2NN2HH-33C-R4

16-port multibeam antenna, 8x 698–896 MHz, 2x 2-beam 33° HPBW and 8x 1695–2400 MHz, 2x 2-beam 33° HPBW, 4x RET

- Provides 4T4R capability in low and mid bands
- Full spectrum operation for Band 14, AWS, PCS and WCS bands
- Twin beam patterns are optimized for minimum beam crossover providing for improved LTE data throughput
- Excellent Front-to-Back and SPR performance

General Specifications

Antenna Type	Multibeam
Band	Multiband
Grounding Type	RF connector inner conductor and body grounded to reflector and mounting bracket
Performance Note	Outdoor usage
Radome Material	Fiberglass, UV resistant
Radiator Material	Low loss circuit board
Reflector Material	Aluminum
RF Connector Interface	4.3-10 Female
RF Connector Location	Bottom
RF Connector Quantity, high band	8
RF Connector Quantity, low band	8
RF Connector Quantity, total	16

Remote Electrical Tilt (RET) Information

RET Hardware	CommRET v2
RET Interface	8-pin DIN Female | 8-pin DIN Male
RET Interface, quantity	1 female | 1 male
Input Voltage	10–30 Vdc
Internal RET	High band (2) | Low band (2)
Power Consumption, idle state, maximum	2 W
Power Consumption, normal conditions, maximum	10 W
Protocol	3GPP/AISG 2.0 (Multi-RET)

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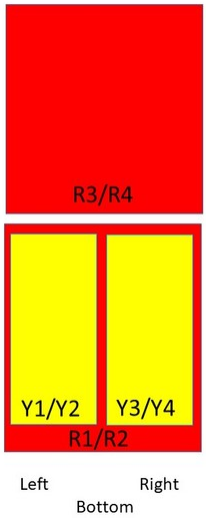
Dimensions

Width	640 mm | 25.197 in
Depth	235 mm | 9.252 in
Length	2437 mm | 95.945 in
Net Weight, without mounting kit	66.7 kg | 147.048 lb

Array Layout

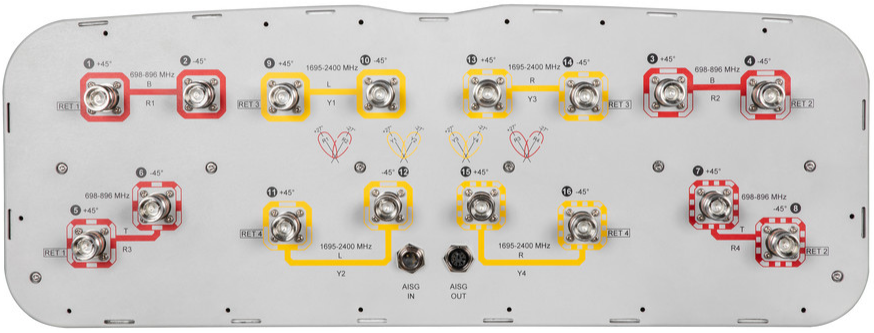


Array	Freq (MHz)	Conns	RET (MRET)	AISG RET UID
R1	698-896	1-2	1	CPxxxxxxxxxxxxxxxMM1
R3	698-896	5-6		
R2	698-896	3-4	2	CPxxxxxxxxxxxxxxxMM2
R4	698-896	7-8		
Y1	1695-2400	9-10	3	CPxxxxxxxxxxxxxxxMM3
Y3	1695-2400	13-14		
Y2	1695-2400	11-12	4	CPxxxxxxxxxxxxxxxMM4
Y4	1695-2400	15-16		

(Sizes of colored boxes are not true depictions of array sizes)

Port Configuration

2NN2HH-33C-R4



Electrical Specifications

Impedance	50 ohm
Operating Frequency Band	1695 – 2400 MHz | 698 – 896 MHz
Polarization	±45°
Total Input Power, maximum	1,500 W @ 50 °C

Electrical Specifications

Frequency Band, MHz	**698–806**	**824–896**	**1695–1880**	**1850–1990**	**1920–2200**	**2300–2400**
Gain, dBi	14.8	16	17.7	18.3	19.1	19.1
Beam Centers, Horizontal, degrees	±27	±27	±27	±27	±27	±27
Beamwidth, Horizontal, degrees	43	36	35	33	32	28
Beamwidth, Vertical, degrees	18.8	16.7	7.7	7.3	7	6.4
Beam Tilt, degrees	2–16	2–16	2–12	2–12	2–12	2–12
Horizontal Sidelobe, dB	13	12	16	18	19	16
USLS (First Lobe), dB	17	18	18	21	22	20
Front-to-Back Ratio at 180°, dB	29	29	33	34	35	32
Isolation, Cross Polarization,	25	25	25	25	25	25

dB						
Isolation, Inter-band, dB	25	25	25	25	25	25
VSWR | Return loss, dB	1.46 | 14.5	1.46 | 14.5	1.46 | 14.5	1.46 | 14.5	1.46 | 14.5	1.46 | 14.5
PIM, 3rd Order, 2 x 20 W, dBc	-153	-153	-153	-153	-153	-153
Input Power per Port at 50°C, maximum, watts	200	200	200	200	200	150

Electrical Specifications, BASTA

Frequency Band, MHz	**698–806**	**824–896**	**1695–1880**	**1850–1990**	**1920–2200**	**2300–2400**
Gain by all Beam Tilts, average, dBi	14.3	15.5	17	17.9	18.4	18.4
Gain by all Beam Tilts Tolerance, dB	±0.8	±0.8	±0.9	±0.4	±0.7	±1.3
Gain by Beam Tilt, average, dBi	2 ° | 14.4 9 ° | 14.3 16 ° | 14.2	2 ° | 15.6 9 ° | 15.5 16 ° | 15.4	2 ° | 16.9 7 ° | 17.1 12 ° | 17.0	2 ° | 17.8 7 ° | 18.0 12 ° | 17.9	2 ° | 18.3 7 ° | 18.5 12 ° | 18.2	2 ° | 18.5 7 ° | 18.5 12 ° | 18.1
Beamwidth, Horizontal Tolerance, degrees	±2.4	±3.6	±1	±1.5	±1.9	±1
Beamwidth, Vertical Tolerance, degrees	±1.2	±0.8	±0.3	±0.3	±0.4	±0.3
USLS, beampeak to 20° above beampeak, dB	16	23	13	15	17	15
Front-to-Back Total Power at 180° ± 30°, dB	24	21	26	27	28	26
CPR at Boresight, dB	18	16	16	18	18	15
CPR at 10 dB Horizontal Beamwidth, dB	6	4	8	12	12	10

Mechanical Specifications

Effective Projective Area (EPA), frontal	0.99 m² | 10.656 ft²
Effective Projective Area (EPA), lateral	0.33 m² | 3.552 ft²
Mechanical Tilt Range	0°–10°
Wind Loading @ Velocity, frontal	1,055.0 N @ 150 km/h (237.2 lbf @ 150 km/h)
Wind Loading @ Velocity, lateral	355.0 N @ 150 km/h (79.8 lbf @ 150 km/h)
Wind Loading @ Velocity, maximum	1,433.0 N @ 150 km/h (322.2 lbf @ 150 km/h)
Wind Loading @ Velocity, rear	1,086.0 N @ 150 km/h (244.1 lbf @ 150 km/h)
Wind Speed, maximum	241.4 km/h (150 mph)

Packaging and Weights

2NN2HH-33C-R4

Width, packed	752 mm | 29.606 in
Depth, packed	382 mm | 15.039 in
Length, packed	2590 mm | 101.969 in
Weight, gross	93.4 kg | 205.912 lb

Regulatory Compliance/Certifications

Agency	Classification
CHINA-ROHS	Below maximum concentration value
ISO 9001:2015	Designed, manufactured and/or distributed under this quality management system
REACH-SVHC	Compliant as per SVHC revision on www.commscope.com/ProductCompliance
ROHS	Compliant
UK-ROHS	Compliant

Included Products

BSAMNT-4	–	Wide Profile Antenna Downtilt Mounting Kit for 2.4 - 4.5 in (60 - 115 mm) OD round members. Kit contains one scissor top bracket set and one bottom bracket set.
BSAMNT-M4	–	Middle Downtilt Mounting Kit for Long Antennas for 2.4 - 4.5 in (60 - 115 mm) OD round members. Kit contains one scissor bracket set.

* Footnotes

Performance Note	Severe environmental conditions may degrade optimum performance