

# NNHH-65B-R4



8-Port sector antenna, 4x 698-896 and 4x 1695-2360 MHz, 65° HPBW, 4x RETs

- Array configuration provides capability for 4T4R (4x MIMO) on Low band and 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>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
<b>Radome Material</b>	Fiberglass, UV resistant
<b>Radiator Material</b>	Aluminum   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>	4
<b>RF Connector Quantity, low band</b>	4
<b>RF Connector Quantity, total</b>	8

## Remote Electrical Tilt (RET) Information

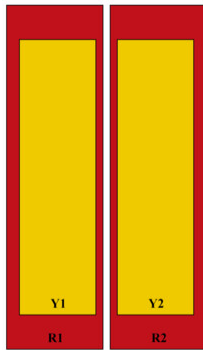
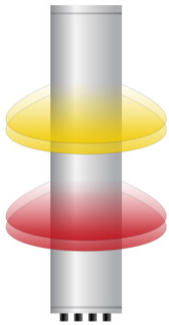
<b>RET Hardware</b>	CommRET v2
<b>RET Interface</b>	8-pin DIN Female   8-pin DIN Male
<b>RET Interface, quantity</b>	1 female   1 male
<b>Input Voltage</b>	10–30 Vdc
<b>Internal RET</b>	High band (2)   Low band (2)
<b>Power Consumption, active state, maximum</b>	10 W
<b>Power Consumption, idle state,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

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## Dimensions

<b>Width</b>	498 mm   19.606 in
<b>Depth</b>	197 mm   7.756 in
<b>Length</b>	1828 mm   71.969 in
<b>Net Weight, antenna only</b>	31 kg   68.343 lb

## Array Layout



Array ID	Frequency (MHz)	RF Connector	RET (MRET)	AISG No.	AISG RET UID
R1	698-896	1 - 2	1	AISG1	CPxxxxxxxxxxxxMM.1
R2	698-896	3 - 4	2	AISG1	CPxxxxxxxxxxxxMM.2
Y1	1695-2360	5 - 6	3	AISG1	CPxxxxxxxxxxxxMM.3
Y2	1695-2360	7 - 8	4	AISG1	CPxxxxxxxxxxxxMM.4

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

## Port Configuration



## Electrical Specifications

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Impedance	50 ohm
Operating Frequency Band	1695 – 2360 MHz   698 – 896 MHz
Polarization	±45°
Total Input Power, maximum	900 W @ 50 °C

## Electrical Specifications

	R1,R2	R1,R2	Y1,Y2	Y1,Y2	Y1,Y2	Y1,Y2
Frequency Band, MHz	698–806	806–896	1695–1880	1850–1990	1920–2180	2300–2360
RF Port	1,2,3,4	1,2,3,4	5,6,7,8	5,6,7,8	5,6,7,8	5,6,7,8
Gain, dBi	14.8	15.5	17.1	17.6	18	18.1
Beamwidth, Horizontal, degrees	68	59	63	60	62	62
Beamwidth, Vertical, degrees	12	10.6	7	6.5	6.1	5.5
Beam Tilt, degrees	2–14	2–14	2–12	2–12	2–12	2–12
USLS (First Lobe), dB	19	17	15	16	16	17
Front-to-Back Ratio at 180°, dB	29	27	35	35	34	33
Front-to-Back Total Power at 180° ± 30°, dB	21	21	30	31	29	26
Isolation, Cross Polarization, dB	25	25	25	25	25	25
Isolation, Inter-band, dB	25	25	25	25	25	25
VSWR   Return loss, dB	1.5 14.0	1.5 14.0	1.5 14.0	1.5 14.0	1.5 14.0	1.5 14.0
PIM, 3rd Order, 2 x 20 W, dBc	-150	-150	-150	-150	-150	-150
Input Power per Port at 50°C, maximum, watts	300	300	250	250	250	200

## Electrical Specifications, BASTA

Frequency Band, MHz	698–806	806–896	1695–1880	1850–1990	1920–2180	2300–2360
Gain by all Beam Tilts, average, dBi	14.3	15.1	16.6	17.3	17.5	17.7
Gain by all Beam Tilts Tolerance, dB	±0.6	±0.6	±0.6	±0.4	±0.4	±0.4
Beamwidth, Horizontal Tolerance, degrees	±5	±4	±4	±3	±5	±3
Beamwidth, Vertical Tolerance, degrees	±0.8	±1	±0.4	±0.3	±0.4	±0.3
USLS, beampeak to 20° above	18	16	14	15	14	14

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## beampeak, dB

<b>CPR at Boresight, dB</b>	20	19	19	19	19	24
<b>CPR at Sector, dB</b>	10	7	8	8	7	9

## Mechanical Specifications

<b>Wind Loading @ Velocity, frontal</b>	622.0 N @ 150 km/h (139.8 lbf @ 150 km/h)
<b>Wind Loading @ Velocity, lateral</b>	188.0 N @ 150 km/h (42.3 lbf @ 150 km/h)
<b>Wind Loading @ Velocity, maximum</b>	746.0 N @ 150 km/h (167.7 lbf @ 150 km/h)
<b>Wind Loading @ Velocity, rear</b>	428.0 N @ 150 km/h (96.2 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>	2015 mm   79.331 in
<b>Weight, gross</b>	42.1 kg   92.815 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-2F	-	Mounting bracket for cylindrical pipe installations (60-115mm pipe diameter) for fix mechanical tilt applications.
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## \* Footnotes

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