protocols	AISG 2.0 / 3GPP

B. Passive Antenna

Multi-beam

1. Dual-beam Antenna

Frequency Range (MHz)	3dB Horizontal beam width (°)	Gain (dBi)	Electrical downtilt (°)	Tilt Method	Connector	Dimension(mm)	Model	Page	Array symbol
690-960/ 690-960	33(-30)/ 33(+30)	18.5/18.5	0-10/0-10	EasyRET2.0	4 x 4.3-10	2090 x 590 x 169	AMB4519R0v06	**203**	/
1710-2200/ 1710-2200	33(-30)/ 33(+30)	19.5/19.5	2-12/2-12	EasyRET2.0	4 x 4.3-10	1468 x 349 x 166	AMB4520R5v06	**205**	/
1710-2690/ 1710-2690	33(-30)/ 33(+30)	20.5/20.5	0-10/0-10	EasyRET2.0	4 x 4.3-10	1468 x 349 x 166	AMB4520R0v06	**207**	/

2. Hybrid Multi-beam Antenna

Frequency Range (MHz)	3dB Horizontal beam width (°)	Gain (dBi)	Electrical downtilt (°)	Tilt Method	Connector	Dimension(mm)	Model	Page	Array symbol
690-960/ 1710-2200/ 1710-2200	65/33 (-30)/33(+30)	16/19.5/ 19.5	0-10/0-10/ 0-10	EasyRET2.0	6 x 4.3-10	2022 x 359 x 178	**AMB4520R2v06	**209**	/
690-960/ 1695-2690/ 1695-2690/ 1695-2200/ 1695-2200	65/65/65/ 33(-30)/ 33(+30)	17/17.5/ 17.5/18.5/ 18.5	0-10/2-12/ 2-12/0-10/ 0-10	EasyRET2.0	10 x 4.3-10	2685 x 359 x 178	AMB4519R2v06	**210**	/
690-960/ 1695-2200/ 1695-2200/ 2490-2690/ 2490-2690/ 1695-2200/ 1695-2200	65/65/65/ 65/65/ 33(-30)/ 33(+30)	17/17/17/ 17.5/17.5/ 18.5/18.5	0-10/2-12/2-12/2-12/2-12/0-10/0-10	EasyRET2.0	14 x 4.3-10	2685 x 359 x 178	**AMB4519R4v06	**213**	/
1710-2690/ 1710-2690/ 1710-2200/ 1710-2200	65/65/ 33(-30)/ 33(+30)	18/18/ 19.5/19.5	0-12/0-12/ 2-12/2-12	EasyRET2.0	8 x 4.3-10	2688 x 349 x 166	AMB4520R4v06	**215**	/

*** Preliminary Issue*

Multi-beam

3. Dual-band Dual-beam Antenna

Frequency Range (MHz)	3dB Horizontal beam width (°)	Gain (dBi)	Electrical downtilt (°)	Tilt Method	Connector	Dimension(mm)	Model	Page	Array symbol
790-960/ 790-960/ 1710-2200/ 1710-2200	33(-30)/ 33(+30)/ 33(-30)/ 33(+30)	16/16/ 18.5/18.5	0-10/0-10/ 0-10	EasyRET2.0	8 x 4.3-10	2090 x 590 x 169	**AMB4519R3v06	**217**	/

4. 4T4R Dual-beam Antenna

Frequency Range (MHz)	3dB Horizontal beam width (°)	Gain (dBi)	Electrical downtilt (°)	Tilt Method	Connector	Dimension(mm)	Model	Page	Array symbol
1710-2200/ 1710-2200/ 1710-2200/ 1710-2200	33(-30)/ 33(+30)/ 33(-30)/ 33(+30)	19.5/19.5/ 19.5/19.5	2-12/2-12/ 2-12/2-12	EasyRET2.0	8 x 4.3-10	2688 x 349 x 166	**AMB4520R6v06	**218**	/

5. Triple-beam Antenna

Frequency Range (MHz)	3dB Horizontal beam width (°)	Gain (dBi)	Electrical downtilt (°)	Tilt Method	Connector	Dimension(mm)	Model	Page	Array symbol
1710-2200/ 1710-2200/ 1710-2200	22(-30)/ 22(0)/ 22(+30)	21/21/21	2-12/2-12 /2-12	EasyRET2.0	6 x 4.3-10	1499 x 449 x 115	AMB4521R0v06	**220**	/

6. 3D Hexa-beam Antenna

Frequency Range (MHz)	3dB Horizontal beam width (°)	Gain (dBi)	Electrical downtilt (°)	Tilt Method	Connector	Dimension(mm)	Model	Page	Array symbol
6*1710-2200	Outer beam: 20(-36)/ 20(+36)/ 18(-12)/ 18(+12) Inner beam: 40(-40)/ 40(+40)	2*21/2*22 /2*19	2*6/2*6/ 2*12	FET	12 x 4.3-10	2090 x 590 x 169	**AMB452200v06	**222**	/

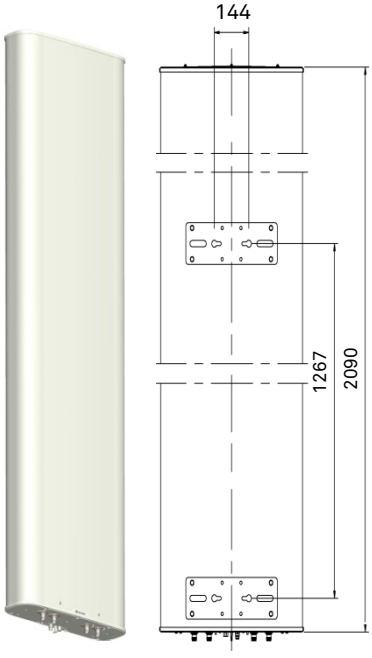
*** Preliminary Issue*

Antenna Specifications

Electrical Properties					
Frequency range (MHz)		690 - 960			
		690 - 803	790 - 862	824 - 894	880 - 960
Polarization		+45°, -45°			
Electrical downtilt (°)		0 - 10, continuously adjustable			
Gain (dBi)	at mid Tilt	16.6	18.0	18.2	18.3
	over all Tilts	16.5 ±0.5	17.8 ±0.4	18.0 ±0.3	18.2 ±0.3
Side lobe suppression for first side lobe above main beam (dB)		> 16	> 17	> 18	> 18
Horizontal 3dB beam width (°)		39 ±3	37 ±3	36 ±2	34 ±2
Vertical 3dB beam width (°)		10.0 ±0.5	9.2 ±0.3	8.9 ±0.3	8.3 ±0.3
VSWR		< 1.5			
Horizontal beam centers (°)		± 30	± 28	± 27	± 25
Cross polar isolation (dB)		Same beam: ≥ 22	Same beam: ≥26		
Beam to beam isolation (dB)		≥ 18			
Front to back ratio, ±30° (dB)		> 25	> 26	> 26	> 26
Cross polar ratio (dB)	0°	> 17	> 22	> 23	> 23
Max. power per input (W)		500 (at 50℃ ambient temperature)			
Intermodulation IM3 (dBc)		≤ -153 (2 x 43 dBm carrier)			
Impedance (Ω)		50			
Grounding		DC Ground			

1. Values based on NGMN recommendations on Base Station Antenna Standards (BASTA).
2. Electrical datasheet in XML format is available.

Mechanical Properties	
Antenna dimensions (H x W x D) (mm)	2090 x 590 x 169
Packing dimensions (H x W x D) (mm)	2350 x 705 x 275
Antenna weight (kg)	36.1
Clamps weight (kg)	5.8 (2 units)
Antenna packing weight (kg)	49.1 (Included clamps)
Mast diameter supported (mm)	50 - 115
Radome material	Fiberglass
Radome colour	Light grey
Operational temperature (℃)	-40 .. +65
Wind load (N)	Frontal: 1320 (at 150 km/h) Lateral: 195 (at 150 km/h) Rear side: 1385 (at 150 km/h)
Max. operational wind speed (km/h)	200
Survival wind speed (km/h)	250
Connector	4 x 4.3-10 Female
Connector position	Bottom



Accessories

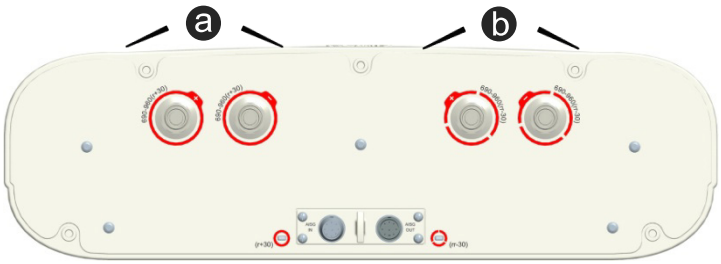
Item	Model	Description	Weight	Units per antenna
Downtilt kit	ASMDT0F01	Mechanical downtilt: 0 - 12 °	3.1 kg	1 (Separate packing)

Integrated RET Specifications

Properties								
RET type	Integrated RET							
RET protocols*	AISG 2.0 / 3GPP							
Input voltage range (V)	10 - 30 DC							
Power consumption (W)	< 5 (motor activated, 12V) < 0.5 (stand by, 12V)							
Adjustment time (full range) (s)	< 50 (typically, depending on antenna type)							
RET connector	2 x 8 pin connector according to IEC 60130-9 Daisy chain in: Male / Daisy chain out: Female							
Pin assignment according AISG	1	2	3	4	5	6	7	8
	DC	n/c	RS-485B	n/c	RS-485A	DC	DC return	n/c
Lightning protection (kA)	3 (10/350 μs) 10 (8/20 μs)							

* Please confirm the AISG protocol of primary station is compatible with RET antenna protocol interface. The protocol of RET antenna software interface is switchable between AISG 2.0/3GPP and AISG 1.1 with a vendor defined command. For more details about protocol switching function, contact Huawei before system installation.

Standards: UL 60950-1 (Safety), UL 60950-22 (Safety - Equipment installed outdoor), EN 55022 (Emission), EN 55024 (Immunity), ETSI EN 301 489, FCC Part15, ICES-003
Certification: CE, FCC, IC, RCM



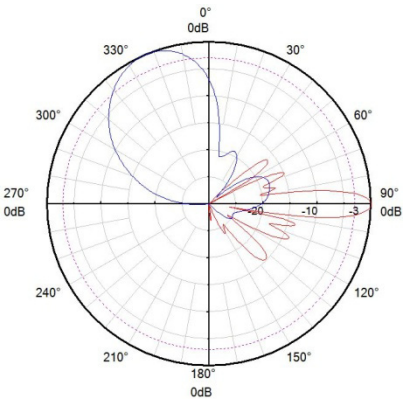
Integrated RET S/N:

ⓐ HWMxxx.....r

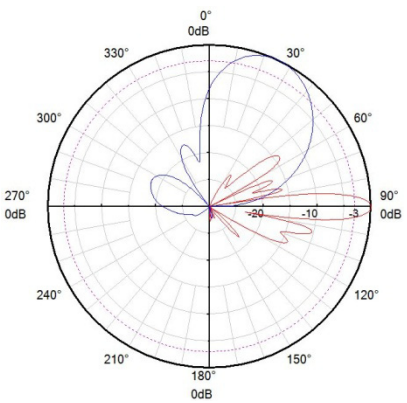
ⓑ HWMxxx.....rr

r - Red

Pattern sample for reference



690 - 960 MHz
(rr-30)



690 - 960 MHz
(r+30)

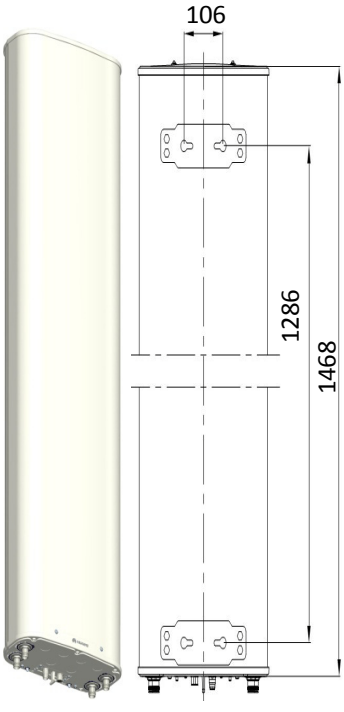
Preliminary Issue

Antenna Specifications

Electrical Properties				
Frequency range (MHz)		1710 - 2200		
		1710 - 1880	1850 - 1990	1920 - 2200
Polarization		+45°, -45°		
Electrical downtilt (°)		2 - 12, continuously adjustable		
Gain (dBi)	at mid Tilt	18.6	19.2	19.5
	over all Tilts	18.4 ±0.6	19.0 ±0.6	19.3 ±0.4
Side lobe suppression for first side lobe above main beam (dB)		> 18	> 18	> 18
Horizontal 3dB beam width (°)		36 ±2	33 ±2	31 ±2
Vertical 3dB beam width (°)		7.2 ±0.4	6.9 ±0.4	6.6 ±0.4
VSWR		< 1.5		
Cross polar isolation (dB)		Same beam: ≥ 28		
Beam to beam isolation (dB)		≥ 18		
Front to back ratio, ±30° (dB)		> 32	> 32	> 34
Cross polar ratio (dB)	0°	> 20	> 20	> 20
Max. power per input (W)		250 (at 50℃ ambient temperature)		
Intermodulation IM3 (dBc)		≤ -153 (2 x 43 dBm carrier)		
Impedance (Ω)		50		
Grounding		DC Ground		

1. Values based on NGMN recommendations on Base Station Antenna Standards (BASTA).
2. Electrical datasheet in XML format is available.

Mechanical Properties	
Antenna dimensions (H x W x D) (mm)	1468 x 349 x 166
Packing dimensions (H x W x D) (mm)	1870 x 415 x 240
Antenna net weight (kg)	17.2
Bracket weight (kg)	6.5
Packing weight (kg)	31.7
Mechanical downtilt (°)	0 - 16
Mast diameter supported (mm)	50 - 115
Radome material	Fiberglass
Radome colour	Light grey
Operational temperature (℃)	-40 .. +65
Wind load (N)	Frontal : 500 (at 150 km/h) Lateral: 165 (at 150 km/h) Rear side: 530 (at 150 km/h)
Max. operational wind speed (km/h)	200
Survival wind speed (km/h)	250
Connector	4 x 4.3-10 Female
Connector position	Bottom

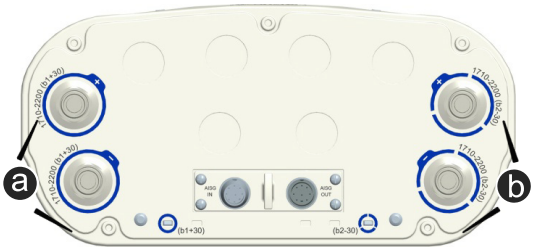


Integrated RET Specifications

Properties								
RET type	Integrated RET							
RET protocols*	AISG 2.0 / 3GPP							
Input voltage range (V)	10 - 30 DC							
Power consumption (W)	< 5 (motor activated, 12V) < 0.5 (stand by, 12V)							
Adjustment time (full range) (s)	< 65 (typically, depending on antenna type)							
RET connector	2 x 8 pin connector according to IEC 60130-9 Daisy chain in: Male / Daisy chain out: Female							
Pin assignment according AISG	1	2	3	4	5	6	7	8
	DC	n/c	RS-485B	n/c	RS-485A	DC	DC return	n/c
Lightning protection (kA)	3 (10/350 μs) 10 (8/20 μs)							

* Please confirm the AISG protocol of primary station is compatible with RET antenna protocol interface. The protocol of RET antenna software interface is switchable between AISG 2.0/3GPP and AISG 1.1 with a vendor defined command. For more details about protocol switching function, contact Huawei before system installation.

Standards: UL 60950-1 (Safety), UL 60950-22 (Safety - Equipment installed outdoor), EN 55022 (Emission), EN 55024 (Immunity), ETSI EN 301 489, FCC Part15, ICES-003
Certification: CE, FCC, IC, RCM



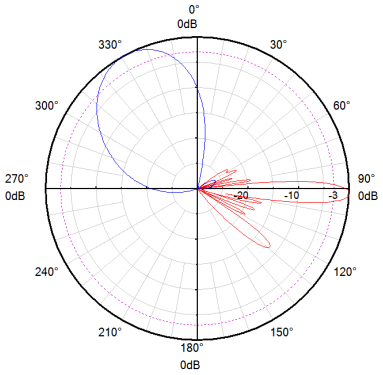
Integrated RET S/N:

ⓐ HWMxxx.....b1

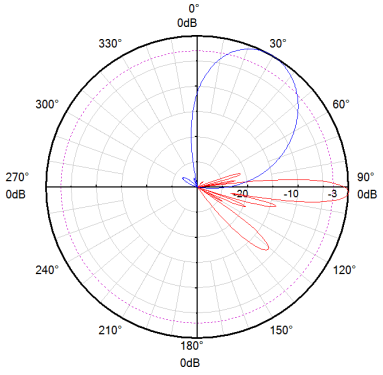
ⓑ HWMxxx.....b2

r - Red b - Blue

Pattern sample for reference



1710 - 2200 MHz
(b2-30)



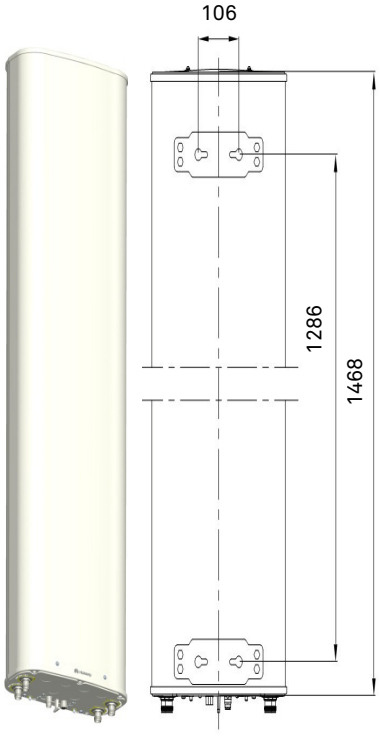
1710 - 2200 MHz
(b1+30)

Antenna Specifications

Electrical Properties					
Frequency range (MHz)		1710 - 2690			
		1710 - 1990	1920 - 2200	2200 - 2490	2490 - 2690
Polarization		+45°, -45°			
Electrical downtilt (°)		0 - 10, continuously adjustable			
Gain (dBi)	at mid Tilt	19.2	19.7	20.0	20.2
	over all Tilts	19.0 ±0.6	19.5 ±0.6	19.8 ±0.5	20.0 ±0.8
Side lobe suppression for first side lobe above main beam (dB)		> 17	> 17	> 17	> 17
Horizontal 3dB beam width (°)		34 ±2.1	31 ±2.3	29 ±0.5	27 ±1.0
Vertical 3dB beam width (°)		6.4 ±0.5	5.9 ±0.4	5.1 ±0.2	4.7 ±0.3
VSWR		< 1.5			
Horizontal beam centers (°)		± 30	± 27	± 25	± 23
Cross polar isolation (dB)		Same beam: ≥ 28			
Beam to beam isolation (dB)		≥ 18			
Front to back ratio, ±30° (dB)		> 32	> 32	> 32	> 32
Cross polar ratio (dB)	0°	> 20	> 20	> 22	> 22
Max. power per input (W)		250 (at 50℃ ambient temperature)			
Intermodulation IM3 (dBc)		≤ -153 (2 x 43 dBm carrier)			
Impedance (Ω)		50			
Grounding		DC Ground			

1. Values based on NGMN recommendations on Base Station Antenna Standards (BASTA).
2. Electrical datasheet in XML format is available.

Mechanical Properties	
Antenna dimensions (H x W x D) (mm)	1468 x 349 x 166
Packing dimensions (H x W x D) (mm)	1870 x 415 x 240
Antenna weight (kg)	18.2
Clamps weight (kg)	3.0 (2 units)
Antenna packing weight (kg)	29.2 (Included clamps)
Mast diameter supported (mm)	50 - 115
Radome material	Fiberglass
Radome colour	Light grey
Operational temperature (℃)	-40 .. +65
Wind load (N)	Frontal: 500 (at 150 km/h) Lateral: 165 (at 150 km/h) Rear side: 530 (at 150 km/h)
Max. operational wind speed (km/h)	200
Survival wind speed (km/h)	250
Connector	4 x 4.3-10 Female
Connector position	Bottom



Accessories

Item	Model	Description	Weight	Units per antenna
Downtilt kit	ASMDT0C01	Mechanical downtilt: 0 - 16 °	2.1 kg	1 (Separate packing)

Integrated RET Specifications

Properties								
RET type	Integrated RET							
RET protocols*	AISG 2.0 / 3GPP							
Input voltage range (V)	10 - 30 DC							
Power consumption (W)	< 5 (motor activated, 12V) < 0.5 (stand by, 12V)							
Adjustment time (full range) (s)	< 65 (typically, depending on antenna type)							
RET connector	2 x 8 pin connector according to IEC 60130-9 Daisy chain in: Male / Daisy chain out: Female							
Pin assignment according AISG	1	2	3	4	5	6	7	8
	DC	n/c	RS-485B	n/c	RS-485A	DC	DC return	n/c
Lightning protection (kA)	3 (10/350 μs) 10 (8/20 μs)							

* Please confirm the AISG protocol of primary station is compatible with RET antenna protocol interface. The protocol of RET antenna software interface is switchable between AISG 2.0/3GPP and AISG 1.1 with a vendor defined command. For more details about protocol switching function, contact Huawei before system installation.

Standards: UL 60950-1 (Safety), UL 60950-22 (Safety - Equipment installed outdoor), EN 55022 (Emission), EN 55024 (Immunity), ETSI EN 301 489, FCC Part15, ICES-003

Certification: CE, FCC, IC, RCM

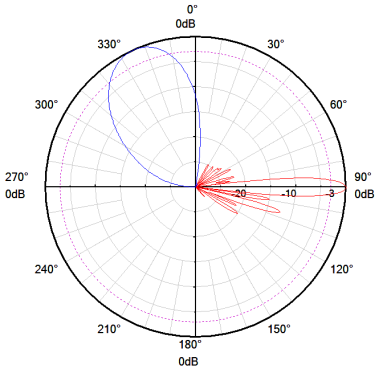
Integrated RCU S/N:

ⓐ HWMxxx.....y

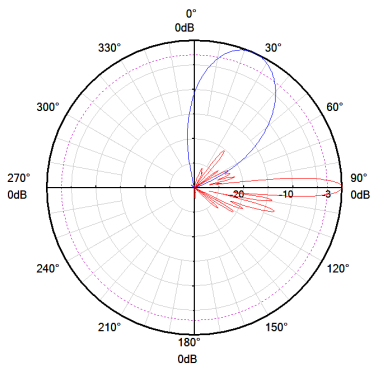
ⓑ HWMxxx....yy

y - Yellow

Pattern sample for reference



1710 - 2690 MHz
(yy-30)



1710 - 2690 MHz
(y+30)

Preliminary Issue

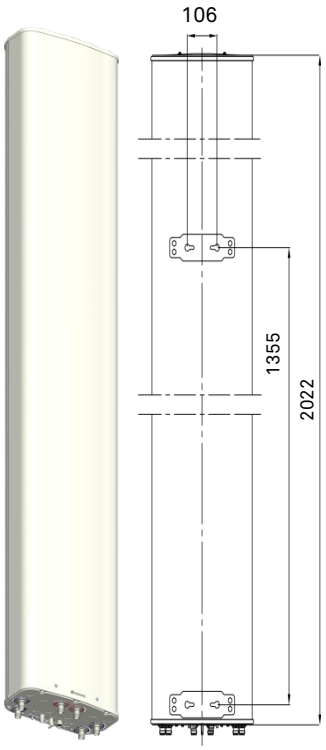
Electrical Properties

Frequency range (MHz)		690 - 960				1710 - 2200	
		690 - 803	790 - 862	824 - 894	880 - 960	1710 - 1990	1920 - 2200
Polarization		+45°, -45°					
Electrical downtilt (°)		0 - 10, continuously adjustable				2 - 12, continuously adjustable	
Gain (dBi)	at mid Tilt	15.4	15.7	15.8	16.0	18.7	19.4
	over all Tilts	15.3 ±0.5	15.6 ±0.5	15.7 ±0.5	15.8 ±0.5	18.5 ±0.8	19.2 ±0.5
Side lobe suppression for first side lobe above main beam (dB)		> 16	> 18	> 17	> 17	> 17	> 17
Horizontal 3dB beam width (°)		63 ±2.5	60 ±2.5	60 ±2.5	59 ±3	32 ±1	30 ±1
Vertical 3dB beam width (°)		10.6 ±0.7	9.5 ±0.5	9.2 ±0.4	8.7 ±0.4	6.2 ±0.5	5.6 ±0.4
VSWR		< 1.5					
Horizontal beam centers (°)		/				± 30	± 26
Cross polar isolation (dB)		≥ 25				Same beam: ≥ 25	
Beam to beam isolation(dB)		/				≥ 18	
Interband isolation (dB)		≥ 28					
Front to back ratio, ±30° (dB)		> 21	> 24	> 24	> 24	> 28	> 28
Cross polar ratio (dB)	0°	> 17	> 18	> 17	> 17	> 17	> 15
Max. power per input (W)		500 (at 50℃ ambient temperature)				250 (at 50℃ ambient temperature)	
Intermodulation IM3 (dBc)		≤ -153 (2 x 43 dBm carrier)					
Impedance (Ω)		50					
Grounding		DC Ground					

1. Values based on NGMN recommendations on Base Station Antenna Standards (BASTA).
2. Electrical datasheet in XML format is available.

Mechanical Properties

Antenna dimensions (H x W x D) (mm)	2022 x 359 x 178
Packing dimensions (H x W x D) (mm)	2400 x 430 x 255
Antenna weight (kg)	25.0
Clamps weight (kg)	3.6 (2 nuits)
Antenna packing weight (kg)	39.7 (Included clamps)
Mast diameter supported (mm)	50 - 115
Radome material	Fiberglass
Radome colour	Light grey
Operational temperature (℃)	-40 to +65
Wind load (N)	Frontal : 930 (at 150 km/h) Lateral: 255 (at 150 km/h) Rear side: 755 (at 150 km/h)
Max. operational wind speed (km/h)	200
Survival wind speed (km/h)	250
Connector	6 x 4.3-10 Female
Connector position	Bottom



Accessories

Item	Model	Description	Weight	Units per antenna
Downtilt kit	ASMDT0D01	Mechanical downtilt: 0 - 12 °	2.1 kg	1 (Separate packing)

Antenna Specifications

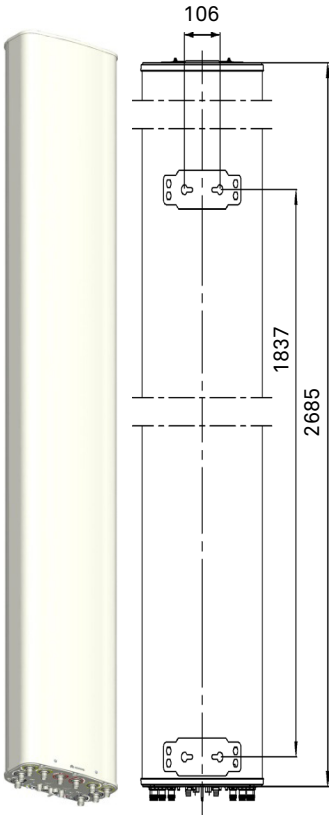
Electrical Properties					
Frequency range (MHz)		690 - 960			
		690 - 803	790 - 862	824 - 894	880 - 960
Polarization		+45°, -45°			
Electrical downtilt (°)		0 - 10, continuously adjustable			
Gain (dBi)	at mid Tilt	15.9	16.0	16.1	16.4
	over all Tilts	15.7 ±0.4	15.8 ±0.5	15.9 ±0.4	16.2 ±0.5
Side lobe suppression for first side lobe above main beam (dB)		> 18	> 19	> 18	> 18
Horizontal 3dB beam width (°)		68 ±4	67 ±4	67 ±3	66 ±4
Vertical 3dB beam width (°)		9.5 ±0.6	8.8 ±0.6	8.4 ±0.6	7.8 ±0.4
VSWR		< 1.5			
Cross polar isolation (dB)		≥ 25			
Interband isolation (dB)		≥ 28			
Front to back ratio, ±30° (dB)		> 25	> 26	> 26	> 26
Cross polar ratio (dB)	0°	> 15	> 17	> 17	> 17
Max. power per input (W)		500 (at 50℃ ambient temperature)*			
Intermodulation IM3 (dBc)		≤ -153 (2 x 43 dBm carrier)			
Impedance (Ω)		50			
Grounding		DC Ground			

Electrical Properties							
Frequency range (MHz)		1695 - 2200		2 x (1695 - 2690)			
		1695 - 1990	1920 - 2200	1695 - 1990	1920 - 2200	2200 - 2490	2490 - 2690
Polarization		+45°, -45°					
Electrical downtilt (°)		0 - 10, continuously adjustable		2 - 12, continuously adjustable, each band separately			
Gain (dBi)	at mid Tilt	17.3	18.1	16.9	17.1	17.2	17.3
	over all Tilts	17.1 ±0.6	17.9 ±0.6	16.8 ±0.6	17.0 ±0.5	17.0 ±0.5	17.2 ±0.5
Side lobe suppression for first side lobe above main beam (dB)		> 17	> 17	> 17	> 17	> 17	> 17
Horizontal 3dB beam width (°)		33 ±3	30 ±3	60 ±5	61 ±5	63 ±5	58 ±5
Vertical 3dB beam width (°)		7.2 ±0.5	6.5 ±0.5	6.5 ±0.6	5.8 ±0.4	5.0 ±0.5	4.8 ±0.3
VSWR		< 1.5					
Horizontal beam centers (°)		± 29	± 27	/			
Cross polar isolation (dB)		Same beam: ≥ 25		≥ 28			
Beam to beam isolation (dB)		≥ 18		/			
Interband isolation (dB)		≥ 28					
Front to back ratio, ±30° (dB)		> 27	> 29	> 26	> 27	> 27	> 28
Cross polar ratio (dB)	0°	> 15	> 17	> 17	> 20	> 20	> 20
Max. power per input (W)		250 (at 50℃ ambient temperature)*					
Intermodulation IM3 (dBc)		≤ -153 (2 x 43 dBm carrier)					
Impedance (Ω)		50					
Grounding		DC Ground					

* Total power： 1000 W (at 50℃ ambient temperature)

1. Values based on NGMN recommendations on Base Station Antenna Standards (BASTA).
2. Electrical datasheet in XML format is available.

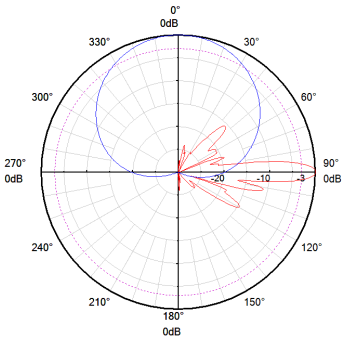
Mechanical Properties	
Antenna dimensions (H x W x D) (mm)	2685 x 359 x 178
Packing dimensions (H x W x D) (mm)	2985 x 425 x 255
Antenna weight (kg)	35.0
Clamps weight (kg)	5.8 (2 units)
Antenna packing weight (kg)	54.1 (Included clamps)
Mast diameter supported (mm)	50 - 115
Radome material	Fiberglass
Radome colour	Light grey
Operational temperature (℃)	-40 .. +65
Wind load (N)	Frontal : 1290 (at 150 km/h) Lateral: 350 (at 150 km/h) Rear side: 1075 (at 150 km/h)
Max. operational wind speed (km/h)	200
Survival wind speed (km/h)	250
Connector	10 x 4.3-10 Female
Connector position	Bottom



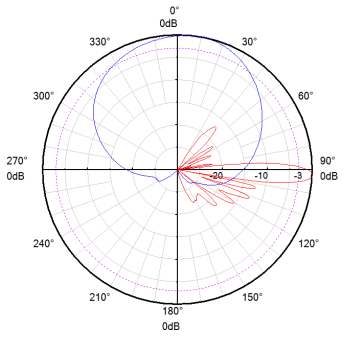
Accessories

Item	Model	Description	Weight	Units per antenna
Downtilt kit	ASMDT0F01	Mechanical downtilt: 0 - 8 °	3.1 kg	1 (Separate packing)

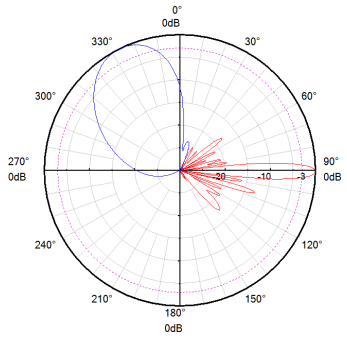
Pattern sample for reference



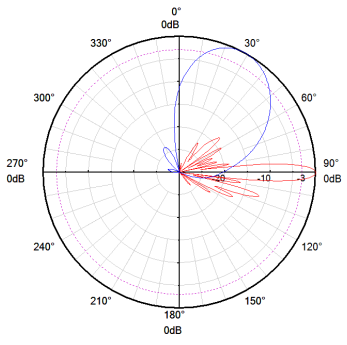
690 - 960 MHz



1695 - 2690 MHz



1695 - 2200 MHz
(b2-30)



1695 - 2200 MHz
(b1+30)

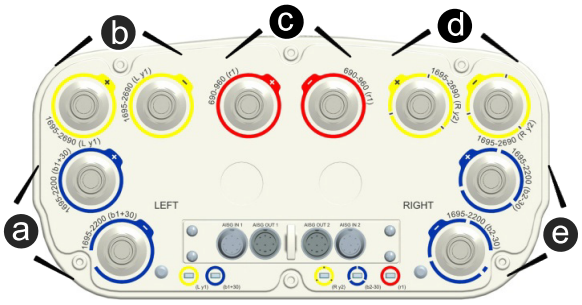
Integrated RET Specifications

Properties								
RET type	Integrated RET							
RET protocols*	AISG 2.0 / 3GPP							
Input voltage range (V)	10 - 30 DC							
Power consumption (W)	< 6 (motor activated, 12V) < 1.5 (stand by, 12V)							
Adjustment time (full range) (s)	< 65 (typically, depending on antenna type)							
RET connector	4 x 8 pin connector according to IEC 60130-9 Daisy chain in: Male / Daisy chain out: Female							
Pin assignment according AISG	1	2	3	4	5	6	7	8
	DC	n/c	RS-485B	n/c	RS-485A	DC	DC return	n/c
Lightning protection (kA)	3 (10/350 μs) 10 (8/20 μs)							

* Please confirm the AISG protocol of primary station is compatible with RET antenna protocol interface. The protocol of RET antenna software interface is switchable between AISG 2.0/3GPP and AISG 1.1 with a vendor defined command. For more details about protocol switching function, contact Huawei before system installation.

Standards: UL 60950-1 (Safety), UL 60950-22 (Safety - Equipment installed outdoor), EN 55022 (Emission), EN 55024 (Immunity), ETSI EN 301 489, FCC Part15, ICES-003

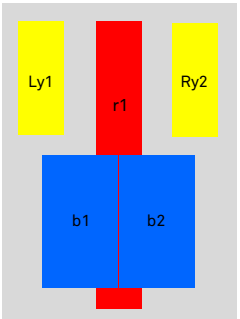
Certification: CE, FCC, IC, RCM



Integrated RET S/N:

- a HWMxxx.....b1
- b HWMxxx.....Ly1
- c HWMxxx.....r1
- d HWMxxx.....Ry2
- e HWMxxx.....b2

r - Red y - Yellow b - Blue
L - Left array R - Right array



Preliminary Issue

Antenna Specifications

Electrical Properties					
Frequency range (MHz)		690 - 960			
		690 - 803	790 - 862	824 - 894	880 - 960
Polarization		+45°, -45°			
Electrical downtilt (°)		0 - 10, continuously adjustable			
Gain (dBi)	at mid Tilt	15.9	16.0	16.1	16.4
	over all Tilts	15.7 ±0.4	15.8 ±0.5	15.9 ±0.4	16.2 ±0.5
Side lobe suppression for first side lobe above main beam (dB)		> 18	> 19	> 18	> 18
Horizontal 3dB beam width (°)		68 ±4	67 ±4	67 ±3	66 ±4
Vertical 3dB beam width (°)		9.5 ±0.6	8.8 ±0.6	8.4 ±0.6	7.8 ±0.4
VSWR		< 1.5			
Cross polar isolation (dB)		≥ 25			
Interband isolation (dB)		≥ 28			
Front to back ratio, ±30° (dB)		> 25	> 26	> 26	> 26
Cross polar ratio (dB)	0°	> 15	> 17	> 17	> 17
Max. power per input (W)		500 (at 50℃ ambient temperature) *			
Intermodulation IM3 (dBc)		≤ -153 (2 x 43 dBm carrier)			
Impedance (Ω)		50			
Grounding		DC Ground			

Electrical Properties						
Frequency range (MHz)		1695 - 2200		2 x (1695 - 2200)		2 x (2490 - 2690)
		1695 - 1990	1920 - 2200	1695 - 1990	1920 - 2200	2490 - 2690
Polarization		+45°, -45°				
Electrical downtilt (°)		0 - 10, continuously adjustable		2 - 12, continuously adjustable, each band separately		
Gain (dBi)	at mid Tilt	17.3	18.1	16.8	17.0	17.3
	over all Tilts	17.1 ±0.6	17.9 ±0.6	16.6 ±0.4	16.8 ±0.4	17.1 ±0.5
Side lobe suppression for first side lobe above main beam (dB)		> 17	> 17	> 17	> 17	> 16
Horizontal 3dB beam width (°)		33 ±3	30 ±3	63 ±4	61 ±4	60 ±5
Vertical 3dB beam width (°)		7.2 ±0.5	6.5 ±0.5	6.4 ±0.7	5.8 ±0.4	4.9 ±0.4
VSWR		< 1.5				
Horizontal beam centers (°)		± 29	± 27	/		
Cross polar isolation (dB)		Same beam: ≥ 25		≥ 28		
Beam to beam isolation (dB)		≥ 18		/		
Interband isolation (dB)		≥ 28				
Front to back ratio, ±30° (dB)		> 27	> 27	> 25	> 25	> 24
Cross polar ratio (dB)	0°	> 15	> 17	> 17	> 17	> 17
Max. power per input (W)		250 (at 50℃ ambient temperature) *				
Intermodulation IM3 (dBc)		≤ -153 (2 x 43 dBm carrier)				
Impedance (Ω)		50				
Grounding		DC Ground				

* Total power： 1000 W (at 50℃ ambient temperature)

1. Values based on NGMN recommendations on Base Station Antenna Standards (BASTA).
2. Electrical datasheet in XML format is available.

Mechanical Properties	
Antenna dimensions (H x W x D) (mm)	2685 x 359 x 178
Packing dimensions (H x W x D) (mm)	2985 x 425 x 255
Antenna weight (kg)	38.0
Clamps weight (kg)	5.8 (2 units)
Antenna packing weight (kg)	57.1 (Included clamps)
Mast diameter supported (mm)	50 - 115
Radome material	Fiberglass
Radome colour	Light grey
Operational temperature (℃)	-40 .. +65
Wind load (N)	Frontal : 1290 (at 150 km/h) Lateral: 350 (at 150 km/h) Rear side: 1075 (at 150 km/h)
Max. operational wind speed (km/h)	200
Survival wind speed (km/h)	250
Connector	14 x 4.3-10 Female
Connector position	Bottom

Accessories

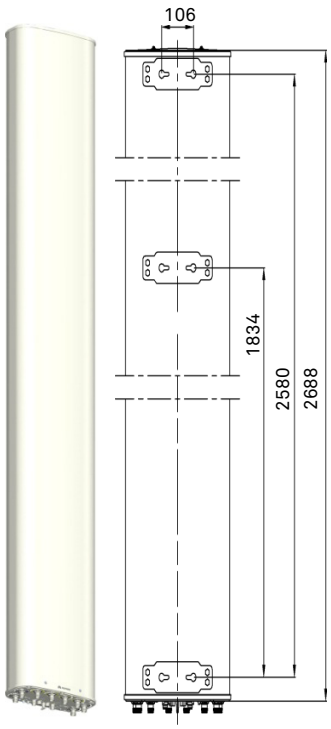
Item	Model	Description	Weight	Units per antenna
Downtilt kit	ASMDT0F01	Mechanical downtilt: 0 - 8 °	3.1 kg	1 (Separate packing)

Antenna Specifications

Electrical Properties								
Frequency range (MHz)		1710 - 2200			2 x (1710 - 2690)			
		1710 - 1880	1850 - 1990	1920 - 2200	1710 - 1990	1920 - 2200	2200 - 2490	2490 - 2690
Polarization		+45°, -45°						
Electrical downtilt (°)		2 - 12, continuously adjustable			0 - 12, continuously adjustable, each band separately			
Gain (dBi)	at mid Tilt	18.6	19.2	19.5	17.0	17.3	17.6	17.7
	over all Tilts	18.4 ±0.6	19.0 ±0.6	19.3 ±0.4	16.9 ±0.5	17.2 ±0.4	17.4 ±0.5	17.5 ±0.4
Side lobe suppression for first side lobe above main beam (dB)		> 18	> 18	> 18	> 18	> 20	> 19	> 19
Horizontal 3dB beam width (°)		36 ±2	33 ±2	31 ±2	67 ±3	64 ±2.5	62 ±2.5	61 ±2.5
Vertical 3dB beam width (°)		7.2 ±0.4	6.9 ±0.4	6.6 ±0.4	6.9 ±0.5	6.3 ±0.3	5.5 ±0.5	5.0 ±0.3
VSWR		< 1.5						
Horizontal beam centers (°)		± 31	± 30	± 28	/			
Cross polar isolation (dB)		Same beam: ≥ 28			≥ 28			
Beam to beam isolation (dB)		≥ 18			/			
Interband isolation (dB)		≥ 28			≥ 28			
Front to back ratio, ±30° (dB)		> 32	> 32	> 34	> 27	> 27	> 27	> 27
Cross polar ratio (dB)	0°	> 20	> 20	> 20	> 19	> 19	> 22	> 22
Max. power per input (W)		250 (at 50℃ ambient temperature)						
Total power (W)		960 (at 50℃ ambient temperature)						
Intermodulation IM3 (dBc)		≤ -153 (2 x 43 dBm carrier)						
Impedance (Ω)		50						
Grounding		DC Ground						

1. Values based on NGMN recommendations on Base Station Antenna Standards (BASTA).
2. Electrical datasheet in XML format is available.

Mechanical Properties	
Antenna dimensions (H x W x D) (mm)	2688 x 349 x 166
Packing dimensions (H x W x D) (mm)	2985 x 425 x 255
Antenna weight (kg)	32.5
Clamps weight (kg)	3.6 (2 units)
Antenna packing weight (kg)	48.5 (Included clamps)
Mast diameter supported (mm)	50 - 115
Radome material	Fiberglass
Radome colour	Light grey
Operational temperature (℃)	-40 .. +65
Wind load (N)	Frontal : 990 (at 150 km/h) Lateral: 325 (at 150 km/h) Rear side: 1030 (at 150 km/h)
Max. operational wind speed (km/h)	200
Survival wind speed (km/h)	250
Connector	8 x 4.3-10 Female
Connector position	Bottom



Accessories

Item	Model	Description	Weight	Units per antenna
Downtilt kit	ASMDT0D01	Mechanical downtilt: 0 - 8 °	2.1 kg	1 (Separate packing)

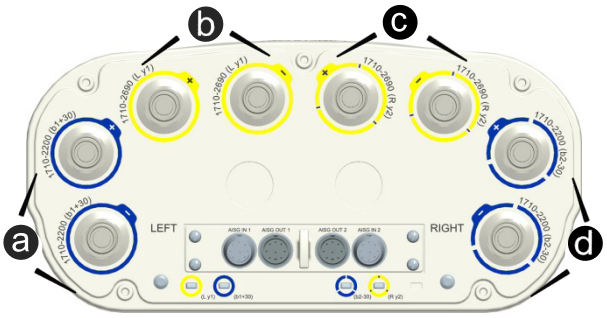
Integrated RET Specifications

Properties								
RET type	Integrated RET							
RET protocols*	AISG 2.0 / 3GPP							
Input voltage range (V)	10 - 30 DC							
Power consumption (W)	< 6 (motor activated, 12V) < 1.5 (stand by, 12V)							
Adjustment time (full range) (s)	< 65 (typically, depending on antenna type)							
RET connector	4 x 8 pin connector according to IEC 60130-9 Daisy chain in: Male / Daisy chain out: Female							
Pin assignment according AISG	1	2	3	4	5	6	7	8
	DC	n/c	RS-485B	n/c	RS-485A	DC	DC return	n/c
Lightning protection (kA)	3 (10/350 μs) 10 (8/20 μs)							

* Please confirm the AISG protocol of primary station is compatible with RET antenna protocol interface. The protocol of RET antenna software interface is switchable between AISG 2.0/3GPP and AISG 1.1 with a vendor defined command. For more details about protocol switching function, contact Huawei before system installation.

Standards: UL 60950-1 (Safety), UL 60950-22 (Safety - Equipment installed outdoor), EN 55022 (Emission), EN 55024 (Immunity), ETSI EN 301 489, FCC Part15, ICES-003

Certification: CE, FCC, IC, RCM



Integrated RET S/N:

ⓐ HWMxxx.....b1

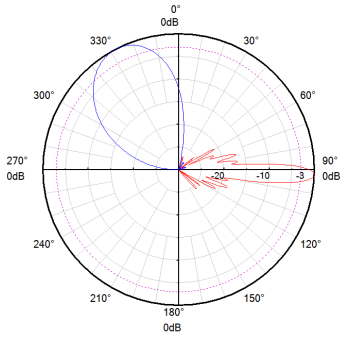
ⓑ HWMxxx.....Ly1

ⓒ HWMxxx.....Ry2

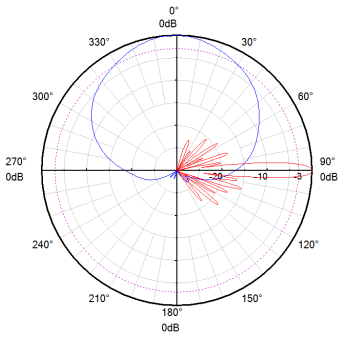
ⓓ HWMxxx.....b2

r - Red y - Yellow
L - Left array R - Right array

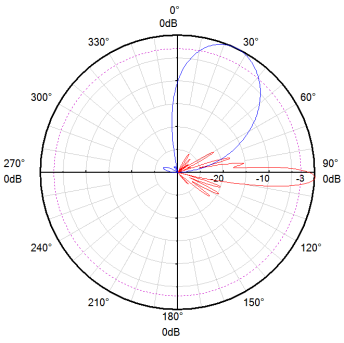
Pattern sample for reference



1710 - 2200 MHz
(b2-30)



1710 - 2690 MHz



1710 - 2200 MHz
(b1+30)

Preliminary Issue

Electrical Properties

Frequency range (MHz)		790 - 960			1710 - 2200	
		790 - 862	824 - 894	880 - 960	1710 - 1990	1920 - 2200
Polarization		+45°, -45°				
Electrical downtilt (°)		0 - 10, continuously adjustable,				
Gain (dBi)	at mid Tilt	15.1	15.4	15.7	17.3	18.2
	over all Tilts	15.0 ±0.5	15.3 ±0.5	15.6 ±0.5	17.1 ±0.6	18.1 ±0.6
Side lobe suppression for first side lobe above main beam (dB)		> 16			> 17	
Horizontal 3dB beam width (°)		37 ±3	36 ±2	34 ±2	34 ±2.5	31 ±2.5
Vertical 3dB beam width (°)		16.0 ±0.5	15.3 ±0.5	14.5 ±0.5	7.2 ±0.5	6.7 ±0.5
VSWR		< 1.5			< 1.5	
Cross polar isolation (dB)		Same beam: ≥ 25			Same beam: ≥ 25	
Beam to beam isolation (dB)		≥ 18			≥ 18	
Front to back ratio, ±30° (dB)		> 26			> 27	
Cross polar ratio (dB)	0°	> 18			> 18	
Max. power per input (W)		500 (at 50℃ ambient temperature)			250 (at 50℃ ambient temperature)	
Intermodulation IM3 (dBc)		≤ -153 (2 x 43 dBm carrier)				
Impedance (Ω)		50				
Grounding		DC Ground				

1. Values based on NGMN recommendations on Base Station Antenna Standards (BASTA).
2. Electrical datasheet in XML format is available.

Mechanical Properties

Antenna dimensions (H x W x D) (mm)	2090 x 590 x 169
Packing dimensions (H x W x D) (mm)	2350 x 705 x 275
Antenna weight (kg)	40
Clamps weight (kg)	5.8 (2 units)
Antenna packing weight (kg)	60 (Included clamps)
Mast diameter supported (mm)	50 - 115
Radome material	Fiberglass
Radome colour	Light grey
Operational temperature (℃)	-40 to +65
Wind load (N)	Frontal: 1320 (at 150 km/h) Lateral: 195 (at 150 km/h) Rear side: 1385 (at 150 km/h)
Max. operational wind speed (km/h)	200
Survival wind speed (km/h)	250
Connector	8 x 4.3-10 Female
Connector position	Bottom

Accessories

Item	Model	Description	Weight	Units per antenna
Downtilt kit	ASMDT0F01	Mechanical downtilt: 0 - 12°	3.1 kg	1 (Separate packing)

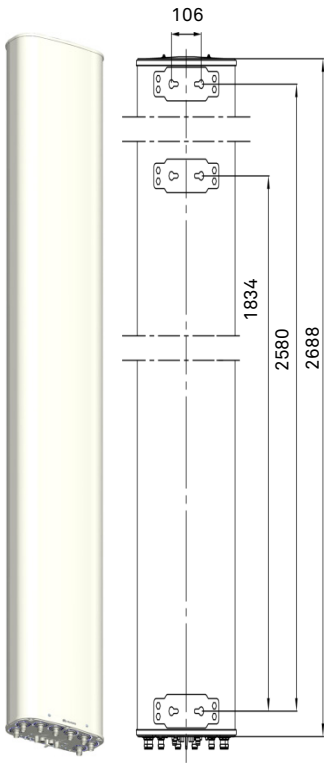
Preliminary Issue

Antenna Specifications

Electrical Properties					
Frequency range (MHz)			2 x (1710 - 2200)		
			1710 - 1880	1850 - 1990	1920 - 2200
Polarization			+45°, -45°		
Electrical downtilt (°)			2 - 12, continuously adjustable, each band separately		
Gain (dBi)	Top	at mid Tilt	18.2	18.9	19.3
		over all Tilts	17.9 ±0.6	18.6 ±0.5	18.9 ±0.5
	Bottom	at mid Tilt	18.6	19.3	19.6
		over all Tilts	18.4 ±0.6	19.0 ±0.5	19.3 ±0.5
Side lobe suppression for first side lobe above main beam (dB)			> 18	> 18	> 18
Horizontal 3dB beam width (°)			36 ±2	33 ±2	31 ±2
Vertical 3dB beam width (°)			7.2 ±0.4	6.9 ±0.4	6.6 ±0.4
VSWR			< 1.5		
Horizontal beam centers (°)			± 31	± 30	± 28
Cross polar isolation (dB)			Same beam: ≥ 28		
Beam to beam isolation (dB)			≥ 18		
Front to back ratio, ±30° (dB)			> 32	> 32	> 34
Cross polar ratio (dB)	0°		> 20	> 20	> 20
Max. power per input (W)			250 (at 50℃ ambient temperature)		
Total power (W)			960 (at 50℃ ambient temperature)		
Intermodulation IM3 (dBc)			≤ -153 (2 x 43 dBm carrier)		
Impedance (Ω)			50		
Grounding			DC Ground		

1. Values based on NGMN recommendations on Base Station Antenna Standards (BASTA).
2. Electrical datasheet in XML format is available.

Mechanical Properties	
Antenna dimensions (H x W x D) (mm)	2688 x 349 x 166
Packing dimensions (H x W x D) (mm)	2985 x 425 x 255
Antenna net weight (kg)	32.5
Bracket weight (kg)	6.5
Packing weight (kg)	51.4
Mechanical downtilt (°)	0 - 8
Mast diameter supported (mm)	50 - 115
Radome material	Fiberglass
Radome colour	Light grey
Operational temperature (℃)	-40 .. +65
Wind load (N)	Frontal : 990 (at 150 km/h) Lateral: 325 (at 150 km/h) Rear side: 1030 (at 150 km/h)
Max. operational wind speed (km/h)	200
Survival wind speed (km/h)	250
Connector	8 x 4.3-10 Female
Connector position	Bottom



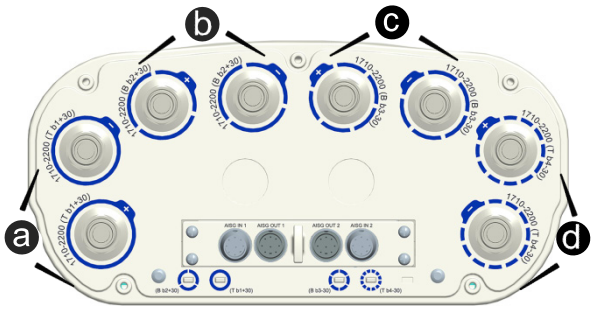
Integrated RET Specifications

Properties								
RET type	Integrated RET							
RET protocols*	AISG 2.0 / 3GPP							
Input voltage range (V)	10 - 30 DC							
Power consumption (W)	< 6 (motor activated, 12V) < 1.5 (stand by, 12V)							
Adjustment time (full range) (s)	< 65 (typically, depending on antenna type)							
RET connector	4 x 8 pin connector according to IEC 60130-9 Daisy chain in: Male / Daisy chain out: Female							
Pin assignment according AISG	1	2	3	4	5	6	7	8
	DC	n/c	RS-485B	n/c	RS-485A	DC	DC return	n/c
Lightning protection (kA)	3 (10/350 μs) 10 (8/20 μs)							

* Please confirm the AISG protocol of primary station is compatible with RET antenna protocol interface. The protocol of RET antenna software interface is switchable between AISG 2.0/3GPP and AISG 1.1 with a vendor defined command. For more details about protocol switching function, contact Huawei before system installation.

Standards: UL 60950-1 (Safety), UL 60950-22 (Safety - Equipment installed outdoor), EN 55022 (Emission), EN 55024 (Immunity), ETSI EN 301 489, FCC Part15, ICES-003

Certification: CE, FCC, IC, RCM

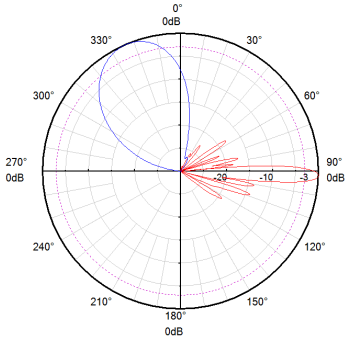


Integrated RET S/N:

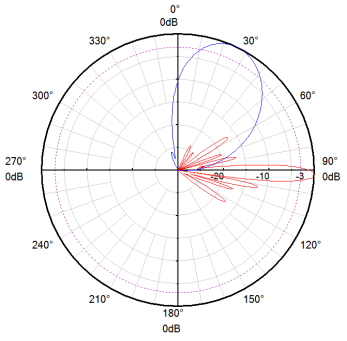
- a HWMxxx.....Tb1
- b HWMxxx.....Bb2
- c HWMxxx.....Bb3
- d HWMxxx.....Tb4

b - Blue
T - Top array B - Bottom array

Pattern sample for reference



1710 - 2200 MHz (-30)



1710 - 2200 MHz (+30)

Multi-beam

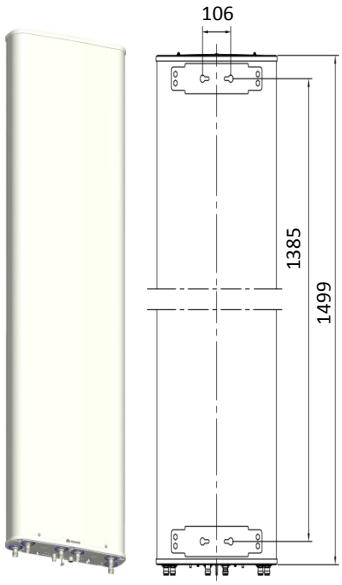
Preliminary Issue

Antenna Specifications

Electrical Properties			
Frequency range (MHz)		1710 - 2200	
		1710 - 1990	1920 - 2200
Polarization		+45°, -45°	
Electrical downtilt (°)		2 - 12, continuously adjustable	
Gain (dBi)	at mid Tilt (M beam)	20.3	20.8
	over all Tilts (M beam)	20.1 ±0.6	20.6 ±0.5
	at mid Tilt (L and R beam)	18.7	19.5
	over all Tilts (L and R beam)	18.5 ±0.6	19.3 ±0.5
Side lobe suppression for first side lobe above main beam (dB)		> 17	> 17
Horizontal 3dB beam width (°) (M beam)		23 ±2	21 ±1.4
Horizontal 3dB beam width (°) (L and R beam)		28 ±2	24 ±1.4
Vertical 3dB beam width (°)		7.5 ±0.5	7.0 ±0.5
VSWR		< 1.5	
Cross polar isolation (dB)		Same beam: ≥ 25	
Beam to beam isolation (dB)		≥ 18	
Front to back ratio, ±30° (dB)		> 29	> 30
Cross polar ratio (dB)	0°	> 17	> 17
Max. power per input (W)		250 (at 50℃ ambient temperature)	
Intermodulation IM3 (dBc)		≤ -153 (2 x 43 dBm carrier)	
Impedance (Ω)		50	
Grounding		DC Ground	

1. Values based on NGMN recommendations on Base Station Antenna Standards (BASTA).
2. Electrical datasheet in XML format is available.

Mechanical Properties	
Antenna dimensions (H x W x D) (mm)	1499 x 449 x 115
Packing dimensions (H x W x D) (mm)	1835 x 510 x 185
Antenna net weight (kg)	22.6
Bracket weight (kg)	6.5
Packing weight (kg)	35.8
Mechanical downtilt (°)	0 - 16
Mast diameter supported (mm)	50 - 115
Radome material	Fiberglass
Radome colour	Light grey
Operational temperature (℃)	-40 .. +65
Wind load (N)	Frontal: 775 (at 150 km/h) Lateral: 90 (at 150 km/h) Rear side: 870 (at 150 km/h)
Max. operational wind speed (km/h)	200
Survival wind speed (km/h)	250
Connector	6 x 4.3-10 Female
Connector position	Bottom

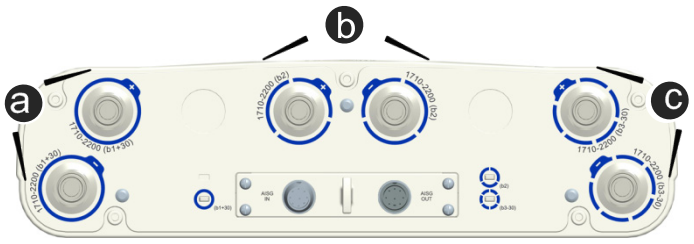


Integrated RET Specifications

Properties								
RET type	Integrated RET							
RET protocols*	AISG 2.0 / 3GPP							
Input voltage range (V)	10 - 30 DC							
Power consumption (W)	< 5 (motor activated, 12V) < 0.5 (stand by, 12V)							
Adjustment time (full range) (s)	< 50 (typically, depending on antenna type)							
RET connector	2 x 8 pin connector according to IEC 60130-9 Daisy chain in: Male / Daisy chain out: Female							
Pin assignment according AISG	1	2	3	4	5	6	7	8
	DC	n/c	RS-485B	n/c	RS-485A	DC	DC return	n/c
Lightning protection (kA)	3 (10/350 μs) 10 (8/20 μs)							

* Please confirm the AISG protocol of primary station is compatible with RET antenna protocol interface. The protocol of RET antenna software interface is switchable between AISG 2.0/3GPP and AISG 1.1 with a vendor defined command. For more details about protocol switching function, contact Huawei before system installation.

Standards: UL 60950-1 (Safety), UL 60950-22 (Safety - Equipment installed outdoor), EN 55022 (Emission), EN 55024 (Immunity), ETSI EN 301 489, FCC Part15, ICES-003
Certification: CE, FCC, IC, RCM

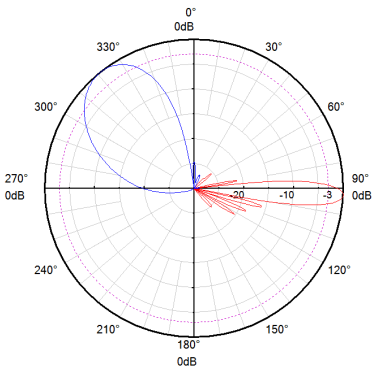


Integrated RET S/N:

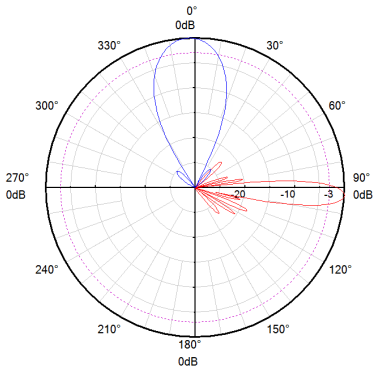
- a HWMxxx.....b1
- b HWMxxx.....b2
- c HWMxxx.....b3

b - Blue

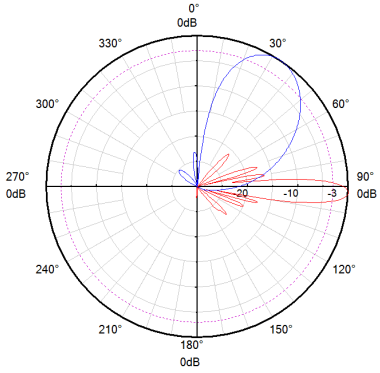
Pattern sample for reference



1710 - 2200 MHz
(b3-30)



1710 - 2200 MHz
(b2)



1710 - 2200 MHz
(b1+30)

Multi-beam

Preliminary Issue

Electrical Properties				
Frequency range (MHz)		1710 - 2200		
		1710 - 1880	1850 - 1990	1920 - 2200
Polarization		+45°, -45°		
Electrical downtilt (°)	Outer beam	6		
	Inner beam	12		
Gain (dBi)	Outer beam at ±36°	19.0 ±0.6	20.0 ±0.6	20.5 ±0.5
	Outer beam at ±12°	20.0 ±0.6	21.0 ±0.6	21.5 ±0.5
	Inner beam at ±40°	17.0 ±0.6	18.0 ±0.6	18.5 ±0.5
Side lobe suppression for first side lobe above main beam (dB)		> 18	> 18	> 18
Horizontal 3dB beam width (°)	Outer beam at ±36°	26 ±3	24 ±2	22 ±2
	Outer beam at ±12°	22 ±3	19 ±2	17 ±2
	Inner beam at ±40°	48 ±3	45 ±2	43 ±2
Vertical 3dB beam width (°)	Outer beam	5.3 ±0.5	4.8 ±0.5	4.3 ±0.5
	Inner beam	6.6 ±0.5	6.1 ±0.5	5.6 ±0.5
VSWR		< 1.5		
Cross polar isolation (dB)		Same beam: ≥ 25		
Beam to beam isolation (dB)		≥ 18		
Front to back ratio, ±30° (dB)		> 30	> 30	> 30
Cross polar ratio (dB)	0°	> 17	> 17	> 17
Max. power per input (W)		250 (at 50℃ ambient temperature)		
Intermodulation IM3 (dBc)		≤ -153 (2 x 43 dBm carrier)		
Impedance (Ω)		50		
Grounding		DC Ground		

Mechanical Properties	
Antenna dimensions (H x W x D) (mm)	2090 x 590 x 169
Packing dimensions (H x W x D) (mm)	2350 x 705 x 275
Antenna weight (kg)	30
Clamps weight (kg)	5.8 (2 nuits)
Antenna packing weight (kg)	45 (Included clamps)
Mast diameter supported (mm)	50 - 115
Radome material	Fiberglass
Radome colour	Light grey
Operational temperature (℃)	-40 .. +65
Wind load (N)	Frontal : 1320 (at 150 km/h) Lateral: 195 (at 150 km/h) Rear side: 1385 (at 150 km/h)
Max. operational wind speed (km/h)	200
Survival wind speed (km/h)	250
Connector	12 x 4.3-10 Female
Connector position	Bottom

Accessories

Item	Model	Description	Weight	Units per antenna
Downtilt kit	ASMDT0F01	Mechanical downtilt: 0 - 12°	3.1 kg	1 (Separate packing)

B. Passive Antenna

TDD Antenna

Frequency Range (MHz)	3dB Horizontal beam width (°)	Gain (dBi)	Electrical downtilt (°)	Tilt Method	Connector	Dimension(mm)	Model	Page	Array symbol
2300-2690	90	16	2-12	EasyRET2.0	9 x N Female	1445 x 299 x 109	ATD4516R5	**224**	/
3300-3800	75	15.5	2-12	EasyRET2.0	9 x N Female	1100 x 259 x 135	ATD4516R8	**228**	/
3300-3800/ 3300-3800	65/65	17.5/17.5	2-12/2-12	EasyRET2.0	4 x N Female	1100 x 259 x 135	ADU4518R13	**232**	

Camouflage Antenna

Cluster Antenna

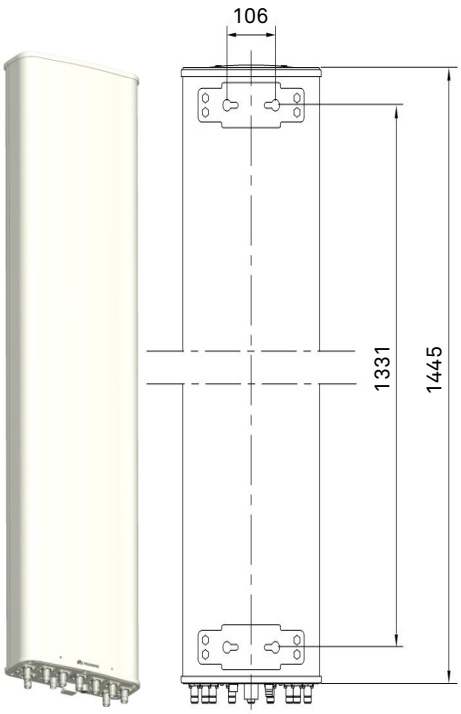
Frequency Range (MHz)	3dB Horizontal beam width (°)	Gain (dBi)	Electrical downtilt (°)	Tilt Method	Connector	Dimension(mm)	Model	Page	Array symbol
1710-2690	65	18	2-12	MET1.0	3 x 2 x 7/ 16 DIN-F	1793 x Φ 230 & Φ 250	A264518S0	**234**	/
690-960/ 1695-2690/ 1695-2690	65/65/65	15/17.5/ 17.5	0-14/ 2-12/2-12	EasyRET2.0	3 x 6 x 7/16 Connector Female	1999 x Φ600	**ATR4518S0	**236**	/

*** Preliminary Issue*

Antenna Specifications

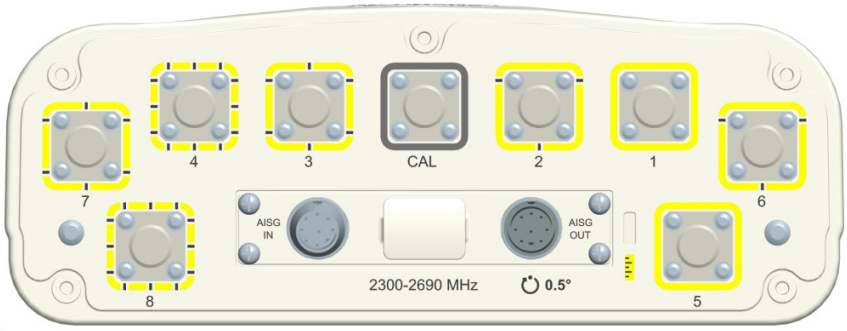
Electrical Properties				
General parameters	Frequency range (MHz)		2300 - 2400	2496 - 2690
	Polarization		+45° , -45°	
	Electrical downtilt (°)		2 - 12 , continuously adjustable	
	Electrical downtilt tolerance (°)		±1	
	Grounding		DC Ground	
Calibration and electrical parameters	Coupling factor between calibration port and each antenna port (dB)		-26 ±2	
	Max. amplitude tolerance from calibration port to input ports (dB)		0.7	
	Max. phase tolerance from calibration port to input ports (°)		5	
	Ports VSWR		1.5	
	Co-polarization isolation between ports (dB)		≥ 20 @ 2°Electrical downtilt ; ≥ 25 @ 3°- 6°Electrical downtilt; ≥ 28 @ 7°- 12°Electrical downtilt	
	Cross-polarization isolation between ports (dB)		≥ 25 @ 2°Electrical downtilt; ≥ 28 @ 3°- 6°Electrical downtilt; ≥ 30 @ 7°- 12°Electrical downtilt	
Radiation parameters	Single column beam	Horizontal 3dB beam width (°)	90	75
		Gain (dBi)	16	17
		Cross polar ratio (0°) (dB)	20	20
		Side lobe suppression for first side lobe above main beam (dB)	≥ 18	≥ 18
		Front to back ratio (dB)	≥ 28	≥ 27
	Multi-beam	Horizontal 3dB beam width (°)	30	27
		Gain (dBi)	20.5	21.5
		Vertical 3dB beam width (°)	6.5	5.7
		Front to back ratio (dB)	≥ 30	≥ 30
		Side lobe suppression for first side lobe above main beam (dB)	≥ 18	≥ 18
	65° Broadcast beam	Horizontal 3dB beam width (°)	65	65
		Gain (dBi)	17.5	18
		Gain roll-off at sector edge (dB)	12	12
		Vertical 3dB beam width (°)	6.5	5.7
		Cross polar ratio (0°) (dB)	22	22
		Front to back ratio (dB)	≥ 30	≥ 30
		Side lobe suppression for first side lobe above main beam (dB)	≤ -18	≤ -18
	Service beam	0° direct beam gain (dBi)	21	22
		0° direction beam horizontal 3dB beam width (°)	25.5	23
		0° direction beam horizontal side lobe suppression (dB)	-12	-12
		±30° direction beam gain (dBi)	20.5	21
		0° direction beam cross polar ratio (0°) (dB)	22	22
		0° direction beam front to back ratio (dB)	30	30

Mechanical Properties	
Distance between columns (mm)	62
Antenna dimensions (H x W x D) (mm)	1445 x 299 x 109
Packing dimensions (H x W x D) (mm)	1770 x 350 x 180
Antenna weight (kg)	16.0
Clamps weight (kg)	2.9 (2 units)
Antenna packing weight (kg)	22.8 (Included clamps)
Mast diameter supported (mm)	50 - 115
Radome material	Fiberglass
Radome colour	Light grey
Operational temperature (℃)	-40 .. +65
Wind load (N)	Frontal: 520 (at 150 km/h) Lateral: 105 (at 150 km/h) Rear side: 600 (at 150 km/h)
Max. operational wind speed (km/h)	200
Survival wind speed (km/h)	250
Connector	9 x N Female
Connector position	Bottom



Accessories

Item	Model	Description	Weight	Units per antenna
Downtilt kit	ASMDT0B01	Mechanical downtilt: 0 - 16 °	1.3 kg	1 (Separate packing)



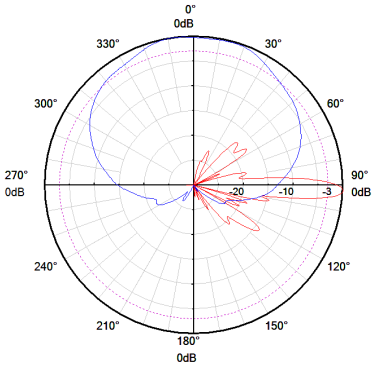
RET S/N: HWMxxx….y

RAE S/N: HWXxxx…..y

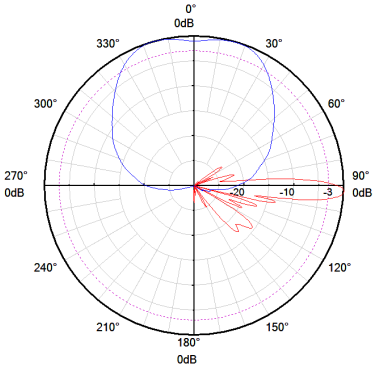
y - Yellow

TDD Camouflage

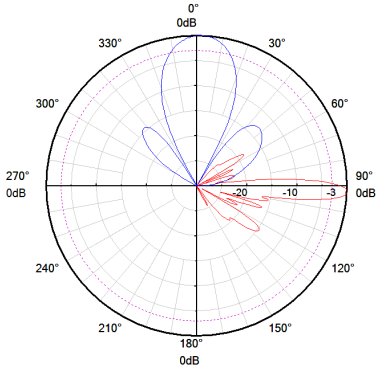
Pattern sample for reference



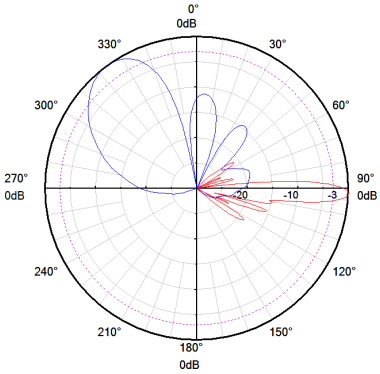
Single column



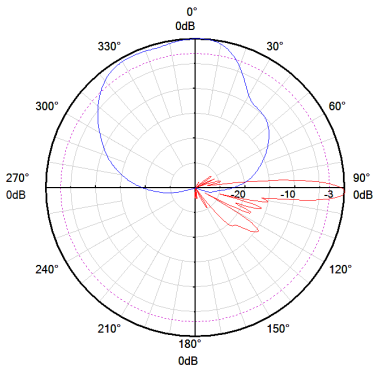
65° Broadcast



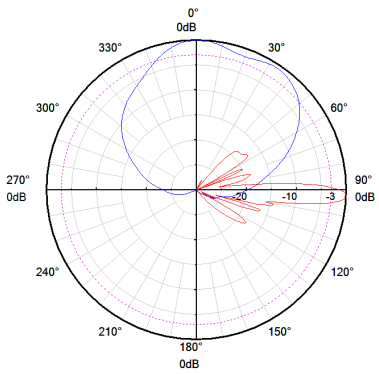
Service 0°



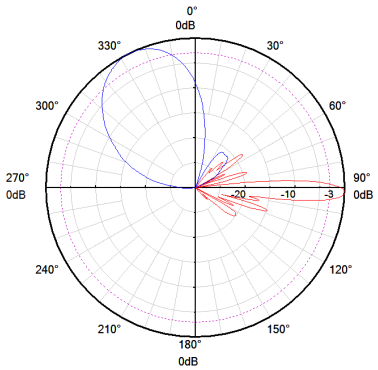
Service 30°



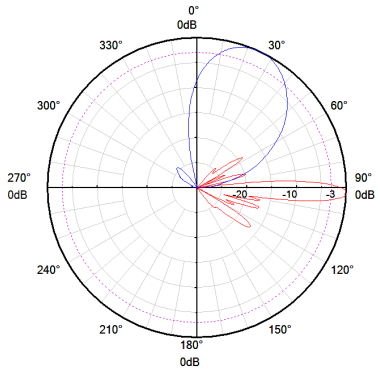
Azimuth -15°



Azimuth +15°



Multi-Beam -30°



Multi-Beam +30°

Antenna Information Management Module (AIMM) Specifications

RET Properties									
RET type	Integrated RET								
RET protocols	AISG 2.0 / 3GPP								
Input voltage range (V)	DC 10 - 30								
Power consumption (W)	< 6 (motor activated, 12V) < 1.5 (stand by, 12V)								
Adjustment time (full range) (s)	Typ. < 55								
RET interface 1 (RF feeder)	Calibration channel integrate the Bias-T and supporting OOK modulation signal communication								
RET interface 2 (485 connector)	2 x 8 pin connector according to IEC 60130-9 Daisy chain in: Male / Daisy chain out: Female								
Pin assignment according AISG	1	2	3	4	5	6	7	8	
	DC	n/c	RS-485B	n/c	RS-485A	DC	DC return	n/c	
Lightning protection (kA)	10 (8/20 μs)								

RAE Properties	
RAE type	Integrated RAE, manages antenna information
RAE protocols	AISG-ES-RAE V2.1.0

EasyBeam Properties								
Frequency range (MHz)		2300 - 2400			2496 - 2690			
Electrical downtilt (°)		2 - 12						
Broadcast beam	Horizontal 3dB beam width (°)	30	65	90	30	65	90	
	Electrical azimuth (°)	-15..+15		0	-15..+15		0	
	Electrical azimuth step(°)	1		/	1		/	

Standards: EN 55022(Emission), EN 55024(Immunity), ETSI EN 301 489, FCC part15, ICES-003
Certification: CE, FCC, IC

TDD Camouflage

Antenna Specifications

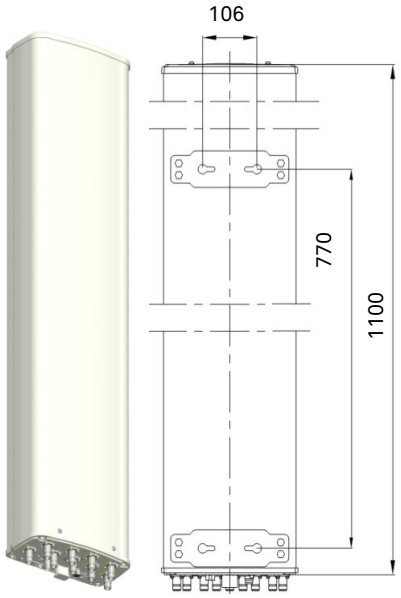
General Electrical Properties		
General parameters	Frequency range (MHz)	3300 - 3800
	Polarization	+45°, -45°
	Electrical downtilt (°)	2 - 12，continuously adjustable
	Grounding	DC Ground
Calibration and electrical parameters	Coupling factor between calibration port and each antenna port (dB)	-26 ±2
	Max. amplitude tolerance from calibration port to input ports (dB)	0.9
	Max. phase tolerance from calibration port to input ports (°)	7
	Ports VSWR	1.5
	Avg. power capacity (W)	25
	Co-polarization isolation between ports (dB)	≥ 20
	Cross-polarization isolation between ports (dB)	≥ 25

Beamforming Electrical Properties			
Radiation parameters	Frequency range (MHz)		3300 - 3800
	Single column beam	Horizontal 3dB beam width (°)	78
		Gain (dBi)	15.5
		Vertical 3dB beam width (°)	5.5
		Cross polar ratio (0°) (dB)	≥ 18
		Side lobe suppression for first side lobe above main beam (dB)	≤ -15
		Front to back ratio (dB)	≥ 23
	65° Broadcast beam	Horizontal 3dB beam width (°)	65
		Gain (dBi)	17
		Gain roll-off at sector edge (dB)	12
		Vertical 3dB beam width (°)	5.5
		Cross polar ratio (0°) (dB)	22
		Front to back ratio (dB)	≥ 25
		Side lobe suppression for first side lobe above main beam (dB)	≤ -15
	Service beam	0° direct beam gain (dBi)	21
		0° direction beam horizontal 3dB beam width (°)	26
		0° direction beam horizontal side lobe suppression (dB)	-12
		0° direction beam cross polar ratio (0°) (dB)	22
		0° direction beam front to back ratio (dB)	28

Soft Split Electrical Properties			
Radiation parameters	Frequency range (MHz)		3300 - 3800
	Multi-beam	Horizontal 3dB beam width (°)	30
		Gain (dBi)	20
		Vertical 3dB beam width (°)	5.5
		Front to back ratio (dB)	≥ 25
		Side lobe suppression for first side lobe above main beam (dB)	≤ -15

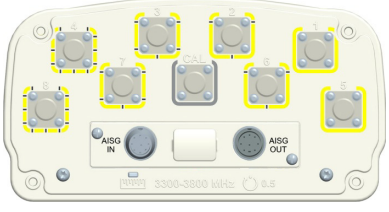
Notes:
65° broadcast beams and multi-beams are applicable in different scenarios. Select one of them for network coverage based on site requirements and auxiliary equipment conditions.

Mechanical Properties	
Distance between columns (mm)	43
Antenna dimensions (H x W x D) (mm)	1100 x 259 x 135
Packing dimensions (H x W x D) (mm)	1290 x 340 x 205
Antenna weight (kg)	13.0
Clamps weight (kg)	2.9 (2 units)
Antenna packing weight (kg)	20.0 (Included clamps)
Mast diameter supported (mm)	50 - 115
Radome material	Fiberglass
Radome colour	Light grey
Operational temperature (℃)	-40 .. +65
Wind load (N)	Frontal: 350 (at 150 km/h) Lateral: 160 (at 150 km/h) Rear side: 435 (at 150 km/h)
Max. operational wind speed (km/h)	200
Survival wind speed (km/h)	250
Connector	9 x N Female
Connector position	Bottom



Accessories

Item	Model	Description	Weight	Units per antenna
Downtilt kit	ASMDT0B01	Mechanical downtilt: 0 - 16°	1.3 kg	1 (Separate packing)



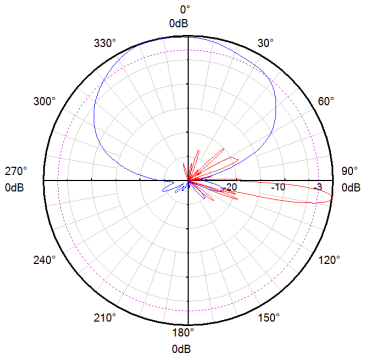
RET S/N: HWMxxx....y

RAE S/N: HWXxxx.....y

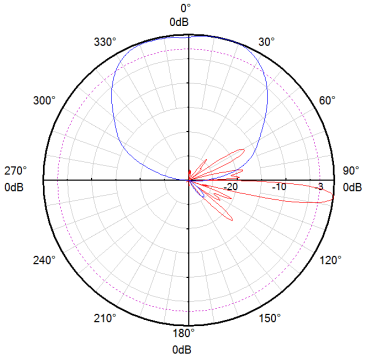
y - Yellow

TDD Camouflage

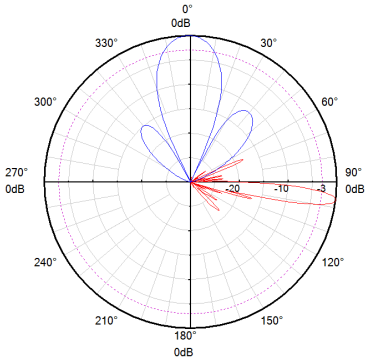
Pattern sample for reference



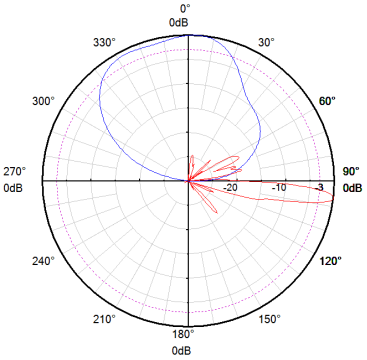
Single column



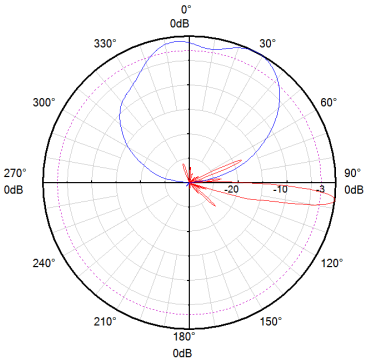
65° Broadcast



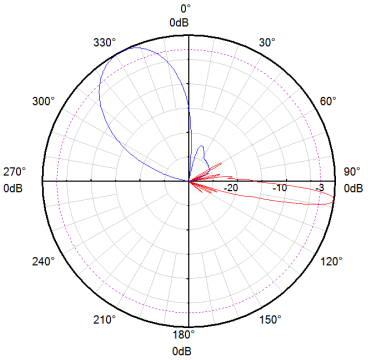
Service 0°



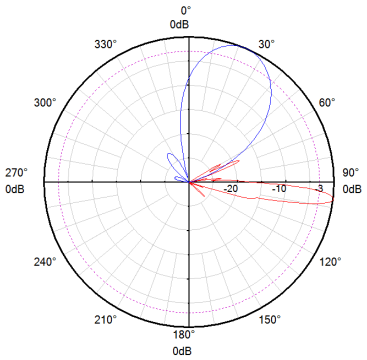
Azimuth -15°



Azimuth +15°



Multi-Beam -30°



Multi-Beam +30°

Antenna Information Management Module (AIMM) Specifications

RET Properties								
RET type	Integrated RET							
RET protocols	AISG 2.0 / 3GPP							
Input voltage range (V)	DC 10 - 30							
Power consumption (W)	< 6 (motor activated, 12V) < 1.5 (stand by, 12V)							
Adjustment time (full range) (s)	Typ. < 55							
RET interface 1 (RF feeder)	Calibration channel integrate the Bias-T and supporting OOK modulation signal communication							
RET interface 2 (485 connector)	2 x 8 pin connector according to IEC 60130-9 Daisy chain in: Male / Daisy chain out: Female							
Pin assignment according AISG	1	2	3	4	5	6	7	8
	DC	n/c	RS-485B	n/c	RS-485A	DC	DC return	n/c
Lightning protection (kA)	5 (8/20 μs)							

RAE Properties	
RAE type	Integrated RAE, manages antenna information
RAE protocols	AISG-ES-RAE V2.1.0

EasyBeam Properties				
Frequency range (MHz)	3300 - 3800			
Electrical downtilt (°)	2 - 12			
Broadcast beam	Horizontal 3dB beam width (°)	30	65	90
	Electrical azimuth (°)	-15..+15		0
	Electrical azimuth step(°)	1		/

Standards: EN 55022(Emission), EN 55024(Immunity), ETSI EN 301 489, FCC part15, ICES-003
Certification: CE, FCC, IC

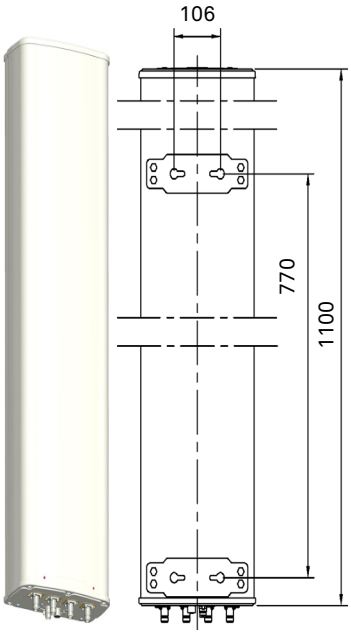
TDD Camouflage

Antenna Specifications

Electrical Properties		
Frequency range (MHz)		2 x (3300 - 3800)
Polarization		+45°, -45°
Electrical downtilt (°)		2 - 12, continuously adjustable
Gain (dBi)	at mid Tilt	17.8
	over all Tilts	17.7 ±0.5
Side lobe suppression for first side lobe above main beam (dB)		> 17
Horizontal 3dB beam width (°)		62 ±2.5
Vertical 3dB beam width (°)		5.6 ±0.4
VSWR		< 1.5
Cross polar isolation (dB)		≥ 28
Interband isolation (dB)		≥ 30
Front to back ratio, ±30° (dB)		> 28
Cross polar ratio (dB)	0°	> 25
Max. power per input (W)		50 (at 50℃ ambient temperature)
Total power (W)		160 (at 50℃ ambient temperature)
Impedance (Ω)		50
Grounding		DC Ground

1. Values based on NGMN recommendations on Base Station Antenna Standards (BASTA).
2. Electrical datasheet in XML format is available.

Mechanical Properties	
Antenna dimensions (H x W x D) (mm)	1100 x 259 x 135
Packing dimensions (H x W x D) (mm)	1290 x 340 x 205
Antenna weight (kg)	10.7
Clamps weight (kg)	2.9 (2 units)
Antenna packing weight (kg)	18.0 (Included clamps)
Mast diameter supported (mm)	50 - 115
Radome material	Fiberglass
Radome colour	Light grey
Operational temperature (℃)	-40 .. +65
Wind load (N)	Frontal: 350 (at 150 km/h) Lateral: 160 (at 150 km/h) Rear side: 435 (at 150 km/h)
Max. operational wind speed (km/h)	200
Survival wind speed (km/h)	250
Connector	4 x N Female
Connector position	Bottom



Accessories

Item	Model	Description	Weight	Units per antenna
Downtilt kit	ASMDT0B01	Mechanical downtilt: 0 - 16 °	1.3 kg	1 (Separate packing)

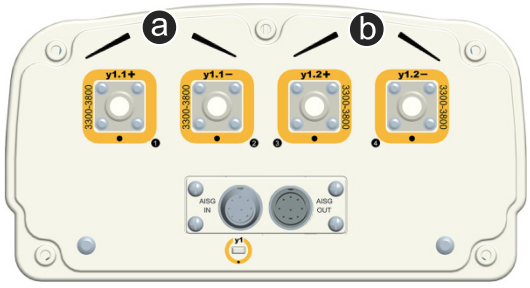
Integrated RET Specifications

Properties								
RET type	Integrated RET							
RET protocols*	AISG 2.0 / 3GPP							
Input voltage range (V)	10 - 30 DC							
Power consumption (W)	< 5 (motor activated, 12V) < 0.5 (stand by, 12V)							
Adjustment time (full range) (s)	< 50 (typically, depending on antenna type)							
RET connector	2 x 8 pin connector according to IEC 60130-9 Daisy chain in: Male / Daisy chain out: Female							
Pin assignment according AISG	1	2	3	4	5	6	7	8
	DC	n/c	RS-485B	n/c	RS-485A	DC	DC return	n/c
Lightning protection (kA)	3 (10/350 μs) 10 (8/20 μs)							

* Please confirm the AISG protocol of primary station is compatible with RET antenna protocol interface. The protocol of RET antenna software interface is switchable between AISG 2.0/3GPP and AISG 1.1 with a vendor defined command. For more details about protocol switching function, contact Huawei before system installation.

Standards: UL 60950-1 (Safety), UL 60950-22 (Safety – Equipment installed outdoor), EN 55022 (Emission), EN 55024 (Immunity), ETSI EN 301 489, FCC Part15, ICES-003

Certification: CE, FCC, IC, RCM



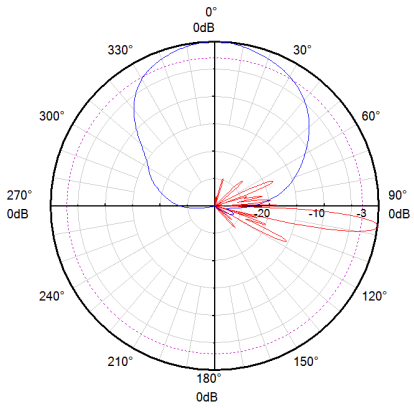
Integrated RET S/N:

ⓐ ⓑ HWMxxx.....y1

y - Yellow

TDD Camouflage

Pattern sample for reference



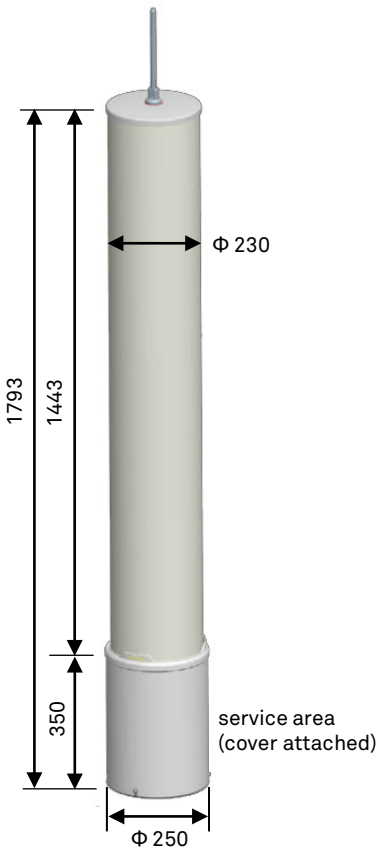
3300 - 3800 MHz

Antenna Specifications

Electrical Properties per Sector					
Frequency range (MHz)		1710 - 2690			
		1710 - 1990	1920 - 2200	2200 - 2490	2490 - 2690
Polarization		+45°, -45°			
Electrical downtilt (°)		2 - 12, continuously adjustable			
Gain (dBi)	at mid Tilt	17.3	17.8	18.3	18.5
	over all Tilts	17.1 ±0.4	17.7 ±0.5	18.2 ±0.5	18.3 ±0.4
Side lobe suppression for first side lobe above main beam (dB)		> 17	> 16	> 18	> 18
Horizontal 3dB beam width (°)		69 ±3.5	65 ±4.8	62 ±5.0	60 ±5.0
Vertical 3dB beam width (°)		6.7 ±0.4	6.1 ±0.5	5.5 ±0.3	4.9 ±0.2
VSWR		< 1.5			
Cross polar isolation (dB)		≥ 30			
Front to back ratio, ±30° (dB)		> 27	> 28	> 28	> 27
Cross polar ratio (dB)	0°	> 20	> 20	> 20	> 20
Max. power per input (W)		250 (at 50℃ ambient temperature)			
Intermodulation IM3 (dBc)		≤ -153 (2 x 43 dBm carrier)			
Impedance (Ω)		50			
Grounding		DC Ground			

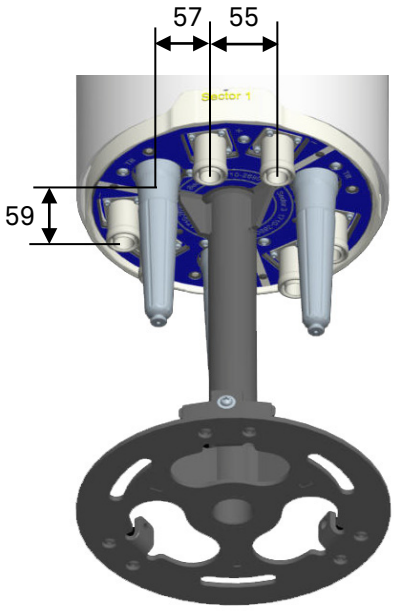
1. Values based on NGMN recommendations on Base Station Antenna Standards (BASTA).
2. Electrical datasheet in XML format is available.

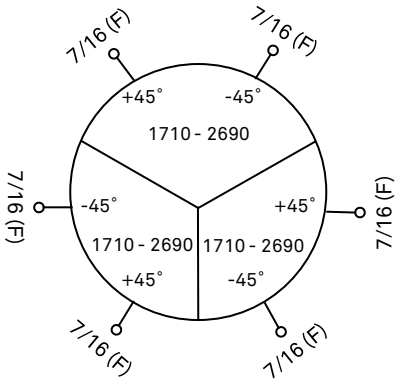
Mechanical Properties	
Antenna dimensions (H x D) (mm)	1793 x Φ 230 and Φ 250
Packing dimensions (H x W x D) (mm)	2000 x 390 x 385
Antenna net weight (kg)	22.5
Packing weight (kg)	29.8
Radome material	Fiberglass
Radome colour	Light grey
Operational temperature (℃)	-55 .. +65
Wind load (N)	310 (at 150 km/h)
Max. operational wind speed (km/h)	150
Survival wind speed (km/h)	200
Connector	3 x 2 x 7/16 DIN Female
Connector position	Bottom - inside service area
Relative directions of internal antennas (sector axis)	0°, 120°, 240°
Mechanical interface	Flange connection 3 x M10 bolt at a graduated diameter of 257 mm



Accessories (only Huawei product applies, order separately if required)

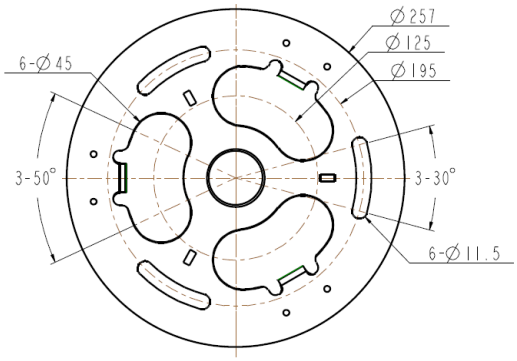
SBT	ASBT00001
RCU	ARCU01109 (AISG 1.1) ARCU02004 (AISG 2.0)



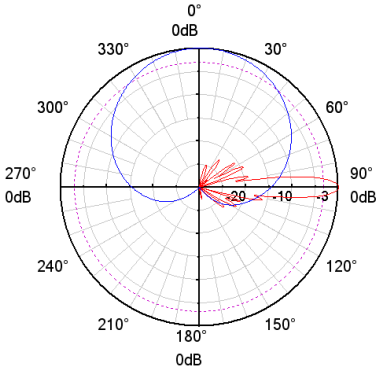


Unit: mm

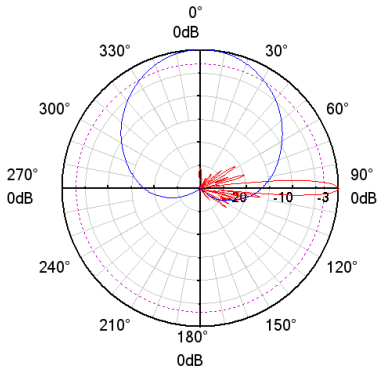
Flange interface (thickness: 5 mm)**:**



Pattern sample for reference



1710 - 2200 MHz



2200 - 2690 MHz

TDD Camouflage

Preliminary Issue

Electrical Properties		
Frequency range (MHz)	690 - 960	2 x (1695 - 2690)
Polarization	+45°, -45°	
Electrical downtilt (°)	0 - 14, continuously adjustable	2 - 12, continuously adjustable for each system independently
Gain (dBi)	14.5	17.5
Side lobe suppression for first side lobe above main beam (Typ.) (dB)	16	16
Horizontal 3dB beam width (°)	68	65
Vertical 3dB beam width (°)	13.0	6.6
VSWR	< 1.5	
Isolation between ports (dB)	Intra-system: ≥ 28 Inter-system: ≥ 30	
Front to back ratio, ±30° (dB)	Typ. 23	Typ. 24
Cross polar ratio (dB)	Typ. 17	Typ. 17
Max. power per input (W)	500 (at 50℃ ambient temperature)	250 (at 50℃ ambient temperature)
Intermodulation IM3 (dBc)	≤ -153 (2 x 43 dBm carrier)	
Impedance (Ω)	50	
Grounding	DC Ground	

Mechanical Properties	
Antenna dimensions (H x W x D) (mm)	1999 x Φ600
Antenna weight (kg)	150
Horizontal azimuth angle	-15° ~ +15°
Radome material	Fiberglass
Radome colour	Light grey
Operational temperature (℃)	-40 .. +65
Connector	3 x 6 x 7/16 Connector Female

C. Digital Antenna System

C-1. RET System

C - 1 - 1. Remote Control Unit (RCU)

Antenna and RCU configuration list	239
Antenna and AIMM configuration list	240

Input voltage range (V)	AISG type	Adjustment time (full range) (min)	Calibration time (min)	Dimension (mm)	Model	Page
DC 10 - 30	AISG 2.0	< 2	< 4	200 x 56 x 47	ARCU02001(AISG 2.0)	241
DC 10 - 30	AISG 2.0	Typ.<0.58 (typically, depending on antenna type)	< 3 (typically, depending on antenna type)	180 x 65 x 54	**ARCU02004v01 (AISG 2.0)	242

C-1-2. Antenna Imformation Management Module (AIMM)

Input voltage range (V)	AISG type	Adjustment time (full range) (min)	Dimension (mm)	Model	Page
DC 10 - 30	AISG 2.0	Typ. < 0.5	197 x 82 x 30	**AIMM20S11v01	243
DC 10 - 30	AISG 2.0	Typ. < 0.5	197 x 107 x 30	**AIMM20D11v01	244
DC 10 - 30	AISG 2.0	Typ. < 0.5	197 x 107 x 30	**AIMM20D22v01	245
DC 10 - 30	AISG 2.0	Typ. < 0.67	203 x 153 x 30	**AIMM20M11v01	246
DC 10 - 30	AISG 2.0	Typ. < 0.67	203 x 153 x 30	**AIMM20M22v01	247

C-1-3. RET Expansion Unit (REU)

Input voltage range (V)	AISG type	Protection class	Mounting type	Dimension (mm)	Model	Page
DC 10 - 30	AISG 2.0	IP65	Wall mounting // Mast mounting	174 x 150 x 48.5	AREU01301	248

C-1-4. Smart Bias Tee (SBT)

Frequency Range (MHz)	AISG type	Insertion loss (dB)	Dimension (mm)	Connector	Model	Page
690-2700	AISG 2.0	≤ 0.1 (690-960/1710-2690 MHz) ≤ 0.15 (960-1710 MHz)	75 x 160 x 45	7/16 DIN-F	ASBT00001	250
				7/16 DIN-F	ASBT00002	250
690-2700	AISG 2.0		75 x 137 x 45	4.3-10	ASBT00001v06	253
				4.3-10	ASBT00002v06	253

C-1-5. Bias Tee (BT)

Frequency Range(MHz)	AISG type	Insertion loss (dB)	Dimension (mm)	Model	Page
690-2700	AISG 2.0	≤ 0.1 (690-960/1710-2690 MHz) ≤ 0.15 (960-1710 MHz)	48.5 x 151 x 45	ABT000001	256

C-1-6. AISG Connecting Cables

Input voltage range (V)	AISG type	Adjustment time (full range) (min)	Dimension (mm)	Model	Page
AISG Connecting Cables For Remote Electrical Tilt(RET) System					259
AISG Connecting Cables For Huawei RRU RET_Port					260

C-1-7. Portable AISG Adapter (PAA)

Output power	ALD Port	Wireless Port	Dimension (mm)	Model	Page
DC 12V 2A	1x8 core female connector	Bluetooth 2.0 + EDR	204 x 88 x 30	APAA00001	261

C-2. Intelligent Management

C - 2 - 1. Antenna Information Sensor Unit (AISU)

Input voltage range (V)	AISG type	Protection class	Dimension (mm)	Model	Page
DC 10 - 30	AISG 2.0	IP65	26.5 x 315 x 95	**AISU00001v01	263

*** Preliminary Issue*

Antenna Model	AISG 2.0
A79451500v06	ARCU02004
A79451600v06	
A79451700v06	
A79451702v06	
ADU451503v06	
ADU451602v06	
ADU451807v06	
ATR451602v06	
ATR451715v06	
ATR451704v06	
ATR451709v06	
ATR451606v06	
ATR451607v06	
A264518S0	

***RCU is used for MET1.0 antennas upgrade to RET antennas.*

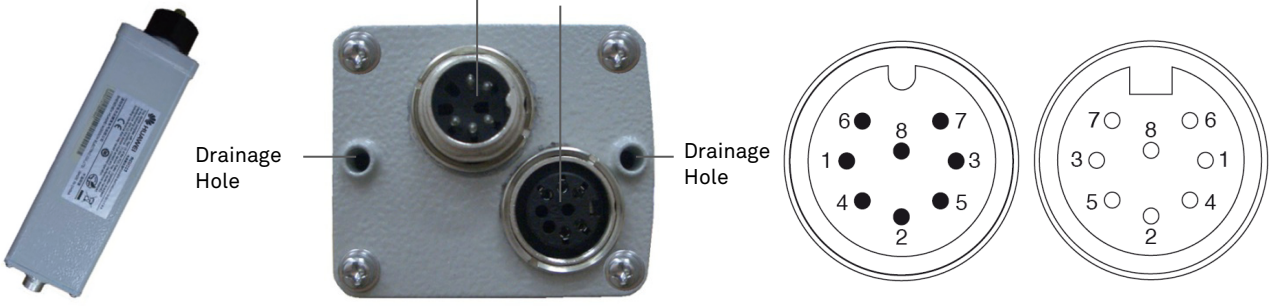
Antenna and AIMM configuration list

Antenna Model		AIMM (Antenna information management module)
MET2.0	EasyRET2.0 (Corresponding to MET2.0)	
A79451503v06	A794515R1v06	AIMM20S11v01
A70452100v06	A704521R0v06	
A19451811v06	A194518R0v06	
A26451800v06	A264518R0v06	
ADU451819v06	ADU4518R1v06	AIMM20D11v01
ADU451816v06	ADU4518R6v06	
ADU451716v06	ADU4518R10v06	
ADU451604v06	ADU4518R11v06	
ADU451712v06	ADU4518R12v06	
AMB452003v06	AMB4520R5v06	
AMB452000v06	AMB4520R0v06	
ATR451807v06	ATR4518R15v06	AIMM20M11v01
ATR451714v06	ATR4518R14v06	

***AIMM is used for MET2.0 antennas upgrade to RET antennas.*

RCU (Remote Control Unit) drives the phase shifter in antenna through mechanical interface to change the electrical downtilt. RCU is suitable for daisy chain solution. RCU is used for MET1.0 antennas upgrading to RET antennas.

Input voltage range (V)	DC 10 - 30							
Current (mA)	< 600 (motor activated) < 50 (stand by)							
Adjustment time (full range) (min)	< 2							
Calibration time (min)	< 4							
Connectors	2 x 8 pin connector according to IEC 60130-9 Daisy chain in: Male // Daisy chain out: Female							
Pin assignment according AISG	1	2	3	4	5	6	7	8
	DC	n/c	RS-485B	n/c	RS-485A	DC	DC return	n/c
Housing material	Profile: Aluminium coated // Cover: Aluminium die cast coated							
Color	Grey							
Weight (g)	600							
Operating temperature range (℃)	-40 ... +65							
Protection class	IP24							
Dimensions (L x W x H) (mm)	200 x 56 x 47							
Packing size (L x W x H) (mm)	268 x 105 x 95							



Appearance | Bottom view of RCU | Male | Female

Please note: Before the installation, check whether the RCU and base station support the same AISG protocol. If not, contact the technical support personnel of Huawei.

Preliminary Issue

Feature Description

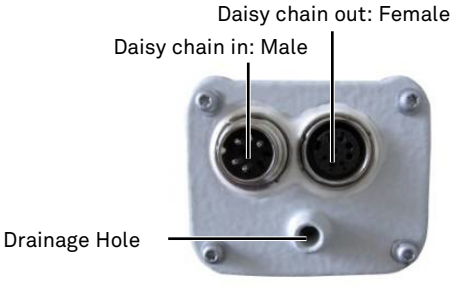
- RCU (Remote Control Unit) drives the phase shifter in antenna through mechanical interface to change the electrical downtilt.
- RCU is suitable for daisy chain solution.
- RCU is used for MET1.0 antennas upgrading to RET antennas.

Input voltage range (V)	DC 10 - 30
Power consumption (W)	< 0.5 (when the motor does not work, 12 V) < 3 (when the motor is working, 12 V) < 10 (when the motor is starting up or shutting down, 12 V)
Adjustment time (full range) (s)	Typ. 35 (depending on antenna type)
Connectors	One pair of 8-pin AISG connectors compliant with the IEC 60130-9 standard [DC (pin 6&pin 1), DC return (pin 7), RS485 A/B (pin 5/pin 3)]
Housing material	Profile: Aluminium coated // Cover: Aluminium die cast coated
Color	RAL 7035
Weight (g)	440
Operating temperature range (℃)	-40 ... +65
Protection class	IP24
Lightning protection (kA)	10 (8/20 μs)
Dimensions (L x W x H) (mm)	180 x 65 x 54
Packing size (L x W x H) (mm)	268 x 105 x 95

Standards:	EN/IEC 60950-1(Safety)
	EN/IEC 60950-22(Safety – Equipment installed outdoor)
	EN 55022(Emission)
	EN 55024(Immunity)
	ETSI EN 301 489
	FCC Part 15
	ICES-003
Certification:	CE, FCC, IC, RCM, RoHS, REACH, WEEE

Please note: Before the installation, check whether the RCU and base station support the same AISG protocol. If not, contact the technical support personnel of Huawei.

Appearance



Bottom view of RCU

2-Port Antenna Information Management Module with One Pair of AISG Connectors (1 Input and 1 Output)
Model: AIMM20S11v01

Preliminary Issue

Feature Description

- The AIMM can adjust the electrical downtilts of RET antennas for antenna information management.
- The AIMM is used for MET2.0 2-port antennas upgrading to RET antennas.
- Configuration data loading and calibration are not required for antennas.

RET Type*	SingleRET
Protocol**	AISG 2.0 / 3GPP
Input voltage range (V)	10 - 30 DC
Power consumption (W)	< 0.5 (when the motor does not work, 12 V) < 3 (when the motor is working, 12 V) < 10 (when the motor is starting up or shutting down, 12 V)
Adjustment time (full range) (s)	Typ. 30
Connector	One pair of 8-pin AISG connectors compliant with the IEC 60130-9 standard [DC (pin 6&pin 1), DC return (pin 7), RS485 A/B (pin 5/pin 3)]
Operating temperature (°C)	-40 to +65
Lightning protection (kA)	10 (8/20 μs)
Weight (g)	350
Packing Weight (g)	420
Dimensions (L x W x H) (mm)	197 x 82 x 30
Packing size (L x W x H) (mm)	250 x 118 x 40

*The information may vary with software versions.
**Before installing the AIMM, check whether the AISG protocol of the AIMM is supported by the base station. If not, contact Huawei technical support.

Standards: EN/IEC 60950-1(Safety)
EN/IEC 60950-22(Safety – Equipment installed outdoor)
EN 55022(Emission)
EN 55024(Immunity)
ETSI EN 301 489
FCC Part 15
ICES-003

Certification: CE, FCC, IC, RCM, RoHS, REACH, WEEE

4-Port Antenna Information Management Module with One Pair of AISG Connectors (2 Input and 2 Output)
Model: AIMM20D11v01

Preliminary Issue

Feature Description

- The AIMM can adjust the electrical downtilts of RET antennas for antenna information management.
- The AIMM is used for MET2.0 4-port antennas upgrading to RET antennas.
- Configuration data loading and calibration are not required for antennas.

RET Type*	SingleRET
Protocol**	AISG 2.0 / 3GPP
Input voltage range (V)	10 - 30 DC
Power consumption (W)	< 0.5 (when the motor does not work, 12 V) < 3 (when the motor is working, 12 V) < 10 (when the motor is starting up or shutting down, 12 V)
Adjustment time (full range) (s)	Typ. 30
Connectors	One pair of 8-pin AISG connectors compliant with the IEC 60130-9 standard [DC (pin 6&pin 1), DC return (pin 7), RS485 A/B (pin 5/pin 3)]
Operating temperature range (℃)	-40 to +65
Lightning protection (kA)	10 (8/20 μs)
Weight (g)	500
Packing weight (g)	580
Dimensions (L x W x H) (mm)	197 x 107 x 30 (without the handle)
Packing size (L x W x H) (mm)	250 x 118 x 40

*The information may vary with software versions.
**Before installing the AIMM, check whether the AISG protocol of the AIMM is supported by the base station. If not, contact Huawei technical support.

Standards:	EN/IEC 60950-1(Safety)
	EN/IEC 60950-22(Safety – Equipment installed outdoor)
	EN 55022(Emission)
	EN 55024(Immunity)
	ETSI EN 301 489
	FCC Part 15
	ICES-003
Certification:	CE, FCC, IC, RCM, RoHS, REACH, WEEE

4-Port Antenna Information Management Module with Two Pairs of AISG Connectors (2 Input and 2 Output)
Model: AIMM20D22v01

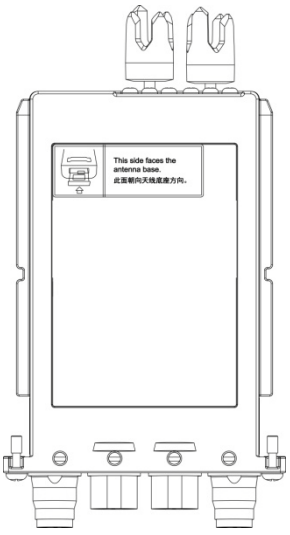
Preliminary Issue

Feature Description

- The AIMM can adjust the electrical downtilts of RET antennas for antenna information management.
- 4-port antennas are supported.
- Configuration data loading and calibration are not required for antennas.

RET Type*	SingleRET
Protocol**	AISG 2.0 / 3GPP
Input voltage range (V)	10 - 30 DC
Power consumption (W)	< 0.5 (when the motor does not work, 12 V) < 3 (when the motor is working, 12 V) < 10 (when the motor is starting up or shutting down, 12 V)
Adjustment time (full range) (s)	Typ. 30
Connectors	Two pairs of 8-pin AISG connectors compliant with the IEC 60130-9 standard [DC (pin 6&pin 1), DC return (pin 7), RS485 A/B (pin 5/pin 3)]
Operating temperature range (℃)	-40 to +65
Lightning protection (kA)	10 (8/20 μs)
Weight (g)	510
Packing weight (g)	590
Dimensions (L x W x H) (mm)	197 x 107 x 30
Packing size (L x W x H) (mm)	250 x 118 x 40

*The information may vary with software versions.
**Before installing the AIMM, check whether the AISG protocol of the AIMM is supported by the base station. If not, contact Huawei technical support.



Standards:	EN/IEC 60950-1(Safety)
	EN/IEC 60950-22(Safety – Equipment installed outdoor)
	EN 55022(Emission)
	EN 55024(Immunity)
	ETSI EN 301 489
	FCC Part 15
	ICES-003
Certification:	CE, FCC, IC, RCM, RoHS, REACH, WEEE

6-Port Antenna Information Management Module with One Pair of AISG Connectors (1 Input and 1 Output)
Model: AIMM20M11v01

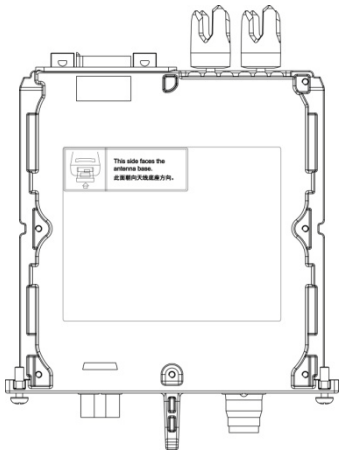
Preliminary Issue

Feature Description

- The AIMM can adjust the electrical downtilts of RET antennas for antenna information management.
- The AIMM is used for MET2.0 6-port antennas upgrading to RET antennas.
- Configuration data loading and calibration are not required for antennas.
- Configuration data loading is not required during maintenance or replacement of RET antennas, and configuration calibration is not required on the base station side.

RET Type*	SingleRET
RET protocol**	AISG 2.0/3GPP
Input voltage (V)	10 V DC to 30 DC
Power consumption (W)	< 0.5 (when the motor does not work, 12 V) < 4.5 (when the motor is working, 12 V) < 10 (when the motor is starting up or shutting down, 12 V)
Adjustment time (full range) (s)	Typ. 40
Connector	One pair of 8-pin AISG connectors compliant with the IEC 60130-9 standard [DC (pin 6&pin 1), DC return (pin 7), RS485 A/B (pin 5/pin 3)]
Operating temperature (°C)	-40 to +65
Lightning protection (kA)	10 (8/20 μs)
Net weight (g)	610
Packing weight (g)	710
Dimensions (L x W x H) (mm)	203 x 153 x 30 (excluding the handles)
Packing dimensions (L x W x H) (mm)	245 x 163 x 37

* The information may vary with software versions.
**Two OOK connectors are reserved inside the AIMM. Their applications depend on the antennas used with the AIMM.
***Before installing the AIMM, check whether the AISG protocol of the AIMM is supported by the base station. If not, contact Huawei technical support.



Standards: EN/IEC 60950-1(Safety)
EN/IEC 60950-22(Safety – Equipment installed outdoor)
EN 55022(Emission)
EN 55024(Immunity)
ETSI EN 301 489
FCC Part 15
ICES-003

Certification: CE, FCC, IC, RCM, RoHS, REACH, WEEE

6 and More Ports Information Management Module with Two Pairs of AISG Connectors (2 Input and 2 Output)
Model: AIMM20M22v01

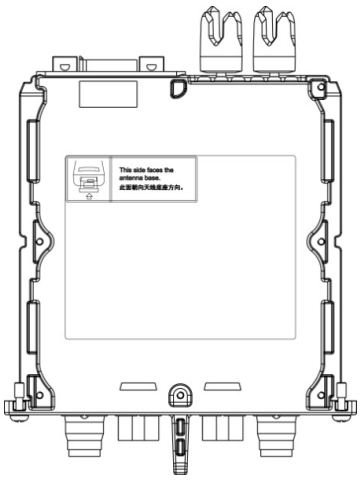
Preliminary Issue

Feature Description

- The AIMM can adjust the electrical downtilts of RET antennas for antenna information management.
- Antennas capable of 6 or more ports are supported.
- Configuration data loading and calibration are not required for antennas.
- Configuration data loading is not required during maintenance or replacement of RET antennas, and configuration calibration is not required on the base station side.

RET Type*	SingleRET
Protocol**	AISG 2.0/3GPP
Input voltage range (V)	10 V DC to 30 DC
Power consumption (W)	< 0.5 (when the motor does not work, 12 V) < 4.5 (when the motor is working, 12 V) < 10 (when the motor is starting up or shutting down, 12 V)
Adjustment time (full range) (s)	Typ. 40
Connectors	Two pairs of 8-pin AISG connectors compliant with the IEC 60130-9 standard [DC (pin 6&pin 1), DC return (pin 7), RS485 A/B (pin 5/pin 3)]
Operating temperature range (℃)	-40 ... +65
Lightning protection (kA)	10 (8/20 μs)
Weight (g)	670
Packing weight (g)	770
Dimensions (L x W x H) (mm)	203 x 153 x 30 (excluding the handles)
Packing size (L x W x H) (mm)	245 x 163 x 37

*The information may vary with software versions.
**Before installing the AIMM, check whether the AISG protocol of the AIMM is supported by the base station. If not, contact Huawei technical support.

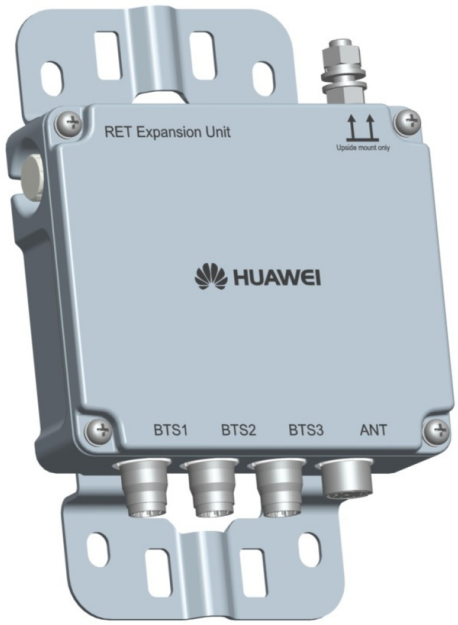


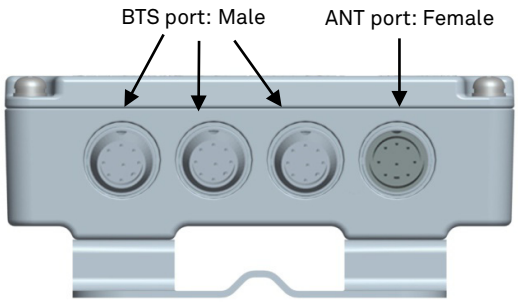
Standards:	EN/IEC 60950-1(Safety)
	EN/IEC 60950-22(Safety – Equipment installed outdoor)
	EN 55022(Emission)
	EN 55024(Immunity)
	ETSI EN 301 489
	FCC Part 15
	ICES-003
Certification:	CE, FCC, IC, RCM, RoHS, REACH, WEEE

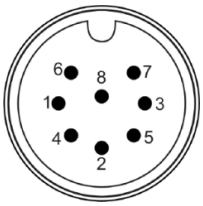
The RET Expansion Unit (REU) is a multi-port AISG signal management device that enables multiple main devices to manage an AISG link.

Protocol	AISG 2.0 / 3GPP							
Input voltage range (V)	DC 10 - 30							
Output voltage range (V)	DC 10 - 30							
Output current range (A)	< 2.5							
Power consumption (W)	< 1 (single channel 12V in)							
Connectors	4 x 8 pin connector according to IEC 60130-9 IN: 3 x Male / OUT: 1 x Female							
Pin assignment according AISG	1	2	3	4	5	6	7	8
	DC	n/c	RS-485B	n/c	RS-485A	DC	DC return	n/c
REU Weight (kg)	< 1.1							
Packing weight (kg)	< 1.5							
Operating temperature range (℃)	-40 ... +65							
Lightning protection (kA)	2.5 (10/350 μs) 10 (8/20 μs)							
Protection class	IP65							
Mounting	Wall mounting // Mast mounting							
Mast diameter (mm)	Default: 30 - 125							
REU dimensions (L x W x H) (mm)	174 x 150 x 48.5 (with connectors, without brackets)							
Packing dimensions (L x W x H) (mm)	338 x 248 x 90							

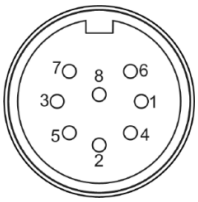
Please note: The REU can work with a main device supporting AISG1.1 or AISG2.0. However, if the REU software needs to be upgraded, the main device must support AISG2.0.



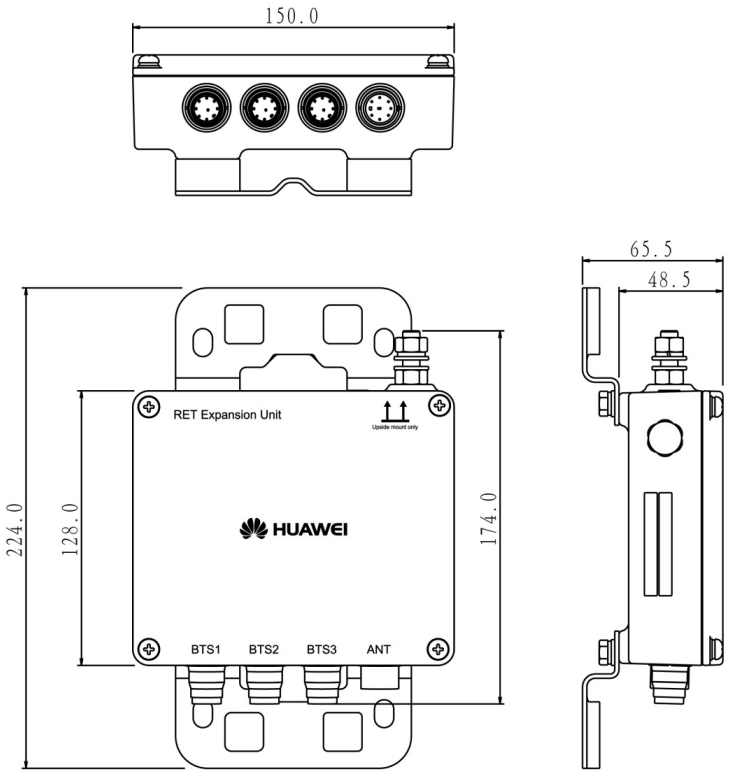




Male

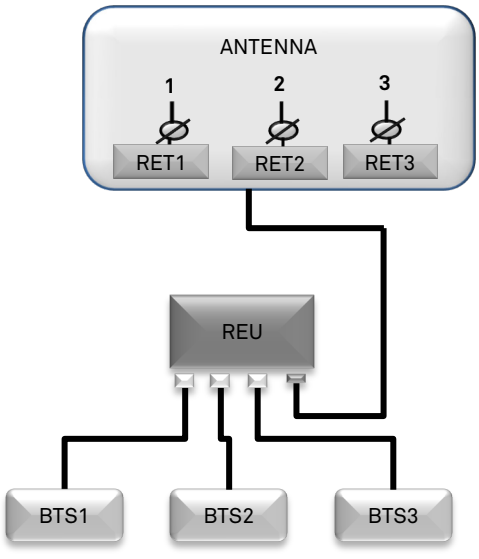


Female



Unit: mm

REU, BTS and Antenna Typical Connecting Diagram



NOTE

When installing the REU ground cable, a copper-core cable with a cross-sectional area of 6 mm² is recommended. There are REU and hoop iron in the package, but not any ground cable, AISG cable or screws, and these need to be purchased additionally depending on the detail scenarios.

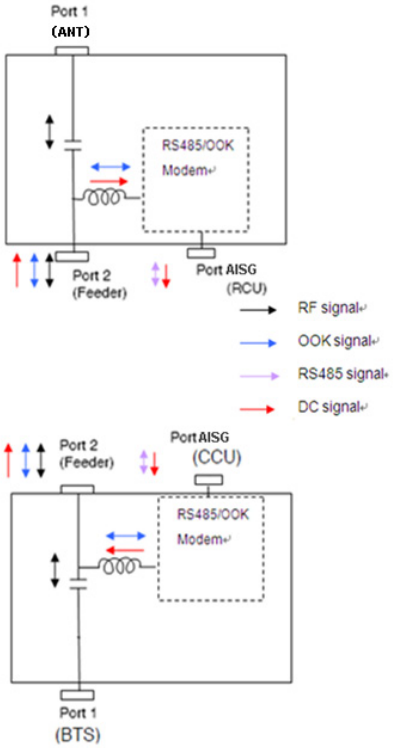
Features

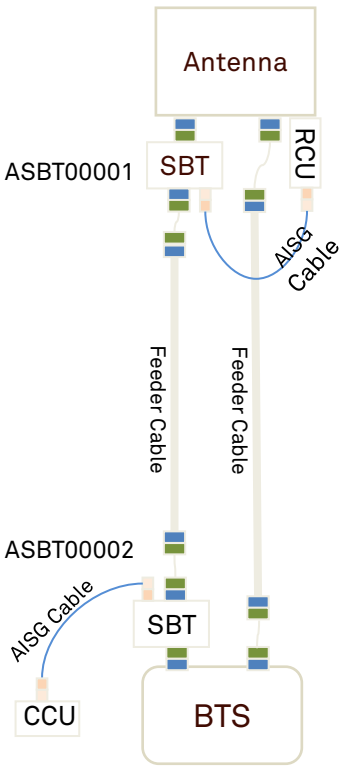
- Convert signals between OOK and RS485.
- Low passive intermodulation products, low insertion loss and high power capacity.
- Ultra wide band design for various communication system.
- Small volume, light weight.
- Support AISG 2.0 protocol.

BT = Bias Tee
BTS = Base Transceiver Station
OOK = On Off Keying

ASBT00001 ASBT00002

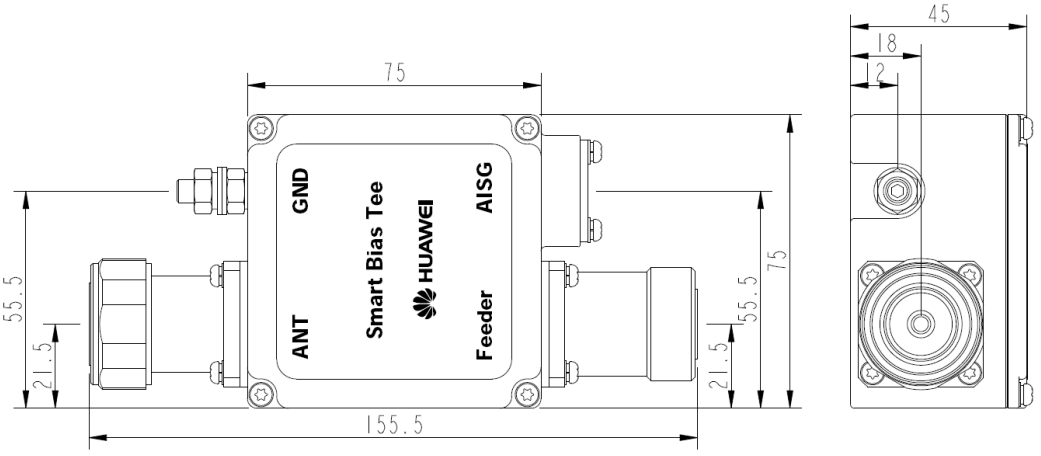
Block Diagram



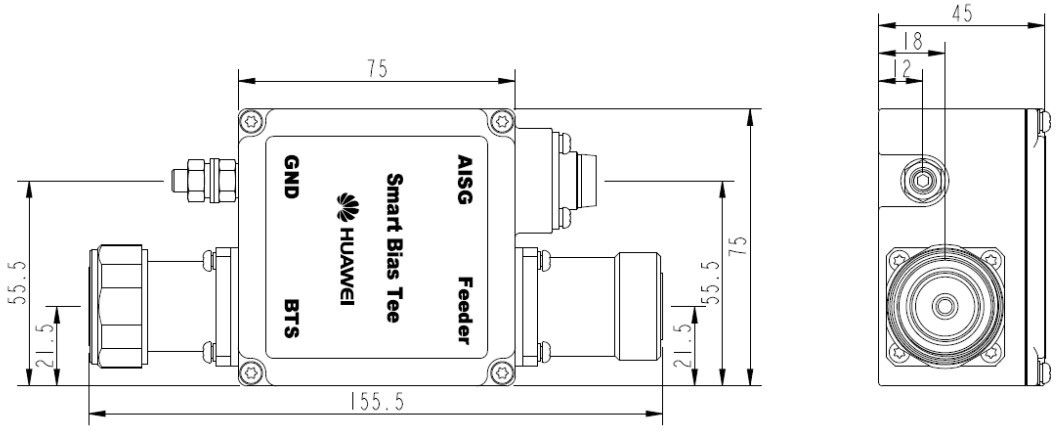


Model	ASBT00001	ASBT00002
Port 1 (Connector type)	Antenna (7-16 DIN Male)	BTS (7-16 DIN Male)
Port 2 (Connector type)	Feeder (7-16 DIN Female)	Feeder (7-16 DIN Female)
Port AISG (Connector type)	AISG (8-pin Connecter Female)	AISG (8-pin Connecter Male)

Electrical Properties		
Frequency range (MHz)		690 - 2700
Insertion loss (dB)	Port 1 ←→ Port 2	≤ 0.1 (690 - 960 MHz //1710 - 2690 MHz) ≤ 0.15 (960 - 1710 MHz)
Isolation for DC signal (dB)	Port 1 ←→ Port 2	≥ 70
	Port 1 ←→ Port AISG	
VSWR	Port 1 and Port 2	≤ 1.15 (690 - 960 MHz // 1710 - 2690 MHz) ≤ 1.2 (960 - 1710 MHz)
Input power (W)	Port 1 and Port 2 Port AISG	Avg. ≥ 500 (690 - 960 MHz) // Avg. ≥ 250 (1710 - 2690 MHz) < 2.5 A (+8 ... +30 V DC)
DC supply voltage (V)		+8 ... +30
RF impedance (Ω)		50
Intermodulation products (dBc)		< -160 (3rd order, 2 x 43 dBm)
Power consumption (W)		Typ. 0.6
Modem carrier frequency (MHz)		2.176
Environmental Specification		
Operating temperature (℃)		-40 ... +70
Application scene		Indoor // outdoor
IP rating		IP67
Lightning protection (kA)		3 (10/350 us)
Mechanical Specification		
SBT Dimensions (W x H x D) (mm)		75 x 160 x 45 (with connectors)
Packing dimensions (W x H x D) (mm)		78 x 185 x 58
SBT net Weight (kg)		< 0.75
Packing weight (kg)		< 0.80



ASBT00001



ASBT00002

Unit: mm

Features

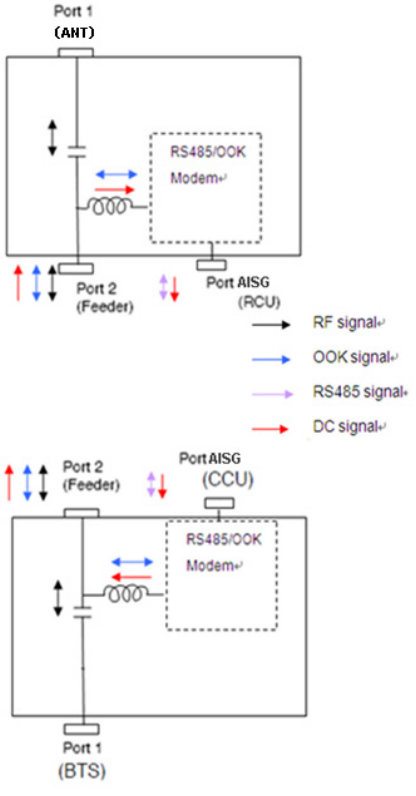
- Convert signals between OOK and RS485.
- Low passive intermodulation products, low insertion loss and high power capacity.
- Ultra wide band design for various communication system.
- Small volume, light weight.
- Support AISG 2.0 protocol.

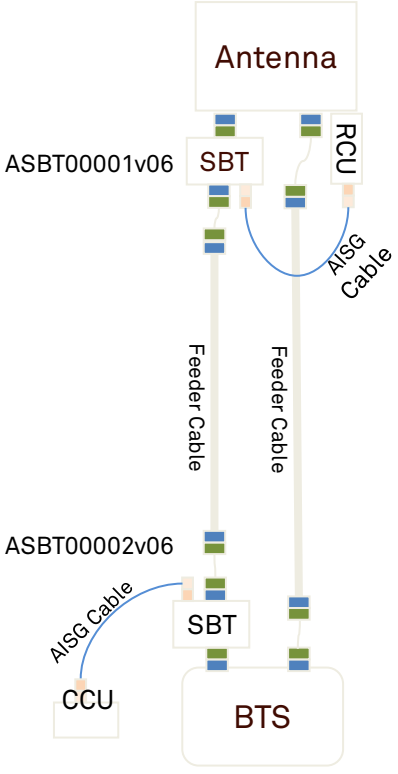
SBT = **S**mart **B**ias **T**ee
RCU = **R**emote **C**ontrol **U**nit for remote electrical control of antenna tilt
BTS = **B**ase **T**ransceiver **S**tation
AISG= **A**ntenna **I**nterface **S**tandards **G**roup

ASBT00001v06

ASBT00002v06

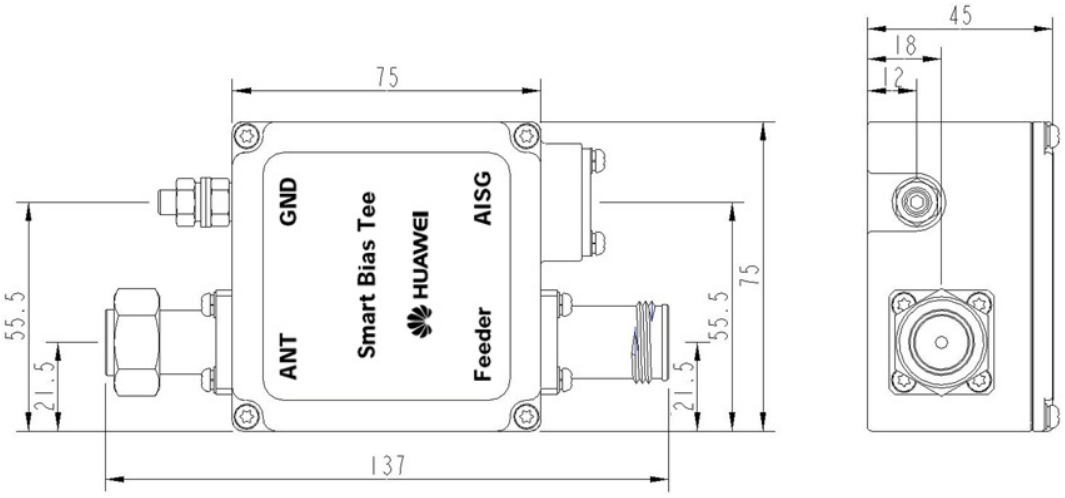
Block Diagram



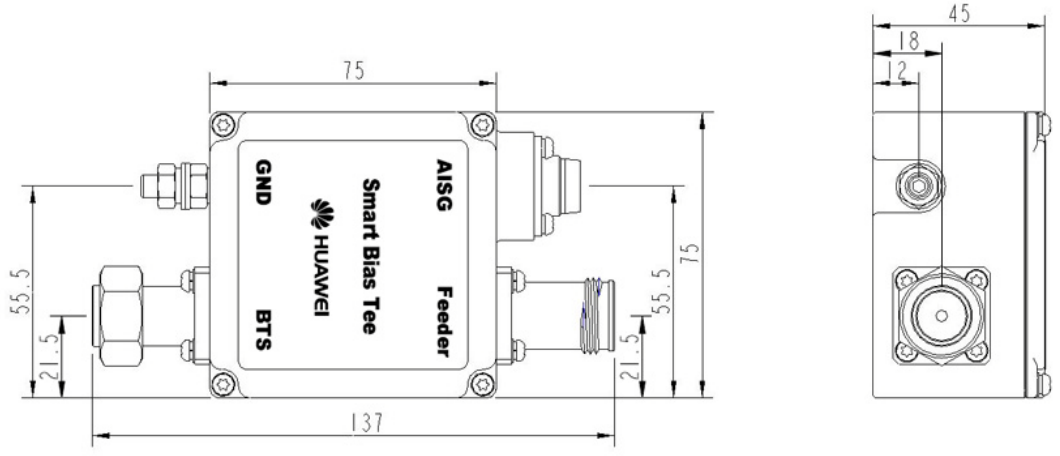


Model	ASBT00001v06	ASBT00002v06
Port 1 (Connector type)	Antenna (4.3-10 Male)	BTS (4.3-10 Male)
Port 2 (Connector type)	Feeder (4.3-10 Female)	Feeder (4.3-10 Female)
Port AISG (Connector type)	AISG (8-pin Connecter Female)	AISG (8-pin Connecter Male)

Electrical Properties		
Frequency range (MHz)		690 - 2700
Insertion loss (dB)	Port 1 ←→ Port 2	≤ 0.1 (690 - 960 MHz //1710 - 2690 MHz) ≤ 0.15 (960 - 1710 MHz)
Isolation for DC signal (dB)	Port 1 ←→ Port 2	≥ 70
	Port 1 ←→ Port AISG	
VSWR	Port 1 and Port 2	≤ 1.15 (690 - 960 MHz // 1710 - 2690 MHz) ≤ 1.2 (960 - 1710 MHz)
Input power (W)	Port 1 and Port 2 Port AISG	Avg. ≥ 500 (690 - 960 MHz) // Avg. ≥ 250 (1710 - 2690 MHz) < 2.5 A (+8 ... +30 V DC)
DC supply voltage (V)		+8 ... +30
RF impedance (Ω)		50
Intermodulation products (dBc)		< -160 (3rd order, 2 x 43 dBm)
Power consumption (W)		Typ. 0.6
Modem carrier frequency (MHz)		2.176
Environmental Specification		
Operating temperature (℃)		-40 ... +70
Application scene		Indoor // outdoor
IP rating		IP67
Lightning protection (kA)		3 (10/350 us)
Mechanical Specification		
SBT Dimensions (W x H x D) (mm)		75 x 137 x 45 (with connectors)
Packing dimensions (W x H x D) (mm)		78 x 185 x 58
SBT net Weight (kg)		< 0.75
Packing weight (kg)		< 0.80



ASBT00001v06



ASBT00002v06

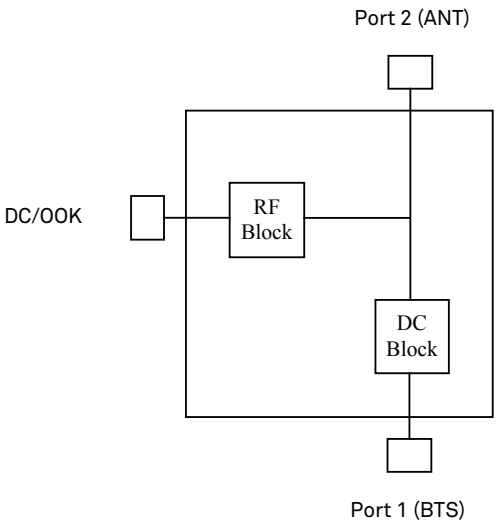
Unit: mm

Features

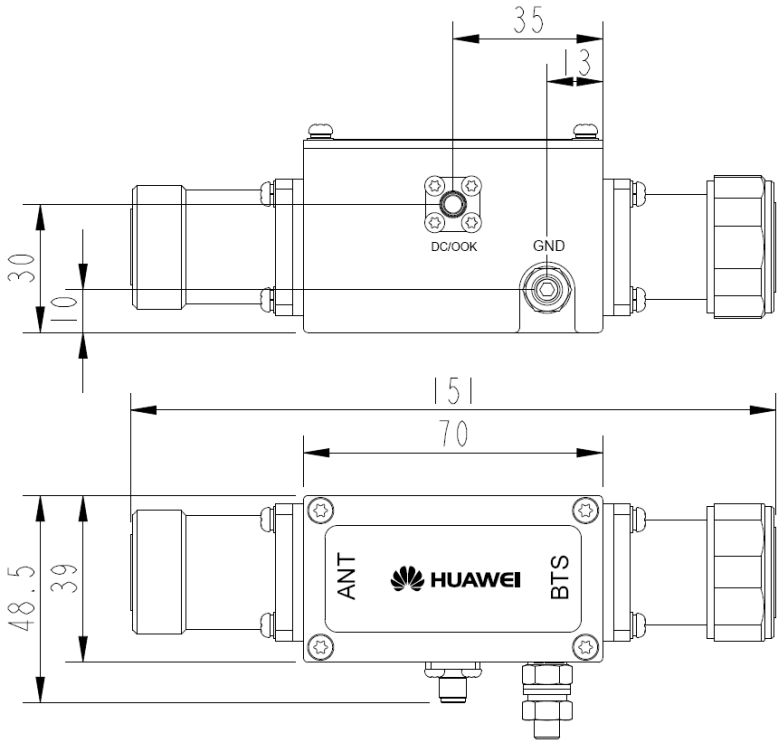
- Used to feed DC voltage and OOK control signals into the feeder cable.
- Low passive intermodulation products, low insertion loss and high power capacity.
- Ultra wide band design for various communication system.
- Small volume, light weight.
- Support AISG 2.0 protocol.

BT = **B**ias **T**ee
BTS = **B**ase **T**ransceiver **S**tation
OOK = **O**n **O**ff **K**eying

Block Diagram



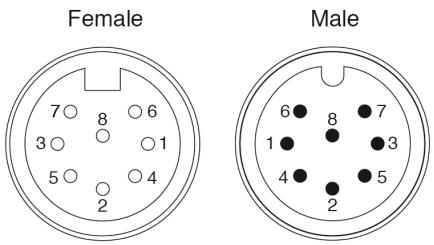
Electrical Properties		
Frequency range (MHz)		690 - 2700
Insertion loss (dB)	Port 1 ←→ Port 2	≤ 0.1 (690 - 960 MHz // 1710 - 2690 MHz) ≤ 0.15 (960 - 1710 MHz)
Isolation for DC signal (dB)	Port 1 ←→ Port 2	≥ 70
	Port 1 ←→ Port DC/OOK	
VSWR	Port 1 and Port 2	≤ 1.15 (690 - 960 MHz // 1710 - 2690 MHz) ≤ 1.2 (960 - 1710 MHz)
Input power (W)	Port 1 and Port 2	Avg. ≥ 500 (690 - 960 MHz) Avg. ≥ 250 (1710 - 2690 MHz)
Input current (mA)	Port DC/OOK ←→ Port 2	≤ 2300
DC voltage reduction (V)	Port DC/OOK ←→ Port 2	≤ 1 (when the current is 2300 mA)
DC supply voltage (V)		0 ... +30
RF Impedance (Ω)		50
Intermodulation products (dBc)		< -160 (2 x 43 dBm carrier)
Environmental Specification		
Operating temperature (℃)		-40 ... +70
Application scene		Indoor or outdoor
IP rating		IP66
Lightning protection (kA)		3 (10/350 us)
Mechanical Specification		
BT Dimensions (W x H x D) (mm)		48.5 x 151 x 45 (with connectors)
Packing dimensions (W x H x D) (mm)		78 x 185 x 58
BT net Weight (kg)		< 0.56
Packing weight (kg)		< 0.60
Connectors	Port 1 (BTS)	7/16 DIN Male
	Port 2 (Antenna)	7/16 DIN Female
	Port DC/OOK	SMA Female



Unit: mm

Technical Specification	
Connectors	2 x 8 pin connector according to IEC 60130-9 Female / Male
Cable	2 x 0.25 mm^2 + 4 x 0.75 mm^2 cable according to UL2464
Rate current	4 A
Protection Class	IP67 (Coupled)
Temperature Range	-40 ~ 80 ℃
Color	Black
Single Bend radius	60 mm Min.
Multiple Bend radius	120 mm Min.
Application scene	Indoor // Outdoor

Pin Number	Signal
1	+12 V DC Nominal
2	N/C
3	RS485 B
4	N/C
5	RS485 A
6	10 V - 30 V DC
7	DC Return
8	N/C



Unit: mm

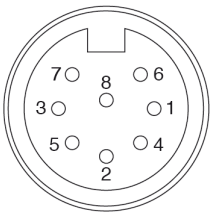
Cable series

Length	BOM Code
0.5 m	04045920
2 m	04045921
5 m	04050228
10 m	04050184
15 m	04045922
30 m	04050230
50 m	04050231
60 m	04050182
70 m	04050232

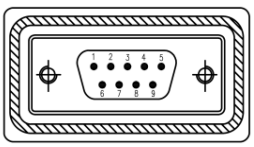
Technical Specification	
Connector 1 (to be connected to RET module)	8 pin connector according to IEC 60130-9 Female
Connector 2 (to be connected to Huawei RRU “RET_port”)	9 pin DB9 connector, water-proofed Male
Cable	4 Pair x 24 AWG
Rate current	4 A
Protection Class	IP67 (when coupled on RRU and RET)
Temperature Range	-40 ~ 80 ℃
Color	Black
Single Bend radius	60 mm Min.
Multiple Bend radius	120 mm Min.
Application scene	Indoor or Outdoor

Pin Number	Signal	
	Female	Male
1	+12 V DC nominal	+12 V DC nominal
2	N/C	N/C
3	RS485 B	RS485 B
4	RS485 GND	RS485 GND
5	RS485 A	RS485 A
6	+12 V DC nominal	N/C
7	DC Return	N/C
8	N/C	N/C
9	/	DC Return

Female



Male



Cable series

Length	BOM Code
3 m	04070193
5 m	04070097

PAA

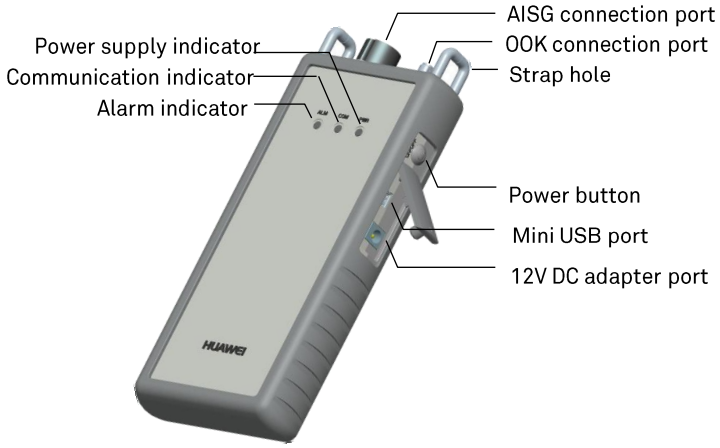
Model: APAA00001

The portable AISG adapter (PAA) is used for AISG devices to perform management and control onsite. The PAA works with Bluetooth enabled smart terminals, could support mutil-AISG-standard with smart terminals software, with software upgrade new standard can support. The PAA is light-weighted and easy to carry and operate, which are suitable for site installation and maintenance. It can also be used for systematic management during site deployment, and provide functions such as fault location and data recording.

Specifications		
Output voltage		15 V DC 1 A (with a built-in rechargeable battery) 12 V DC 1 A (with an external AC/DC power adapter)
Overcurrent protection threshold		1 A
Rechargeable battery		Lithium-ion battery (3.7 V, 10000 mAh)
Input voltage		12 V AC/DC power adapter
Power adapter		Input: 100 V AC to 240 V AC, 0.55 A, 50 Hz to 60 Hz Output: 12 V DC, 2 A
Operating temperature (˚C)		-20 to +55
Charge temperature (˚C)		0 to +40
PAA dimensions (H x W x D) (mm)		30 x 204 x 88
Net weight (kg)		0.52 (with a built-in rechargeable battery, and without a power adapter)
Maximum number of RCUs (PCS)		6
Maximum length of the connection cable (m)		100
Interface		Bluetooth 2.0 + EDR
Bluetooth	Frequency range	2400 MHz to 2483.5 MHz (ISM-Band)
	Receiving signal range	-82 dBm to -20 dBm (Typical)
	Transmission power	Class 2 device with 6 power control levels

Certificate: CE, FCC, IC, VCCI, RCM, TELEC, REACH, RoSH, WEEE
Standards: EN60950-1, EN55022, EN55024, VCCI V-3

PAA Appearance



Description	Function
AISG connection port	1 x 8 core female connector, complying with the IEC 60130-9 standards Connects the PAA to an ALD using an AISG cable.
OOK connection port	Connects the PAA to an ALD using an RF cable.
Power indicator (PWR)	Indicates the power supply status.
Communication indicator (COM)	Indicates the status of communication between the PAA and smartphone.
Alarm indicator (ALM)	Indicates the PAA alarms status.
Power button	Used to power on or off the PAA. The PAA can be powered on or off by holding down this button.
Mini USB port	Reserved for further development and is not used temporarily.
12 V DC adapter port	Connects to the AC/DC adapter. When an AC/DC adapter is connected, the PAA automatically uses the input power supply as the operating power supply to charge the integrated battery.

1. App Installation Guidelines

Scan the QR code on the back of the PAA using the QR code scanning function of your smartphone, and then download the PAA app after the scanning is successful. (Some browsers may have use restrictions and the app cannot be downloaded. In this case, try a different browser.)
This app requires Android 4.0 or later. A smartphone with a 1.2 GHz dual-core CPU and 1 GB memory is recommended.

2. PAA and ALD typical connecting diagram

Antenna Information Sensor Unit

Model: AISU00001v01

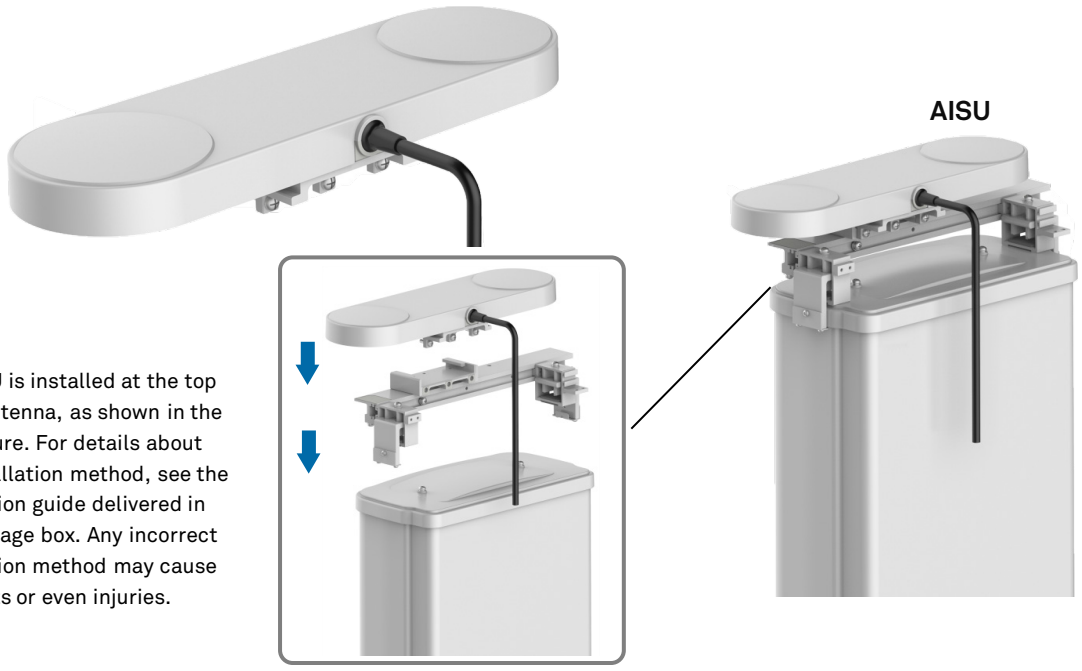
Preliminary Issue

The antenna information sensor unit (AISU) is one kind of device that measures engineering parameters of antennas, including azimuths, mechanical tilts, longitude, latitude, and altitude. It is installed at the top of the antenna to perform GPS-based direction measurement.

The AISU belongs to the SAA solution. The SAA solution enables users to remotely manage engineering parameters of antennas in batches in real time using the NMS.

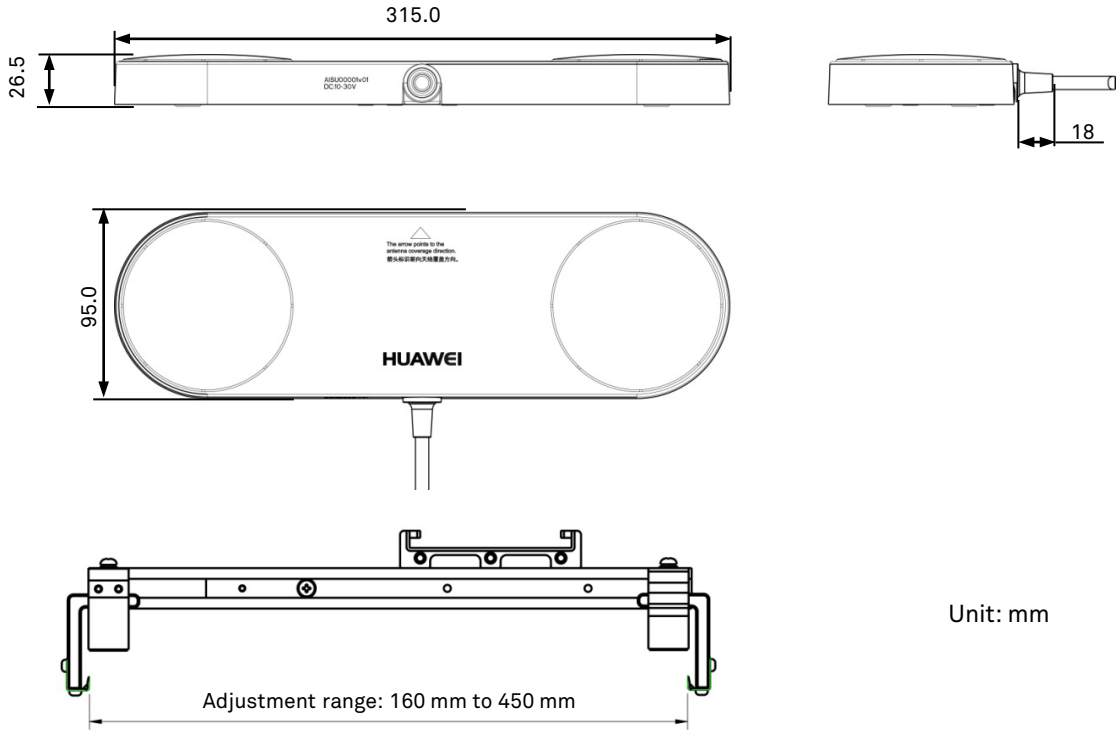
Azimuth Precision (°)*	± 2							
Mechanical Tilt Precision (°)	± 0.5							
Horizontal Positioning Precision (m)*	< 6							
Vertical Positioning Precision (m)*	< 3							
Protocol Compliance	AISG-ES-RAE V2.1.0							
Input Voltage Range (V)	10 to 30 (DC)							
Power Consumption (W)	< 2.5 (@ 12 V)							
Connector	8-pin male connectors compliant with the IEC 60130-9 standard							
Connector Pin	1	2	3	4	5	6	7	8
	DC	n/c	RS-485B	n/c	RS-485A	DC	DC return	n/c
Device Weight (kg)	0.68							
Packing Weight (kg)	1.75							
Operating Temperature (°C)	-40 to +65							
Surge Protection Specifications (kA)	5 (8/20 μs)							
Ingress Protection Rating	IP65							
Device Dimensions (H x W x D) (mm)	26.5 x 315 x 95 (including connectors and not including mounting brackets)							
Packing Dimensions (H x W x D) (mm)	100 x 470 x 187.5							

* indicates that the item is affected by the multipath environment, number of visible satellites, satellite geometric distribution, ionospheric activeness, and SBAS using and observation time.



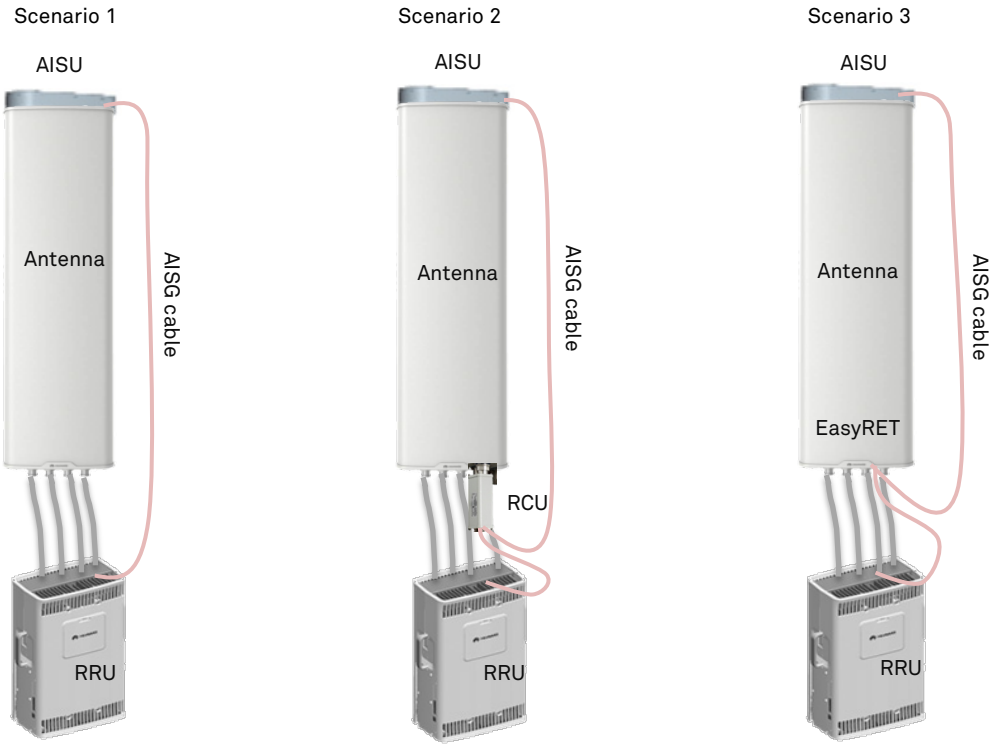
The AISU is installed at the top of the antenna, as shown in the right figure. For details about the installation method, see the installation guide delivered in the package box. Any incorrect installation method may cause accidents or even injuries.

AISU Dimensions



Unit: mm

Typical connections between the AISU, RET, BTS, and antenna



D. Antenna Line Product

D-1. TMA

Description	Frequency Range (MHz)	AISG type	Gain(dB)	Connector	Dimension (mm)	Model	Page
700M	RX:703-748MHz TX:758-803MHz	AISG v2.0	12 ±1(Fixed) 8 - 16(Adjustable)	4 x 7/16 DIN-F	215 x 290 x 130	ATA702000	266
DD800M	RX:832-862MHz TX:791-821MHz	AISG v2.0	12±1	4 x 4.3-10	155 x 255 x 120	**ATA802001v06	269
E900M SUBBAND	RX:880-905MHz TX:925-950MHz	AISG v2.0	12 ±1(Fixed) 8 - 16(Adjustable)	4 x 7/16 DIN-F	198 x 308 x 70.5	ATA902002	272
E900M	RX:880-915MHz TX:925-960MHz	AISG v2.0	12±1	4 x 4.3-10	155 x 255 x 120	**ATA902007v06	275
P900M	RX: 890-915 MHz TX: 935-960 MHz	AISG v2.0	12 ±1(Fixed) 8 - 16(Adjustable)	4 x 7/16 DIN-F	198 x 308 x 70.5	ATA902003	278
1800M	RX:1710-1785 MHz TX:1805-1880 MHz	AISG v2.0	12±1	4 x 4.3-10	203x 269 x 55	**ATA182003v06	281
2100M	RX:1920-1980MHz TX:2110-2170MHz	AISG v2.0	12±1	4 x 4.3-10	170×225×54.5	**ATA212007v06	284
2600M	RX:2500-2570MHz TX:2620-2690MHz	AISG v2.0	12 ±1(Fixed) 8 - 12(Adjustable)	4 x 7/16 DIN-F	160 x 210 x 54.5	ATA262000	287
Dual Band 1800M & 2100M (2in2out)	RX:1710-1785/ 1920-1980MHz TX:1805-1880/ 2110-2170MHz	AISG v2.0	12	4 x 4.3-10	203 x 233 x 96	**ATADU2017v06	290
Dual Band 1800M & 2100M (2in4out)	RX:1710-1785/ 1920-1980MHz TX:1805-1880/ 2110-2170MHz	AISG v2.0	12	6 x 7/16 DIN-F	196 x 280 x 110	ATADU2003	293
Dual Band 800M & 900M (2input2output)	RX:832-862/ 880-915MHz TX:791-821/ 925-950MHz	AISG v2.0	12	4 x 7/16 DIN-F	247 x 342 x 132	ATADU2001	296
Dual Band 800M & 900M (2input4output)	RX:832-862/ 880-915MHz TX:791-821/ 925-950MHz	AISG v2.0	12	6 x 7/16 DIN-F	247 x 342 x 132	ATADU2005	299
Dual Band (1800M & 2100M) & 2600M	RX:1710 - 1785& 1920 - 1980/ 2500 - 2570MHz TX:1805 - 1880& 2110 - 2170/ 2620 - 2690MHz	AISG v2.0	12	6 x 7/16 DIN-F	252 x 236 x 95	**ATADU2015	302

*** Preliminary Issue*

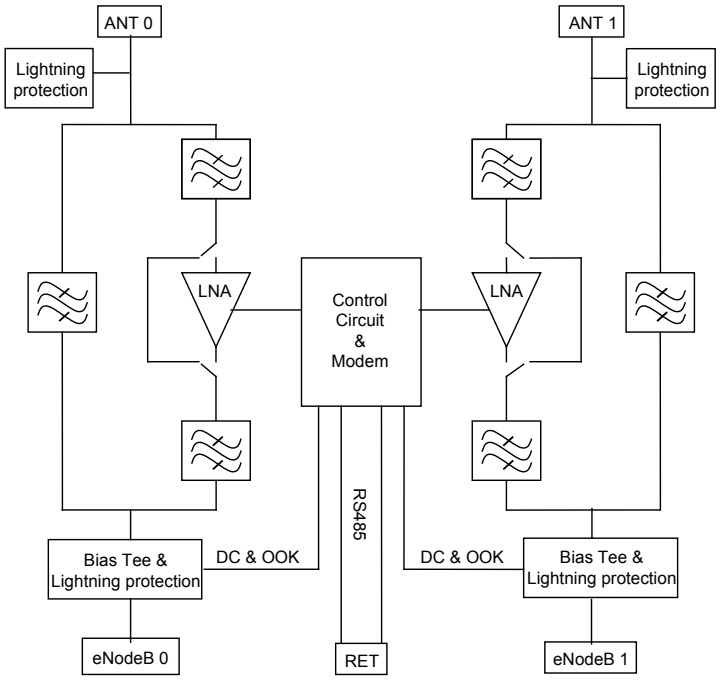
Product Description

The dual tower mounted amplifier (DTMA) is a low-noise amplifier installed near the antenna. It helps to improve the signal-to-noise ratio and enhance the receiving sensitivity of the BTS system. It enhances the uplink coverage and reduces uplink and downlink imbalance of the base station. It effectively reduces the transmitting power used by cellphones and improves voice and data communication quality.

Features

- High linearity and low noise performance.
- Power failure bypass for high reliability.
- Light weight and compact design.
- Wall mounting and mast mounting.
- Built-in lightning protection up to 10 kA.
- Support AISG 2.0 protocol.
- Support default 12dB fixed gain.
- Can be switched to adjustable gain via software command, and the range is from 8 to 16 dB.

Appearance and Block Diagram



DTMA-700-12dB-2eNodeBport2ANTport-AISG/CWA

Model: ATA702000

Tx Specifications	
Frequency range (MHz)	758 - 803
Bandwidth (MHz)	45
Insertion loss* (dB)	Avg. < 0.45
Return loss (dB)	≥ 18
Input power (W)	< 160 (+52 dBm) CW < 2000 (+63 dBm) peak
Intermodulation products in Rx band (dBm)	≤ -117 (2 TX carriers at +43 dBm)

Rx Specifications	
Frequency range (MHz)	703 - 748
Bandwidth (MHz)	45
Return loss(dB)	≥ 18 (DC ON) ≥ 13 (DC OFF)
Insertion loss in by-pass mode (dB)	≤ 3.5 (DC OFF)
Gain*** (dB)	12 ±1 (Fixed) 8 - 16 (Adjustable)
Noise figure** (dB)	Avg. < 1.5 (12 dB Gain, +22 ... +28 ℃)
Output 1dB compression (dBm)	≥ 8 (12 dB Gain)
OIP3 (dBm)	≥ 20 (12 dB Gain)

Electrical Specifications			
		CWA Mode (Single port)	AISG Mode (Total ports)
DC supply voltage (V)		8.5 - 15	9 - 30
Operating current per TMA (mA) (without RET)	@12 V	99 ±5	187 ±5
	@17 V	74 ±5	134 ±5
	@30 V	/	90 ±5
Alarm management (mA)		150 - 280	AISG
Power consumption (W)		< 3.5	

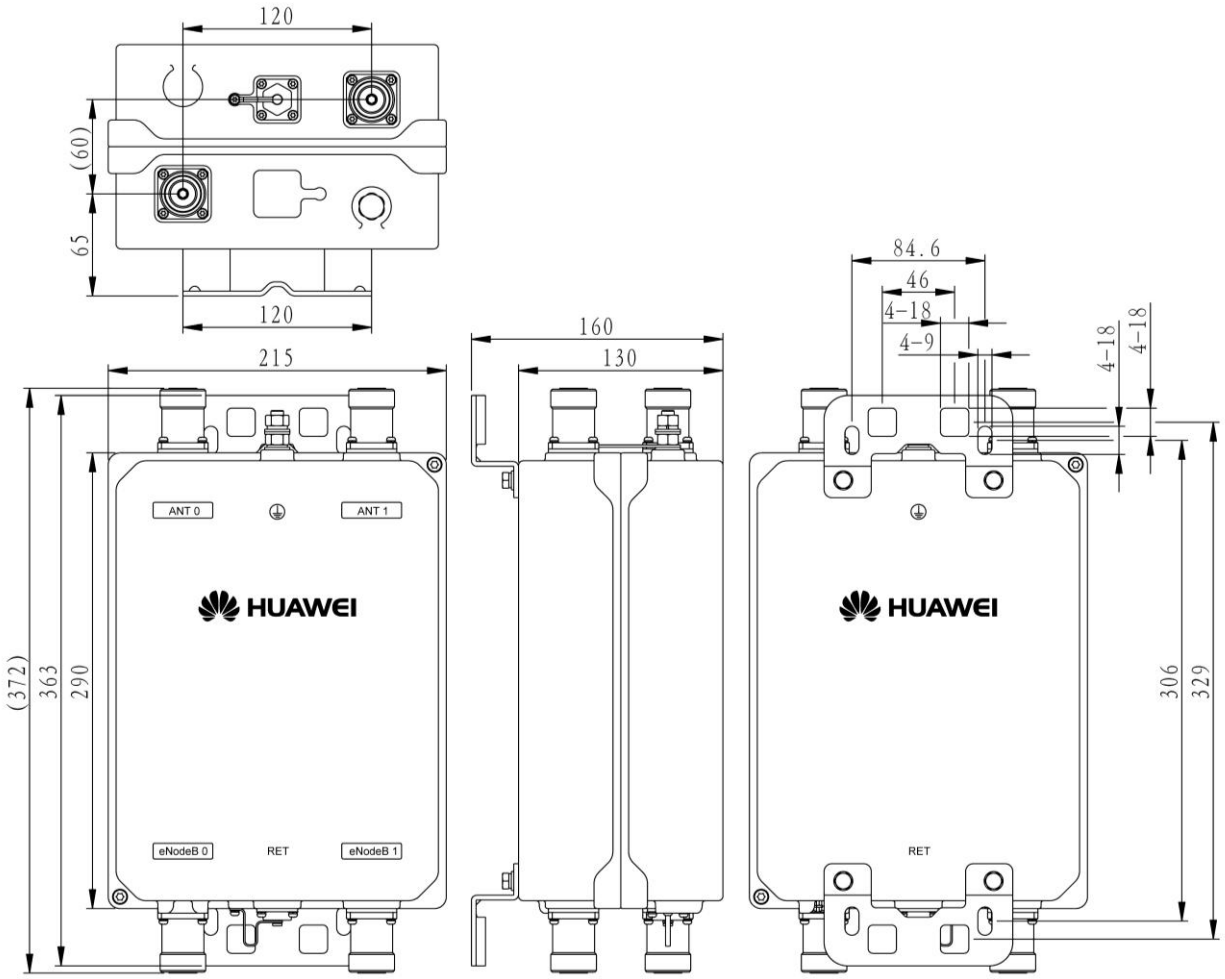
Environmental Specification	
Operating temperature range (℃)	-40 ... +65
IP rating	IP67
MTBF (hours)	> 1,000,000
EMC	ETS 300 342-3
Lightning protection (kA)	10 (8/20 us)

Mechanical Specification	
DTMA dimensions (W x H x D) (mm)	215 x 290 x 130 (without connectors, without brackets)
Packing dimensions (W x H x D) (mm)	290 x 500 x 265
DTMA weight (kg)	≤ 8.5 (with brackets)
Packing weight (kg)	≤ 9.5
DTMA Volume (L)	Approx. 9.0
AISG connector	8-pin female, IEC 60130-9 (pin6: 8.5V - 30V DC, pin3: RS485B, pin5: RS485A, pin7: DC return, other pins: not connected)
Mounting	Wall mounting: with 4 screws (max. 8 mm diameter) Mast mounting
Mast diameter (mm)	Default: 30 - 125 // Optional: 40 - 140
Connector	4 x 7/16 DIN Female (Long neck)

*Insertion loss: $\overline{IL} = \frac{IL_{758MHz} + 2 \times IL_{780.5MHz} + IL_{803MHz}}{4}$

***Noise figure: $\overline{NF} = \frac{NF_{703MHz} + 2 \times NF_{725.5MHz} + NF_{748MHz}}{4}$

**TMA gain can be switched from fixed to adjustable via the gain setting command. when set a value between 0x20 and 0x40, the gain is adjustable, and the range is from 8 dB to16 dB, and when the value is 0xFE, the gain is fixed 12 dB.


120
(60)
65
120
215
160
130
84.6
46
4-18
4-9
4-18
4-18
ANT 0
ANT 1
HUAWEI
(372)
363
290
eNodeB 0
RET
eNodeB 1
HUAWEI
RET
306
329

Unit : mm

DTMA-800-12dB-2eNodeBport2ANTport-AISG
Model: ATA802001v06

Preliminary Issue

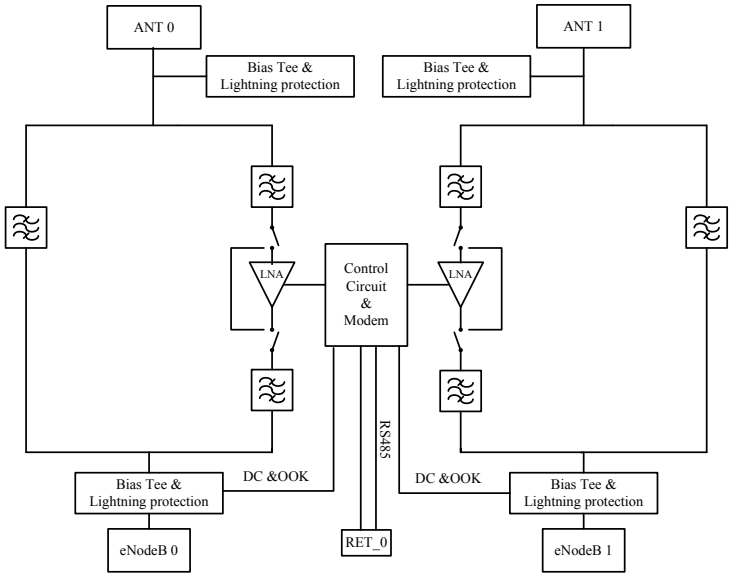
Product Description

The dual tower mounted amplifier (DTMA) is a low-noise amplifier installed near the antenna. It helps to improve the signal-to-noise ratio and enhance the receiving sensitivity of the BTS system. It enhances the uplink coverage and reduces uplink and downlink imbalance of the base station. It effectively reduces the transmitting power used by cellphones and improves voice and data communication quality.

Features

- High linearity and low noise performance.
- Power failure bypass for high reliability.
- Light weight and compact design.
- Wall mounting and mast mounting.
- Built-in lightning protection up to 10 kA.
- Support AISG 2.0 protocol.
- Support default 12dB fixed gain.

Appearance and Block Diagram



TMA

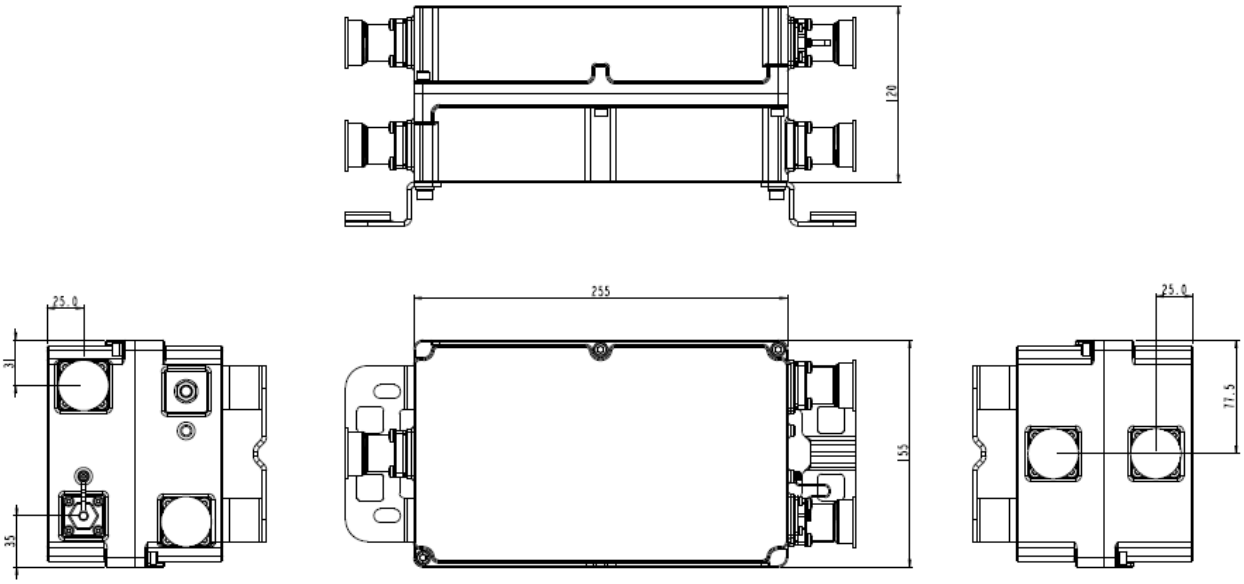
DTMA-800-12dB-2eNodeBport2ANTport-AISG

Model: ATA802001v06

Tx Specifications		
Frequency range (MHz)		791 - 821
Bandwidth (MHz)		30
Insertion loss* (dB)		Typ.< 0.45
Return loss (dB)		≥ 18
Input power (W)		< 160 (+52 dBm) CW < 2000 (+63 dBm) peak
Intermodulation products in Rx band (dBm)		≤ -117 (3 order, with 2 x 43 dBm)
Rx Specifications		
Frequency range (MHz)		832- 862
Bandwidth (MHz)		30
Return loss(dB)		≥ 18 (DC ON) ≥ 13 (DC OFF)
Insertion loss in by-pass mode (dB)		≤ 3.0 (DC OFF)
Gain** (dB)		12 ±1
Noise figure*** (dB)		Avg. < 1.4 (+25 ... +65℃)
Output 1dB compression (dBm)		≥ 12
OIP3 (dBm)		≥ 27
Electrical Specifications		
		AISG Mode (Total ports)
DC supply voltage (V)		8.5 - 30
Operating current per TMA (mA) (without RET)	@12 V	245 ±5
	@17 V	175 ±5
	@30 V	105 ±5
Alarm management		AISG2.0
Power consumption (W)		< 2
Environmental Specification		
Operating temperature range (℃)		-40 ... +65
IP rating		IP67
MTBF (hours)		> 1,000,000
EMC		ETS 300 342-3
Lightning protection (kA)		10 (8/20 us) 3 (10/350 us)
Mechanical Specification		
DTMA dimensions (W x H x D) (mm)		155 x 255 x 120 (without connectors, without brackets)
Packing dimensions (W x H x D) (mm)		240 x 405 x 210
DTMA weight (kg)		≤ 6 (with brackets)
Packing weight (kg)		≤ 7
DTMA Volume (L)		<4.8
AISG connector		8-pin female, IEC 60130-9 (pin6: 8.5V - 30V DC, pin3: RS485B, pin5: RS485A, pin7: DC return, other pins: not connected)
Mounting		Wall mounting: with 4 screws (max. 8 mm diameter) Mast mounting
Mast diameter (mm)		Default: 40 - 135
Connector		4 x 4.3-10 Female

*Insertion loss: $IL^{*} = \frac{Sum(v_1 + v_2 + \ldots + v_n)}{n}$, *V1, V2... Vn* is the IL-value for each 5M in the passband.

**Noise figure: $\overline{NF} = \frac{Sum(NF_1 + NF_2 + \ldots + NF_n)}{n}$, *NF1, NF2...NFn* is the NF-value for each 5M in the passband.



Unit : mm

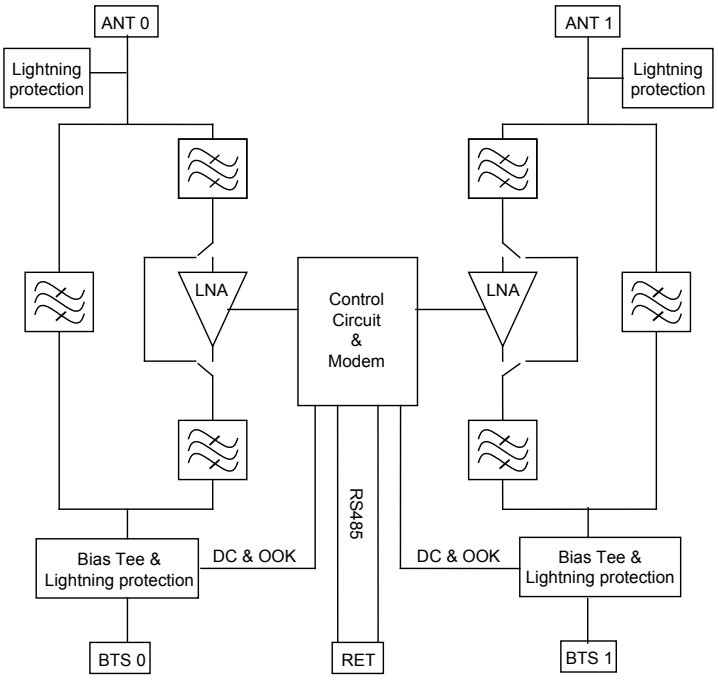
Product Description

The dual tower mounted amplifier (DTMA) is a low-noise amplifier installed near the antenna. It helps to improve the signal-to-noise ratio and enhance the receiving sensitivity of the BTS system. It enhances the uplink coverage and reduces uplink and downlink imbalance of the base station. It effectively reduces the transmitting power used by cellphones and improves voice and data communication quality.

Features

- High linearity and low noise performance.
- Power failure bypass for high reliability.
- Light weight and compact design.
- Wall mounting and mast mounting.
- Built-in lightning protection up to 10 kA.
- Support AISG 2.0 protocol.
- Support default 12dB fixed gain.
- Can be switched to adjustable gain via software command, and the range is from 8 to 16 dB.

Appearance and Block Diagram



DTMA-E900SUBBAND-12dB-2BTSport2ANTport-AISG/CWA

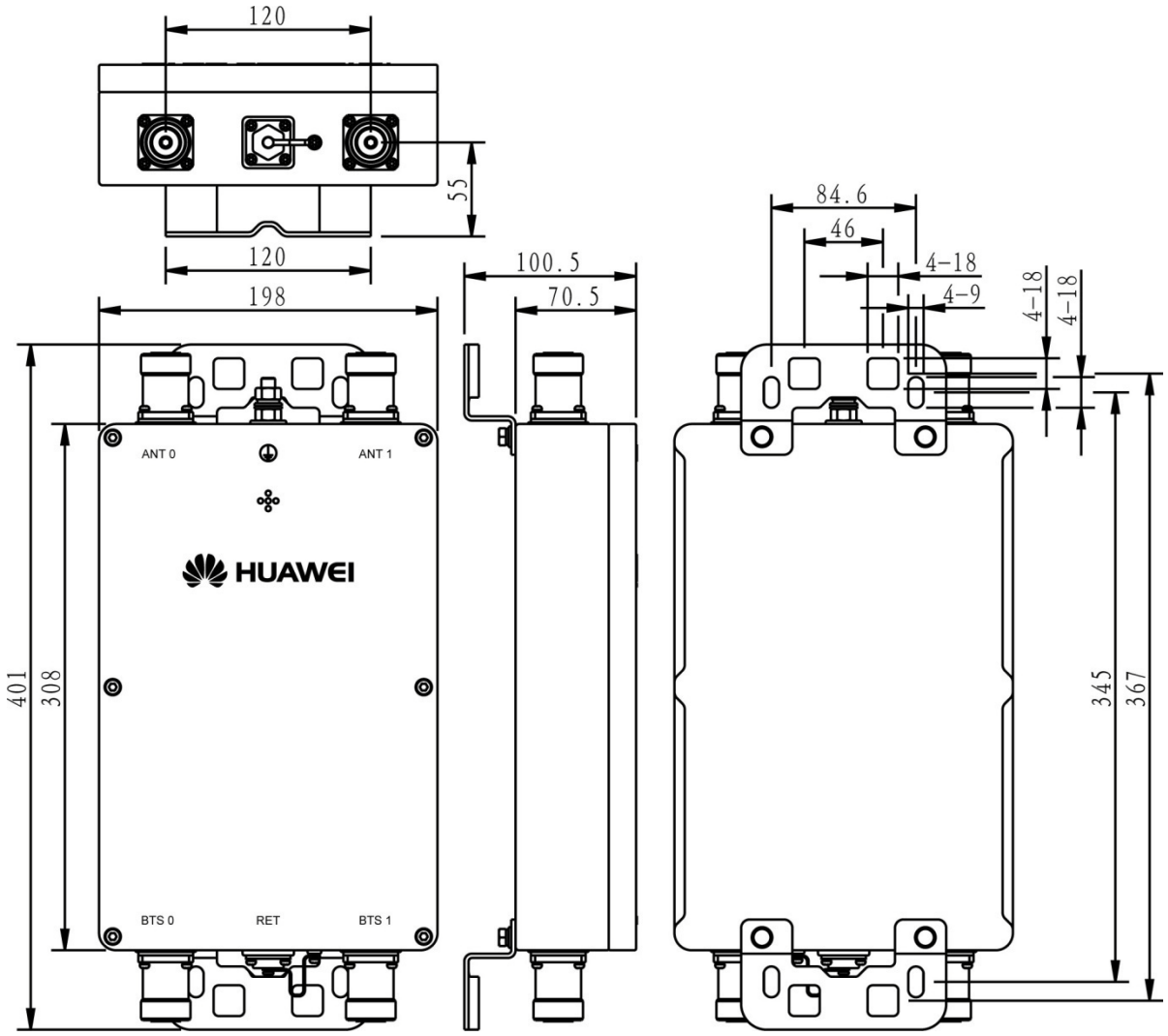
Model: ATA902002

Tx Specifications			
Frequency range (MHz)		925 - 950	
Bandwidth (MHz)		25	
Insertion loss* (dB)		Avg. < 0.4	
Return loss (dB)		≥ 18	
Input power (W)		< 160 (+52 dBm) CW < 2000 (+63 dBm) peak	
Intermodulation products in Rx band (dBm)		≤ -117 (2 TX carriers at +43 dBm)	
Rx Specifications			
Frequency range (MHz)		880 - 905	
Bandwidth (MHz)		25	
Return loss(dB)		≥ 18 (DC ON) ≥ 13 (DC OFF)	
Insertion loss in by-pass mode (dB)		≤ 3.0 (DC OFF)	
Gain*** (dB)		12 ±1 (Fixed) 8 - 16 (Adjustable)	
Noise figure** (dB)		Avg. < 1.4 (12 dB Gain, +22 ... +28 ℃)	
Output 1dB compression (dBm)		≥ 8 (12 dB Gain)	
OIP3 (dBm)		≥ 20 (12 dB Gain)	
Electrical Specifications			
		CWA Mode (Single port)	AISG Mode (Total ports)
DC supply voltage (V)		8.5 - 15	9 - 30
Operating current per TMA (mA) (without RET)	@12 V	99 ±5	187 ±5
	@17 V	74 ±5	134 ±5
	@30 V	/	90 ±5
Alarm management (mA)		150 - 210	AISG
Power consumption (W)		< 3.5	
Environmental Specification			
Operating temperature range (℃)		-40 ... +65	
IP rating		IP67	
MTBF (hours)		> 1,000,000	
EMC		ETS 300 342-3	
Lightning protection (kA)		10 (8/20 us)	
Mechanical Specification			
DTMA dimensions (W x H x D) (mm)		198 x 308 x 70.5 (without connectors, without brackets)	
Packing dimensions (W x H x D) (mm)		305 x 490 x 165	
DTMA weight (kg)		≤ 5.5 (with brackets)	
Packing weight (kg)		≤ 6.6	
DTMA Volume (L)		Approx. 4.3	
AISG connector		8-pin female, IEC 60130-9 (pin6: 8.5V - 30V DC, pin3: RS485B, pin5: RS485A, pin7: DC return, other pins: not connected)	
Mounting		Wall mounting: with 4 screws (max. 8 mm diameter) Mast mounting	
Mast diameter (mm)		Default: 30 - 125 // Optional: 40 - 140	
Connector		4 x 7/16 DIN Female (Long neck)	

*Insertion loss: $\overline{IL} = \frac{IL925MHz + 2 \times IL937.5MHz + IL950MHz}{4}$

**Noise figure: $\overline{NF} = \frac{NF880MHz + 2 \times NF892.5MHz + NF905MHz}{4}$

***TMA gain can be switched from fixed to adjustable via the gain setting command. when set a value between 0x20 and 0x40, the gain is adjustable, and the range is from 8 dB to 16 dB, and when the value is 0xFE, the gain is fixed 12 dB.


120
55
120
198
100.5
70.5
84.6
46
4-18
4-9
4-18
4-18
ANT 0
ANT 1
HUAWEI
BTS 0
RET
BTS 1
401
308
345
367

Unit : mm

DTMA-E900-12dB-2BTSport2ANTport-AISG
Model: ATA902007v06

Preliminary Issue

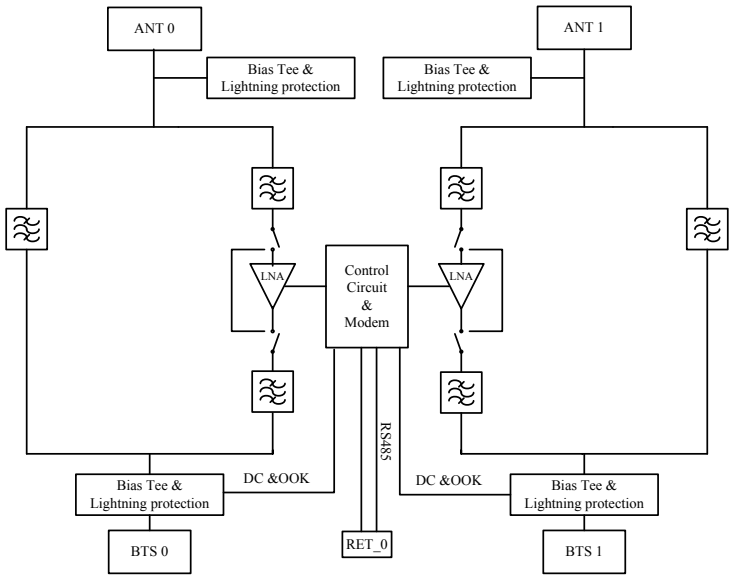
Product Description

The dual tower mounted amplifier (DTMA) is a low-noise amplifier installed near the antenna. It helps to improve the signal-to-noise ratio and enhance the receiving sensitivity of the BTS system. It enhances the uplink coverage and reduces uplink and downlink imbalance of the base station. It effectively reduces the transmitting power used by cellphones and improves voice and data communication quality.

Features

- High linearity and low noise performance.
- Power failure bypass for high reliability.
- Light weight and compact design.
- Wall mounting and mast mounting.
- Built-in lightning protection up to 10 kA.
- Support AISG 2.0 protocol.
- Support default 12dB fixed gain.

Appearance and Block Diagram



TMA

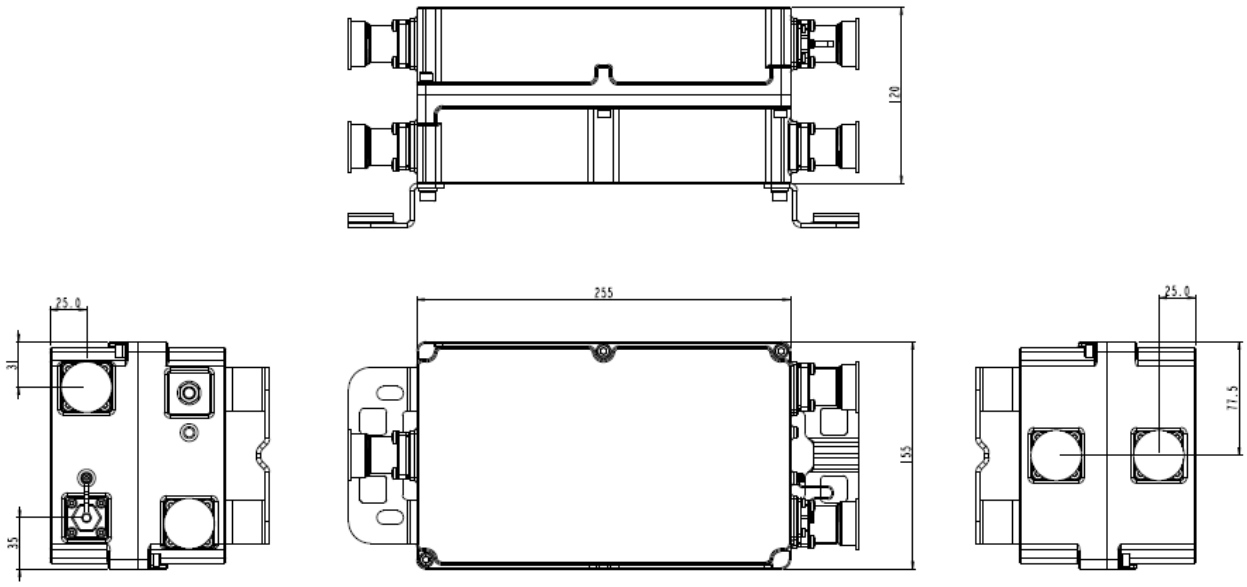
DTMA-E900-12dB-2BTSport2ANTport-AISG

Model: ATA902007v06

Tx Specifications	
Frequency range (MHz)	925 - 960
Bandwidth (MHz)	35
Insertion loss* (dB)	Typ.< 0.45
Return loss (dB)	≥ 18
Input power (W)	< 160 (+52 dBm) CW < 2000 (+63 dBm) peak
Intermodulation products in Rx band (dBm)	≤ -117 (3 order, with 2 x 43 dBm)
Rx Specifications	
Frequency range (MHz)	880 - 915
Bandwidth (MHz)	35
Return loss(dB)	≥ 18 (DC ON) ≥ 13 (DC OFF)
Insertion loss in by-pass mode (dB)	≤ 3.0 (DC OFF)
Gain** (dB)	12 ±1
Noise figure*** (dB)	Avg. < 1.4 (+25 ... +65℃)
Output 1dB compression (dBm)	≥ 12
OIP3 (dBm)	≥ 27
Electrical Specifications	
	AISG Mode (Total ports)
DC supply voltage (V)	8.5 - 30
Operating current per TMA (mA) (without RET) @12 V	245 ±5
Operating current per TMA (mA) (without RET) @17 V	175 ±5
Operating current per TMA (mA) (without RET) @30 V	105 ±5
Alarm management	AISG2.0
Power consumption (W)	< 2
Environmental Specification	
Operating temperature range (℃)	-40 ... +65
IP rating	IP67
MTBF (hours)	> 1,000,000
EMC	ETS 300 342-3
Lightning protection (kA)	10 (8/20 us) 3 (10/350 us)
Mechanical Specification	
DTMA dimensions (W x H x D) (mm)	155 x 255 x 120 (without connectors, without brackets)
Packing dimensions (W x H x D) (mm)	240 x 405 x 210
DTMA weight (kg)	≤ 6 (with brackets)
Packing weight (kg)	≤ 7
DTMA Volume (L)	<4.8
AISG connector	8-pin female, IEC 60130-9 (pin6: 8.5V - 30V DC, pin3: RS485B, pin5: RS485A, pin7: DC return, other pins: not connected)
Mounting	Wall mounting: with 4 screws (max. 8 mm diameter) Mast mounting
Mast diameter (mm)	Default: 40 - 135
Connector	4 x 4.3/10 Female

*Insertion loss: $IL^{*} = \frac{Sum(v_1 + v_2 + \ldots + v_n)}{n}$, *V1, V2...Vn* is the IL-value for each 5M in the passband.

**Noise figure: $\overline{NF} = \frac{Sum(NF_1 + NF_2 + \ldots + NF_n)}{n}$, *NF1, NF2...NFn* is the NF-value for each 5M in the passband.



Unit : mm

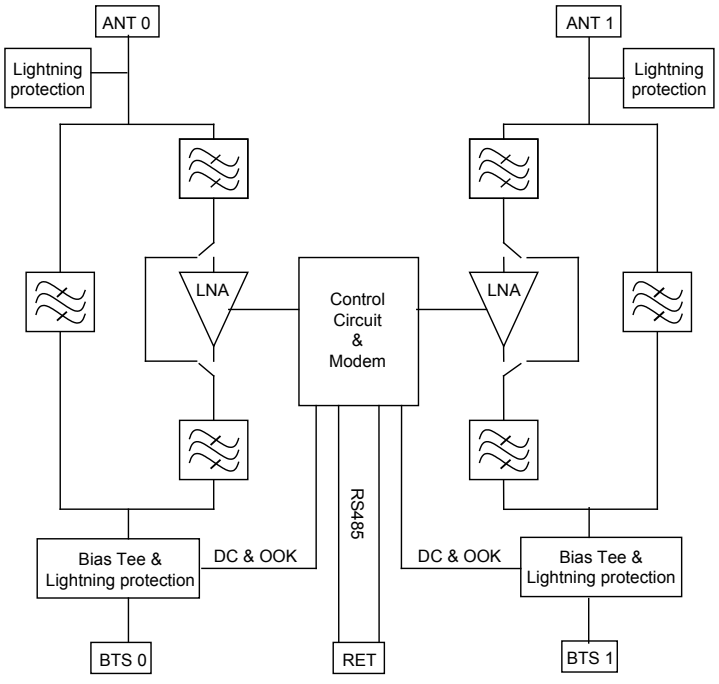
Product Description

The dual tower mounted amplifier (DTMA) is a low-noise amplifier installed near the antenna. It helps to improve the signal-to-noise ratio and enhance the receiving sensitivity of the BTS system. It enhances the uplink coverage and reduces uplink and downlink imbalance of the base station. It effectively reduces the transmitting power used by cellphones and improves voice and data communication quality.

Features

- High linearity and low noise performance.
- Power failure bypass for high reliability.
- Light weight and compact design.
- Wall mounting and mast mounting.
- Built-in lightning protection up to 10 kA.
- Support AISG 2.0 protocol.
- Support default 12dB fixed gain.
- Can be switched to adjustable gain via software command, and the range is from 8 to 16 dB.

Appearance and Block Diagram



DTMA-P900-12dB-2BTSport2ANTport-AISG/CWA

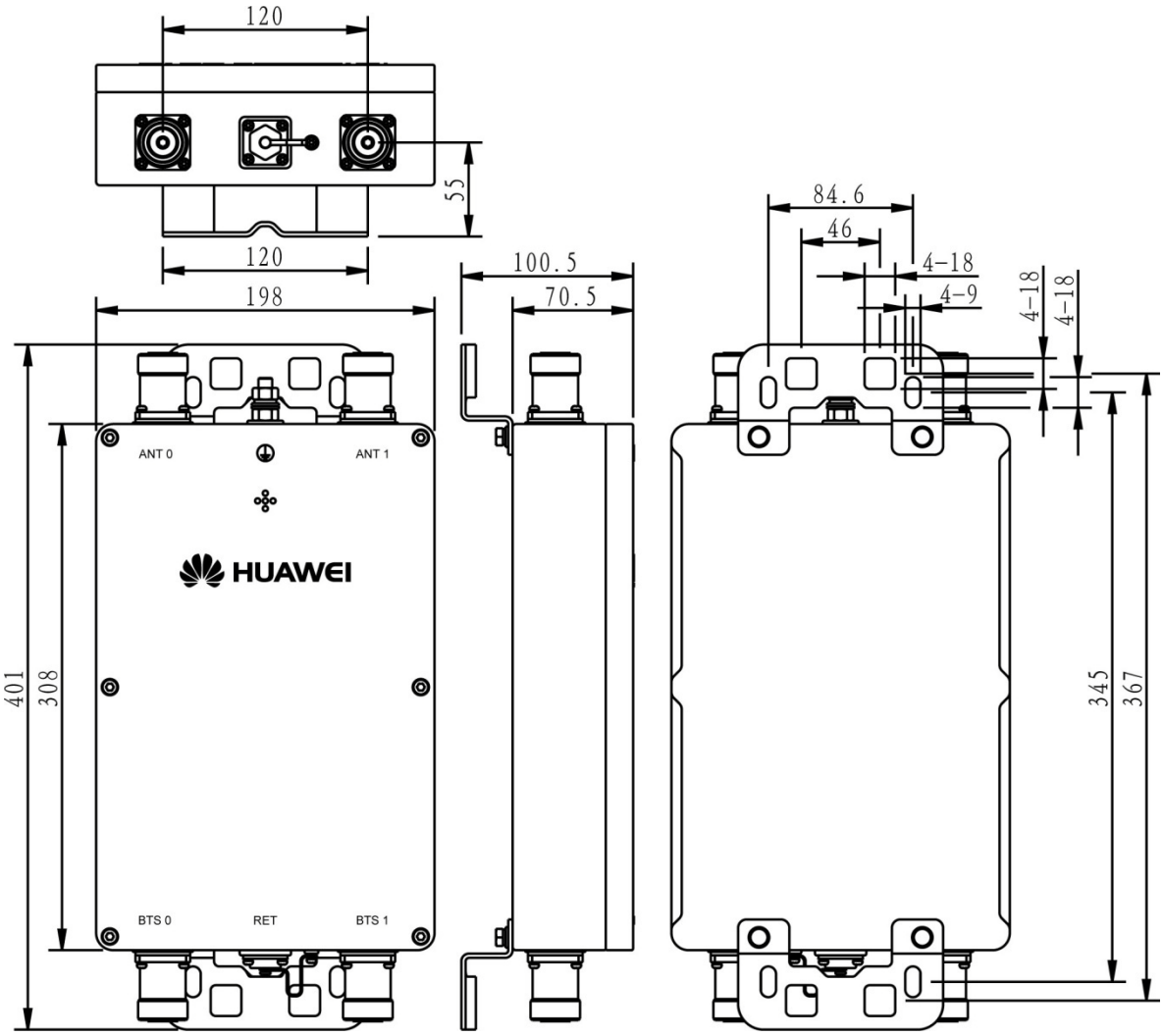
Model: ATA902003

Tx Specifications		
Frequency range (MHz)		935 - 960
Bandwidth (MHz)		25
Insertion loss* (dB)		Avg. < 0.4
Return loss (dB)		≥ 18
Input power (W)		< 160 (+52 dBm) CW < 2000 (+63 dBm) peak
Intermodulation products in Rx band (dBm)		≤ -117 (2 TX carriers at +43 dBm)
Rx Specifications		
Frequency range (MHz)		890 - 915
Bandwidth (MHz)		25
Return loss(dB)		≥ 18 (DC ON) ≥ 13 (DC OFF)
Insertion loss in by-pass mode (dB)		≤ 3.0 (DC OFF)
Gain*** (dB)		12 ±1 (Fixed) 8 - 16 (Adjustable)
Noise figure** (dB)		Avg. < 1.4 (12 dB Gain, +22 ... +28 ℃)
Output 1dB compression (dBm)		≥ 8 (12 dB Gain)
OIP3 (dBm)		≥ 20 (12 dB Gain)
Electrical Specifications		
		CWA Mode (Single port) / AISG Mode (Total ports)
DC supply voltage (V)		8.5 - 15 / 9 - 30
Operating current per TMA (mA) (without RET)	@12 V	99 ±5 / 187 ±5
	@17 V	74 ±5 / 134 ±5
	@30 V	/ / 90 ±5
Alarm management (mA)		150 - 210 / AISG
Power consumption (W)		< 3.5
Environmental Specification		
Operating temperature range (℃)		-40 ... +65
IP rating		IP67
MTBF (hours)		> 1,000,000
EMC		ETS 300 342-3
Lightning protection (kA)		10 (8/20 us)
Mechanical Specification		
DTMA dimensions (W x H x D) (mm)		198 x 308 x 70.5 (without connectors, without brackets)
Packing dimensions (W x H x D) (mm)		305 x 490 x 165
DTMA weight (kg)		≤ 5.5 (with brackets)
Packing weight (kg)		≤ 6.6
DTMA Volume (L)		Approx. 4.3
AISG connector		8-pin female, IEC 60130-9 (pin6: 8.5V - 30V DC, pin3: RS485B, pin5: RS485A, pin7: DC return, other pins: not connected)
Mounting		Wall mounting: with 4 screws (max. 8 mm diameter) Mast mounting
Mast diameter (mm)		Default: 30 - 125 // Optional: 40 - 140
Connector		4 x 7/16 DIN Female (Long neck)

*Insertion loss: $\overline{IL} = \frac{IL935MHz + 2 \times IL947.5MHz + IL960MHz}{4}$

**Noise figure: $\overline{NF} = \frac{NF890MHz + 2 \times NF902.5MHz + NF915MHz}{4}$

***TMA gain can be switched from fixed to adjustable via the gain setting command. when set a value between 0x20 and 0x40, the gain is adjustable, and the range is from 8 dB to 16 dB, and when the value is 0xFE, the gain is fixed 12 dB.


120
55
120
198
100.5
70.5
84.6
46
4-18
4-9
4-18
4-18
ANT 0
ANT 1
HUAWEI
401
308
345
367
BTS 0
RET
BTS 1

Unit : mm

DTMA-1800-12dB-2BTSport2ANTport-AISG
Model: ATA182003v06

Preliminary Issue

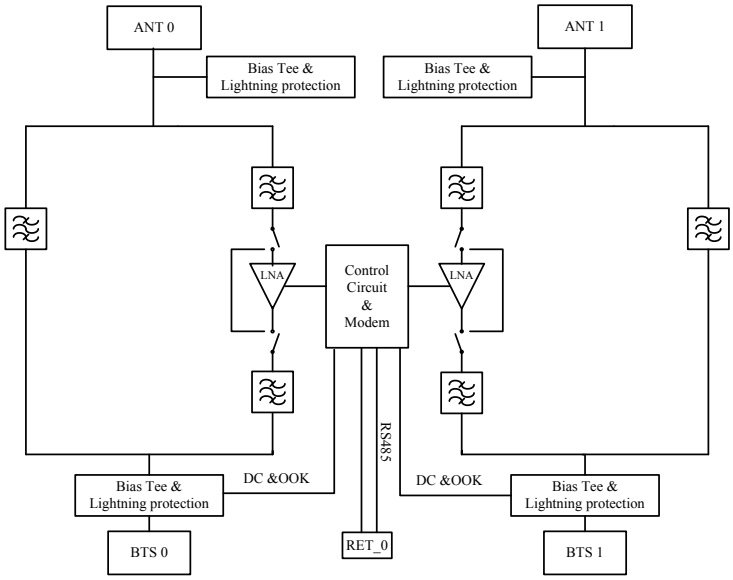
Product Description

The dual tower mounted amplifier (DTMA) is a low-noise amplifier installed near the antenna. It helps to improve the signal-to-noise ratio and enhance the receiving sensitivity of the BTS system. It enhances the uplink coverage and reduces uplink and downlink imbalance of the base station. It effectively reduces the transmitting power used by cellphones and improves voice and data communication quality.

Features

- High linearity and low noise performance.
- Power failure bypass for high reliability.
- Light weight and compact design.
- Wall mounting and mast mounting.
- Built-in lightning protection up to 10 kA.
- Support AISG 2.0 protocol.
- Support default 12dB fixed gain.

Appearance and Block Diagram



TMA

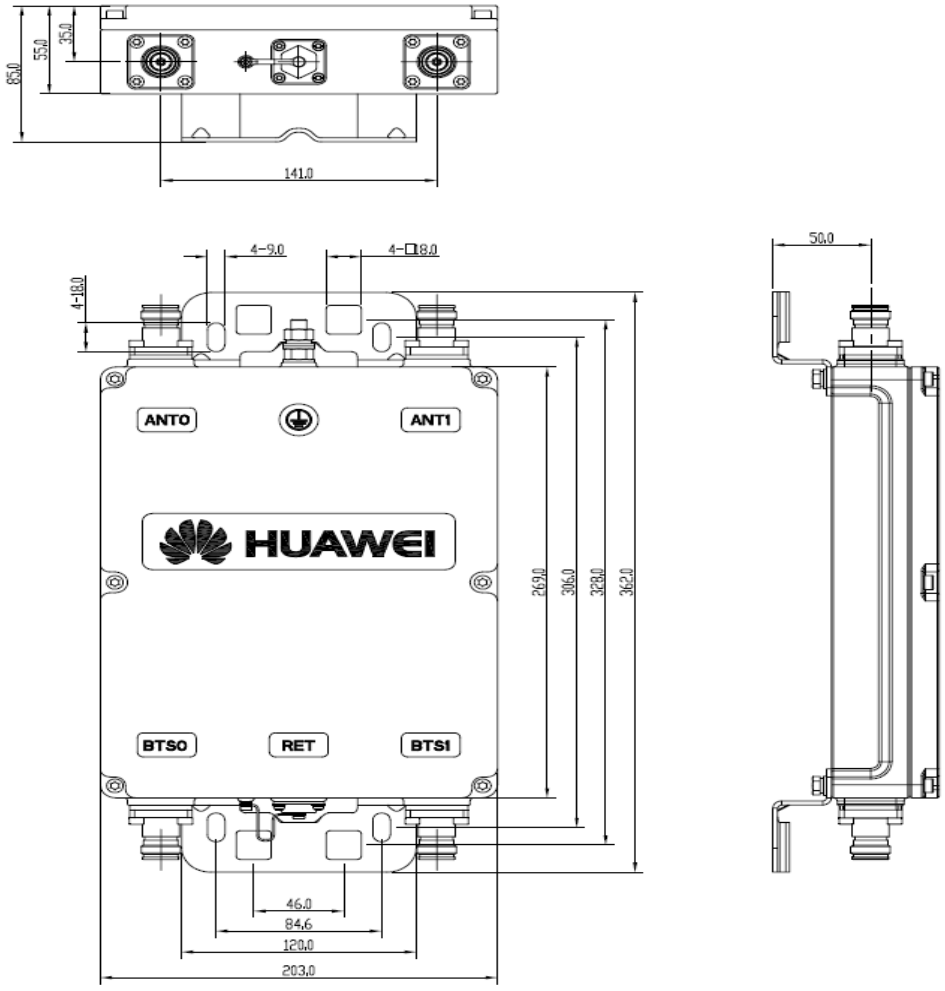
DTMA-1800-12dB-2BTSport2ANTport-AISG

Model: ATA182003v06

Tx Specifications	
Frequency range (MHz)	1805 - 1880
Bandwidth (MHz)	75
Insertion loss* (dB)	Avg. < 0.35
Return loss (dB)	≥ 18
Input power (W)	< 160 (+52 dBm) CW < 725 (+58.6 dBm) peak
Intermodulation products in Rx band (dBm)	≤ -117 (3 order, with 2 x 43 dBm)
Rx Specifications	
Frequency range (MHz)	1710 - 1785
Bandwidth (MHz)	75
Return loss(dB)	≥ 18 (DC ON) ≥ 13 (DC OFF)
Insertion loss in by-pass mode (dB)	≤ 3.0 (DC OFF)
Gain** (dB)	12 ±1
Noise figure*** (dB)	Avg. < 1.4 (+25 ... +65℃)
Output 1dB compression (dBm)	≥ 12
OIP3 (dBm)	≥ 27
Electrical Specifications	
	AISG Mode (Total ports)
DC supply voltage (V)	8.5 - 30
Operating current per TMA (mA) (without RET) @12 V	245 ±5
Operating current per TMA (mA) (without RET) @17 V	175 ±5
Operating current per TMA (mA) (without RET) @30 V	105 ±5
Alarm management	AISG2.0
Power consumption (W)	< 2
Environmental Specification	
Operating temperature range (℃)	-40 ... +65
IP rating	IP67
MTBF (hours)	> 1,000,000
EMC	ETS 300 342-3
Lightning protection (kA)	10 (8/20 us) 3 (10/350 us)
Mechanical Specification	
DTMA dimensions (W x H x D) (mm)	203x 269 x 55 (without connectors, without brackets)
Packing dimensions (W x H x D) (mm)	460 x 260 x 165
DTMA weight (kg)	≤ 4 (with brackets)
Packing weight (kg)	≤ 5
DTMA Volume (L)	< 3.2
AISG connector	8-pin female, IEC 60130-9 (pin6: 8.5V - 30V DC, pin3: RS485B, pin5: RS485A, pin7: DC return, other pins: not connected)
Mounting	Wall mounting: with 4 screws (max. 8 mm diameter) Mast mounting
Mast diameter (mm)	Default: 40 - 135
Connector	4 x 4.3/10 Female

*Insertion loss: $IL^* = \frac{Sum(v_1 + v_2 + \ldots + v_n)}{n}$, *V1, V2... Vn* is the IL-value for each 5M in the passband.

**Noise figure: $\overline{NF} = \frac{Sum(NF_1 + NF_2 + \ldots + NF_n)}{n}$, *NF1, NF2... NFn* is the NF-value for each 5M in the passband.


65.0
55.0
25.0
141.0
4-9.0
4-□8.0
4-18.0
ANT0
ANT1
HUAWEI
BTS0
RET
BTS1
269.0
306.0
328.0
362.0
46.0
84.6
120.0
203.0
50.0

Unit : mm

DTMA-2100-12dB-2NodeBport2ANTport-AISG
Model: ATA212007v06

Preliminary Issue

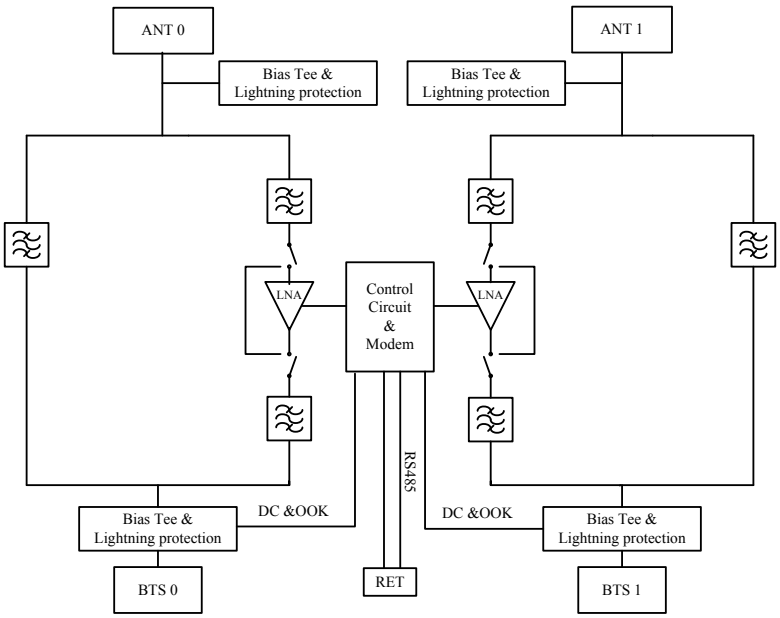
Product Description

The dual tower mounted amplifier (DTMA) is a low-noise amplifier installed near the antenna. It helps to improve the signal-to-noise ratio and enhance the receiving sensitivity of the BTS system. It enhances the uplink coverage and reduces uplink and downlink imbalance of the base station. It effectively reduces the transmitting power used by cellphones and improves voice and data communication quality.

Features

- High linearity and low noise performance.
- Power failure bypass for high reliability.
- Light weight and compact design.
- Wall mounting and mast mounting.
- Built-in lightning protection up to 10 kA.
- Support AISG 2.0 protocol.
- Support default 12dB fixed gain.

Appearance and Block Diagram



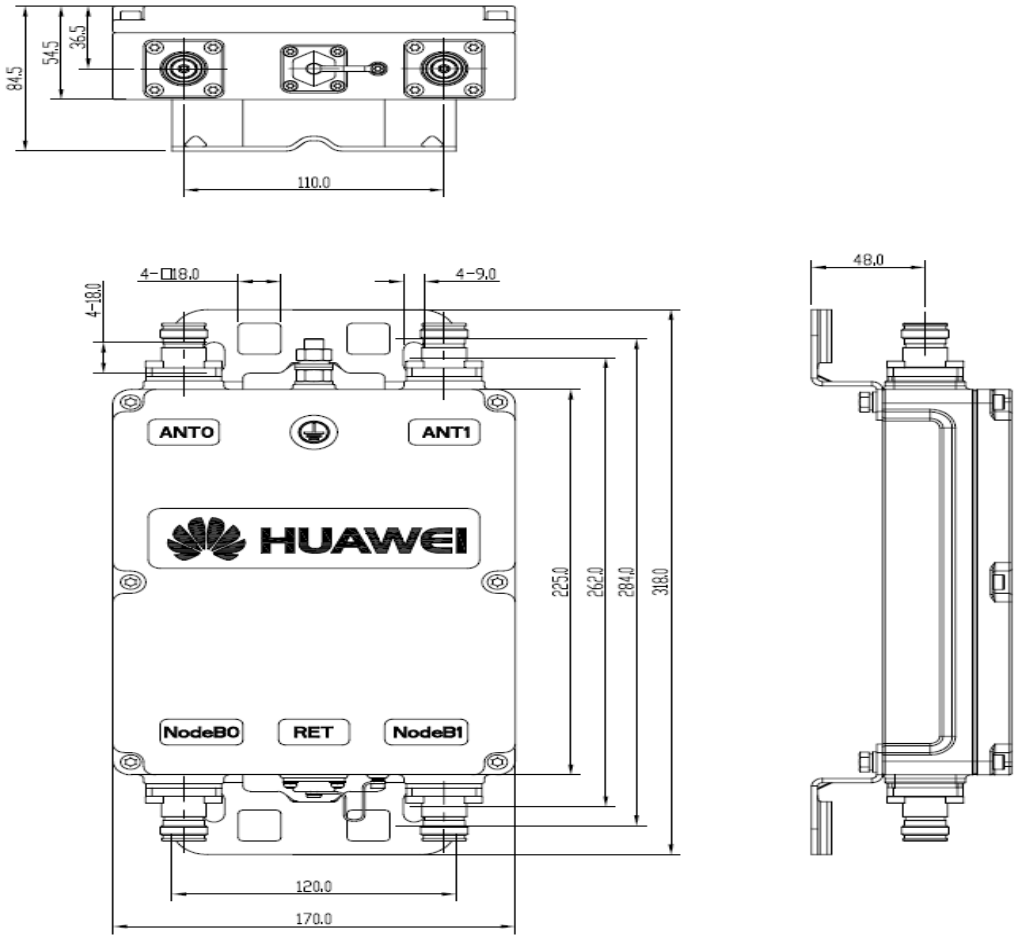
DTMA-2100-12dB-2NodeBport2ANTport-AISG

Model: ATA212007v06

Tx Specifications	
Frequency range (MHz)	2110 - 2170
Bandwidth (MHz)	60
Insertion loss* (dB)	Typ. < 0.2
Return loss (dB)	≥ 18
Input power (W)	< 160 (+52 dBm) CW < 725 (+58.6 dBm) peak
Intermodulation products in Rx band (dBm)	≤ -122 (7th order, with 2 x 43 dBm)
Rx Specifications	
Frequency range (MHz)	1920 - 1980
Bandwidth (MHz)	60
Return loss(dB)	≥ 18 (DC ON) ≥ 13 (DC OFF)
Insertion loss in by-pass mode (dB)	≤ 2.8 (DC OFF)
Gain** (dB)	12 ±1
Noise figure*** (dB)	Avg. < 1.2 (+25 ... +65 ℃)
Output 1dB compression (dBm)	≥ 12
OIP3 (dBm)	≥ 27
Electrical Specifications	
	AISG Mode
DC supply voltage (V)	8.5 - 30
Operating current per TMA (mA) (without RET) @12 V	245 ±5
Operating current per TMA (mA) (without RET) @17 V	175 ±5
Operating current per TMA (mA) (without RET) @30 V	105 ±5
Alarm management	AISG2.0
Power consumption (W)	< 1.8
Environmental Specification	
Operating temperature range (℃)	-40 ... +65
IP rating	IP67
MTBF (hours)	> 1,000,000
EMC	ETS 300 342-3
Lightning protection (kA)	10 (8/20 us) 3 (10/350 us)
Mechanical Specification	
DTMA dimensions (W x H x D) (mm)	170×225×54.5 (without connectors, without brackets)
Packing dimensions (W x H x D) (mm)	440 x 220 x 150
DTMA weight (kg)	≤ 3.6 (with brackets)
Packing weight (kg)	≤ 4.5
DTMA Volume (L)	<2.2
AISG connector	8-pin female, IEC 60130-9 (pin6: 8.5V - 30V DC, pin3: RS485B, pin5: RS485A, pin7: DC return, other pins: not connected)
Mounting	Wall mounting: with 4 screws (max. 8 mm diameter) Mast mounting
Mast diameter (mm)	Default: 40 - 135
Connector	4 x 4.3-10 Female (Long neck)

*Insertion loss: $IL^{*} = \frac{Sum(v_1 + v_2 + \ldots + v_n)}{n}$, *V1, V2...Vn* is the IL-value for each 5M in the passband.

**Noise figure: $\overline{NF} = \frac{Sum(NF_1 + NF_2 + \ldots + NF_n)}{n}$, *NF1, NF2...NFn* is the NF-value for each 5M in the passband.


84.5
54.5
36.5
110.0
4-□18.0
4-18.0
4-9.0
ANT0
ANT1
HUAWEI
NodeB0
RET
NodeB1
225.0
262.0
284.0
318.0
120.0
170.0
48.0

Unit : mm

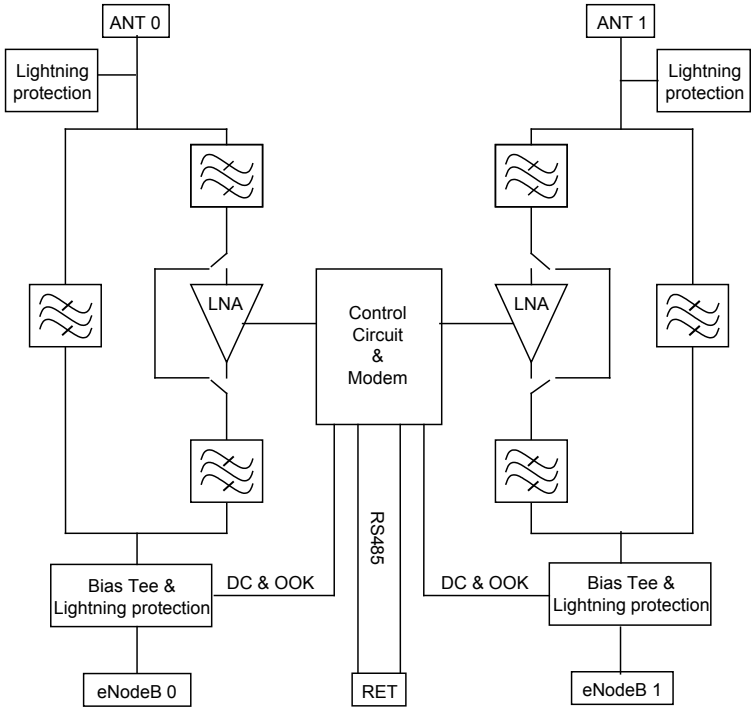
Product Description

The dual tower mounted amplifier (DTMA) is a low-noise amplifier installed near the antenna. It helps to improve the signal-to-noise ratio and enhance the receiving sensitivity of the BTS system. It enhances the uplink coverage and reduces uplink and downlink imbalance of the base station. It effectively reduces the transmitting power used by cellphones and improves voice and data communication quality.

Features

- High linearity and low noise performance.
- Power failure bypass for high reliability.
- Light weight and compact design.
- Wall mounting and mast mounting.
- Built-in lightning protection up to 10 kA.
- Support AISG 2.0 protocol.
- Support default 12dB fixed gain.
- Can be switched to adjustable gain via software command, and the range is from 8 to 12 dB.

Appearance and Block Diagram



DTMA-2600-12dB-2eNodeBport2ANTport-AISG/CWA

Model: ATA262000

Tx Specifications	
Frequency range (MHz)	2620 - 2690
Bandwidth (MHz)	70
Insertion loss* (dB)	Avg. < 0.4
Return loss (dB)	≥ 18
Input power (W)	< 160 (+52 dBm) CW < 2000 (+63 dBm) peak
Intermodulation products in Rx band (dBm)	≤ -117 (2 TX carriers at +43 dBm)

Rx Specifications	
Frequency range (MHz)	2500 - 2570
Bandwidth (MHz)	70
Return loss(dB)	≥ 18 (DC ON) ≥ 13 (DC OFF)
Insertion loss in by-pass mode (dB)	≤ 3.0 (DC OFF)
Gain*** (dB)	12 ±1 (Fixed) 8 - 12 (Adjustable)
Noise figure** (dB)	Avg. < 1.3 (+22 ... +28 ℃)
Output 1dB compression (dBm)	≥ 12
OIP3 (dBm)	≥ 24

Electrical Specifications			
		CWA Mode (Single port)	AISG Mode (Total ports)
DC supply voltage (V)		8.5 - 15	9 - 30
Operating current per TMA (mA) (without RET)	@12 V	99 ±5	187 ±5
	@17 V	74 ±5	134 ±5
	@30 V	/	90 ±5
Alarm management (mA)		150 - 210	AISG
Power consumption (W)		< 3.5	

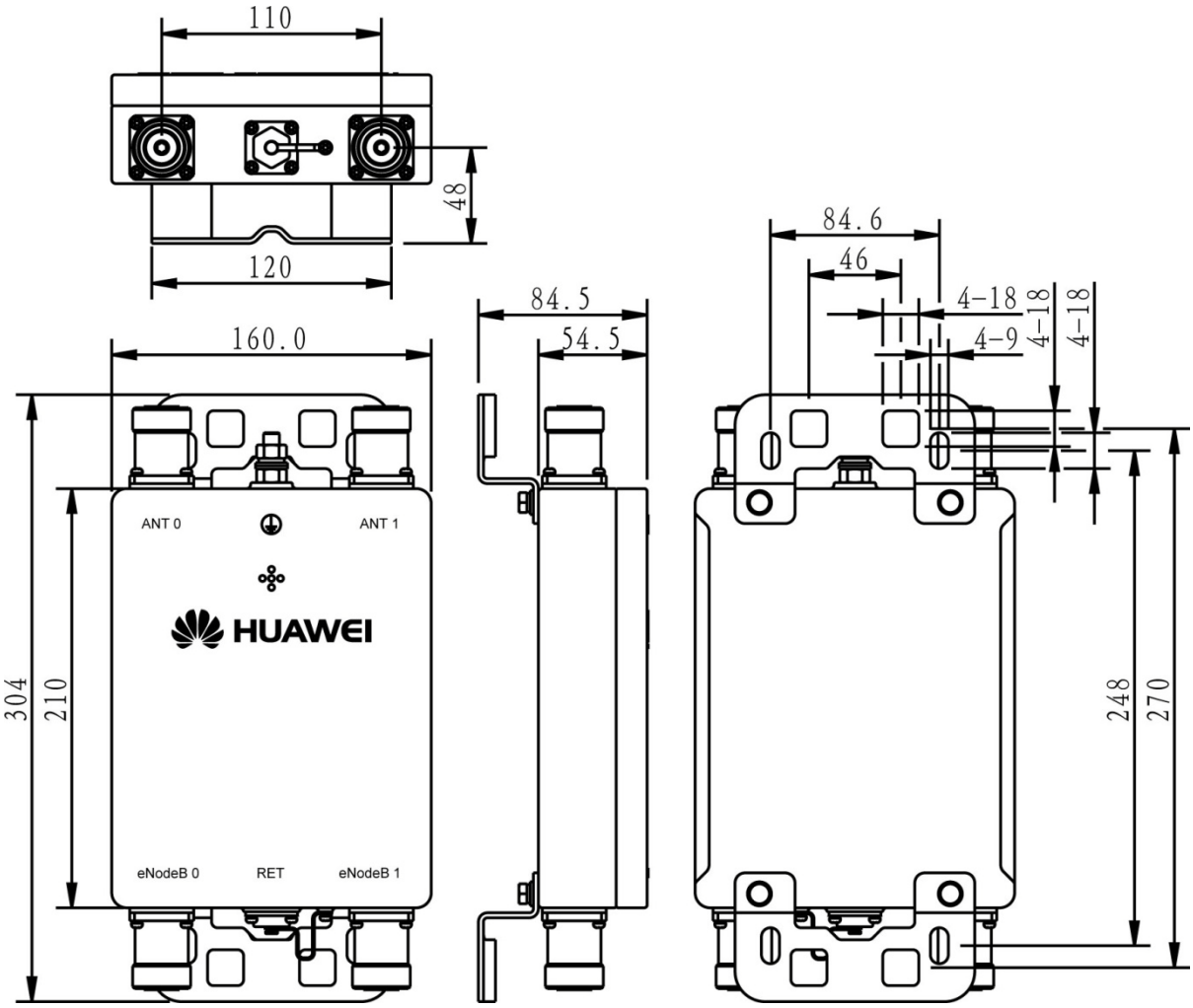
Environmental Specification	
Operating temperature range (℃)	-40 ... +65
IP rating	IP67
MTBF (hours)	> 1,000,000
EMC	ETS 300 342-3
Lightning protection (kA)	10 (8/20 us)

Mechanical Specification	
DTMA dimensions (W x H x D) (mm)	160 x 210 x 54.5 (without connectors, without brackets)
Packing dimensions (W x H x D) (mm)	205 x 380 x 130
DTMA weight (kg)	≤ 3.1 (with brackets)
Packing weight (kg)	≤ 4.0
DTMA Volume (L)	Approx. 1.8
AISG connector	8-pin female, IEC 60130-9 (pin6: 8.5V - 30V DC, pin3: RS485B, pin5: RS485A, pin7: DC return, other pins: not connected)
Mounting	Wall mounting: with 4 screws (max. 8 mm diameter) Mast mounting
Mast diameter (mm)	Default: 30 - 125 // Optional: 40 - 140
Connector	4 x 7/16 DIN Female (Long neck)

*Insertion loss: $\overline{IL} = \frac{IL2620MHz + 2 \times IL2655MHz + IL2690MHz}{4}$

**Noise figure: $\overline{NF} = \frac{NF2500MHz + 2 \times NF2535MHz + NF2570MHz}{4}$

***TMA gain can be switched from fixed to adjustable via the gain setting command. when set a value between 0x20 and 0x30, the gain is adjustable, and the range is from 8 dB to 12 dB, and when the value is 0xFE, the gain is fixed 12 dB.


110
48
120
84.5
54.5
160.0
84.6
46
4-18
4-18
4-18
4-9
304
210
248
270
ANT 0
ANT 1
HUAWEI
eNodeB 0
RET
eNodeB 1

Unit : mm

MTMA-1800/2100-12dB-2BTSport2ANTport-AISG
Model: ATADU2017v06

Preliminary Issue

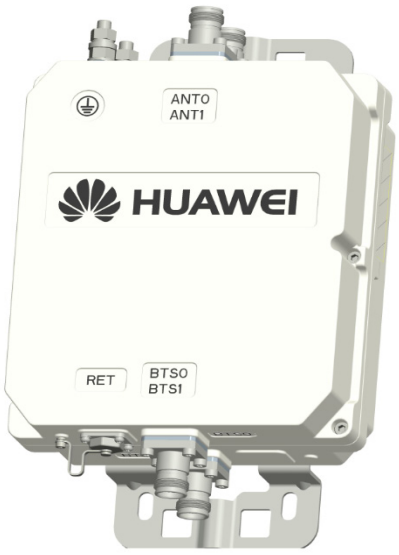
Product Description

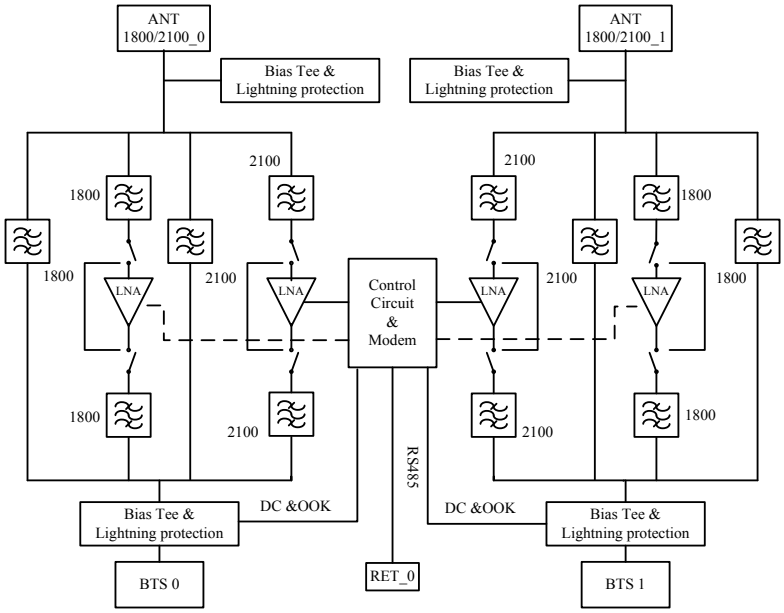
The multiband tower mounted amplifier (MTMA) is a low-noise amplifier installed near the antenna to satisfy the co-siting purposes. It helps to improve the signal-to-noise ratio and enhance the receiving sensitivity of the BTS system. It enhances the uplink coverage and reduces uplink and downlink imbalance of the base station. It effectively reduces the transmitting power used by cellphones and improves voice and data communication quality. When scanning the AISG ALD, the TMA is responding to the AISG controller with two individual serial numbers (unique IDs) with each their two subunits (two subunits per frequency band).

Features

- High linearity and low noise performance.
- Power failure bypass for high reliability.
- Light weight and compact design.
- Designed for co-siting purposes.
- Wall mounting and mast mounting.
- Built-in lightning protection up to 10 kA.
- Support AISG 2.0 protocol.

Appearance and Block Diagram





MTMA-1800/2100-12dB-2BTSport2ANTport-AISG

Model: ATADU2017v06

Tx Specifications		
Frequency range (MHz)	1805-1880	2110-2170
Bandwidth (MHz)	75	60
Insertion loss (dB)	Typ. < 0.35	Typ. < 0.25
Return loss (dB)	≥ 18	
Input power (W)	< 200 (+53 dBm) CW < 2000 (+63 dBm) peak	
Intermodulation products in Rx band (dBm)	≤ -110 (3rd order; with 2 x 43 dBm)	

Rx Specifications		
Frequency range (MHz)	1710-1785	1920-1980
Bandwidth (MHz)	75	60
Return loss(dB)	≥ 18 (DC ON) ≥ 13 (DC OFF)	
Insertion loss in by-pass mode (dB)	< 3.0	
Gain (dB)	12 ±1	
Noise figure (dB)	Typ. < 1.2	Typ. < 1.2
Output 1dB compression (dBm)	≥ 12	
OIP3 (dBm)	≥ 27	

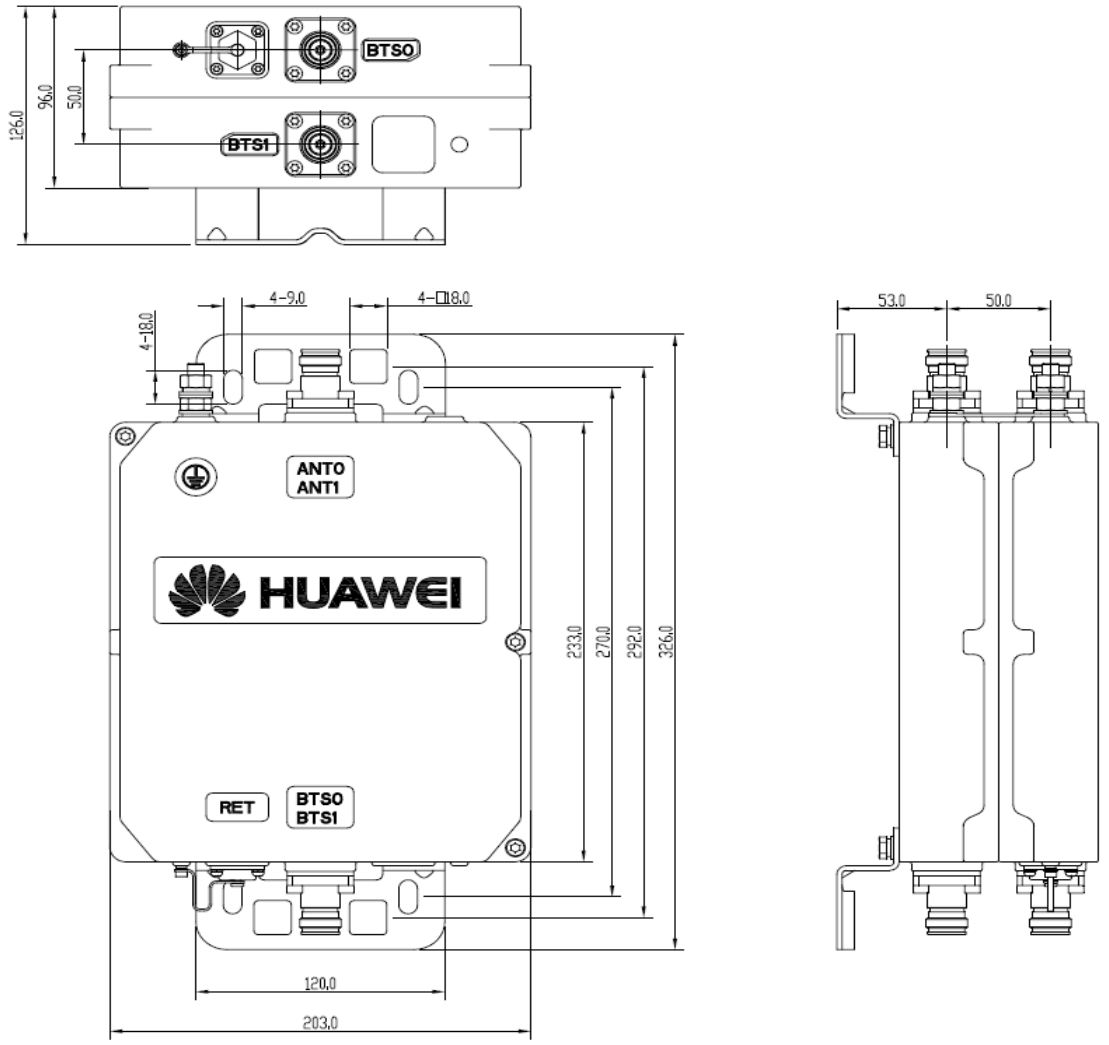
Electrical Specifications		
DC supply voltage (V)		8.5 - 30
Operating current per TMA (mA) (without RET)	@12 V	245 ±5
	@17 V	175 ±5
	@30 V	105 ±5
Alarm management		AISG
Power consumption (W)		< 3.2

Environmental Specification	
Operating temperature range (℃)	-40 ... +65
IP rating	IP67
MTBF (hours)	> 1,000,000
EMC	ETS 300 342-3
Lightning protection (kA)	10 (8/20 us) 3 (10/350 us)

Mechanical Specification	
MTMA dimensions (W x H x D) (mm)	203 x 233 x 96 (without connectors, without brackets)
Packing dimensions (W x H x D) (mm)	300 x 545 x 250
MTMA weight (kg)	≤ 5.5 (with brackets)
Packing weight (kg)	≤ 6
MTMA Volume (L)	<4.8
AISG connector	8-pin female, IEC 60130-9 (pin6: 8.5V - 30V DC, pin3: RS485B, pin5: RS485A, pin7: DC return, other pins: not connected)
Mounting	Wall mounting: with 4 screws (max. 8 mm diameter) Mast mounting
Mast diameter (mm)	Default: 40 - 135
Connector	4 x 4.3/10 DIN Female (Two ports are BTS and two ports are ANT)

*Insertion loss: $IL^* = \frac{Sum(V_1 + V_2 + \ldots + V_n)}{n}$, *V1, V2...Vn* is the IL-value for each 5M in the passband.

**Noise figure: $\overline{NF} = \frac{Sum(NF_1 + NF_2 + \ldots + NF_n)}{n}$, *NF1, NF2...NFn* is the NF-value for each 5M in the passband.


BTS0
BTS1
126.0
96.0
50.0
4-9.0
4-□8.0
4-18.0
ANT0
ANT1
HUAWEI
RET
BTS0
BTS1
233.0
270.0
292.0
326.0
120.0
203.0
53.0
50.0

Unit : mm

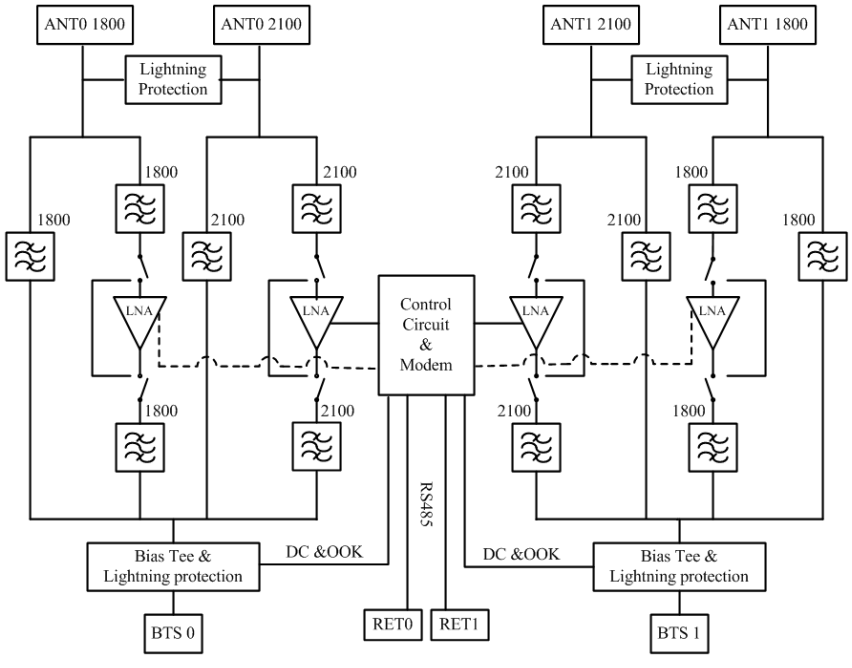
Product Description

The multiband tower mounted amplifier (MTMA) is a low-noise amplifier installed near the antenna to satisfy the co-siting purposes. It helps to improve the signal-to-noise ratio and enhance the receiving sensitivity of the BTS system. It enhances the uplink coverage and reduces uplink and downlink imbalance of the base station. It effectively reduces the transmitting power used by cellphones and improves voice and data communication quality. When scanning the AISG ALD, the TMA is responding to the AISG controller with two individual serial numbers (unique IDs) with each their two subunits (two subunits per frequency band).

Features

- High linearity and low noise performance.
- Balanced LNA design and power failure bypass for high reliability.
- Light weight and compact design.
- Designed for co-siting purposes.
- Wall mounting and mast mounting.
- Built-in lightning protection up to 10 kA.
- Support AISG 2.0 protocol.
- RET0 only controlled by BTS0 and RET1 only controlled by BTS1.

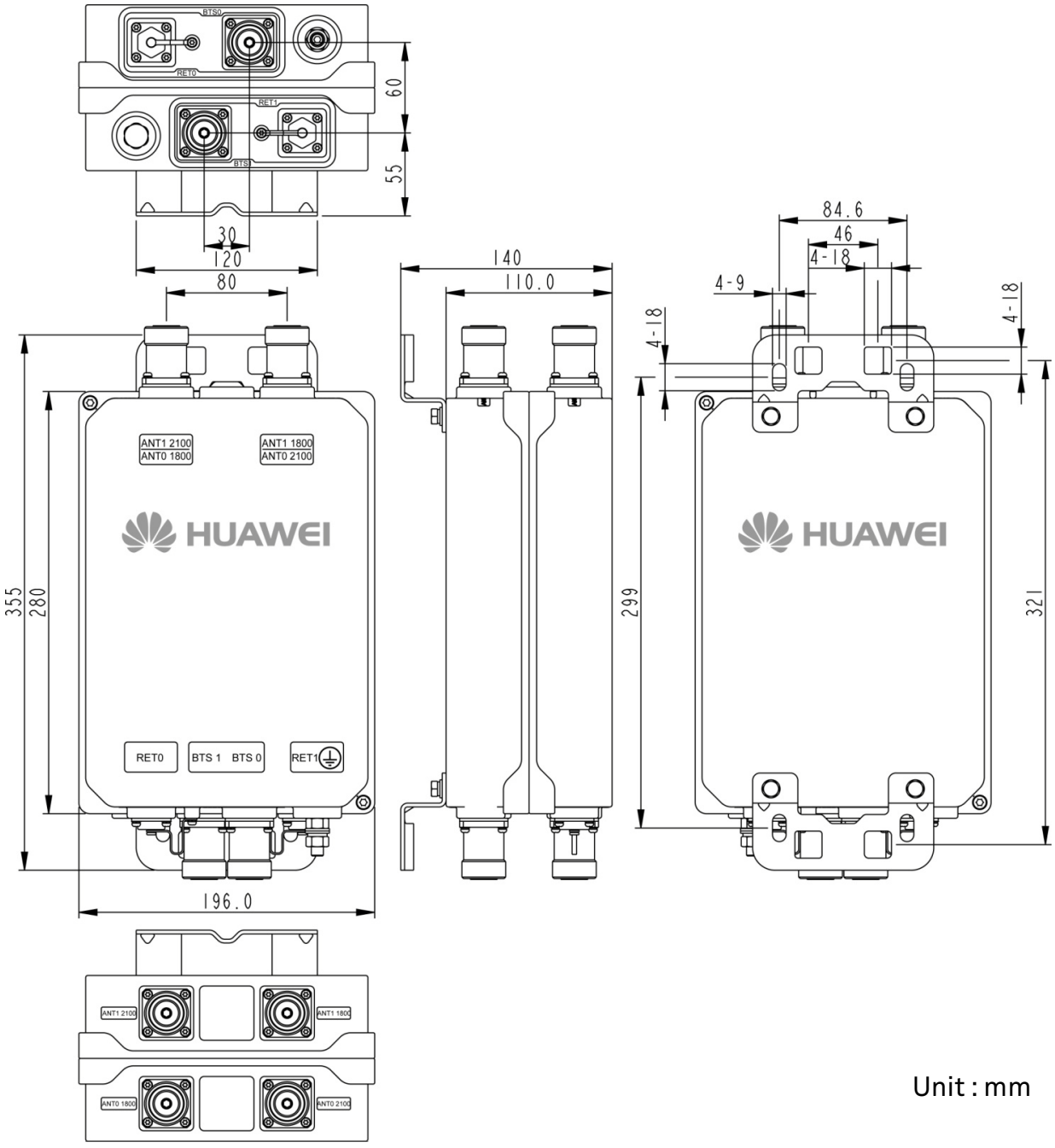
Appearance and Block Diagram



MTMA-1800/2100-12dB-2BTSport4ANTport-AISG

Model: ATADU2003

Tx Specifications		
Frequency range (MHz)	1805 - 1880	2110 - 2170
Bandwidth (MHz)	75	60
Insertion loss (dB)	Typ. < 0.45	Typ. < 0.35
Return loss (dB)	≥ 18	
Input power (W)	< 160 (+52 dBm) CW < 2000 (+63 dBm) peak	
Intermodulation products in Rx band (dBm)	≤ -110 (3rd order; with 2 x 43 dBm)	≤ -122 (7th order; with 2 x 43 dBm)
Rx Specifications		
Frequency range (MHz)	1710 - 1785	1920 - 1980
Bandwidth (MHz)	75	60
Return loss (dB)	≥ 18 (DC ON) ≥ 14 (DC OFF)	
Insertion loss in by-pass mode (dB)	Typ. < 3.0	
Gain (dB)	12 ± 1	
Noise figure (dB)	Typ. < 1.2	Typ. < 1.2
Output 1dB compression (dBm)	≥ 12	
OIP3 (dBm)	≥ 24	
Electrical Specifications		
DC supply voltage (V)	9 - 30	
Operating current per TMA (mA) (without RET) @12 V	225 ± 5	
Operating current per TMA (mA) (without RET) @17 V	165 ± 5	
Operating current per TMA (mA) (without RET) @30 V	105 ± 5	
Alarm management	AISG	
Power consumption (W)	< 3.0	
Environmental Specification		
Operating temperature range (℃)	-40 ... +65	
IP rating	IP67	
MTBF (hours)	> 1,000,000	
EMC	ETS 300 342-3	
Lightning protection (kA)	10 (8/20 us)	
Mechanical Specification		
MTMA dimensions (W x H x D) (mm)	196 x 280 x 110 (without connectors, without brackets)	
Packing dimensions (W x H x D) (mm)	245 x 475 x 220	
MTMA weight (kg)	≤ 7.3 (with brackets)	
Packing weight (kg)	≤ 8.5	
MTMA Volume (L)	Approx. 5.9	
AISG connector	8-pin female, IEC 60130-9 (pin6: 8.5V - 30V DC, pin3: RS485B, pin5: RS485A, pin7: DC return, other pins: not connected)	
Mounting	Wall mounting: with 4 screws (max. 8 mm diameter) Mast mounting	
Mast diameter (mm)	Default: 30 - 125 // Optional: 40 - 140	
Connector	6 x 7/16 DIN Female (Two ports are BTS and four ports are ANT)	


BTS0
RET0
RET1
BTS1
60
55
30
120
80
140
110.0
84.6
46
4-18
4-9
4-18
4-18
ANT1 2100
ANT0 1800
ANT1 1800
ANT0 2100
HUAWEI
355
280
RET0
BTS 1
BTS 0
RET1
196.0
299
321

Unit : mm

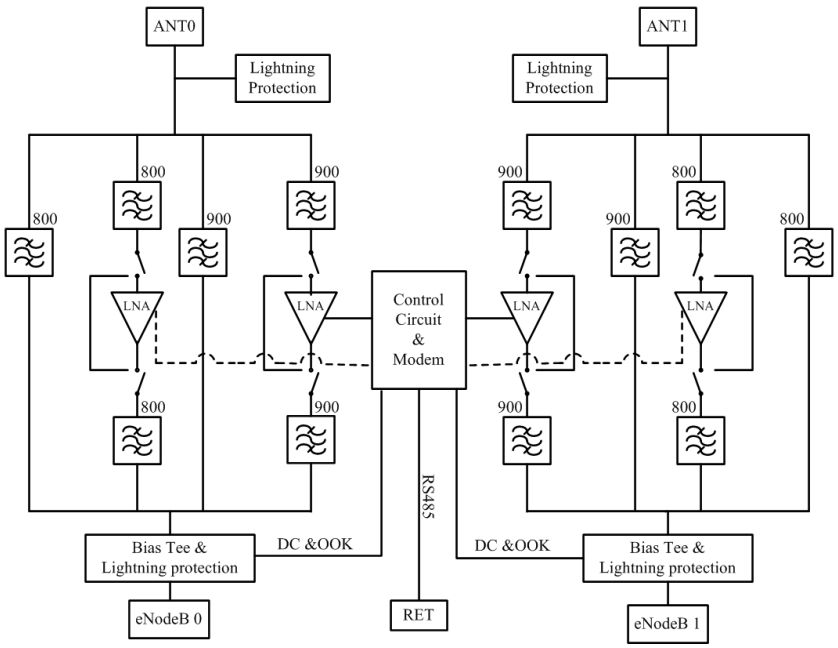
Product Description

The multiband tower mounted amplifier (MTMA) is a low-noise amplifier installed near the antenna to satisfy the co-siting purposes. It helps to improve the signal-to-noise ratio and enhance the receiving sensitivity of the BTS system. It enhances the uplink coverage and reduces uplink and downlink imbalance of the base station. It effectively reduces the transmitting power used by cellphones and improves voice and data communication quality. When scanning the AISG ALD, the MTMA can be operated from one primary controller, either on NodeB0 or NodeB1 port. When scanning the AISG ALD, the TMA is responding to the AISG controller with two individual serial numbers (unique IDs) with each their two subunits (two subunits per frequency band).

Features

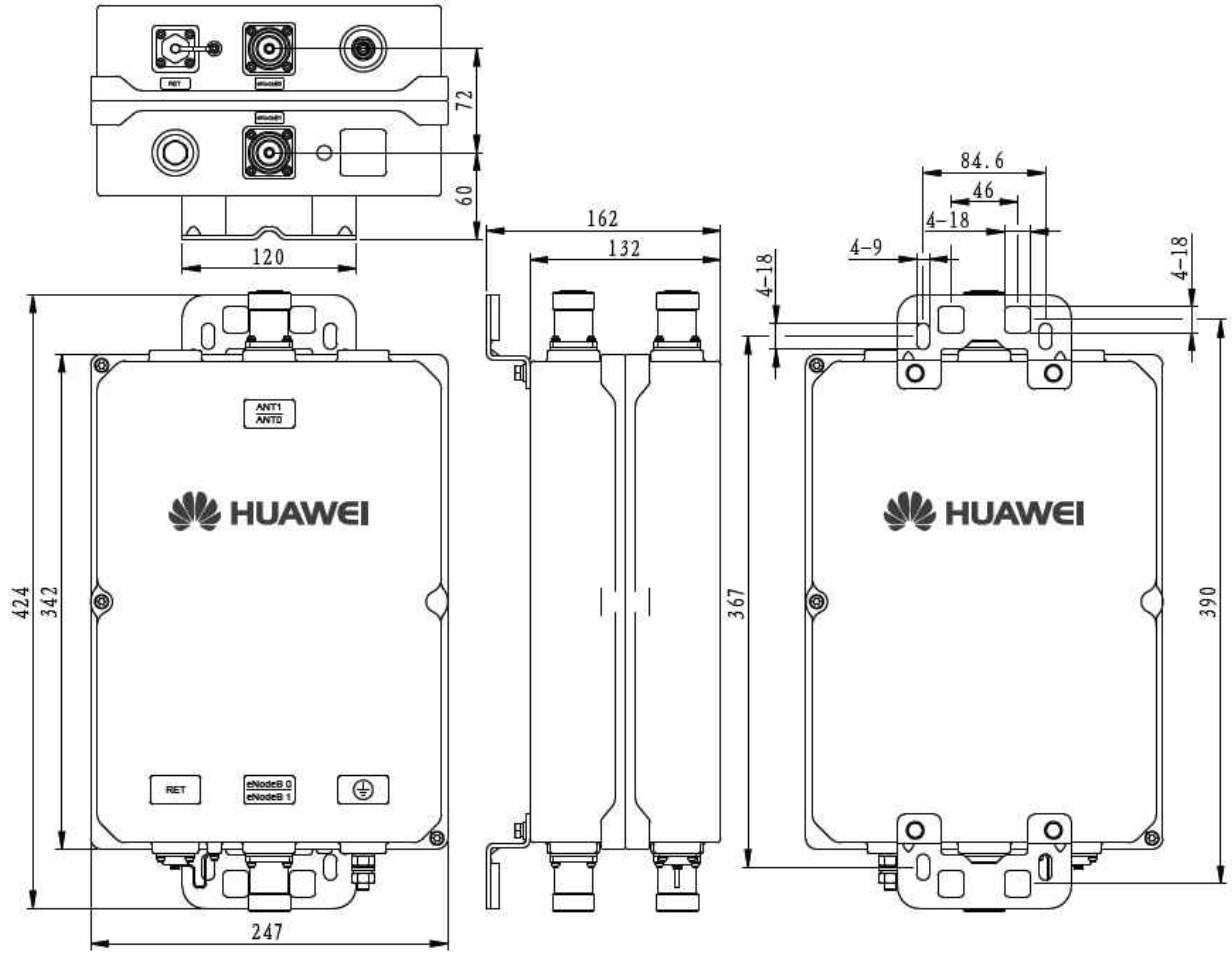
- High linearity and low noise performance.
- Balanced LNA design and power failure bypass for high reliability.
- Light weight and compact design.
- Designed for co-siting purposes.
- Wall mounting and mast mounting.
- Built-in lightning protection up to 10 kA.
- Support AISG 2.0 protocol.

Appearance and Block Diagram



MTMA-800/E900-12dB-2eNodeBport2ANTport-AISG
Model: ATADU2001

Tx Specifications		
Frequency range (MHz)	791 - 821	925 - 960
Bandwidth (MHz)	30	35
Insertion loss (dB)	Typ. < 0.4	
Return loss (dB)	≥ 18	
Input power (W)	< 160 (+52 dBm) CW < 2000 (+63 dBm) peak	
Intermodulation products in Rx band (dBm)	≤ -110 (3rd order; with 2 x 43 dBm)	
Rx Specifications		
Frequency range (MHz)	832 - 862	880 - 915
Bandwidth (MHz)	30	35
Return loss(dB)	≥ 18 (DC ON) ≥ 14 (DC OFF)	
Insertion loss in by-pass mode (dB)	Typ. < 3.0	
Gain (dB)	12 ±1	
Noise figure (dB)	Typ. < 1.3	
Output 1dB compression (dBm)	≥ 12	
OIP3 (dBm)	≥ 24	
Electrical Specifications		
DC supply voltage (V)	9 - 30	
Operating current per TMA (mA)(without RET) @12 V	245 ±5	
Operating current per TMA (mA)(without RET) @17 V	175 ±5	
Operating current per TMA (mA)(without RET) @30 V	105 ±5	
Alarm management	AISG	
Power consumption (W)	< 3.0	
Environmental Specification		
Operating temperature range (℃)	-40 ... +65	
IP rating	IP67	
MTBF (hours)	> 1,000,000	
EMC	ETS 300 342-3	
Lightning protection (kA)	10 (8/20 us)	
Mechanical Specification		
MTMA dimensions (W x H x D) (mm)	247 x 342 x 132 (without connectors, without brackets)	
Packing dimensions (W x H x D) (mm)	300 x 545 x 250	
MTMA weight (kg)	≤ 10.5 (with brackets)	
Packing weight (kg)	≤ 12.3	
MTMA Volume (L)	Approx. 10.8	
AISG connector	8-pin female, IEC 60130-9 (pin6: 8.5V - 30V DC, pin3: RS485B, pin5: RS485A, pin7: DC return, other pins: not connected)	
Mounting	Wall mounting: with 4 screws (max. 8 mm diameter) Mast mounting	
Mast diameter (mm)	Default: 30 - 125 // Optional: 40 - 140	
Connector	4 x 7/16 DIN Female (Two ports are eNodeB and two ports are ANT)	


72
60
120
162
132
84.6
46
4-18
4-9
4-18
4-18
424
342
247
367
390
ANT1
ANT0
RET
eNodeB 0
eNodeB 1
HUAWEI
HUAWEI

Unit : mm

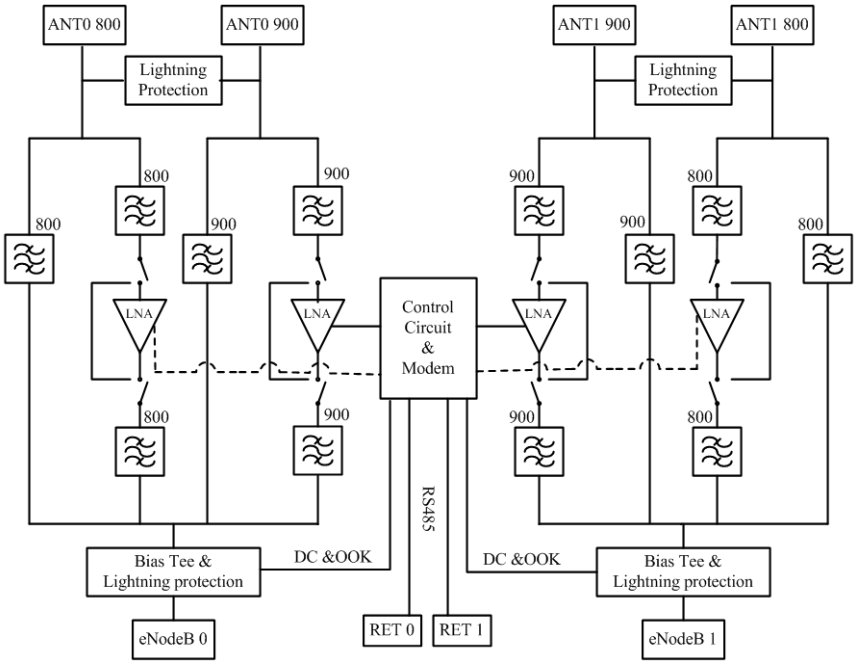
Product Description

The multiband tower mounted amplifier (MTMA) is a low-noise amplifier installed near the antenna to satisfy the co-siting purposes. It helps to improve the signal-to-noise ratio and enhance the receiving sensitivity of the BTS system. It enhances the uplink coverage and reduces uplink and downlink imbalance of the base station. It effectively reduces the transmitting power used by cellphones and improves voice and data communication quality. When scanning the AISG ALD, the TMA is responding to the AISG controller with two individual serial numbers (unique IDs) with each their two subunits (two subunits per frequency band).

Features

- High linearity and low noise performance.
- Balanced LNA design and power failure bypass for high reliability.
- Light weight and compact design.
- Designed for co-siting purposes.
- Wall mounting and mast mounting.
- Built-in lightning protection up to 10 kA.
- Support AISG 2.0 protocol.
- RET0 only controlled by eNodeB0 and RET1 only controlled by eNodeB1.

Appearance and Block Diagram

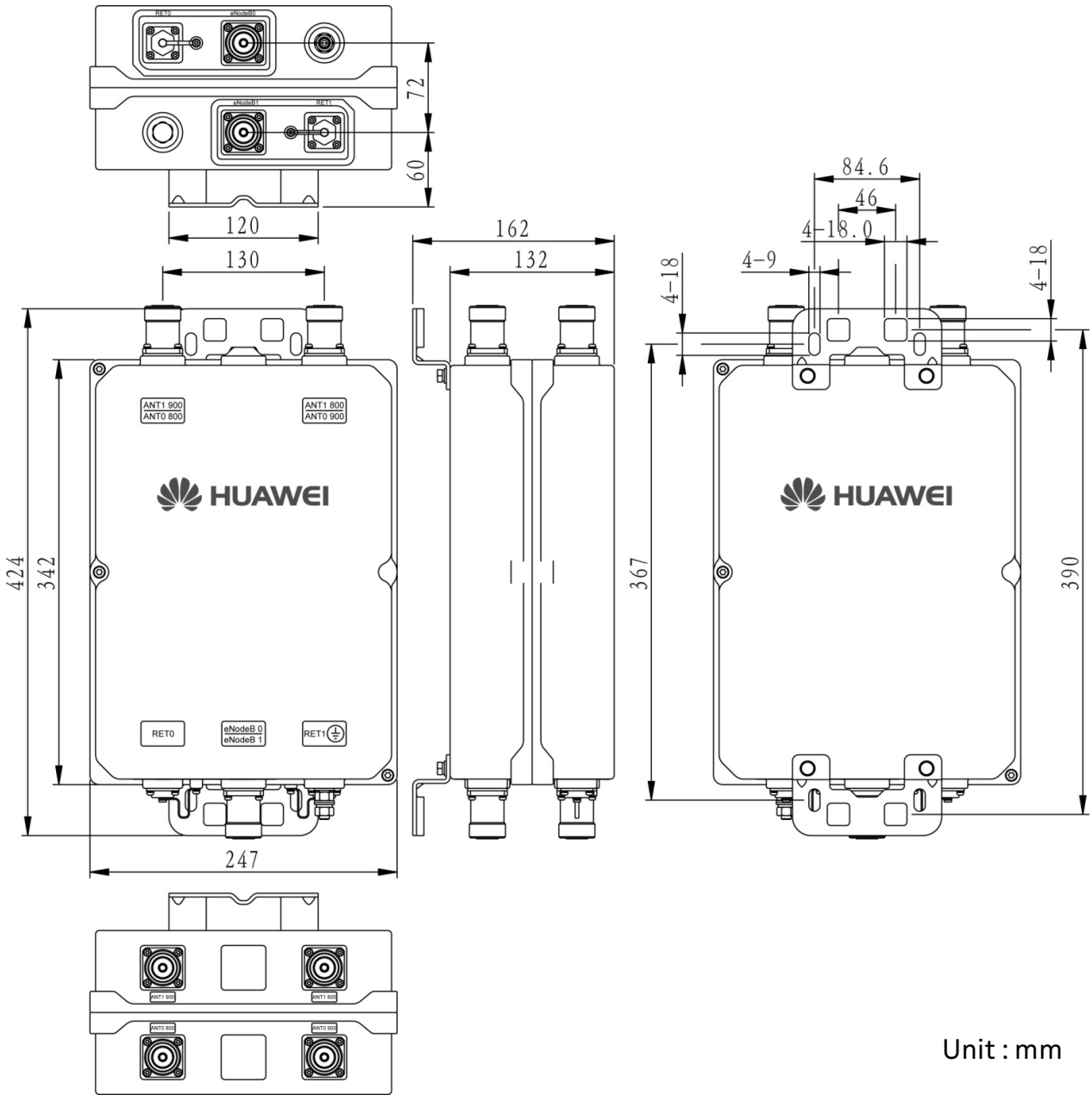


TMA

MTMA-800/E900-12dB-2eNodeBport4ANTport-AISG

Model: ATADU2005

Tx Specifications			
Frequency range (MHz)		791 - 821	925 - 960
Bandwidth (MHz)		30	35
Insertion loss (dB)		Typ. < 0.4	
Return loss (dB)		≥ 18	
Input power (W)		< 160 (+52 dBm) CW < 2000 (+63 dBm) peak	
Intermodulation products in Rx band (dBm)		≤ -110 (3rd order; with 2 x 43 dBm)	
Rx Specifications			
Frequency range (MHz)		832 - 862	880 - 915
Bandwidth (MHz)		30	35
Return loss(dB)		≥ 18 (DC ON) ≥ 14 (DC OFF)	
Insertion loss in by-pass mode (dB)		Typ. < 3.0	
Gain (dB)		12 ±1	
Noise figure (dB)		Typ. < 1.3	
Output 1dB compression (dBm)		≥ 12	
OIP3 (dBm)		≥ 24	
Electrical Specifications			
DC supply voltage (V)		9 - 30	
Operating current per TMA (mA) (without RET)	@12 V	225 ±5	
	@17 V	165 ±5	
	@30 V	105 ±5	
Alarm management		AISG	
Power consumption (W)		< 3.0	
Environmental Specification			
Operating temperature range (℃)		-40 ... +65	
IP rating		IP67	
MTBF (hours)		> 1,000,000	
EMC		ETS 300 342-3	
Lightning protection (kA)		10 (8/20 us)	
Mechanical Specification			
MTMA dimensions (W x H x D) (mm)		247 x 342 x 132 (without connectors, without brackets)	
Packing dimensions (W x H x D) (mm)		300 x 545 x 250	
MTMA weight (kg)		≤ 10.5 (with brackets)	
Packing weight (kg)		≤ 12.3	
MTMA Volume (L)		Approx. 10.8	
AISG connector		8-pin female, IEC 60130-9 (pin6: 8.5V - 30V DC, pin3: RS485B, pin5: RS485A, pin7: DC return, other pins: not connected)	
Mounting		Wall mounting: with 4 screws (max. 8 mm diameter) Mast mounting	
Mast diameter (mm)		Default: 30 - 125 // Optional: 40 - 140	
Connector		6 x 7/16 DIN Female (Two ports are eNodeB and four ports are ANT)	


72
60
120
130
162
132
84.6
46
4-18.0
4-9
4-18
4-18
424
342
367
390
247
ANT1 900
ANT0 800
ANT1 800
ANT0 900
HUAWEI
RET0
eNodeB 0
eNodeB 1
RET1
HUAWEI

Unit : mm

MTMA-1800&2100/2600-12dB-2BTSport4ANTport-AISG
Model: ATADU2015

Preliminary Issue

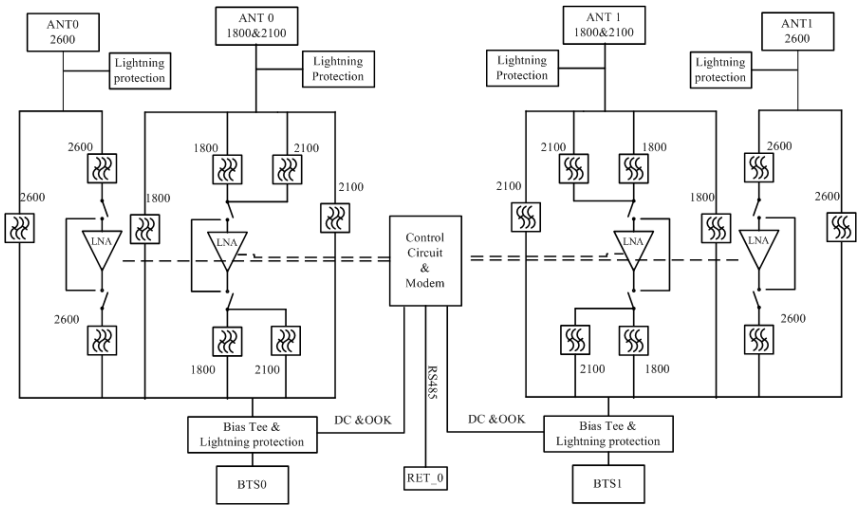
Product Description

The multiband tower mounted amplifier (MTMA) is a low-noise amplifier installed near the antenna to satisfy the co-siting purposes. It helps to improve the signal-to-noise ratio and enhance the receiving sensitivity of the BTS system. It enhances the uplink coverage and reduces uplink and downlink imbalance of the base station. It effectively reduces the transmitting power used by cellphones and improves voice and data communication quality. When scanning the AISG ALD, the MTMA can be operated from one primary controller, either on BTS0 or BTS1 port. When scanning the AISG ALD, the TMA is responding to the AISG controller with two individual serial numbers (unique IDs) with each their two subunits (two subunits per frequency band).

Features

- High linearity and low noise performance.
- Power failure bypass for high reliability.
- Light weight and compact design.
- Designed for co-siting purposes.
- Wall mounting and mast mounting.
- Built-in lightning protection up to 10 kA.
- Support AISG 2.0 protocol.

Appearance and Block Diagram



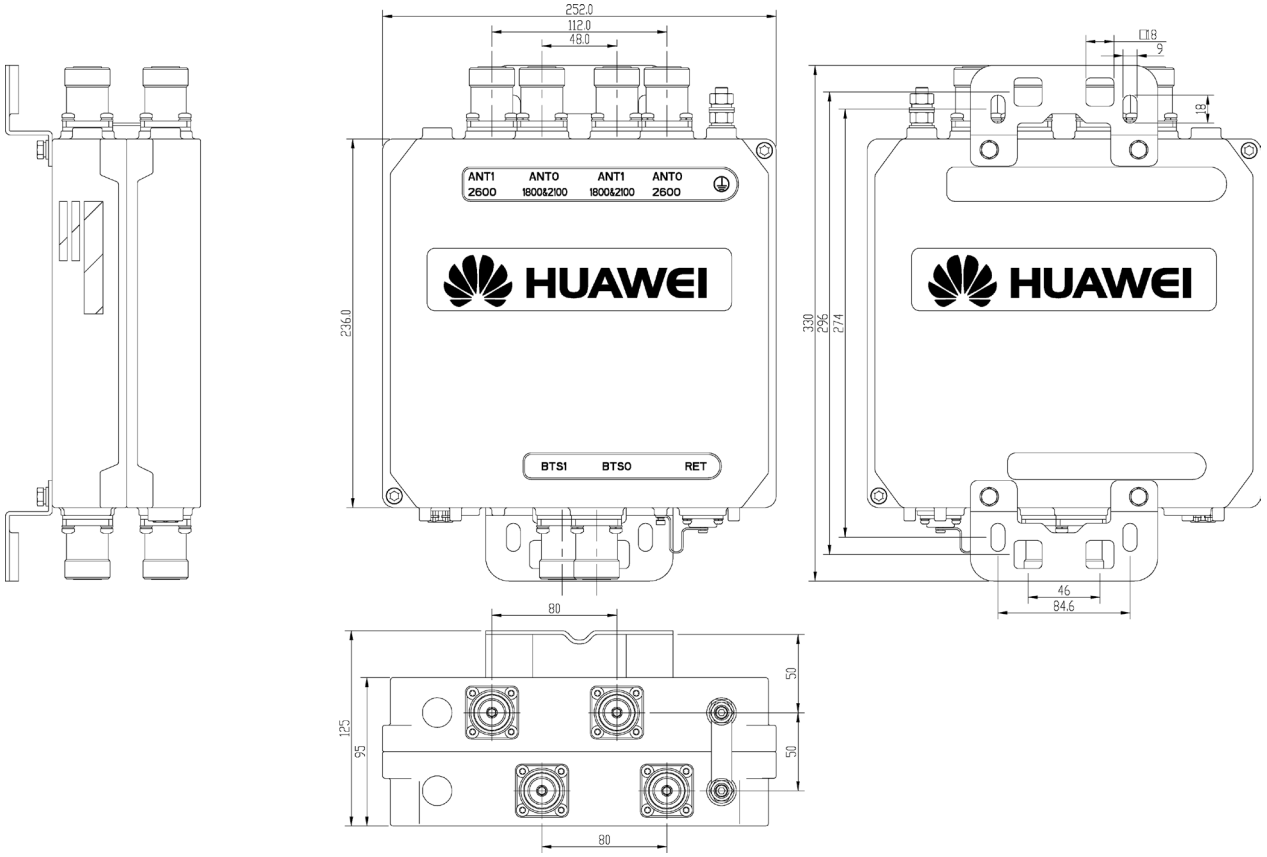
MTMA-1800&2100/2600-12dB-2BTSport4ANTport-AISG

Model: ATADU2015

Tx Specifications			
Frequency range (MHz)		1805 - 1880&2110 - 2170	2620 - 2690
Bandwidth (MHz)		75&60	70
Insertion loss * (dB)		Typ. < 0.4&Typ. < 0.25	Typ. < 0.35
Return loss (dB)		≥ 18	
Input power (W)		< 160 (+52 dBm) CW < 2000 (+63 dBm) peak	
Intermodulation products in Rx band (dBm)		≤ -110 (3rd order; with 2 x 43 dBm) @1800M ≤ -122 (7th order; with 2 x 43 dBm) @2100M	≤ -110 (3rd order; with 2 x 43 dBm)
Rx Specifications			
Frequency range (MHz)		1710 - 1785&1920 - 1980	2500 - 2570
Bandwidth (MHz)		75&60	70
Return loss (dB)		≥ 18 (DC ON) ≥ 13 (DC OFF)	
Insertion loss in by-pass mode (dB)		Typ. < 2.5	
Gain (dB)		12（nominal）	
Noise figure** (dB)		Typ. <1.2 &Typ. <1.2	Typ. < 1.5
Output 1dB compression (dBm)		≥ 12	
OIP3 (dBm)		≥ 28	
Electrical Specifications			
DC supply voltage (V)		8.5 - 30	
Operating current per TMA (mA) (without RET)	@12 V	245 ±5	
	@17 V	175 ±5	
	@30 V	105 ±5	
Alarm management		AISG2.0	
Power consumption (W)		< 3.0	
Environmental Specification			
Operating temperature range (℃)		-40 ... +65	
IP rating		IP67	
MTBF (hours)		> 1,000,000	
EMC		ETS 300 342-3	
Lightning protection (kA)		10 (8/20 us)	
Mechanical Specification			
MTMA dimensions (W x H x D) (mm)		252 x 236 x 95 (without connectors, without brackets)	
Packing dimensions (W x H x D) (mm)		405 x 305 x 210	
MTMA weight (kg)		8.0	
Packing weight (kg)		9.5	
MTMA Volume (L)		< 5.8	
AISG connector		8-pin female, IEC 60130-9 (pin6: 8.5V - 30V DC, pin3: RS485B, pin5: RS485A, pin7: DC return, other pins: not connected)	
Mounting		Wall mounting: with 4 screws (max. 8 mm diameter) Mast mounting	
Mast diameter (mm)		Default: 40 - 135	
Connector		6 x 7/16 DIN Female (Two ports are BTS and four ports are ANT)	

*Insertion loss: $\overline{IL} = \frac{IL_{Min.MHz(TX)} + 2 \times IL_{Mid.MHz(TX)} + IL_{Max.MHz(TX)}}{4}$

**Noise figure: $\overline{NF} = \frac{NF_{Min.Frequency} + 2 \times NF_{Mid.Frequency} + NF_{Max.Frequency}}{4}$


252.0
112.0
48.0
ANT1 2600
ANT0 1800&2100
ANT1 1800&2100
ANT0 2600
HUAWEI
236.0
BTS1
BTS0
RET
80
125
95
50
50
80
HUAWEI
330
296
274
18
9
46
84.6

Unit : mm

D-2. Combiner

Catagery	Pass Band(MHz)	Max. Input power(W)	DC-Bypass	Intermodulation (dBm)	Dimension (mm)	Model	Page
Dual-band Combiner	Band 1: 690-862/ Band 2: 880-960	200	Smart DC-Bypass	< -117	Double Unit: 130 x180 x 125	**ACOMD2S01v06	307
	Band 1: 690-803/ Band 2: 824-960	200	690~803MHz DC-bypass	< -112	Double Unit: 200 x 230 x 107	ACOMD2L08	310
	Band 1: 790-862/ Band 2: 880-960	200	880~960MHz DC-bypass	< -110	Double Unit: 180 x 210 x 107	ACOMD2H09	313
	Band 1: 790-862/ Band 2: 880-960	200	All DC-bypass	< -110	Double Unit: 180 x 210 x 107	ACOMD2H18	313
	Band 1 : 698-960/ Band 2: 1710-2200	300	1710~2200MHz DC-bypass	< -110	Double Unit: 130 x 190 x 105	ACOMD2H11	316
	Band 1: 698-960 / Band 2: 1710-2700	300	1710~2700MHz DC-bypass	< -110	Double Unit: 130 x 190 x 105	ACOMD2H00	319
	Band 1: 698-960/ Band 2: 1710-2700	300	All DC-bypass	< -110	Double Unit: 130 x 190 x 105	ACOMD2H22	319
	Band 1: 1710-1880 / Band 2: 1920-2200	300	1920~2200MHz DC-bypass	< -110	Double Unit: 160 x 154 x 103	ACOMD2H06	322
	Band 1: 1710-1880/ Band 2: 1920-2200	300	All DC-bypass	< -110	Double Unit: 160 x 154 x 103	ACOMD2H08	322
	Band 1: 1710-2200/ Band 2: 2490-2700	300	1710~2200MHz DC-bypass	< -110	Double Unit: 126 x 102 x 103	ACOMD2L04	325
	Band 1: 1710-2200/ Band 2: 2490-2700	300	All DC-bypass	< -110	Double Unit: 126 x 102 x 103	ACOMD2H16	325
Tri-band Combiner	Band 1: 790-862/ Band 2: 880-960/ Band 3: 1710-2200	300	All DC-bypass	< -110	Double Unit: 220 x 210 x 115	ACOMT2H04	328
	Band 1: 790-862/ Band 2: 880-960/ Band 3: 1710-2700	300	All DC-bypass	< -110	Double Unit: 220 x 210 x 115	**ACOMT2A02	331
	Band 1: 790-960/ Band 2: 1710-1880/ Band 3: 1920-2200	300	1920~2200MHz DC-bypass	< -110	Double Unit: 190 x 154 x 105	ACOMT2H01	334
	Band 1: 790-960/ Band 2: 1710-1880/ Band 3: 1920-2200	300	1710~1880MHz DC-bypass 1920~2200MHz DC-bypass	< -110	Double Unit: 190 x 154 x 105	ACOMT2H03	334
	Band 1: 790-960/ Band 2: 1710-1880/ Band 3: 1920-2200	300	ALL DC-bypass	< -110	Double Unit: 190 x 154 x 105	ACOMT2H08	334

Catagery	Pass Band(MHz)	Max. Input power(W)	DC-Bypass	Intermodulation (dBm)	Dimension (mm)	Model	Page
	Band 1: 690-960/ Band 2: 1710-1880/ Band 3: 1920-2200	300	All DC-bypass	< -110	Double Unit: 196 x 190 x 112	**ACOMT2A03	**337**
	Band 1: 690-960/ Band 2: 1710-2200/ Band 3: 2300-2690	300	All DC-bypass	< -110	Double Unit: 196 x 190 x 112	**ACOMT2A04	**340**
	Band 1: 1710-1880/ Band 2: 1920-2200/ Band 3: 2490-2700	300	All DC-bypass	< -110	Double Unit: 230 x 220x 112	**ACOMT2A06	**343**
Quad-band Combiner	Band 1: 790-960/ Band 2: 1710 -1880/ Band 3: 1920-2200/ Band 4: 2490-2700	300	1920~2200MHz DC-bypass	< -110	Double Unit: 215 x 200 x 105	ACOMQ2M00	**346**
	Band 1: 790-960/ Band 2: 1710 -1880/ Band 3: 1920-2200/ Band 4: 2490-2700	300	All DC-bypass	< -110	Double Unit: 215 x 200 x 105	ACOMQ2H00	**346**
	Band 1: 690-960/ Band 2: 1710-1880/ Band 3: 1920-2200/ Band 4: 2300-2690	300	All DC-bypass	< -110	Double Unit: 230 x 220 x 112	**ACOMQ2A01	**349**
DC-STOP	Band: 698-2700	500	DC-Stop	< -117	Unit: 39 x 151 x 45	ADCSTOP00	**352**

D-3. Filter

Filter Band(MHz)	Insertion loss (dB)	Rejection(dB)	Intermodulation products (dBm)	Dimension (mm)	Model	Page
824-880	< 0.55 (875 MHz - 880 MHz), < 0.25 (824 MHz - 875 MHz)	> 35 (885 MHz - 960 MHz)	< -110	200 x 155 x 58	**ACOMD2N05	**354**
885-960	< 1.3 (885 MHz - 890 MHz), < 0.45 (890 MHz - 905 MHz), < 0.3 (905 MHz - 960 MHz)	> 65 (869 MHz - 880 MHz), > 55 (824 MHz - 869 MHz)	< -110	180 x 220 x 56	**ACOMD2N04	**357**

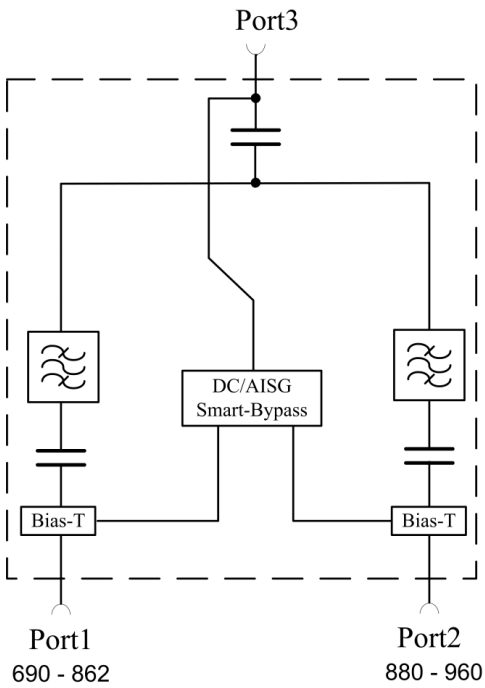
*** Preliminary Issue*

Preliminary Issue

Product Description

- Built-in lightning protection up to 10 kA;
- Can be used as a combiner near the BTS or in a reciprocal function near the antenna;
- Automatically recognizes the port DC / AISG, and the combiner module or the demultiplexing module is the same module;
- Support for customer-defined configuration with handheld terminal;
- Designed for co-siting purposes;
- Feeder sharing available;
- Suitable for indoor or outdoor applications.
- Wall or mast mounting.

Block Diagram

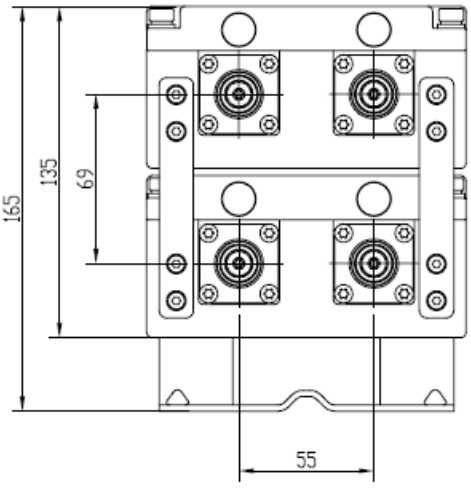


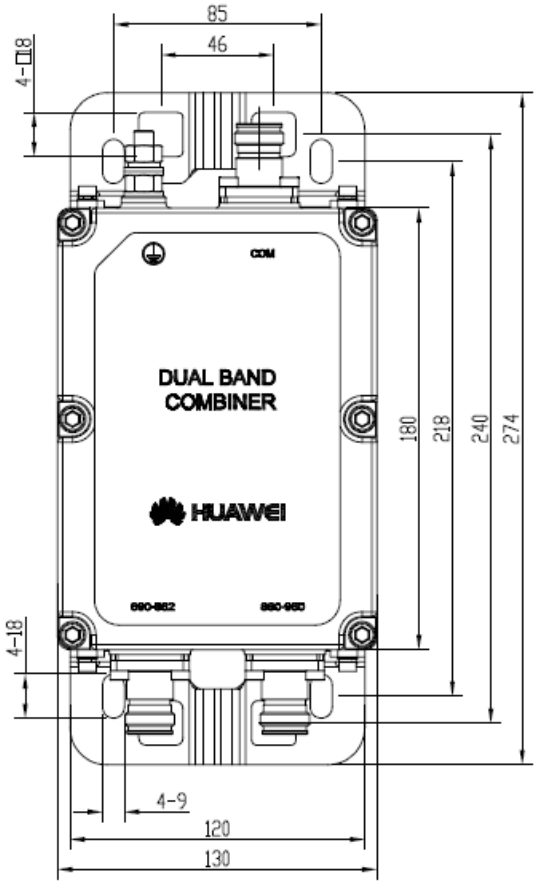
ACOMD2S01v06

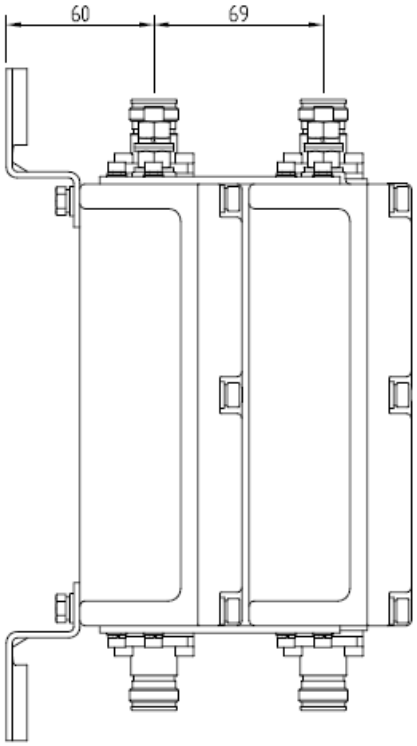
Electrical Properties		
Model		ACOMD2S01v06
Pass band (MHz)	Band 1	690 - 862
	Band 2	880 - 960
Insertion loss* (dB)	Port 1 ←→ Port 3	< 0.3 (690 MHz - 862 MHz)
	Port 2 ←→ Port 3	< 0.3 (880 MHz - 960 MHz)
DC/AISG transparency	Port 1 ←→ Port 3	Smart-bypass (max. 2000 mA)
	Port 2 ←→ Port 3	Smart-bypass (max. 2000 mA)
Isolation (dB)	Port 1 ←→ Port 2	> 30 (832 MHz - 862 MHz / 880 MHz - 915 MHz) > 50 (690 MHz - 821 MHz / 925 MHz - 960 MHz)
VSWR		< 1.28
Input power (W)	Port 1, Port 2, Port 3, Port 4	< 200
Intermodulation products (dBm)		< -117 (3rd order; with 2 x 43 dBm)
Environmental Specification		
Operating temperature (℃)		-40 ... +65
Application scene		Indoor // Outdoor
IP rating		IP67
Lightning protection** (kA)		10 (8/20 us)
Mechanical Specification		
Combiner dimensions (W x H x D) (mm)		Double Unit: 130 x 180x 135 (without connectors, without mounting brackets)
Packing dimensions (W x H x D) (mm)		225 x 355 x 220
Combiner weight (kg)		Double Unit: ≤ 5.5
Packing weight (kg)		≤ 7
Mounting		Wall mounting // Mast mounting
Mast diameter (mm)		Default: 40 - 135
Connector		4.3/10 DIN Female

*Insertion loss: $\overline{IL} = \frac{IL_{Min.Frequency} + 2 \times IL_{Mid.Frequency} + IL_{Max.Frequency}}{4}$

**Lightning protection: In normal instance, the combiner share the GND protection systems with feeders and no need another GND cable.


165
135
69
55


85
46
4-□18
COM
DUAL BAND
COMBINER
HUAWEI
180
218
240
274
4-18
4-9
120
130

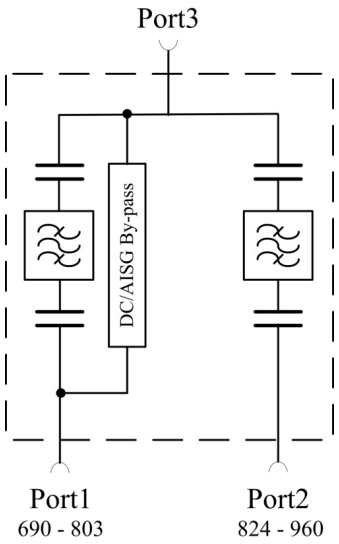

60
69

Unit : mm

Product Description

- Built-in lightning protection up to 10 kA.
- Can be used as a combiner near the BTS or in a reciprocal function near the antenna.
- Designed for co-siting purposes.
- Feeder sharing available.
- Suitable for indoor or outdoor applications.
- Wall or mast mounting.

Block Diagram

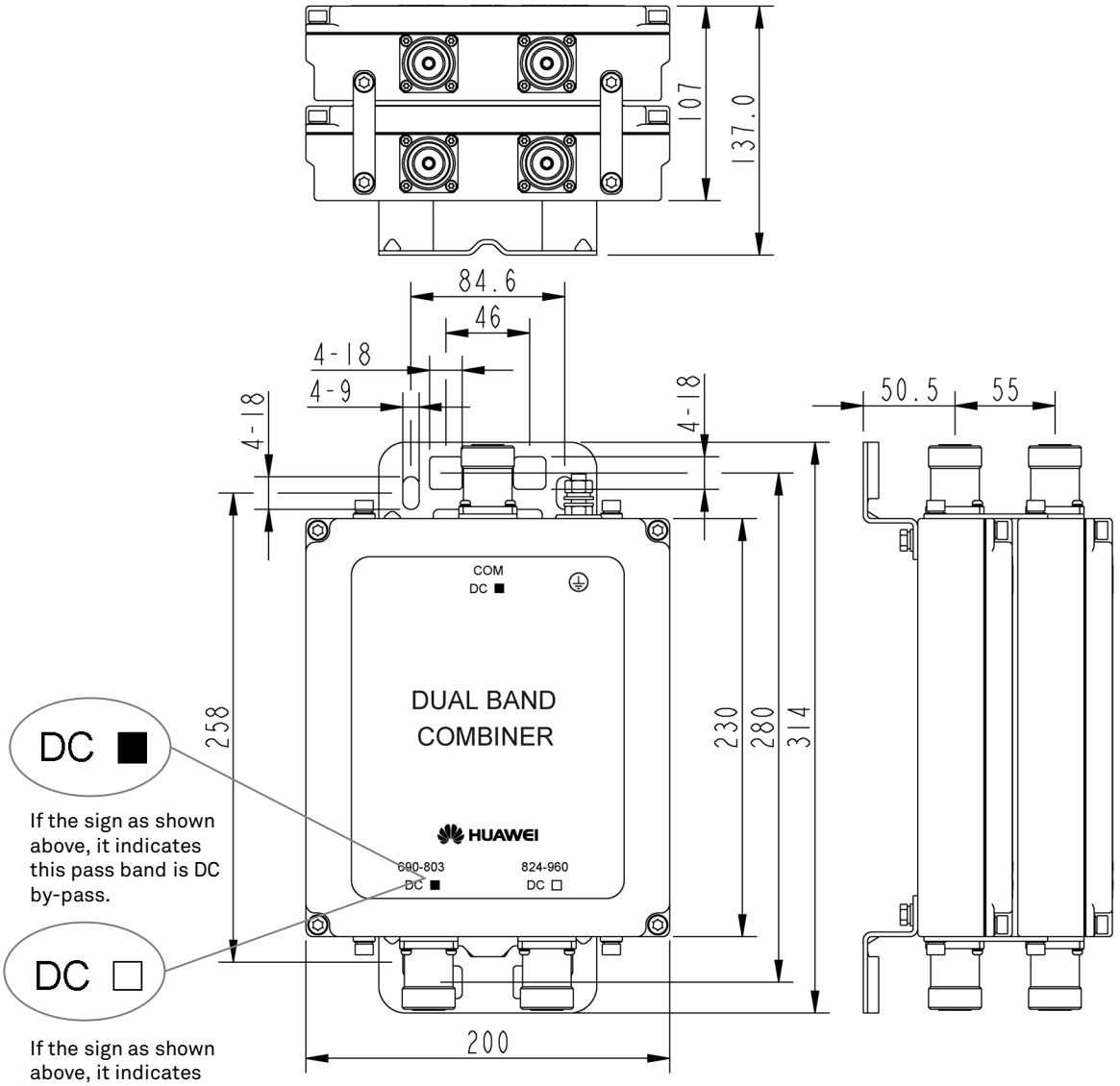


ACOMD2L08

Electrical Properties		
Model		ACOMD2L08
Pass band (MHz)	Band 1	690 - 803
	Band 2	824 - 960
Insertion loss *(dB)	Port 1 ←→ Port 2	< 0.45 (690 MHz - 803 MHz)
	Port 1 ←→ Port 3	< 0.45 (824 MHz - 960 MHz)
DC/AISG transparency	Port 1 ←→ Port 2	By-pass (max. 2500 mA)
	Port 1 ←→ Port 3	Stop
Isolation (dB)		> 47.0
VSWR		< 1.22
Input power (W)	Port 1, Port 2, Port3	< 300
Intermodulation products (dBm)		< -112 (3rd order; with 2 x 43 dBm)
Environmental Specification		
Operating temperature (℃)		-40 ... +65
Application scene		Indoor // Outdoor
IP rating		IP67
Lightning protection** (kA)		10 (8/20 us)
Mechanical Specification		
Combiner dimensions (W x H x D) (mm)		Double Unit: 200 x 230 x 107 (without connectors, without mounting brackets)
Packing dimensions (W x H x D) (mm)		335 x 405 x 265
Combiner weight (kg)		Double Unit: ≤ 7.9
Packing weight (kg)		≤ 9.4
Mounting		Wall mounting // Mast mounting
Mast diameter (mm)		Default: 40 - 135
Connector		7/16 DIN Female (Long neck)

*Insertion loss: $\overline{IL} = \frac{IL_{Min.Frequency} + 2 \times IL_{Mid.Frequency} + IL_{Max.Frequency}}{4}$

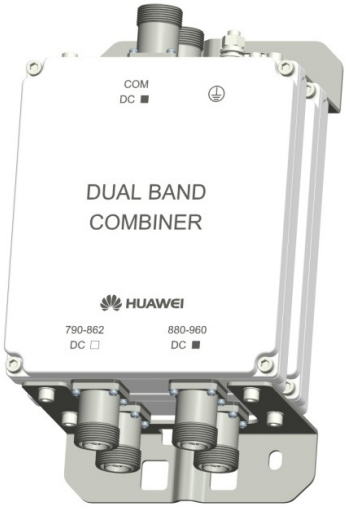
**Lightning protection：In normal instance, the combiner share the GND protection systems with feeders and no need another GND cable.


107
137.0
84.6
46
4-18
4-9
4-18
4-18
50.5
55
COM
DC ■
DUAL BAND
COMBINER
HUAWEI
690-803
DC ■
824-960
DC □
258
230
280
314
200
DC ■
If the sign as shown above, it indicates this pass band is DC by-pass.
DC □
If the sign as shown above, it indicates this pass band is DC stop.

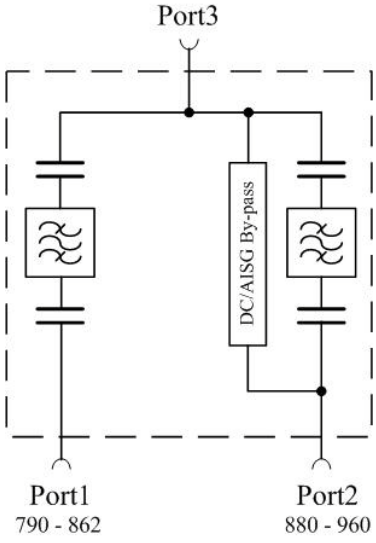
Unit : mm

Product Description

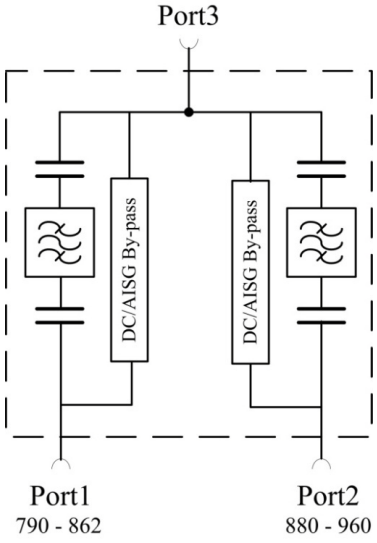
- Built-in lightning protection up to 10 kA.
- Can be used as a combiner near the BTS or in a reciprocal function near the antenna.
- Designed for co-siting purposes.
- Feeder sharing available.
- Suitable for indoor or outdoor applications.
- Wall or mast mounting.



Block Diagram



ACOMD2H09

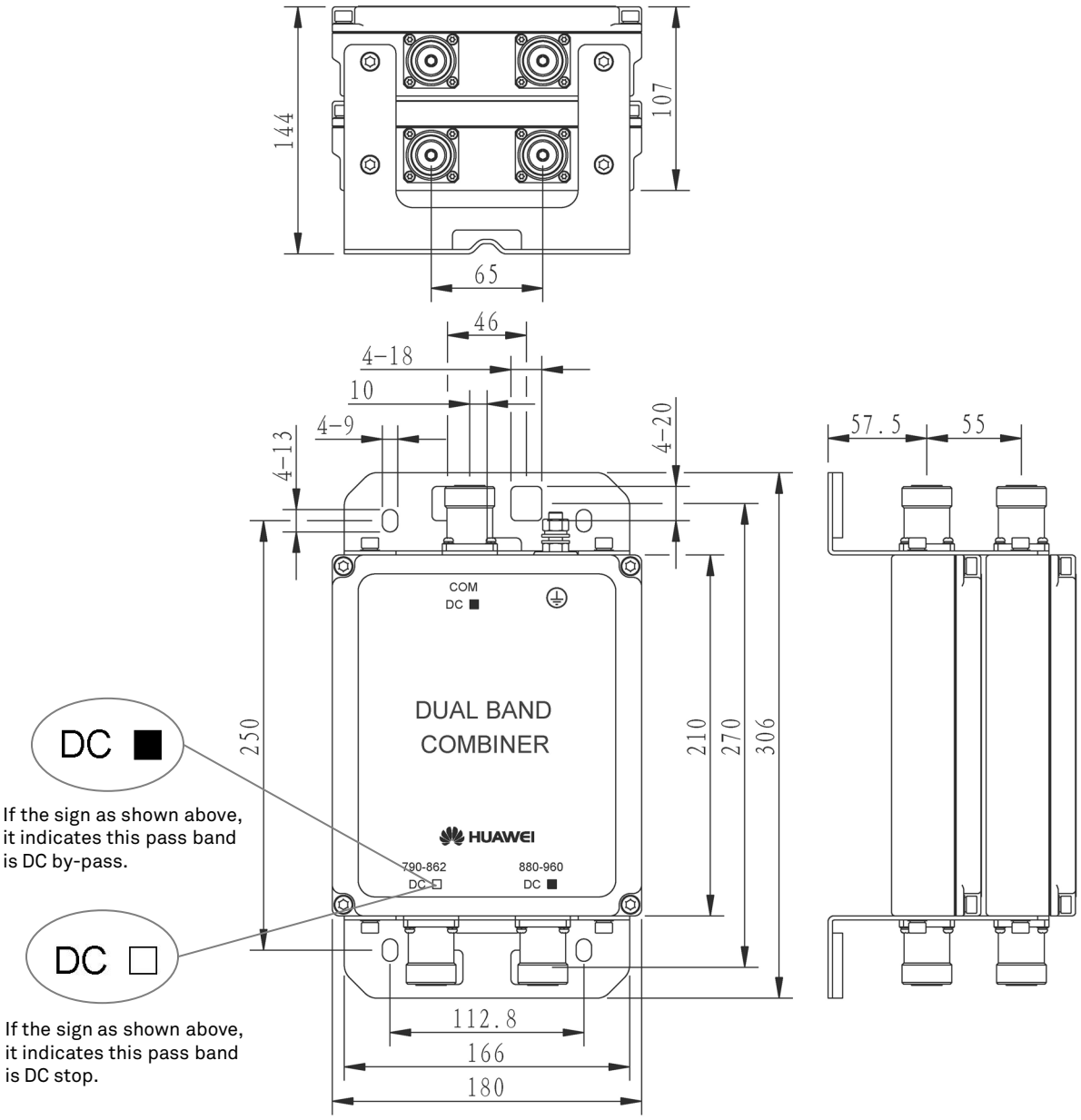


ACOMD2H18

Electrical Properties			
Model		ACOMD2H09	ACOMD2H18
Pass band (MHz)	Band 1	790 - 862	
	Band 2	880 - 960	
Insertion loss* (dB)	Port 1 ←→ Port 3	< 0.3 (790 MHz - 862 MHz)	
	Port 2 ←→ Port 3	< 0.25 (880 MHz - 960 MHz)	
DC/AISG transparency	Port 1 ←→ Port 3	Stop	By-pass (max. 2500 mA)
	Port 2 ←→ Port 3	By-pass (max. 2500 mA)	By-pass (max. 2500 mA)
Isolation (dB)		> 50	
VSWR		< 1.28	
Input power (W)	Port 1, Port 2	< 200	
Intermodulation products (dBm)		< -110 (3rd order; with 2 x 43 dBm)	
Environmental Specification			
Operating temperature (℃)		-40 ... +65	
Application scene		Indoor // Outdoor	
IP rating		IP67	
Lightning protection** (kA)		10 (8/20 us)	
Mechanical Specification			
Combiner dimensions (W x H x D) (mm)		Double Unit: 180 x 210 x 107 (without connectors, without mounting brackets)	
Packing dimensions (W x H x D) (mm)		225 x 380 x 220	
Combiner weight (kg)		Double Unit: ≤ 6.1	
Packing weight (kg)		≤ 6.7	
Mounting		Wall mounting // Mast mounting	
Mast diameter (mm)		Default: 40 - 135	
Connector		7/16 DIN Female (Long neck)	

*Insertion loss: $\overline{IL} = \frac{IL_{Min.Frequency} + 2 \times IL_{Mid.Frequency} + IL_{Max.Frequency}}{4}$

**Lightning protection：In normal instance, the combiner share the GND protection systems with feeders and no need another GND cable.

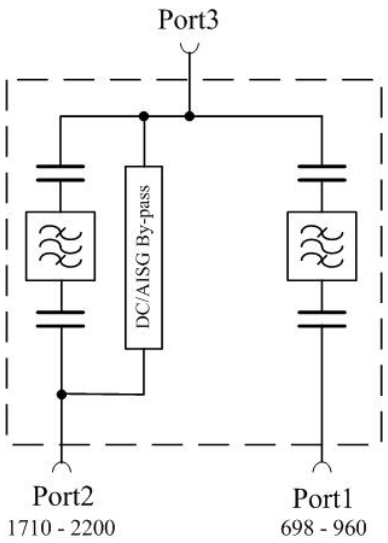

144
107
65
46
4-18
10
4-9
4-13
4-20
57.5
55
COM
DC
DUAL BAND
COMBINER
HUAWEI
790-862
DC
880-960
DC
250
210
270
306
112.8
166
180
DC
If the sign as shown above, it indicates this pass band is DC by-pass.
DC
If the sign as shown above, it indicates this pass band is DC stop.

Unit : mm

Product Description

- Built-in lightning protection up to 10 kA.
- Can be used as a combiner near the BTS or in a reciprocal function near the antenna.
- Designed for co-siting purposes.
- Feeder sharing available.
- Suitable for indoor or outdoor applications.
- Wall or mast mounting.

Block Diagram

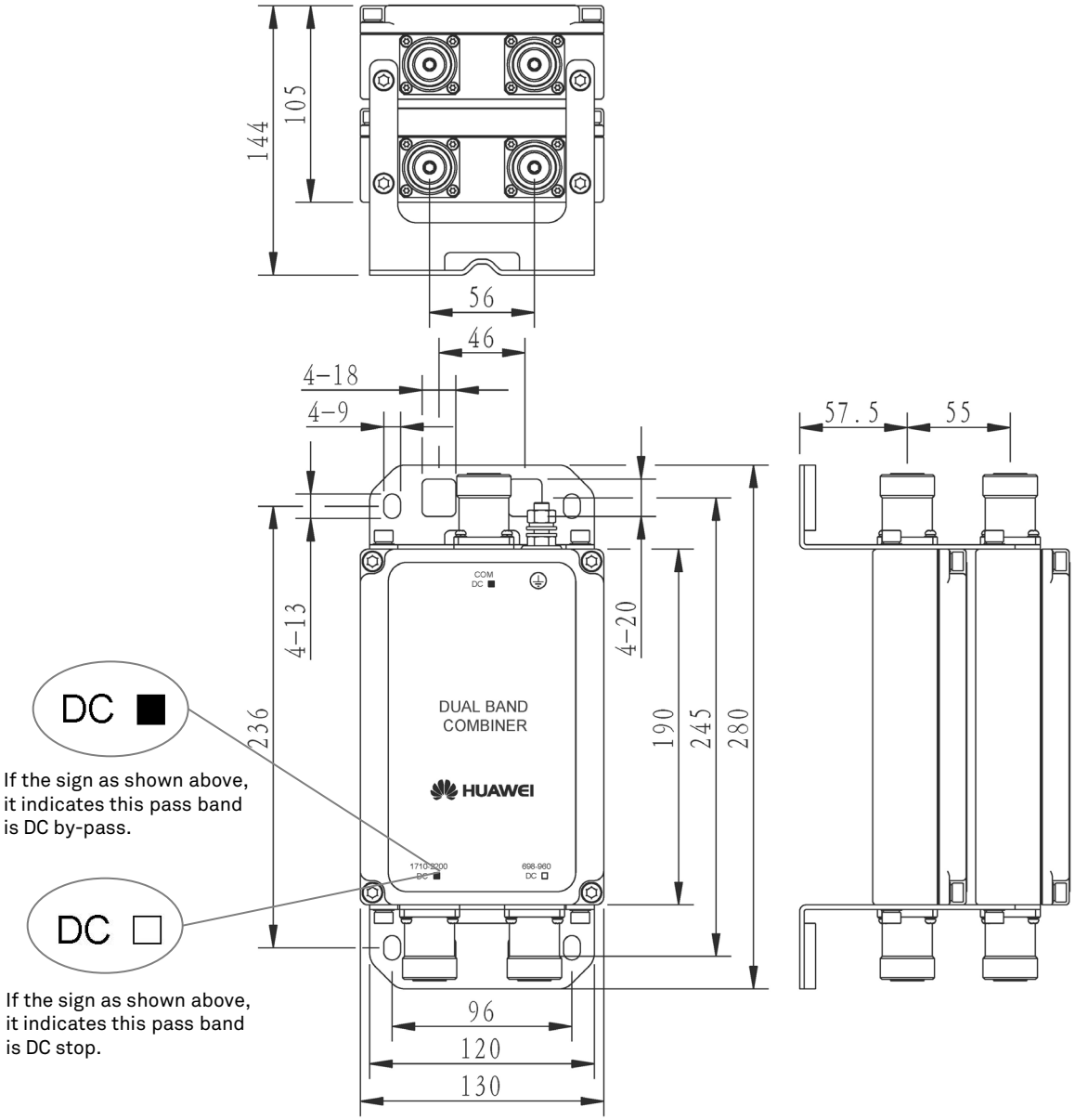


ACOMD2H11

Electrical Properties		
Model		ACOMD2H11
Pass band (MHz)	Band 1	698 - 960
	Band 2	1710 - 2200
Insertion loss* (dB)	Port 1 ←→ Port 3	< 0.15 (698 MHz - 960 MHz)
	Port 2 ←→ Port 3	< 0.15 (1710 MHz - 2200 MHz)
DC/AISG transparency	Port 1 ←→ Port 3	Stop
	Port 2 ←→ Port 3	By-pass (max. 2500 mA)
Isolation (dB)		> 40
VSWR		< 1.28
Input power (W)	Port 1, Port 2	< 300
Intermodulation products (dBm)		< -110 (3rd order; with 2 x 43 dBm)
Environmental Specification		
Operating temperature (℃)		-40 ... +65
Application scene		Indoor // Outdoor
IP rating		IP67
Lightning protection** (kA)		10 (8/20 us)
Mechanical Specification		
Combiner dimensions (W x H x D) (mm)		Double Unit: 130 x 190 x 105 (without connectors, without mounting brackets)
Packing dimensions (W x H x D) (mm)		175 x 355 x 220
Combiner weight (kg)		Double Unit: ≤ 5.6
Packing weight (kg)		≤ 6.2
Mounting		Wall mounting // Mast mounting
Mast diameter (mm)		Default: 40 - 135
Connector		7/16 DIN Female (Long neck)

*Insertion loss: $\overline{IL} = \frac{IL_{Min.Frequency} + 2 \times IL_{Mid.Frequency} + IL_{Max.Frequency}}{4}$

**Lightning protection: In normal instance, the combiner share the GND protection systems with feeders and no need another GND cable.

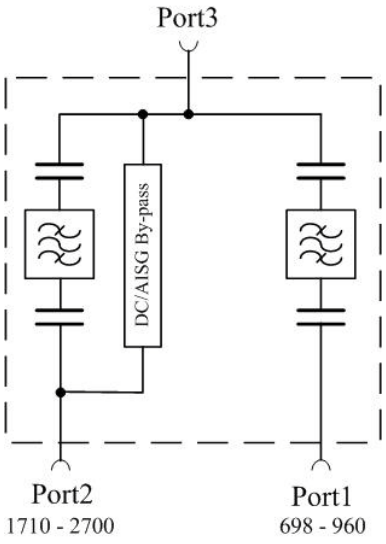

144
105
56
46
4-18
4-9
4-13
4-20
236
190
245
280
57.5
55
96
120
130
DUAL BAND
COMBINER
HUAWEI
DC ■
If the sign as shown above, it indicates this pass band is DC by-pass.
DC □
If the sign as shown above, it indicates this pass band is DC stop.

Unit : mm

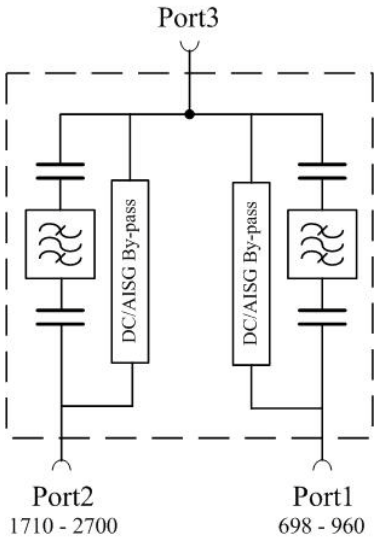
Product Description

- Built-in lightning protection up to 10 kA.
- Can be used as a combiner near the BTS or in a reciprocal function near the antenna.
- Designed for co-siting purposes.
- Feeder sharing available.
- Suitable for indoor or outdoor applications.
- Wall or mast mounting.

Block Diagram



ACOMD2H00

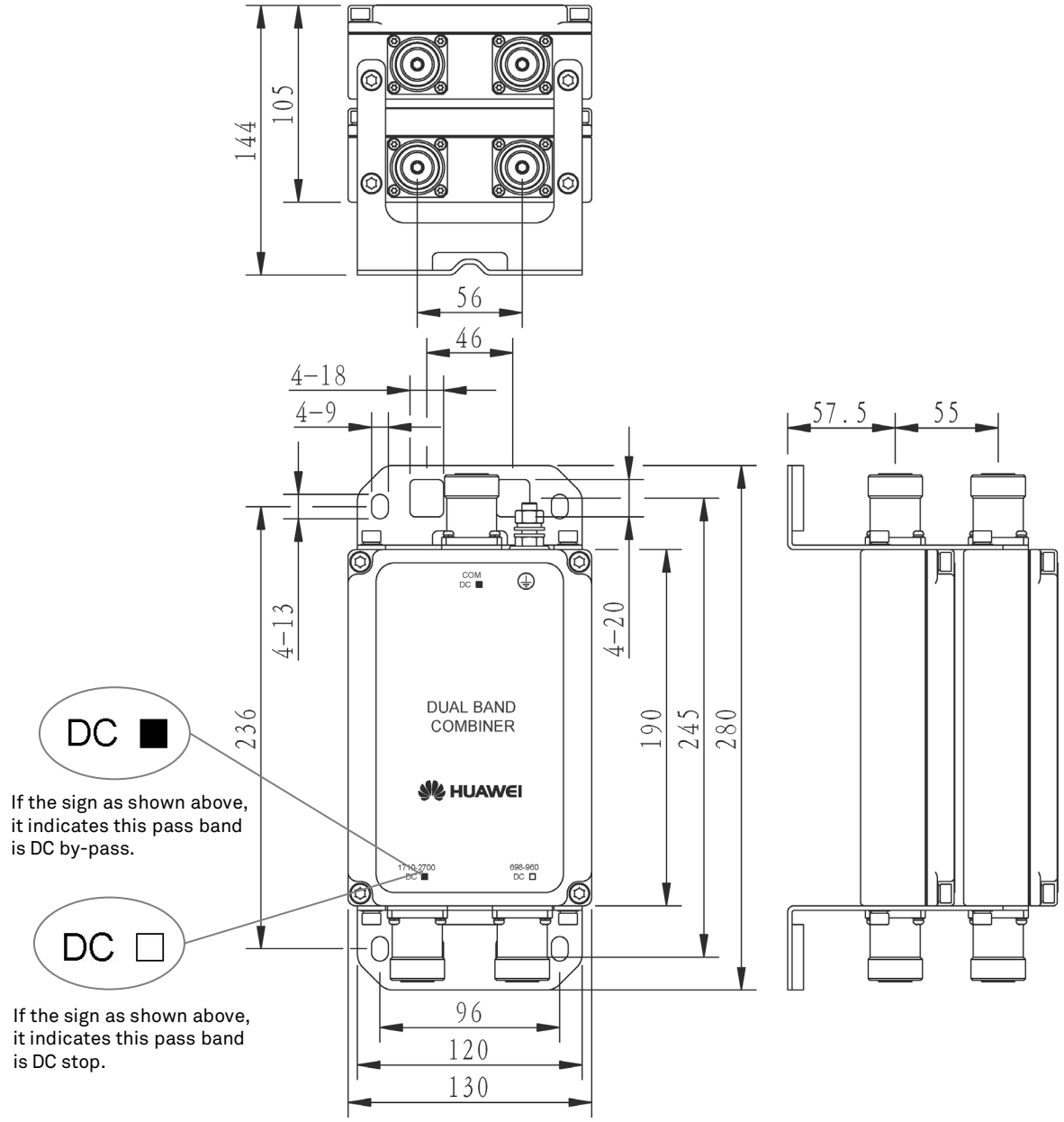


ACOMD2H22

Electrical Properties			
Model		ACOMD2H00	ACOMD2H22
Pass band (MHz)	Band 1	698 - 960	
	Band 2	1710 - 2700	
Insertion loss* (dB)	Port 1 ←→ Port 3	< 0.15 (698 MHz - 960 MHz)	
	Port 2 ←→ Port 3	< 0.25 (1710 MHz - 2700 MHz)	
DC/AISG transparency	Port 1 ←→ Port 3	Stop	By-pass (max. 2500 mA)
	Port 2 ←→ Port 3	By-pass (max. 2500 mA)	By-pass (max. 2500 mA)
Isolation (dB)		> 40	
VSWR		< 1.28	
Input power (W)	Port 1, Port 2	< 300	
Intermodulation products (dBm)		< -110 (3rd order; with 2 x 43 dBm)	
Environmental Specification			
Operating temperature (℃)		-40 ... +65	
Application scene		Indoor // Outdoor	
IP rating		IP67	
Lightning protection** (kA)		10 (8/20 us)	
Mechanical Specification			
Combiner dimensions (W x H x D) (mm)		Double Unit: 130 x 190 x 105 (without connectors, without mounting brackets)	
Packing dimensions (W x H x D) (mm)		175 x 355 x 220	
Combiner weight (kg)		Double Unit: ≤ 4.2	
Packing weight (kg)		≤ 4.7	
Mounting		Wall mounting // Mast mounting	
Mast diameter (mm)		Default: 40 - 135	
Connector		7/16 DIN Female (Long neck)	

*Insertion loss: $\overline{IL} = \frac{IL_{Min.Frequency} + 2 \times IL_{Mid.Frequency} + IL_{Max.Frequency}}{4}$

**Lightning protection：In normal instance, the combiner share the GND protection systems with feeders and no need another GND cable.

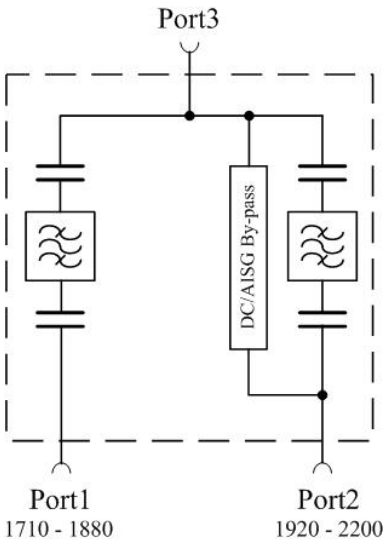

144
105
56
46
4-18
4-9
57.5
55
4-13
4-20
236
190
245
280
DUAL BAND
COMBINER
HUAWEI
96
120
130
DC ■
If the sign as shown above, it indicates this pass band is DC by-pass.
DC □
If the sign as shown above, it indicates this pass band is DC stop.

Unit : mm

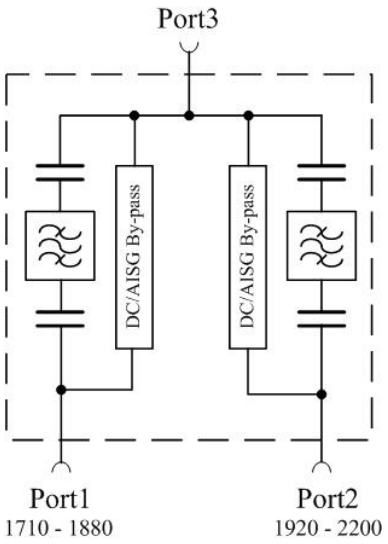
Product Description

- Built-in lightning protection up to 10 kA.
- Can be used as a combiner near the BTS or in a reciprocal function near the antenna.
- Designed for co-siting purposes.
- Feeder sharing available.
- Suitable for indoor or outdoor applications.
- Wall or mast mounting.

Block Diagram



ACOMD2H06

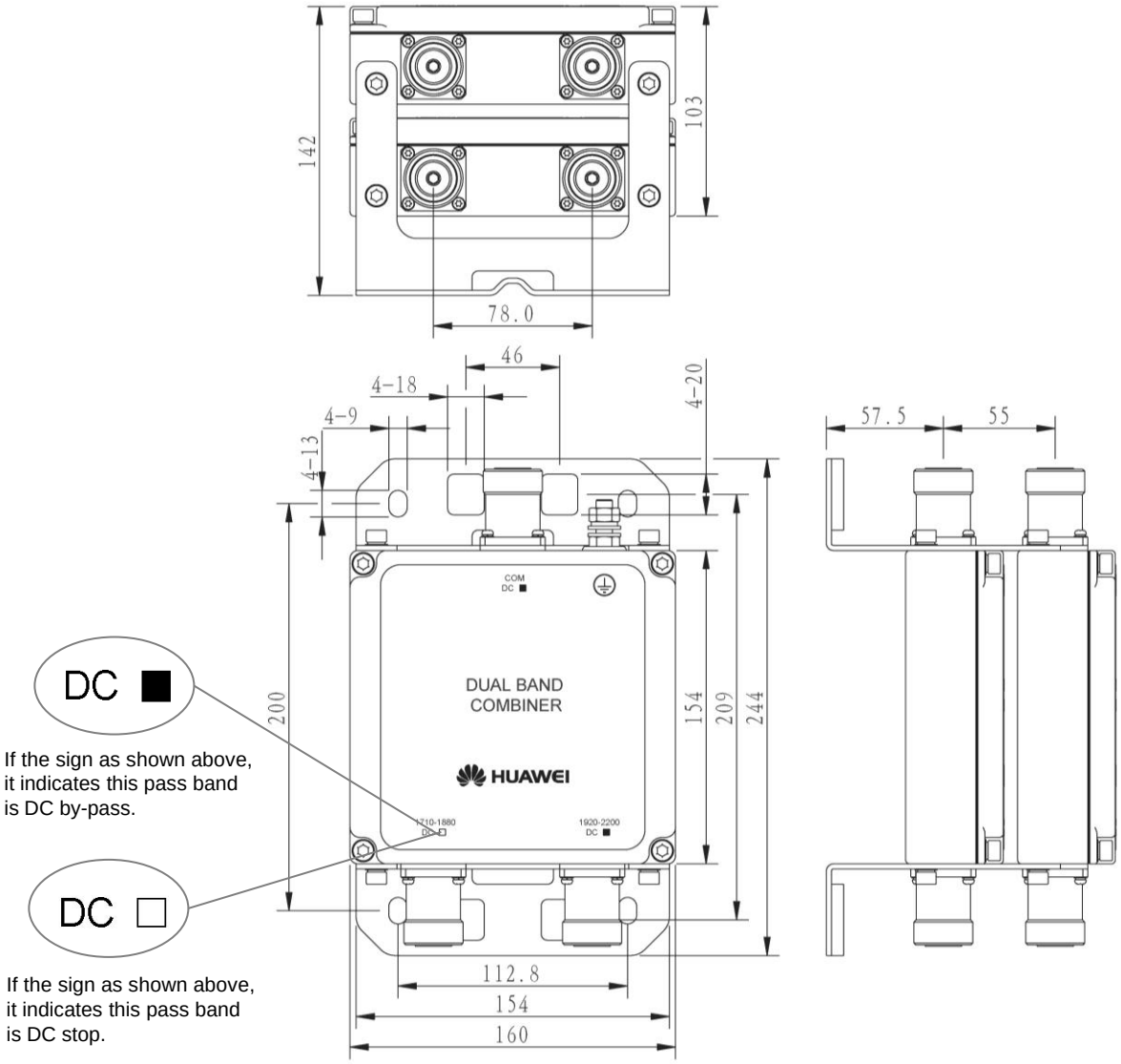


ACOMD2H08

Electrical Properties			
Model		ACOMD2H06	ACOMD2H08
Pass band (MHz)	Band 1	1710 - 1880	
	Band 2	1920 - 2200	
Insertion loss* (dB)	Port 1 ←→ Port 3	< 0.25 (1710 MHz - 1880 MHz)	
	Port 2 ←→ Port 3	< 0.25 (1920 MHz - 2200 MHz)	
DC/AISG transparency	Port 1 ←→ Port 3	Stop	By-pass (max. 2500 mA)
	Port 2 ←→ Port 3	By-pass (max. 2500 mA)	By-pass (max. 2500 mA)
Isolation (dB)		> 45	
VSWR		< 1.28	
Input power (W)	Port 1, Port 2	< 300	
Intermodulation products (dBm)		< -110 (3rd order; with 2 x 43 dBm)	
Environmental Specification			
Operating temperature (℃)		-40 ... +65	
Application scene		Indoor // Outdoor	
IP rating		IP67	
Lightning protection** (kA)		10 (8/20 us)	
Mechanical Specification			
Combiner dimensions (W x H x D) (mm)		Double Unit: 160 x 154 x 103 (without connectors, without mounting brackets)	
Packing dimensions (W x H x D) (mm)		245 x 330 x 220	
Combiner weight (kg)		Double Unit: ≤ 4.3	
Packing weight (kg)		≤ 4.8	
Mounting		Wall mounting // Mast mounting	
Mast diameter (mm)		Default: 40 - 135	
Connector		7/16 DIN Female (Long neck)	

*Insertion loss: $\overline{IL} = \frac{IL_{Min.Frequency} + 2 \times IL_{Mid.Frequency} + IL_{Max.Frequency}}{4}$

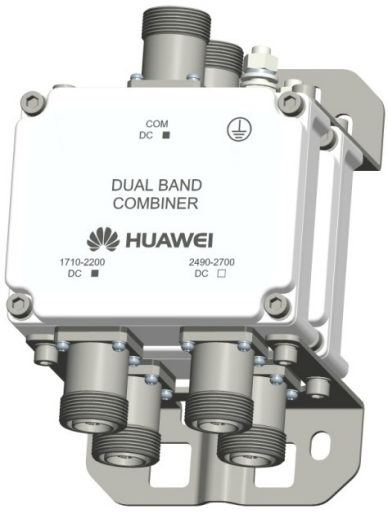
**Lightning protection：In normal instance, the combiner share the GND protection systems with feeders and no need another GND cable.


142
103
78.0
46
4-18
4-9
4-13
4-20
57.5
55
DUAL BAND
COMBINER
HUAWEI
200
154
209
244
112.8
154
160
DC ■
If the sign as shown above, it indicates this pass band is DC by-pass.
DC □
If the sign as shown above, it indicates this pass band is DC stop.

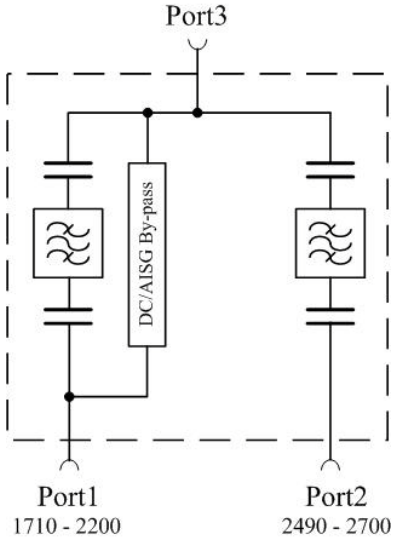
Unit : mm

Product Description

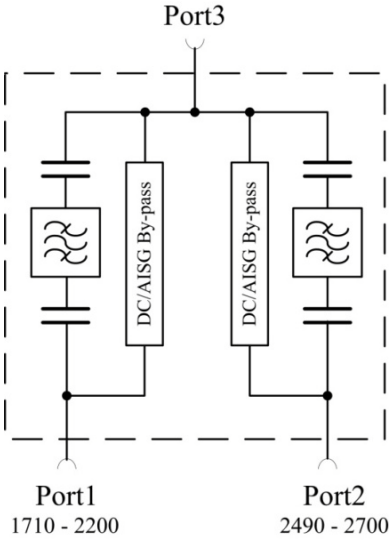
- Built-in lightning protection up to 10 kA.
- Can be used as a combiner near the BTS or in a reciprocal function near the antenna.
- Designed for co-siting purposes.
- Feeder sharing available.
- Suitable for indoor or outdoor applications.
- Wall or mast mounting.



Block Diagram



ACOMD2L04

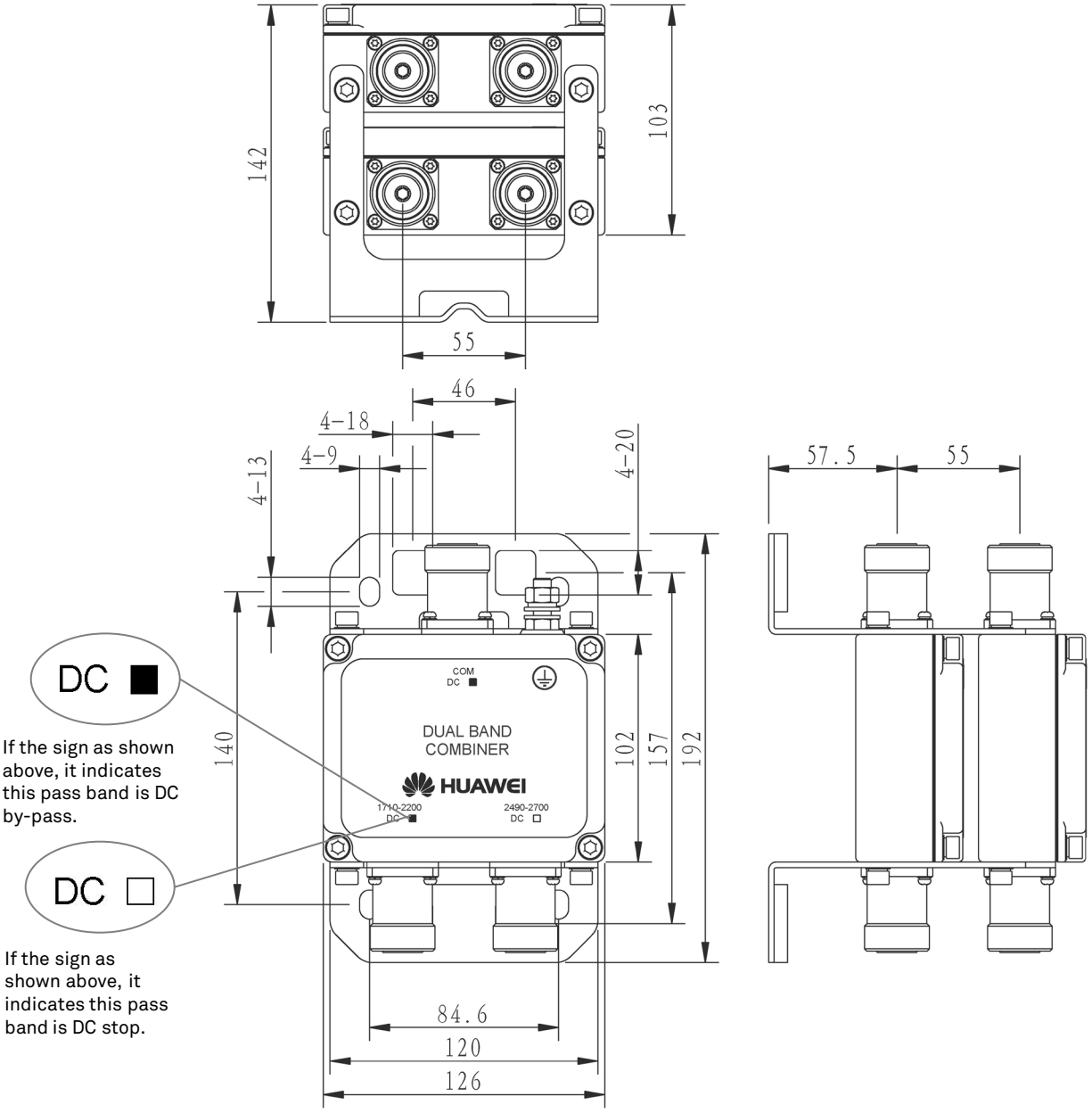


ACOMD2H16

Electrical Properties			
Model		ACOMD2L04	ACOMD2H16
Pass band (MHz)	Band 1	1710 - 2200	
	Band 2	2490 - 2700	
Insertion loss* (dB)	Port 1 ←→ Port 3	< 0.15 (1710 MHz - 2200 MHz)	
	Port 2 ←→ Port 3	< 0.15 (2490 MHz - 2700 MHz)	
DC/AISG transparency	Port 1 ←→ Port 3	By-pass (max. 2500 mA)	By-pass (max. 2500 mA)
	Port 2 ←→ Port 3	Stop	By-pass (max. 2500 mA)
Isolation (dB)		> 45	
VSWR		< 1.28	
Input power (W)	Port 1, Port 2	< 300	
Intermodulation products (dBm)		< -110 (3rd order; with 2 x 43 dBm)	
Environmental Specification			
Operating temperature (℃)		-40 ... +65	
Application scene		Indoor // Outdoor	
IP rating		IP67	
Lightning protection** (kA)		10 (8/20 us)	
Mechanical Specification			
Combiner dimensions (W x H x D) (mm)		Double Unit: 126 x 102 x 103 (without connectors, without mounting brackets)	
Packing dimensions (W x H x D) (mm)		170 x 265 x 220	
Combiner weight (kg)		Double Unit: ≤ 3.2	
Packing weight (kg)		≤ 3.6	
Mounting		Wall mounting // Mast mounting	
Mast diameter (mm)		Default: 40 - 135	
Connector		7/16 DIN Female (Long neck)	

*Insertion loss: $\overline{IL} = \frac{IL_{Min.Frequency} + 2 \times IL_{Mid.Frequency} + IL_{Max.Frequency}}{4}$

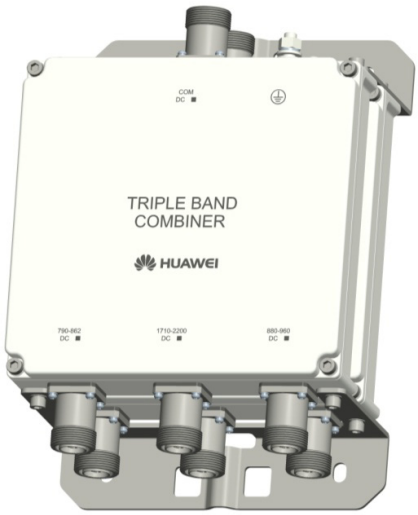
**Lightning protection：In normal instance, the combiner share the GND protection systems with feeders and no need another GND cable.


142
103
55
46
4-18
4-9
4-13
4-20
57.5
55
DC ■
If the sign as shown above, it indicates this pass band is DC by-pass.
DC □
If the sign as shown above, it indicates this pass band is DC stop.
COM
DC ■
DUAL BAND COMBINER
HUAWEI
1710-2200 DC ■
2490-2700 DC □
140
102
157
192
84.6
120
126

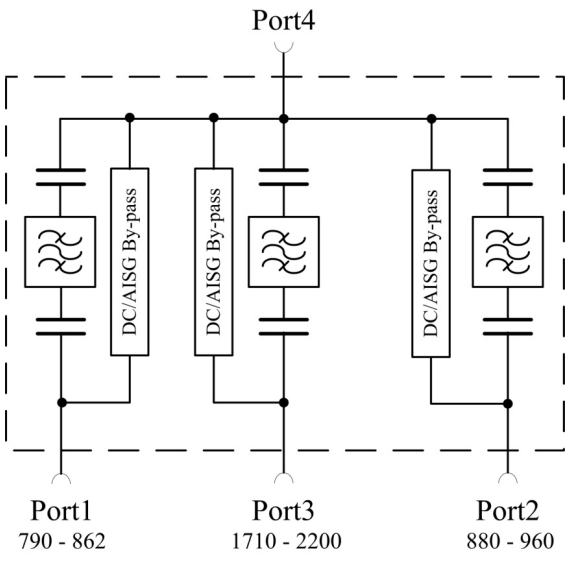
Unit : mm

Product Description

- Built-in lightning protection up to 10 kA.
- Can be used as a combiner near the BTS or in a reciprocal function near the antenna.
- Designed for co-siting purposes.
- Feeder sharing available.
- Suitable for indoor or outdoor applications.
- Wall or mast mounting.



Block Diagram

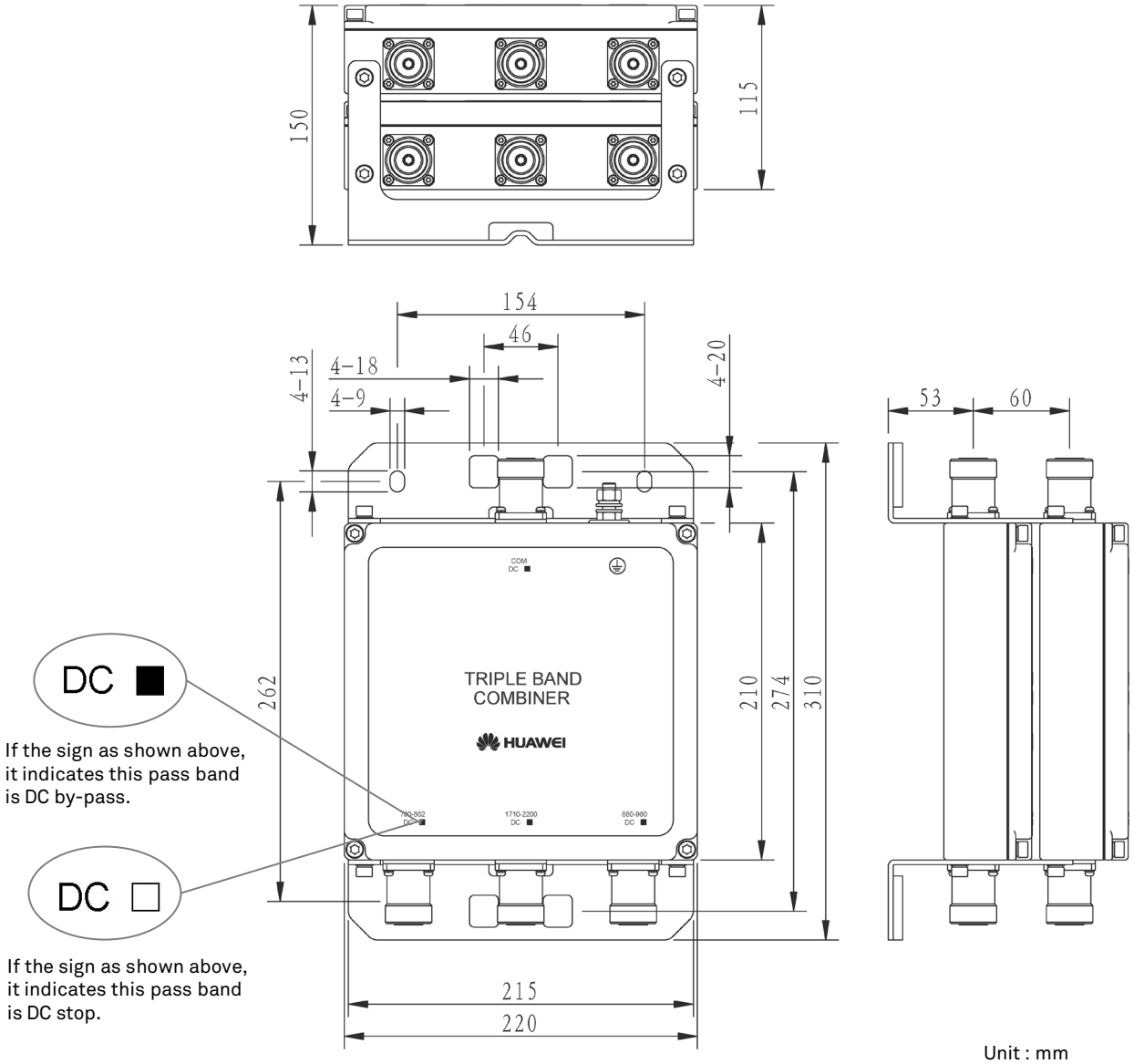


ACOMD2H04

Electrical Properties		
Model		ACOMT2H04
Pass band (MHz)	Band 1	790 - 862
	Band 2	880 - 960
	Band 3	1710 - 2200
Insertion loss* (dB)	Port 1 ←→ Port 4	< 0.3 (790 MHz - 862 MHz)
	Port 2 ←→ Port 4	< 0.3 (880 MHz - 960 MHz)
	Port 3 ←→ Port 4	< 0.25 (1710 MHz - 2200 MHz)
DC/AISG transparency	Port 1 ←→ Port 4	By-pass (max. 2500 mA)
	Port 2 ←→ Port 4	By-pass (max. 2500 mA)
	Port 3 ←→ Port 4	By-pass (max. 2500 mA)
Isolation (dB)	Port 1 ←→ Port 2	> 50
	Port 2 ←→ Port 3	> 50
	Port 1 ←→ Port 3	> 50
VSWR		< 1.24
Input power (W)	Port 1, Port 2, Port3	< 300
Intermodulation products (dBm)		< -110 (3rd order; with 2 x 43 dBm)
Environmental Specification		
Operating temperature (℃)		-40 ... +65
Application scene		Indoor // outdoor
IP rating		IP67
Lightning protection** (kA)		10 (8/20 us)
Mechanical Specification		
Dimensions (W x H x D) (mm)		Double Unit: 220 x 210 x 115 (without connectors, without mounting brackets)
Packing dimensions (W x H x D) (mm)		275 x 375 x 205
Combiner weight (kg)		Double Unit: ≤ 7.5
Packing weight (kg)		≤ 8.9
Mounting		Wall mounting // Mast mounting
Mast diameter (mm)		Default: 40 - 135
Connector		7/16 DIN Female (Long neck)

*Insertion loss: $\overline{IL} = \frac{IL_{Min.Frequency} + 2 \times IL_{Mid.Frequency} + IL_{Max.Frequency}}{4}$

**Lightning protection: In normal instance, the combiner share the GND protection systems with feeders and no need another GND cable.

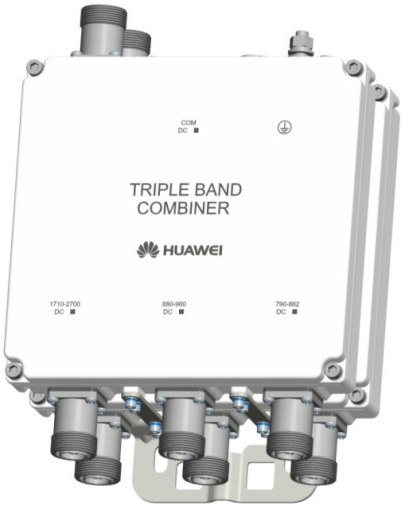

150
115
154
46
4-18
4-9
4-13
4-20
53
60
262
210
274
310
TRIPLE BAND
COMBINER
HUAWEI
215
220
DC ■
If the sign as shown above, it indicates this pass band is DC by-pass.
DC □
If the sign as shown above, it indicates this pass band is DC stop.

Unit : mm

Preliminary Issue

Product Description

- Built-in lightning protection up to 10 kA.
- Can be used as a combiner near the BTS or in a reciprocal function near the antenna.
- Designed for co-siting purposes.
- Feeder sharing available.
- Suitable for indoor or outdoor applications.
- Wall or mast mounting.



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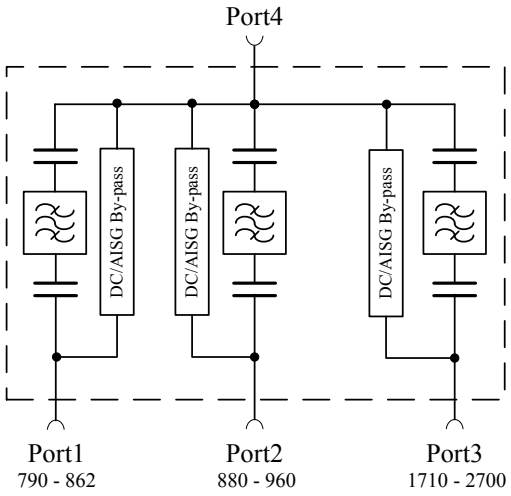
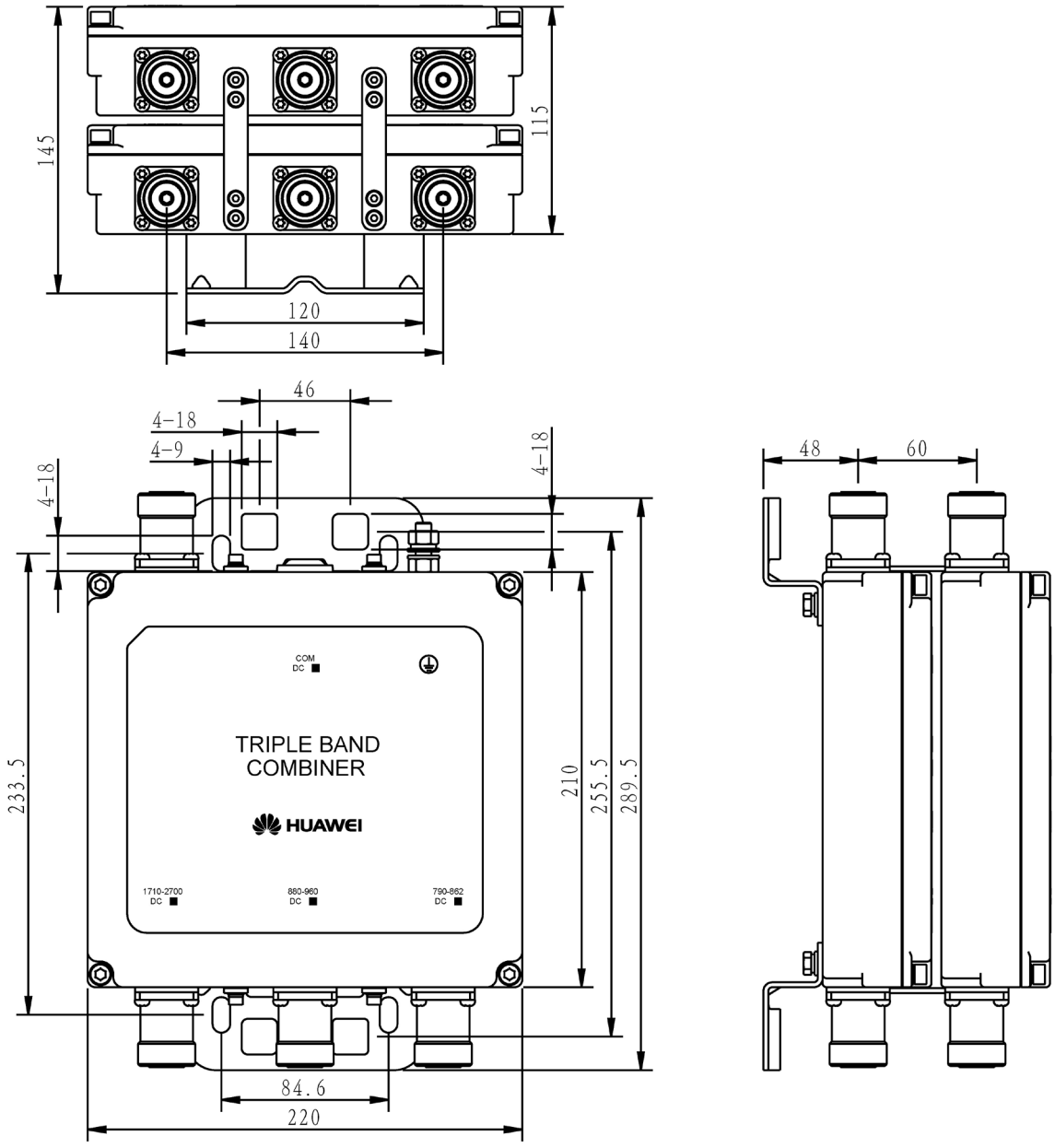


ACOMT2A02


145
115
120
140
46
4-18
4-9
4-18
4-18
COM
DC
TRIPLE BAND
COMBINER
HUAWEI
1710-2700
DC
880-960
DC
790-862
DC
233.5
210
255.5
289.5
84.6
220
48
60

Unit : mm

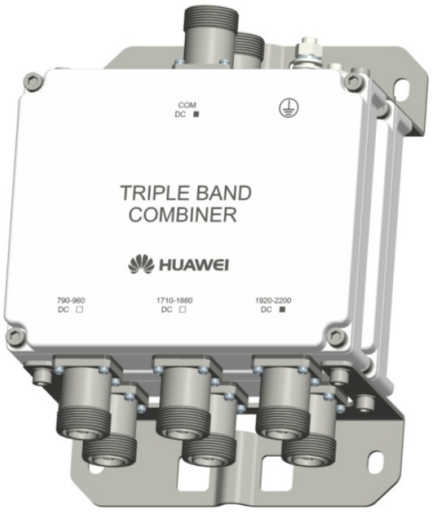
Preliminary Issue

Electrical Properties		
Model		ACOMT2A02
Pass band (MHz)	Band 1	790 - 862
	Band 2	880 - 960
	Band 3	1710 - 2700
Insertion loss* (dB)	Port 1 ←→ Port 4	< 0.3 (790 MHz - 862 MHz)
	Port 2 ←→ Port 4	< 0.3 (880 MHz - 960 MHz)
	Port 3 ←→ Port 4	< 0.15 (1710 MHz - 2200 MHz)
DC/AISG transparency	Port 1 ←→ Port 4	By-pass (max. 2500 mA)
	Port 2 ←→ Port 4	By-pass (max. 2500 mA)
	Port 3 ←→ Port 4	By-pass (max. 2500 mA)
Isolation (dB)	Port 1 ←→ Port 2	> 50
	Port 2 ←→ Port 3	> 50
	Port 1 ←→ Port 3	> 50
VSWR		< 1.24
Input power (W)	Port 1, Port 2, Port3	< 300
Intermodulation products (dBm)		< -110 (3rd order; with 2 x 43 dBm)
Environmental Specification		
Operating temperature (℃)		-40 ... +65
Application scene		Indoor // outdoor
IP rating		IP67
Lightning protection (kA)		10 (8/20 us)
Mechanical Specification		
Dimensions (W x H x D) (mm)		Double Unit: 220 x 210 x 115 (without connectors, without mounting brackets)
Packing dimensions (W x H x D) (mm)		335 x 405 x 265
Combiner weight (kg)		Double Unit: ≤ 7.5
Packing weight (kg)		≤8.4
Mounting		Wall mounting // Mast mounting
Mast diameter (mm)		Default: 40 - 135
Connector		7/16 DIN Female (Long neck)

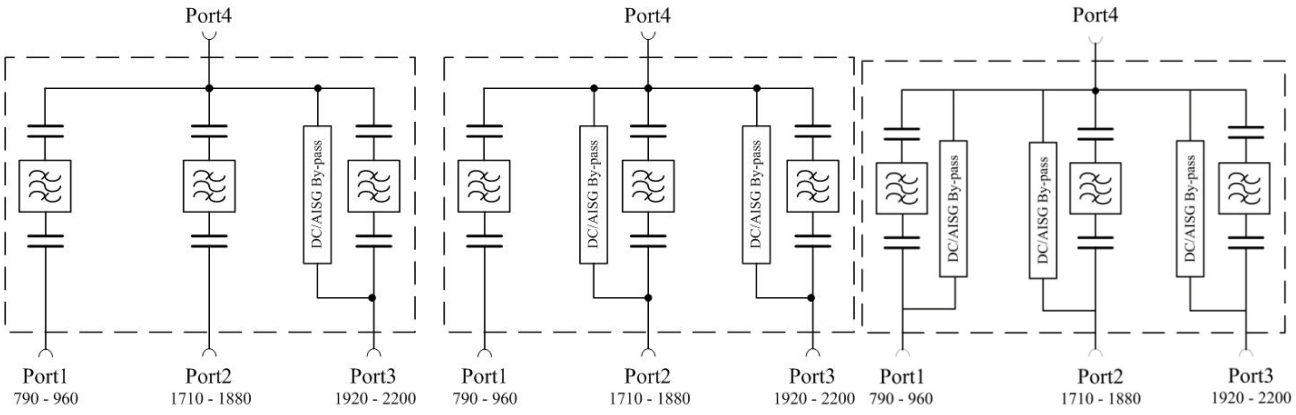
*Insertion loss: $\overline{IL} = \frac{IL_{Min.Frequency} + 2 \times IL_{Mid.Frequency} + IL_{Max.Frequency}}{4}$

Product Description

- Built-in lightning protection up to 10 kA.
- Can be used as a combiner near the BTS or in a reciprocal function near the antenna.
- Designed for co-siting purposes.
- Feeder sharing available.
- Suitable for indoor or outdoor applications.
- Wall or mast mounting.



Block Diagram

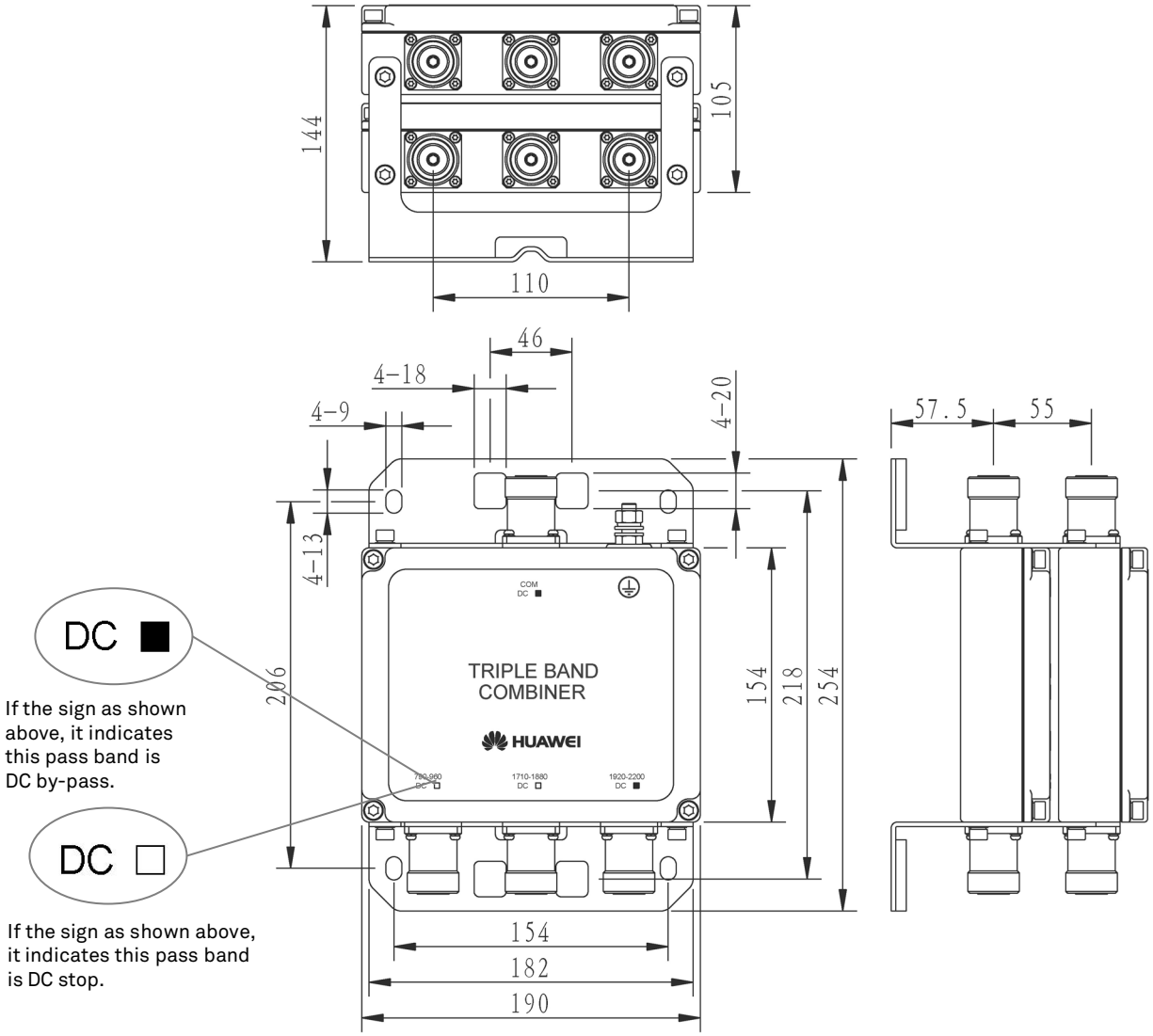


ACOMT2H01 ACOMT2H03 ACOMT2H08

Electrical Properties				
Model		ACOMT2H01	ACOMT2H03	ACOMT2H08
Pass band (MHz)	Band 1	790 - 960		
	Band 2	1710 - 1880		
	Band 3	1920 - 2200		
Insertion loss* (dB)	Port 1 ←→ Port 4	< 0.15 (790 MHz - 960 MHz)		
	Port 2 ←→ Port 4	< 0.25 (1710 MHz - 1880 MHz)		
	Port 3 ←→ Port 4	< 0.25 (1920 MHz - 2200 MHz)		
DC/AISG transparency	Port 1 ←→ Port 4	Stop	Stop	By-pass (max. 2500 mA)
	Port 2 ←→ Port 4	Stop	By-pass (max. 2500 mA)	By-pass (max. 2500 mA)
	Port 3 ←→ Port 4	By-pass (max. 2500 mA)	By-pass (max. 2500 mA)	By-pass (max. 2500 mA)
Isolation (dB)		> 45		
VSWR		< 1.28		
Input power (W)	Port 1, Port 2, Port3	< 300		
Intermodulation products (dBm)		< -110 (3rd order; with 2 x 43 dBm)		
Environmental Specification				
Operating temperature (℃)		-40 ... +65		
Application scene		Indoor // Outdoor		
IP rating		IP67		
Lightning protection** (kA)		10 (8/20 us)		
Mechanical Specification				
Combiner dimensions (W x H x D) (mm)		Double Unit: 190 x 154 x 105 (without connectors, without mounting brackets)		
Packing dimensions (W x H x D) (mm)		245 x 330 x 220		
Combiner weight (kg)		Double Unit: ≤ 5.6		
Packing weight (kg)		≤ 6.2		
Mounting		Wall mounting // Mast mounting		
Mast diameter (mm)		Default: 40 - 135		
Connector		7/16 DIN Female (Long neck)		

*Insertion loss: $\overline{IL} = \frac{IL_{Min.Frequency} + 2 \times IL_{Mid.Frequency} + IL_{Max.Frequency}}{4}$

**Lightning protection：In normal instance, the combiner share the GND protection systems with feeders and no need another GND cable.

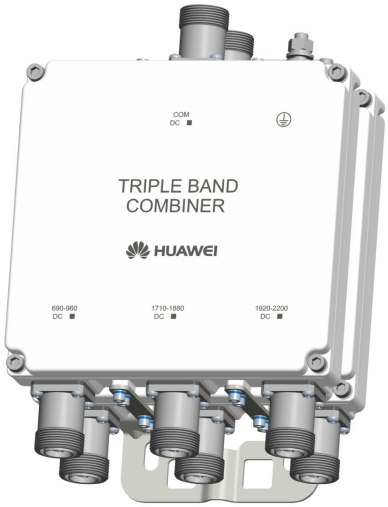

144
105
110
46
4-18
4-9
4-20
4-13
57.5
55
206
154
218
254
TRIPLE BAND
COMBINER
HUAWEI
154
182
190
DC ■
If the sign as shown above, it indicates this pass band is DC by-pass.
DC □
If the sign as shown above, it indicates this pass band is DC stop.

Unit : mm

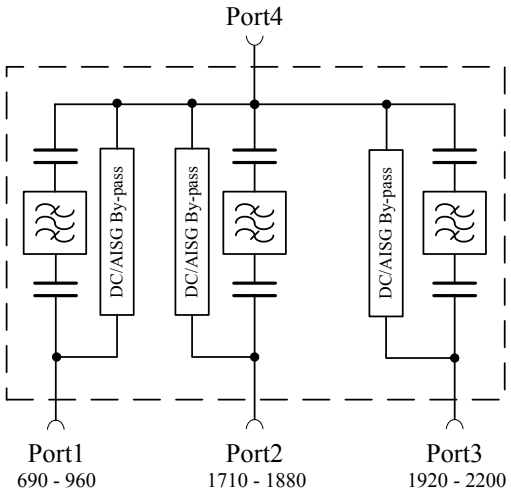
Preliminary Issue

Product Description

- Built-in lightning protection up to 10 kA.
- Can be used as a combiner near the BTS or in a reciprocal function near the antenna.
- Designed for co-siting purposes.
- Feeder sharing available.
- Suitable for indoor or outdoor applications.
- Wall or mast mounting.



Block Diagram

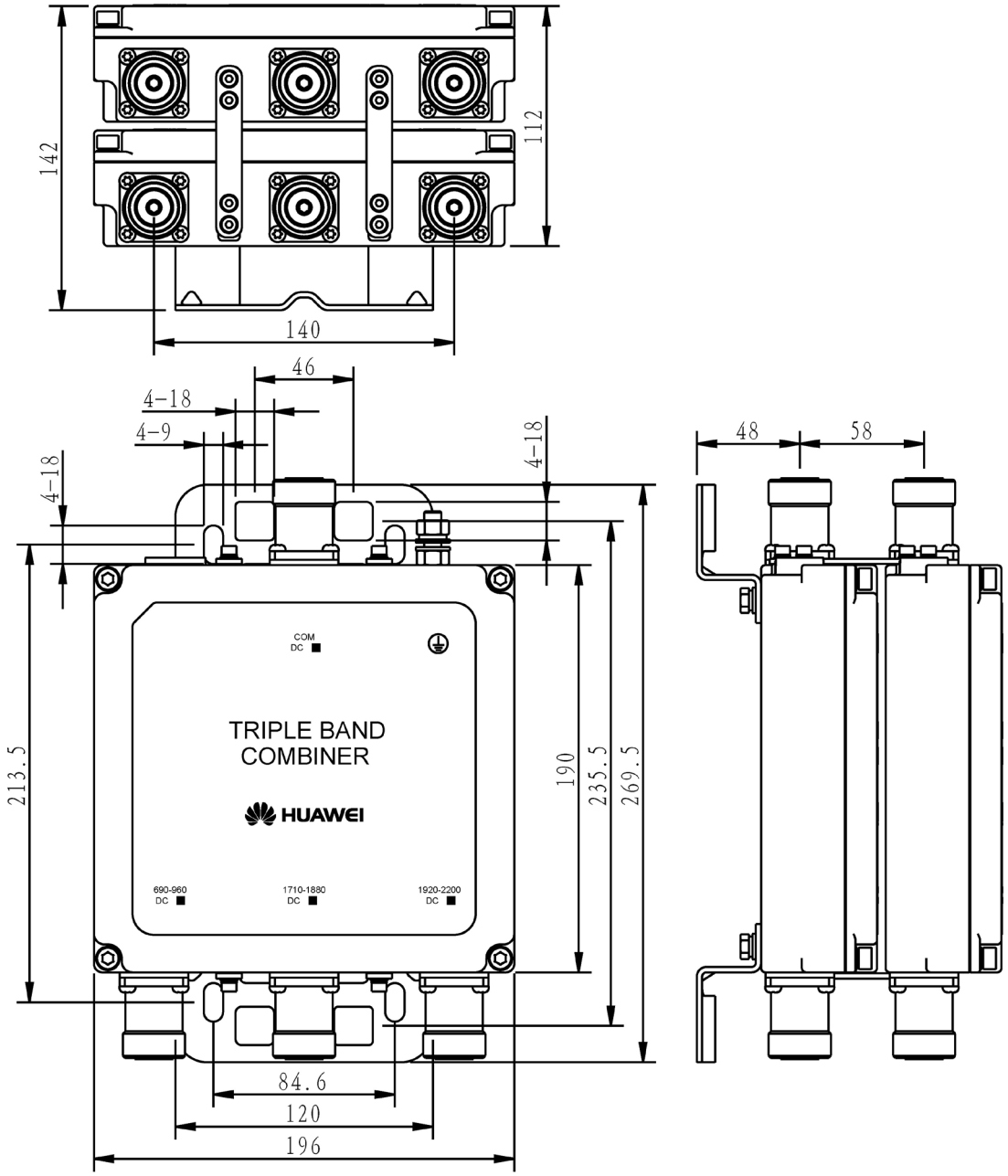


ACOMT2A03

Preliminary Issue

Electrical Properties		
Model		ACOMT2A03
Pass band (MHz)	Band 1	690 - 960
	Band 2	1710 - 1880
	Band 3	1920 - 2200
Insertion loss* (dB)	Port 1 ←→ Port 4	< 0.15 (690 MHz - 960 MHz)
	Port 2 ←→ Port 4	< 0.25 (1710 MHz - 1880 MHz)
	Port 3 ←→ Port 4	< 0.25 (1920 MHz - 2200 MHz)
DC/AISG transparency	Port 1 ←→ Port 4	By-pass (max. 2500 mA)
	Port 2 ←→ Port 4	By-pass (max. 2500 mA)
	Port 3 ←→ Port 4	By-pass (max. 2500 mA)
Isolation (dB)		> 45
VSWR		< 1.24
Input power (W)	Port 1, Port 2, Port3	< 300
Intermodulation products (dBm)		< -110 (3rd order; with 2 x 43 dBm)
Environmental Specification		
Operating temperature (℃)		-40 ... +65
Application scene		Indoor // Outdoor
IP rating		IP67
Lightning protection (kA)		10 (8/20 us)
Mechanical Specification		
Combiner dimensions (W x H x D) (mm)		Double Unit: 196 x 190 x 112 (without connectors, without mounting brackets)
Packing dimensions (W x H x D) (mm)		335 x 405 x 265
Combiner weight (kg)		Double Unit: ≤ 7.0
Packing weight (kg)		≤ 7.9
Mounting		Wall mounting // Mast mounting
Mast diameter (mm)		Default: 40 - 135
Connector		7/16 DIN Female (Long neck)

*Insertion loss: $\overline{IL} = \frac{IL_{Min.Frequency} + 2 \times IL_{Mid.Frequency} + IL_{Max.Frequency}}{4}$

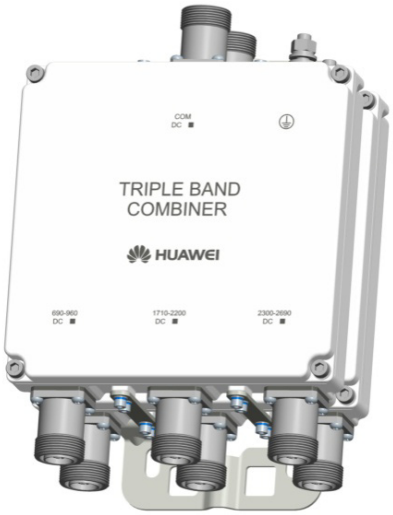

142
112
140
46
4-18
4-9
4-18
4-18
48
58
COM
DC
TRIPLE BAND
COMBINER
HUAWEI
690-960
DC
1710-1880
DC
1920-2200
DC
213.5
190
235.5
269.5
84.6
120
196

Unit : mm

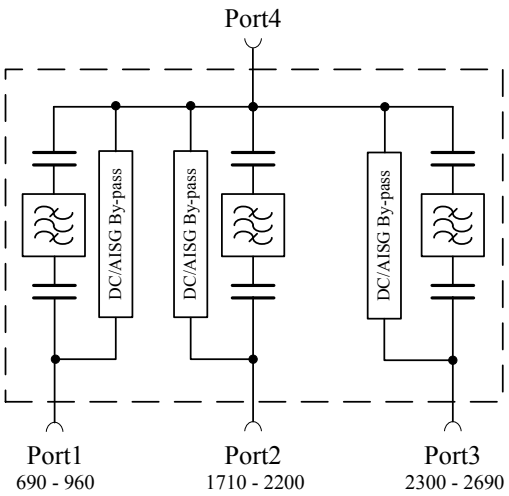
Preliminary Issue

Product Description

- Built-in lightning protection up to 10 kA.
- Can be used as a combiner near the BTS or in a reciprocal function near the antenna.
- Designed for co-siting purposes.
- Feeder sharing available.
- Suitable for indoor or outdoor applications.
- Wall or mast mounting.



Block Diagram

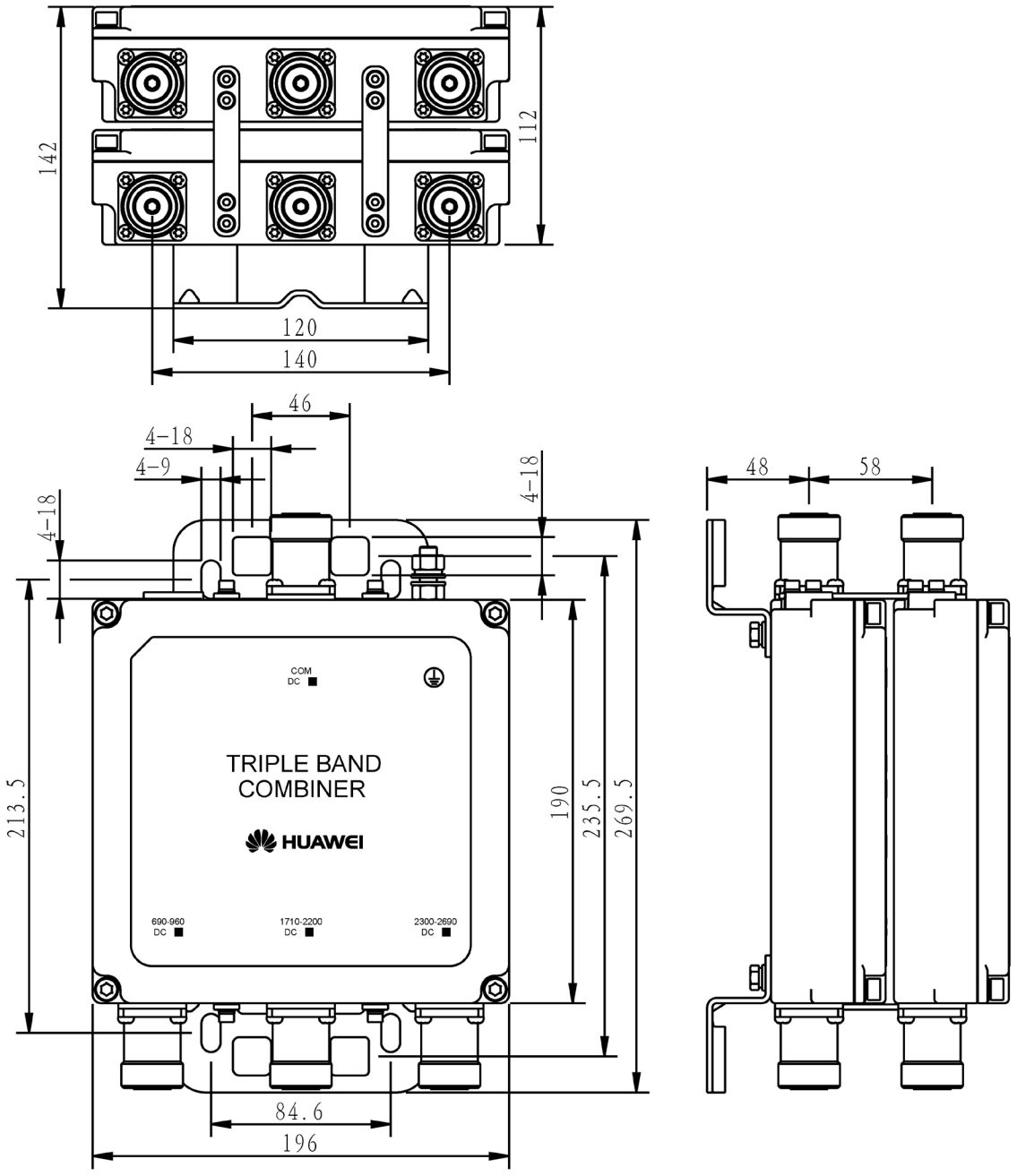


ACOMT2A04

Preliminary Issue

Electrical Properties		
Model		ACOMT2A04
Pass band (MHz)	Band 1	690 - 960
	Band 2	1710 - 2200
	Band 3	2300 - 2690
Insertion loss* (dB)	Port 1 ←→ Port 4	< 0.15 (690 MHz - 960 MHz)
	Port 2 ←→ Port 4	< 0.25 (1710 MHz - 2200 MHz)
	Port 3 ←→ Port 4	< 0.25 (2300 MHz - 2690 MHz)
DC/AISG transparency	Port 1 ←→ Port 4	By-pass (max. 2500 mA)
	Port 2 ←→ Port 4	By-pass (max. 2500 mA)
	Port 3 ←→ Port 4	By-pass (max. 2500 mA)
Isolation (dB)		> 45
VSWR		< 1.24
Input power (W)	Port 1, Port 2, Port3	< 300
Intermodulation products (dBm)		< -110 (3rd order; with 2 x 43 dBm)
Environmental Specification		
Operating temperature (℃)		-40 ... +65
Application scene		Indoor // Outdoor
IP rating		IP67
Lightning protection (kA)		10 (8/20 us)
Mechanical Specification		
Combiner dimensions (W x H x D) (mm)		Double Unit: 196 x 190 x 112 (without connectors, without mounting brackets)
Packing dimensions (W x H x D) (mm)		335 x 405 x 265
Combiner weight (kg)		Double Unit: ≤ 7.0
Packing weight (kg)		≤ 7.9
Mounting		Wall mounting // Mast mounting
Mast diameter (mm)		Default: 40 - 135
Connector		7/16 DIN Female (Long neck)

*Insertion loss: $\overline{IL} = \frac{IL_{Min.Frequency} + 2 \times IL_{Mid.Frequency} + IL_{Max.Frequency}}{4}$

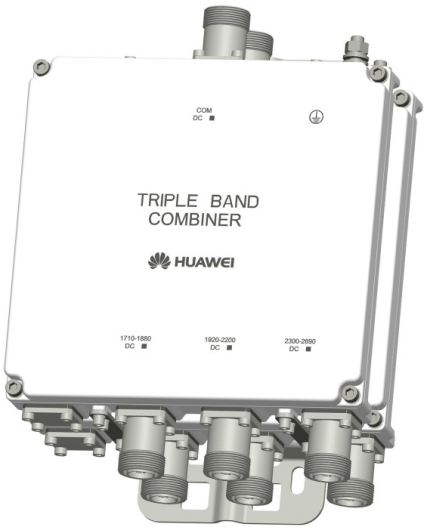

142
112
120
140
46
4-18
4-9
4-18
4-18
48
58
COM
DC
TRIPLE BAND
COMBINER
HUAWEI
690-960
DC
1710-2200
DC
2300-2690
DC
213.5
190
235.5
269.5
84.6
196

Unit : mm

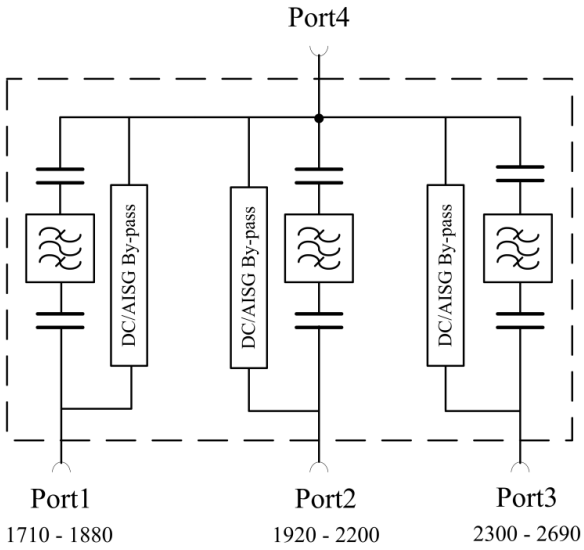
Preliminary Issue

Product Description

- Built-in lightning protection up to 10 kA.
- Can be used as a combiner near the BTS or in a reciprocal function near the antenna.
- Designed for co-siting purposes.
- Feeder sharing available.
- Suitable for indoor or outdoor applications.
- Wall or mast mounting.



Block Diagram

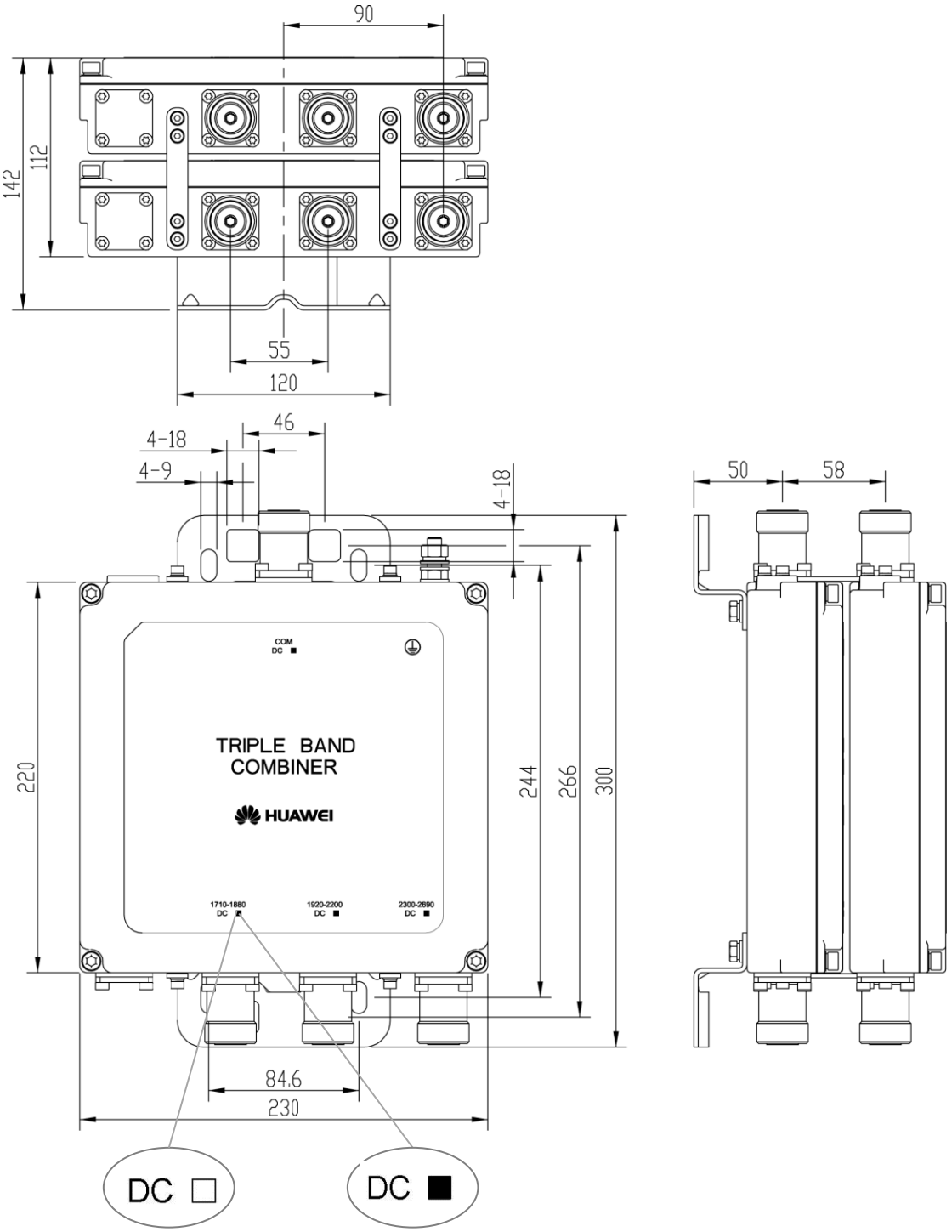


ACOMT2A06

Electrical Properties		
Model		ACOMT2A06
Pass band (MHz)	Band 1	1710 - 1880
	Band 2	1920 - 2200
	Band 3	2300 - 2690
Insertion loss* (dB)	Port 1 ←→ Port 4	< 0.25 (1710 MHz - 1880 MHz)
	Port 2 ←→ Port 4	< 0.25 (1920 MHz - 2200 MHz)
	Port 3 ←→ Port 4	< 0.2 (2300 MHz - 2690 MHz)
DC/AISG transparency	Port 1 ←→ Port 4	By- pass (max. 2500 mA)
	Port 2 ←→ Port 4	By- pass (max. 2500 mA)
	Port 3 ←→ Port 4	By- pass (max. 2500 mA)
Isolation (dB)		> 45
VSWR		< 1.28
Input power (W)	Port 1, Port 2 Port 3	< 300
Intermodulation products (dBm)		< -110 (3rd order; with 2 x 43 dBm)
Environmental Specification		
Operating temperature (℃)		-40 ... +65
Application scene		Indoor // Outdoor
IP rating		IP67
Lightning protection** (kA)		10 (8/20 us)
Mechanical Specification		
Combiner dimensions (W x H x D) (mm)		Double Unit: 230 x 220x 112 mm (without connectors, without mounting brackets)
Packing dimensions (W x H x D) (mm)		405 x 335 x 265
Combiner weight (kg)		Double Unit: ≤ 9.0
Packing weight (kg)		≤ 10.0
Mounting		Wall mounting // Mast mounting
Mast diameter (mm)		Default: 40 - 135
Connector		7/16 DIN Female (Long neck)

*Insertion loss: $\overline{IL} = \frac{IL_{Min.Frequency} + 2 \times IL_{Mid.Frequency} + IL_{Max.Frequency}}{4}$

**Lightning protection: In normal instance, the combiner share the GND protection systems with feeders and no need another GND cable.



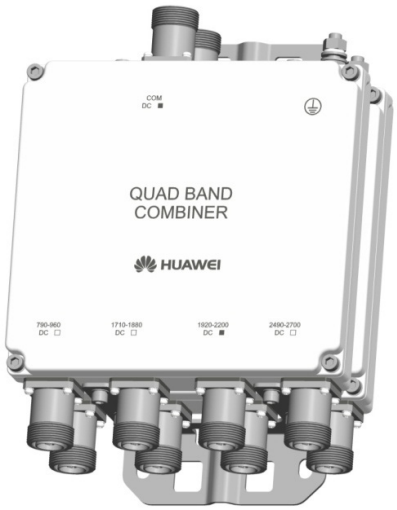
If the sign as shown above, it indicates this pass band is DC stop.

If the sign as shown above, it indicates this pass band is DC pass.

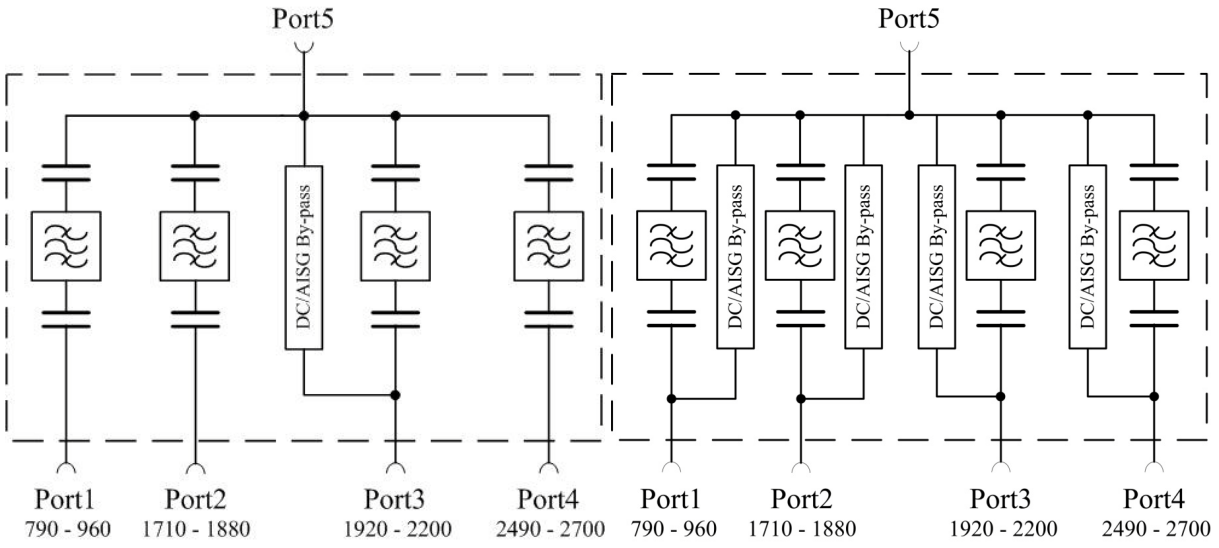
Unit: mm

Product Description

- Built-in lightning protection up to 10 kA.
- Can be used as a combiner near the BTS or in a reciprocal function near the antenna.
- Designed for co-siting purposes.
- Feeder sharing available.
- Suitable for indoor or outdoor applications.
- Wall or mast mounting.



Block Diagram

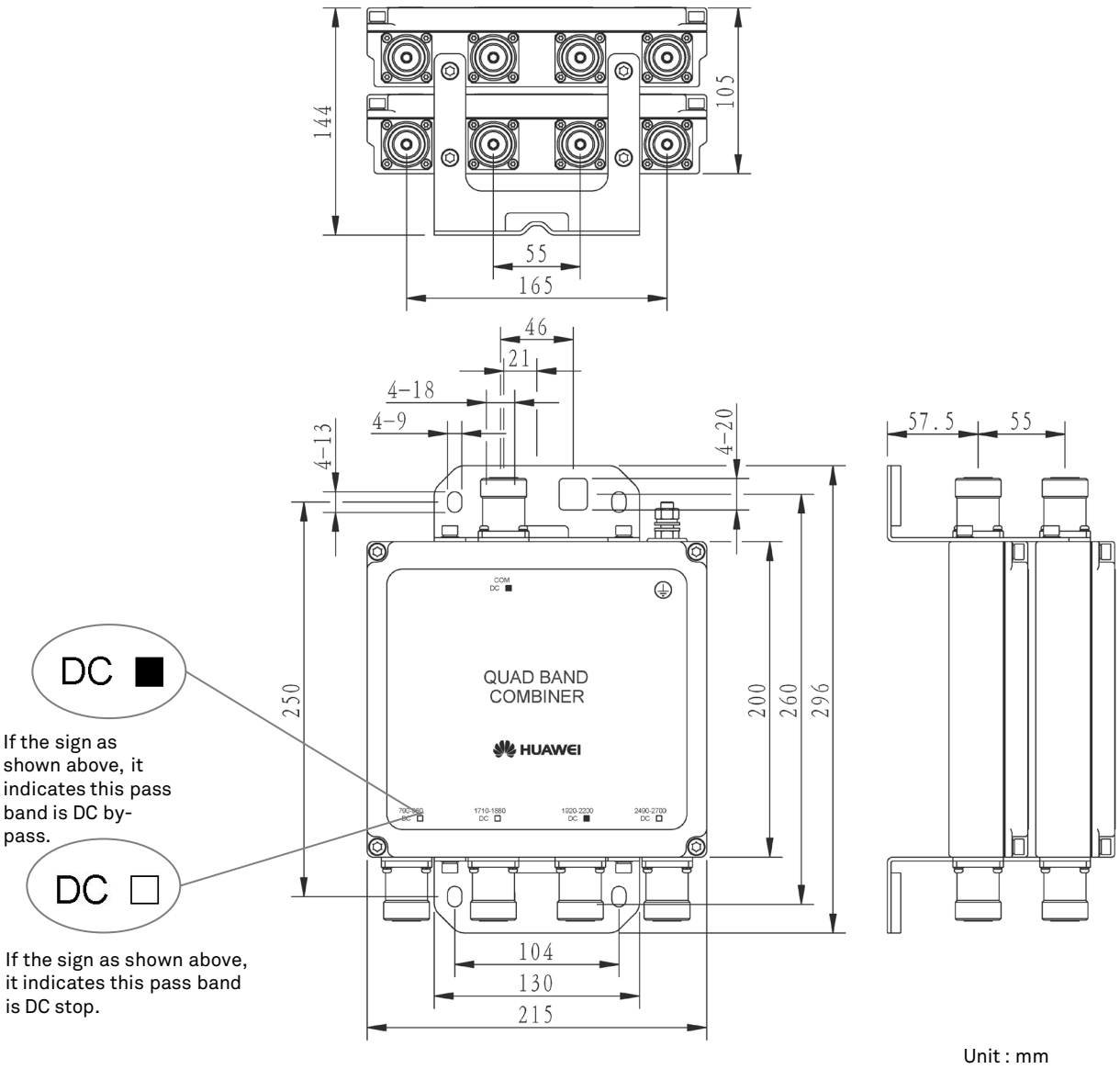


ACOMQ2M00 ACOMQ2H00

Electrical Properties			
Model		ACOMQ2M00	ACOMQ2H00
Pass band (MHz)	Band 1	790 - 960	
	Band 2	1710 - 1880	
	Band 3	1920 - 2200	
	Band 4	2490 - 2700	
Insertion loss* (dB)	Port 1 ←→ Port 5	< 0.15 (790 MHz - 960 MHz)	
	Port 2 ←→ Port 5	< 0.25 (1710 MHz - 1880 MHz)	
	Port 3 ←→ Port 5	< 0.25 (1920 MHz - 2200 MHz)	
	Port 4 ←→ Port 5	< 0.2 (2490 MHz - 2700 MHz)	
DC/AISG transparency	Port 1 ←→ Port 5	Stop	By- pass (max. 2500 mA)
	Port 2 ←→ Port 5	Stop	By- pass (max. 2500 mA)
	Port 3 ←→ Port 5	By- pass (max. 2500 mA)	By- pass (max. 2500 mA)
	Port 4 ←→ Port 5	Stop	By- pass (max. 2500 mA)
Isolation (dB)		> 45	
VSWR		< 1.28	
Input power (W)	Port 1, Port 2 Port 3, Port 4	< 300	
Intermodulation products (dBm)		< -110 (3rd order; with 2 x 43 dBm)	
Environmental Specification			
Operating temperature (℃)		-40 ... +65	
Application scene		Indoor // Outdoor	
IP rating		IP67	
Lightning protection** (kA)		10 (8/20 us)	
Mechanical Specification			
Combiner dimensions (W x H x D) (mm)		Double Unit: 215 x 200 x 105 (without connectors, without mounting brackets)	
Packing dimensions (W x H x D) (mm)		290 x 380 x 220	
Combiner weight (kg)		Double Unit: ≤ 7.2	
Packing weight (kg)		≤ 7.9	
Mounting		Wall mounting // Mast mounting	
Mast diameter (mm)		Default: 40 - 135	
Connector		7/16 DIN Female (Long neck)	

*Insertion loss: $\overline{IL} = \frac{IL_{Min.Frequency} + 2 \times IL_{Mid.Frequency} + IL_{Max.Frequency}}{4}$

**Lightning protection: In normal instance, the combiner share the GND protection systems with feeders and no need another GND cable.

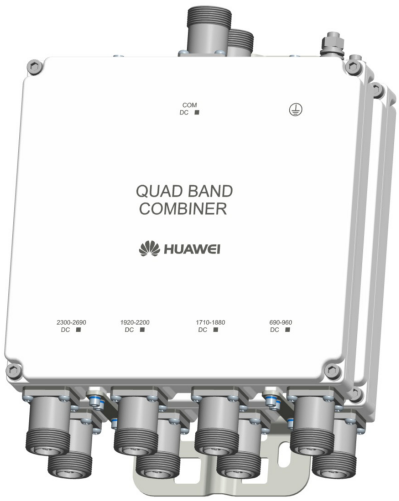

144
105
55
165
46
21
4-18
4-9
4-13
4-20
57.5
55
DC ■
If the sign as shown above, it indicates this pass band is DC by-pass.
DC □
If the sign as shown above, it indicates this pass band is DC stop.
COM
DC ■
QUAD BAND
COMBINER
HUAWEI
790-960
DC □
1710-1880
DC □
1920-2200
DC ■
2490-2700
DC □
250
200
260
296
104
130
215

Unit : mm

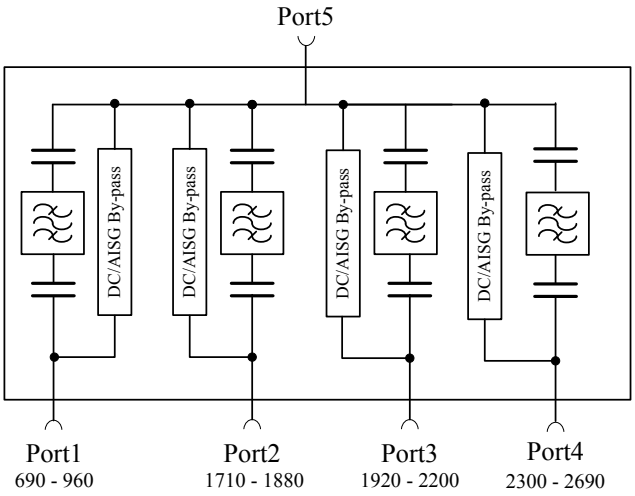
Preliminary Issue

Product Description

- Built-in lightning protection up to 10 kA.
- Can be used as a combiner near the BTS or in a reciprocal function near the antenna.
- Designed for co-siting purposes.
- Feeder sharing available.
- Suitable for indoor or outdoor applications.
- Wall or mast mounting.



Block Diagram

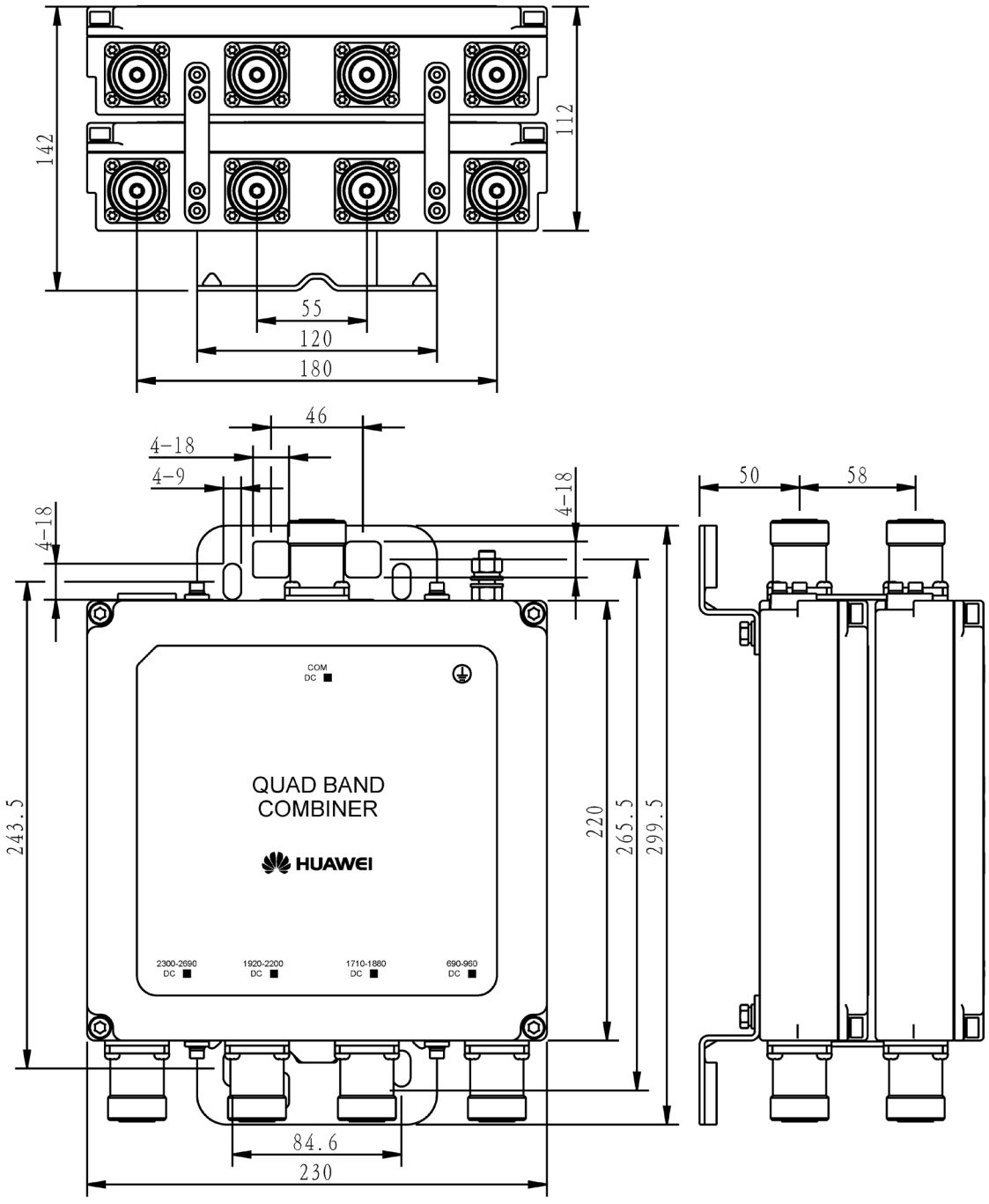


ACOMQ2A01

Preliminary Issue

Electrical Properties		
Model		ACOMQ2A01
Pass band (MHz)	Band 1	690 - 960
	Band 2	1710 - 1880
	Band 3	1920 - 2200
	Band 4	2300 - 2690
Insertion loss* (dB)	Port 1 ←→ Port 5	< 0.15 (690 MHz - 960 MHz)
	Port 2 ←→ Port 5	< 0.30 (1710 MHz - 1880 MHz)
	Port 3 ←→ Port 5	< 0.30 (1920 MHz - 2200 MHz)
	Port 4 ←→ Port 5	< 0.20 (2300 MHz - 2690 MHz)
DC/AISG transparency	Port 1 ←→ Port 5	By- pass (max. 2500 mA)
	Port 2 ←→ Port 5	By- pass (max. 2500 mA)
	Port 3 ←→ Port 5	By- pass (max. 2500 mA)
	Port 4 ←→ Port 5	By- pass (max. 2500 mA)
Isolation (dB)		> 45
VSWR		< 1.24
Input power (W)	Port 1, Port 2 Port 3, Port 4	< 300
Intermodulation products (dBm)		< -110 (3rd order; with 2 x 43 dBm)
Environmental Specification		
Operating temperature (℃)		-40 ... +65
Application scene		Indoor // Outdoor
IP rating		IP67
Lightning protection (kA)		10 (8/20 us)
Mechanical Specification		
Combiner dimensions (W x H x D) (mm)		Double Unit： 230 x 220 x 112 (without connectors, without mounting brackets)
Packing dimensions (W x H x D) (mm)		335 x 405 x 265
Combiner weight (kg)		Double Unit: ≤ 8.0
Packing weight (kg)		≤ 8.9
Mounting		Wall mounting // Mast mounting
Mast diameter (mm)		Default: 40 - 135
Connector		7/16 DIN Female (Long neck)

*Insertion loss: $\overline{IL} = \frac{IL_{Min.Frequency} + 2 \times IL_{Mid.Frequency} + IL_{Max.Frequency}}{4}$

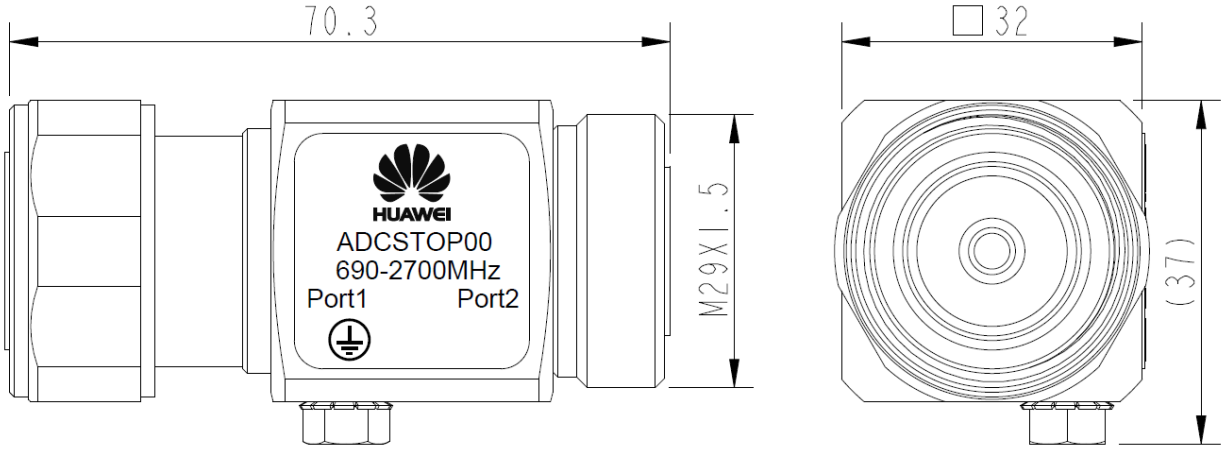

142
112
55
120
180
46
4-18
4-9
4-18
4-18
50
58
COM
DC
QUAD BAND
COMBINER
HUAWEI
2300-2690
DC
1920-2200
DC
1710-1880
DC
690-960
DC
243.5
220
265.5
299.5
84.6
230

Unit : mm

Features

- Used to isolate DC voltage from port 1 to port 2.
- Low passive intermodulation products, low insertion loss and high power capacity.
- Ultra wide band design for various communication system.
- Small volume, light weight.

Dimension figure

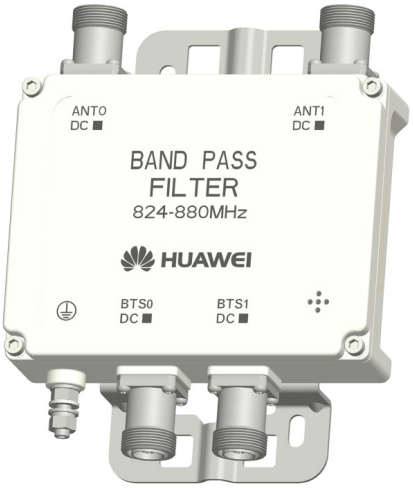


Electrical Properties		
Model		ADCSTOP00
Frequency range (MHz)		690 - 2700
Insertion loss (dB)	Port 1 ←→ Port 2	≤ 0.1 (690 - 960 MHz // 1710 - 2700 MHz) ≤ 0.15 (960 - 1710 MHz)
Isolation for DC signal (dB)	Port 1 ←→ Port 2	≥ 70
VSWR	Port 1, Port 2	≤ 1.15 (690 - 960 MHz // 1710 - 2700 MHz) ≤ 1.2 (960 - 1710 MHz)
Input power (W)	Port 1, Port 2	Avg. ≥ 500 (690 - 2700 MHz)
RF Impedance (Ω)		50
Intermodulation products (dBm)		< -117 (2 x 43 dBm carrier)
Environmental Specification		
Operating temperature (℃)		-40 ... +70
Application scene		Indoor or outdoor
IP rating		IP66
Lightning protection (kA)		3 (10/350 us)
Mechanical Specification		
BT dimensions (W x H x D) (mm)		32 x 70.3 x 37 (with connectors and ground screw)
Packing dimensions (W x H x D) (mm)		50 x 82 x 50
BT net weight (kg)		< 0.32
Packing weight (kg)		< 0.45
Connectors	Port 1	7/16 DIN Male
	Port 2	7/16 DIN Female

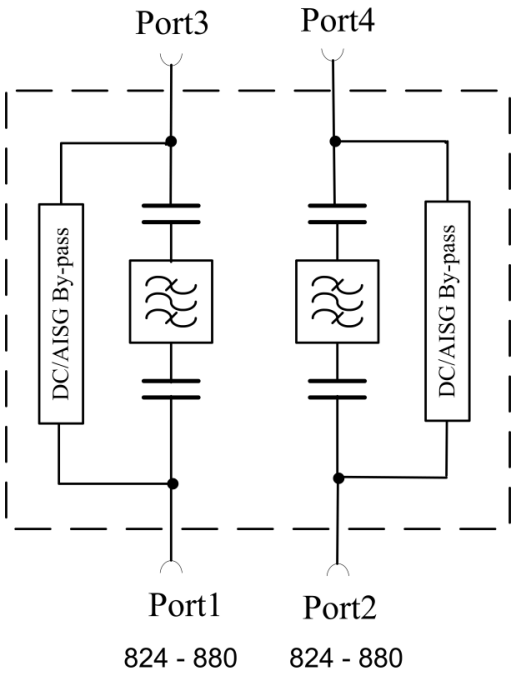
Preliminary Issue

Product Description

- Built-in lightning protection up to 10 kA.
- Suppressing blocking interference of the different system or spurious emission of the same system.
- Suitable for indoor or outdoor applications.
- Wall or mast mounting.
- Environment IP67



Block Diagram

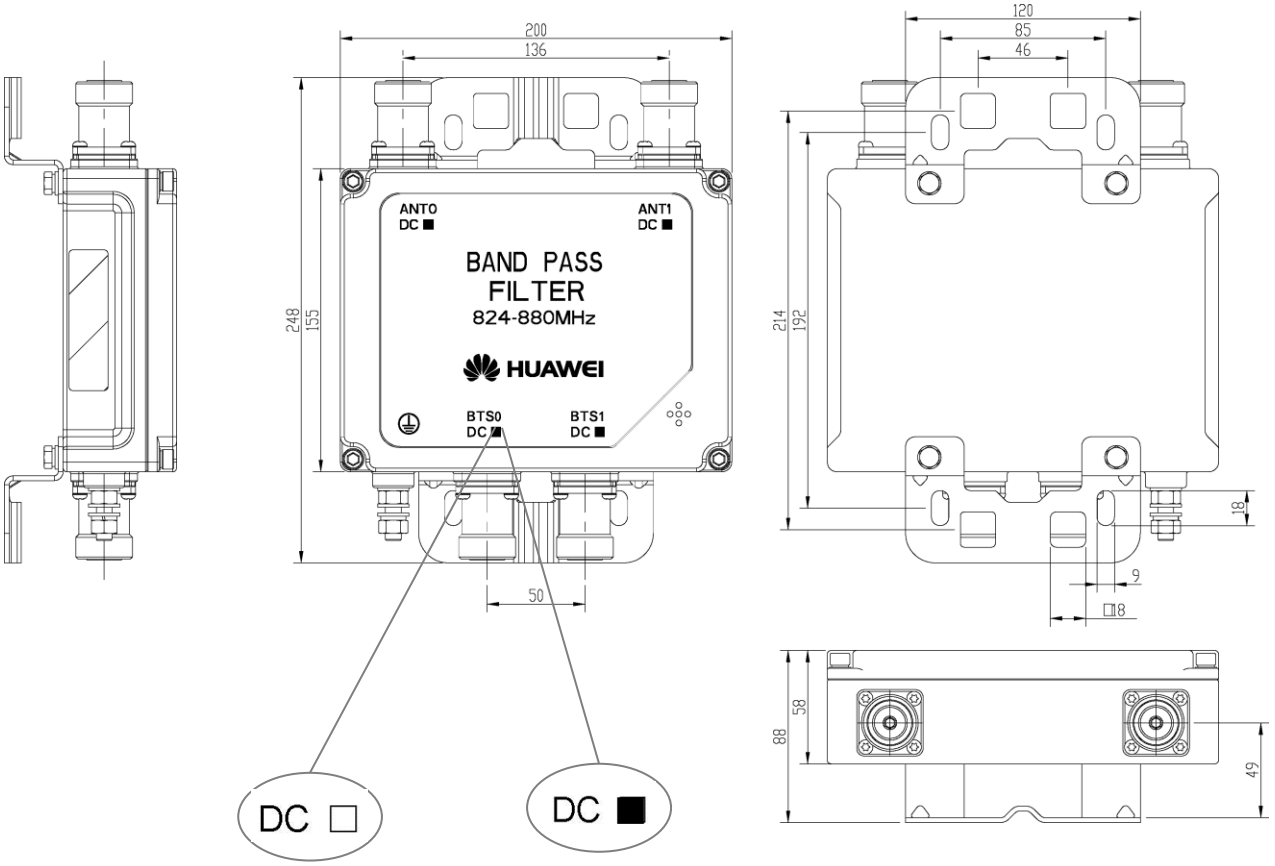


ACOMD2N05

Electrical Properties		
Model		ACOMD2N05
Pass band (MHz)		824 - 880
Insertion loss* (dB)	Port 1 ←→ Port 3	< 0.55 (875 MHz - 880 MHz), < 0.25 (824 MHz - 875 MHz)
	Port 2 ←→ Port 4	< 0.55 (875 MHz - 880 MHz), < 0.25 (824 MHz - 875 MHz)
DC/AISG transparency	Port 1 ←→ Port 3	By-pass (max. 2500 mA)
	Port 2 ←→ Port 4	By-pass (max. 2500 mA)
Rejection(dB)	Port 1 ←→ Port 3	> 35 (885 MHz - 960 MHz)
	Port 2 ←→ Port 4	> 35 (885 MHz - 960 MHz)
VSWR		< 1.25
Input power (W)	Port 1, Port 2, Port 3, Port 4	< 200
Intermodulation products (dBm)		< -110 (3rd order; with 2 x 43 dBm)
Environmental Specification		
Operating temperature (℃)		-40 ... +65
Application scene		Indoor // Outdoor
IP rating		IP67
Lightning protection** (kA)		10 (8/20 us)
Mechanical Specification		
Combiner dimensions (W x H x D) (mm)		200 x 155 x 58 (without connectors, without mounting brackets)
Packing dimensions (W x H x D) (mm)		330 x 265 x 160
Combiner weight (kg)		≤ 3.5
Packing weight (kg)		≤ 4
Mounting		Wall mounting // Mast mounting
Mast diameter (mm)		Default: 40 - 135
Connector		7/16 DIN Female (Long neck)

*Insertion loss: $\overline{IL} = \frac{IL_{Min.Frequency} + 2 \times IL_{Mid.Frequency} + IL_{Max.Frequency}}{4}$

**Lightning protection: In normal instance, the combiner share the GND protection systems with feeders and no need another GND cable.



If the sign as shown above, it indicates this pass band is DC stop.

If the sign as shown above, it indicates this pass band is DC pass.

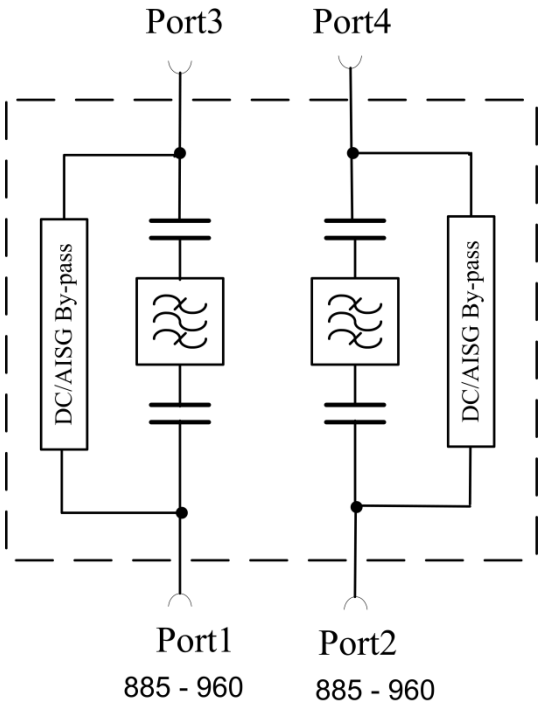
Unit : mm

Preliminary Issue

Product Description

- Built-in lightning protection up to 10 kA.
- Suppressing blocking interference of the different system or spurious emission of the same system.
- Suitable for indoor or outdoor applications.
- Wall or mast mounting.
- Environment IP67

Block Diagram

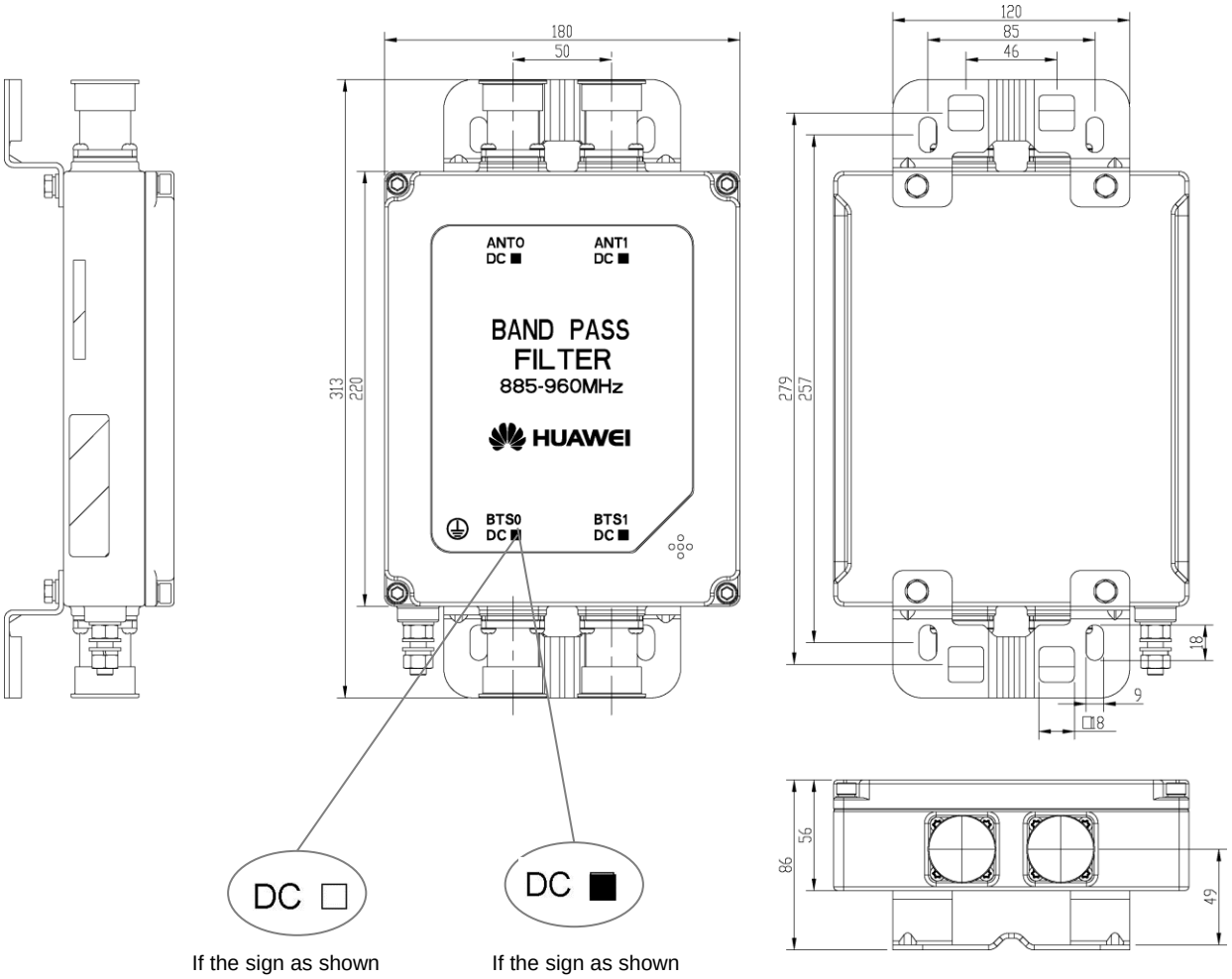


ACOMD2N04

Electrical Properties		
Model		ACOMD2N04
Pass band (MHz)		885 - 960
Insertion loss* (dB)	Port 1 ←→ Port 3	< 1.3 (885 MHz - 890 MHz), < 0.45 (890 MHz - 905 MHz), < 0.3 (905 MHz - 960 MHz)
	Port 2 ←→ Port 4	< 1.3 (885 MHz - 890 MHz), < 0.45 (890 MHz - 905 MHz), < 0.3 (905 MHz - 960 MHz)
DC/AISG transparency	Port 1 ←→ Port 3	By-pass (max. 2500 mA)
	Port 2 ←→ Port 4	By-pass (max. 2500 mA)
Rejection (dB)	Port 1 ←→ Port 3	> 65 (869 MHz - 880 MHz), > 55 (824 MHz - 869 MHz)
	Port 2 ←→ Port 4	> 65 (869 MHz - 880 MHz), > 55 (824 MHz - 869 MHz)
VSWR		< 1.25
Input power (W)	Port 1, Port 2, Port 3, Port 4	< 200
Intermodulation products (dBm)		< -110 (3rd order; with 2 x 43 dBm)
Environmental Specification		
Operating temperature (℃)		-40 ... +65
Application scene		Indoor // Outdoor
IP rating		IP67
Lightning protection** (kA)		10 (8/20 us)
Mechanical Specification		
Combiner dimensions (W x H x D) (mm)		180 x 220 x 56 (without connectors, without mounting brackets)
Packing dimensions (W x H x D) (mm)		380 x 245 x 160
Combiner weight (kg)		≤ 4.0
Packing weight (kg)		≤ 4.5
Mounting		Wall mounting // Mast mounting
Mast diameter (mm)		Default: 40 - 135
Connector		7/16 DIN Female

*Insertion loss: $\overline{IL} = \frac{IL_{Min.Frequency} + 2 \times IL_{Mid.Frequency} + IL_{Max.Frequency}}{4}$

**Lightning protection: In normal instance, the combiner share the GND protection systems with feeders and no need another GND cable.



If the sign as shown above, it indicates this pass band is DC stop.

If the sign as shown above, it indicates this pass band is DC pass.

Unit : mm

E. Bracket & Installation Guide

E-1. Bracket

E - 1 - 1. Tri-sector Bracket

Bracket Type	Antenna Width Required	Weight (Kg)	Dimension (mm)	Model	Page
TSC-S (3 Sector Clamp-Small)	<280mm	5.8	88.9mm (3.5inch)	ASMC00001	362
TSC-M (3 Sector Clamp-Medium)	<380mm	6.3	114.3mm (4.5inch)	ASMC00002	362
TSC-L (3 Sector Clamp-Large)	<400mm	6.6	139.7mm (5.5inch)	ASMC00003	362

E - 1 - 2. Downtilt Kit

Bracket Type	Antenna bases distance (m)	Weight(Kg)	Packing dimensions (H x W x D) (mm)	Model	Page
Downtilt Kit-A(Wind load Category “Light”)	0.7/1.4/2.0	0.6	260 x 98 x 50	ASMDT0A01	363
Downtilt Kit-B(Wind load Category “Medium”)	1.4/2.0	1.4	305 x 158 x 75	ASMDT0B01	364
Downtilt Kit-C(Wind load Category “Medium”)	1.4/2.0/2.6	1.9	305 x 158 x 75	ASMDT0C01	365
Downtilt Kit-D(Wind load Category “Heavy”)	1.4/2.0/2.6	2	340 x 168 x 105	ASMDT0D01	366
Downtilt Kit-G(Wind load Category “Heavy”)	1.4/2.0/2.6	4.3	385 x 240 x 135	ASMDT0G01	367
Downtilt Kit-F(Wind load Category “Heavy”)	1.4/2.0/2.6	4.3	385 x 240 x 135	ASMDT0F01	368

E - 1 - 3. Special Installation Kit

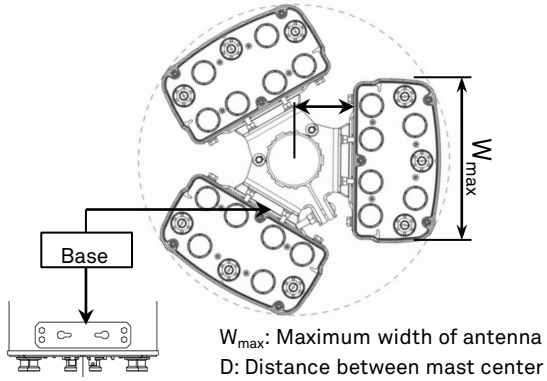
Bracket Type	Mast diameter supported (mm)	Weight(Kg)	Packing dimensions (H x W x D) (mm)	Model	Page
Extension Clamps Kit-B	110 - 180	3.7	255 x 165 x 120	ASMC00006	369

Bracket Type	Antenna Width Required	Weight(Kg)	Azimuth adjustment range (°)	Model	Page
Wall-mounting Kit-A	<400mm	4.3	±30	ASMWM0001	370

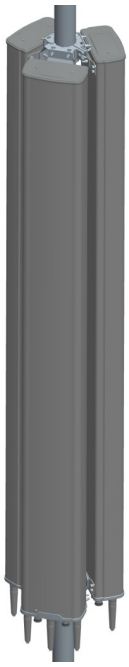
E-2. Installation Guide

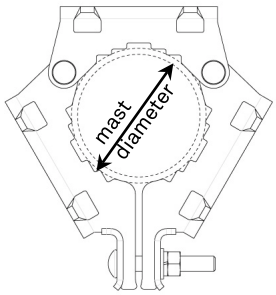
Bracket Type	Page
Antenna Installation Guide (with Type A Brackets)	371
Antenna Installation Guide (with Type B and Type C Brackets)	374
Antenna Installation Guide (with Type D Brackets)	377
Antenna Installation Guide (with Type F Brackets)	380

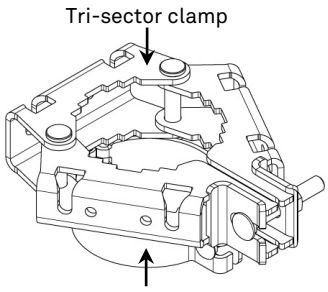
- Suitable for antennas whose widths are less than 400 mm and bases are installed at both ends of the antennas.
- Adjustment is available together with standard bracket within antenna package.
- Support the third party customized camouflage cover.
- Not support antennas with brackets of model F or above.



W_{max}: Maximum width of antenna
D: Distance between mast center and back of antenna





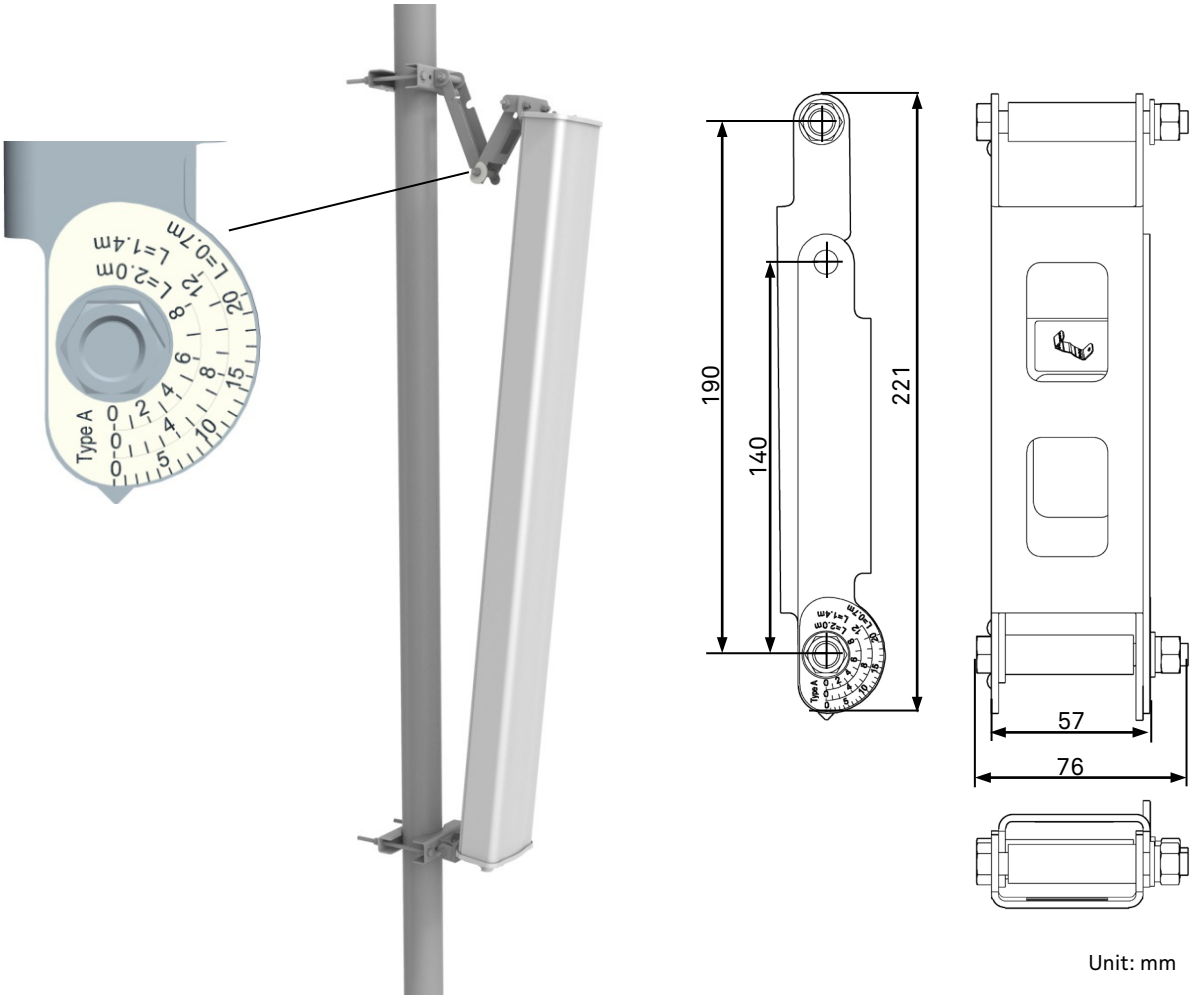


mounting support clamp

Specifications				
Model		ASMC00001	ASMC00002	ASMC00003
Angle between antennas (°)		120	120	120
Mast diameter (mm)		88.9	114.3	139.7
*W_{max} (mm)		280	380	400
Maximum weight of a single antenna (kg)		35	35	35
**D (mm)		100	113	128
Number of pieces		2 x 3 sector clamp 2 x mounting support clamp 6 x connecting plate	2 x 3 sector clamp 2 x mounting support clamp 6 x connecting plate	2 x 3 sector clamp 2 x mounting support clamp 6 x connecting plate
Net weight (approx.) (kg)		5.8	6.3	6.6
Packing weight (kg)		7.3	7.8	8.1
Packing dimensions (H x W x D) (mm)		410 x 280 x 160	410 x 280 x 160	410 x 280 x 160
Max. operational wind speed (km/h)		150	150	150
Material	3 sector clamp	Hot-dip galvanized steel	Hot-dip galvanized steel	Hot-dip galvanized steel
	Mounting support clamp			
	Connecting plate			
	Screws	Stainless steel	Stainless steel	Stainless steel
	Nuts			

Standard Downtilt kit-A for Panel Antennas
(Wind load Category “Light”)
Model: ASMDT0A01

Antenna bases distance (m)	Downtilt angle (°)	Net weight (kg)	Packing weight (kg)	Packing dimensions (H x W x D) (mm)	Material
0.7 1.4 2.0	0 - 20 0 - 12 0 - 8	0.6	0.7	260 x 98 x 50	Sheet Metal: Hot-dip galvanized steel Screws / nuts / washers: Stainless steel

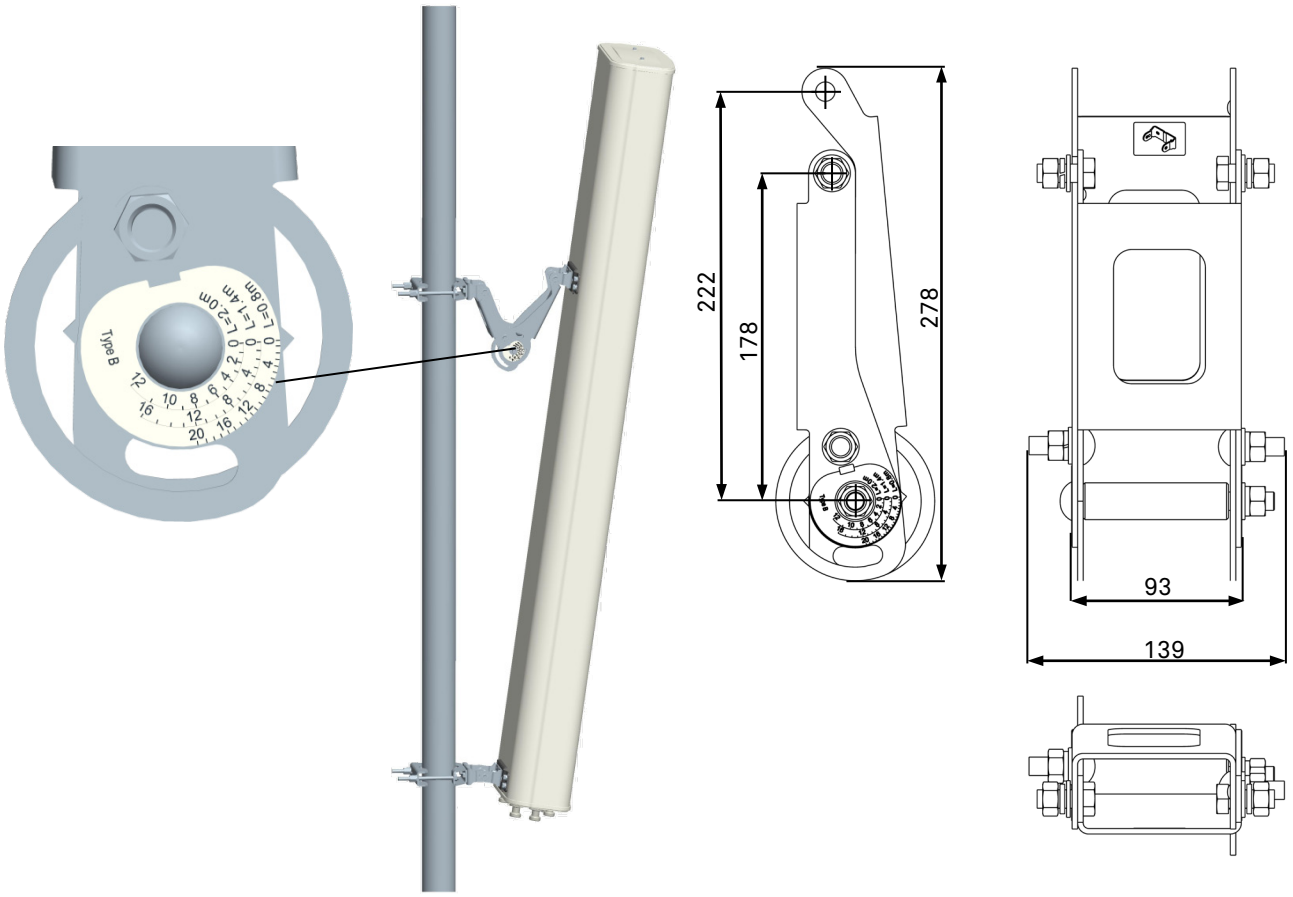


Unit: mm

NOTE

Downtilt kit must be combined with corresponding models of clam for antenna installation.
Installation must follow the antenna installation guide within antenna package.

Antenna bases distance (m)	Downtilt angle (°)	Net weight (kg)	Packing weight (kg)	Packing dimensions (H x W x D) (mm)	Material
0.8 1.4 2.0	0 - 20 0 - 16 0 - 12	1.3	1.8	315 x 160 x 105	Sheet Metal: Hot-dip galvanized steel Screws / nuts / washers: Stainless steel



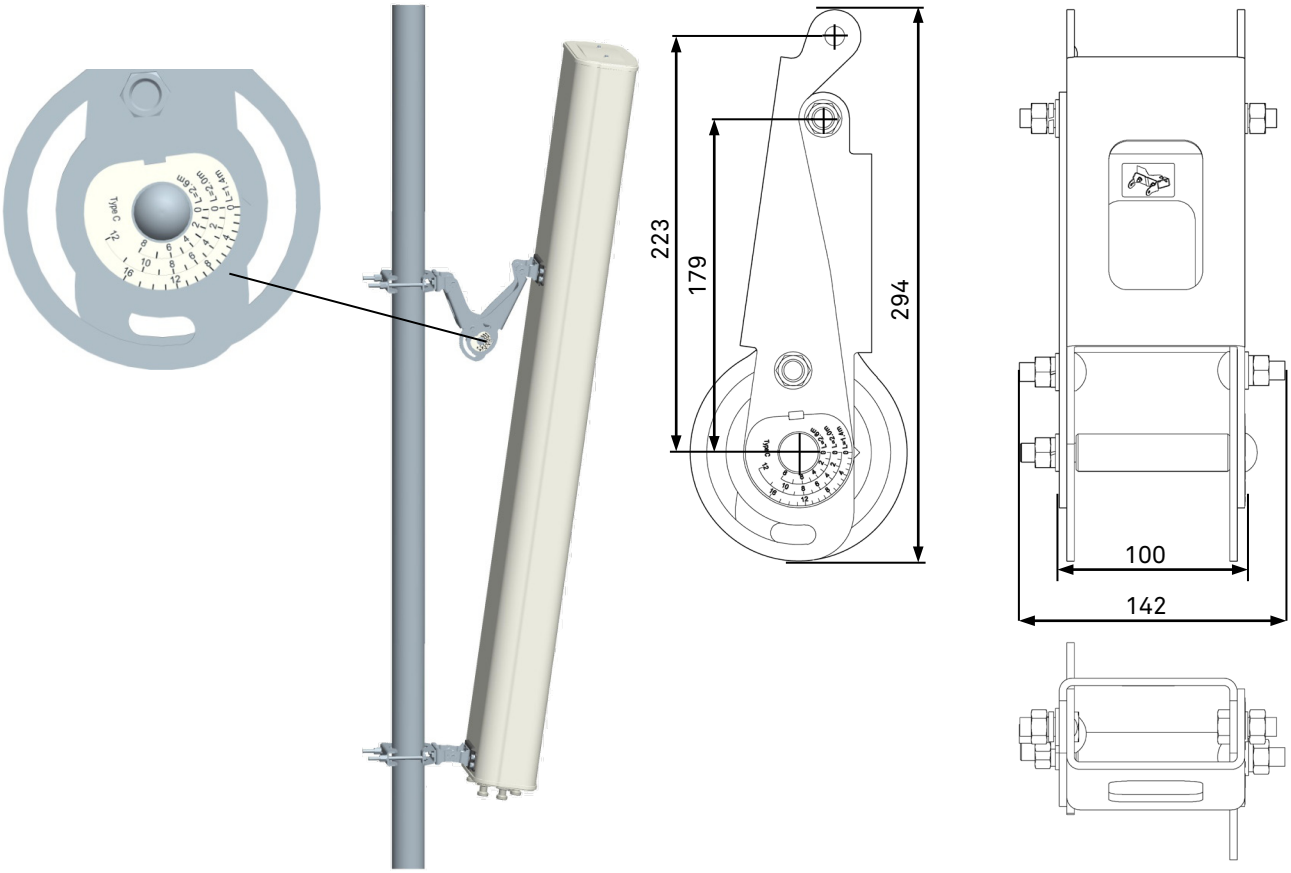
Unit: mm

NOTE

Downtilt kit must be combined with corresponding models of clam for antenna installation.
Installation must follow the antenna installation guide within antenna package.

Standard Downtilt kit-C for Panel Antennas
(Wind load Category “Medium”)
Model: ASMDT0C01

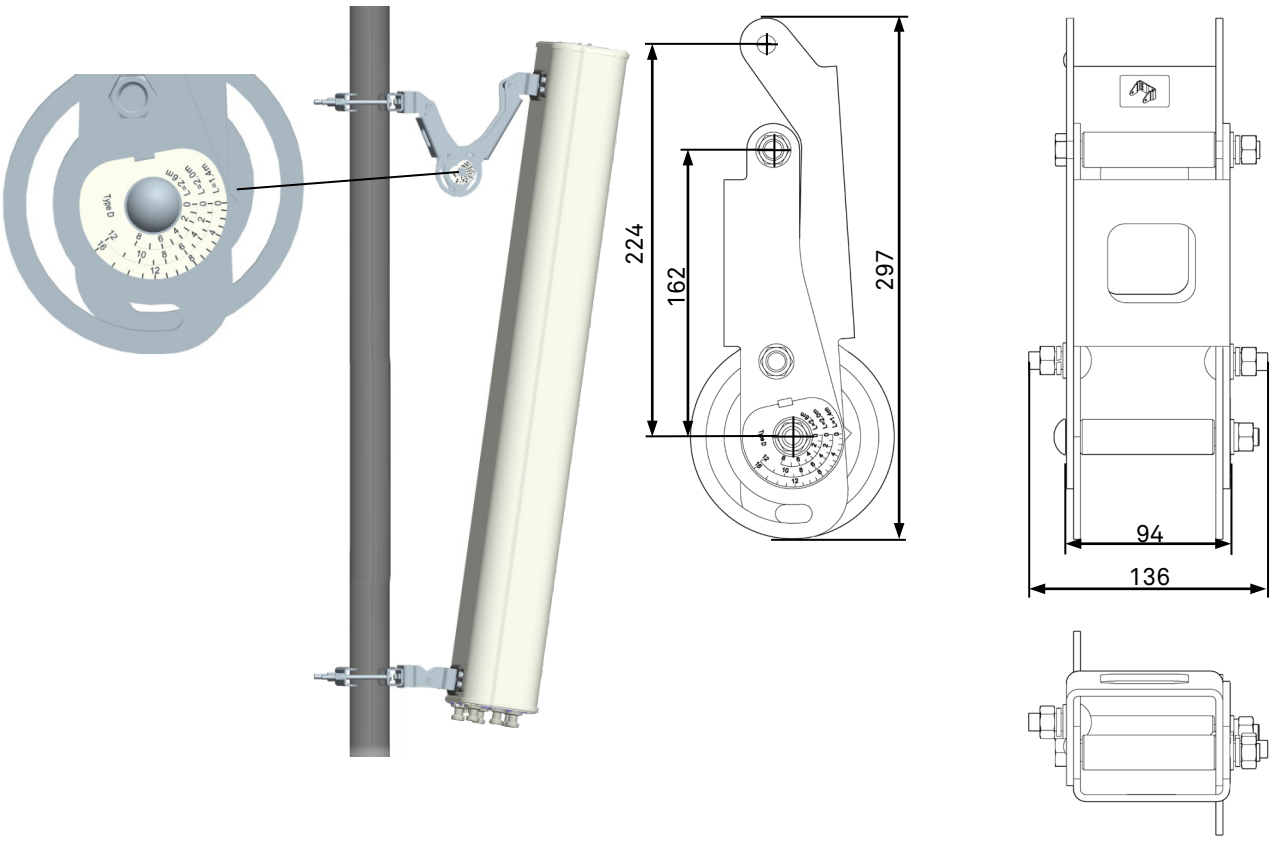
Antenna bases distance (m)	Downtilt angle (°)	Net weight (kg)	Packing weight (kg)	Packing dimensions (H x W x D) (mm)	Material
1.4 2.0 2.6	0 - 16 0 - 12 0 - 8	2.1	2.7	330 x 160 x 135	Sheet Metal: Hot-dip galvanized steel Screws / nuts / washers: Stainless steel



NOTE

Downtilt kit must be combined with corresponding models of clam for antenna installation.
Installation must follow the antenna installation guide within antenna package.

Antenna bases distance (m)	Downtilt angle (°)	Net weight (kg)	Packing weight (kg)	Packing dimensions (H x W x D) (mm)	Material
1.4 2.0 2.6	0 - 16 0 - 12 0 - 8	2.1	2.7	330 x 170 x 135	Sheet Metal: Hot-dip galvanized steel Screws / nuts / washers: Stainless steel



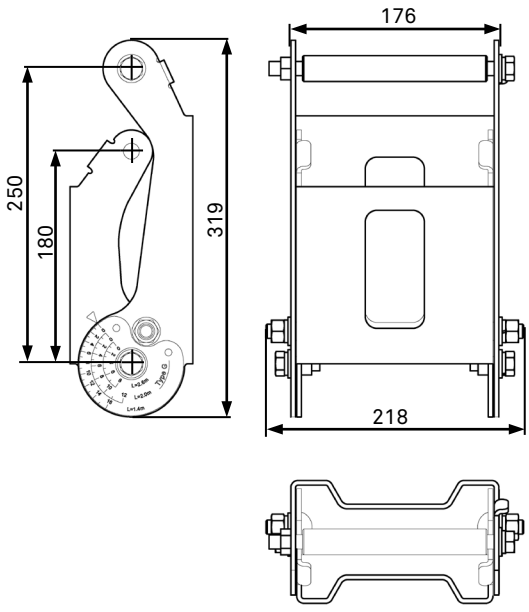
Unit: mm

NOTE

Downtilt kit must be combined with corresponding models of clam for antenna installation.
Installation must follow the antenna installation guide within antenna package.

Standard Downtilt kit-G for Panel Antennas
(Wind load Category “Heavy”)
Model: ASMDT0G01

Antenna bases distance (m)	Downtilt angle (°)	Net weight (kg)	Packing weight (kg)	Packing dimensions (H x W x D) (mm)	Material
1.4 2.0 2.6	0 - 16 0 - 12 0 - 8	4.3	4.8	385 x 240 x 135	Sheet Metal: Hot-dip galvanized steel Screws / nuts / washers: Stainless steel



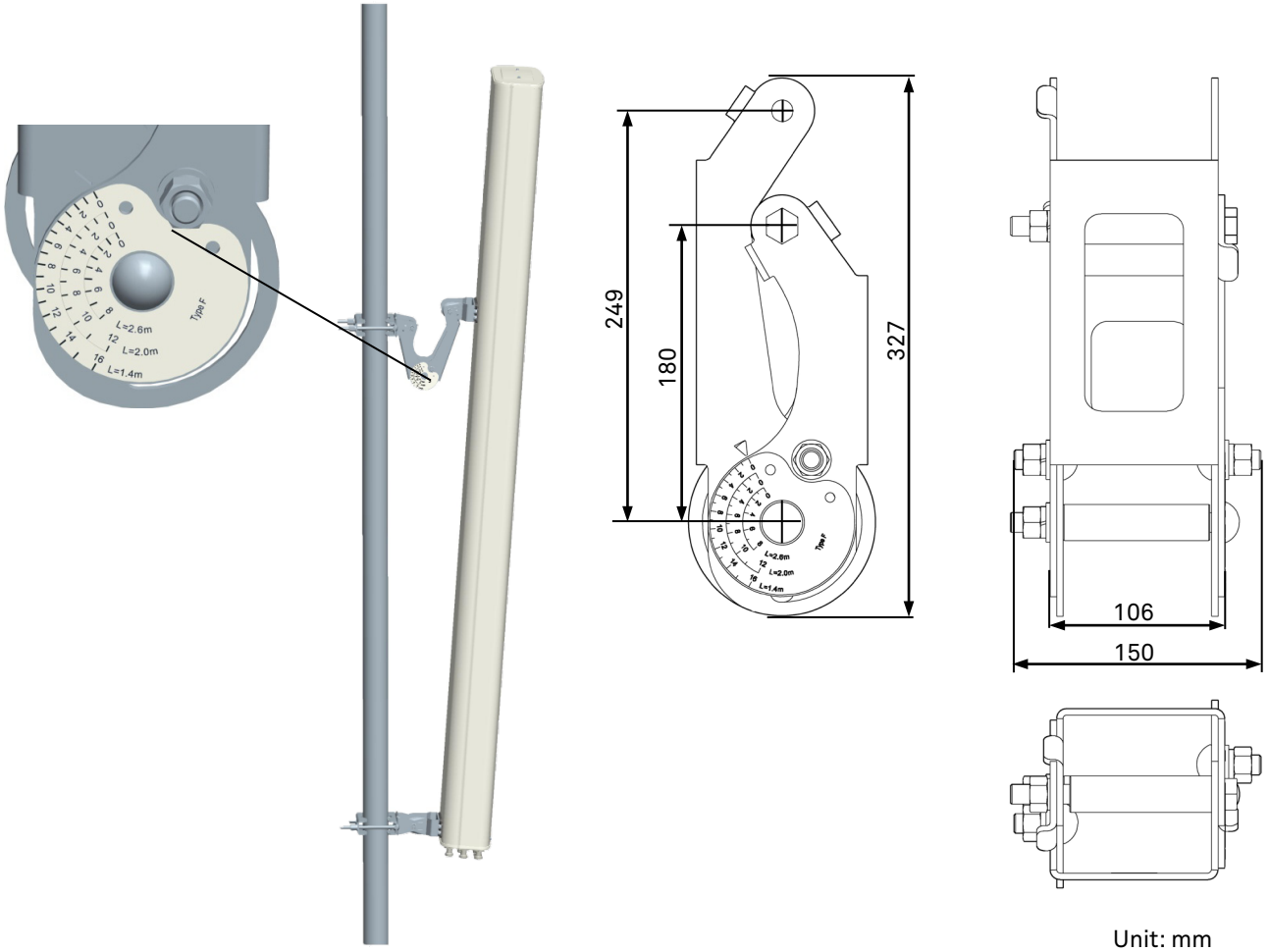
Unit: mm

NOTE

Downtilt kit must be combined with corresponding models of clam for antenna installation.
Installation must follow the antenna installation guide within antenna package.

Standard Downtilt kit-F for Panel Antennas
(Wind load Category “Heavy”)
Model: ASMDT0F01

Antenna bases distance (m)	Downtilt angle (°)	Net weight (kg)	Packing weight (kg)	Packing dimensions (H x W x D) (mm)	Material
1.4 2.0 2.6	0 - 16 0 - 12 0 - 8	3.1	3.7	360 x 170 x 120	Sheet Metal: Hot-dip galvanized steel Screws / nuts / washers: Stainless steel



Unit: mm

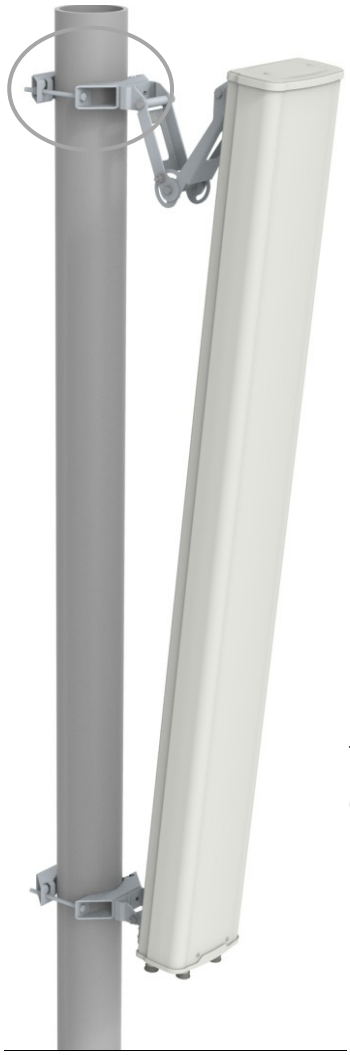
NOTE

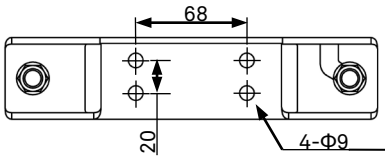
Downtilt kit must be combined with corresponding models of clam for antenna installation.
Installation must follow the antenna installation guide within antenna package.

Extension Clamps Kit-B for Panel Antennas

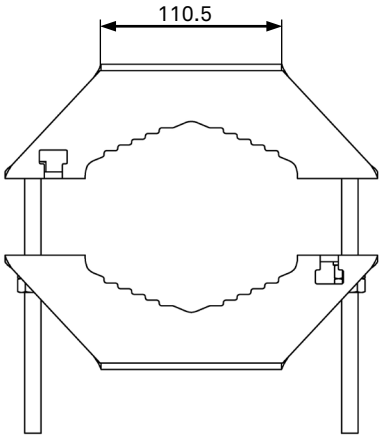
Model: ASMC00006

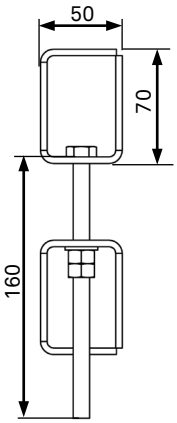
Mast diameter supported (mm)	Net weight (kg)	Packing weight (kg)	Packing dimensions (H x W x D) (mm)	Material
110 - 180	3.7	4.0	255 x 165 x 120	All parts: Hot-dip galvanized steel Bolts / nuts / washers: Stainless steel



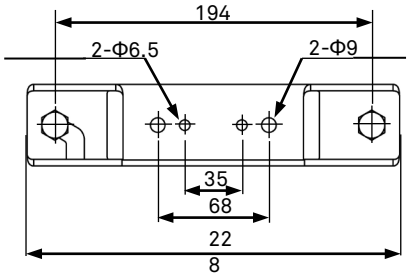


The expand interface for Clamps Kit-F





The expand interface for Clamps Kit-A



The expand interface for Clamps Kit-B , Clamps Kit-C and Clamps Kit-D

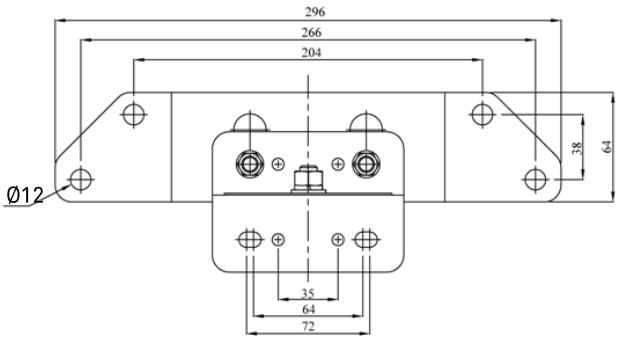
Unit: mm

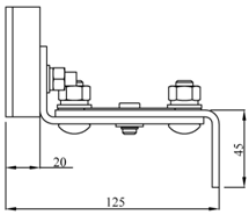
NOTE

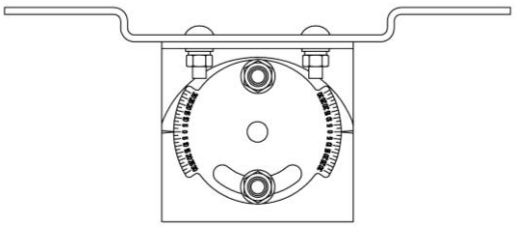
Clamps kit must be combined with corresponding models of clam for antenna installation.
Installation must follow the antenna installation guide within antenna package.

- Suitable for all panels with an antenna housing width (W_{max}) less than 400 mm.
- Not support antennas with brackets of model F or above.

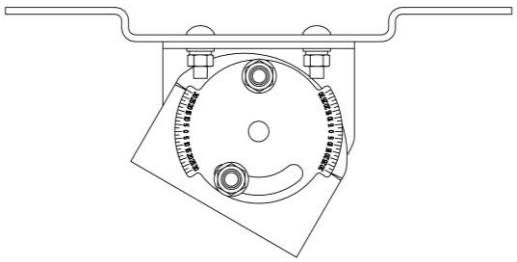
Wall Mounting Hardware		
Azimuth adjustment range (°)		±30
W_{max} (mm)		400
Maximum weight of antenna (kg)		35
Number of pieces		2
Weight (kg)		4.3
Material	Sheet Metal	Hot-dip galvanized steel
	Screws	Stainless steel
	Nuts	







Angular: 0°

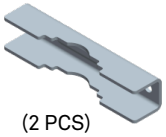
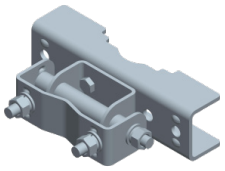


Angular: 30°

Unit: mm

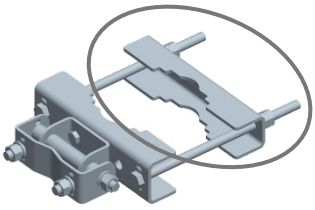
NOTE

The expansion bolts for concrete wall mounting are provided, other wall mounting screws are not supplied, they must be chosen by installer according to the mounting condition.

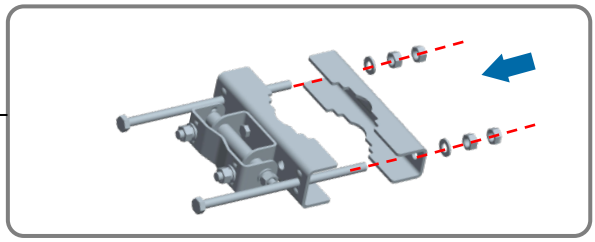
Installation Tools	Clamps	Downtilt kit (Optional)
Torque wrench Inclinometer 13 mm combination wrench (2 PCS)	M8 (4 PCS)  (2 PCS)  (2 PCS)	ASMDT0A01 (1 PCS)

Installation without Downtilt Kit

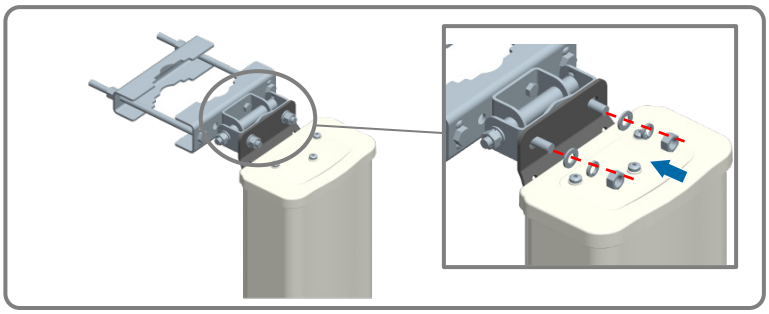
1 Assemble the Clamps



2 PCS

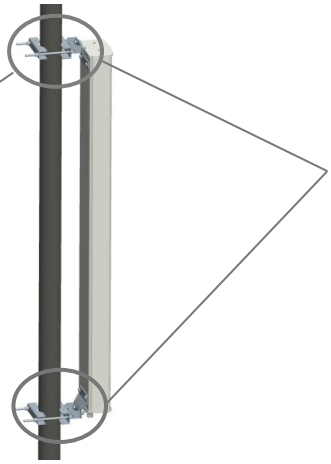


2 Install the Clamps

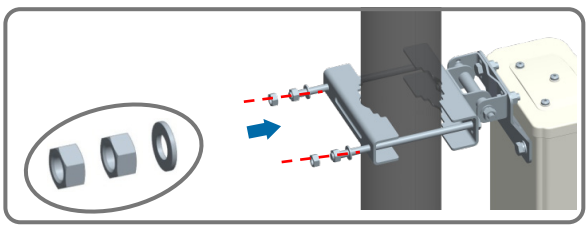


The same installation method applies to both upper and lower brackets.

3 Install the antenna



The mechanical downtilt of the antenna is fixed to 0° and cannot be adjusted.



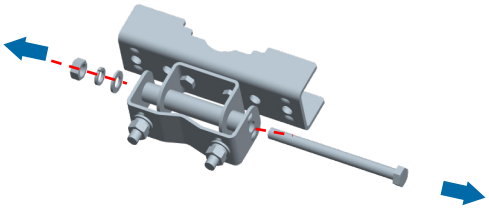
The same installation method applies to both upper and lower brackets.
Check and tighten all the nuts when the installation is complete. The recommended torque M8 is 18 N·m

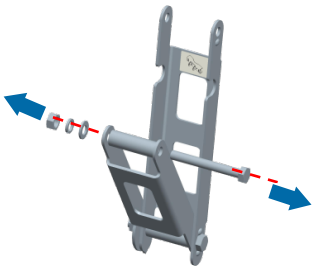
Installation with Downtilt Kit

1 Assemble the bracket

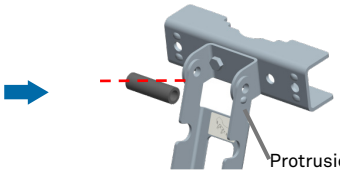
1. Disassemble clamps and downtilt kit .

The packaging box contains two clamps. Just need disassemble one of them.

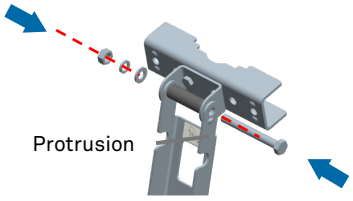




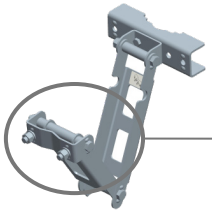
2. Assemble the upper bracket

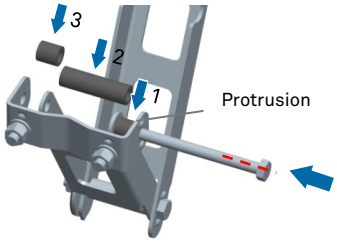


The side of the downtilt kit with a protrusion is outside.

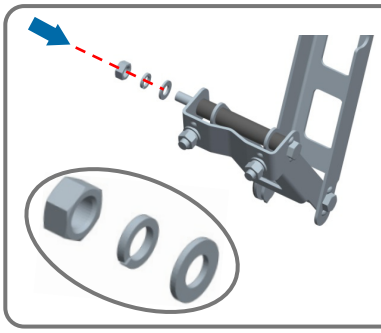


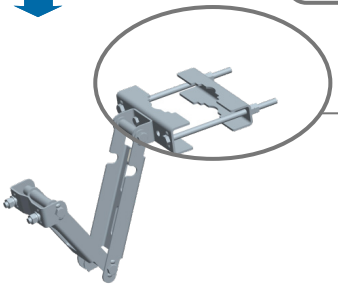
Insert the bolt from the side with the Protrusion.

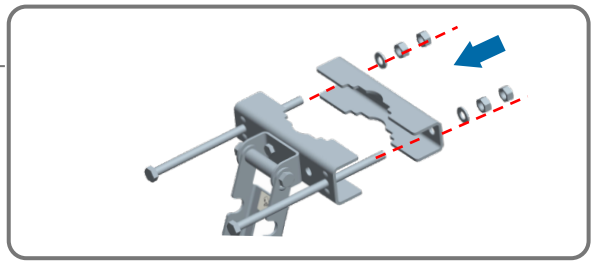




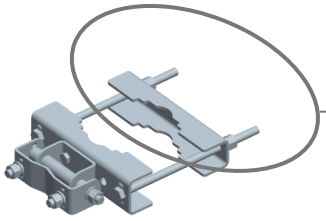
Insert the bolt from the side with the protrusion.

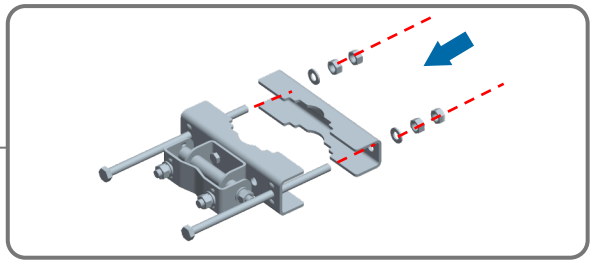




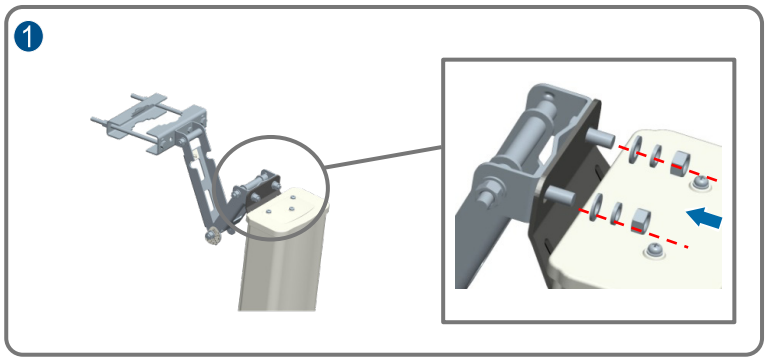


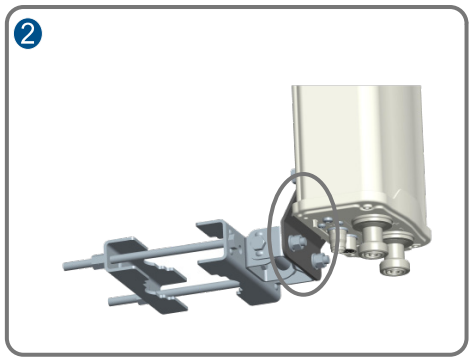
3. Assemble the lower bracket





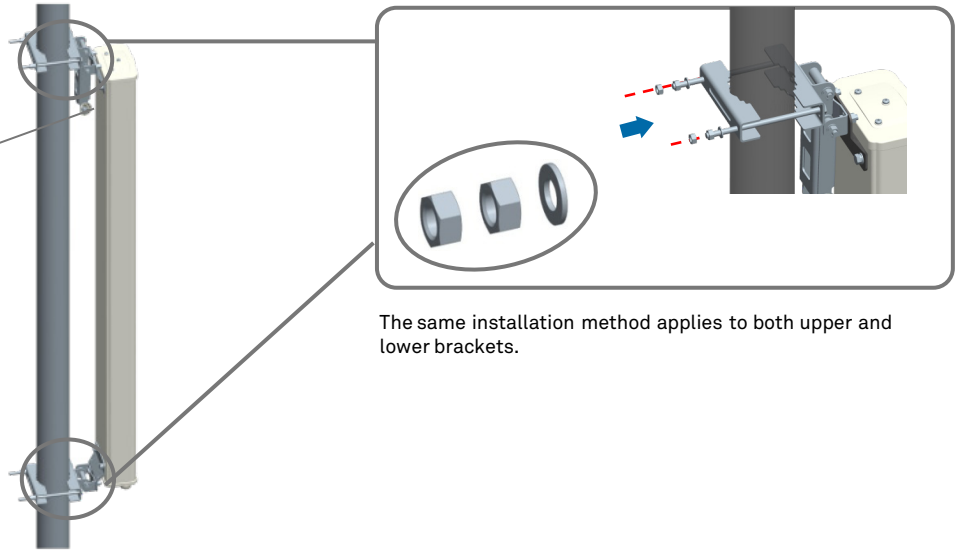
2 Install the bracket





3 Install the antenna

Tighten all the nuts before lifting the antenna onto the tower. Ensure the bracket is fully folded.

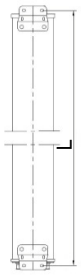


The same installation method applies to both upper and lower brackets.

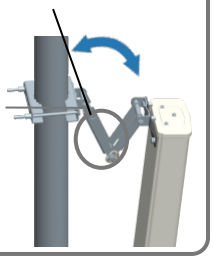
4 Adjust the mechanical downtilt

Method 1: Using a scale plate

The letter "L" on the scale plate indicates the distance between antenna bases. Determine the value that is closest to the actual distance. if the distance is approximate 1.4 m, observe the readings corresponding to "L=1.4 m".



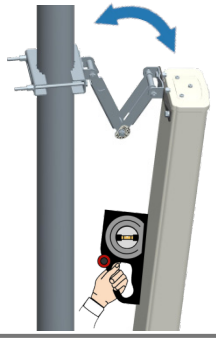
The scale plates may vary with different types of downtilt kit. The scale plate shown in the right figure is only for reference.

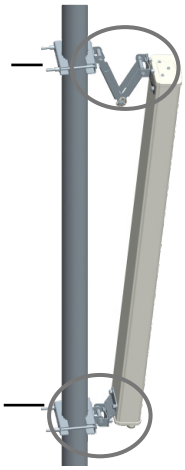


Example of a scale plate

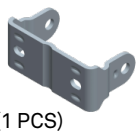
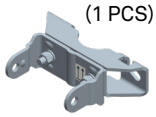
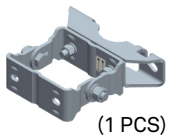
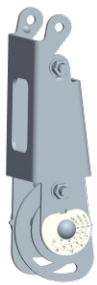
Method 2: Using an inclinometer

Before the adjustment, adjust the inclinometer to the desired downtilt. After the adjustment, locate the bead in the middle of the inclinometer.





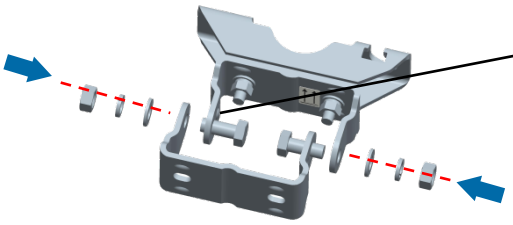
Finally, tighten all the nuts. The recommended torque M8 is 18 N·m

Installation Tools	Clamps	Downtilt kit (Optional)
13 mm combination wrench (2 PCS) Inclinometer 16 mm combination wrench (2 PCS) Torque wrench	(2 PCS)  (1 PCS)  (1 PCS) M10 (4 PCS) M10 (2 PCS) M8 (4 PCS)  (1 PCS)	 ASMDT0B01 or ASMDT0C01 (1 PCS)

Installation without Downtilt Kit

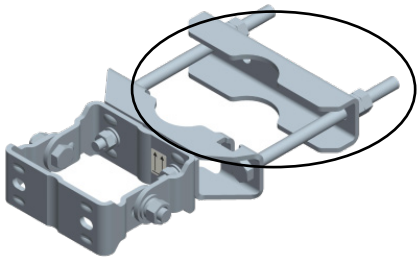
1 Assemble the clamps

1. Assemble the 2 PCS clamps.

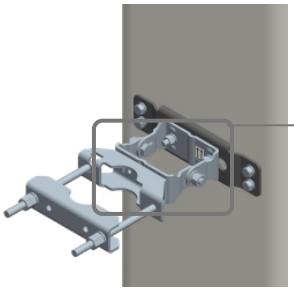


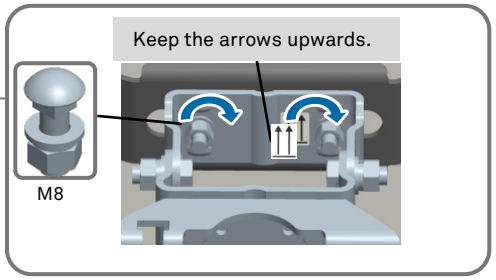
Ensure that the bolthead and the protrusion always reside on the same side.

2.



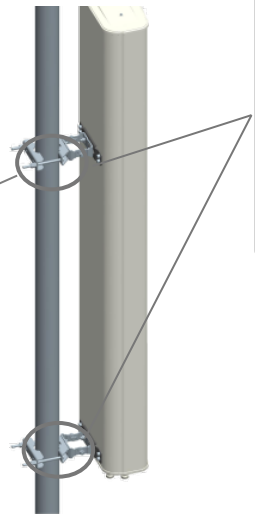
2 Install the clamps



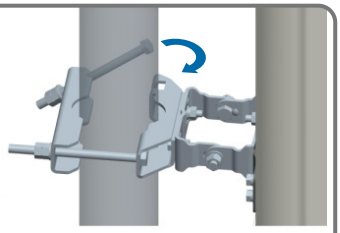


The same installation method applies to both upper and lower brackets. And tighten the nuts. The recommended torque M8 is 18 N·m.

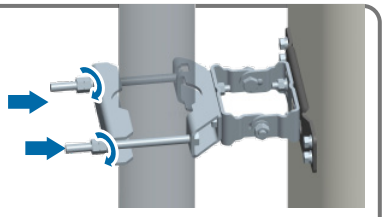
3 Install the antenna



The mechanical downtilt of the antenna is fixed to 0° and cannot be adjusted.

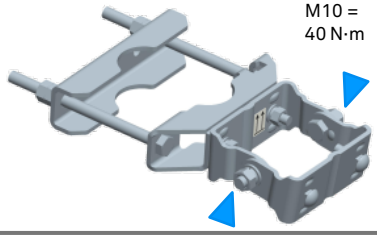
1. 

The same installation method applies to both upper and lower brackets.

2. 

Install and tighten the nuts. The recommended torque M10 is 40 N·m.

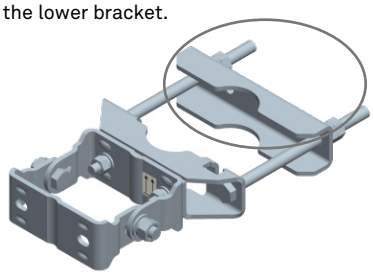
3. Check and tighten all the nuts when the installation is complete. The operating torques are given in the following figures.



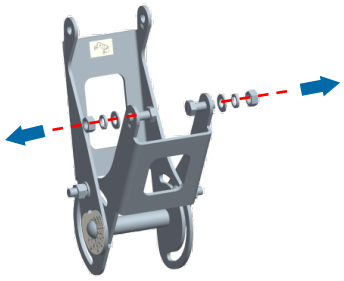
Installation with Downtilt Kit

1 Assemble the bracket

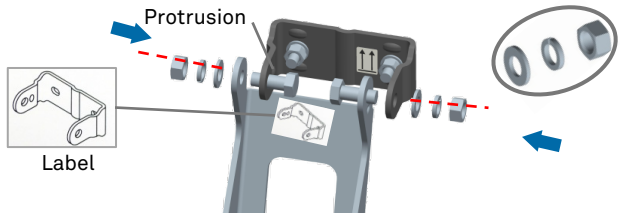
1. Assemble the lower bracket.



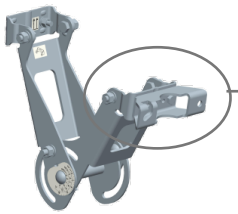
2. Disassemble the downtilt kit.

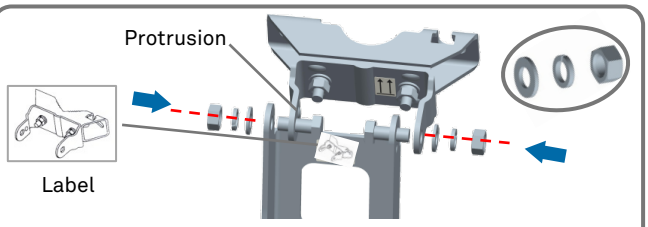


3. Assemble the upper bracket

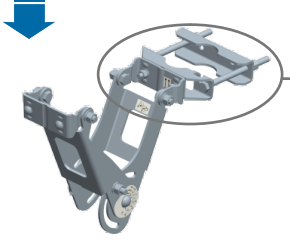


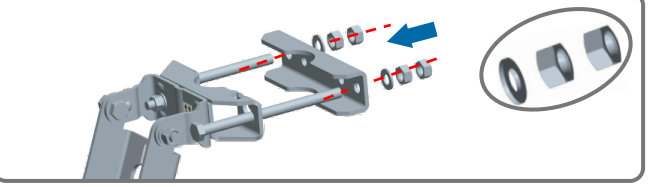
Follow the pattern on the label to select installation parts.



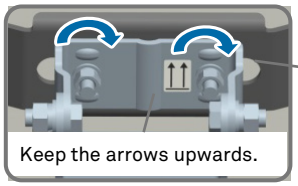


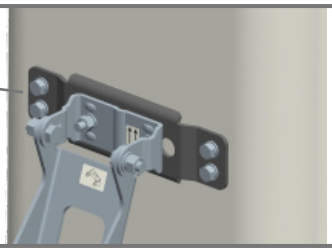
Follow the pattern on the label to select installation parts.





2 Install the bracket

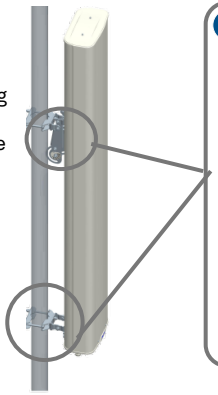




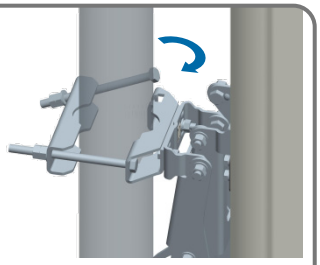
The same installation method applies to both upper and lower brackets.
Tighten the nuts. The recommended torque M8 is 18 N·m.

3 Install the antenna

Tighten all the nuts before lifting the antenna onto the tower. Ensure the bracket is fully folded.

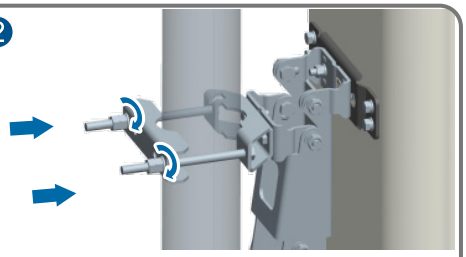


1



The same installation method applies to both upper and lower brackets.

2

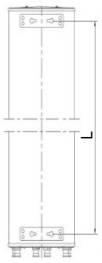


Install and tighten the nuts. The recommended torque M10 is 40 N·m.

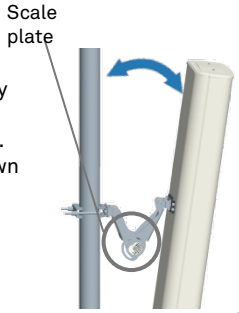
4 Adjust the mechanical downtilt

Method 1: Using a scale plate

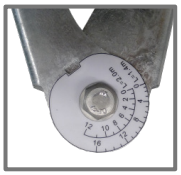
The letter "L" on the scale plate indicates the distance between antenna bases. Determine the value that is closest to the actual distance. If the distance is approximately 1.4 m, observe the readings corresponding to "L=1.4 m".



The scale plates may vary with different types of downtilt kit. The scale plate shown in the right figure is only for reference.

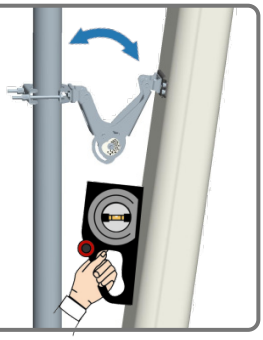


Example of a scale plate



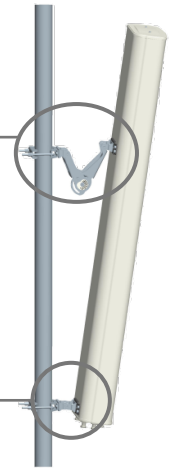
Method 2: Using an inclinometer

Before the adjustment, adjust the inclinometer to the desired downtilt. After the adjustment, locate the bead in the middle of the inclinometer.



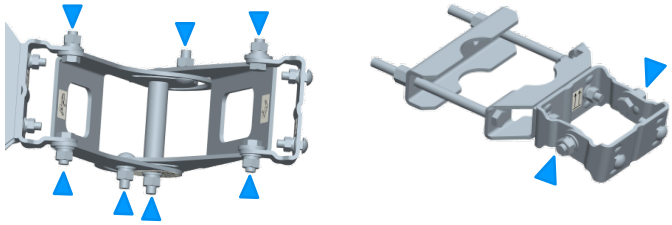
Tighten the upper bracket

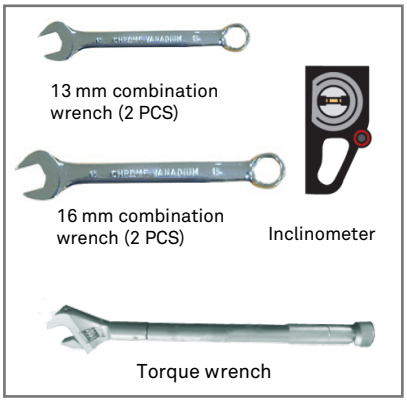
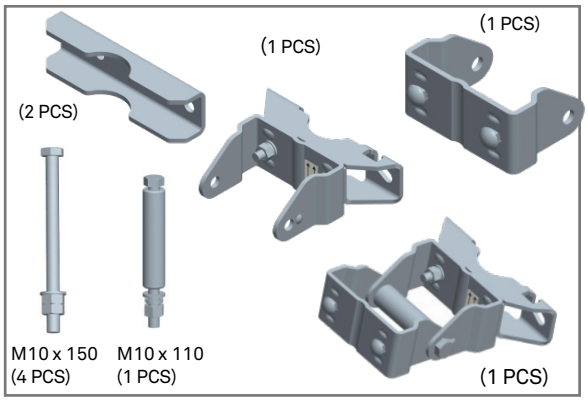
Tighten the lower bracket.



Loosen all the nuts as shown in the figure to adjust the downtilt. After the adjustment is complete, tighten all the nuts.
Check the component shape and the position of screws before the adjustment.
Strictly the operating torques given in the following figures must be used.

Recommended torque M10 = 40N·m

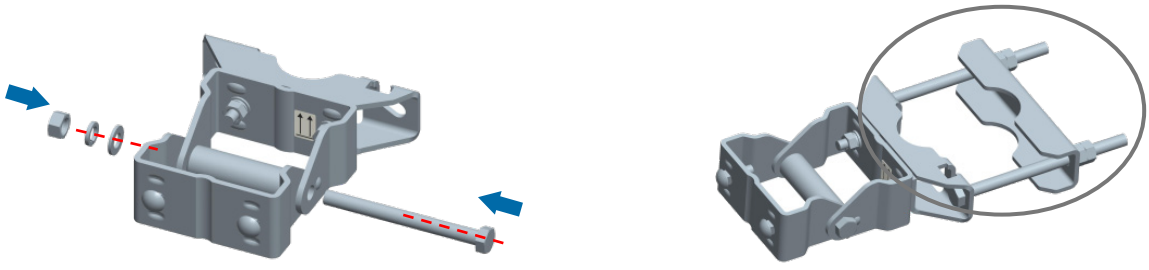


Installation Tools	Clamps	Downtilt kit (Optional)
		

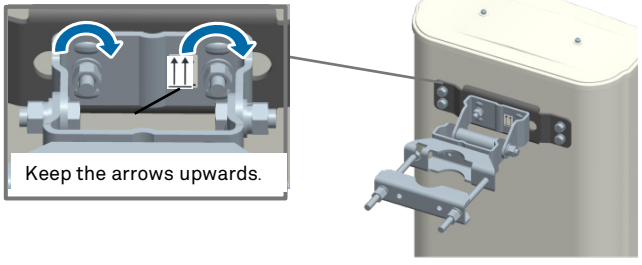
Installation without Downtilt Kit

1 Assemble the clamps

Assemble 2 PCS clamps.

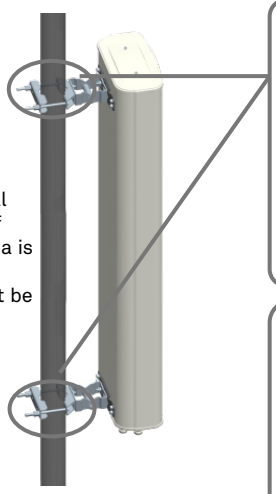


2 Install the clamps

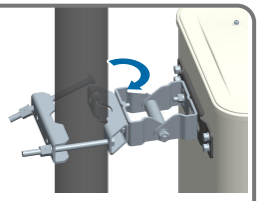


The same installation method applies to both upper and lower brackets.
Tighten the nuts. The recommended torque M8 is 18 N·m.

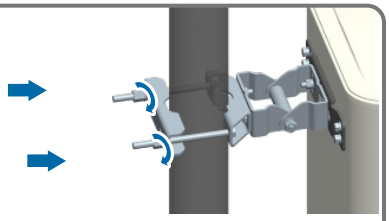
3 Install the antenna



The mechanical downtilt of the antenna is fixed to 0° and cannot be adjusted.

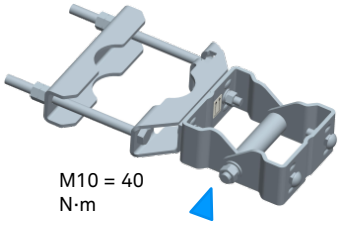
1. 

The same installation method applies to both upper and lower brackets.

2. 

Install and tighten the nuts. The recommended torque M10 is 40 N·m.

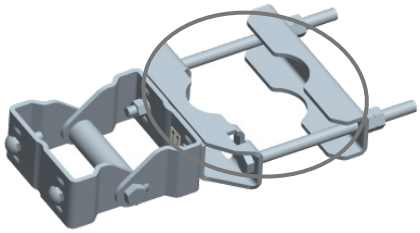
3. Check and tighten all the nuts when the installation is complete. The operating torques are given in the following figures.



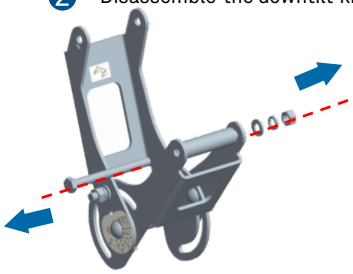
Installation with Downtilt Kit

1 Assemble the bracket

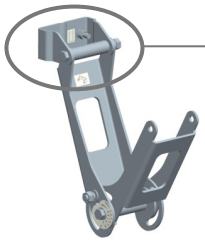
1. Assemble the lower bracket.

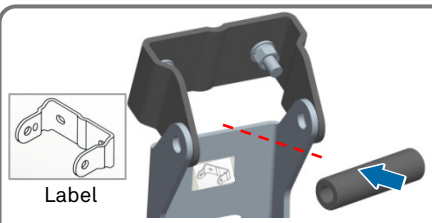


2. Disassemble the downtilt kit.

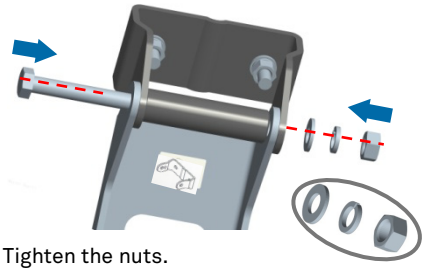


3. Assemble the upper bracket.

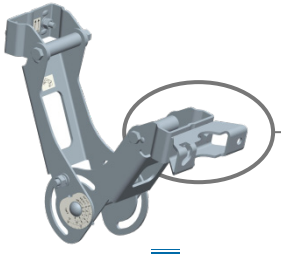


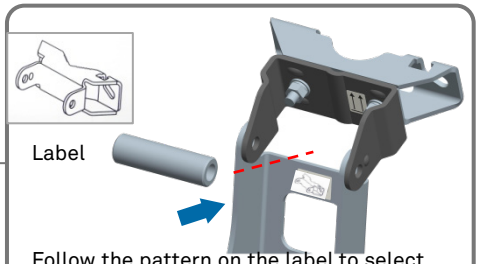


Follow the pattern on the label to select installation parts.

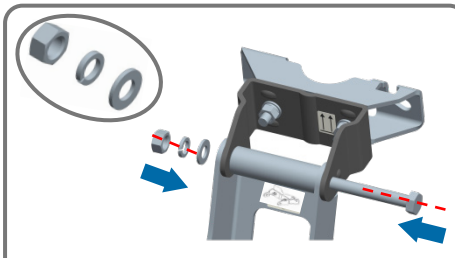


Tighten the nuts.

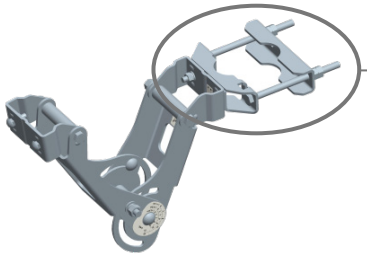


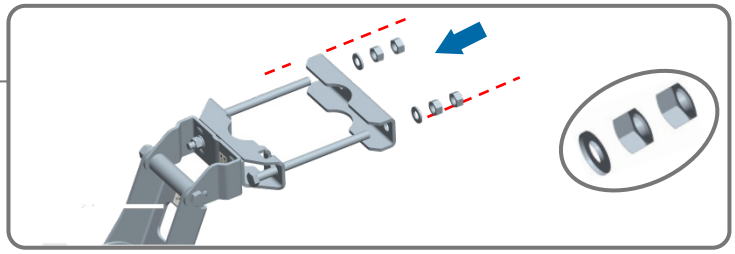


Follow the pattern on the label to select installation parts.

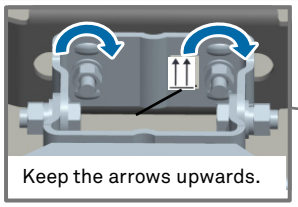


Tighten the nuts.

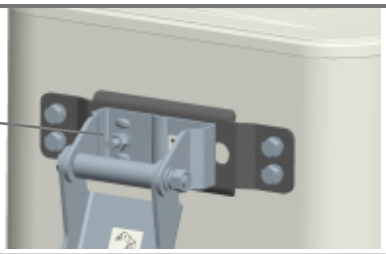




2 Install the bracket



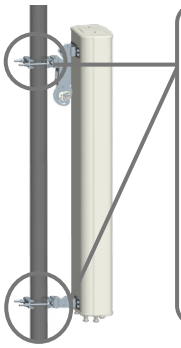
Keep the arrows upwards.



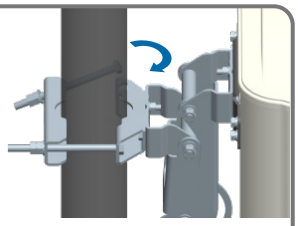
The same installation method applies to both upper and lower brackets.
Tighten the nuts. The recommended torque M8 is 18 N·m.

3 Install the antenna

Tighten all the nuts before lifting the antenna onto the tower. Ensure the bracket is fully folded.

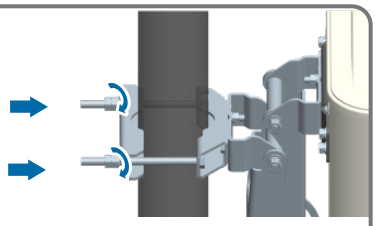


1



The same installation method applies to both upper and lower brackets.

2

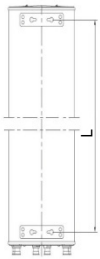


Install and tighten the nuts. The recommended torque M10 is 40 N·m.

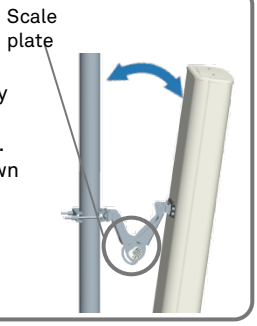
4 Adjust the mechanical downtilt

Method 1: Using a scale plate

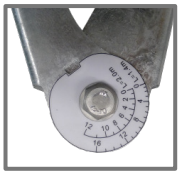
The letter "L" on the scale plate indicates the distance between antenna bases. Determine the value that is closest to the actual distance. If the distance is approximately 1.4 m, observe the readings corresponding to "L=1.4 m".



The scale plates may vary with different types of downtilt kit. The scale plate shown in the right figure is only for reference.

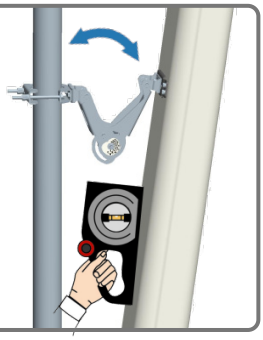


Example of a scale plate



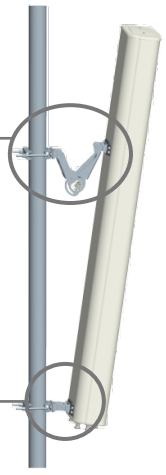
Method 2: Using an inclinometer

Before the adjustment, adjust the inclinometer to the desired downtilt. After the adjustment, locate the bead in the middle of the inclinometer.



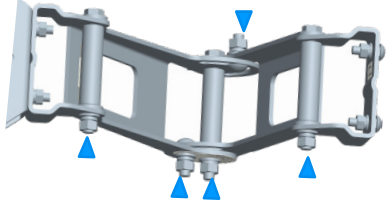
Tighten the upper bracket

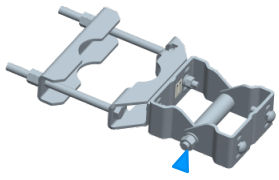
Tighten the lower bracket.



Loosen all the nuts as shown in the figure to adjust the downtilt. After the adjustment is complete, tighten all the nuts.
Check the component shape and the position of screws before the adjustment.
Strictly the operating torques given in the following figures must be used.

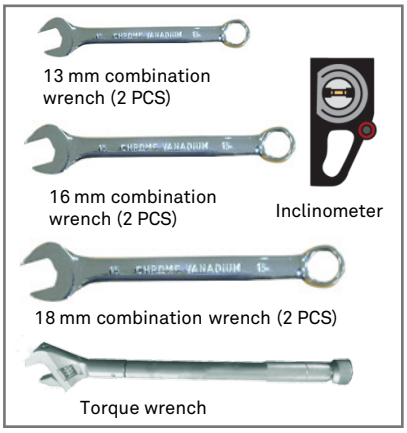
Recommended torque M10 = 40N·m

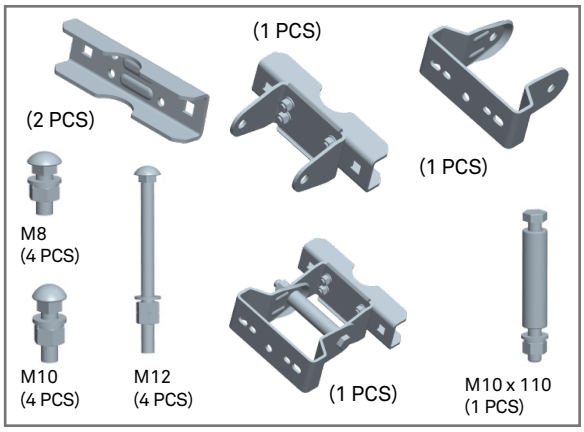




Antenna with Type F Brackets Installation Guide

Installation Tools	Clamps	Downtilt kit (Optional)

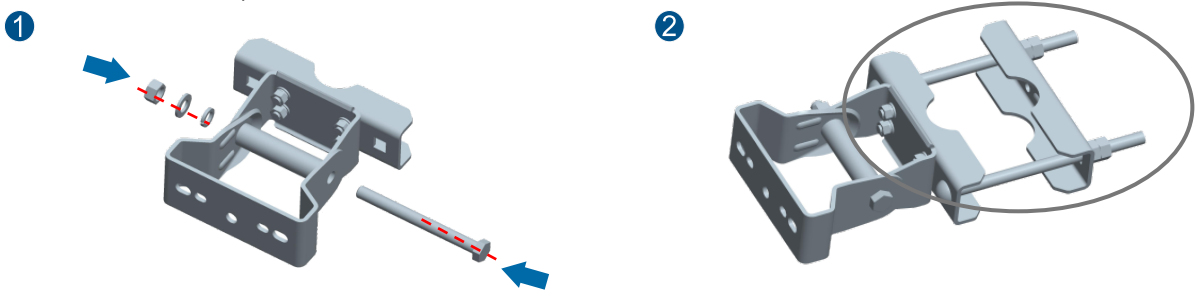




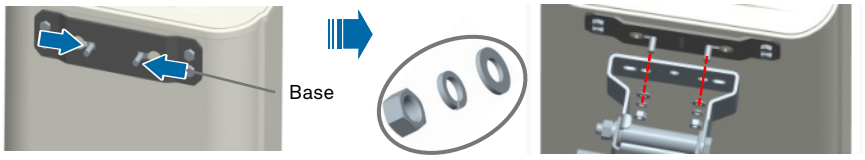
Installation without Downtilt Kit

1 Assemble the clamps

Assemble two clamps.



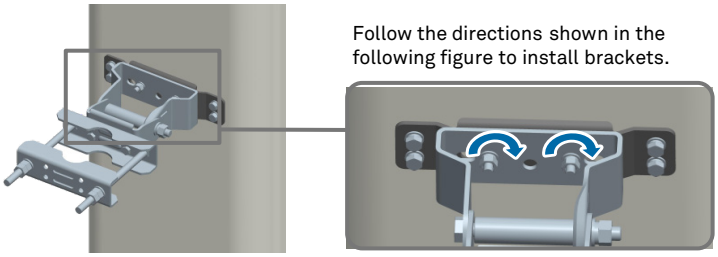
2 Install the clamps



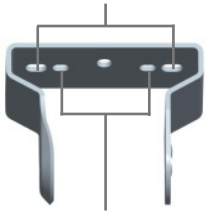
Install bolts on the antenna base. The same installation method applies to both upper and lower bases.

Align the bolt with the mounting hole on the clamp and determine the bolt model according to the position of the mounting hole. Replace the bolt if the bolt model is incorrect. Then, install and tighten the flat washer, spring washer and nut.

Follow the directions shown in the following figure to install brackets.



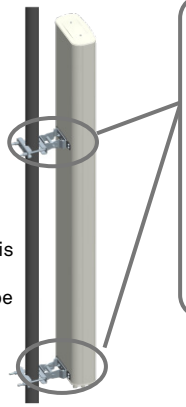
Use an M10 bolt for the M10 mounting hole.
The recommended torque for M10 bolts is 30 N·m.



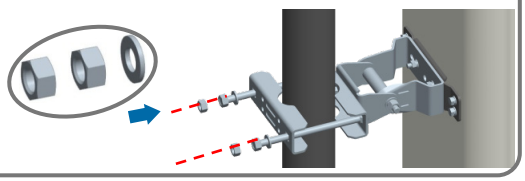
Use an M8 bolt for the M8 mounting hole.
The recommended torque for M8 bolts is 18 N·m.

3 Install the antenna

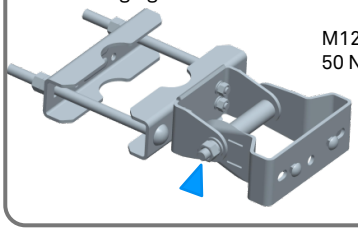
The mechanical downtilt of the antenna is fixed to 0° and cannot be adjusted.



1. The same installation method applies to both upper and lower brackets. Install and tighten the nuts. The recommended torque M12 is 50 N·m.



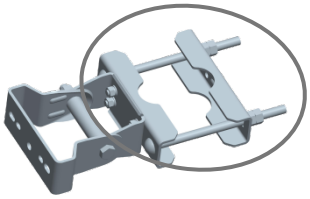
2. Check and tighten all the nuts when the installation is complete. The operating torques are given in the following figures.



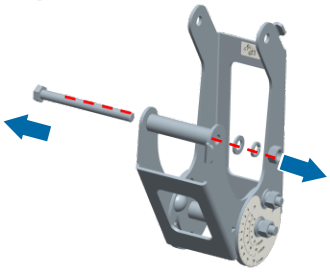
Installation with Downtilt Kit

1 Assemble the bracket

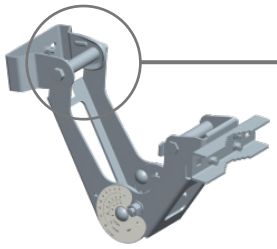
1. Assemble the lower bracket

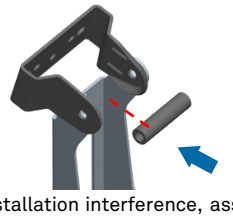


2. Disassemble the downtilt kit.

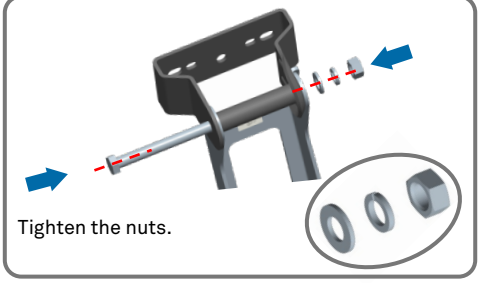


3. Assemble the upper bracket.

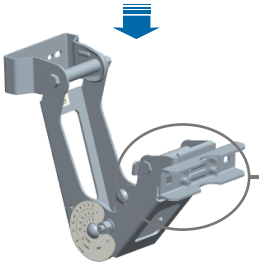


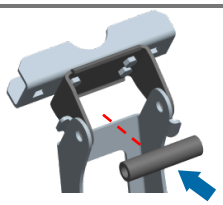


To avoid installation interference, assemble brackets in the directions shown in the preceding figure.

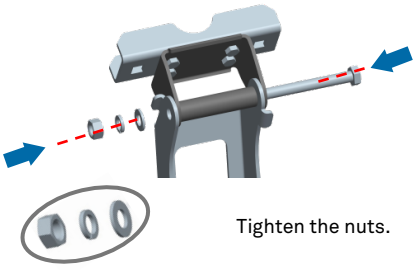


Tighten the nuts.

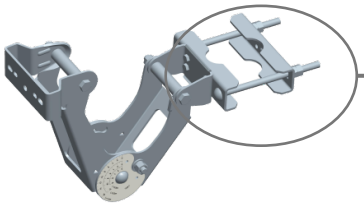


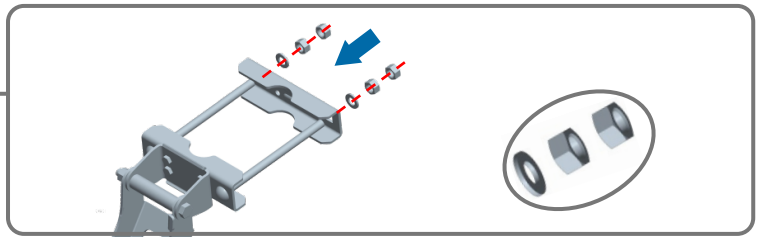


To avoid installation interference, assemble brackets in the directions shown in the preceding figure.

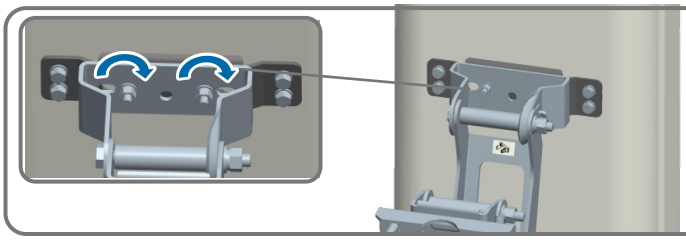


Tighten the nuts.





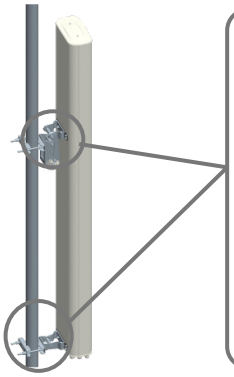
2 Install the bracket

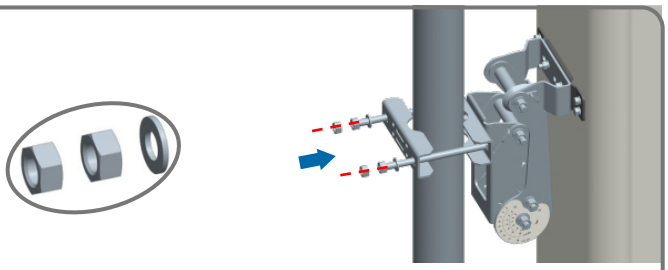


For details about how to select bolts for fixing the bracket, see "Install the clamps" .
The same installation method applies to both upper and lower brackets.

3 Install the antenna

Tighten all the nuts before lifting the antenna onto the tower. Ensure the bracket is fully folded.



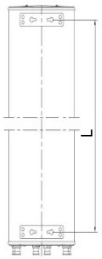


The same installation method applies to both upper and lower brackets. Install and tighten the nuts. The recommended torque M12 is 50 N·m.

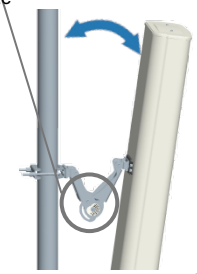
4 Adjust the mechanical downtilt

Method 1: Using a scale plate

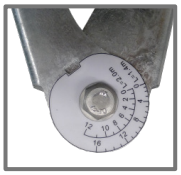
The letter "L" on the scale plate indicates the distance between antenna bases. Determine the value that is closest to the actual distance. If the distance is approximately 1.4 m, observe the readings corresponding to "L=1.4 m".



The scale plates may vary with different types of downtilt kit. The scale plate shown in the right figure is only for reference.

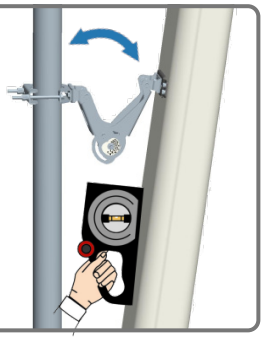


Example of a scale plate



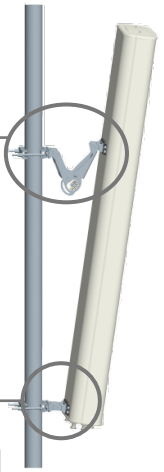
Method 2: Using an inclinometer

Before the adjustment, adjust the inclinometer to the desired downtilt. After the adjustment, locate the bead in the middle of the inclinometer.



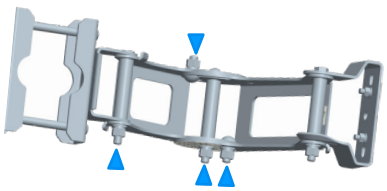
Tighten the upper bracket

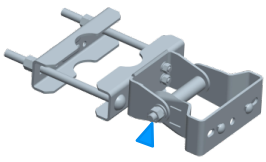
Tighten the lower bracket.



Loosen all the nuts as shown in the figure to adjust the downtilt. After the adjustment is complete, tighten all the nuts.
Check the component shape and the position of screws before the adjustment.
Strictly the operating torques given in the following figures must be used.

Recommended torque M12 = 50N·m





Huawei Antenna Test Standard

Type	Reference	Method	Condition	Duration	Parameters Tested
Low Temperature Exposure	ETSI 300 019 - 2 - 4	IEC 60068 - 2 - 1	-55°C	16h	Visual/physical exam VSWR ISO and PIM (pre and post)
High Temperature Exposure	ETSI 300 019 - 2 - 4	IEC 60068 - 2 - 2	+70°C	16h	Visual/physical exam VSWR ISO and PIM (pre and post)
Temperature Cycling	ETSI 300 019 - 2 - 4	IEC 60068 - 2 - 14	-55°C/+70°C	5cycles, 50h	Visual/physical exam VSWR ISO and PIM (pre and post)
Humidity	ETSI 300 019 - 2 - 4	IEC 60068 - 2 - 30	+25°C/+55°C @ 95% RH	10cycles, 240h	Visual/physical exam VSWR ISO and PIM (pre and post)
Wind Loading	ETSI 300 019 - 2 - 4	IEC 721 - 3 - 4	Simulated constant force of 200 km/h wind	3surfaces, 144h	Visual/physical exam VSWR ISO and PIM (pre and post)
Vibration	ETSI 300 019 - 2 - 4	IEC 60068 - 2 - 6	sinusoidal 6.15mm, 10m/s2, 2-9HZ 9HZ-200HZ	3axes×5 sweep cycles	Visual/physical exam VSWR ISO and PIM (pre and post)
Transportation Vibration	ETSI 300 019 - 2 - 4	IEC 60068 - 2 - 64	Truck level 3	3 axes, 90min	Visual/physical exam VSWR ISO and PIM (pre and post)
Shocks(without package)	ETSI 300 019 - 2 - 4	IEC 60068 - 2 - 27	300 m/s2, 6ms pulse width	72s	Visual/physical exam VSWR ISO and PIM (pre and post)
shocks (with package)	ETSI 300 019 - 2 - 2	IEC 60068 - 2 - 27	300 m/s2, 6ms pulse width	72s	Visual/physical exam VSWR ISO and PIM (pre and post)
Drop (with package)	ETSI 300 019 - 2 - 2	ISO 12048	6surfaces/4Angles/3Edges	13 drops	Visual/physical exam VSWR ISO and PIM (pre and post)
Rain (in water chamber)	ETSI 300 019 - 2 - 4	IEC 60068 - 2 - 18	0.067m3/min, 5r/min	2h	Visual/physical exam VSWR ISO and PIM (pre and post)
Wind Driven Rain	GR - 487 - CORE	MIL - STD - 810 Method 506.3	150mm/h, 31m/s, 0.5mm-4.5mm, 45°	4surfaces, more than 120min	Visual/physical exam VSWR ISO and PIM (pre and post)
Salt Fog (Continuous)	ETSI 300 019 - 2 - 4	IEC 60068 - 2 - 11	5%NaCl mist @+40°C	1000h	Visual/physical exam VSWR ISO and PIM (pre and post)
Salt Fog (Cyclic)	ETSI 300 019 - 2 - 4	IEC 60068 - 2 - 52	5%NaCl mist @+15/+40°C, 93% RH	10 cycles, 240h	Visual/physical exam VSWR ISO and PIM (pre and post)
Solar (UV) Exposure	ETSI 300 019 - 2 - 4	IEC 60068 - 2 - 5	1120W/s2 @+40°C	24h/cycle, 56days	Visual/physical exam VSWR ISO and PIM (pre and post)
Dust and sand	ETSI 300 019 - 2 - 4	IEC 60068 - 2 - 68	150um-850um, 1g/m3, 20m/s @+70°C, RH<30%	8h	Visual/physical exam VSWR ISO and PIM (pre and post)

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Any previous datasheet issues become invalid.
We reserve the right to make alterations in accordance with the requirements of our customers.

Huawei antenna supports NGMN recommendations on Base Station Antenna Standards (BASTA).

The notes of Huawei antenna followed:

- Facilities, such as towers and poles, must bear the weight and wind load of antennas.
- HUAWEI's standard brackets and accessories must be used for any installation.
- The antenna working environment must meet the requirements specified in the datasheet.
- Only qualified personnel are allowed to perform installation. Installation tools and procedures must conform to requirements described in the antenna installation guide.

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