HC882



When **precision** matters.®

HC882 Dual-band Helical Antenna + L-band

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

The HC882 helical antenna is designed and crafted for precision positioning, covering the GPS/QZSS-L1/L2, GLONASS-G1/G2/G3, Galileo-E1/E5b, and BeiDou-B1/B2 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 wide variety of applications, including unmanned 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® helical antenna elements are protected by a robust military-grade IP67-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 SMA connector.

Tallysman®'s HC882 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.



Applications

- Autonomous unmanned 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: 1.6 dB typ
- Axial ratio: ≤ 0.5 dB at zenith
- LNA gain 28 dB typ. or 35 dB typ.
- Low current: 15 mA typ. or 21 mA typ.
- ESD circuit protection: 15 kV
- Invariant performance from 2.2 to 16 VDC
- IP67, REACH, and RoHS compliant

Benefits

- Extremely lightweight (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 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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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	
	B2	1.1	≤ 0.5	
	B2a	-	-	
	В3	-	-	
IRNSS / NavIC	L5	-	-	
QZSS	L6	-	-	
L-band correction services		1.5	≤ 0.5	
Satellite Communications				
Iridium		-	-	
Globalstar		-	-	
Phase Centre				
Phase Centre Variation (PCV)		± 3.0 mm (all freq.)		
Phase Centre Offset (PCO)		34 mm @ L1 38 mm @ L2/E5b		

Mechanicals

Mechanical Size 44.2 mm (dia.) x 62.4 mm (h.)

Weight 42 g Available Connectors SMA

Radome / Enclosure Radome and Base: EXL9330

Mount 3 M2.5 screws

Environmental

Operating Temperature $-40 \,^{\circ}\text{C}$ to $+85 \,^{\circ}\text{C}$ Storage Temperature $-50 \,^{\circ}\text{C}$ to $+95 \,^{\circ}\text{C}$

Random Vibration MIL-STD-810E - Test method 514.5

4 hours per axis (x, y, z) at 3.674 Grms

Shock and Drop Salt Fog IP Rating (housing) 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 3.0 VDC 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 corrections services	1539 - 1559 MHz		
Upper Band	1559 - 1606 MHz	> 36 dB @ < 1400 MHz > 44 dB @ < 1450 MHz > 28 dB @ > 1700 MHz	

Architecture Pre-filter → LNA

Gain 28 dB typ. or 35 dB typ.

Noise Figure 2.0 dB typ.

VSWR < 1.5:1 typ. | 1.8:1 max.

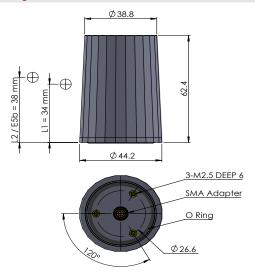
Supply Voltage Range 2.2 to 16 VDC

Supply Current 15 mA (28 dB gain) | 21 mA (35 dB gain)

ESD Circuit Protection 15 kV air discharge

P 1dB Output Group Delay Variation -

Mechanical Diagram



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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