STATE OF CONNECTICUT
CONNECTICUT SITING COUNCIL

IN RE:	:	
	:	
MCM HOLDINGS, LLC APPLICATION FOR A CERTIFICATE OF ENVIRONMENTAL COMPATIBILITY AND PUBLIC NEED FOR THE CONSTRUCTION, MAINTENANCE AND OPERATION OF A TELECOMMUNICATIONS FACILITY LOCATED AT THE BOY SCOUTS OF AMERICA CAMP HOYT, 288 SIMPAUG TURNPIKE (PARCEL NO. 12-29), REDDING, CONNECTICUT	:	DOCKET NO. 517
	:	NOVEMBER 20, 2023

RESPONSES OF CELLCO PARTNERSHIP D/B/A VERIZON WIRELESS TO
INTERROGATORIES FROM INTERVENOR DOTTIE DELUCA

On November 8, 2023, the Intervenor, Dottie DeLuca issued Interrogatories to Cellco Partnership d/b/a Verizon Wireless ("Cellco"), relating to Docket No. 517. Below are Cellco's responses.

Question No. 1

Please provide substantial proof that the need for service is greater than any environmental effects.

I have lived in West Redding for 12 years and have had zero issues with my service. Please provide proof of dropped 911 calls or any Towns emergency services which provide adequate safety to its residents versus the hazards associated with an invasive a 150' monopole with 9 panels for antennas and 9 remote radio heads emitting powerful electromagnetic frequencies that could affect the wildlife and children in this pristine 174-acre wildlife and educational preserve? If only "a preliminary study has been done on threatened or endangered species" when will a complete and conclusive study be done on all native species? And will it be provided to us well before the hearing? Also please provide data on how this will not be an

"attractive nuisance" for boy scouts to climb creating an undue burden on our emergency resources and Town liability?

Response

Cellco stands by the information, representations, and evidence in the Docket No. 517 Application in support of its position that there is a substantial need for improved wireless service in northwest Redding and supports the evidence provided by MCM and its team that the proposed facility will not have a substantial adverse environmental effect.

Question No. 2

There are 44 Towers and 79 Antennas within a 3-mile radius of 288 Simpaug Turnpike according to Antenna.search.com. Section 2 of the application site search summary states: "both MCM and Verizon seek to avoid the unnecessary proliferation of towers and to reduce the potential adverse environmental effects of a needed facility." Please provide data how you have "avoided" said proliferation of towers and reduced the environmental effects if MCM and Verizon is in fact adding yet another cell tower facility to an already crowded 3-mile radius?

If there is truly a "lack of coverage" as claimed then why would my Broadband RF Meter clearly show connecting service to 8 antennas? Four of which are Verizon Wireless?

Response

Cellco stands by the information, representations, and evidence in the Docket No. 517 Application in support of its position that there is a substantial need for improved wireless service in northwest Redding and that this need cannot be satisfied by any existing facility in the area. As shown on the "Existing Verizon Wireless 700 MHz Coverage" plot provided in Attachment 1 of the Application, Cellco does provide some 700 MHz service in northwest Redding today. However, significant gaps in Cellco's 700 MHz service still exist in the area and

along significant portion of Route 53 to the east of the proposed site. Also as illustrated on the coverage plots, Cellco's wireless service in its 850 MHz; 1900 MHz, 2100 MHz and 5G frequencies is virtually non-existent in northwest Redding.

Question No. 3

Please list all "community preferences" that were taken into consideration for your site choice as referred to in your application. Please provide evidence on how your 4-mile search claims to not be able to find a "suitable location". Section 16-50. Define "Suitable"?

If "community preferences" were actually taken as stated then it would be recommended to apply for a more "suitable" location such as the Francis J Industrial Park or the West Redding Firehouse. These locations are within the required coverage gap radius and would serve the supposed" need".

Response

Response to be provided by MCM.

Question No. 4

Please explain in detailed layman's terms the specific reason why an alternative site was rejected?

Response

Cellco objects as the question is vague and does not specifically identify which alternative site is being referenced. Notwithstanding its objection, Cellco directs the Intervenor to its response to Question No. 5 below.

Question No. 5

Please provide a detailed explanation of what "RF rejected" means for locations at:

306 Umpawaug Rd
4 Dittmar Rd

36 Sugar Hollow Rd
66 Sugar Hollow Rd
and all other rejected locations.

Response

The term "RF Rejected" in a Site Search Summary means that, after evaluation, a ground location, or a specific tower site or non-tower structure, if used by Cellco, would not satisfy its wireless service objectives in a particular area. Details regarding Cellco's rejection of 306 Umpawaug Road, 4 Dittmar Road, and 66 Sugar Hollow Road are addressed in Cellco's responses to Questions Nos. 2 and 3 of the Council's interrogatories dated November 1, 2023. Similar to its response regarding 66 Sugar Hollow Road, the parcel identified as 36 Sugar Hollow Road is located too far to the north and west of the target area to satisfy Cellco's need for service to the east along Route 53.

Question No. 6

If the "supposed" coverage gap exists on Route 53 and in Southwestern Bethel and Southern Danbury, why was the only spot deemed "suitable" not in those locations? Why was the specific half mile radius limited to Long Ridge Rd and Simpaug Turnpike and determined to be the only "suitable "location?

Response

Cellco was not presented with any alternative sites in Bethel or Danbury primarily because the center of its established "Search Ring" was located at the corner of Simpaug Turnpike and Long Ridge Road. (*See* Cellco's response to Council interrogatory No. 1).

Question No. 7

If the lease with the Scout Council of America was signed in 2014 was the Town of Redding notified and why was the coverage map done after the fact in 2016?

Response

Response to be provided by MCM.

Question No. 8

If a tree inventory was done in December 2022 why wasn't a balloon flow over the site then when there were no leaves? Why was it done in June when there was full foliage? Will there be a balloon run now? Can you please provide those photos taken to all intervenors prior to the hearing?

Response

Response to be provided by MCM.

Question No. 9

How will tree cover "limit overall visibility" as stated when the monopole is 150' and the native trees are not 150' tall? How will "year-round visibility be limited to the immediate area" as stated when it is in an elevated location? Please define the "immediate" area?

Response

Response to be provided by MCM.

Question No. 10

Please list all agencies that have to be notified of this cell tower proposal. Please list if they have been reported to including NEPA who requires federal agencies to assess the environmental effects of their proposed actions prior to making decisions: "to use all practicable means to create and maintain conditions under which man and nature can exist in productive harmony."

Response

Response to be provided by MCM.

Question No. 11

Can you guarantee that a tower will improve service to the area once it is erected? The tower that went up at 4 Dittmar Rd did not improve the service according to its residents. How do we know that this won't happen in West Redding?

Response

Cellco is very confident that the proposed facility at Camp Hoyt will improve wireless service for Cellco customers in northwest Redding in those areas shown and described in the Docket No. 517 application including the coverage plots provided in Attachment 1 Application.

Question No. 12

Please provide the exact pdf model and make specifications and speed for every antenna that is being proposed. Please provide the amount of power per transmitter and the direction of the transmitting beam.

Response

Specifications for the antennas that Cellco intends to install on the proposed tower are attached. Information about the effective radiated power from the proposed antennas is provided in the Far Field emissions calculation table included in Attachment 7 of the Application.

CERTIFICATE OF SERVICE

I hereby certify that on the 20th day of November 2023, a copy of the foregoing was sent, via electronic mail, to:

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SAMSUNG

Samsung Massive MIMO Radio

C-band (N77)
64T64R Massive MIMO Radio

Samsung C-band 64T64R Massive MIMO enables mobile operators to increase coverage range, boost data speeds and ultimately offers enriched 5G experiences to users.

Model Code	MT6413-77A

57196

Homepage
samsungnetworks.com

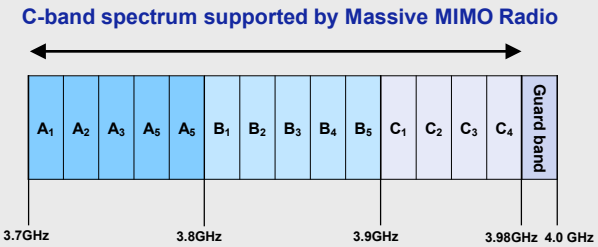
Youtube
www.youtube.com/samsung5g

Points of Differentiation

Wide Bandwidth

Samsung C-band Massive MIMO Radio covers the entire C-band 280 MHz spectrum.

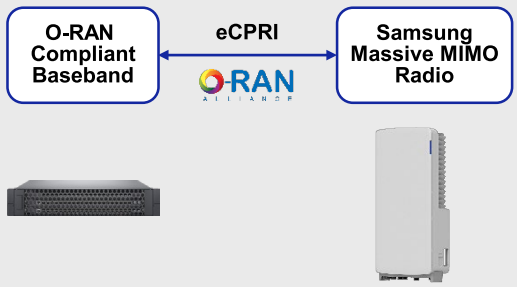
With capability to support up to 2 CC carrier configuration, Samsung C-band Massive MIMO Radio supports up to 200 MHz IBW/OBW in the C-band spectrum. So, it can maximize the utilization of operator's available spectrum.



O-RAN Compliant

A standardized O-RAN Radio can support implementation of cost-effective networks capable of enhanced data throughput without compromising on additional investments.

Samsung state-of-the-art O-RAN technology will ensure and accelerate the efforts towards building a solid O-RAN ecosystems.



Enhanced Performance

C-band massive MIMO Radio creates sharp beams to boost data speed and extend network coverage in the critical Mid-band spectrum using a large number of antenna elements and high output power.

This also helps operators reduce their CAPEX as they now need fewer radios to cover the same area than before.

Furthermore, as C-band Massive MIMO Radio supports MU-MIMO(Multi-User MIMO) , it enables to increase user throughput by minimizing interference.

Well Matched Design

Samsung C-band Massive MIMO Radio utilizes 64 Tx/Rx paths with 192 antenna elements, supports up to 200MHz IBW/OBW in the C-band Spectrum, and delivers up to 320W conducted output power. Despite the above advanced performance, the Radio has a compact size of 41.1L and 57.3lbs. This makes it easy to install the Radio.

It is designed to look solid and compact, with a low profile appearance so that, when installed, harmonizes well with the surrounding environment.

Technical Specifications

Item	Specification
Tech	NR
Band	n77 / TDD
Frequency Band	3,700 – 3,980 MHz
RF Power	320 W (5 W x 64 Ports)
IBW/OBW	200MHz / 200MHz
Installation	Pole, Wall
Size/ Weight	[Radio] 15.75 x 28.90 x 5.51 inch, 41.1L, 57.3 lbs [Bracket Weight] Pole (EP97-02126C) : 17.6 lbs Wall (EP97-02127C) : 19.2 lbs

MX06FRO860-03

NWAV™ X-Pol Hex-Port Antenna

X-Pol Hex-Port 8 ft 60° Fast Roll Off antenna with independent tilt on 700 & 850 MHz:

2 ports 698-798, 824-894 MHz and 4 ports 1695-2180 MHz

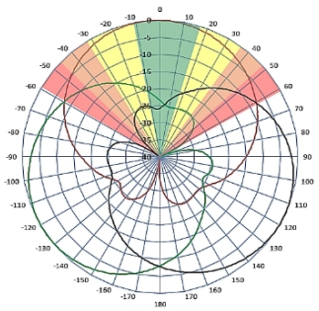
- Fast Roll Off (FRO™) azimuth beam pattern improves Intra- and Inter-cell SINR
- Compatible with dual band 700/850 MHz radios with independent low band EDT without external diplexers
- Fully integrated (iRETs) with independent RET control for low and high bands for ease of network optimization
- SON-Ready array spacing supports beamforming capabilities
- Suitable for LTE/CDMA/PCS/UMTS/GSM air interface technologies
- 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



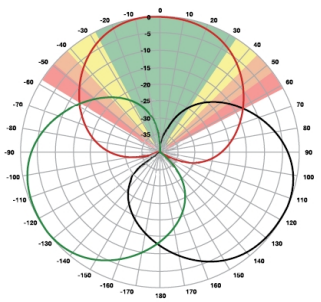
Large traditional antenna pattern overlap creates harmful interference.

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

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.

JMA FRO antenna



Electrical specification (minimum/maximum)	Ports 1, 2		Ports 3, 4, 5, 6		
Frequency bands, MHz	698-798	824-894	1695-1880	1850-1990	1920-2180
Polarization	± 45°		± 45°		
Average gain over all tilts, dBi	15.3	14.5	17.6	17.9	18.2
Horizontal beamwidth (HBW), degrees	60.0	53.5	55.0	55.0	55.5
Front-to-back ratio, co-polar power @180°± 30°, dB	>22.0	>21.0	>25.0	>25.0	>25.0
X-Pol discrimination (CPR) at boresight, dB	>18.0	>15.0	>18	>18	>15
Sector power ratio, percent	<4.5	<3.5	<3.7	<3.8	<3.6
Vertical beamwidth (VBW), degrees[1]	9.0	8.3	6.0	5.5	5.5
Electrical downtilt (EDT) range, degrees	2-12	2-12	0-9		
First upper side lobe (USLS) suppression, dB[1]	≤-15.0	≤-15.0	≤-16.0	≤-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		
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

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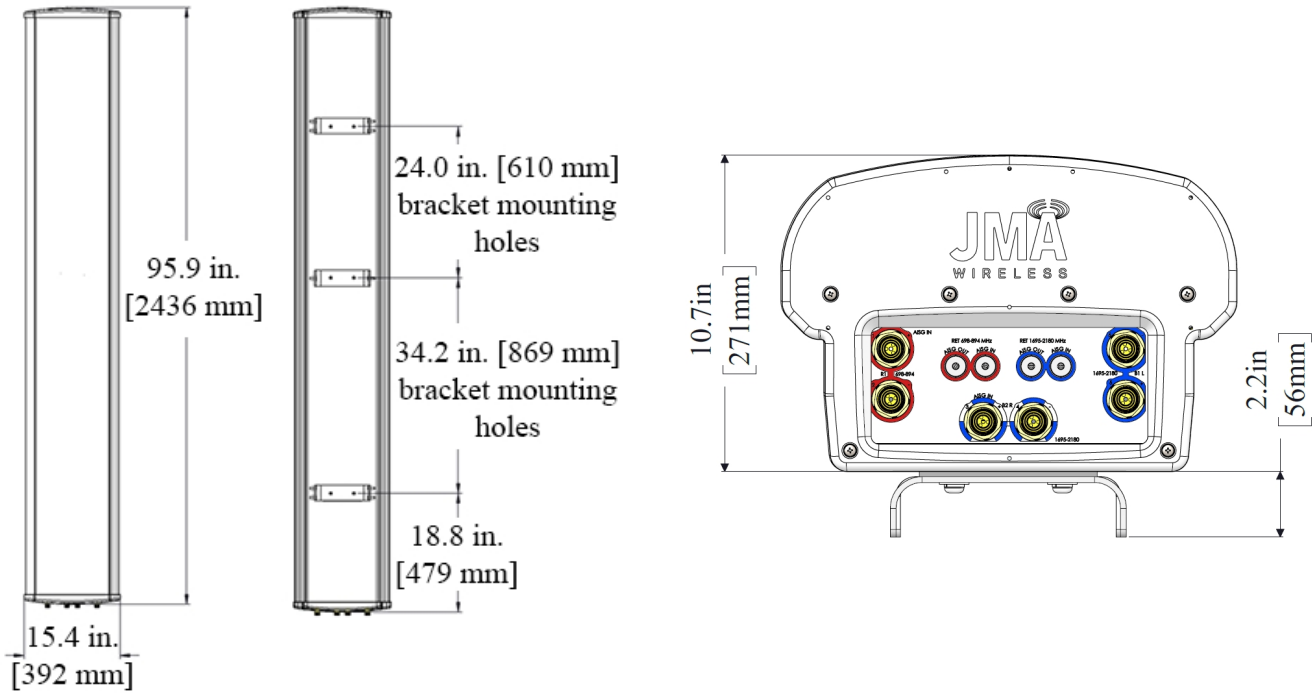
MX06FRO860-03

NWAV™ X-Pol Hex-Port Antenna

Mechanical specifications	
Dimensions height/width/depth, inches (mm)	95.9/ 15.4/ 10.7 (2436/ 392/ 273)
Shipping dimensions length/width/height, inches (mm)	106/ 20/ 15 (2692/ 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)	65 (29.5)
Shipping weight, lb (kg)	95 (43.1)
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)	141.4 (629.0), 105.8 (470.6)
Equivalent flat plate @ 100 mph and Cd=2, sq ft	3.46
EPA frontal and lateral, ft^2, (m^2)	6.4 (0.59), 3.2 (0.30)

Front view **Back view** **Bottom view**



Ordering information	
Antenna model	**Description**
MX06FRO860-03	8F X-Pol HEX FRO 60° independent tilt 700/850 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

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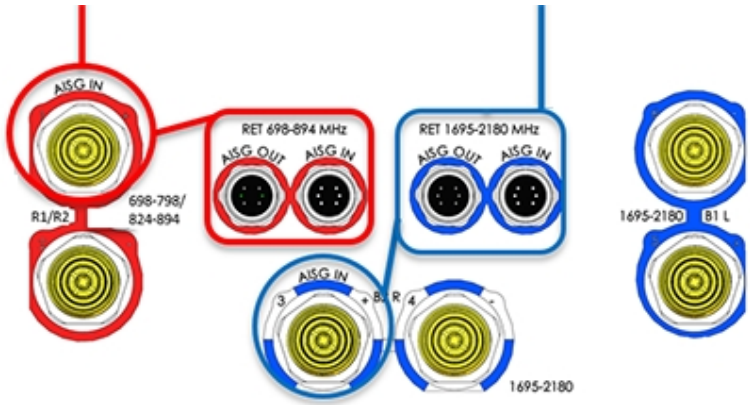
Remote electrical tilt (RET 1000) information	
RET location	Integrated into antenna
RET interface connector type	8-pin AISG connector per IEC 60130-9
RET connector torque	Min 0.5 N·m to max 1.0 N·m (hand pressure & finger tight)
RET interface connector quantity	2 pairs of AISG male/female connectors
RET interface connector location	Bottom of the antenna
Total no. of internal RETs (low bands)	2
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	698-798	1-2
R2	824-894	1-2

RET device	Band	RF port
B1/B2	1695-2180	3-6



Array topology

3 sets of radiating arrays

R1/R2: 698-894 MHz
B1: 1695-2180 MHz
B2: 1695-2180 MHz

Band	RF port
1695-2180	3-4
698-894	1-2
1695-2180	5-6

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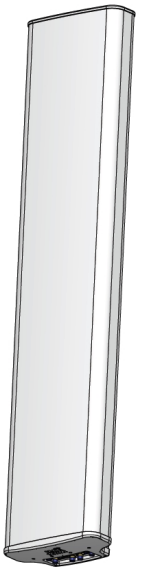
MX06FRO840-02

NWAV™ X-Pol Hex-Port Antenna

X-Pol Hex-Port 8 ft 40° Fast Roll Off:

2 ports 698-894 MHz and 4 ports 1695-2180 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 high bands for ease of network optimization
- SON-Ready array spacing supports beamforming capabilities
- Suitable for LTE/CDMA/PCS/UMTS/GSM air interface technologies
- Integrated Smart Bias-Ts reduce leasing costs



nWAV™

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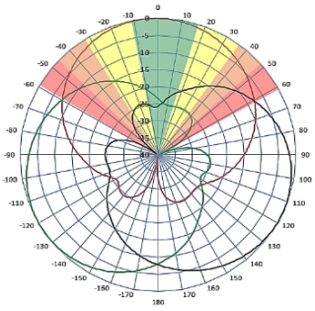
Non-FRO antenna



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Good	15-18	3.3-4.5	277%	6-7
Fair	10-15	2-3.3	160%	4-6
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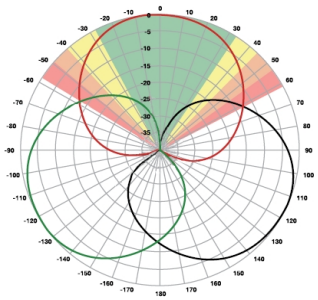
The LTE radio automatically selects the best throughput based on measured SINR.

JMA FRO antenna



Electrical specification (minimum/maximum)	Ports 1, 2		Ports 3, 4, 5, 6		
Frequency bands, MHz	698-798	824-894	1695-1880	1850-1990	1920-2180
Polarization	± 45°		± 45°		
Average gain over all tilts, dBi	17.6	18.0	19.9	20.4	20.8
Horizontal beamwidth (HBW), degrees	42	37	39	36	34
Front-to-back ratio, co-polar power @180°± 30°, dB	>22.0	>22.0	>25.0	>25.0	>25.0
X-Pol discrimination (CPR) at boresight, dB	>18.0	>15.0	>18	>18	>15
Sector power ratio, percent	<4.5	<3.5	<3.7	<3.8	<3.6
Vertical beamwidth (VBW), degrees[1]	9.0	8.3	6.0	5.7	5.3
Electrical downtilt (EDT) range, degrees	2-12	2-12	0-9		
First upper side lobe (USLS) suppression, dB[1]	≤-15.0	≤-15.0	≤-16.0	≤-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		
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				

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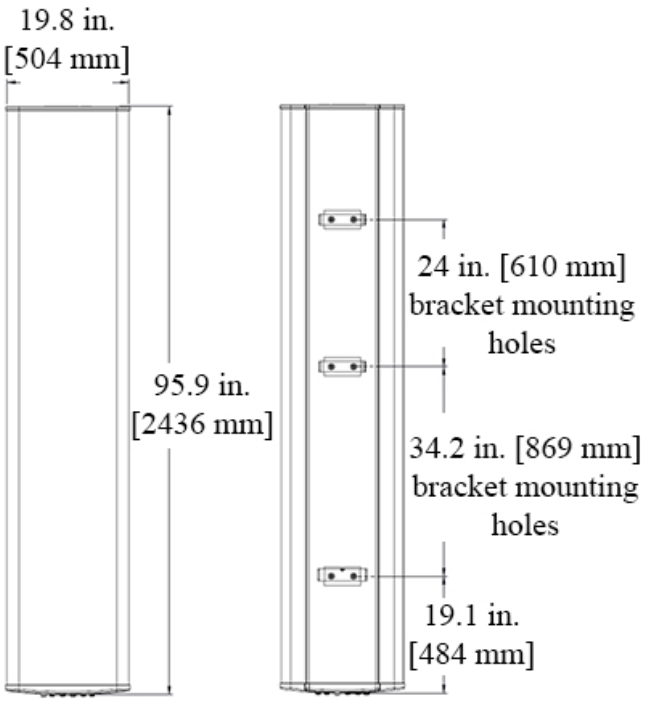
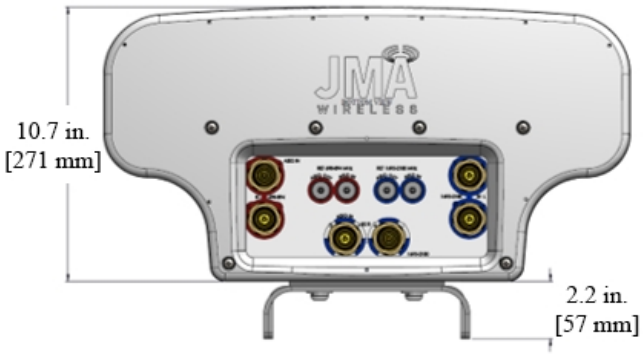
MX06FRO840-02

NWAV™ X-Pol Hex-Port Antenna

Mechanical specifications	
Dimensions height/width/depth, inches (mm)	95.9/ 19.8/ 10.7 (2436/ 504/ 271)
Shipping dimensions length/width/height, inches (mm)	106/ 26/ 15 (2692/ 660/ 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)	98 (44.55)
Shipping weight, lb (kg)	147 (66.82)
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)	213.4 (949.3), 105.4 (468.8)
Equivalent flat plate @ 100 mph and Cd=2, sq ft	6.32
EPA frontal and lateral, ft^2, (m^2)	9.6 (0.89), 3.6 (0.33)

Front view **Back view** **Bottom view**





Ordering information	
Antenna model	**Description**
MX06FRO840-02	8F X-Pol HEX FRO 40°, 2-12° / 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

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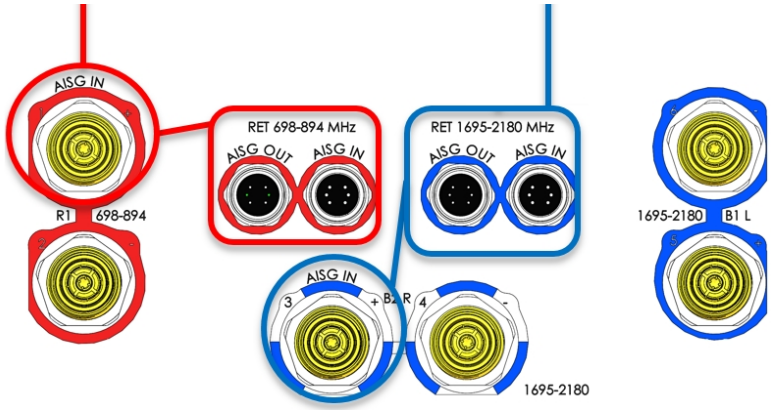

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B1: 1695-2180 MHz
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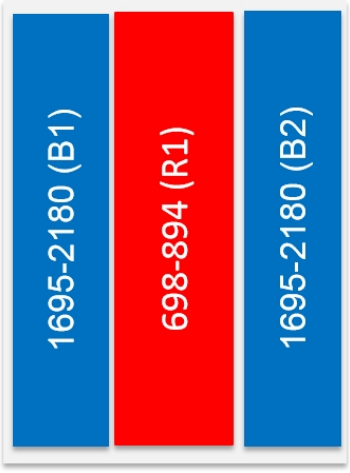
Band	RF port
1695-2180	3-4
698-894	1-2
1695-2180	5-6



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