



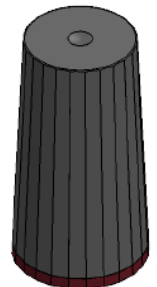
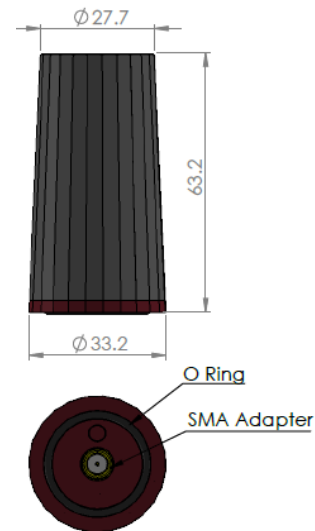
## HC871 GPS L1/L2 + GLONASS G1/G2 + Galileo E1 + BeiDou B1 Helix Antenna

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 grams, 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 signals, such as the 700MHz band LTW 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 3/32" x 48tpi threaded holes in the base for secure attachment of the unit.



### Applications

- Airborne Unmanned Autonomous Vehicles
- Precision GPS position
- Dual Frequency RTK receivers
- Mission Critical GPS Timing
- Military & Security
- Network Timing and Synchronization

### Features

- Very low Noise Preamp, 2.0dB
- Axial ratio: <0.5dB @zenith
- LNA Gain 28dB typ.
- Low current: 12 mA typ.
- ESD circuit protection: 15 KV
- Invariant performance from: +2.5 to 16VDC

### Benefits

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



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## Specifications (Measured at Vcc = 3V, and Temperature = 25°C)

### Antenna

Element Architecture	Dual Frequency Quadrifilar Helix
L1/L2 Peak Gain	1.6dBic/ -0.3 dBic peak gain at Zenith
G1/G2 Peak Gain	1.2dBic/0.5dBic peak gain at Zenith
Axial Ratio, over full bandwidth, both L1 & L2	≤ 0.5dB max. at Zenith
Polarization	RHCP

### Electrical

Bandwidth	L2: 1215MHz-1254MHz	L1: 1559MHz-1606MHz
Overall LNA Gain	28dB typ, 26dB min each of L1 and L2 Bands	
LNA Noise Figure	2.0dB typ @25°C	
VSWR (at LNA output)	<1.5:1 typ. 1.8:1 max.	
Supply Voltage Range	+2.5 to 16VDC nominal, up to 50mV p-p ripple	
EMI Immunity	50V/m, excepting L1+/-100MHz and L2 +/- 100MHz	
Supply Current	12 mA typ. At 25°C.	
ESD Circuit protection	15 KV air discharge.	
Out-of-Band Rejection	<b>L1</b>	<b>L2</b>
	<1400 MHz	>48 dB
	<1500 MHz	>39 dB
	>1625 MHz	>38 dB
	>1700MHz	>57 dB
	<1100 MHz	>46dB
	<1190 MHz	>40 dB

### Mechanicals & Environmental

Mechanical Size	63.2mm (h) x 33.2mm (d)
Connector	SMA Male
Enclosure	Radome: EXL9330, Base: EXL9330
Operating Temperature Range	-40°C to +85°C
Weight	24 g
Environmental	RoHS and REACH compliant
Shock	Vertical axis: 50 G, other axes: 30 G
Vibration	3-axis, sweep = 15 min, 10 to 200 Hz sweep: 3 G

### Ordering Information

HC871 – Helical GPS L1/L2 + GLONASS G1/G2 + Galileo E1 + BeiDou B1

33-HC871-30

Please refer to the Ordering Guide (<http://www.tallysman.com/wp-content/uploads/Current-Ordering-Guide.pdf>) for the current and complete list of available radomes and connectors.



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