

# NNH4-65D-R6



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

## 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
<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)
<b>Power Consumption, idle state, maximum</b>	1 W
<b>Power Consumption, normal conditions, maximum</b>	8 W

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**Protocol** 3GPP/AISG 2.0 (Multi-RET)

## Dimensions

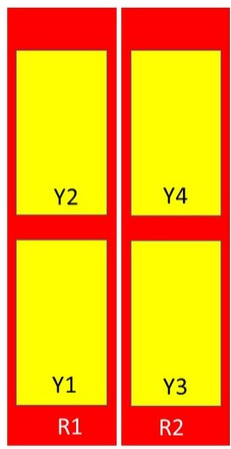
**Width** 498 mm | 19.606 in

**Depth** 197 mm | 7.756 in

**Length** 2688 mm | 105.827 in

**Net Weight, without mounting kit** 42.1 kg | 92.815 lb

## Array Layout



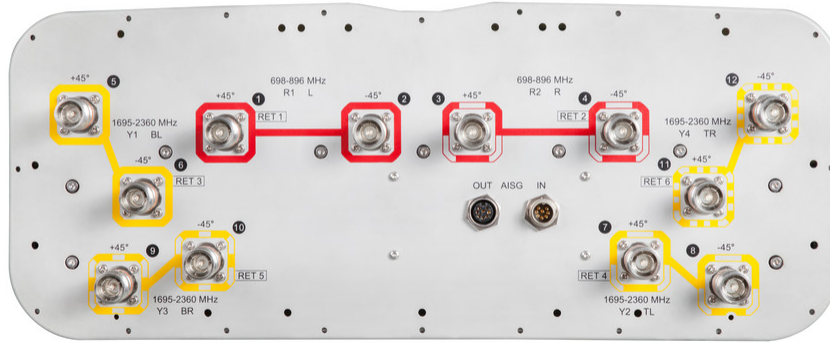
Array	Freq (MHz)	Conns	RET (SRET)	AISG RET UID
R1	698-896	1-2	1	CPxxxxxxxxxxxxxxxxmm.1
R2	698-896	3-4	2	CPxxxxxxxxxxxxxxxxmm.2
Y1	1695-2360	5-6	3	CPxxxxxxxxxxxxxxxxmm.3
Y2	1695-2360	7-8	4	CPxxxxxxxxxxxxxxxxmm.4
Y3	1695-2360	9-10	5	CPxxxxxxxxxxxxxxxxmm.5
Y4	1695-2360	11-12	6	CPxxxxxxxxxxxxxxxxmm.6

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>	1,800 W @ 50 °C

## Electrical Specifications

Frequency Band, MHz	698–806	806–896	1695–1880	1850–1990	1920–2180	2300–2360
<b>Gain, dBi</b>	16	16.9	17	17.7	18.1	18.4
<b>Beamwidth, Horizontal, degrees</b>	76	72	63	56	58	57
<b>Beamwidth, Vertical, degrees</b>	8.4	7.4	7.8	7.1	6.7	5.9
<b>Beam Tilt, degrees</b>	2–12	2–12	2–12	2–12	2–12	2–12
<b>USLS (First Lobe), dB</b>	18	17	20	20	21	17
<b>Front-to-Back Ratio at 180°, dB</b>	30	29	35	37	35	35
<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>	350	350	300	300	300	300

## 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>	15.6	16.5	16.3	17.3	17.4	18
<b>Gain by all Beam Tilts Tolerance, dB</b>	±0.6	±0.5	±0.8	±0.5	±0.5	±0.5
<b>Gain by Beam Tilt, average, dBi</b>	2°   15.6 7°   15.7 12°   15.5	2°   16.6 7°   16.6 12°   16.1	2°   16.2 7°   16.4 12°   16.2	2°   17.1 7°   17.5 12°   17.3	2°   17.3 7°   17.7 12°   17.5	2°   17.7 7°   18.3 12°   17.9
<b>Beamwidth, Horizontal Tolerance, degrees</b>	±3.8	±4.3	±5.2	±4	±5	±2.8
<b>Beamwidth, Vertical Tolerance, degrees</b>	±0.5	±0.4	±0.6	±0.3	±0.5	±0.3
<b>USLS, beampeak to 20° above beampeak, dB</b>	15	14	13	15	17	15
<b>Front-to-Back Total Power at 180° ± 30°, dB</b>	20	20	29	29	29	28
<b>CPR at Boresight, dB</b>	18	19	18	20	21	18
<b>CPR at Sector, dB</b>	8	6	7	7	7	8

## Mechanical Specifications

<b>Effective Projective Area (EPA), frontal</b>	1 m <sup>2</sup>   10.764 ft <sup>2</sup>
<b>Effective Projective Area (EPA), lateral</b>	0.35 m <sup>2</sup>   3.767 ft <sup>2</sup>
<b>Mechanical Tilt Range</b>	0°–12°
<b>Wind Loading @ Velocity, frontal</b>	1,070.0 N @ 150 km/h (240.5 lbf @ 150 km/h)
<b>Wind Loading @ Velocity, lateral</b>	375.0 N @ 150 km/h (84.3 lbf @ 150 km/h)
<b>Wind Loading @ Velocity, maximum</b>	1,385.0 N @ 150 km/h (311.4 lbf @ 150 km/h)
<b>Wind Loading @ Velocity, rear</b>	880.0 N @ 150 km/h (197.8 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>	2875 mm   113.189 in

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**Weight, gross**

55.3 kg | 121.915 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

- 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