

# NNH4-65B-R6H4-V1



12-port sector antenna, 4x 698–896 and 8x 1695–2360 MHz, 65° HPBW, 6x RET.

- Features broadband Low Band (698-896 MHz) and High Band (1695-2360 MHz) arrays for 4T4R (4X MIMO) capability for Band 14, AWS, PCS and WCS applications
- Non-stacked high band array design provides higher gain and narrower vertical beamwidth than traditional antenna designs
- Independent tilt for all arrays
- Array configuration provides capability for 4T4R (4x MIMO) on Low band and Dual 4T4R (4x MIMO) on High band
- Optimized SPR performance across all operating bands
- Excellent wind loading characteristics
- Supports re-configurable antenna sharing capability enabling control of the internal RET system using up to two separate RET compatible OEM radios
- By default AISG input port 1 controls all RET motors

## General Specifications

<b>Antenna Type</b>	Sector
<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   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, low band</b>	4
<b>RF Connector Quantity, total</b>	12

## 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


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<b>Input Voltage</b>	10–30 Vdc
<b>Internal RET</b>	High band (4)   Low band (2)
<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>	498 mm   19.606 in
<b>Depth</b>	197 mm   7.756 in
<b>Length</b>	1848 mm   72.756 in
<b>Net Weight, without mounting kit</b>	38.3 kg   84.437 lb

## Array Layout



Array	Freq (MHz)	Conns	RET (SRET)	AISG RET UID
R1	698-896	1-2	1	CPxxxxxxxxxxxxxxxxR1
R2	698-896	3-4	2	CPxxxxxxxxxxxxxxxxR2
Y1	1695-2360	5-6	3	CPxxxxxxxxxxxxxxxxY1
Y2	1695-2360	7-8	4	CPxxxxxxxxxxxxxxxxY2
Y3	1695-2360	9-10	5	CPxxxxxxxxxxxxxxxxY3
Y4	1695-2360	11-12	6	CPxxxxxxxxxxxxxxxxY4

Left Bottom Right Bottom

(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 – 2360 MHz   698 – 896 MHz
<b>Polarization</b>	±45°
<b>Total Input Power, maximum</b>	900 W @ 50 °C

## Electrical Specifications

Frequency Band, MHz	698–806	806–896	1695–1880	1850–1990	1920–2180	2300–2360
<b>Gain, dBi</b>	14.2	14.8	16.7	17.3	17.9	18.4
<b>Beamwidth, Horizontal, degrees</b>	68	64	70	67	61	59
<b>Beamwidth, Vertical, degrees</b>	11.5	10.2	6.9	6.5	6	5.4
<b>Beam Tilt, degrees</b>	2–14	2–14	2–12	2–12	2–12	2–12
<b>USLS (First Lobe), dB</b>	16	18	16	19	19	19
<b>Front-to-Back Ratio at 180°, dB</b>	30	30	33	34	34	34
<b>Isolation, Cross Polarization, dB</b>	25	25	25	25	25	25
<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

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<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>	300	300	250	250	250	200

## Electrical Specifications, BASTA

<b>Frequency Band, MHz</b>	<b>698–806</b>	<b>806–896</b>	<b>1695–1880</b>	<b>1850–1990</b>	<b>1920–2180</b>	<b>2300–2360</b>
<b>Gain by all Beam Tilts, average, dBi</b>	13.8	14.5	16.1	16.9	17.5	18
<b>Gain by all Beam Tilts Tolerance, dB</b>	±0.6	±0.5	±0.7	±0.6	±0.6	±0.5
<b>Gain by Beam Tilt, average, dBi</b>	2°   14.0 8°   13.9 14°   13.5	2°   14.6 8°   14.6 14°   14.1	2°   15.9 7°   16.2 12°   16.0	2°   16.6 7°   17.0 12°   16.9	2°   17.1 7°   17.6 12°   17.4	2°   17.7 7°   18.0 12°   17.9
<b>Beamwidth, Horizontal Tolerance, degrees</b>	±5.7	±3.2	±6.4	±7.5	±5.9	±3.6
<b>Beamwidth, Vertical Tolerance, degrees</b>	±0.9	±0.7	±0.5	±0.3	±0.4	±0.2
<b>USLS, beampeak to 20° above beampeak, dB</b>	16	15	12	15	15	16
<b>Front-to-Back Total Power at 180° ± 30°, dB</b>	20	21	27	26	27	28
<b>CPR at Boresight, dB</b>	24	23	19	19	20	17
<b>CPR at Sector, dB</b>	12	10	7	5	6	8

## Mechanical Specifications

<b>Effective Projective Area (EPA), frontal</b>	0.65 m <sup>2</sup>   6.997 ft <sup>2</sup>
<b>Effective Projective Area (EPA), lateral</b>	0.22 m <sup>2</sup>   2.368 ft <sup>2</sup>
<b>Mechanical Tilt Range</b>	0°–17°
<b>Wind Loading @ Velocity, frontal</b>	694.0 N @ 150 km/h (156.0 lbf @ 150 km/h)
<b>Wind Loading @ Velocity, lateral</b>	235.0 N @ 150 km/h (52.8 lbf @ 150 km/h)
<b>Wind Loading @ Velocity, maximum</b>	900.0 N @ 150 km/h (202.3 lbf @ 150 km/h)
<b>Wind Loading @ Velocity, rear</b>	571.0 N @ 150 km/h (128.4 lbf @ 150 km/h)
<b>Wind Speed, maximum</b>	241 km/h (150 mph)

## Packaging and Weights

<b>Width, packed</b>	565 mm   22.244 in
<b>Depth, packed</b>	309 mm   12.165 in
<b>Length, packed</b>	2035 mm   80.118 in

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**Weight, gross**

51.9 kg | 114.42 lb

## Regulatory Compliance/Certifications

**Agency**

ISO 9001:2015

**Classification**

Designed, manufactured and/or distributed under this quality management system



## 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.

## \* Footnotes

**Performance Note**

Severe environmental conditions may degrade optimum performance