

RRZZV4T4S4-6590DR7



32-port sector antenna, 4x 694-960 and 4x 1427-2690 MHz 65° HPBW, 8x 1695-2690, 8x 2300-2690 and 8x 3300-3800MHz, 90° HPBW, 7x RET

- Antenna FDD Beamforming in 1695-2690 MHz
- Soft Split Feature available
- Antenna support 4T4R configuration by using external power divider
- ZZ, V4, T4 and S4 arrays use MLOC cluster connectors

General Specifications

| | |
|----------------------------------|--|
| Antenna Type | Sector and beamforming |
| Band | Multiband |
| Calibration Connector Interface | M-LOC |
| Calibration Connector Quantity | 3 |
| Grounding Type | RF connector inner conductor and body grounded to reflector and mounting bracket |
| Performance Note | Outdoor usage |
| RF Connector Interface | 4.3-10 Female M-LOC |
| RF Connector Location | Bottom |
| RF Connector Quantity, high band | 8 |
| RF Connector Quantity, mid band | 20 |
| RF Connector Quantity, low band | 4 |
| RF Connector Quantity, total | 32 |

Remote Electrical Tilt (RET) Information

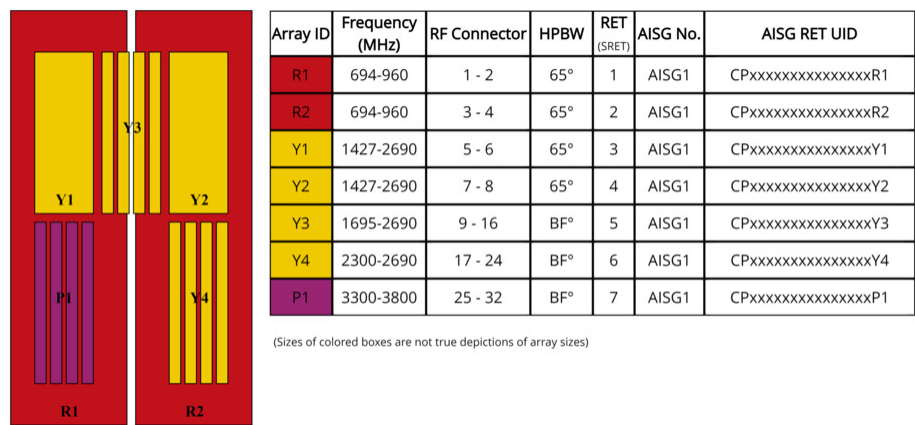
| | |
|--|---|
| RET Hardware | CommRET v2 |
| RET Interface | 8-pin DIN Female 8-pin DIN Male |
| RET Interface, quantity | 2 female 2 male |
| Input Voltage | 10–30 Vdc |
| Internal RET | High band (1) Low band (2) Mid band (4) |
| Power Consumption, active state, maximum | 8 W |
| Power Consumption, idle state, maximum | 1 W |
| Protocol | 3GPP/AISG 2.0 (Single RET) |

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Dimensions

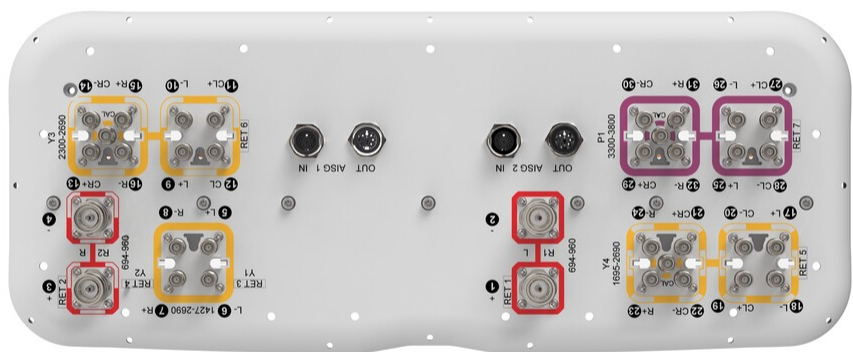
| | |
|--------------------------|----------------------|
| Width | 498 mm 19.606 in |
| Depth | 197 mm 7.756 in |
| Length | 2688 mm 105.827 in |
| Net Weight, antenna only | 54 kg 119.049 lb |

Array Layout



Port Configuration

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Electrical Specifications

| | |
|----------------------------|---|
| Impedance | 50 ohm |
| Operating Frequency Band | 1427 – 2690 MHz 1695 – 2690 MHz 2300 – 2690 MHz 3300 – 3800 MHz 694 – 960 MHz |
| Polarization | ±45° |
| Total Input Power, maximum | 900 W @ 50 °C |

Electrical Specifications

| | R1,R2 | R1,R2 | R1,R2 | Y1,Y2 | Y1,Y2 | Y1,Y2 | Y1,Y2 | Y1,Y2 |
|--------------------------------|---------|---------|---------|-----------|-----------|-----------|-----------|-----------|
| Frequency Band, MHz | 698–806 | 790–894 | 890–960 | 1427–1518 | 1695–1995 | 1920–2300 | 2300–2500 | 2490–2690 |
| RF Port | 1-4 | 1-4 | 1-4 | 5-8 | 5-8 | 5-8 | 5-8 | 5-8 |
| Gain at Mid Tilt, dBi | 15.8 | 15.9 | 15.9 | 14.2 | 16.4 | 17 | 17.8 | 18.1 |
| Beamwidth, Horizontal, degrees | 72 | 67 | 67 | 87 | 74 | 68 | 61 | 61 |
| Beamwidth, Vertical, degrees | 8.7 | 7.9 | 7.4 | 6.5 | 5.6 | 5.1 | 4.6 | 4.3 |
| Beam Tilt, degrees | 2–12 | 2–12 | 2–12 | 2–12 | 2–12 | 2–12 | 2–12 | 2–12 |
| USLS (First Lobe), dB | 20 | 18 | 16 | 15 | 20 | 19 | 20 | 20 |
| Front-to-Back Ratio at 180°, | 28 | 28 | 30 | 32 | 30 | 28 | 29 | 32 |

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| | | | | | | | | |
|---|------------|------------|------------|------------|------------|------------|------------|------------|
| dB | | | | | | | | |
| Isolation, Cross Polarization, dB | 28 | 28 | 28 | 25 | 25 | 25 | 25 | 25 |
| Isolation, Inter-band, dB | 25 | 25 | 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 | 1.5 14.0 | 1.5 14.0 |
| PIM, 3rd Order, 2 x 20 W, dBc | -150 | -150 | -150 | -150 | -150 | -150 | -150 | -150 |
| Input Power per Port at 50°C, maximum, watts | 300 | 300 | 300 | 250 | 250 | 250 | 200 | 200 |

Electrical Specifications

| | | | | | | |
|--|------------------|------------------|------------------|------------------|------------------|------------------|
| | Y3 | Y3 | Y4 | Y4 | P1 | P1 |
| Frequency Band, MHz | 1695–2200 | 2490–2690 | 2300–2500 | 2490–2690 | 3300–3600 | 3600–3800 |
| RF Port | 9-16 | 9-16 | 17-24 | 17-24 | 25-32 | 25-32 |
| Gain at Mid Tilt, dBi | 14.4 | 15.6 | 14.3 | 14.8 | 15.7 | 16.2 |
| Beamwidth, Horizontal, degrees | 104 | 80 | 100 | 93 | 83 | 70 |
| Beamwidth, Vertical, degrees | 5.9 | 4.6 | 7.4 | 7.1 | 5.6 | 5.2 |
| Beam Tilt, degrees | 2–12 | 2–12 | 2–12 | 2–12 | 2–12 | 2–12 |
| USLS (First Lobe), dB | 15 | 16 | 13 | 16 | 13 | 14 |
| Front-to-Back Ratio at 180°, dB | 32 | 30 | 32 | 32 | 28 | 30 |
| Coupling level, Amp, Antenna port to Cal port, dB | -26 | -26 | -26 | -26 | -26 | -26 |
| Coupling level, max Amp Δ, Antenna port to Cal port, dB | ±2 | ±2 | ±2 | ±2 | ±2 | ±2 |
| Coupler, max Amp Δ, Antenna port to Cal port, dB | 0.9 | 0.9 | 0.9 | 0.9 | 0.9 | 0.9 |
| Coupler, max Phase Δ, Antenna port to Cal port, degrees | 7 | 7 | 7 | 7 | 7 | 7 |
| Isolation, Cross Polarization, dB | 25 | 25 | 23 | 23 | 25 | 25 |
| Isolation, Inter-band, dB | 22 | 22 | 25 | 25 | 25 | 25 |
| Isolation, Co-polarization, dB | 20 | 20 | 18 | 18 | 20 | 20 |
| 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 | -140 | -140 | -140 | -140 | -140 | -140 |
| Input Power per Port at 50°C, maximum, watts | 150 | 150 | 150 | 150 | 75 | 75 |

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Electrical Specifications, Broadcast 65°

| Frequency Band, MHz | 2300–2500 | 2490–2690 | 3300–3600 | 3600–3800 |
|---|-----------|-----------|-----------|-----------|
| Gain, dBi | 17 | 17.5 | 17.9 | 18.1 |
| Beamwidth, Horizontal at 3 dB, degrees | 65 | 65 | 65 | 65 |
| Beamwidth, Horizontal at 10 dB, degrees | 120 | 112 | 115 | 107 |
| Beamwidth, Vertical, degrees | 7.5 | 7 | 5.6 | 5.2 |
| Front-to-Back Total Power at 180° ± 30°, dB | 28 | 28 | 24 | 25 |
| USLS (First Lobe), dB | 15 | 18 | 18 | 21 |

Electrical Specifications, Envelope Pattern

| Frequency Band, MHz | 1695–2200 | 2490–2690 | 2300–2500 | 2490–2690 | 3300–3600 | 3600–3800 |
|---|-----------|-----------|-----------|-----------|-----------|-----------|
| Gain, dBi | 19.7 | 20.9 | 19.8 | 20.4 | 20.9 | 21.4 |
| Beamwidth, Horizontal at 10 dB, degrees | 119 | 103 | 114 | 105 | 110 | 105 |
| Beamwidth, Vertical at 3 dB, degrees | 5.9 | 4.6 | 7.4 | 7 | 5.6 | 5.2 |
| Front-to-Back Total Power at 180° ± 30°, dB | 29 | 28 | 30 | 30 | 23 | 25 |
| USLS (First Lobe), dB | 17 | 19 | 15 | 18 | 19 | 20 |

Electrical Specifications, Service Beam

| Frequency Band, MHz | 1695–2200 | 2490–2690 | 2300–2500 | 2490–2690 | 3300–3600 | 3600–3800 |
|---|-----------|-----------|-----------|-----------|-----------|-----------|
| Steered 0° Gain, dBi | | | 19.8 | 20.4 | 20.9 | 21.4 |
| Steered 0° Beamwidth, Horizontal, degrees | | | 26 | 25 | 26 | 23 |
| Steered 0° Front-to-Back Total Power at 180° ± 30°, dB | | | 32 | 32 | 28 | 29 |
| Steered 0° Horizontal Sidelobe, dB | | | 13 | 12 | 13 | 13 |
| Steered 30° Gain, dBi | 19.2 | 19.9 | 19.4 | 19.8 | 19.5 | 19.6 |
| Steered 30° Beamwidth, Horizontal, degrees | 31 | 23 | 28 | 27 | 29 | 27 |
| Steered 30° Front-to-Back Total Power at 180° ± 30°, dB | 30 | 28 | 30 | 30 | 23 | 24 |
| Steered 30° Horizontal Sidelobe, dB | 10 | 9 | 10 | 10 | 10 | 8 |

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Electrical Specifications, Soft Split

| Frequency Band, MHz | 1695–2200 | 2300–2500 | 2490–2690 | 3300–3600 | 3600–3800 |
|---|-----------|-----------|-----------|-----------|-----------|
| Gain, dBi | 18.8 | 18.8 | 19.2 | 19.4 | 20 |
| Beamwidth, Horizontal, degrees | 37 | 33 | 31 | 32 | 28 |
| Front-to-Back Total Power at 180° ± 30°, dB | 31 | 30 | 30 | 24 | 25 |
| Horizontal Sidelobe, dB | 16 | 20 | 20 | 17 | 15 |

Electrical Specifications

| | Y3 | Y3 |
|---------------------------------|------------------------------------|------------------------------------|
| Frequency Band, MHz | 1695–2200 | 2490–2690 |
| RF Port | 9&11, 10&12, 13&15, 14&16 | 9&11, 10&12, 13&15, 14&16 |
| Gain at Mid Tilt, dBi | 16 | 17.4 |
| Beamwidth, Horizontal, degrees | 65 | 57 |
| Beamwidth, Vertical, degrees | 5.9 | 4.6 |
| Beam Tilt, degrees | 2–12 | 2–12 |
| USLS (First Lobe), dB | 16 | 17 |
| Front-to-Back Ratio at 180°, dB | 36 | 33 |

Mechanical Specifications

| | |
|----------------------------------|---|
| Wind Loading @ Velocity, frontal | 970.0 N @ 150 km/h (218.1 lbf @ 150 km/h) |
| Wind Loading @ Velocity, lateral | 304.0 N @ 150 km/h (68.3 lbf @ 150 km/h) |
| Wind Loading @ Velocity, maximum | 1,162.0 N @ 150 km/h (261.2 lbf @ 150 km/h) |
| Wind Loading @ Velocity, rear | 667.0 N @ 150 km/h (149.9 lbf @ 150 km/h) |
| Wind Speed, maximum | 241 km/h (150 mph) |

Packaging and Weights

| | |
|----------------|----------------------|
| Width, packed | 565 mm 22.244 in |
| Depth, packed | 318 mm 12.52 in |
| Length, packed | 2809 mm 110.591 in |
| Weight, gross | 74.1 kg 163.362 lb |

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Regulatory Compliance/Certifications

| Agency | Classification |
|---------------|--|
| ISO 9001:2015 | Designed, manufactured and/or distributed under this quality management system |
| UK-ROHS | Compliant/Exempted |

Included Products

| | | |
|-----------|---|--|
| BSAMNT-4 | – | 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-M4 | – | 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 |
|------------------|---|