

TW7882



Multi-Constellation Dual-Band Antenna

Frequency Coverage: GPS L1, L2 | GALILEO E1, E5b | BEIDOU B1, B2b | GLONASS G1, G2, G3

The TW7882 employs Calian's patented Accutenna® technology providing dual-band GPS-L1/L2, GLONASS-G1/G2 + BeiDou B1/B2b + Galileo E1/E5b coverage and is especially designed for precision dual frequency positioning.

The TW7882 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 TW7882 has a pre-filter which increases the antenna's immunity to high amplitude signals, such as LTW and other cellular signals. The TW7882 offers excellent axial ratio and a tightly grouped phase centre variation.

The TW7882 covers GPS L2 (1227.6MHz), GLONASS G2 (1248MHz centre), GPS-L1/WAAS/EGNOS/MSAS (1575.42 MHz), GLONASS-G1 (1602 MHz, centre), BeiDou B1/B2b (1575 and 1207 MHz) and Galileo E1 (1561 and 1589 MHz).

The TW7882 is housed in a through-hole mount, weatherproof enclosure for permanent installations. L Bracket or Pipe Mount (part numbers 23-0040-0, 23-0065-0 respectively) are available for non-rooftop installation. A 100 mm ground plane is recommended for non-roof-top installations. A 100 mm diameter ground plane is recommended for optimal antenna performance. This product is also available in an OEM format (TW3887).



Applications

- Precision GPS position
- Dual-frequency RTK receivers
- Mission Critical GPS Timing
- Safety & security
- Network timing & synchronization

Features

- Very low noise preamp: < 2.5 dB
- Axial ratio: < 2.0 dB typ.
- Tight phase centre variation
- High-gain LNA: 35 dB typ.
- Low current: 24 mA typ.
- ESD circuit protection (15 kV)
- Invariant performance from 2.5 to 16 VDC

Benefits

- Ideal for L1/L2 RTK surveying systems
- Great multipath rejection
- Increased system accuracy
- Great signal-to-noise ratio
- IP67, 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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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	4.5	≤ 1
	L2	3.8	≤ 1
	L5	-	-
GLONASS	G1	4.0	≤ 1
	G2	3.5	≤ 1
	G3	-	-
Galileo	E1	4.0	≤ 1
	E5A	-	-
	E5B	3.0	≤ 1
	E6	-	-
BeiDou	B1	4.0	≤ 1
	B2b	3.0	≤ 1
	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	± 10 mm	-	-

Mechanicals

Size	69 mm (dia.) x 22 mm (h.)
Weight	180 g
Radome	LEXAN™ EXL9330, Base: Zamac Metal
Mount	Magnetic
Available Connectors	See Ordering Guide

Environmental

Operating Temperature	-40 °C to +85 °C
Storage Temperature	-55 °C to +95 °C
Vibration	MIL-STD-810-E - Test Method 514.5
Shock	MIL-STD-810G Method 516.6
Salt Fog	MIL-STD-810-F - Test Method 509.5
IP Rating	IP67
Compliance	IPC-A-610, FCC, RED / CE Mark, RoHS, REACH

Warranty

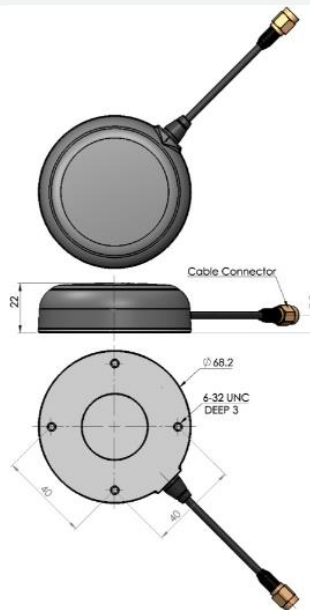
Parts and Labour	3-year standard warranty
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Low Noise Amplifier (LNA) - Measured at 3V and 25°C

Frequency Bandwidth		Out of Band Rejection
Lower Band	1192 - 1254 MHz	< 1050 MHz > 55 dB < 1100 MHz > 30 dB > 1350 MHz > 50 dB
L-Band Corr.	-	< 1450 MHz > 35 dB < 1520 MHz > 35 dB > 1650 MHz > 45 dB
Upper Band	1559 - 1606 MHz	

Architecture	Pre-filtered
Gain	32 dB typ.
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	24 mA typ., 25 mA max.
ESD Circuit Protection	15 kV air discharge
P 1dB Output	11 dBm typ.
Group Delay	9.5 ns
PCO	-

Mechanical Diagram



Ordering Information

Part Number **33-7882-xx-yyyy**

Where xx = connector type and yyyy = cable length in mm (where applicable)

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