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# Antennas GPS-701-GGL & GPS-702-GGL

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HIGH PERFORMANCE PINWHEEL® ANTENNAS PROVIDE GPS+GLONASS L1 & L2, BEIDOU B1, GALILEO E1 FREQUENCIES PLUS ACCESS TO L-BAND SERVICES

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## DUAL CONSTELLATION PLUS L-BAND

The GPS-701-GGL utilizes the L1 frequency while the GPS-702-GGL uses the L1 and L2 frequencies. Both antennas offer combined GPS+GLONASS signal reception and receive BeiDou B1, Galileo E1 and L-Band signals. This enhances antenna performance by providing access to popular differential services. 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 easily completed. With the phase center in the same location for both the L1 and L2 signals and with minimal phase center variation between the antennas, the GPS-701/702-GGL antennas are ideal for baselines of any length.

## DURABLE, FUTURE-PROOF DESIGN

The GPS-701/702-GGL 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, both antennas are compact and lightweight, making them highly portable and suitable for a wide variety of environments and applications.

The GPS-701/702-GGL 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.



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## BENEFITS

- + Enhanced differential performance with L-Band reception
- + Choke ring antenna functionality without size and weight
- + Reduces equipment costs & need for future redesign
- + Placement flexibility and precision positioning, even on long baselines

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## FEATURES

- + L1 or L1/L2 options
- + L-Band capable
- + GPS+GLONASS signal reception
- + Excellent multipath rejection
- + Highly stable phase center
- + RoHS compliant

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If you require more information about our antennas, visit [www.novatel.com/antennas](http://www.novatel.com/antennas)

# GPS-701-GGL and GPS-702-GGL

## PERFORMANCE

### 3 dB Pass Band

|        |                             |
|--------|-----------------------------|
| L1     | 1588.5 ± 23.0 MHz (typical) |
| L2     | 1236.0 ± 18.0 MHz (typical) |
| L-Band | 1545.0 ± 20.0 MHz (typical) |

### Out-of-Band Rejection

|             |                  |
|-------------|------------------|
| L1 ±150 MHz | 30 dBc (typical) |
| L2 ±100 MHz | 30 dBc (typical) |
| L1 ±250 MHz | 50 dBc (typical) |
| L2 ±200 MHz | 50 dBc (typical) |

|                 |                 |
|-----------------|-----------------|
| <b>LNA Gain</b> | 29 dB (typical) |
|-----------------|-----------------|

### Gain Roll-Off (from Zenith to Horizon)

|        |       |
|--------|-------|
| GPS L1 | 13 dB |
| GPS L2 | 11 dB |

|                     |                  |
|---------------------|------------------|
| <b>Noise Figure</b> | 2.5 dB (typical) |
|---------------------|------------------|

|             |          |
|-------------|----------|
| <b>VSWR</b> | ≤2.0 : 1 |
|-------------|----------|

|   |                |
|---|----------------|
| <b>L1-L2 Differential Propagation Delay</b> | 5 ns (maximum) |
|---|----------------|

|                          |      |
|--------------------------|------|
| <b>Nominal Impedance</b> | 50 Ω |
|--------------------------|------|

|                 |         |
|-----------------|---------|
| <b>Altitude</b> | 9,000 m |
|-----------------|---------|

## PHYSICAL AND ELECTRICAL

|                   |                                      |
|-------------------|--------------------------------------|
| <b>Dimensions</b> | 185 mm diameter <sup>1</sup> × 69 mm |
|-------------------|--------------------------------------|

|               |       |
|---------------|-------|
| <b>Weight</b> | 500 g |
|---------------|-------|

### Power

|               |                   |
|---------------|-------------------|
| Input voltage | +4.5 to +18.0 VDC |
|---------------|-------------------|

|                   |                 |
|-------------------|-----------------|
| Power consumption | 35 mA (typical) |
|-------------------|-----------------|

|                  |            |
|------------------|------------|
| <b>Connector</b> | TNC female |
|------------------|------------|

## ENVIRONMENTAL

### Temperature

|           |                |
|-----------|----------------|
| Operating | -40°C to +85°C |
|-----------|----------------|

|         |                |
|---------|----------------|
| Storage | -55°C to +85°C |
|---------|----------------|

|                 |                    |
|-----------------|--------------------|
| <b>Humidity</b> | 95% non-condensing |
|-----------------|--------------------|

### Vibration (operating)

|        |              |
|--------|--------------|
| Random | MIL-STD-202F |
|--------|--------------|

|            |                       |
|------------|-----------------------|
| Sinusoidal | SAEJ1211, Section 4.7 |
|------------|-----------------------|

|              |                  |
|--------------|------------------|
| <b>Shock</b> | IEC 68-2-27 (Ea) |
|--------------|------------------|

|             |                  |
|-------------|------------------|
| <b>Bump</b> | IEC 68-2-29 (Eb) |
|-------------|------------------|

|                   |                     |
|-------------------|---------------------|
| <b>Salt Spray</b> | MIL-STD-810F, 509.4 |
|-------------------|---------------------|

|                   |                |
|-------------------|----------------|
| <b>Waterproof</b> | IEC 60529 IPX7 |
|-------------------|----------------|

|                   |                             |
|-------------------|-----------------------------|
| <b>Compliance</b> | FCC, CE and Industry Canada |
|-------------------|-----------------------------|

|             |                         |
|-------------|-------------------------|
| <b>RoHS</b> | EU Directive 2011/65/EU |
|-------------|-------------------------|

For the most recent details of this product:

[www.novatel.com/products/gnss-antennas/high-performance-gnss-antennas/](http://www.novatel.com/products/gnss-antennas/high-performance-gnss-antennas/)

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1. Not including tape measure tab. Full diameter with tape measure tab is 195 mm.