HC871

TALLYSMAN®

When **precision** matters.®

HC871 Dual Band Helical Antenna

Frequency Coverage: L1/L2/G1/G2/E1/B1

Overview

The HC871 is a lightweight helical antenna covering the GPS L1/L2, GLONASS G1/G2, Galileo E1, and BeiDou B1 frequency bands, designed and crafted for precision positioning.

Weighing 25 g, the lightweight HC871 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 HC871 features an industry-leading low current, Low Noise Amplifier (LNA) that includes an integrated low-loss pre-filter to protect against harmonic interference from high amplitude interfering signals, such as 700 MHz band LTE and other near in-band cellular signals.

The HC871 is protected by a robust, military-grade plastic enclosure with an integrated SMA connector for screw-on mounting that securely seals the unit with an O-ring, complying with IP67 standards. The enclosure also provides two threaded holes in the base for secure attachment of the unit.

Applications

- Autonomous, Unmanned Aerial Vehicles
- Precision GPS positioning
- Dual Frequency RTK receivers
- Mission-critical GPS timing
- Military & security
- Network timing and synchronization

Features

- Very low noise preamp, 2 dB
- Axial ratio: <= 0.5 dB max.
- LNA gain 28 dB typ.
- Low current: 12 mA typ.
- ESD circuit protection: 15 kV
- Invariant performance from: +2.2 to 16 VDC

Benefits

- Extremely Lightweight (25 g)
- Ideal for L1/L2 RTK surveying systems
- Great multipath rejection
- Increased system accuracy
- Excellent signal to noise ratio
- IP67, REACH, and RoHS compliant

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**

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

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Antenna

Architecture ..... Dual Frequency, RHCP Quadrifilar Helix

		Gain dBic typ. at Zenith	Axial Ratio dB at Zenith
GNSS			
GPS	**L1**	1.6	≤ .5 max.
	L2	1.7	≤ .5 max.
	L5	-	-
GLONASS	**G1**	1.2	≤ .5 max.
	G2	1.7	≤ .5 max.
	G3	-	-
Galileo	**E1**	1.6	≤ .5 max.
	E5a	-	-
	E5b	-	-
	E6	-	-
BeiDou	**B1**	1.7	≤ .5 max.
	B2	-	-
	B3	-	-
IRNSS/NavIC	**L5**	-	-
QZSS	**L6**	-	-
Satellite Communications			
Iridium		-	-
Globalstar		-	-

Mechanical

Mechanical Size..... 63.2mm (H) x 33.2mm (Dia)
Available Connectors.....SMA Male
Weight..... 25 g
Enclosure..... Radome and Base: EXL9330

Environmental

Operating Temp. Range.. -40°C to +85°C
Vibration..... 3-axis, sweep = 15 min, 10 to 200 Hz sweep: 3 G
Shock..... Vertical axis: 50 G, other axes: 30 G
Compliance..... RoHS and REACH compliant

Other

Warranty..... One year – parts and labour

Low Noise Amplifier (LNA) (Measured a Vcc = 3V, Temperature=25°C)

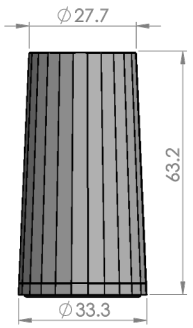
Frequency Bandwidth ... 1559-1606 MHz , 1215-1254 MHz
Architecture ..... Pre-filtered

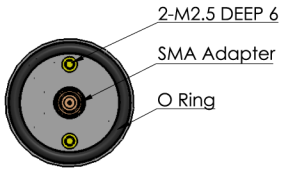
Out-of-Band Rejection ... **L1/G1/B1/E1:**
< 1400 MHz > 48 dB
< 1500 MHz > 39 dB
> 1625 MHz > 38 dB
> 1700 MHz > 57 dB

L2/G2:
< 1100 MHz > 46 dB
< 1190 MHz > 40 dB

Gain ..... 28 dB typ. 26 dB min.
Noise Figure ..... 2 dB typ.
VSWR ..... <1.5:1 typ. 1.8:1 max.
Supply Voltage Range.... +2.2 to 12 VDC
Supply Current..... 12 mA typ. at 25°C.
ESD Circuit Protection ... 15 kV air discharge
EMI Immunity..... 50 V/m, excepting L1+/-100 MHz and L2 +/- 100 MHz

HC871 Dimensions (mm)





Ordering Information

HC871 - Dual Band Helical Antenna
Part Number: 33-HC871

www.tallysman.com