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When precision matters™

A Tallysman Accutenna® TW2106/TW2108 Embedded Precision GPS L1 Antenna

The TW2106 is electronically identical to the TW2105. The TW2106 has a larger PCB with drilled holes for a more secure method of attaching the antenna

The TW2106 employs Tallysman's unique *Accutenna™* technology in an embedded GPS L1 antenna, specially designed for industrial, agricultural and military precision positioning and timing applications.

The TW2106 features a custom high performance, dual-feed, wide band patch element. Its LNA configuration provides a LNA for each feed, a mid section high rejection SAW for the combined signal, followed by a final stage of LNA. It provides ± 10 MHz bandwidth centred on 1575.42 MHz and covers all GPS L1, and SBAS (WAAS/EGNOS/MSAS) signals. It features great axial ratio over the entire frequency range (<3 dB), excellent circular polarized signal reception, great multipath rejection and out-of-band signal rejection.

The TW2108 has a pre-filter to provide strong protection from near frequencies.

Applications

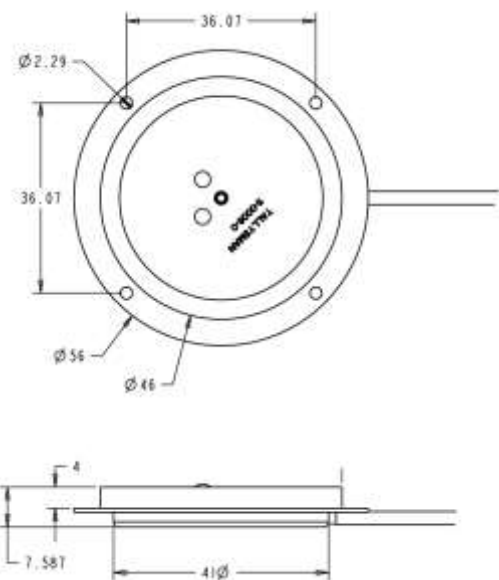
- High Accuracy & Mission Critical GPS
- Precision Agriculture, Mining & Construction
- Military & Security
- Avionics
- Law Enforcement & Public Safety
- Fleet Management & Asset Tracking

Features

- Great axial ratio: <3 dB over full bandwidth
- Low noise LNA: 1 dB
- High rejection SAW filter
- High gain: 28 dB typ.
- Low current: 15 mA typ.
- ESD circuit protection: 15 KV
- Wide voltage input range: +2.5 to 16 VDC
- Small form factor



TW2106 Dimensions (mm)



Benefits

- Excellent multipath rejection
- Increase system accuracy
- Excellent signal reception
- Great out of band signal rejection
- RoHS compliant



TW2106/ TW2108 Embedded Precision GPS L1 Antenna

Specifications V_{cc} = 3V, over full bandwidth, T=25°C

Antenna

| | |
|-----------------------------------|------------------------|
| Architecture | Dual, Quadrature Feeds |
| Antenna Gain (100mm ground plane) | 4.25 dBic |
| Axial Ratio (over full bandwidth) | ≤3 dB |

Electrical

| | |
|------------------------|---|
| Architecture | One LNA per feed line, mid section SAW filter, output LNA |
| Frequency Bandwidth | 1575 MHz ± 10 MHz |
| Polarization | RHCP |
| Gain | 28 dB min. at 90° (at 1575.42 MHz) |
| Out-of-Band Rejection | <1560 MHz >42 dB |
| | >1600 MHz >31 dB |
| | >1620 MHz >45 dB |
| VSWR (at LNA input) | <1.5:1 typ 1.8:1 max. |
| Noise Figure | 1 dB typ. |
| Supply Voltage Range | +2.5 to 16 VDC nominal (12VDC recommended maximum) |
| Supply Current | 15 mA typ at 25°C. |
| ESD Circuit Protection | 15 KV air discharge |

Mechanicals & Environmental

| | |
|-----------------------|---|
| Mechanical Size | 56 mm dia. x 7.8 mm H |
| Cable | RG174 |
| Operating Temp. Range | -40 to +85 °C |
| Weight | 100 g |
| Attachment Method | Adhesive or screw mount |
| Environmental | RoHS compliant |
| Shock | Vertical axis: 50 G, other axes: 30 G |
| Vibration | 3 axis, sweep = 15 min, 10 to 200 Hz sweep: 3 G |
| Warranty | One year – parts and labour |

Ordering Information

| | |
|--------------------------------------|--------------------|
| TW2106 – GPS L1 antenna | 33-2106-xx-yyyy-zz |
| TW2108 – GPS L1 antenna w/pre-filter | 33-2108-xx-yyyy-zz |

Where xx = connector type and yyyy = cable length in mm

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 connectors.

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