

### ■ FEATURES

- ❖ Cellular Booster; High Gain
- ❖ 2G, 3G, 4G, 5G Ready. Works on all worldwide cellular bands for voice & data: LTE/CDMA/GSM/UMTS/AWS. 600MHz band included.
- ❖ All WiFi Bands, and new 5G, 600MHz & 3.5GHz spectrum
- ❖ ISM 900 & 1200MHz, SDR, plus GPS band jammer
- ❖ Military, Government, HomeLand Security Bands
- ❖ Scanner, Narrow Beam Spectrum Search & Energy Harvesting
- ❖ Sirius-XM (with avail. amplifier) Deep Fringe to Stationary Sats.
- ❖ Simple install kit with tilt/swivel mast bracket for 1.25 to 2" diameter pipe/mast
- ❖ Gain+Beamwidth can be optimized at 600-900 MHz or 4000-6500 MHz
- ❖ Light weight, easy to assemble & install for home and office, Weatherproof
- ❖ Heavy-Duty commercial grade model available
- ❖ FeedHorn system designed to fit larger reflectors. +3 +6 dB Gain.



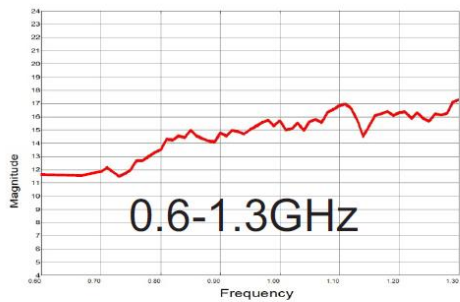
### ■ ELECTRICAL SPECIFICATIONS

Parameters		Value						Unit	
Frequency Range		600 ~ 6500						MHz	
Frequency (Center/Band)		752	859	920	1450	1575	1585	1785	MHz
		1920	2045	2400	2495	2600	3400	3550	
		3900	5375	5450	5500	5800	5887		
Numbers of Bands		20						-	
Returns Loss		10 / 20						dB	
Gain	Low Band	15						dBi	
	Mid Band	20						dBi	
	High Band	25						dBi	
Half-Power Beam Width	Low Band	20 Horiz, 23 Vert						°	
	Mid Band	12 Horiz, 15 Vert						°	
	High Band	7 Horiz, 9 Vert						°	
Front-to-back Ratio, min	@ AVG	20						dB	
Impedance		50						Ω	
VSWR	@ AVG	1.6:1 / 1.4:1						-	
Input Power, max		100						W	
Lightning Protection		DC Ground						-	
Polarization		Vertical or Horizontal						-	
Connector		N-Female						-	
Dimensions		24x39x16 / 609.6x990.6x406.4						in/mm	
Dimensions, Boxed		20x25x4 / 508x635x101.6						in/mm	
Antenna Weight (with bracket)		5.3 / 2.4						lb/kg	

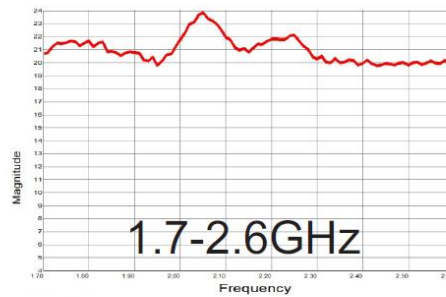
RGP-MBF4-6099-17F-TA-001

<b>Packing Weight</b>	7.2 / 3.3	lb/kg
<b>Rated Wind Velocity</b>	130 / 209	mph/kph
<b>Wind Load</b>   <b>@ Rated Velo</b>	150 / 68	lb/kg
<b>Mounting Mast Diam</b>	1.5-2.0 / 40-50	in/mm
<b>Reflector Material</b>	Aluminum	-
<b>Reflector Finish</b>	Electrostatic Powder Coat	-
<b>Radome Material</b>	ASA Anti UV	-
<b>Antenna System Color</b>	Flat Gray	-
<b>Water Resistance</b>	IPX Weather Rated	-
<b>Ingress Protection</b>	IP65	-
<b>Operating Temperature Range</b>	-40 ~ +60	°C
	-40 ~ +140	°F

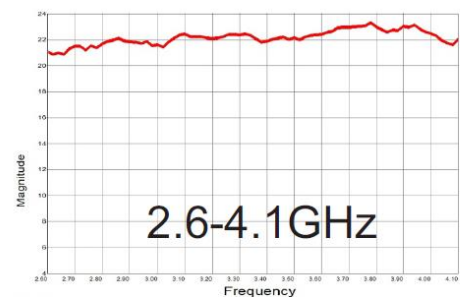
### ■ GAIN DATA FEED HORN MID POSITION DEFAULT



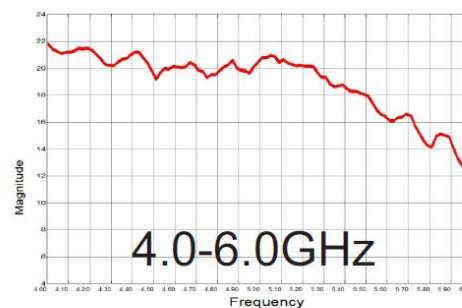
Test Channel: 521  
Test Comments: prodn housing and tube sample, stock position FH feed line with rp-316 band  
959 Spectrum ORBIT/FR



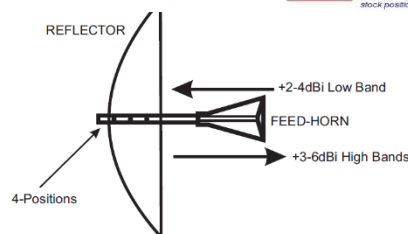
Test Channel: 521  
Test Comments: 6099 prodn housing tube, 141 flareline f with rp-316 entry, stock position FH  
959 Spectrum ORBIT/FR



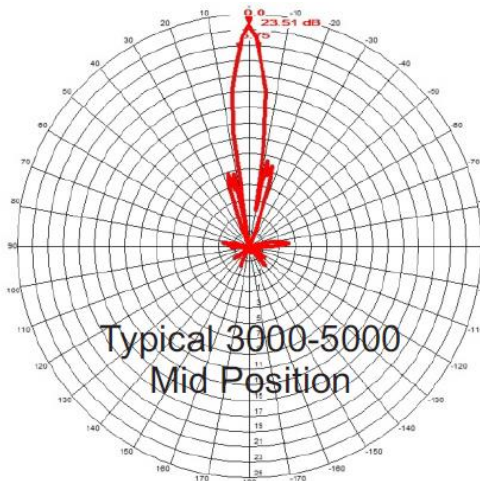
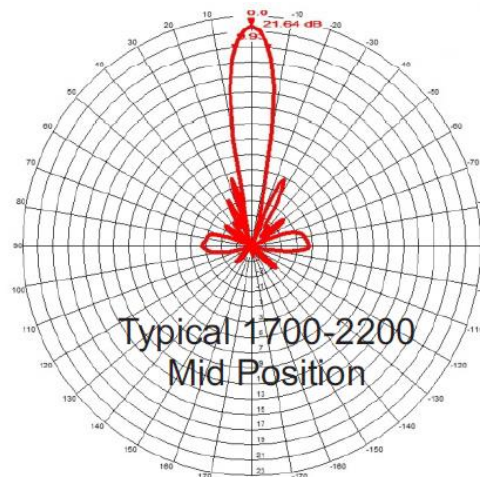
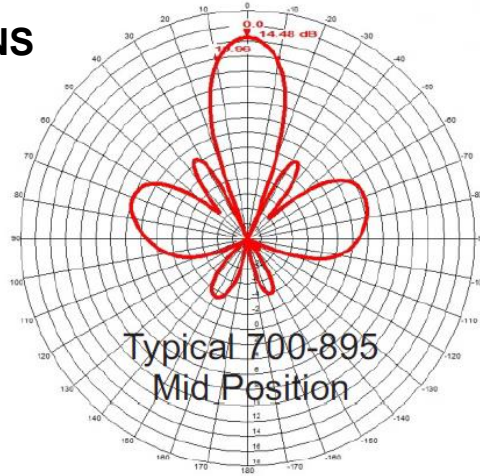
Test Channel: 521  
Test Comments: LP Grid fulfills parts 3" out 2.5-4GHz  
959 Spectrum ORBIT/FR



Test Channel: 521  
Test Comments: COM 0665 prodn tube and housing FH stock position  
959 Spectrum ORBIT/FR



■ **RADIATION PATTERNS**



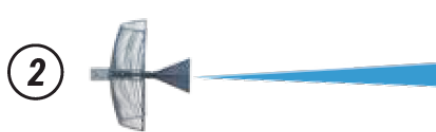
### ■ INSTALLATION

- 1) **ASSEMBLE:** Be sure to assemble the antenna per the assembly sheet included.
- 2) **LOCATE:** Aim the antenna at the intended target. In most cases it will be a cellular tower which hosts your desired carrier's antennas. Keep in mind that a tower nearby that you know the location of, may not be the broadcast tower for your desired frequency range and carrier. If you are unsure which tower to use, a number of tower location apps by carrier & frequency are available.

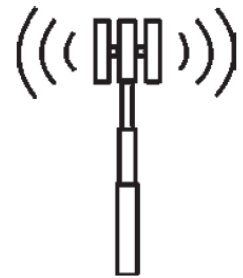
**Finding the tower:** The best way to see improvements in signal is with a spectrum analyzer. If one is not available you will use a "rough indicator" like the bars on your phone or speed tests on your devices. As you aim better or worse, you will see the difference in your device. **NOTE:** It may take up to 1 minute for your phone to update the signal strength reading with the bars. For real time readings on your phone, manually change to show signal in dBm.



1  
If possible, use a lower gain antenna with a larger spread to locate the general direction of the tower. If not available scan with the grid 2°-4° at a time to find the tower.

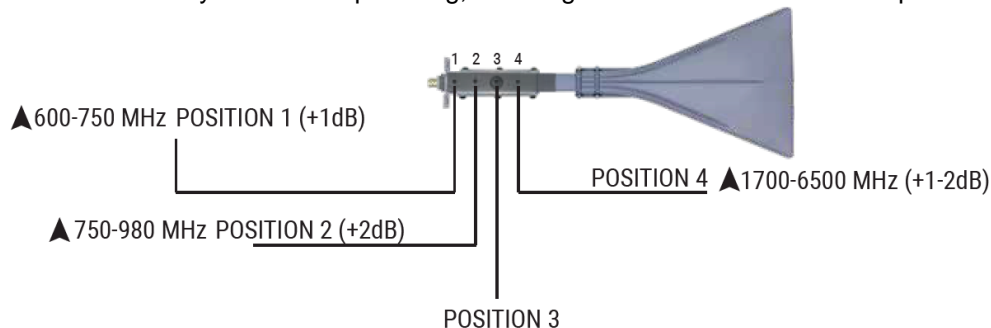


2  
When aiming grid, be aware of the narrow signal beam. The grid can only "see" within the signal pattern for a given frequency. Once the best position is found, secure the grid firmly to ensure performance.



SIGNAL PATTERN VARIES DEPENDING ON YOUR FREQUENCY SELECTION 6° - 20°  
TOWER MUST BE WITHIN SIGNAL PATTERN TO FUNCTION CORRECTLY

- 3) **OPTIMIZE:** The grid's adjustable feature allows for increased gain in a desired frequency range. By positioning the feedhorn in or out along the predefined slots, you will increase gain by 2dB on either the low or high band. Note that the inverse will occur for the band you are not optimizing; 1-2 dB gain will be lost on the other part of the spectrum.



**PRO TIPS**

USE  
MINIMUM  
CABLE  
LENGTH

MAXIMIZE  
ANTENNA  
HEIGHT

GET  
CLEAR  
LINE OF  
SIGHT

USE 2  
GRIDS  
FOR  
MIMO

DO NOT  
BEND AT  
CONNECTORS



RGP-MBF4-6099-17F-TA-001

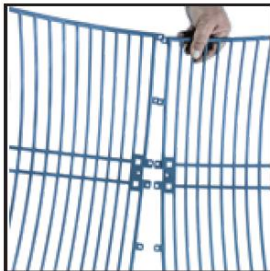
### ■ IN THE BOX

- 2 - Grid Reflectors
- 1 - Feedhorn
- 1 - Reinforced L-Bracket
- 2 - U-Bolts
- 2 - Toothed Saddles
- 4 - Short Bolts & Washers
- 4 - Long Bolts & Washers

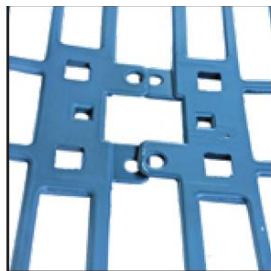


### TOOLS REQUIRED

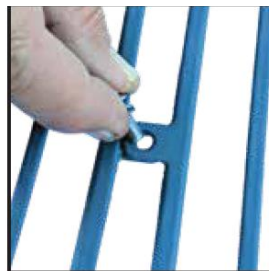
**BEST:** 2 x 10mm Wrench, Socket or Nutdriver.  
**ALTERNATE:** Adjustable Wrench and/or Pliers



1) Bring two halves together with the tabs overlapping. Alternate the tabs over/under.



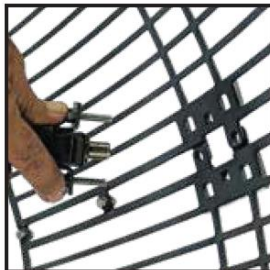
2) Carefully check the tab arrangement. Excess pressure indicates incorrect alignment.



3) With holes aligned, secure the two halves with the short bolts to the four outer positions.



4) All four outer bolts should be secured with the head of the bolt facing inward.



5) With the feedhorn vertical, use one hand to hold 2 long bolts in place on the left & right arm brackets.



6) Position feedhorn so bolts & connector pass through reflector. Place L-Bracket over bolts and connectors as shown.



7) Secure the left & right bolts in place to hold bracket. Then proceed with remaining bolts for top & bottom of feedhorn.



8) Depending on your mount location. You can slide assembled antenna over mast or secure U-bolts around mast on this step.



9) U-Bolts & toothed saddle should be positioned as shown for the best grab on the mast.



10) Once on mast, secure nuts on U-bolt. L-bracket allows for vertical alignment in combination with holes & the U-bolts.



12) Completed Antenna  
NOTE: The antenna has a very narrow radiation beam. Antenna will only work within the narrow signal cone.

■ **APPROVAL**

<b>RALTRON</b>	
DRAWN BY:	AR, March 16, 2020
APPROVED BY:	CP, March 16, 2020
REVISION:	A, Initial Release
	B, AR, April 27, 2020 Added Installation Guide
	C, AR, July 17, 2020 Updated the Current Revision Levels

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