TW1722

CALIAN
Confidence. Engineered.

Multi-Constellation Antenna

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

Overview

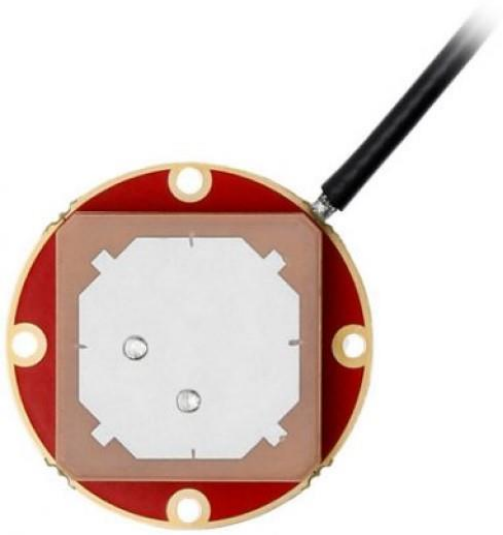
The TW1722 is a compact wideband GNSS antenna employing patented Accutenna® technology. This antenna provides accurate reception for all upper-Band GPS/QZSS-L1, GLONASS-G1, Galileo-E1, and Beidou-B1 signals and associated augmentation signals (WAAS, EGNOS and MSAS).

The TW1722 features a novel 25 mm dual-feed wideband patch element that, in sharp contrast with its competitors, provides a truly circularly polarized response, with a typical axial ratio of less than 2.0 dB over the full bandwidth. This provides a more linear carrier phase response, substantially improved multipath rejection, and tight phase centre variation (PCV), making the TW1722 ideal for applications that require high-precision positioning and timing in a small form factor.

The TW1722 contains a pre-filter to protect against saturation by high-level sub-harmonic and out-of-band signals, such as LTE and Wi-Fi. It also features a two-stage low-noise amplifier (LNA) with a mid-section filter. The Accutenna® technology provides an excellent axial ratio that is constant across the supported bandwidth.

The built-in 35 mm circular ground plane should ideally be augmented with a local system ground plane or reflecting surface (DC connection not required).

OEM antennas are easily detuned by the local environment. Calian offers custom tuning services for optimized integration into OEM end-user modules.



Applications

- High-accuracy GNSS positioning
- Precision agriculture, mining, and construction
- Law enforcement and public safety
- Fleet management and asset tracking
- Avionics

Features

- Compact Dual-feed Patch Element
- Axial ratio: ≤ 2.0 dB typ. over the full bandwith
- LNA gain (27 dB typ.)
- Voltage input range: 2.5 to 16 VDC
- ESD circuit protection (15 kV)
- Temperature-compensated gain
- RoHS and REACH compliant

Benefits

- Great multipath rejection
- Increased system accuracy
- Improved carrier phase linearity
- Excellent signal-to-noise ratio
- Great out-of-band signal rejection
- Compact form factor
- Reliable performance

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: 38

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Antenna - Measured with a 100 mm ground plane

Technology: Dual-feed RHCP ceramic patch

		Gain dBic typ. at Zenith	Axial Ratio dB at Zenith
GNSS			
GPS / QZSS	L1	4.5	≤ 2.0
	L2	-	-
	L5	-	-
GLONASS	G1	4.0	≤ 2.0
	G2	-	-
	G3	-	-
Galileo	E1	4.5	≤ 2.0
	E5A	-	-
	E5B	-	-
	E6	-	-
BeiDou	B1	4.5	≤ 2.0
	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	35 mm (dia.) x 8.8 mm
Weight	18 g
Radome	-
Mount	Adhesive | 4 · M2 screws
Available Connectors	Refer to Ordering Guide

Environmental

Operating Temperature	-40 °C to +85 °C
Storage Temperature	-55 °C to +95 °C
Vibration	MIL-STD-810D
Shock	Vertical axis: 50 G, other axes: 30 G
Salt Fog	-
IP Rating	-
Compliance	IPC-A-610, FCC, RED / CE Mark, RoHS, REACH

Warranty

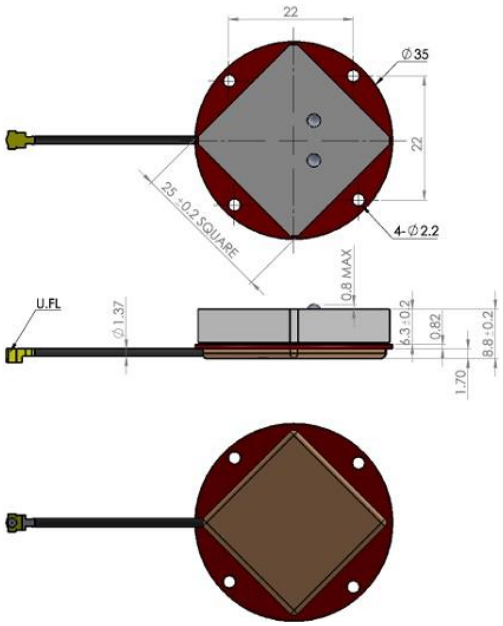
Parts and Labour: 1-year standard warranty

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

Upper Band	Lower Band
Frequency Bandwith	
1559 - 1606 MHz	-
Out-of-band Rejection	
> 50 dB @ < 1500 MHz > 50 dB @ < 1525 MHz > 50 dB @ > 1640 MHz	-

Architecture	Pre-filtered
Gain	27 dB typ., 24 dB min.
Noise Figure	3.0 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	10 mA typ., 15 mA max.
ESD Circuit Protection	15 kV air discharge
P 1dB Output	-
Group Delay	-
PCO	-

Mechanical Diagram



Ordering Information

Part Number **33-1722-xx-yyyy-zz**

Where xx = connector type; yyyy= cable length (in mm); and zz = reserved for Calian's use

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

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