



When precision matters...™

TW2105 Embedded Precision GPS L1 Antenna

The TW2105 by Tallysman Wireless is a professional grade, embedded GPS L1 antenna, specially designed for industrial, agricultural and military precision positioning and timing applications.

The TW2105 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 $\pm 10\text{MHz}$ 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 ($<3\text{dB}$), excellent circular polarized signal reception, great multipath rejection and out-of-band signal rejection.

The TW2105 comes in a compact circular form factor with a built-in 50 mm diameter ground plane and with a 15 cm RG174 cable.

Applications

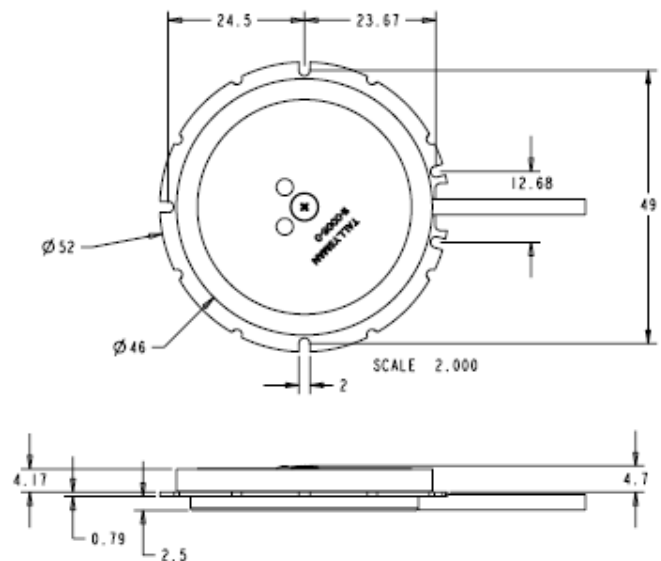
- High Accuracy & Mission Critical GPS
- Precision Agriculture, Mining & Construction
- Military & Security
- Avionics
- Law Enforcement & Public Safety
- Fleet Management & Asset Tracking

Features

- Great axial ratio: $<3\text{ dB}$ 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



TW2105 Dimensions (mm)



Benefits

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



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Specifications Vcc = 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 >1600 MHz >1620 MHz
	>42 dB >31 dB >45 dB
VSWR (at LNA input)	<1.5:1
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	50 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

Legacy Part Number:

TW2105 32-2105-xx-yyyy-zz

Where xx = connector type, yy = cable length in mm and zz = custom tuning number assigned by Tallysman

* As a result of a growing product portfolio, Tallysman has rationalized its part number system. No changes have been made to the mechanical or electrical properties of these products. Where administratively possible, please use the following Part Numbers.

TW2105 – GPS L1 antenna 33-2105-xx-yyyy-zz

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

Please refer to the Ordering Guide (<http://www.tallysman.com/orderingguide.php>) for the current and complete list of available connectors.

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