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When **precision** matters.[®]

HC975 Triple Band Helical Antenna + L-band Frequency Coverage: L1/L2/L5/G1/G3/E1/E5/B1/B2/B2a + L-band

Overview

The lightweight HC975 helical antenna, which covers the GPS L1/L2/L5, GLONASS G1/G3, Galileo E1/E5, and BeiDou B1/B2/B2a frequency bands, as well as L-band correction services, is designed and crafted for precision positioning.

Weighing 37 g, the lightweight HC975 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 HC975 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 HC975 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 three 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, 1.6 dB
- Axial ratio: <= 0.5 dB max.
- 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 (37 g)
- Ideal for RTK surveying systems
- Great multipath rejection
- Increased system accuracy
- Excellent signal to noise ratio

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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HC975 Triple Band Helical Antenna + L-band Frequency Coverage: L1/L2/L5/G1/G3/E1/E5/B1/B2/B2a + L-band

Antenna

Architecture Triple Frequency, RHCP Quadrifilar Helix

| | | Gain | Axial Ratio |
|--------------------------------------|-----|---------------------|--------------|
| | | dBic typ. at Zenith | dB at Zenith |
| GNSS | | | |
| GPS/QZSS | L1 | 2.6 | ≤ 0.5 max. |
| | L2 | 1.5 | ≤ 0.5 max. |
| | L5 | 0 | ≤0.5 max. |
| GLONASS | G1 | 1.8 | ≤ 0.5 max. |
| | G2 | - | - |
| | G3 | 2.6 | ≤ 0.5 max. |
| | E1 | 2.6 | ≤0.5 max. |
| Galileo | E5a | 0 | ≤ 0.5 max. |
| | E5b | 2.6 | ≤0.5 max. |
| | E6 | - | - |
| BeiDou | B1 | 2.5 | ≤ 0.5 max. |
| | B2 | 2.6 | ≤ 0.5 max. |
| | B2a | 0 | ≤ 0.5 max. |
| | B3 | - | - |
| IRNSS/NavIC | L5 | 0 | ≤ 0.5 max. |
| QZSS | L6 | - | - |
| L-band Services (1525 MHz - 1559MHz) | | 1.5 | ≤ 0.5 max. |
| Satellite Communications | | | |
| Iridium | | - | - |
| Globalstar | | - | - |

Mechanical

| Mechanical Size | 62.4 mm (H) x 44.2 mm (Dia) |
|----------------------|-----------------------------|
| Available Connectors | .SMA Male |
| Weight | 37 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 | IP67, RoHS and REACH compliant |

Other

Warranty..... One year - parts and labour

Ordering Information

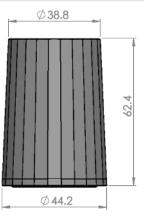
HC975 - Triple Band Helical Antenna With L-band Services Part Number: 33-HC975-xx, where xx = Gain in dB

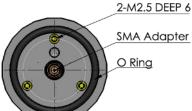
Low Noise Amplifier (LNA) (Measured a Vcc = 3V, Temperature=25°C)

Frequency Bandwidth ... 1525-1606 MHz , 1164-1240 MHz Architecture Pre-filtered

| Out-of-Band Rejection | Upper Band: < 1400 MHz > 36 dB < 1450 MHz > 44 dB > 1700 MHz > 28 dB |
|------------------------|--|
| | Lower Band: < 1000 MHz > 63 dB < 1100 MHz > 38 dB < 1325 MHz > 57 dB |
| ESD Circuit Protection | 1.6 dB typ. <1.5:1 typ. 1.8:1 max. +2.2 to 16 VDC 15 mA typ. or 21 mA typ. at 25°C. |

HC975 Dimensions (mm)





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