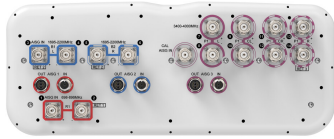


# NHHS4-45A-R3B



14 Port Sector Antenna, 2x 698-896 MHz, 4x 1695-2200 MHz 45° HPBW, and 8x 3400-3550/3700-4000 MHz Beamformer, 3x RETs and 3x SBTs

- Narrow beamwidth capacity antenna for higher level of densification and enhanced data throughput
- Internal SBT on low and high band allow remote RET control from the radio over the RF jumper cable
- Separate RS-485 RET input/output for low and high band
- One LB RET, one MB RET and one HB RET. Both mid bands are controlled by one RET to ensure same tilt level for 4x Rx or 4x MIMO

## General Specifications

<b>Antenna Type</b>	Sector- and beamforming
<b>Band</b>	Multiband
<b>Calibration Connector Interface</b>	4.3-10 Female
<b>Calibration Connector Quantity</b>	1
<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>	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>	4
<b>RF Connector Quantity, low band</b>	2
<b>RF Connector Quantity, total</b>	14

## Remote Electrical Tilt (RET) Information

<b>RET Hardware</b>	CommRET v2
<b>RET Interface</b>	8-pin DIN Female   8-pin DIN Male

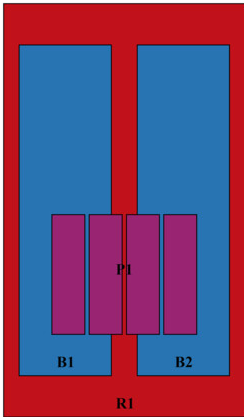
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<b>RET Interface, quantity</b>	3 female   3 male
<b>Input Voltage</b>	10–30 Vdc
<b>Internal Bias Tee</b>	Cal Port   Port 1   Port 3
<b>Internal RET</b>	High band (1)   Low band (1)   Mid band (1)
<b>Power Consumption, active state, maximum</b>	10 W
<b>Power Consumption, idle state, maximum</b>	2 W
<b>Protocol</b>	3GPP/AISG 2.0

## Dimensions

<b>Width</b>	498 mm   19.606 in
<b>Depth</b>	197 mm   7.756 in
<b>Length</b>	1399 mm   55.079 in
<b>Net Weight, antenna only</b>	29 kg   63.934 lb

## Array Layout

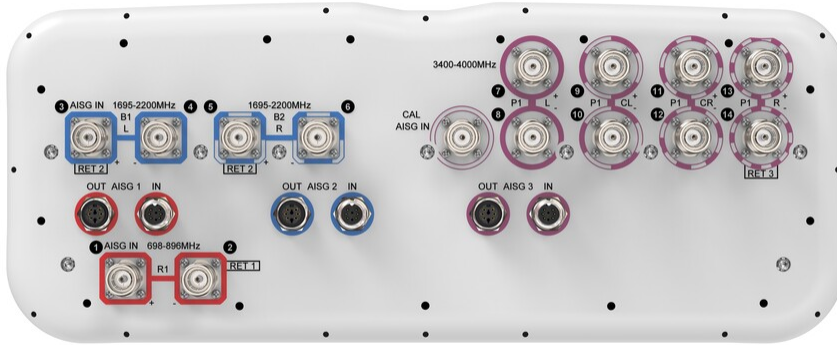


Array ID	Frequency (MHz)	RF Connector	HPBW	RET (SRET)	AISG No.	AISG RET UID
R1	698-896	1 - 2	45°	1	AISG1	CPxxxxxxxxxxxxxxxxR1
B1	1695-2200	3 - 4	45°	2	AISG2	CPxxxxxxxxxxxxxxxxB1
B2	1695-2200	5 - 6	45°			
P1	3400-4000	7 - 14	BF°	3	AISG3	CPxxxxxxxxxxxxxxxxP1

(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 – 2200 MHz   3400 – 4000 MHz   698 – 896 MHz
<b>Polarization</b>	±45°
<b>Total Input Power, maximum</b>	1,040 W @ 50 °C

## Electrical Specifications

	R1	R1	B1,B2	B1,B2	B1,B2	P1	P1
<b>Frequency Band, MHz</b>	<b>698–806</b>	<b>806–896</b>	<b>1695–1880</b>	<b>1850–1990</b>	<b>1920–2200</b>	<b>3400–3550</b>	<b>3700–4000</b>
<b>RF Port</b>	1,2	1,2	3-6	3-6	3-6	7-14	7-14
<b>Gain, dBi</b>	15.3	15.7	18.1	18.3	19	16.1	17.5
<b>Beamwidth, Horizontal, degrees</b>	46	41	48	46	44	84	71
<b>Beamwidth, Vertical, degrees</b>	19	17	7.6	7.1	6.7	6.2	5.7
<b>Beam Tilt, degrees</b>	2–18	2–18	1–9	1–9	1–9	0–10	0–10
<b>USLS (First Lobe), dB</b>	16	17	17	17	17	14	15
<b>Front-to-Back Ratio at 180°, dB</b>	34	36	36	35	34	29	30
<b>Coupling level, Amp, Antenna port to Cal port, dB</b>							26
<b>Coupling level, max Amp Δ, Antenna port to Cal port, dB</b>							±2
<b>Coupler, max Amp Δ, Antenna port to Cal port, dB</b>							0.9

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<b>Coupler, max Phase Δ, Antenna port to Cal port, degrees</b>							7
<b>Isolation, Cross Polarization, dB</b>	25	25	25	25	25	25	25
<b>Isolation, Inter-band, dB</b>	25	25	25	25	25	25	25
<b>Isolation, Co-polarization, dB</b>						19	19
<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	1.5 14.0
<b>PIM, 3rd Order, 2 x 20 W, dBc</b>	-153	-153	-153	-153	-153	-145	-145
<b>Input Power per Port at 50°C, maximum, watts</b>	300	300	250	250	250	75	75

## Electrical Specifications, BASTA

Frequency Band, MHz	698–806	806–896	1695–1880	1850–1990	1920–2200	3400–3550	3700–4000
<b>Gain by all Beam Tilts, average, dBi</b>	15	15.5	17.8	18	18.5	15.5	16.7
<b>Gain by all Beam Tilts Tolerance, dB</b>	±0.5	±0.5	±0.5	±0.4	±0.7	±0.9	±1
<b>Beamwidth, Horizontal Tolerance, degrees</b>	±2	±3	±3	±2	±4	±21	±24
<b>Beamwidth, Vertical Tolerance, degrees</b>	±1	±1.4	±0.4	±0.3	±0.4	±0.3	±0.3
<b>Front-to-Back Total Power at 180° ± 30°, dB</b>	26	25	29	28	27	22	23
<b>CPR at Boresight, dB</b>	22	26	20	22	20	14	14
<b>CPR at Sector, dB</b>						8	8
<b>CPR at 10 dB Horizontal Beamwidth, dB</b>	14	10	8	7	7		

## Electrical Specifications, Broadcast 65°

Frequency Band, MHz	3400–3550	3700–4000
<b>Gain, dBi</b>	17.1	18.2
<b>Beamwidth, Horizontal, degrees</b>	65	65
<b>Beamwidth, Vertical, degrees</b>	6.2	5.8
<b>Front-to-Back Total Power at 180° ± 30°, dB</b>	26	24
<b>USLS (First Lobe), dB</b>	17	19

## Electrical Specifications, Broadcast 45°

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	<b>3400–3550</b>	<b>3700–4000</b>
<b>Frequency Band, MHz</b>		
<b>Beamwidth, Vertical, degrees</b>	6.2	5.8
<b>Front-to-Back Total Power at 180° ± 30°, dB</b>	27	25
<b>USLS (First Lobe), dB</b>	17	20

## Electrical Specifications, Service Beam

	<b>3400–3550</b>	<b>3700–4000</b>
<b>Frequency Band, MHz</b>		
<b>Steered 0° Gain, dBi</b>	20.4	21.6
<b>Steered 0° Beamwidth, Horizontal, degrees</b>	27	23
<b>Steered 0° Front-to-Back Total Power at 180° ± 30°, dB</b>	29	29
<b>Steered 0° Horizontal Sidelobe, dB</b>	13	13
<b>Steered 0° USLS (First Lobe), dB</b>	18	21
<b>Steered 30° Gain, dBi</b>	19.4	19.9
<b>Steered 30° Beamwidth, Horizontal, degrees</b>	31	31
<b>Steered 30° Front-to-Back Total Power at 180° ± 30°, dB</b>	27	27

## Electrical Specifications, Soft Split

	<b>3400–3550</b>	<b>3700–4000</b>
<b>Frequency Band, MHz</b>		
<b>Gain, dBi</b>	19.3	20.2
<b>Beamwidth, Horizontal, degrees</b>	36	32
<b>Front-to-Back Total Power at 180° ± 30°, dB</b>	27	27
<b>Horizontal Sidelobe, dB</b>	15	16
<b>USLS (First Lobe), dB</b>	18	21

## Mechanical Specifications

<b>Wind Loading @ Velocity, frontal</b>	461.0 N @ 150 km/h (103.6 lbf @ 150 km/h)
<b>Wind Loading @ Velocity, lateral</b>	137.0 N @ 150 km/h (30.8 lbf @ 150 km/h)
<b>Wind Loading @ Velocity, maximum</b>	554.0 N @ 150 km/h (124.5 lbf @ 150 km/h)
<b>Wind Loading @ Velocity, rear</b>	318.0 N @ 150 km/h (71.5 lbf @ 150 km/h)
<b>Wind Speed, maximum</b>	241 km/h (150 mph)

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## 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>	1587 mm   62.48 in
<b>Weight, gross</b>	41.4 kg   91.271 lb

## Regulatory Compliance/Certifications

<b>Agency</b>	<b>Classification</b>
CHINA-ROHS	Above maximum concentration value
ROHS	Compliant/Exempted
UK-ROHS	Compliant



## 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