




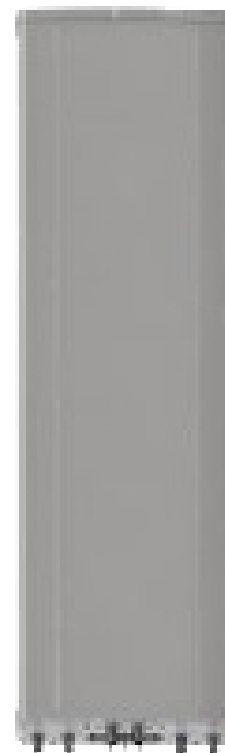
## 6177488

6177488N 6177488G 6177488NG

3-Band, 6-Port, 65°, XPOL, Panel Antenna, Variable Tilt, 1460 mm

- Triple band antenna, dual polarisation, 6 connectors
- Independent tilt on each band 0-10° / 0-10° / 0-10°
- Manual (MET) and Remote (RET) electrical tilt options
- Mounting and downtilt brackets included

| PRODUCT OVERVIEW | Frequency Range (MHz)   | 1690-2690  | 1690-2690  | 1690-2690  |
|------------------|-------------------------|--|--|--|
|                  | Array                   |  Y1 |  Y2 |  Y3 |
|                  | Connector               | 1-2  | 3-4  | 5-6  |
|                  | Polarization            | XPOL   | XPOL   | XPOL   |
|                  | Azimuth Beamwidth (avg) | 65°  | 65°  | 65°  |
|                  | Electrical Downtilt     | 0-10°  | 0-10°  | 0-10°  |
|                  | Dimensions              | 1460 x 392 x 94 mm   |  |  |



### ORDERING OPTIONS

Select from the different options listed below

| SELECT ELECTRICAL DOWNTILT CONTROL & AISG PROTOCOL | SELECT ACTUATOR                  | SELECT CONNECTOR TYPE | ANTENNA MODEL NUMBER |
|--|----------------------------------|-----------------------|----------------------|
| Manual Electrical Tilt (MET)                       | ---                              | 4.3-10 Female         | 6177488N             |
|  |                                  | 7/16-DIN Female       | 6177488              |
| Remote Electrical Tilt (RET)<br>AISG v2.0 / 3GPP   | Multi-Device Control Unit (MDCU) | 4.3-10 Female         | 6177488NG            |
|  |                                  | 7/16-DIN Female       | 6177488G             |



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### ELECTRICAL SPECIFICATIONS Ultra Wide Band

Y1

| Frequency Range   |                     | MHz     | 1690-2690                     |                               |                               |                               |
|---|---------------------|---------|-------------------------------|-------------------------------|-------------------------------|-------------------------------|
|   |                     | MHz     | 1690-1990                     | 1920-2200                     | 2200-2490                     | 2490-2690                     |
| Polarization  |                     | ---     | ±45°                          |                               |                               |                               |
| Gain  | At Mid Tilt         | dBi     | 17.5                          | 17.8                          | 18.1                          | 18.2                          |
|   | Over All Tilts      | dBi     | 17.4 ± 0.5                    | 17.7 ± 0.5                    | 17.9 ± 0.6                    | 17.9 ± 0.8                    |
|   | 0° Tilt             | dBi     | 17.3 ± 0.4                    | 17.7 ± 0.4                    | 17.9 ± 0.4                    | 18.2 ± 0.4                    |
|   | 5° Tilt             | dBi     | 17.5 ± 0.4                    | 17.8 ± 0.4                    | 18.1 ± 0.4                    | 18.3 ± 0.4                    |
|   | 10° Tilt            | dBi     | 17.4 ± 0.5                    | 17.7 ± 0.5                    | 17.7 ± 0.4                    | 17.6 ± 0.5                    |
| Azimuth Beamwidth   |                     | degrees | 66° ± 5°                      | 65° ± 5°                      | 66° ± 5°                      | 67° ± 7°                      |
| Elevation Beamwidth                                       |                     | degrees | 7.0° ± 0.4°                   | 6.4° ± 0.5°                   | 5.8° ± 0.3°                   | 5.4° ± 0.3°                   |
| Electrical Downtilt                                       |                     | degrees | 0°-10°                        |                               |                               |                               |
| Impedance   |                     | Ohms    | 50                            |                               |                               |                               |
| VSWR  |                     | ---     | < 1.5                         |                               |                               |                               |
| Passive Intermodulation<br>3rd Order for 2 x 20W Carriers |                     | dBc     | ≤ -153                        |                               |                               |                               |
| Front-to-Back<br>Ratio                                    | 180°                | dB      | > 30                          |                               |                               |                               |
|   | 180° ± 30°          | dB      | > 25                          |                               |                               |                               |
| Upper Sidelobe<br>Suppression                             | First USL           | dB      | 0°...5°...10°<br>18...17...15 | 0°...5°...10°<br>17...17...14 | 0°...5°...10°<br>17...17...14 | 0°...5°...10°<br>17...17...15 |
|   | Peak to 20°         | dB      | 15                            | 15                            | 15                            | 15                            |
| Cross Polar Ratio   | Main Direction (0°) | dB      | > 18                          |                               |                               |                               |
|   | Sector Edges (60°)  | dB      | > 8                           |                               |                               |                               |
| Maximum Effective Power Per Port (50° C)                  |                     | Watts   | 250 W                         |                               |                               |                               |
| Isolation between ports                                   |                     | dB      | > 28                          |                               |                               |                               |

Standard values based on NGMN-P-BASTA version 9.6 recommendation.

### ELECTRICAL SPECIFICATIONS Ultra Wide Band

Y2

| Frequency Range   |                     | MHz     | 1690-2690                     |                               |                               |                               |
|---|---------------------|---------|-------------------------------|-------------------------------|-------------------------------|-------------------------------|
|   |                     | MHz     | 1690-1990                     | 1920-2200                     | 2200-2490                     | 2490-2690                     |
| Polarization  |                     | ---     | ±45°                          |                               |                               |                               |
| Gain  | At Mid Tilt         | dBi     | 17.5                          | 17.8                          | 18.1                          | 18.2                          |
|   | Over All Tilts      | dBi     | 17.4 ± 0.5                    | 17.7 ± 0.5                    | 17.9 ± 0.6                    | 17.9 ± 0.8                    |
|   | 0° Tilt             | dBi     | 17.3 ± 0.4                    | 17.7 ± 0.4                    | 17.9 ± 0.4                    | 18.2 ± 0.4                    |
|   | 5° Tilt             | dBi     | 17.5 ± 0.4                    | 17.8 ± 0.4                    | 18.1 ± 0.4                    | 18.3 ± 0.4                    |
|   | 10° Tilt            | dBi     | 17.4 ± 0.5                    | 17.7 ± 0.5                    | 17.7 ± 0.4                    | 17.6 ± 0.5                    |
| Azimuth Beamwidth   |                     | degrees | 66° ± 5°                      | 65° ± 5°                      | 66° ± 5°                      | 67° ± 7°                      |
| Elevation Beamwidth                                       |                     | degrees | 7.0° ± 0.4°                   | 6.4° ± 0.5°                   | 5.8° ± 0.3°                   | 5.4° ± 0.3°                   |
| Electrical Downtilt                                       |                     | degrees | 0°-10°                        |                               |                               |                               |
| Impedance   |                     | Ohms    | 50                            |                               |                               |                               |
| VSWR  |                     | ---     | < 1.5                         |                               |                               |                               |
| Passive Intermodulation<br>3rd Order for 2 x 20W Carriers |                     | dBc     | ≤ -153                        |                               |                               |                               |
| Front-to-Back<br>Ratio                                    | 180°                | dB      | > 30                          |                               |                               |                               |
|   | 180° ± 30°          | dB      | > 25                          |                               |                               |                               |
| Upper Sidelobe<br>Suppression                             | First USL           | dB      | 0°...5°...10°<br>18...17...15 | 0°...5°...10°<br>17...17...14 | 0°...5°...10°<br>17...17...14 | 0°...5°...10°<br>17...17...15 |
|   | Peak to 20°         | dB      | 15                            | 15                            | 15                            | 15                            |
| Cross Polar Ratio   | Main Direction (0°) | dB      | > 18                          |                               |                               |                               |
|   | Sector Edges (60°)  | dB      | > 8                           |                               |                               |                               |
| Maximum Effective Power Per Port (50° C)                  |                     | Watts   | 250 W                         |                               |                               |                               |
| Isolation between ports                                   |                     | dB      | > 28                          |                               |                               |                               |

Standard values based on NGMN-P-BASTA version 9.6 recommendation.

Several patents pending regarding this product. Quoted performance parameters are provided to offer typical, peak or range values only and may vary as a result of normal testing, manufacturing and operational conditions. Extreme operational conditions and/or stress on structural supports is beyond our control. Such conditions may result in damage to this product. Improvements to products may be made without notice.

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### ELECTRICAL SPECIFICATIONS Ultra Wide Band

■ Y3

| Frequency Range   |                     | MHz     | 1690-2690                     |                               |                               |                               |
|---|---------------------|---------|-------------------------------|-------------------------------|-------------------------------|-------------------------------|
|   |                     | MHz     | 1690-1990                     | 1920-2200                     | 2200-2490                     | 2490-2690                     |
| Polarization  |                     | ---     | ±45°                          |                               |                               |                               |
| Gain  | At Mid Tilt         | dBi     | 17.5                          | 17.8                          | 18.1                          | 18.2                          |
|   | Over All Tilts      | dBi     | 17.4 ± 0.5                    | 17.7 ± 0.5                    | 17.9 ± 0.6                    | 17.9 ± 0.8                    |
|   | 0° Tilt             | dBi     | 17.3 ± 0.4                    | 17.7 ± 0.4                    | 17.9 ± 0.4                    | 18.2 ± 0.4                    |
|   | 5° Tilt             | dBi     | 17.5 ± 0.4                    | 17.8 ± 0.4                    | 18.1 ± 0.4                    | 18.3 ± 0.4                    |
|   | 10° Tilt            | dBi     | 17.4 ± 0.5                    | 17.7 ± 0.5                    | 17.7 ± 0.4                    | 17.6 ± 0.5                    |
| Azimuth Beamwidth   |                     | degrees | 66° ± 5°                      | 65° ± 5°                      | 66° ± 5°                      | 67° ± 7°                      |
| Elevation Beamwidth                                       |                     | degrees | 7.0° ± 0.4°                   | 6.4° ± 0.5°                   | 5.8° ± 0.3°                   | 5.4° ± 0.3°                   |
| Electrical Downtilt                                       |                     | degrees | 0°-10°                        |                               |                               |                               |
| Impedance   |                     | Ohms    | 50                            |                               |                               |                               |
| VSWR  |                     | ---     | < 1.5                         |                               |                               |                               |
| Passive Intermodulation<br>3rd Order for 2 x 20W Carriers |                     | dBc     | ≤ -153                        |                               |                               |                               |
| Front-to-Back<br>Ratio                                    | 180°                | dB      | > 30                          |                               |                               |                               |
|   | 180° ± 30°          | dB      | > 25                          |                               |                               |                               |
| Upper Sidelobe<br>Suppression                             | First USL           | dB      | 0°...5°...10°<br>18...17...15 | 0°...5°...10°<br>17...17...14 | 0°...5°...10°<br>17...17...14 | 0°...5°...10°<br>17...17...15 |
|   | Peak to 20°         | dB      | 15                            | 15                            | 15                            | 15                            |
| Cross Polar Ratio   | Main Direction (0°) | dB      | > 18                          |                               |                               |                               |
|   | Sector Edges (60°)  | dB      | > 8                           |                               |                               |                               |
| Maximum Effective Power Per Port (50° C)                  |                     | Watts   | 250 W                         |                               |                               |                               |
| Isolation between ports                                   |                     | dB      | > 28                          |                               |                               |                               |

Standard values based on NGMN-P-BASTA version 9.6 recommendation.

### RET ACTUATOR

|                               |           |  |       |           |  |
|-------------------------------|-----------|--|-------|-----------|--|
| Number of RET-READY Actuators |           | One per antenna                                      |       |           |  |
| Input Voltage                 |           | +10 to +36 V DC                                      |       |           |  |
| Power Consumption             | Idle      | < 1 W  |       |           |  |
|                               | Operating | < 10 W   |       |           |  |
| Protocol                      |           | 3GPP/AISG 2.0  |       |           |  |
| Precision                     |           | ±0.1°  |       |           |  |
| Hardware Interface            | Pin 1     | DC   | Pin 5 | RS-485A   |  |
|                               | Pin 2     | n/c  | Pin 6 | DC In/Out |  |
|                               | Pin 3     | RS-485B  | Pin 7 | DC Return |  |
|                               | Pin 4     | n/c  | Pin 8 | n/c       |  |
| RET Interface                 |           | 1 pair of AISG Male and Female, conforms to AISG 2.0 |       |           |  |

Several patents pending regarding this product. Quoted performance parameters are provided to offer typical, peak or range values only and may vary as a result of normal testing, manufacturing and operational conditions. Extreme operational conditions and/or stress on structural supports is beyond our control. Such conditions may result in damage to this product. Improvements to products may be made without notice.

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| ARRAY LAYOUT | ARRAY | FREQUENCY | CONNECTOR | CONNECTOR TYPE                             |
|--------------|-------|-----------|-----------|--|
|              | Y1    | 1690-2690 | 1-2       | 7/16-DIN Female Long Neck or 4.3-10 Female |
|              | Y2    | 1690-2690 | 3-4       | 7/16-DIN Female Long Neck or 4.3-10 Female |
|              | Y3    | 1690-2690 | 5-6       | 7/16-DIN Female Long Neck or 4.3-10 Female |

### MECHANICAL SPECIFICATIONS

|  |             |               |             |
|--|-------------|---------------|-------------|
| Length                                 | mm (in)     | 1460 (57.5)   |             |
| Width                                  | mm (in)     | 392 (15.4)    |             |
| Depth                                  | mm (in)     | 94 (3.7)      |             |
| Net Weight - Antenna Only              | kg (lbs)    | ≤ 17.5 (38.6) |             |
| Windload<br>(Wind Tunnel Coefficients) | Calculation | km/h (mph)    | 150 (93.2)  |
|  | Frontal     | N (lbf)       | 580 (130.4) |
|  | Lateral     | N (lbf)       | 140 (31.5)  |
|  | Rearside    | N (lbf)       | 605 (136.0) |
| Operational Wind Speed                 | km/h (mph)  | 150 (93.2)    |             |
| Survival Wind Speed                    | km/h (mph)  | 200 (124)     |             |
| Radome Color                           | ---         | Light Grey    |             |
| Radome Material                        | ---         | PVC           |             |
| Lightning Protection                   | ---         | DC Ground     |             |

### ENVIRONMENTAL SPECIFICATIONS

|                                  |           |                              |
|----------------------------------|-----------|------------------------------|
| Operating Temperature            | ° C (° F) | -55° to +65° (-67° to +149°) |
| Product Environmental Compliance | ---       | Product is RoHs Compliant    |

### ACCESSORIES

All accessories are ordered separately unless otherwise indicated

| ITEM   | MECHANICAL TILT |
|--|-----------------|
| Brackets for pole Ø50 to Ø115 mm (Ø2.0 to Ø4.5 in) <i>Included - delivered as standard</i> | 0-17°           |

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