



MX06FRO660-02E

NWAV™ X-Pol Hex-Port Antenna

X-Pol Hex-Port 6 ft 60° Fast Roll Off:

2 ports 698-894 MHz and 4 ports 1695-2200 MHz

- 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) with independent RET control for low and high bands for ease of network optimization
- 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-Ts reduce leasing costs



NWAV™

Fast Roll-Off antennas increase data throughput without compromising coverage

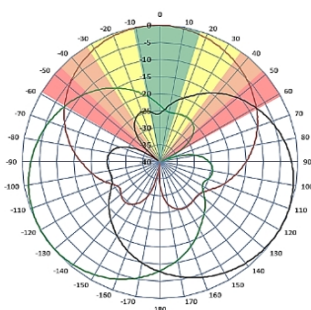
The horizontal beam produced by Fast Roll-Off (FRO) technology increases the Signal to Interference & Noise Ratio (SINR) by eliminating overlap between sectors.

Non-FRO antenna

Large traditional antenna pattern overlap creates harmful interference.

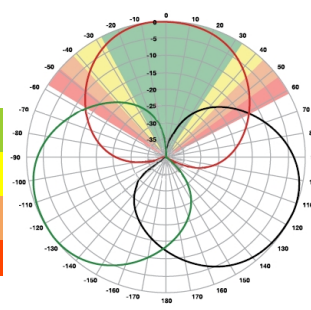
JMA's FRO antenna pattern minimizes overlap, thereby minimizing interference.

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		Ports 3, 4, 5, 6		
Frequency bands, MHz	698-806	806-894	1695-1880	1850-1990	1920-2200
Polarization	± 45°		± 45°		
Maximum gain over all tilts, dBi	15.0	15.1	18.3	18.5	18.7
Average gain over all tilts, dBi	14.8 ± 0.2	14.9 ± 0.2	18.1 ± 0.2	18.3 ± 0.2	18.5 ± 0.2
Horizontal beamwidth (HBW), degrees	61	57	62	60	60
Front-to-back ratio, co-polar power @180°± 30°, dB	>27	>28	>30	>32	>30
X-Pol discrimination (CPR) at boresight, dB	>18	>18	>20	>20	>18
Sector power ratio, percent	<4.0	<3.5	<3.7	<3.8	<3.6
Vertical beamwidth (VBW), degrees ¹	13.5	12.0	5.8	5.5	5.5
Electrical downtilt (EDT) range, degrees	0-14		0-9		
First upper side lobe (USLS) suppression, dB ¹	≤-16.0	≤-16.0	≤-18.0	≤-16.0	≤-16.0
Cross-polar isolation, port-to-port, dB ¹	25	25	25	25	25
Max VSWR / return loss, dB	1.5:1 / -14.0		1.5:1 / -14.0		



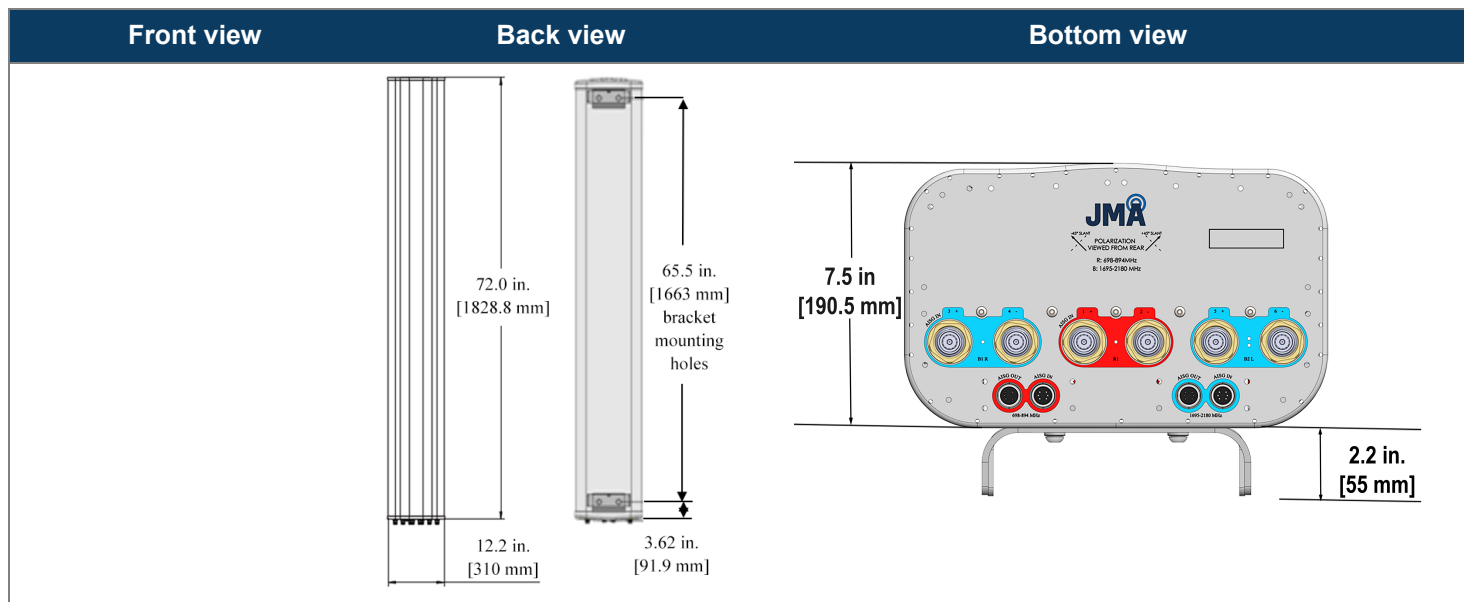
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NWAV™ X-Pol Hex-Port Antenna

Electrical specification (minimum/maximum)	Ports 1, 2	Ports 3, 4, 5, 6
Max passive intermodulation (PIM), 2x20W carrier, dBc	-153	-153
Max input power per any port, watts	300	250
Total composite power all ports, watts	1500	

¹ Typical value over frequency and tilt

Mechanical specifications	
Dimensions height/width/depth, inches (mm)	72/ 12.2/ 7.5 (1828.8/ 310/ 191)
Shipping dimensions length/width/height, inches (mm)	76/ 20/ 15 (1930/ 508/ 381)
No. of RF input ports, connector type, and location	6 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)	40 (18.1)
Shipping weight, lb (kg)	86 (39.0)
Antenna mounting and downtilt kit included with antenna	91900318
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)	66.9 (297.6), 60 (266.9)
Equivalent flat plate @ 100 mph and Cd=2, sq ft	1.41
EPA frontal and lateral, ft ² , (m ²)	2.0 (0.28), 3.6 (0.33)



Ordering information	
Antenna model	Description
MX06FRO660-02E	6F X-Pol HEX FRO 60°, 0-14° / 0-9° RET, 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
91900314-02	Dual Mount Bracket (see 91900314 bracket document for details)

Remote electrical tilt (RET 1000) information

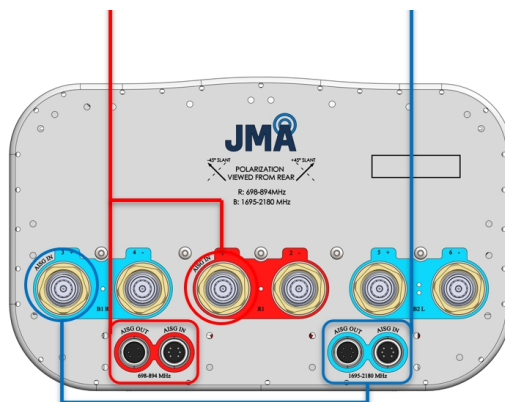
RET location	Integrated into antenna
RET interface connector type	8-pin AISG connector per IEC 60130-9
RET connector torque	Min 0.5 N·m to max 1.0 N·m (hand pressure & finger tight)
RET interface connector quantity	2 pairs of AISG male/female connectors
RET interface connector location	Bottom of the antenna
Total no. of internal RETs (low bands)	1
Total no. of internal RETs (high bands)	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 port as shown below:

RET device	Band	RF port
R1	698-894	1-2

RET device	Band	RF port
B1/B2	1695-2200	3-6



Array topology

3 sets of radiating arrays

R1: 698-894 MHz
B1: 1695-2200 MHz
B2: 1695-2200 MHz

Band	RF port
1695-2200	3-4
698-894	1-2
1695-2200	5-6

