VC6150

TALLYSMAN®

When **precision** matters.®

VC6150 VeraChoke® High-Precision Full GNSS Spectrum Choke Ring Antenna

Frequency Coverage: GPS/QZSS-L1/L2/L5, QZSS-L6, GLONASS-G1/G2/G3, Galileo-E1/E5a/E5b/E6, BeiDou-B1/B2/B2a/B3, NavIC-L5

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 (horizon to 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 antenna is compatible with both large and small SCIGN radomes.

Applications

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

Features

- Low axial ratios from horizon to horizon
- Geo++ Calibrated
- 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 Tallysman: With global headquarters and manufacturing in Ottawa, Canada, Tallysman is a leading manufacturer of high-precision antennas and components for Global Navigation Satellite System (GNSS) applications. Tallysman'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.tallysman.com**

Revision: 1.0

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Antenna

Technology Wideband Quadrature RHCP Element

		Gain	Axial Ratio
		dBic typ. at Zenith	dB at Zenith
GNSS			
GPS / QZSS	L1	8.0	0.2
	L2	8.0	0.3
	L5	8.0	0.3
GLONASS	G1	8.0	0.3
	G2	8.0	0.3
	G3	8.0	0.3
Galileo	E1	8.0	0.2
	E5a	8.0	0.3
	E5b	8.0	0.3
	E6	8.0	0.3
BeiDou	B1	8.0	0.2
	B2	8.0	0.3
	B2a	8.0	0.3
	B3	8.0	0.3
IRNSS / NavIC	L5	8.0	0.3
QZSS	L6	8.0	0.3
L-band correction services		-	-
Satellite Communications			
Iridium		-	-
Globalstar		-	-
Other			
Axial Ratio at 10°	2.0 - 3.5 dB	Efficiency	> 80%
Phase Centre Variation	± 1.0 mm		

Mechanicals

Mechanical Size	Small Radome: 378 mm (dia.) x 150.8 mm (h.) SCIGN Radome: 378 mm (dia.) x 255.6 mm (h.)
Weight	5.4 kg
Available Connectors	type-N (female)
Radome / Enclosure	SCIGN Compatible
Mount	5/8" x 11 TPI (female)

Environmental

Operating Temperature	-55 °C to +85 °C
Storage Temperature	-55 °C to +95 °C
Mechanical Vibration	MIL-STD-810E - Method 514.5
Shock and Drop	-
Salt Fog	MIL-STD-810G - Method 509.6
Low Pressure - Altitude	-
IP Rating (housing)	IP67 (housing)
Compliance	IPC-A-610, FCC, RED / CE Mark, RoHS, REACH

Warranty:

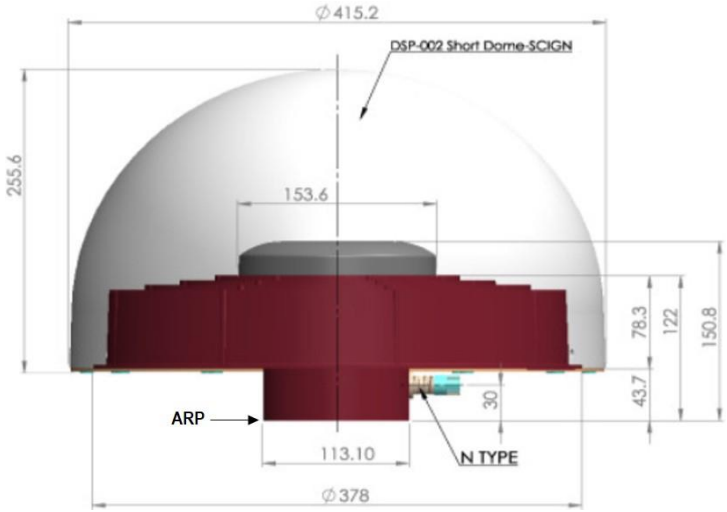
Parts and Labour	3-year standard warranty

Low Noise Amplifier (LNA) - Measured at 3.0 VDC and 25°C

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

Architecture	Pre-filter → LNA stage 1 → filter → LNA stage 2
Gain	50 dB
Noise Figure	2.0 dB typ. at 25 °C
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
Group Delay Variation	< 10 ns

Mechanical Diagram



Ordering Information

Part Number **33-VC6150-14**

14 = type-N connector
Tall and regular SCIGN Radomes available

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

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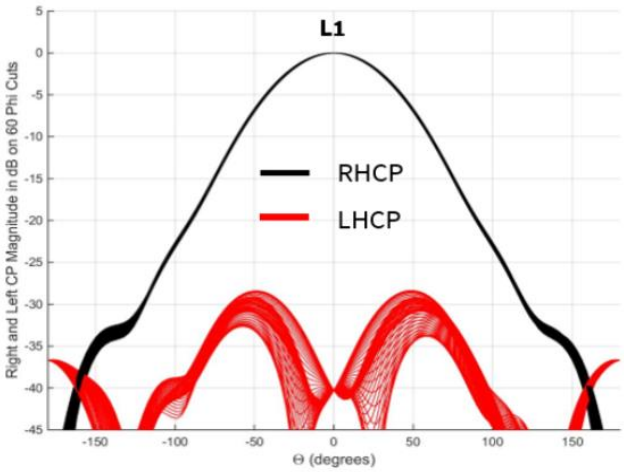
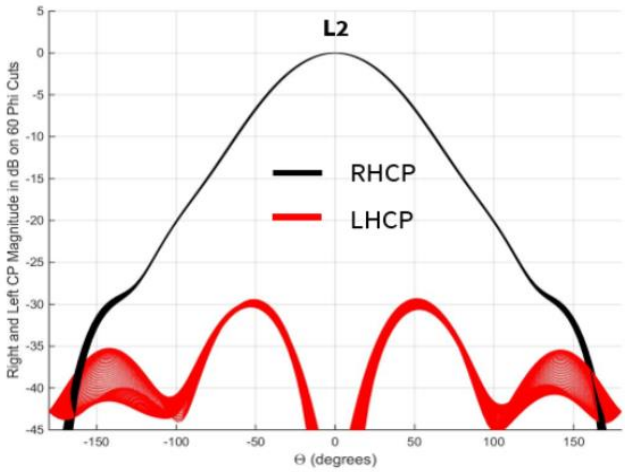
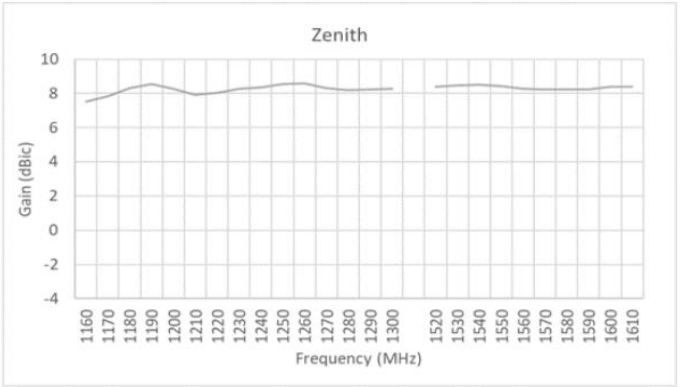
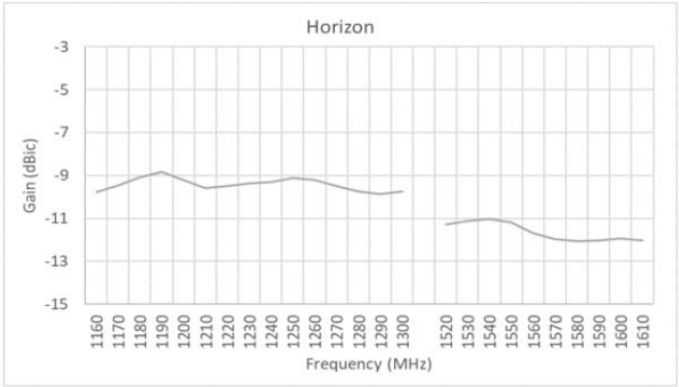
Normalized Radiation Patterns





Gain





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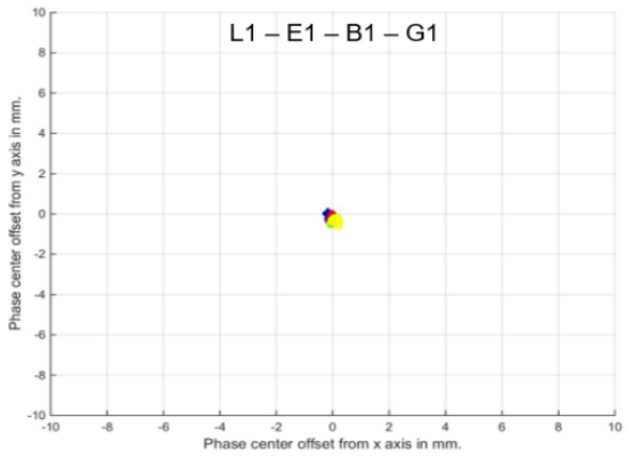
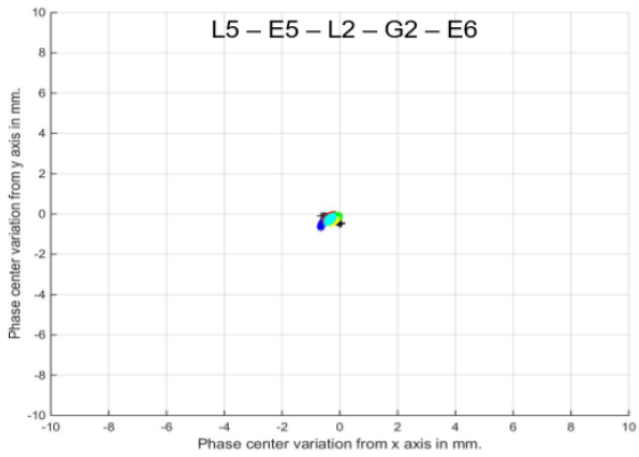
Phase Center Variation





Axial Ratio

Typical (dB)

Elevation	L5 - E5a	E5b - B2 - G3	L2 - G2	B3	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°	2.5	2.25	2	2	2	3	3.5