

### X-Pol 8-Port 4 ft 65° Fast Roll Off:

#### 4 ports 617-894 MHz and 4 ports 1695-2200 MHz

- Fast Roll Off (FRO™) azimuth beam pattern improves Intra- and Inter-cell SINR
- Excellent passive intermodulation (PIM) performance reduces harmful interference.
- Fully integrated (iRETs) with independent RET control for low and mid bands for ease of network optimization
- SON-Ready array spacing supports beamforming capabilities.
- High total power handling to maximize network efficiency
- Reduced tower loading for ease of site deployment

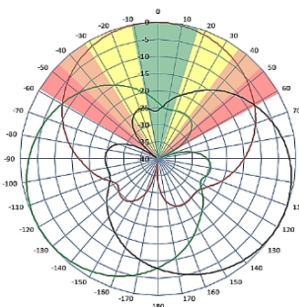


**NWAV™**

#### 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.

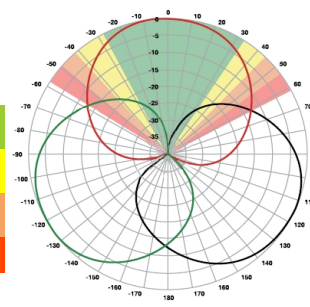
##### Non-FRO antenna



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, 3, 4		Ports 5, 6, 7, 8		
	Frequency bands, MHz	617-698	698-894	1695-1880	1850-1990
Polarization	± 45°		± 45°		
Gain over all tilts, max, dBi	11.8	13.1	16.5	17.0	17.2
Horizontal beamwidth (HBW), degrees <sup>1</sup>	68	62	64	61	62
Front-to-back ratio, co-polar power @180°± 30°, dB	>27	>29	>32	>35	>32
Vertical beamwidth (VBW), degrees <sup>1</sup>	19.5	16.5	8.0	7.5	6.9
Electrical downtilt (EDT) range, degrees	2-16		2-12		
First upper side lobe (USLS) suppression, dB <sup>1</sup>	≤-16.0	≤-16.5	≤-18.0	≤-18.0	≤-18.0
Minimum cross-polar isolation, port-to-port, dB <sup>1</sup>	25	25	25	25	25
Max VSWR / return loss, dB	1.5:1 / -14.0		1.5:1 / -14.0		
Max passive intermodulation (PIM), 2x20W carrier, dBc	-153		-153		
Max input power per any port, watts	300		250		
Total composite power all ports (1-8), watts <sup>2</sup>	1500				

<sup>1</sup> Typical value over frequency and tilt

<sup>2</sup> Power rated up to +55 °C



# MX08FRO465-20

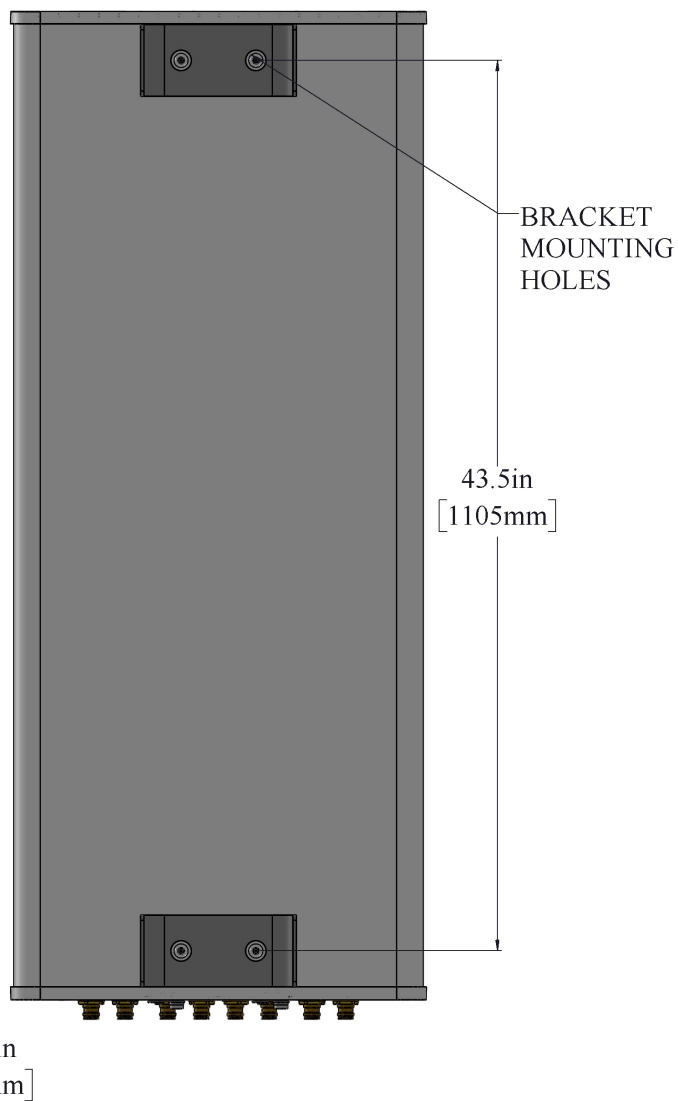
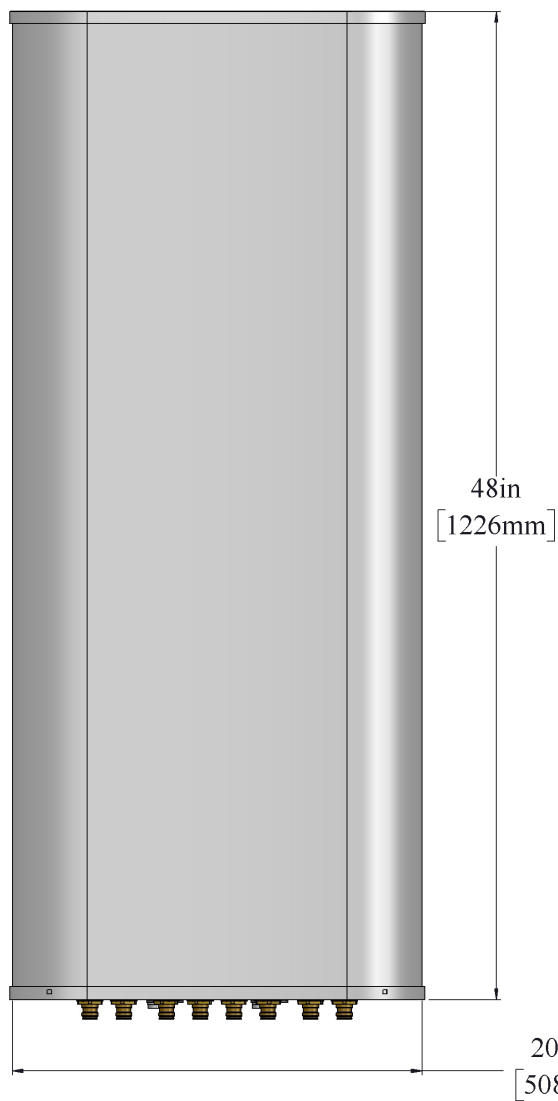
## NWAV™ X-Pol 8-Port Antenna

Electrical specification (minimum/maximum)	Ports 1, 2, 3, 4		Ports 5, 6, 7, 8		
Frequency bands, MHz	617-698	698-894	1695-1880	1850-1990	1920-2200
Average gain over all tilts, dBi (Gain Tolerance)	11.3±0.5	13.2±0.5	16.1±0.4	16.6±0.4	16.8±0.5
Horizontal beamwidth tolerance (HBW), degrees <sup>1</sup>	±5	±6.5	±5.5	±3.5	±5.0
Vertical beamwidth tolerance (VBW), degrees	±0.3	±0.3	±0.3	±0.3	±0.3
Front-to-back ratio, co-polar power @180°± 30°, dB	>27	>25	>25	>26	>24
X-Pol discrimination (CPR) at boresight, dB	>20	>19.5	>17.5	>19	>19.5
First upper side lobe (USLS) suppression boresight to 20°, dB <sup>1</sup>	≤-16	≤-15	≤-16	≤-16	≤-16

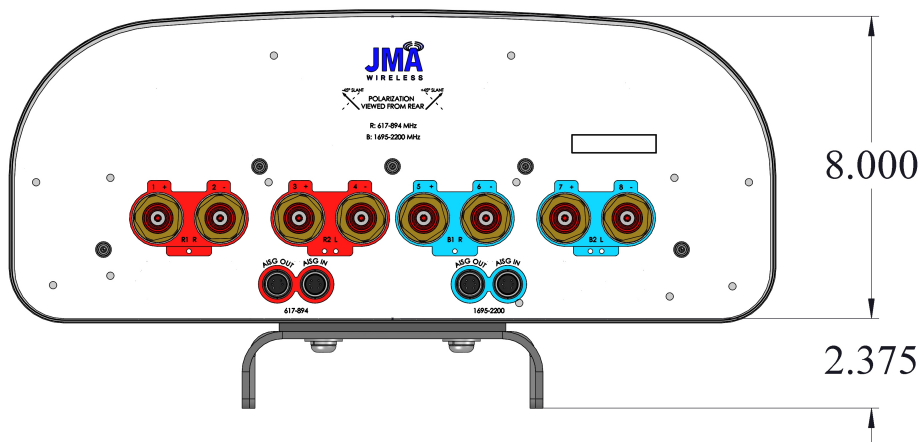
Mechanical specifications	
Dimensions height/width/depth, inches (mm)	48/ 20.0/ 8.0 (1219/ 508.0/ 203.2)
Shipping dimensions length/width/height, inches (mm)	53.3/ 23.8/ 14.5 (1353.8/ 605/ 368)
No. of RF input ports, connector type, and location	8 x 4.3-10 female, bottom
RF connector torque	96 lbf-in (10.85 N·m or 8 lbf-ft)
Net antenna weight, lb (kg)	51.3 (23.27)
Shipping weight, lb (kg)	89.3 (40.5)
Antenna mounting and downtilt kit included with antenna	91900318
Net weight of the mounting and downtilt kit, lb (kg)	18 (8.2)
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)	88 (391.44), 40 (177.93)
Effective projected area @ 150 km/h (EPA), frontal, sq ft	3.9

Front view

Back view



Bottom view

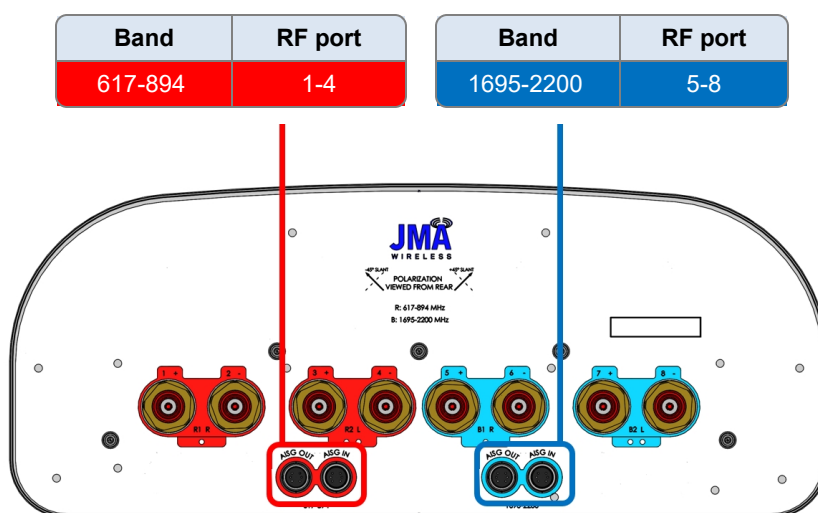


### Remote electrical tilt (RET 1000) information

<b>RET location</b>	Integrated into antenna
<b>RET interface connector type</b>	8-pin AISG connector per IEC 60130-9
<b>RET connector torque</b>	Min 0.5 N·m to max 1.0 N·m (hand pressure & finger tight)
<b>RET interface connector quantity</b>	2 pairs of AISG male/female connectors
<b>RET interface connector location</b>	Bottom of the antenna
<b>Total no. of internal RETs 617-894 MHz</b>	1
<b>Total no. of internal RETs 1695-2200 MHz</b>	1
<b>RET input operating voltage, vdc</b>	10-30
<b>RET max power consumption, idle state, W</b>	≤ 2.0
<b>RET max power consumption, normal operating conditions, W</b>	≤ 10.0
<b>RET communication protocol</b>	Hardware AISG 3.0; firmware AISG 2.0, field-upgradable to AISG 3.0

### RET and RF connector topology

Each RET device can be controlled via the designated external AISG connector as shown below:



### Array topology

4 sets of radiating arrays

- R1: 617-894 MHz
- R2: 617-894 MHz
- B1: 1695-2200 MHz
- B2: 1695-2200 MHz

Band	RF port
617-894	1-2
617-894	3-4
1695-2200	5-6
1695-2200	7-8

