



Product Name: GM-48W GNSS Receiver (RS-232)

Part Number: H2A3GM48000100

Features:

- U-blox 10 engine
- Maximum position availability with concurrent reception of 4 GNSS
- Low profile, Robust, IP67 Water proof enclosure, Magnetic Mount
- Ultra low power consumption without compromising GNSS performance
- Excellent Tracking Sensitivity, -167 dBm
- Advanced spoofing and jamming detection
- Quick Time-to-First-Fix Cold Start
- RoHS & REACH Compliant

Applications:

- Vehicle navigation
- Agriculture Machinery Tracking
- Robotic/Autonomous Application

GM-48W GNSS Receiver (RS-232)

MODEL: GM-48W

Rev.A

I. Specifications:

Items	Specifications
Built in Antenna element	High-reliability ceramic patch
Receiver type	u-blox M10 receiver GPS L1 C/A, QZSS L1 C/A L1S, GLONASS L1OF SBAS L1 C/A: WAAS, EGNOS, MSAS, GAGA
Sensitivity*	Tracking and nav. -167 dBm
Nav update rate	1 Hz
Acquisition**	Cold start 28 sec. Hot start 1 sec. Aided start 1 sec.
Position accuracy**	1.5 m CEP
Velocity accuracy ***	0.05 m/s
Operating Voltage	5 V
Physical Construction	
Dimension (mm)	56.00 mm (Diameter) x 21.50 mm (Height)
Weight (g)	80 grams (without cable)
Case Material	Fully gasketed high-impact plastic, waterproof IP67
Environmental Conditions	
Temperature (°C)	Operating: -30 ~ +80
	Storage: -40 ~ +80
ESD Protection (IEC 61000-4-2 level 4)	±8 KV (Contact Discharge) ±15 KV (Air Discharge)

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Communication		
Protocol	NMEA 0183	
Interface	RS232	
Interface Capability		
Output Sentences	RMC (1sec)	
Baud Rate	4800 bps	
Antenna Performance		
Application Bands	GPS L1	GLONASS L1OF
Frequencies (MHz)	1575.42	1602.00
Efficiency (%)	39.99	30.83
Average Gain (dBi)	-3.98	-5.11
Peak Gain (dBi)	1.81	1.08
V.S.W.R	< 2	
Return loss	< -10	
Test Condition	With housing	
Impedance (Ω)	50	
Polarization	R.H.C.P. (Right-Handed Circular Polarization)	

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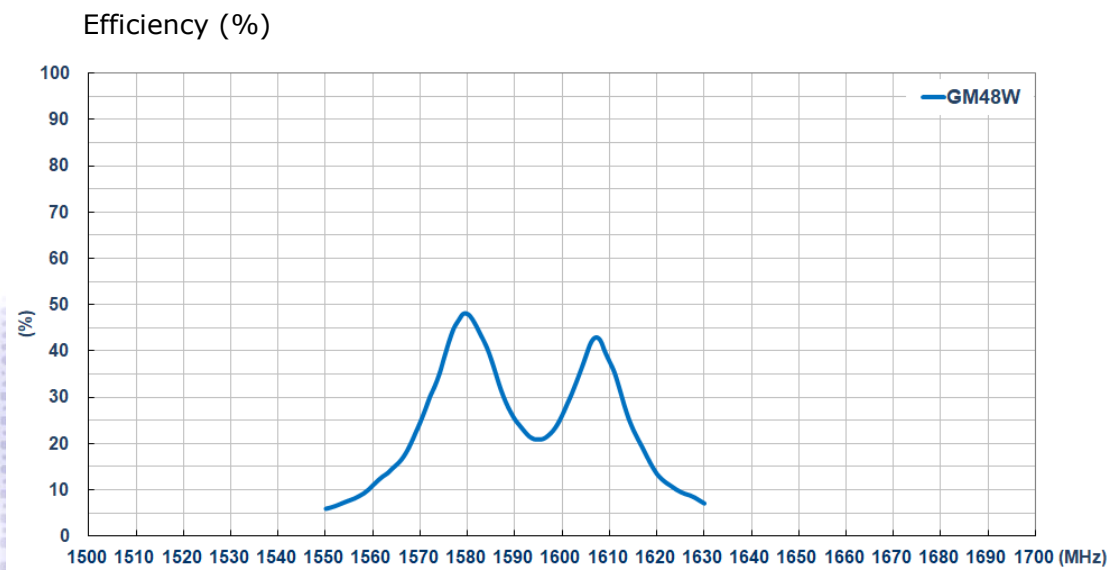
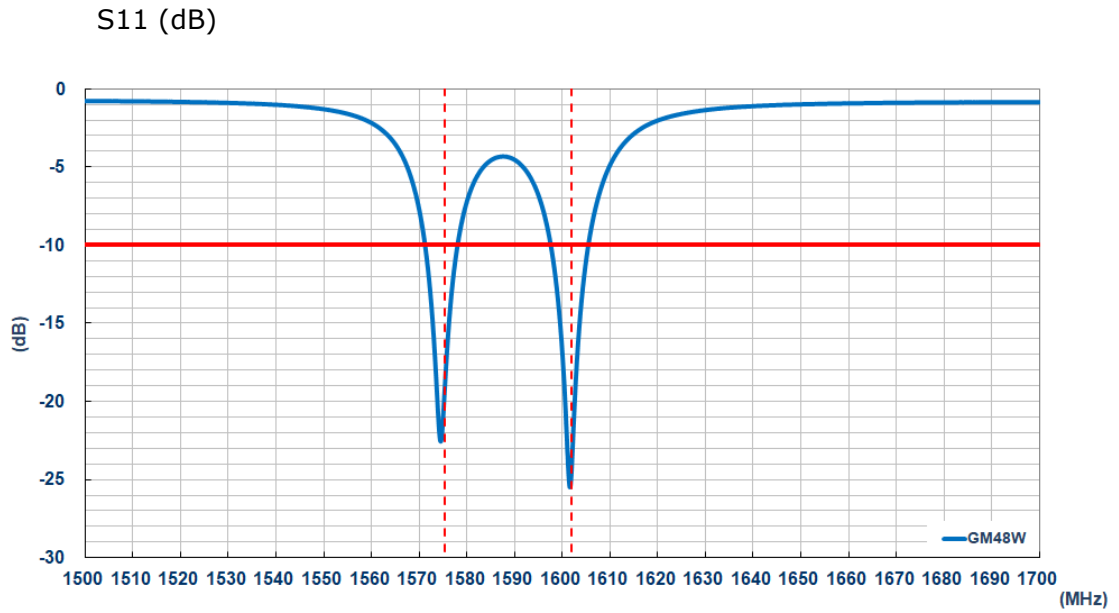
*All satellites at -130 dBm · Use u-blox u-center test

**CEP, 50%, 24 hours static, -130 dBm, > 6 SVs

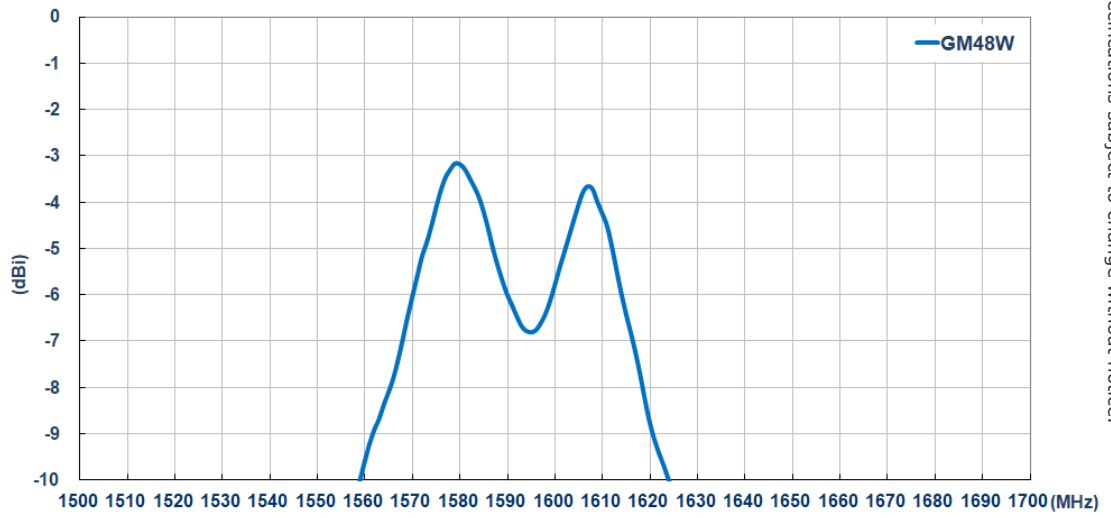
*** 50% @ 30 m/s

II. Antenna Technical Parameters:

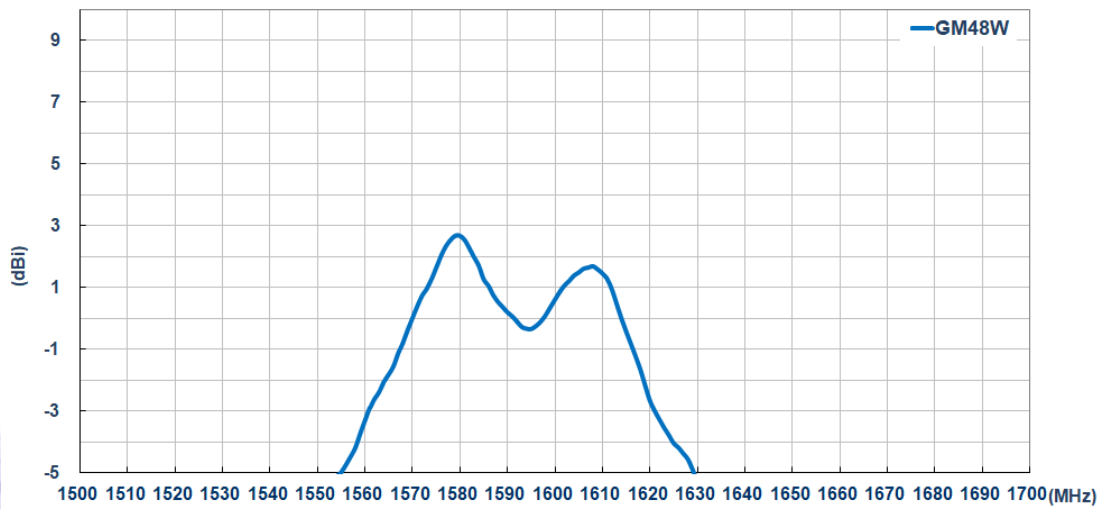
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Average Gain (dBi)



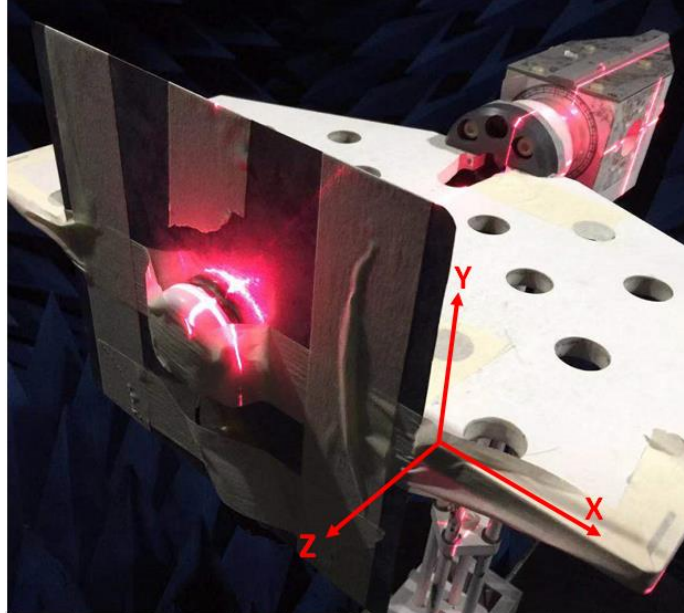
Peak Gain (dBi)



III. Antenna Radiation Pattern Measurement:

The antenna radiation patterns are measured in 3D Anechoic Chamber. The measurement setup is as shown below,

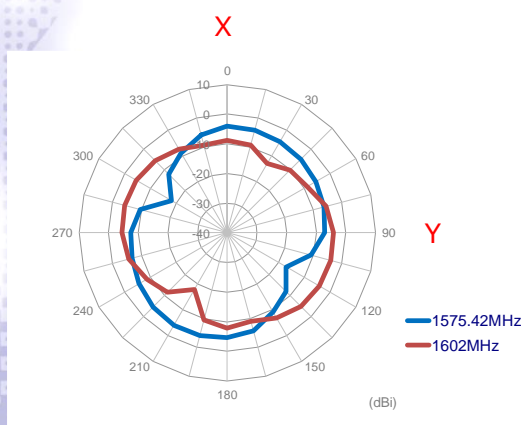
With Ground Plane



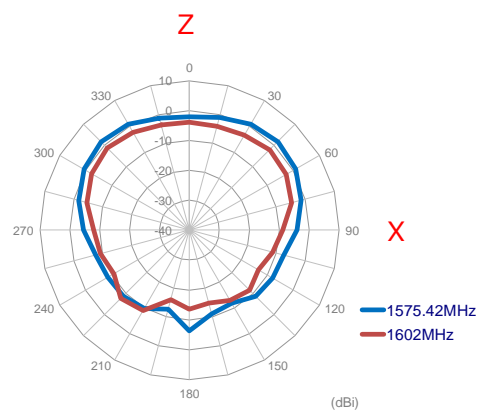
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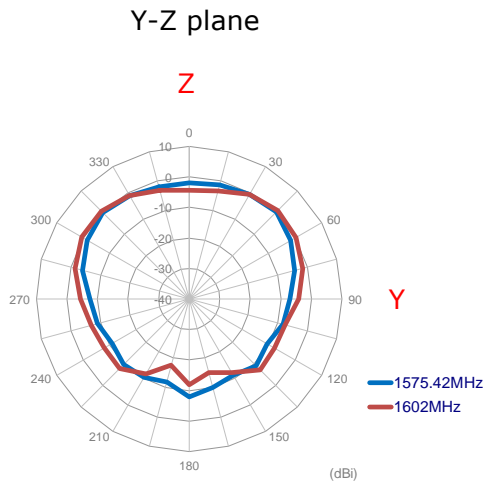
A) 2D Radiation Pattern

X-Y plane

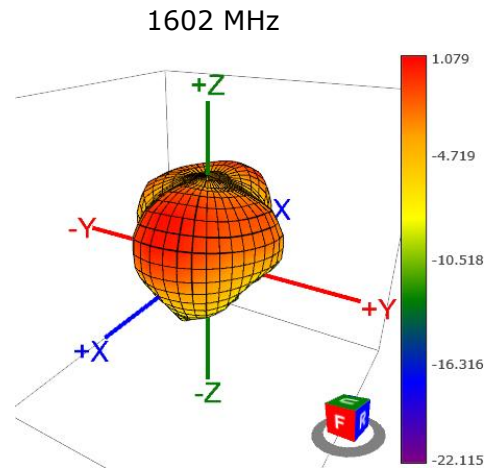
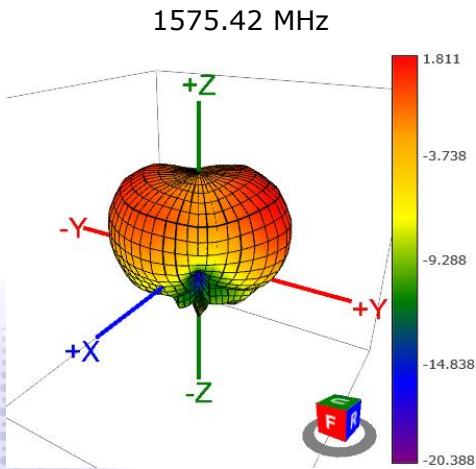


X-Z plane

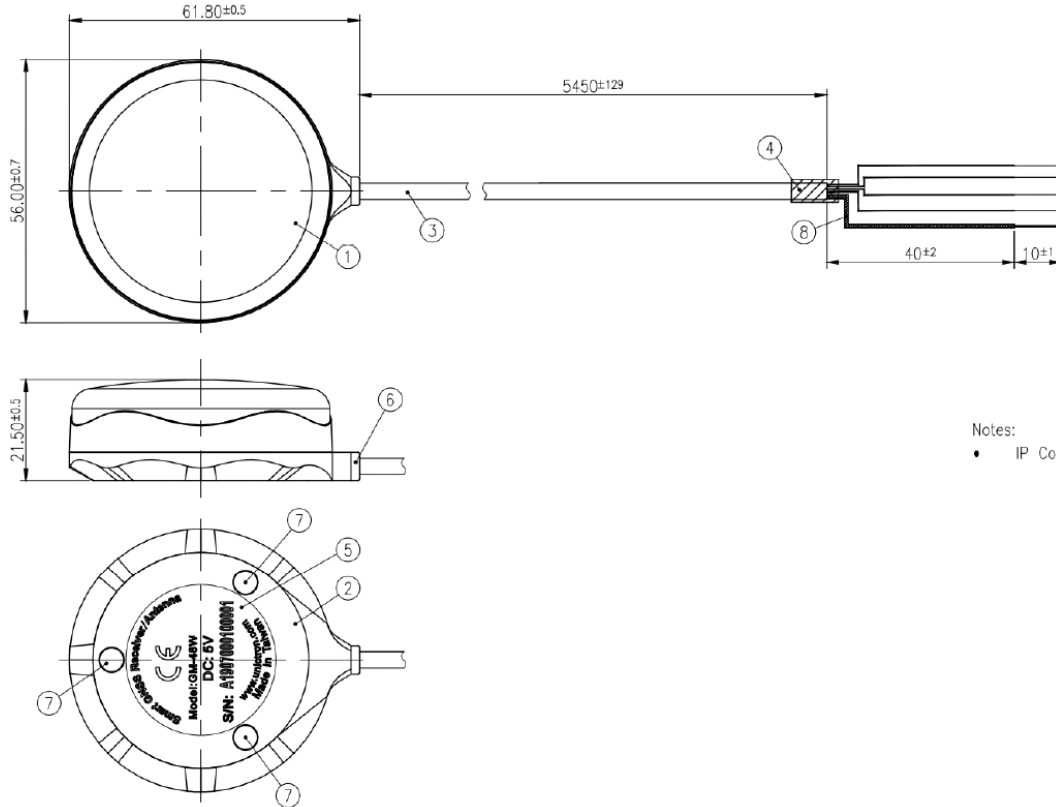




B) 3D Radiation Pattern



IV. Mechanical Drawing:



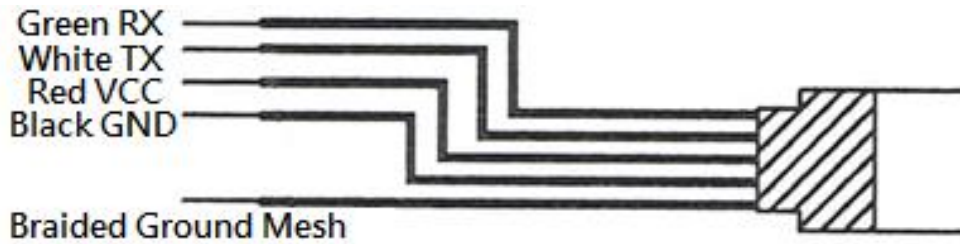
Notes:

- IP Code : IP67 .

8	Heat Shrink Tube-2	EVA	Black	1
7	Slip Rubber	Silicon	Black	3
6	Rubber	PVC	Black	1
5	Label	PET	Silver	1
4	Heat Shrink Tube-1	EVA	Black	1
3	UL 2725 Cable 28AWG/4C	PVC	Black	1
2	Bottom Case	Zinc Alloy	Ni Plated	1
1	Top Housing	PC+PBT	White	1
No	NAME	MATERIAL	FINISH	Q'TY

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Pin Assignment



Pin color.	Title	I/O	Note
White	TX	O	RS232 TRANSMITTER
Green	RX	I	RS232 RECEIVER
Red	VCC	-	Power Supply (VDC 5V)
Black	GND	-	Ground
	Braided Ground Mesh	-	Ground