



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

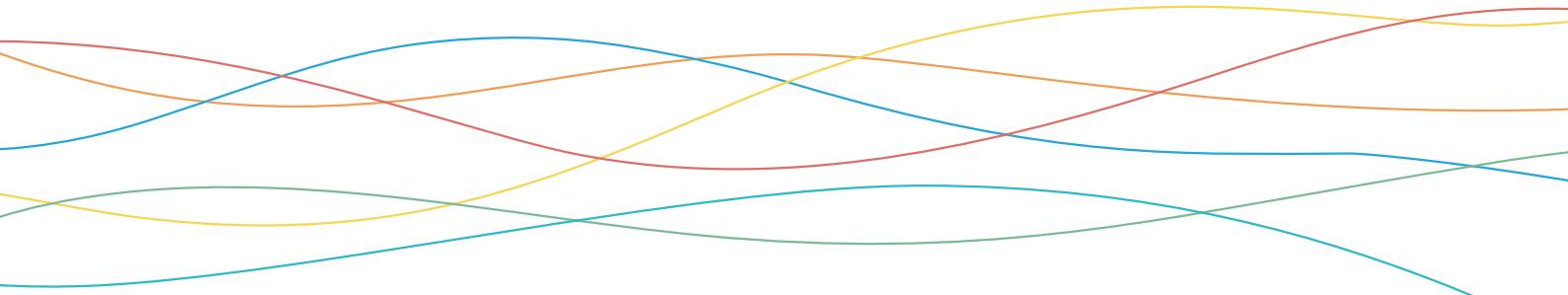
As 700 MHz, L band, 3.5 GHz, and other new spectrums are issued on top of existing requirements for 1.8 GHz/2.1 GHz/2.6 GHz multi-band full 4T4R configuration, antennas need to provide increasingly more ports. However, as the antenna platform space is limited, applications of new spectrums and technologies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



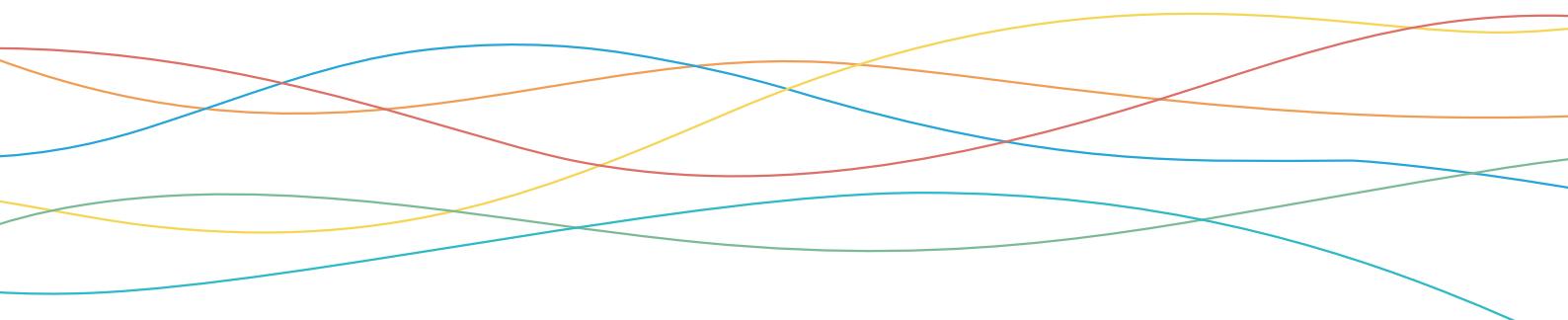
Huawei 22-port TDD/FDD converged antenna

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.

| 6-Sector Network | | | | 9-Sector Network |
|--|------------------------------------|---|---|-----------------------|
| High-band | Low-band | Low-band High-band | High-band 4T4R | High-band tri-beam |
| | | | | |
| 2*(1710-2200)MHz | 2*(690-960)MHz | 2*(690-960) 2*(1710-2200)MHz | 4*(1710-2200)MHz | 3*(1710-2690)MHz |
| Hybrid Network (3-Sector&6-Sector/6-Sector & 4T4R) | | | | 3D 18-Sector Network |
| Hybrid tri-beam | Hybrid quad-beam | Hybrid penta-beam | Hybrid hepta-beam | 3D Hexa-beam |
| | | | | |
| 790-960/ 2*(1710-2200)MHz | 2*(1710-2200) /2*(1710-2690)MHz | 690-960/2*(1695-2690) 2*(1695-2200)MHz | 690-960/2*(2490-2690) 4*(1695-2200)MHz | 6*(1710-2200)MHz |

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.

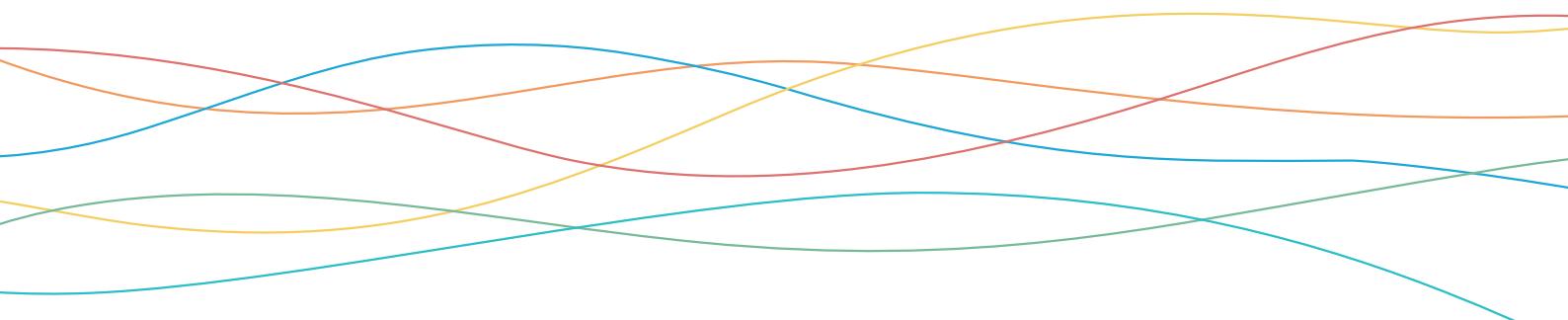
With its cylindrical design, Easy Macro can be effortlessly installed on a pole in just 2 hours, reducing the construction cost of a single site by 40%. In addition, the pole-mounted site resources can be obtained in

batches, reducing site acquisition time by 60% and achieving rapid site deployment.



AAU5953 AAU391X AAU3920 AAU3961 AAU3940 AAU5940
(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.



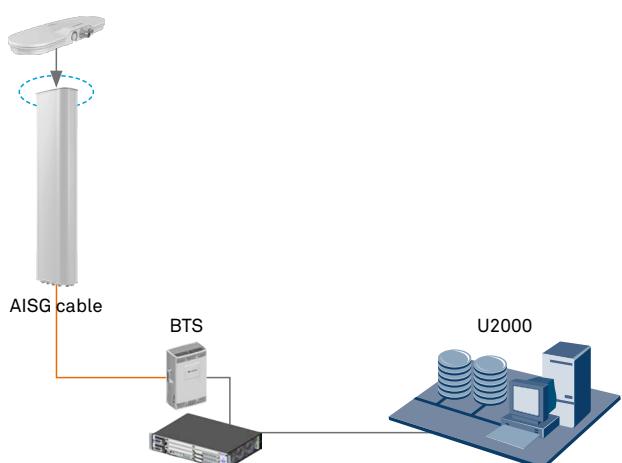
Huawei massive MIMO antenna

Digital antenna system to achieve highly efficient O&M

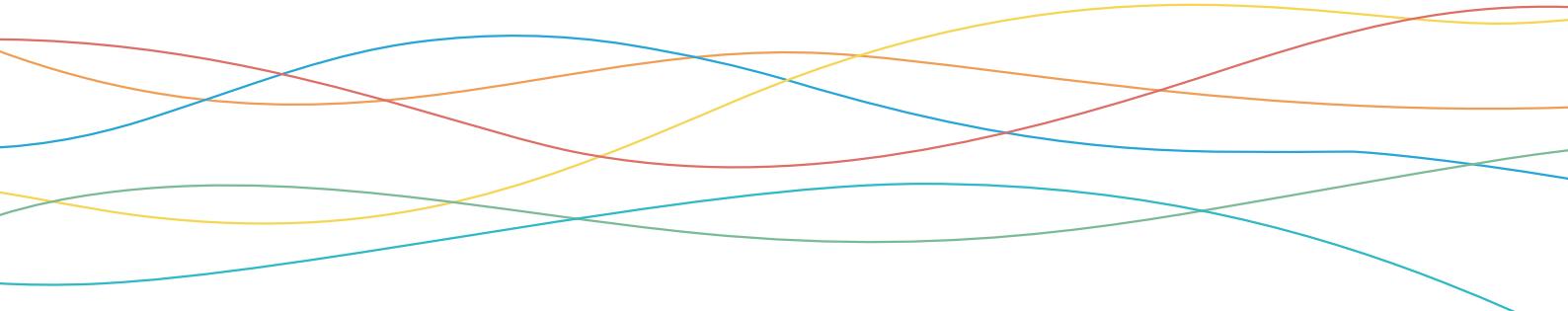
Diversified services pose challenges to network construction and maintenance. It is important to improve O&M efficiency and reduce OPEX by simplifying antenna parameter query and adjustment, and by reducing in-person site visits. The digital antenna system enables remote observation and O&M of the antenna 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

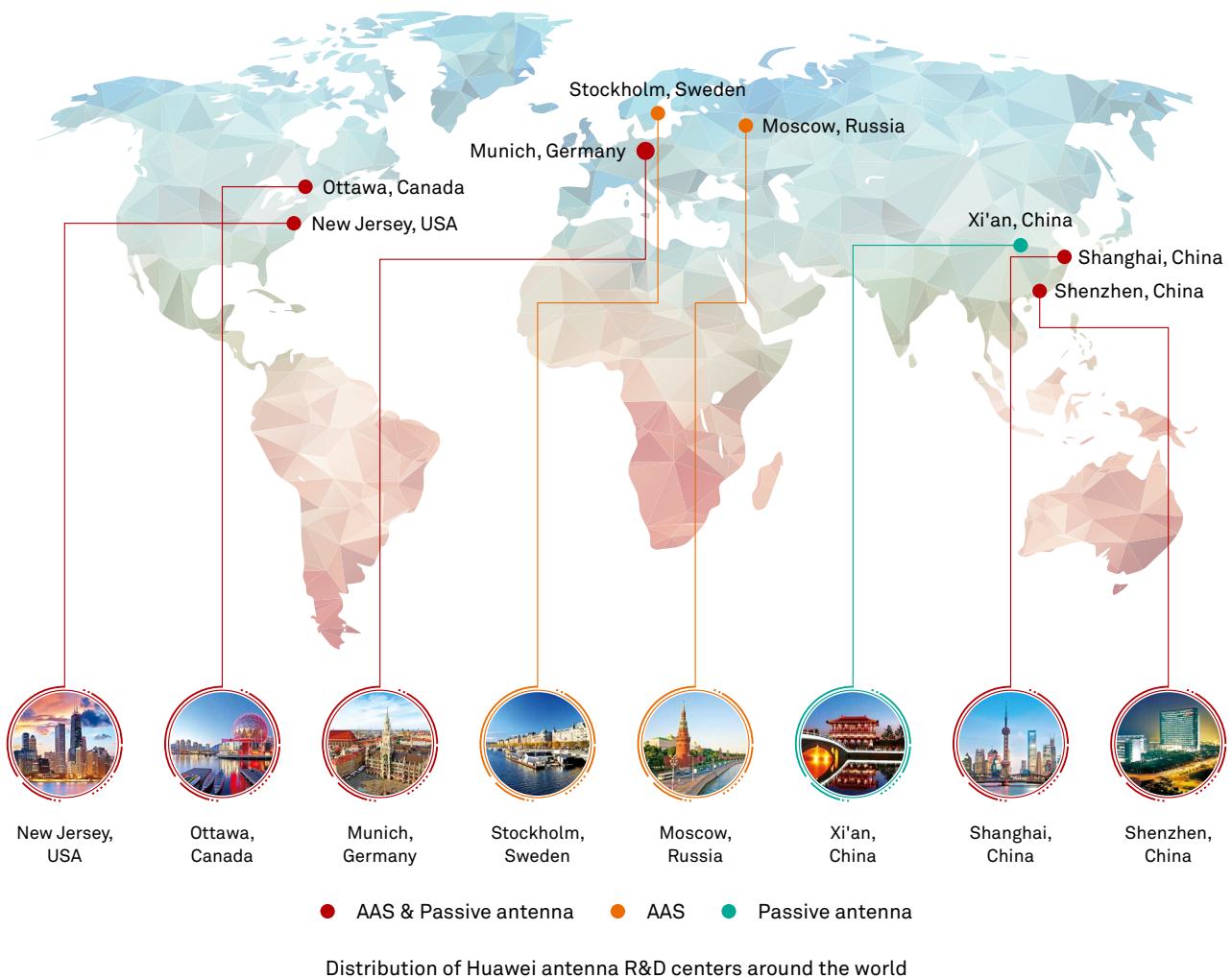


Leading the Future through Continuous Innovation

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.





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.



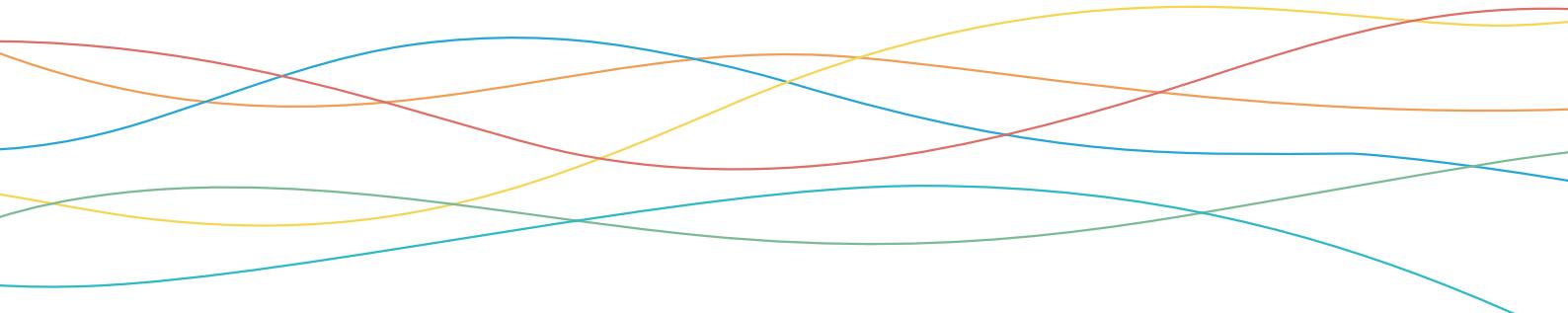
Ecosystem innovation

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,

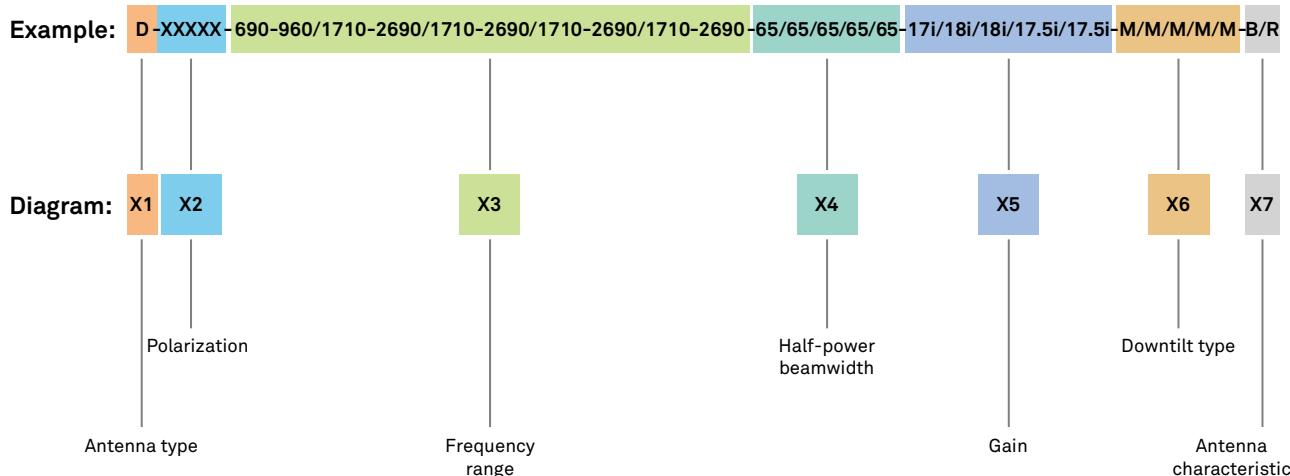
and vertical channel vendors to discuss the future development of the antenna industry. Recently, Huawei joined the NGMN 4.3-10 task force to promote 4.3-10 connector switching.



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



Antenna Type Naming Rule

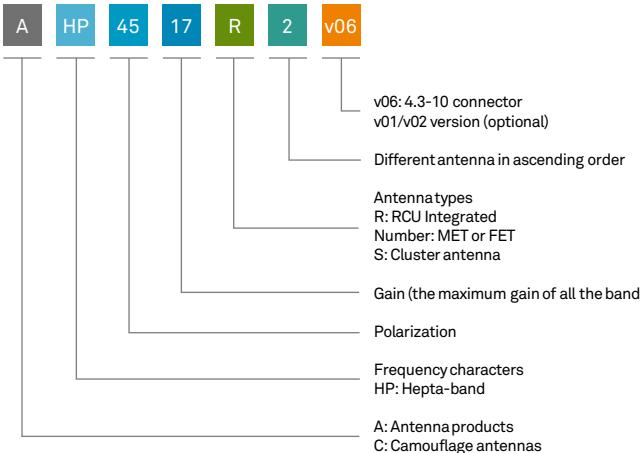


| | | |
|----|-----------------|----------------------------------|
| X1 | D | Directional |
| | O | Omni-directional |
| | C | Cluster |
| | I | Indoor |
| | Number + M | Multi Beam, 3M means three beams |
| | CP | Camouflage Pipe |
| | CS | Camouflage Square Column |
| X2 | X | X Polarization |
| | 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 | OF: 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 "XXXXXX".

Product Model Naming Rule

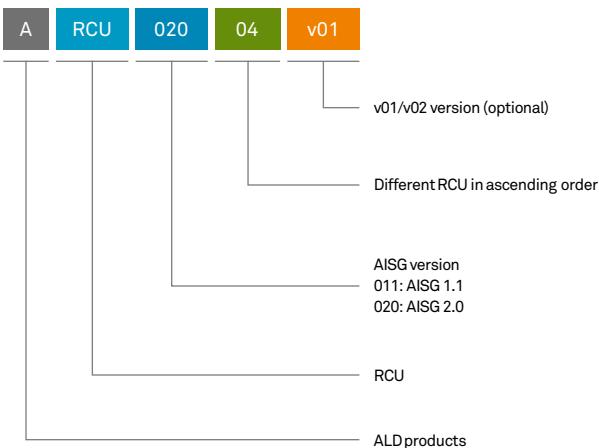
Antenna Model Naming Example:



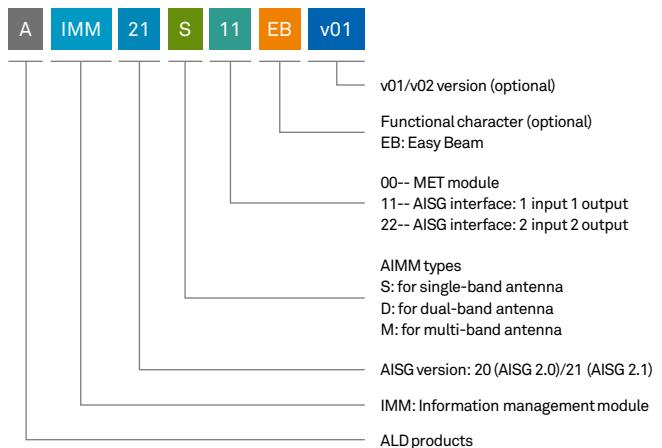
Notes for frequency characters:

- 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

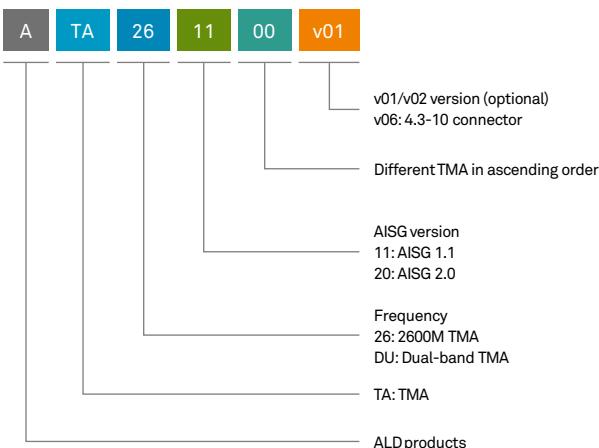
RCU Model Naming Example:



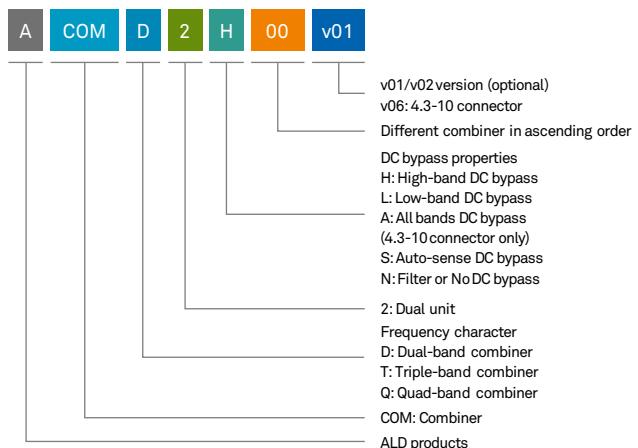
AIMM Model Naming Example:



TMA Model Naming Example:



Combiner Model Naming Example:



AISG Colour Coding Technology

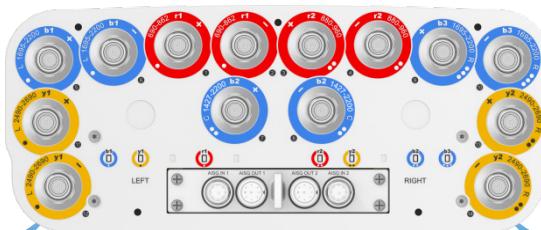
Antenna Port Colour Coding

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:

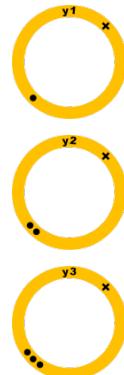
1. Colour Code

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



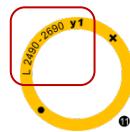
2. Pattern Coding

(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.)

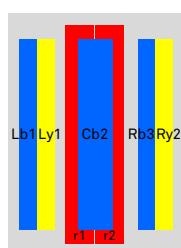


4. Array Symbol

(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

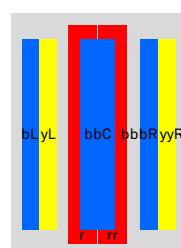
Lb1, Rb3: 1695-2200MHz

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

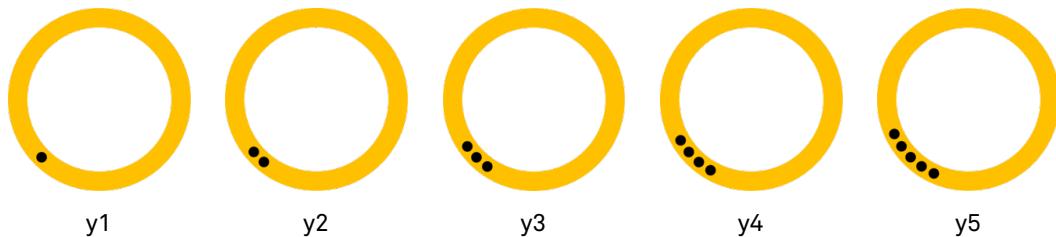
Pattern coding is used to differentiate array ports carrying the same colour code.

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.

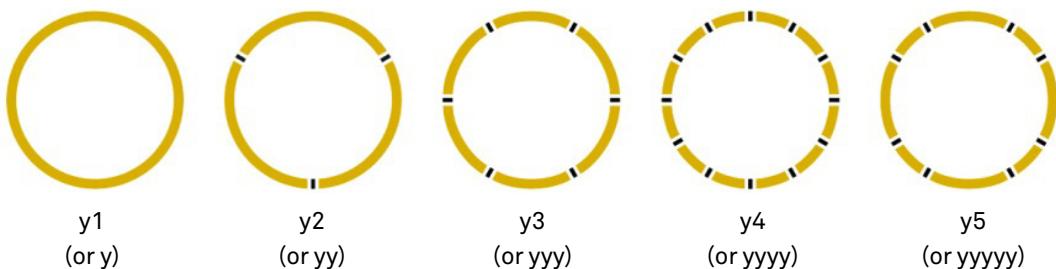
Note: The dot may be black or white.



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.

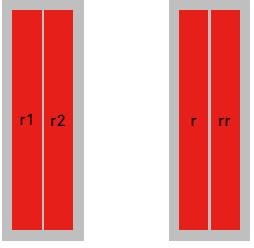
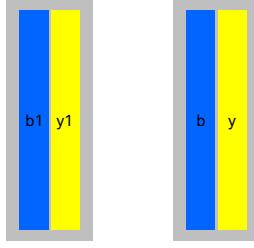
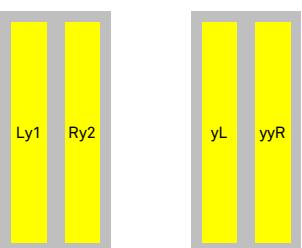
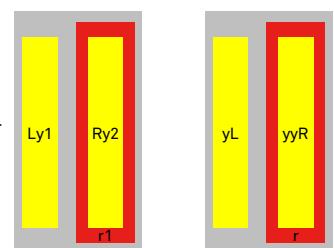
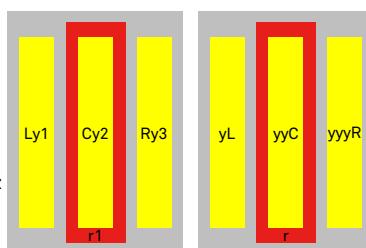
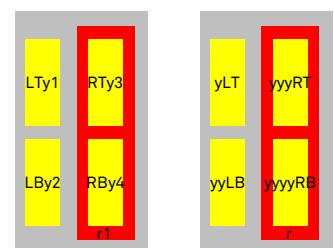
| Array Horizontal Definition | | Array Vertical Definition | |
|-----------------------------|--------------|---------------------------|--------------|
| Abbreviation | Full Name | Abbreviation | Full Name |
| L | Left Array | T | Top Array |
| C | Center Array | M | Middle Array |
| R | Right Array | 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:

| | |
|---|---|
| Type 1 or Type 2 | Type 1 or Type 2 |
| 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 MHz |  |

AISG Colour Coding Technology

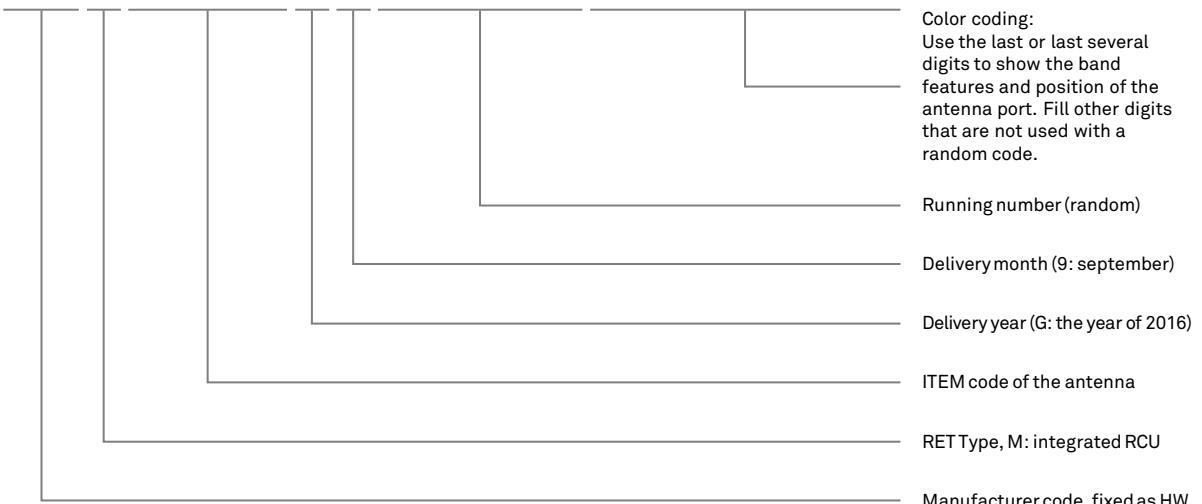
5. RCU Serial Number

The SN (serial number) of integrated RCU contains colour coding information, EasyRET antennas support remote RCU identification by colour coding.

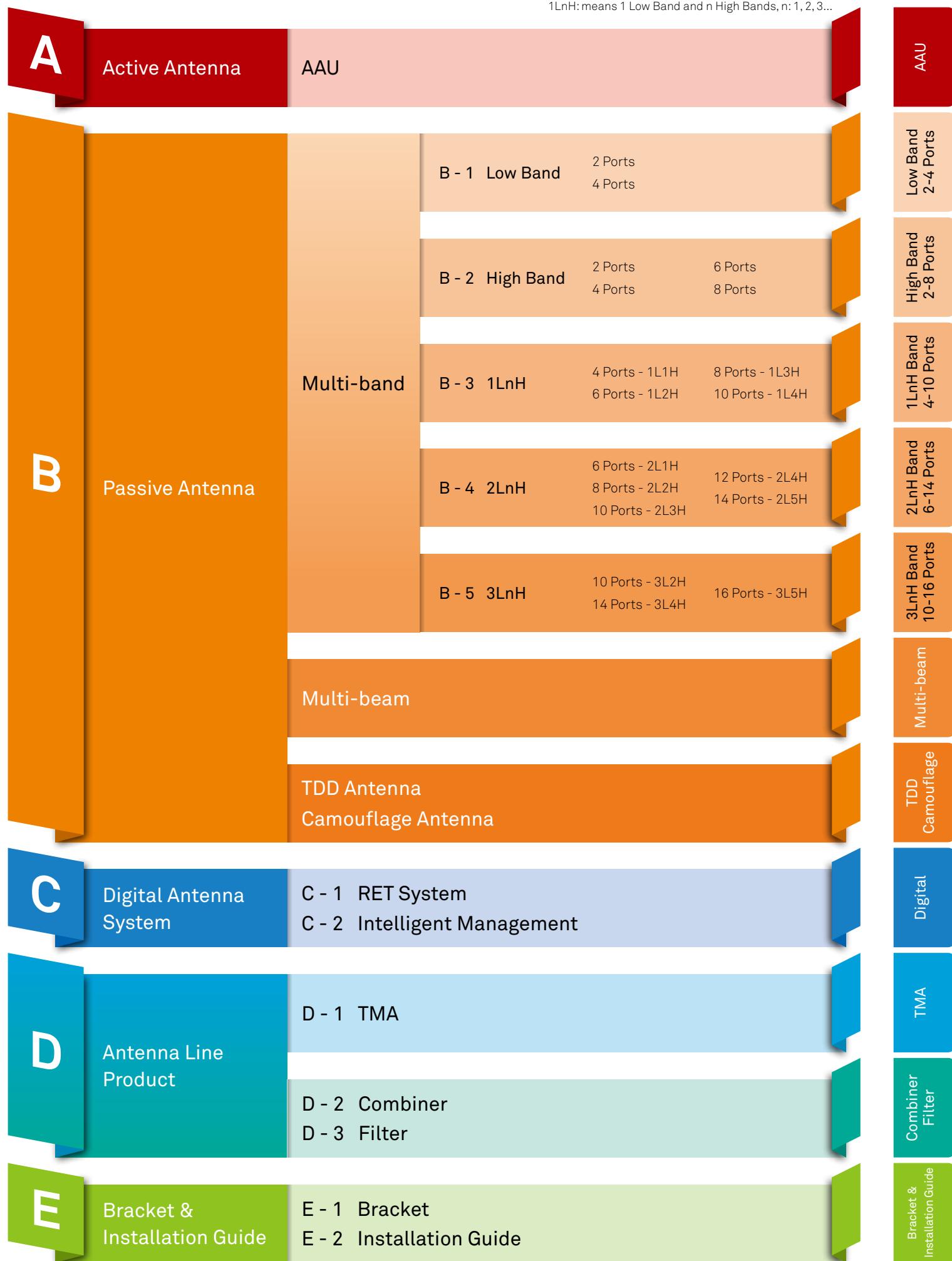
The SN of an integrated RCU contains 19 digits. The following describes a hexa-band EasyRET antenna's SN as an example:

Type 1: H W M 2 4 3 0 G 9 0 0 1 0 0 2 1 R y 2

Type 2: H W M 2 4 3 0 G 9 0 0 1 0 0 2 1 y y R



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



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 |

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| 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 |

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| | | | | AMB4519R3v06 | 217 | AQU4517R4v06 | 155 |
| AAU... | | ADU... | | AMB4519R4v06 | 213 | AQU4518R0v06 | 122 |
| AAU3910 | 6 | ADU4515R0v06 | 37 | AMB4520R0v06 | 207 | AQU4518R11v06 | 110 |
| AAU3911 | 4 | ADU4515R5v06 | 31 | AMB4520R2v06 | 209 | AQU4518R14v06 | 107 |
| AAU3920 | 8 | ADU4516R0v06 | 39 | AMB4520R4v06 | 215 | AQU4518R17v06 | 163 |
| AAU3940 | 11 | ADU4516R6v06 | 33 | AMB4520R5v06 | 205 | AQU4518R19v06 | 161 |
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| | | ADU4521R0v06 | 55 | APE4518R14v06 | 166 | ASI4517R3v06 | 185 |
| A7... | | | | APE4518R16v06 | 179 | ASI4518R10v06 | 186 |
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| ATR4518R25v06 | 142 | ACOMD2H09 | 313 | AIMM20D11v01 | 244 | ASMDT0G01 | 367 |
| ATR4518R2v06 | 145 | ACOMD2H11 | 316 | AIMM20D22v01 | 245 | ASMWM0001 | 370 |
| ATR4518R3v06 | 59 | ACOMD2H16 | 325 | AIMM20M11v01 | 246 | | |
| ATR4518R4v06 | 103 | ACOMD2H18 | 313 | AIMM20M22v01 | 247 | | |
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| | | ACOMD2N04 | 357 | AISU00001v01 | 263 | | |
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| ATA902007v06 | 275 | ACOMT2H03 | 334 | | | | |

EasyRET and MET Antenna Corresponding List

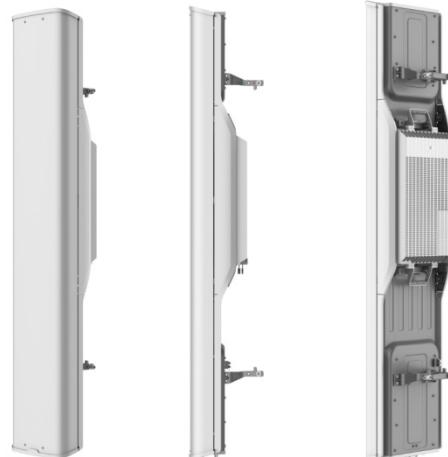
| EasyRET Antenna | MET Antenna (Corresponding to EasyRET) |
|-----------------|---|
| Model | Model |
| A794515R0v06 | A79451500v06 |
| A794516R0v06 | A79451600v06 |
| A794517R0v06 | A79451700v06 |
| A794515R1v06 | A79451503v06 |
| A704515R0v06 | A79451702v06 |
| A704521R0v06 | A70452100v06 |
| A194518R0v06 | A19451811v06 |
| A264518R0v06 | A26451800v06 |
| ADU4518R1v06 | ADU451819v06 |
| ADU4518R6v06 | ADU451816v06 |
| ATR4518R15v06 | ATR451807v06 |
| ATR4518R14v06 | ATR451714v06 |
| ADU4517R3v06 | ADU451503v06 |
| ADU4518R3v06 | ADU451602v06 |
| ADU4518R0v06 | ADU451807v06 |
| ADU4518R10v06 | ADU451716v06 |
| ADU4518R11v06 | ADU451604v06 |
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A. Active Antenna

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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.

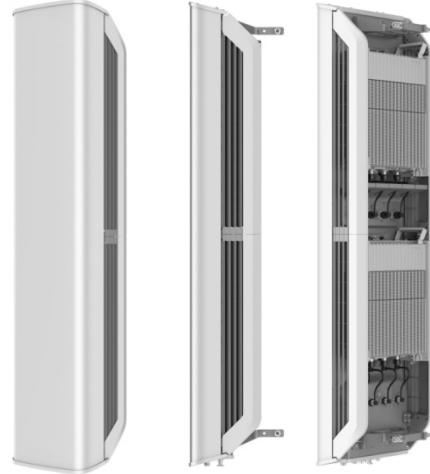


AAU5953 Properties

| | |
|--------------------------------|--|
| 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°C~55°C |
| 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) |

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°C~50°C |
| 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) |

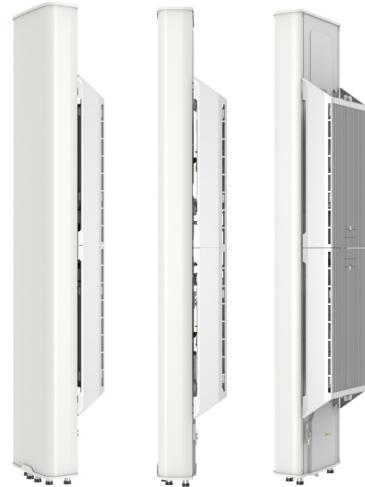
Antenna Specifications

| 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 | | |

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 °C ~ 55 °C |
| 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 |
| | over all Tilts | 15.4±0.4 | 15.6±0.4 | 15.6±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 | |

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 °C ~ 55 °C |
| 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 | | |

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°C~55°C |
| 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 |
| Vertical 3dB beam width (°) | | | 6.5±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°C 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°C ambient temperature) |
| Impedance (Ω) | | | 50 |
| Grounding | | | DC Ground |

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.

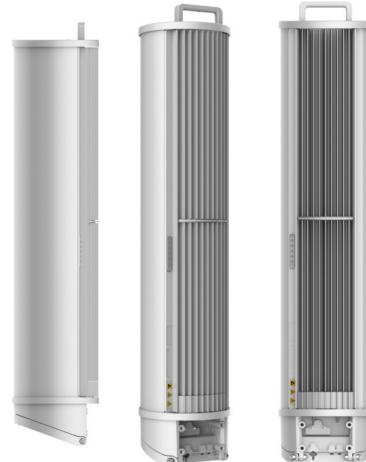


AAU5940 Properties

| | |
|--------------------------------|--|
| 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° |

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 |

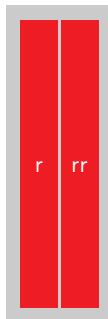
**Preliminary Issue

Array Symbol Type

Type A

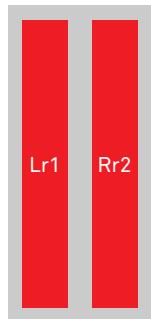


Type D



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°C ambient temperature) | | | |
| Intermodulation IM3 (dBc) | | ≤ -153 (2 x 43 dBm carrier) | | | |
| Impedance (Ω) | | 50 | | | |
| Grounding | | DC Ground | | | |

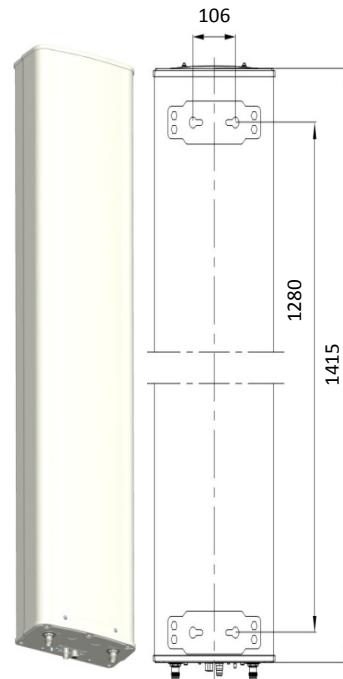
1. Values based on NGMN recommendations on Base Station Antenna Standards (BASTA).

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 (°C) | -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 DC | 2 n/c | 3 RS-485B | 4 n/c | 5 RS-485A | 6 DC | 7 DC return | 8 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

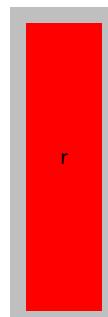
Certification: CE, FCC, IC, RCM



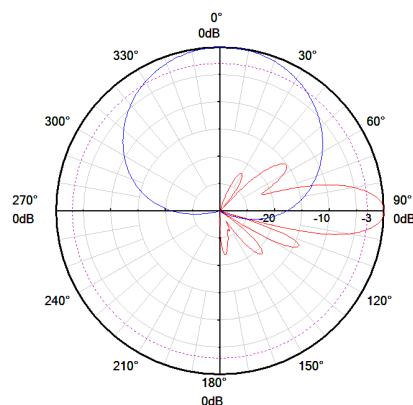
Integrated RET S/N:

a HWMxxx.....r

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°C ambient temperature) | | | |
| Intermodulation IM3 (dBc) | | ≤ -153 (2 x 43 dBm carrier) | | | |
| Impedance (Ω) | | 50 | | | |
| Grounding | | DC Ground | | | |

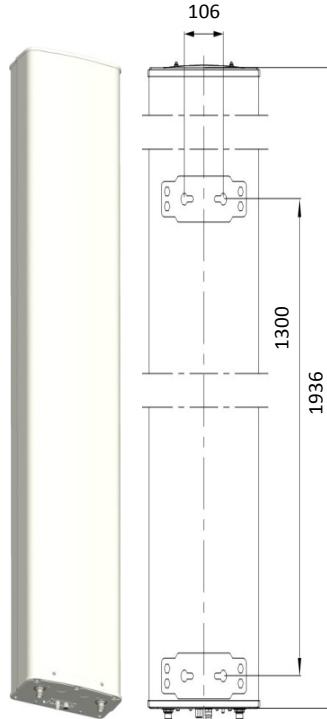
1. Values based on NGMN recommendations on Base Station Antenna Standards (BASTA).

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 (°C) | -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 DC | 2 n/c | 3 RS-485B | 4 n/c | 5 RS-485A | 6 DC | 7 DC return | 8 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

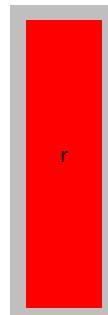
Certification: CE, FCC, IC, RCM



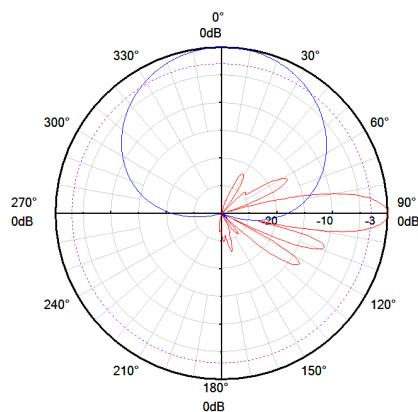
Integrated RET S/N:

a HWMxxxx....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°C ambient temperature) | | | |
| Intermodulation IM3 (dBc) | | ≤ -153 (2 x 43 dBm carrier) | | | |
| Impedance (Ω) | | 50 | | | |
| Grounding | | DC Ground | | | |

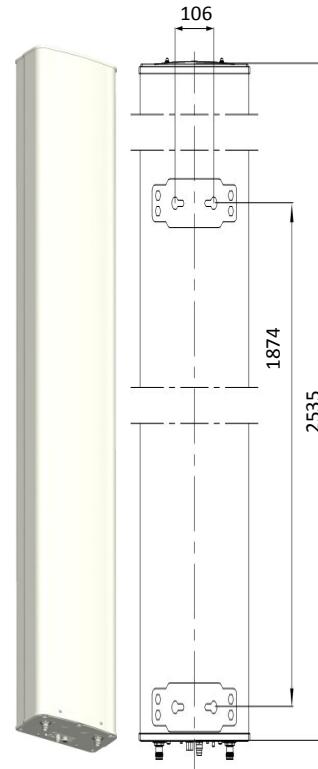
1. Values based on NGMN recommendations on Base Station Antenna Standards (BASTA).

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 (°C) | -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 DC | 2 n/c | 3 RS-485B | 4 n/c | 5 RS-485A | 6 DC | 7 DC return | 8 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

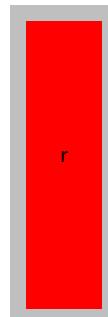
Certification: CE, FCC, IC, RCM



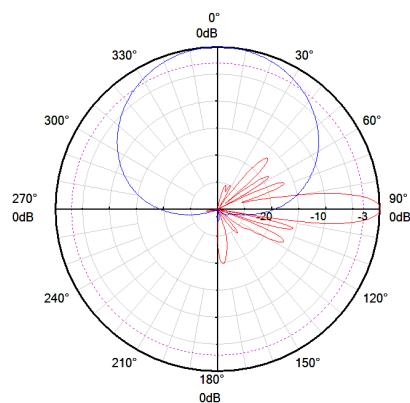
Integrated RET S/N:

② HWMxxxx....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°C ambient temperature) | | | |
| Intermodulation IM3 (dBc) | | ≤ -153 (2 x 43 dBm carrier) | | | |
| Impedance (Ω) | | 50 | | | |
| Grounding | | DC Ground | | | |

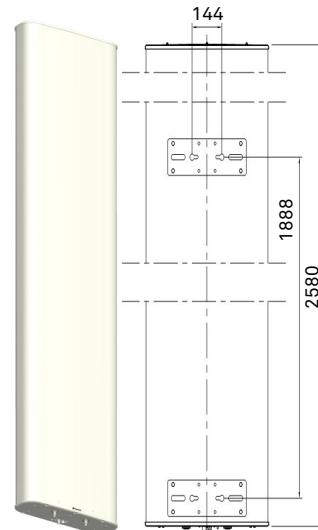
1. Values based on NGMN recommendations on Base Station Antenna Standards (BASTA).

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 (°C) | | -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) |



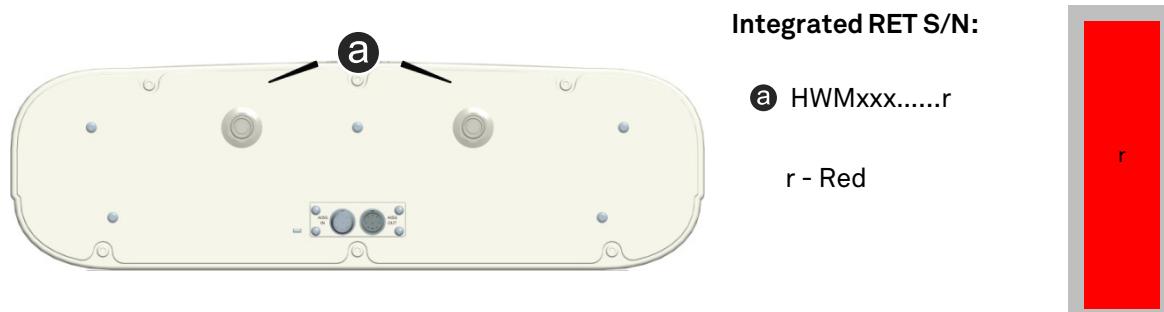
Integrated RET Specifications

| 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 DC | 2 n/c | 3 RS-485B | 4 n/c | 5 RS-485A | 6 DC | 7 DC return | 8 n/c |
| Lightning protection (kA) | 3 (10/350 µs) 10 (8/20 µs) | | | | | | | |

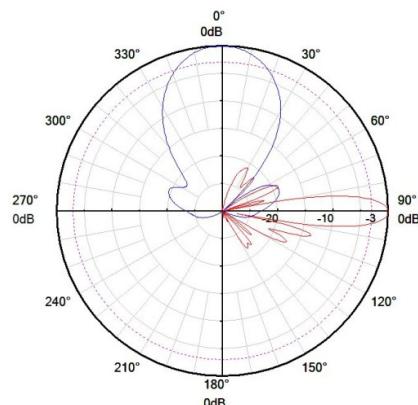
* Please confirm the AISG protocol of primary station is compatible with RET antenna protocol interface. The protocol of RET antenna software interface is switchable between AISG 2.0/3GPP and AISG 1.1 with a vendor defined command. For more details about protocol switching function, contact Huawei before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



Pattern sample for reference



690 - 960 MHz

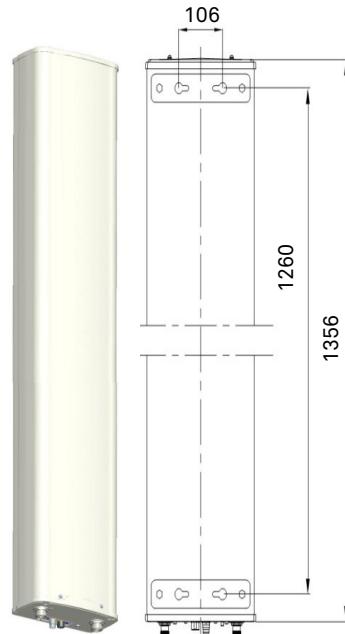
Antenna Specifications

| 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 | > 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°C 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 (°C) | -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 DC | 2 n/c | 3 RS-485B | 4 n/c | 5 RS-485A | 6 DC | 7 DC return | 8 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

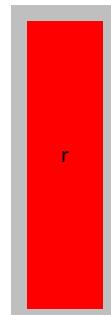
Certification: CE, FCC, IC, RCM



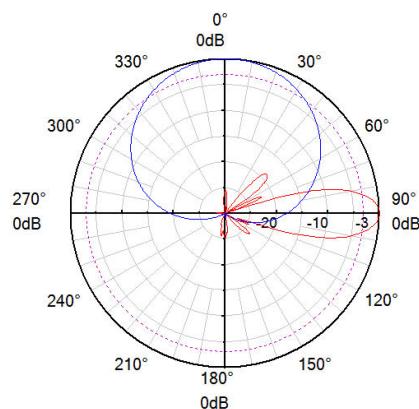
Integrated RET S/N:

a HWMxxxx....r

r - Red



Pattern sample for reference



790 - 960 MHz

Antenna Specifications

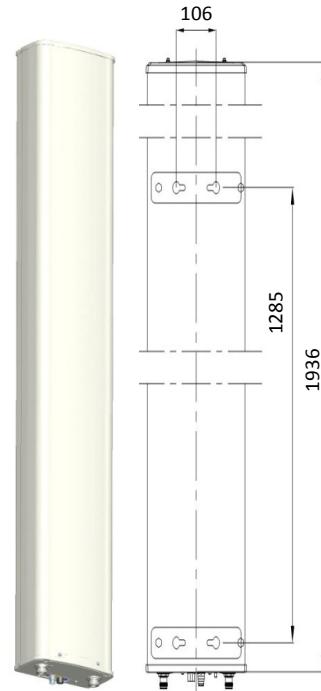
| Electrical Properties | | | | |
|--|-----------------------------------|-----------|-----------|-----------|
| Frequency range (MHz) | 790 - 960 | | | |
| | 790 - 862 | 824 - 894 | 880 - 960 | |
| Polarization | +45° , -45° | | | |
| Electrical downtilt (°) | 0 - 12 , continuously adjustable | | | |
| 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°C ambient temperature) | | | |
| Intermodulation IM3 (dBc) | ≤ -153 (2 x 43 dBm carrier) | | | |
| Impedance (Ω) | 50 | | | |
| Grounding | DC Ground | | | |

- Values based on NGMN recommendations on Base Station Antenna Standards (BASTA).
- 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 (°C) | -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 DC | 2 n/c | 3 RS-485B | 4 n/c | 5 RS-485A | 6 DC | 7 DC return | 8 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



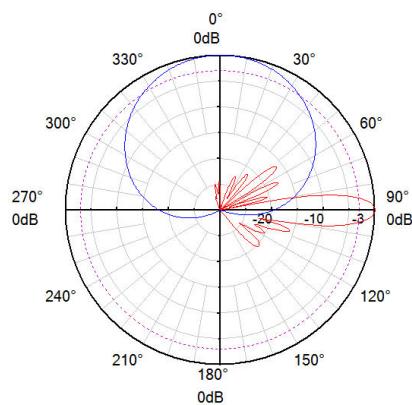
Integrated RET S/N:

a HWMxxx.....r

r - Red



Pattern sample for reference



790 - 960 MHz

Antenna Specifications

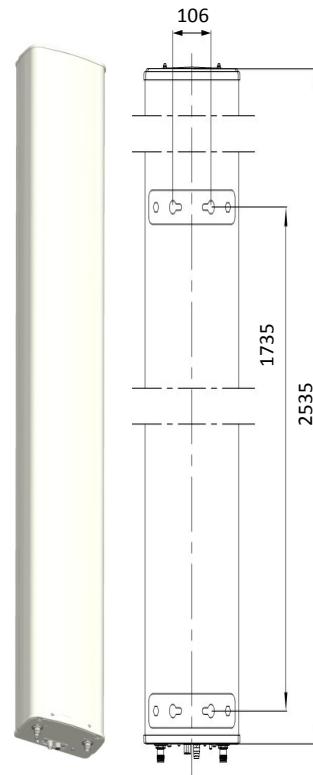
| Electrical Properties | | | | |
|--|-----------------------------------|-----------|-----------|-----------|
| Frequency range (MHz) | 790 - 960 | | | |
| | 790 - 862 | 824 - 894 | 880 - 960 | |
| Polarization | +45° , -45° | | | |
| Electrical downtilt (°) | 0 - 10 , continuously adjustable | | | |
| 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 | > 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 | > 26 |
| Cross polar ratio (dB) | 0° | > 25 | > 25 | > 25 |
| Max. power per input (W) | 500 (at 50°C 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 (°C) | -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 DC | 2 n/c | 3 RS-485B | 4 n/c | 5 RS-485A | 6 DC | 7 DC return | 8 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

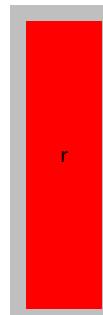
Certification: CE, FCC, IC, RCM



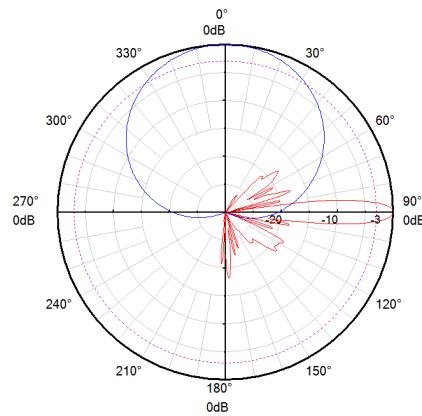
Integrated RET S/N:

a HWMxxxx....r

r - Red



Pattern sample for reference



790 - 960 MHz

Antenna Specifications

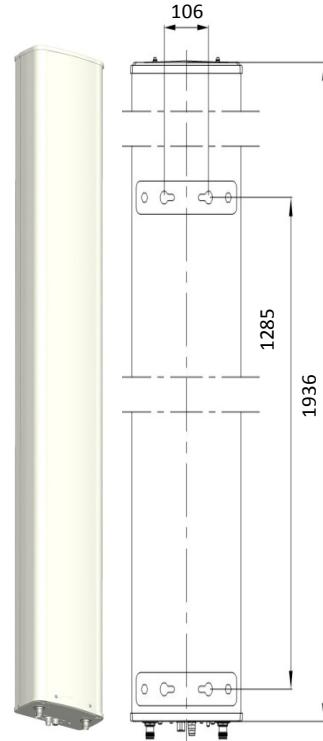
| Electrical Properties | | | | |
|--|----------------|-----------|-----------|-----------|
| Frequency range (MHz) | 790 - 960 | | | |
| | 790 - 862 | 824 - 894 | 880 - 960 | |
| Polarization | | | | |
| +45° , -45° | | | | |
| Electrical downtilt (°) | | | | |
| 0 - 12 , continuously adjustable | | | | |
| 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 | | | | |
| Horizontal 3dB beam width (°) | | | | |
| 86 ±1.0 | | | | |
| Vertical 3dB beam width (°) | | | | |
| 10.0 ±0.4 | | | | |
| VSWR | | | | |
| < 1.5 | | | | |
| Cross polar isolation (dB) | | | | |
| ≥ 30 | | | | |
| Front to back ratio , ±30° (dB) | | | | |
| > 24 | | | | |
| Cross polar ratio (dB) | 0° | > 20 | > 20 | > 20 |
| Max. power per input (W) | | | | |
| 500 (at 50°C ambient temperature) | | | | |
| Intermodulation IM3 (dBc) | | | | |
| ≤ -153 (2 x 43 dBm carrier) | | | | |
| Impedance (Ω) | | | | |
| 50 | | | | |
| Grounding | | | | |
| DC Ground | | | | |

- Values based on NGMN recommendations on Base Station Antenna Standards (BASTA).
- 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 (°C) | -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 DC | 2 n/c | 3 RS-485B | 4 n/c | 5 RS-485A | 6 DC | 7 DC return | 8 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

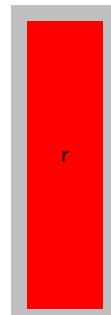
Certification: CE, FCC, IC, RCM



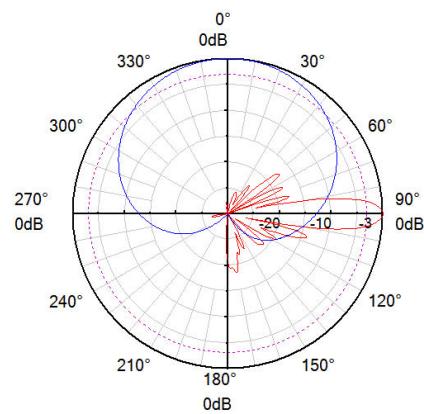
Integrated RET S/N:

a HWMxxx.....r

r - Red



Pattern sample for reference



790 - 960 MHz

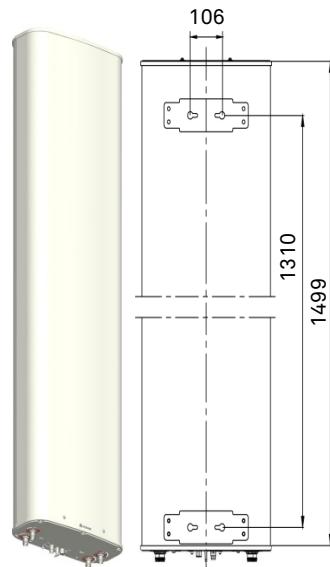
Antenna Specifications

| 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°C 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 (°C) | -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) |

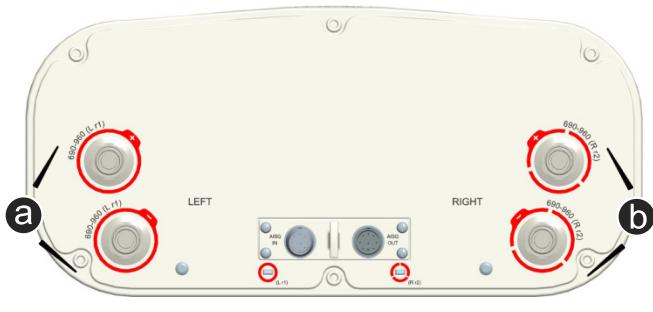
Integrated RET Specifications

| 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 DC | 2 n/c | 3 RS-485B | 4 n/c | 5 RS-485A | 6 DC | 7 DC return | 8 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

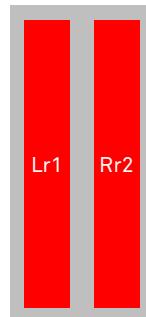
Certification: CE, FCC, IC, RCM



Integrated RET S/N:

a HWMxxx.....Lr1

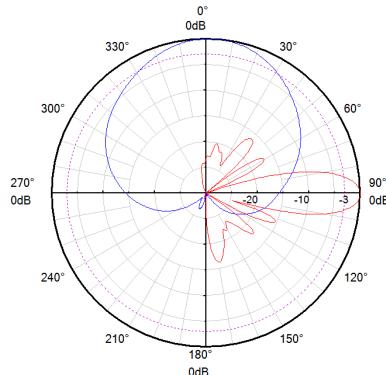
b HWMxxx.....Rr2



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 | | $+45^\circ, -45^\circ$ | | | |
| 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, $\pm 30^\circ$ (dB) | | > 23 | > 24 | > 25 | > 26 |
| Cross polar ratio (dB) | 0° | > 17 | > 18 | > 19 | > 20 |
| Max. power per input (W) | | 400 (at 50°C ambient temperature) | | | |
| Intermodulation IM3 (dBc) | | ≤ -150 (2 x 43 dBm carrier) | | | |
| Impedance (Ω) | | 50 | | | |
| Grounding | | DC Ground | | | |

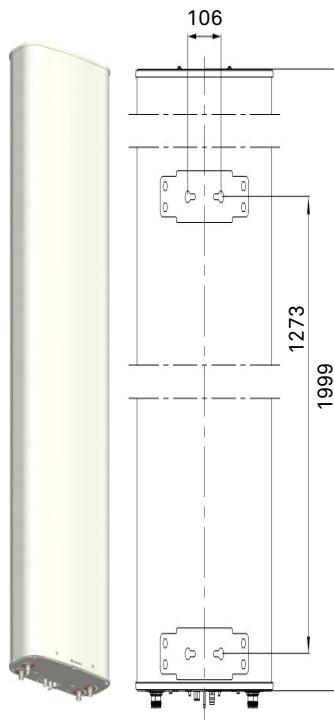
1. Values based on NGMN recommendations on Base Station Antenna Standards (BASTA).

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 (°C) | -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) |



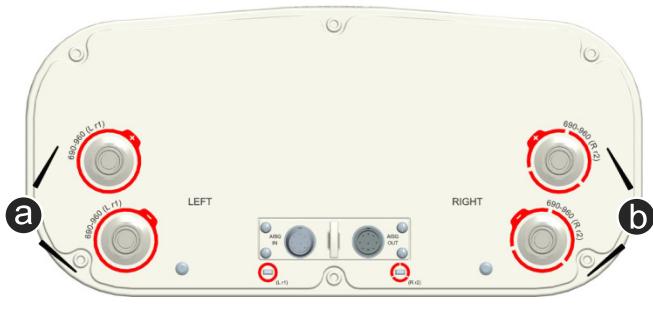
Integrated RET Specifications

| 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 DC | 2 n/c | 3 RS-485B | 4 n/c | 5 RS-485A | 6 DC | 7 DC return | 8 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



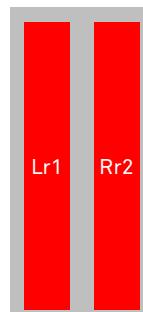
Integrated RET S/N:

a HWMxxx.....Lr1

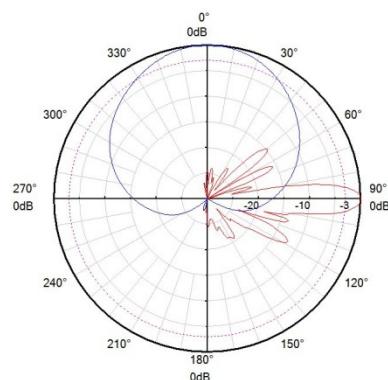
b HWMxxx.....Rr2

r - Red

L - Left array R - Right array



Pattern sample for reference



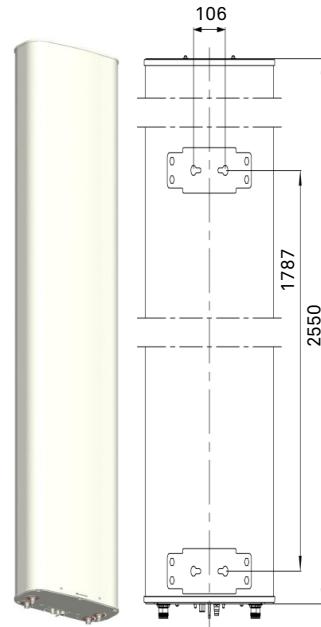
**Antenna Specifications**

| Electrical Properties | | | | | |
|--|----------------|---|----------------|----------------|----------------|
| Frequency range (MHz) | | 2 x (690 - 960) | | | |
| | | 690 - 803 | 790 - 862 | 824 - 894 | 880 - 960 |
| Polarization | | $+45^\circ, -45^\circ$ | | | |
| 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 \pm 0.5 | 16.2 \pm 0.5 | 16.4 \pm 0.5 | 16.9 \pm 0.5 |
| Side lobe suppression for first side lobe above main beam (dB) | | > 16 | > 17 | > 17 | > 17 |
| Horizontal 3dB beam width (°) | | 68 \pm 5 | 65 \pm 5 | 62 \pm 5 | 60 \pm 5 |
| Vertical 3dB beam width (°) | | 8.8 \pm 0.7 | 8.0 \pm 0.6 | 7.8 \pm 0.5 | 7.5 \pm 0.5 |
| VSWR | | < 1.5 | | | |
| Cross polar isolation (dB) | | ≥ 28 | | | |
| Interband isolation (dB) | | ≥ 28 | | | |
| Front to back ratio, $\pm 30^\circ$ (dB) | | > 23 | > 24 | > 25 | > 26 |
| Cross polar ratio (dB) | 0° | > 17 | > 18 | > 19 | > 20 |
| Max. power per input (W) | | 400 (at 50°C 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 (°C) | -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) |

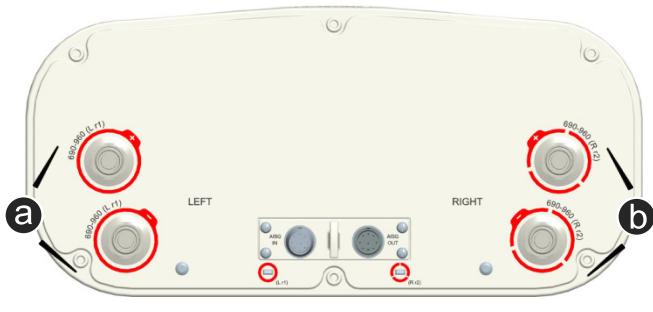
Integrated RET Specifications

| 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 DC | 2 n/c | 3 RS-485B | 4 n/c | 5 RS-485A | 6 DC | 7 DC return | 8 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

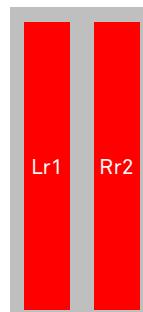
Certification: CE, FCC, IC, RCM



Integrated RET S/N:

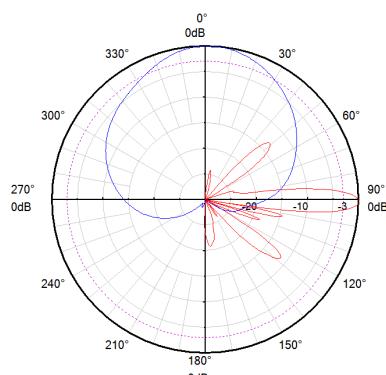
a HWMxxx.....Lr1

b HWMxxx.....Rr2



r - Red
L - Left array R - Right array

Pattern sample for reference



690 - 960 MHz

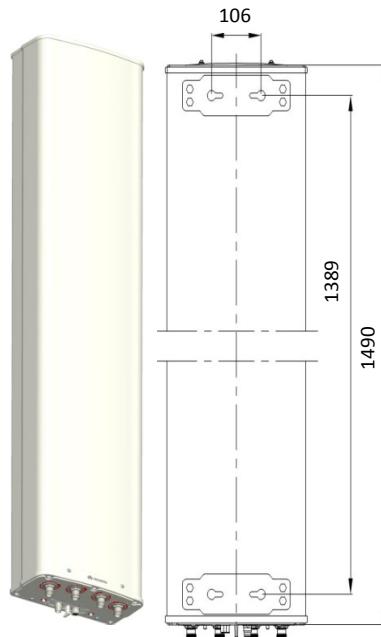
Antenna Specifications

| 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 |
| | over all Tilts | 14.2 ±0.3 |
| Side lobe suppression for first side lobe above main beam (dB) | > 17 | |
| Horizontal 3dB beam width (°) | 65 ±2.0 | |
| Vertical 3dB beam width (°) | 13.5 ±0.8 | |
| VSWR | < 1.5 | |
| Cross polar isolation (dB) | ≥ 30 | |
| Interband isolation (dB) | ≥ 30 | |
| Front to back ratio, ±30° (dB) | > 24 | |
| Cross polar ratio (dB) 0° | > 25 | |
| Max. power per input (W) | 400 (at 50°C 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 (°C) | -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) |

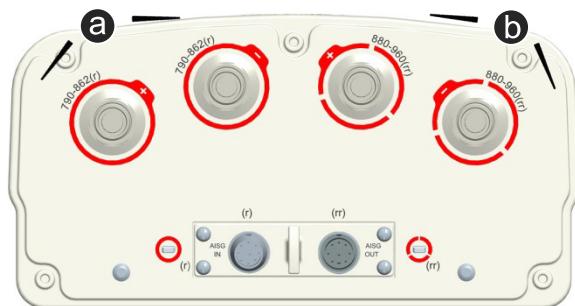
Integrated RET Specifications

| 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 DC | 2 n/c | 3 RS-485B | 4 n/c | 5 RS-485A | 6 DC | 7 DC return | 8 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

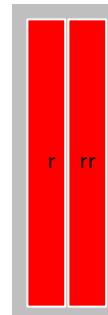


Integrated RET S/N:

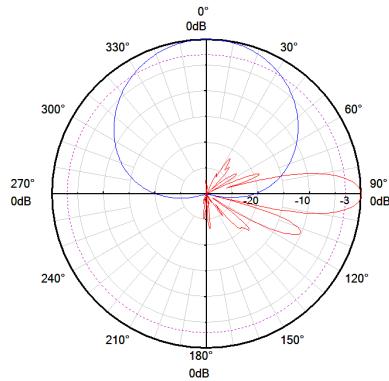
a HWMxxx.....r

b HWMxxx.....rr

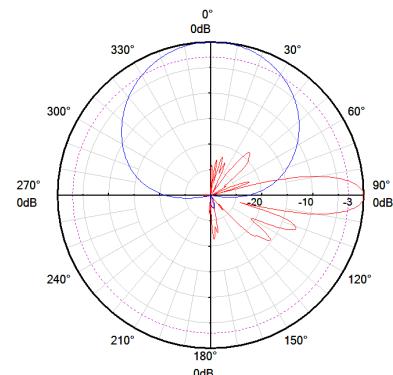
r - Red



Pattern sample for reference



790 - 862 MHz



880 - 960 MHz

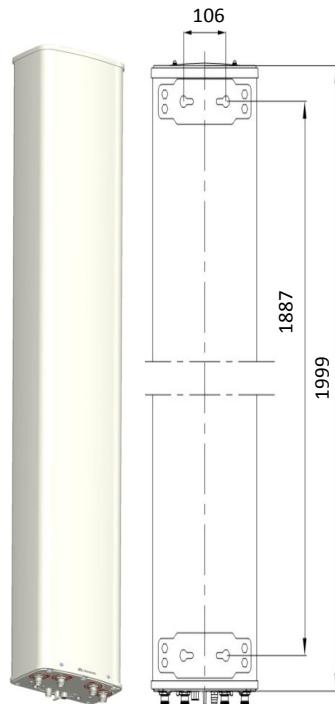
**Antenna Specifications**

| 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 |
| | over all Tilts | 15.6 ±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°C 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 (°C) | -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) |

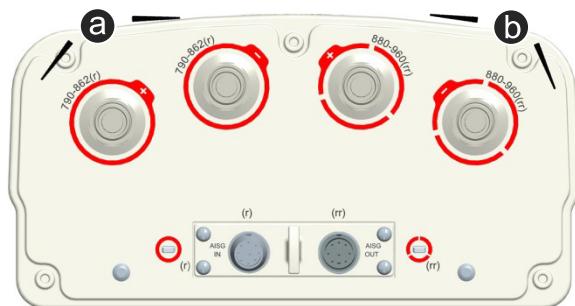
Integrated RET Specifications

| 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 DC | 2 n/c | 3 RS-485B | 4 n/c | 5 RS-485A | 6 DC | 7 DC return | 8 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

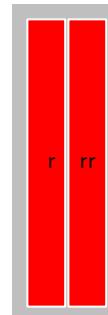


Integrated RET S/N:

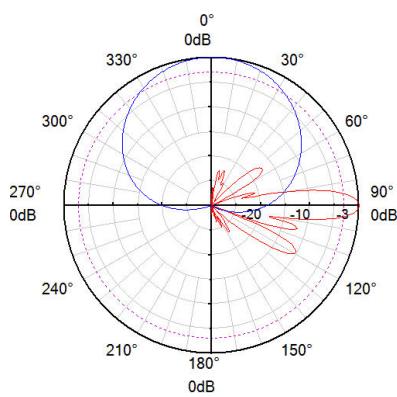
a HWMxxx.....r

b HWMxxx.....rr

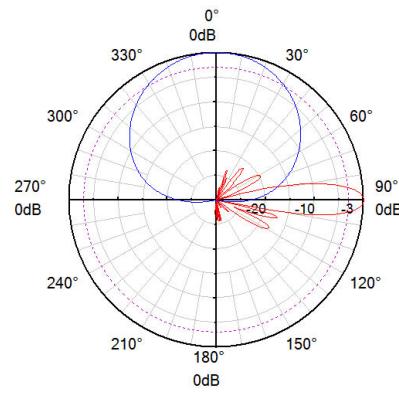
r - Red



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 |
| | over all Tilts | 16.5 ±0.4 |
| 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°C ambient temperature) | |
| Intermodulation IM3 (dBc) | ≤ -150 (2 x 43 dBm carrier) | |
| Impedance (Ω) | 50 | |
| Grounding | DC Ground | |

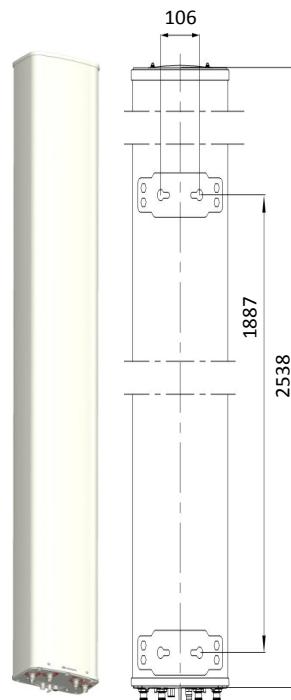
1. Values based on NGMN recommendations on Base Station Antenna Standards (BASTA).

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 (°C) | -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) |



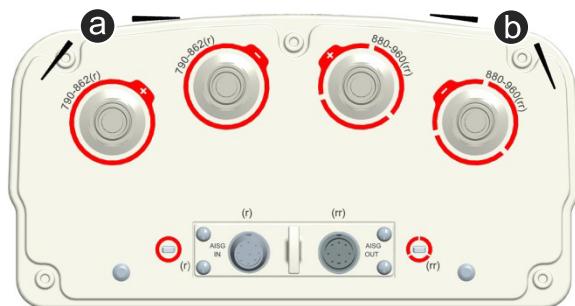
Integrated RET Specifications

| 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 DC | 2 n/c | 3 RS-485B | 4 n/c | 5 RS-485A | 6 DC | 7 DC return | 8 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

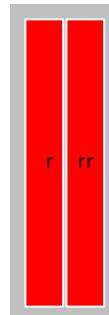


Integrated RET S/N:

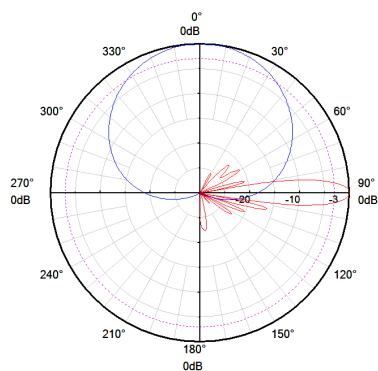
a HWMxxx.....r

b HWMxxx.....rr

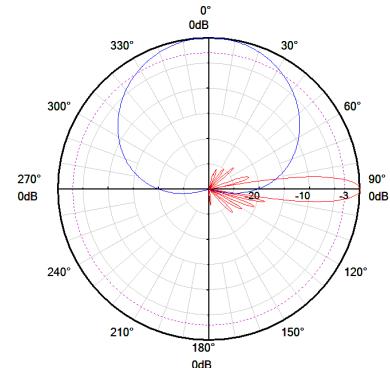
r - Red



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

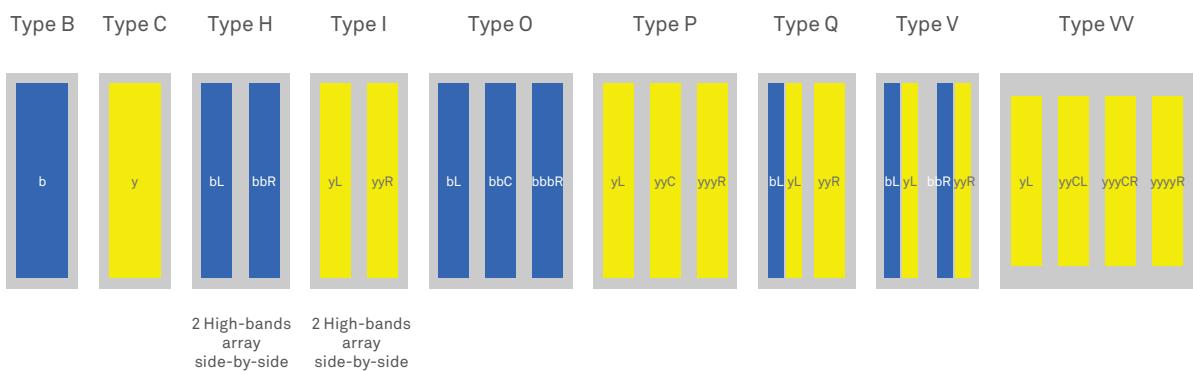
B - 2 High Band

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



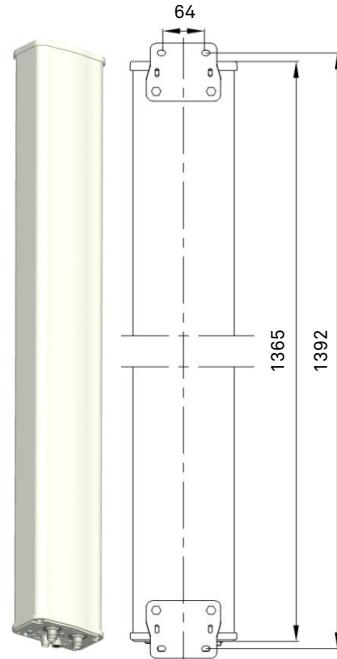
Antenna Specifications

| 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°C 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 (°C) | -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 DC | 2 n/c | 3 RS-485B | 4 n/c | 5 RS-485A | 6 DC | 7 DC return | 8 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



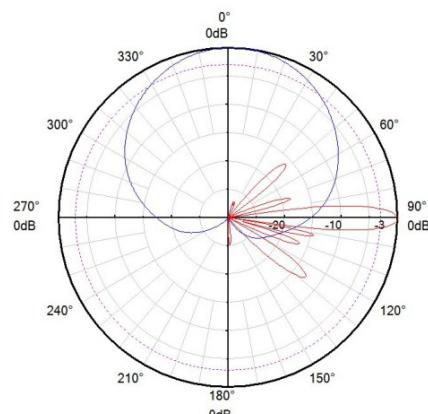
Integrated RET S/N:

a HWMxxx.....b

b - Blue



Pattern sample for reference



1710 - 2200 MHz

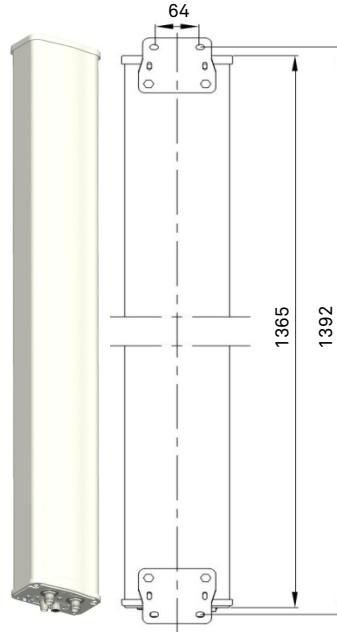
Antenna Specifications

| 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°C 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 (°C) | -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 DC | 2 n/c | 3 RS-485B | 4 n/c | 5 RS-485A | 6 DC | 7 DC return | 8 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

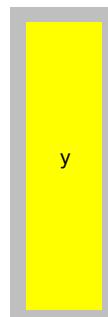
Certification: CE, FCC, IC, RCM



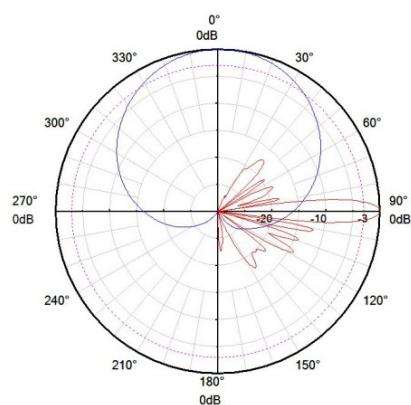
Integrated RET S/N:

a HWMxxx.....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) | | | |

High Band
2-8 Ports

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

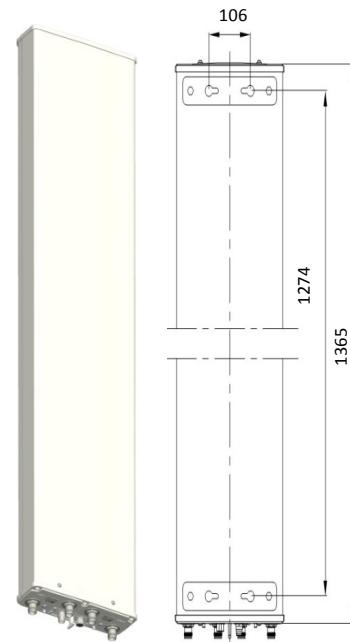
1. Values based on NGMN recommendations on Base Station Antenna Standards (BASTA).

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 (°C) | -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) |

High Band
2-8 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) | < 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 DC | 2 n/c | 3 RS-485B | 4 n/c | 5 RS-485A | 6 DC | 7 DC return | 8 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

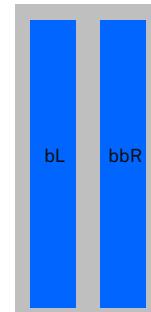


Integrated RET S/N:

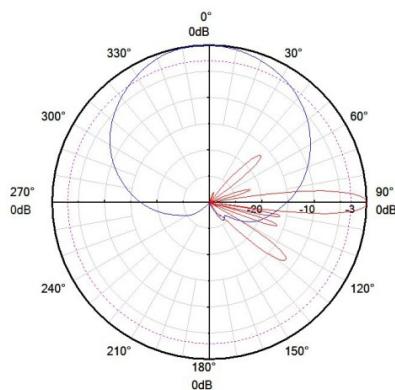
a HWMxxx.....bL

b HWMxxx.....bbR

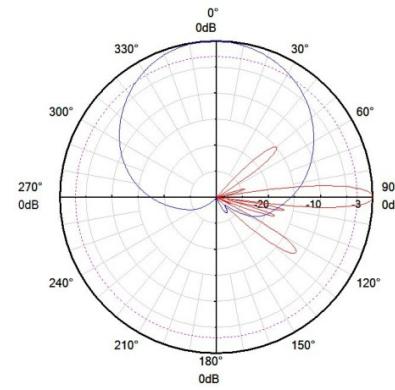
L - Left array R - Right array



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 | | | | |
| | | at mid Tilt | 17.4 | 17.9 | 18.2 | 18.4 |
| Gain (dBi) | 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°C ambient temperature) | | | | |
| Intermodulation IM3 (dBc) | | ≤ -153 (2 x 43 dBm carrier) | | | | |
| Impedance (Ω) | | 50 | | | | |
| Grounding | | DC Ground | | | | |

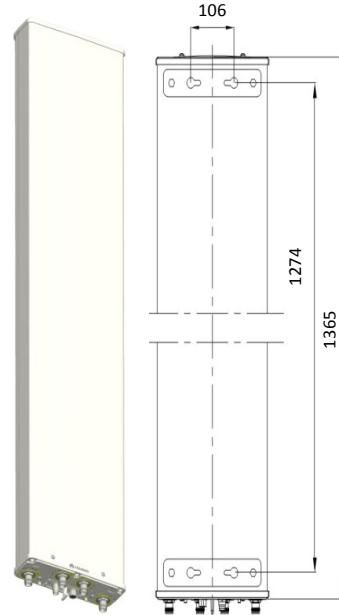
1. Values based on NGMN recommendations on Base Station Antenna Standards (BASTA).

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 (°C) | | -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 DC | 2 n/c | 3 RS-485B | 4 n/c | 5 RS-485A | 6 DC | 7 DC return | 8 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

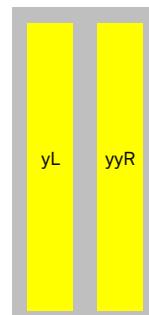
Certification: CE, FCC, IC, RCM



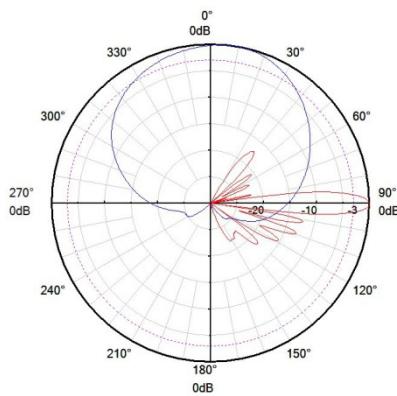
Integrated RET S/N:

- ⓐ HWMxxx.....yL
- ⓑ HWMxxx.....yyR

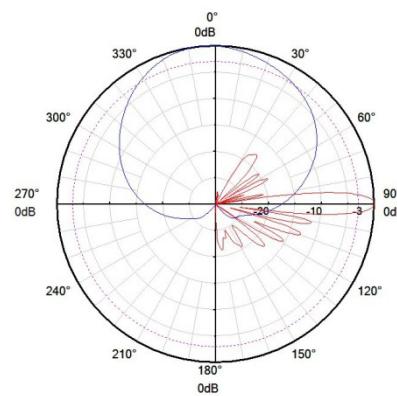
y - Yellow
L - Left array
R - Right array



Pattern sample for reference



1710 - 2690 MHz
(Left)



1710 - 2690 MHz
(Right)

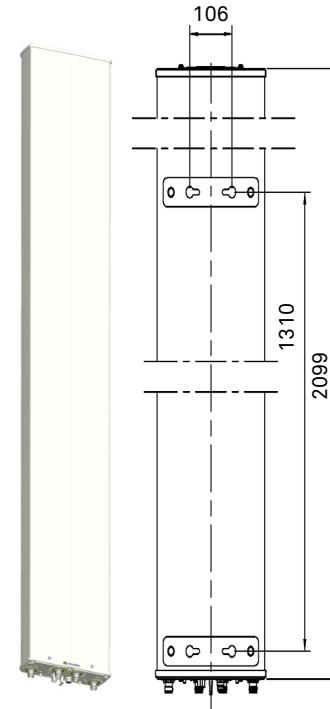
Antenna Specifications

| 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°C 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 (°C) | -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

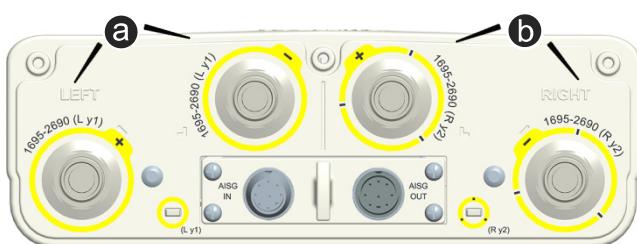
| Properties | | | | | | | | |
|----------------------------------|--|----------|--------------|----------|--------------|---------|----------------|----------|
| RET type | Integrated RET | | | | | | | |
| RET protocols* | AISG 2.0 / 3GPP | | | | | | | |
| Input voltage range (V) | 10 - 30 DC | | | | | | | |
| 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 DC | 2 n/c | 3 RS-485B | 4 n/c | 5 RS-485A | 6 DC | 7 DC return | 8 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

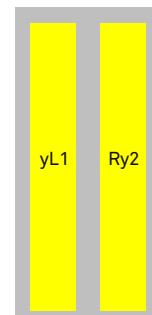
Certification: CE, FCC, IC, RCM



Integrated RET S/N:

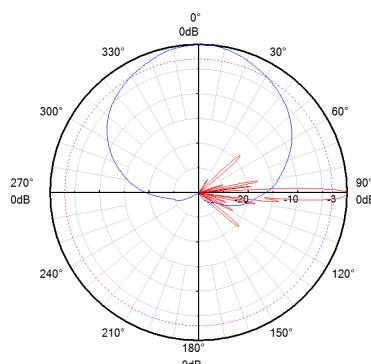
a HWMxxx.....Ly1

b HWMxxx.....Ry2



y - Yellow
L - Left array R - Right array

Pattern sample for reference



1695 - 2690 MHz

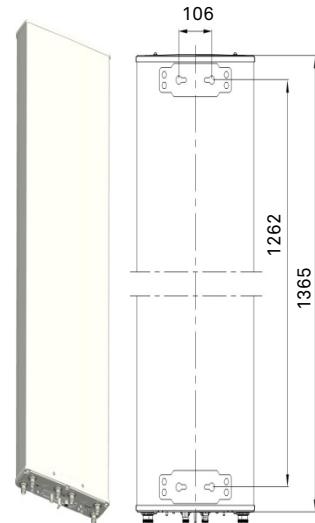
Antenna Specifications

| Electrical Properties | | | | | |
|--|----------------|---|----------------|----------------|----------------|
| Frequency range (MHz) | | 3 x (1710 - 2200) | | | |
| | | 1710 - 1880 | 1850 - 1990 | 1920 - 2170 | 2170 - 2200 |
| Polarization | | $+45^\circ, -45^\circ$ | | | |
| 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, $\pm 30^\circ$ (dB) | | > 25 | > 26 | > 27 | > 27 |
| Cross polar ratio (dB) | 0° | > 21 | > 21 | > 20 | > 18 |
| Max. power per input (W) | | 300 (at 50°C 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 (°C) | -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) |

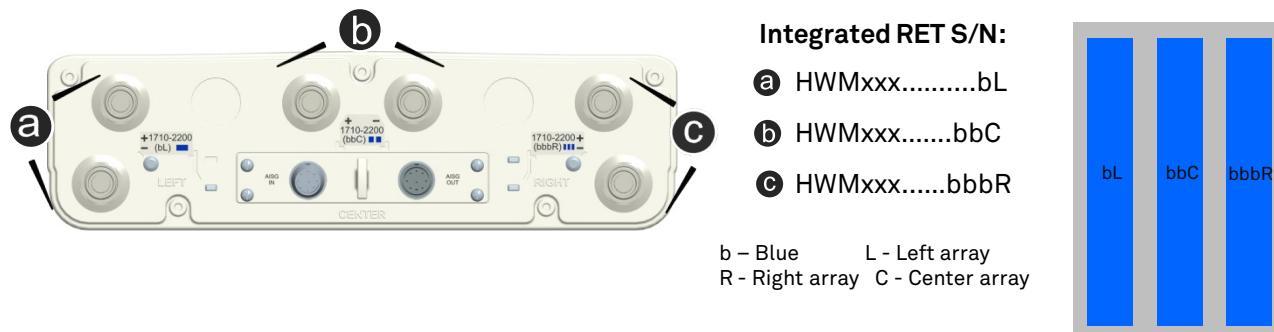
Integrated RET Specifications

| 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 DC | 2 n/c | 3 RS-485B | 4 n/c | 5 RS-485A | 6 DC | 7 DC return | 8 n/c |
| Lightning protection (kA) | 3 (10/350 µs) 10 (8/20 µs) | | | | | | | |

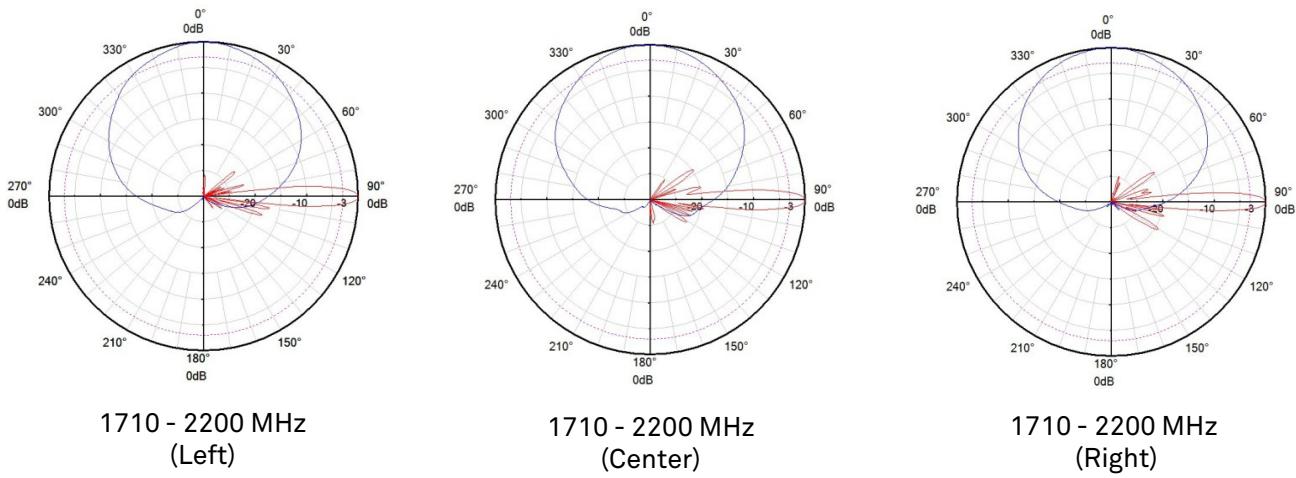
* Please confirm the AISG protocol of primary station is compatible with RET antenna protocol interface. The protocol of RET antenna software interface is switchable between AISG 2.0/3GPP and AISG 1.1 with a vendor defined command. For more details about protocol switching function, contact Huawei before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



Pattern sample for reference



Antenna Specifications

| Electrical Properties | | | | | | | | |
|--|----------------|---|-------------|-------------|-------------|-------------|-------------|--|
| Frequency range (MHz) | | 1710 - 2690 | | | 1710 - 2170 | | 2490 - 2690 | |
| | | 1710 - 1990 | 1920 - 2200 | 2200 - 2490 | 2490 - 2690 | 1710 - 1990 | | |
| 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 | |
| | 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 | |
| Side lobe suppression for first side lobe above main beam (dB) | | > 17 | > 17 | > 18 | > 17 | > 17 | > 18 | |
| Horizontal 3dB beam width (°) | | 66 ±3.8 | 64 ±3.2 | 62 ±2.3 | 60 ±3.8 | 66 ±3.4 | 64 ±3.1 | |
| 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 | |
| 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 | |
| Cross polar ratio (dB) | 0° | > 18 | > 18 | > 18 | > 18 | > 18 | > 18 | |
| Max. power per input (W) | | 250 (at 50°C ambient temperature) | | | | | | |
| Intermodulation IM3 (dBc) | | ≤ -153 (2 x 43 dBm carrier) | | | | | | |
| Impedance (Ω) | | 50 | | | | | | |
| Grounding | | DC Ground | | | | | | |

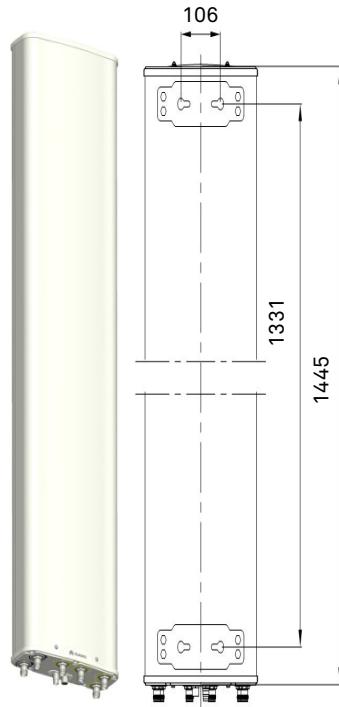
1. Values based on NGMN recommendations on Base Station Antenna Standards (BASTA).

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 (°C) | -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) |



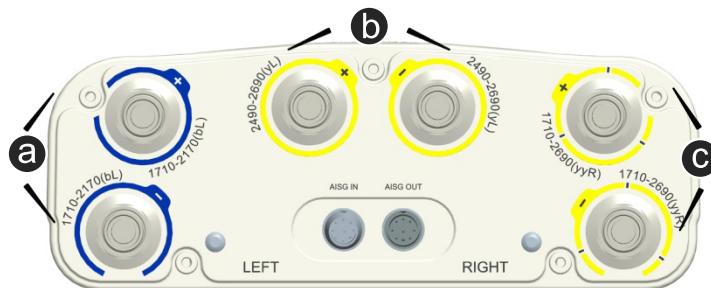
Integrated RET Specifications

| 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 DC | 2 n/c | 3 RS-485B | 4 n/c | 5 RS-485A | 6 DC | 7 DC return | 8 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

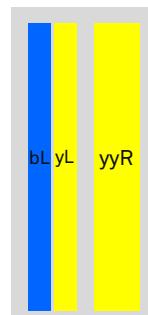
Certification: CE, FCC, RoHS, WEEE



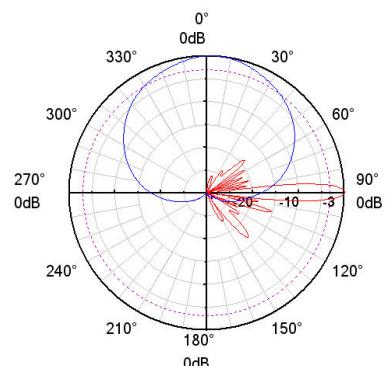
Integrated RET S/N:

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

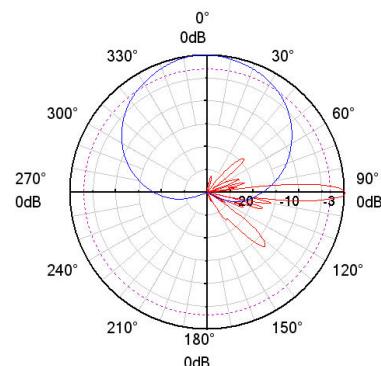
b - Blue y - Yellow
L - Left array R - Right array



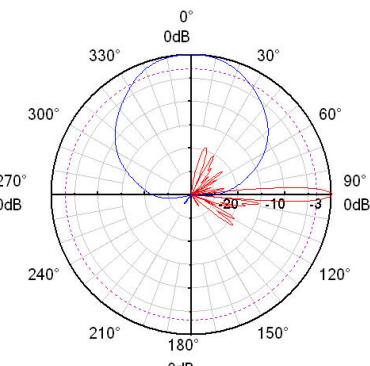
Pattern sample for reference



1710 - 2690 MHz



1710 - 2170 MHz



2490 - 2690 MHz

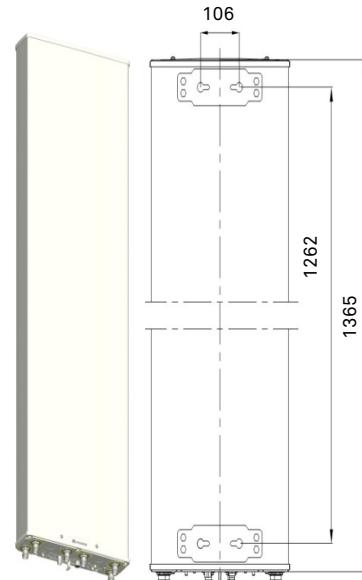
Antenna Specifications

| Electrical Properties | | | | | |
|--|----------------|---|----------------|----------------|----------------|
| Frequency range (MHz) | | 3 x (1710 - 2690) | | | |
| | | 1710 - 1990 | 1920 - 2200 | 2200 - 2490 | 2490 - 2690 |
| Polarization | | $+45^\circ, -45^\circ$ | | | |
| 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, $\pm 30^\circ$ (dB) | | > 27 | > 27 | > 29 | > 29 |
| Cross polar ratio (dB) | 0° | > 26 | > 25 | > 23 | > 23 |
| Max. power per input (W) | | 250 (at 50°C 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 (°C) | -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) |

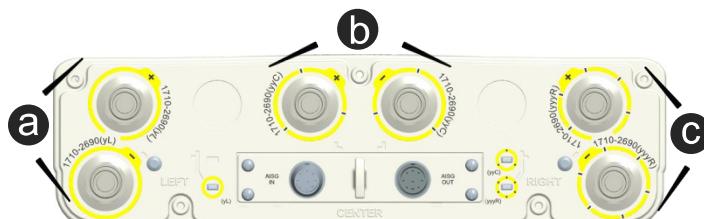
Integrated RET Specifications

| 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 DC | 2 n/c | 3 RS-485B | 4 n/c | 5 RS-485A | 6 DC | 7 DC return | 8 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

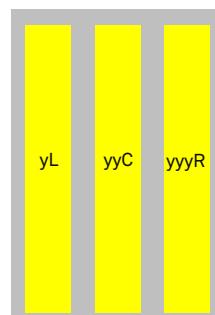
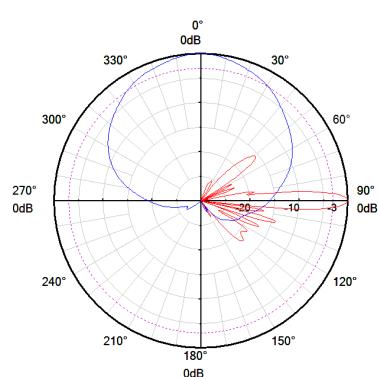
**Integrated RET S/N:**

a HWMxxx.....yL

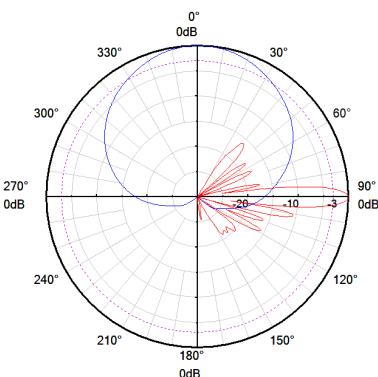
b HWMxxx....yyC

c HWMxxx....yyyR

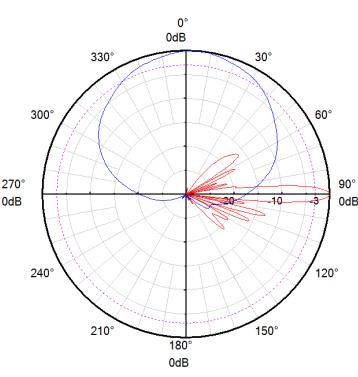
y - Yellow L - Left array
R - Right array C - Center array

**Pattern sample for reference**

1710 - 2690 MHz
(Left)



1710 - 2690 MHz
(Center)



1710 - 2690 MHz
(Right)



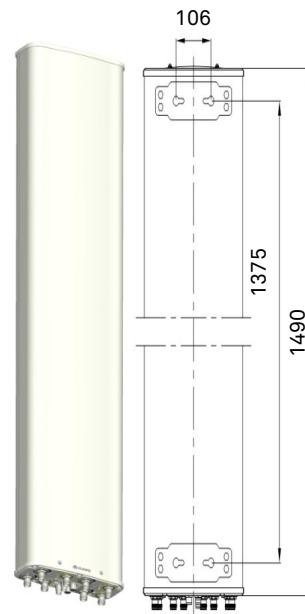
Antenna Specifications

| 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°C ambient temperature) | | | |
| Total power (W) | | 500 (at 50°C 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 (°C) | -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) |

High Band
2-8 Ports

DXXX-1710-2170/1710-2170/2490-2690/2490-2690-

65/65/65-18i/18i/18i/18i-M/M/M/M-R

EasyRET 8-Port Antenna with 4 Integrated RCUs - 1.4m

Model: AQU4518R8v06



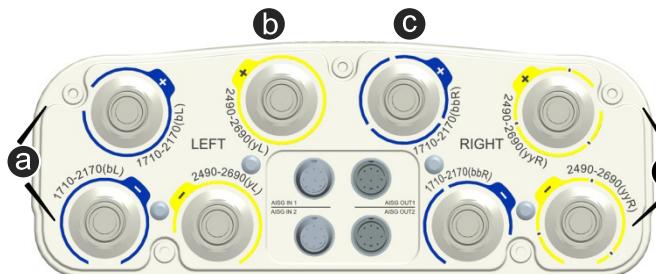
Integrated RET Specifications

| 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 DC | 2 n/c | 3 RS-485B | 4 n/c | 5 RS-485A | 6 DC | 7 DC return | 8 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.

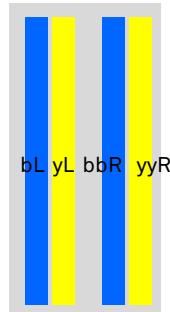
Standards: EN 60950-1 (Safety), EN 55022 (Emission), EN 55024 (Immunity), ETSI EN 301 489, FCC part15

Certification: CE, FCC, RoHS, WEEE



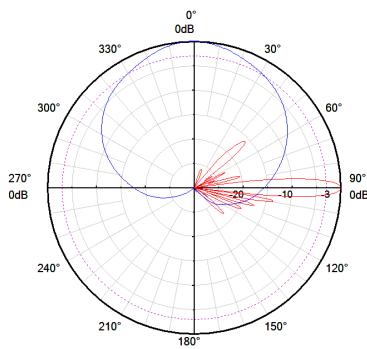
Integrated RET S/N:

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

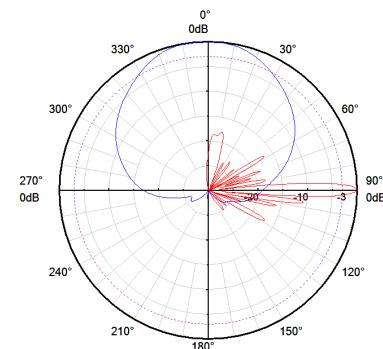


b - Blue y - Yellow
L - Left array R - Right array

Pattern sample for reference



1710 - 2170 MHz



2490 - 2690 MHz



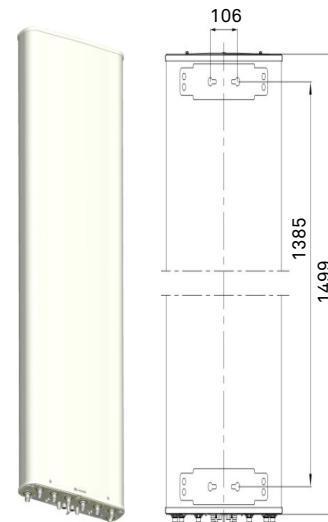
Antenna Specifications

| 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°C ambient temperature) | | | | |
| Total power (W) | 800 (at 50°C 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 (°C) | -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) |

High Band
2-8 Ports

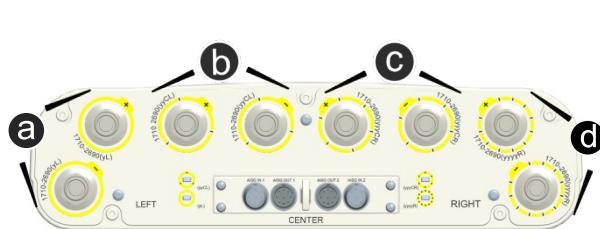
Integrated RET Specifications

| 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 DC | 2 n/c | 3 RS-485B | 4 n/c | 5 RS-485A | 6 DC | 7 DC return | 8 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

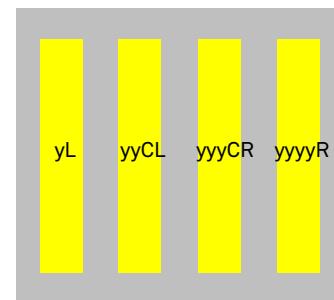
Certification: CE, FCC, IC, RCM



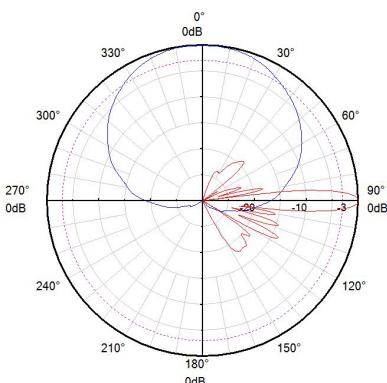
Integrated RET S/N:

- ⓐ HWMxxx.....yL
- ⓑ HWMxxx.....yyCL
- ⓒ HWMxxx....yyyCR
- ⓓ HWMxxx.....yyyyR

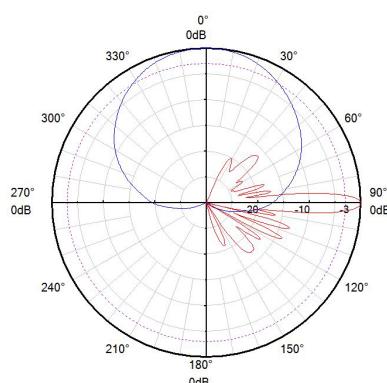
y – Yellow L - Left array
R - Right array C - Center array



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

1LnH Band
4-10 Ports

Multi-band

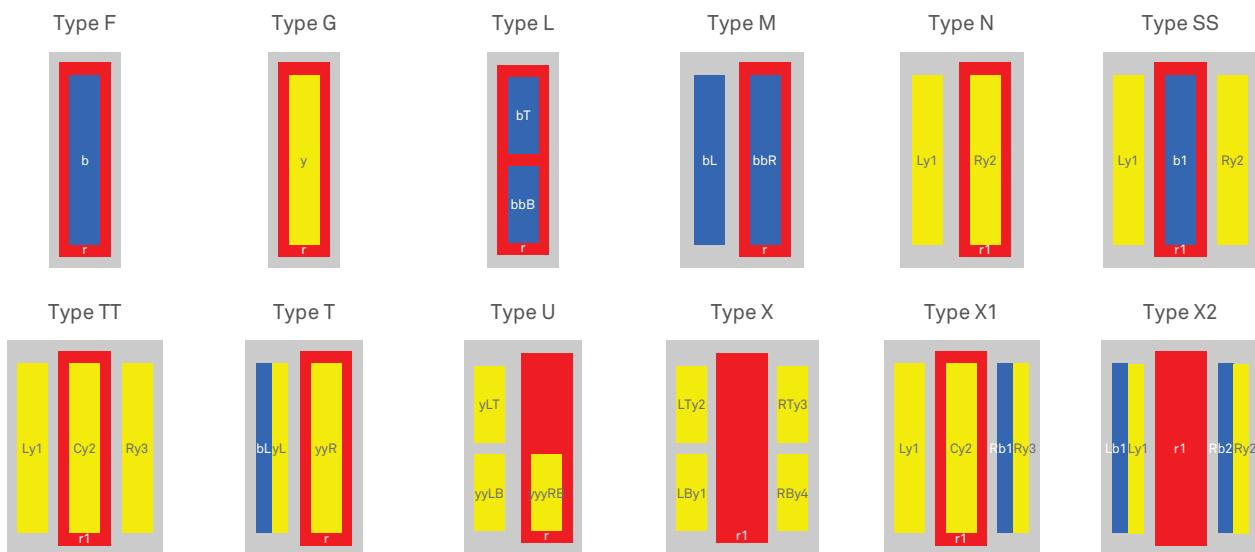
B - 3 1LnH

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/ 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/ 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 | | | | | |
| 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°C ambient temperature) | | | | 250 (at 50°C ambient temperature) | | | | | | | |
| Intermodulation IM3 (dBc) | | ≤ -153 (2 x 43 dBm carrier) | | | | | | | | | | | |
| Impedance (Ω) | | 50 | | | | | | | | | | | |
| Grounding | | DC Ground | | | | | | | | | | | |

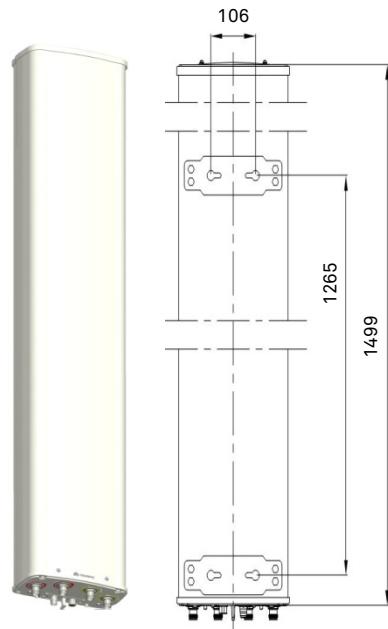
1. Values based on NGMN recommendations on Base Station Antenna Standards (BASTA).

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 (°C) | -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) |

1LnH Band
4-10 Ports

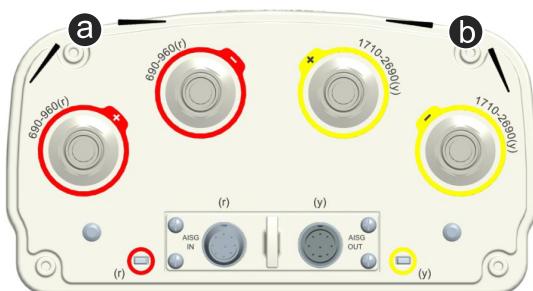
Integrated RET Specifications

| Properties | | | | | | | | |
|----------------------------------|--|----------|--------------|----------|--------------|---------|----------------|----------|
| RET type | Integrated RET | | | | | | | |
| RET protocols* | AISG 2.0 / 3GPP | | | | | | | |
| Input voltage range (V) | 10 - 30 DC | | | | | | | |
| Power consumption (W) | < 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 DC | 2 n/c | 3 RS-485B | 4 n/c | 5 RS-485A | 6 DC | 7 DC return | 8 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:

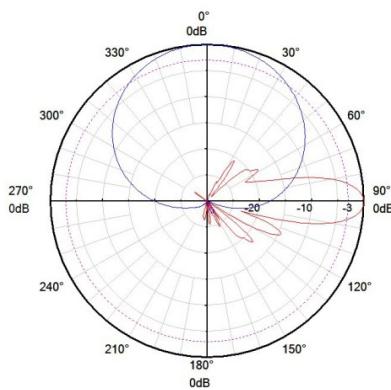
a HWMxxx.....r

b HWMxxx.....y

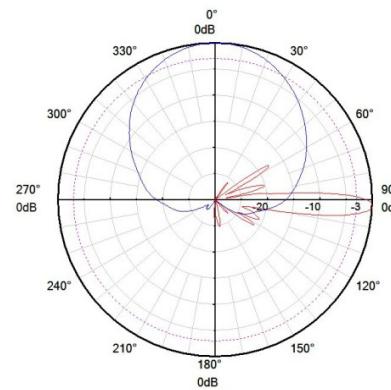
r - Red y - Yellow



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 | | | |
| 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 | | | |
| | 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 | | | |
| Side lobe suppression for first side lobe above main beam (dB) | | > 18 | > 18 | > 18 | > 18 | > 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 | | | |
| 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 | | | |
| 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 | | | |
| Cross polar ratio (dB) | 0° | > 20 | > 20 | > 20 | > 20 | > 20 | > 20 | > 20 | | | |
| Max. power per input (W) | | 500 (at 50°C ambient temperature) | | | | 250 (at 50°C ambient temperature) | | | | | |
| Intermodulation IM3 (dBc) | | ≤ -153 (2 x 43 dBm carrier) | | | | | | | | | |
| Impedance (Ω) | | 50 | | | | | | | | | |
| Grounding | | DC Ground | | | | | | | | | |

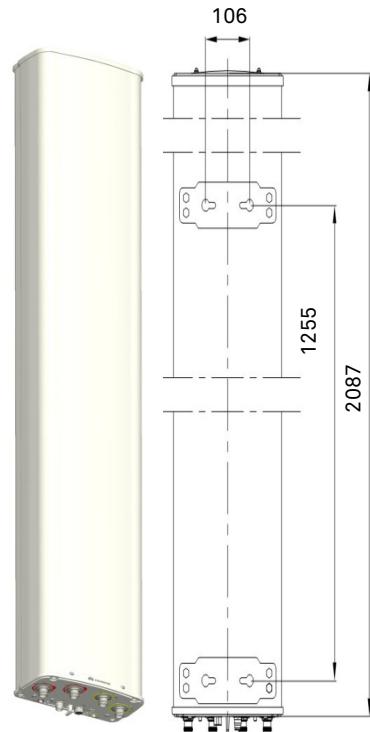
1. Values based on NGMN recommendations on Base Station Antenna Standards (BASTA).

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 (°C) | -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) |

1LnH Band
4-10 Ports

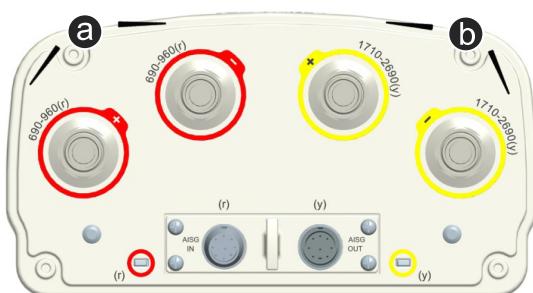
Integrated RET Specifications

| Properties | | | | | | | | |
|----------------------------------|--|----------|--------------|----------|--------------|---------|----------------|----------|
| RET type | Integrated RET | | | | | | | |
| RET protocols* | AISG 2.0 / 3GPP | | | | | | | |
| Input voltage range (V) | 10 - 30 DC | | | | | | | |
| Power consumption (W) | < 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 DC | 2 n/c | 3 RS-485B | 4 n/c | 5 RS-485A | 6 DC | 7 DC return | 8 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:

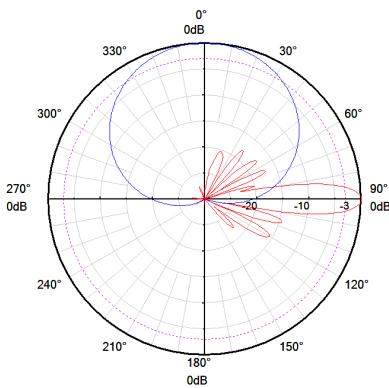
a HWMxxx.....r

b HWMxxx.....y

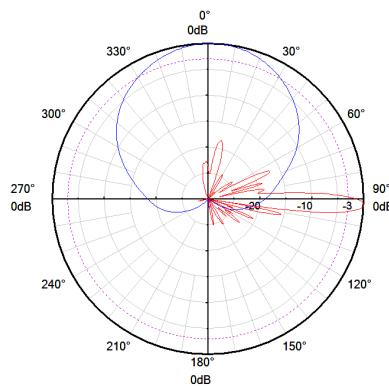
r - Red y - Yellow



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 | | | |
| 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 | | | |
| | 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 | | | |
| Side lobe suppression for first side lobe above main beam (dB) | | > 17 | > 18 | > 18 | > 18 | > 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 | | | |
| 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 | | | |
| 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 | | | |
| Cross polar ratio (dB) | 0° | > 20 | > 20 | > 20 | > 20 | > 20 | > 20 | > 20 | | | |
| Max. power per input (W) | | 500 (at 50°C ambient temperature) | | | | 250 (at 50°C ambient temperature) | | | | | |
| Intermodulation IM3 (dBc) | | ≤ -153 (2 x 43 dBm carrier) | | | | | | | | | |
| Impedance (Ω) | | 50 | | | | | | | | | |
| Grounding | | DC Ground | | | | | | | | | |

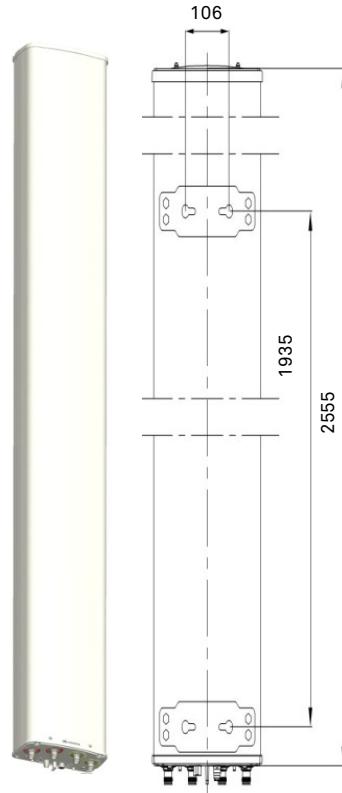
1. Values based on NGMN recommendations on Base Station Antenna Standards (BASTA).

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 (°C) | -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) |

1LnH Band
4-10 Ports

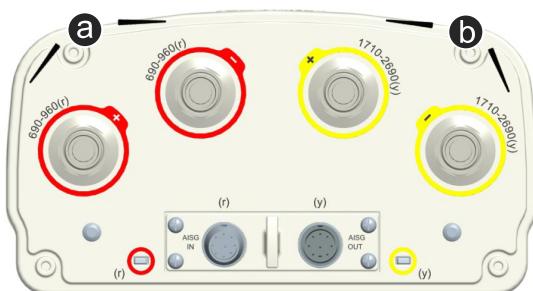
Integrated RET Specifications

| Properties | | | | | | | | |
|----------------------------------|--|----------|--------------|----------|--------------|---------|----------------|----------|
| RET type | Integrated RET | | | | | | | |
| RET protocols* | AISG 2.0 / 3GPP | | | | | | | |
| Input voltage range (V) | 10 - 30 DC | | | | | | | |
| Power consumption (W) | < 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 DC | 2 n/c | 3 RS-485B | 4 n/c | 5 RS-485A | 6 DC | 7 DC return | 8 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:

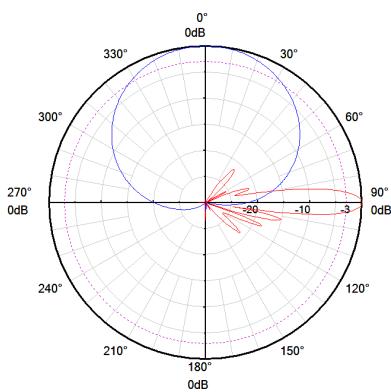
a HWMxxx.....r

b HWMxxx.....y

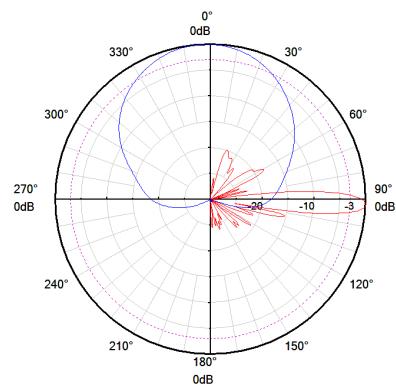
r - Red y - Yellow



Pattern sample for reference



690 - 960 MHz



1710 - 2690 MHz

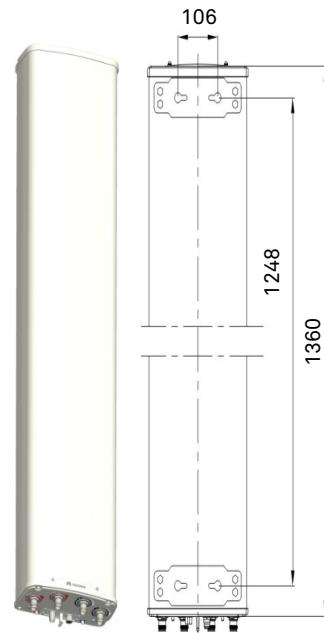
Antenna Specifications

| 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°C ambient temperature) | | | 300 (at 50°C 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 (°C) | -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) |

1LnH Band
4-10 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) | < 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 DC | 2 n/c | 3 RS-485B | 4 n/c | 5 RS-485A | 6 DC | 7 DC return | 8 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

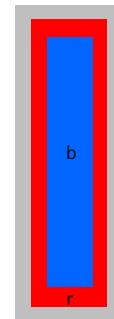


Integrated RET S/N:

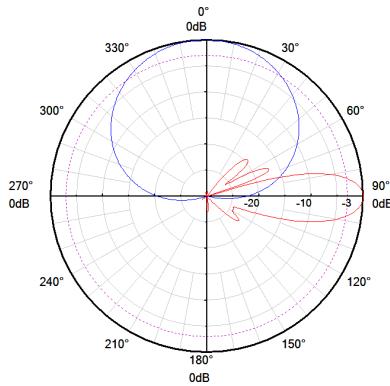
a HWMxxx.....r

b HWMxxx.....b

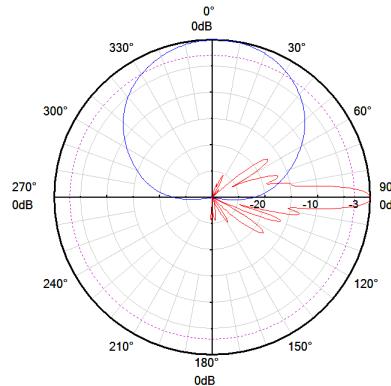
r - Red b - Blue



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°C ambient temperature) | | | 300 (at 50°C ambient temperature) | | | | | |
| Intermodulation IM3 (dBc) | | ≤ -153 (2 x 43 dBm carrier) | | | | | | | | |
| Impedance (Ω) | | 50 | | | | | | | | |
| Grounding | | DC Ground | | | | | | | | |

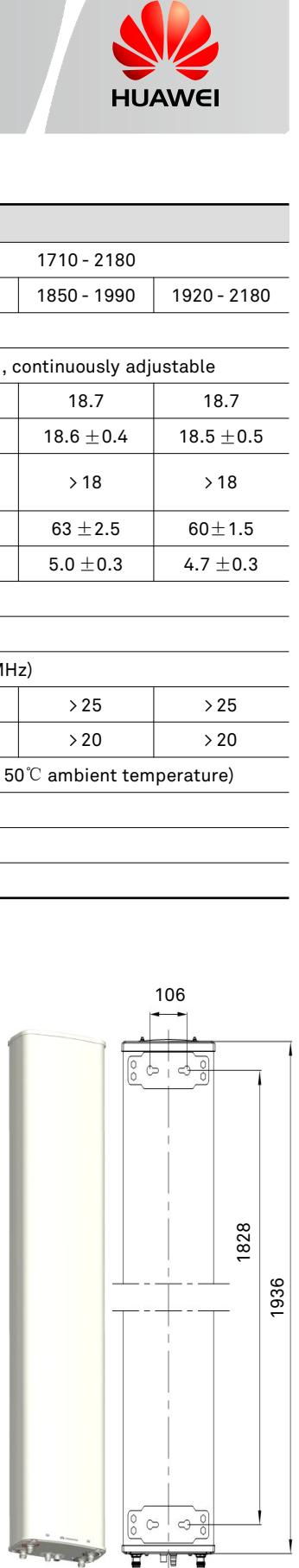
1. Values based on NGMN recommendations on Base Station Antenna Standards (BASTA).

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 (°C) | -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) |

1LnH Band
4-10 Ports

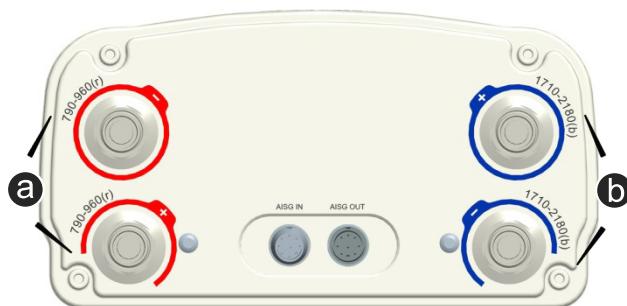
Integrated RET Specifications

| Properties | | | | | | | | |
|----------------------------------|--|----------|--------------|----------|--------------|---------|----------------|----------|
| RET type | Integrated RET | | | | | | | |
| RET protocols* | AISG 2.0 / 3GPP | | | | | | | |
| Input voltage range (V) | 10 - 30 DC | | | | | | | |
| Power consumption (W) | < 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 DC | 2 n/c | 3 RS-485B | 4 n/c | 5 RS-485A | 6 DC | 7 DC return | 8 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.

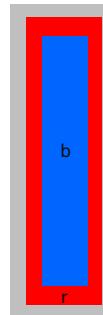
Standards: EN 60950-1 (Safety), EN 55022 (Emission), EN 55024 (Immunity), ETSI EN 301 489, FCC part15

Certification: CE, FCC, RoHS, WEEE

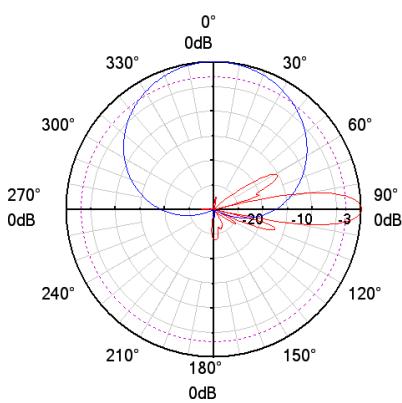


Integrated RET S/N:

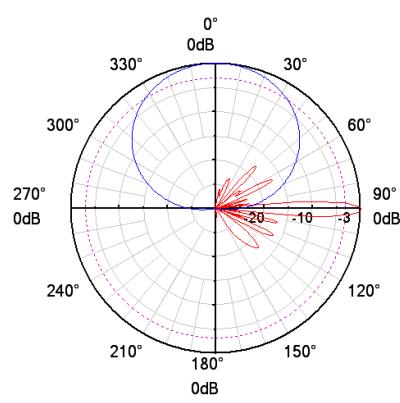
- ⓐ HWMxxx...r
 - ⓑ HWMxxx...b
- r - Red b - Blue



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°C ambient temperature) | | | 300 (at 50°C ambient temperature) | | | | | |
| Intermodulation IM3 (dBc) | | ≤ -153 (2 x 43 dBm carrier) | | | | | | | | |
| Impedance (Ω) | | 50 | | | | | | | | |
| Grounding | | DC Ground | | | | | | | | |

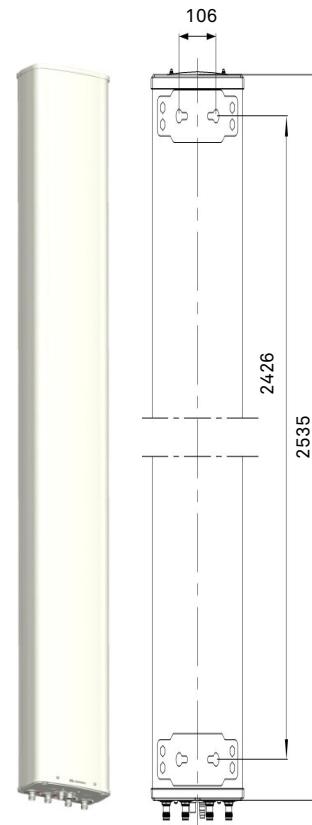
1. Values based on NGMN recommendations on Base Station Antenna Standards (BASTA).

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 (°C) | -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) |



1LnH Band
4-10 Ports

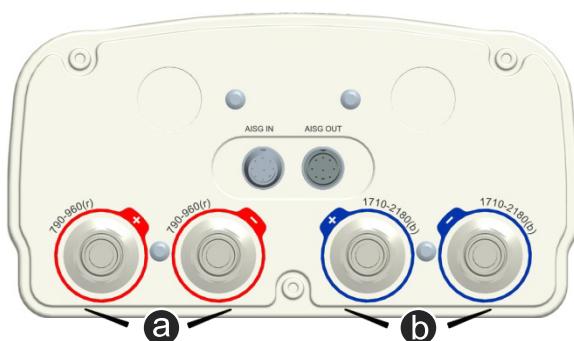
Integrated RET Specifications

| Properties | | | | | | | | |
|----------------------------------|--|----------|--------------|----------|--------------|---------|----------------|----------|
| RET type | Integrated RET | | | | | | | |
| RET protocols* | AISG 2.0 / 3GPP | | | | | | | |
| Input voltage range (V) | 10 - 30 DC | | | | | | | |
| Power consumption (W) | < 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 DC | 2 n/c | 3 RS-485B | 4 n/c | 5 RS-485A | 6 DC | 7 DC return | 8 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

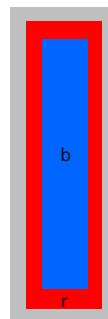


Integrated RET S/N:

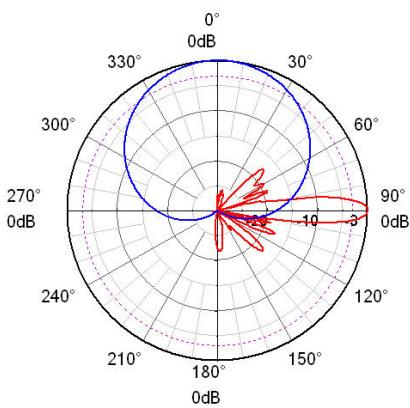
a HWMxxx...r

b HWMxxx...b

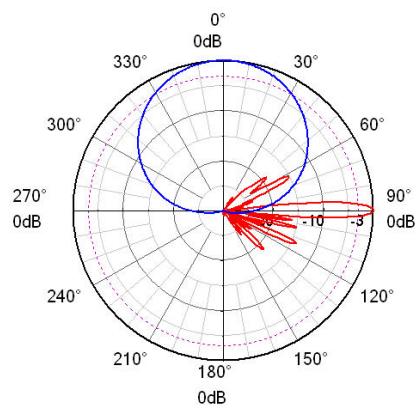
r - Red b - Blue



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 | | | |
| 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 | | | |
| | 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 | | | |
| Side lobe suppression for first side lobe above main beam (dB) | | > 18 | > 18 | > 17 | > 17 | > 18 | > 18 | | | |
| Horizontal 3dB beam width (°) | | 66 ±4 | 64 ±3 | 62 ±3 | 60 ±5 | 62 ±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 | | | |
| 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 | | | |
| Cross polar ratio (dB) | 0° | > 26 | > 23 | > 20 | > 25 | > 26 | > 24 | | | |
| Max. power per input (W) | | 500 (at 50°C ambient temperature) | | | 250 (at 50°C ambient temperature) | | | | | |
| Intermodulation IM3 (dBc) | | ≤ -153 (2 x 43 dBm carrier) | | | | | | | | |
| Impedance (Ω) | | 50 | | | | | | | | |
| Grounding | | DC Ground | | | | | | | | |

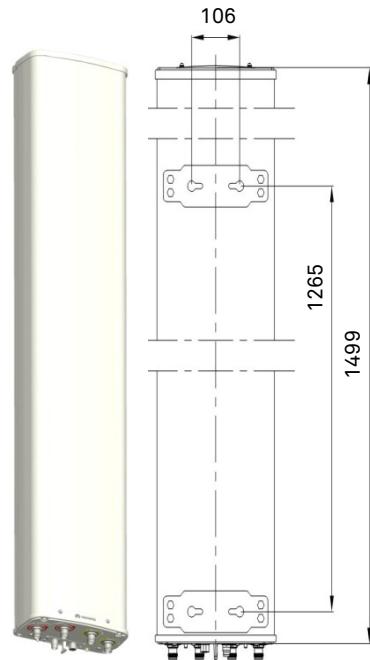
1. Values based on NGMN recommendations on Base Station Antenna Standards (BASTA).

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 (°C) | -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) |

1LnH Band
4-10 Ports

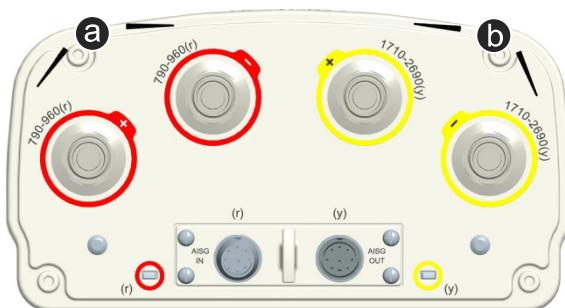
Integrated RET Specifications

| Properties | | | | | | | | |
|----------------------------------|--|----------|--------------|----------|--------------|---------|----------------|----------|
| RET type | Integrated RET | | | | | | | |
| RET protocols* | AISG 2.0 / 3GPP | | | | | | | |
| Input voltage range (V) | 10 - 30 DC | | | | | | | |
| Power consumption (W) | < 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 DC | 2 n/c | 3 RS-485B | 4 n/c | 5 RS-485A | 6 DC | 7 DC return | 8 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:

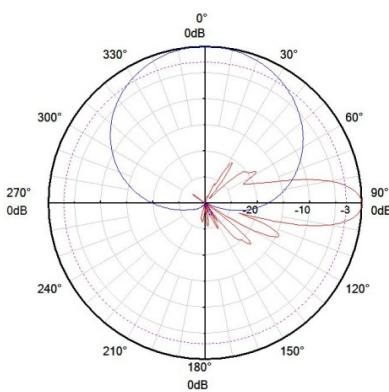
a HWMxxx.....r

b HWMxxx.....y

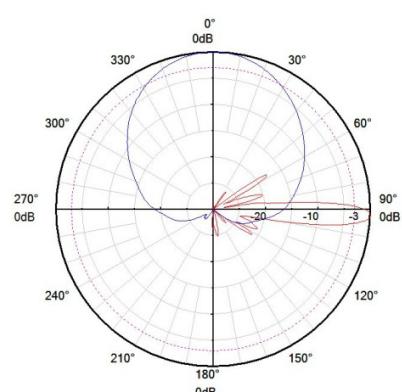
r - Red y - Yellow



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 | | | |
| 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 | | | |
| | 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 | | | |
| Side lobe suppression for first side lobe above main beam (dB) | | > 18 | > 18 | > 18 | > 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 | | | |
| 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 | | | |
| 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 | | | |
| Cross polar ratio (dB) | 0° | > 20 | > 20 | > 20 | > 20 | > 20 | > 20 | | | |
| Max. power per input (W) | | 500 (at 50°C ambient temperature) | | | 250 (at 50°C ambient temperature) | | | | | |
| Intermodulation IM3 (dBc) | | ≤ -153 (2 x 43 dBm carrier) | | | | | | | | |
| Impedance (Ω) | | 50 | | | | | | | | |
| Grounding | | DC Ground | | | | | | | | |

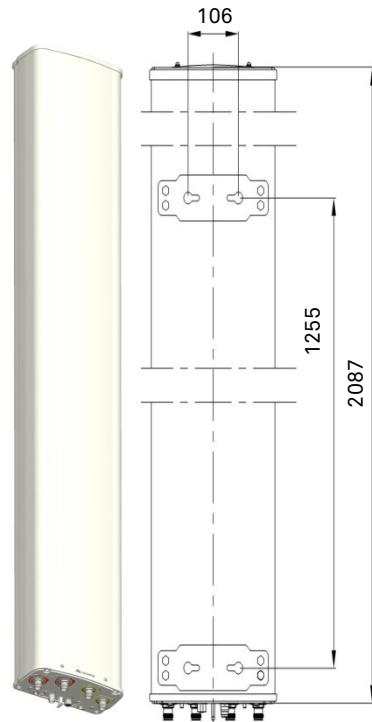
1. Values based on NGMN recommendations on Base Station Antenna Standards (BASTA).

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 (°C) | -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) |

1LnH Band
4-10 Ports

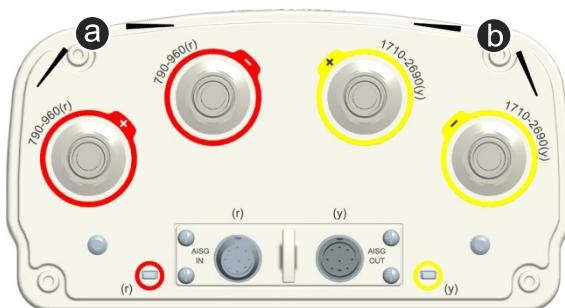
Integrated RET Specifications

| Properties | | | | | | | | |
|----------------------------------|--|----------|--------------|----------|--------------|---------|----------------|----------|
| RET type | Integrated RET | | | | | | | |
| RET protocols* | AISG 2.0 / 3GPP | | | | | | | |
| Input voltage range (V) | 10 - 30 DC | | | | | | | |
| Power consumption (W) | < 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 DC | 2 n/c | 3 RS-485B | 4 n/c | 5 RS-485A | 6 DC | 7 DC return | 8 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:

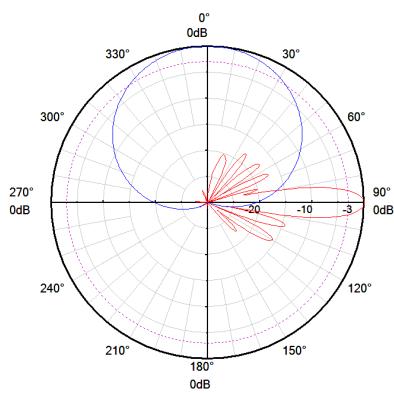
a HWMxxx.....r

b HWMxxx.....y

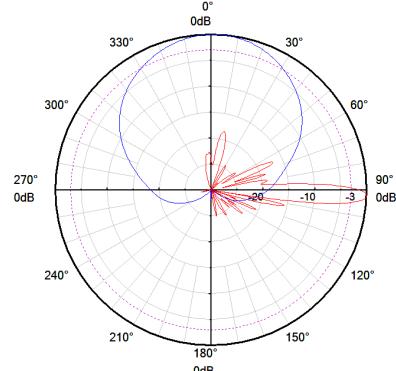
r - Red y - Yellow



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 | | | |
| 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 | | | |
| | 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 | | | |
| Side lobe suppression for first side lobe above main beam (dB) | | > 18 | > 18 | > 18 | > 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 | | | |
| 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 | | | |
| 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 | | | |
| Cross polar ratio (dB) | 0° | > 20 | > 20 | > 20 | > 20 | > 20 | > 20 | | | |
| Max. power per input (W) | | 500 (at 50°C ambient temperature) | | | 250 (at 50°C ambient temperature) | | | | | |
| Intermodulation IM3 (dBc) | | ≤ -153 (2 x 43 dBm carrier) | | | | | | | | |
| Impedance (Ω) | | 50 | | | | | | | | |
| Grounding | | DC Ground | | | | | | | | |

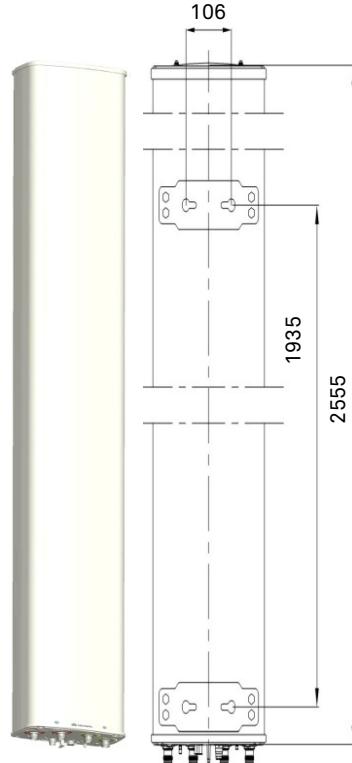
1. Values based on NGMN recommendations on Base Station Antenna Standards (BASTA).

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 (°C) | -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) |

1LnH Band
4-10 Ports

Integrated RET Specifications

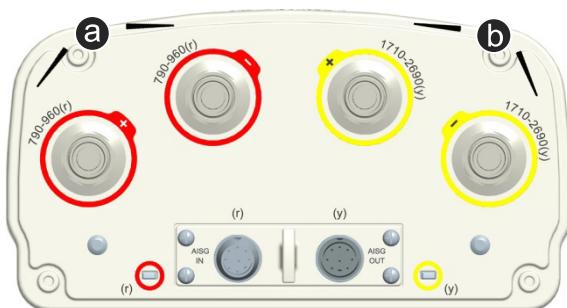
| Properties | | | | | | | | |
|----------------------------------|--|----------|--------------|----------|--------------|---------|----------------|----------|
| RET type | Integrated RET | | | | | | | |
| RET protocols* | AISG 2.0 / 3GPP | | | | | | | |
| Input voltage range (V) | 10 - 30 DC | | | | | | | |
| Power consumption (W) | < 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 DC | 2 n/c | 3 RS-485B | 4 n/c | 5 RS-485A | 6 DC | 7 DC return | 8 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:

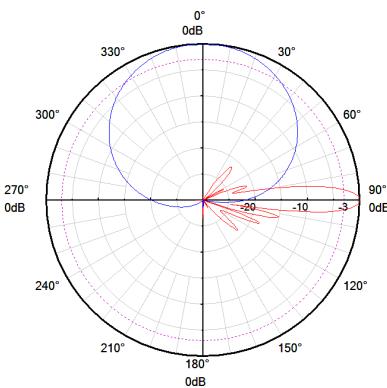
a HWMxxx.....r

b HWMxxx.....y

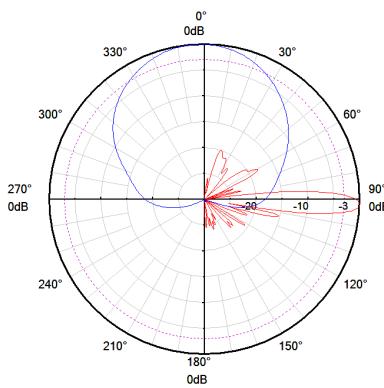
r - Red y - Yellow



Pattern sample for reference



790 - 960 MHz



1710 - 2690 MHz

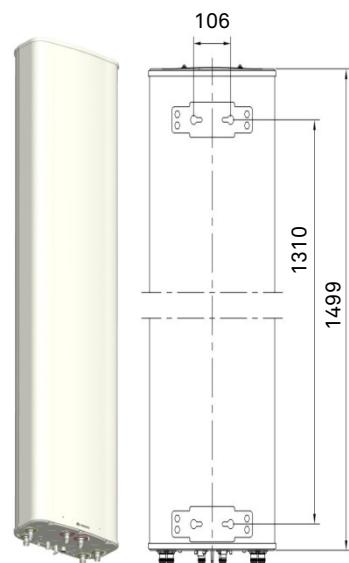
Antenna Specifications

| 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 | | | |
| 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 | | | |
| | 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 | 18.2 ±0.5 | | | |
| Side lobe suppression for first side lobe above main beam (dB) | | > 16 | > 17 | > 17 | > 17 | > 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 | | | |
| 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 | | | |
| 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 | | | |
| Cross polar ratio (dB) | 0° | > 19 | > 20 | > 20 | > 22 | > 18 | > 19 | > 20 | | | |
| Max. power per input (W) | | 500 (at 50°C ambient temperature) | | | | 250 (at 50°C 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 (°C) | -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

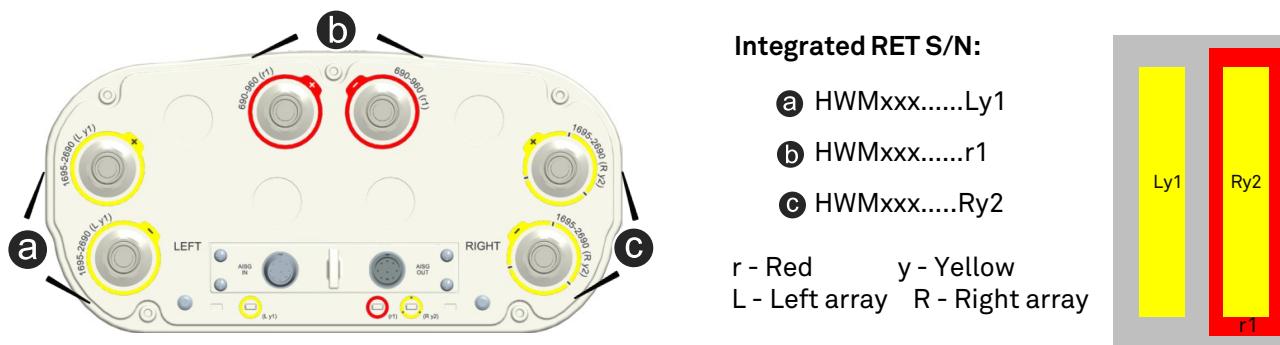
| Properties | | | | | | | | |
|----------------------------------|--|----------|--------------|----------|--------------|---------|----------------|----------|
| RET type | Integrated RET | | | | | | | |
| RET protocols* | AISG 2.0 / 3GPP | | | | | | | |
| Input voltage range (V) | 10 - 30 DC | | | | | | | |
| 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 DC | 2 n/c | 3 RS-485B | 4 n/c | 5 RS-485A | 6 DC | 7 DC return | 8 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.

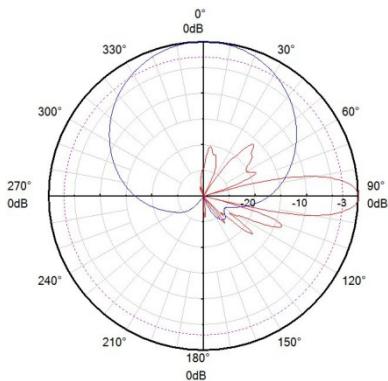
Standards: UL 60950-1 (Safety), UL 60950-22 (Safety – Equipment installed outdoor), EN 55022 (Emission),

EN 55024 (Immunity), ETSI EN 301 489, FCC Part15, ICES-003

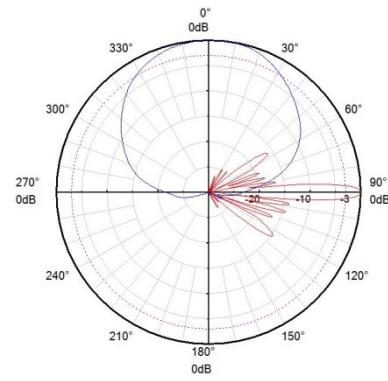
Certification: CE, FCC, IC, RCM



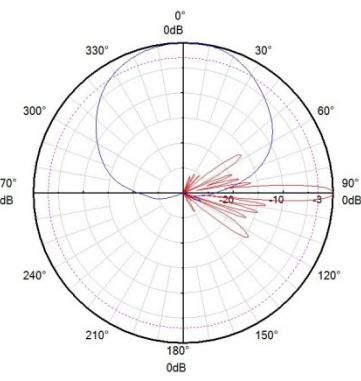
Pattern sample for reference



690 - 960 MHz



1695 - 2690 MHz
(Left)



1695 - 2690 MHz
(Right)

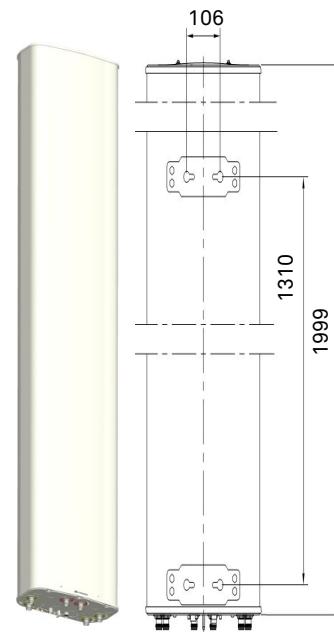
Antenna Specifications

| 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 | | | |
| 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°C ambient temperature) | | | | 250 (at 50°C 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 (°C) | -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 |


 1LnH 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) |

Integrated RET Specifications

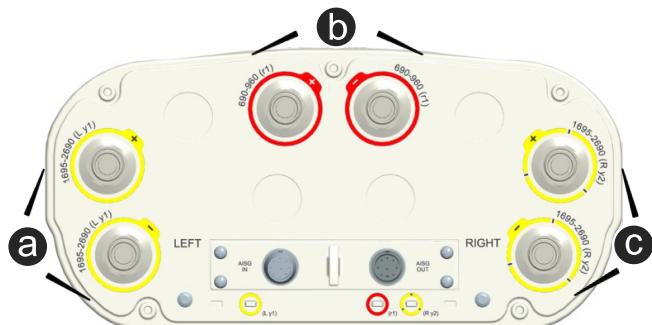
| Properties | | | | | | | | |
|----------------------------------|--|----------|--------------|----------|--------------|---------|----------------|----------|
| RET type | Integrated RET | | | | | | | |
| RET protocols* | AISG 2.0 / 3GPP | | | | | | | |
| Input voltage range (V) | 10 - 30 DC | | | | | | | |
| 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 DC | 2 n/c | 3 RS-485B | 4 n/c | 5 RS-485A | 6 DC | 7 DC return | 8 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:

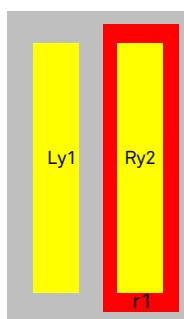
a HWMxxx.....Ly1

b HWMxxx.....r1

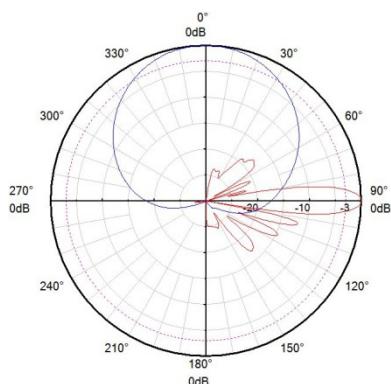
c HWMxxx.....Ry2

r - Red y - Yellow

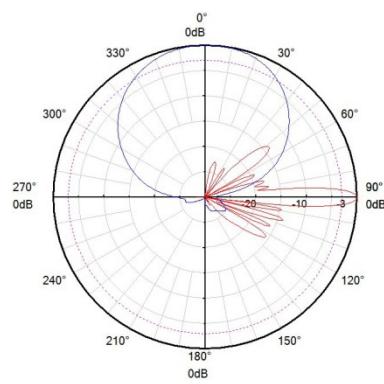
L - Left array R - Right array



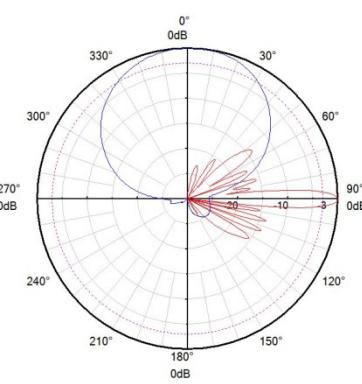
Pattern sample for reference



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 | | | |
| 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 | | |
| Max. power per input (W) | | 500 (at 50°C ambient temperature) | | | | 250 (at 50°C ambient temperature) | | | | | |
| Intermodulation IM3 (dBc) | | ≤ -153 (2 x 43 dBm carrier) | | | | | | | | | |
| Impedance (Ω) | | 50 | | | | | | | | | |
| Grounding | | DC Ground | | | | | | | | | |

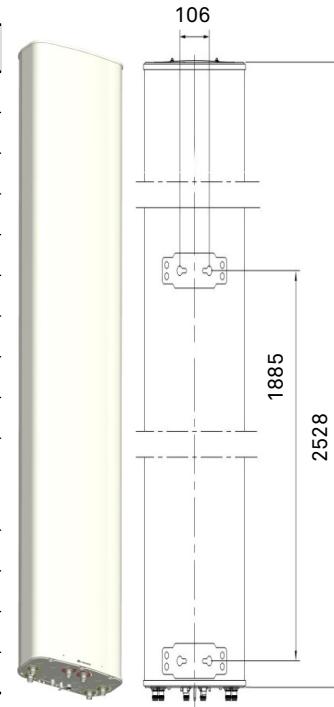
1. Values based on NGMN recommendations on Base Station Antenna Standards (BASTA).

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 (°C) | -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) |


 1LnH Band
 4-10 Ports

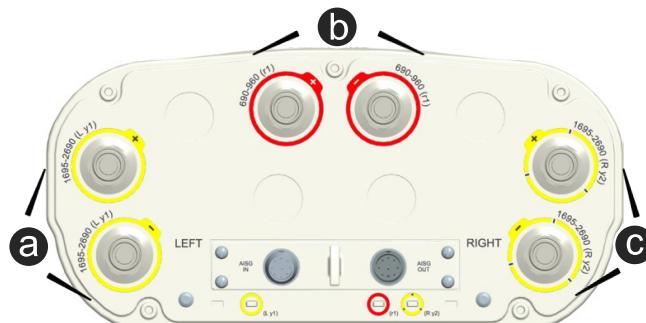
Integrated RET Specifications

| 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 | 2 x 8 pin connector according to IEC 60130-9 Daisy chain in: Male / Daisy chain out: Female | | | | | | | |
| Pin assignment according AISG | 1 DC | 2 n/c | 3 RS-485B | 4 n/c | 5 RS-485A | 6 DC | 7 DC return | 8 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



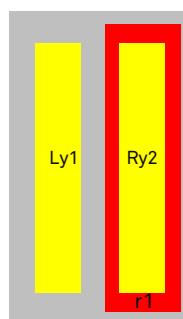
Integrated RET S/N:

a HWMxxx.....Ly1

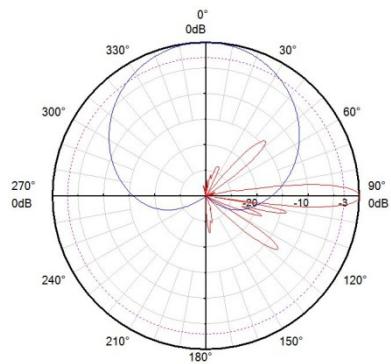
b HWMxxx.....r1

c HWMxxx.....Ry2

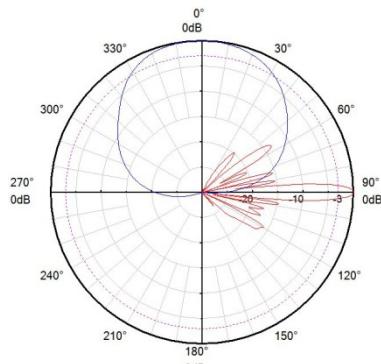
r - Red y - Yellow
L - Left array R - Right array



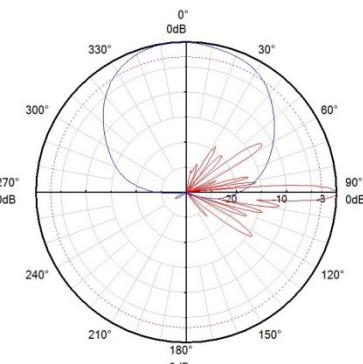
Pattern sample for reference



690 - 960 MHz



1710 - 2690 MHz
(Left)



1710 - 2690 MHz
(Right)

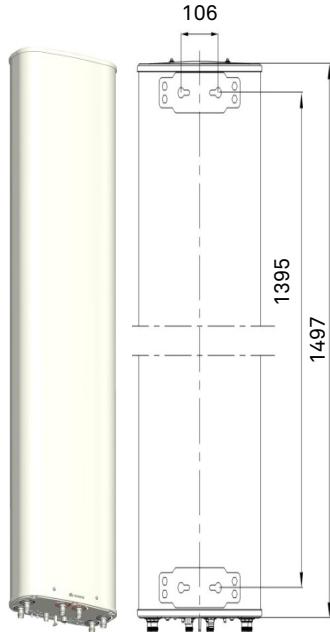
Antenna Specifications

| 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 | | | |
| | over all Tilts | 14.5 ± 0.5 | 14.8 ± 0.4 | 15.1 ± 0.5 | 16.9 ± 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°C ambient temperature) | | | 300 (at 50°C 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 (°C) | -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) |

1LnH Band
4-10 Ports

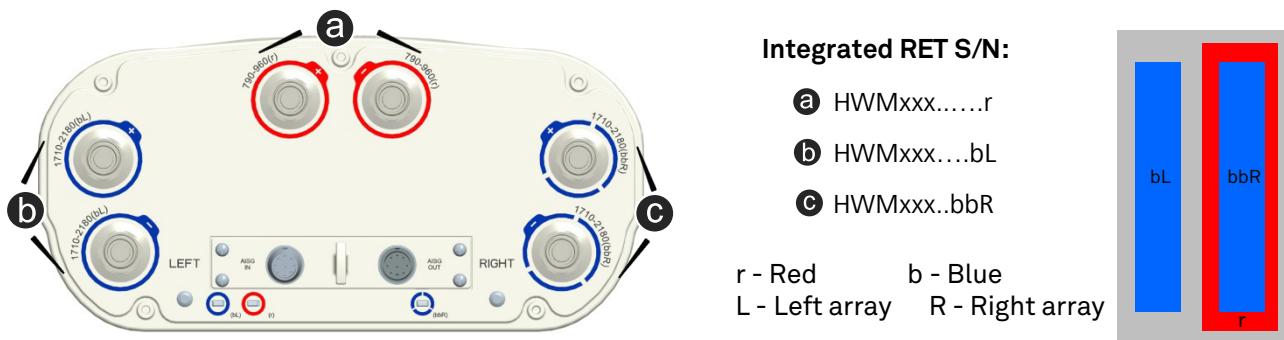
Integrated RET Specifications

| 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 | 2 x 8 pin connector according to IEC 60130-9 Daisy chain in: Male / Daisy chain out: Female | | | | | | | |
| Pin assignment according AISG | 1 DC | 2 n/c | 3 RS-485B | 4 n/c | 5 RS-485A | 6 DC | 7 DC return | 8 n/c |
| Lightning protection (kA) | 3 (10/350 µs) 10 (8/20 µs) | | | | | | | |

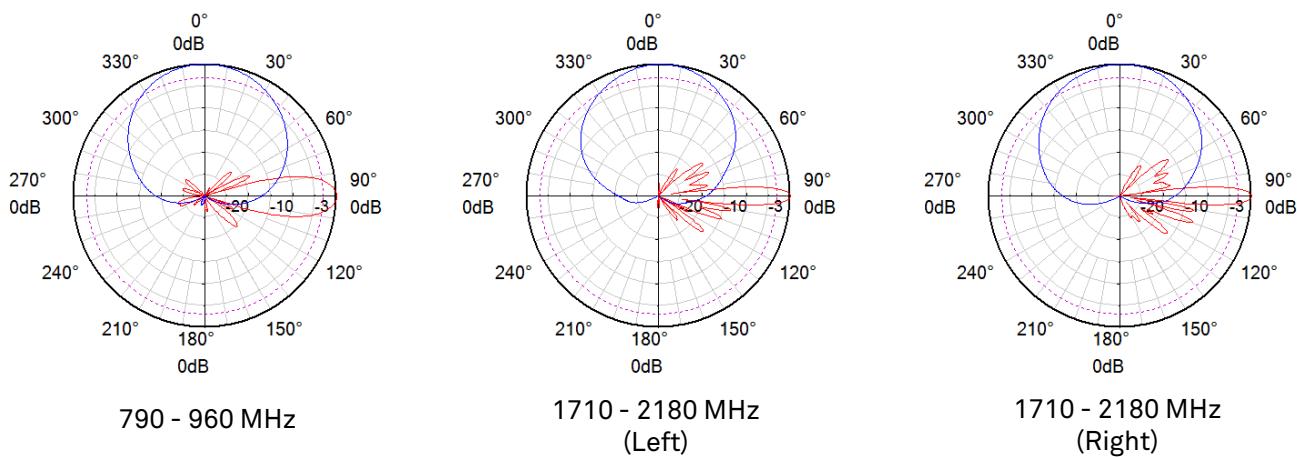
* Please confirm the AISG protocol of primary station is compatible with RET antenna protocol interface. The protocol of RET antenna software interface is switchable between AISG 2.0/3GPP and AISG 1.1 with a vendor defined command. For more details about protocol switching function, contact Huawei before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



Pattern sample for reference





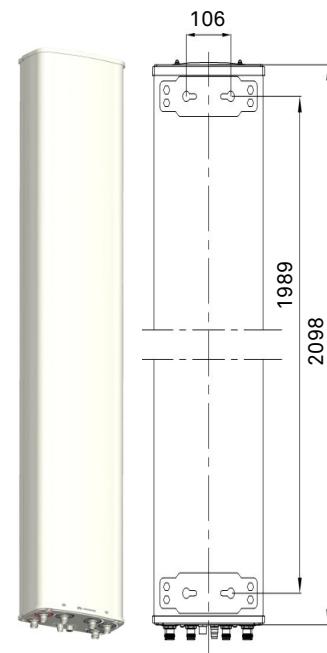
Antenna Specifications

| Electrical Properties | | | | | | | | |
|--|--|--|----------------|-------------------|-----------------------------------|-----------------------|--|--|
| Frequency range (MHz) | 790 - 960 | | | 2 x (1710 - 2180) | | | | |
| | 790 - 862 | 824 - 894 | 880 - 960 | 1710 - 1880 | 1850 - 1990 | 1920 - 2180 | | |
| Polarization | | $+45^\circ, -45^\circ$ | | | | | | |
| Electrical downtilt ($^\circ$) | | 0 - 12, continuously adjustable, each band separately | | | | | | |
| Gain (dBi) | Bottom | at mid Tilt | 16.0 | 16.3 | 16.2 | | | |
| | | over all Tilts | 15.9 ± 0.5 | 16.0 ± 0.4 | 16.1 ± 0.4 | | | |
| | Top | at mid Tilt | | | 16.2 | 16.4 | | |
| | | over all Tilts | | | 16.0 ± 0.4 | 16.3 ± 0.4 | | |
| | Side lobe suppression for first side lobe above main beam (dB) | | >18 | >19 | >19 | >17 | | |
| | Horizontal 3dB beam width ($^\circ$) | | 69 ± 2.0 | 66 ± 2.0 | 65 ± 3.0 | 64 ± 4.0 | | |
| Vertical 3dB beam width ($^\circ$) | | 10.7 ± 0.5 | 10.1 ± 0.5 | 9.4 ± 0.5 | Bottom: 9.6 ± 0.6 | Bottom: 8.9 ± 0.5 | | |
| | | | | | Top: 8.5 ± 0.6 | Top: 8.0 ± 0.5 | | |
| 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, $\pm 30^\circ$ (dB) | | >24 | >25 | >25 | >25 | >24 | | |
| Cross polar ratio (dB) | 0° | >26 | >26 | >26 | >20 | >20 | | |
| Max. power per input (W) | | 500 (at 50°C ambient temperature) | | | 300 (at 50°C 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 (°C) | -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 |



1LnH Band
4-10 Ports

Accessories

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

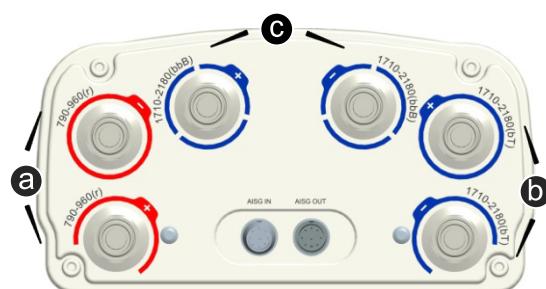
Integrated RET Specifications

| 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 DC | 2 n/c | 3 RS-485B | 4 n/c | 5 RS-485A | 6 DC | 7 DC return | 8 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.

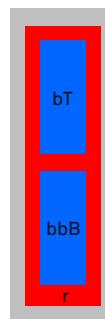
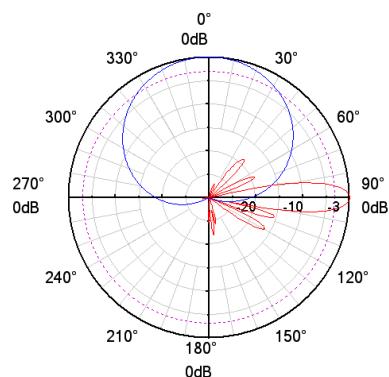
Standards: EN 60950-1 (Safety), EN 55022 (Emission), EN 55024 (Immunity), ETSI EN 301 489, FCC part15

Certification: CE, FCC, RoHS, WEEE

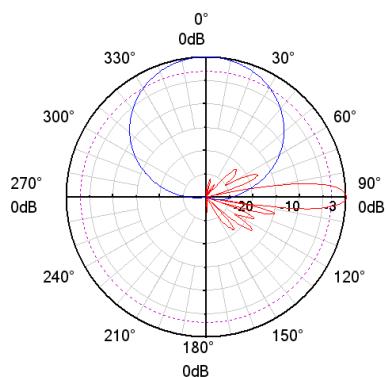
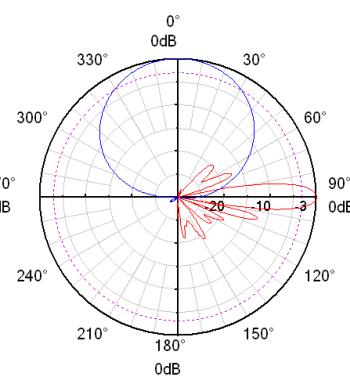
**Integrated RET S/N:**

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

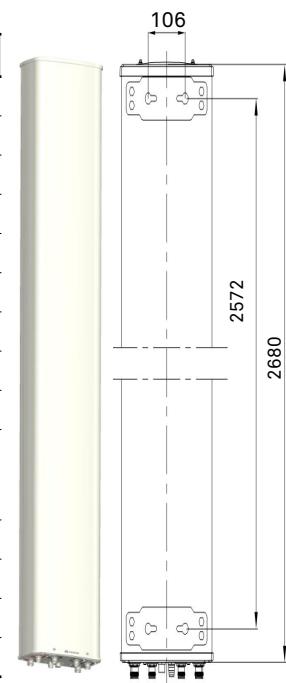
Antenna Specifications

| Electrical Properties | | | | | | | | |
|--|-------------|--|------------|-------------------|-------------------------------------|-------------------------------------|--|--|
| Frequency range (MHz) | | 790 - 960 | | 2 x (1710 - 2180) | | | | |
| | | 790 - 862 | 824 - 894 | 880 - 960 | 1710 - 1880 | 1850 - 1990 | | |
| Polarization | | +45° , -45° | | | | | | |
| Electrical downtilt (°) | | 0 - 10 , continuously adjustable, each band separately | | | | | | |
| Gain (dBi) | at mid Tilt | 16.8 | 17.1 | 17.3 | | | | |
| | | 16.7 ± 0.4 | 16.9 ± 0.4 | 17.1 ± 0.4 | | | | |
| | Bottom | at mid Tilt | | | 17.1 | 17.6 | | |
| | | over all Tilts | | | 16.9 ± 0.4 | 17.4 ± 0.4 | | |
| | Top | at mid Tilt | | | 17.1 | 17.3 | | |
| | | over all Tilts | | | 16.8 ± 0.4 | 17.1 ± 0.4 | | |
| Side lobe suppression for first side lobe above main beam (dB) | | > 19 | > 19 | > 19 | > 18 | > 16 | | |
| Horizontal 3dB beam width (°) | | 69 ± 2.0 | 66 ± 2.0 | 65 ± 3.0 | 63 ± 4.0 | 62 ± 3.0 | | |
| Vertical 3dB beam width (°) | | 8.4 ± 0.4 | 8.0 ± 0.4 | 7.5 ± 0.4 | Bottom: 7.5 ± 0.3 Top: 7.0 ± 0.3 | Bottom: 6.6 ± 0.4 Top: 6.5 ± 0.3 | | |
| 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 | | |
| Cross polar ratio (dB) | 0° | > 28 | > 28 | > 28 | > 20 | > 20 | | |
| Max. power per input (W) | | 500 (at 50°C ambient temperature) | | | 300 (at 50°C 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 (°C) | -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 |

1LnH Band
4-10 Ports

Accessories

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

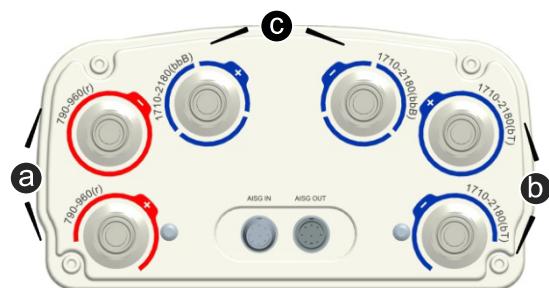
Integrated RET Specifications

| 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 DC | 2 n/c | 3 RS-485B | 4 n/c | 5 RS-485A | 6 DC | 7 DC return | 8 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.

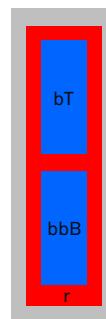
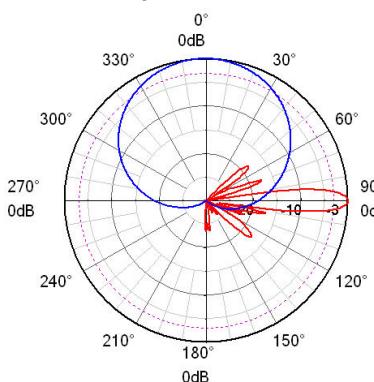
Standards: EN 60950-1 (Safety), EN 55022 (Emission), EN 55024 (Immunity), ETSI EN 301 489, FCC part15

Certification: CE, FCC, RoHS, WEEE

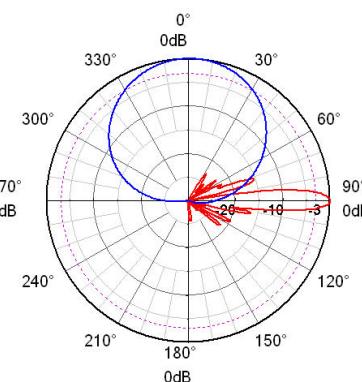
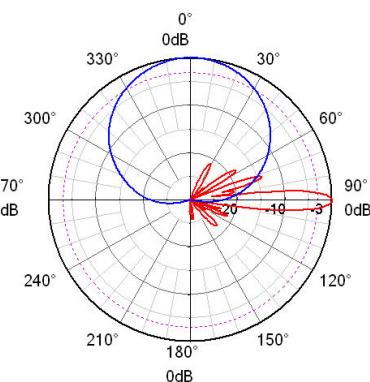
**Integrated RET S/N:**

- ⓐ HWMxxx.....r
- ⓑ HWMxxx....bT
- ⓒ 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 | | | | |
| | 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 ±0.5 | | | | |
| 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 | | | | |
| Max. power per input (W) | 500 (at 50°C ambient temperature) | | | 250 (at 50°C ambient temperature) | | | | | | | |
| Intermodulation IM3 (dBc) | ≤ -153 (2 x 43 dBm carrier) | | | | | | | | | | |
| Impedance (Ω) | 50 | | | | | | | | | | |
| Grounding | DC Ground | | | | | | | | | | |

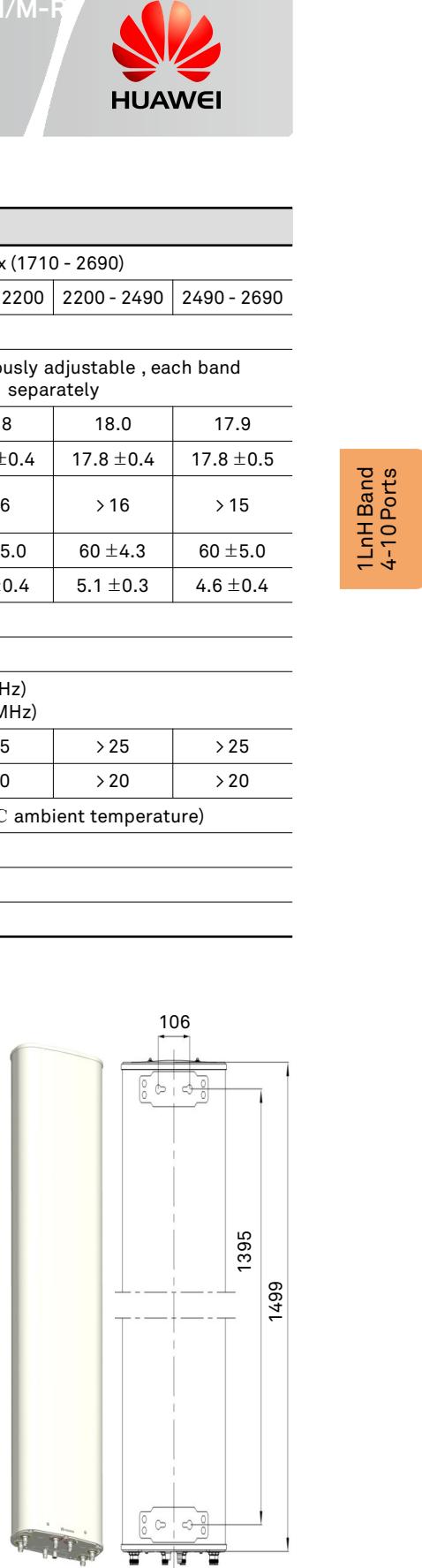
1. Values based on NGMN recommendations on Base Station Antenna Standards (BASTA).

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 (°C) | -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) |

1LnH Band
4-10 Ports

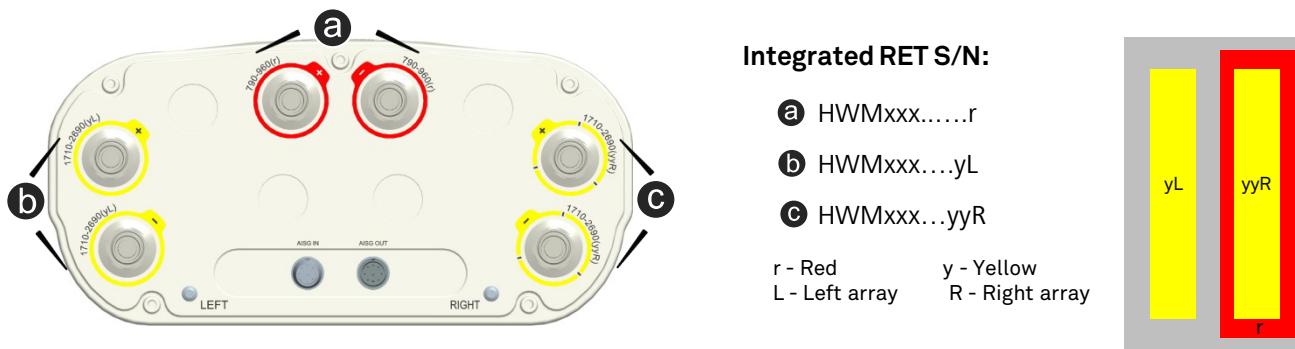
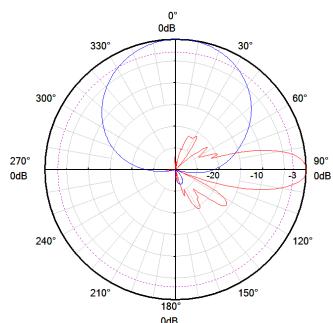
Integrated RET Specifications

| Properties | | | | | | | | |
|----------------------------------|--|----------|--------------|----------|--------------|---------|----------------|----------|
| RET type | Integrated RET | | | | | | | |
| RET protocols* | AISG 2.0 / 3GPP | | | | | | | |
| Input voltage range (V) | 10 - 30 DC | | | | | | | |
| Power consumption (W) | < 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 DC | 2 n/c | 3 RS-485B | 4 n/c | 5 RS-485A | 6 DC | 7 DC return | 8 n/c |
| Lightning protection (kA) | 3 (10/350 µs) 10 (8/20 µs) | | | | | | | |

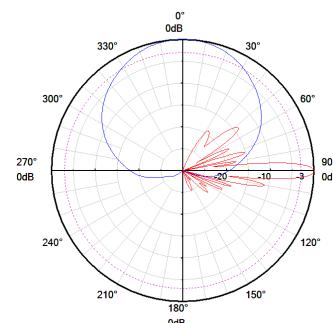
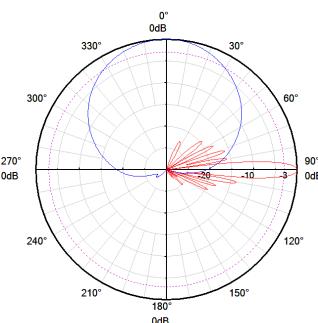
* Please confirm the AISG protocol of primary station is compatible with RET antenna protocol interface. The protocol of RET antenna software interface is switchable between AISG 2.0/3GPP and AISG 1.1 with a vendor defined command. For more details about protocol switching function, contact Huawei before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

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

Certification: CE, FCC, RoHS, WEEE

**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 | | | | |
| | 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 | | | | |
| 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°C ambient temperature) | | | 250 (at 50°C ambient temperature) | | | | | | | |
| Intermodulation IM3 (dBc) | ≤ -153 (2 x 43 dBm carrier) | | | | | | | | | | |
| Impedance (Ω) | 50 | | | | | | | | | | |
| Grounding | DC Ground | | | | | | | | | | |

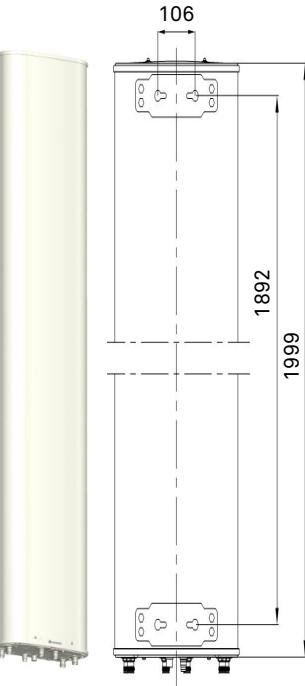
1. Values based on NGMN recommendations on Base Station Antenna Standards (BASTA).

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 (°C) | -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) |

1LnH Band
4-10 Ports

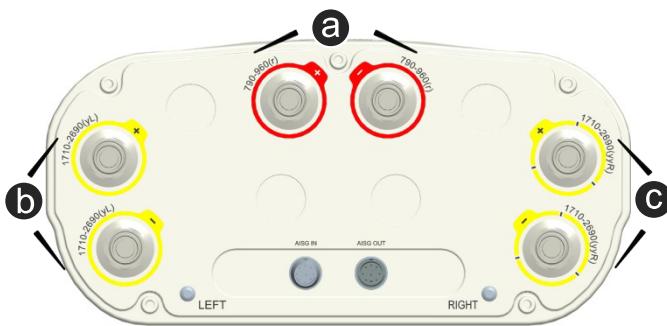
Integrated RET Specifications

| Properties | | | | | | | | |
|----------------------------------|--|----------|--------------|----------|--------------|---------|----------------|----------|
| RET type | Integrated RET | | | | | | | |
| RET protocols* | AISG 2.0 / 3GPP | | | | | | | |
| Input voltage range (V) | 10 - 30 DC | | | | | | | |
| Power consumption (W) | < 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 DC | 2 n/c | 3 RS-485B | 4 n/c | 5 RS-485A | 6 DC | 7 DC return | 8 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

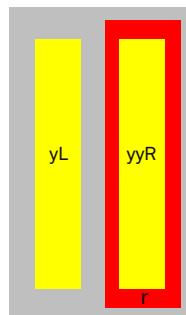
Certification: CE, FCC, RoHS, WEEE



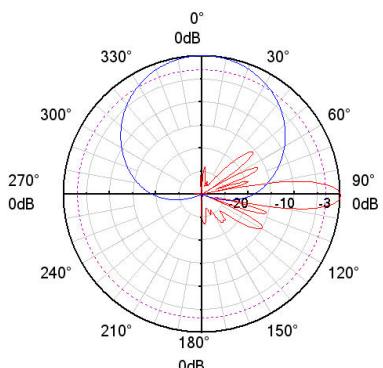
Integrated RET S/N:

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

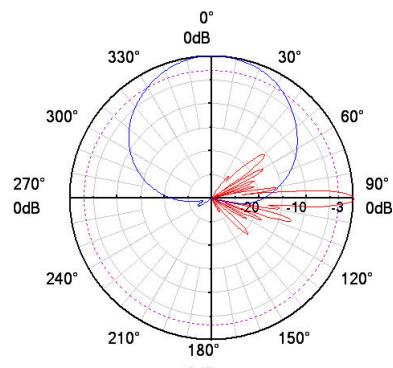
r - Red
L - Left array y - Yellow
R - Right array



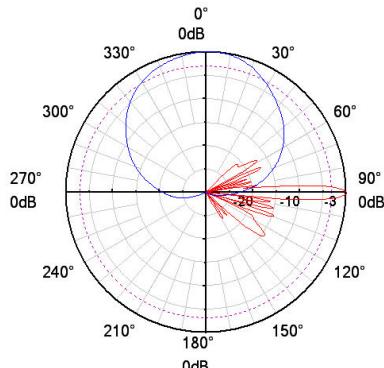
Pattern sample for reference



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 | | | | |
| | 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 | | | | |
| 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°C ambient temperature) | | | 250 (at 50°C ambient temperature) | | | | | | | |
| Intermodulation IM3 (dBc) | ≤ -153 (2 x 43 dBm carrier) | | | | | | | | | | |
| Impedance (Ω) | 50 | | | | | | | | | | |
| Grounding | DC Ground | | | | | | | | | | |

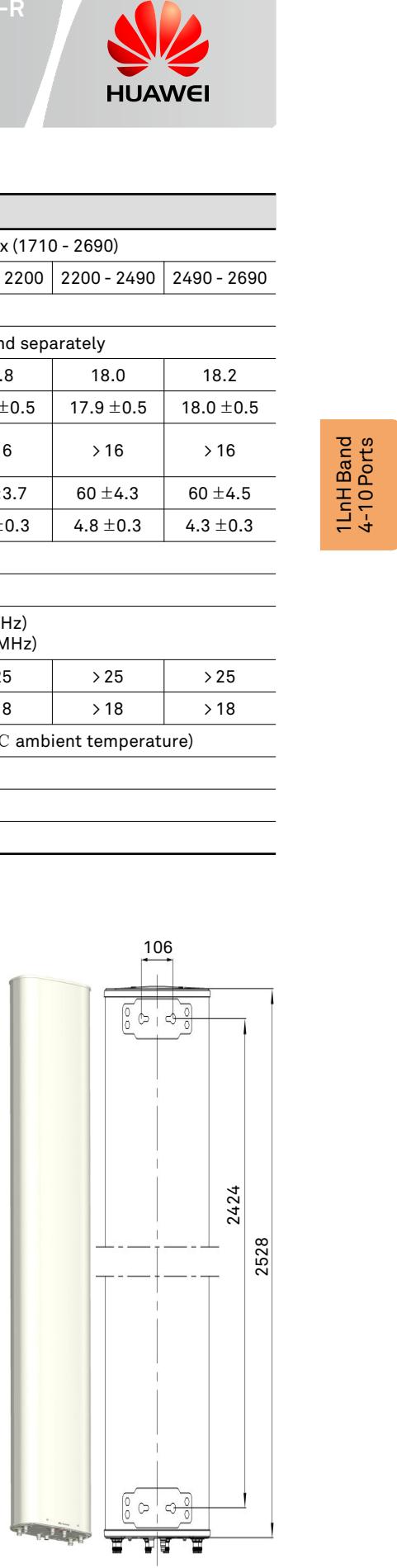
1. Values based on NGMN recommendations on Base Station Antenna Standards (BASTA).

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 (°C) | -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) |



1LnH Band
4-10 Ports

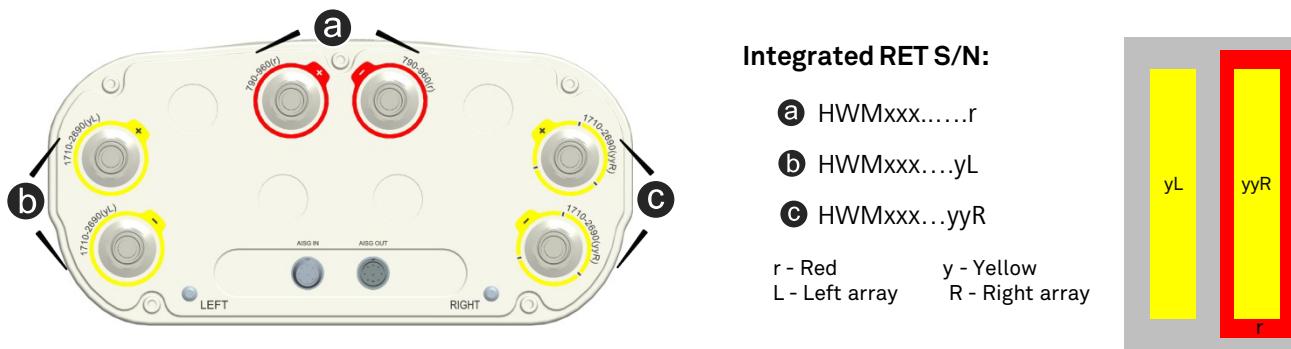
Integrated RET Specifications

| Properties | | | | | | | | |
|----------------------------------|--|----------|--------------|----------|--------------|---------|----------------|----------|
| RET type | Integrated RET | | | | | | | |
| RET protocols* | AISG 2.0 / 3GPP | | | | | | | |
| Input voltage range (V) | 10 - 30 DC | | | | | | | |
| Power consumption (W) | < 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 DC | 2 n/c | 3 RS-485B | 4 n/c | 5 RS-485A | 6 DC | 7 DC return | 8 n/c |
| Lightning protection (kA) | 3 (10/350 µs) 10 (8/20 µs) | | | | | | | |

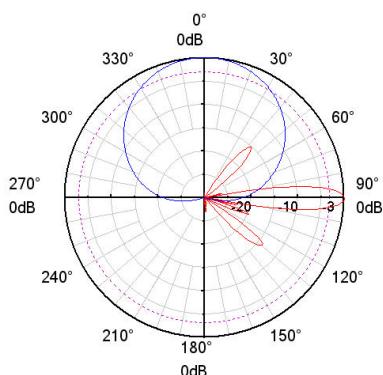
* Please confirm the AISG protocol of primary station is compatible with RET antenna protocol interface. The protocol of RET antenna software interface is switchable between AISG 2.0/3GPP and AISG 1.1 with a vendor defined command. For more details about protocol switching function, contact Huawei before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

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

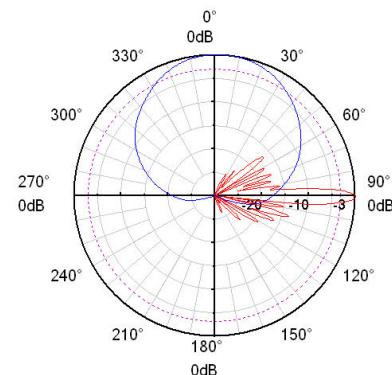
Certification: CE, FCC, RoHS, WEEE



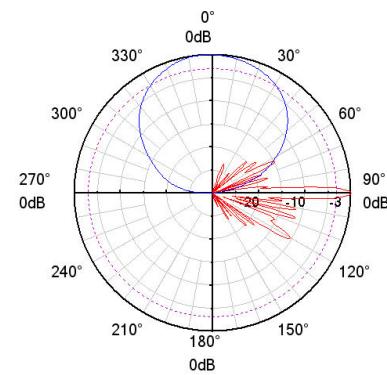
Pattern sample for reference



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 | | $+45^\circ, -45^\circ$ | | | |
| Electrical downtilt ($^\circ$) | | 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 ($^\circ$) | | 66 ± 1.1 | 67 ± 0.8 | 65 ± 1.4 | 65 ± 1.2 |
| Vertical 3dB beam width ($^\circ$) | | 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, $\pm 30^\circ$ (dB) | | > 25 | > 26 | > 26 | > 25 |
| Cross polar ratio (dB) | 0° | > 21 | > 16 | > 16 | > 16 |
| Max. power per input (W) | | 300 (at 50°C 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 (yyR) | | | | 1710 - 2690 (yyC) | | | |
| | | 1710 - 1990 | 1920 - 2200 | 2200 - 2490 | 2490 - 2690 | 1710 - 1990 | 1920 - 2200 | 2200 - 2490 | 2490 - 2690 |
| Polarization | | $+45^\circ, -45^\circ$ | | | | $+45^\circ, -45^\circ$ | | | |
| Electrical downtilt ($^\circ$) | | 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 ($^\circ$) | | 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 ($^\circ$) | | 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, $\pm 30^\circ$ (dB) | | > 25 | > 25 | > 25 | > 25 | > 25 | > 25 | > 25 | |
| Cross polar ratio (dB) | 0° | > 16 | > 16 | > 16 | > 16 | > 16 | > 16 | > 16 | |
| Max. power per input (W) | | 250 (at 50°C ambient temperature) | | | | | | | |
| Intermodulation IM3 (dBc) | | ≤ -153 (2 x 43 dBm carrier) | | | | | | | |
| Impedance (Ω) | | 50 | | | | | | | |
| Grounding | | DC Ground | | | | | | | |

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

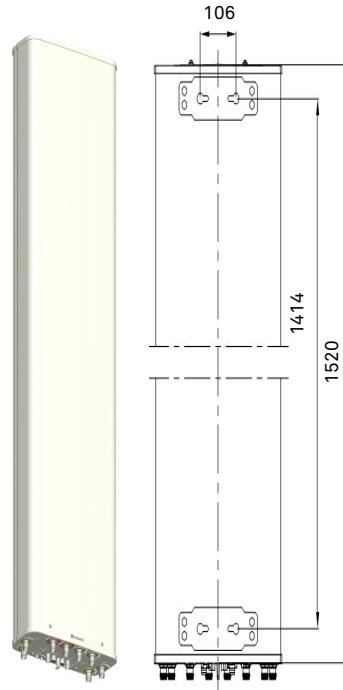
1. Values based on NGMN recommendations on Base Station Antenna Standards (BASTA).

2. Electrical datasheet in XML format is available.

1LnH Band
4-10 Ports



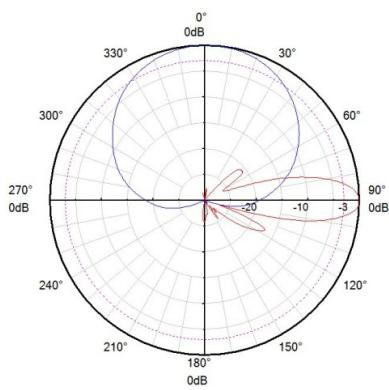
| Mechanical Properties | |
|-------------------------------------|--|
| Antenna dimensions (H x W x D) (mm) | 1520 x 369 x 149 |
| Packing dimensions (H x W x D) (mm) | 1850 x 450 x 230 |
| Antenna net weight (kg) | 26.2 |
| Clamps weight (kg) | 3.6 (2 units) |
| Antenna packing weight (kg) | 36.4 (Included clamps) |
| Mast diameter supported (mm) | 50 - 115 |
| Radome material | Fiberglass |
| Radome colour | Light grey |
| Operational temperature (°C) | -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 |



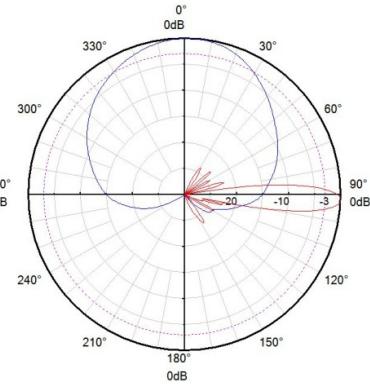
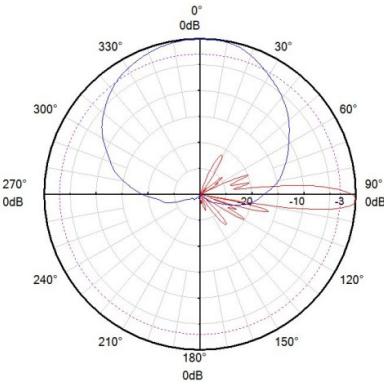
Accessories

| 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

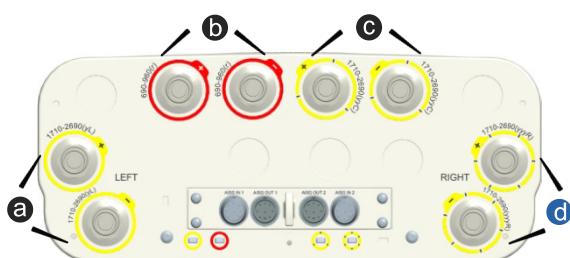
| Properties | | | | | | | | |
|----------------------------------|--|----------|--------------|----------|--------------|---------|----------------|----------|
| RET type | Integrated RET | | | | | | | |
| RET protocols* | AISG 2.0 / 3GPP | | | | | | | |
| Input voltage range (V) | 10 - 30 DC | | | | | | | |
| 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 DC | 2 n/c | 3 RS-485B | 4 n/c | 5 RS-485A | 6 DC | 7 DC return | 8 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.....yyC

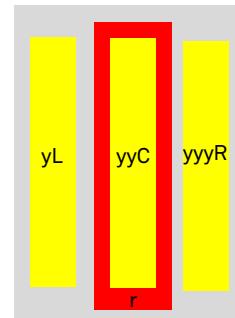
d HWMxxx.....yyyR

r - Red y - Yellow

L - Left array

C - Center array

R - Right 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°C 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 | |
| Cross polar ratio (dB) | 0° | > 15 | > 15 | > 15 | > 15 | > 15 | > 15 | > 15 | |
| Max. power per input (W) | | 250 (at 50°C ambient temperature) | | | | | | | |
| Intermodulation IM3 (dBc) | | ≤ -153 (2 x 43 dBm carrier) | | | | | | | |
| Impedance (Ω) | | 50 | | | | | | | |
| Grounding | | DC Ground | | | | | | | |

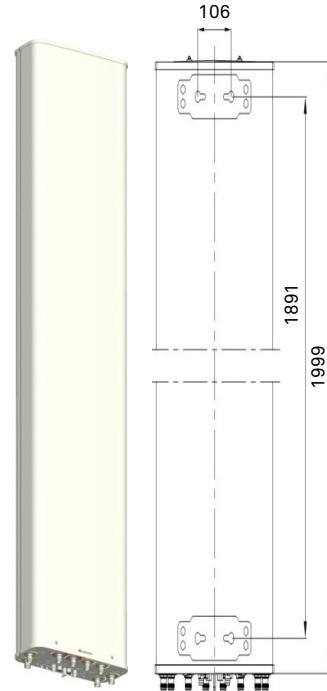
* Total power : 700 W (at 50°C ambient temperature)

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 (°C) | -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 |

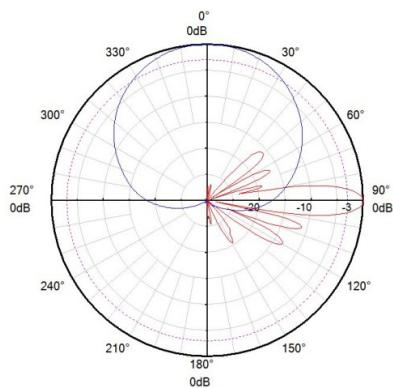


1LnH Band
4-10 Ports

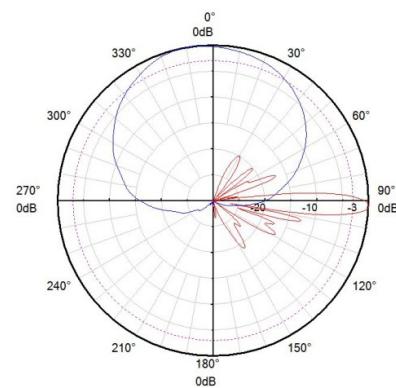
Accessories

| Item | Model | Description | Weight | Units per antenna |
|--------------|-----------|-------------------------------|--------|----------------------|
| Downtilt kit | ASMDTDD01 | Mechanical downtilt: 0 - 12 ° | 2.1 kg | 1 (Separate packing) |

Pattern sample for reference

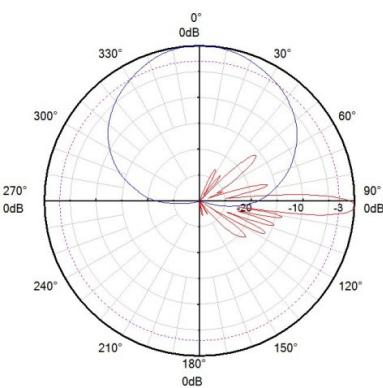


690 - 960 MHz



1710 - 2690 MHz

(Left & Right)



1710 - 2690 MHz

(Center)

Integrated RET Specifications

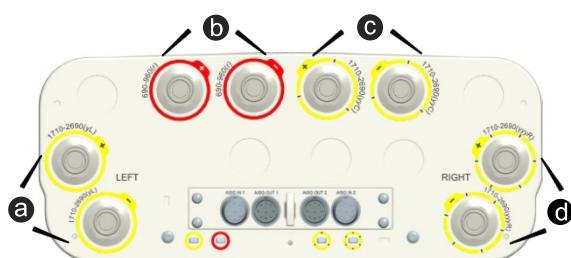
| Properties | | | | | | | | |
|----------------------------------|--|----------|--------------|----------|--------------|---------|----------------|----------|
| RET type | Integrated RET | | | | | | | |
| RET protocols* | AISG 2.0 / 3GPP | | | | | | | |
| Input voltage range (V) | 10 - 30 DC | | | | | | | |
| 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 DC | 2 n/c | 3 RS-485B | 4 n/c | 5 RS-485A | 6 DC | 7 DC return | 8 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.....yyC

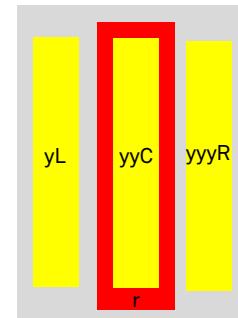
d HWMxxx.....yyR

r - Red y - Yellow

L - Left array

C - Center array

R - Right 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 | | | | |
| Polarization | | | +45°, -45° | | | | | | | | | |
| Electrical downtilt (°) | | | 0 - 10 , continuously adjustable , each band separately | | | | | | | | | |
| Gain (dBi) | Bottom | 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 | | | | | | |
| | Top | at mid Tilt | | | | 17.1 | 17.3 | 17.1 | | | | |
| | | over all Tilts | | | | 16.9 ± 0.5 | 17.1 ± 0.3 | 17.0 ± 0.4 | | | | |
| | Top | at mid Tilt | | | | 16.8 | 17.1 | 16.8 | | | | |
| | | over all Tilts | | | | 16.7 ± 0.5 | 17.0 ± 0.4 | 17.1 ± 0.5 | | | | |
| Side lobe suppression for first side lobe above main beam (dB) | | | > 17 | > 18 | > 17 | > 17 | > 17 | > 17 | | | | |
| Horizontal 3dB beam width (°) | | | 67 ± 1.9 | 66 ± 3.5 | 65 ± 2.4 | 62 ± 3.3 | 63 ± 3.4 | 62 ± 2.8 | | | | |
| 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 | | | | |
| VSWR | | | < 1.5 | | | | | | | | | |
| Cross polar isolation (dB) | | | ≥ 28 | | | | | | | | | |
| Interband isolation (dB) | | | ≥ 30 | | | | | | | | | |
| Front to back ratio, ±30° (dB) | | | > 25 | > 25 | > 25 | > 25 | > 24 | > 24 | | | | |
| Cross polar ratio (dB) | | | 0° | > 20 | > 20 | > 20 | > 17 | > 17 | | | | |
| Max. power per input (W) | | | 500 (at 50°C ambient temperature) | | | 250 (at 50°C ambient temperature) | | | | | | |
| Total power (W) | | | 960 (at 50°C 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).

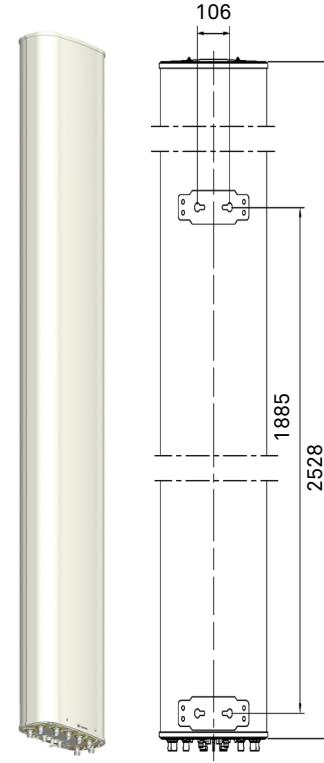
2. Electrical datasheet in XML format is available.

| 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 (°C) | -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) |

1LnH Band
4-10 Ports



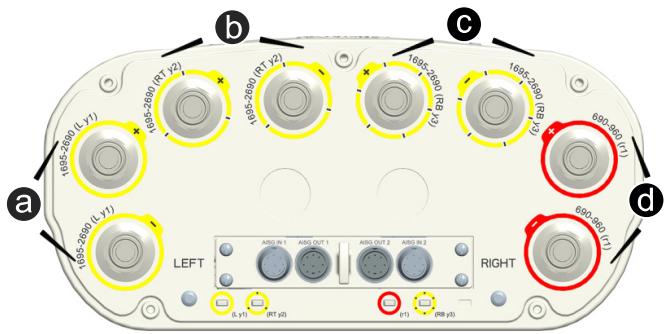
Integrated RET Specifications

| 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 DC | 2 n/c | 3 RS-485B | 4 n/c | 5 RS-485A | 6 DC | 7 DC return |
| 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

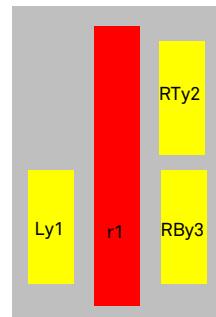
Certification: CE, FCC, RoHS, WEEE



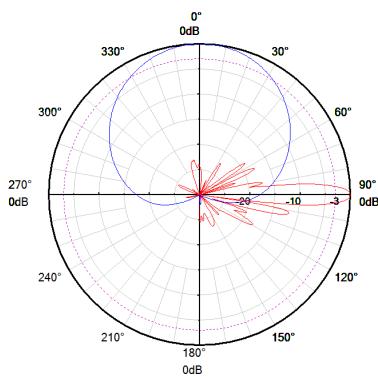
Integrated RET S/N:

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

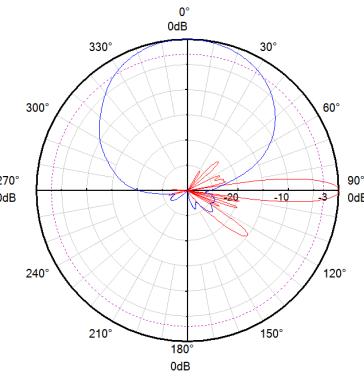
r - Red y - Yellow
L - Left array R - Right array
T - Top array B - Bottom array



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) | | |

1LnH Band
4-10 Ports**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°C ambient temperature)* | | | | | 250 (at 50°C ambient temperature)* | |
| Intermodulation IM3 (dBc) | | ≤ -153 (2 x 43 dBm carrier) | | | | | ≤ -153 (2 x 43 dBm carrier) | |
| Impedance (Ω) | | 50 | | | | | | |
| Grounding | | DC Ground | | | | | | |

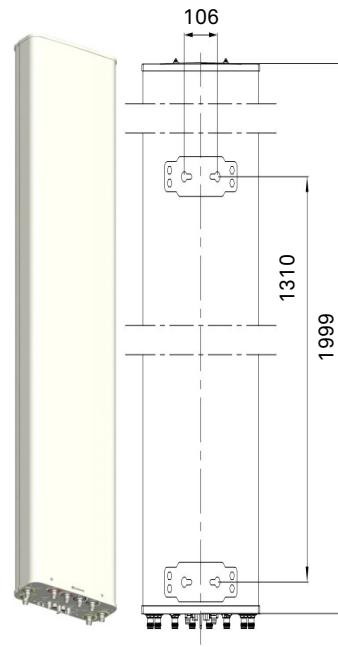
| Electrical Properties | | | | |
|--|----------------|---|-------------|-------------|
| Frequency range (MHz) | | 2 x (1695 - 2690) | | |
| | | 1695 - 1990 | 1920 - 2200 | 2200 - 2490 |
| Polarization | | +45° , -45° | | |
| Electrical downtilt (°) | | 2 - 12 , continuously adjustable , each band separately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

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

1. Values based on NGMN recommendations on Base Station Antenna Standards (BASTA).

2. Electrical datasheet in XML format is available.

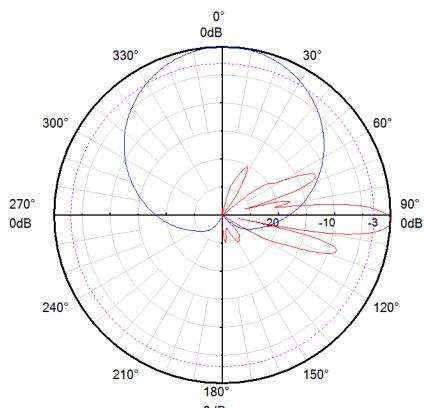
| Mechanical Properties | |
|-------------------------------------|--|
| Antenna dimensions (H x W x D) (mm) | 1999 x 369 x 149 |
| Packing dimensions (H x W x D) (mm) | 2265 x 435 x 240 |
| Antenna weight (kg) | 27.7 |
| Clamps weight (kg) | 3.6 (2 units) |
| Antenna packing weight (kg) | 40.5 (Included clamps) |
| Mast diameter supported (mm) | 50 - 115 |
| Radome material | Fiberglass |
| Radome colour | Light grey |
| Operational temperature (°C) | -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
4-10 Ports

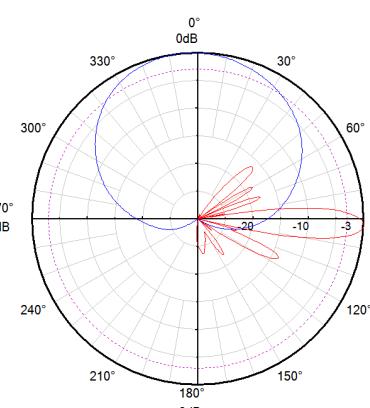
Accessories

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

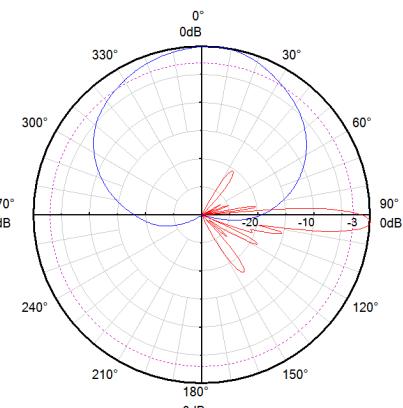
Pattern sample for reference



690 - 960 MHz



1427 - 2200 MHz



1695 - 2690 MHz

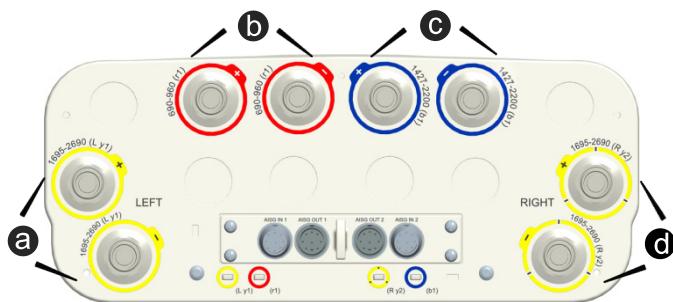
Integrated RET Specifications

| 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 DC | 2 n/c | 3 RS-485B | 4 n/c | 5 RS-485A | 6 DC | 7 DC return |
| 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.

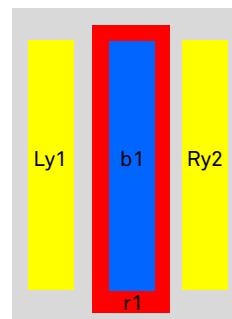
Standards: EN 60950-1 (Safety), EN 55022 (Emission), EN 55024 (Immunity), ETSI EN 301 489, FCC part15

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°C 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 | |
| Cross polar ratio (dB) | 0° | > 20 | > 20 | > 20 | > 20 | > 20 | > 20 | |
| Max. power per input (W) | | 250 (at 50°C ambient temperature) * | | | | | | |
| Intermodulation IM3 (dBc) | | ≤ -153 (2 x 43 dBm carrier) | | | | | | |
| Impedance (Ω) | | 50 | | | | | | |
| Grounding | | DC Ground | | | | | | |

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

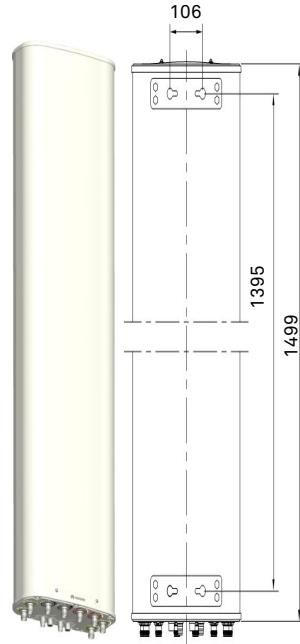
1. Values based on NGMN recommendations on Base Station Antenna Standards (BASTA).

2. Electrical datasheet in XML format is available.

1LnH Band
4-10 Ports



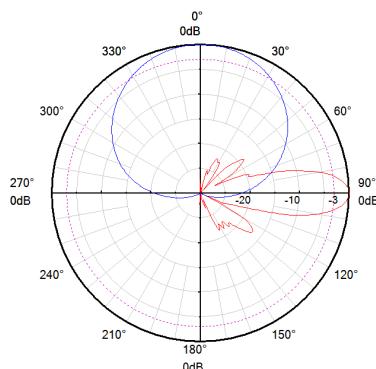
| Mechanical Properties | |
|-------------------------------------|--|
| Antenna dimensions (H x W x D) (mm) | 1499 x 349 x 166 |
| Packing dimensions (H x W x D) (mm) | 1825 x 410 x 235 |
| Antenna weight (kg) | 22.6 |
| Clamps weight (kg) | 3.0 (2 units) |
| Antenna packing weight (kg) | 31.7 (Included clamps) |
| Mast diameter supported (mm) | 50 - 115 |
| Radome material | Fiberglass |
| Radome colour | Light grey |
| Operational temperature (°C) | -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 |



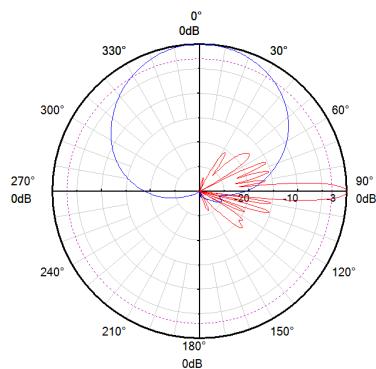
Accessories

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

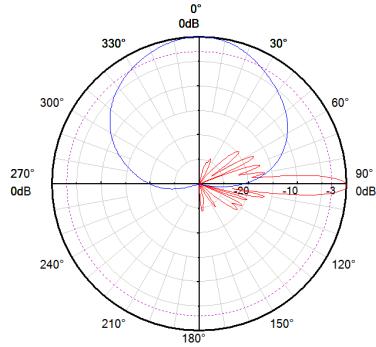
Pattern sample for reference



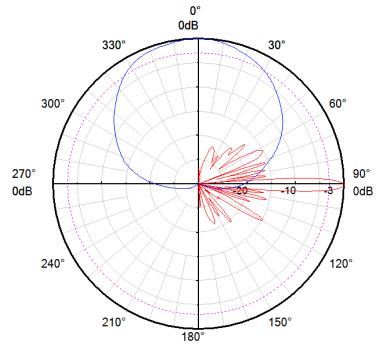
790 - 960 MHz



1710 - 2690 MHz



1710 - 2170 MHz



2490 - 2690 MHz

Integrated RET Specifications

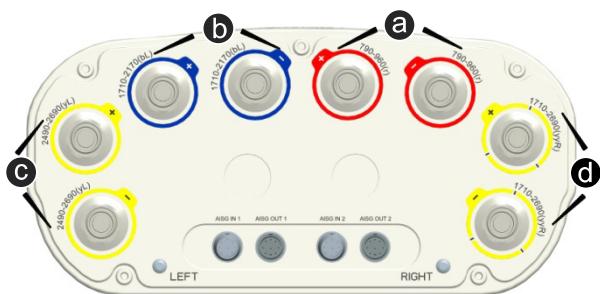
| Properties | | | | | | | | |
|----------------------------------|--|----------|--------------|----------|--------------|---------|----------------|----------|
| RET type | Integrated RET | | | | | | | |
| RET protocols* | AISG 2.0 / 3GPP | | | | | | | |
| Input voltage range (V) | 10 - 30 DC | | | | | | | |
| 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 DC | 2 n/c | 3 RS-485B | 4 n/c | 5 RS-485A | 6 DC | 7 DC return | 8 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

1LnH Band
4-10 Ports



Integrated RET S/N:

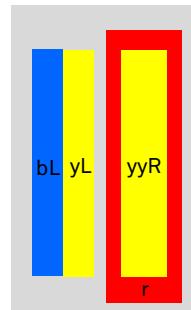
a HWMxxx.....r

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 | | |
| | at mid Tilt | 15.9 | 16.1 |
| Gain (dBi) | 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 |
| Horizontal 3dB beam width (°) | | 65 ±1.5 | 64 ±2.0 |
| Vertical 3dB beam width (°) | | 10.1 ±0.4 | 9.8 ±0.5 |
| VSWR | | < 1.5 | |
| Cross polar isolation (dB) | | ≥ 28 | |
| Interband isolation (dB) | | ≥ 30 | |
| Front to back ratio , ±30° (dB) | | > 25 | > 25 |
| Cross polar ratio (dB) | 0° | > 18 | > 18 |
| Max. power per input (W) | | 500 (at 50°C 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 | | | | | |
| | | at mid Tilt | 17.3 | 17.8 | 18.0 | 18.2 | 17.2 |
| Gain (dBi) | 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 |
| Horizontal 3dB beam width (°) | | 65 ±2.5 | 62 ±4.3 | 60 ±4.4 | 60 ±5.0 | 65 ±3.8 | 62 ±4.0 |
| 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 |
| VSWR | | < 1.5 | | | | | |
| Cross polar isolation (dB) | | ≥ 28 | | | | | |
| Interband isolation (dB) | | ≥ 30 | | | | | |
| 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) | | 250 (at 50°C ambient temperature) * | | | | | |
| Intermodulation IM3 (dBc) | | ≤ -153 (2 x 43 dBm carrier) | | | | | |
| Impedance (Ω) | | 50 | | | | | |
| Grounding | | DC Ground | | | | | |

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

1. Values based on NGMN recommendations on Base Station Antenna Standards (BASTA).

2. Electrical datasheet in XML format is available.

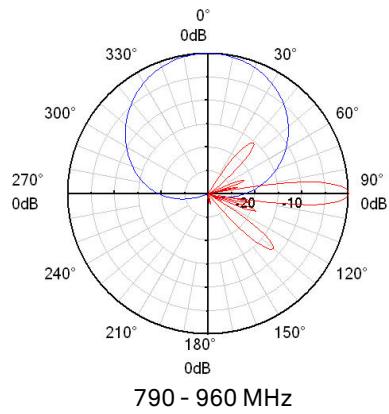


| Mechanical Properties | |
|-------------------------------------|--|
| Antenna dimensions (H x W x D) (mm) | 1999 x 349 x 166 |
| Packing dimensions (H x W x D) (mm) | 2350 x 415 x 240 |
| Antenna weight (kg) | 27.4 |
| Clamps weight (kg) | 3.6 (2 units) |
| Antenna packing weight (kg) | 39.7 (Included clamps) |
| Mast diameter supported (mm) | 50 - 115 |
| Radome material | Fiberglass |
| Radome colour | Light grey |
| Operational temperature (°C) | -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 |

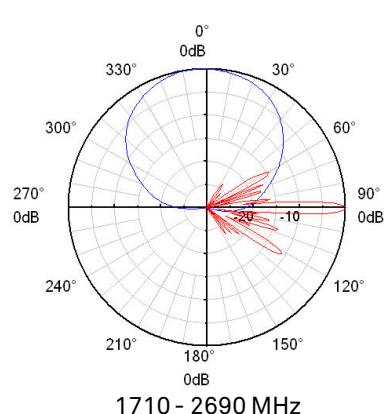
Accessories

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

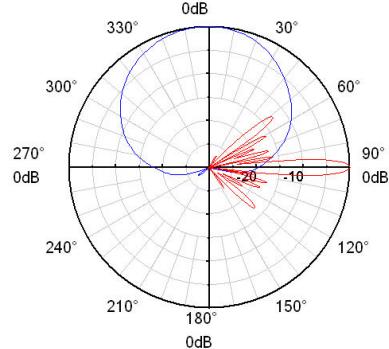
Pattern sample for reference



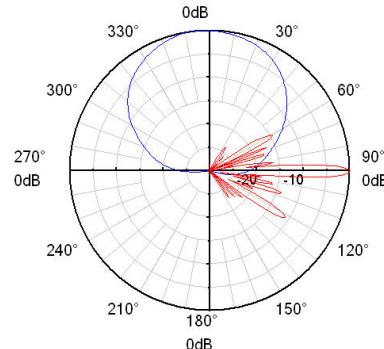
790 - 960 MHz



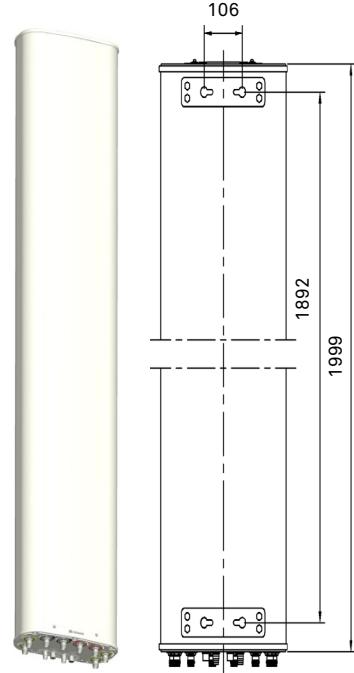
1710 - 2690 MHz



1710 - 2170 MHz



2490 - 2690 MHz



1LnH Band
4-10 Ports

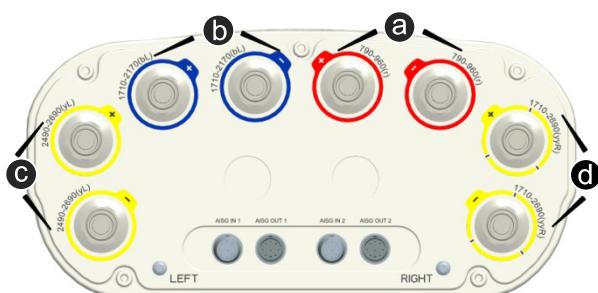
Integrated RET Specifications

| Properties | | | | | | | | |
|----------------------------------|--|----------|--------------|----------|--------------|---------|----------------|----------|
| RET type | Integrated RET | | | | | | | |
| RET protocols* | AISG 2.0 / 3GPP | | | | | | | |
| Input voltage range (V) | 10 - 30 DC | | | | | | | |
| Power consumption (W) | < 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 DC | 2 n/c | 3 RS-485B | 4 n/c | 5 RS-485A | 6 DC | 7 DC return | 8 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.

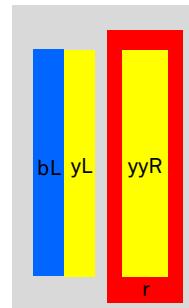
Standards: EN 60950-1 (Safety), EN 55022 (Emission), EN 55024 (Immunity), ETSI EN 301 489, FCC part15

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 | | $+45^\circ, -45^\circ$ | | | | | | |
| 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, $\pm 30^\circ$ (dB) | | > 28 | > 28 | > 28 | | | | |
| Cross polar ratio (dB) | 0° | > 18 | > 18 | > 18 | | | | |
| Max. power per input (W) | | 500 (at 50°C ambient temperature) * | | | | | | |
| Intermodulation IM3 (dBc) | | ≤ -153 (2 x 43 dBm carrier) | | | | | | |
| Impedance (Ω) | | 50 | | | | | | |
| Grounding | | DC Ground | | | | | | |

1LnH Band
4-10 Ports

| 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 | | $+45^\circ, -45^\circ$ | | | | | | |
| 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, $\pm 30^\circ$ (dB) | | > 28 | > 28 | > 28 | > 28 | > 28 | > 28 | |
| Cross polar ratio (dB) | 0° | > 18 | > 18 | > 18 | > 18 | > 18 | > 18 | |
| Max. power per input (W) | | 250 (at 50°C ambient temperature) * | | | | | | |
| Intermodulation IM3 (dBc) | | ≤ -153 (2 x 43 dBm carrier) | | | | | | |
| Impedance (Ω) | | 50 | | | | | | |
| Grounding | | DC Ground | | | | | | |

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

1. Values based on NGMN recommendations on Base Station Antenna Standards (BASTA).

2. Electrical datasheet in XML format is available.

DXXX-790-960/1710-2690/1710-2170/2490-2690-65/65/65/65-

17i/18i/18i/18i-M/M/M/M-R

EasyRET 8-Port Antenna with 4 Integrated RCUs - 2.6m

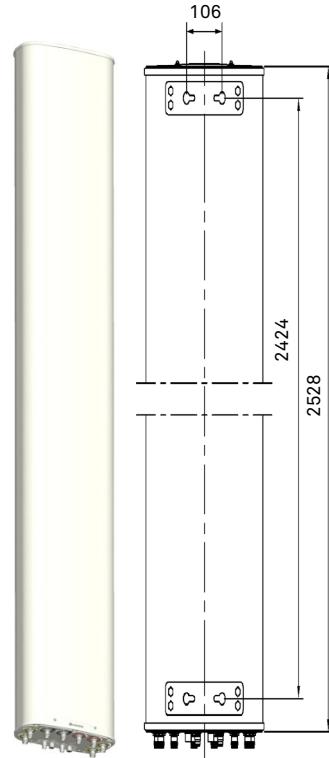
Model: AQU4518R1v06



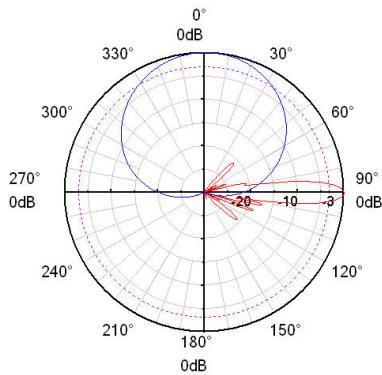
| Mechanical Properties | |
|-------------------------------------|--|
| Antenna dimensions (H x W x D) (mm) | 2528 x 349 x 166 |
| Packing dimensions (H x W x D) (mm) | 2885 x 420 x 240 |
| Antenna weight (kg) | 31.4 |
| Clamps weight (kg) | 3.6 (2 units) |
| Antenna packing weight (kg) | 46.6 (Included clamps) |
| Mast diameter supported (mm) | 50 - 115 |
| Radome material | Fiberglass |
| Radome colour | Light grey |
| Operational temperature (°C) | -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

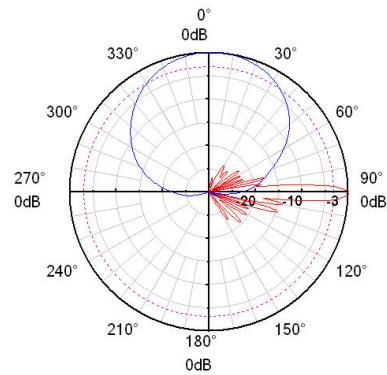
| Item | Model | Description | Weight | Units per antenna |
|--------------|-----------|---------------------------------|--------|----------------------|
| Downtilt kit | ASMDT0D01 | Mechanical downtilt: 0 - 8 ° | 2.1 kg | 1 (Separate packing) |



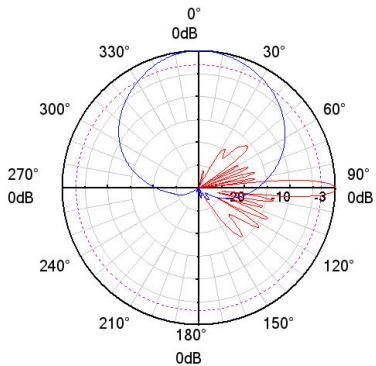
Pattern sample for reference



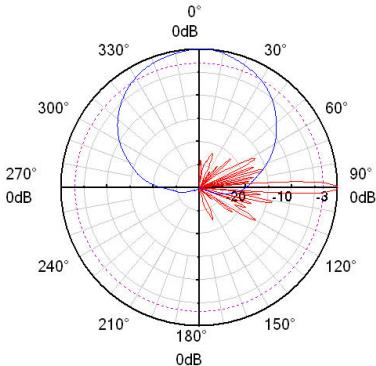
790 - 960 MHz



1710 - 2690 MHz



1710 - 2170 MHz



2490 - 2690 MHz



Integrated RET Specifications

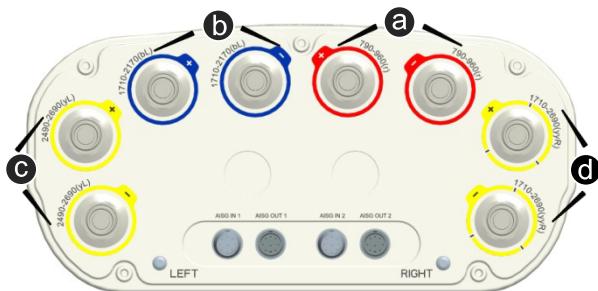
| Properties | | | | | | | | |
|----------------------------------|--|----------|--------------|----------|--------------|---------|----------------|----------|
| RET type | Integrated RET | | | | | | | |
| RET protocols* | AISG 2.0 / 3GPP | | | | | | | |
| Input voltage range (V) | 10 - 30 DC | | | | | | | |
| 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 DC | 2 n/c | 3 RS-485B | 4 n/c | 5 RS-485A | 6 DC | 7 DC return | 8 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

1LnH Band
4-10 Ports



Integrated RET S/N:

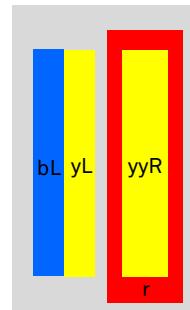
a HWMxxx.....r

b HWMxxx....bL

c HWMxxx....yL

d HWMxxx...yyR

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



DXXXXX-690-960/1695-2200/1695-2200/2490-2690/2490-2690-

65/65/65/65-16i/17.5i/17.5i/18i/18i-M/M/M/M/M-R

EasyRET 10-Port Antenna with 5 Integrated RCUs - 2.0m

Model: APE4518R19v06



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 | | | | |
| 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 | | | |
| | 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 | | | |
| Side lobe suppression for first side lobe above main beam (dB) | | > 17 | > 17 | > 17 | > 17 | > 17 | > 16 | | | |
| Horizontal 3dB beam width (°) | | 67 ± 2 | 67 ± 3 | 66 ± 3 | 64 ± 4 | 63 ± 4 | 61 ± 4 | | | |
| 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 | | | |
| VSWR | | < 1.5 | | | | | | | | |
| Cross polar isolation (dB) | | ≥ 28 | | | | | | | | |
| Interband isolation (dB) | | ≥ 30 | | | | | | | | |
| Front to back ratio , ±30° (dB) | | > 23 | > 24 | > 24 | > 24 | > 25 | > 26 | | | |
| Cross polar ratio (dB) | 0° | > 18 | > 18 | > 18 | > 17 | > 18 | > 18 | | | |
| Max. power per input (W) | | 500 (at 50°C ambient temperature) | | | 250 (at 50°C ambient temperature) | | | | | |
| Total power (W) | | 1000 (at 50°C ambient temperature) | | | | | | | | |
| Intermodulation IM3 (dBc) | | ≤ -153 (2 x 43 dBm carrier) | | | | | | | | |
| Impedance (Ω) | | 50 | | | | | | | | |
| Grounding | | DC Ground | | | | | | | | |

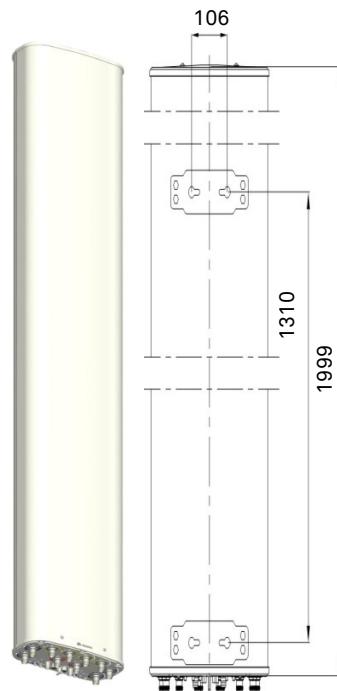
1. Values based on NGMN recommendations on Base Station Antenna Standards (BASTA).

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 (°C) | -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

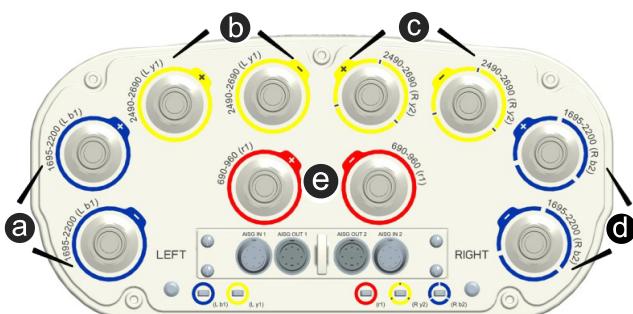
| Properties | | | | | | | |
|----------------------------------|--|----------|--------------|----------|--------------|---------|----------------|
| RET type | Integrated RET | | | | | | |
| RET protocols* | AISG 2.0 / 3GPP | | | | | | |
| Input voltage range (V) | 10 - 30 DC | | | | | | |
| Power consumption (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 DC | 2 n/c | 3 RS-485B | 4 n/c | 5 RS-485A | 6 DC | 7 DC return |
| 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

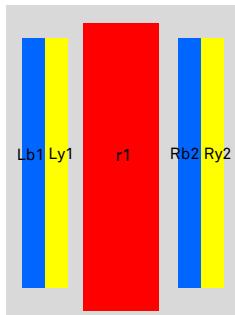
Certification: CE, FCC, RoHS, WEEE

1LnH Band
4-10 Ports



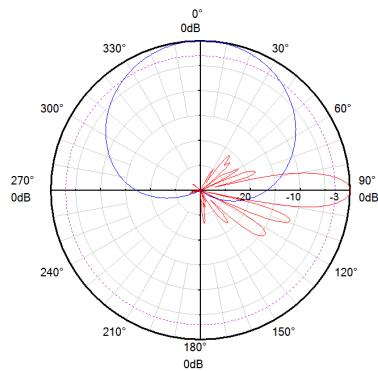
Integrated RET S/N:

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

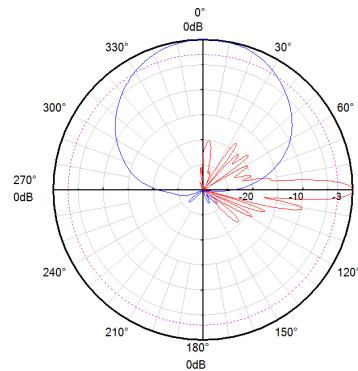


r - Red y - Yellow b - Blue
L - Left array R - Right array

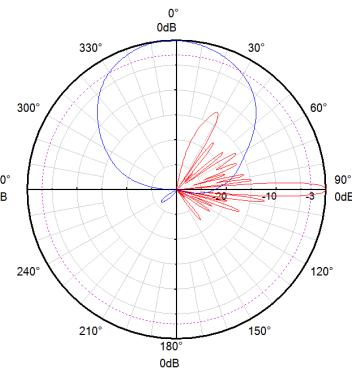
Pattern sample for reference



690 - 960 MHz



1695 - 2200 MHz



2490 - 2690 MHz

DXXXXX-690-960/1695-2690/1695-2690/1695-2690-

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) | Bottom | 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 | | | | | | |
| | Top | 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 | | |
| | | 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 (°) | Bottom | 10.3 ± 0.7 | 9.3 ± 0.5 | 9.1 ± 0.6 | 8.4 ± 0.6 | | | | | | | |
| | | | | | | | 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 | > 18 | > 20 | | |
| Max. power per input (W) | | | 500 (at 50°C ambient temperature) | | | | 250 (at 50°C ambient temperature) | | | | | |
| Total power (W) | | | 1000 (at 50°C 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).

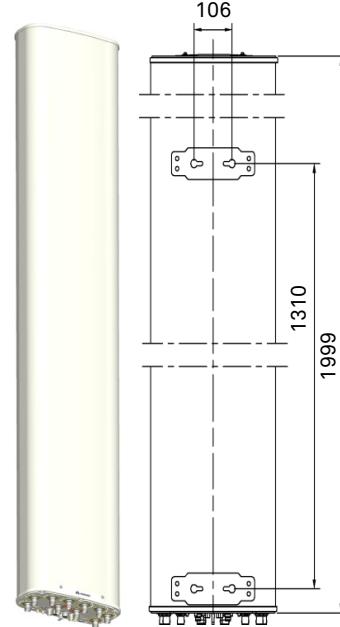
2. Electrical datasheet in XML format is available.

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 (°C) | -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) |



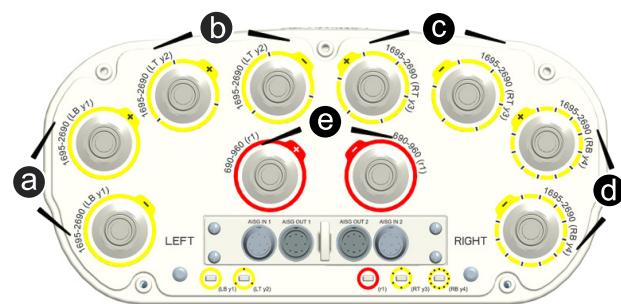
Integrated RET Specifications

| 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 DC | 2 n/c | 3 RS-485B | 4 n/c | 5 RS-485A | 6 DC | 7 DC return |
| 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:

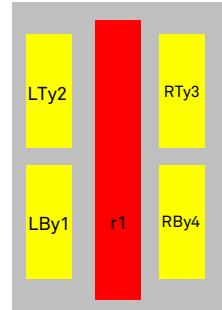
a HWMxxx.....LBy1

b HWMxxx.....LTy2

c HWMxxx.....RTy3

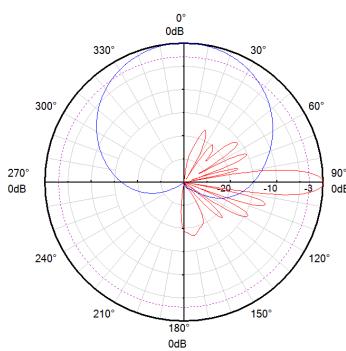
d HWMxxx.....RBy4

e HWMxxx.....r1

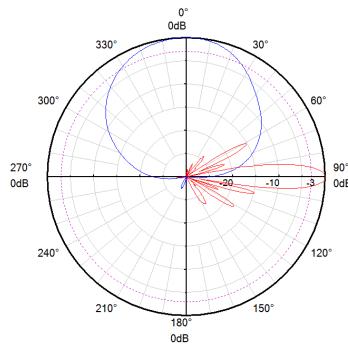


r - Red y - Yellow
L - Left array R - Right array
T - Top array B - Bottom array

Pattern sample for reference



690 - 960 MHz



1695 - 2690 MHz

1LnH Band
4-10 Ports

DXXXXX-690-960/1695-2690/1695-2690/1695-2690-

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 | | | | | |
| Polarization | | | +45°, -45° | | | | | | | | | | | |
| Electrical downtilt (°) | | | 0 - 10 , continuously adjustable , each band separately | | | | | | | | | | | |
| Gain (dBi) | Bottom | 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 | | | | | | | | |
| | Top | 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°C ambient temperature) | | | | 250 (at 50°C ambient temperature) | | | | | | | |
| Total power (W) | | | 1000 (at 50°C ambient temperature) | | | | | | | | | | | |
| Intermodulation IM3 (dBc) | | | ≤ -153 (2 x 43 dBm carrier) | | | | | | | | | | | |
| Impedance (Ω) | | | 50 | | | | | | | | | | | |
| Grounding | | | DC Ground | | | | | | | | | | | |

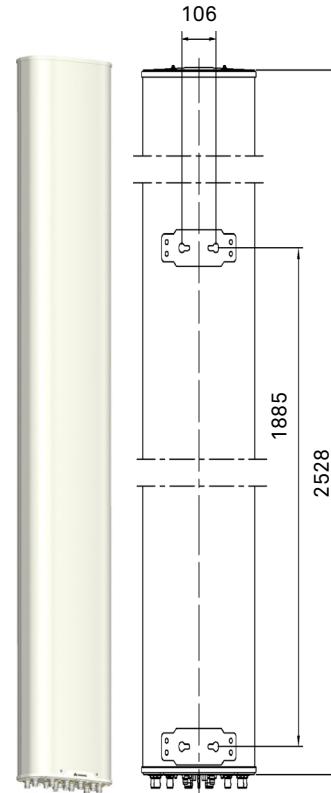
1. Values based on NGMN recommendations on Base Station Antenna Standards (BASTA).

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 (°C) | -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) |



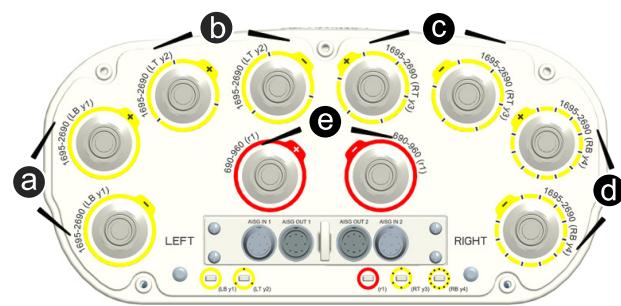
Integrated RET Specifications

| 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 DC | 2 n/c | 3 RS-485B | 4 n/c | 5 RS-485A | 6 DC | 7 DC return |
| 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:

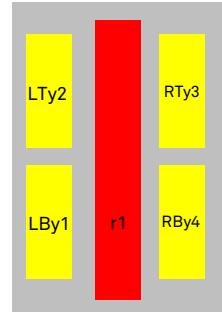
a HWMxxx.....LBy1

b HWMxxx.....LTy2

c HWMxxx.....RTy3

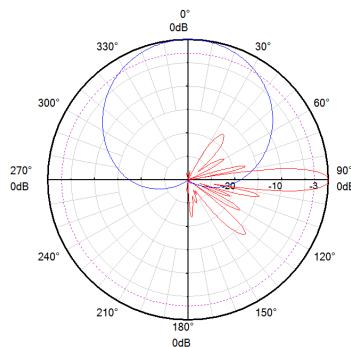
d HWMxxx.....RBy4

e HWMxxx.....r1

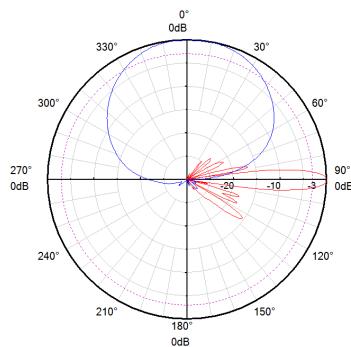


r - Red y - Yellow
L - Left array R - Right array
T - Top array B - Bottom array

Pattern sample for reference



690 - 960 MHz



1695 - 2690 MHz

DXXXXX-690/960/1710-2690/1710-2200/2490-2690-

65/65/65/65-15i/17.5i/17.5i/17i/17.5i-M/M/M/M/M-R

EasyRET 10-Port Antenna with 5 Integrated RCUs – 1.4m



Model: APE4517R4v06

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 |
| 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 |
| | 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 |
| Side lobe suppression for first side lobe above main beam (dB) | | > 15 | > 15 | > 17 | > 17 | > 15 | > 16 | > 16 |
| 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 |
| 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 |
| 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 |
| Cross polar ratio (dB) | 0° | > 21 | > 19 | > 19 | > 17 | > 18 | > 16 | > 15 |
| Max. power per input (W) | | 500 (at 50°C ambient temperature) * | | | | 250 (at 50°C 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°C ambient temperature) * | | | | | | | |
| Intermodulation IM3 (dBc) | | ≤ -153 (2 x 43 dBm carrier) | | | | | | | |
| Impedance (Ω) | | 50 | | | | | | | |
| Grounding | | DC Ground | | | | | | | |

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

1. Values based on NGMN recommendations on Base Station Antenna Standards (BASTA).

2. Electrical datasheet in XML format is available.

DXXXX-690-960/1710-2690/1710-2200/2490-2690-

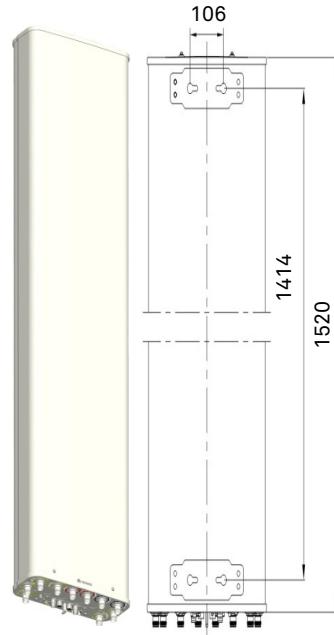
65/65/65/65-15i/17.5i/17.5i/17i/17.5i-M/M/M/M/M-R

EasyRET 10-Port Antenna with 5 Integrated RCUs – 1.4m

Model: APE4517R4v06



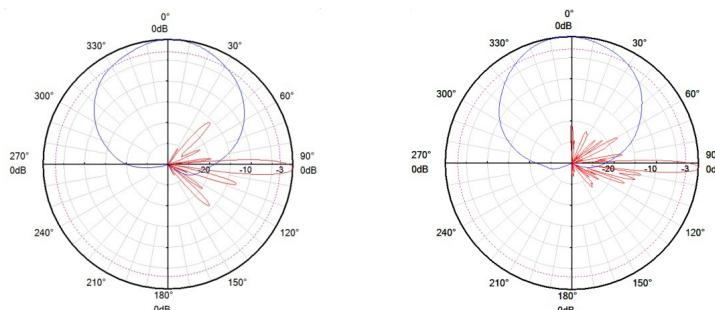
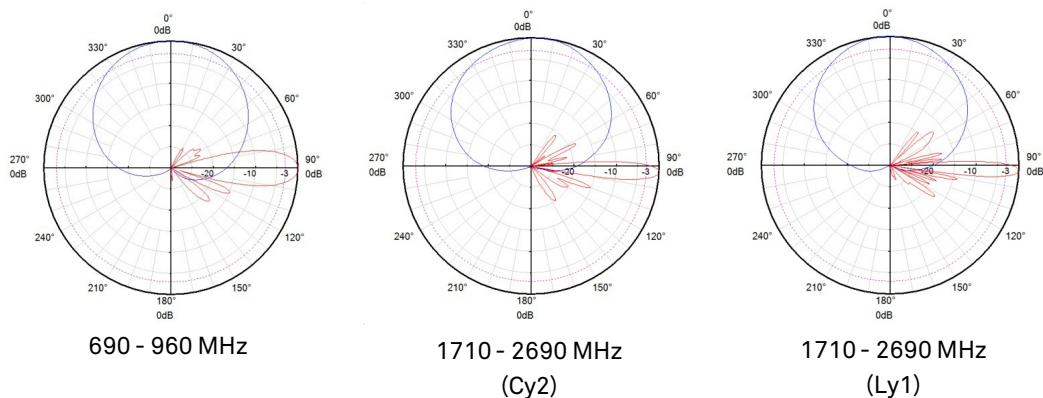
| Mechanical Properties | |
|-------------------------------------|--|
| Antenna dimensions (H x W x D) (mm) | 1520 x 369 x 149 |
| Packing dimensions (H x W x D) (mm) | 1790 x 435 x 240 |
| Antenna weight (kg) | 25.8 |
| Clamps weight (kg) | 3.6 (2 units) |
| Antenna packing weight (kg) | 37.3 (Included clamps) |
| Mast diameter supported (mm) | 50 - 115 |
| Radome material | Fiberglass |
| Radome colour | Light grey |
| Operational temperature (°C) | -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 |

1LnH 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



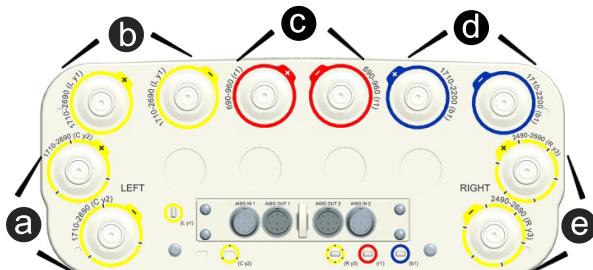
Integrated RET Specifications

| 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 DC | 2 n/c | 3 RS-485B | 4 n/c | 5 RS-485A | 6 DC | 7 DC return |
| 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.

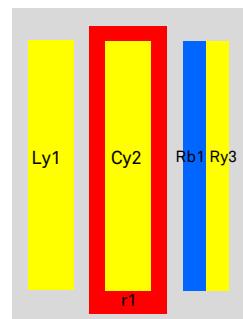
Standards: EN 60950-1 (Safety), EN 55022 (Emission), EN 55024 (Immunity), ETSI EN 301 489, FCC part15

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

2LnH Band
6-14 Ports

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

2LnH Band
6-14 Ports

Multi-band

B - 4 2LnH

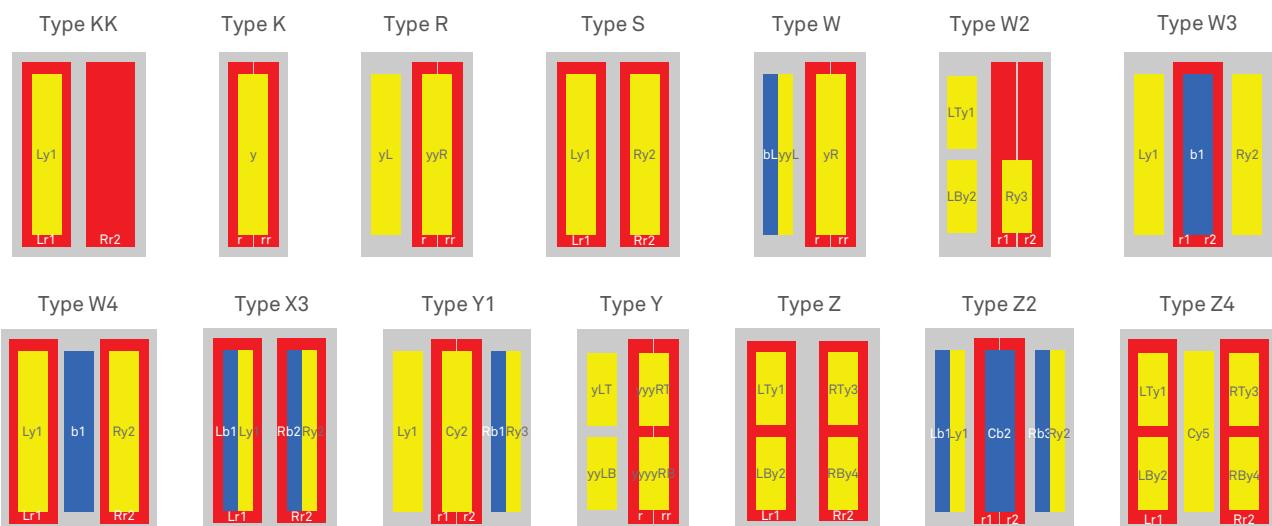
| Frequency Range (MHz) | 3dB Horizontal beam width (°) | Gain (dBi) | Electrical downtilt (°) | Tilt Method | Connector | Dimension(mm) | Model | Page | Array symbol |
|---|-------------------------------|-----------------------------------|---------------------------------------|-------------|-------------|------------------|---------------|------|--------------|
| 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) | |

2LnH Band
6-14 Ports

| 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 | | | | |
| | 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 | | | | |
| 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 | | | | |
| Max. power per input (W) | 300 (at 50°C ambient temperature) | | | 250 (at 50°C ambient temperature) | | | | | | | |
| Intermodulation IM3 (dBc) | ≤ -150 (2 x 43 dBm carrier) | | | | | | | | | | |
| Impedance (Ω) | 50 | | | | | | | | | | |
| Grounding | DC Ground | | | | | | | | | | |

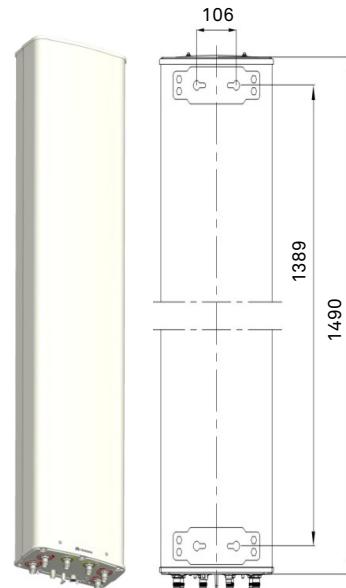
1. Values based on NGMN recommendations on Base Station Antenna Standards (BASTA).

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 (°C) | -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) |



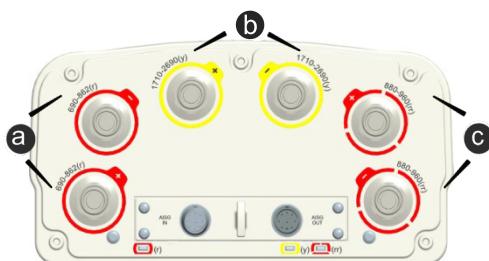
Integrated RET Specifications

| 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 DC | 2 n/c | 3 RS-485B | 4 n/c | 5 RS-485A | 6 DC | 7 DC return | 8 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



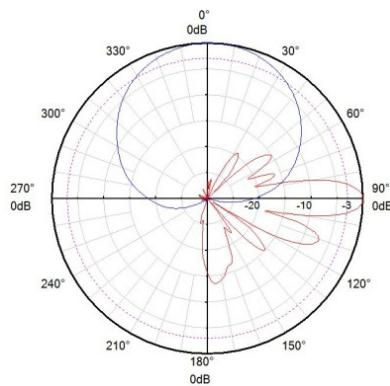
Integrated RET S/N:

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

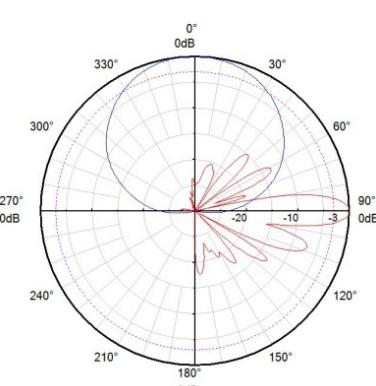
r - Red y - Yellow



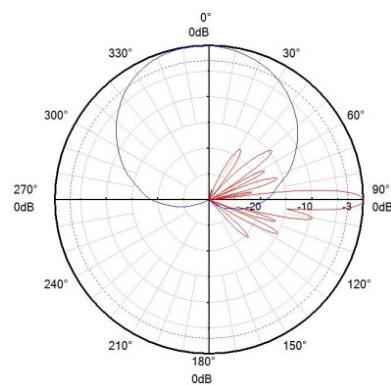
Pattern sample for reference



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 | |
| | over all Tilts | 15.0 ± 0.4 | 15.3 ± 0.3 | 17.5 ± 0.5 | 17.9 ± 0.3 | 17.9 ± 0.4 | |
| 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 (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°C ambient temperature) | | 250 (at 50°C 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).

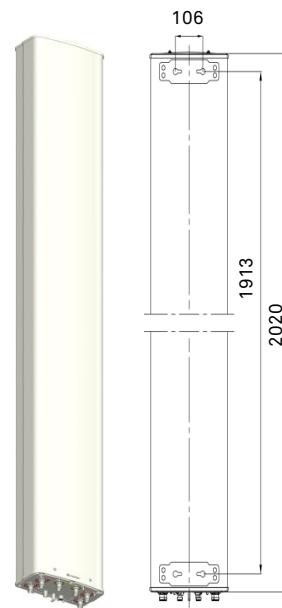
2. Electrical datasheet in XML format is available.

2LnH Band
6-14 Ports

| 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 (°C) | -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) |



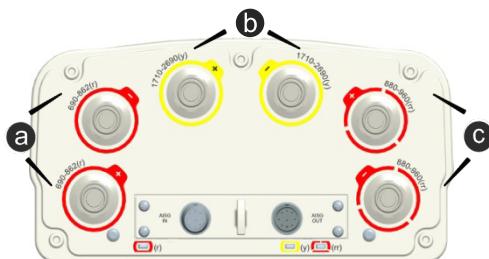
Integrated RET Specifications

| 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 DC | 2 n/c | 3 RS-485B | 4 n/c | 5 RS-485A | 6 DC | 7 DC return | 8 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



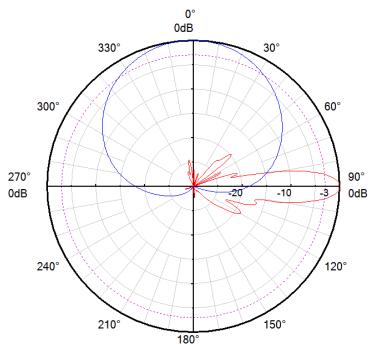
Integrated RET S/N:

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

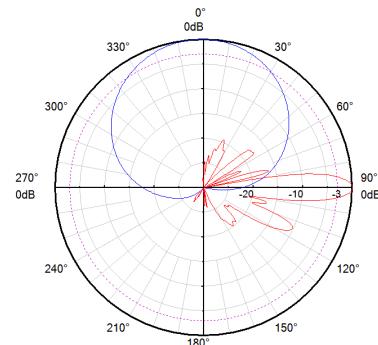
r - Red y - Yellow



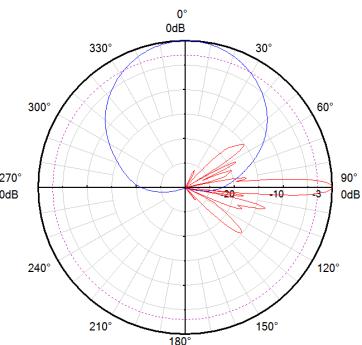
Pattern sample for reference



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°C ambient temperature) | | 250 (at 50°C ambient temperature) | | | | | | | |
| Intermodulation IM3 (dBc) | | ≤ -150 (2 x 43 dBm carrier) | | | | | | | | | |
| Impedance (Ω) | | 50 | | | | | | | | | |
| Grounding | | DC Ground | | | | | | | | | |

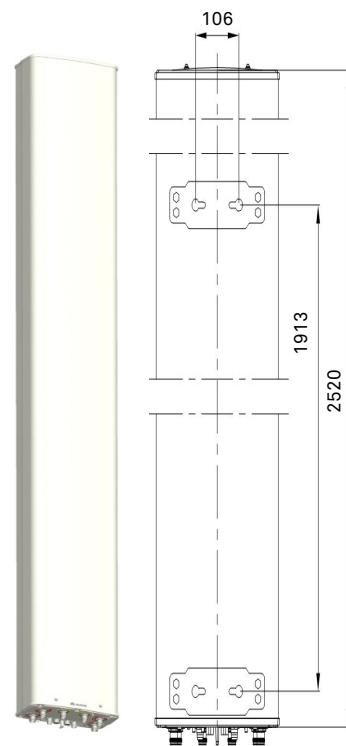
1. Values based on NGMN recommendations on Base Station Antenna Standards (BASTA).

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 (°C) | -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) |

2LnH Band
6-14 Ports

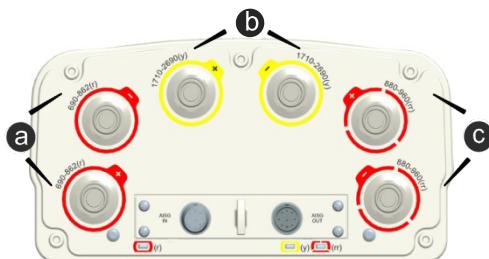
Integrated RET Specifications

| 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 | 2 x 8 pin connector according to IEC 60130-9 Daisy chain in: Male / Daisy chain out: Female | | | | | | | |
| Pin assignment according AISG | 1 DC | 2 n/c | 3 RS-485B | 4 n/c | 5 RS-485A | 6 DC | 7 DC return | 8 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



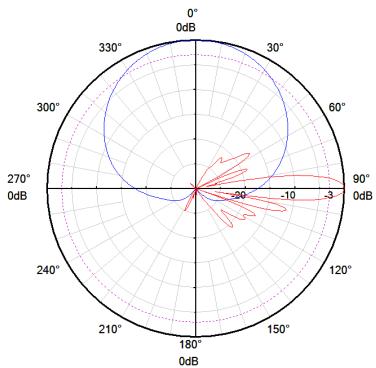
Integrated RET S/N:

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

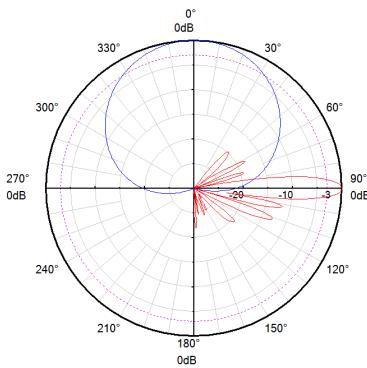
r - Red y - Yellow



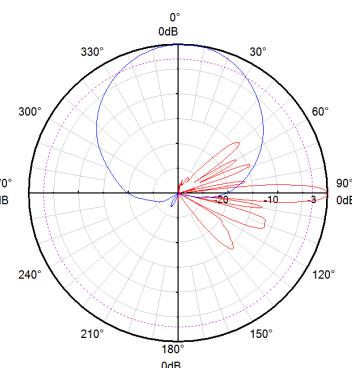
Pattern sample for reference



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 | | | |
| 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 | | | |
| | 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 | | | |
| Side lobe suppression for first side lobe above main beam (dB) | | > 15 | > 17 | > 17 | > 16 | > 16 | > 16 | > 16 | | | |
| Horizontal 3dB beam width (°) | | 66 ± 5 | 63 ± 5 | 62 ± 5 | 60 ± 5 | 65 ± 5 | 63 ± 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 | | | |
| 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 | | | |
| Cross polar ratio (dB) | 0° | > 16 | > 18 | > 19 | > 20 | > 15 | > 16 | > 17 | | | |
| Max. power per input (W) | | 500 (at 50°C ambient temperature) | | | | 250 (at 50°C ambient temperature) | | | | | |
| Total power (W) | | 960 (at 50°C ambient temperature) | | | | | | | | | |
| Intermodulation IM3 (dBc) | | ≤ -153 (2 x 43 dBm carrier) | | | | | | | | | |
| Impedance (Ω) | | 50 | | | | | | | | | |
| Grounding | | DC Ground | | | | | | | | | |

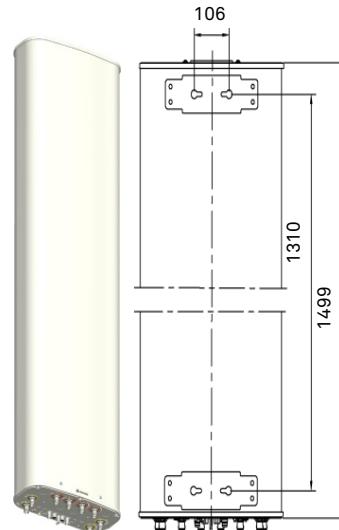
1. Values based on NGMN recommendations on Base Station Antenna Standards (BASTA).

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 (°C) | -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) |



2LnH Band
6-14 Ports

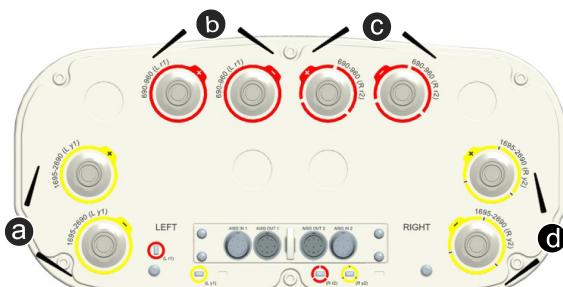
Integrated RET Specifications

| 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 DC | 2 n/c | 3 RS-485B | 4 n/c | 5 RS-485A | 6 DC | 7 DC return | 8 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

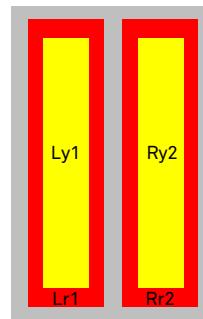
Certification: CE, FCC, IC, RCM



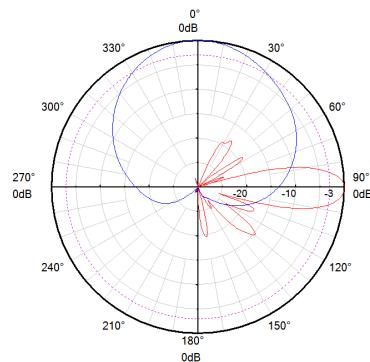
Integrated RET S/N:

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

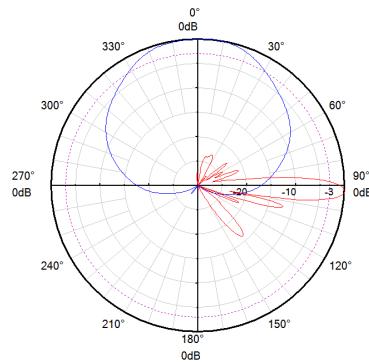
r - Red y - Yellow
L - Left array R - Right array



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 | | | |
| Polarization | | $+45^\circ, -45^\circ$ | | | | | | | | | |
| 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, $\pm 30^\circ$ (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°C ambient temperature) | | | | 250 (at 50°C ambient temperature) | | | | | |
| Total power (W) | | 960 (at 50°C ambient temperature) | | | | | | | | | |
| Intermodulation IM3 (dBc) | | ≤ -153 (2 x 43 dBm carrier) | | | | | | | | | |
| Impedance (Ω) | | 50 | | | | | | | | | |
| Grounding | | DC Ground | | | | | | | | | |

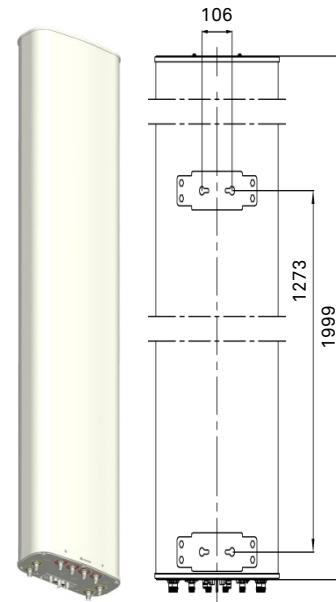
1. Values based on NGMN recommendations on Base Station Antenna Standards (BASTA).

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 (°C) | -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) |



2LnH Band
6-14 Ports

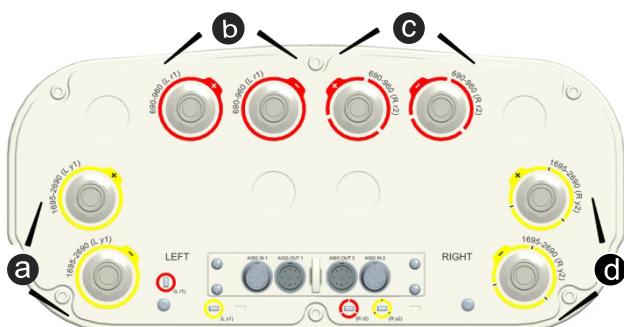
Integrated RET Specifications

| 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 DC | 2 n/c | 3 RS-485B | 4 n/c | 5 RS-485A | 6 DC | 7 DC return | 8 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

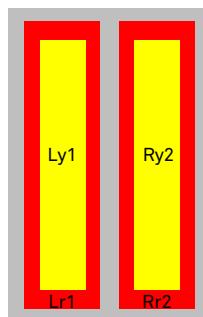
b HWMxxx.....Lr 1

c HWMxxx.....Rr 2

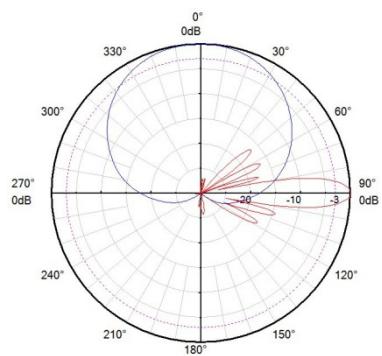
d HWMxxx.....Ry2

r - Red y - Yellow

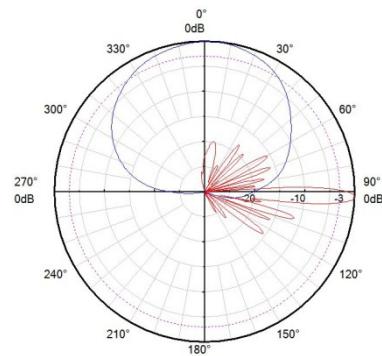
L - Left array R - Right array



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 | | | |
| Polarization | | $+45^\circ, -45^\circ$ | | | | | | | | | |
| 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 \pm 0.5 | 16.3 \pm 0.5 | 16.5 \pm 0.5 | 16.7 \pm 0.5 | 16.8 \pm 0.5 | 17.1 \pm 0.5 | 17.5 \pm 0.5 | 17.9 \pm 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 \pm 5 | 65 \pm 5 | 60 \pm 5 | 58 \pm 5 | 65 \pm 5 | 63 \pm 5 | 61 \pm 5 | 60 \pm 5 | | |
| Vertical 3dB beam width (°) | | 8.8 \pm 0.7 | 8.0 \pm 0.6 | 7.8 \pm 0.5 | 7.5 \pm 0.5 | 6.8 \pm 0.7 | 5.8 \pm 0.5 | 5.3 \pm 0.4 | 5.0 \pm 0.5 | | |
| VSWR | | < 1.5 | | | | | | | | | |
| Cross polar isolation (dB) | | ≥ 28 | | | | | | | | | |
| Interband isolation (dB) | | ≥ 28 | | | | | | | | | |
| Front to back ratio, $\pm 30^\circ$ (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°C ambient temperature) | | | | 250 (at 50°C ambient temperature) | | | | | |
| Total power (W) | | 960 (at 50°C ambient temperature) | | | | | | | | | |
| Intermodulation IM3 (dBc) | | ≤ -153 (2 x 43 dBm carrier) | | | | | | | | | |
| Impedance (Ω) | | 50 | | | | | | | | | |
| Grounding | | DC Ground | | | | | | | | | |

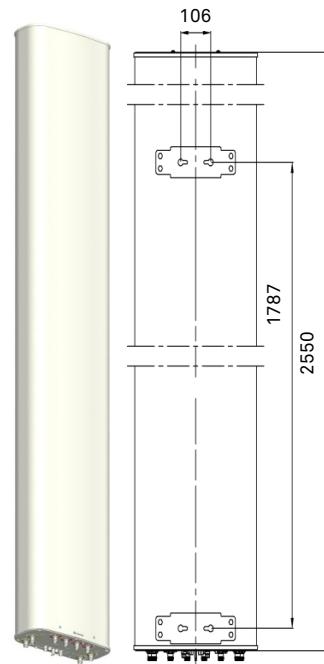
1. Values based on NGMN recommendations on Base Station Antenna Standards (BASTA).

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 (°C) | -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) |



2LnH Band
6-14 Ports

Integrated RET Specifications

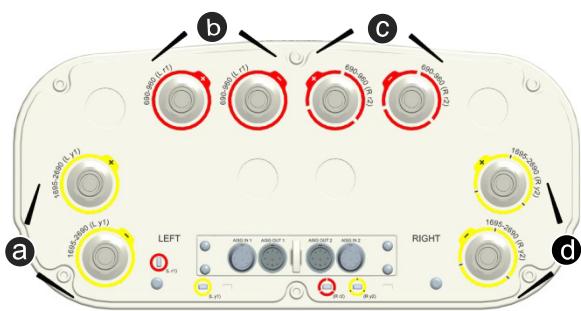
| Properties | | | | | | | |
|----------------------------------|--|----------|--------------|----------|--------------|---------|----------------|
| RET type | Integrated RET | | | | | | |
| RET protocols* | AISG 2.0 / 3GPP | | | | | | |
| Input voltage range (V) | 10 - 30 DC | | | | | | |
| Power consumption (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 DC | 2 n/c | 3 RS-485B | 4 n/c | 5 RS-485A | 6 DC | 7 DC return |
| 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:

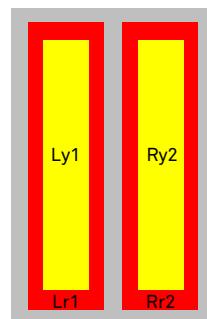
a HWMxxx.....Ly1

b HWMxxx.....Lr 1

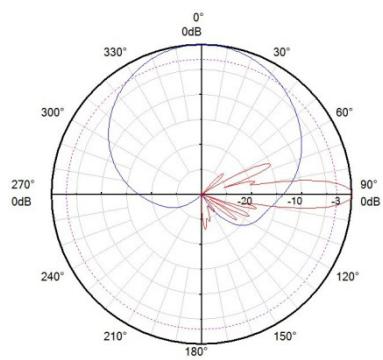
c HWMxxx.....Rr 2

d HWMxxx.....Ry2

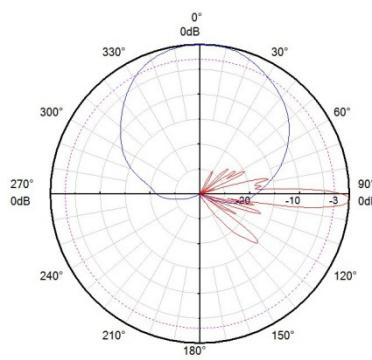
r - Red y - Yellow
L - Left array R - Right array



Pattern sample for reference



690 - 960 MHz



1695 - 2690 MHz



Antenna Specifications

| Electrical Properties | | | | | | | | | | | |
|--|--|------------|------------|--|-------------|-------------|-------------|--|--|--|--|
| Frequency range (MHz) | 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 | | | | |
| | 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 | | | | |
| 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°C ambient temperature) | | | 250 (at 50°C ambient temperature) | | | | | | | |
| Total power (W) | 700 (at 50°C ambient temperature) | | | | | | | | | | |
| Intermodulation IM3 (dBc) | ≤ -150 (2 x 43 dBm carrier) | | | | | | | | | | |
| Impedance (Ω) | 50 | | | | | | | | | | |
| Grounding | DC Ground | | | | | | | | | | |

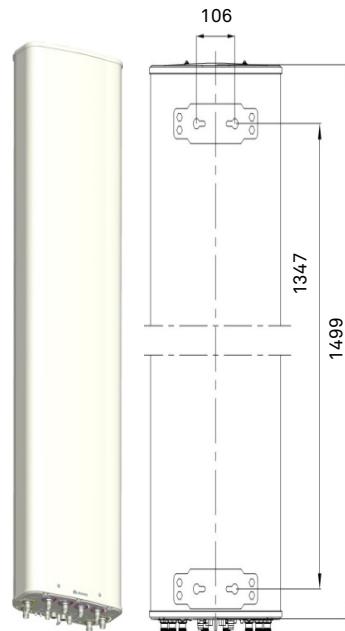
1. Values based on NGMN recommendations on Base Station Antenna Standards (BASTA).

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 (°C) | -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

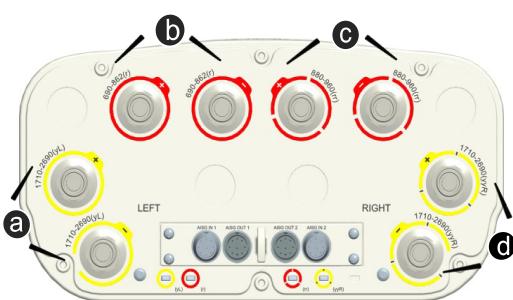
| Properties | | | | | | | | |
|----------------------------------|--|----------|--------------|----------|--------------|---------|----------------|----------|
| RET type | Integrated RET | | | | | | | |
| RET protocols* | AISG 2.0 / 3GPP | | | | | | | |
| Input voltage range (V) | 10 - 30 DC | | | | | | | |
| 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 DC | 2 n/c | 3 RS-485B | 4 n/c | 5 RS-485A | 6 DC | 7 DC return | 8 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

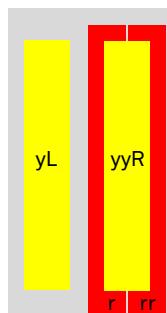
Certification: CE, FCC, IC, RCM



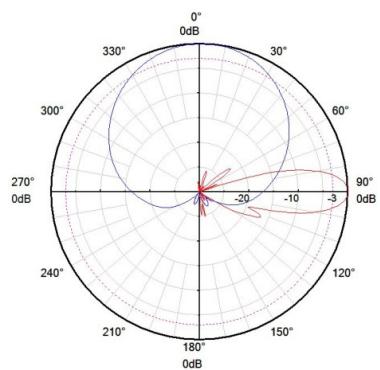
Integrated RET S/N:

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

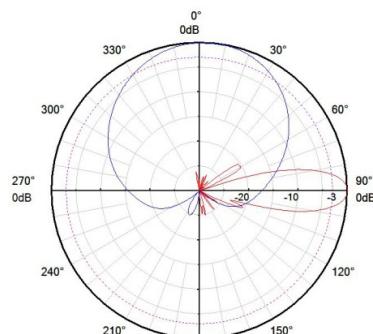
r - Red y - Yellow
L - Left array R - Right array



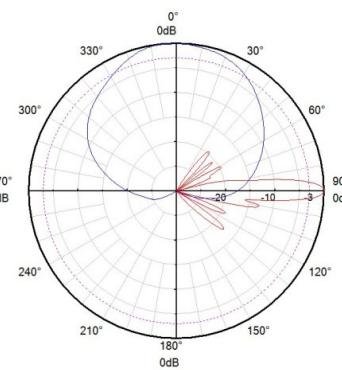
Pattern sample for reference



690 - 862 MHz



880 - 960 MHz



1710 - 2690 MHz

DXXX-790-862/880-960/1710-2690/1710-2690-65/65/65/65-

15.5i/16i/18i/18i-M/M/M/M-R

EasyRET 8-Port Antenna with 4 Integrated RCUs-2.0m

Model: AQU4518R5v06



Antenna Specifications

| Electrical Properties | | | | | | | | | |
|--|---|------------|--|-----------------------------------|-------------|-------------|--|--|--|
| Frequency range (MHz) | | 790 - 862 | 880 - 960 | 2 x (1710 - 2690) | | | | | |
| | | | | 1710 - 1990 | 1920 - 2200 | 2200 - 2490 | | | |
| 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 | | | |
| | over all Tilts | 15.3 ± 0.3 | 15.7 ± 0.4 | 17.2 ± 0.5 | 17.6 ± 0.4 | 17.9 ± 0.4 | | | |
| 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 (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 | | | |
| Max. power per input (W) | 500 (at 50°C ambient temperature) | | | 250 (at 50°C ambient temperature) | | | | | |
| Total power (W) | 800 (at 50°C 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.

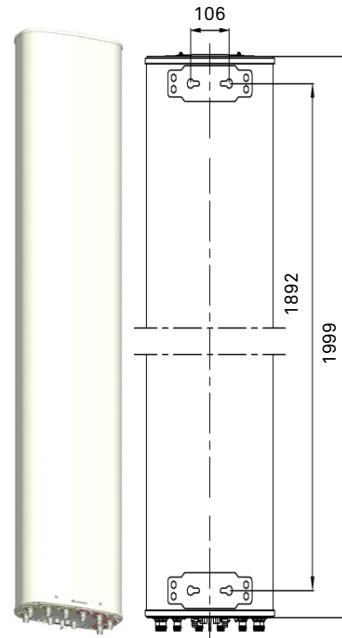
2LnH Band
6-14 Ports

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 (°C) | -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) |





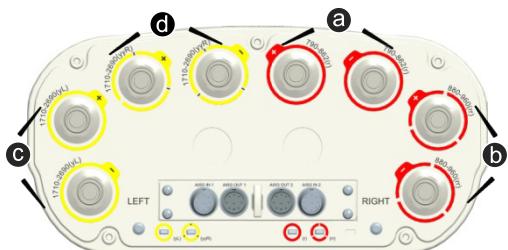
Integrated RET Specifications

| 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 DC | 2 n/c | 3 RS-485B | 4 n/c | 5 RS-485A | 6 DC | 7 DC return | 8 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

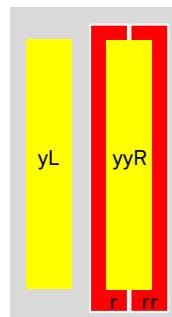
Certification: CE, FCC, IC, RCM



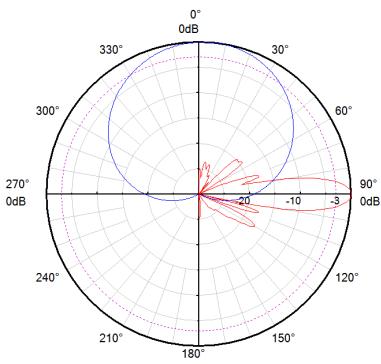
Integrated RET S/N:

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

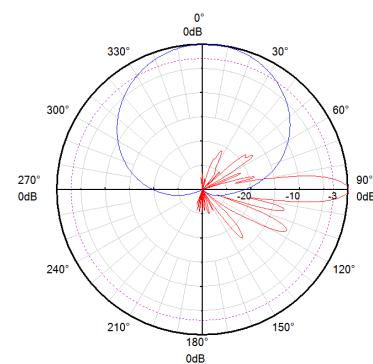
r - Red y - Yellow
L - Left array R - Right array



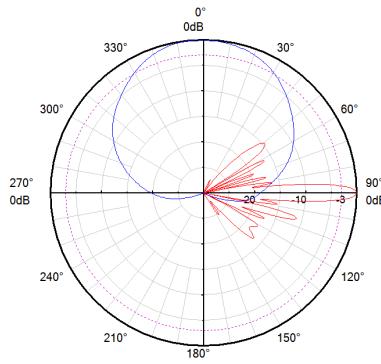
Pattern sample for reference



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°C ambient temperature) | 250 (at 50°C ambient temperature) | | | | | | | | | |
| Total power (W) | | 1000 (at 50°C ambient temperature) | | | | | | | | | | |
| Intermodulation IM3 (dBc) | | ≤ -150 (2 x 43 dBm carrier) | | | | | | | | | | |
| Impedance (Ω) | | 50 | | | | | | | | | | |
| Grounding | | DC Ground | | | | | | | | | | |

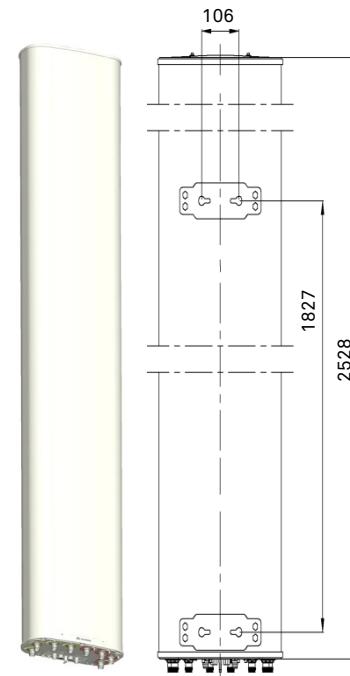
1. Values based on NGMN recommendations on Base Station Antenna Standards (BASTA).

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 (°C) | -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



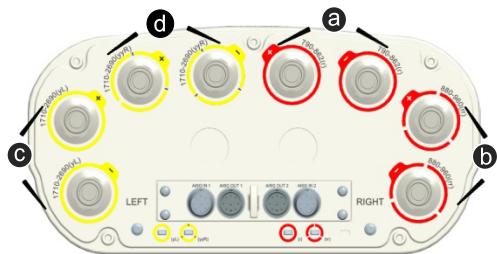
Integrated RET Specifications

| 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 DC | 2 n/c | 3 RS-485B | 4 n/c | 5 RS-485A | 6 DC | 7 DC return | 8 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

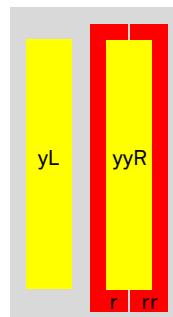
Certification: CE, FCC, IC, RCM



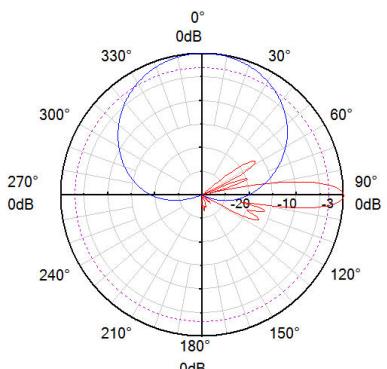
Integrated RET S/N:

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

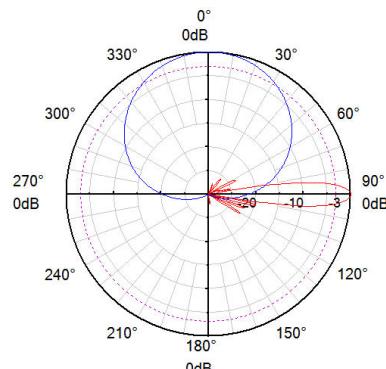
r - Red y - Yellow
L - Left array R - Right array



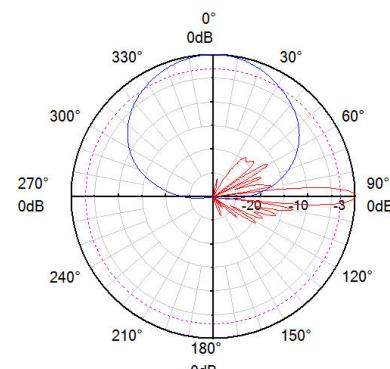
Pattern sample for reference



790 - 862 MHz



880 - 960 MHz



1710 - 2690 MHz



Antenna Specifications

| Electrical Properties | | | | | | | | | | |
|--|----------------|--|------------|-------------------|---|-------------|-------------|--|--|--|
| Frequency range (MHz) | 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 | | | |
| | 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 | | | |
| Side lobe suppression for first side lobe above main beam (dB) | | > 16 | > 16 | > 15 | > 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 | | | |
| 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 | | | |
| 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 | | | |
| Cross polar ratio (dB) | 0° | > 18 | > 18 | > 20 | > 19 | > 19 | > 20 | | | |
| Max. power per input (W) | | 300 (at 50°C ambient temperature) | | | 250 (at 50°C ambient temperature) | | | | | |
| Total power (W) | | 700 (at 50°C ambient temperature) | | | | | | | | |
| Intermodulation IM3 (dBc) | | ≤ -150 (2 x 43 dBm carrier) | | | | | | | | |
| Impedance (Ω) | | 50 | | | | | | | | |
| Grounding | | DC Ground | | | | | | | | |

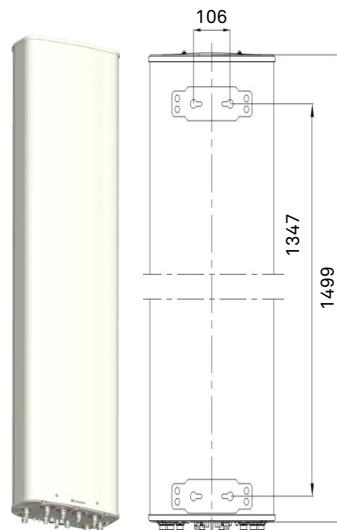
1. Values based on NGMN recommendations on Base Station Antenna Standards (BASTA).

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 (°C) | -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

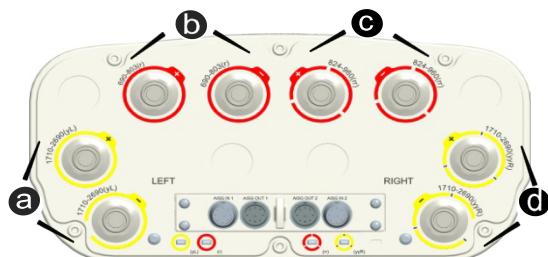
Integrated RET Specifications

| 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 DC | 2 n/c | 3 RS-485B | 4 n/c | 5 RS-485A | 6 DC | 7 DC return | 8 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

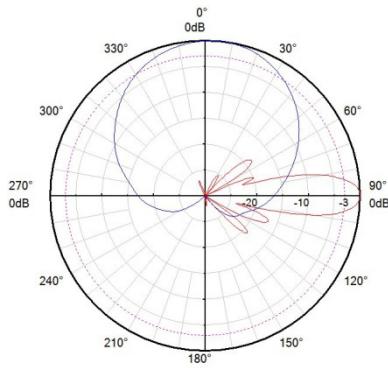
L - Left array

y - Yellow

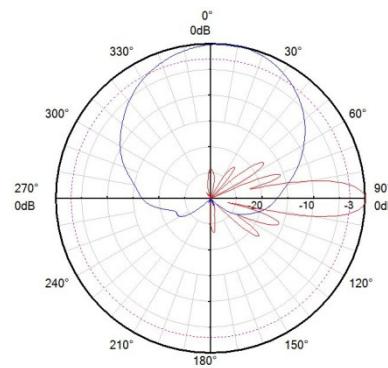
R - Right array



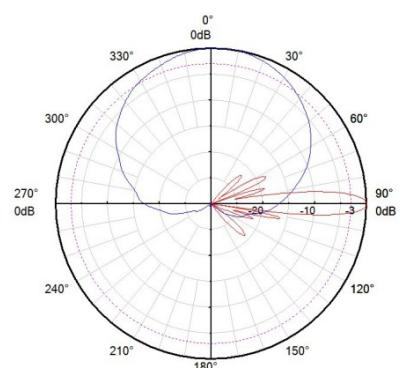
Pattern sample for reference



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° | | | | | | | | | |
| Gain (dBi) | at mid tilt | 14.7 | 15.1 | 15.4 | 17.2 | 17.5 | 17.8 | | | | |
| | 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 | | | | |
| Side lobe suppression for first side lobe above main beam (dB) | | > 18 | > 18 | > 18 | > 18 | > 17 | > 17 | | | | |
| Horizontal 3dB beam width (°) | | 67 ± 3.0 | 63 ± 2.7 | 63 ± 3.0 | 66 ± 3.9 | 64 ± 3.3 | 63 ± 4.8 | | | | |
| 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 | | | | |
| 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 | | | | |
| Cross polar ratio (dB) | 0° | > 16 | > 19 | > 19 | > 18 | > 18 | > 18 | | | | |
| Max. power per input (W) | | 360 (at 50°C ambient temperature) | | 250 (at 50°C ambient temperature) | | | | | | | |
| Total power (W) | | 700 (at 50°C ambient temperature) | | | | | | | | | |
| Intermodulation IM3 (dBc) | | ≤ -150 (2 x 43 dBm carrier) | | | | | | | | | |
| Impedance (Ω) | | 50 | | | | | | | | | |
| Grounding | | DC Ground | | | | | | | | | |

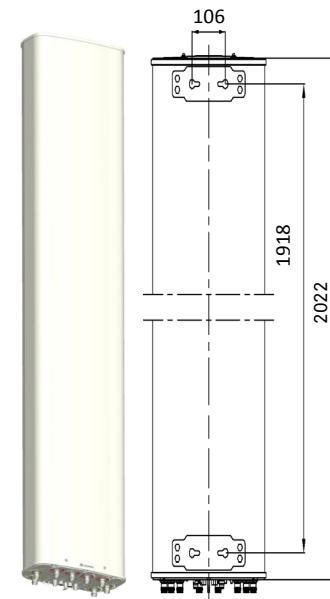
1. Values based on NGMN recommendations on Base Station Antenna Standards (BASTA).

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 (°C) | -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) |



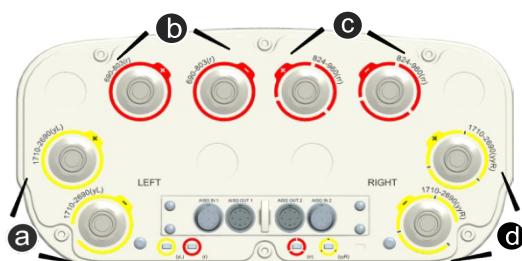
Integrated RET Specifications

| 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 DC | 2 n/c | 3 RS-485B | 4 n/c | 5 RS-485A | 6 DC | 7 DC return |
| 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

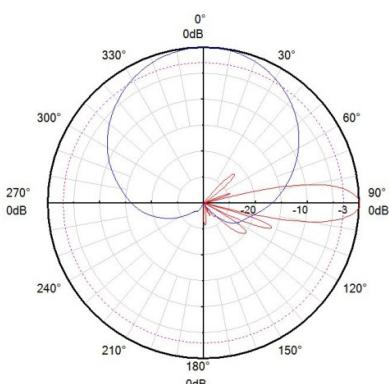
L - Left array

y - Yellow

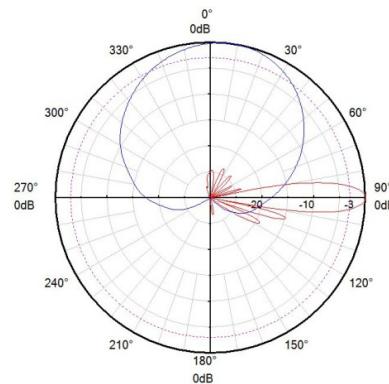
R - Right array



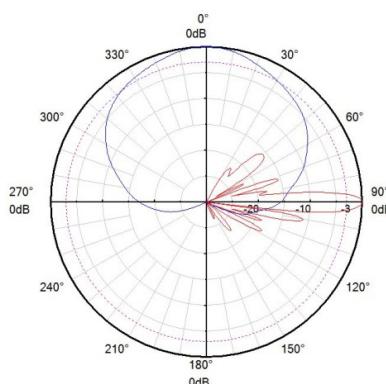
Pattern sample for reference



690 - 803 MHz



824 - 960 MHz



1710 - 2690 MHz

DXXXXX-690-960/690-960/1427-2690/1695-2690-

65/65/65/65-14.5i/14.5i/17i/17.5i/17.5i-M/M/M/M/M/M-R

EasyRET 10-Port Antenna with Integrated RCUs - 1.5m**Model: APE4518R13v06****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) | | |

2LnH Band
6-14 Ports**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 |

DXXXXX-690-960/690-960/1427-2200/1695-2690-

65/65/65/65-16i/16i/17i/18i/18i-M/M/M/M/M-R

EasyRET 10-Port Antenna with Integrated RCUs - 2.0m

Model: APE4518R14v06

**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 |

DXXXXX-790-862/880-960/1710-2690/1710-2170/2490-2690-

65/65/65/65-15.5i/16i/18i/18i/18i-M/M/M/M/M-R

EasyRET 10-Port Antenna with 5 Integrated RCUs - 2.0m

Model: APE4518R0v06



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°C ambient temperature) * | |
| Intermodulation IM3 (dBc) | | ≤ -150 (2 x 43 dBm carrier) | |
| Impedance (Ω) | | 50 | |
| Grounding | | DC Ground | |

2LnH Band
6-14 Ports

| 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 | |
| Cross polar ratio (dB) | 0° | > 18 | > 18 | > 18 | > 18 | > 18 | > 18 | |
| Max. power per input (W) | | 250 (at 50°C ambient temperature) * | | | | | | |
| Intermodulation IM3 (dBc) | | ≤ -150 (2 x 43 dBm carrier) | | | | | | |
| Impedance (Ω) | | 50 | | | | | | |
| Grounding | | DC Ground | | | | | | |

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

1. Values based on NGMN recommendations on Base Station Antenna Standards (BASTA).

2. Electrical datasheet in XML format is available.

DXXXXX-790-862/880-960/1710-2690/1710-2170/2490-2690-

65/65/65/65-15.5i/16i/18i/18i/18i-M/M/M/M/M-R

EasyRET 10-Port Antenna with 5 Integrated RCUs - 2.0m

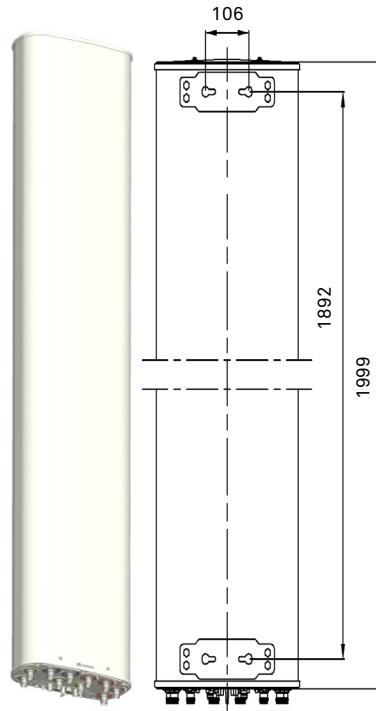
Model: APE4518R0v06



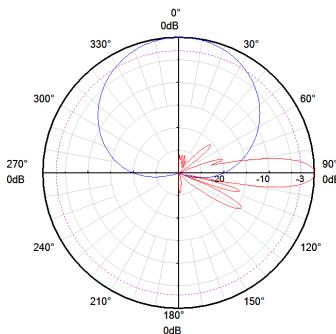
| Mechanical Properties | |
|-------------------------------------|--|
| Antenna dimensions (H x W x D) (mm) | 1999 x 349 x 166 |
| Packing dimensions (H x W x D) (mm) | 2350 x 415 x 240 |
| Antenna weight (kg) | 30.7 |
| Clamps weight (kg) | 3.6 (2 units) |
| Antenna packing weight (kg) | 44.8 (Included clamps) |
| Mast diameter supported (mm) | 50 - 115 |
| Radome material | Fiberglass |
| Radome colour | Light grey |
| Operational temperature (°C) | -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

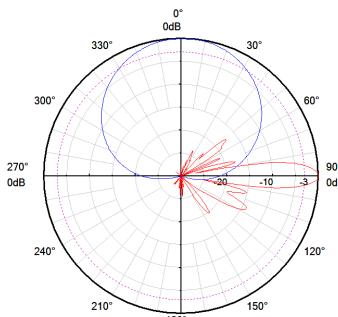
| Item | Model | Description | Weight | Units per antenna |
|--------------|-----------|----------------------------------|--------|----------------------|
| Downtilt kit | ASMDT0D01 | Mechanical downtilt: 0 - 12 ° | 2.1 kg | 1 (Separate packing) |



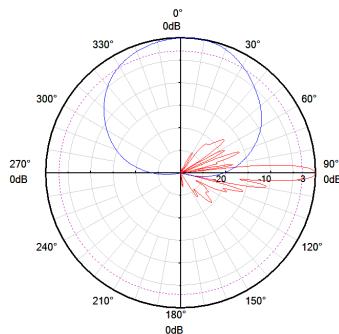
Pattern sample for reference



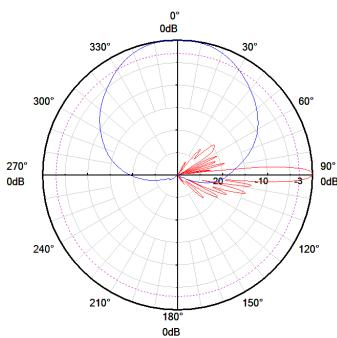
790 - 862 MHz



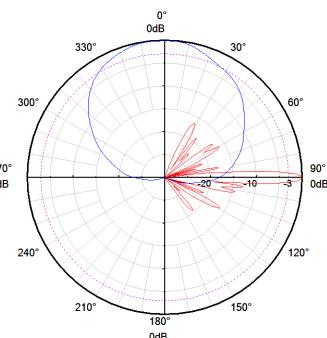
880 - 960 MHz



1710 - 2690 MHz



1710 - 2170 MHz



2490 - 2690 MHz

DXXXXX-790-862/880-960/1710-2690/1710-2170/2490-2690-

65/65/65/65-15.5i/16i/18i/18i/18i-M/M/M/M/M-R

EasyRET 10-Port Antenna with 5 Integrated RCUs - 2.0m

Model: APE4518R0v06



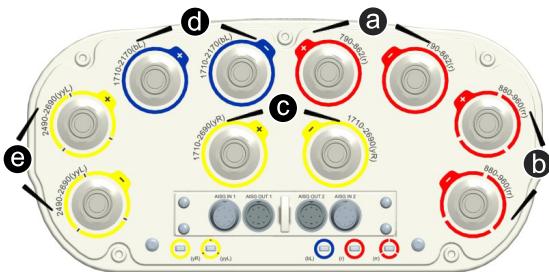
Integrated RET Specifications

| 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 DC | 2 n/c | 3 RS-485B | 4 n/c | 5 RS-485A | 6 DC | 7 DC return | 8 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.

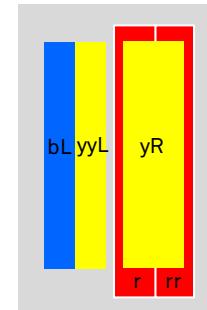
Standards: UL 60950-1 (Safety), UL 60950-22 (Safety - Equipment installed outdoor), EN 55022 (Emission),
EN 55024 (Immunity), ETSI EN 301 489, FCC Part15, ICES-003

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

DXXXXX-790-862/880-960/1710-2690/1710-2170/2490-2690-

65/65/65/65-16.5i/17i/18i/18i/18i-M/M/M/M/M-R

EasyRET 10-Port Antenna with 5 Integrated RCUs - 2.6m

Model: APE4518R1v06



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°C 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 | |
| Cross polar ratio (dB) | 0° | > 18 | > 18 | > 18 | > 18 | > 18 | > 18 | |
| Max. power per input (W) | | 250 (at 50°C ambient temperature) * | | | | | | |
| Intermodulation IM3 (dBc) | | ≤ -150 (2 x 43 dBm carrier) | | | | | | |
| Impedance (Ω) | | 50 | | | | | | |
| Grounding | | DC Ground | | | | | | |

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

1. Values based on NGMN recommendations on Base Station Antenna Standards (BASTA).

2. Electrical datasheet in XML format is available.

DXXXXX-790-862/880-960/1710-2690/1710-2170/2490-2690-

65/65/65/65-16.5i/17i/18i/18i/18i-M/M/M/M/M-R

EasyRET 10-Port Antenna with 5 Integrated RCUs - 2.6m

Model: APE4518R1v06

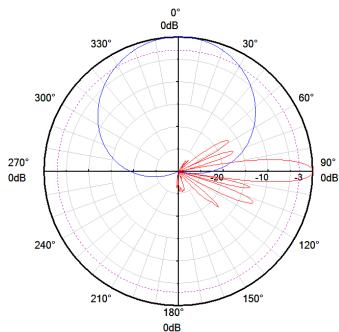


| Mechanical Properties | |
|-------------------------------------|--|
| Antenna dimensions (H x W x D) (mm) | 2528 x 349 x 166 |
| Packing dimensions (H x W x D) (mm) | 2885 x 420 x 245 |
| Antenna weight (kg) | 34.8 |
| Clamps weight (kg) | 3.6 (2 units) |
| Antenna packing weight (kg) | 50.8 (Included clamps) |
| Mast diameter supported (mm) | 50 - 115 |
| Radome material | Fiberglass |
| Radome colour | Light grey |
| Operational temperature (°C) | -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 |

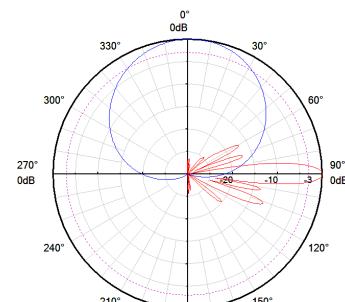
Accessories

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

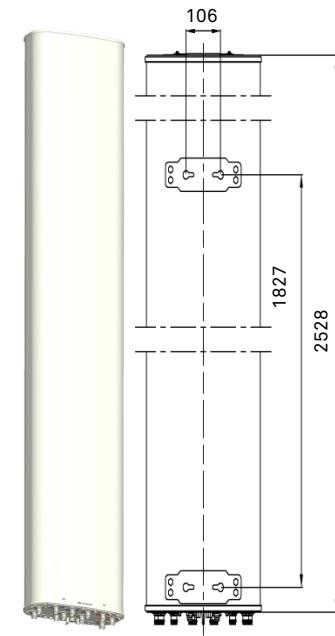
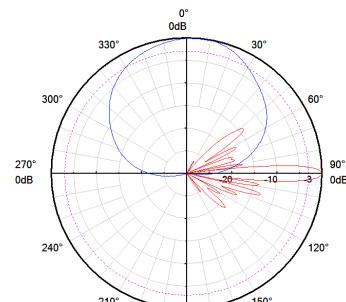
Pattern sample for reference



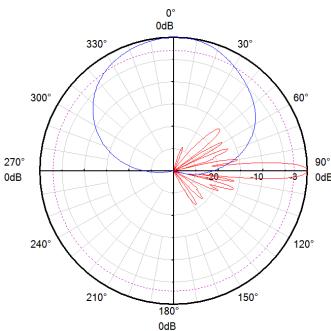
790 - 862 MHz



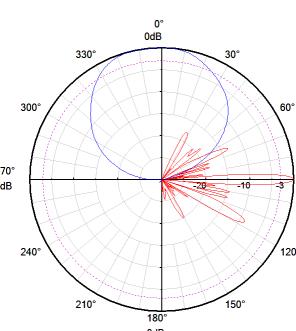
880 - 960 MHz

2LnH Band
6-14 Ports

1710 - 2690 MHz



1710 - 2170 MHz



2490 - 2690 MHz

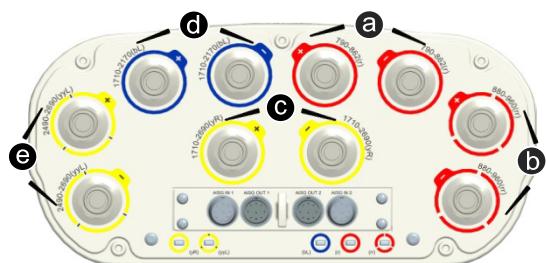
Integrated RET Specifications

| 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 DC | 2 n/c | 3 RS-485B | 4 n/c | 5 RS-485A | 6 DC | 7 DC return | 8 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.

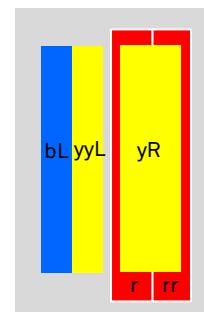
Standards: UL 60950-1 (Safety), UL 60950-22 (Safety - Equipment installed outdoor), EN 55022 (Emission), EN 55024 (Immunity), ETSI EN 301 489, FCC Part15, ICES-003

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

DXXXXX-690-862/880-960/1427-2200/1695-2690/1695-2690-

65/65/65/65-15i/15.5i/17i/18i/18i-M/M/M/M/M-R

EasyRET 10-Port Antenna with Integrated RCUs - 2.0m

Model: APE4518R17v06

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

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

1. Values based on NGMN recommendations on Base Station Antenna Standards (BASTA).

2. Electrical datasheet in XML format is available.

2LnH Band
6-14 Ports

DXXXXX-690-862/880-960/1427-2200/1695-2690-

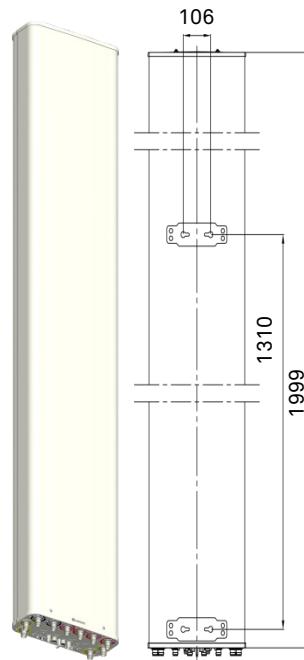
65/65/65/65-15i/15.5i/17i/18i/18i-M/M/M/M/M-R

EasyRET 10-Port Antenna with Integrated RCUs - 2.0m

Model: APE4518R17v06



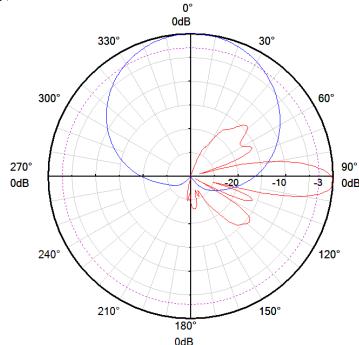
| Mechanical Properties | |
|-------------------------------------|--|
| Antenna dimensions (H x W x D) (mm) | 1999 x 369 x 149 |
| Packing dimensions (H x W x D) (mm) | 2265 x 435 x 240 |
| Antenna weight (kg) | 32.5 |
| Clamps weight (kg) | 3.6 (2 units) |
| Antenna packing weight (kg) | 45.0 (Included clamps) |
| Mast diameter supported (mm) | 50 - 115 |
| Radome material | Fiberglass |
| Radome colour | Light grey |
| Operational temperature (°C) | -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 |



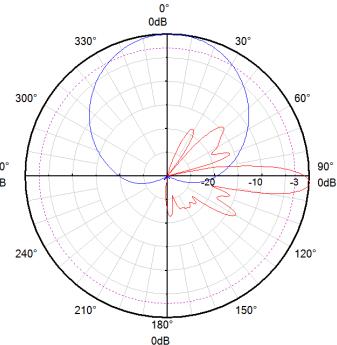
Accessories

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

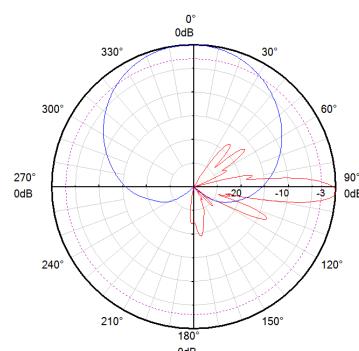
Pattern sample for reference



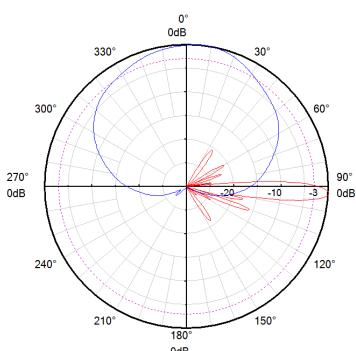
690 - 862 MHz



880 - 960 MHz



1427 - 2200 MHz



1695 - 2690 MHz

Integrated RET Specifications

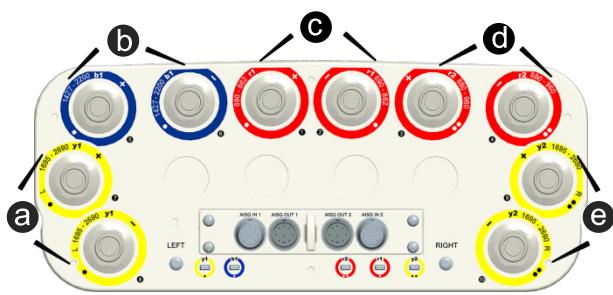
| Properties | | | | | | | | |
|----------------------------------|--|----------|--------------|----------|--------------|---------|----------------|----------|
| RET type | Integrated RET | | | | | | | |
| RET protocols* | AISG 2.0 / 3GPP | | | | | | | |
| Input voltage range (V) | 10 - 30 DC | | | | | | | |
| 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 DC | 2 n/c | 3 RS-485B | 4 n/c | 5 RS-485A | 6 DC | 7 DC return | 8 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

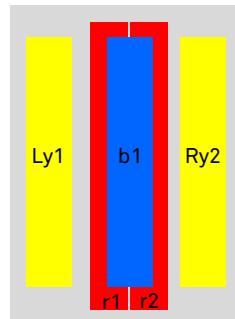
2LnH Band
6-14 Ports



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-

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 | | | | |
| Polarization | | | +45°, -45° | | | | | | | | | |
| Electrical downtilt (°) | | | 0 - 10 , continuously adjustable , each band separately | | | | | | | | | |
| Gain (dBi) | Bottom | at mid Tilt | 16.2 | 16.5 | 16.9 | | | | | | | |
| | | over all Tilts | 16.0 ± 0.5 | 16.3 ± 0.5 | 16.8 ± 0.6 | | | | | | | |
| | Top | 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 | | | | |
| Horizontal 3dB beam width (°) | | | 66 ± 2.7 | 65 ± 2.9 | 63 ± 4.1 | 66 ± 4.7 | 63 ± 3.3 | 61 ± 5.2 | | | | |
| 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 | | | | |
| 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 | | | | |
| Cross polar ratio (dB) | | | 0° | > 18 | > 22 | > 19 | > 19 | > 21 | | | | |
| Max. power per input (W) | | | 400 (at 50°C ambient temperature) | | | 250 (at 50°C ambient temperature) | | | | | | |
| Total power (W) | | | 1000 (at 50°C 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).

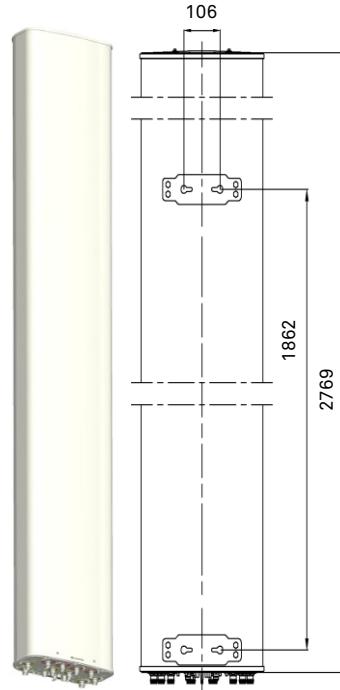
2. Electrical datasheet in XML format is available.

2LnH Band
6-14 Ports

| 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 (°C) | -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) |



DXXXXX-690-862/880-960/1710-2690/1710-2690-

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



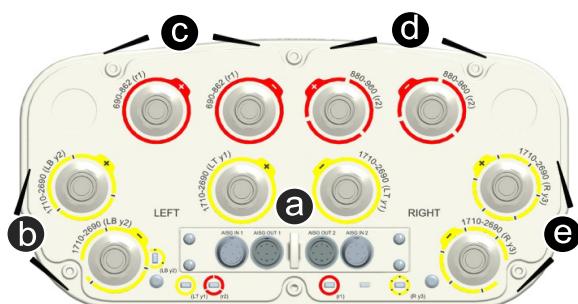
Integrated RET Specifications

| 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 DC | 2 n/c | 3 RS-485B | 4 n/c | 5 RS-485A | 6 DC | 7 DC return | 8 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.

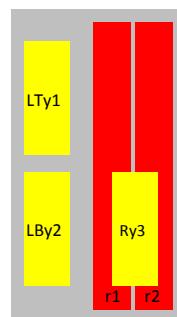
Standards: UL 60950-1 (Safety), UL 60950-22 (Safety - Equipment installed outdoor), EN 55022 (Emission),
EN 55024 (Immunity), ETSI EN 301 489, FCC Part15, ICES-003

Certification: CE, FCC, IC, RCM



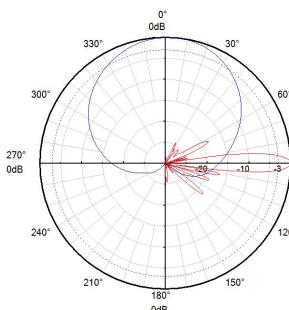
Integrated RET S/N:

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

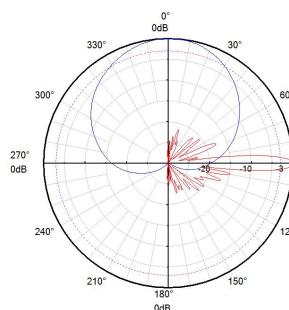


r - Red y - Yellow
L - Left array R - Right array
T - Top array B - Bottom array

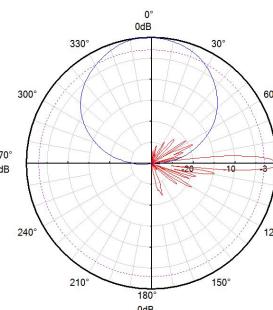
Pattern sample for reference



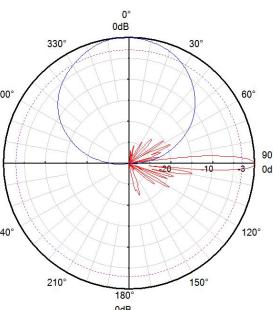
690 - 862 MHz



880 - 960 MHz



1710 - 2690 MHz
(Bottom)



1710 - 2690 MHz
(Top)



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 | | | | |
| Polarization | | +45° , -45° | | | | | | | | | |
| Electrical downtilt (°) | | 0 - 10 , continuously adjustable , each band separately | | | | | | | | | |
| Gain (dBi) | at mid Tilt | 16.2 | 16.5 | 16.9 | | | | | | | |
| | | 16.0 ± 0.5 | 16.3 ± 0.5 | 16.8 ± 0.6 | | | | | | | |
| | Bottom | at mid Tilt | | | 17.3 | 17.4 | 17.6 | | | | |
| | | over all Tilts | | | 17.2 ± 0.5 | 17.4 ± 0.5 | 17.5 ± 0.6 | | | | |
| | Top | at mid Tilt | | | 16.9 | 17.2 | 17.4 | | | | |
| | | over all Tilts | | | 16.8 ± 0.5 | 17.1 ± 0.3 | 17.2 ± 0.5 | | | | |
| Side lobe suppression for first side lobe above main beam (dB) | | > 20 | > 18 | > 17 | > 20 | > 20 | > 19 | | | | |
| Horizontal 3dB beam width (°) | | 66 ± 2.7 | 65 ± 2.9 | 63 ± 4.1 | 66 ± 4.7 | 63 ± 3.3 | 61 ± 5.2 | | | | |
| 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 | | | | |
| 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 | | | | |
| Cross polar ratio (dB) 0° | | > 18 | > 22 | > 22 | > 19 | > 19 | > 21 | | | | |
| Max. power per input (W) | | 400 (at 50°C ambient temperature) | | | 250 (at 50°C ambient temperature) | | | | | | |
| Total power per combined input (W) | | 1000 (at 50°C ambient temperature) | | | | | | | | | |
| Intermodulation IM3 (dBc) | | ≤ -150 (2 x 43 dBm carrier) | | | | | | | | | |
| Impedance (Ω) | | 50 | | | | | | | | | |
| Grounding | | DC Ground | | | | | | | | | |

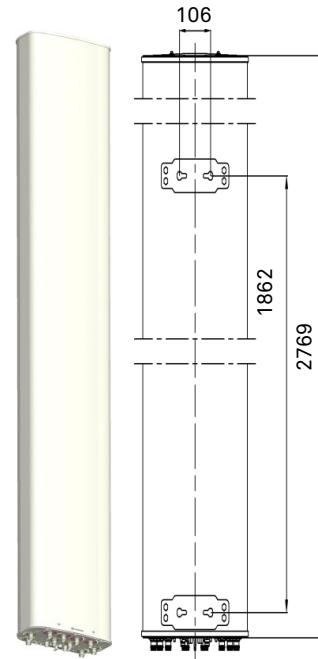
1. Values based on NGMN recommendations on Base Station Antenna Standards (BASTA).

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 (°C) | -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

DXXXXX-690-803/824-960/1710-2690/1710-2690-

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



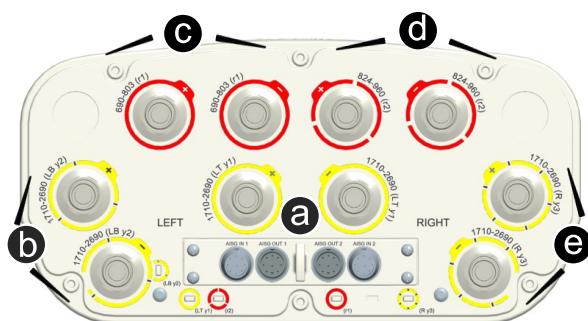
Integrated RET Specifications

| 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 DC | 2 n/c | 3 RS-485B | 4 n/c | 5 RS-485A | 6 DC | 7 DC return | 8 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.

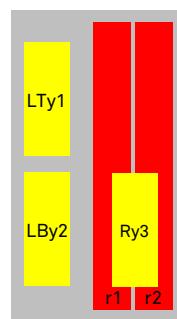
Standards: UL 60950-1 (Safety), UL 60950-22 (Safety - Equipment installed outdoor), EN 55022 (Emission),
EN 55024 (Immunity), ETSI EN 301 489, FCC Part15, ICES-003

Certification: CE, FCC, IC, RCM



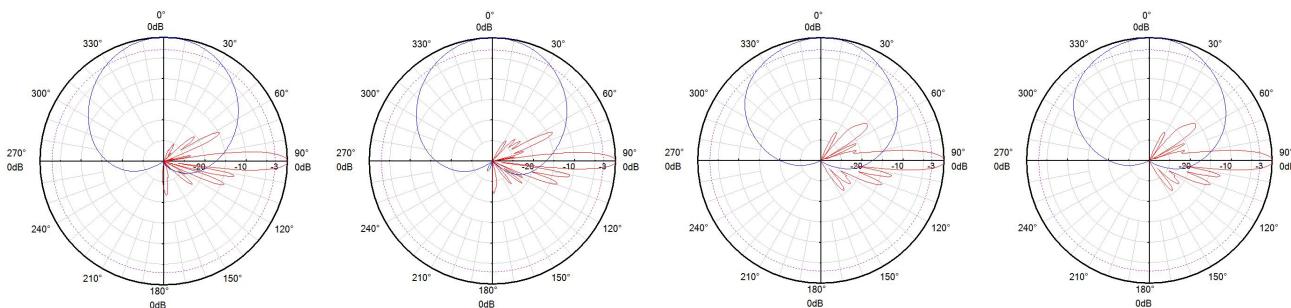
Integrated RET S/N:

- 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°C ambient temperature)* | | | 250 (at 50°C 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°C ambient temperature)* | | | |
| Intermodulation IM3 (dBc) | | ≤ -153 (2 x 43 dBm carrier) | | | |
| Impedance (Ω) | | 50 | | | |
| Grounding | | DC Ground | | | |

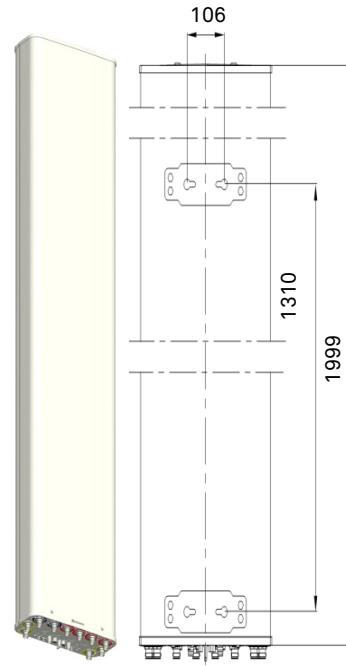
* Total power : 1000 W (at 50°C ambient temperature)

1. Values based on NGMN recommendations on Base Station Antenna Standards (BASTA).

2. Electrical datasheet in XML format is available.

2LnH Band
6-14 Ports

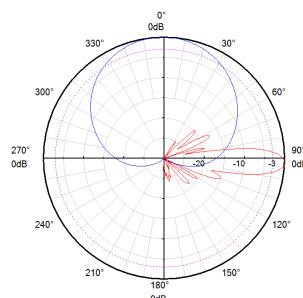
| Mechanical Properties | |
|-------------------------------------|--|
| Antenna dimensions (H x W x D) (mm) | 1999 x 369 x 149 |
| Packing dimensions (H x W x D) (mm) | 2265 x 435 x 240 |
| Antenna weight (kg) | 32.7 |
| Clamps weight (kg) | 3.6 (2 units) |
| Antenna packing weight (kg) | 47.5 (Included clamps) |
| Mast diameter supported (mm) | 50 - 115 |
| Radome material | Fiberglass |
| Radome colour | Light grey |
| Operational temperature (°C) | -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 |



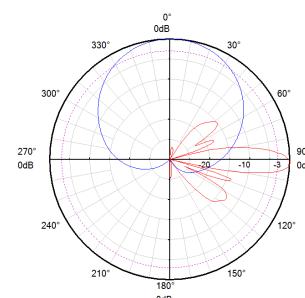
Accessories

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

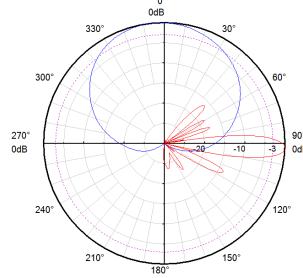
Pattern sample for reference



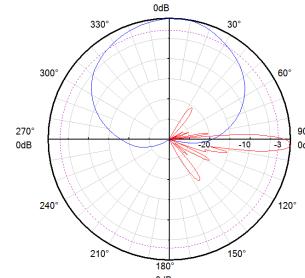
690 - 803 MHz



824 - 960 MHz



1427 - 2200 MHz



1695 - 2690 MHz

Integrated RET Specifications

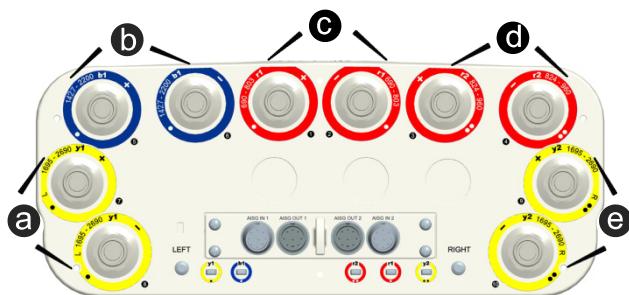
| Properties | | | | | | | | |
|----------------------------------|--|----------|--------------|----------|--------------|---------|----------------|----------|
| RET type | Integrated RET | | | | | | | |
| RET protocols* | AISG 2.0 / 3GPP | | | | | | | |
| Input voltage range (V) | 10 - 30 DC | | | | | | | |
| 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 DC | 2 n/c | 3 RS-485B | 4 n/c | 5 RS-485A | 6 DC | 7 DC return | 8 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

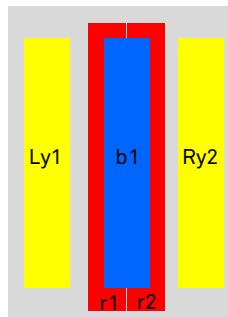
Certification: CE, FCC, RoHS, WEEE

2LnH Band
6-14 Ports



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 |

DXXXXXX-690-960/690-960/1695-2690/1695-2690/1695-2690-

65/65/65/65-16i/16i/16.5i/16.5i/16.5i-M/M/M/M/M/M-R

EasyRET 12-Port Antenna with Integrated RCU - 2.0m

Model: ASI4517R3v06



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) | |

2LnH Band
6-14 Ports

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 |

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 | | |
| 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°C ambient temperature) | | | | 250 (at 50°C ambient temperature) | | | | |
| Total power (W) | | | 1200 (at 50°C ambient temperature) | | | | | | | | |
| Intermodulation IM3 (dBc) | | | ≤ -153 (2 x 43 dBm carrier) | | | | | | | | |
| Impedance (Ω) | | | 50 | | | | | | | | |
| Grounding | | | DC Ground | | | | | | | | |

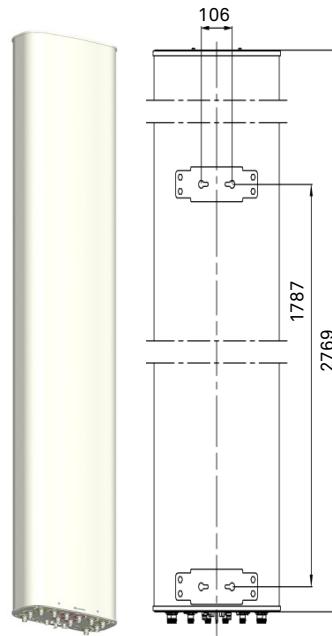
1. Values based on NGMN recommendations on Base Station Antenna Standards (BASTA).

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 (°C) | -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

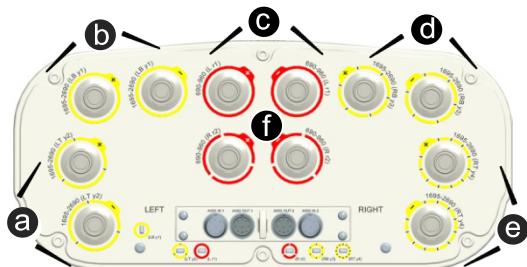
| Properties | | | | | | | |
|----------------------------------|--|----------|--------------|----------|--------------|---------|----------------|
| RET type | Integrated RET | | | | | | |
| RET protocols* | AISG 2.0 / 3GPP | | | | | | |
| Input voltage range (V) | 10 - 30 DC | | | | | | |
| Power consumption (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 DC | 2 n/c | 3 RS-485B | 4 n/c | 5 RS-485A | 6 DC | 7 DC return |
| 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

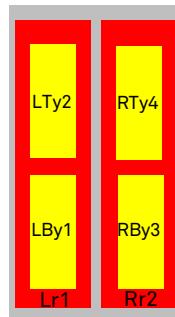
Certification: CE, FCC, IC, RCM

2LnH Band
6-14 Ports



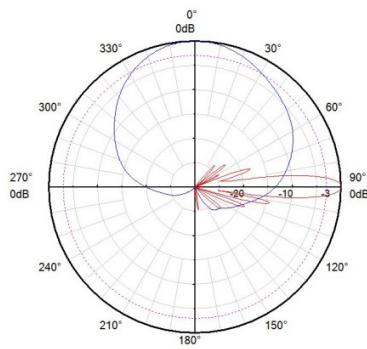
Integrated RET S/N:

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

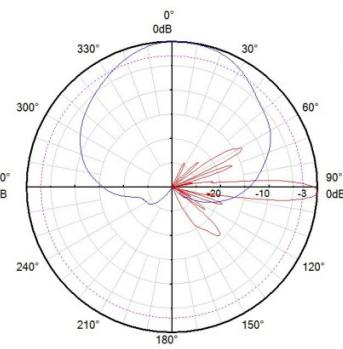


r - Red y - Yellow
 L - Left array R - Right array
 T - Top array B - Bottom array

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 | | | |
| 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 | | | |
| | 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 | | | |
| Side lobe suppression for first side lobe above main beam (dB) | | > 16 | > 16 | > 15 | > 15 | > 16 | > 15 | | | |
| Horizontal 3dB beam width (°) | | 68 ±3.0 | 65 ±2.6 | 64 ±3.2 | 63 ±5.1 | 62 ±5.0 | 63 ±4.0 | | | |
| 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 | | | |
| 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 | | | |
| Cross polar ratio (dB) | 0° | > 18 | > 20 | > 20 | > 18 | > 16 | > 15 | | | |
| Max. power per input (W) | | 500 (at 50°C ambient temperature) * | | | 250 (at 50°C 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°C ambient temperature) * | | | | | | |
| Intermodulation IM3 (dBc) | | ≤ -153 (2 x 43 dBm carrier) | | | | | | |
| Impedance (Ω) | | 50 | | | | | | |
| Grounding | | DC Ground | | | | | | |

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

1. Values based on NGMN recommendations on Base Station Antenna Standards (BASTA).

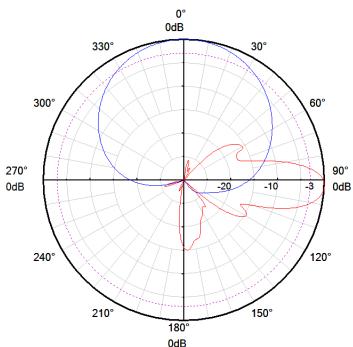
2. Electrical datasheet in XML format is available.

| 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 (°C) | -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 |

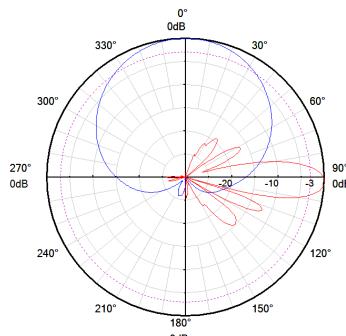
Accessories

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

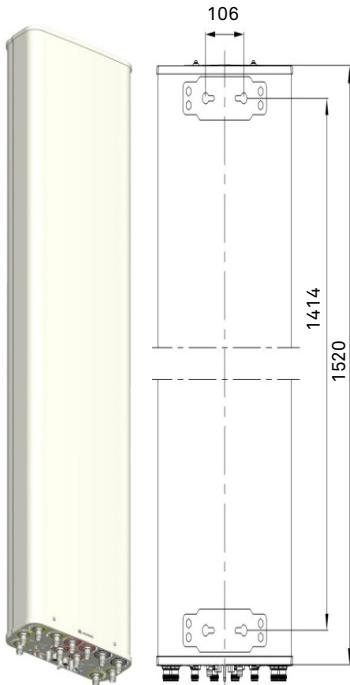
Pattern sample for reference



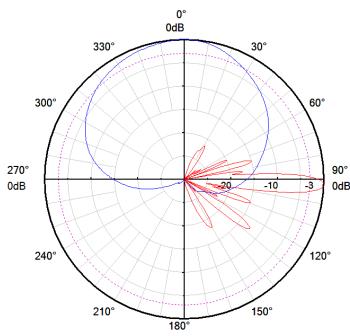
690 - 862 MHz



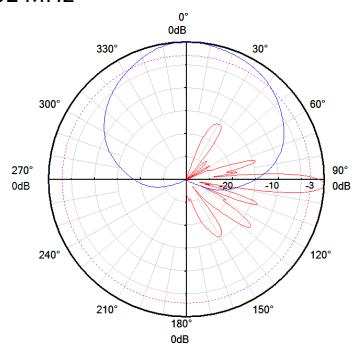
880 - 960 MHz



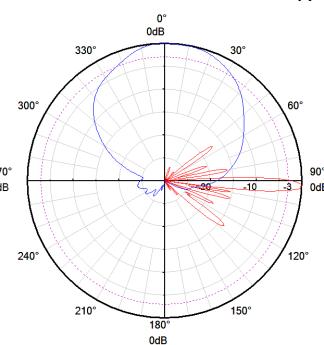
2LnH Band
6-14 Ports



1710 - 2690 MHz



1710 - 2200 MHz



2490 - 2690 MHz

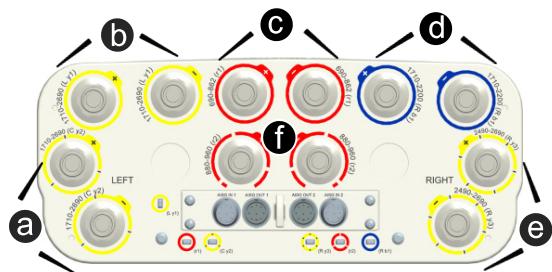
Integrated RET Specifications

| 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 DC | 2 n/c | 3 RS-485B | 4 n/c | 5 RS-485A | 6 DC | 7 DC return | 8 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.

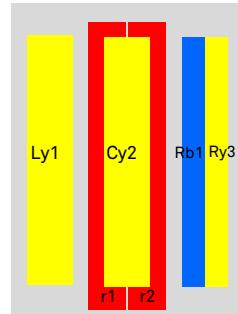
Standards: UL 60950-1 (Safety), UL 60950-22 (Safety - Equipment installed outdoor), EN 55022 (Emission),
EN 55024 (Immunity), ETSI EN 301 489, FCC Part15, ICES-003

Certification: CE, FCC, IC, RCM



Integrated RET S/N:

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



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

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 | | | |
| Polarization | | +45°, -45° | | | | | | | | |
| Electrical downtilt (°) | | 0 - 10, continuously adjustable , each band separately | | | | | | | | |
| Gain (dBi) | Bottom | at mid Tilt | 16.2 | 16.5 | 16.9 | | | | | |
| | | over all Tilts | 16.0 ±0.5 | 16.3 ±0.5 | 16.8 ±0.6 | | | | | |
| | Top | at mid Tilt | | | 17.3 | 17.4 | 17.6 | | | |
| | | over all Tilts | | | 17.2 ±0.5 | 17.4 ±0.5 | 18.0 ±0.6 | | | |
| | Top | at mid Tilt | | | 16.9 | 17.2 | 17.4 | | | |
| | | over all Tilts | | | 16.8 ±0.5 | 17.1 ±0.3 | 17.2 ±0.5 | | | |
| Side lobe suppression for first side lobe above main beam (dB) | | > 20 | > 18 | > 17 | > 20 | > 20 | > 19 | | | |
| Horizontal 3dB beam width (°) | | 66 ±2.7 | 65 ±2.9 | 63 ±4.1 | 66 ±4.7 | 63 ±3.3 | 61 ±5.2 | | | |
| 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 | | | |
| 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 | | | |
| Cross polar ratio (dB) | 0° | > 18 | > 22 | > 22 | > 19 | > 19 | > 21 | | | |
| Max. power per input (W) | | 400 (at 50°C ambient temperature) | | | 250 (at 50°C ambient temperature) | | | | | |
| Total power (W) | | 1000 (at 50°C ambient temperature) | | | | | | | | |
| Intermodulation IM3 (dBc) | | ≤ -150 (2 x 43 dBm carrier) | | | | | | | | |
| Impedance (Ω) | | 50 | | | | | | | | |
| Grounding | | DC Ground | | | | | | | | |

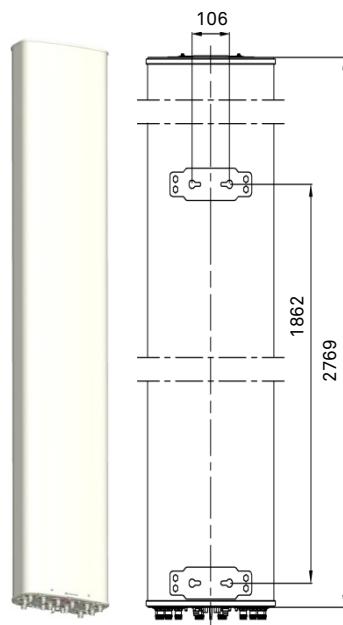
1. Values based on NGMN recommendations on Base Station Antenna Standards (BASTA).

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 (°C) | -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) |



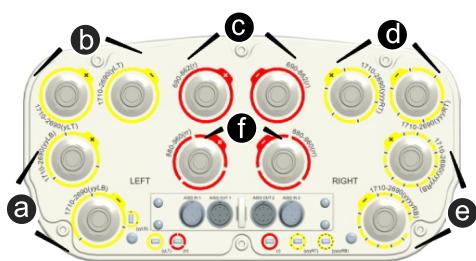
Integrated RET Specifications

| 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 DC | 2 n/c | 3 RS-485B | 4 n/c | 5 RS-485A | 6 DC | 7 DC return | 8 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.

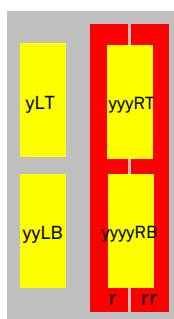
Standards: UL 60950-1 (Safety), UL 60950-22 (Safety - Equipment installed outdoor), EN 55022 (Emission), EN 55024 (Immunity), ETSI EN 301 489, FCC Part15, ICES-003

Certification: CE, FCC, IC, RCM



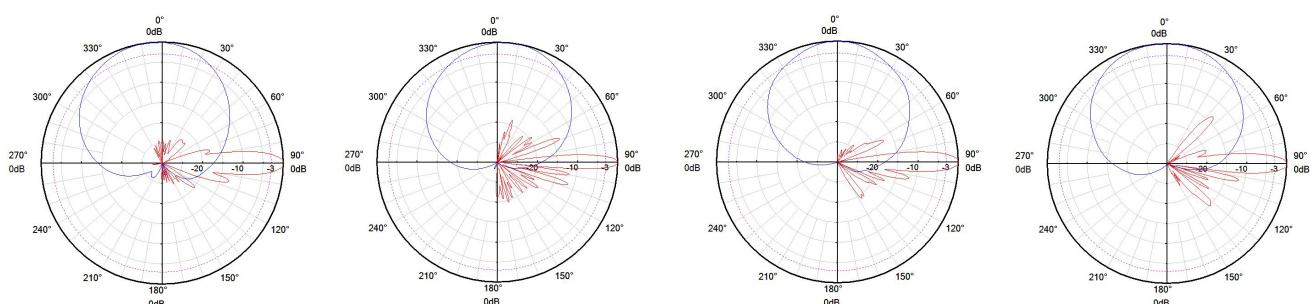
Integrated RET S/N:

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



r - Red 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
(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°C ambient temperature)* | | | 250 (at 50°C 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 | | |
| 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°C ambient temperature)* | | | |
| Intermodulation IM3 (dBc) | | ≤ -150 (2 x 43 dBm carrier) | | | |
| Impedance (Ω) | | 50 | | | |
| Grounding | | DC Ground | | | |

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

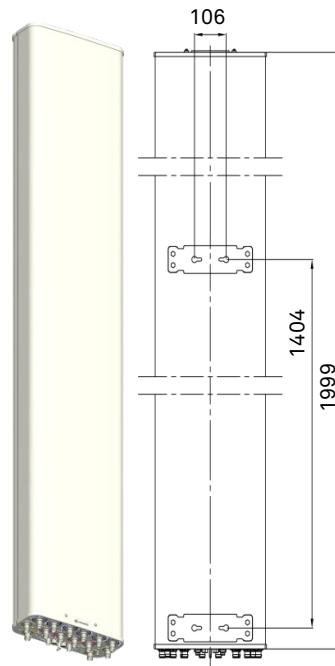
1. Values based on NGMN recommendations on Base Station Antenna Standards (BASTA).

2. Electrical datasheet in XML format is available.

2LnH Band
6-14 Ports



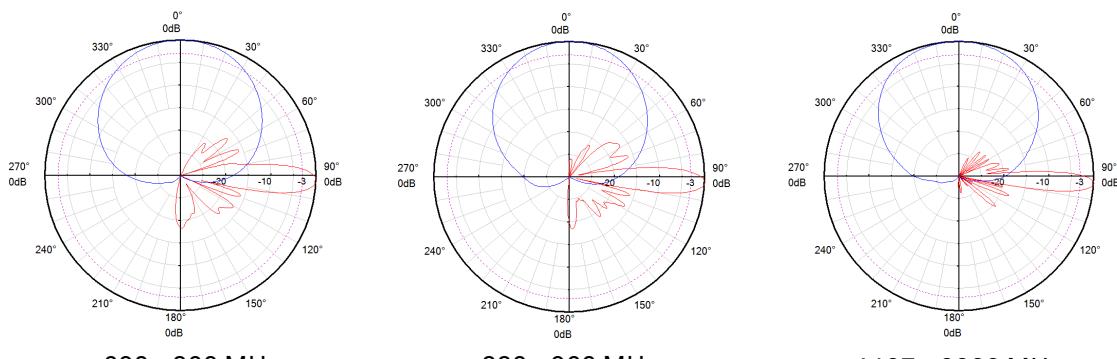
| Mechanical Properties | |
|-------------------------------------|--|
| Antenna dimensions (H x W x D) (mm) | 1999 x 369 x 149 |
| Packing dimensions (H x W x D) (mm) | 2265 x 435 x 240 |
| Antenna weight (kg) | 37.0 |
| Clamps weight (kg) | 5.8 (2 units) |
| Antenna packing weight (kg) | 50.0 (Included clamps) |
| Mast diameter supported (mm) | 50 - 115 |
| Radome material | Fiberglass |
| Radome colour | Light grey |
| Operational temperature (°C) | -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) |

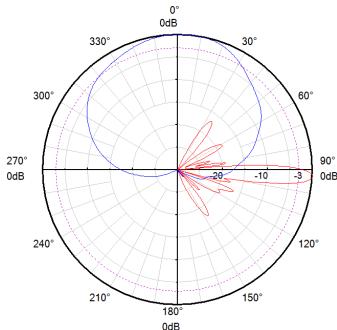
Pattern sample for reference



690 - 862 MHz

880 - 960 MHz

1427 - 2200 MHz



1695 - 2200 MHz

2490 - 2690 MHz

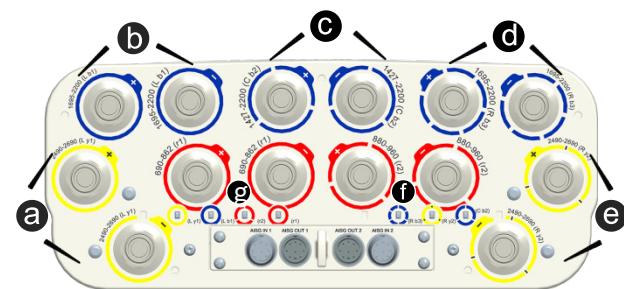
Integrated RET Specifications

| 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 DC | 2 n/c | 3 RS-485B | 4 n/c | 5 RS-485A | 6 DC | 7 DC return |
| 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.....Lb1

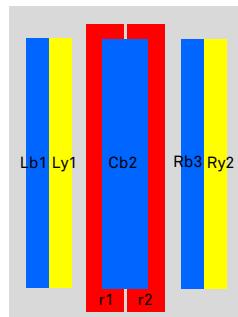
c HWMxxx.....Cb2

d HWMxxx.....Rb3

e HWMxxx.....Ry2

f HWMxxx.....r2

g HWMxxx.....r1



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

**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 5 | 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

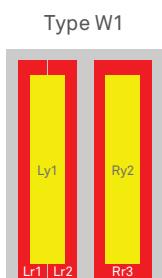
| Frequency Range (MHz) | 3dB Horizontal beam width (°) | Gain (dBi) | Electrical downtilt (°) | Tilt Method | Connector | Dimension(mm) | Model | Page | Array symbol |
|---|-------------------------------|--|--|-------------|-------------|------------------|----------------|------|--------------|
| 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 | EasyRET2.0 | 14 x 4.3-10 | 2769 x 429 x 196 | **AHP4518R0v06 | 199 | Z1 |

16 Ports - 3L5H

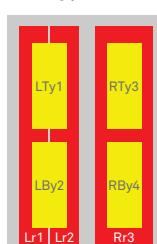
| Frequency Range (MHz) | 3dB Horizontal beam width (°) | Gain (dBi) | Electrical downtilt (°) | Tilt Method | Connector | Dimension(mm) | Model | Page | Array symbol |
|---|-------------------------------|---|---|-------------|-------------|------------------|----------------|------|--------------|
| 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

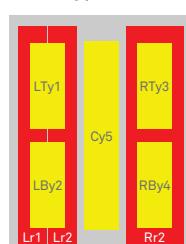
Array Symbol Type



Type Z1



Type Z3



3LnH Band
10-16 Ports

DXXXXX-690-862/880-960/690-960/1695-2690/1695-2690-

65/65/65/65-16i/16.5i/17i/18i/18i-M/M/M/M/M-R

EasyRET 10-Port Antenna with 5 Integrated RCUs - 2.6m

Model: APE4518R18v06

**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 |

D7X-690-862/880-960/690-960/4x(1695-2690)-7x65-

16i/16.5i/17i/17.5i/17.5i/17.5i/17.5i-7xM-R

EasyRET 14-Port Antenna with Integrated RCUs - 2.6m

Model: AHP4518R0v06

**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) | | | |

3LnH Band
10-16 Ports**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

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°C ambient temperature) | | | |
| Intermodulation IM3 (dBc) | | ≤ -153 (2 x 43 dBm carrier) | | | |
| Impedance (Ω) | | 50 | | | |
| Grounding | | DC Ground | | | |

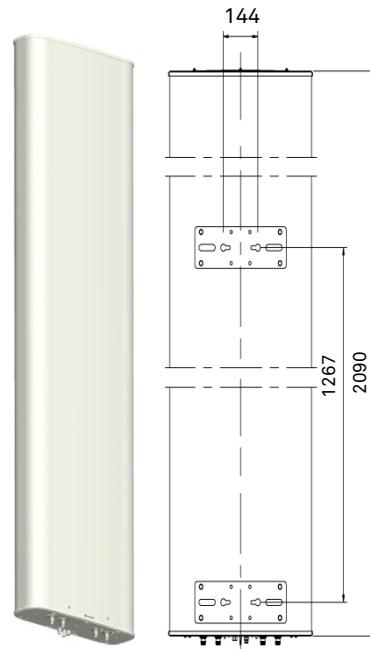
1. Values based on NGMN recommendations on Base Station Antenna Standards (BASTA).

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 (°C) | | -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) |



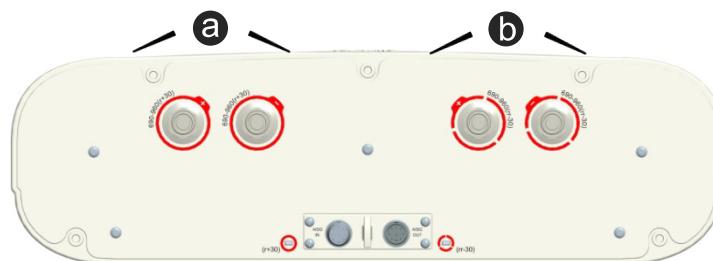
Integrated RET Specifications

| 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 DC | 2 n/c | 3 RS-485B | 4 n/c | 5 RS-485A | 6 DC | 7 DC return | 8 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



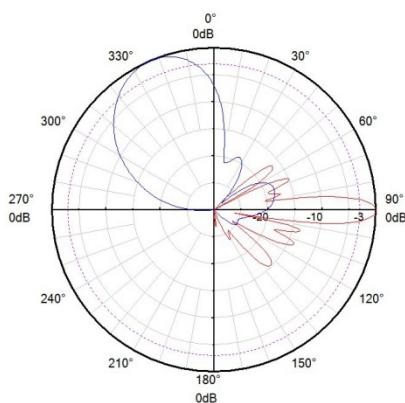
Integrated RET S/N:

a HWMxxxx.....r

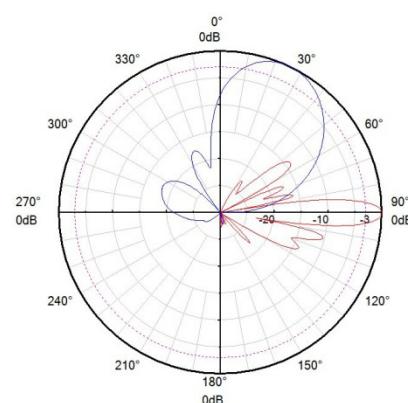
b HWMxxxx.....rr

r - Red

Pattern sample for reference



690 - 960 MHz
(rr-30)



690 - 960 MHz
(r+30)

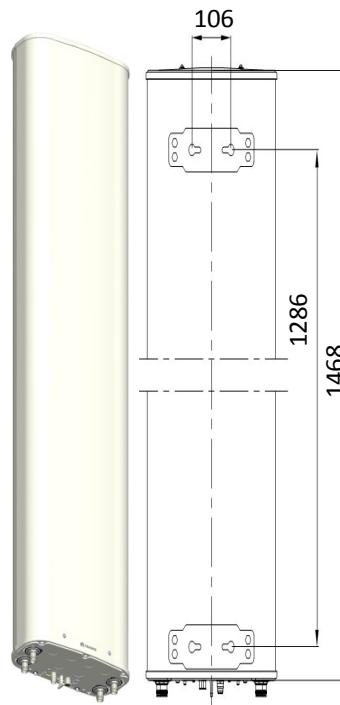
Preliminary Issue**Antenna Specifications**

| Electrical Properties | | | | |
|--|----------------------------------|-----------------------------------|-------------|-----------|
| Frequency range (MHz) | 1710 - 2200 | | | |
| | 1710 - 1880 | 1850 - 1990 | 1920 - 2200 | |
| Polarization | +45° , -45° | | | |
| Gain (dBi) | 2 - 12 , continuously adjustable | | | |
| | at mid Tilt | 18.6 | 19.2 | 19.5 |
| Side lobe suppression for first side lobe above main beam (dB) | over all Tilts | 18.4 ±0.6 | 19.0 ±0.6 | 19.3 ±0.4 |
| | | > 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°C 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 (°C) | -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 DC | 2 n/c | 3 RS-485B | 4 n/c | 5 RS-485A | 6 DC | 7 DC return | 8 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:

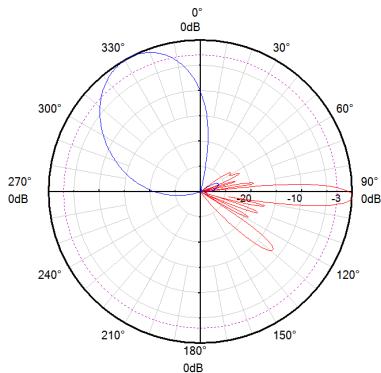
a HWMxxx.....b1

b HWMxxx.....b2

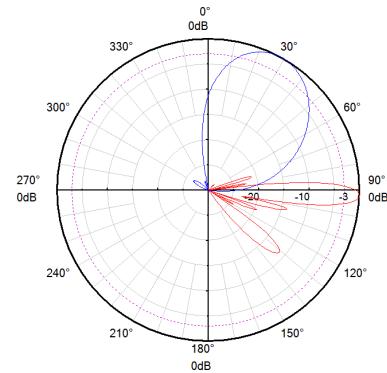
r - Red

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°C ambient temperature) | | | |
| Intermodulation IM3 (dBc) | | ≤ -153 (2 x 43 dBm carrier) | | | |
| Impedance (Ω) | | 50 | | | |
| Grounding | | DC Ground | | | |

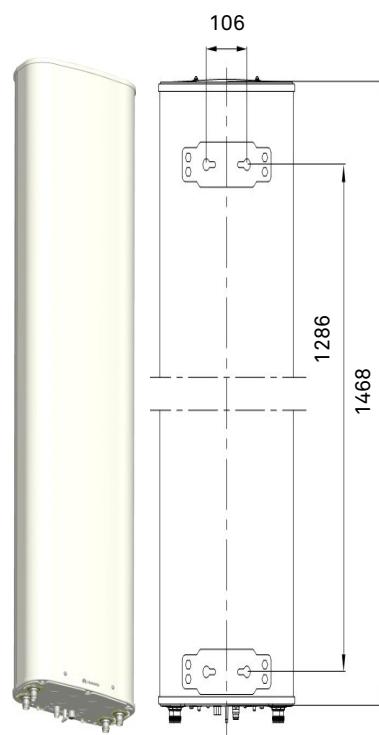
1. Values based on NGMN recommendations on Base Station Antenna Standards (BASTA).

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 (°C) | | -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 DC | 2 n/c | 3 RS-485B | 4 n/c | 5 RS-485A | 6 DC | 7 DC return | 8 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



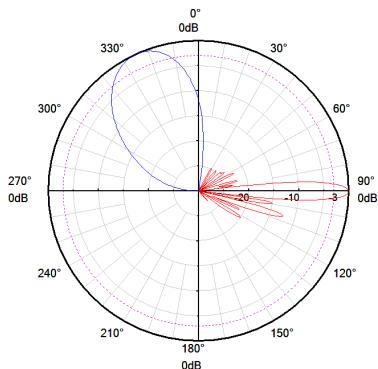
Integrated RCU S/N:

a HWxxxx.....y

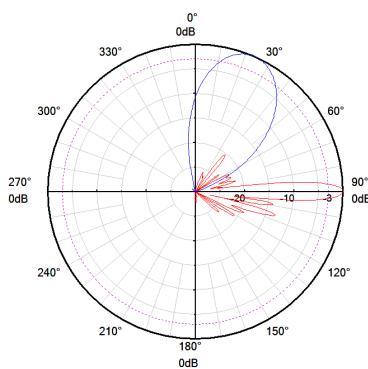
b HWxxxx....yy

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 |
| 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°C ambient temperature) | | | | | 250 (at 50°C ambient temperature) |
| Intermodulation IM3 (dBc) | | ≤ -153 (2 x 43 dBm carrier) | | | | | |
| Impedance (Ω) | | 50 | | | | | |
| Grounding | | DC Ground | | | | | |

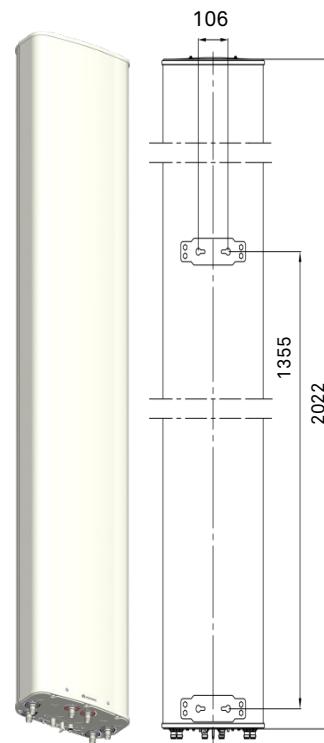
1. Values based on NGMN recommendations on Base Station Antenna Standards (BASTA).

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 (°C) | -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 | | $+45^\circ, -45^\circ$ | | | |
| 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, $\pm 30^\circ$ (dB) | | > 25 | > 26 | > 26 | > 26 |
| Cross polar ratio (dB) | 0° | > 15 | > 17 | > 17 | > 17 |
| Max. power per input (W) | | 500 (at 50°C 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 |
| Polarization | | $+45^\circ, -45^\circ$ | | | | |
| 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 |
| | over all Tilts | 17.1 ± 0.6 | 17.9 ± 0.6 | 16.8 ± 0.6 | 17.0 ± 0.5 | 17.2 ± 0.5 |
| Side lobe suppression for first side lobe above main beam (dB) | | > 17 | > 17 | > 17 | > 17 | > 17 |
| Horizontal 3dB beam width (°) | | 33 ± 3 | 30 ± 3 | 60 ± 5 | 61 ± 5 | 63 ± 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 |
| 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, $\pm 30^\circ$ (dB) | | > 27 | > 29 | > 26 | > 27 | > 27 |
| Cross polar ratio (dB) | 0° | > 15 | > 17 | > 17 | > 20 | > 20 |
| Max. power per input (W) | | 250 (at 50°C ambient temperature)* | | | | |
| Intermodulation IM3 (dBc) | | ≤ -153 (2 x 43 dBm carrier) | | | | |
| Impedance (Ω) | | 50 | | | | |
| Grounding | | DC Ground | | | | |

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

1. Values based on NGMN recommendations on Base Station Antenna Standards (BASTA).

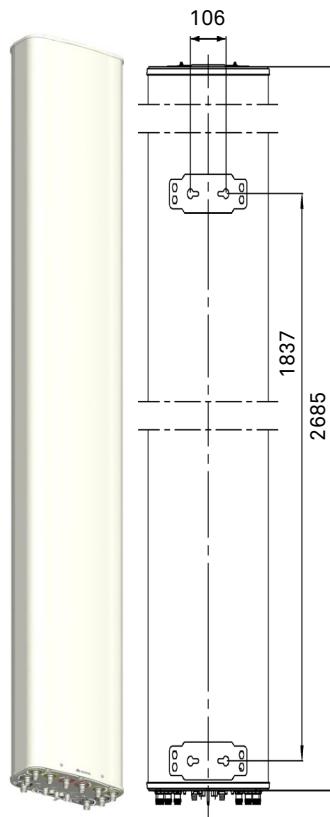
2. Electrical datasheet in XML format is available.



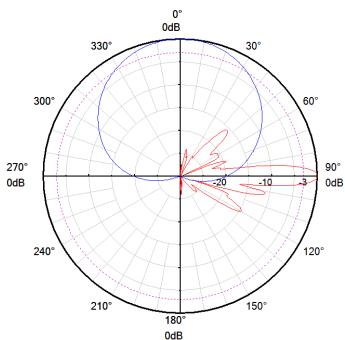
| Mechanical Properties | |
|-------------------------------------|---|
| Antenna dimensions (H x W x D) (mm) | 2685 x 359 x 178 |
| Packing dimensions (H x W x D) (mm) | 2985 x 425 x 255 |
| Antenna weight (kg) | 35.0 |
| Clamps weight (kg) | 5.8 (2 units) |
| Antenna packing weight (kg) | 54.1 (Included clamps) |
| Mast diameter supported (mm) | 50 - 115 |
| Radome material | Fiberglass |
| Radome colour | Light grey |
| Operational temperature (°C) | -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

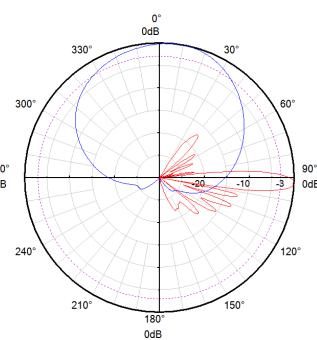
| Item | Model | Description | Weight | Units per antenna |
|--------------|-----------|---------------------------------|--------|----------------------|
| Downtilt kit | ASMDT0F01 | Mechanical downtilt: 0 - 8 ° | 3.1 kg | 1 (Separate packing) |



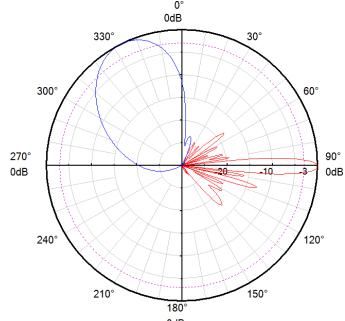
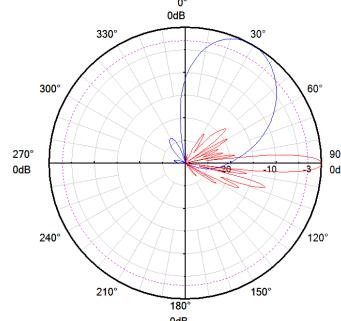
Pattern sample for reference



690 - 960 MHz



1695 - 2690 MHz

1695 - 2200 MHz
(b2-30)1695 - 2200 MHz
(b1+30)

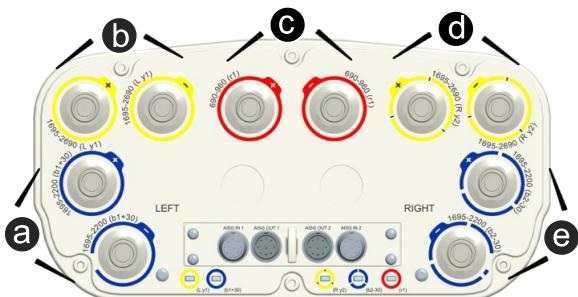
Integrated RET Specifications

| 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 DC | 2 n/c | 3 RS-485B | 4 n/c | 5 RS-485A | 6 DC | 7 DC return | 8 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.

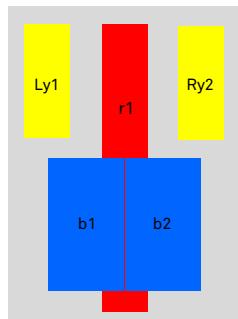
Standards: UL 60950-1 (Safety), UL 60950-22 (Safety - Equipment installed outdoor), EN 55022 (Emission),
EN 55024 (Immunity), ETSI EN 301 489, FCC Part15, ICES-003

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 | | $+45^\circ, -45^\circ$ | | | |
| 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, $\pm 30^\circ$ (dB) | | > 25 | > 26 | > 26 | > 26 |
| Cross polar ratio (dB) | 0° | > 15 | > 17 | > 17 | > 17 |
| Max. power per input (W) | | 500 (at 50°C 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) | |
| | | 1695 - 1990 | 1920 - 2200 | 1695 - 1990 | 1920 - 2200 |
| Polarization | | $+45^\circ, -45^\circ$ | | | |
| 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 |
| | over all Tilts | 17.1 ± 0.6 | 17.9 ± 0.6 | 16.6 ± 0.4 | 16.8 ± 0.4 |
| Side lobe suppression for first side lobe above main beam (dB) | | > 17 | > 17 | > 17 | > 17 |
| Horizontal 3dB beam width (°) | | 33 ± 3 | 30 ± 3 | 63 ± 4 | 61 ± 4 |
| Vertical 3dB beam width (°) | | 7.2 ± 0.5 | 6.5 ± 0.5 | 6.4 ± 0.7 | 5.8 ± 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, $\pm 30^\circ$ (dB) | | > 27 | > 27 | > 25 | > 25 |
| Cross polar ratio (dB) | 0° | > 15 | > 17 | > 17 | > 17 |
| Max. power per input (W) | | 250 (at 50°C ambient temperature) * | | | |
| Intermodulation IM3 (dBc) | | ≤ -153 (2 x 43 dBm carrier) | | | |
| Impedance (Ω) | | 50 | | | |
| Grounding | | DC Ground | | | |

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

1. Values based on NGMN recommendations on Base Station Antenna Standards (BASTA).

2. Electrical datasheet in XML format is available.

2MXXXXXX-690-960/1695-2200/1695-2200/2490-2690/2490-2690/1695-
 2200-65/65/65/65/33-17i/17 i/17i/17.5i/17.5i/18.5i-M/M/M/M/M/M-R
EasyRET Hybrid Hepta-beam Antenna with 7 Integrated RCUs - 2.6m
Model: AMB4519R4v06



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 (°C) | -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 |
| | 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 |
| Side lobe suppression for first side lobe above main beam (dB) | | > 18 | > 18 | > 18 | > 18 | > 20 | > 19 |
| Horizontal 3dB beam width (°) | | 36 ±2 | 33 ±2 | 31 ±2 | 67 ±3 | 64 ±2.5 | 62 ±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 |
| 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 |
| Cross polar ratio (dB) | 0° | > 20 | > 20 | > 20 | > 19 | > 19 | > 22 |
| Max. power per input (W) | | 250 (at 50°C ambient temperature) | | | | | |
| Total power (W) | | 960 (at 50°C ambient temperature) | | | | | |
| Intermodulation IM3 (dBc) | | ≤ -153 (2 x 43 dBm carrier) | | | | | |
| Impedance (Ω) | | 50 | | | | | |
| Grounding | | DC Ground | | | | | |

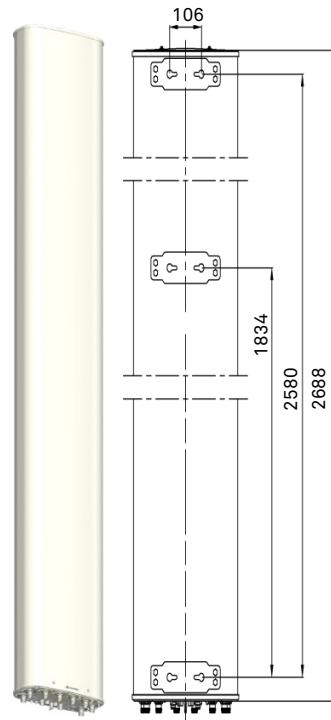
1. Values based on NGMN recommendations on Base Station Antenna Standards (BASTA).

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 (°C) | -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) |



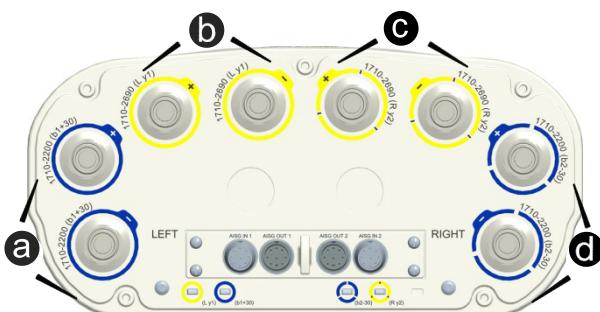
Integrated RET Specifications

| 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 DC | 2 n/c | 3 RS-485B | 4 n/c | 5 RS-485A | 6 DC | 7 DC return | 8 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

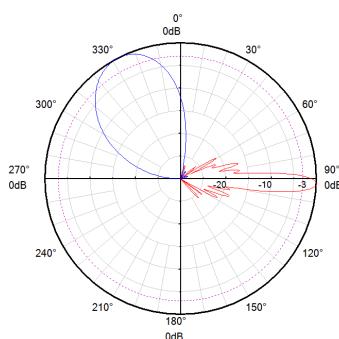


Integrated RET S/N:

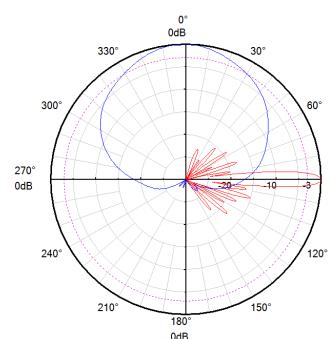
- a HWMxxx.....b1
- b HWMxxx.....Ly1
- c HWMxxx.....Ry2
- d HWMxxx.....b2

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

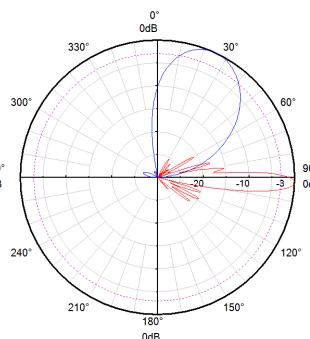
Pattern sample for reference



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°C ambient temperature) | | | 250 (at 50°C 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.

Multi-beam

| 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 (°C) | -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) |

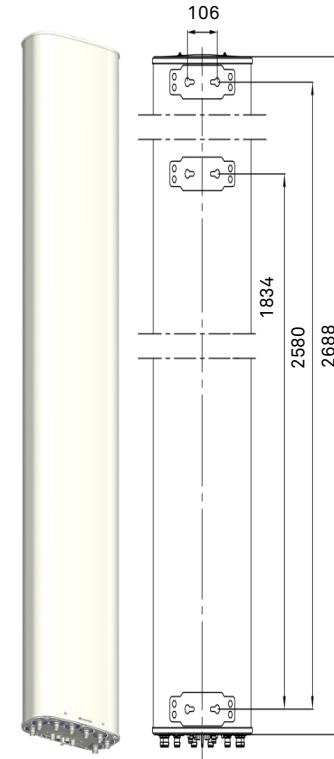
**Preliminary Issue****Antenna Specifications**

| Electrical Properties | | | | | |
|--|--------------------|-------------|-------------|-----------|--|
| Frequency range (MHz) | 2 x (1710 - 2200) | | | | |
| | 1710 - 1880 | 1850 - 1990 | 1920 - 2200 | | |
| Polarization | | | | | |
| +45° , -45° | | | | | |
| Electrical downtilt (°) | | | | | |
| 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 | | | | | |
| Horizontal 3dB beam width (°) | | | | | |
| 36 ±2 | | | | | |
| Vertical 3dB beam width (°) | | | | | |
| 7.2 ±0.4 | | | | | |
| VSWR | | | | | |
| < 1.5 | | | | | |
| Horizontal beam centers (°) | | | | | |
| ± 31 | | | | | |
| Cross polar isolation (dB) | | | | | |
| Same beam: ≥ 28 | | | | | |
| Beam to beam isolation (dB) | | | | | |
| ≥ 18 | | | | | |
| Front to back ratio, ±30° (dB) | | | | | |
| > 32 | | | | | |
| Cross polar ratio (dB) 0° | | | | | |
| > 20 | | | | | |
| Max. power per input (W) | | | | | |
| 250 (at 50°C ambient temperature) | | | | | |
| Total power (W) | | | | | |
| 960 (at 50°C 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 (°C) | -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 |



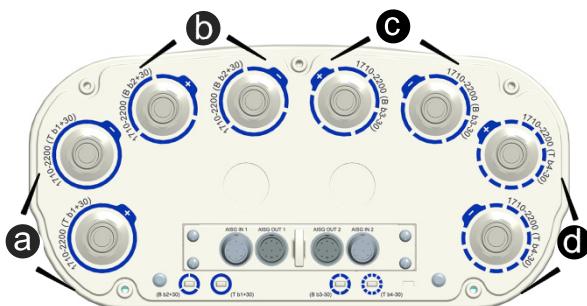
Integrated RET Specifications

| 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 DC | 2 n/c | 3 RS-485B | 4 n/c | 5 RS-485A | 6 DC | 7 DC return | 8 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

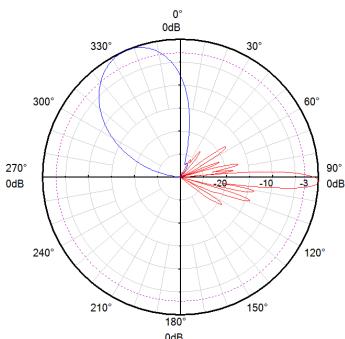
b - Blue

T - Top array

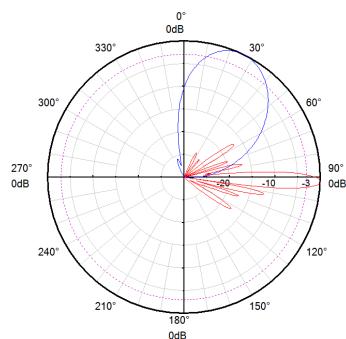
B - Bottom array

Multi-beam

Pattern sample for reference



1710 - 2200 MHz (-30)



1710 - 2200 MHz (+30)

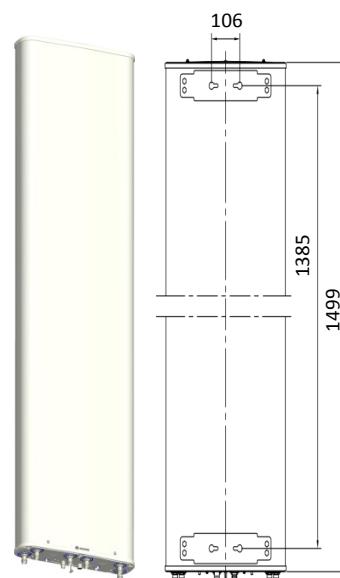
**Preliminary Issue****Antenna Specifications**

| 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°C 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 (°C) | -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 |



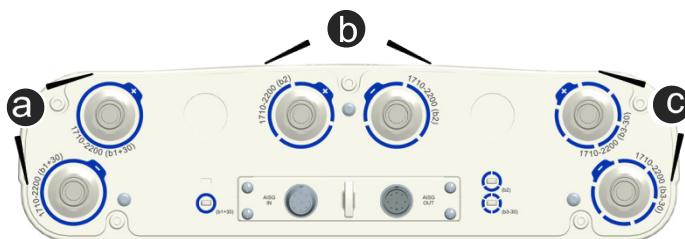
Integrated RET Specifications

| 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 DC | 2 n/c | 3 RS-485B | 4 n/c | 5 RS-485A | 6 DC | 7 DC return | 8 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:

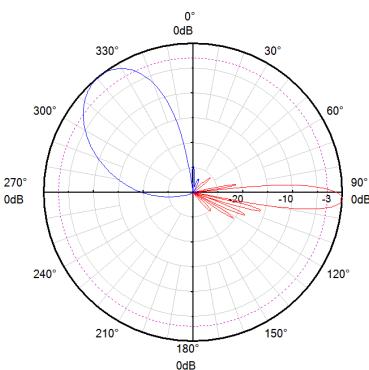
a HWMxxx.....b1

b HWMxxx.....b2

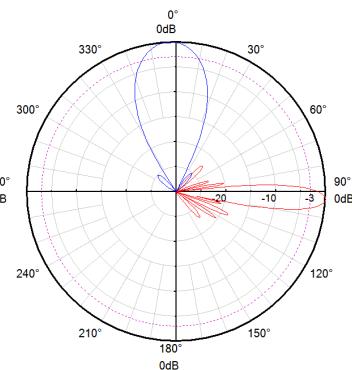
c HWMxxx.....b3

b - Blue

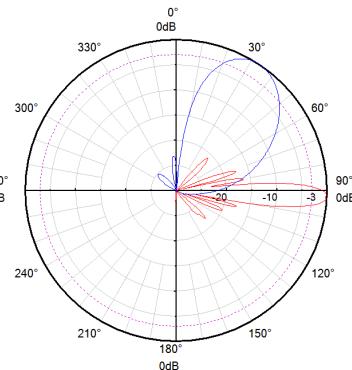
Pattern sample for reference



1710 - 2200 MHz
(b3-30)



1710 - 2200 MHz
(b2)



1710 - 2200 MHz
(b1+30)

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°C 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 (°C) | -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

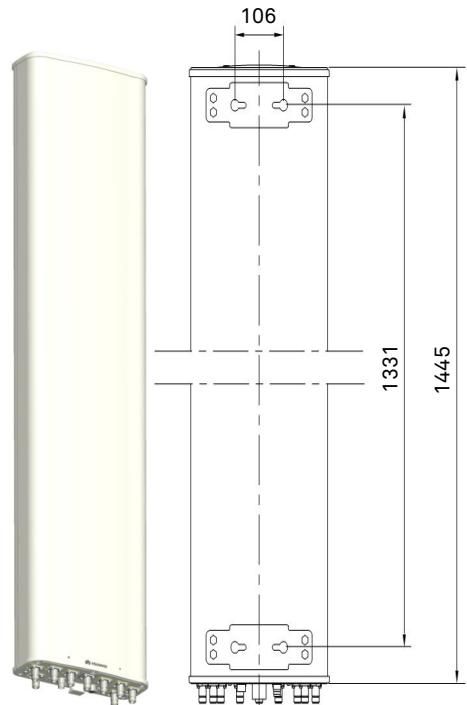
| Frequency Range (MHz) | 3dB Horizontal beam width (°) | Gain (dBi) | Electrical downtilt (°) | Tilt Method | Connector | Dimension(mm) | Model | Page | Array symbol |
|-------------------------------------|-------------------------------|------------------|-------------------------|-------------|-------------------------------------|-------------------------|-------------|------------|--------------|
| 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

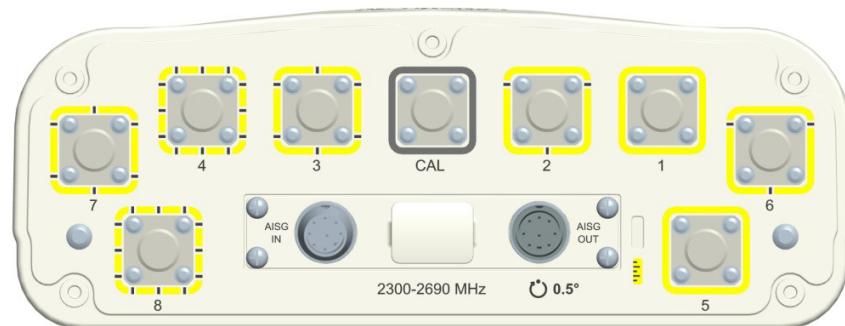
| Electrical Properties | | | | |
|---------------------------------------|---|--|-------------|-------|
| General parameters | Frequency range (MHz) | 2300 - 2400 | 2496 - 2690 | |
| | Polarization | +45° , -45° | | |
| | Electrical downtilt (°) | 2 - 12 , continuously adjustable | | |
| | Electrical 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 (°C) | -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) |

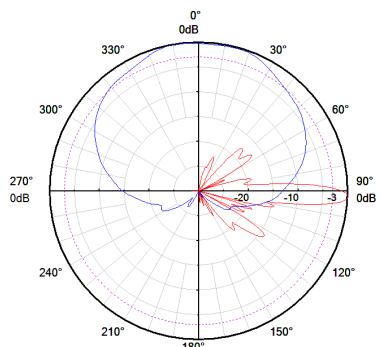


RET S/N: HWMxxxx....y

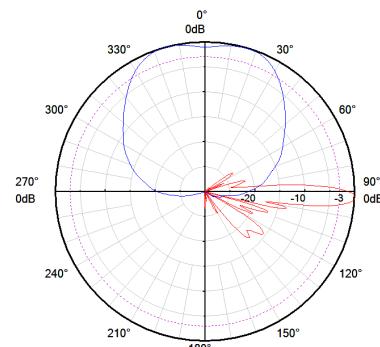
RAE S/N: HWXxxxx....y

y - Yellow

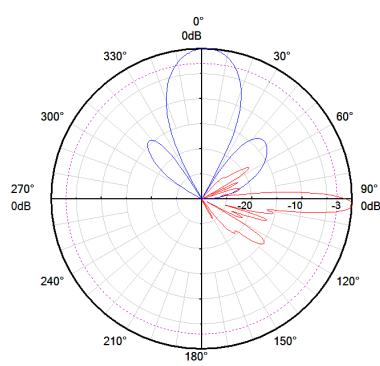
TDD
Camouflage

Pattern sample for reference

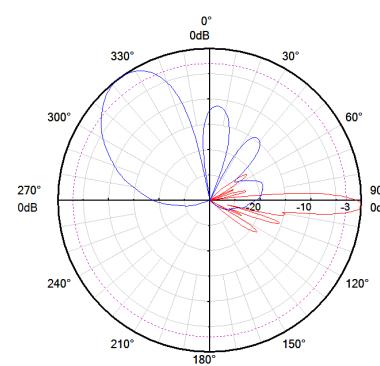
Single column



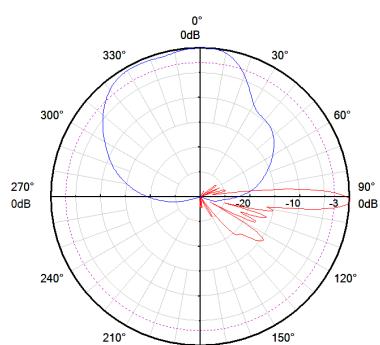
65° Broadcast



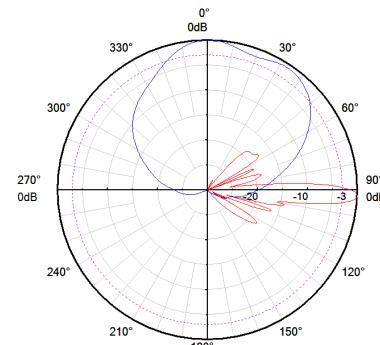
Service 0°



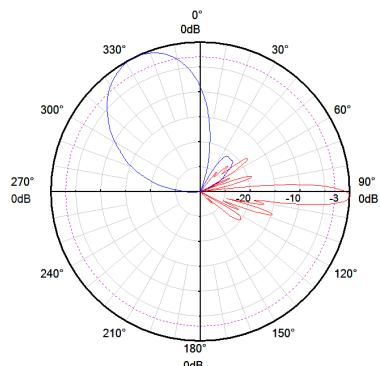
Service 30°



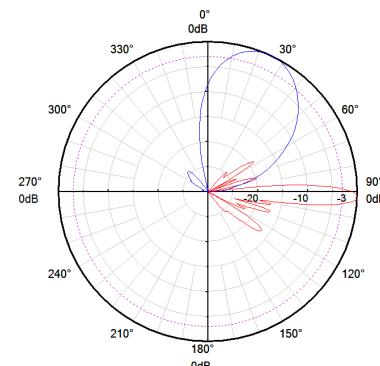
Azimuth -15°



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

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

| 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) |
| | 65° Broadcast beam | 65 |
| | | Gain (dBi) |
| | | 17 |
| | | Gain roll-off at sector edge (dB) |
| | | 12 |
| | | Vertical 3dB beam width (°) |
| | | 5.5 |
| | Service beam | Cross polar ratio (0°) (dB) |
| | | 22 |
| | | Front to back ratio (dB) |
| | | ≥ 25 |
| | | Side lobe suppression for first side lobe above main beam (dB) |
| | | ≤ -15 |
| | | 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

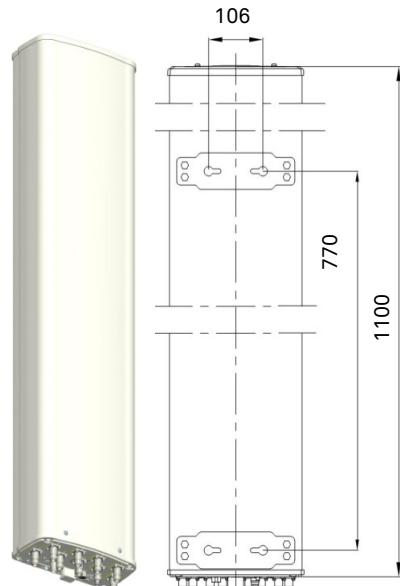
| | | |
|----------------------|--|-------------|
| Radiation parameters | Frequency range (MHz) | 3300 - 3800 |
| | Horizontal 3dB beam width (°) | 30 |
| | Gain (dBi) | 20 |
| | Vertical 3dB beam width (°) | 5.5 |
| | Front to back ratio (dB) | ≥ 25 |
| | Side lobe suppression for first side lobe above 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

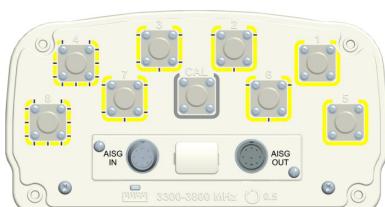
| | |
|-------------------------------------|--|
| Distance between columns (mm) | 43 |
| Antenna dimensions (H x W x D) (mm) | 1100 x 259 x 135 |
| Packing dimensions (H x W x D) (mm) | 1290 x 340 x 205 |
| Antenna weight (kg) | 13.0 |
| Clamps weight (kg) | 2.9 (2 units) |
| Antenna packing weight (kg) | 20.0 (Included clamps) |
| Mast diameter supported (mm) | 50 - 115 |
| Radome material | Fiberglass |
| Radome colour | Light grey |
| Operational temperature (°C) | -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 |



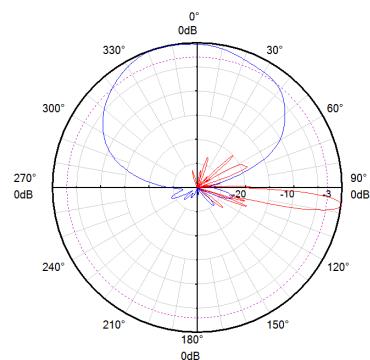
TDD Camouflage

Accessories

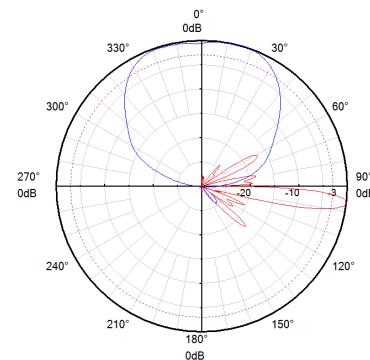
| Item | Model | Description | Weight | Units per antenna |
|--------------|-----------|---------------------------------|--------|----------------------|
| Downtilt kit | ASMDT0B01 | Mechanical downtilt: 0 - 16° | 1.3 kg | 1 (Separate packing) |

**RET S/N:** HWxxxx....y**RAE S/N:** HWXXXX....y

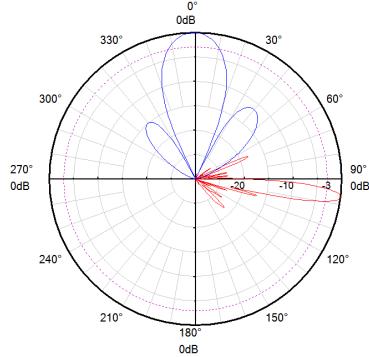
y - Yellow

Pattern sample for reference

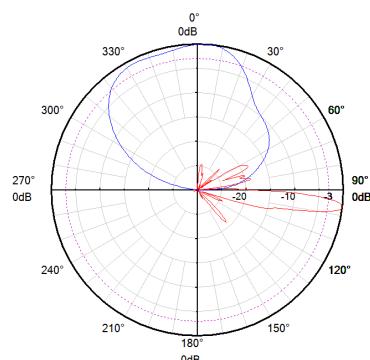
Single column



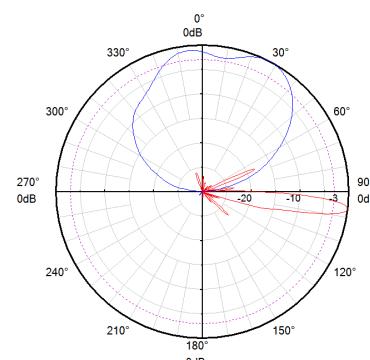
65° Broadcast



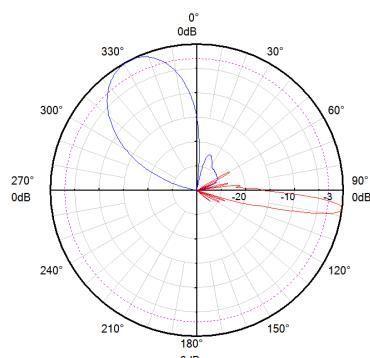
Service 0°



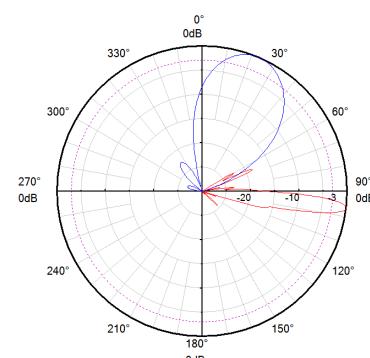
Azimuth -15°



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 | | | | | | | | | |
| Broadca st 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

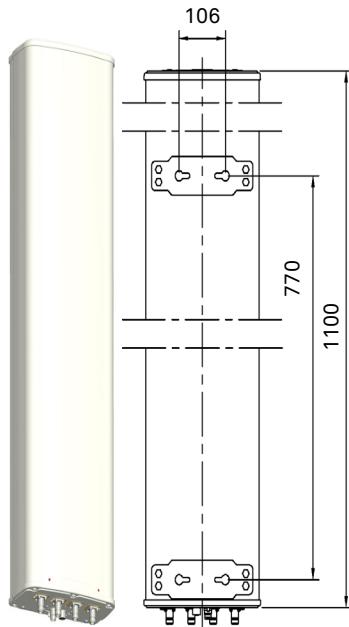
Antenna Specifications

| | | 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°C ambient temperature) |
| Total power (W) | | 160 (at 50°C 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 (°C) | | -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) |

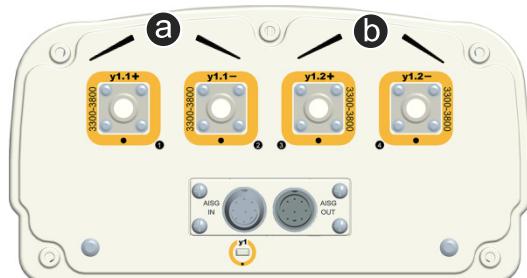
Integrated RET Specifications

| 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 DC | 2 n/c | 3 RS-485B | 4 n/c | 5 RS-485A | 6 DC | 7 DC return | 8 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



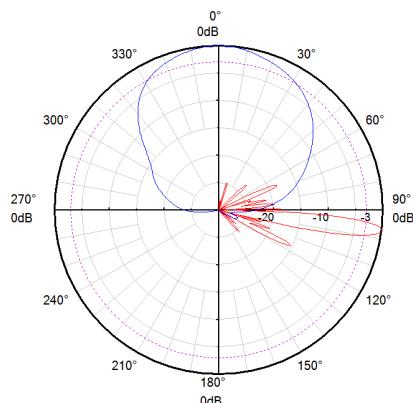
Integrated RET S/N:

a b 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 | > 28 | > 27 |
| Cross polar ratio (dB) | 0° | > 20 | > 20 | > 20 | > 20 |
| Max. power per input (W) | 250 (at 50°C ambient temperature) | | | | |
| Intermodulation IM3 (dBc) | ≤ -153 (2 x 43 dBm carrier) | | | | |
| Impedance (Ω) | 50 | | | | |
| Grounding | DC Ground | | | | |

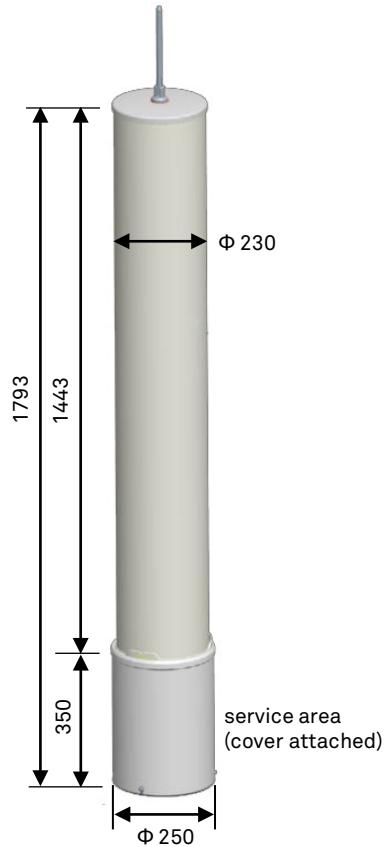
1. Values based on NGMN recommendations on Base Station Antenna Standards (BASTA).

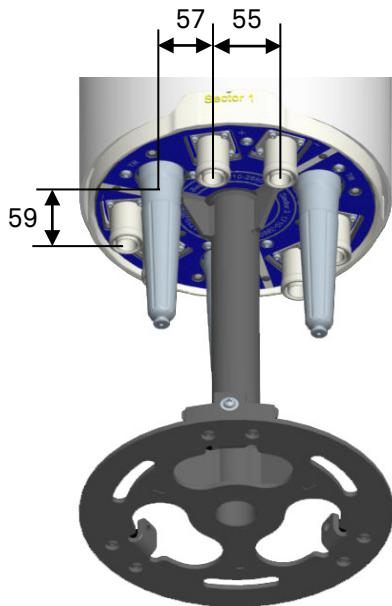
2. Electrical datasheet in XML format is available.

| 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 (°C) | -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 |

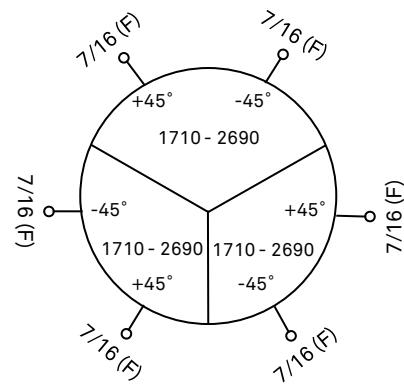
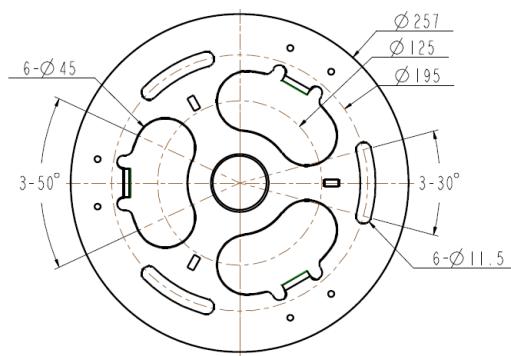
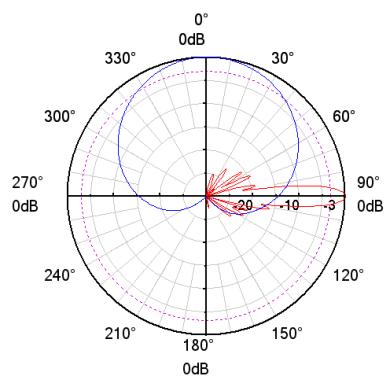
Accessories (only Huawei product applies, order separately if required)

| | |
|-----|--|
| SBT | ASBT00001 |
| RCU | ARCU01109 (AISG 1.1) ARCU02004 (AISG 2.0) |

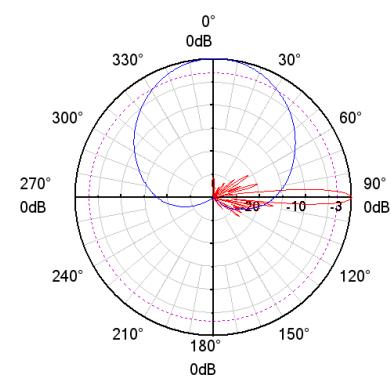




Unit: mm

**Flange interface (thickness: 5 mm):****Pattern sample for reference**

1710 - 2200 MHz



2200 - 2690 MHz

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°C ambient temperature) | 250 (at 50°C 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 (°C) | -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 and RCU configuration list



| Antenna Model | AISG 2.0 |
|---------------|-----------|
| A79451500v06 | |
| A79451600v06 | |
| A79451700v06 | |
| A79451702v06 | |
| ADU451503v06 | |
| ADU451602v06 | |
| ADU451807v06 | |
| ATR451602v06 | ARCU02004 |
| ATR451715v06 | |
| ATR451704v06 | |
| ATR451709v06 | |
| ATR451606v06 | |
| ATR451607v06 | |
| A264518S0 | |

***RCU is used for MET1.0 antennas upgrade to RET antennas.*

| Antenna Model | | AIMM (Antenna information management module) |
|---------------|---|---|
| MET2.0 | EasyRET2.0 (Corresponding to MET2.0) | |
| A79451503v06 | A794515R1v06 | |
| A70452100v06 | A704521R0v06 | |
| A19451811v06 | A194518R0v06 | AIMM20S11v01 |
| A26451800v06 | A264518R0v06 | |
| ADU451819v06 | ADU4518R1v06 | |
| ADU451816v06 | ADU4518R6v06 | |
| ADU451716v06 | ADU4518R10v06 | |
| ADU451604v06 | ADU4518R11v06 | AIMM20D11v01 |
| ADU451712v06 | ADU4518R12v06 | |
| AMB452003v06 | AMB4520R5v06 | |
| AMB452000v06 | AMB4520R0v06 | |
| ATR451807v06 | ATR4518R15v06 | |
| ATR451714v06 | ATR4518R14v06 | AIMM20M11v01 |

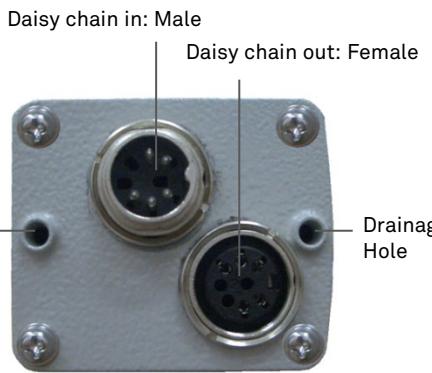
*****AIMM is used for MET2.0 antennas upgrade to RET antennas.***

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.

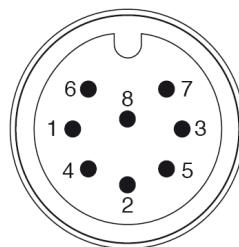
| | | | | | | | | |
|------------------------------------|---|-----|---------|-----|---------|----|-----------|-----|
| Input voltage range (V) | DC 10 - 30 | | | | | | | |
| Current (mA) | < 600 (motor activated) < 50 (stand by) | | | | | | | |
| Adjustment time (full range) (min) | < 2 | | | | | | | |
| 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 (°C) | -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 | | | | | | | |



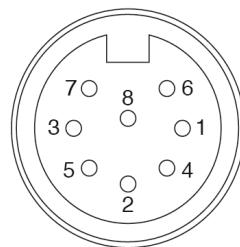
Appearance



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 (°C) | -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

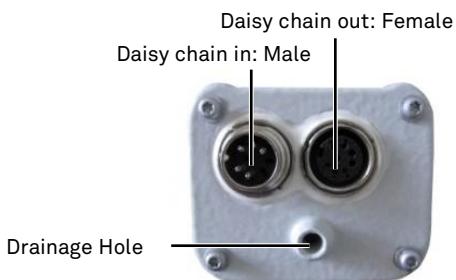
Certification:

- 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

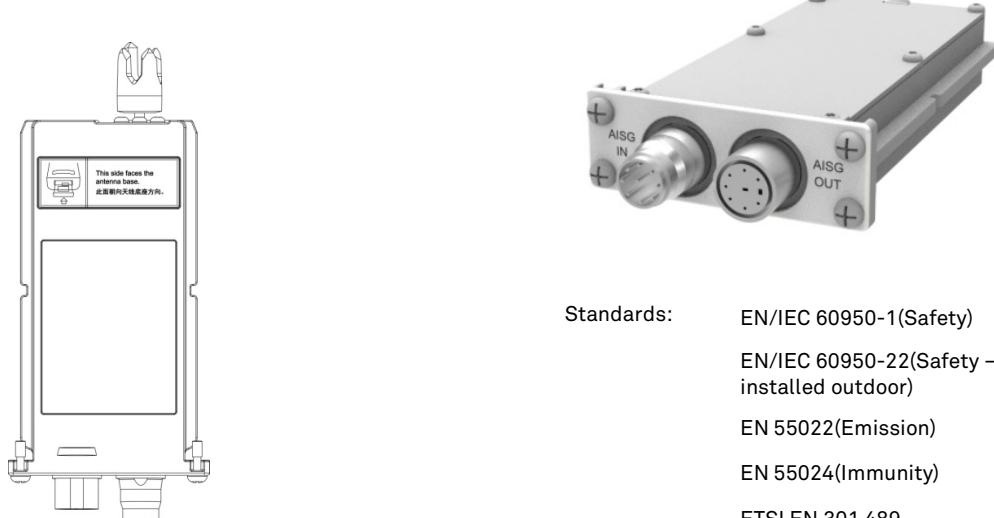
Feature Description

- 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

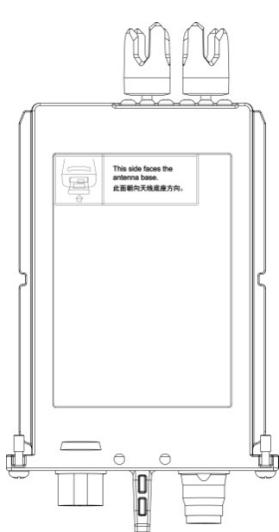
Feature Description

- 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 (°C) | -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 (°C) | -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 |

Preliminary Issue

Feature Description

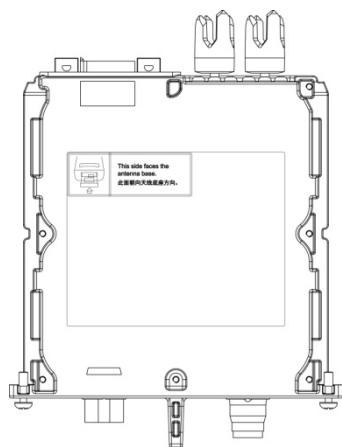
- The AIMM can adjust the electrical downtilts of RET antennas for antenna information management.
- The AIMM is used for MET2.0 6-port antennas upgrading to RET antennas.
- Configuration data loading and calibration are not required for antennas.
- Configuration data loading is not required during maintenance 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 |

Preliminary Issue

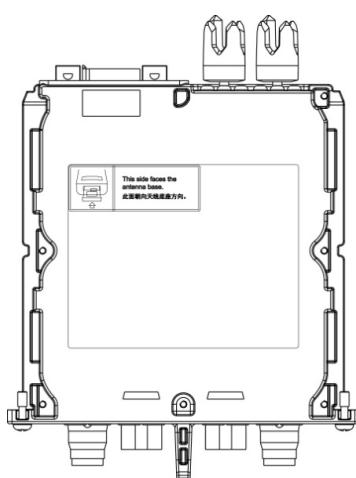
Feature Description

- 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 (°C) | -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.

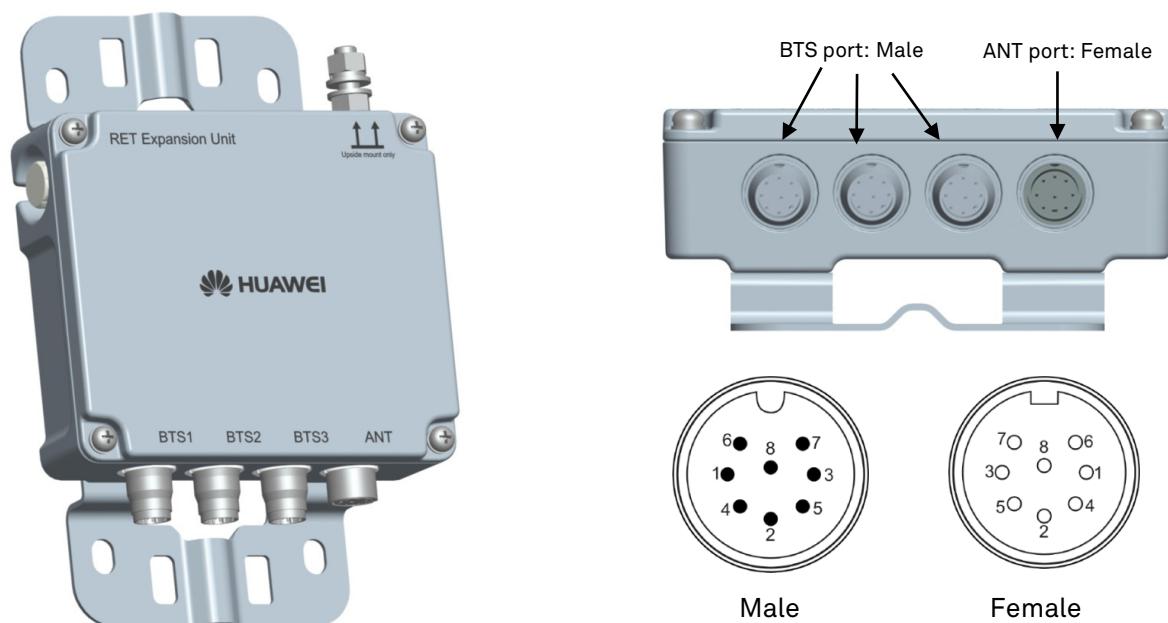


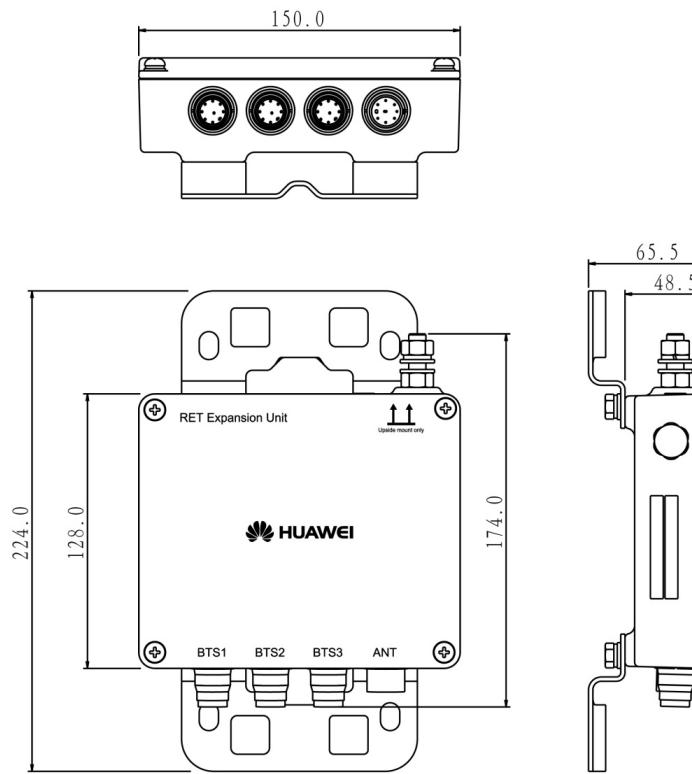
| | |
|----------------|---|
| Standards: | EN/IEC 60950-1(Safety) EN/IEC 60950-22(Safety – Equipment installed outdoor) EN 55022(Emission) EN 55024(Immunity) ETSI EN 301 489 FCC Part 15 ICES-003 |
| Certification: | CE, FCC, IC, RCM, RoHS, REACH, WEEE |

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 (°C) | -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 | | | | | | | |

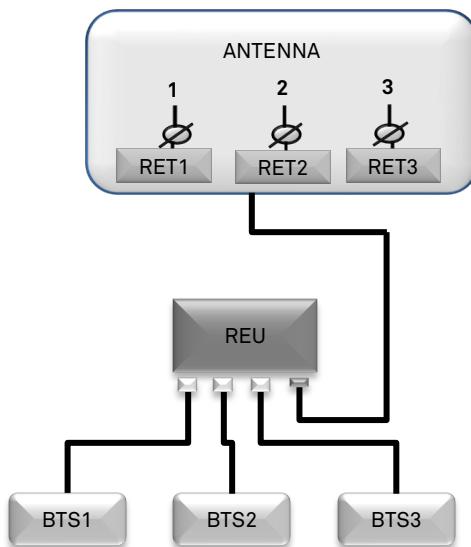
Please note: The REU can work with a main device supporting AISG1.1 or AISG2.0. However, if the REU software needs to be upgraded, the main device must support AISG2.0.





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

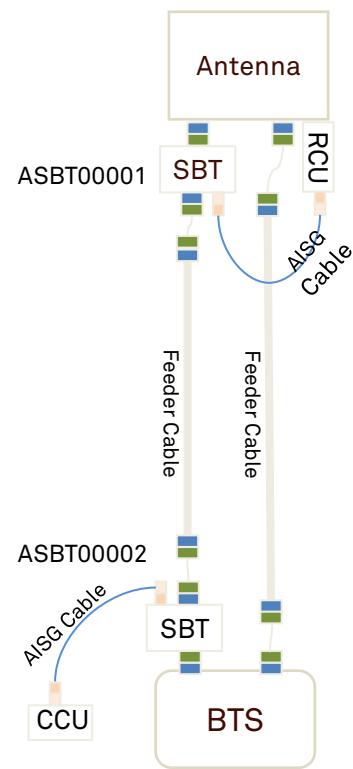
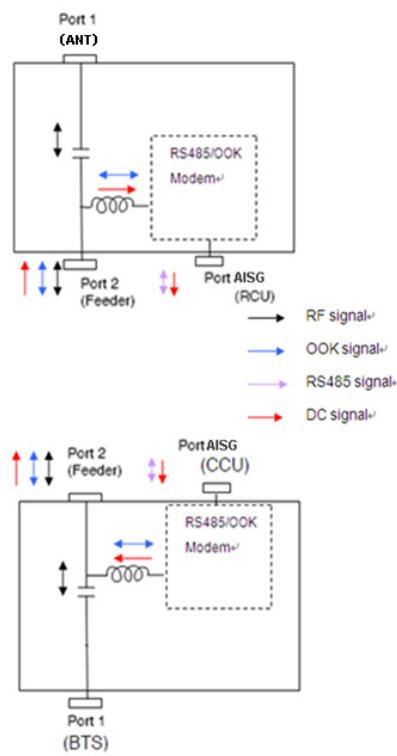
OOK = On Off Keying



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

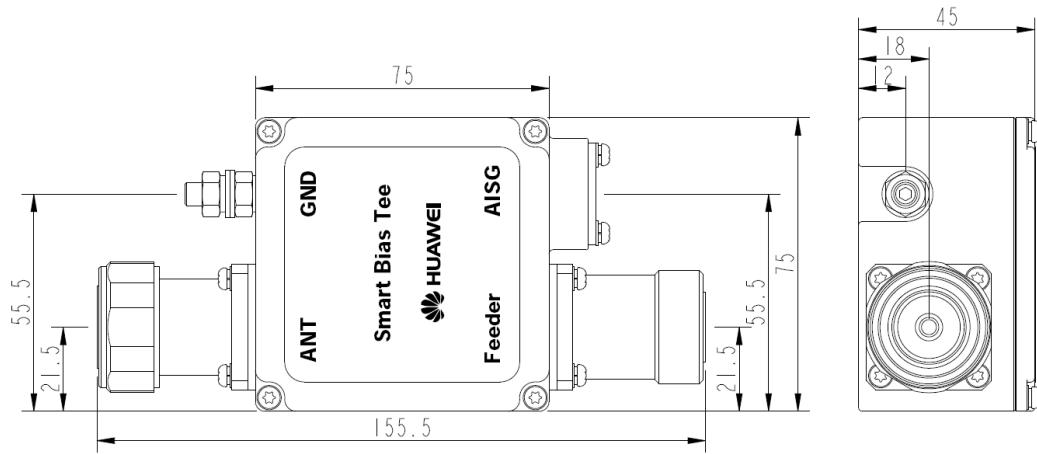
| | |
|----------------------------|-------------------|
| Operating temperature (°C) | -40 ... +70 |
| Application scene | Indoor // outdoor |
| IP rating | IP67 |
| Lightning protection (kA) | 3 (10/350 us) |

Mechanical Specification

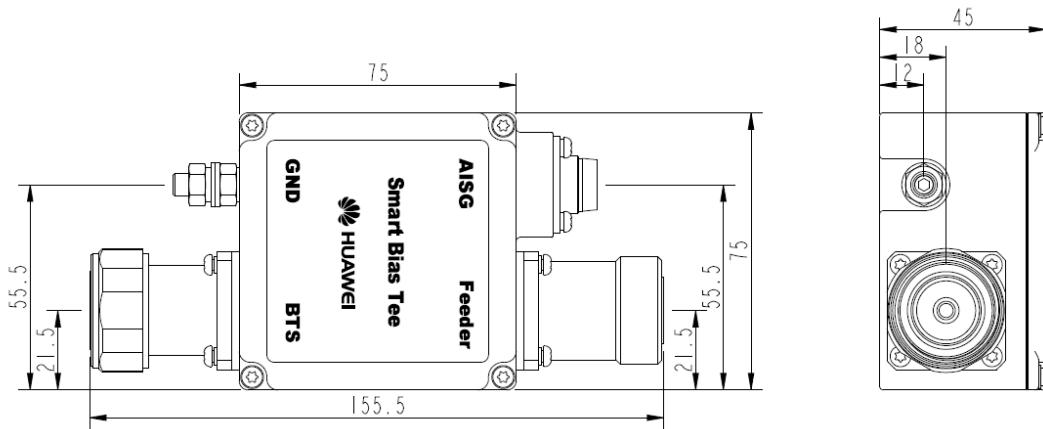
| | |
|-------------------------------------|---------------------------------|
| SBT Dimensions (W x H x D) (mm) | 75 x 160 x 45 (with connectors) |
| Packing dimensions (W x H x D) (mm) | 78 x 185 x 58 |
| SBT net Weight (kg) | < 0.75 |
| Packing weight (kg) | < 0.80 |

SBT-690-2700-001 Model: ASBT00001

SBT-690-2700-002 Model: ASBT00002



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 = Smart Bias Tee

RCU = Remote Control Unit for remote electrical control of antenna tilt

BTS = Base Transceiver Station

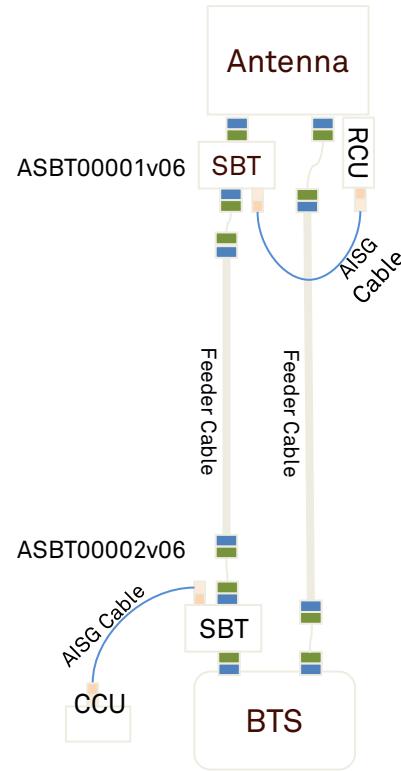
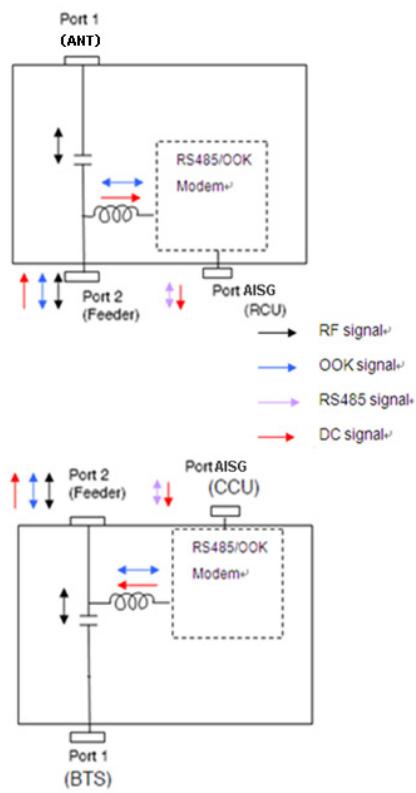
AISG= Antenna Interface Standards Group



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 × 43 dBm) |
| Power consumption (W) | | Typ. 0.6 |
| Modem carrier frequency (MHz) | | 2.176 |

Environmental Specification

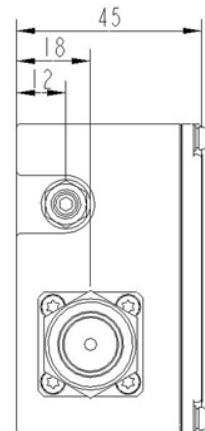
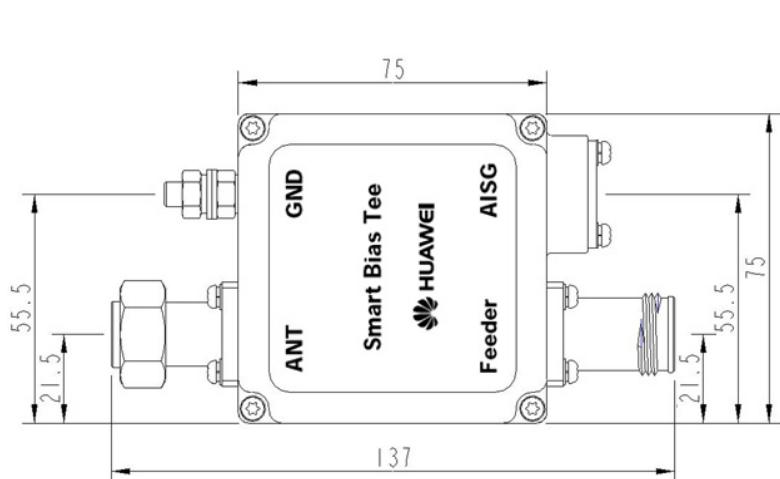
| | |
|----------------------------|-------------------|
| Operating temperature (°C) | -40 ... +70 |
| Application scene | Indoor // outdoor |
| IP rating | IP67 |
| Lightning protection (kA) | 3 (10/350 us) |

Mechanical Specification

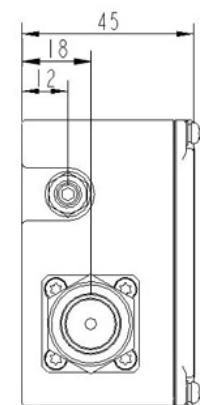
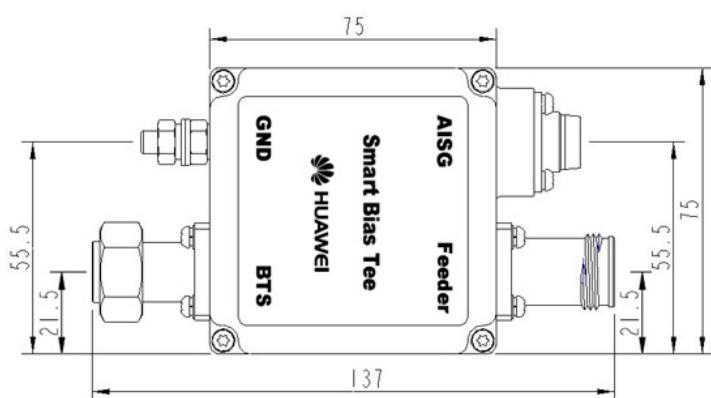
| | |
|-------------------------------------|---------------------------------|
| SBT Dimensions (W x H x D) (mm) | 75 x 137 x 45 (with connectors) |
| Packing dimensions (W x H x D) (mm) | 78 x 185 x 58 |
| SBT net Weight (kg) | < 0.75 |
| Packing weight (kg) | < 0.80 |

SBT-690-2700-001 Model: ASBT00001v06

SBT-690-2700-002 Model: ASBT00002v06



ASBT00001v06



ASBT00002v06

Unit: mm

Digital

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.

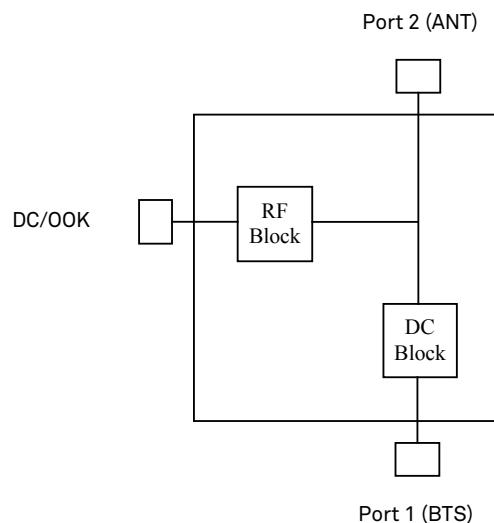
BT = Bias Tee

BTS = Base Transceiver Station

OOK = On Off Keying



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

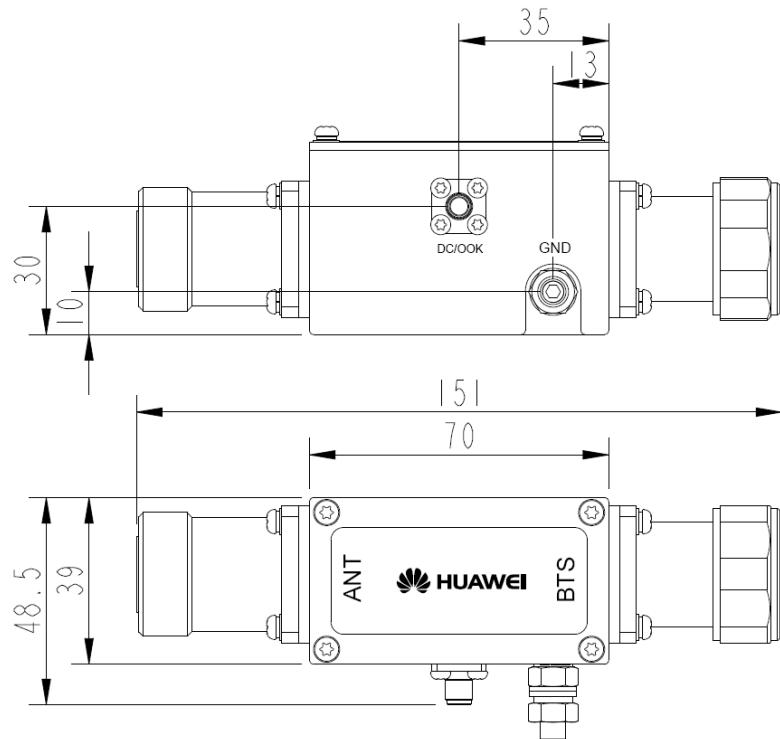
| | |
|----------------------------|-------------------|
| Operating temperature (°C) | -40 ... +70 |
| Application scene | Indoor or outdoor |
| IP rating | IP66 |
| Lightning protection (kA) | 3 (10/350 μs) |

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 |

BT-690-2700-001

Model: ABT000001

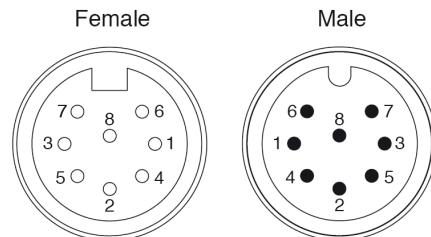


Unit: mm

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 °C |
| 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

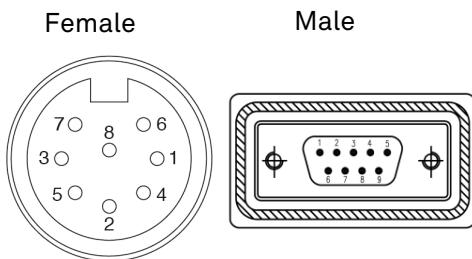
| Length | BOM Code |
|--------|----------|
| 0.5 m | 04045920 |
| 2 m | 04045921 |
| 5 m | 04050228 |
| 10 m | 04050184 |
| 15 m | 04045922 |
| 30 m | 04050230 |
| 50 m | 04050231 |
| 60 m | 04050182 |
| 70 m | 04050232 |



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 RRUs and RET) |
| Temperature Range | -40 ~ 80 °C |
| 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 |



Cable series

| Length | BOM Code |
|--------|----------|
| 3 m | 04070193 |
| 5 m | 04070097 |



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 mult-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.

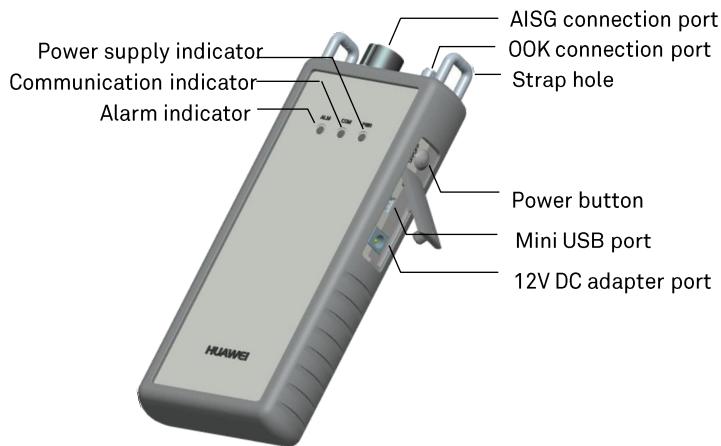


Specifications

| | | |
|--|--|--|
| 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**

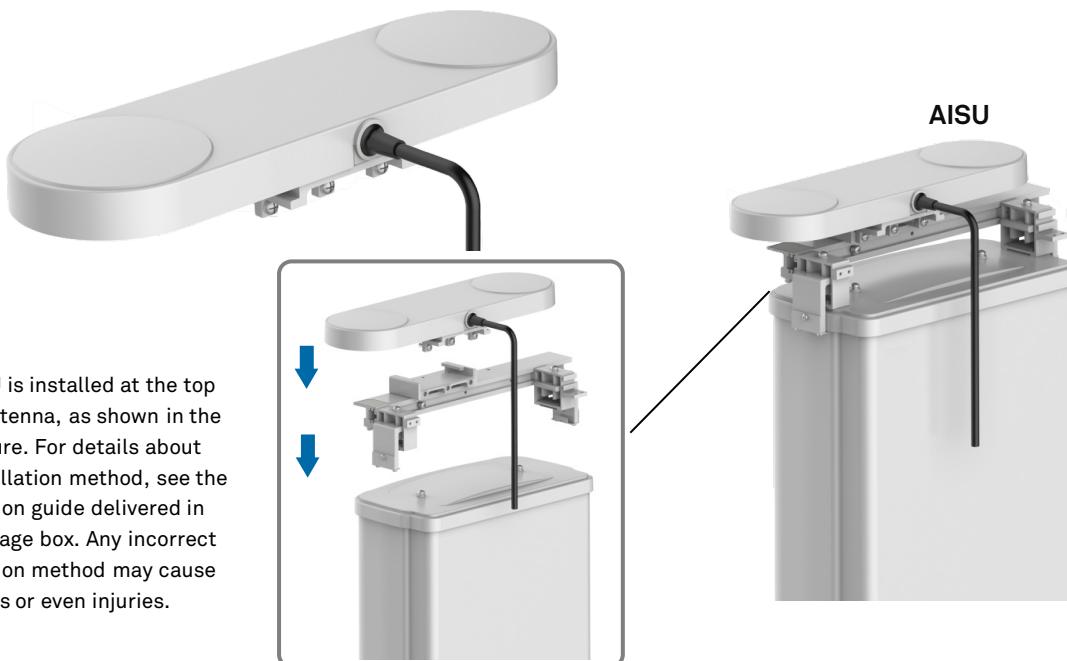
Preliminary Issue

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 μ s) | | | | | | | |
| 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.

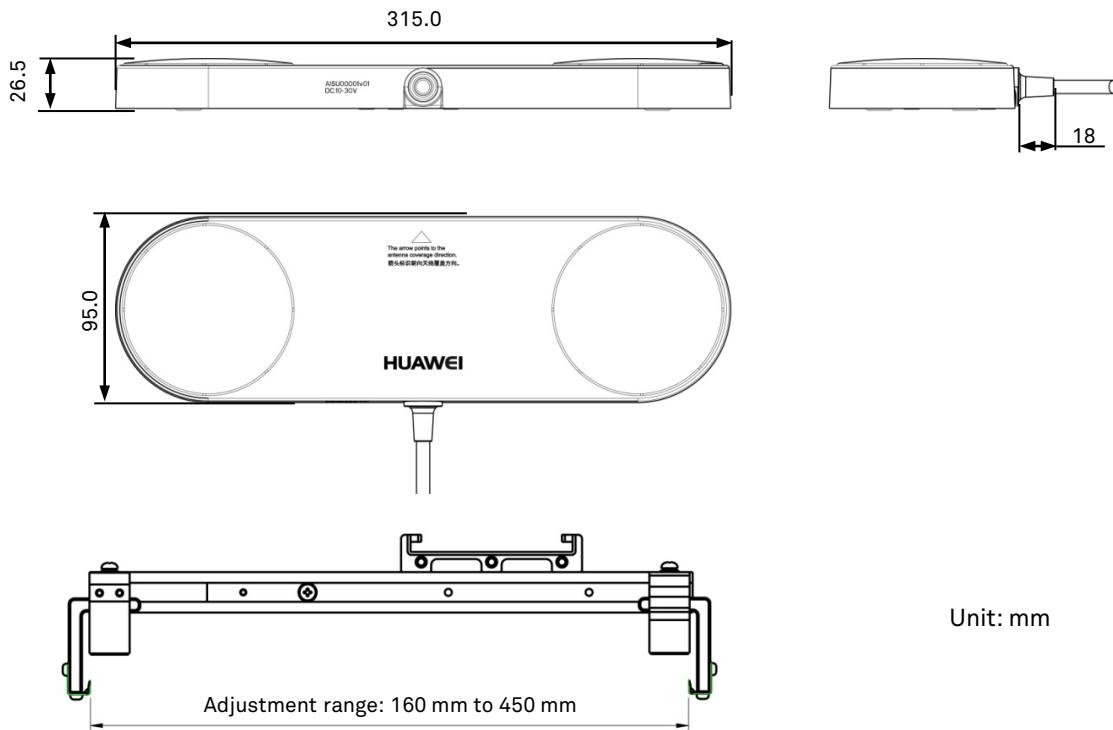


Antenna Information Sensor Unit

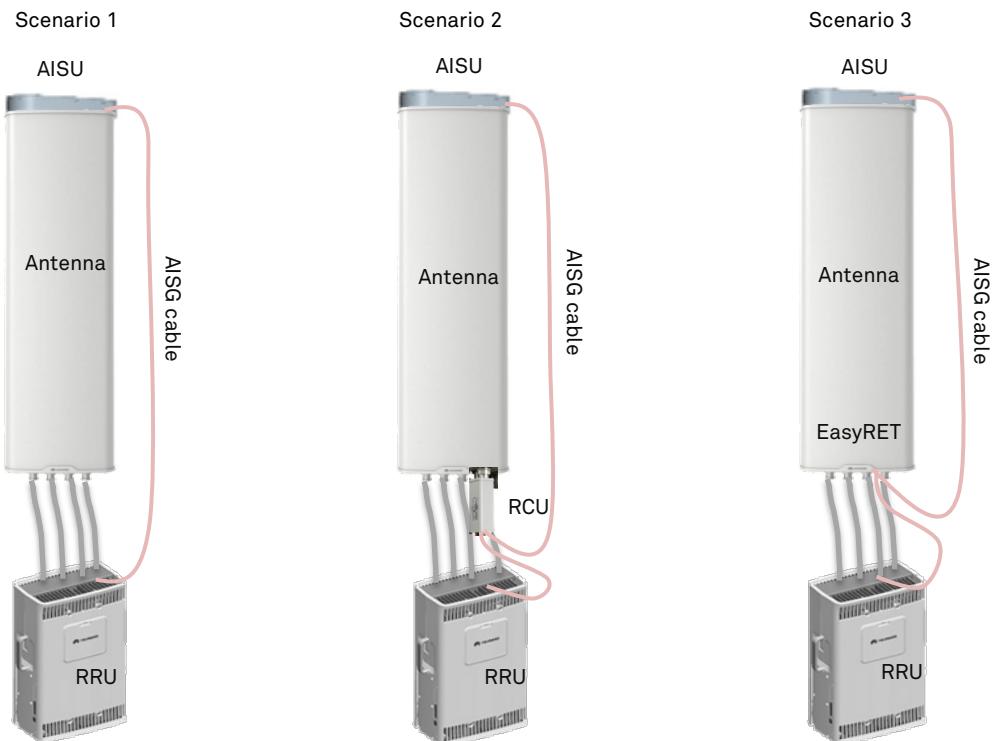
Model: AISU00001v01



AISU Dimensions



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:1710-1785MHz 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

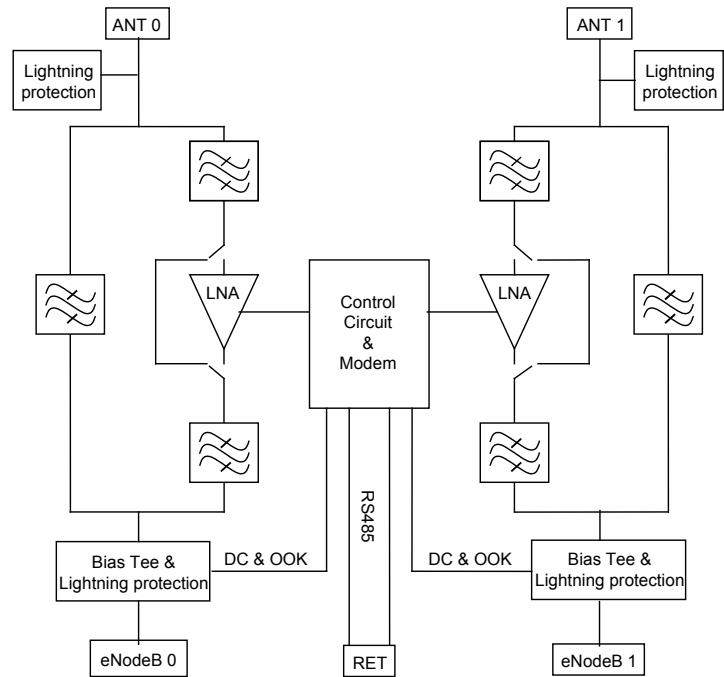
Product Description

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

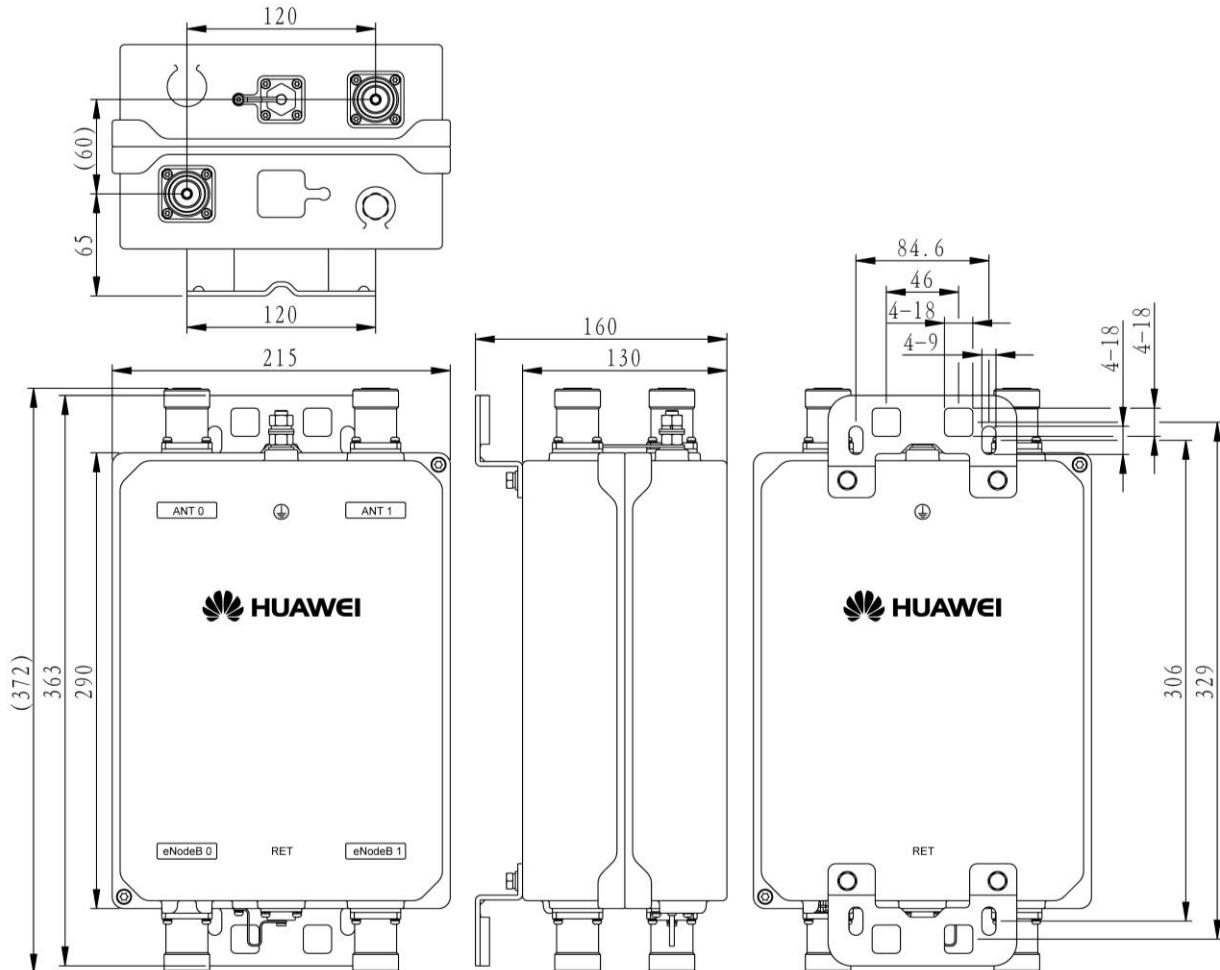


| Tx Specifications | | |
|---|---|-------------------------|
| Frequency range (MHz) | 758 - 803 | |
| Bandwidth (MHz) | 45 | |
| Insertion loss* (dB) | Avg. < 0.45 | |
| Return loss (dB) | ≥ 18 | |
| Input power (W) | < 160 (+52 dBm) CW < 2000 (+63 dBm) peak | |
| Intermodulation products in Rx band (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 °C) | |
| 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) | @12 V | 99 ± 5 |
| (without RET) | @17 V | 74 ± 5 |
| | @30 V | / |
| Alarm management (mA) | 150 - 280 | AISG |
| Power consumption (W) | ≤ 3.5 | |
| Environmental Specification | | |
| Operating temperature range (°C) | -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 to 16 dB, and when the value is 0xFE, the gain is fixed 12 dB.



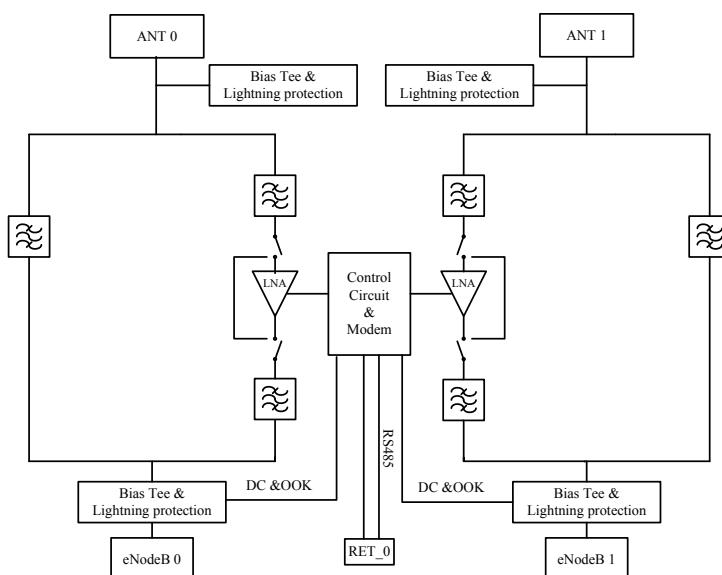
Unit : mm

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.

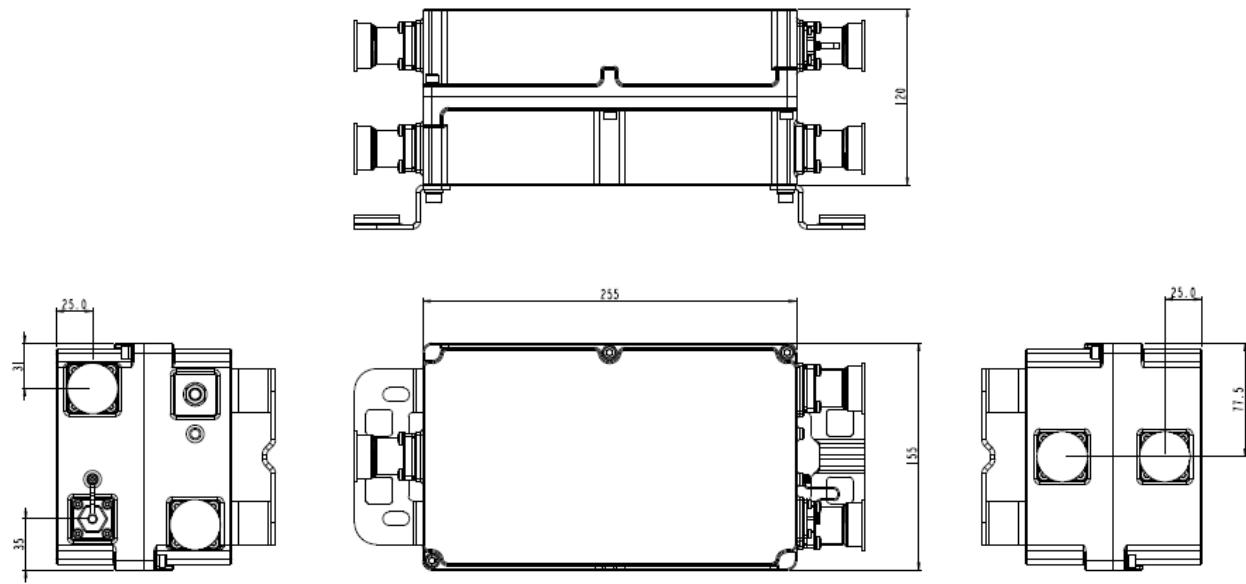
Appearance and Block Diagram



| 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°C) | |
| 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 (°C) | -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: $IL^ = \frac{Sum(v_1 + v_2 + \dots + v_n)}{n}$, $v_1, v_2 \dots v_n$ is the IL-value for each 5M in the passband.

**Noise figure: $\overline{NF} = \frac{Sum(NF_1 + NF_2 + \dots + NF_n)}{n}$, $NF_1, NF_2 \dots NF_n$ is the NF-value for each 5M in the passband.



Unit : mm

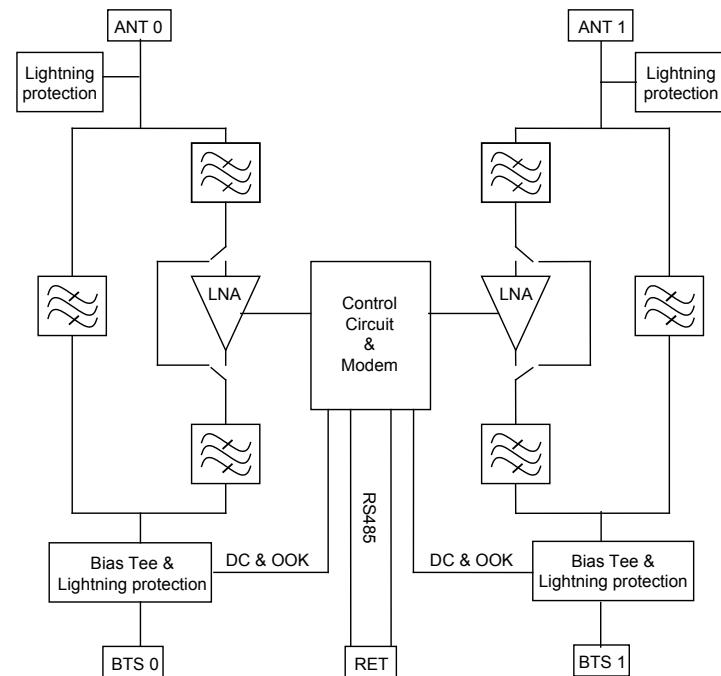
Product Description

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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

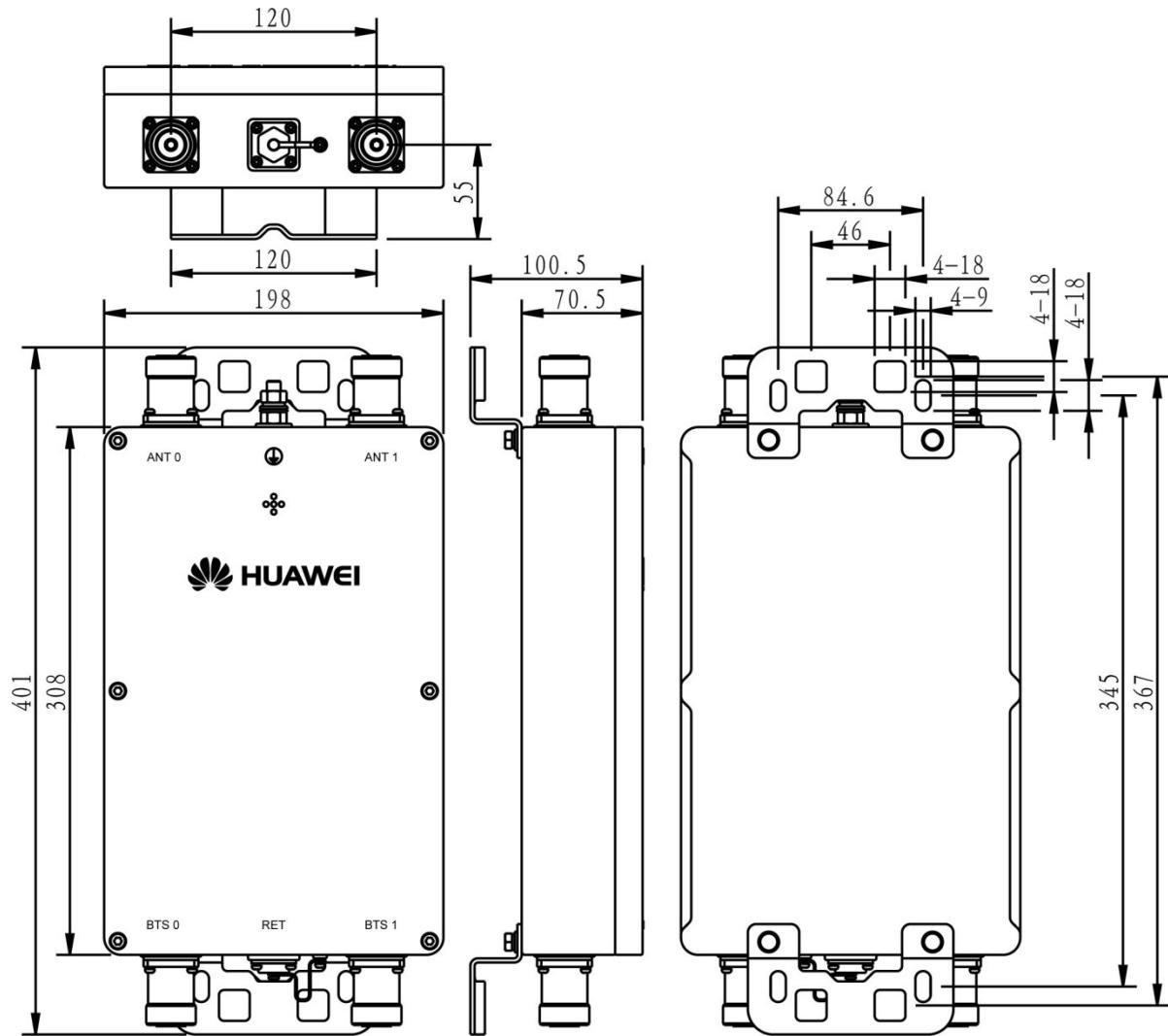


| Tx Specifications | | |
|---|------------------------|---|
| Frequency range (MHz) | | 925 - 950 |
| Bandwidth (MHz) | | 25 |
| Insertion loss* (dB) | | Avg. < 0.4 |
| Return loss (dB) | | ≥ 18 |
| Input power (W) | | < 160 (+52 dBm) CW < 2000 (+63 dBm) peak |
| Intermodulation products in Rx band (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 °C) |
| 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) | @12 V | 99 ± 5 |
| (without RET) | @17 V | 74 ± 5 |
| | @30 V | / |
| Alarm management (mA) | 150 - 210 | AISG |
| Power consumption (W) | | < 3.5 |
| Environmental Specification | | |
| Operating temperature range (°C) | | -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: $IL = \frac{IL925MHz + 2 \times IL937.5MHz + IL950MHz}{4}$

**Noise figure: $NF = \frac{NF880MHz + 2 \times NF892.5MHz + NF905MHz}{4}$

***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.



Unit : mm

Preliminary Issue

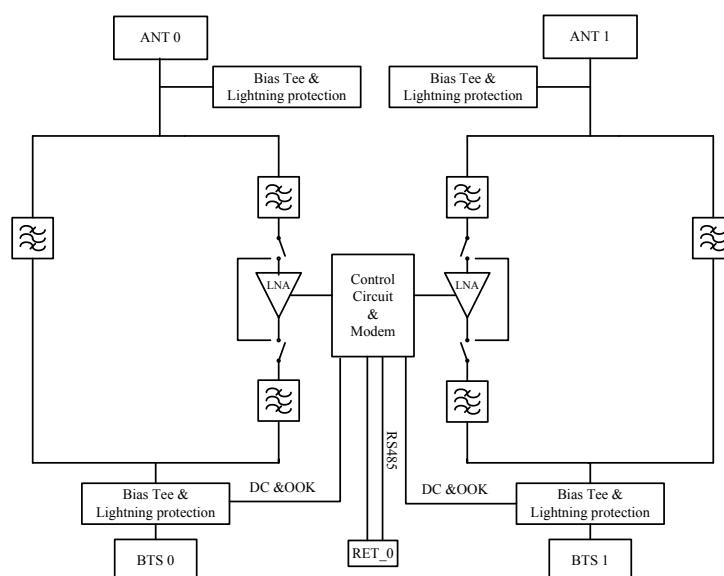
Product Description

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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

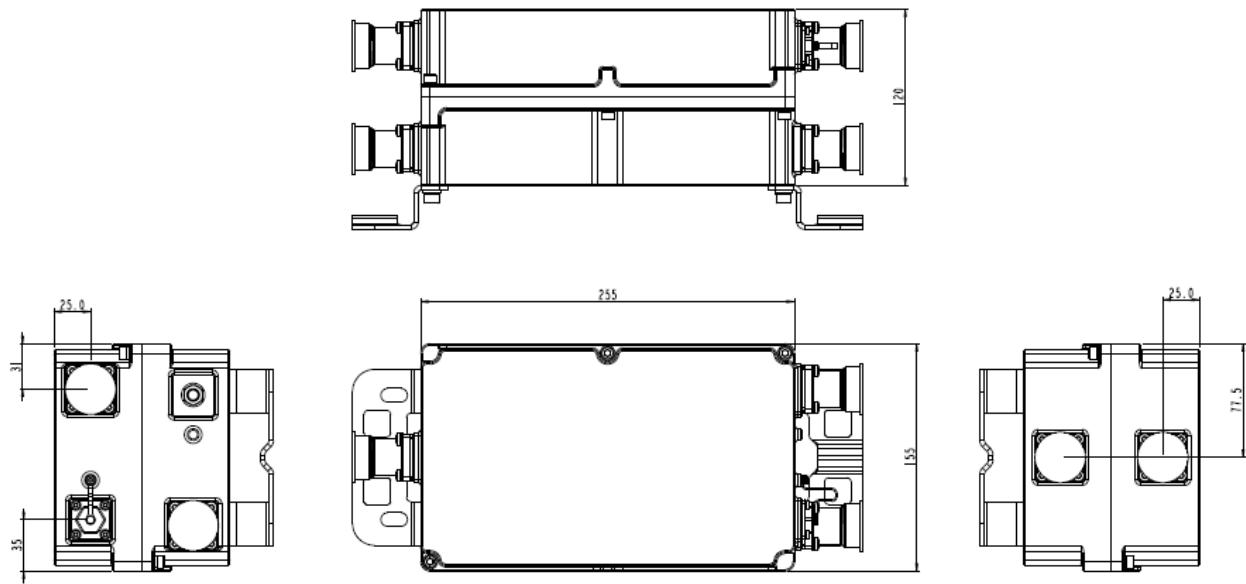




| Tx Specifications | |
|---|---|
| Frequency range (MHz) | 925 - 960 |
| Bandwidth (MHz) | 35 |
| Insertion loss* (dB) | Typ.< 0.45 |
| Return loss (dB) | ≥ 18 |
| Input power (W) | < 160 (+52 dBm) CW < 2000 (+63 dBm) peak |
| Intermodulation products in Rx band (dBm) | ≤ -117 (3 order, with 2 x 43 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°C) |
| 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 |
| Alarm management | AISG2.0 |
| Power consumption (W) | < 2 |
| Environmental Specification | |
| Operating temperature range (°C) | -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: $IL^ = \frac{Sum(v_1 + v_2 + \dots + v_n)}{n}$, v_1, v_2, \dots, v_n is the IL-value for each 5M in the passband.

**Noise figure: $\overline{NF} = \frac{Sum(NF_1 + NF_2 + \dots + NF_n)}{n}$, NF_1, NF_2, \dots, NF_n is the NF-value for each 5M in the passband.



Unit : mm

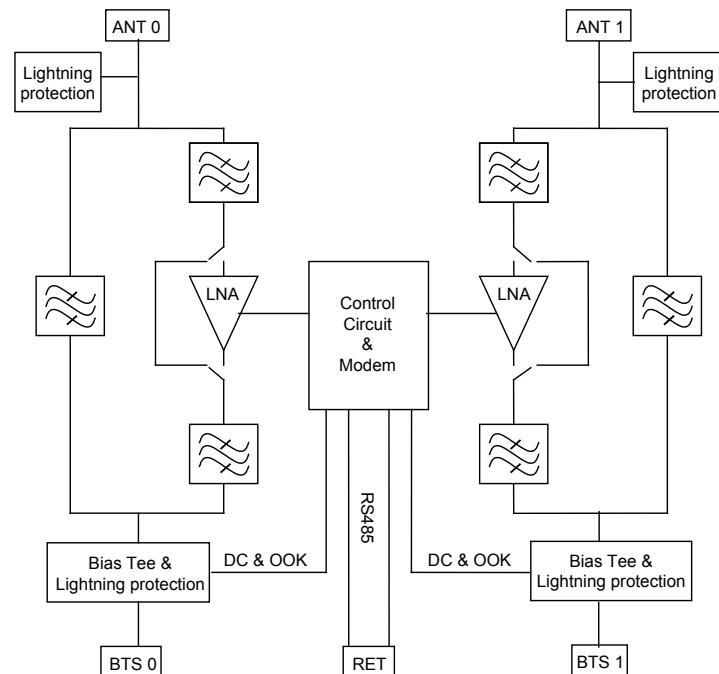
Product Description

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





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 °C) |
| 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 |
| | @17 V | 74 ± 5 |
| | @30 V | / |
| Alarm management (mA) | 150 - 210 | AISG |
| Power consumption (W) | | < 3.5 |

Environmental Specification

| | |
|----------------------------------|---------------|
| Operating temperature range (°C) | -40 ... +65 |
| IP rating | IP67 |
| MTBF (hours) | > 1,000,000 |
| EMC | ETS 300 342-3 |
| Lightning protection (kA) | 10 (8/20 us) |

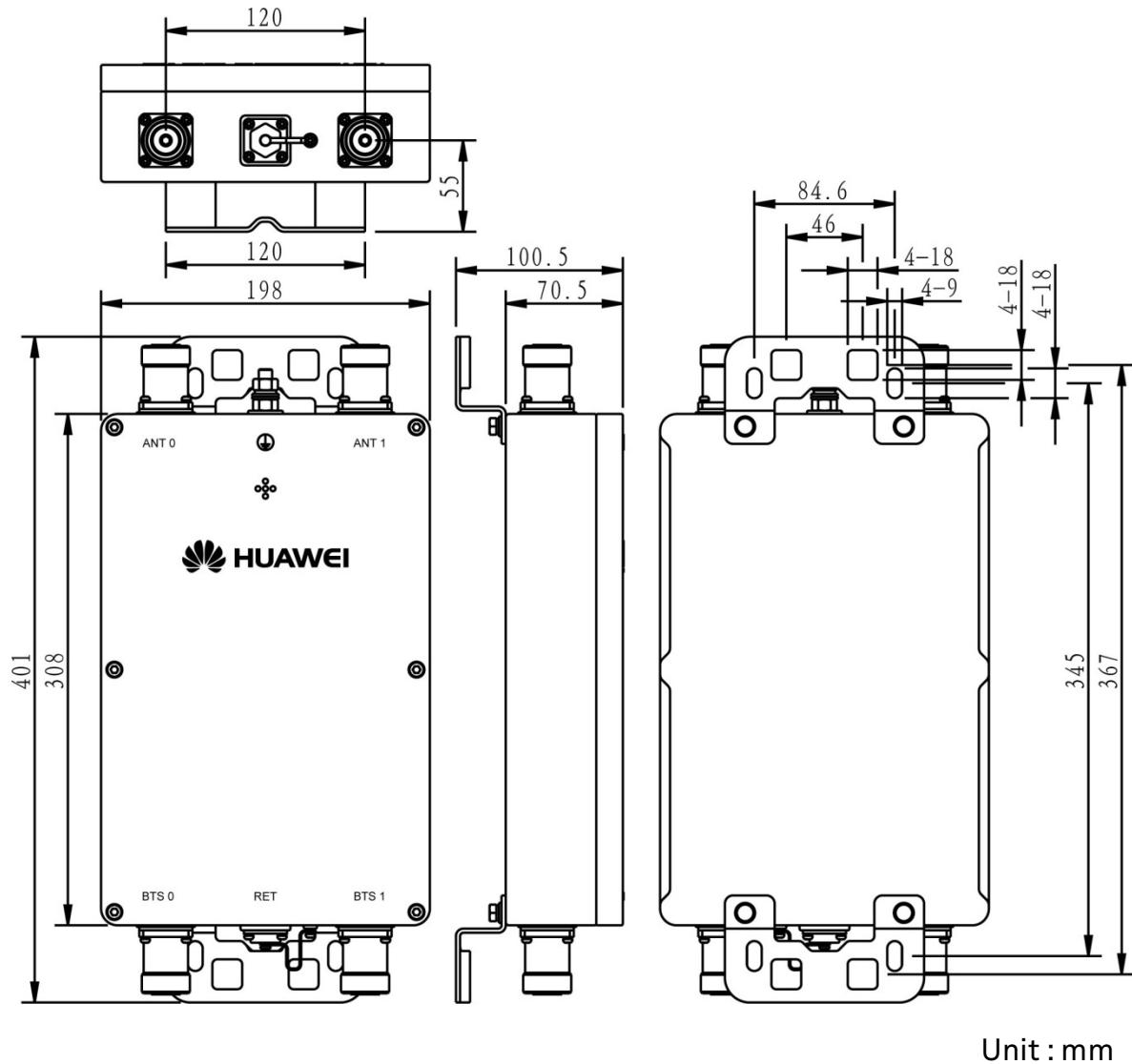
Mechanical Specification

| | |
|-------------------------------------|---|
| 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: $IL = \frac{IL935MHz + 2 \times IL947.5MHz + IL960MHz}{4}$

**Noise figure: $NF = \frac{NF890MHz + 2 \times NF902.5MHz + NF915MHz}{4}$

***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.

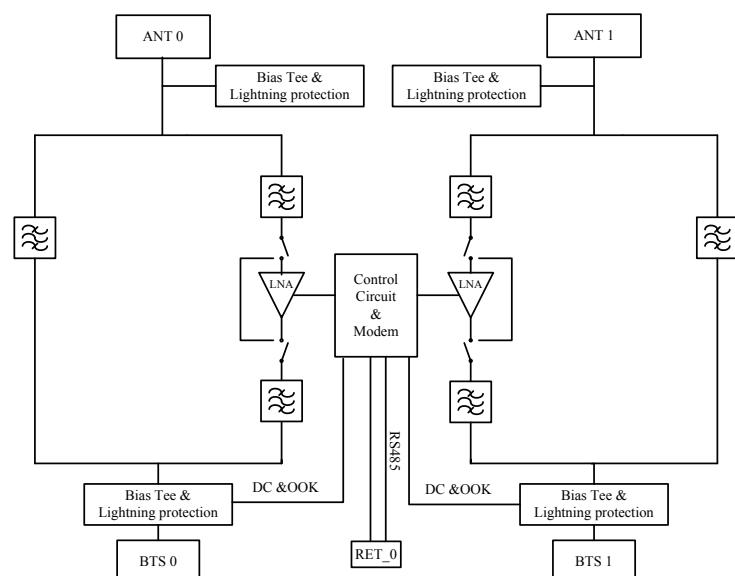


Preliminary Issue**Product Description**

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

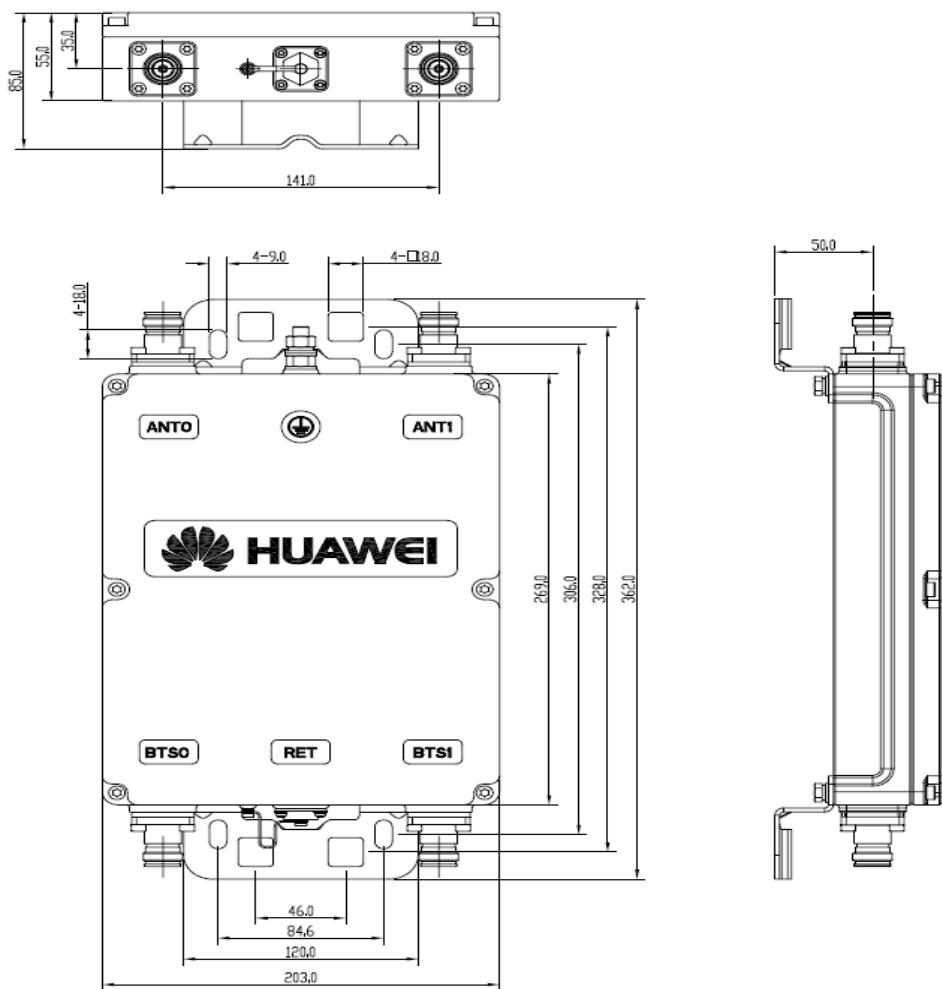
| Tx Specifications | | |
|---|---|---------|
| Frequency range (MHz) | 1805 - 1880 | |
| Bandwidth (MHz) | 75 | |
| Insertion loss* (dB) | Avg. < 0.35 | |
| Return loss (dB) | ≥ 18 | |
| Input power (W) | < 160 (+52 dBm) CW < 725 (+58.6 dBm) peak | |
| Intermodulation products in Rx band (dBm) | ≤ -117 (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°C) | |
| 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 (°C) | -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: $IL^ = \frac{Sum(v_1 + v_2 + \dots + v_n)}{n}$, $v_1, v_2 \dots v_n$ is the IL-value for each 5M in the passband.

**Noise figure: $\overline{NF} = \frac{Sum(NF_1 + NF_2 + \dots + NF_n)}{n}$, $NF_1, NF_2 \dots NF_n$ is the NF-value for each 5M in the passband.

DTMA-1800-12dB-2BTSport2ANTport-AISG

Model: ATA182003v06



Unit : mm

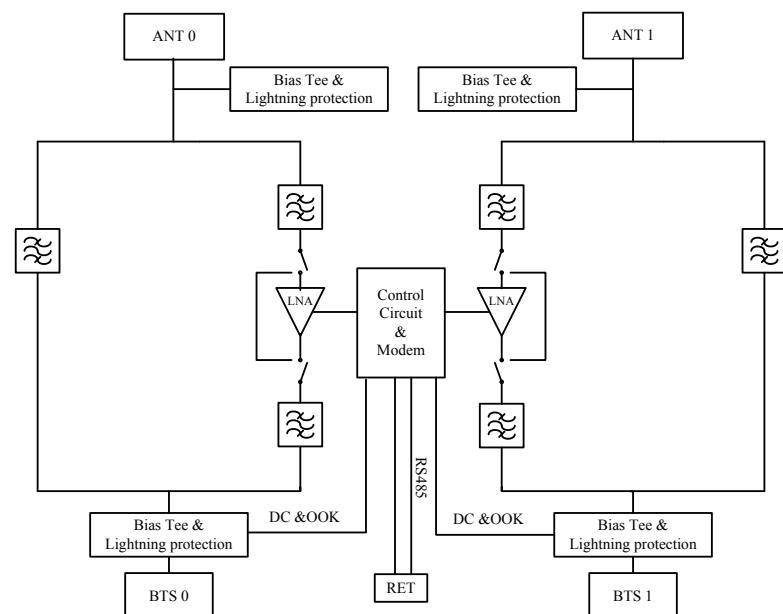
TMA

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

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 (7 th 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 °C) |
| 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 |
| | @17 V |
| | @30 V |
| Alarm management | AISG2.0 |
| Power consumption (W) | < 1.8 |

Environmental Specification

| | |
|----------------------------------|-------------------------------|
| Operating temperature range (°C) | -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

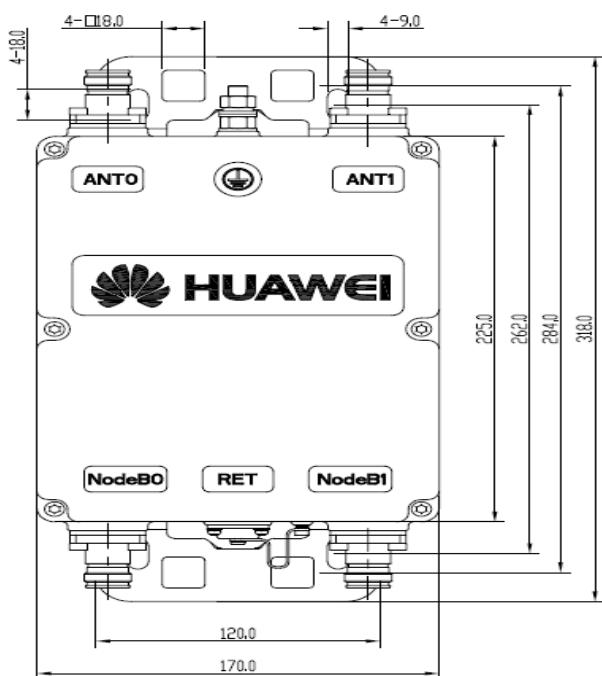
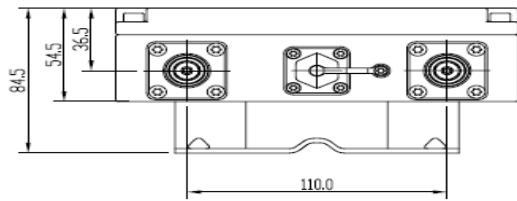
| | |
|-------------------------------------|---|
| DTMA dimensions (W x H x D) (mm) | 170×225×54.5 (without connectors, without brackets) |
| Packing dimensions (W x H x D) (mm) | 440 x 220 x 150 |
| DTMA weight (kg) | ≤ 3.6 (with brackets) |
| Packing weight (kg) | ≤ 4.5 |
| DTMA Volume (L) | <2.2 |
| 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: $IL^ = \frac{\text{Sum}(v_1 + v_2 + \dots + v_n)}{n}$, v_1, v_2, \dots, v_n is the IL-value for each 5M in the passband.

**Noise figure: $\overline{NF} = \frac{\text{Sum}(NF_1 + NF_2 + \dots + NF_n)}{n}$, NF_1, NF_2, \dots, NF_n is the NF-value for each 5M in the passband.

DTMA-2100-12dB-2NodeBport2ANTport-AISG

Model: ATA212007v06



Unit : mm

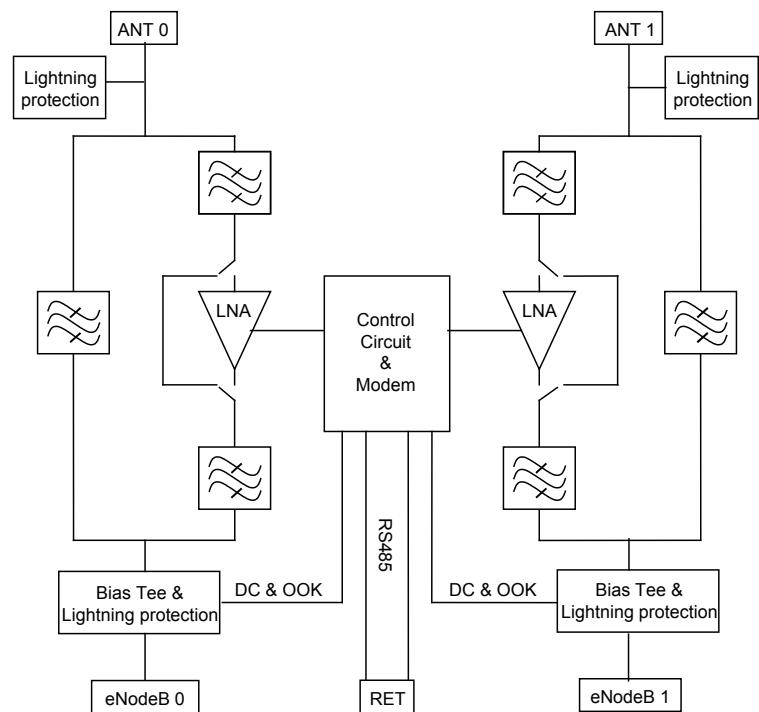
Product Description

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





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 °C) |
| 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 |
| | @17 V | 74 ± 5 |
| | @30 V | / |
| Alarm management (mA) | 150 - 210 | AISG |
| Power consumption (W) | | < 3.5 |

Environmental Specification

| | |
|----------------------------------|---------------|
| Operating temperature range (°C) | -40 ... +65 |
| IP rating | IP67 |
| MTBF (hours) | > 1,000,000 |
| EMC | ETS 300 342-3 |
| Lightning protection (kA) | 10 (8/20 us) |

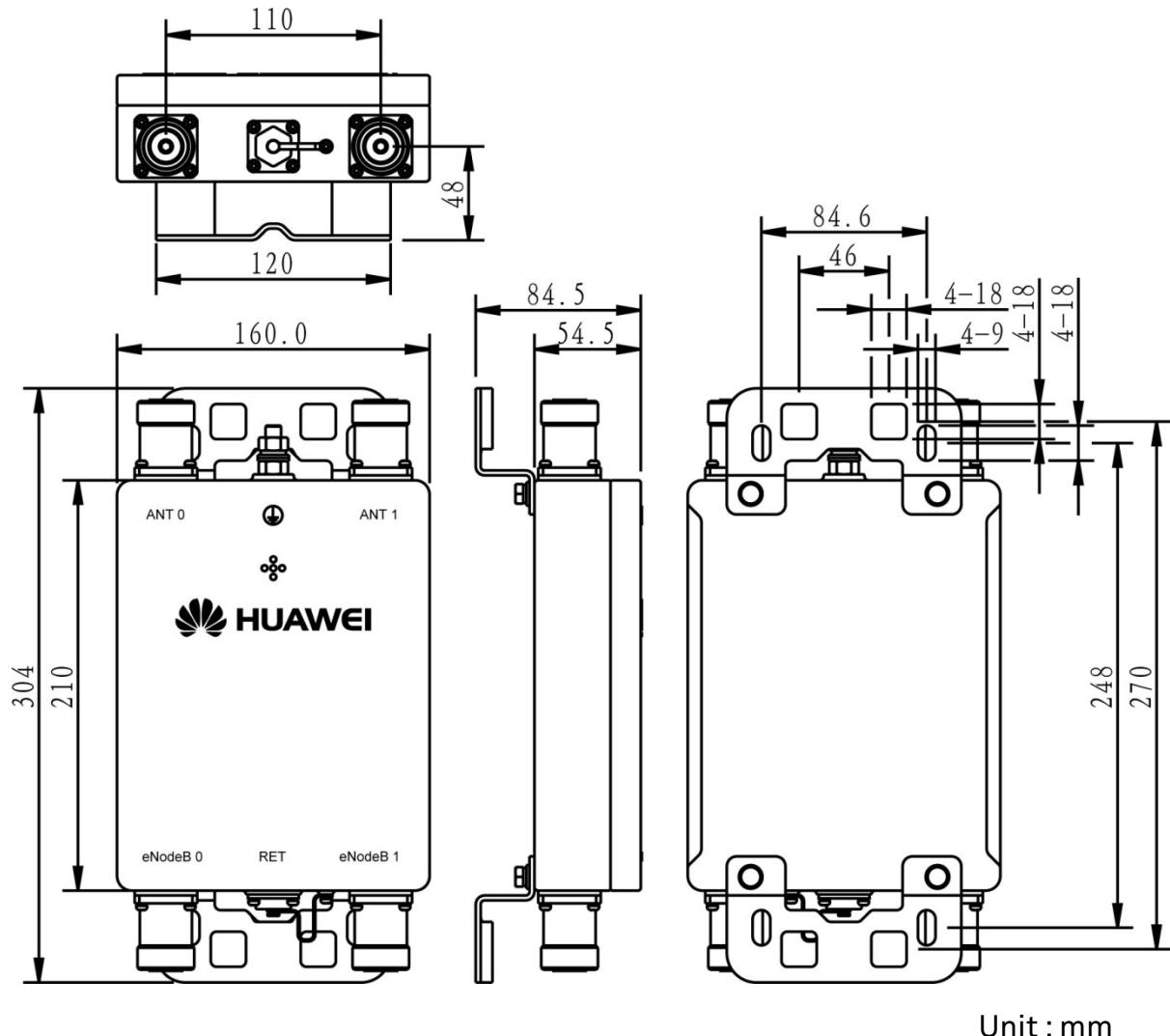
Mechanical Specification

| | |
|-------------------------------------|---|
| 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: $IL = \frac{IL2620MHz + 2 \times IL2655MHz + IL2690MHz}{4}$

**Noise figure: $NF = \frac{NF2500MHz + 2 \times NF2535MHz + NF2570MHz}{4}$

***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.



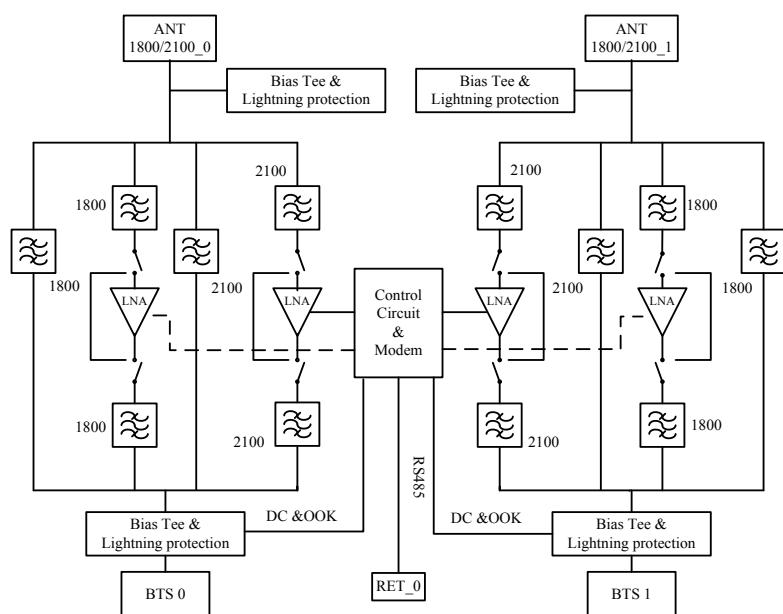
Unit : mm

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

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 (°C) | -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

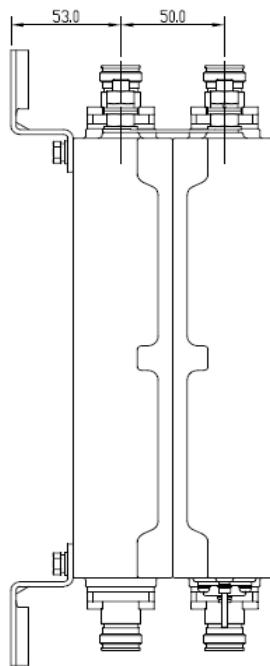
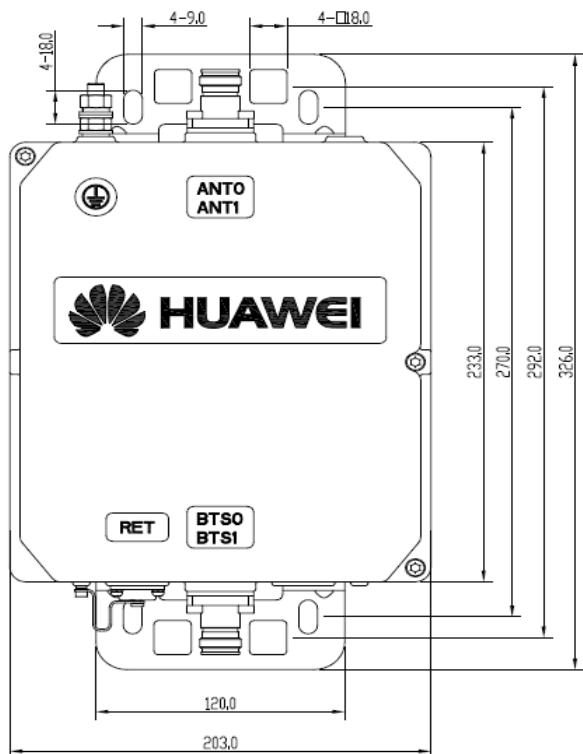
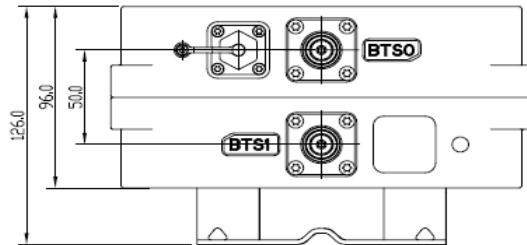
| | |
|-------------------------------------|---|
| MTMA dimensions (W x H x D) (mm) | 203 x 233 x 96 (without connectors, without brackets) |
| Packing dimensions (W x H x D) (mm) | 300 x 545 x 250 |
| MTMA weight (kg) | ≤ 5.5 (with brackets) |
| Packing weight (kg) | ≤ 6 |
| MTMA Volume (L) | < 4.8 |
| 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: $IL^ = \frac{\text{Sum}(v_1 + v_2 + \dots + v_n)}{n}$, v_1, v_2, \dots, v_n is the IL-value for each 5M in the passband.

**Noise figure: $\overline{NF} = \frac{\text{Sum}(NF_1 + NF_2 + \dots + NF_n)}{n}$, NF_1, NF_2, \dots, NF_n is the NF-value for each 5M in the passband.

MTMA-1800/2100-12dB-2BT Sport2ANT port-AISG

Model: ATADU2017v06



Unit : mm

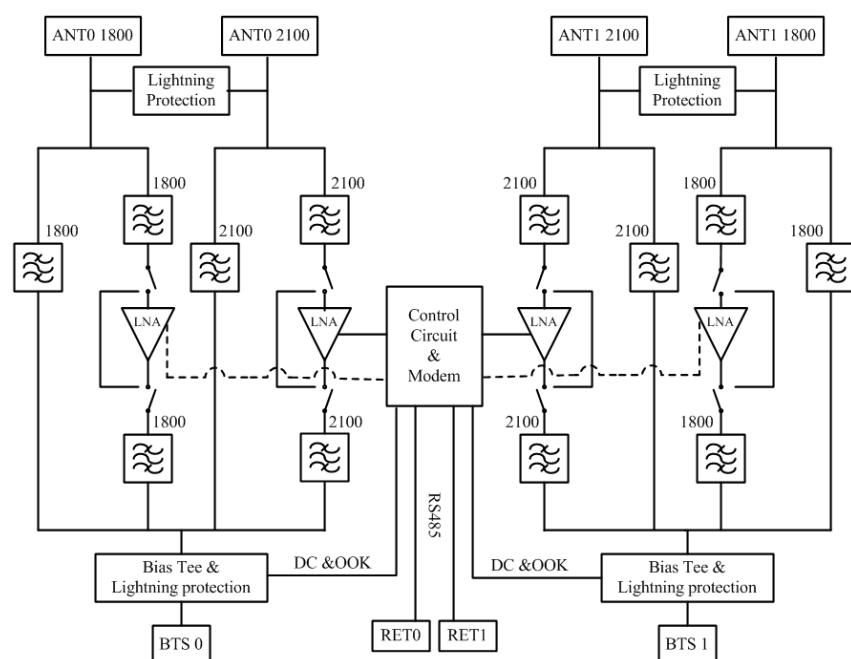
Product Description

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



**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

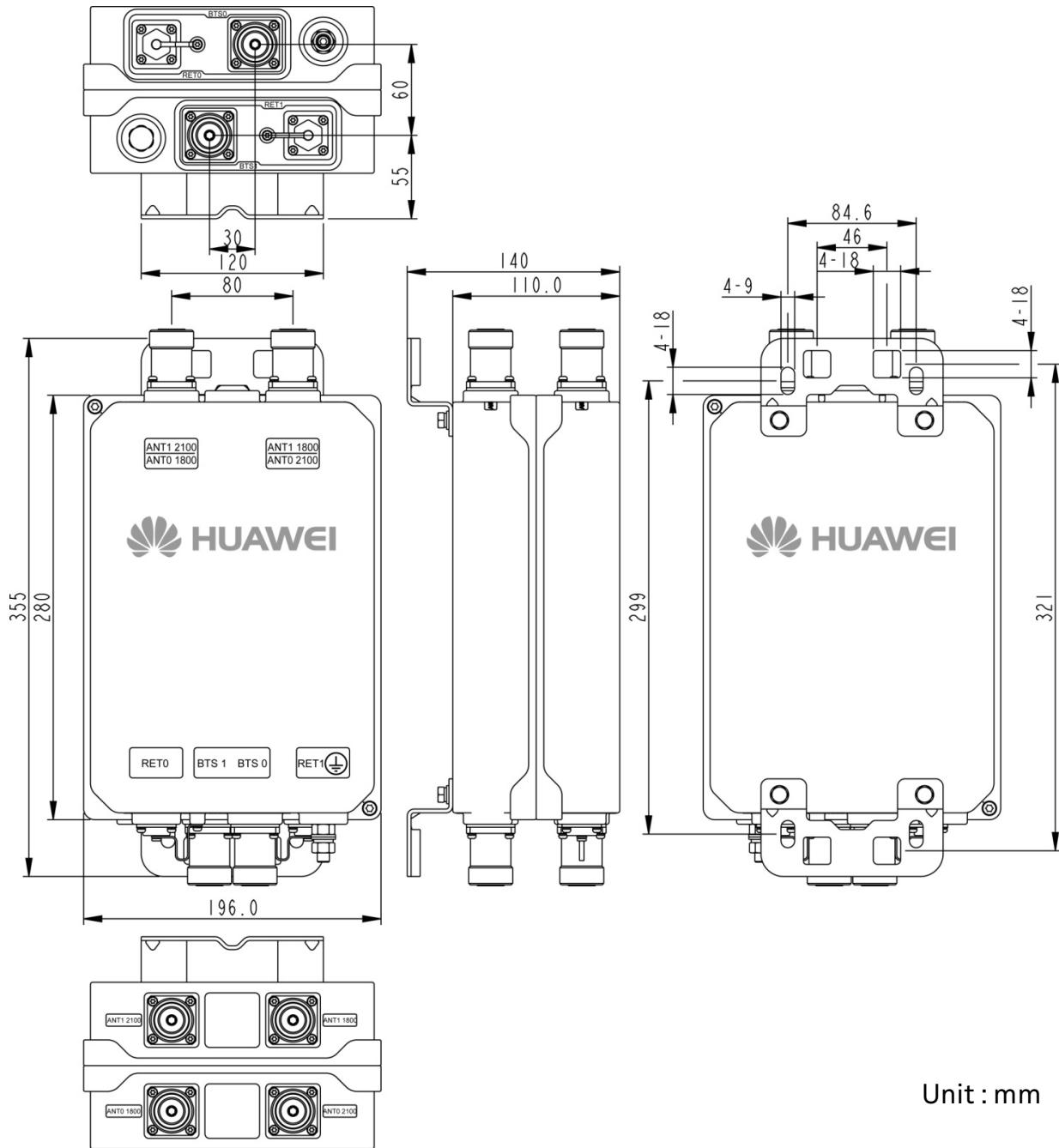
| | | |
|---|-------|---------|
| DC supply voltage (V) | | 9 - 30 |
| Operating current per TMA (mA) (without RET) | @12 V | 225 ± 5 |
| | @17 V | 165 ± 5 |
| | @30 V | 105 ± 5 |
| Alarm management | | AISG |
| Power consumption (W) | | < 3.0 |

Environmental Specification

| | |
|----------------------------------|---------------|
| Operating temperature range (°C) | -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) |



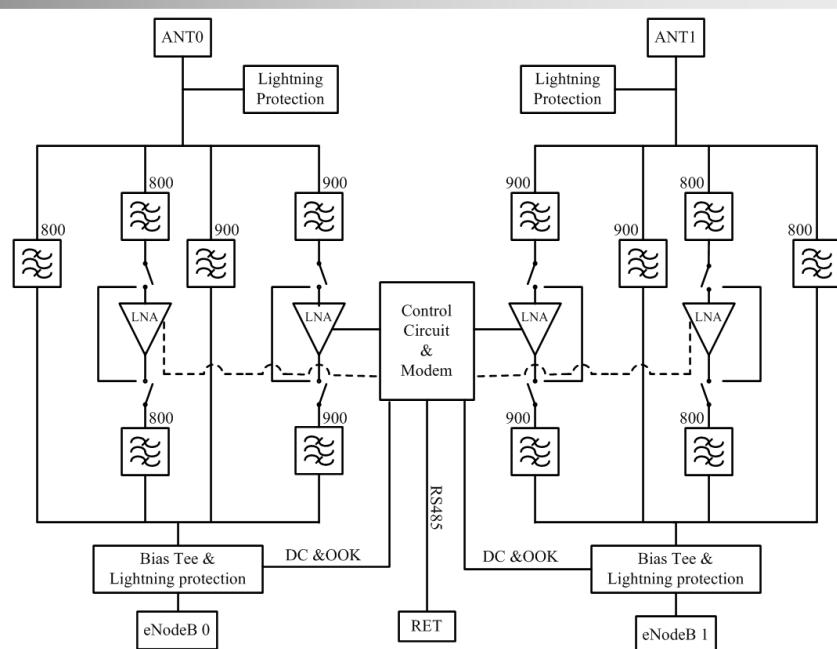
Product Description

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



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

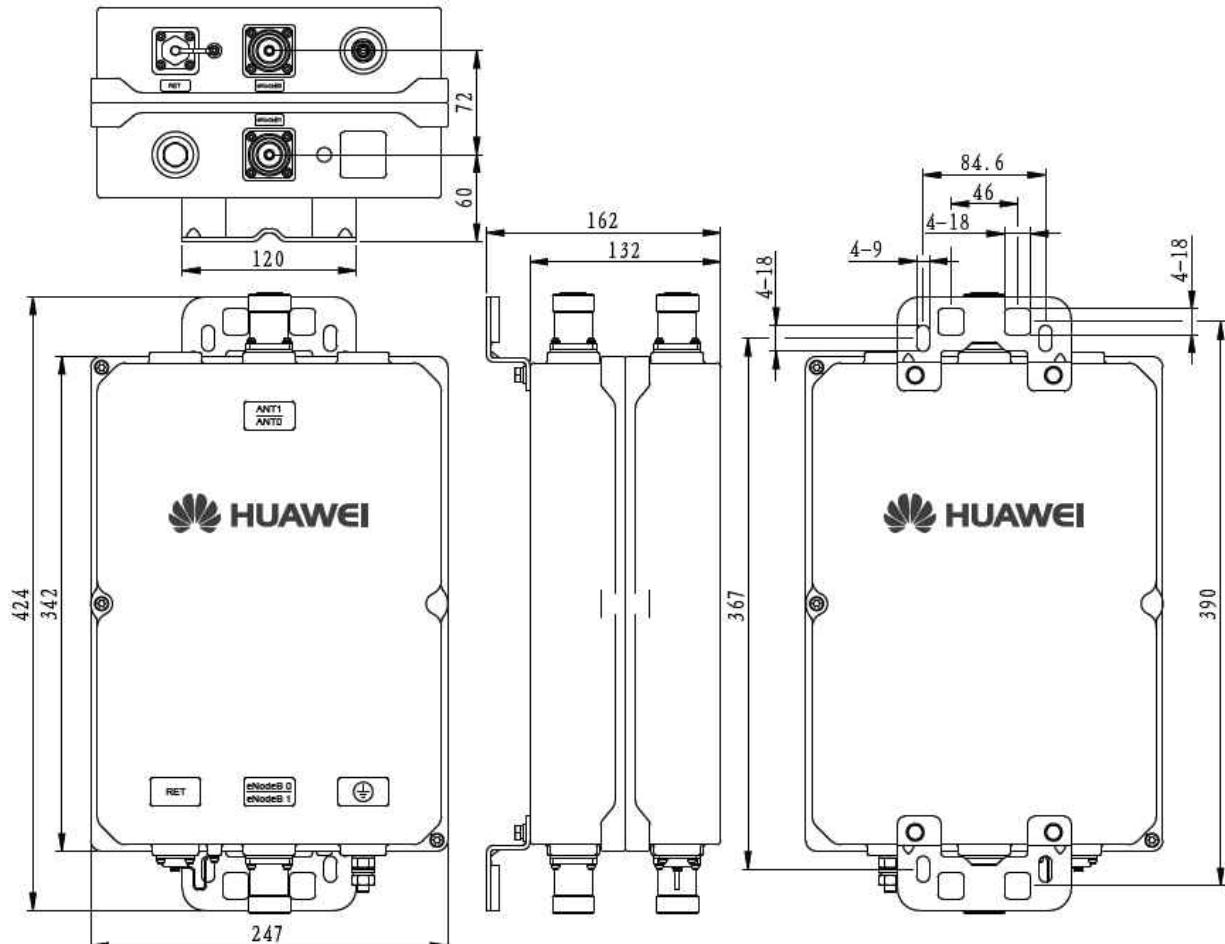
| | | |
|---|--------|--------|
| DC supply voltage (V) | 9 - 30 | |
| Operating current per TMA (mA)(without RET) | @12 V | 245 ±5 |
| | @17 V | 175 ±5 |
| | @30 V | 105 ±5 |
| Alarm management | AISG | |
| Power consumption (W) | < 3.0 | |

Environmental Specification

| | |
|----------------------------------|---------------|
| Operating temperature range (°C) | -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) |



Unit : mm

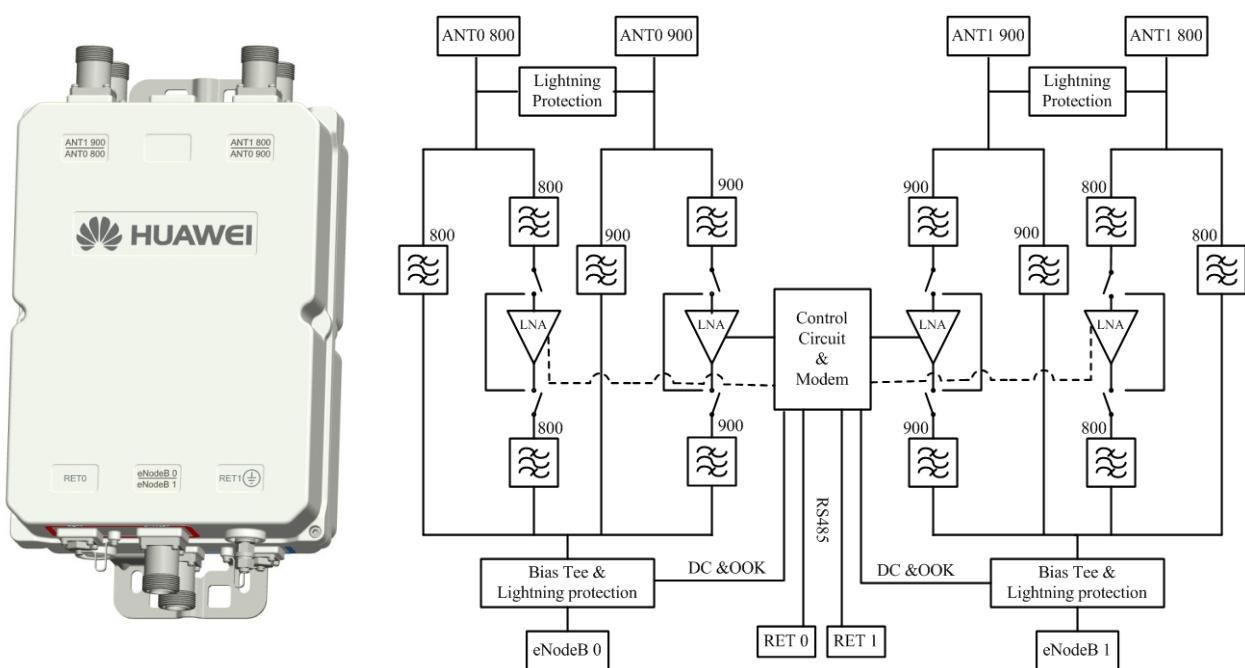
Product Description

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



**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

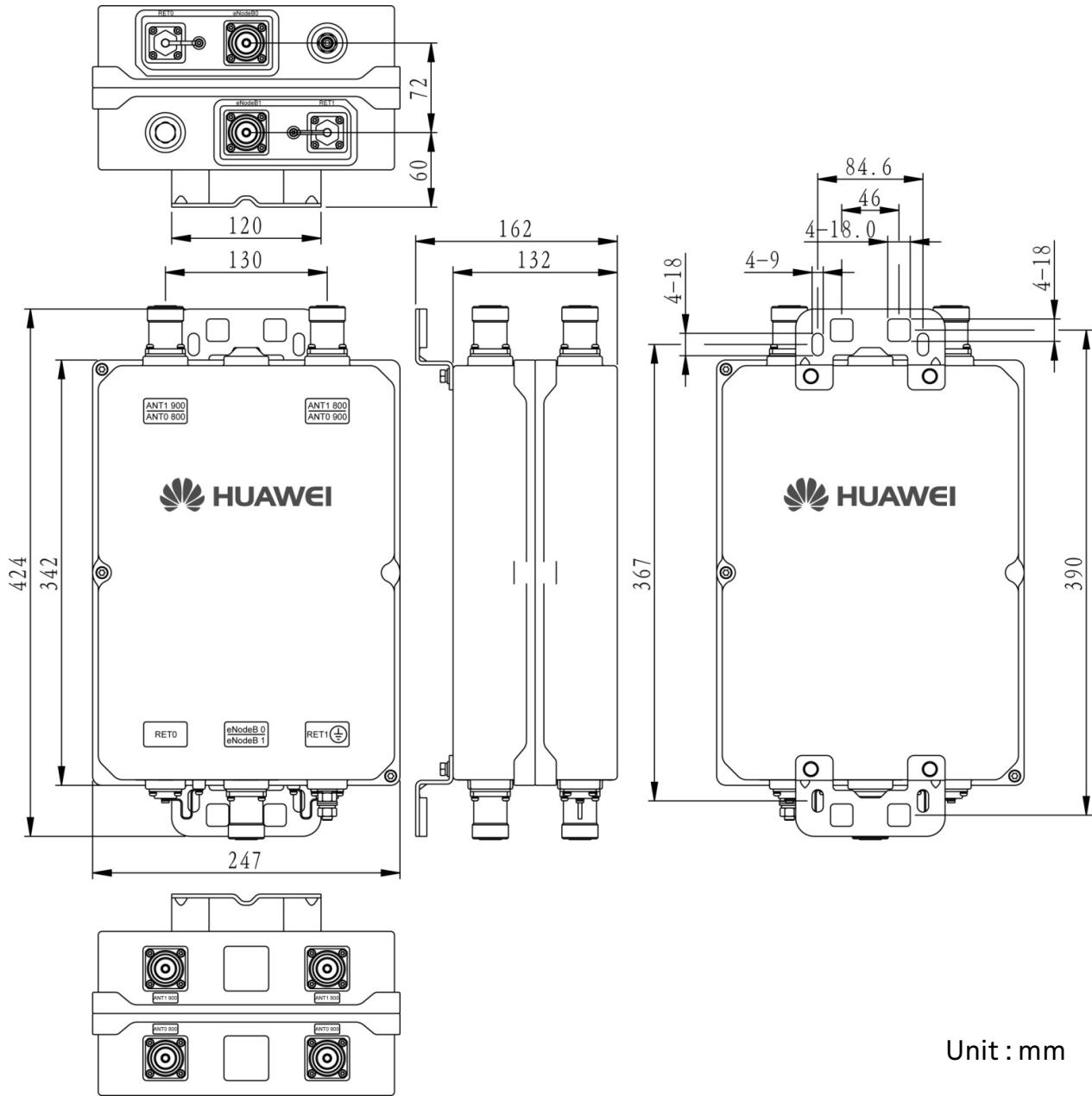
| | |
|---|--------|
| DC supply voltage (V) | 9 - 30 |
| Operating current per TMA (mA) (without RET) | @12 V |
| | @17 V |
| | @30 V |
| Alarm management | AISG |
| Power consumption (W) | < 3.0 |

Environmental Specification

| | |
|----------------------------------|---------------|
| Operating temperature range (°C) | -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) |

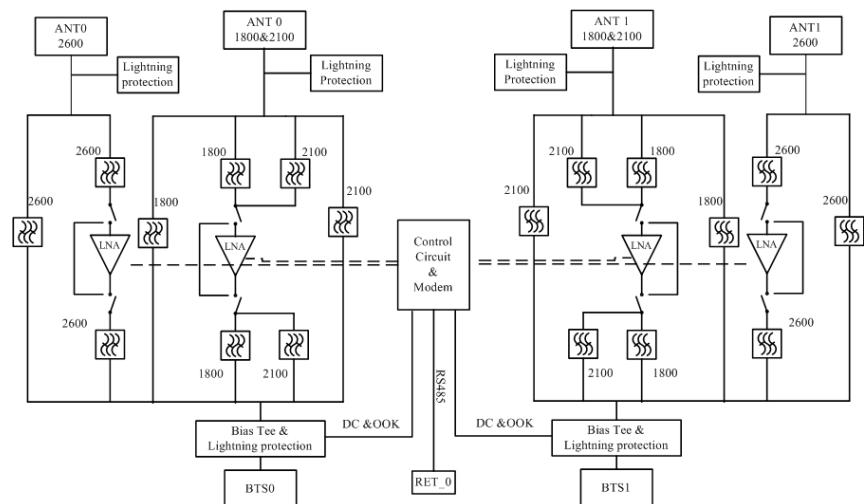


Preliminary Issue**Product Description**

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



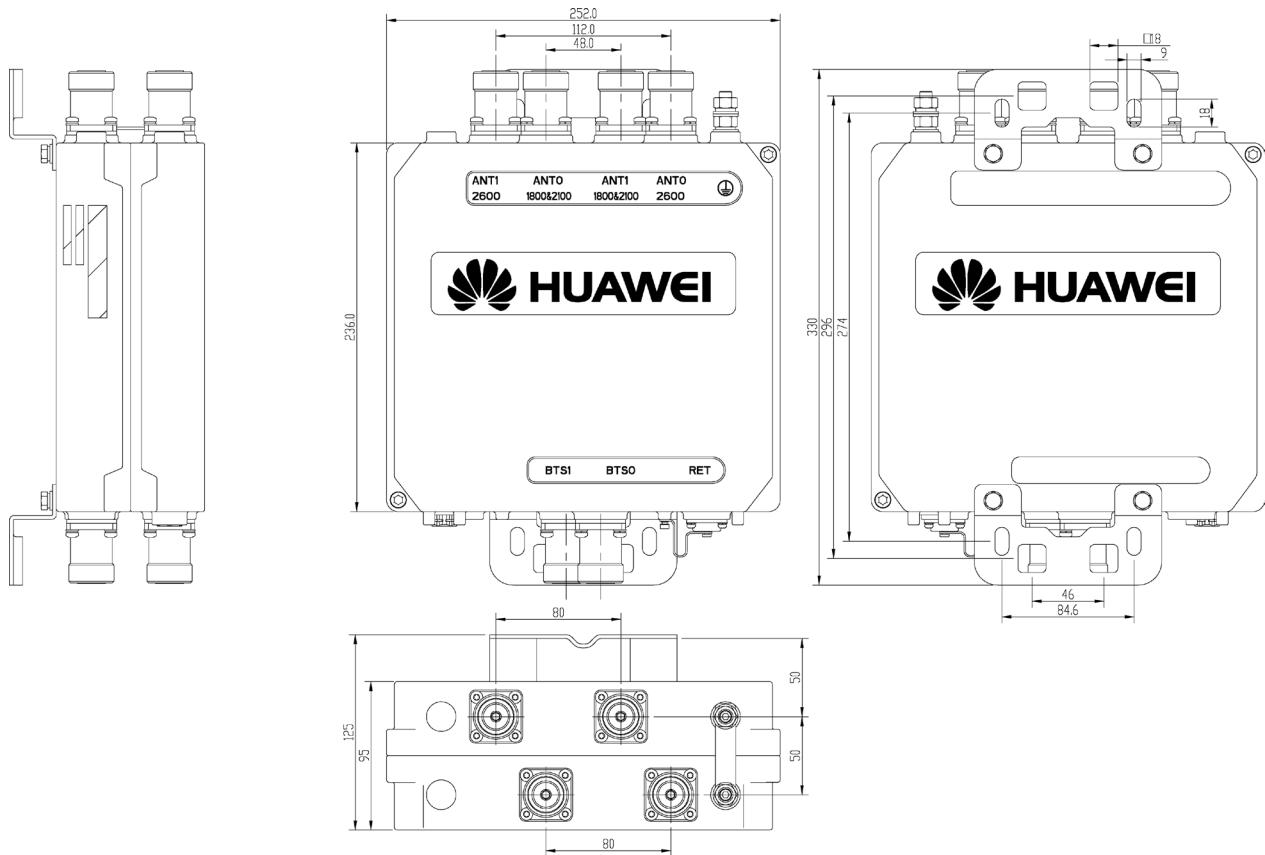
| Tx Specifications | | |
|---|---|--|
| Frequency range (MHz) | 1805 - 1880 & 2110 - 2170 | 2620 - 2690 |
| Bandwidth (MHz) | 75&60 | 70 |
| Insertion loss * (dB) | Typ. < 0.4&Typ. < 0.25 | Typ. < 0.35 |
| Return loss (dB) | ≥ 18 | |
| Input power (W) | < 160 (+52 dBm) CW < 2000 (+63 dBm) peak | |
| 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 \pm 5 |
| | @17 V | 175 \pm 5 |
| | @30 V | 105 \pm 5 |
| Alarm management | AISG2.0 | |
| Power consumption (W) | < 3.0 | |
| Environmental Specification | | |
| Operating temperature range (°C) | -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: $IL = \frac{IL_{Min.MHz(TX)} + 2 \times IL_{Mid.MHz(TX)} + IL_{Max.MHz(TX)}}{4}$

**Noise figure: $NF = \frac{NF_{Min.Frequency} + 2 \times NF_{Mid.Frequency} + NF_{Max.Frequency}}{4}$

MTMA-1800&2100/2600-12dB-2BTSport4ANTport-AISG

Model: ATADU2015



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 x 180 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 |

| Catagory | Pass Band(MHz) | Max. Input power(W) | DC-Bypass | Intermodulation (dBm) | Dimension (mm) | Model | Page |
|--------------------|--|---------------------|---------------------------|-----------------------|---------------------------------|-------------|------------|
| Quad-band Combiner | 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 |

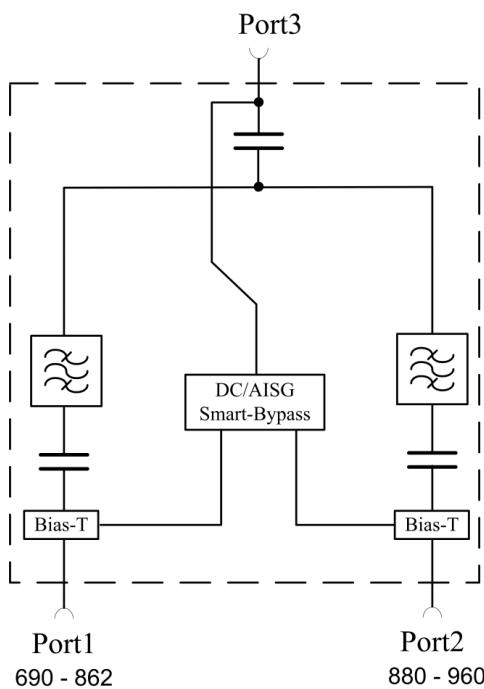
D-3. Filter

| 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

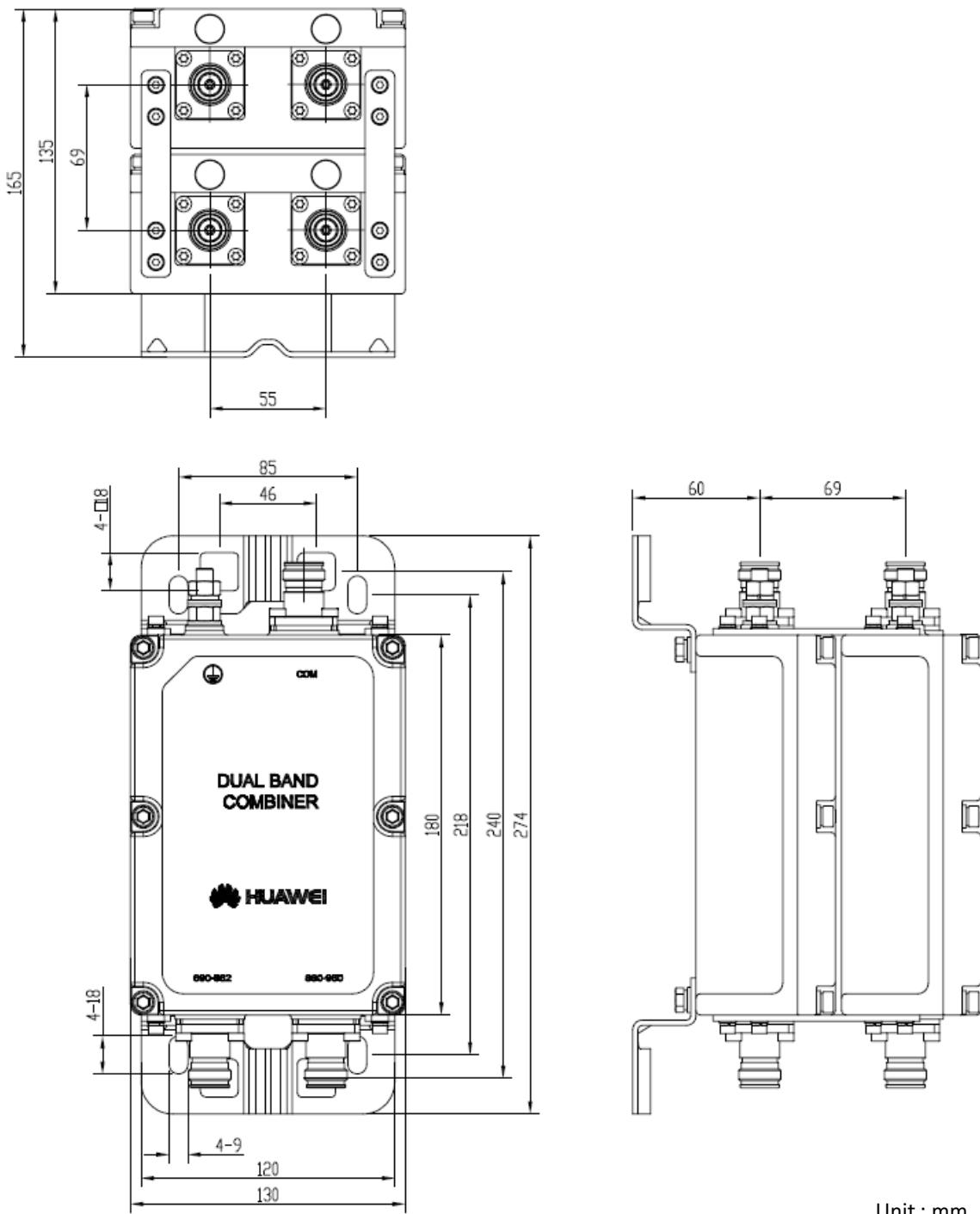
| | |
|-----------------------------|-------------------|
| Operating temperature (°C) | -40 ... +65 |
| Application scene | Indoor // Outdoor |
| IP rating | IP67 |
| Lightning protection** (kA) | 10 (8/20 us) |

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: $\overline{IL} = \frac{IL_{\text{Min. Frequency}} + 2 \times IL_{\text{Mid. Frequency}} + IL_{\text{Max. Frequency}}}{4}$

**Lightning protection: In normal instance, the combiner share the GND protection systems with feeders and no need another GND cable.

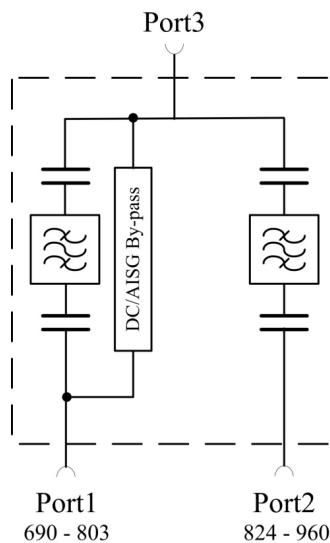


Product Description

- 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

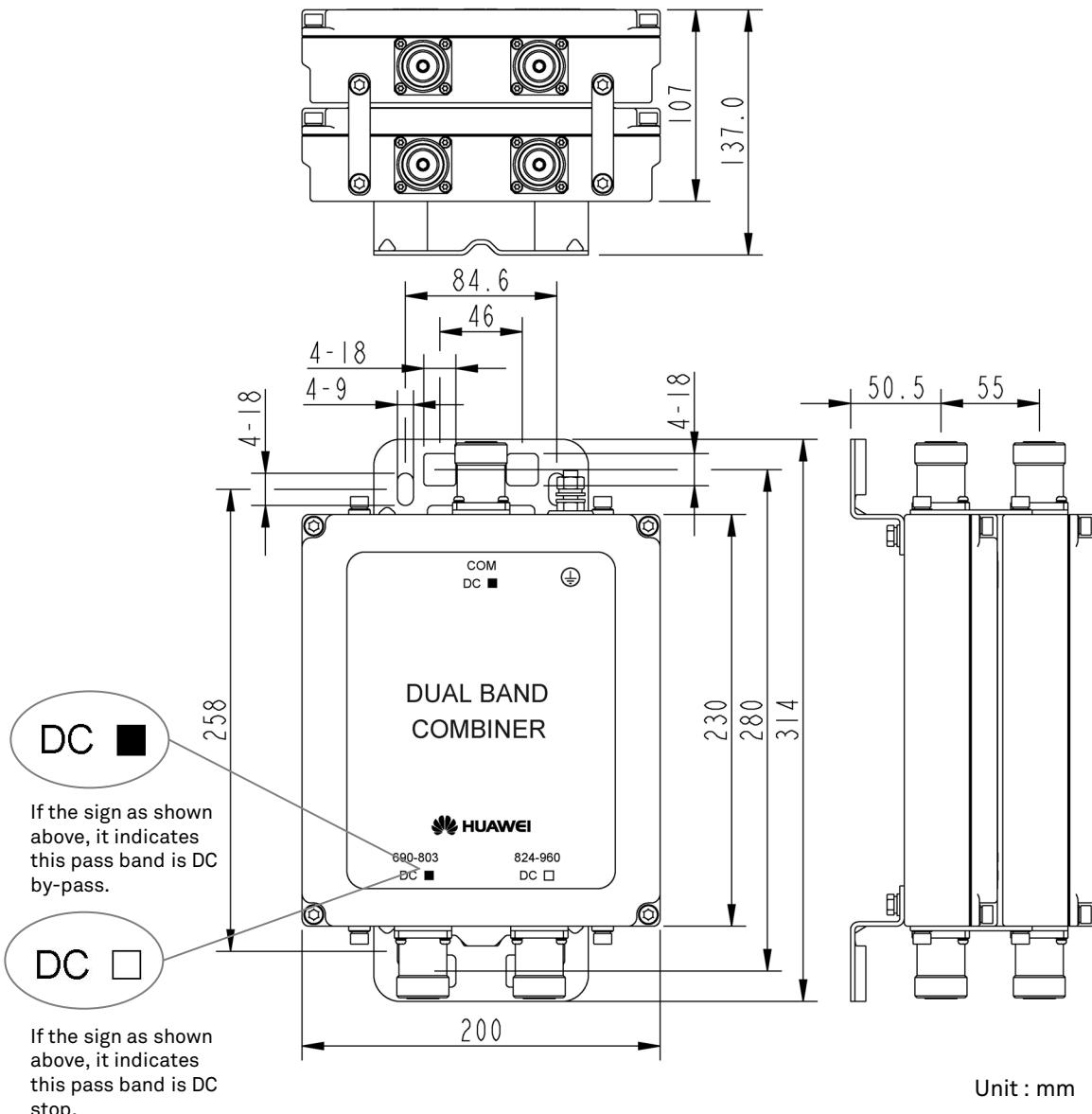
| | |
|-----------------------------|-------------------|
| Operating temperature (°C) | -40 ... +65 |
| Application scene | Indoor // Outdoor |
| IP rating | IP67 |
| Lightning protection** (kA) | 10 (8/20 us) |

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.

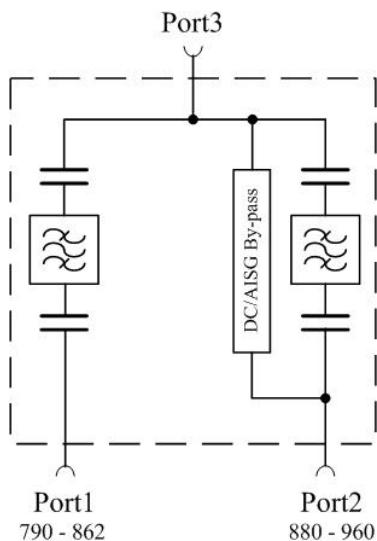


Product Description

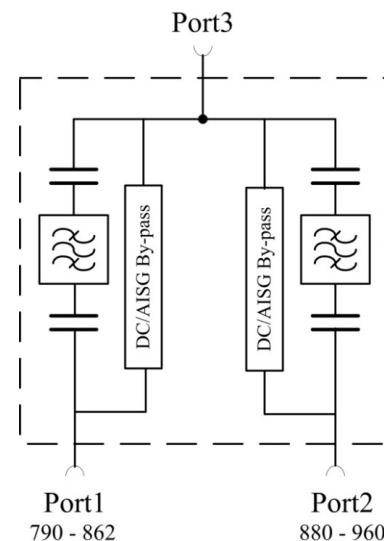
- Built-in lightning protection up to 10 kA.
- Can be used as a combiner near the BTS or in a reciprocal function near the antenna.
- Designed for co-siting purposes.
- Feeder sharing available.
- Suitable for indoor or outdoor applications.
- Wall or mast mounting.



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

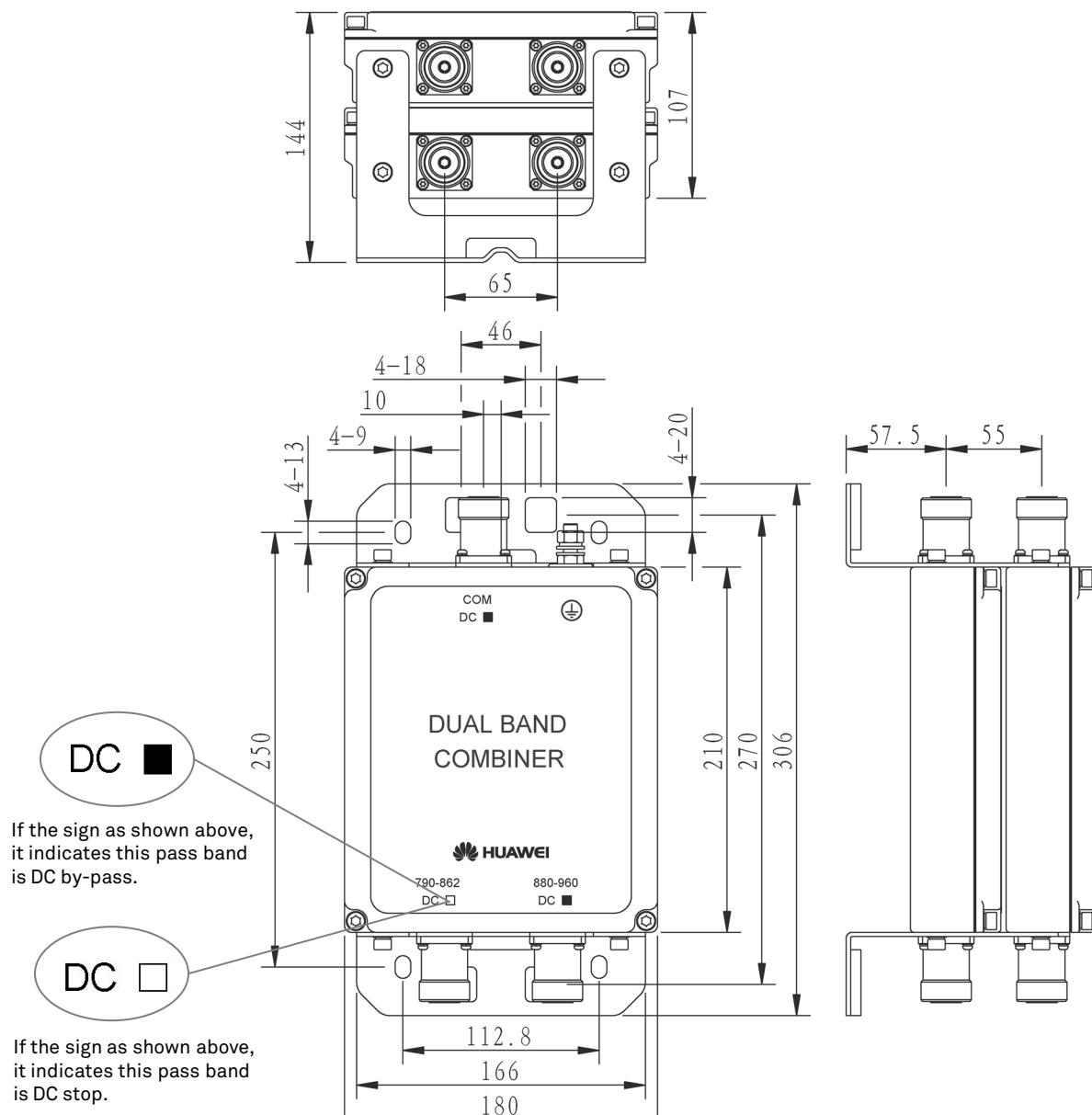
| | |
|-----------------------------|-------------------|
| Operating temperature (°C) | -40 ... +65 |
| Application scene | Indoor // Outdoor |
| IP rating | IP67 |
| Lightning protection** (kA) | 10 (8/20 us) |

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: $\overline{IL} = \frac{IL_{Min.\text{Frequency}} + 2 \times IL_{Mid.\text{Frequency}} + IL_{Max.\text{Frequency}}}{4}$

**Lightning protection: In normal instance, the combiner share the GND protection systems with feeders and no need another GND cable.



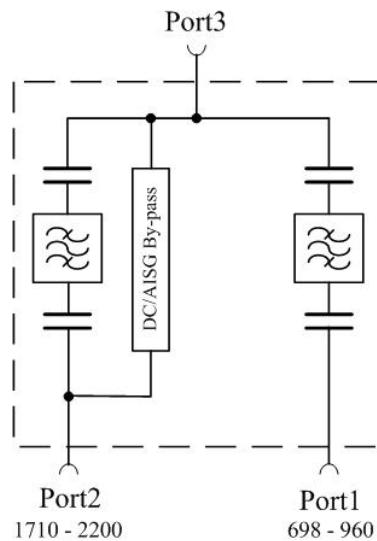
Unit : mm

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

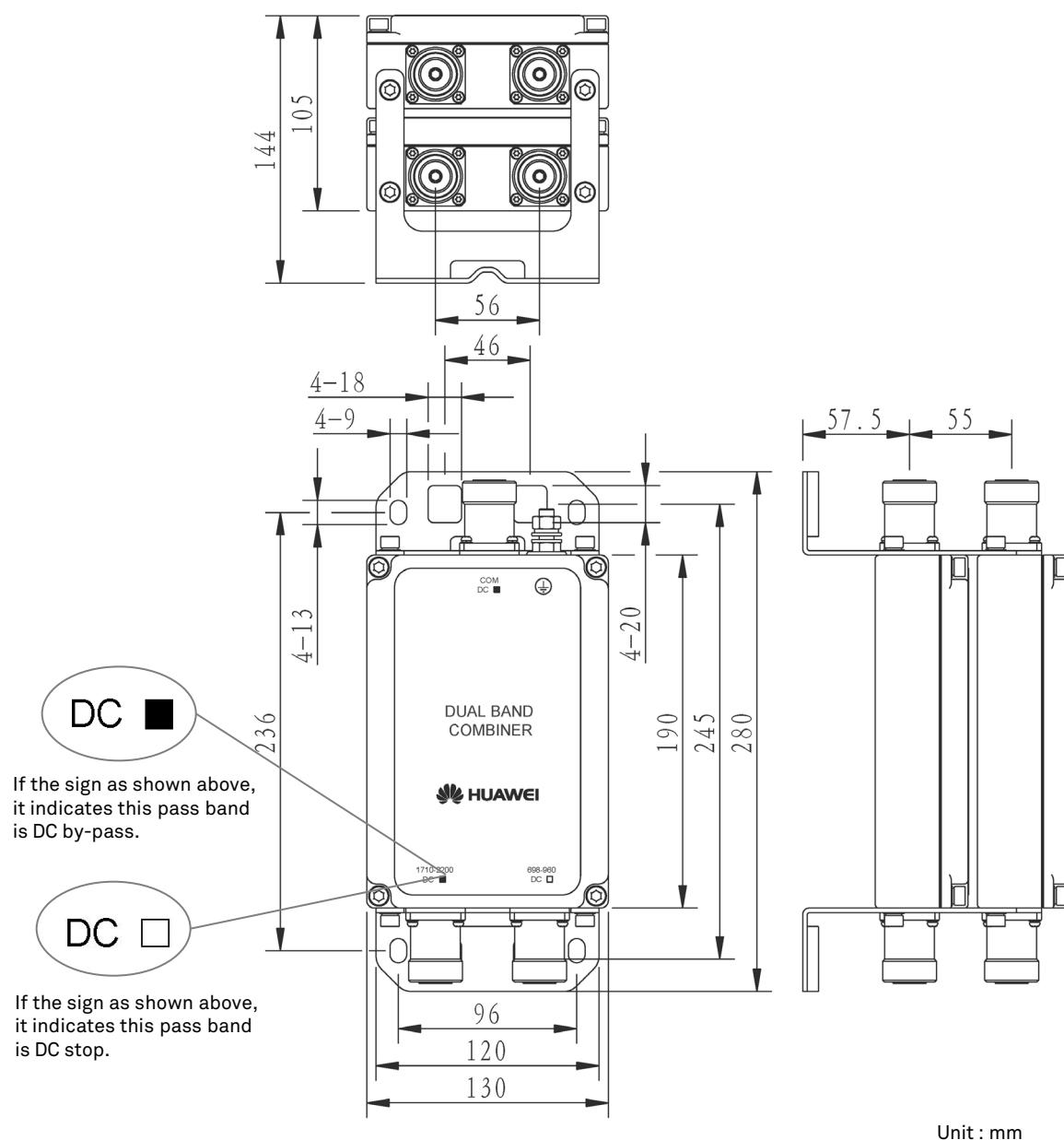
| | |
|-----------------------------|-------------------|
| Operating temperature (°C) | -40 ... +65 |
| Application scene | Indoor // Outdoor |
| IP rating | IP67 |
| Lightning protection** (kA) | 10 (8/20 us) |

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: $\overline{IL} = \frac{IL_{\text{Min. Frequency}} + 2 \times IL_{\text{Mid. Frequency}} + IL_{\text{Max. Frequency}}}{4}$

**Lightning protection: In normal instance, the combiner share the GND protection systems with feeders and no need another GND cable.

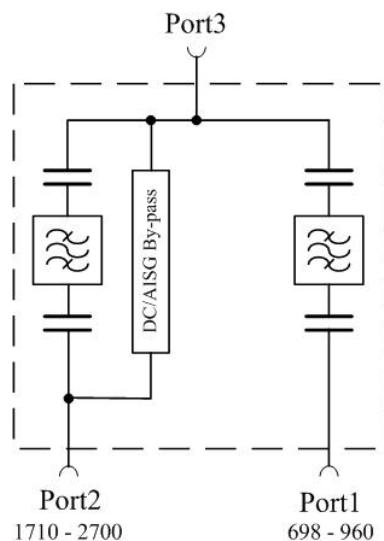


Product Description

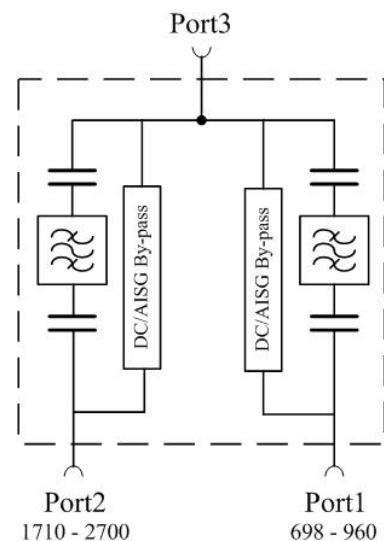
- Built-in lightning protection up to 10 kA.
- Can be used as a combiner near the BTS or in a reciprocal function near the antenna.
- Designed for co-siting purposes.
- Feeder sharing available.
- Suitable for indoor or outdoor applications.
- Wall or mast mounting.



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

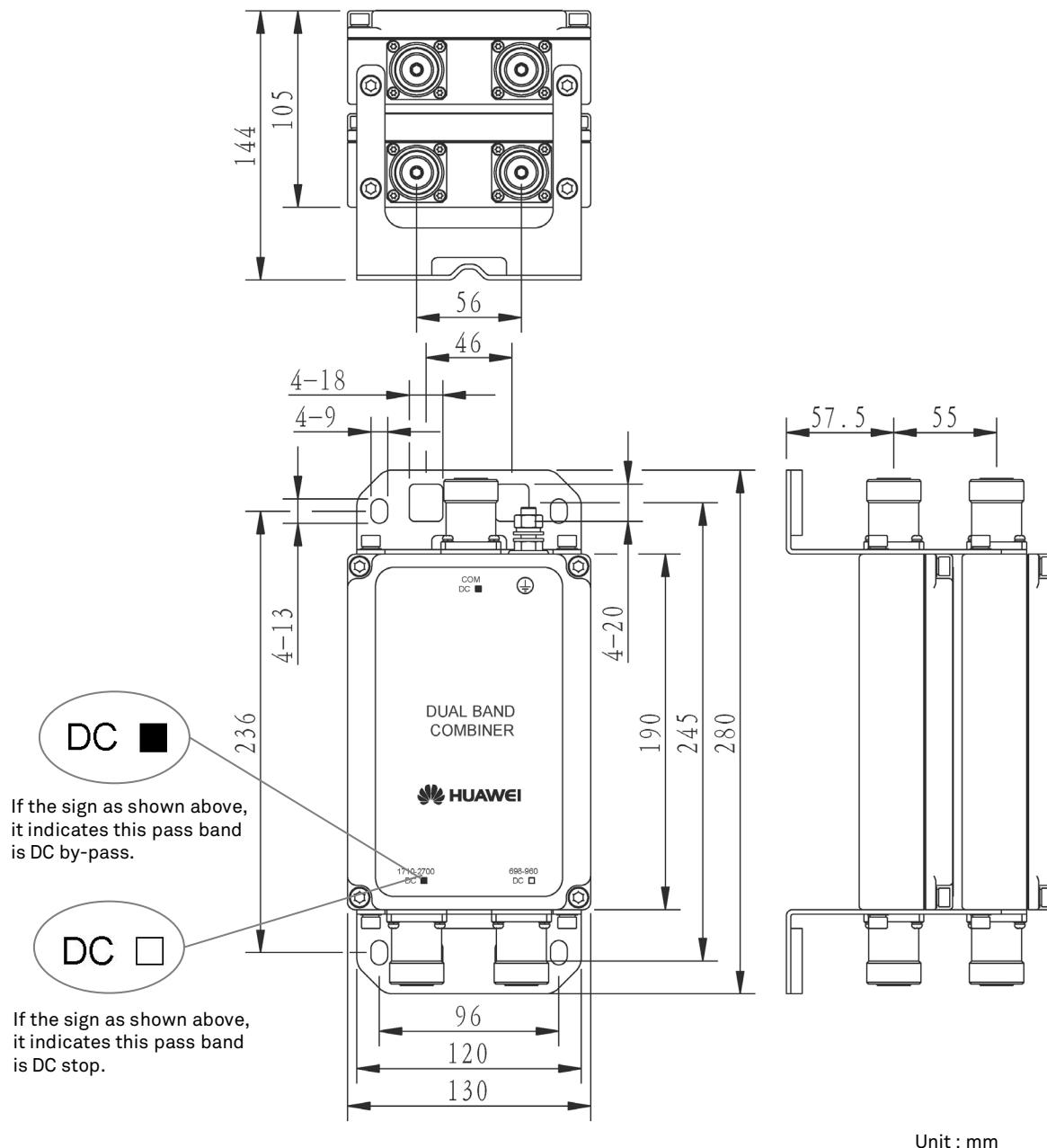
| | |
|-----------------------------|-------------------|
| Operating temperature (°C) | -40 ... +65 |
| Application scene | Indoor // Outdoor |
| IP rating | IP67 |
| Lightning protection** (kA) | 10 (8/20 us) |

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.

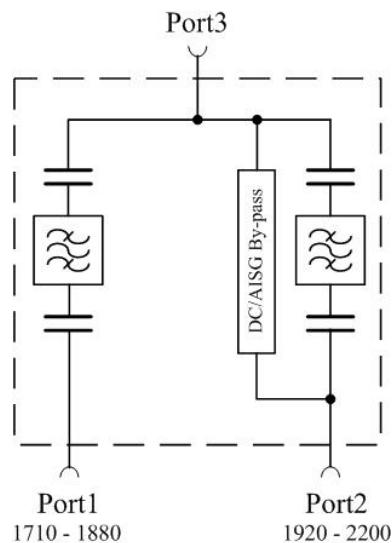


Product Description

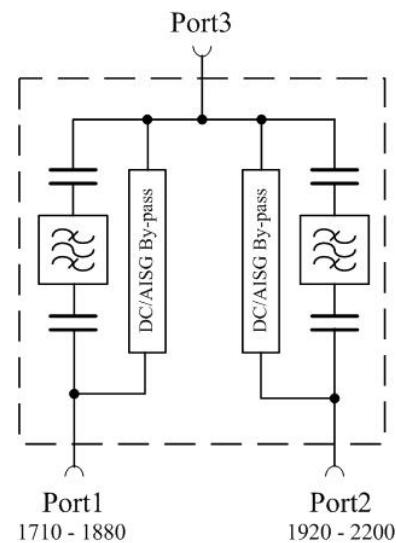
- Built-in lightning protection up to 10 kA.
- Can be used as a combiner near the BTS or in a reciprocal function near the antenna.
- Designed for co-siting purposes.
- Feeder sharing available.
- Suitable for indoor or outdoor applications.
- Wall or mast mounting.



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

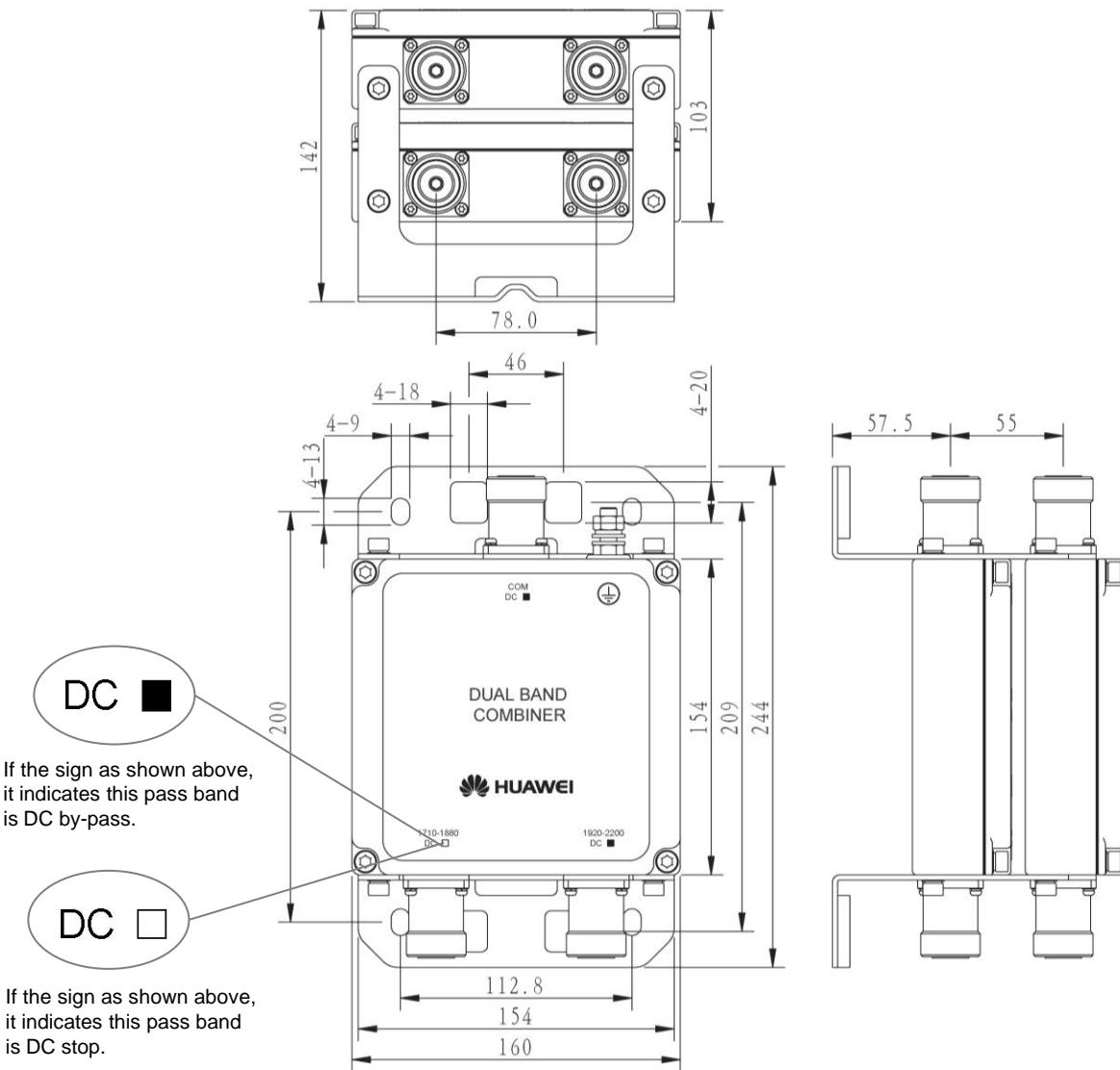
| | |
|-----------------------------|-------------------|
| Operating temperature (°C) | -40 ... +65 |
| Application scene | Indoor // Outdoor |
| IP rating | IP67 |
| Lightning protection** (kA) | 10 (8/20 us) |

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: $\overline{IL} = \frac{IL_{Min.\text{Frequency}} + 2 \times IL_{Mid.\text{Frequency}} + IL_{Max.\text{Frequency}}}{4}$

**Lightning protection: In normal instance, the combiner share the GND protection systems with feeders and no need another GND cable.



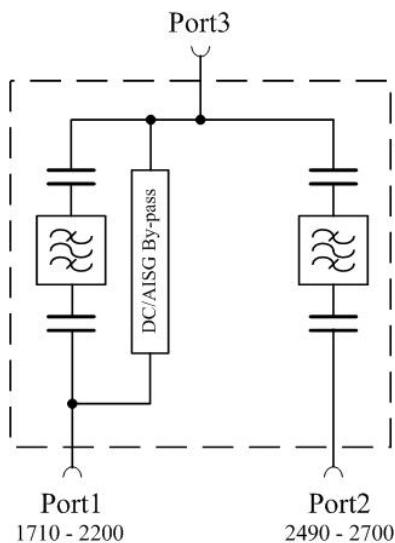
Unit : mm

Product Description

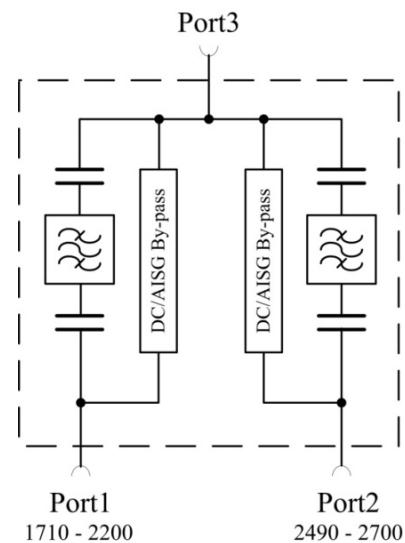
- Built-in lightning protection up to 10 kA.
- Can be used as a combiner near the BTS or in a reciprocal function near the antenna.
- Designed for co-siting purposes.
- Feeder sharing available.
- Suitable for indoor or outdoor applications.
- Wall or mast mounting.



Block Diagram



ACOMD2L04



ACOMD2H16

DC-1710-2200/2490-2700-10 Model: ACOMD2L04

DC-1710-2200/2490-2700-11 Model: 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

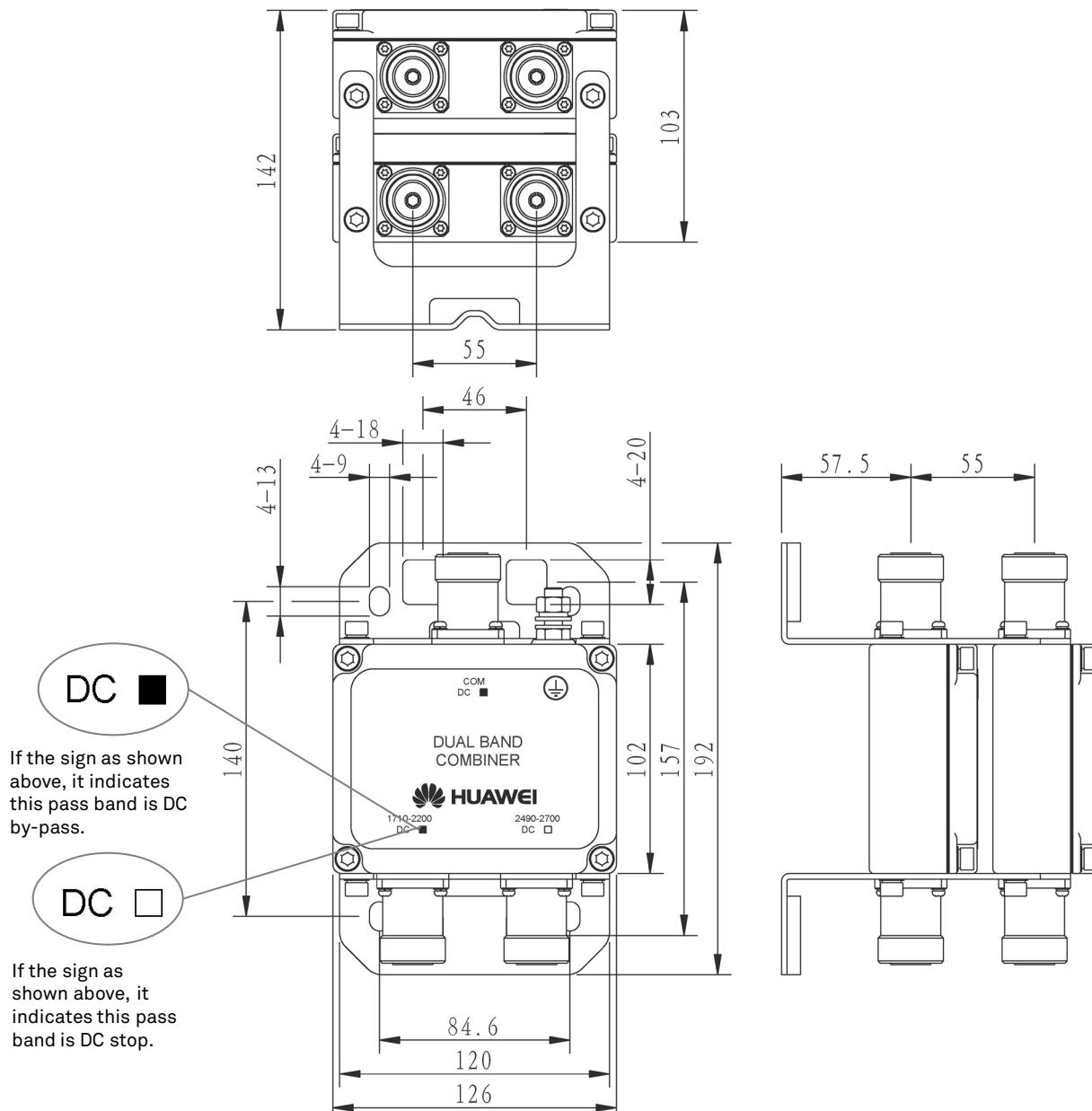
| | |
|-----------------------------|-------------------|
| Operating temperature (°C) | -40 ... +65 |
| Application scene | Indoor // Outdoor |
| IP rating | IP67 |
| Lightning protection** (kA) | 10 (8/20 us) |

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.



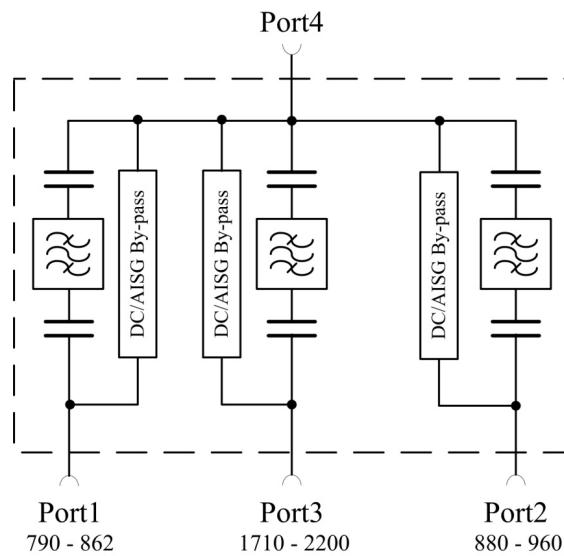
Unit : mm

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

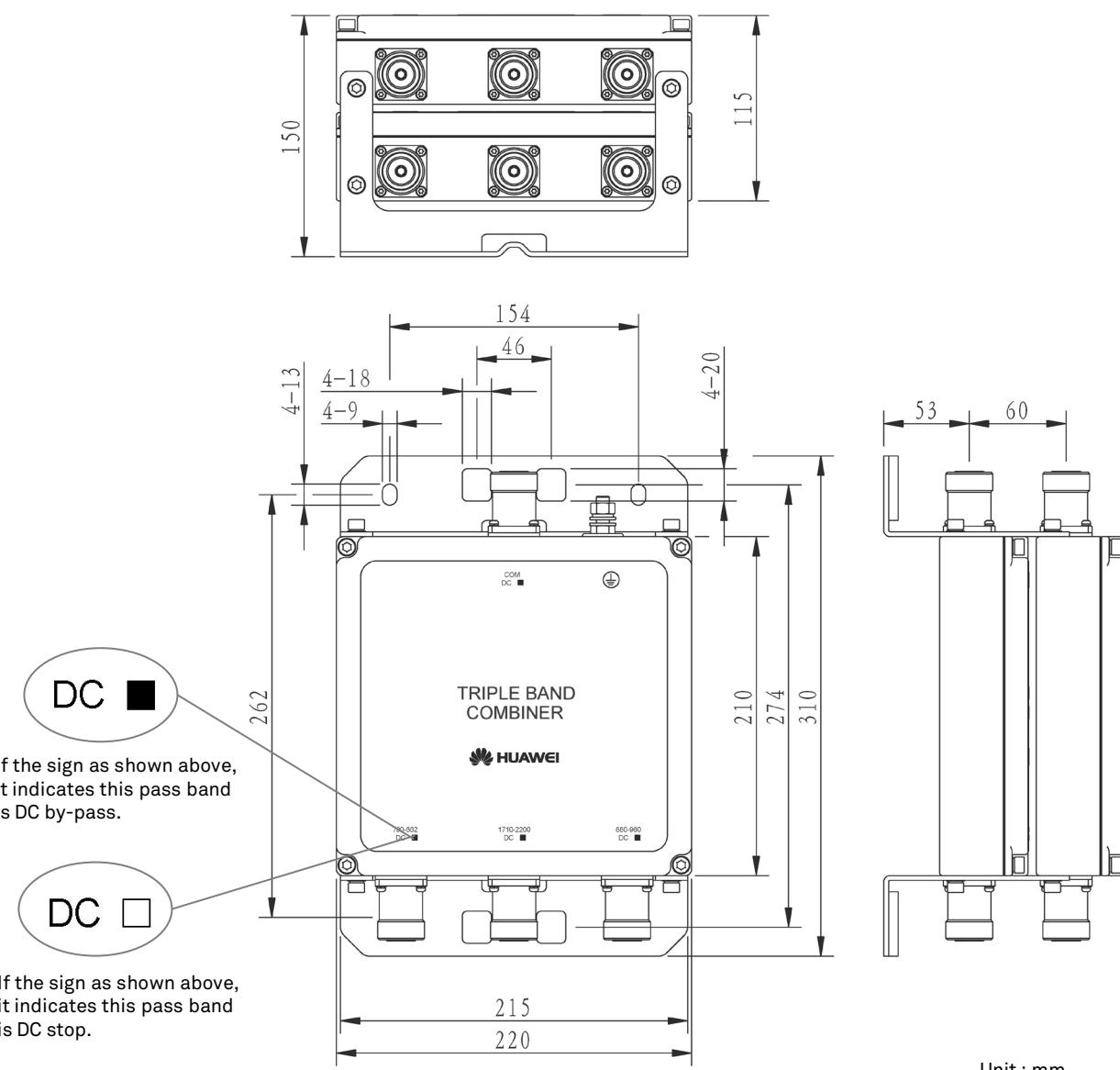
| | |
|-----------------------------|-------------------|
| Operating temperature (°C) | -40 ... +65 |
| Application scene | Indoor // outdoor |
| IP rating | IP67 |
| Lightning protection** (kA) | 10 (8/20 us) |

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) |

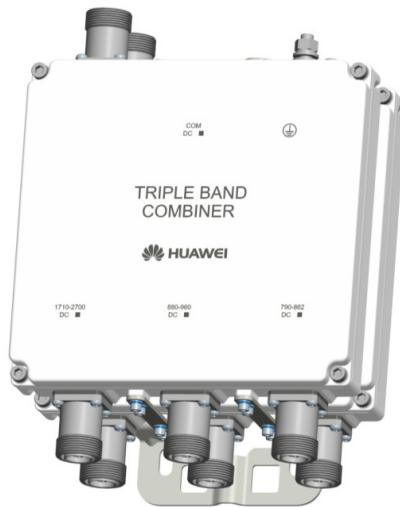
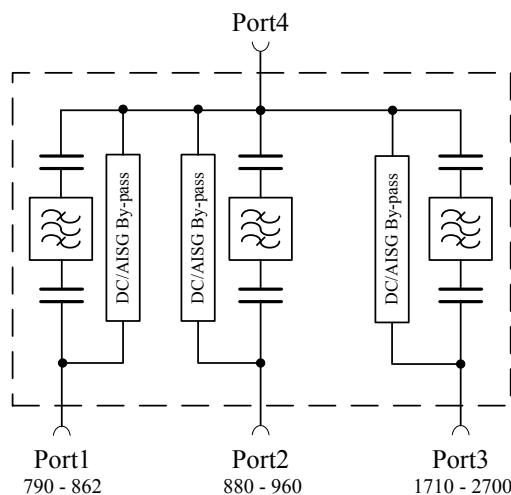
*Insertion loss: $\overline{IL} = \frac{IL_{Min.\ Frequency} + 2 \times IL_{Mid.\ Frequency} + IL_{Max.\ Frequency}}{4}$

**Lightning protection: In normal instance, the combiner share the GND protection systems with feeders and no need another GND cable.

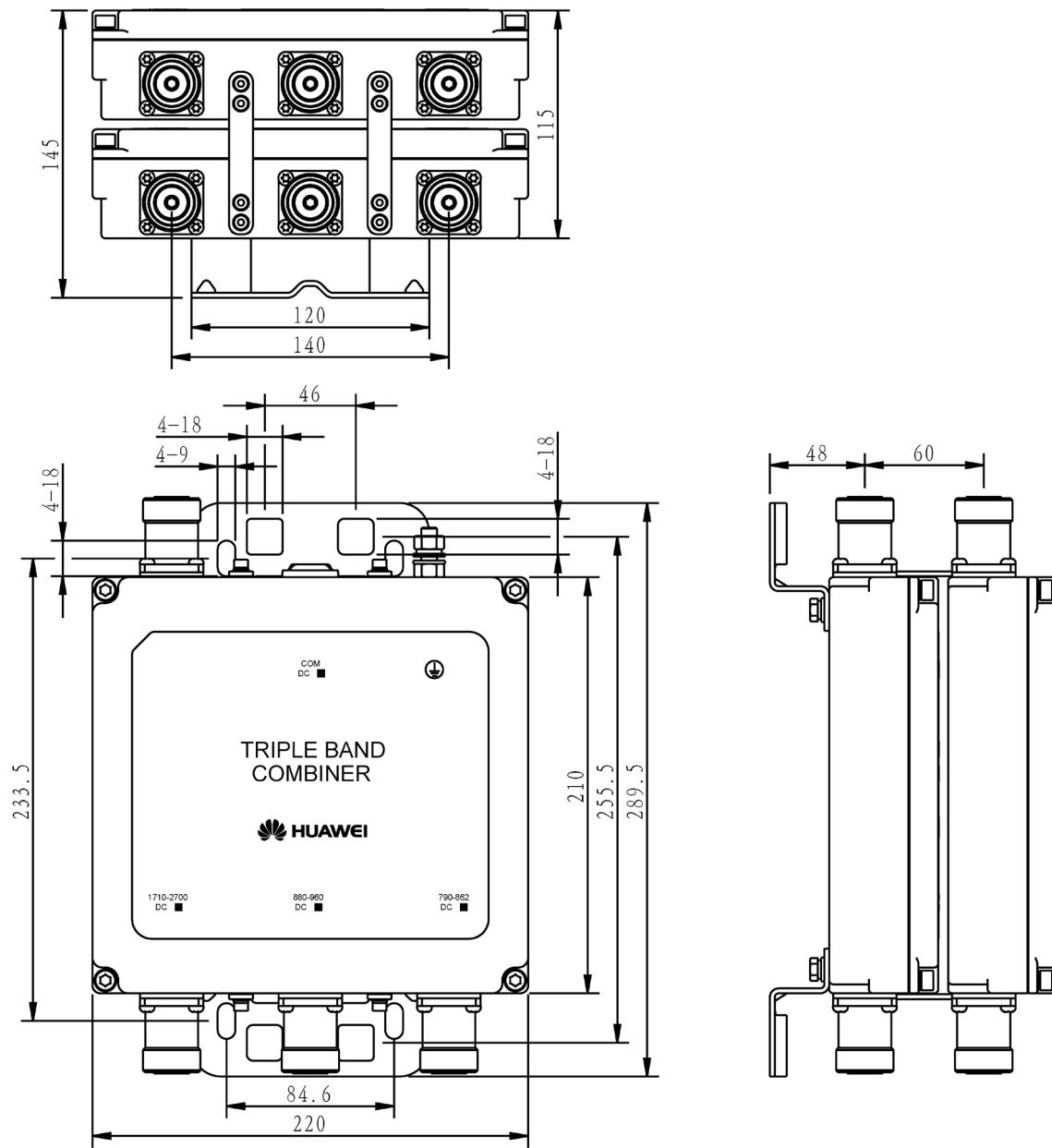


Preliminary Issue**Product Description**

- 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**

ACOMT2A02



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 (°C) | -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: $\overline{IL} = \frac{IL_{\text{Min. Frequency}} + 2 \times IL_{\text{Mid. Frequency}} + IL_{\text{Max. Frequency}}}{4}$

TC-790-960/1710-1880/1920-2200-001 Model: ACOMT2H01

TC-790-960/1710-1880/1920-2200-011 Model: ACOMT2H03

TC-790-960/1710-1880/1920-2200-111 Model: ACOMT2H08

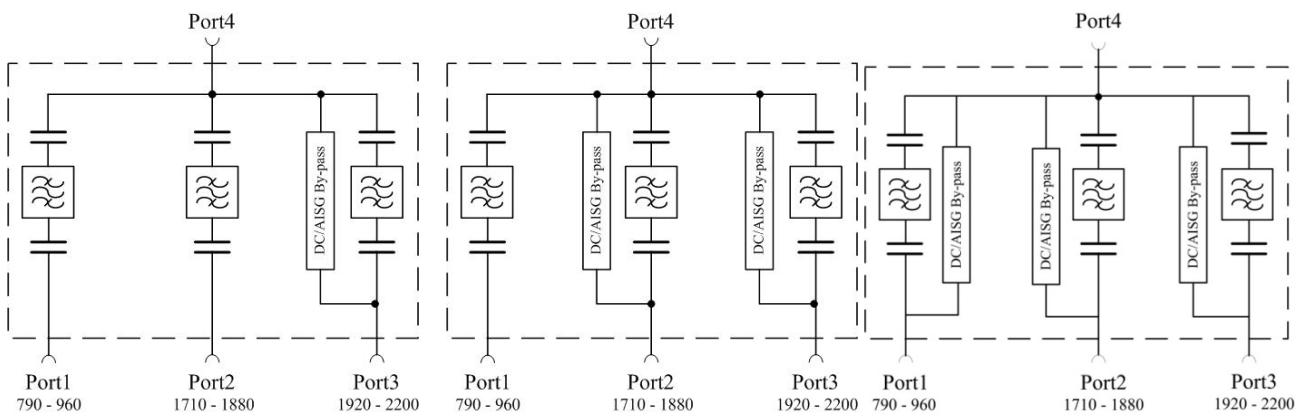


Product Description

- 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





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

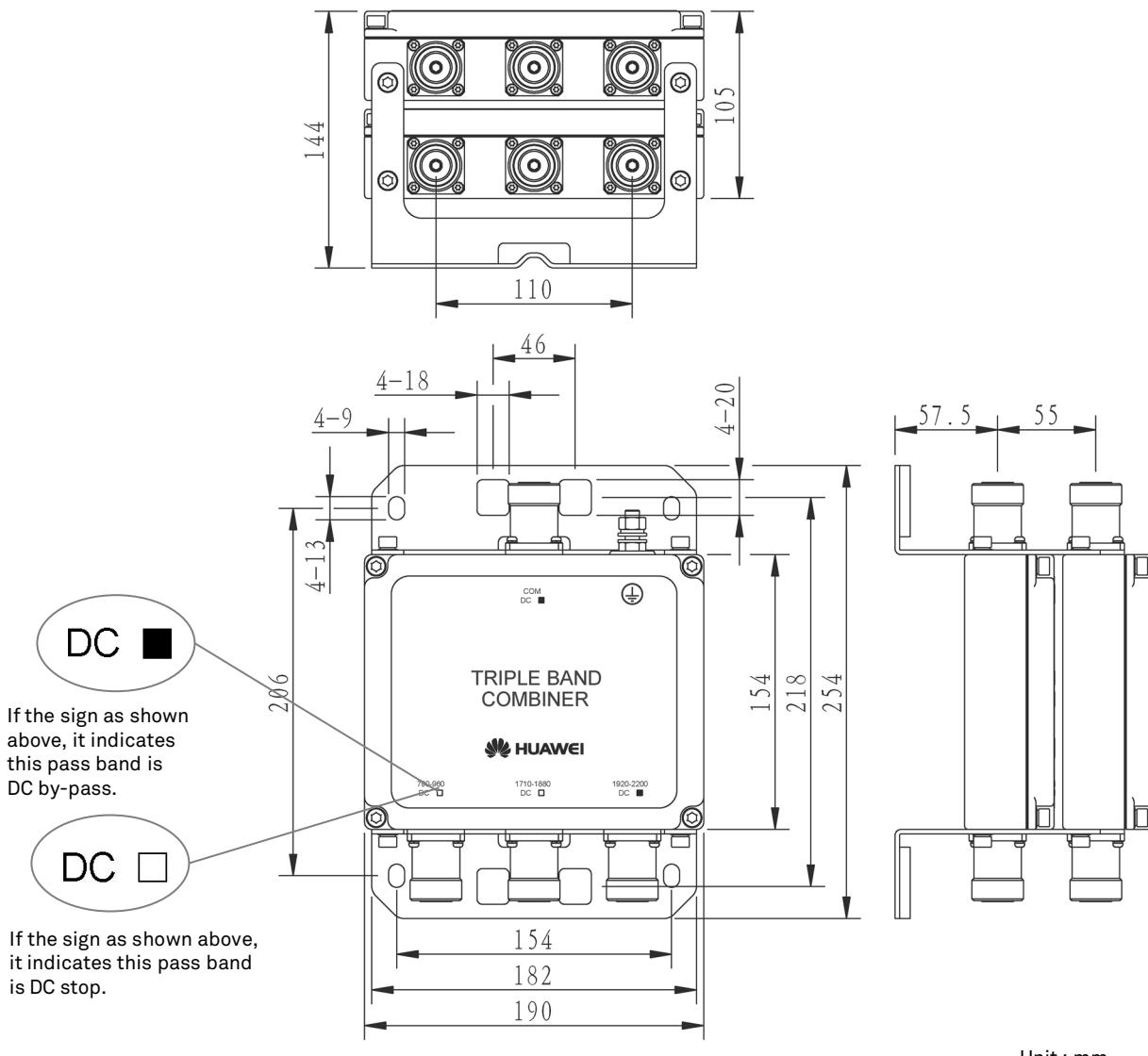
| | |
|-----------------------------|-------------------|
| Operating temperature (°C) | -40 ... +65 |
| Application scene | Indoor // Outdoor |
| IP rating | IP67 |
| Lightning protection** (kA) | 10 (8/20 us) |

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) |

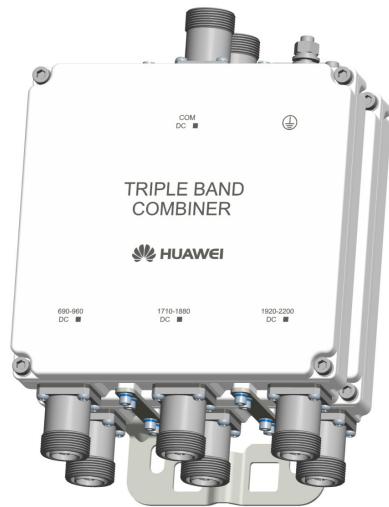
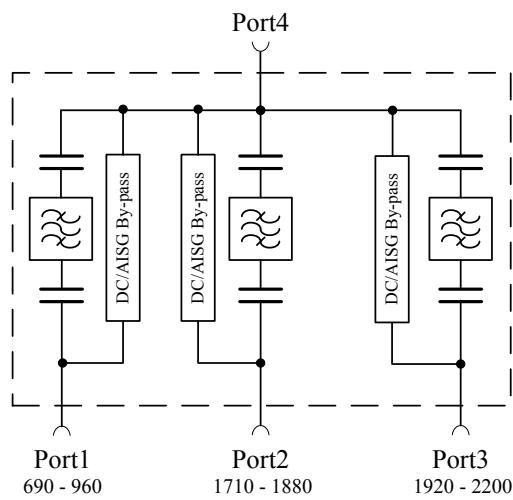
*Insertion loss: $\overline{IL} = \frac{IL_{Min.\ Frequency} + 2 \times IL_{Mid.\ Frequency} + IL_{Max.\ Frequency}}{4}$

**Lightning protection: In normal instance, the combiner share the GND protection systems with feeders and no need another GND cable.



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.

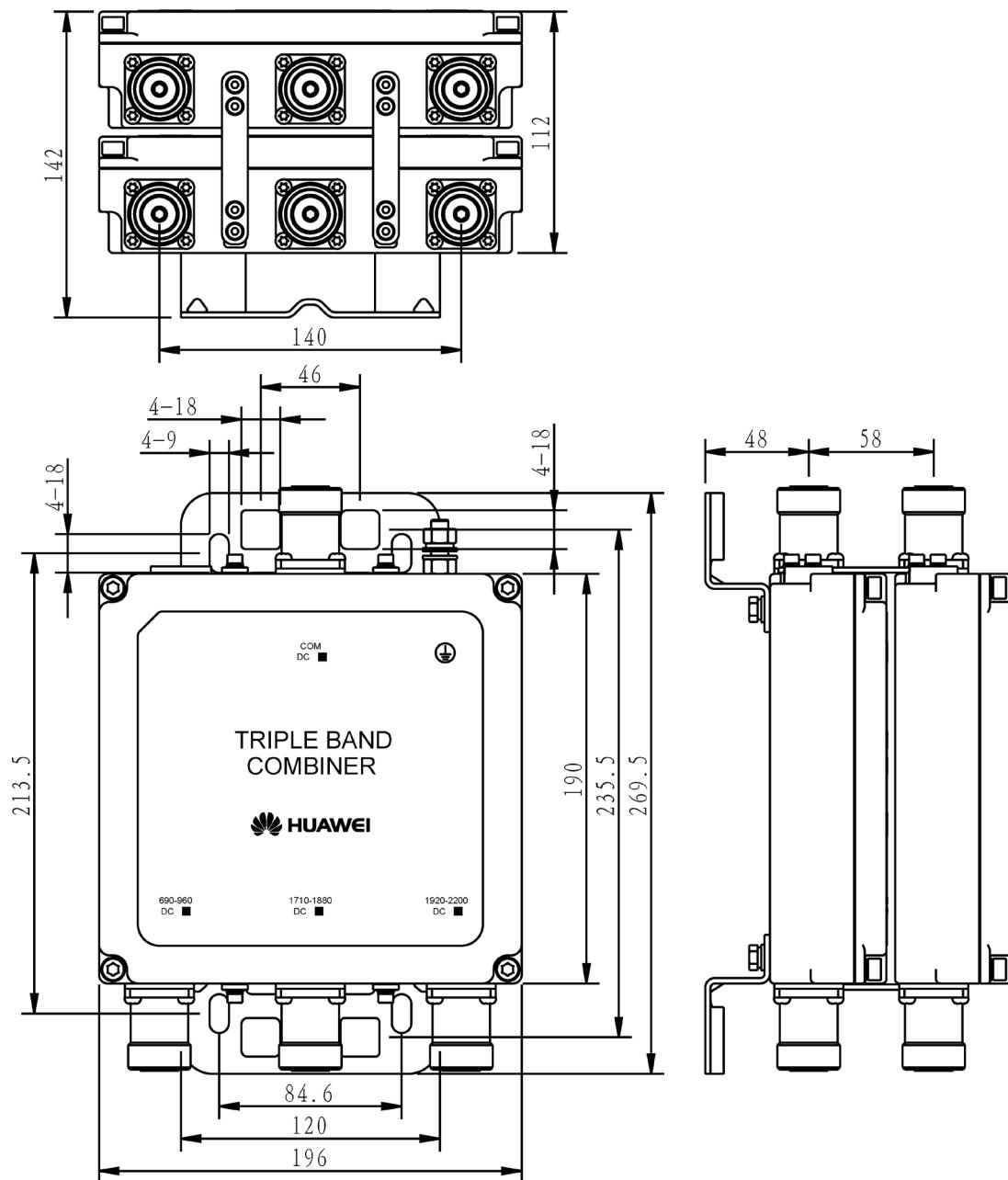
**Block Diagram**

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 × 43 dBm) |
| Environmental Specification | | |
| Operating temperature (°C) | | -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) |

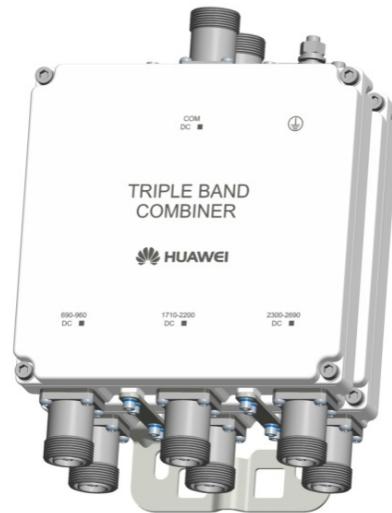
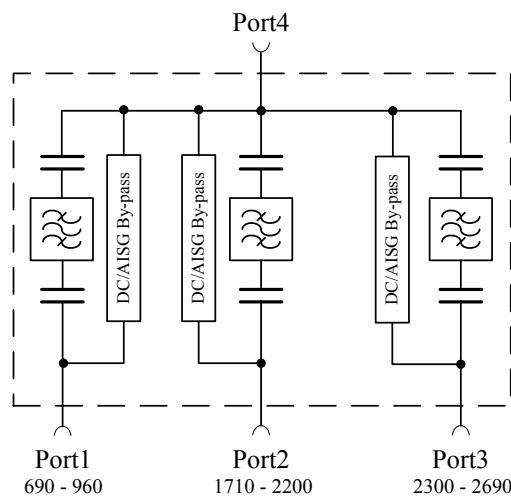
*Insertion loss: $\overline{IL} = \frac{IL_{Min.\text{Frequency}} + 2 \times IL_{Mid.\text{Frequency}} + IL_{Max.\text{Frequency}}}{4}$



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.

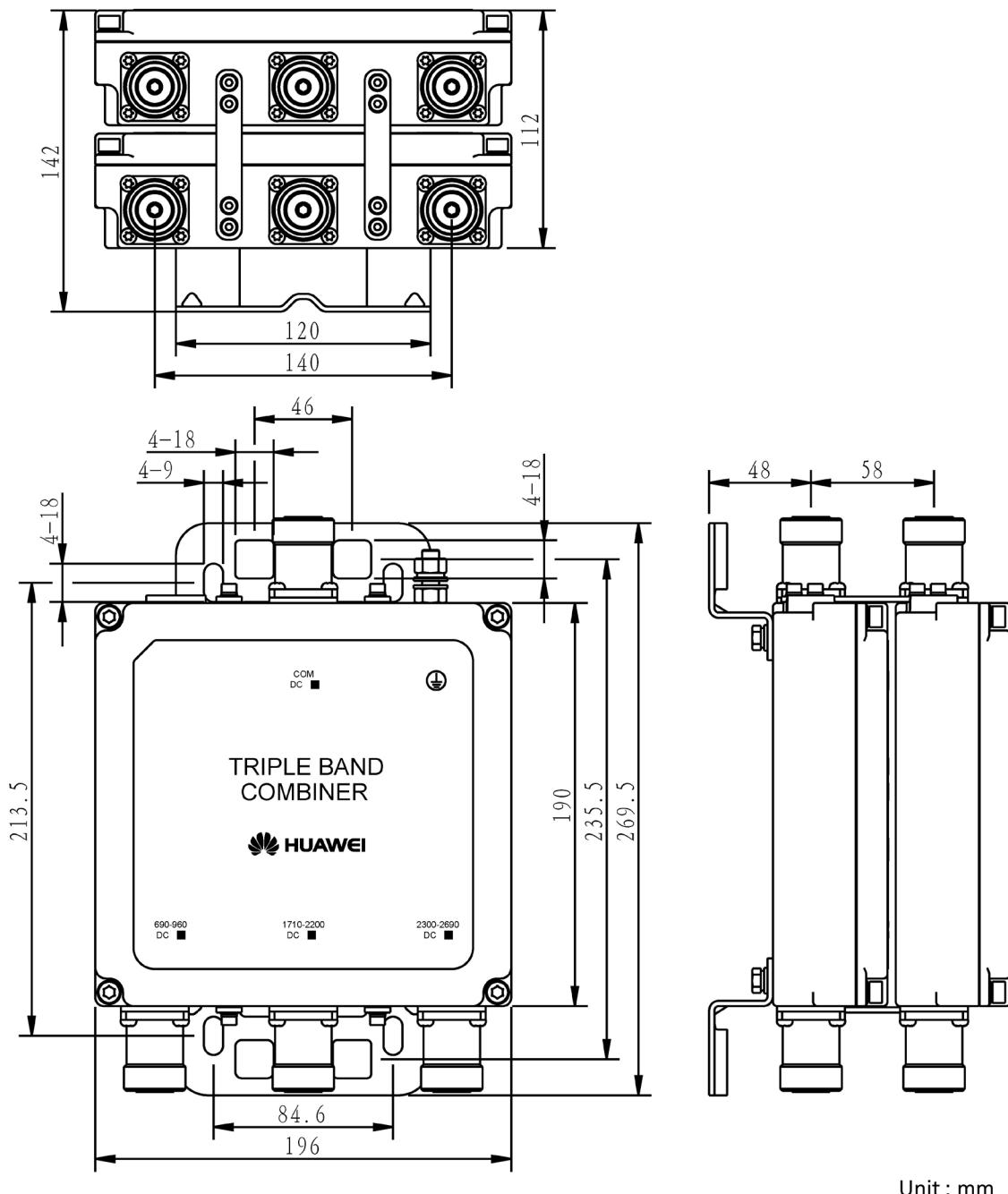
**Block Diagram**

ACOMT2A04

Preliminary Issue

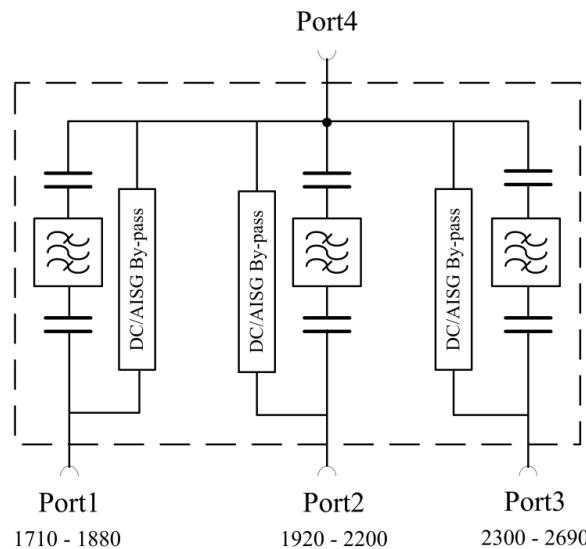
| Electrical Properties | | |
|--------------------------------------|-----------------------|---|
| Model | | ACOMT2A04 |
| Pass band (MHz) | Band 1 | 690 - 960 |
| | Band 2 | 1710 - 2200 |
| | Band 3 | 2300 - 2690 |
| Insertion loss* (dB) | Port 1 ↔ Port 4 | < 0.15 (690 MHz - 960 MHz) |
| | Port 2 ↔ 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 (°C) | | -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: $\overline{IL} = \frac{IL_{\text{Min. Frequency}} + 2 \times IL_{\text{Mid. Frequency}} + IL_{\text{Max. Frequency}}}{4}$



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

Combiner Filter

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

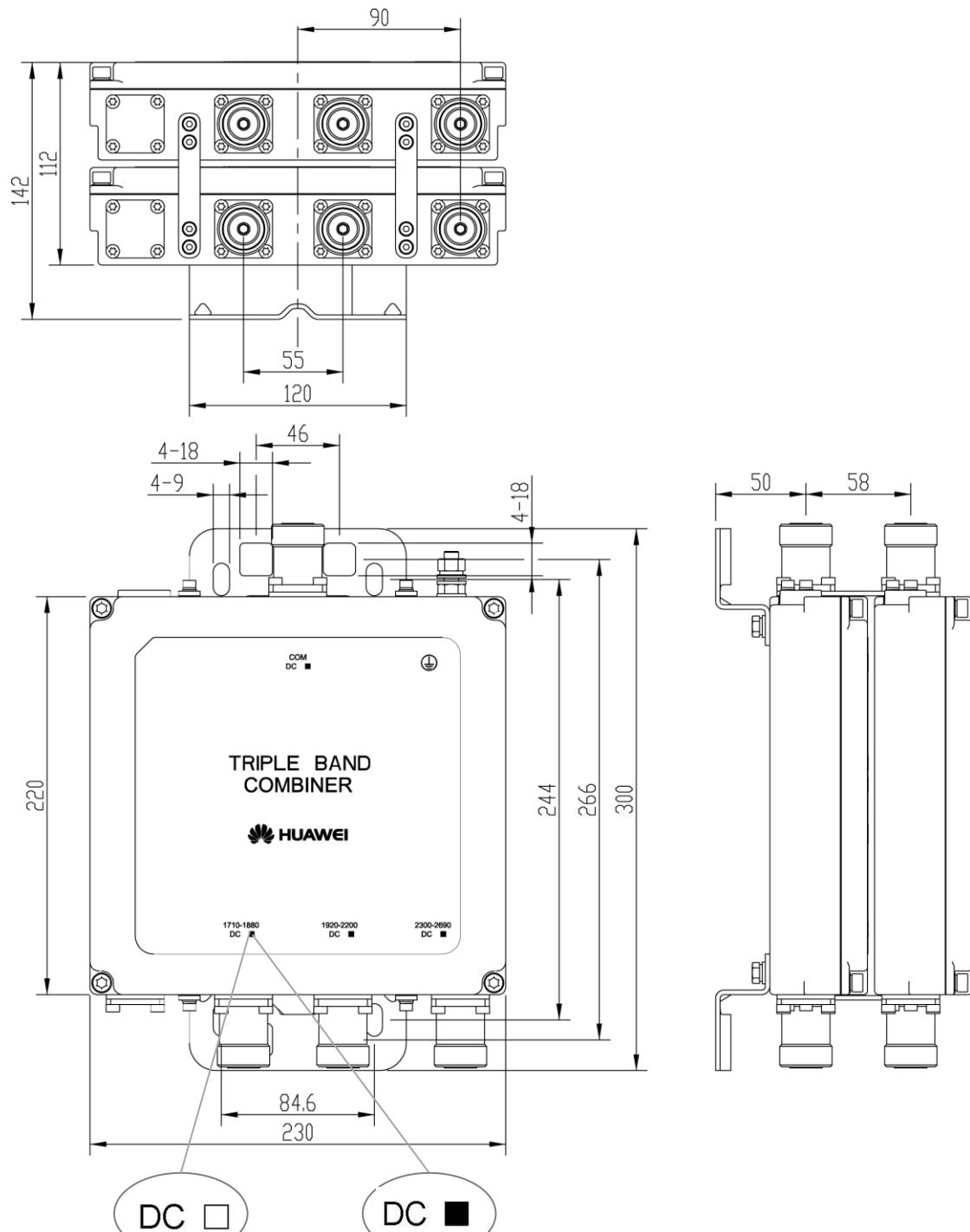
| | |
|-----------------------------|-------------------|
| Operating temperature (°C) | -40 ... +65 |
| Application scene | Indoor // Outdoor |
| IP rating | IP67 |
| Lightning protection** (kA) | 10 (8/20 us) |

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:
$$\overline{IL} = \frac{IL_{Min.\text{Frequency}} + 2 \times IL_{Mid.\text{Frequency}} + IL_{Max.\text{Frequency}}}{4}$$

**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.

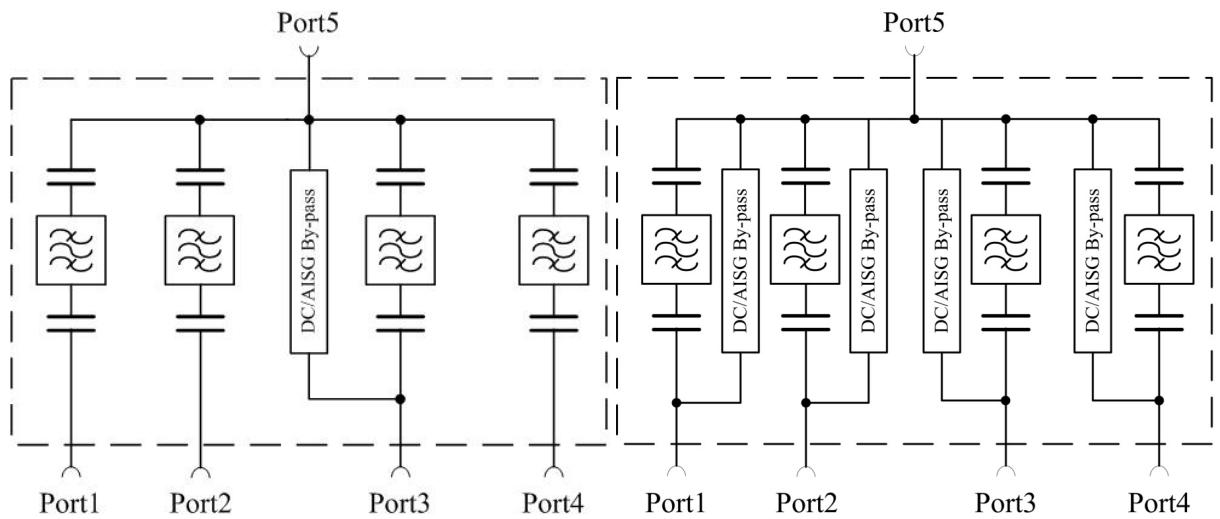


Product Description

- 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 × 43 dBm) |

Environmental Specification

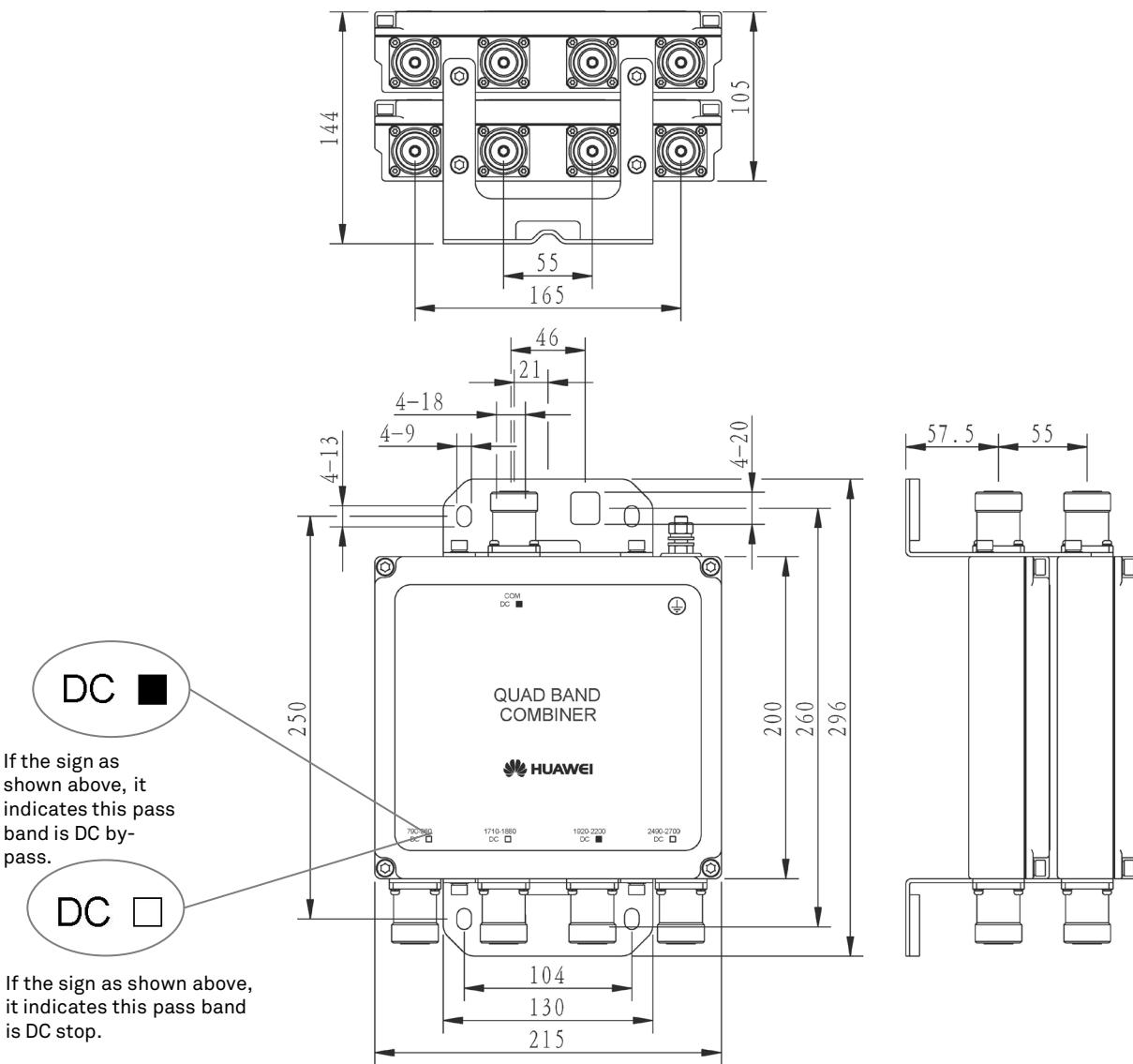
| | |
|-----------------------------|-------------------|
| Operating temperature (°C) | -40 ... +65 |
| Application scene | Indoor // Outdoor |
| IP rating | IP67 |
| Lightning protection** (kA) | 10 (8/20 us) |

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) |

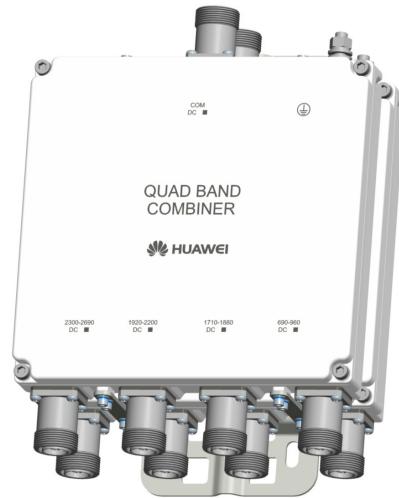
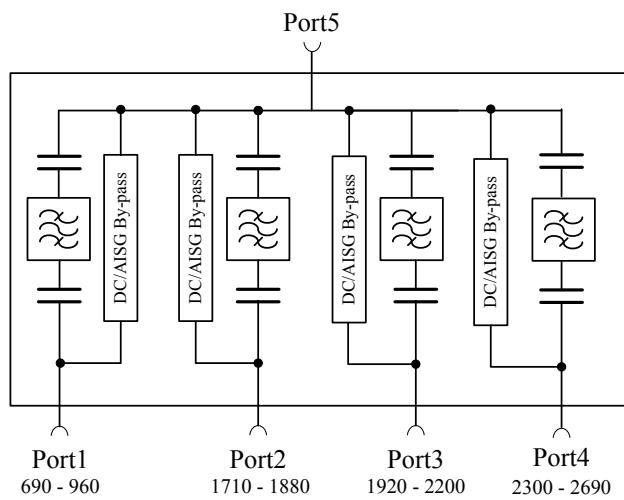
*Insertion loss: $\overline{IL} = \frac{IL_{Min.\text{Frequency}} + 2 \times IL_{Mid.\text{Frequency}} + IL_{Max.\text{Frequency}}}{4}$

**Lightning protection: In normal instance, the combiner share the GND protection systems with feeders and no need another GND cable.



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.

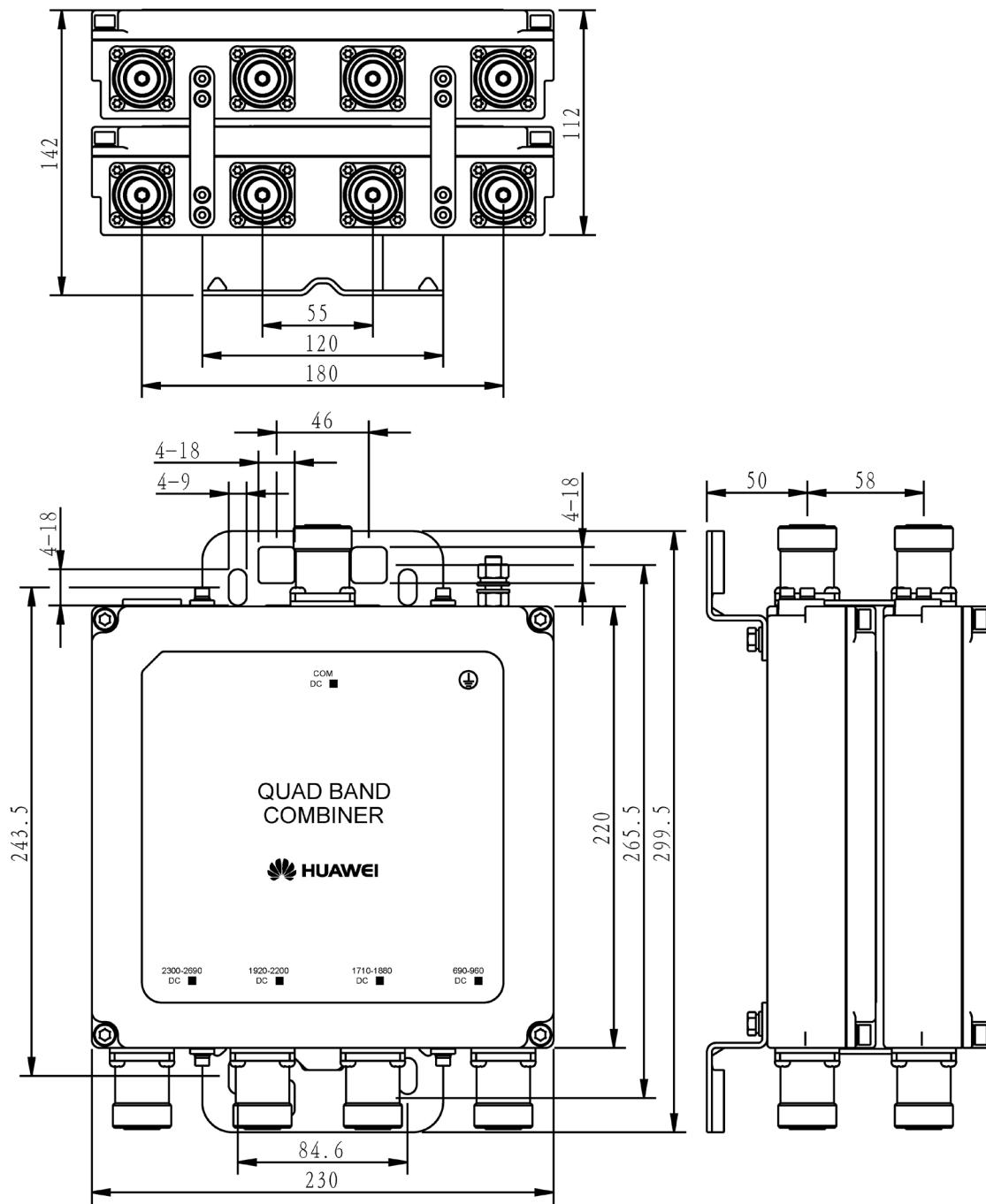
**Block Diagram**

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 (°C) | | -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: $\overline{IL} = \frac{IL_{Min.\text{Frequency}} + 2 \times IL_{Mid.\text{Frequency}} + IL_{Max.\text{Frequency}}}{4}$



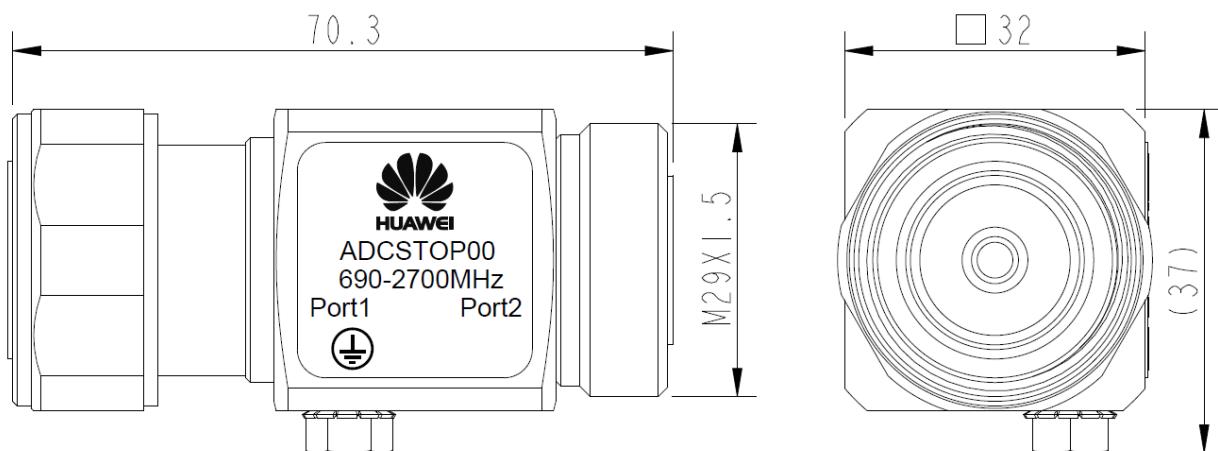
Unit : mm

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

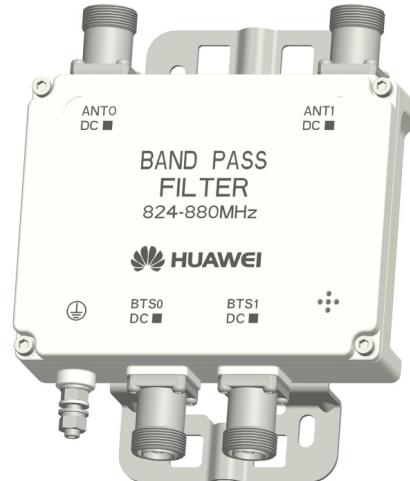
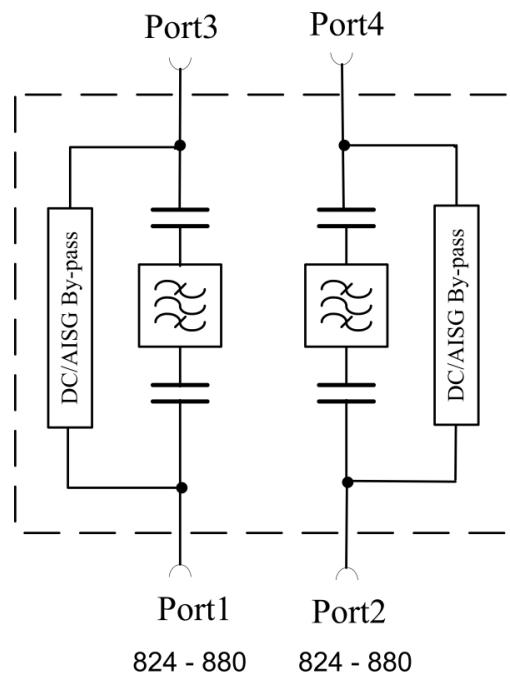
| | |
|----------------------------|-------------------|
| Operating temperature (°C) | -40 ... +70 |
| Application scene | Indoor or outdoor |
| IP rating | IP66 |
| Lightning protection (kA) | 3 (10/350 us) |

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

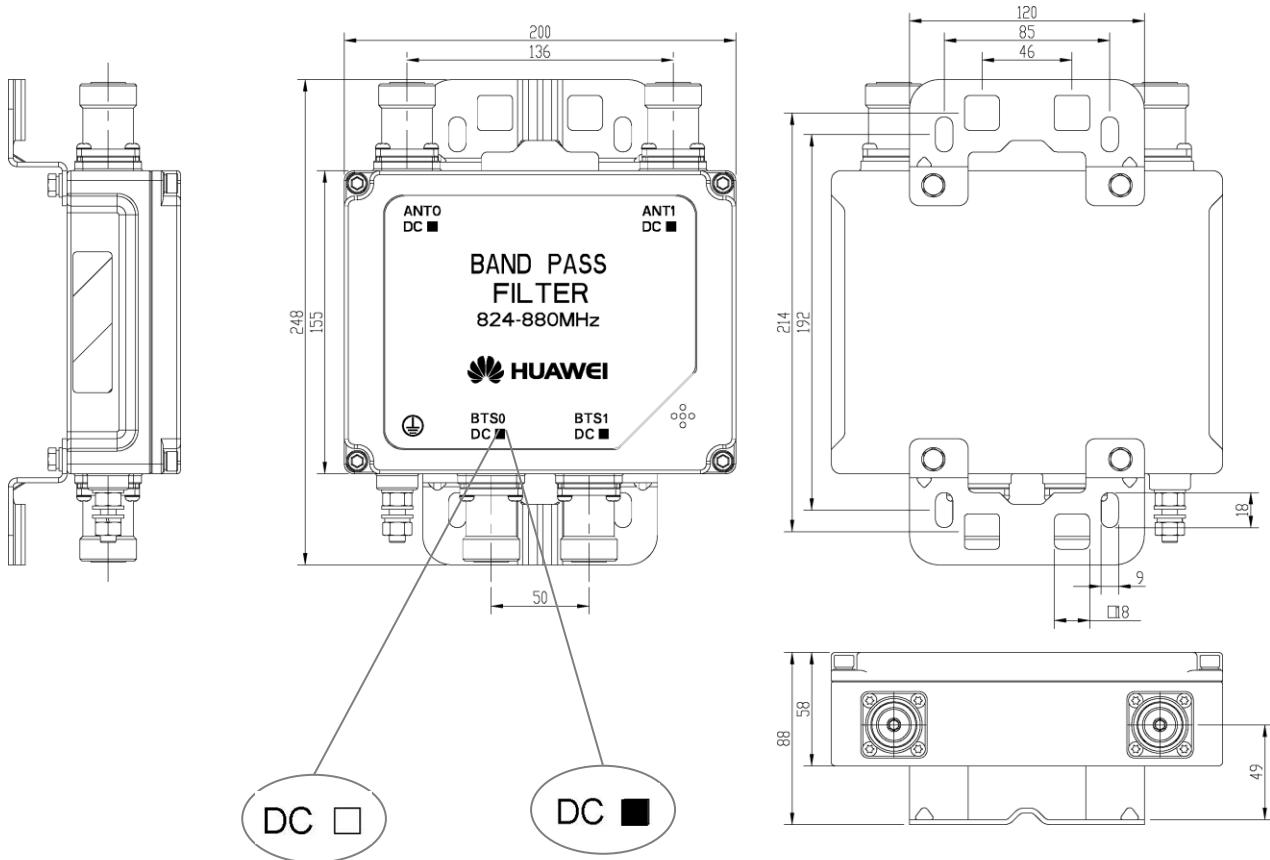
| | |
|-----------------------------|-------------------|
| Operating temperature (°C) | -40 ... +65 |
| Application scene | Indoor // Outdoor |
| IP rating | IP67 |
| Lightning protection** (kA) | 10 (8/20 us) |

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: $\overline{IL} = \frac{IL_{\text{Min. Frequency}} + 2 \times IL_{\text{Mid. Frequency}} + IL_{\text{Max. Frequency}}}{4}$

**Lightning protection: In normal instance, the combiner share the GND protection systems with feeders and no need another GND cable.



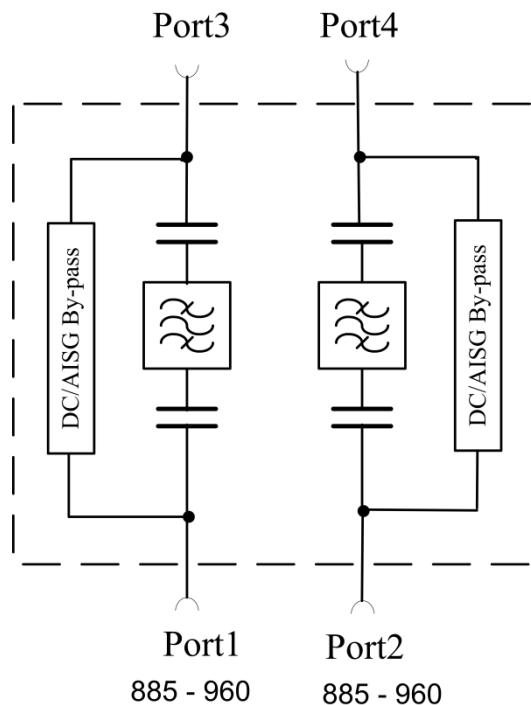
If the sign as shown above, it indicates this pass band is DC stop.

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

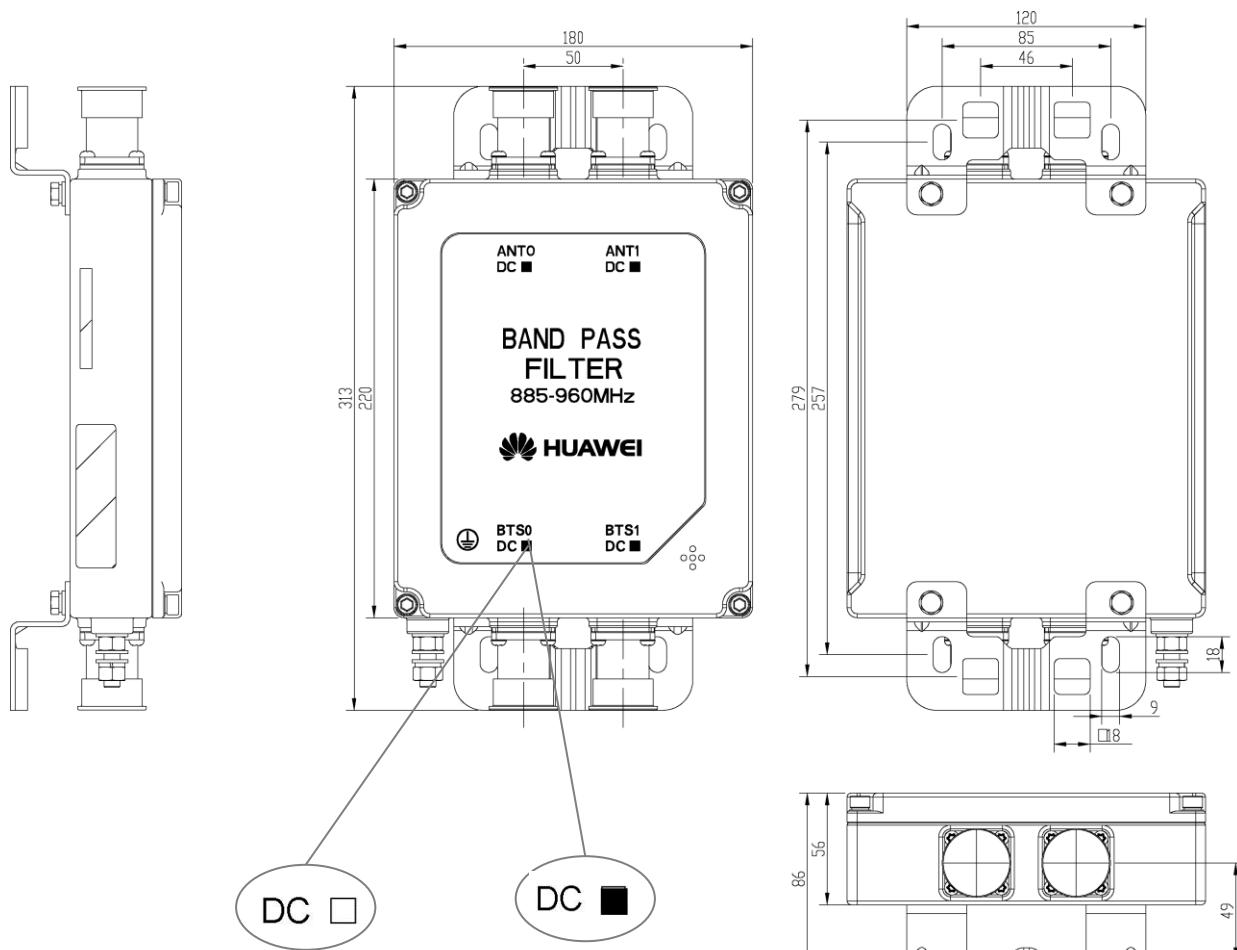
| | |
|-----------------------------|-------------------|
| Operating temperature (°C) | -40 ... +65 |
| Application scene | Indoor // Outdoor |
| IP rating | IP67 |
| Lightning protection** (kA) | 10 (8/20 us) |

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: $\overline{IL} = \frac{IL_{\text{Min. Frequency}} + 2 \times IL_{\text{Mid. Frequency}} + IL_{\text{Max. Frequency}}}{4}$

**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

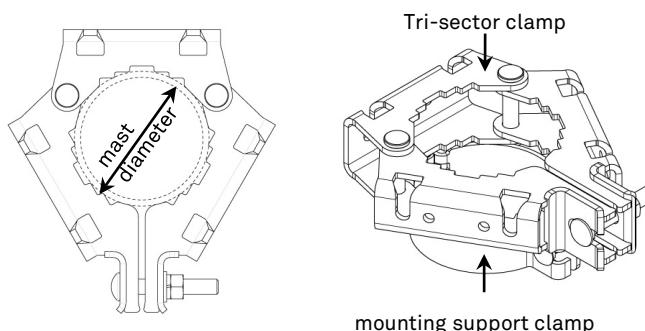
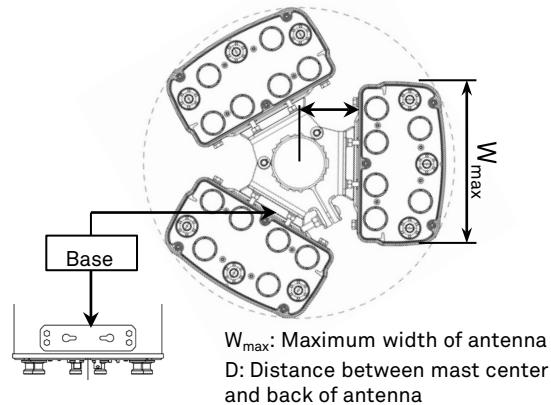
| Bracket Type | Page |
|--|------------|
| Antenna Installation Guide (with Type A Brackets) | 371 |
| Antenna Installation Guide (with Type B and Type C Brackets) | 374 |
| Antenna Installation Guide (with Type D Brackets) | 377 |
| Antenna Installation Guide (with Type F Brackets) | 380 |

Tri-sector Clamps

Model: ASMC00001 ASMC00002 ASMC00003



- 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.



| 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 |
| | Mounting support clamp | | |
| | Connecting plate | | |
| | Screws | Stainless steel | Stainless steel |
| | Nuts | | |

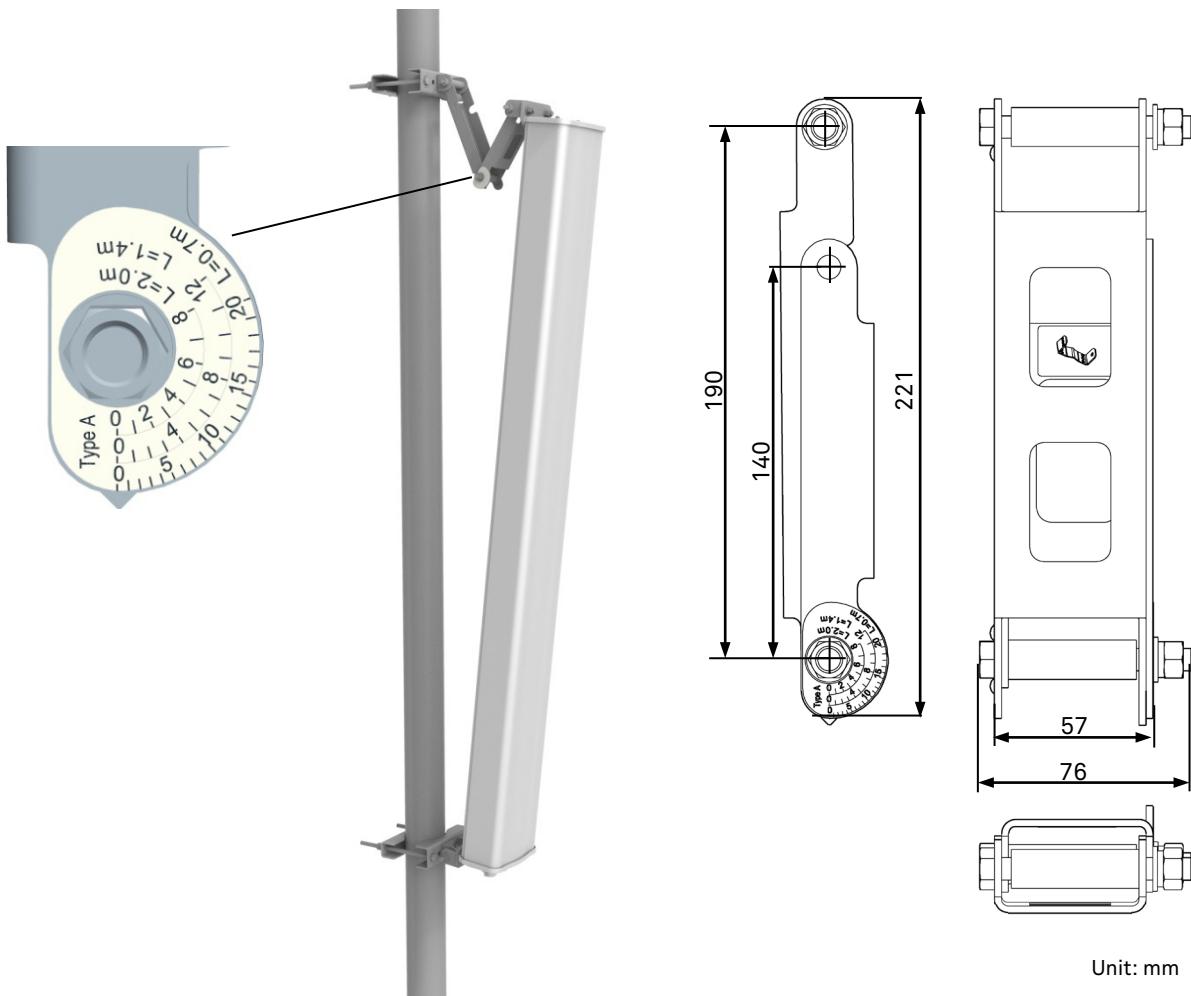
Standard Downtilt kit-A for Panel Antennas

(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 | 0 - 20 | | | | Sheet Metal: Hot-dip galvanized steel |
| 1.4 | 0 - 12 | | | | Screws / nuts / washers: Stainless steel |
| 2.0 | 0 - 8 | 0.6 | 0.7 | 260 x 98 x 50 | |



Downtilt kit must be combined with corresponding models of clam for antenna installation.
Installation must follow the antenna installation guide within antenna package.

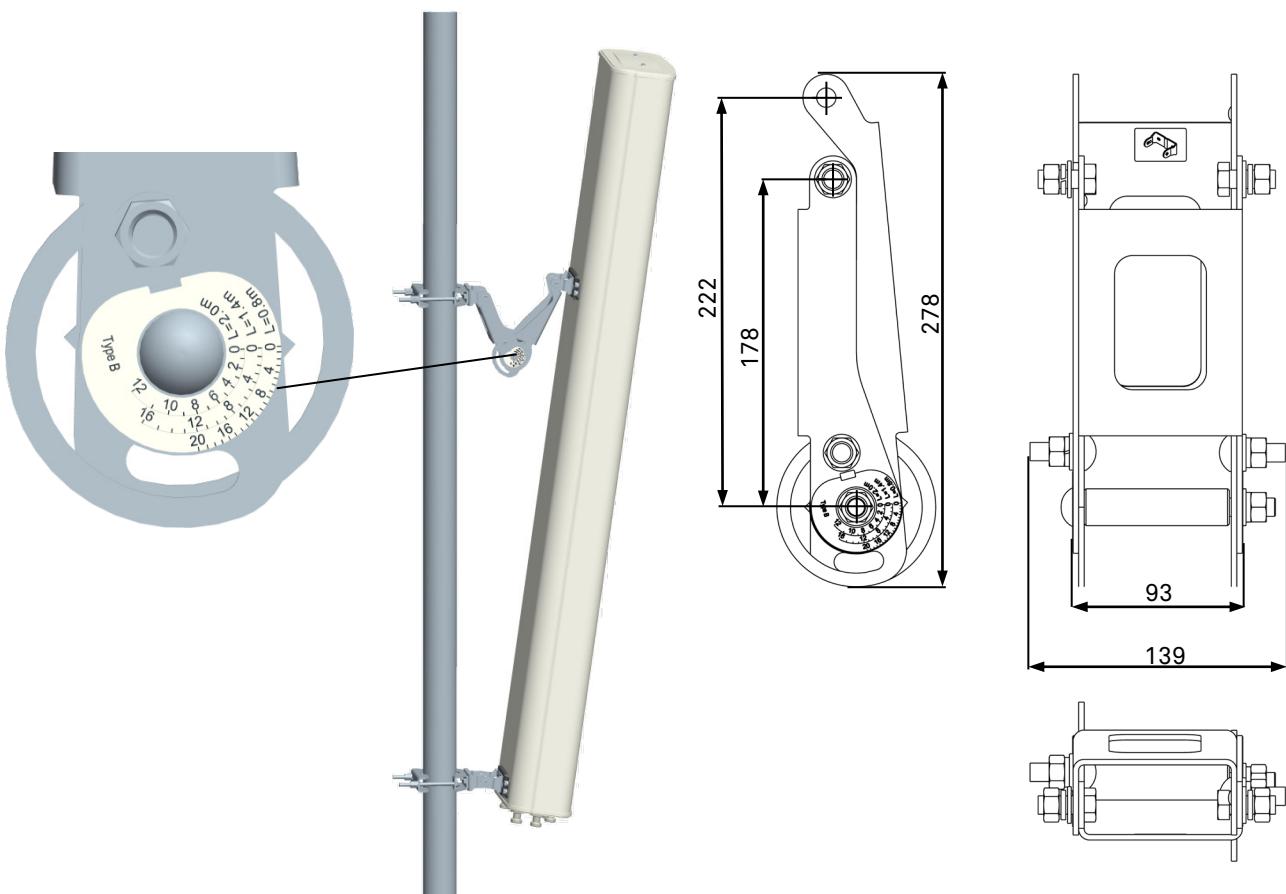
Standard Downtilt kit-B for Panel Antennas

(Wind load Category “Medium”)

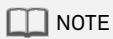
Model: ASMDT0B01



| Antenna bases distance (m) | Downtilt angle (°) | Net weight (kg) | Packing weight (kg) | Packing dimensions (H x W x D) (mm) | Material |
|----------------------------|--------------------|-----------------|---------------------|-------------------------------------|---|
| 0.8 | 0 - 20 | | | | Sheet Metal: Hot-dip galvanized steel Screws / nuts / washers: Stainless steel |
| 1.4 | 0 - 16 | | | | |
| 2.0 | 0 - 12 | | | | |



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.

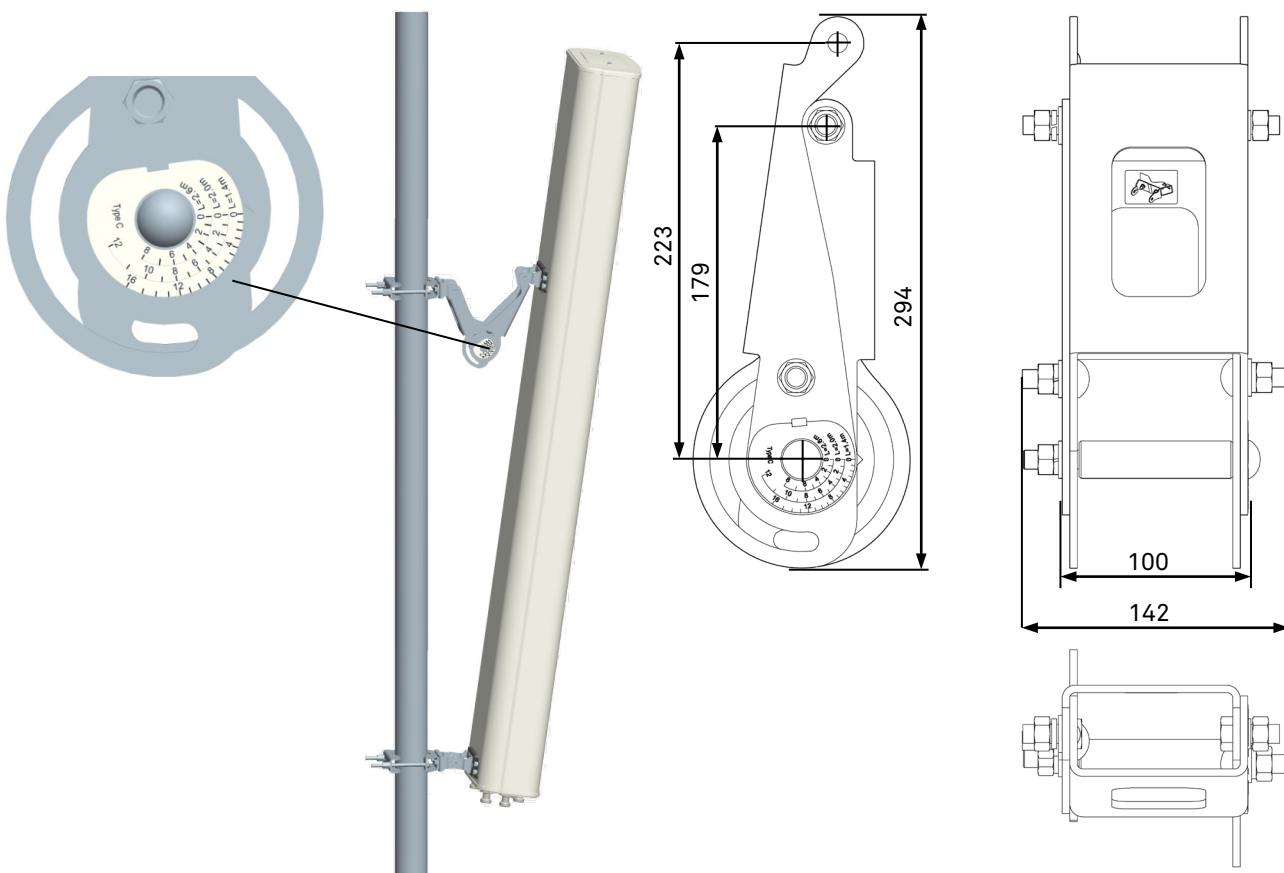
Standard Downtilt kit-C for Panel Antennas

(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 | 0 - 16 | | | | Sheet Metal: Hot-dip galvanized steel Screws / nuts / washers: Stainless steel |
| 2.0 | 0 - 12 | | | | |
| 2.6 | 0 - 8 | | | | |



NOTE

Downtilt kit must be combined with corresponding models of clam for antenna installation.
Installation must follow the antenna installation guide within antenna package.

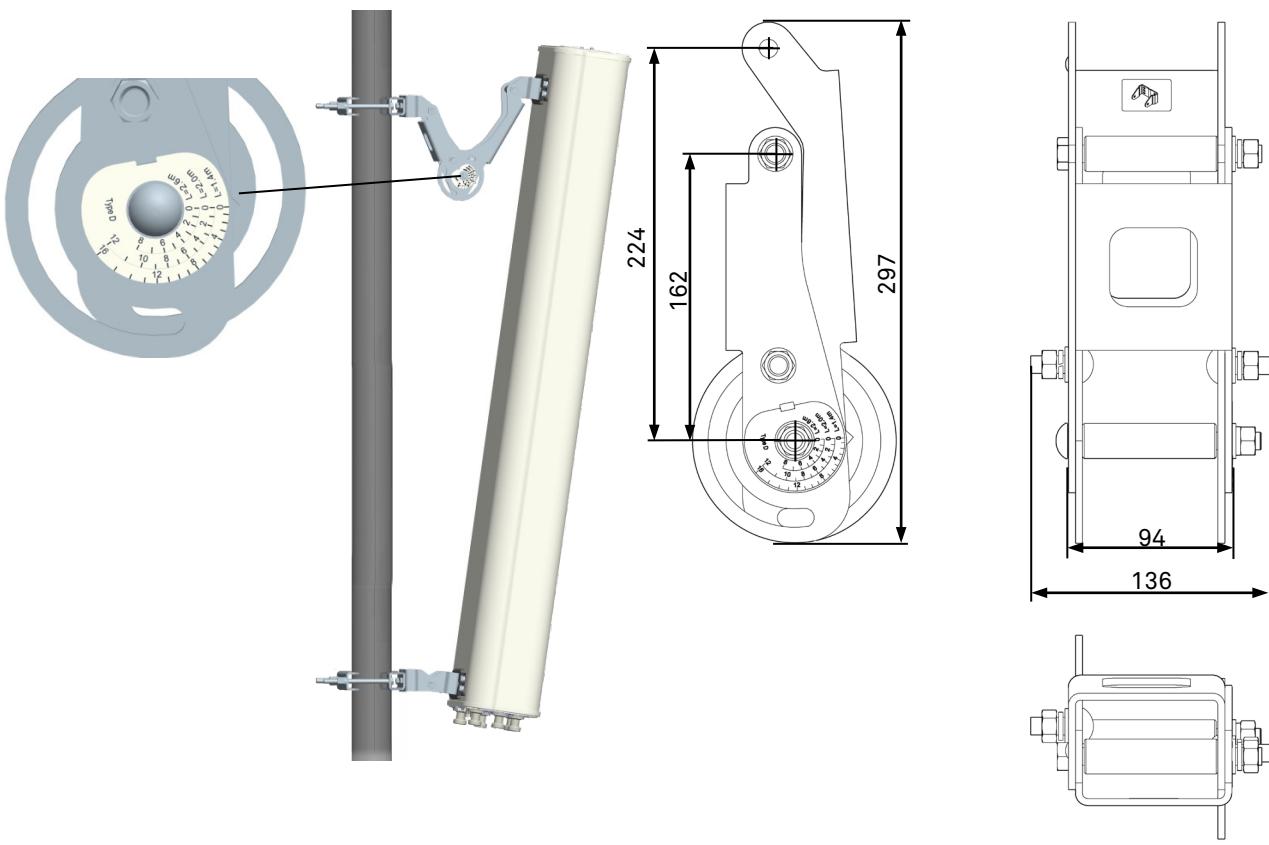
Standard Downtilt kit-D for Panel Antennas

(Wind load Category "Heavy")

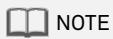
Model: ASMDT0D01



| Antenna bases distance (m) | Downtilt angle (°) | Net weight (kg) | Packing weight (kg) | Packing dimensions (H x W x D) (mm) | Material |
|----------------------------|--------------------|-----------------|---------------------|-------------------------------------|---|
| 1.4 | 0 - 16 | | | | Sheet Metal: Hot-dip galvanized steel Screws / nuts / washers: Stainless steel |
| 2.0 | 0 - 12 | | | | |
| 2.6 | 0 - 8 | | | | |



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.

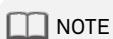
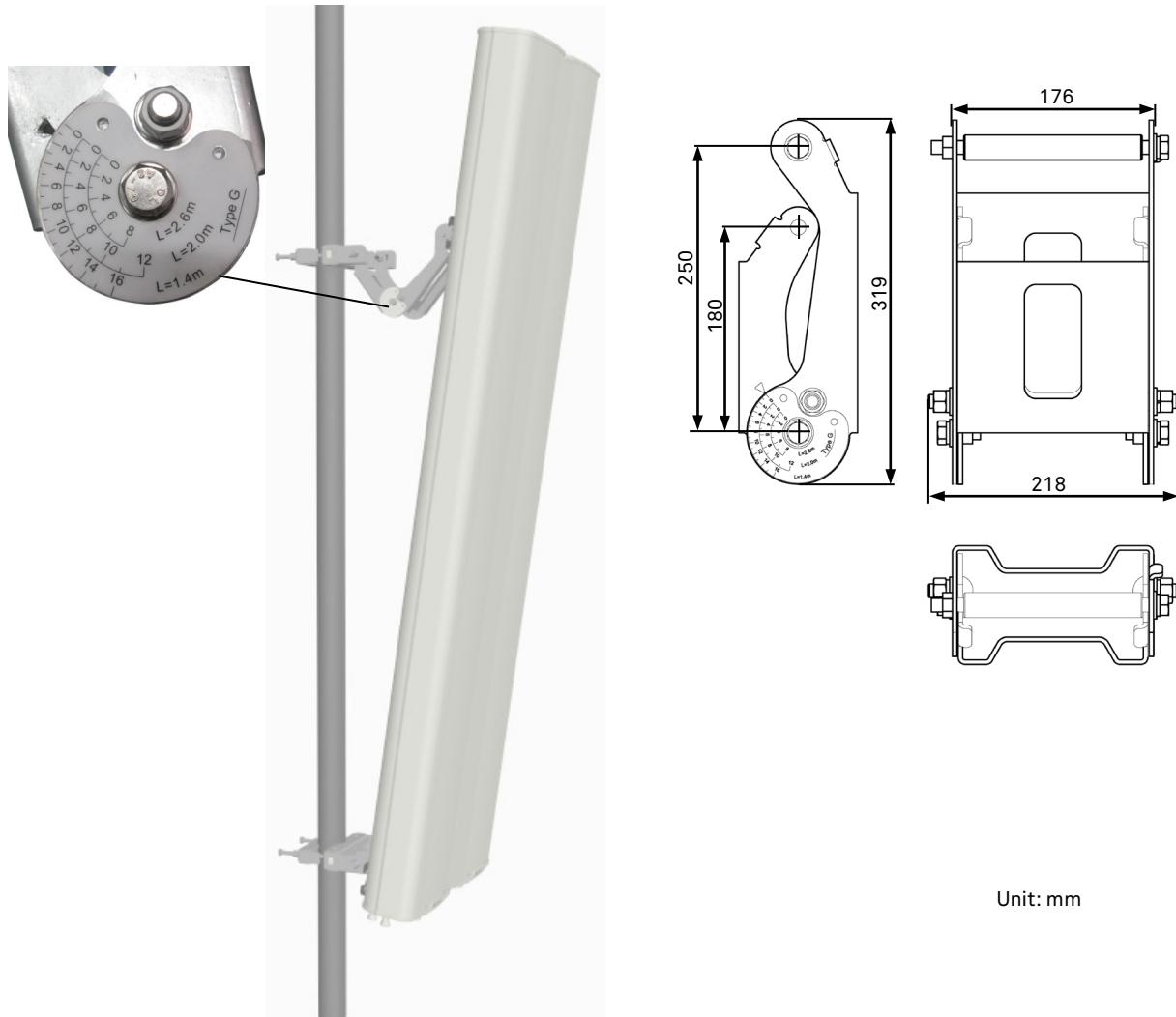
Standard Downtilt kit-G for Panel Antennas

(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 | 0 - 16 | | | | Sheet Metal: Hot-dip galvanized steel |
| 2.0 | 0 - 12 | | | | Screws / nuts / washers: Stainless steel |
| 2.6 | 0 - 8 | | | | |



Downtilt kit must be combined with corresponding models of clam for antenna installation.
Installation must follow the antenna installation guide within antenna package.

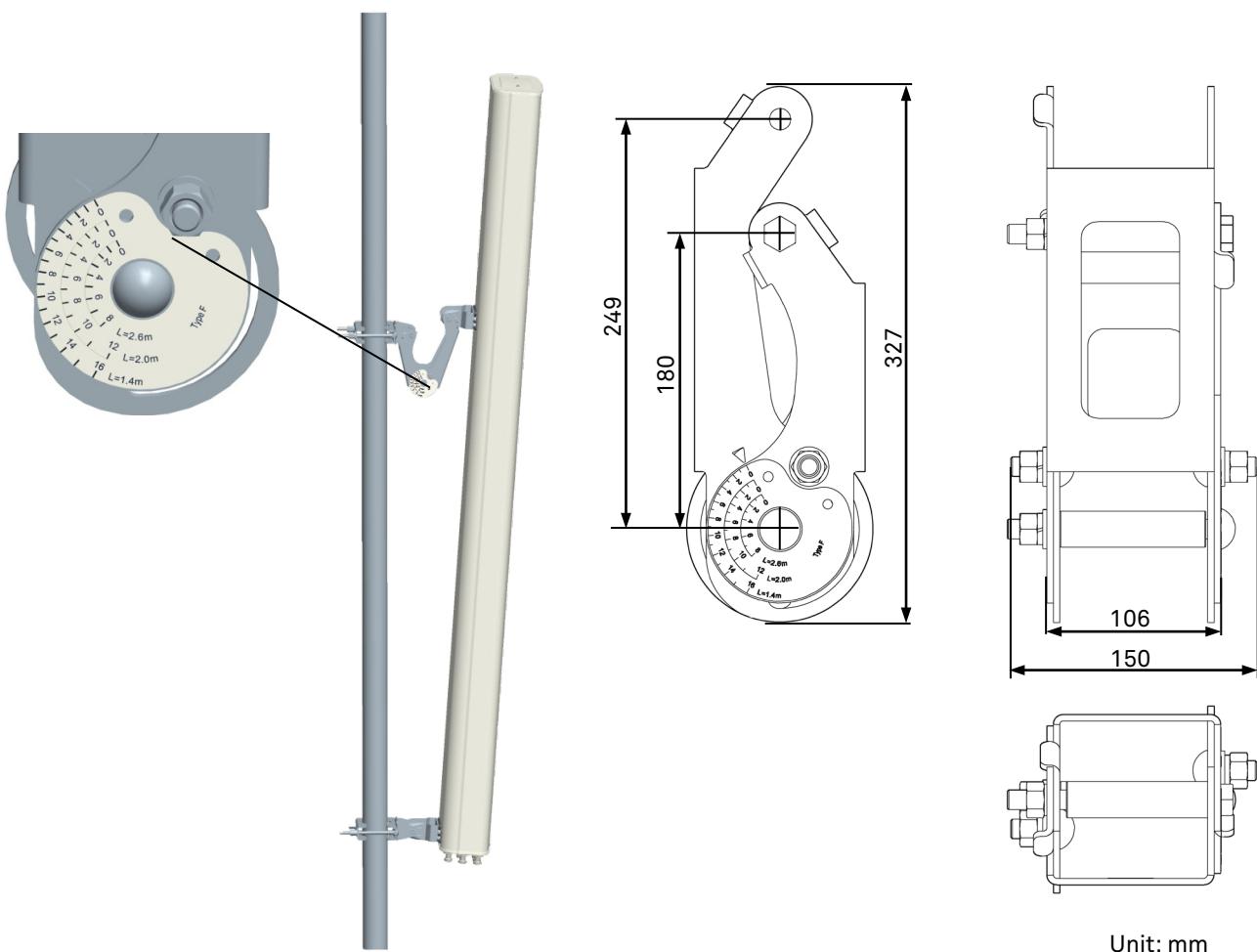
Standard Downtilt kit-F for Panel Antennas

(Wind load Category "Heavy")

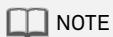
Model: ASMDT0F01



| Antenna bases distance (m) | Downtilt angle (°) | Net weight (kg) | Packing weight (kg) | Packing dimensions (H x W x D) (mm) | Material |
|----------------------------|--------------------|-----------------|---------------------|-------------------------------------|--|
| 1.4 | 0 - 16 | | | | Sheet Metal: Hot-dip galvanized steel |
| 2.0 | 0 - 12 | | | | Screws / nuts / washers: Stainless steel |
| 2.6 | 0 - 8 | 3.1 | 3.7 | 360 x 170 x 120 | |



Unit: mm



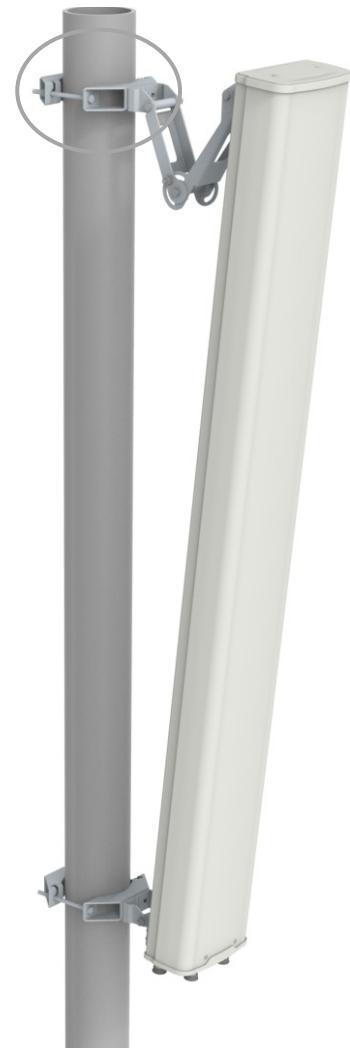
NOTE
Downtilt kit must be combined with corresponding models of clam for antenna installation.
Installation must follow the antenna installation guide within antenna package.

Extension Clamps Kit-B for Panel Antennas

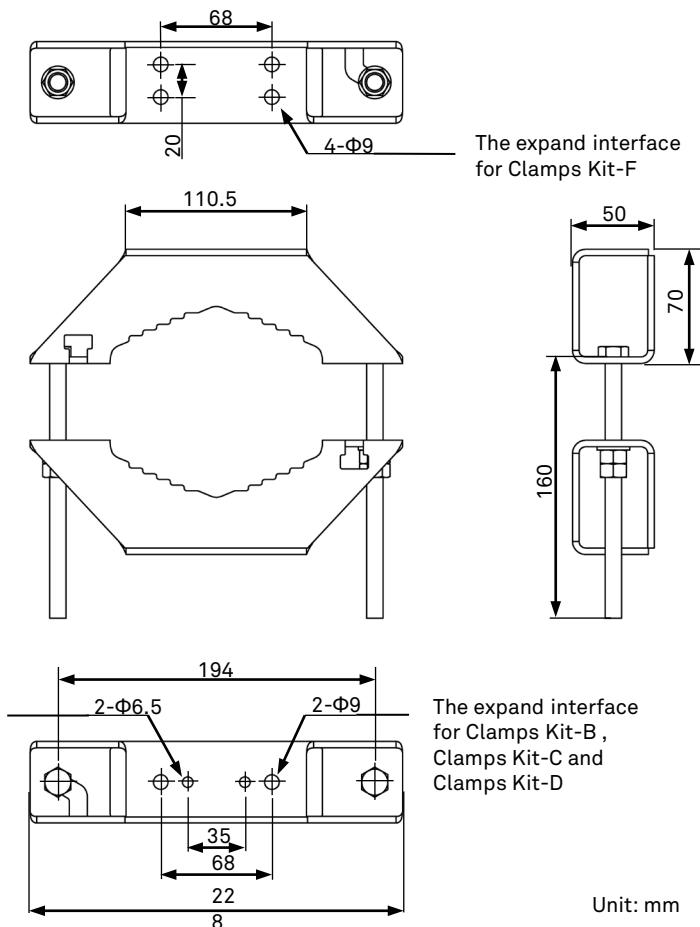
Model: ASMC00006



| 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-A



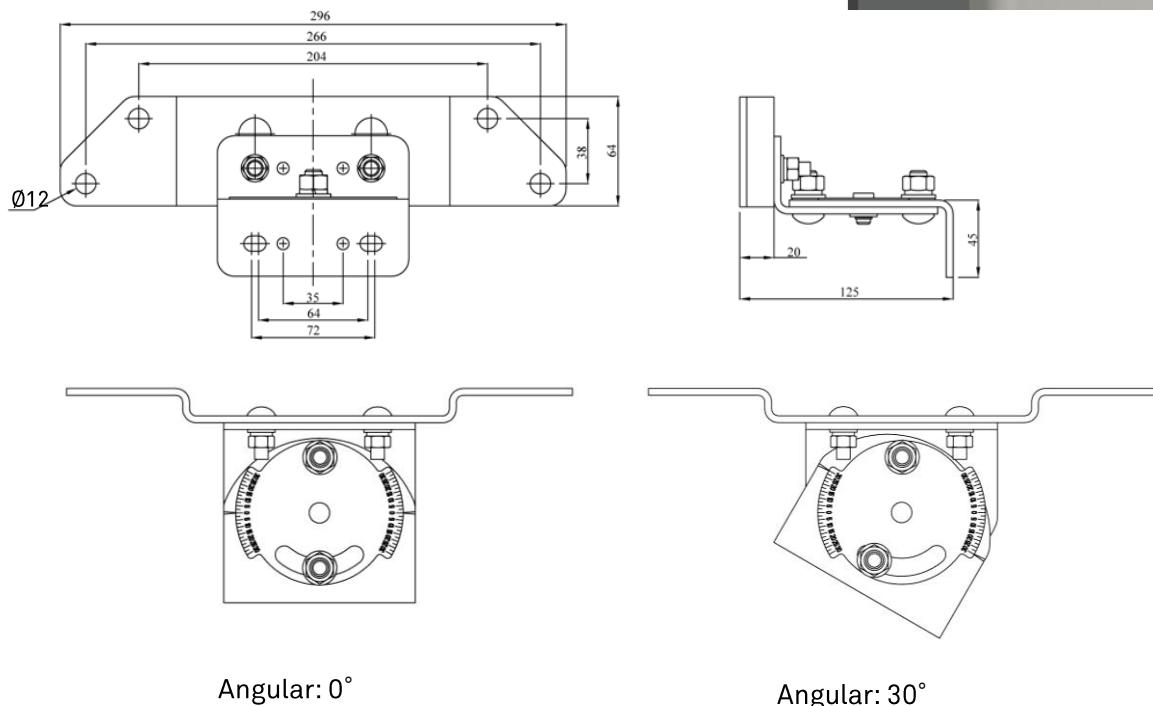
Unit: mm

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

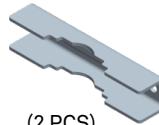
Torque wrench



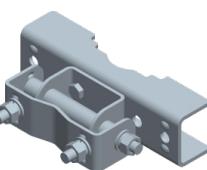
Inclinometer



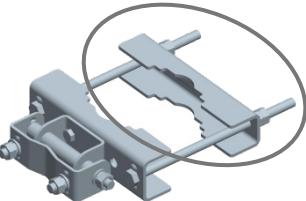
13 mm combination wrench (2 PCS)

ClampsM8
(4 PCS)

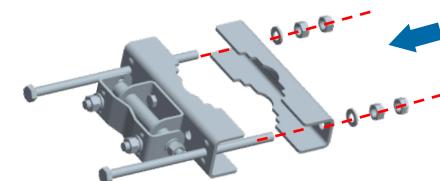
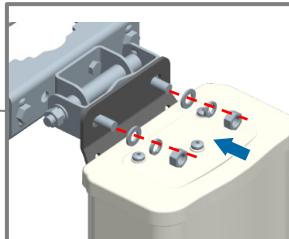
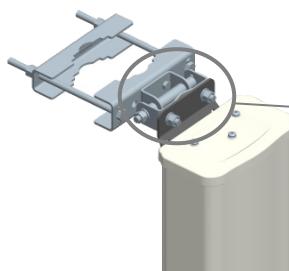
(2 PCS)



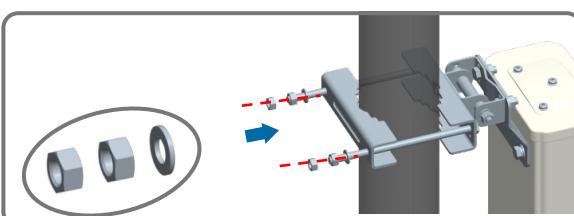
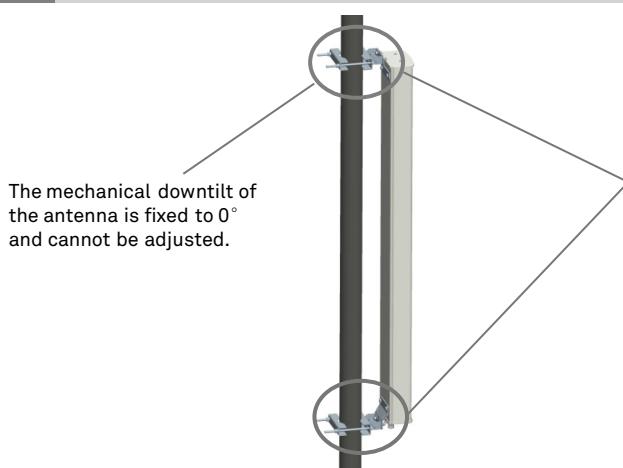
(2 PCS)

Downtilt kit (Optional)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 same installation method applies to both upper and lower brackets.

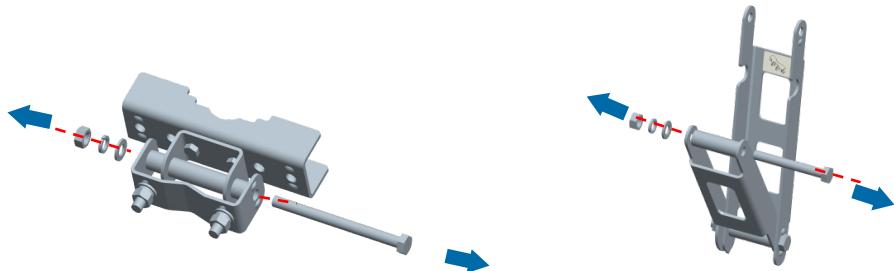
Check and tighten all the nuts when the installation is complete. The recommended torque M8 is 18 N·m

Installation with Downtilt Kit

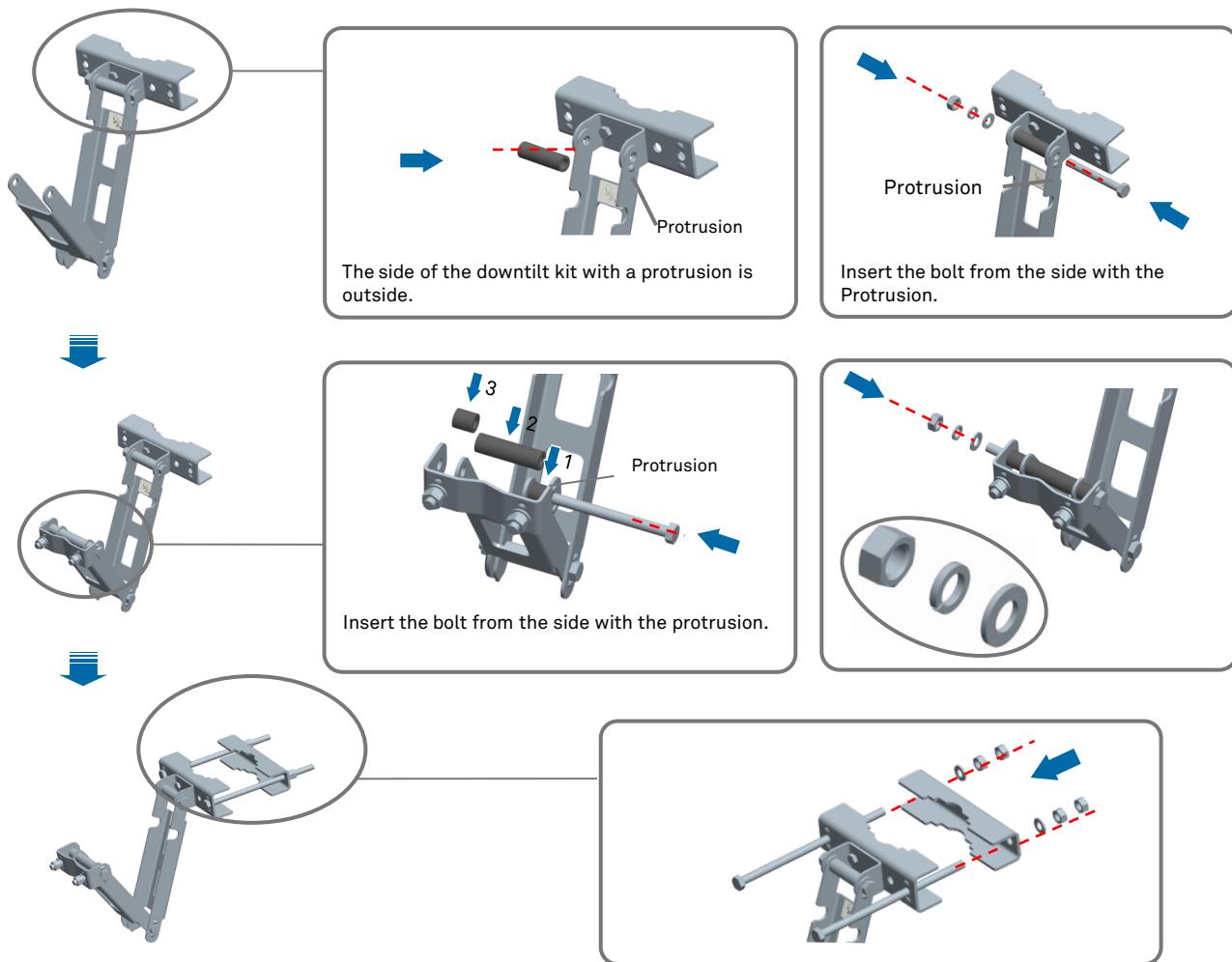
1 Assemble the bracket

- ① Disassemble clamps and downtilt kit .

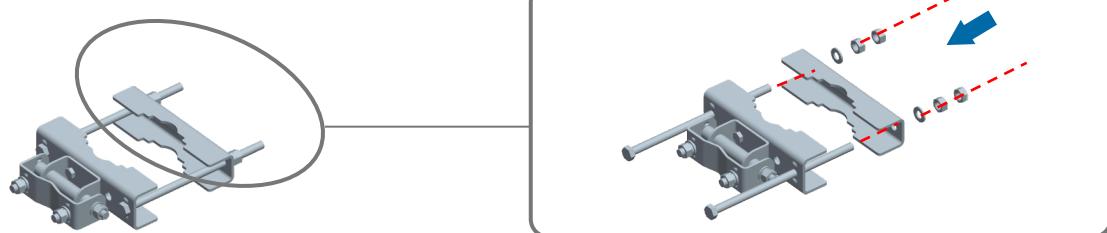
The packaging box contains two clamps. Just need disassemble one of them.



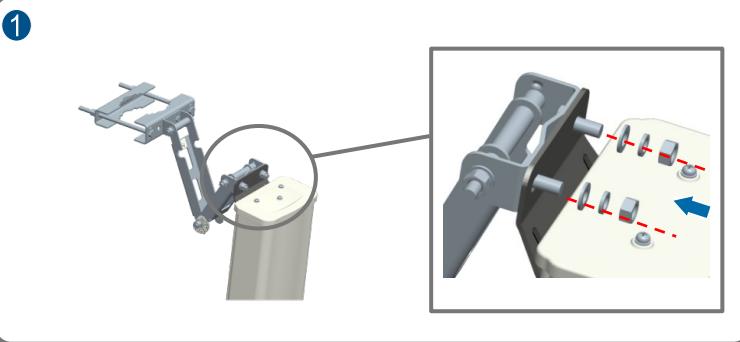
- ② Assemble the upper bracket



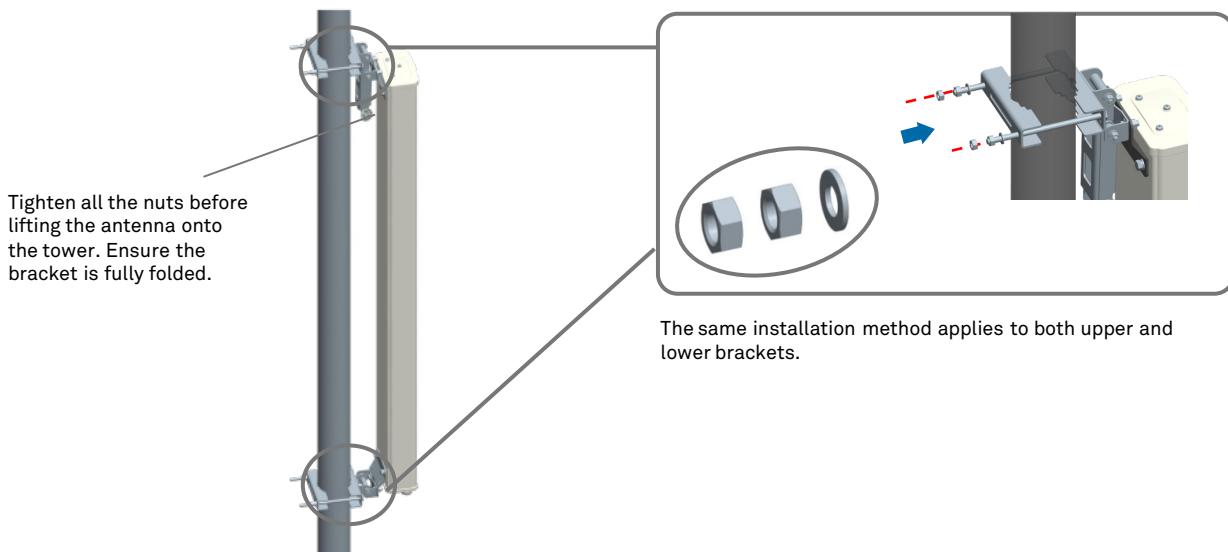
- ③ Assemble the lower bracket



2 Install the bracket



3 Install the antenna



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.

Scale plate

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.

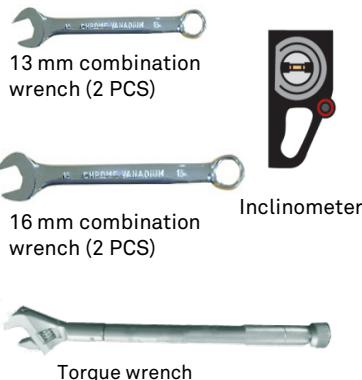
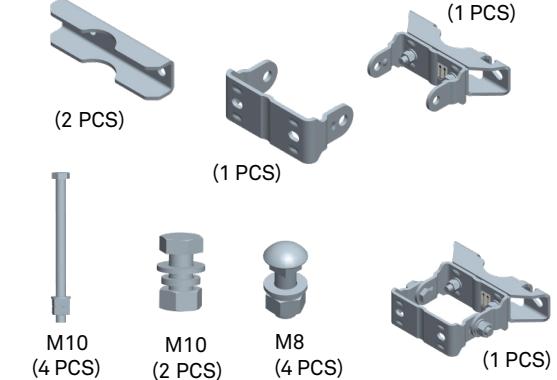


Tighten the upper bracket.

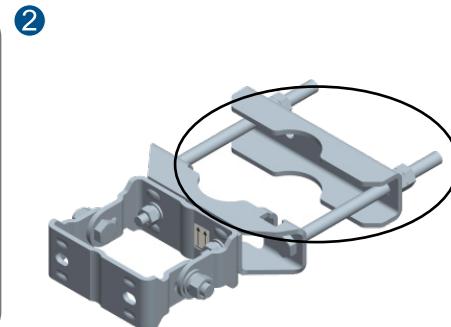
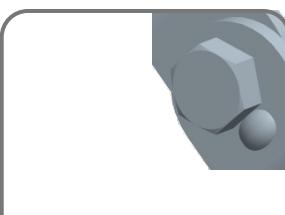
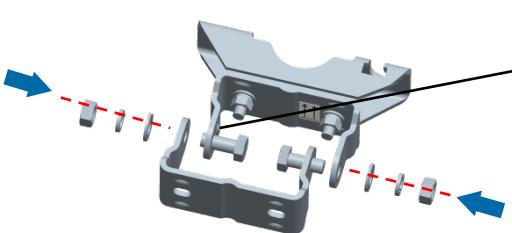
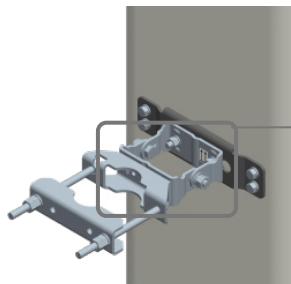
Tighten the lower bracket.



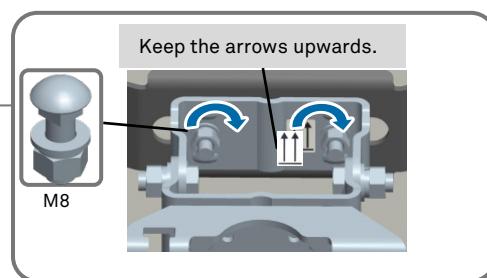
Finally, tighten all the nuts. The recommended torque M8 is 18 N·m

Installation Tools**Clamps****Downtilt kit (Optional)****Installation without Downtilt Kit****1 Assemble the clamps**

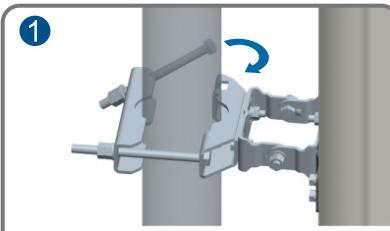
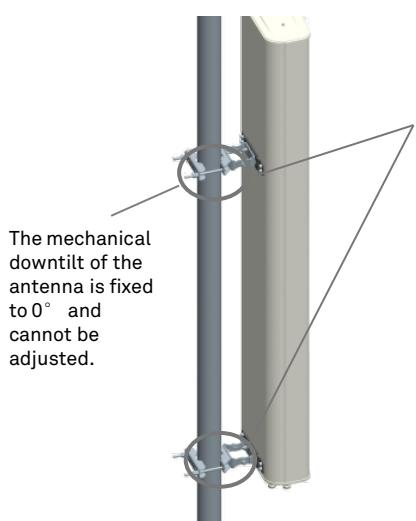
- ① Assemble the 2 PCS clamps.

**2 Install the clamps**

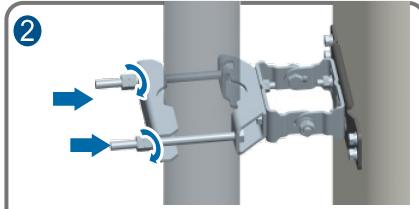
The same installation method applies to both upper and lower brackets. And tighten the nuts. The recommended torque M8 is 18 N·m.



3 Install the antenna

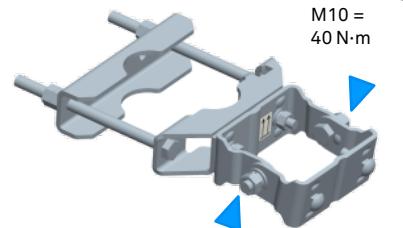


The same installation method applies to both upper and lower brackets.



Install and tighten the nuts. The recommended torque M10 is 40 N·m.

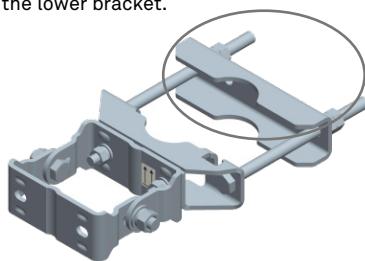
- ③ Check and tighten all the nuts when the installation is complete. The operating torques are given in the following figures.



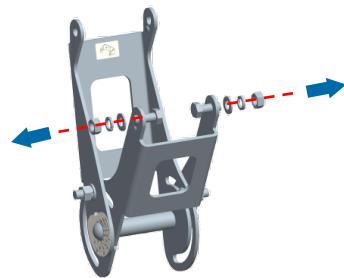
Installation with Downtilt Kit

1 Assemble the bracket

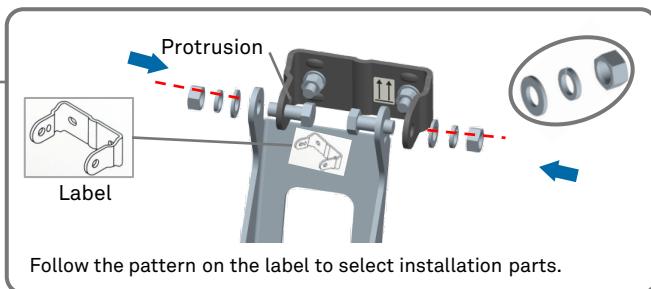
- ① Assemble the lower bracket.



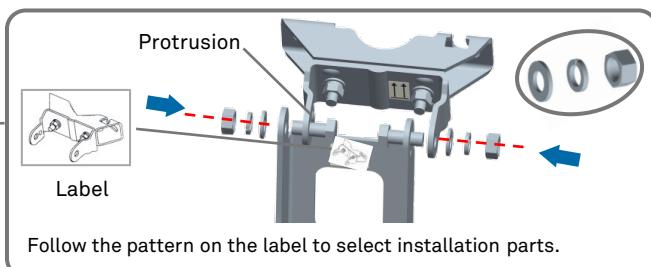
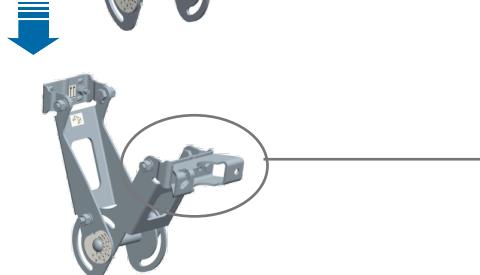
- ② Disassemble the downtilt kit.



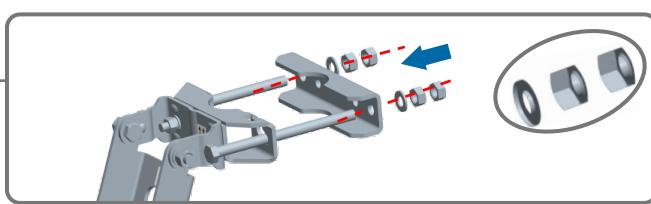
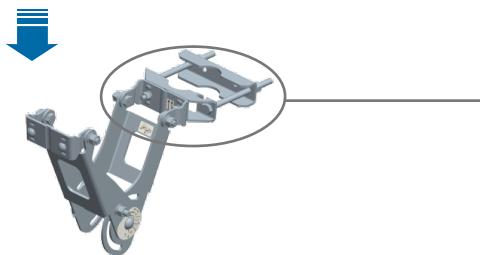
- ③ Assemble the upper bracket



Follow the pattern on the label to select installation parts.



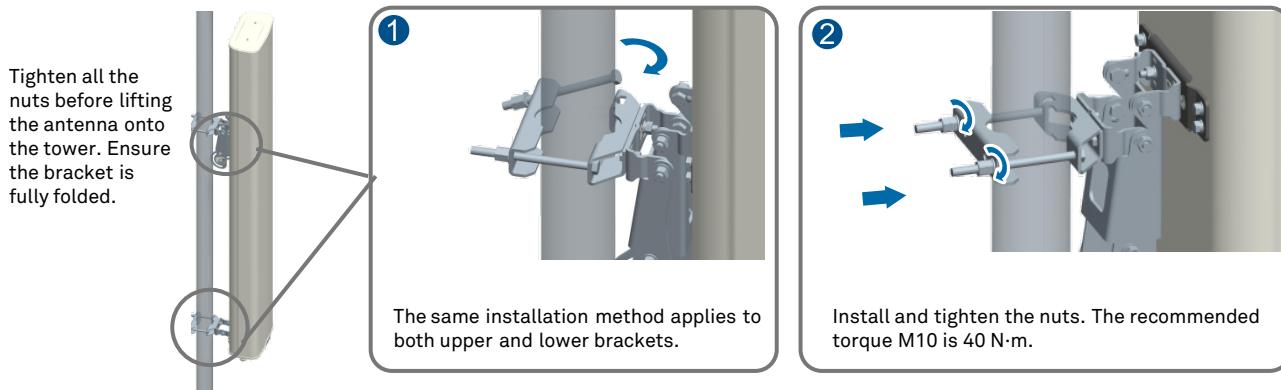
Follow the pattern on the label to select installation parts.



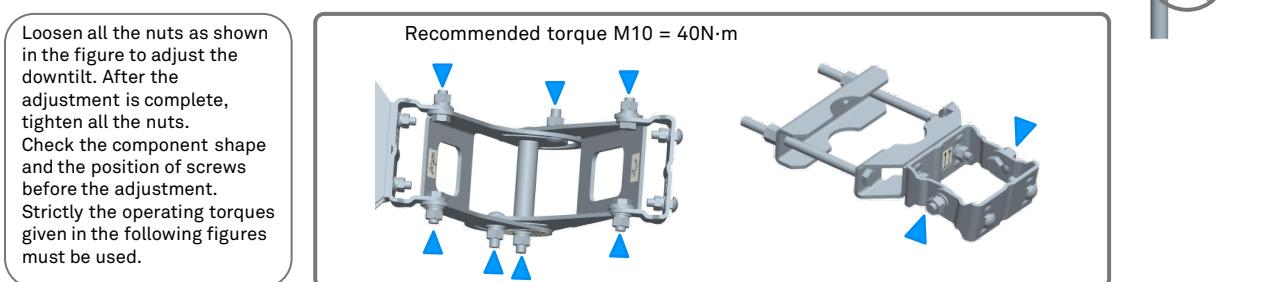
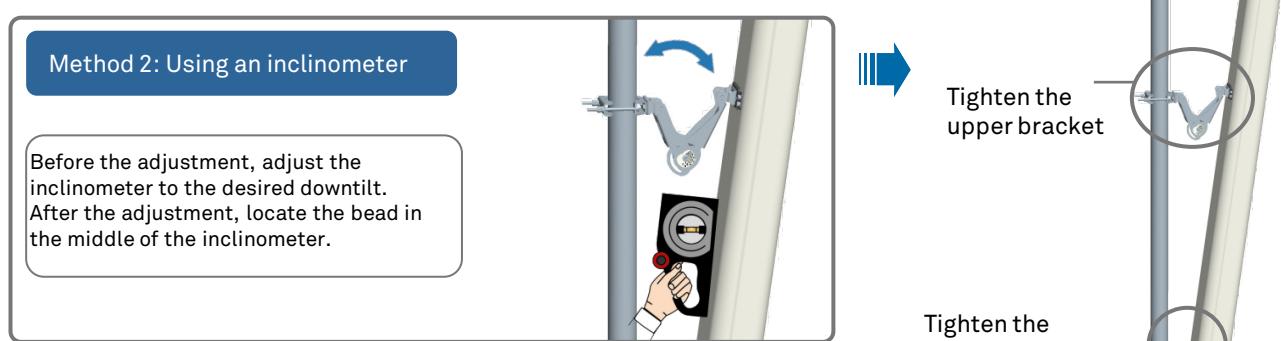
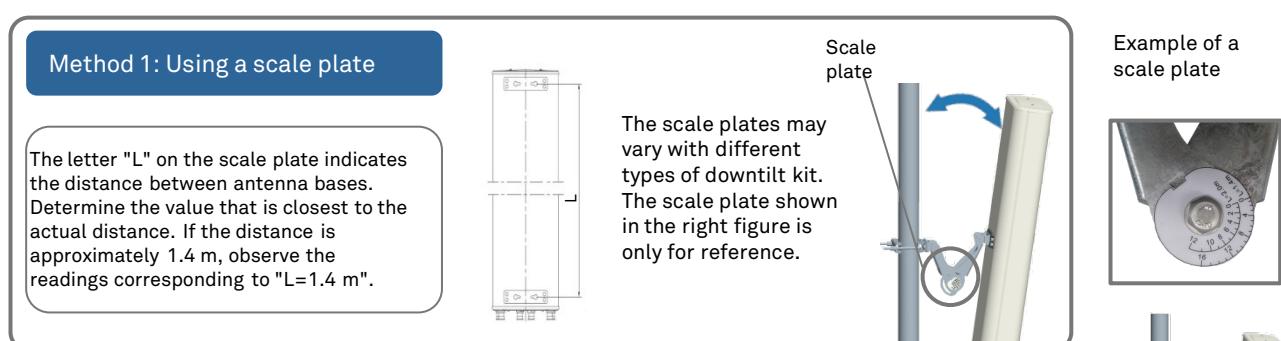
2 Install the bracket

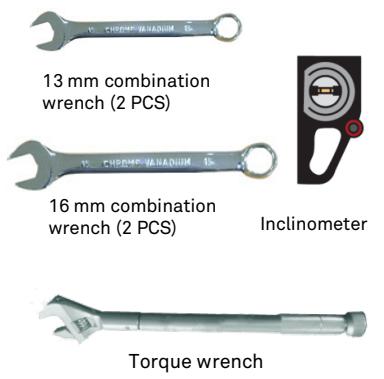
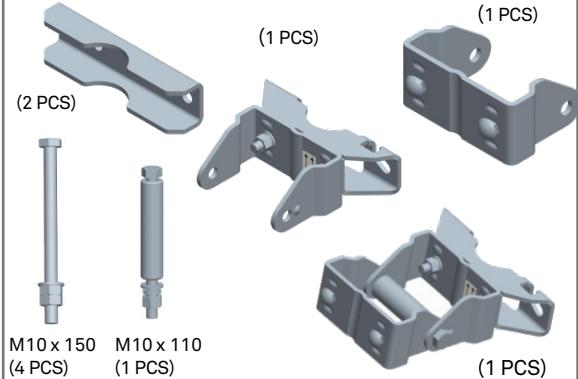


3 Install the antenna

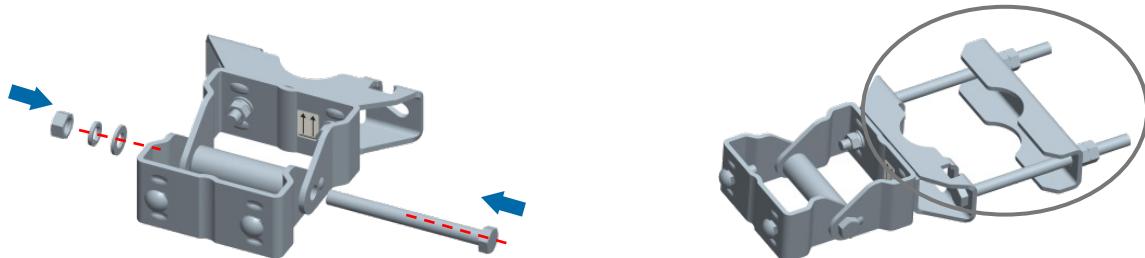
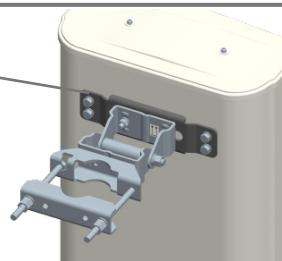
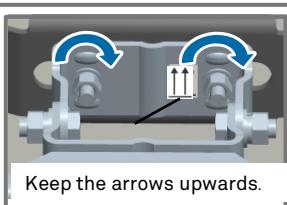


4 Adjust the mechanical downtilt



Installation Tools**Clamps****Downtilt kit (Optional)****Installation without Downtilt Kit****1 Assemble the clamps**

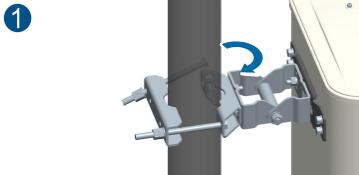
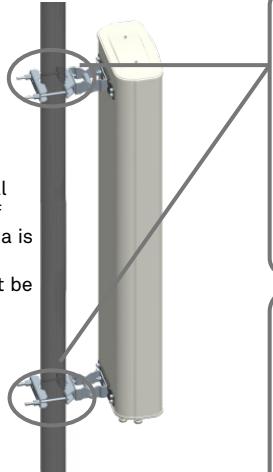
Assemble 2 PCS clamps.

**2 Install the clamps**

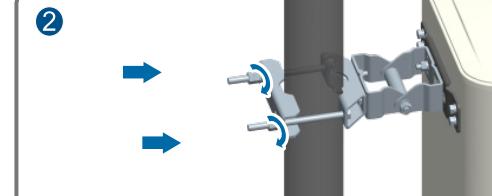
The same installation method applies to both upper and lower brackets.
Tighten the nuts. The recommended torque M8 is 18 N·m.

3 Install the antenna

The mechanical downtilt of the antenna is fixed to 0° and cannot be adjusted.

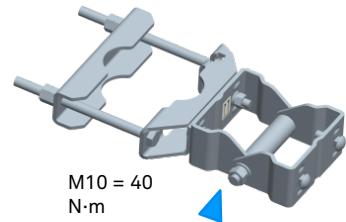


The same installation method applies to both upper and lower brackets.



Install and tighten the nuts. The recommended torque M10 is 40 N·m.

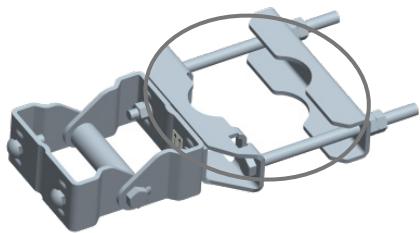
- ③ Check and tighten all the nuts when the installation is complete. The operating torques are given in the following figures.



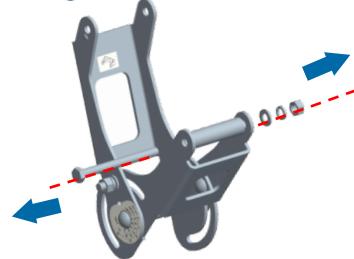
Installation with Downtilt Kit

1 Assemble the bracket

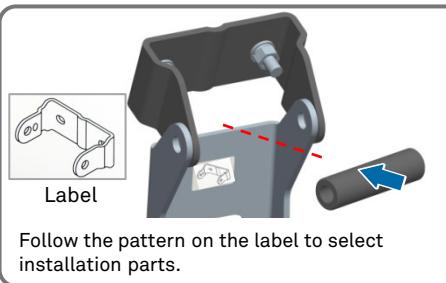
- ① Assemble the lower bracket.



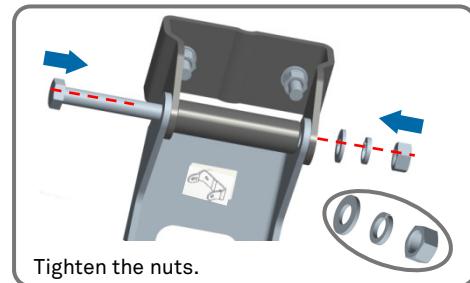
- ② Disassemble the downtilt kit.



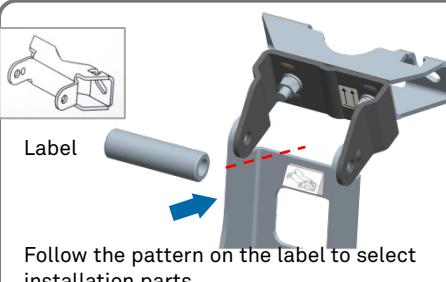
- ③ Assemble the upper bracket.



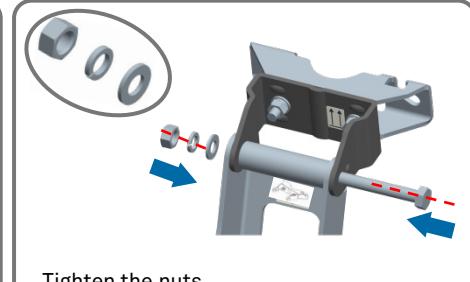
Follow the pattern on the label to select installation parts.



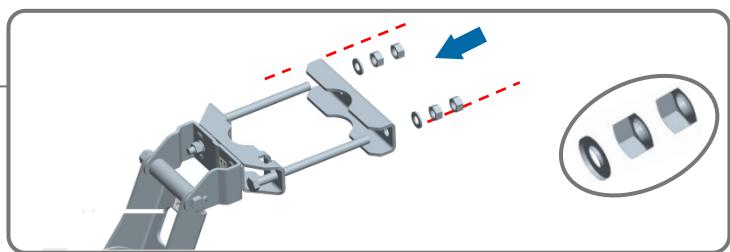
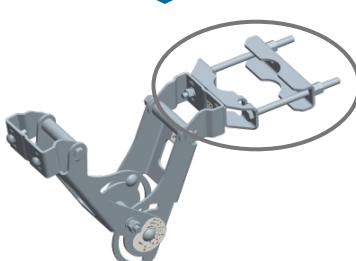
Tighten the nuts.



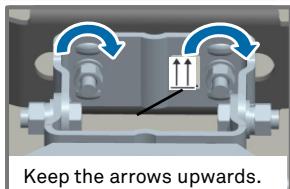
Follow the pattern on the label to select installation parts.



Tighten the nuts.



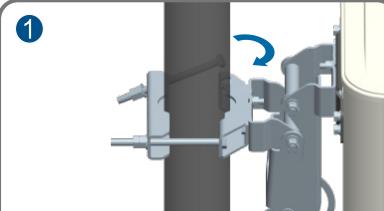
2 Install the bracket



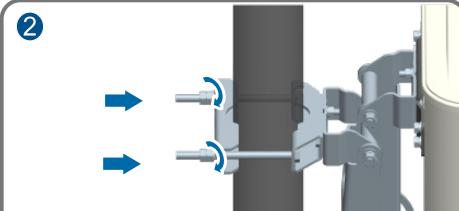
The same installation method applies to both upper and lower brackets.
Tighten the nuts. The recommended torque M8 is 18 N·m.

3 Install the antenna

Tighten all the nuts before lifting the antenna onto the tower. Ensure the bracket is fully folded.



The same installation method applies to both upper and lower brackets.

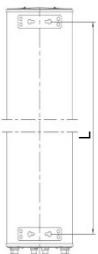


Install and tighten the nuts. The recommended torque M10 is 40 N·m.

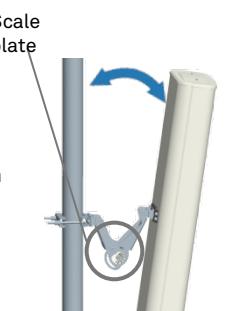
4 Adjust the mechanical downtilt

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.

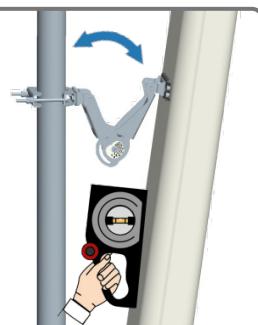


Example of a scale plate



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.

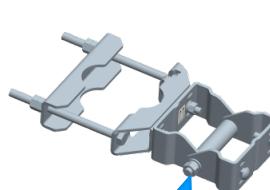
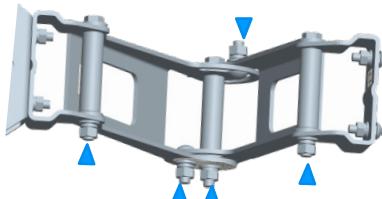


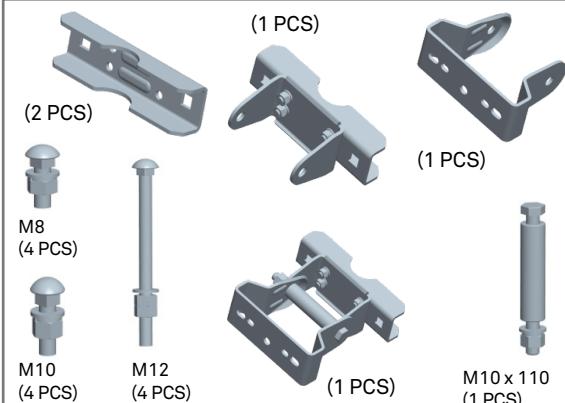
Tighten the upper bracket

Tighten the lower bracket

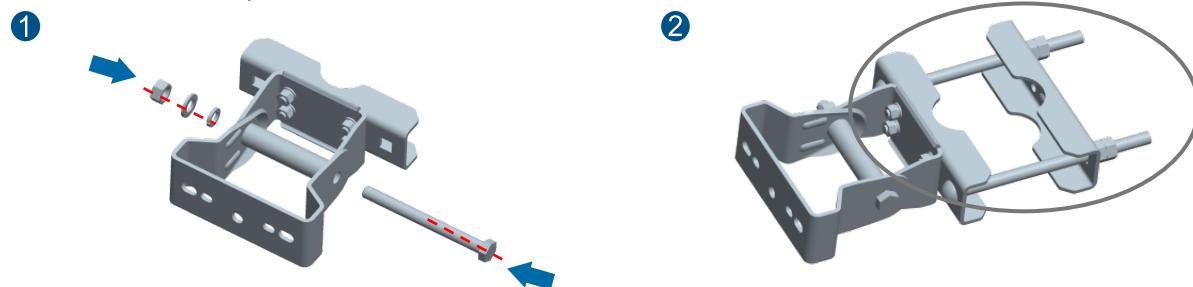
Loosen all the nuts as shown in the figure to adjust the downtilt. After the adjustment is complete, tighten all the nuts. Check the component shape and the position of screws before the adjustment. Strictly the operating torques given in the following figures must be used.

Recommended torque M10 = 40N·m

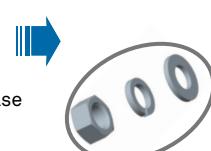


Installation Tools**Clamps****Downtilt kit (Optional)****Installation without Downtilt Kit****1 Assemble the clamps**

Assemble two clamps.

**2 Install the clamps**

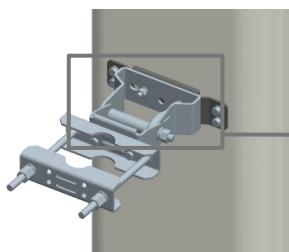
Install bolts on the antenna base. The same installation method applies to both upper and lower bases.



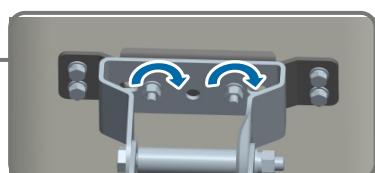
Align the bolt with the mounting hole on the clamp and determine the bolt model according to the position of the mounting hole. Replace the bolt if the bolt model is incorrect. Then, install and tighten the flat washer, spring washer and nut.



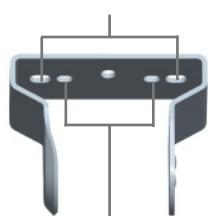
Use an M10 bolt for the M10 mounting hole.
The recommended torque for M10 bolts is 30 N·m.



Follow the directions shown in the following figure to install brackets.



Use an M8 bolt for the M8 mounting hole.
The recommended torque for M8 bolts is 18 N·m.

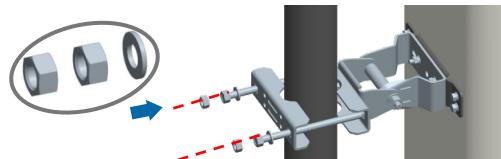


3 Install the antenna



1

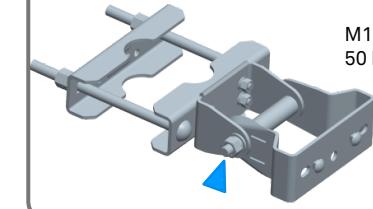
The same installation method applies to both upper and lower brackets. Install and tighten the nuts. The recommended torque M12 is 50 N·m.



2

Check and tighten all the nuts when the installation is complete. The operating torques are given in the following figures.

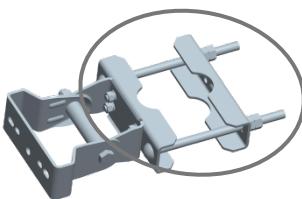
M12 =
50 N·m



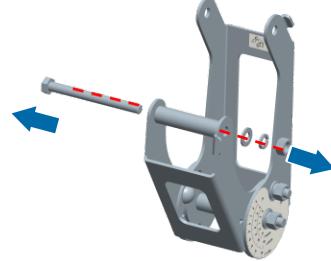
Installation with Downtilt Kit

1 Assemble the bracket

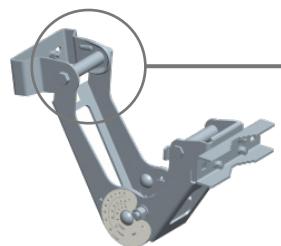
1 Assemble the lower bracket



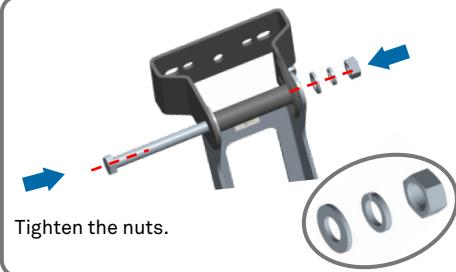
2 Disassemble the downtilt kit.



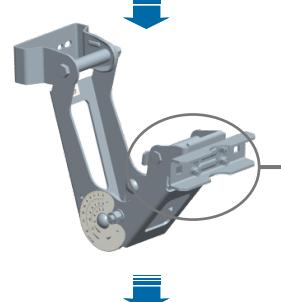
3 Assemble the upper bracket.



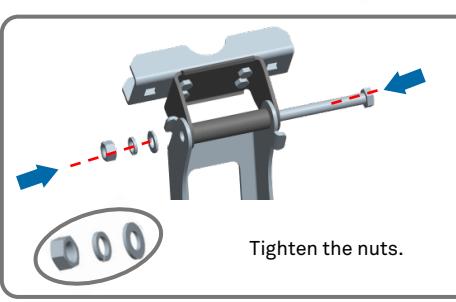
To avoid installation interference, assemble brackets in the directions shown in the preceding figure.



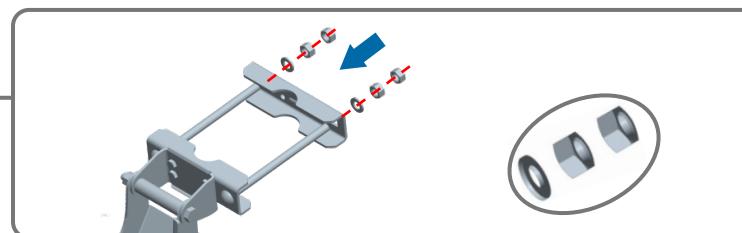
Tighten the nuts.



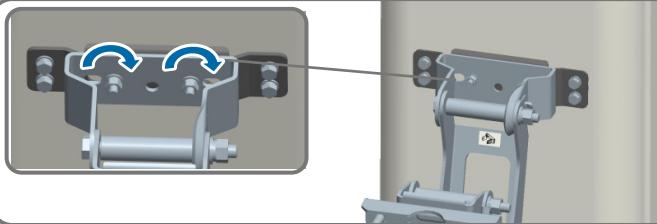
To avoid installation interference, assemble brackets in the directions shown in the preceding figure.



Tighten the nuts.



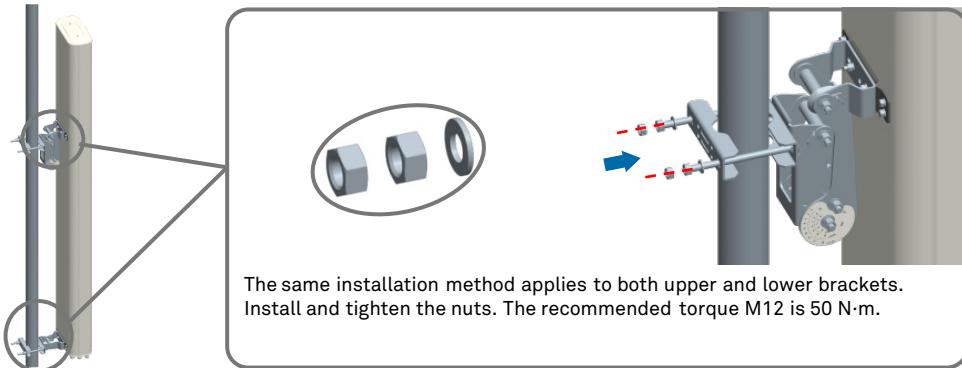
2 Install the bracket



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.

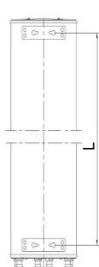


The same installation method applies to both upper and lower brackets. Install and tighten the nuts. The recommended torque M12 is 50 N·m.

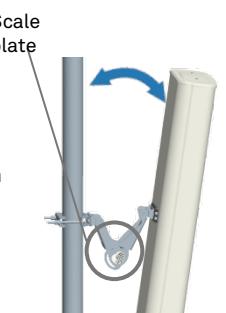
4 Adjust the mechanical downtilt

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".

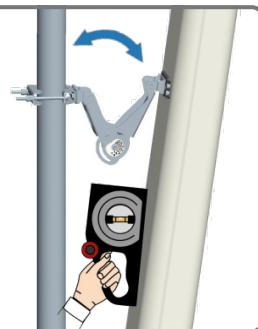


The scale plates may vary with different types of downtilt kit. The scale plate shown in the right figure is only for reference.



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.

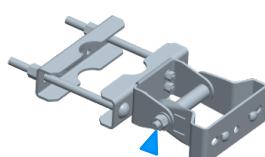
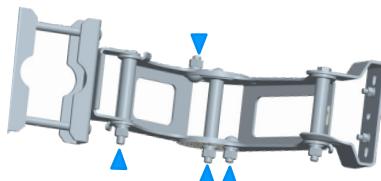


→ Tighten the upper bracket

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/s ² , 2-9HZ 9HZ-200HZ | 3axesx5 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/s ² , 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/s ² , 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 | 0.067m ³ /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/s ² @+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/m ³ , 20m/s @+70°C, RH<30% | 8h | Visual/physical exam VSWR ISO and PIM (pre and post) |

Catalogue Issue 01/2017

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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Website of events



www.huawei.com/antenna



<https://www.linkedin.com/company/huawei-antenna>