



Trimble AV16 Antenna

HELIX BASED DUAL-FREQUENCY ANTENNA FOR UAV APPLICATIONS

The Trimble AV16 antenna is a helix based dual-frequency L-band antenna. This antenna is ideal for UAV applications due to its lightweight, small form factor and low power consumption design.

COMPREHENSIVE GNSS SUPPORT

The Trimble AV16 offers support for GPS L1/L2, GLONASS L1/L2, Galileo E1 and BeiDou B1 as well as Trimble RTX and OmniSTAR correction services via L-Band.

DESIGNED FOR ACCURACY

Trimble AV16 features a precision tuned, helix element. It offers excellent axial ratio and does not require a ground plane for optimal performance. In addition, the antenna has an integrated low-loss pre-filter to increase the antenna's

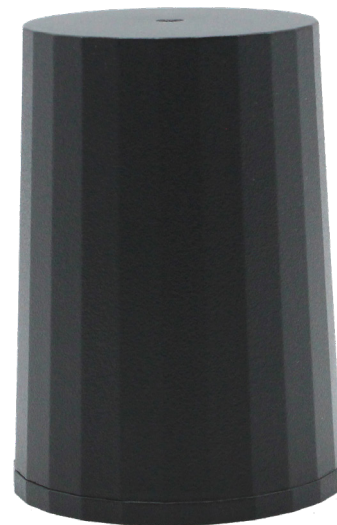
immunity to high amplitude interfering signals from LTE and other cellular signals. The antenna also has an integrated SMA connector for easy screw-on mounting as well as an O-ring to comply with IP67 standards.

Additional key features of the AV16 include:

- ▶ Very low noise preamp: 1.7dB
- ▶ Axial ratio: <0.5dB max
- ▶ LNA Gain: 35dB typ
- ▶ Low current: 21mA typ
- ▶ ESD circuit protection: 15 KV
- ▶ Invariant performance from: +2.2 to 16VDC

Key Benefits

- ▶ Lightweight at 37g
- ▶ Small footprint
- ▶ Great multipath rejection
- ▶ Increased system accuracy
- ▶ Excellent signal to noise ratio
- ▶ IP67, REACH and RoHS compliant



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TECHNICAL SPECIFICATIONS

@ Vcc = 3V and 25 °C ambient temperature

Antenna

Element Architecture Dual-Frequency
 RHCP Quadrifilar Helix
 Phase Center L1/E1/B1: 0.032m
 L2/G2: 0.037m

| GNSS | | Gain (dBic typ at Zenith) | Axial Ratio (dB at Zenith) |
|--|-----|------------------------------|-------------------------------|
| GPS / QZSS | L1 | 3.3 | ≤ 0.5 max |
| | L2 | 1.8 | ≤ 0.5 max |
| | L5 | - | - |
| GLONASS | L1 | 2.8 | ≤ 0.5 max |
| | L2 | 1.5 | ≤ 0.5 max |
| | L3 | - | - |
| Galileo | E1 | 3.3 | ≤ 0.5 max |
| | E5a | - | - |
| | E5b | - | - |
| | E6 | - | - |
| BeiDou | B1 | 3.1 | ≤ 0.5 max |
| | B2 | - | - |
| | B2a | - | - |
| | B3 | - | - |
| IRNSS / NavIC | L5 | - | - |
| QZSS | L6 | - | - |
| L-Band Services (1525MHz - 1559MHz) | | 2.9 | ≤ 0.5 max |

ELECTRICAL SPECIFICATIONS

Frequency Bandwidth1525MHz - 1606MHz
 1215MHz - 1254MHz
 Overall LNA Gain.....35dB typ
 LNA Noise Figure1.7dB typ
 VSWR..... <1.5:1 typ
 1.8:1 max
 Supply Voltage Range+2.2 to 16VDC
 Supply Current 21mA typ at 25 °C
 ESD Circuit protection 15 KV air discharge
 EMI Immunity 50V/meter, excepting L1 +/- 100MHz
 and L2 +/- 100 MHz

Out-of-Band Rejection

| L1 | | L2 | |
|----------|-------|----------|-------|
| <1400MHz | >36dB | <1100MHz | >35dB |
| <1450MHz | >32dB | <1190MHz | >47dB |
| >1700MHz | >45dB | >1350MHz | >48dB |

PHYSICAL & ENVIRONMENTAL SPECIFICATIONS

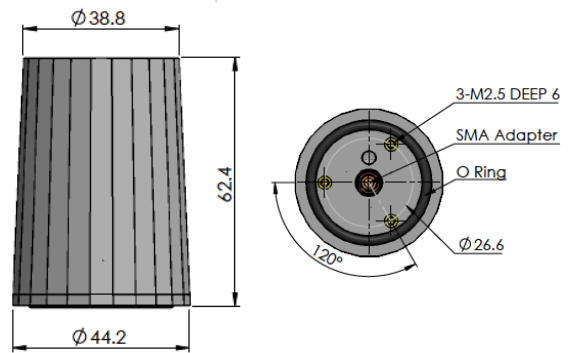
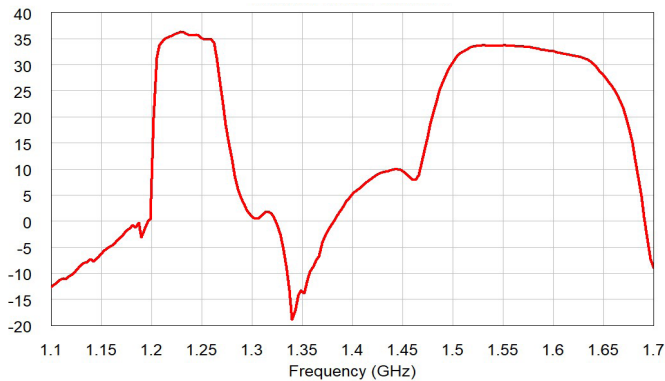
Mechanical Size 62.4 mm (H) x 44.2 mm (D)
 Weight 37g
 Connector..... SMA Male
 Operating Temperature Range -40 °C to +85 °C
 Enclosure Radome: EXL9330, Base: EXL9330
 EnvironmentalIP67, RoHS and REACH compliant
 Shock..... Vertical axis: 50 G, Other axes: 30 G
 Vibration 3 axis, sweep = 15 min, 10 to 200Hz sweep: 3 G

PART NUMBER

120982-16..... Trimble AV16 GNSS Antenna

Specifications subject to change without notice.

AV16 Filter Curve



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