

# NNHH-45C-R4



8-port sector antenna, 4x 698–896 and 4x 1695–2360 MHz, 45° HPBW, 4x RET

- Independent tilt for all arrays
- 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 with internal RET   |
| <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>                | 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

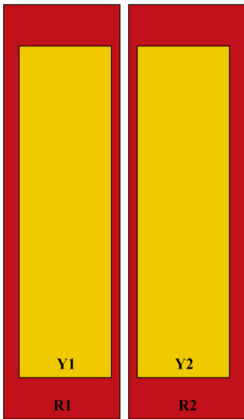
|   |                                   |
|---|-----------------------------------|
| <b>RET Hardware</b>                             | CommRET v2                        |
| <b>RET Interface</b>                            | 8-pin DIN Female   8-pin DIN Male |
| <b>RET Interface, quantity</b>                  | 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 (Multi-RET)         |

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## Dimensions

|                                 |                     |
|---------------------------------|---------------------|
| <b>Width</b>                    | 640 mm   25.197 in  |
| <b>Depth</b>                    | 235 mm   9.252 in   |
| <b>Length</b>                   | 2437 mm   95.945 in |
| <b>Net Weight, antenna only</b> | 61 kg   134.482 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

|                                   |                                 |
|-----------------------------------|---------------------------------|
| <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                   |

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## Electrical Specifications

|   | <b>R1,R2</b>   | <b>R1,R2</b>   | <b>Y1,Y2</b>     | <b>Y1,Y2</b>     | <b>Y1,Y2</b>     | <b>Y1,Y2</b>     |
|---|----------------|----------------|------------------|------------------|------------------|------------------|
| <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>RF Port</b>  | 1,2,3,4        | 1,2,3,4        | 5,6,7,8          | 5,6,7,8          | 5,6,7,8          | 5,6,7,8          |
| <b>Gain, dBi</b>  | 16.4           | 17.1           | 18.8             | 19.2             | 20               | 20.5             |
| <b>Gain at Mid Tilt, dBi</b>                              | 16             | 17             | 18.4             | 19.1             | 19.6             | 20.5             |
| <b>Beamwidth, Horizontal, degrees</b>                     | 51             | 45             | 46               | 49               | 47               | 38               |
| <b>Beamwidth, Vertical, degrees</b>                       | 9.6            | 8.4            | 5.7              | 5.3              | 5                | 4.5              |
| <b>Beam Tilt, degrees</b>                                 | 2–14           | 2–14           | 2–12             | 2–12             | 2–12             | 2–12             |
| <b>USLS (First Lobe), dB</b>                              | 14             | 15             | 15               | 16               | 16               | 18               |
| <b>Front-to-Back Ratio, Copolarization 180° ± 30°, dB</b> | 28             | 30             | 26               | 26               | 27               | 26               |
| <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         |
| <b>PIM, 3rd Order, 2 x 20 W, dBc</b>                      | -150           | -150           | -150             | -150             | -150             | -150             |
| <b>Input Power per Port, maximum, watts</b>               | 350            | 350            | 300              | 300              | 300              | 250              |

## Electrical Specifications, BASTA

|  | <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>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>        | 15.9                           | 16.9                           | 18.3                           | 18.9                           | 19.4                           | 20.2                           |
| <b>Gain by all Beam Tilts Tolerance, dB</b>        | ±0.7                           | ±0.5                           | ±0.7                           | ±0.4                           | ±0.7                           | ±0.7                           |
| <b>Gain by Beam Tilt, average, dBi</b>             | 2° 16.0<br>8° 16.0<br>14° 15.7 | 2° 16.9<br>8° 17.0<br>14° 16.7 | 2° 18.3<br>7° 18.4<br>12° 18.1 | 2° 18.9<br>7° 19.1<br>12° 18.8 | 2° 19.4<br>7° 19.6<br>12° 19.3 | 2° 20.5<br>7° 20.5<br>12° 19.4 |
| <b>Beamwidth, Horizontal Tolerance, degrees</b>    | ±7.6                           | ±3.9                           | ±4                             | ±2.3                           | ±3.3                           | ±3                             |
| <b>Beamwidth, Vertical Tolerance, degrees</b>      | ±0.7                           | ±0.4                           | ±0.4                           | ±0.3                           | ±0.3                           | ±0.1                           |
| <b>Front-to-Back Total Power at 180° ± 30°, dB</b> | 23                             | 21                             | 24                             | 26                             | 26                             | 24                             |
| <b>CPR at Boresight, dB</b>                        | 20                             | 20                             | 16                             | 17                             | 18                             | 20                             |

## Mechanical Specifications

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|   |   |
|---|---|
| <b>Wind Loading @ Velocity, frontal</b> | 954.0 N @ 150 km/h (214.5 lbf @ 150 km/h)   |
| <b>Wind Loading @ Velocity, lateral</b> | 355.0 N @ 150 km/h (79.8 lbf @ 150 km/h)    |
| <b>Wind Loading @ Velocity, maximum</b> | 1,434.0 N @ 150 km/h (322.4 lbf @ 150 km/h) |
| <b>Wind Loading @ Velocity, rear</b>    | 1,086.0 N @ 150 km/h (244.1 lbf @ 150 km/h) |
| <b>Wind Speed, maximum</b>              | 241 km/h (150 mph)                          |

## Packaging and Weights

|                       |                      |
|-----------------------|----------------------|
| <b>Width, packed</b>  | 752 mm   29.606 in   |
| <b>Depth, packed</b>  | 382 mm   15.039 in   |
| <b>Length, packed</b> | 2590 mm   101.969 in |
| <b>Weight, gross</b>  | 79.2 kg   174.606 lb |

## Regulatory Compliance/Certifications

| <b>Agency</b> | <b>Classification</b>  |
|---------------|--|
| CHINA-ROHS    | Below maximum concentration value  |
| ISO 9001:2015 | Designed, manufactured and/or distributed under this quality management system |
| ROHS          | Compliant  |
| UK-ROHS       | Compliant  |



## Included Products

|           |   |  |
|-----------|---|--|
| BSAMNT-3F | – | Mounting bracket for cylindrical pipe installations (60-115mm pipe diameter) for fix mechanical tilt applications. |
|-----------|---|--|

## \* Footnotes

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