

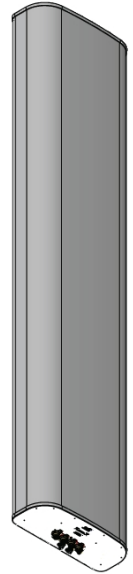
MX04FRO845-02E

NWAV™ X-Pol 4-Port Antenna

X-Pol 4-Port 8 ft, 45° Fast Roll-Off, with Smart Bias Ts, 698-894 MHz:

4 ports 698-894 MHz

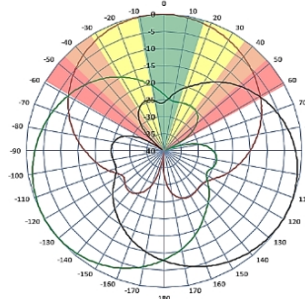
- Full low-band arrays for maximum gain
- Fast Roll Off (FRO™) azimuth beam pattern improves Intra- and Inter-cell SINR
- Enhanced pattern performance with superior cross polarization and front-to-back ratio for excellent MIMO performance
- Excellent passive intermodulation (PIM) performance reduces harmful interference.
- Fully integrated (iRETs) for low band tilt control
- FRO performance on smallest form factor, reducing leasing costs
- Suitable for 5G/LTE/CDMA/PCS/UMTS/GSM air interface technologies
- Lighter weight and lower profile radome shape optimized for superior wind loading
- Integrated Smart Bias-T reduce leasing costs



Fast Roll-Off antennas increase data throughput without compromising coverage

The horizontal beam produced by Fast Roll-Off (FRO) technology increases the Signal to Interference & Noise Ratio (SINR) by eliminating overlap between sectors.

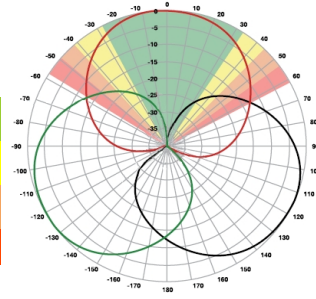
Non-FRO antenna



Large traditional antenna pattern overlap creates harmful interference.

JMA's FRO antenna pattern minimizes overlap, thereby minimizing interference.

JMA FRO antenna



| LTE throughput | SINR | Speed (bps/Hz) | Speed increase | CQI |
|----------------|-------|----------------|----------------|------|
| Excellent | >18 | >4.5 | 333+% | 8-10 |
| Good | 15-18 | 3.3-4.5 | 277% | 6-7 |
| Fair | 10-15 | 2-3.3 | 160% | 4-6 |
| Poor | <10 | <2 | 0% | 1-3 |

The LTE radio automatically selects the best throughput based on measured SINR.



| Electrical specification (minimum/maximum) | Ports 1, 2, 3, 4 | |
|-----------------------------------------------------------|------------------|------------|
| Frequency bands, MHz | 698-806 | 806-894 |
| Polarization | ± 45° | |
| Maximum gain over all tilts, dBi | 16.9 | 17.5 |
| Average gain over all tilts, dBi | 16.7 ± 0.2 | 17.3 ± 0.2 |
| Horizontal beamwidth (HBW), degrees ¹ | 46 | 44 |
| Front-to-back ratio, co-polar power @180°± 30°, dB | >25.0 | >25.0 |
| Front-to-back ratio, co-polar power @180°, dB | >37.0 | >33.0 |
| X-Pol discrimination (CPR) at boresight, dB | >25.0 | >25.0 |
| Vertical beamwidth (VBW), degrees ¹ | 9 | 8 |
| Electrical downtilt (EDT) range, degrees | 2-12 | |
| First upper side lobe (USLS) suppression, dB ¹ | ≤-15.0 | ≤-15.0 |
| Cross-polar isolation, port-to-port, dB ¹ | 25 | 25 |



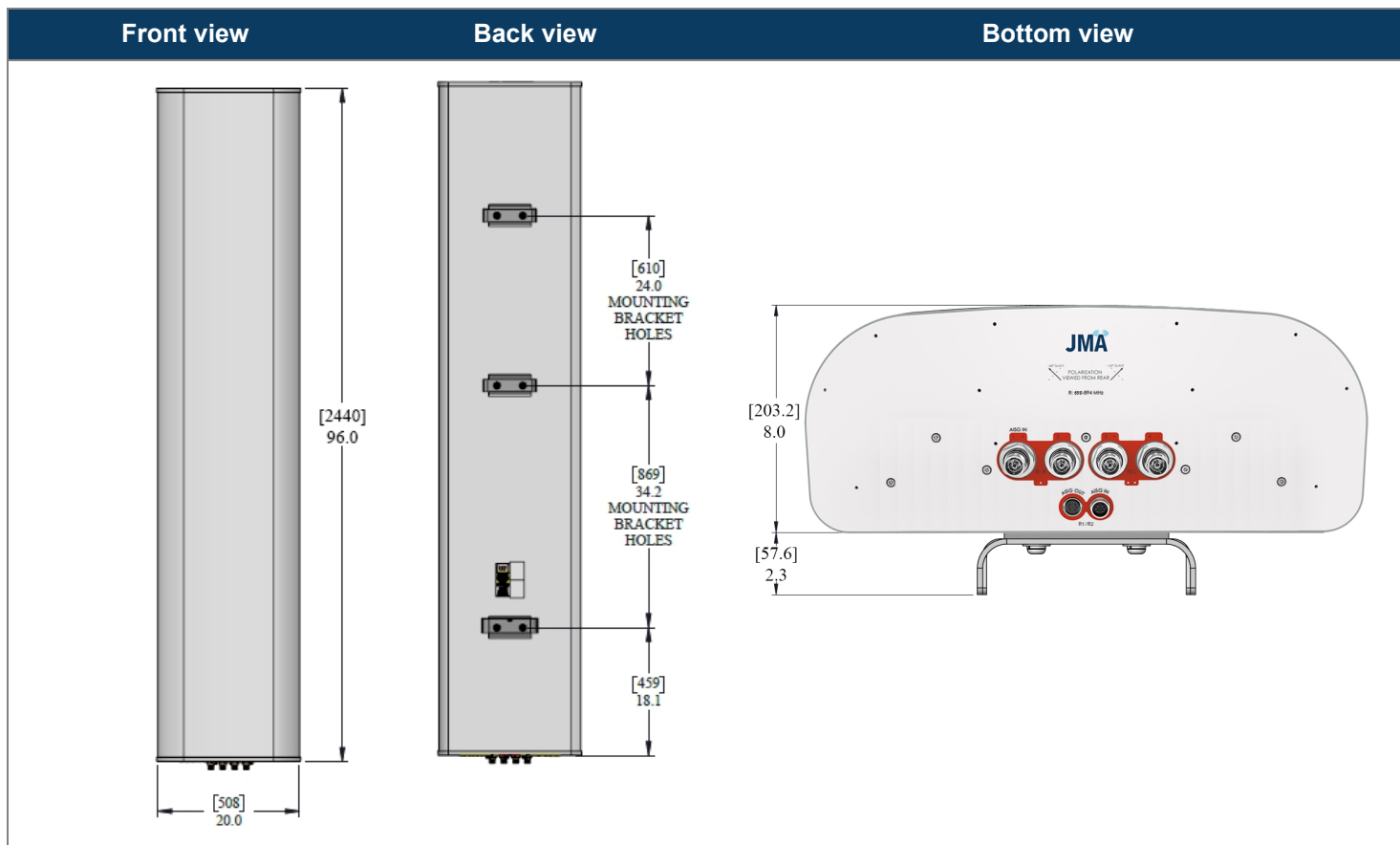
MX04FRO845-02E

NWAV™ X-Pol 4-Port Antenna

| Electrical specification (minimum/maximum) | Ports 1, 2, 3, 4 |
|-------------------------------------------------------|------------------|
| Max VSWR / return loss, dB | 1.5:1 / -14.0 |
| Max passive intermodulation (PIM), 2x20W carrier, dBc | -153 |
| Max input power per any port, watts | 300 |
| Total composite power all ports, watts | 1500 |

¹ Typical value over frequency and tilt

| Mechanical specifications | |
|--------------------------------------------------------------|-------------------------------------|
| Dimensions height/width/depth, inches (mm) | 96/ 20/ 8(2440/ 510/ 203) |
| Shipping dimensions length/width/height, inches (mm) | 100.6/ 23.8/ 14.5(2555/ 605/ 368) |
| No. of RF input ports, connector type, and location | 4 x 4.3-10 female, bottom |
| RF connector torque | 96 lbf-in (10.85 N·m or 8 lbf-ft) |
| Net antenna weight, lb (kg) | 48 (21.8) |
| Shipping weight, lb (kg) | 90 (40.8) |
| Antenna mounting and downtilt kit included with antenna | 91900318, 91900319 (middle bracket) |
| Net weight of the mounting and downtilt kit, lb (kg) | 26 (11.82) |
| Range of mechanical up/down tilt | -2° to 12° |
| Rated wind survival speed, mph (km/h) | 150 (241) |
| Frontal and lateral wind loading @ 150 km/h, lbf (N) | 172.3 (766.4), 79.8 (355.0) |
| EPA frontal and lateral, ft ² , (m ²) | 7.7 (0.72), 3.6 (0.33) |



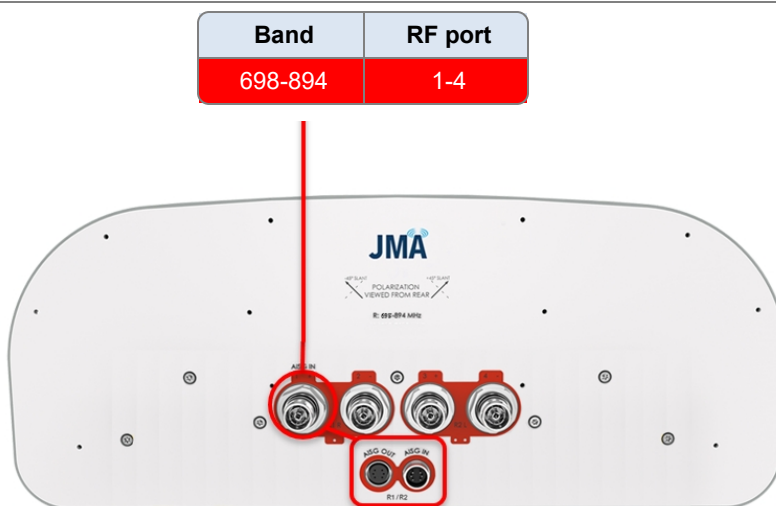
| Ordering information | |
|-----------------------------------------|----------------------------------------------------------------|
| Antenna model | Description |
| MX04FRO845-02E | 8F X- Pol 4 PORT FRO 45° 2-12°, 4.3-10 & SBT |
| Optional accessories | |
| AISG cables | M/F cables for AISG connections |
| PCU-1000 RET controller | Stand-alone controller for RET control and configurations |
| 91900314-03 | Dual Mount Bracket (see 91900314 bracket document for details) |

Remote electrical tilt (RET 1000) information

| | |
|-----------------------------------------------------------|------------------------------------------------------------|
| RET location | Integrated into antenna |
| RET interface connector type | 8-pin AISG connector per IEC 60130-9 or RF port bias-t |
| RET connector torque | Min 0.5 N·m to max 1.0 N·m (hand pressure & finger tight) |
| RET interface connector quantity | 1 pair of AISG male/female connectors and 1 RF port Bias T |
| RET interface connector location | Bottom of the antenna |
| Total no. of internal RETs 698-894 MHz | 1 |
| RET input operating voltage, vdc | 10-30 |
| RET max power consumption, idle state, W | ≤ 2.0 |
| RET max power consumption, normal operating conditions, W | ≤ 13.0 |
| RET communication protocol | AISG 2.0 / 3GPP |

RET and RF connector topology

Each RET device can be controlled either via the designated external AISG connector or RF smart bias-t port as shown below:



Array topology

2 sets of radiating arrays

R1: 698-894 MHz
R2: 698-894 MHz

| Band | RF port |
|---------|---------|
| 698-894 | 1-4 |

