CX16OMI218-1P

NWAV™ X-Pol Antenna

16-port 2 ft 180° cylinder antenna with RET-controlled HB from 1695–2700 MHz:

4 ports 698-960 MHz, 4 ports 1695-2690 MHz, 4 ports 3550-3700 MHz, and 4 ports 5150-5925 MHz

- X-Pol, Small Cell, multi-port antenna
- Suitable for pole or building mount
- 4x4 MIMO for all bands
- Internal beam combining
- Dependent RET control for PCS/AWS ports
- Beam configuration: Omni Peanut
- Cost-effective solution for neutral host locations



nWAV

Electrical specification (min/max)	Ports 1, 2, 3, 4		Ports 5, 6, 7, 8				
Frequency bands, MHz	698-798	824-894	1695-1880	1850-1990	1920-2180	2300-2400	2496-2690
Polarization	± 45°		± 45°				
Average gain over all tilts, dBi	3.6	3.8	9.3	9.5	10.2	10.4	10.2
Horizontal beamwidth (HBW), degrees[1]	180°		180°				
Vertical beamwidth (VBW), degrees[1]	80°	72°	15.4°	14.4°	13.5°	12.0°	11.0°
Electrical downtilt (EDT) range, degrees	0°		2-8° (RET)				
Cross-polar isolation, port-to-port, dB[1]	25	25	25	25	25	25	25
Max VSWR / return loss, dB	1.5:1 / -14.0		1.5:1 / -14.0				
Max PIM, 3rd order 2x20W carrier, dBc	-153		-153				
Maximum input power per port, watts	250		125				
Maximum composite power, watts	900						

Electrical specification (min/max)	Ports 9, 10, 11, 12	Ports 13, 14, 15, 16
Frequency bands, MHz	3550-3700	5150-5925
Polarization	± 45°	± 45°
Average gain, dBi	5.3	5.5
Horizontal beamwidth (HBW), degrees[1]	180°	180°
Vertical beamwidth (VBW), degrees[1]	28°	22°
Fixed electrical downtilt (EDT), degrees	0°	
Cross-polar isolation, port-to-port, dB[1]	25	25
Max VSWR / return loss, dB	1.5:1 / -14.0	1.5:1 / -14.0
Max PIM, 3rd order 2x20W carrier, dBc	N/A	
Maximum input power per port, watts	50	10

[1] Typical value over frequency and tilt.

Note: To comply with FCC Title 47 Part 15 U-NII 1, the vertical beam upper side lobe at 5150-5250 MHz < -12 dB at > 30° above horizon

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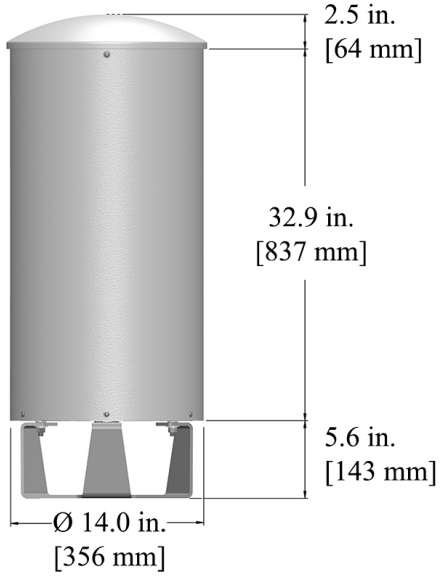
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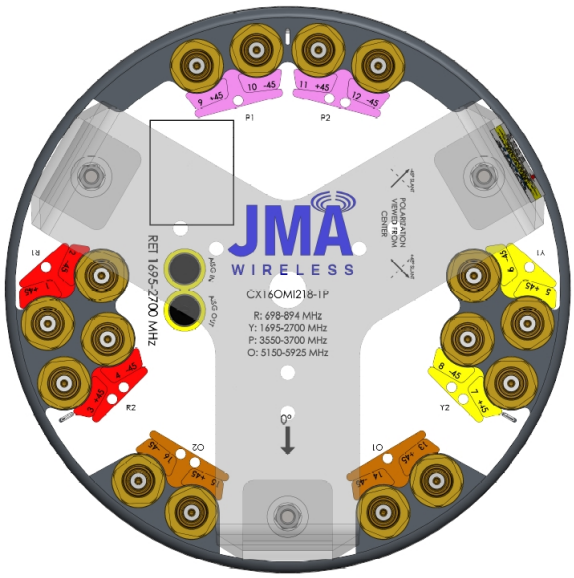
Mechanical specifications	
Dimensions height/diameter, inches (mm)	35.4/ 14 (899.2/ 355)
Antenna volume (cubic feet)	2.98
No. of RF input ports, connector type, and location	16 x 4.3-10 female, bottom
RF connector torque	96 lbf·in (10.85 N·m or 8 lbf·ft)
Net antenna weight, lb (kg)	35 (15.9)
Rated wind survival speed, mph (km/h)	150 (241)
Frontal wind loading @ 160 km/h, lbf (N)	58.7 (261.2)
Equivalent flat plate @ 100 mph and Cd=2, sq ft	1.17

Front view



End view

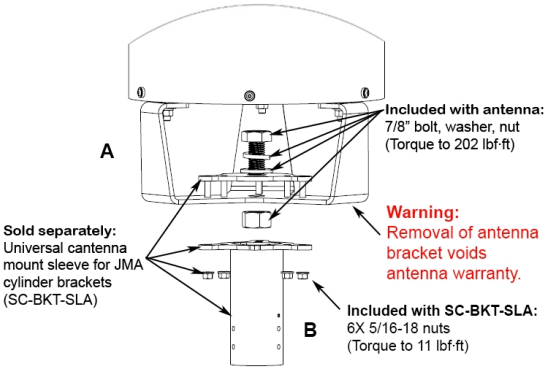
The 0 degree reference arrow corresponds to the 0 degree position in the antenna pattern file. Each antenna pattern file uses a top down orientation view (the patterns are viewed from the top of the antenna looking down).



Notes on cylinder brackets

- All CX* antennas come with the bottom mount bracket (marked as **A**) factory-installed (all factory testing is done with bracket attached)
- Hardware is included with each antenna to connect bottom bracket to different mounting systems.
- JMA cylinder brackets are compatible with bottom mount via universal cantenna mount sleeve (marked as **B**), sold separately.
- To mitigate potential risk of PIM issues, the recommended torque values need to be applied.

Mounting details



Small Cell solutions and mounting systems (sold separately)			
Side Arm Mounting System	SC-BKT-SA-(color)	Wide Diameter Pole	SC-BKT-WTPE-(color)
Steel Pole Mounting System	SC-BKT-SLA (color)		

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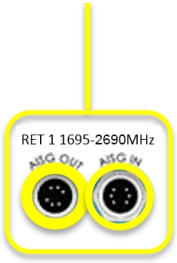
Ordering information	
Antenna model	**Description**
CX16OMI218-1P	2F X-Pol 16-port OMNI 180°, 1695-2690 MHz 2-8° RET, 4.3-10
Optional accessories	
AISG cables	M/F cables for AISG connections
PCU-1000 RET controller	Stand-alone controller for RET control and configurations

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 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 topology

A single RET device controls all 3 sectors via the designated external AISG connector as shown below:

RET device	Band	RF port
1	1695-2690	5-8

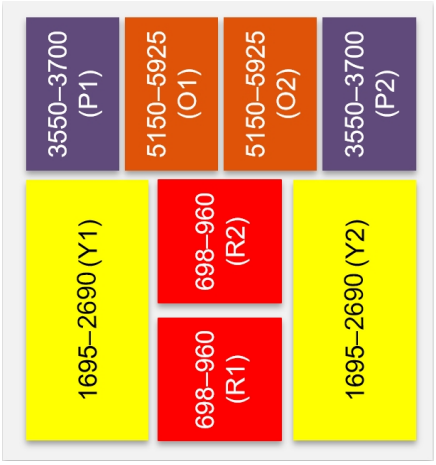


Array topology

8 sets of radiating arrays

R1: 698-960 MHz
R2: 698-960 MHz
Y1: 1695-2690 MHz
Y2: 1695-2690 MHz
P1: 3550-3700 MHz
P2: 3550-3700 MHz
O1: 5150-5925 MHz
O2: 5150-5925 MHz

Band	RF port
698-960	1-2
698-960	3-4
1695-2690	5-6
1695-2690	7-8
3550-3700	9-10
3550-3700	11-12
5150-5925	13-14
5150-5925	15-16

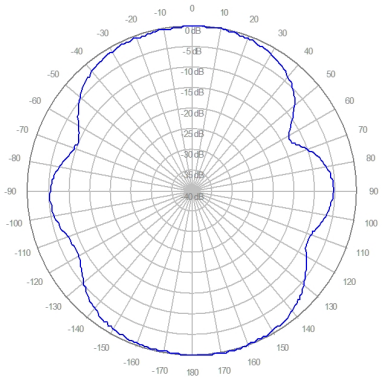
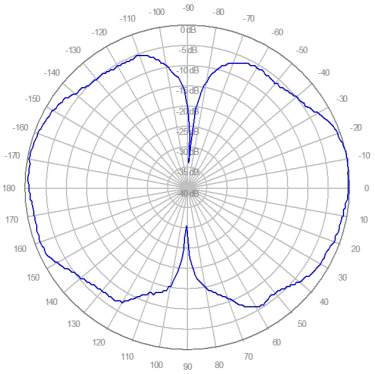
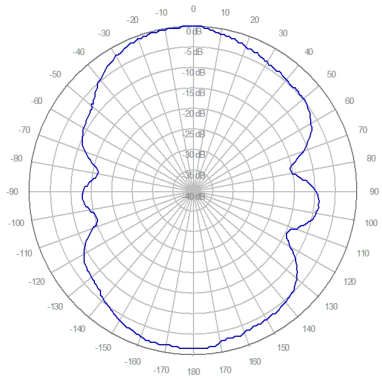
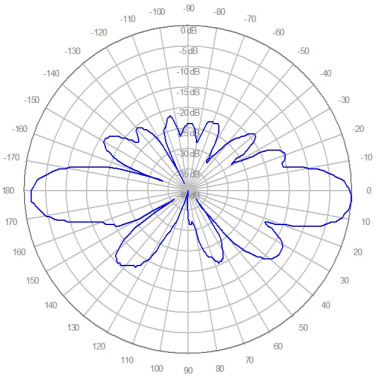
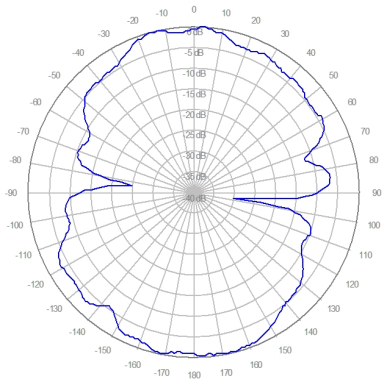
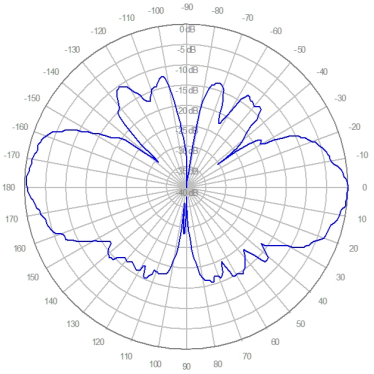
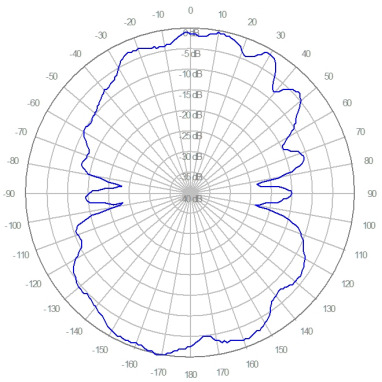
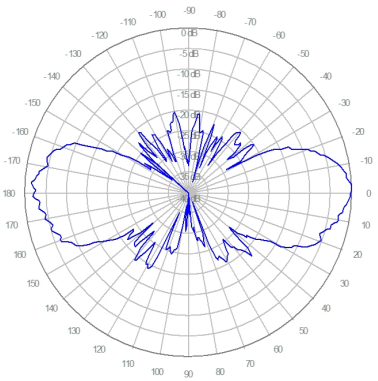


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Polar patterns

	Horizontal	Vertical
698-894 MHz		
1695-2690 MHz		
3550-3700 MHz		
5150-5925 MHz		

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Specifications

The following table outlines the main specifications of RF4461d-13A.

Table 2. Specifications of RF4461d-13A

Item		RF4461d-13A
Air Technology		LTE, 5G
Band / Duplex		B13, n13, B5, n5 / FDD
OFR		• Band 13: DL 746 - 756 MHz, UL 777 - 787 MHz • Band 5: DL 869 - 894 MHz, UL 824 - 849 MHz
IBW		• Band 13: 10 MHz • Band 5: 25 MHz
OBW		• Band 13: 10 MHz • Band 5: 25 MHz
Carrier configuration	Ch. BW	[HW readiness] • Band13: LTE 5/10 MHz • Band5: LTE 5/10 MHz, NR 5/10/15/20 MH, DSS 10 MHz [23A] • Band13: LTE 5/10 MHz • Band5: LTE 5/10 MHz, NR 5/10/15 MH, DSS 10 MHz
	# of carriers per band	[HW readiness] • Band 13: Max 2CC • Band 5: LTE Max 3CC or NR/DSS Max 2CC [SVR23A] • Same as above
	# of carriers (per unit)	Max 5CC
	NB-IoT	[HW readiness] • Band13: 2GB+2IB or 4IB • Band5: 2SA+2GB or 2GB+2IB or 4GB [SVR23A] • Band13, NB-IoT (2GB or 1GB+1IB or 2IB) @10M, 1IB@ 5M • Band5, Not support
TRX path configuration		[HW readiness] • 4T4R, 2T4R, 2T2R x 1 Sector • 2T2R x 2 Sector • 1T2R x 1 Sector per Band (Option 8, LTE only) [SVR23A] • Same as above
Conductive power		Max 320 W / Unit • Band13: Max 160 W (60 W / Path for 2T, 40 W/ Path for 4T) • Band5: Max 160 W (60 W / Path for 2T, 40 W/ Path for 4T)
EVM		3.5% (256 QAM)
Modulation		256QAM support, (1024QAM with 1~2dB power back-off)
Ref. sensitivity		Typical : -104.5dBm @1Rx (25RBs 5MHz, room temp)
Unwanted	3GPP	3GPP 36.104 Cat.A

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Item		RF4461d-13A
emission	Local regulation	• B13: FCC 47 CFR 27.53 c), f) • B5: FCC 47 CFR 22.917
	Operator's request	• (851~861.5MHz) -69dBm /30kHz per path • (896 ~901MHz) -69 dBm/100 kHz per path
Function Split		• DL/UL Option 7-2x Cat.A • DL/UL Option 8
Compression		Not support
Optic Interface		20km, 10Gbps x 2 port , Duplex (Option: Bi-di)
Input voltage		DC -48 V (-38 V to -57 V DC)
Power Consumption [a)]		• 650 W @ 40 % data load, room temp • 1,165 W @ 100 % data load, room temp • 1,230 W @ 100 % data load, all temp
Volume / Dimension (W x H x D)		• 37.5 L/380 × 380 × 260 mm (14.96 x 14.96 x10.24 inch) • Excluding connector, partial extrusion, flange
Weight		35.9 kg (79.15 lb) or less (excluding bracket)
Operating Temperature [b)]		-40 to +55 °C (-40 to +131 °F) (without solar load)
Cooling scheme		Natural convection
Installation		Pole, wall, tower, side-by-side, back to back
Misc. Feature		Spectrum analyzer (TX / RX), PIM detection and cancellation
Operating Humidity [b)]		5% to 100% Condensing, not to exceed 30g/m3 absolute humidity
Altitude		Telcordia GR-63-CORE, Issue 5, Section 4.1.3
Noise		Telcordia GR-487-CORE, Issue 5, Section 3.34 (45 dBA)
Ingress Protection Rating		IEC 60529 (IP65)
Salt Fog / Salt Spray		Telcordia GR-487-CORE, Issue 5, Section 3.38.1
Wind Resistance		Telcordia GR-487-CORE Issue5, Section 3.36
Earthquake		Telcordia Earthquake Risk Zone4+ (Telcordia GR-63-CORE)
Vibration		Telcordia GR-63-CORE, Issue 5, Section 4.4.4 / 4.4.5
EMC		FCC Title 47 CFR Part 15
Safety		UL 62368-1, 2nd Edition
RF		FCC Title 47 CFR Part 2, 22, 24, 27

[a)] These values can be changed by +/- 5% according to product variations.

[b)] Temperature and humidity are measured at 1.5 m above the floor and at 400 mm away from the front panel of the equipment

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