HC975

TALLYSMAN®

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

Benefits

- Extremely lightweight (37 g)
- Ideal for 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**

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Frequency Coverage: L1/L2/L5/G1/G3/E1/E5/B1/B2/B2a + L-band

Antenna

Architecture ..... Triple Frequency, RHCP Quadrifilar Helix

		Gain dBic typ. at Zenith	Axial Ratio 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.
Galileo	**E1**	2.6	≤ 0.5 max.
	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

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

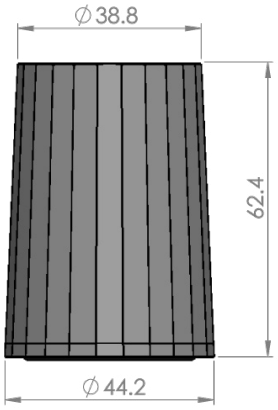
Frequency Bandwidth ... 1525-1606 MHz , 1164-1240 MHz
Architecture ..... Pre-filtered

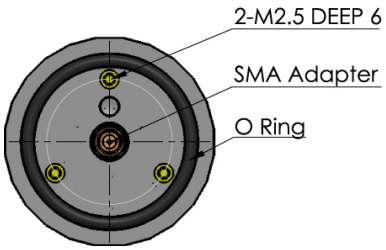
Out-of-Band Rejection ... **Upper Band:**
< 1400 MHz > 36 dB
< 1450 MHz > 44 dB
> 1700 MHz > 28 dB

Lower Band:
< 1000 MHz > 63 dB
< 1100 MHz > 38 dB
< 1325 MHz > 57 dB

Gain ..... 28 dB typ. or 35 dB typ.
Noise Figure ..... 1.6 dB typ.
VSWR ..... <1.5:1 typ. 1.8:1 max.
Supply Voltage Range .... +2.2 to 16 VDC
Supply Current ..... 15 mA typ. or 21 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

HC975 Dimensions (mm)





Ordering Information

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

www.tallysman.com