VP6150

CALIAN®
Confidence. Engineered.

VeraPhase® 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

The patented VeraPhase® 6150 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 (< 0.5 dB at zenith, < 2 dB typ. at horizon).

It has an exceptional front to back ratios, high efficiency (> 70%), a tight PCV, and near constant PCO for all azimuth and elevation angles, over all in-Band frequencies.

The performance of the VeraPhase® rivals any geodetic / reference antennas including choke ring antennas but is lighter, smaller, more economical, and requires less power. The antenna has been calibrated by Geo++® and the type mean calibration files are available in the IGS and NGS databases.

The VP6150 provides 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, Ligado® while still providing a noise figure of less than 2.0 dB.

An uncommitted PCB is available within the base of the antenna for integration of a custom system board such as a PPP or RTK GNSS receiver or other applications.

Applications

- Survey
- RTK / PPP systems
- High-Precision GNSS systems
- Reference networks
- Custom OEM products
- Monitoring stations

Features

- Low axial ratio from zenith to the horizon
- Calibrated by Geo++®
- Very Tight Phase centre Variation (< 1 mm)
- Low current (45 mA)
- Invariant performance from 2.7 to 24 VDC
- Space in housing for integrated GNSS Receiver (PPP, RTK)

Benefits

- Consistent performance across all frequencies
- Broadest tracking elevation
- Extreme precision
- Excellent multipath rejection
- IP67, REACH, and RoHS compliant
- Reduced time to market

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

Contact us:
info@tallysman.com
T: +1 613 591-3131

Revision: 202407

VeraPhase® 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

Antenna

Technology	Wideband Quadrature RHCP Element

		Gain dBic typ. at Zenith	Axial Ratio dB at Zenith
GNSS			
GPS / QZSS	L1	7.0	0.75
	L2	6.0	0.50
	L5	5.0	0.50
GLONASS	G1	7.0	0.75
	G2	6.0	0.50
	G3	6.0	0.50
Galileo	E1	7.0	0.75
	E5A	5.0	0.50
	E5B	5.0	0.50
	E6	6.0	0.50
BeiDou	B1	7.0	0.75
	B2	6.0	0.50
	B2a	5.0	0.50
	B3	6.0	0.50
IRNSS / NavIC	L5	5.0	0.50
QZSS	L6	6.0	0.50
L-Band Services (1525 MHz - 1559 MHz)		-	-
Satellite Communications			
Iridium		-	-
Globalstar		-	-
Other			
Axial Ratio at 10°	1.0 to 3.0 dB	Efficiency	> 70%
PC Variation	≤ 1 mm		

Mechanicals

Size	167 mm (d.) x 110 (flat) or 175 (conical) mm (h.)
Weight	800 g (flat), 820 g (conical)
Radome	LEXAN™ EXL9330 Flat or Conical
Mount	5/8" x 11 TPI female
Available Connectors	TNC or type-N (female)

Environmental

Operating Temperature	-60 °C to +85 °C
Storage Temperature	-60 °C to +95 °C
Vibration	MIL-STD-810-E - Test Method 514.5
Shock	MIL-STD-810-G - Test Method 516.6
Icing & Humidity	MIL-STD-810-G - Test Method 521.2 & 520.3
IP Rating	IP67
Compliance	IPC-A-610, FCC, RED / CE Mark, RoHS, REACH

Warranty

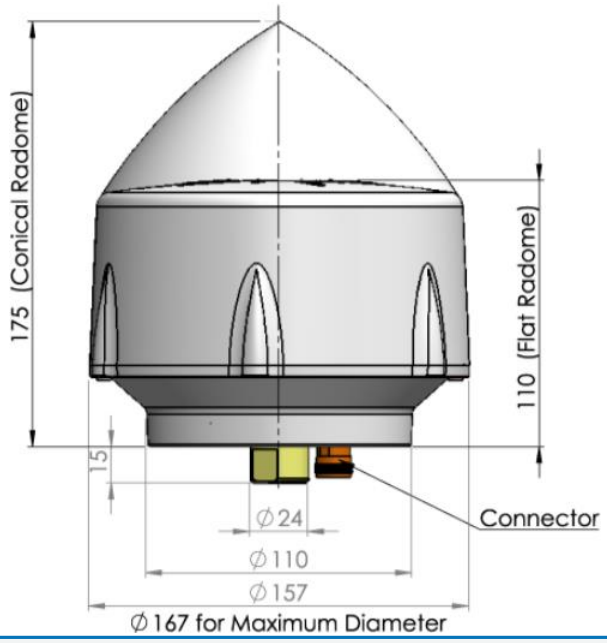
Parts and Labour	3-year standard warranty

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	> 50 dB @ < 1536 MHz > 40 dB @ > 1640 MHz = 60 dB @ 1690 MHz > 60 dB @ > 1710 MHz	> 55 dB @ < 800 MHz = 40 dB @ < 900 MHz = 30 dB @ < 1090 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 nom.
Supply Current	45 mA max.
ESD Circuit Protection	15 kV air discharge
P 1dB Output	+12 dBm
Group Delay	Lower Band 7 ns, Upper Band 15 ns
PCO	Geo++® calibration available

Mechanical Diagram - Units in 'mm'



Ordering Information

Part Number **33-6150cd-ee-ff**

c = Base: 0 = Standard Base | d = Options: 0 = No options
ee = Connector: 01 = TNC Female 14 = N-Type Female
ff = Radome: 01 = White Conical 11 = White Flat top

Please refer to our **Ordering Guide** to review available radomes and connectors at:
https://www.tallysman.com/resource/tallysman-ordering-guide/

Revision: 202407

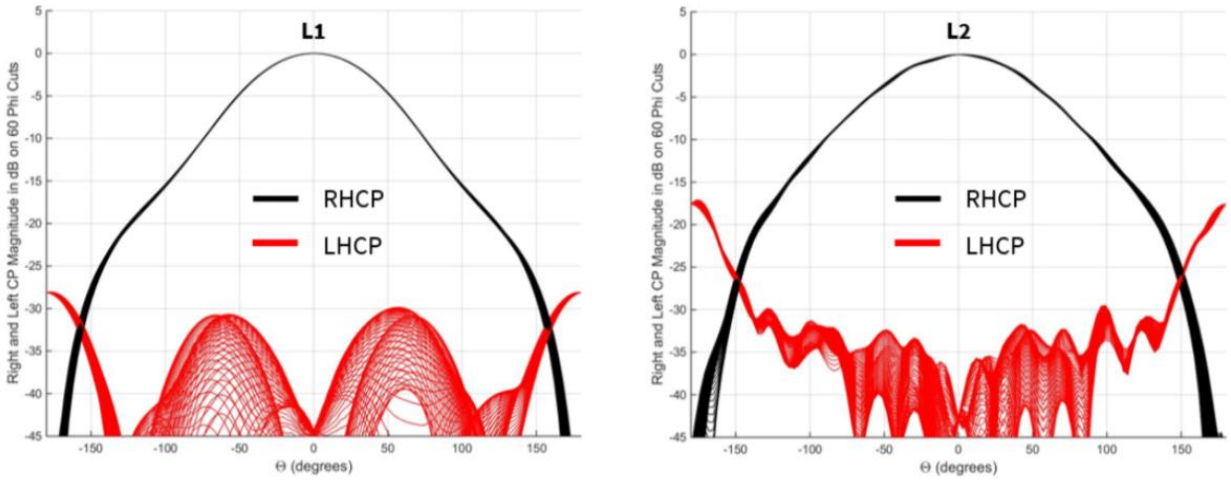
VP6150

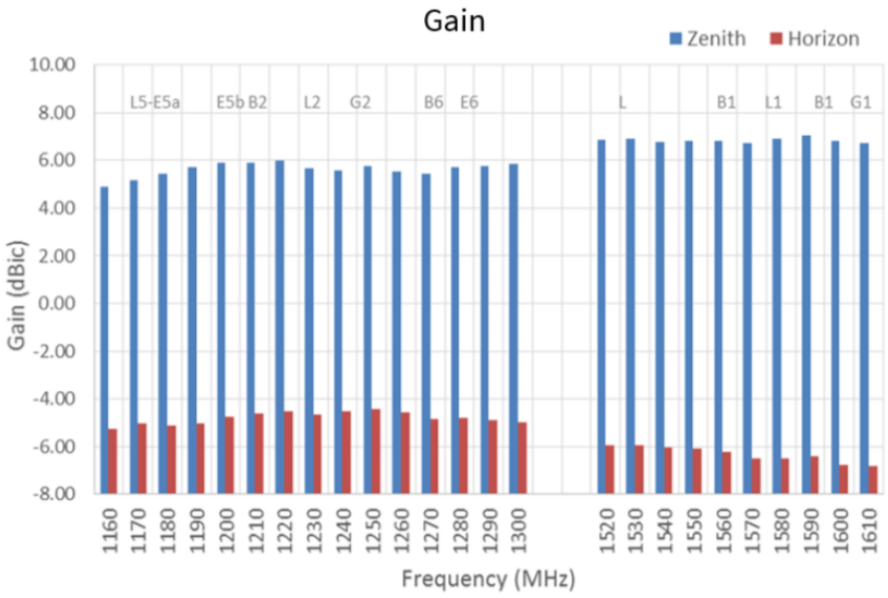
CALIAN®
Confidence. Engineered.

VeraPhase® 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

Normalized Radiation Patterns





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

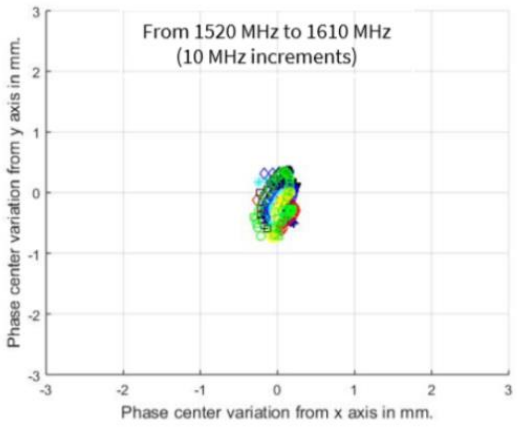
Contact us:
info@tallysman.com
T: +1 613 591-3131

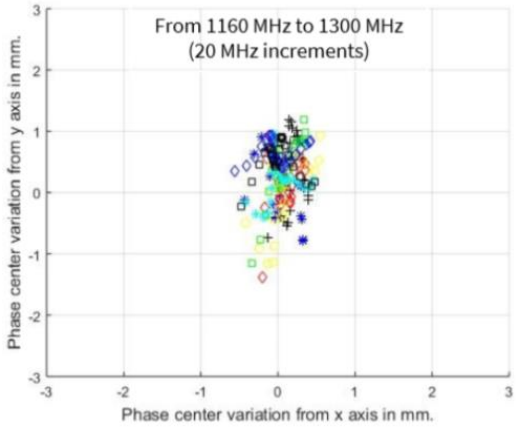
Revision: 202407

VeraPhase® 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

Phase Center Variation





Axial Ratio

Flat Radome Option

Elevation	L5 - E5a	E5b - B2 - G3	L2 - G2	B3	E6	L1 - E1 - B1	G1
Zenith	0.5	0.3	0.2	0.3	0.3	0.3	0.4
30°	1.5	1.5	1.3	1	1.5	1.2	1.2
10°	2	1.8	1.4	1.8	2.2	2	2.2

Conical Radome Option

Elevation	L5 - E5a	E5b - B2 - G3	L2 - G2	B3	E6	L1 - E1 - B1	G1
Zenith	0.5	0.4	0.2	0.3	0.3	0.3	0.4
30°	1.8	1.7	1.3	1.2	1.5	1.5	1.5
10°	2.2	1.8	1.5	2	2.5	2.5	2.8

Revision: 202407