

# L1/L2 Antennas

## Features

Choice of specialized antennas

Wide input voltage range

Rugged, environmentally sealed housings

## Benefits

Offers performance and a form factor optimized to meet the needs of your application

Ensures compatibility with virtually all GPS receivers

Provides reliability in a wide range of severe environments and applications



**NovAtel's L1/L2 antennas combine exceptional performance with unsurpassed reliability to suit a wide variety of applications.**

## GPS-702

The GPS-702 includes patented Pinwheel™ technology to provide superior multipath rejection in a compact and lightweight dual-frequency antenna. With a highly stable phase center in the same location for the L1 and L2 signals, the antenna is the perfect choice for high precision applications. The GPS-702 is waterproof to IEC 60529 IPX7 and meets the MIL-STD-810F specification for vibration and salt spray, resulting in an antenna suitable for adverse conditions.

## GPS-533

The GPS-533 is a high performance L1/L2 antenna with a built-in choke ring to substantially reduce the effects of multipath, making it ideal for use in a DGPS base station or other demanding applications. The antenna features an integrated protective radome to withstand harsh environments and meets DO-160D standards.

## GPS-532 and GPS-532-C

NovAtel's GPS-532 is an aircraft-certified L1/L2 antenna for airborne and other high dynamic applications. Designed to the ARINC 743A standard, the GPS-532 weighs less than 200 grams and includes a four hole mounting system for secure installation. The GPS-532-C includes an FAA airworthiness certificate.

## GPS-702L

The GPS-702L offers a single antenna solution for GPS L1 and L2 frequencies, as well as the L-band frequencies used by the OmniSTAR and Canada-Wide Differential GPS (CDGPS) correction services. This Pinwheel™ antenna features improved RTK performance with superior multipath rejection for high accuracy, real-time performance in any positioning mode. In addition, the GPS-702L is compliant with the European Union's directive for the Restriction of Hazardous Substances (RoHS), thus eliminating the need for future hardware changes.



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## Receiver Compatibility

All antennas listed on this page are designed for use with NovAtel's OEM4-based receivers or other equivalent high-precision GPS receivers.

### GPS-702

For more specifications on the GPS-702, see the GPS-700 Series product sheet.

#### 3 dB Pass Band

L1	1575 -15/+30 MHz (typical)
L2	1228 -15/+30 MHz (typical)

#### Out-of-Band Rejection ( $f_c = L1, L2$ )

$f_c - 30/+50$ MHz	30 dBc (typical)
$f_c - 40/+80$ MHz	50 dBc (typical)

#### LNA Gain

27 dB (typical)

#### Gain at Zenith (90°)

L1	+5 dBic (minimum)
L2	+2 dBic (minimum)

#### Noise Figure

≤ 2.0 dB (typical)

### GPS-702L

For more specifications on the GPS-702L, see the GPS-702L product sheet.

#### 3 dB Pass Band

L1	1575 ± 20 MHz (typical)
L2	1228 ± 20 MHz (typical)
L-band	1543 ± 20 MHz (typical)

#### Out-of-Band Rejection

L1, L-band ( $f_c = 1555$ MHz)	
$f_c ± 75$ MHz	30 dBc (typical)
$f_c ± 100$ MHz	50 dBc (typical)
L2 ( $f_c = 1227$ MHz)	
$f_c + 50$ MHz	25 dBc (typical)
$f_c - 50$ MHz	30 dBc (typical)
$f_c ± 100$ MHz	50 dBc (typical)
LNA Gain	27 dB (typical)

#### Gain at Zenith (90°)

L1	+5.0 dBic (minimum)
L2	+1.5 dBic (minimum)
L-band	+5.0 dBic (minimum)

#### Noise Figure

2.5 dB (typical)

### GPS-533

#### Performance

##### 3 dB Pass Band

L1	1575 ± 13 MHz (typical)
L2	1227 ± 13 MHz (typical)

##### Out-of-Band Rejection ( $f_c = L1, L2$ )

$f_c ± 50$ MHz	40 dBc (typical)
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##### LNA Gain

L1	31 ± 2 dB (typical)
L2	33 ± 2 dB (typical)

##### Gain at Zenith (90°)

L1	+7.7 dBic (minimum)
L2	+4.7 dBic (minimum)

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

L1	15 dB
L2	18 dB

##### Noise Figure

≤ 3.0 dB (typical)

##### VSWR

≤ 1.5 : 1

#### Physical & Electrical

<b>Size</b>	
Diameter	308 mm
Height	223 mm
<b>Weight</b>	
	4.1 kg

#### Power

Input Voltage	+2.5 to +24 VDC
Power Consumption	1 W (typical)

#### Operating Temperature

-55°C to +85°C

#### Regulatory

FCC Class B, CE

### GPS-532 / GPS-532-C

#### Performance

##### 3 dB Pass Band

L1	1575 ± 12 MHz (typical)
L2	1227 ± 12 MHz (typical)

##### Out-of-Band Rejection ( $f_c = L1, L2$ )

$f_c ± 50$ MHz	40 dBc (typical)
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##### LNA Gain

L1	31 ± 2 dB (typical)
L2	33 ± 2 dB (typical)

##### Gain at Zenith (90°)

L1	+4.7 dBic (minimum)
L2	+3.3 dBic (minimum)

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

L1	6.5 dB
L2	7.1 dB

##### Noise Figure

≤ 3.0 dB (typical)

##### VSWR

≤ 1.5 : 1

#### Physical & Electrical

<b>Size</b>	
	19 x 76 x 119 mm (Conforms to ARINC 743A)
<b>Weight</b>	
	198 g

#### Power

Input Voltage	+2.5 to +24 VDC
Power Consumption	1 W (typical)

#### Operating Temperature

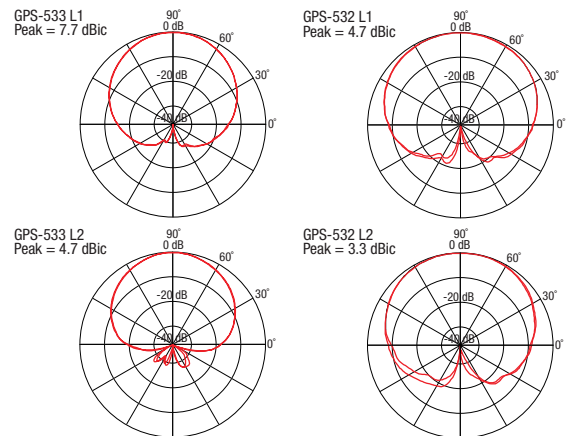
-55°C to +85°C

#### Regulatory

FCC Class B, CE

### GPS-533 and GPS-532 Elevation Gain Patterns

The plots to the right represent the typical right-hand polarized normalized radiation pattern for the L1 and L2 frequencies. The plots on the left are for the GPS-533 antenna and the plots on the right are for the GPS-532 antenna.



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