

S4-90M-R1-V5



8-Port Beamforming Antenna, 3300-4200 MHz, 1x RET

- Planer array antenna - 4 columns
- Single internal RET control for all four antenna arrays
- Designed for beamforming, including calibration port
- Optimized for software defined split six sector applications
- Fits in the CommScope AEKT solution

General Specifications

| | |
|---|--|
| Antenna Type | Sector- and beamforming |
| Band | Single band |
| Calibration Connector Interface | 4.3-10 Female |
| Calibration Connector Quantity | 1 |
| Color | Light gray |
| Grounding Type | RF connector inner conductor and body grounded to reflector and mounting bracket |
| Performance Note | Outdoor usage |
| Radome Material | PVC, UV resistant |
| Reflector Material | Aluminum |
| RF Connector Interface | 4.3-10 Female |
| RF Connector Location | Bottom |
| RF Connector Quantity, high band | 8 |
| RF Connector Quantity, total | 8 |

Remote Electrical Tilt (RET) Information

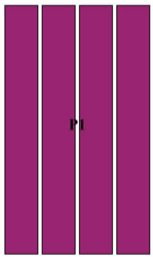
| | |
|---|-----------------------------------|
| RET Hardware | CommRET v2 |
| RET Interface | 8-pin DIN Female 8-pin DIN Male |
| RET Interface, quantity | 1 female 1 male |
| Input Voltage | 10–30 Vdc |
| Internal RET | High band (1) |
| Power Consumption, active state, maximum | 10 W |
| Power Consumption,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

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Dimensions

| | |
|---|--------------------|
| Width | 307 mm 12.087 in |
| Depth | 118 mm 4.646 in |
| Length | 850 mm 33.465 in |
| Net Weight, without mounting kit | 8.5 kg 18.739 lb |

Array Layout



| Array ID | Frequency (MHz) | RF Connector | RET (MRET) | AISG RET UID |
|----------|-----------------|--------------|------------|--------------------|
| P1 | 3300-4200 | 1 - 8 | 1 | CPxxxxxxxxxxxxMM.1 |

(Sizes of colored boxes are not true depictions of array sizes)

Port Configuration



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Electrical Specifications

| | |
|-----------------------------------|-----------------|
| Impedance | 50 ohm |
| Operating Frequency Band | 3300 – 4200 MHz |
| Polarization | ±45° |
| Total Input Power, maximum | 400 W @ 50 °C |

Electrical Specifications

| Frequency Band, MHz | 3300–3400 | 3400–3700 | 3700–4000 | 4000–4200 |
|--|------------------|------------------|------------------|------------------|
| Gain, dBi | 16 | 16.7 | 17.6 | 17 |
| Beamwidth, Horizontal, degrees | 92 | 87 | 81 | 75 |
| Beamwidth, Vertical, degrees | 6.5 | 6.1 | 5.8 | 5.5 |
| Beam Tilt, degrees | 0–10 | 0–10 | 0–10 | 0–10 |
| Front-to-Back Ratio at 180°, dB | 31 | 31 | 31 | 30 |
| Coupling level, Amp, Antenna port to Cal port, dB | 26 | 26 | 26 | 26 |
| Coupling level, max Amp Δ, Antenna port to Cal port, dB | ±2 | ±2 | ±2 | ±2 |
| Coupler, max Amp Δ, Antenna port to Cal port, dB | 0.9 | 0.9 | 0.9 | 0.9 |
| Coupler, max Phase Δ, Antenna port to Cal port, degrees | 7 | 7 | 7 | 7 |
| Isolation, Cross Polarization, dB | 25 | 25 | 25 | 25 |
| VSWR Return loss, dB | 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 |
| Input Power per Port at 50°C, maximum, watts | 75 | 75 | 75 | 75 |

Electrical Specifications, BASTA

| Frequency Band, MHz | 3300–3400 | 3400–3700 | 3700–4000 | 4000–4200 |
|---|------------------|------------------|------------------|------------------|
| Gain by all Beam Tilts, average, dBi | 15.4 | 15.9 | 16.8 | 16.4 |
| Gain by all Beam Tilts Tolerance, dB | ±1 | ±1.1 | ±1.2 | ±1 |
| Beamwidth, Horizontal Tolerance, degrees | ±21.7 | ±19.6 | ±17.1 | ±15 |
| Beamwidth, Vertical Tolerance, degrees | ±0.5 | ±0.4 | ±0.3 | ±0.3 |
| CPR at Boresight, dB | 17 | 17 | 16 | 16 |
| CPR at Sector, dB | 12 | 11 | 9 | 9 |

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Electrical Specifications, Broadcast 65°

| Frequency Band, MHz | 3300–3400 | 3400–3700 | 3700–4000 | 4000–4200 |
|---|-----------|-----------|-----------|-----------|
| Gain, dBi | 17.3 | 17.7 | 17.8 | 18 |
| Beamwidth, Vertical, degrees | 6.5 | 6.1 | 5.7 | 5.4 |
| Beamwidth, Vertical Tolerance, degrees | ±0.3 | ±0.3 | ±0.3 | ±0.2 |
| Front-to-Back Total Power at 180° ± 30°, dB | 28 | 27 | 25 | 26 |
| USLS (First Lobe), dB | 18 | 17 | 17 | 18 |

Electrical Specifications, Envelope Pattern

| Frequency Band, MHz | 3300–3400 | 3400–3700 | 3700–4000 | 4000–4200 |
|---|-----------|-----------|-----------|-----------|
| Gain, dBi | 21.1 | 21.5 | 22 | 21.6 |
| Beamwidth, Horizontal at 10 dB, degrees | 129 | 121 | 119 | 118 |
| Beamwidth, Vertical at 3 dB, degrees | 6.5 | 6.2 | 5.7 | 5.5 |
| Front-to-Back Total Power at 180° ± 30°, dB | 29 | 28 | 28 | 26 |
| USLS (First Lobe), dB | 18 | 18 | 19 | 20 |

Electrical Specifications, Service Beam

| Frequency Band, MHz | 3300–3400 | 3400–3700 | 3700–4000 | 4000–4200 |
|---|-----------|-----------|-----------|-----------|
| Steered 0° Gain, dBi | 21.1 | 21.5 | 22.3 | 21.9 |
| Steered 0° Beamwidth, Horizontal, degrees | 26 | 25 | 23 | 21 |
| Steered 0° Front-to-Back Total Power at 180° ± 30°, dB | 31 | 31 | 31 | 30 |
| Steered 30° Gain, dBi | 19.9 | 20.4 | 21.3 | 20.9 |
| Steered 30° Beamwidth, Horizontal, degrees | 30 | 29 | 26 | 23 |
| Steered 30° Front-to-Back Total Power at 180° ± 30°, dB | 30 | 29 | 29 | 28 |

Electrical Specifications, Soft Split

| Frequency Band, MHz | 3300–3400 | 3400–3700 | 3700–4000 | 4000–4200 |
|---------------------|-----------|-----------|-----------|-----------|
| Gain, dBi | 20 | 20.4 | 20.8 | 20.3 |

Mechanical Specifications

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| | |
|---|---|
| Effective Projective Area (EPA), frontal | 0.27 m ² 2.906 ft ² |
| Effective Projective Area (EPA), lateral | 0.05 m ² 0.538 ft ² |
| Wind Loading @ Velocity, frontal | 284.0 N @ 150 km/h (63.8 lbf @ 150 km/h) |
| Wind Loading @ Velocity, lateral | 56.0 N @ 150 km/h (12.6 lbf @ 150 km/h) |
| Wind Loading @ Velocity, maximum | 286.0 N @ 150 km/h (64.3 lbf @ 150 km/h) |
| Wind Loading @ Velocity, rear | 343.0 N @ 150 km/h (77.1 lbf @ 150 km/h) |
| Wind Speed, maximum | 241 km/h 149.75 mph |

Packaging and Weights

| | |
|-----------------------|---------------------|
| Width, packed | 413 mm 16.26 in |
| Depth, packed | 257 mm 10.118 in |
| Length, packed | 1035 mm 40.748 in |
| Weight, gross | 19 kg 41.888 lb |

Regulatory Compliance/Certifications

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



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 |
|-------------------------|---|