TW1825

CALIAN
Confidence. Engineered.

Multi-Constellation Dual-Band Antenna

Frequency Coverage: GPS L1, L5 | GALILEO E1, E5a | BEIDOU B1, B2a | GLONASS G1 | NavIC L5

Overview

The TW1825 employs Calian's patented Accutenna® technology providing dual-band GPS-L1/L5, GLONASS-G1, Galileo E1/E5a, and BeiDou B1 coverage and is especially designed for precision dual frequency positioning where light weight is important.

The TW1825 features a precision tuned, circular dual-feed, stacked patch element. The signals from the two orthogonal feeds are combined in a hybrid combiner, amplified in a wideband LNA, then band-split for narrow filtering in each band and further amplified prior to recombination at the output.

The TW1825 offers excellent axial ratio and a tightly grouped phase centre variation.

The TW1825 covers GPS L5/Galileo E5a (1175.45 MHz), GPS-L1/WAAS/EGNOS/MSAS (1575.42 MHz), GLONASS-G1 (1602 MHz, centre), Galileo E1 (1575.42 MHz, centre), and BeiDou B1 (1575.42 MHz, centre).

The TW1825 has a pre-filter which increases the antenna's immunity to high-amplitude interfering signals, such as LTE and other cellular signals.

Applications

- Autonomous unmanned aerial vehicles (UAVs)
- Precision GPS position
- Dual-frequency RTK receivers
- Mission Critical GPS Timing
- Law enforcement and public safety
- Network timing & synchronization

Features

- Compact Dual-feed Patch Element
- Low noise figure, 2.5 dB typ.
- Axial ratio: ≤ 2.0 dB typ. over the full bandwith
- Tight phase centre variation
- High-gain LNA (26 dB typ.)
- Low current (12 mA typ.)
- ESD circuit protection (15 kV)
- Invariant performance from 2.5 to 16 VDC

Benefits

- Lightweight (37g excluding cable and connector)
- Ideal for L1/L2 RTK surveying systems
- Great multipath rejection
- Increased system accuracy
- Excellent signal-to-noise ratio
- REACH, and RoHS compliant

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: 48

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Antenna - Measured with a 100 mm ground plane

Technology: Dual-feed Stacked RHCP ceramic patch

		Gain (dBic typ. at Zenith)	Axial Ratio (dB at Zenith)
GNSS			
GPS / QZSS	L1	4.0	≤ 2
	L2	-	-
	L5	3.5	≤ 2
GLONASS	G1	4.0	≤ 2
	G2	-	-
	G3	-	-
Galileo	E1	4.0	≤ 2
	E5A	3.5	≤ 2
	E5B	-	-
	E6	-	-
BeiDou	B1	4.0	≤ 2
	B2	-	-
	B2a	3.5	≤ 2
	B3	-	-
IRNSS / NavIC	L5	3.5	≤ 2
QZSS	L6	-	-
L-Band Services (1525 MHz - 1559 MHz)		-	-
Satellite Communications			
Iridium		-	-
Globalstar		-	-
Other			
Axial Ratio at 10°	-	Efficiency	-
PC Variation	-		

Mechanicals

Size	48 mm (dia.) x 13.1 mm (h.) [100 mm ground plane recommended]
Weight	37 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

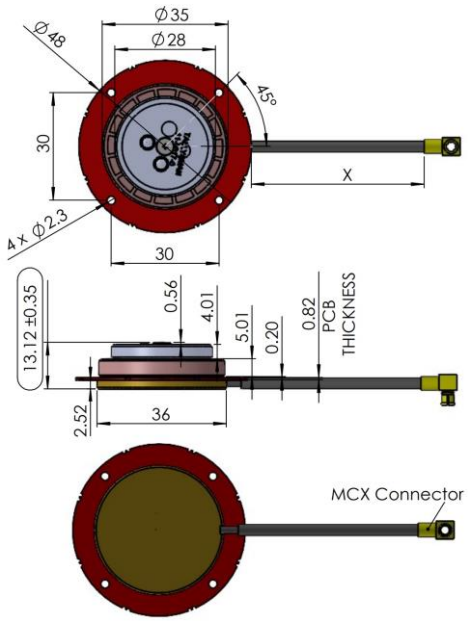
Parts and Labour: 1-year standard warranty

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

Upper Band	Lower Band
Frequency Bandwith	
1559 - 1606 MHz	1164 - 1189 MHz
Out-of-band Rejection	
> 35 dB @ < 1450 MHz > 30 dB @ < 1520 MHz > 35 dB @ > 1650 MHz	> 40 dB @ < 1170 MHz > 30 dB @ < 1190 MHz > 32 dB @ > 1290 MHz

Architecture	Pre-filtered
Gain	26 dB typ., 24 dB min.
Noise Figure	2.5 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	12 mA typ.
ESD Circuit Protection	15 kV air discharge
P 1dB Output	-
Group Delay	-
PCO	-

Mechanical Diagram



Ordering Information

Part Number **33-1825-xx-yyyy**

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/

Revision: 202407