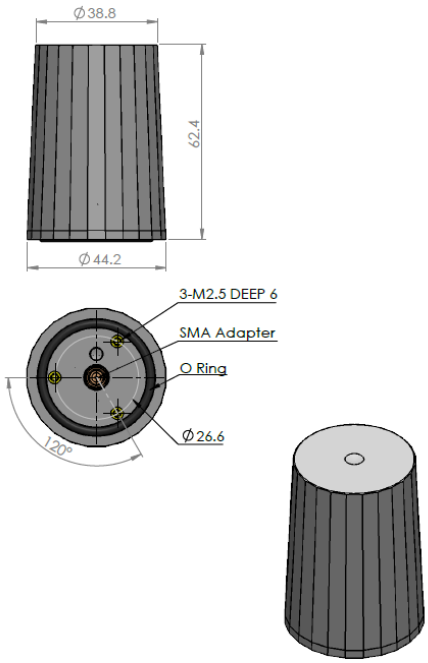
HC975 GPS L1/L2/L5 + GLONASS G1/G3 + Galileo E1/E5 + BeiDou B1/B2 + L-Band Services Helix Antenna

The HC975 is a helix-based antenna with GPS L1/L2/L5, GLONASS G1/G3, Galileo E1/E5, and BeiDou B1/B2 coverage and is especially designed for precision dual frequency positioning where light weight is important.

The HC975 features a precision tuned, helix element.

The HC975 offers excellent axial ratio, light weight, and does not require a ground plane.

The HC975 includes an integrated SMA connector for screw-on mounting along with an O-ring and sealed housing to reach IP67. The enclosure also provides two, 3/32" - 48 threaded holes in the base for secure attachment of the unit.



The HC975 covers GPS L5 (1176.45MHz), Galileo E5a+b (1191.79MHz), GLONASS G3 (1201.5MHz), BeiDou B2 (1207.14MHz), GPS L2 (1227.6MHz), GPS L1/WAAS/EGNOS/MSAS (1575.42MHz), GLONASS G1 (1602MHz), Galileo (1575.42MHz), and BeiDou B1 (1575.42MHz). Frequencies provided are centre frequencies.

The HC975 has a pre-filter which increases the antenna's immunity to high amplitude interfering signals, such as LTE and other cellular signals.

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, 1.6 dB typ.
- Axial ratio: <0.5 dB typ.
- LNA Gain 28 or 35 dB typ.
- Low current: 15/21 mA typ.
- ESD circuit protection: 15 kV
- Invariant performance from: +2.2 to 16VDC

Benefits

- Lightweight
- Ideal for 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 = 3 V, and temperature = 25°C)

Antenna

Element Architecture	Triple Frequency Quadrifilar Helix
L5 Peak Gain	0 dBic @ zenith
L2 Peak Gain	1.5 dBic @ zenith
L1 Peak Gain	2.6 dBic @ zenith
L-Band Gain	1 dBic @ zenith
Axial Ratio, over full bandwidth,	≤ 0.5 dB typ., 1 dB max. @ zenith
Polarization	RHCP

Electrical

Bandwidth		L2: 1164MHz-1240 MHz L1: 1525MHz-1606 MHz		
Overall LNA Gain		L2: 28 or 35 dB typ. L1: 28 or 33 dB typ.		
LNA Noise Figure		1.6 dB typ. @ 25°C		
VSWR (at LNA output)		<1.5:1 typ. 1.8:1 max.		
Supply Voltage Range		+2.2 to 16 VDC nominal, up to 50mV p-p ripple		
EMI Immunity		50 V/m, excepting L1+/-100MHz and L2 +/- 100 MHz		
Supply Current		15/21 mA typ. @ 25°C		
ESD Circuit protection		15 kV air discharge.		
Out-of-Band Rejection	**L1**		**L5/L2**	
	<1400 MHz	>36 dB	<1000 MHz	>63 dB
	<1450 MHz	>44 dB	<1100 MHz	>38 dB
	>1700 MHz	>28 dB	>1325 MHz	>57 dB

Mechanicals & Environmental

Mechanical Size	62.4mm (h) x 44.2mm (d)
Connector	SMA Male
Enclosure	Radome: EXL9330, Base: EXL9330
Operating Temperature Range	-40°C to +85°C
Weight	37 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

HC975 – Helical GPS L1/L2/L5 + GLONASS G1/G2/G3 + Galileo E1/E5 + BeiDou B1/B2	33-HC975

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.

An ISO 9001:2015 Certified Company

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