GPS-701-GG and GPS-702-GG

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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GPS-701-GG and GPS-702-GG

Performance

3 dB Pass Band

L1	1588.5±23.0 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 +18.0 VDC
Power Consumption	35 mA (typical)

Connector **TNC female**

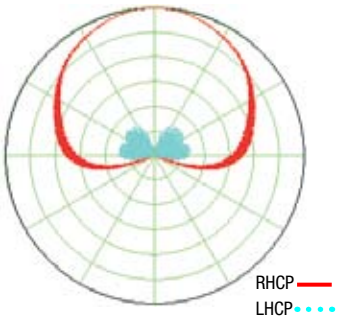
Environmental

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

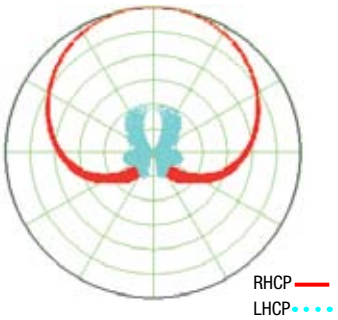
Compliance **FCC, CE**

Elevation Gain Patterns[2]

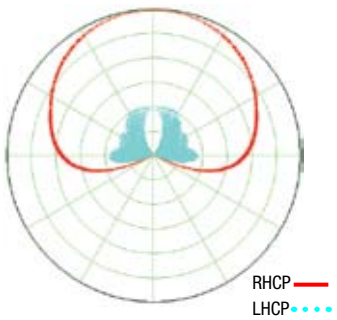
The plots below represent the typical right-hand circular polarized (RHCP) and left-hand circular polarized (LHCP) normalized radiation patterns for GPS L1/L2 and GLONASS L1/L2 frequencies, respectively.



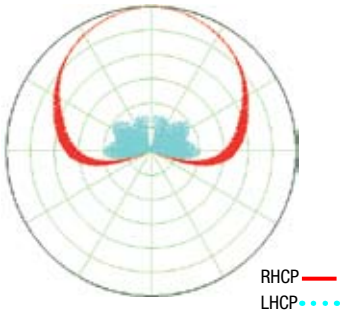
GPS L1



GPS L2



GLONASS L2–1246 MHz



GLONASS L1–1602 MHz

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

Version 2 -Specifications subject to change without notice.

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For the most recent details of this product:
novatel.com/Documents/Papers/GPS701_702GG.pdf