Pinwheel™ Antennas Enhance Flexibility and Reduce Costs

Benefits

Choke ring antenna performance without size and weight

Reduces equipment costs

Placement flexibility and precision positioning, even on long baselines

Eliminates need for future redesign

Features

L1 or L1/L2 options

GPS+GLONASS signal reception

Excellent multipath rejection

Highly stable phase center

RoHS compliant

Dual Constellation For Enhanced Positioning

The GPS-701-GG uses the L1 frequency while the GPS-702-GG uses the L1 and L2 frequencies. Both antennas offer combined GPS+GLONASS signal reception. Customers can use the same antenna for GPS-only or dual constellation applications, resulting in increased flexibility and reduced equipment costs.

Stable Phase Center

The phase center of these two antennas remains constant as the azimuth and elevation angle of the satellites change. Signal reception is unaffected by the rotation of the antenna or satellite elevation, so placement and installation of the antennas can be completed with ease. With the phase center in the same location for both the L1 and L2 signals, and with minimal phase center variation between the two antennas, these antennas are ideal for baselines of any length.

Durable, Future-Proof Design

These rugged antennas are enclosed in a durable, waterproof housing and meet MIL-STD-202F for vibration and MIL-STD-810F for salt spray. Sharing the same form factor as other NovAtel GPS-700 series antennas, the GPS-701-GG and GPS-702-GG antennas are compact and lightweight, making them highly portable and suitable for a wide variety of environments and applications.

Both antennas meet the European Union's directive for Restriction of Hazardous Substances (RoHS), so integrators can be confident these antennas can be used in system designs for years to come.

If you require more information about our antennas, visit novatel.com/products/antennas.htm

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or 403-295-4900

Europe 44-1993-85-24-36

SE Asia and Australia 61-400-833-601

Performance[1]

3 dB Pass Band
L1   1588.5±23 MHz (typical)
L2   1236±18.3 MHz (typical)

Out-of-Band Rejection
L1±100 MHz   30 dBc (typical)
L2±200 MHz   50 dBc (typical)

LNA Gain   29 dB (typical)

Gain at Zenith (90°)
L1   +5.0 dBic (minimum)
L2   +2.0 dBic (minimum)

Gain Roll-Off (from Zenith to Horizon)
L1   13 dB
L2   11 dB

Noise Figure   2.0 dB (typical)

VSWR   ≤2.0 : 1

L1-L2 Differential

Propagation Delay   5 ns (maximum)

Nominal Impedance   50 Ω

Altitude   9,000 m

Physical and Electrical

Dimensions   185 mm diameter[2] x 69 mm

Weight   500 g

Power
Input Voltage   +4.5 to +18 VDC
Power Consumption   35 mA (typical)

Connector   TNC female

Environmental
Temperature
   Operating   -40°C to +85°C
   Storage   -55°C to +85°C
Humidity   95% non-condensing
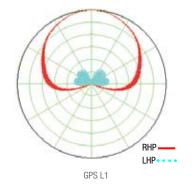Vibration (operating)
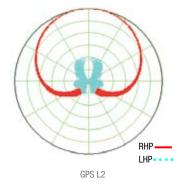   Random   MIL-STD-202F
   Sinusoidal   SAEJ1211, Section 4.7
Shock   IEC 68-2-27 (Ea)
Bump   IEC 68-2-29 (Eb)
Salt Spray   MIL-STD-810F, 509.4
Waterproof   IEC 60529 IPX7
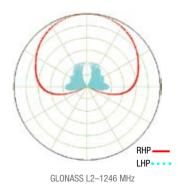RoHS   EU Directive 2002/95/EC

Compliance   FCC, CE

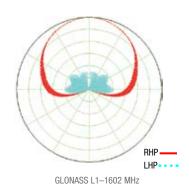## Elevation Gain Patterns[1]

The plots below represent the typical right-hand polarized (RHP) and left-hand polarized (LHP) normalized radiation patterns for GPS L1/L2 and GLONASS L1/L2 frequencies, respectively.

RHP ——
LHP ••••

GPS L1

RHP ——
LHP ••••

GPS L2

RHP ——
LHP ••••

GLONASS L2–1246 MHz

RHP ——
LHP ••••

GLONASS L1–1602 MHz

[1] L2 specifications apply to the GPS-702-GG only.
[2] Not including tape measure tab. Full diameter with tape measure tab is 195 mm.

NovAtel

RoHS COMPLIANT