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 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).

The TW1829 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 (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

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

Antenna
Patch Architecture
L2 Peak Gain (100mm ground plane), 1227.6-1246MHz
L1 Peak Gain (100mm ground plane), 1575.42MHz-1606MHz
Axial Ratio, over full bandwidth, both L1 & L2
Circular, Dual Feed, Dual Stacked Patch

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
<1450 MHz >35 dB
<1520 MHz >30 dB
>1650 MHz >35 dB
L2
<1170 MHz >40 dB
<1190 MHz >30 dB
>1290 MHz >32 dB

Mechanicals & Environmental
Mechanical Size, Ground Plane
48mm(d) x 12.2mm(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
Where xx = connector type, yyyy = cable length in mm (all 4 digits required)


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