



Product Name: Mini GNSS Receiver (RS232)

Part Number: GM-5G-C1RA-SDN02

Features:

- U-blox 10 engine
- Maximum position availability with concurrent reception of 4 GNSS
- Low profile, Robust, IPX7 Water proof enclosure, Magnetic Mount
- Ultra low power consumption without compromising GNSS performance
- Excellent Tracking Sensitivity, -167dBm
- Advanced spoofing and jamming detection
- Quick Time-to-First-Fix Cold Start
- RoHS & REACH Compliant

Application:

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

Mini GNSS Receiver

MODEL: GM-5G

Preliminary

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 BeiDou B1I/B1C, Galileo E1B/C SBAS L1 C/A: WAAS, EGNOS, MSAS, GAGA |
| Sensitivity* | Tracking and nav.-167 dBm |
| Nav update rate | 1Hz (default) Up to 10Hz |
| TTFF** | Cold start 28 sec. Typical Hot start 1 sec. Typical Aided start 1 sec Typical |
| Position accuracy** | 1.5 m cep |
| Velocity accuracy *** | 0.05 m/s |
| Operating Voltage | 5V |
| Physical Construction | |
| Dimension (mm) | 58.3(L) x 48(W) x 15(H) |
| Weight (g) | 243 (with cable) |
| Case Material | Fully gasketed high-impact plastic, waterproof to IEC 60529 IPX7 standards |
| Environmental Conditions | |
| Temperature | Operating: -30 ~ +80 °C |
| | Storage: -40 ~ +80 °C |
| ESD Protection (IEC 61000-4-2 level 4) | Contact : 8KV · Air : 15KV |

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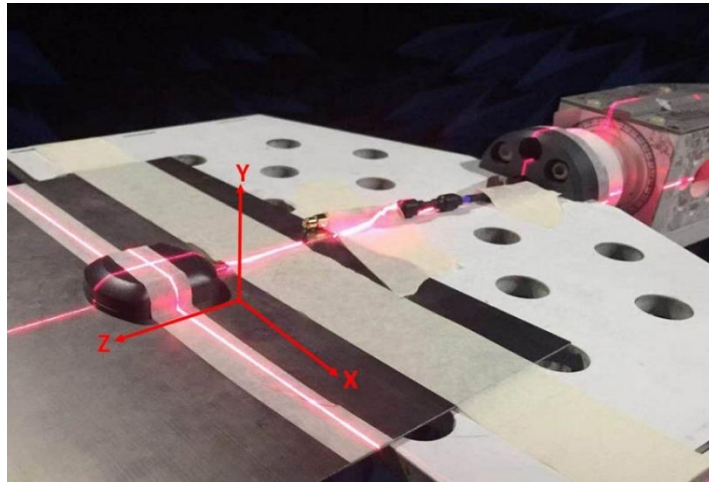
| Communication | | |
|----------------------|--|--------------|
| Protocol | NMEA 0183 V4.10 | |
| Interface | RS232 | |
| Interface Capability | | |
| Output Sentences | GGA(1sec), GLL(1sec), GSA(1sec), GSV(1sec), RMC(1sec), VTG(1sec) | |
| Baud Rate | 38400bps | |
| Antenna Performance | | |
| Application Bands | GPS L1 | GLONASS L1OF |
| Frequencies (MHz) | 1575.42 | 1602.00 |
| Efficiency(%) | 73.62 | 71.45 |
| Average Gain(dBi) | -1.33 | -1.46 |
| Peak Gain(dBi) | 4.83 | 4.41 |
| V.S.W.R | < 2 | |
| Return loss | < -10 | |
| Test Condition | With housing With metal plane (305 * 225 mm) | |
| Impedance | 50Ω | |
| Polarization | R.H.C.P. (Right-Handed Circular Polarization) | |

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

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

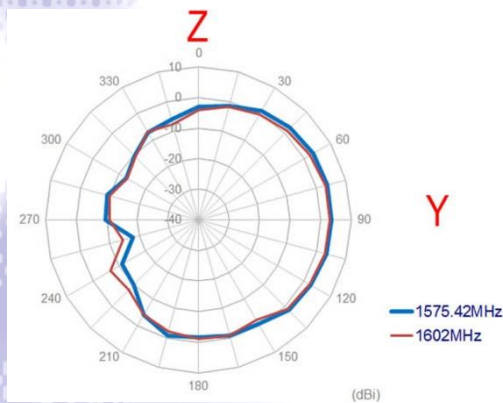
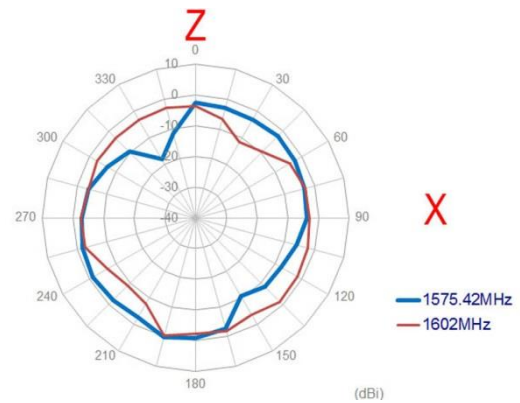
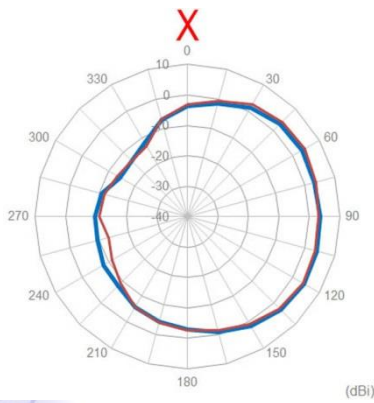
*** 50% @ 30 m/s

II. Antenna Radiation Pattern Measurement:

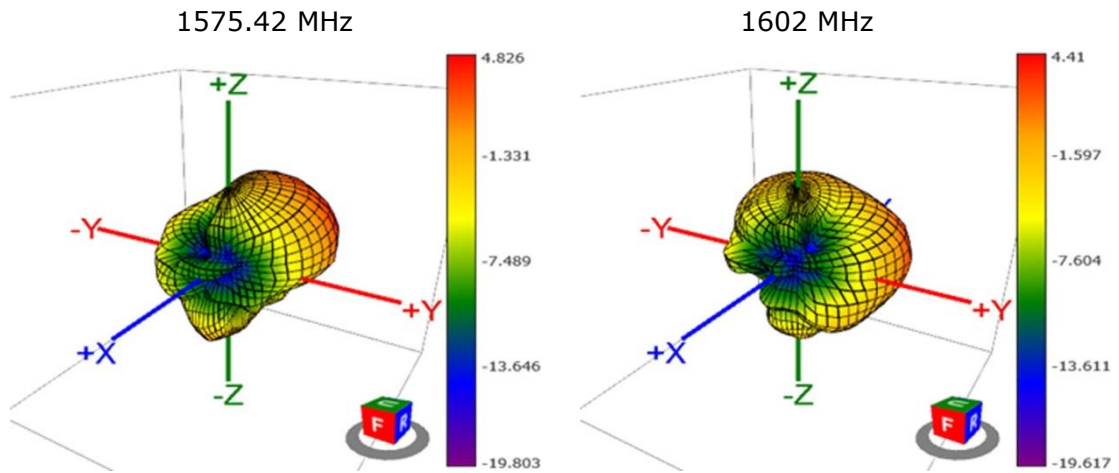


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A) 2D Radiation Pattern



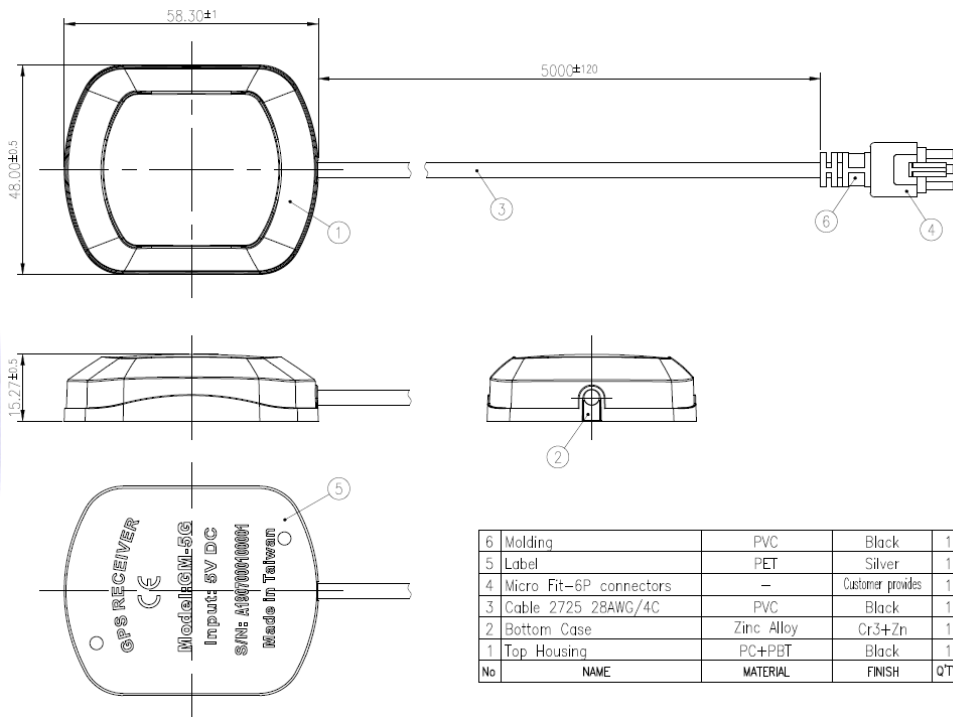
B) 3D Radiation Pattern




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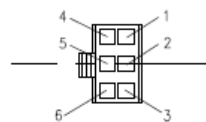
III. Mechanical Drawing:

For Reference Only



CONNECTION :

| PIN NO | Cable Color | Function |
|---|-------------|----------|
|  PIN 1 | White(白) | TX |
| PIN 5 | Black(黑) | Ground |
|  PIN 4 | Red(紅) | VCC |
| PIN 2 | Green(綠) | RX |



Type :Molex CON-2-058-6R