



A Tallysman Accutenna® TW1889 GPS L1/L2 + GLONASS G1/G2/G3

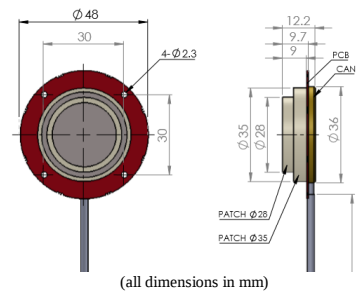
The TW1889 employs Tallysman's unique *Accutenna* technology providing dual band GPS L1/L2, GLONASS G1/G2/G3, Galileo E1/E5b, and BeiDou B1/B2 coverage and is especially designed for precision dual frequency positioning where light weight is important.

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 L2 (1227.6 MHz, centre), GLONASS G2 (1248 MHz, centre), GLONASS G3 (1201.5 MHz, centre), GPS L1/WAAS/EGNOS/MSAS (1575.42 MHz), GLONASS G1 (1602 MHz, centre), Galileo E1 (1575.42 MHz centre), Galileo E5b (1201.5 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 Preamplifier, 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 (37g 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



TW1889 GPS L1/L2 + GLONASS G1/G2/G3

Specifications (Measured at Vcc = 3V, and Temperature = 25°C)

Antenna

Patch Architecture	Circular, Dual Feed, Dual Stacked Patch
L2 Peak Gain (100mm ground plane), 1215-1240 MHz	4.0 dBic peak gain at Zenith
G2 Peak Gain (100mm ground plane), 1237-1246 MHz	3.0 dBic peak gain at Zenith
E5b/G3 Peak Gain (100mm ground plane), 1189-1214 MHz	1.0 dBic peak gain at Zenith
L1 Peak Gain (100mm ground plane), 1575.42MHz-1606MHz	4.0 dBic peak gain at Zenith
Axial Ratio, over full bandwidth, both L1 & L2	≤ 2dB typ., 1 dB max. at Zenith
Polarization	RHCP

Electrical

Bandwidth	L2: 1170MHz-1278MHz (filter bandwidth) L1: 1557 MHz-1606MHz (filter bandwidth)
Overall LNA Gain	27 dB typ., 26 dB min., each of L1 and L2 bands
Gain Variation with Temperature.	3 dB max. over operational temperature range
LNA Noise Figure	2.5 dB typ. @25°C
VSWR (at LNA output)	<1.5:1 typ. 1.8:1 max.
Supply Voltage Range	+2.5 to 16VDC nominal, up to 50mV p-p ripple
EMI Immunity	50V/Meter, excepting L1+/-100MHz and L2 +/- 100MHz
Supply Current	12 mA typ. at 25°C
ESD Circuit protection	15 KV air discharge

Out-of-Band Rejection	L1		L2	
	<1450 MHz	>47 dB	<1000 MHz	>70 dB
	<1520 MHz	>35 dB	<1100 MHz	>36 dB
	>1650 MHz	>30 dB	<1130 MHz	>30 dB
	>1800 MHz	>49 dB	>1340 MHz	>51 dB

Mechanicals & Environmental

Mechanical Size, Ground Plane	48mm(d)x12.2mm(h)100mm ground plane recommended
Cable	1.38mm OD (micro-coax) or 2.6mm OD (RG174)
Operating Temperature Range	-40°C to +85°C
Weight	37 g
Environmental	RoHS and REACH compliant
Shock	Vertical axis: 50 G, other axes: 30 G
Vibration	3-axis, sweep = 15 min, 10 to 200 Hz sweep: 3 G

Ordering Information

TW1889 - GPS L1/L2 + GLONASS G1/G2/G3

33-1889-xx-yyyy

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

Please refer to the Ordering Guide (<http://www.tallysman.com/wp-content/uploads/Current-Ordering-Guide.pdf>) for the current and complete list of available radomes and connectors.

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