VSS6337L

TALLYSMAN®
A CALIAN® COMPANY
When precision matters.®

VSS6337L VeroStar™ Surface-Mount Triple-band GNSS Precision Antenna + L-band

Frequency Coverage: GPS/QZSS-L1/L2/L5, GLONASS-G1/G2/G3, Galileo-E1/E5a/E5b, BeiDou-B1/B2/B2a, NavIC-L5 + L-band correction services

The patent-pending VSS6337L antenna employs Tallysman's unique VeroStar™ technology, providing high gain over the GPS/QZSS-L1/L2/L5, GLONASS-G1/G2/G3, Galileo-E1/E5a/E5b, BeiDou-B1/B2/B2a, and NavIC-L5 frequency bands, including the satellite-based augmentation system (SBAS) available in the region of operation [WAAS (North America), EGNOS (Europe), MSAS (Japan), or GAGAN (India)], as well as L-band correction services.

The light and compact surface-mount VeroStar™ VSS6337L is designed and crafted for high-accuracy positioning while being robust and reliable.

With an exceptionally low roll-off from zenith to the horizon, the VeroStar™ antenna provides the best-in-class tracking of GNSS and L-band correction signals from low elevation angles. In addition, the optimized axial ratio at all elevation angles results in excellent multipath rejection, thus enabling accurate and precise code and phase tracking of GNSS and L-band correction signals.

A wide-band spherical antenna element enables the VeroStar™ to deliver a ±2 mm phase centre variation (PCV), making it ideal for high-precision applications, such as autonomous vehicle navigation (land, sea, and air), machine control, and precision agriculture.

The VeroStar™ antenna features a robust pre-filter and high-IP3 LNA architecture, minimizing de-sensing from high-level out-of-band signals, including 700 MHz LTE, while still providing a noise figure of only 1.8 dB.

The surface-mount antenna has passed a battery of tests (water pressure, altitude, salt fog, shock, drop, and vibration) to ensure it can survive the rigours of day-to-day field use.

The unique features of the VeroStar™ antenna guarantee it can deliver high signal-to-noise ratio (SNR) and highly accurate and precise code and phase tracking of GNSS signals from all elevation angles in the most challenging environments.

Applications

- High-precision GNSS systems
- All surface-mount precision applications, such as:
  - Autonomous vehicle navigation (land, sea, air)
  - Marine navigation
  - RTK/PPP systems
  - Precision agriculture

Features

- Tight phase centre ariation (± 2 mm typ.)
- Low axial ratios from zenith to horizon
- Low roll-off from zenith to the horizon
- Superior low-elevation L-band correction reception
- High G/T at low elevation angles
- Invariant performance from 3.0 to 16 VDC
- Low current (50 mA)
- Low noise figure (1.8 dB)
- Light, compact, and robust design
- IP67, REACH, and RoHS compliant

Benefits

- Consistent performance across all frequency bands
- Excellent GNSS tracking from low elevation angles
- Extreme accuracy and 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**

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

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Antenna

Technology GNSS triple-band crossed dipoles

		Gain	Axial Ratio
		dBic typ. at Zenith	dB at Zenith
GNSS			
GPS / QZSS	L1	4.0	< 1.0
	L2	4.5	< 1.0
	L5	4.0	< 1.0
GLONASS	G1	4.0	< 1.0
	G2	4.5	< 1.0
	G3	4.5	< 1.0
Galileo	E1	4.0	< 1.0
	E5a	4.0	< 1.0
	E5b	4.5	< 1.0
	E6	-	-
BeiDou	B1	4.0	< 1.0
	B2	4.5	< 1.0
	B2a	4.0	< 1.0
	B3	-	-
IRNSS / NavIC	L5	4.0	< 1.0
QZSS	L6	-	-
L-band correction services		4.0	< 1.0
Satellite Communications			
Iridium		-	-
Globalstar		-	-

Other			
Axial Ratio at 10°	5.0 dB max.	Efficiency	> 70%
Phase Centre Variation	± 2 mm typ. (no azi.)	G/T @10°C (L-band c.s.)	≥ -25.4 dB/K

Mechanicals

Mechanical Size	146.7 mm (dia.) x 43.9 mm (h.)
Weight	340 g
Available Connectors	TNC (female)
Radome / Enclosure	EXL9330 plastic
Mount	4 x M6 screws

Environmental

Operating Temperature	-45 °C to +85 °C
Storage Temperature	-55 °C to +95 °C
Mechanical Vibration	MIL-STD-810E - Test method 514.5
Shock and Drop	MIL-STD-810G - Test method 516.6
Salt Fog	MIL-STD-810G - Test method 509.6
Low Pressure - Altitude	MIL-STD-810F - Test method 500.5
IP Rating (housing)	IP67
Compliance	IPC-A-610, FCC Part 15, RED / CE Mark, RoHS, REACH

Warranty:

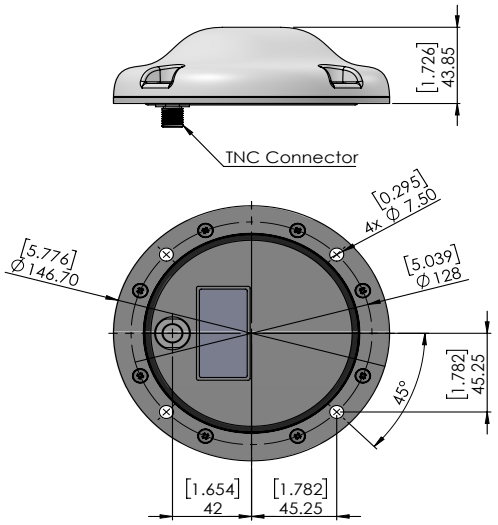
Parts and Labour	3-year standard warranty

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

Frequency Bandwith		Out-of-Band Rejection
Lower Band	1160 - 1255 MHz	≥ 80 dB @ ≤ 500 MHz ≥ 60 dB @ ≤ 900 MHz ≥ 55 dB @ ≤ 1120 MHz ≥ 14 dB @ ≥ 1290 MHz ≥ 41 dB @ ≥ 1310 MHz ≥ 58 dB @ ≥ 1350 MHz ≥ 65 dB @ ≥ 1390 MHz
L-band corrections services	1539 - 1559 MHz	
Upper Band	1559 - 1606 MHz	≥ 70 dB @ ≤ 1450 MHz ≥ 52 dB @ ≤ 1480 MHz ≥ 35 dB @ ≤ 1500 MHz ≥ 60 dB @ ≥ 1650 MHz ≥ 74 dB @ ≥ 1700 MHz

Architecture	Pre-filter → LNA stage 1 → filter → LNA stage 2
Gain	37 dB min.
Noise Figure	1.8 dB typ. @ 25 °C
VSWR	< 1.5:1 typ. | 1.8:1 max.
Supply Voltage Range	3.0 to 16 VDC nominal
Supply Current	50 mA typ.
ESD Circuit Protection	15 kV air discharge
P 1dB Output	+ 6.0 dBm
Group Delay Variation	< 10 ns

Mechanical Diagram



Ordering Information

Part Number	**33-VSS6337L**

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