

# 2HH-33A-R4



8-port multibeam antenna, 8x 1695–2400 MHz, 4x 38° HPBW, 4x RET with retractable tilt rods

- Enhances network capacity through six sectors site application with only three antenna faces
- Maximizes frequency spectrum utilization to increase Average Revenue Per User (ARPU)
- Reduces antenna count to minimize Cap-Ex and Op-Ex costs
- High gain with excellent sector edge roll-off and azimuth sidelobe suppression
- Each antenna downtilt can be independently adjusted for greater flexibility in network optimization
- Supports re-configurable antenna sharing capability enabling control of the internal RET system using up to two separate RET compatible OEM radios

## OBSOLETE

This product was discontinued on: **March 31, 2023**

### Replaced By:

2HH-38A-R4-V2

8-port multibeam antenna, 8x 1695–2200 MHz, 4x 38° HPBW, 4x RET

## General Specifications

<b>Antenna Type</b>	Multibeam
<b>Band</b>	Single band
<b>Color</b>	Light Gray (RAL 7035)
<b>Grounding Type</b>	RF connector inner conductor and body grounded to reflector and mounting bracket
<b>Performance Note</b>	Outdoor usage   Wind loading figures are validated by wind tunnel measurements described in white paper WP-112534-EN
<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, mid band</b>	0
<b>RF Connector Quantity, low band</b>	0
<b>RF Connector Quantity, total</b>	8

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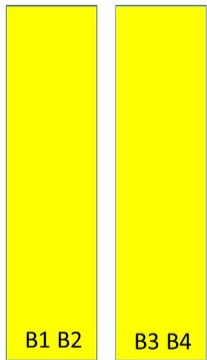
## Remote Electrical Tilt (RET) Information

<b>RET Hardware</b>	CommRET v2
<b>RET Interface</b>	8-pin DIN Female   8-pin DIN Male
<b>RET Interface, quantity</b>	2 female   2 male
<b>Input Voltage</b>	10–30 Vdc
<b>Internal RET</b>	High band (4)
<b>Power Consumption, idle state, maximum</b>	1 W
<b>Power Consumption, normal conditions, maximum</b>	8 W
<b>Protocol</b>	3GPP/AISG 2.0 (Single RET)

## Dimensions

<b>Width</b>	640 mm   25.197 in
<b>Depth</b>	235 mm   9.252 in
<b>Length</b>	1350 mm   53.15 in
<b>Net Weight, without mounting kit</b>	30.8 kg   67.902 lb

## Array Layout



Array	Freq (MHz)	Conns	RET (SRET)	AISG RET UID
B1	1695-2400	1-2	1	CPxxxxxxxxxxxxxxxxB1
B2	1695-2400	3-4	2	CPxxxxxxxxxxxxxxxxB2
B3	1695-2400	5-6	3	CPxxxxxxxxxxxxxxxxB3
B4	1695-2400	7-8	4	CPxxxxxxxxxxxxxxxxB4

Left Bottom Right

(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
<b>Polarization</b>	±45°
<b>Total Input Power, maximum</b>	400 W @ 50 °C

## Electrical Specifications

Frequency Band, MHz	1695–1880	1850–1990	1920–2180	2300–2400
<b>Gain, dBi</b>	19.1	19.7	19.9	19.4
<b>Beam Centers, Horizontal, degrees</b>	±27	±27	±27	±27
<b>Beamwidth, Horizontal, degrees</b>	38	35.8	33	29
<b>Beamwidth, Vertical, degrees</b>	7.4	7	6.6	5.9
<b>Beam Tilt, degrees</b>	2–12	2–12	2–12	2–12
<b>USLS (First Lobe), dB</b>	19	20	19	17
<b>Front-to-Back Ratio at 180°, dB</b>	37	37	35	33
<b>Isolation, Cross Polarization, dB</b>	28	28	28	28
<b>Isolation, Inter-band, dB</b>	16	16	16	16
<b>VSWR   Return loss, dB</b>	1.46   14.5	1.46   14.5	1.46   14.5	1.46   14.5
<b>PIM, 3rd Order, 2 x 20 W, dBc</b>	-150	-150	-150	-150

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<b>Input Power per Port at 50°C, maximum, watts</b>	200	200	200	200
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## Mechanical Specifications

<b>Mechanical Tilt Range</b>	0°–24°
<b>Wind Loading @ Velocity, frontal</b>	557.0 N @ 150 km/h (125.2 lbf @ 150 km/h)
<b>Wind Loading @ Velocity, lateral</b>	175.0 N @ 150 km/h (39.3 lbf @ 150 km/h)
<b>Wind Loading @ Velocity, maximum</b>	759.0 N @ 150 km/h (170.6 lbf @ 150 km/h)
<b>Wind Loading @ Velocity, rear</b>	574.0 N @ 150 km/h (129.0 lbf @ 150 km/h)
<b>Wind Speed, maximum</b>	241 km/h (150 mph)

## Packaging and Weights

<b>Width, packed</b>	797 mm   31.378 in
<b>Depth, packed</b>	402 mm   15.827 in
<b>Length, packed</b>	1501 mm   59.095 in
<b>Weight, gross</b>	41.7 kg   91.933 lb

## Regulatory Compliance/Certifications

<b>Agency</b>	<b>Classification</b>
CHINA-ROHS	Above maximum concentration value
ISO 9001:2015	Designed, manufactured and/or distributed under this quality management system
ROHS	Compliant/Exempted
UK-ROHS	Compliant/Exempted



## Included Products

BSAMNT-3	–	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.
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## \* Footnotes

<b>Performance Note</b>	Severe environmental conditions may degrade optimum performance
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