



**Product Name:** Mini GNSS Locator (RS232)

**Part Number:** GM-5G-A1RA-1BN01

**Features:**

- U-blox 8 engine
- GPS / Glonass /QZSS/SBAS L1 Supported
- Low profile, Robust, IPX7 Water proof enclosure, Magnetic Mount
- Excellent Tracking Sensitivity, -164dBm
- Six Configurable Output Sentences
- Quick Time-to-First-Fix Cold Start

**Application:**

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

# Mini GNSS Locator

## MODEL: GM-5G-A1RA-1BN01

WI-RD-D-243 V1.0

### I. Specifications:

Category	Specifications	
Application Band	L1(GPS)	GLONASS
Frequency (MHz)	1575.42	1602.00
Efficiency(%)	73.62	71.45
Average Gain(dBi)	-1.33	-1.46
Peak Gain(dBi)	4.83	4.41
VSWR	< 2	
Return loss	< -10	
Test Condition	With housing With metal plane (305 * 225 mm)	
Impedance	50Ω	
Polarization	RHCP	
<b>PHYSICAL CONSTRUCTION</b>		
Dimension	L 58.3 mm * W 48 mm * H 15 mm	
Weight	243 gram (with cable)	
Case Material	Fully gasketed high-impact plastic, waterproof to IEC 60529 IPX7 standards	
<b>ENVIRONMENTAL CONDITIONS</b>		
Temperature	Operating: -30 ~ +80 °C	
	Storage: -40 ~ +80 °C	
ESD Protection (IEC 61000-4-2 level 4)	Contact : 8KV · Air : 15KV	
<b>COMMUNICATION</b>		
Protocol	NMEA 0183 V4.0	
Interface	RS232	
<b>INTERFACE CAPABILITY</b>		
Output Sentences (Optional)	GGA(1sec), GLL(1sec), GSA(1sec), GSV(1sec), RMC(1sec), VTG(1sec)	
Baud Rate	9600bps	

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PERFORMANCE	
<b>Built in Antenna element</b>	High-reliability ceramic patch
<b>Receiver type</b>	GPS L1C/A GLONASS L1OF SBAS L1C/A QZSS L1C/A
<b>Channels</b>	72 parallel
<b>Sensitivity*</b>	-164dBm
<b>SBAS</b>	Support : WAAS, EGNOS, MSAS
<b>TTFF**</b>	Hot start 1 sec. Typical Cold start 26 sec. Typical
<b>Position accuracy**</b>	2.5 m
<b>Velocity accuracy ***</b>	0.05 m/s
<b>Update Rate(Optional)</b>	1Hz
<b>Input Voltage</b>	5V
<b>Power Consumption</b>	Typical 75mA

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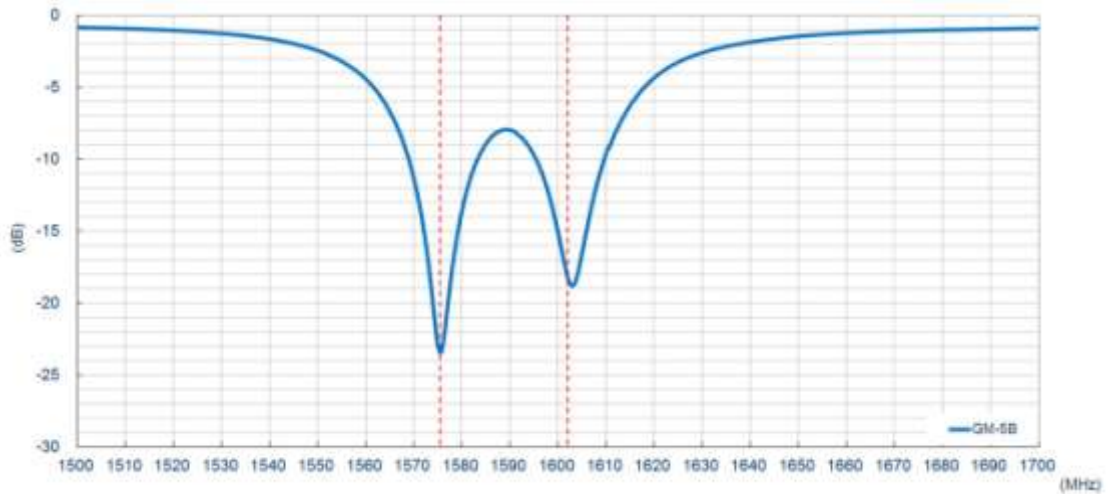
\*All satellites at -130 dBm · Use u-blox u-center test

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

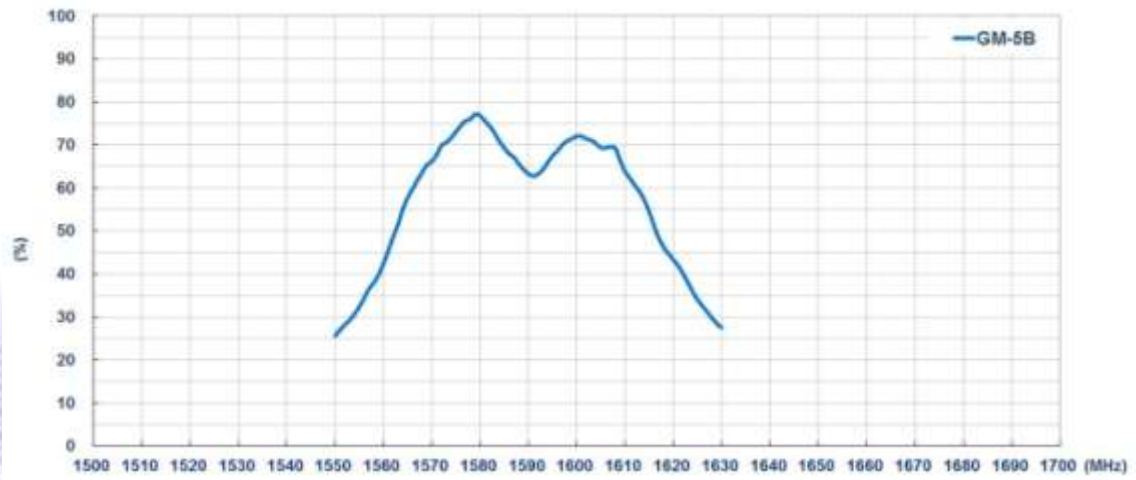
\*\*\* 50% @ 30 m/s

## II. Antenna Technical Parameters:

S-parameters:

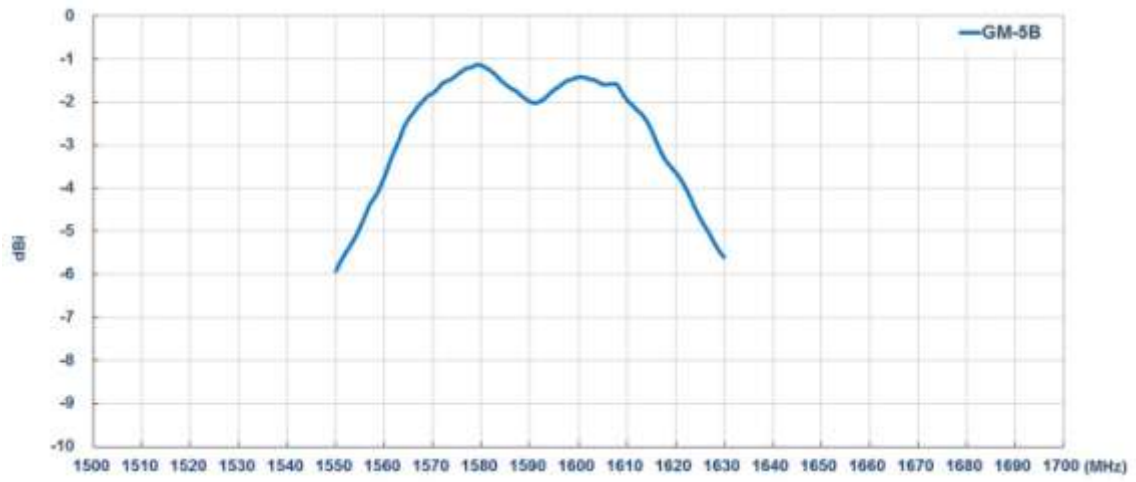


Efficiency:

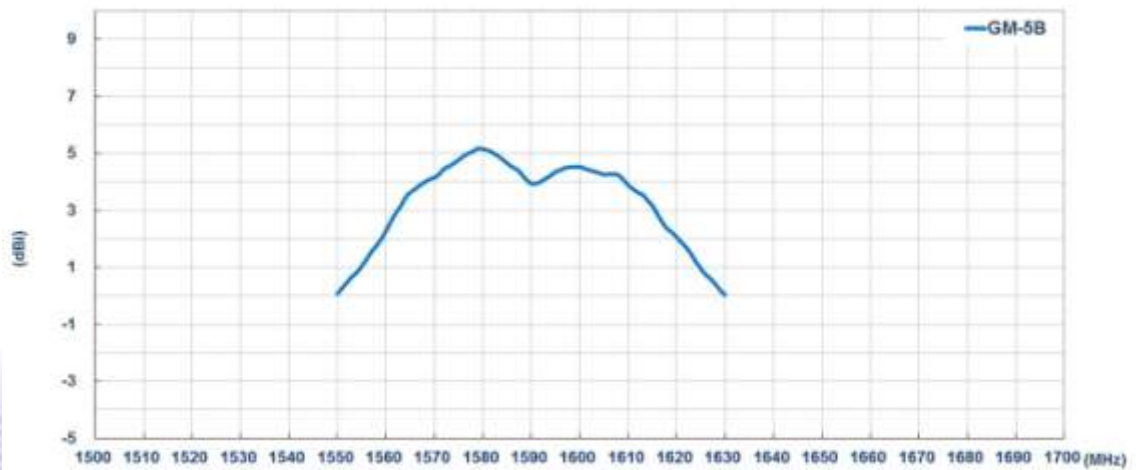


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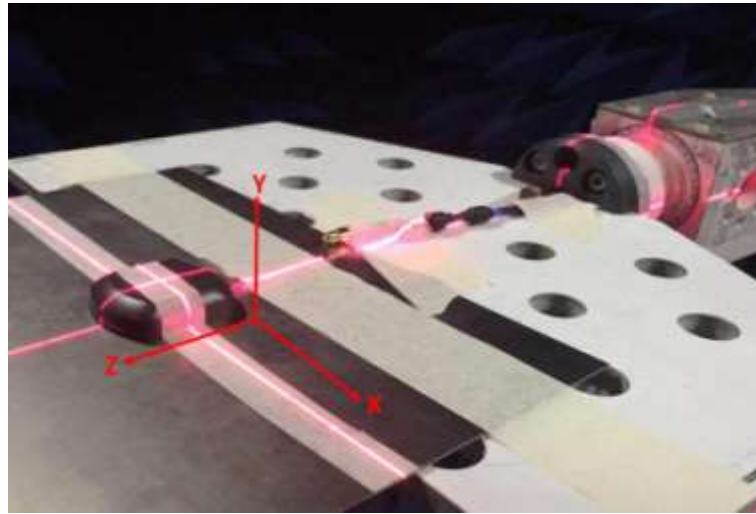
Average Gain:



Peak Gain:

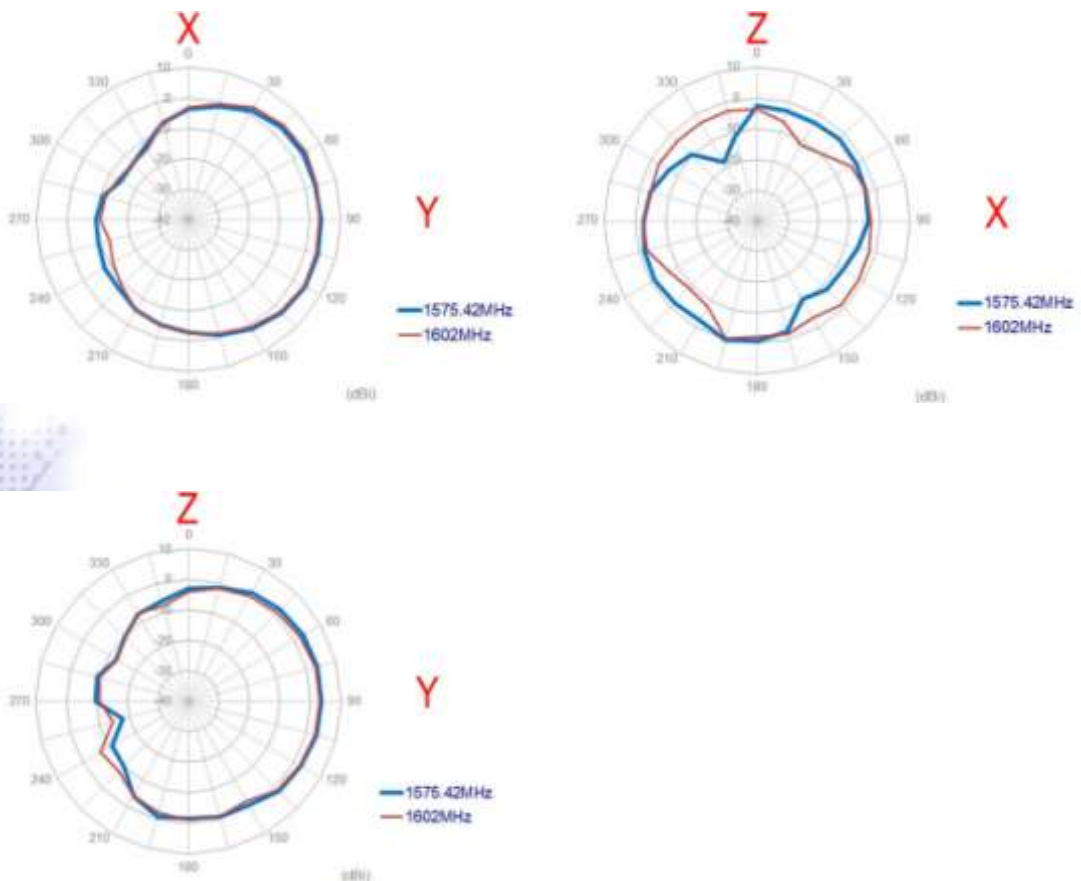


### III. Antenna Radiation Pattern Measurement:



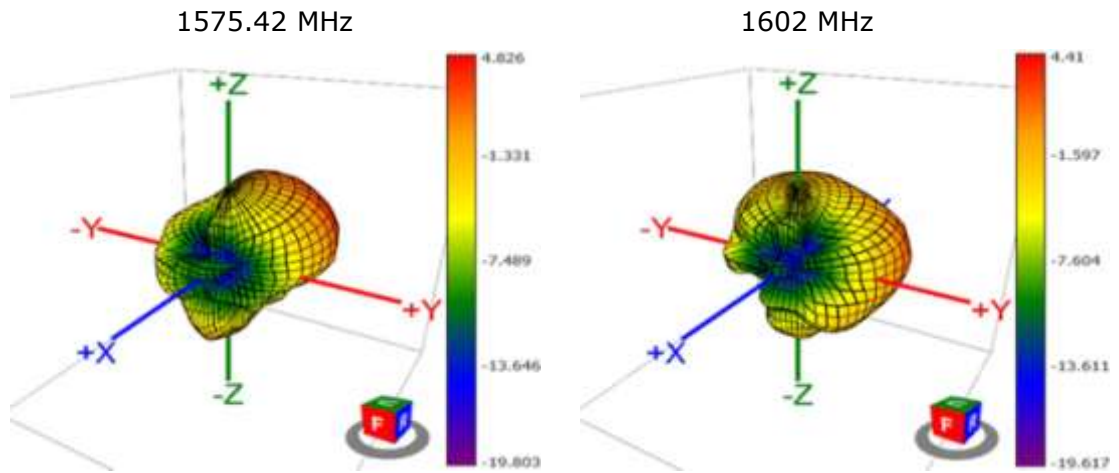
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2D Radiation Pattern





### 3D Radiation Pattern



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### IV. Mechanical Drawing:

