A Tallysman *Accutenna*®
TW1829 GPS L1/L2 + GLONASS G1/G2

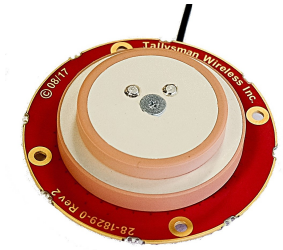
The TW1829 employs Tallysman's unique *Accutenna* technology providing dual band GPS L1/L2, GLONASS G1/G2, Galileo E1, and BeiDou B1 coverage and is especially designed for precision dual frequency positioning where light weight is important.

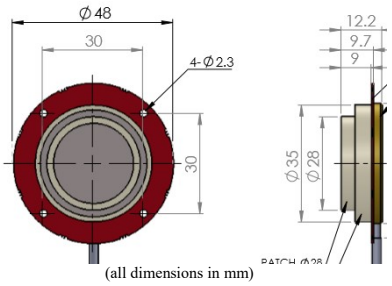
The TW1829 features a precision tuned, circular dual feed, stacked patch element. The signals from the two orthogonal feeds are combined in a hybrid combiner, amplified in a wide-band LNA, then band-split for narrow filtering in each band and further amplified prior to recombination at the output.

The TW1829 offers excellent axial ratio and a tightly grouped phase center variation.

The TW1829 covers GPS L2 (1227.6MHz), GLONASS G2 (1248MHz centre), GPS L1/WAAS/EGNOS/MSAS (1575.42MHz), GLONASS G1 (1602MHz, centre), Galileo E1 (1575.42MHz centre), and BeiDou B1 (1575.42MHz centre.

The TW1829 has a pre-filter which increases the antenna's immunity to high amplitude interfering signals, such as LTE and other cellular signals.





(all dimensions in mm)

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: ≤1.5 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

TW1829 GPS L1/L2 + GLONASS G1/G2

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

Antenna

Patch Architecture	Circular, Dual Feed, Dual Stacked Patch
L2 Peak Gain (100mm ground plane), 1215-1254MHz	3.7 dBic peak gain at Zenith
L1 Peak Gain (100mm ground plane), 1575.42MH-1606MHz	4.0 dBic peak gain at Zenith
Axial Ratio, over full bandwidth, both L1	≤ 1.0 dB typ, 1.5 dB max.
Axial Ratio, over full bandwidth, both L2	≤ 1.5 dB typ, 2.0 dB max.
Polarization	RHCP

Electrical

Bandwidth	L2: 1215MHz-1261MHz (Filter bandwidth) L1: 1557 MHz-1606MHz (Filter bandwidth)			
Overall LNA Gain	27dB typ, 26 dB min, each of L1 and L2 Bands,			
Gain Variation with Temperature.	3dB max over operational temperature range			
LNA Noise Figure	2.5dB 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	>35 dB	<1170 MHz	>40 dB
	<1520 MHz	>30 dB	<1190 MHz	>30 dB
	>1650 MHz	>35 dB	>1290 MHz	>32 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

TW1829 - GPS L1/L2 + GLONASS G1/G2 33-1829-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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