

MX10FIT665-xx

NWAV™ X-Pol Ten-Port Antenna

X-Pol Ten-Port 6 ft, 65° Form in Tighter with Smart Bias Ts, 698-4200 MHz:

2 ports 698-894 MHz, 4 ports 1695-2180 MHz, and 4 ports 3400-4200 MHz

- Excellent passive intermodulation (PIM) performance reduces harmful interference.
- Fully integrated (iRETs) with independent RET control for low band and mid band
- FET configured with internal RET for high band & ease of future network optimization.
- SON-Ready array spacing supports beamforming capabilities
- Suitable for 3G, 4G, and 5G interface technologies
- Integrated Smart Bias-Ts reduce leasing costs
- Optimized form factor for reduced wind loading



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	14.4	14.8	17.8	18.1	18.2
Horizontal beamwidth (HBW), degrees ¹	66.0	61.0	63.0	63.0	58.0
Front-to-back ratio, co-polar power @180°± 30°, dB	>22	>22.0	>25.0	>25.0	>25.0
X-Pol discrimination (CPR) at boresight, dB	>17.0	>15.6	>23	>18	>18
Vertical beamwidth (VBW), degrees ¹	13.5	12.0	6.0	5.5	5.4
Electrical downtilt (EDT) range, degrees	2-14		0-9		
First upper side lobe (USLS) suppression, dB ¹	≤-17.0	≤-16.0	≤-17.0	≤-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 (1-10), watts	1500				

¹ Typical value over frequency and tilt

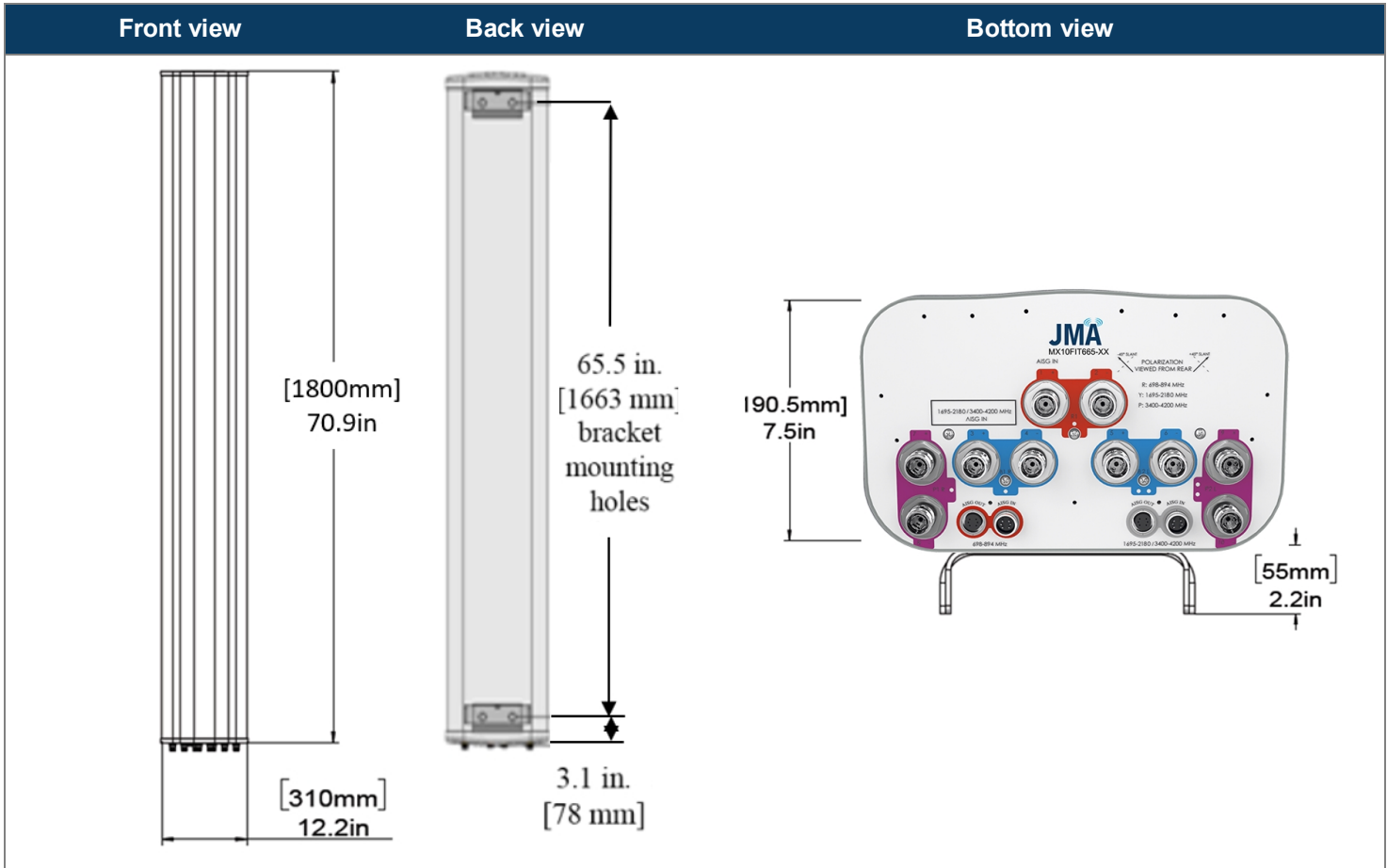
Electrical specification (minimum/maximum)	Ports 7, 8, 9, 10			
Frequency bands, MHz	3400-3550	3550-3700	3700-3950	3950-4200
Polarization	± 45°			
Average gain over all tilts, dBi	13.6	13.8	14.0	14.2
Horizontal beamwidth (HBW), degrees	65	62	60	58
Front-to-back ratio, co-polar power @180°± 30°, dB	>23	>23	>23	>22
Vertical beamwidth (VBW), degrees ¹	20	19.6	19.3	18.5
Electrical downtilt (EDT) range, degrees	2-12 orderable in 1 deg increments			
First upper side lobe (USLS) suppression, dB ¹	≤-15	≤-15	≤-15	≤-15
Cross-polar isolation, port-to-port, dB ¹	25	25	25	25
Max VSWR / return loss, dB	1.5:1 / -14.0			
Max input power per any port, watts	150			
Total composite power all ports (1-10), watts	1500			

¹ Typical value over frequency and tilt

* For ports 7-10, the electrical downtilt is FET configured with internal RET, where the required electrical downtilt is defined at the time of order per the ordering information below.

Ordering information	
Antenna model	Description
MX10FIT665-xx (xx represents the FET in one degree increments for 3.4-4.2 GHz)	6F X- Pol 10 Port FIT 65° 2-14°/ 0-9°/ 2-12°, 4.3-10 & SBTs
	xx=02 thru 12 for each 1 degree tilt 3.4-4.2 GHz Examples MX10FIT665-02 – 2deg, MX10FIT665-09 – 9deg, MX10FIT665-12-12deg
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)

Mechanical specifications	
Dimensions height/width/depth, inches (mm)	70.9/ 12.2/ 7.5 (1800/ 309.9/ 190.5)
Shipping dimensions length/width/height, inches (mm)	76/ 20/ 14.5 (1930/ 508/ 368)
No. of RF input ports, connector type, and location	10 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)	53.4 (24.3)
Shipping weight, lb (kg)	97.5 (44.3)
Antenna mounting and downtilt kit included with antenna	91900318
Net weight of the mounting and downtilt kit, lb (kg)	20.3 (9.2)
Range of mechanical up/down tilt	-2° to 12°
Rated wind survival speed, mph (km/h)	150 (241)
Frontal, lateral, and rear wind loading @ 150 km/h, lbf (N)	74.1 (330), 26.1 (116), 69.8 (311)
Equivalent flat plate @ 100 mph and Cd=2, sq ft	1.49



[CBRS] Clip-on Antenna Specifications

VzW accepted IP45 in FLD, but IP55 is Samsung Spec.

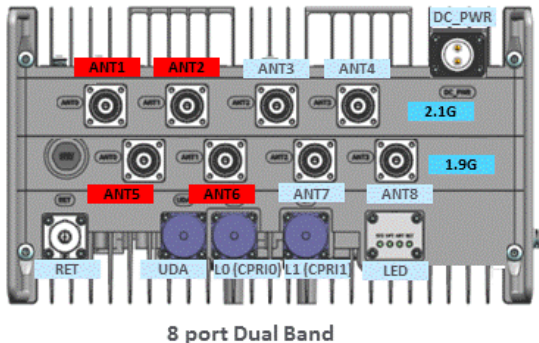


Items	Clip-on Antenna, BASTA**
Antenna Gain	12.5 ± 0.5 dBi (Max 13 dBi)
Horizontal BW (-3dB)	65° ± 5°
Vertical BW (-3dB)	17° ± 3°
Electrical Tilt	8° (fixed) ± 2°
Front-to-Back Ratio	> 25 dB
Port-to-Port Tracking	< 3 dB
VSWR	< 1.5
Isolation	> 25 dB
Ingress Protection	IP55
Size	220(W)×313(H)×34.3(D) mm (*) (8.7 x 12.3 x 1.4 inch.)
Weight	< 2.0 kg [Typ. 1.3 kg]
It is required that the radio should be weatherproofed properly with JMA WPS Boot with external antenna or with Weatherproof Boot for clip-on antennas.	

Antenna includes integrated cable with connector
 * Design is subject to minor change

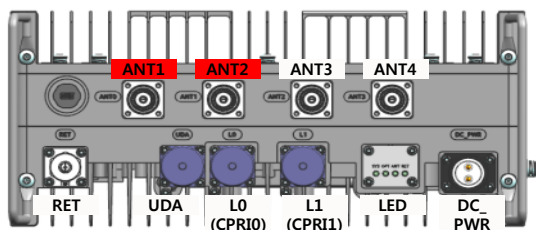
** Ant. spec. follows NGMN recommendations on Base Station Antenna Standards (BASTA). For example, 'mean ± tolerance of 86.6%' is applied to double-sided specification of statistical RF parameters.

PCS+AWS Dual Band RRH(Model : RFV01U-D1A)



Item	Specification	
Band	Band2 (1.9GHz)	Band66 (2.1GHz)
Frequency	DL : 1930~1990MHz	DL : 2110~2180MHz
	UL : 1850~1910MHz	UL : 1710~1780MHz
IBW	60MHz	70MHz
OBW	20MHz	30MHz
Carrier Bandwidth	5MHz, 10MHz, 15MHz, 20MHz	
# of carriers	2 carriers	3 carriers
Total # of carriers	4 carriers	
RF Chain	4T4R, 2T4R, 2T2R (SW configurable)	
RF Output Power	Total : 320W (for OBW 40MHz)	
	4 x 40W or 2 x 60W	4 x 60W or 2 x 90W
Spectrum Analyzer	TX/RX Support	
Noise Figure	Less than 3.0 dB	
RX Sensitivity	Typical : -105dBm @1Rx (25RBs 5MHz)	
Modulation	256QAM support	
Input Power	-48VDC (-38VDC to -57VDC)	
Power Consumption	About 1,270 Watt @ 100% RF load, typical conditions (w/ BAS OOB)+TMA/RET	
Size (WHD)	380 x 380 x 255 mm (15.0" x 15.0" x 10.0") (w/ BAS OOB)	
Volume	36.8 L	
Weight	38.3 kg(84.4 lb) w/o solar shield(finger guard) & mount bracket 44.2 kg (97.5 lb) with solar shield(finger guard) & mount bracket	
Operating Temperature	-40°C (-40°F) ~ 55°C (131°F) (Without solar load)	
Cooling	Natural convection	
Unwanted Emission	3GPP 36.104 Category A	3GPP 36.104 Category A,
	[B2] : FCC 47 CFR 24.238	[B66] : FCC 47 CFR 27.53 h)
CPRI Cascade	Not supported	
Optic Interface	20km, 2 ports (9.8Gbps x 2), SFP, single mode, Duplex	
RET & TMA Interface	AISG 2.2	
Bias-T	4 ports (2 ports per band) (Max. 49W)	
Mounting Options	Pole, wall, tower, side by side, back to back	
NB-IoT	Support	
PIM Cancellation	Support	
# of antenna port	4	4
External Alarm	4	

700+850MHz Dual Band RRH(Model : RFV01U-D2A)



Item	Specification	
Band	Band13 (700MHz)	Band5 (850MHz)
Frequency	DL : 746~756MHz	DL : 869~894MHz
	UL : 777~787MHz	UL : 824~849MHz
IBW	10MHz	25MHz
OBW	10MHz	25MHz
Carrier Bandwidth	10MHz	5MHz, 10MHz
# of carriers	1 carrier	3C
Total # of carriers	4C	
RF Chain	4T4R, 2T4R, 2T2R (SW configurable)	
RF Output Power	Total : 320W	
	4 x 40W or 2 x 60W	4 x 40W or 2 x 60W
Spectrum Analyzer	TX/RX Support	
Noise Figure	Less than 3.0 dB	
RX Sensitivity	Typical : -105dBm @1Rx (25RBs 5MHz)	
Modulation	256QAM support	
Input Power	-48VDC (-38VDC to -57VDC)	
Power Consumption	About 1,106Watt @ 100% RF load, typical conditions + TMA/RET	
Size (WHD)	380 x 380 x 207 mm (15.0" x 15.0" x 8.1")	
Volume	29.9 L	
Weight	31.9 kg(70.3 lb) w/o solar shield(finger guard) & mount bracket	
	37.2 kg(82.0 lb) with solar shield(finger guard) & mount bracket	
Operating Temperature	-40°C (-40°F) ~ 55°C (131°F) (Without solar load)	
Cooling	Natural convection	
Unwanted Emission	3GPP 36.104 Category A,	3GPP 36.104 Category A
	FCC 47 CFR 27.53 c), f)	FCC 47 CFR 22.917
CPRI Cascade	Not supported	
Optic Interface	20km, 2 ports (9.8Gbps x 2), SFP, single mode, Duplex	
RET & TMA Interface	AISG 2.2	
Bias-T	2 ports (Max. 49W)	
Mounting Options	Pole, wall, tower, side by side, back to back	
NB-IoT	Support	
PIM Cancellation	Support	
# of antenna port	4	
External Alarm	4	