HC882

CALIAN®
Confidence. Engineered.

Multi-Constellation Dual-Band Antenna

Frequency Coverage: GPS L1, L2 | GALILEO E1, E5b | BEIDOU B1, B2b | GLONASS G1, G2, G3 + L-Band

The patented HC882 helical antenna is designed for precision positioning, covering the GPS/QZSS-L1/L2, GLONASS-G1/G2/G3, Galileo-E1/E5b, and BeiDou-B1/B2b 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.

Weighing only 42 g, The HC882 features a precision-tuned helix element that provides excellent axial ratios and operates without the requirement of a ground plane, making it ideal for a variety of applications, including uncrewed aerial vehicles (UAVs).

The HC882 features an industry-leading low current, low-noise amplifier (LNA) that includes an integrated low-loss pre-filter to prevent harmonic interference from high-amplitude signals, such as 700 MHz band LTE and other nearby in-Band cellular signals.

All Tallysman housed helical antenna elements are protected by a robust military-grade IP69K-compliant plastic enclosure. The enclosure's base provides two threaded inserts for secure attachment, as well as a rubber O-ring around the outer edge to seal the antenna base and its integrated male SMA connector.

Calian's helical family has passed a rigorous 30-hour vibration test procedure, consisting of five cycles of 2-hour tests per axis (x, y, z):

- Cycle 1: 1.05 Grms;
- Cycle 2: 1.20 Grms;
- Cycle 3: 1.35 Grms;
- Cycle 4: 3.67 Grms;
- Cycle 5: 3.67 Grms.

Mounting instructions available on our product page.

Applications

- Autonomous uncrewed aerial vehicles (UAVs)
- Precision GNSS positioning
- Precision land survey positioning
- Mission-critical GNSS timing
- Network timing and synchronization
- Sea and land container tracking
- Fleet management and asset tracking
- Marine and avionics systems
- Law enforcement and public safety

Features

- Very low noise preamp (2.0 dB typ.)
- Axial ratio (≤ 0.5 dB at zenith)
- LNA gain (28 dB typ., 35 dB typ.)
- Low current (15 mA (28 dB), 21 mA (35 dB) typ.)
- ESD circuit protection (15 kV)
- Invariant performance from 2.5 to 16 VDC
- IP69K, REACH, and RoHS compliant

Benefits

- Extremely light (42 g)
- Ideal for RTK and PPP surveying systems
- Excellent RH circular polarized signal reception
- Great multipath rejection
- Increased system accuracy
- Excellent signal-to-noise ratio
- Industrial temperature range
- Rugged design, ideal for harsh environments

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: 202203

Multi-Constellation Dual-Band Antenna

Frequency Coverage: GPS L1, L2 | GALILEO E1, E5b | BEIDOU B1, B2b | GLONASS G1, G2, G3 + L-Band

Antenna

Technology: Triple-frequency, RHCP quadrifilar helix

		Gain	Axial Ratio
		dBic typ. at Zenith	dB at Zenith
GNSS			
GPS / QZSS	L1	2.5	≤ 0.5
	L2	2.7	≤ 0.5
	L5	-	-
GLONASS	G1	1.5	≤ 0.5
	G2	2.0	≤ 0.5
	G3	1.0	≤ 0.5
Galileo	E1	2.5	≤ 0.5
	E5A	-	-
	E5B	1.0	≤ 0.5
	E6	-	-
BeiDou	B1	2.5	≤ 0.5
	B2b	1.1	≤ 0.5
	B2a	-	-
	B3	-	-
IRNSS / NavIC	L5	-	-
QZSS	L6	-	-
L-Band Services (1525 MHz - 1559 MHZ)		1.5	≤ 0.5
Satellite Communications			
Iridium		-	-
Globalstar		-	-
Other			
Axial Ratio at 10°	-	Efficiency	-
PC Variation	± 3.0 mm (all freq.)	PCO (mm)	34 (L1), 38 (L2)

Mechanicals

Mechanical Size	44.2 mm (dia.) x 62.4 mm (h.)
Weight	42 g
Radome	LEXAN™ EXL9330
Mount	3x M2.5 screws
Available Connectors	SMA (male)

Environmental

Operating Temperature	-40 °C to +85 °C
Storage Temperature	-55 °C to +95 °C
Vibration	MIL-STD-810-G - Test Method 514.6
Shock	MIL-STD-810-G - Test Method 516.6
Salt Fog	MIL-STD-810-G - Test Method 509.6
IP Rating	IP69K
Compliance	IPC-A-610, FCC, RED / CE Mark, RoHS, REACH

Warranty

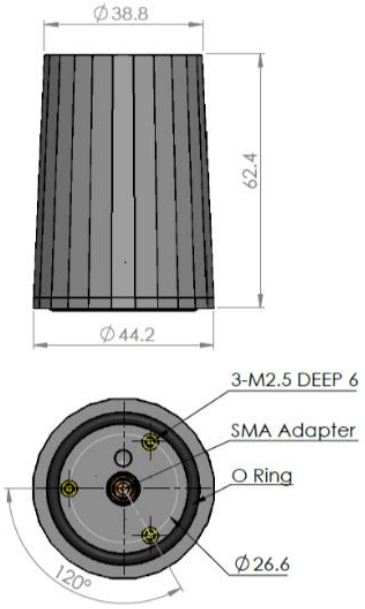
Parts and Labour: 3-year standard warranty

Low Noise Amplifier (LNA) - Measured at 3V and 25°C

Frequency Bandwith		Out of Band Rejection
Lower Band	1192 - 1255 MHz	> 63 dB @ < 1000 MHz > 38 dB @ < 1100 MHz > 30 dB @ < 1130 MHz
L-Band Corr.	1540 - 1559 MHz	> 36 dB @ < 1400 MHz > 44 dB @ < 1450 MHz > 28 dB @ > 1700 MHz
Upper Band	1559 - 1606 MHz	

Architecture	Pre-filtered
Gain	28 dB typ., 35 dB typ.
Noise Figure	2.0 dB typ.
VSWR	< 1.5:1 typ., 1.8:1 max.
Supply Voltage Range	2.5 to 16 VDC nominal, up to 50mV p-p ripple
Supply Current	15 mA typ. (28 dB), 21 mA typ. (35 dB)
ESD Circuit Protection	15 kV air discharge
P 1dB Output	11 dBm typ.
Group Delay	-

Mechanical Diagram - Units in 'mm'



Ordering Information

Part Number **33-HC882-xx**

where xx = gain (28 or 35 dB)

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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