HC771E

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CALIAN
Confidence. Engineered.

Embedded Multi-Constellation Antenna

Frequency Coverage: GPS L1 | GALILEO E1 | BEIDOU B1 | GLONASS G1

Overview

The patented HC771E embedded helical antenna is designed for precision positioning, covering the GPS/QZSS-L1, GLONASS-G1, Galileo-E1, and BeiDou-B1 frequency bands, including the satellite-based augmentation system (SBAS) available in the region of operation [WAAS (North America), EGNOS (Europe), MSAS (Japan), or GAGAN (India)].

Weighing only 4 g, The light and compact HC771E 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 HC771E features an industry-leading low current, low-noise amplifier (LNA) that includes an integrated low-loss pre-filter to prevent harmonic interference from high-amplitude signals, such as 700 MHz band LTE and other nearby in-Band cellular signals.

Tallysman provides an optional embedded helical mounting ring, which traps the outer edge of the antenna circuit board to the host circuit board or to any 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

Applications

- Autonomous unmanned aerial vehicles (UAVs)
- Precision GNSS positioning
- Precision land survey positioning
- Mission-critical GNSS timing
- Network timing and synchronization
- Sea and land container tracking
- Fleet management and asset tracking
- Marine and avionics systems
- Law enforcement and public safety

Features

- Very low noise preamp (2.0 dB typ.)
- Axial ratio (≤ 0.5 dB at zenith)
- LNA gain (28 dB typ.)
- Low current (15 mA typ.)
- ESD circuit protection (15 kV)
- Invariant performance from 2.5 to 16 VDC
- REACH and RoHS compliant

Benefits

- Extremely light (4 g)
- Ideal for RTK and PPP surveying systems
- Excellent RH circular polarized signal reception
- Great multipath rejection
- Increased system accuracy
- Excellent signal-to-noise ratio
- Industrial temperature range

About Calian: With global headquarters and manufacturing in Ottawa, Canada, Calian is a leading manufacturer of high-precision antennas and components for Global Navigation Satellite System (GNSS) applications. Calian'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.calian.com**

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Revision: 202407

Embedded Multi-Constellation Antenna

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Antenna

Technology: Single-frequency, RHCP quadrifilar helix

		Gain dBic typ. at Zenith	Axial Ratio dB at Zenith
GNSS			
GPS / QZSS	L1	3.5	≤ 0.5
	L2	-	-
	L5	-	-
GLONASS	G1	2.0	≤ 0.5
	G2	-	-
	G3	-	-
Galileo	E1	3.5	≤ 0.5
	E5A	-	-
	E5B	-	-
	E6	-	-
BeiDou	B1	3.0	≤ 0.5
	B2	-	-
	B2a	-	-
	B3	-	-
IRNSS / NavIC	L5	-	-
QZSS	L6	-	-
L-Band Services (1525 MHz - 1559 MHZ)		-	-
Satellite Communications			
Iridium		-	-
Globalstar		-	-
Other			
Axial Ratio at 10°	-	Efficiency	-
PC Variation	-		

Mechanicals

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

Environmental

Operating Temperature	-40 °C to +85 °C
Storage Temperature	-55 °C to +95 °C
Vibration	MIL-STD-810-G - Test Method 514.6
Shock	-
Salt Fog	-
IP Rating	-
Compliance	IPC-A-610, FCC, RED / CE Mark, RoHS, REACH

Warranty

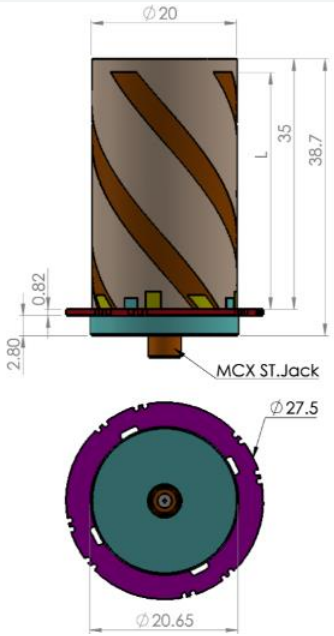
Parts and Labour: 1-year standard warranty

Low Noise Amplifier (LNA) - Measured at 3V and 25°C

Frequency Bandwith	Out of Band Rejection
1559 - 1606 MHz	> 65 dB @ < 1500 MHz > 65 dB @ > 1700 MHz

Architecture	Pre-filtered
Gain	28 dB typ., 26 dB min.
Noise Figure	2.0 dB typ.
VSWR	< 1.5:1 typ., 1.8:1 max.
Supply Voltage Range	2.5 to 16 VDC nominal, up to 50mV p-p ripple
Supply Current	15 mA typ.
ESD Circuit Protection	15 kV air discharge
P 1dB Output	11 dBm typ.
Group Delay	-
PCO	-

Mechanical Diagram - Units in 'mm'



Ordering Information

Part Number **33-HC771E**

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