TW8829

CALIAN
Confidence. Engineered.

Multi-Constellation Dual-Band Antenna

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

The TW8829 employs Calian's patented Accutenna® technology providing dual-band GPS-L1/L2, GLONASS-G1/G2, Galileo E1, and BeiDou B1 coverage and is especially designed for precision dual frequency positioning where light weight is important.

The TW8829 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 wide-Band LNA, then band-split for narrow filtering in each band and further amplified prior to recombination at the output.

The TW8829 offers excellent axial ratio and a tightly grouped phase centre variation.

The TW8829 has a pre-filter which increases the antenna's immunity to high-amplitude interfering signals, such as LTE and other cellular signals. A 100 mm diamter ground plane is recommended for optimal antenna performance.

Applications

- Autonomous unmanned aerial vehicles (UAVs)
- 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: 26 dB typ.
- Low current: 12 mA typ.
- ESD circuit protection (15 kV)
- Invariant performance from 2.5 to 16 VDC

Benefits

- Lightweight (52g excluding cable and connector)
- Ideal for L1/L2 RTK surveying systems
- Great multipath rejection
- Increased system accuracy
- Excellent 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/gnss

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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 dB
	L2	3.7	≤ 2 dB
	L5	-	-
GLONASS	G1	3.5	≤ 2 dB
	G2	3.0	≤ 2 dB
	G3	-	-
Galileo	E1	4.0	≤ 2 dB
	E5A	-	-
	E5B	-	-
	E6	-	-
BeiDou	B1	4.0	≤ 2 dB
	B2b	-	-
	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	47.3 mm (Dia.) x 18.3 mm (H.)
Weight	52 g
Radome	LEXAN™ EXL9330, Base: Zamac Metal
Mount	Magnet or Adhesive Tape
Available Connectors	Please see ordering guide

Environmental

Operating Temperature	-40 °C to +85 °C
Storage Temperature	-55 °C to +95 °C
Vibration	MIL-STD-810E Method 514.3-1
Shock	Vertical axis: 50 G, other axes: 30 G
Salt Fog	MIL-STD-810-F - Test Method 509.5
IP Rating	IP68
Compliance	IPC-A-610, FCC, RED / CE Mark, RoHS, REACH

Warranty

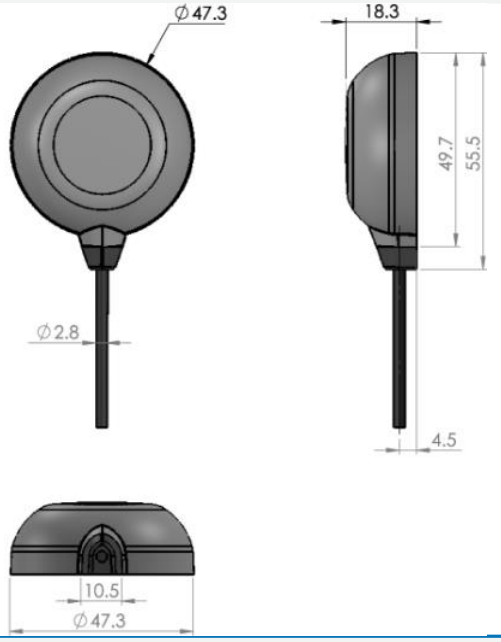
Parts and Labour	3-year standard warranty

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

Frequency Bandwith		Out of Band Rejection	
		Upper Band	Lower Band
1559 - 1606 MHz	1215 - 1254 MHz	> 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	27 dB typ., 26 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	8 dBm typ.
Group Delay	-
PCO	-

Mechanical Diagram - Units in 'mm'



Ordering Information

Part Number **33-8829-xx-yyyy**

Where xx = connector type, yyyy = cable length in mm (all 4 digits required)

Please refer to our **Ordering Guide** to review available radomes and connectors at:
https://at.calian.com/gnss/information-support/part-number-ordering-guide/

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