

# 2NN2HH-33B-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

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

## Remote Electrical Tilt (RET) Information

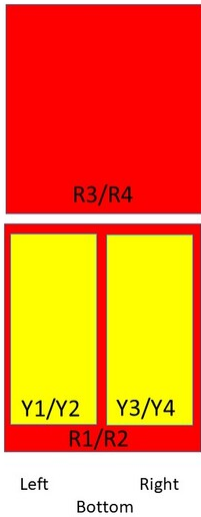
<b>RET Hardware</b>	CommRET v2
<b>RET Interface</b>	AISG1 8-pin DIN Female   AISG1 8-pin DIN Male
<b>RET Interface, quantity</b>	1 female   1 male
<b>Input Voltage</b>	10–30 Vdc
<b>Internal RET</b>	High band (2)   Low band (2)
<b>Power Consumption, active state, maximum</b>	10 W
<b>Power Consumption, idle state, maximum</b>	2 W
<b>Protocol</b>	3GPP/AISG 2.0 (Multi-RET)

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## Dimensions

<b>Width</b>	640 mm   25.197 in
<b>Depth</b>	235 mm   9.252 in
<b>Length</b>	1828 mm   71.969 in
<b>Net Weight, without mounting kit</b>	57 kg   125.663 lb

## Array Layout

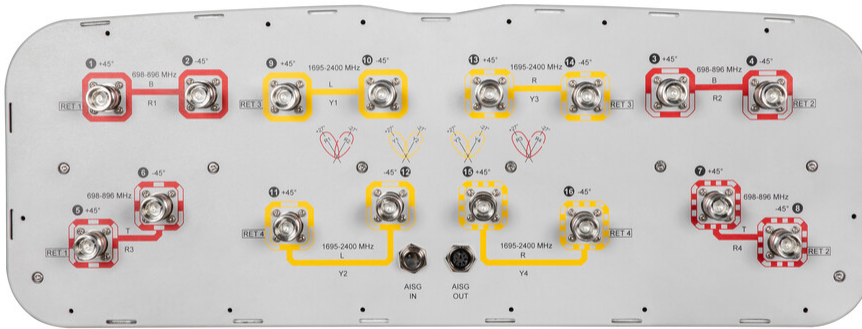


Array	Freq (MHz)	Conns	RET (MRET)	AISG RET UID
R1	698-896	1-2	1	CPxxxxxxxxxxxxxxxxMM1
R3	698-896	5-6		
R2	698-896	3-4	2	CPxxxxxxxxxxxxxxxxMM2
R4	698-896	7-8		
Y1	1695-2400	9-10	3	CPxxxxxxxxxxxxxxxxMM3
Y3	1695-2400	13-14		
Y2	1695-2400	11-12	4	CPxxxxxxxxxxxxxxxxMM4
Y4	1695-2400	15-16		

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

## Port Configuration

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## Electrical Specifications

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

## Electrical Specifications

Frequency Band, MHz	698–806	824–896	1695–1880	1850–1990	1920–2200	2300–2400
<b>Gain, dBi</b>	13.7	14.8	17.7	18.3	19.1	19.1
<b>Beam Centers, Horizontal, degrees</b>	±27	±27	±27	±27	±27	±27
<b>Beamwidth, Horizontal, degrees</b>	42	35	35	33	32	28
<b>Beamwidth, Vertical, degrees</b>	23.7	21.5	7.7	7.3	6.9	6.3
<b>Beam Tilt, degrees</b>	2–20	2–20	2–12	2–12	2–12	2–12
<b>USLS (First Lobe), dB</b>	15	17	16	17	18	22
<b>Front-to-Back Ratio at 180°, dB</b>	26	29	36	37	36	34
<b>Isolation, Cross Polarization, dB</b>	25	25	25	25	25	25

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<b>Isolation, Inter-band, dB</b>	25	25	25	25	25	25
<b>VSWR   Return loss, dB</b>	1.5 14.0	1.5 14.0	1.5 14.0	1.5 14.0	1.5 14.0	1.5 14.0
<b>PIM, 3rd Order, 2 x 20 W, dBc</b>	-153	-153	-153	-153	-153	-153
<b>Input Power per Port at 50°C, maximum, watts</b>	200	200	200	200	200	150

## Electrical Specifications, BASTA

<b>Frequency Band, MHz</b>	<b>698–806</b>	<b>824–896</b>	<b>1695–1880</b>	<b>1850–1990</b>	<b>1920–2200</b>	<b>2300–2400</b>
<b>Gain by all Beam Tilts, average, dBi</b>	13.1	14.2	17	17.9	18.3	18.5
<b>Gain by all Beam Tilts Tolerance, dB</b>	±0.9	±1	±1	±0.4	±0.8	±1
<b>Beamwidth, Horizontal Tolerance, degrees</b>	±2.7	±3	±2.1	±1.2	±1.9	±1.2
<b>Beamwidth, Vertical Tolerance, degrees</b>	±1.5	±1.1	±0.3	±0.2	±0.4	±0.2
<b>USLS, beampeak to 20° above beampeak, dB</b>			14	16	17	16
<b>Front-to-Back Total Power at 180° ± 30°, dB</b>	21	21	27	29	29	27
<b>CPR at Boresight, dB</b>	17	17	17	19	21	21
<b>CPR at 10 dB Horizontal Beamwidth, dB</b>	6	5	9	13	14	13

## Mechanical Specifications

<b>Wind Loading @ Velocity, frontal</b>	764.0 N @ 150 km/h (171.8 lbf @ 150 km/h)
<b>Wind Loading @ Velocity, lateral</b>	251.0 N @ 150 km/h (56.4 lbf @ 150 km/h)
<b>Wind Loading @ Velocity, maximum</b>	1,039.0 N @ 150 km/h (233.6 lbf @ 150 km/h)
<b>Wind Loading @ Velocity, rear</b>	787.0 N @ 150 km/h (176.9 lbf @ 150 km/h)
<b>Wind Speed, maximum</b>	241 km/h (150 mph)

## Packaging and Weights

<b>Width, packed</b>	752 mm   29.606 in
<b>Depth, packed</b>	387 mm   15.236 in
<b>Length, packed</b>	1982 mm   78.032 in
<b>Weight, gross</b>	74 kg   163.142 lb

## Regulatory Compliance/Certifications

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**Agency**

CHINA-ROHS  
ISO 9001:2015  
ROHS  
UK-ROHS

**Classification**

Below maximum concentration value  
Designed, manufactured and/or distributed under this quality management system  
Compliant  
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.

**\* Footnotes**

**Performance Note** Severe environmental conditions may degrade optimum performance