

# HC610E

## HC610E Embedded Active Iridium Helical Antenna

Frequency Coverage: Iridium

Weighing only 4 g, the patented light and compact HC610E 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 HC610E 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.

The HC610E can be installed in a custom enclosure. It provides a base-mounted female MCX connector. An optional embedded helical mounting ring is available to attach the antenna to a flat surface. Tallysman also provides support for installation and integration of embedded helical antennas to enable the integrator to achieve a successful installation and obtain optimum antenna performance.

For mounting instructions, visit:  
[https://www.tallysman.com/downloads/Helical\\_Mounting\\_Instruction.pdf](https://www.tallysman.com/downloads/Helical_Mounting_Instruction.pdf)



### Applications

- Iridium<sup>®</sup> PNT applications
- Law enforcement and public safety

### Features

- LNA gain (28 dB typ.)
- Excellent axial ratio ( $\leq 0.5$  dB at zenith)
- ESD circuit protection (15 kV)
- Supports long cable runs
- REACH and RoHS compliant

### Benefits

- Extremely light (4 g)
- Excellent RH circular polarized signal reception
- Increased system accuracy
- Excellent signal-to-noise ratio
- Industrial temperature range
- 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](http://www.tallysman.com)

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Frequency Coverage: Iridium

## Antenna

Technology Single-frequency, RHCP quadrifilar helix

		Gain	Axial Ratio
		dBic typ. at Zenith	dB at Zenith
<b>GNSS</b>			
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			
<b>Satellite Communications</b>			
Iridium		3.7	≤ 0.5
Globalstar		-	-
<b>Phase Centre</b>			
Phase Centre Variation (PCV)		-	-
Phase Centre Offset (PCO)		-	-

## Mechanicals

Mechanical Size	27.5 mm (dia.) x 38.7 mm (h.)
Weight	4 g
Available Connectors	MCX (female)
Radome / Enclosure	-
Mount	Helical mounting ring P/N 23-0219-0

## Environmental

Operating Temperature	-45 °C to +85 °C
Storage Temperature	-55 °C to +95 °C
Random Vibration	-
Shock and Drop	-
Salt Fog	-
IP Rating (housing)	n/a
Compliance	IPC-A-610, FCC, RED / CE Mark, RoHS, REACH

## Warranty:

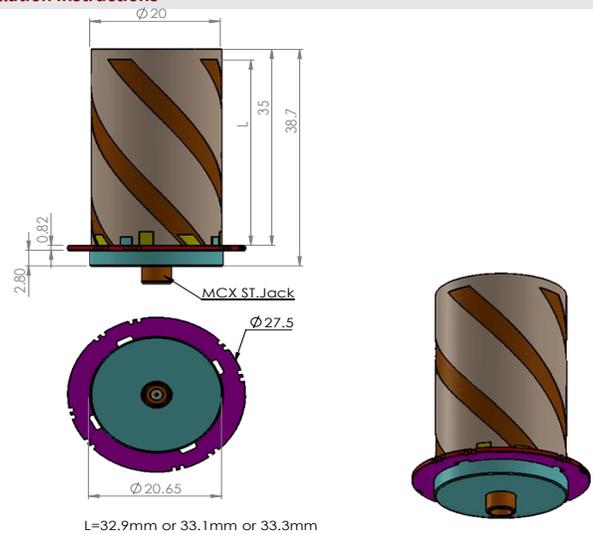
Parts and Labour	1-year standard warranty
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## Low Noise Amplifier (LNA) - Measured at 3.0 VDC and 25°C

Frequency Bandwidth	Out-of-Band Rejection
Lower Band	-
Upper Band	> 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-HC610E**

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