

# NNH4-65C-R6-V3



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
- 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
- The antenna is supplied with mounting kits that provide 0 degree of mechanical downtilt; optional downtilt mounting kits are available

## 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>	1 female   1 male
<b>Input Voltage</b>	10–30 Vdc
<b>Internal RET</b>	High band (4)   Low band (2)

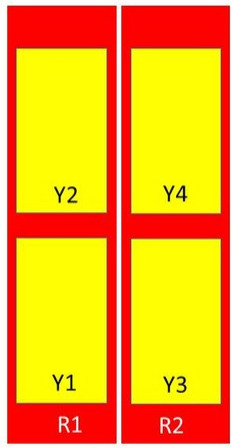
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<b>Power Consumption, idle state, maximum</b>	1 W
<b>Power Consumption, normal conditions, maximum</b>	8 W
<b>Protocol</b>	3GPP/AISG 2.0 (Multi-RET)

## Dimensions

<b>Width</b>	498 mm   19.606 in
<b>Depth</b>	197 mm   7.756 in
<b>Length</b>	2438 mm   95.984 in
<b>Net Weight, without mounting kit</b>	40.5 kg   89.287 lb

## Array Layout



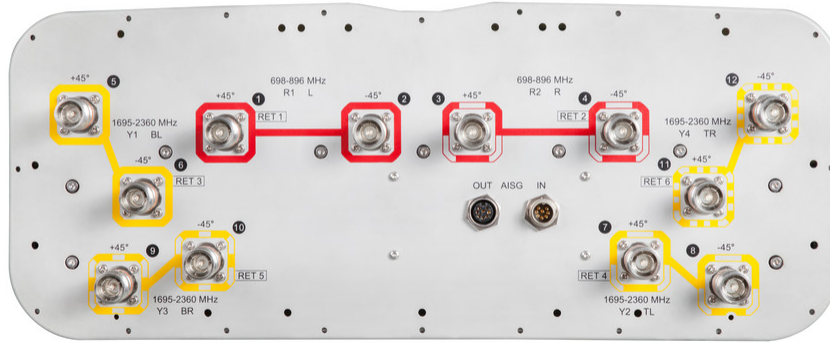
Array	Freq (MHz)	Conns	RET (MRET)	AISG RET UID
R1	698-896	1-2	1	CPxxxxxxxxxxxxxxxxmm.1
R2	698-896	3-4	2	CPxxxxxxxxxxxxxxxxmm.2
Y1	1695-2360	5-6	3	CPxxxxxxxxxxxxxxxxmm.3
Y2	1695-2360	7-8	4	CPxxxxxxxxxxxxxxxxmm.4
Y3	1695-2360	9-10	5	CPxxxxxxxxxxxxxxxxmm.5
Y4	1695-2360	11-12	6	CPxxxxxxxxxxxxxxxxmm.6

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 – 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>	15.6	15.8	16.7	17.1	17.5	18
<b>Beamwidth, Horizontal, degrees</b>	73	72	60	62	62	58
<b>Beamwidth, Vertical, degrees</b>	9.8	8.7	7.9	7.4	7	6.2
<b>Beam Tilt, degrees</b>	0–10	0–10	0–10	0–10	0–10	0–10
<b>USLS (First Lobe), dB</b>	23	18	17	18	19	18
<b>Front-to-Back Ratio at 180°, dB</b>	29	31	37	39	38	36
<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>	-150	-150	-150	-150	-150	-150
<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>	15.2	15.6	16.2	16.7	16.9	17.5
<b>Gain by all Beam Tilts Tolerance, dB</b>	±0.4	±0.4	±0.7	±0.7	±0.7	±0.7
<b>Gain by Beam Tilt, average, dBi</b>	0°   14.9 5°   15.2 10°   15.2	0°   15.2 5°   15.6 10°   15.6	0°   16.0 5°   16.2 10°   16.2	0°   16.4 5°   16.7 10°   16.7	0°   16.5 5°   17.0 10°   16.9	0°   17.0 5°   17.6 10°   17.5
<b>Beamwidth, Horizontal Tolerance, degrees</b>	±2.4	±2.8	±3.9	±2.3	±2.8	±3.3
<b>Beamwidth, Vertical Tolerance, degrees</b>	±0.6	±0.4	±0.4	±0.4	±0.5	±0.2
<b>USLS, beampeak to 20° above beampeak, dB</b>	17	16	15	16	16	17
<b>Front-to-Back Total Power at 180° ± 30°, dB</b>	23	23	30	32	29	28
<b>CPR at Boresight, dB</b>	23	24	18	21	21	17
<b>CPR at Sector, dB</b>	9	7	10	11	10	9

## Mechanical Specifications

<b>Effective Projective Area (EPA), frontal</b>	0.9 m <sup>2</sup>   9.688 ft <sup>2</sup>
<b>Effective Projective Area (EPA), lateral</b>	0.31 m <sup>2</sup>   3.337 ft <sup>2</sup>
<b>Mechanical Tilt Range</b>	0°–10°
<b>Wind Loading @ Velocity, frontal</b>	954.0 N @ 150 km/h (214.5 lbf @ 150 km/h)
<b>Wind Loading @ Velocity, lateral</b>	331.0 N @ 150 km/h (74.4 lbf @ 150 km/h)
<b>Wind Loading @ Velocity, maximum</b>	1,235.0 N @ 150 km/h (277.6 lbf @ 150 km/h)
<b>Wind Loading @ Velocity, rear</b>	785.0 N @ 150 km/h (176.5 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>	2625 mm   103.347 in

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**Weight, gross**

53.2 kg | 117.286 lb

## Regulatory Compliance/Certifications

**Agency**

**Classification**

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-2F

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Mounting bracket for cylindrical pipe installations (60-115mm pipe diameter) for fix mechanical tilt applications.

## \* Footnotes

**Performance Note**

Severe environmental conditions may degrade optimum performance