

TW1889



When precision matters.®

TW1889 Triple Band Antenna GPS/QZSS + GLONASS + Galileo + Bei Dou

Frequency Coverage: L1/L2/G1/G2/G3/E1/E5b/B1/B2

Overview

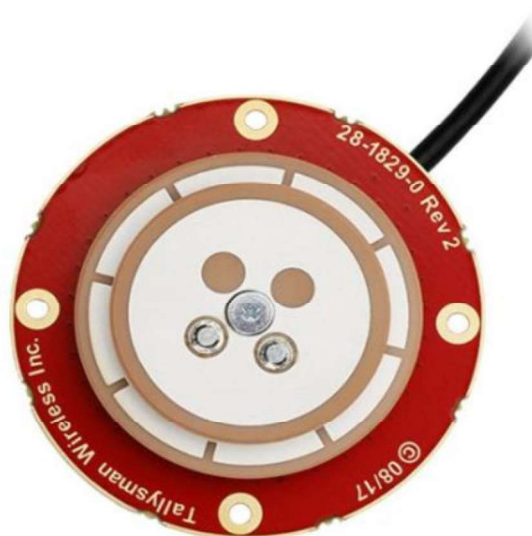
The TW1889 employs Tallysman's unique Accutenna technology providing triple band GPS/QZSS L1/L2, GLONASS G1/G2/G3, Galileo E1/E5b, and BeiDou B1/B2 coverage and is especially designed for precision dual frequency positioning where light weight is important.

The TW1889 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 TW1889 offers excellent axial ratio and a tightly grouped phase center variation.

The TW1889 covers GPS/QZSS L2 (1227.6 MHz, centre), GLONASS G2 (1248 MHz, centre), GLONASS G3 (1202.02 MHz, centre), GPS/QZSS L1/WAAS/EGNOS/MSAS (1575.42 MHz), GLONASS G1 (1602 MHz, centre), Galileo E1 (1575.42 MHz centre), Galileo E5b (1207.14 MHz, centre), BeiDou B1 (1575.42 MHz, centre), and BeiDou B2 (1207.14 MHz, centre).

The TW1889 has a pre-filter which increases the antenna's immunity to high amplitude interfering signals, such as LTE and other cellular signals.



Applications

- Airborne Unmanned Autonomous Vehicles
- Precision GPS position
- Dual Frequency RTK receivers
- Mission Critical GPS Timing
- Military & Security
- Network Timing and Synchronization

Features

- Very low Noise Preamp, 2.5 dB
- Axial ratio: < 2 dB typ.
- Tight Phase Center Variation
- LNA Gain 26 dB typ.
- Low current: 12 mA typ.
- ESD circuit protection: 15 KV
- Invariant performance from: +2.5 to 16 VDC

Benefits

- Lightweight (37 g 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 Tallysman: With global headquarters and manufacturing in Ottawa, Canada, Tallysman is a leading manufacturer of high-precision antennas and components for Global Navigation Satellite System (GNSS) applications. Tallysman'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.tallysman.com

Revision: 2.1

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Antenna

Technology Dual-feed Stacked RHCP ceramic Patch

		Gain	Axial Ratio
		dBic typ. at Zenith	dB at Zenith
GNSS			
GPS / QZSS	L1	4	≤ 2
	L2	4	≤ 2
	L5	-	-
GLONASS	G1	4	≤ 2
	G2	3	≤ 2
	G3	1	≤ 2
Galileo	E1	4	≤ 2
	E5A	-	-
	E5B	1	≤ 2
	E6	-	-
BeiDou	B1	4	≤ 2
	B2	3.7	≤ 2
	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	48mm(d)x12.2mm(h)100mm ground plane recommended
Weight	37 g
Radome	-
Mount	-

Environmental

Operating Temperature	- 40 °C to +85 °C
Storage Temperature	- 50 °C to +95 °C
Vibration	MIL-STD-810-D
Shock	Vertical axis: 50G, other axes: 30G
Salt Fog	-
IP Rating	Not Applicable
Compliance	IPC-A-610, FCC, RED / CE Mark, RoHS, REACH

Warranty:

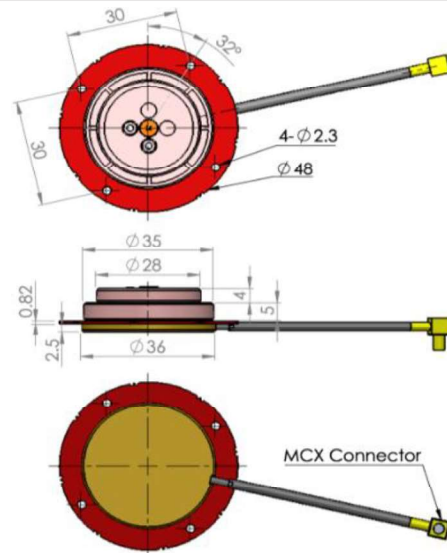
Parts and Labour	One year (Extended warranty available)
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Low Noise Amplifier (LNA) - Measured at 3V and 25°C

Frequency Bandwith		Out of Band Rejection	
		Upper Band	Lower Band
1559-1606 MHz	1189-1254 MHz	<1450 MHz > 47 dB <1520 MHz > 35 dB >1650 MHz > 30 dB >1800 MHz > 49 dB	<1100 MHz > 36 dB <1130 MHz > 30 dB >1340 MHz > 51 dB

Architecture	Pre-Filtered
Gain	26 dB typ
Noise Figure	2.5dB typ @25°C
VSWR	<1.5:1 typ. 1.8:1 max.
Supply Voltage Range	+2.5 to 16VDC nominal, up to 50mV p-p ripple
Supply Current	12 mA typ. at 25°C
ESD Circuit Protection	15 KV air discharge.
P 1dB Output	-
Group Delay	-

Mechanical Diagram



Ordering Information

Part Number **33-1889-xx-yyyy**

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

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