

# NNHH-65C-R4-V1



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

## 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   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>                | 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, idle state, maximum</b>        | 1 W                               |
| <b>Power Consumption, normal conditions, maximum</b> | 8 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>                           | 2438 mm   95.984 in |
| <b>Net Weight, without mounting kit</b> | 45.5 kg   100.31 lb |

## Array Layout



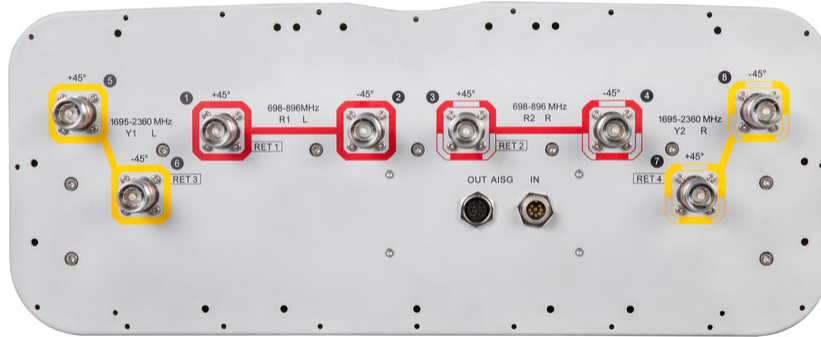
| Array | Freq (MHz) | Conns | RET (SRET) | AISG RET UID         |
|-------|------------|-------|------------|----------------------|
| R1    | 698-896    | 1-2   | 1          | CPxxxxxxxxxxxxxxxxR1 |
| R2    | 698-896    | 3-4   | 2          | CPxxxxxxxxxxxxxxxxR2 |
| Y1    | 1695-2360  | 5-6   | 3          | CPxxxxxxxxxxxxxxxxY1 |
| Y2    | 1695-2360  | 7-8   | 4          | CPxxxxxxxxxxxxxxxxY2 |

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>                         | 15.7     | 16.1     | 18.3      | 18.8      | 19.1      | 19.3      |
| <b>Beamwidth, Horizontal, degrees</b>    | 73       | 71       | 58        | 59        | 61        | 59        |
| <b>Beamwidth, Vertical, degrees</b>      | 9.8      | 8.6      | 5.4       | 5         | 4.7       | 4.2       |
| <b>Beam Tilt, degrees</b>                | 2–12     | 2–12     | 2–12      | 2–12      | 2–12      | 2–12      |
| <b>USLS (First Lobe), dB</b>             | 21       | 20       | 19        | 19        | 20        | 20        |
| <b>Front-to-Back Ratio at 180°, dB</b>   | 28       | 32       | 37        | 38        | 39        | 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>                | -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>        | 15.3                                 | 15.9                                 | 17.9                                 | 18.6                                 | 18.8                                 | 19                                   |
| <b>Gain by all Beam Tilts Tolerance, dB</b>        | ±0.5                                 | ±0.5                                 | ±0.8                                 | ±0.3                                 | ±0.4                                 | ±0.4                                 |
| <b>Gain by Beam Tilt, average, dBi</b>             | 2°   15.2<br>7°   15.4<br>12°   15.2 | 2°   15.7<br>7°   16.0<br>12°   15.8 | 2°   17.6<br>7°   18.0<br>12°   17.8 | 2°   18.4<br>7°   18.7<br>12°   18.5 | 2°   18.5<br>7°   19.0<br>12°   18.7 | 2°   18.8<br>7°   19.1<br>12°   18.8 |
| <b>Beamwidth, Horizontal Tolerance, degrees</b>    | ±3                                   | ±3.3                                 | ±4.4                                 | ±2.6                                 | ±3.6                                 | ±4.9                                 |
| <b>Beamwidth, Vertical Tolerance, degrees</b>      | ±0.7                                 | ±0.6                                 | ±0.3                                 | ±0.2                                 | ±0.3                                 | ±0.2                                 |
| <b>USLS, beampeak to 20° above beampeak, dB</b>    | 16                                   | 16                                   | 16                                   | 17                                   | 18                                   | 17                                   |
| <b>Front-to-Back Total Power at 180° ± 30°, dB</b> | 23                                   | 22                                   | 30                                   | 33                                   | 30                                   | 29                                   |
| <b>CPR at Boresight, dB</b>                        | 22                                   | 24                                   | 19                                   | 23                                   | 22                                   | 18                                   |
| <b>CPR at Sector, dB</b>                           | 10                                   | 7                                    | 8                                    | 9                                    | 8                                    | 7                                    |

## 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> | 2685 mm   105.709 in |

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**Weight, gross**

63.1 kg | 139.112 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-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. |
| BSAMNT-M | - | Middle Downtilt Mounting Kit for Long Antennas for 2.4 - 4.5 in (60 - 115 mm) OD round members. Kit contains one scissor bracket set.                            |

## \* Footnotes

**Performance Note**

Severe environmental conditions may degrade optimum performance