HC610

TALLYSMAN®
A CALIAN® COMPANY

HC610 Active Iridium Helical Antenna

Frequency Coverage: Iridium

Weighing only 24 g, the patented light and compact HC610 features a precision-tuned helix element that provides excellent axial ratios and operates without the requirement of a ground plane. It is designed to receive Iridium Satellite Time and Location (STL) signals, used by STL terminals to provide worldwide position, navigation, and timing independent of GPS/GNSS, via a secure encrypted satellite broadcast signal that is strong enough for indoor reception.

Since GNSS signals may be jammed (intentionally or accidentally) and spoofed, STL signals are a reliable alternative to augment and authenticate time for applications, such as electrical grids, wireless communications networks, and financial systems, as well as position for private and public infrastructure.

The HC610 is an active Iridium antenna that operates in receive-only mode and enables Iridium terminals to be installed tens of metres away from the antenna. It also features a low-current, low-noise amplifier (LNA) and pre-filter to prevent harmonic interference from high-amplitude signals, such as 700 MHz band LTE and other nearby in-band cellular signals.

All Tallysman housed helical antenna elements are protected by a robust military-grade IP67-compliant plastic enclosure. The enclosure's base provides two threaded inserts for secure attachment, as well as a rubber O-ring around the outer edge to seal the antenna base and its integrated male SMA connector.

Tallysman's helical family has passed a rigorous 30-hour vibration test procedure, consisting of five cycles of 2-hour tests per axis (x, y, z):

- Cycle 1: 1.05 Grms;
- Cycle 2: 1.20 Grms;
- Cycle 3: 1.35 Grms;
- Cycle 4: 3.67 Grms;
- Cycle 5: 3.67 Grms.

For mounting instructions, visit:
https://www.tallysman.com/downloads/Helical_Mounting_Instruction.pdf

Applications

- Iridium® PNT applications
- Law enforcement and public safety

Features

- LNA gain (28 dB typ.)
- Excellent axial ratio (≤ 0.5 dB at zenith)
- ESD circuit protection (15 kV)
- Supports long cable runs
- Robust industrial-grade enclosure
- IP67, REACH, and RoHS compliant

Benefits

- Extremely light (24 g)
- Excellent RH circular polarized signal reception
- Increased system accuracy
- Excellent signal-to-noise ratio
- Industrial temperature range
- Rugged design, ideal for harsh environments
- Remote SBD antenna

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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Revision: 1.0

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Antenna

Technology Single-frequency, RHCP quadrifilar helix

		Gain	Axial Ratio
		dBic typ. at Zenith	dB at Zenith
GNSS			
GPS / QZSS	L1	-	-
	L2	-	-
	L5	-	-
GLONASS	G1	-	-
	G2	-	-
	G3	-	-
Galileo	E1	-	-
	E5a	-	-
	E5b	-	-
	E6	-	-
BeiDou	B1	-	-
	B2	-	-
	B2a	-	-
	B3	-	-
IRNSS / NavIC	L5	-	-
QZSS	L6	-	-
L-band correction services		-	-
Satellite Communications			
Iridium		3.7	≤ 0.5
Globalstar		-	-
Phase Centre			
Phase Centre Variation (PCV)		-	
Phase Centre Offset (PCO)		-	

Mechanicals

Mechanical Size	33.3 mm (dia.) x 54.2 mm (h.)
Weight	24 g
Available Connectors	SMA (male)
Radome / Enclosure	Radome and base: EXL9330
Mount	2x M2.5 screws

Environmental

Operating Temperature	-45 °C to +85 °C
Storage Temperature	-55 °C to +95 °C
Random Vibration	MIL-STD-810E - Test method 514.5 4 hours per axis (x, y, z) at 3.674 Grms
Shock and Drop	-
Salt Fog	-
IP Rating (housing)	IP67
Compliance	IPC-A-610, FCC, RED / CE Mark, RoHS, REACH

Warranty:

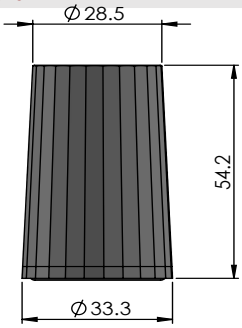
Parts and Labour	3-year standard warranty

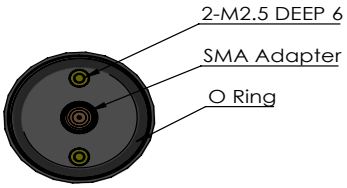
Low Noise Amplifier (LNA) - Measured at 3.0 VDC and 25°C

Frequency Bandwith		Out-of-Band Rejection
Lower Band	-	-
Upper Band	1616.0 - 1626.5 MHz	**> 60 dB @ < 1570 MHz** **> 80 dB @ > 1660 MHz**

Architecture	Pre-filter → LNA
Gain	28 dB typ.
Noise Figure	2.0 dB typ.
VSWR	< 1.5:1 typ. | 1.8:1 max.
Supply Voltage Range	2.2 to 12 VDC
Supply Current	15 mA typ.
ESD Circuit Protection	15 kV air discharge
P 1dB Output	-
Group Delay Variation	-

Installation Instructions





Ordering Information

Part Number **33-HC610**

Please refer to our **Ordering Guide** to review available radomes and connectors at:
https://www.tallysman.com/resource/tallysman-ordering-guide/