

# VEXXIS™ Antennas GNSS-850



## CUTTING EDGE ANTENNA TECHNOLOGY WITH SUPERIOR TRACKING PERFORMANCE



### INNOVATIVE DESIGN WITH MULTIPLE PATENTS

The VEXXIS GNSS-800 series antennas feature a patented multi-point feeding network and radiation pattern optimization technology. In addition to having enhanced performance in multipath environments, the GNSS-850 antenna is able to maintain a low profile while achieving both high peak zenith gain and low gain roll-off from zenith to horizon, without sacrificing tracking performance. This new technology significantly enhances the low elevation angle tracking capabilities, extending operation to the entire GNSS constellation. Furthermore, the antenna is able to achieve greater phase center stability through our innovative element design. This directly translates into improved carrier phase measurement and a better RTK solution.

### TRACKING IN CHALLENGING ENVIRONMENTS

The ability to track low elevation satellites while maintaining a high gain for higher elevation satellites makes the GNSS-850 an excellent choice for any applications where the sky is partially visible, such as operating close to tree lines, under foliage, or in urban canyons. The antenna is able to track any visible satellites from horizon to zenith, providing maximum number of observations for an enhanced positioning solution.

### NOVATEL'S TOUGHEST PRECISION ANTENNA

GNSS-800 antennas are the toughest high precision antennas NovAtel has designed to date, ensuring their survivability even in the harshest operating environments. The antennas feature ultra-durable watertight enclosures, and have been proven to sustain intense vibration, earning the MIL-STD-810G rating.

### FEATURES

- + Supports all GNSS Constellations and frequencies
- + L-Band signal reception, supporting correction services such as TerraStar
- + Multi-point antenna feed provides stable phase center and enhanced multipath rejection
- + Radiation pattern optimization technology yields exceptional low elevation satellite tracking
- + Provides exceptional tracking performance previously unachievable in a small form factor
- + Hermetically sealed enclosure to endure the toughest environments

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



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# GNSS-850



## PERFORMANCE

### Signal Received

GPS	L1, L2, L5
GLONASS	L1, L2, L3
Galileo	E1, E5a/b, E6
BeiDou	B1, B2, B3
L-Band	

### Pass Band (typical)

Upper passband	1569.0 ± 43.0 MHz
Lower passband	1232.0 ± 68.0 MHz

### Out-of-Band Rejection

Band edges ± 50 MHz	40 dB minimum
Band edges ± 100 MHz	60 dB minimum

**LNA Gain** 29 dB (typical)

### Gain at Zenith (90°)<sup>1</sup>

L1/B1/E1/G1	+5.0 dBic minimum
L2/B2/E5b/G2	+5.0 dBic minimum
L5/E5a	+3.0 dBic minimum
L-Band	+5.0 dBic minimum

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

L1/B1/E1/G1	10 dB
L2/B2/E5b/G2	12 dB
L5/E5a	12 dB
L-Band	10 dB

**Phase Center Stability** <2.0 mm

**Noise Figure** <2.0 dB (typical)

**VSWR** ≤2.0 : 1

**L1-L2 Differential Propagation Delay**  
5 ns (maximum)

**Group Delay Ripple** <15 ns

**Nominal Impedance** 50 Ω

## PHYSICAL AND ELECTRICAL

**Dimensions** 176 mm D × 55 mm H

**Weight** 507 g

**Connector** TNC female

**Mounting** 5/8" thread mount

### Power

Input voltage +3.8 to +18.0 VDC  
Current 60 mA (maximum)

## ENVIRONMENTAL

### Temperature

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

**Humidity** 95% non-condensing

**Salt Fog** MIL-STD-810G (CH1), 509.6

**Water Resistance** IP67

### Vibration (operating)

Random MIL-STD-810G (CH1),  
514.7 (7.7 g) Annex E  
Procedure 1, Category 24

**Shock** MIL-STD-810G (CH1),  
516.7 (40 g), Procedure 1

**Bump** IEC 60068-2-27 Ea (25 g)

**Regulatory Compliance** FCC, CE

**RoHS** EU Directive 2011/65/EU

For the most recent details of this product:

[www.novatel.com/products/gnss-antennas/vexxis-series-antennas/gnss-800-series-antennas/](http://www.novatel.com/products/gnss-antennas/vexxis-series-antennas/gnss-800-series-antennas/)

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<sup>1</sup> G1 zenith gain is 4 dBic (typical).  
L5 zenith gain is 3 dBic (typical)