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 interferencing 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
- 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 Quadrifilar Helix

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 Bandwidth ..... 1525MHz - 1606MHz
1215MHz - 1254MHz
Overall LNA Gain 35dB
LNA Noise Figure ..... 1.7dB 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

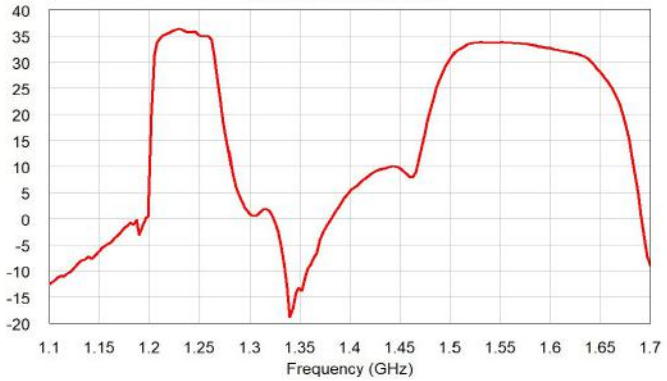
Mechanical Size ..... 62.4 mm (H) x 44.2 mm (D)
Weight 37g
Connector ..... SMA Male
Operating Temperature Range ..... –40 °C to +85 °C
Enclosure ..... Radome: EXL9330, Base: EXL9330
Environmental ..... IP67, RoHS and REACH compliant
Shock ..... Vertical axis: 50 G, Other axes: 30 G
Vibration ..... 3 axis, sweep = 15 min, 10 to 200Hz sweep: 3 G

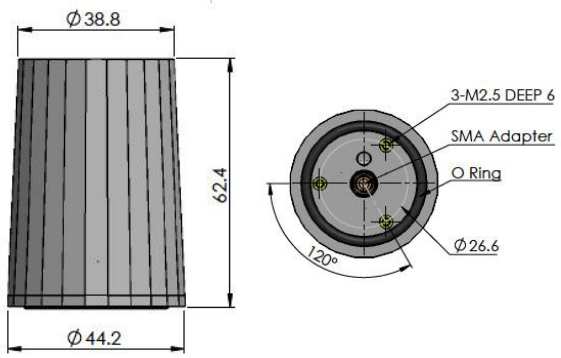
PART NUMBER

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

Specifications subject to change without notice.

AV16 Filter Curve





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