



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

Part Number: H2A3GM48000000

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	4 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	8 ~ 35 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	GGA(1sec), VTG(1sec), GSV(1sec), ZDA(1sec)	
Baud Rate	57600 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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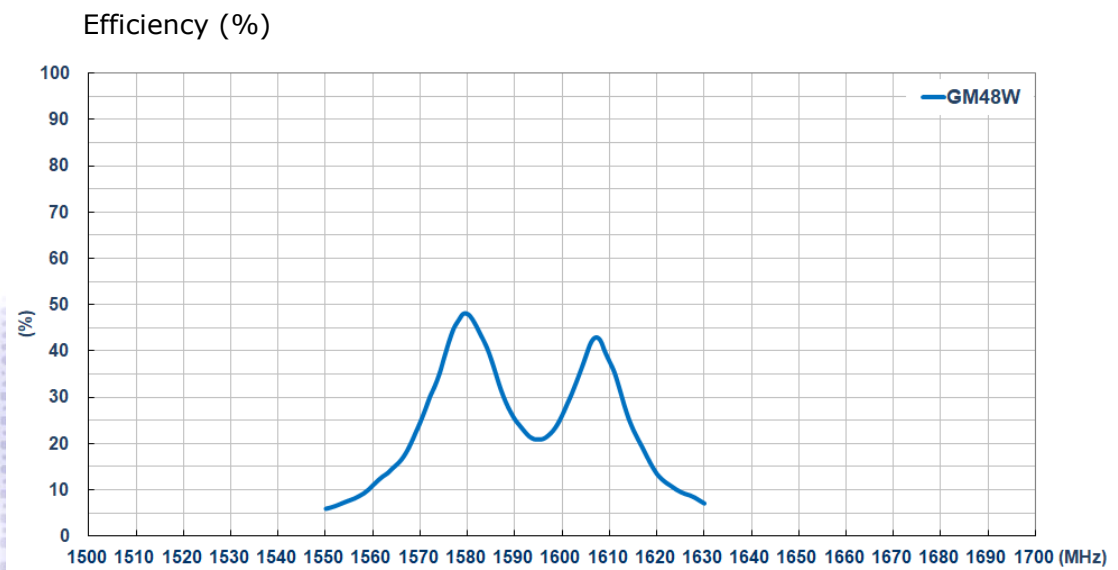
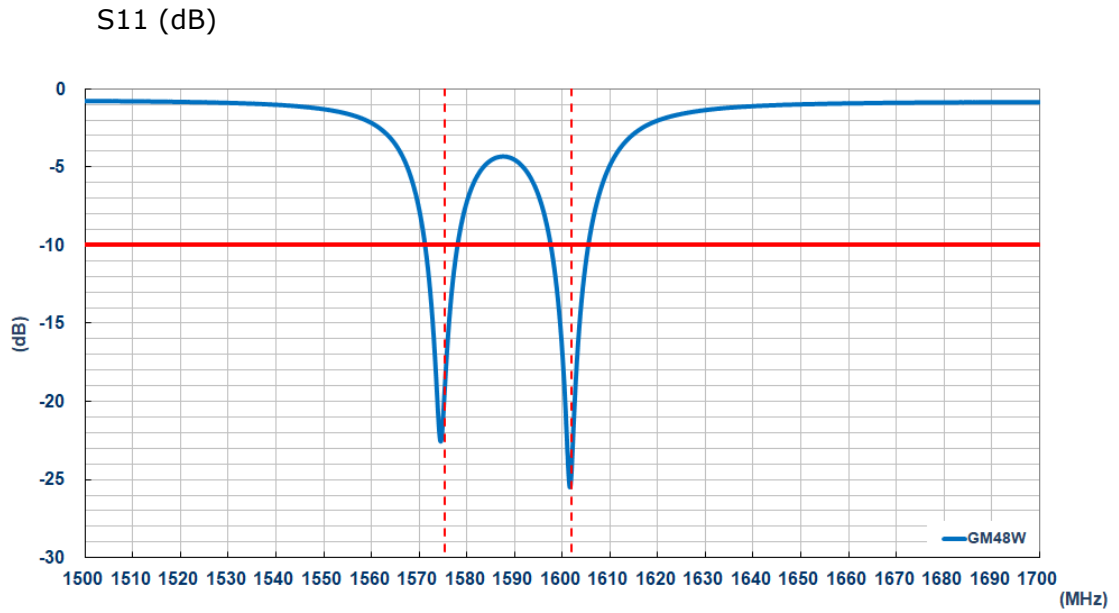
*All satellites at -130 dBm · Use u-blox u-center test

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

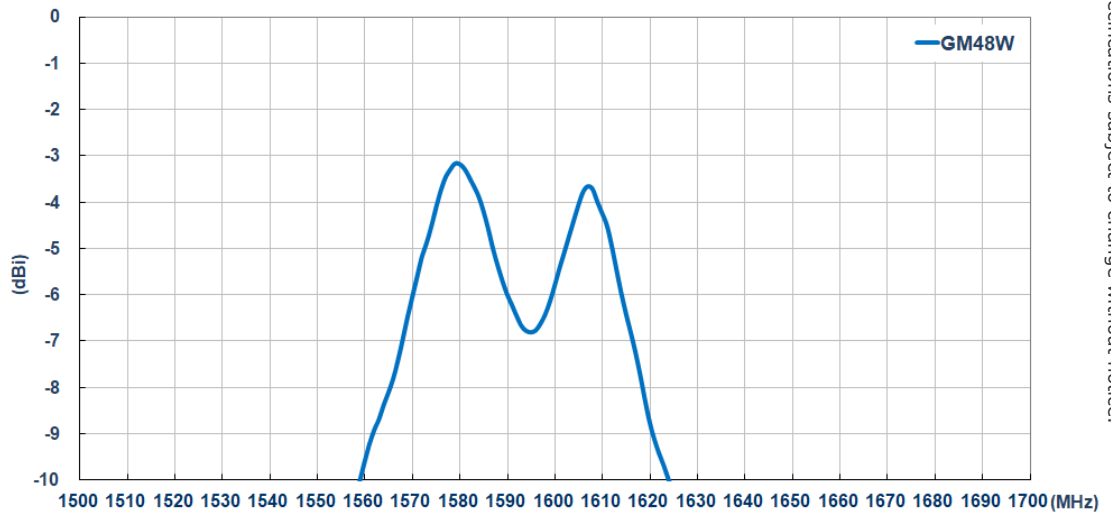
*** 50% @ 30 m/s

II. Antenna Technical Parameters:

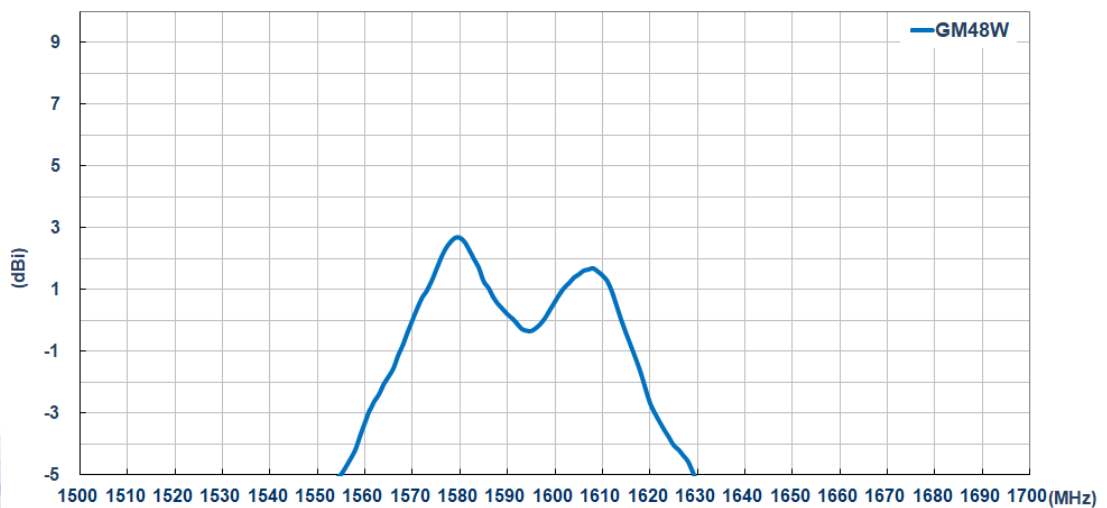
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Average Gain (dBi)



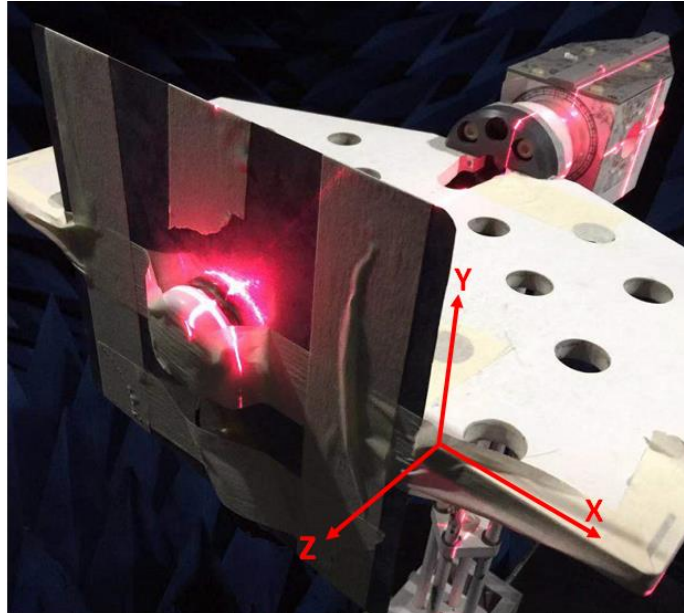
Peak Gain (dBi)



III. Antenna Radiation Pattern Measurement:

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

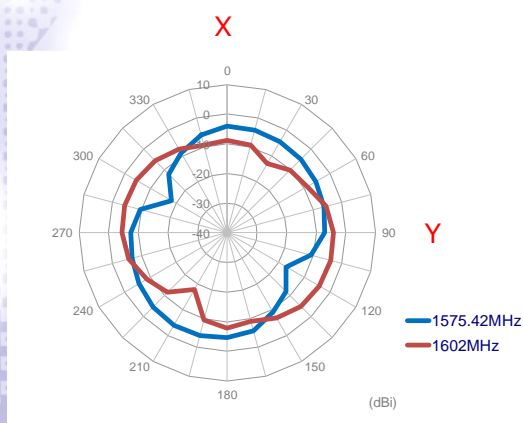
With Ground Plane



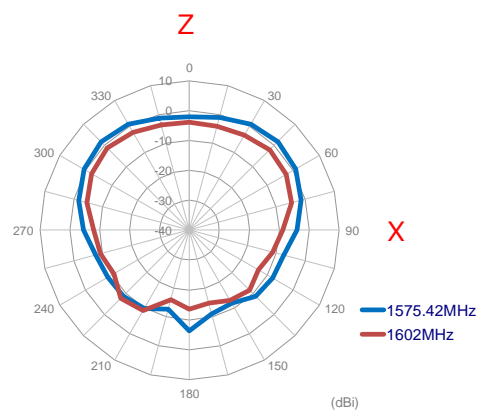
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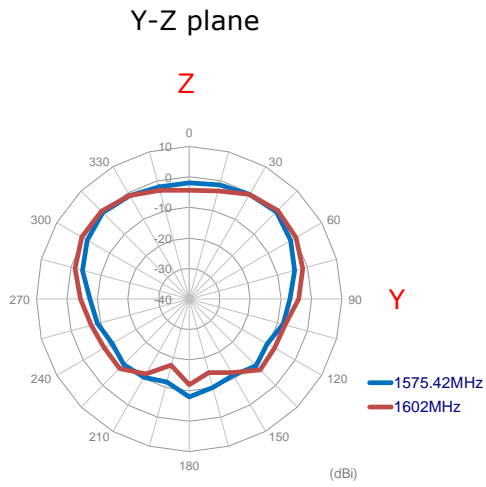
A) 2D Radiation Pattern

X-Y plane

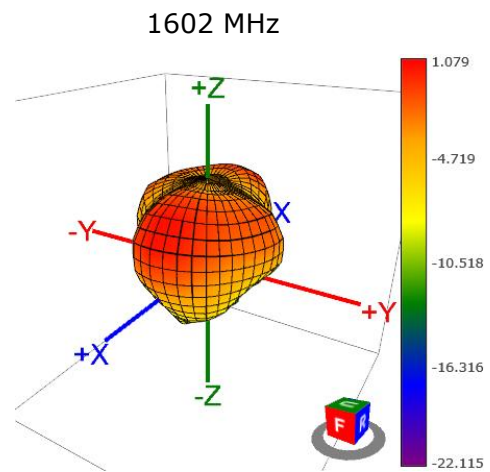
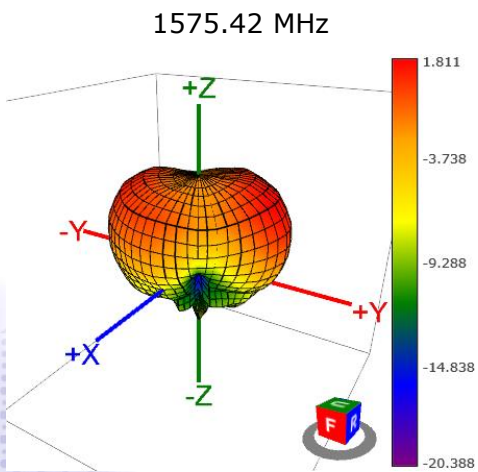


X-Z plane

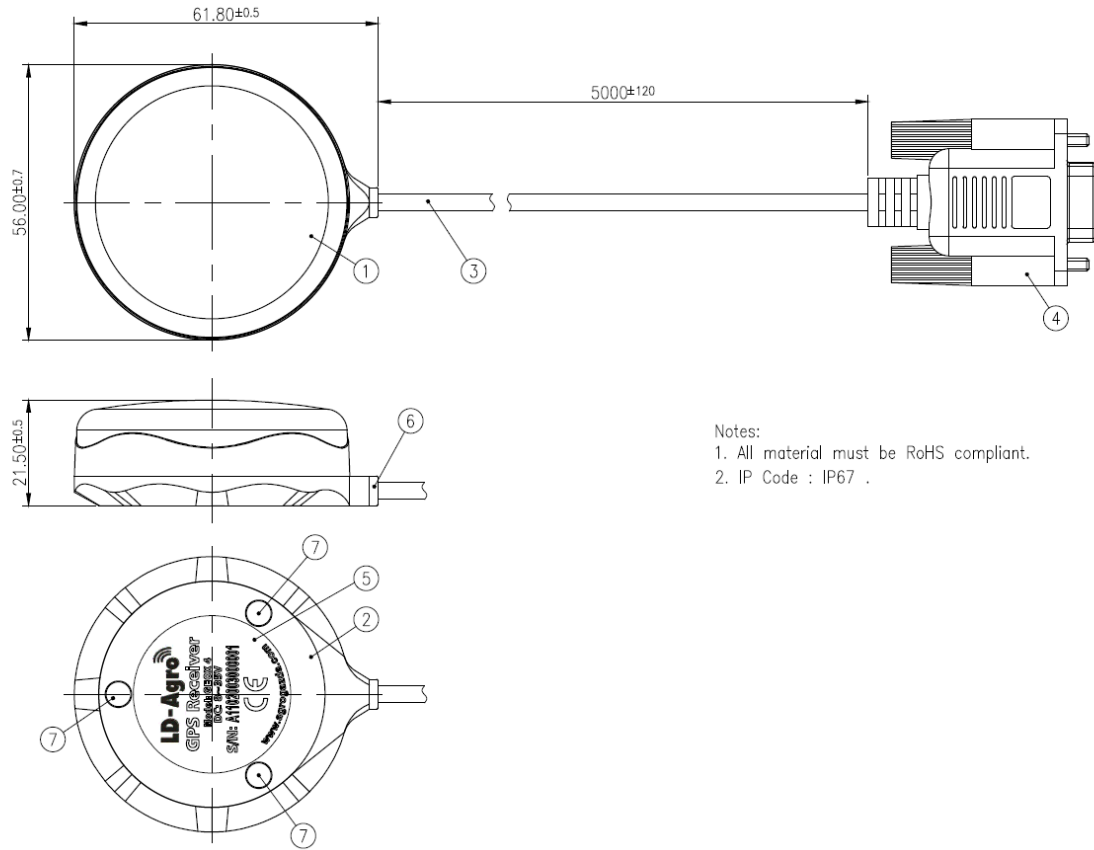




B) 3D Radiation Pattern



IV. Mechanical Drawing:

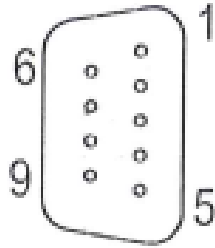


Notes:
 1. All material must be RoHS compliant.
 2. IP Code : IP67 .

7	Slip Rubber	Silicon	Black	3
6	Rubber	PVC	Black	1
5	Label	PET	Silver	1
4	DB9(SP) Connector	PBT	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



DB-9 (Male)			Open Ending Cable	Function
FROM			TO	
PIN No.	Cable Color		Cable Color	
3	白 White	←→	白 White	TX
2	綠 Green	←→	綠 Green	RX
9	紅 Red	←→	紅 Red	VCC
5	黑 Black	←→	黑 Black	GROUND
	編織網			
	編織網/外殼	←→	編織網	

Pin No.	Title	I/O	Note
3	TX	O	RS232 TRANSMITTER
2	RX	I	RS232 RECEIVER
9	VCC	-	Power Supply (VDC 8~35V)
5	GND	-	Ground