

## Antenna Module for OEM Integrators

### Benefits

GNSS L1/L2 and L-Band signals maximize performance

Easily integrated into smart antennas and alternative custom enclosure assemblies

### Features

Proven NovAtel® Pinwheel™ technology

Small form factor facilitates easier integration

Excellent multipath rejection

Stable phase center

RoHS compliant

### Designed for Integration

The Pinwheel OEM antenna module provides NovAtel's Pinwheel antenna technology in an easy to integrate assembly targeted for use in machine control and precision agriculture applications. The Pinwheel OEM provides optimum flexibility to create high performance antenna and smart antenna products using your own industrial designs.

### Multi-Constellation for Enhanced Positioning

The Pinwheel OEM receives GNSS L1/L2 signals. The antenna module also receives L-Band signals for SBAS correction services.

### Small Form Factor

The small form factor antenna module measures only 143 mm x 30 mm. It accepts an input voltage of 5.0 VDC and draws less than 40 mA.

The Pinwheel OEM comes with a 22 dB LNA and is designed for use in custom smart antenna products and for integrating into alternative enclosures, such as roof top domes.

### Proven Pinwheel Technology

NovAtel's patented Pinwheel antenna technology provides choke ring type performance in a small, lightweight, integratable package.

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



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## Performance

### Signals Tracked

GPS	L1, L2, L2C
GLONASS	L1, L2
Galileo	E1
BeiDou	B1
L-Band	
SBAS	

### 3 dB Pass Band

L1 L-Band	1568 ± 43.0 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

22 dB (typical)

### Gain at Zenith (90°)

L1	+3.0 dBic (minimum)
L2	+1.5 dBic (minimum)

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

L1	13 dB
L2	11 dB

### Phase Center Stability

<3 mm<sup>1</sup>

### Noise Figure

2.0 dB (typical)

### VSWR

≤2.5 : 1

### L1-L2 Differential Propagation Delay

5 ns (maximum)

### Nominal Impedance

50 Ω

## Physical and Electrical

### Dimensions

143 mm diameter x <30 mm

### Weight

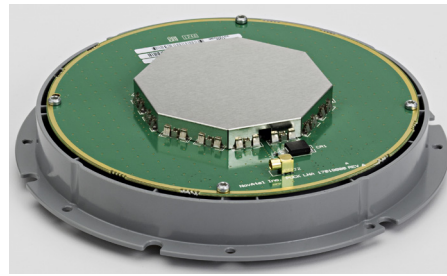
<120 g

### Power

Input Voltage	+5.0 ±5% VDC
Current Draw	40 mA (typical)

### Connector

MMCX right angle female



Bottom View

## Environmental

### Temperature

Operating	-40°C to +85°C
Storage	-55°C to +85°C

### Humidity

95% non-condensing

### Vibration (operating)<sup>1</sup>

Random	MIL-STD-202F
Sinusoidal	SAEJ1211, Section 4.7

### Shock<sup>2</sup>

IEC 68-2-27 (Ea)

### Bump<sup>2</sup>

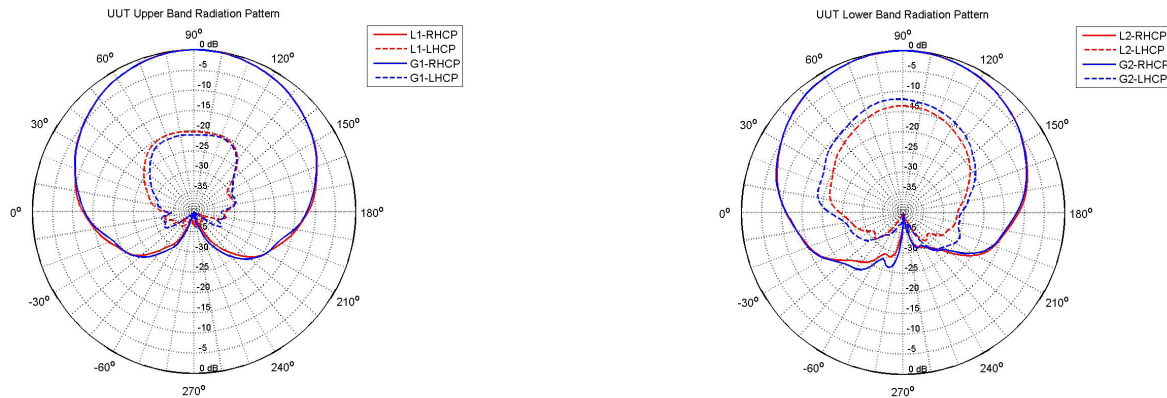
IEC 68-2-29 (Eb)

### Compliance

FCC, CE<sup>3</sup>  
RoHS EU Directive 2011/65/EU

## Elevation Gain Patterns

These plots represent the typical Right Hand Polarized (RHP) and Left Hand Polarized (LHP) normalized radiation patterns for the L1 and L2 frequency bands, respectively.



Revision 1 - Specifications subject to change without notice.

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For the most recent details of this product:

[http://www.novatel.com/assets/Documents/Papers/Pinwheel\\_OEM.pdf](http://www.novatel.com/assets/Documents/Papers/Pinwheel_OEM.pdf)

<sup>1</sup> As measured in NovAtel Anechoic chamber.

<sup>2</sup> Environmental testing validated in a NovAtel antenna enclosure.

<sup>3</sup> Compliant by design—not tested.

