VC6150



VeraChoke® Multi-Constellation Full-Band Antenna

Frequency Coverage: GPS L1, L2, L5 | QZSS L6 | GALILEO E1, E5a, E5b, E6 | BEIDOU B1, B2a, B2b, B3 | GLONASS G1, G2, G3 | NaviC L5

Overview

The patented VeraChoke® VC6150 antenna is a full GNSS spectrum antenna. It has consistent performance (gain, axial ratio, PCV, and PCO) across the full bandwidth of the antenna. It provides the lowest axial ratios (zenith to the horizon, over all azimuths) across all GNSS frequencies (< 0.3 dB at zenith, < 3.0 dB typ. at horizon). It has an exceptional front to back ratio, high efficiency (> 80%), a tight PCV, and near constant PCO for all azimuth and elevation angles, over all in-Band frequencies.

The VC6150 provides a high receive gain over the full GNSS spectrum: Low GNSS band (1160 MHz to 1300 MHz) and High GNSS band (1559 MHz to 1606 MHz).

It has a robust pre-filtered LNA, with high IP3 to minimize de-sensing from high-level out-of-band signals, including 700 MHz LTE, while still providing a low noise figure.

The VC6150 is compatible with the short SCIGN radome and requires a SCIGN mount adapter if the tall SCIGN radome is selected (SCIGN radomes sold separately).



Applications

- Survey Base Stations
- RTK / PPP systems
- High-Precision GNSS systems
- Reference Networks
- Monitoring Stations

Features

- Low axial ratios from zenith to horizon
- Calibrated by Geo++®
- Very tight phase centre variation (< 1.0 mm)
- Low current (35 mA)
- Invariant performance from 2.7 to 24 VDC
- IP67, REACH, and RoHS compliant

Benefits

- Consistent performance across all frequencies
- Extreme precision
- Excellent multipath rejection

About Calian: With global headquarters and manufacturing in Ottawa, Canada, Calian is a leading manufacturer of high-precision antennas and components for Global Navigation Satellite System (GNSS) applications. Calian's mission is to support the needs of a new generation of positioning systems by delivering unprecedented antenna precision at competitive prices. Learn more at www.calian.com/gnss

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Antenna

Technology Wideband Quadrature RHCP Element

			Gain	Axial Ratio	
			dBic typ. at Zenith	dB at Zenith	
GNSS					
		L1	8	0.2	
GPS / QZSS		L2	8	0.3	
		L5	8	0.3	
GLONASS		G1	8	0.3	
		G2	8	0.3	
		G3	8	0.3	
		E1	8	0.2	
Galileo	0.17		8	0.3	
Gallieo		E5B	8	0.3	
		E6	8	0.3	
		B1	8	0.2	
BeiDou		B2b	8	0.3	
ветрои		B2a	8	0.3	
		В3	8	0.3	
IRNSS / NavIC L		L5	8	0.3	
QZSS L6		L6	8	0.3	
L-Band Services (1525 M	L-Band Services (1525 MHz - 1559 MHZ)			-	
Satellite Communication	ns				
Iridium			-	-	
Globalstar			-	-	
Other					
Axial Ratio at 10°	2.0 - 3	3.5 dB	Efficiency	> 80%	
PC Variation	0.5	mm			

Mechanicals

Antenna: 378 mm (dia.) x 150.8 mm (h.) Size

SCIGN radome: 415.2 mm (dia.) x 299.3 mm (h.)

Weight 5.4 kg

Radome Integrated, SCIGN Radome sold separately

5/8" x 11 TPI (female) Mount **Available Connectors** type-N (female)

Environmental

Operating Temperature -60 °C to +85 °C Storage Temperature -60 °C to +95 °C

Vibration MIL-STD-810E - Method 514.5

Shock

Salt Fog MIL-STD-810G - Method 509.6

IP Rating IP67

Compliance IPC-A-610, FCC, RED / CE Mark, RoHS, REACH

Warranty

Parts and Labour 3-year standard warranty Low Noise Amplifier (LNA) - Measured at 3V and 25°C

Frequency Bandwith		Out of Band Rejection		
		Upper Band	Lower Band	
1559 - 1606 MHz	1160 - 1300 MHz	56 dB @ < 1500 MHz 27 dB @ < 1536 MHz 30 dB @ < 1630 MHz > 50 dB @ > 1700 MHz	50 dB @ < 900 MHz 40 dB @ < 1000 MHz 25 dB @ < 1100 MHz 35 dB @ < 1400 MHz	

Architecture eXtended Filtering

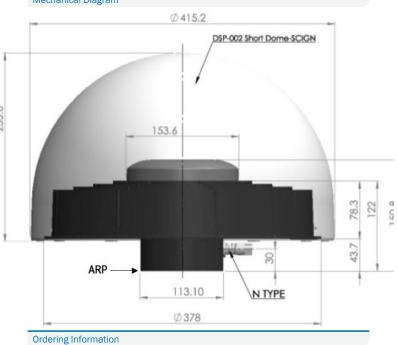
Gain 50 dB Noise Figure 2.0 dB typ. **VSWR** < 1.5:1 max

Supply Voltage Range 2.7 to 24 VDC nominal

Supply Current < 45 mA

ESD Circuit Protection 15 kV air discharge P 1dB Output 12 dBm typ. Group Delay 10 ns max. PCO

Mechanical Diagram



Part Number

33-VC6150-14

14 = type-N connector Short SCIGN radomes available

Please refer to our **Ordering Guide** to review available radomes and connectors at: https://at.calian.com/gnss/information-support/part-number-ordering-guide/

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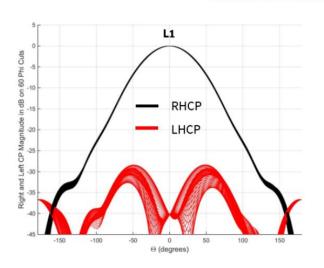
VC6150

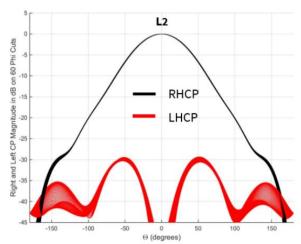


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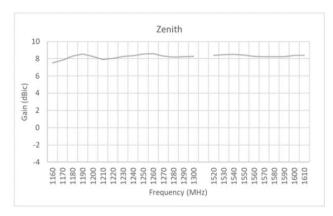
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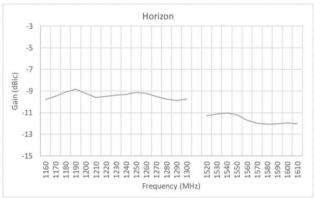
Normalized Radiation Patterns





Gain

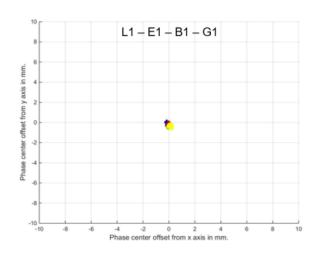


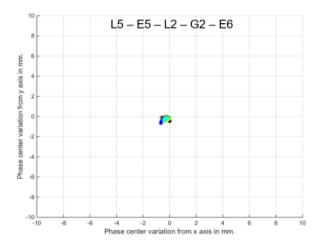


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Phase Center Variation





Axial Ratio

Typical (dB)

Elevation	L5 - E5a	E5b - B2 - G3	L2 - G2	В3	E6	L1 - E1 - B1	G1
Zenith	0.3	0.3	0.3	0.3	0.3	0.2	0.3
30°	2	1.8	1.8	1.8	2	2	2.5
10°		2.25					

