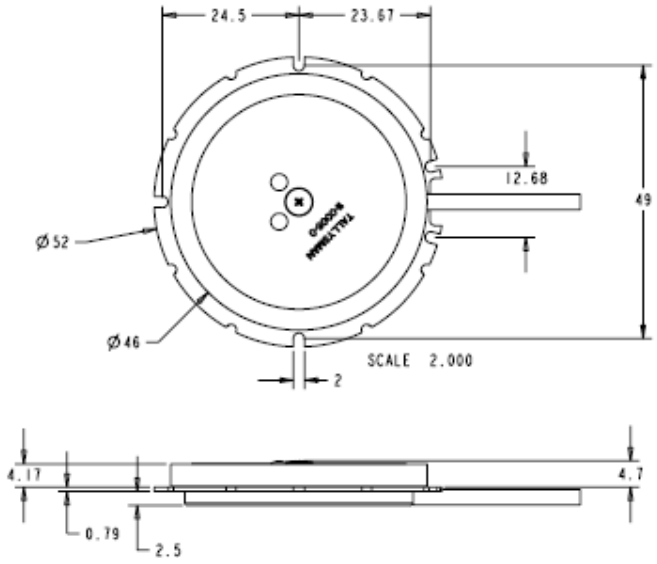
A Tallysman *Accutenna*®
TW2105 Embedded Precision GPS L1 Antenna

The TW2105 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 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 ± 10MHz 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 (<3dB), 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.

TW2105 Dimensions (mm)



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

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	>42 dB
	>1600 MHz	>31 dB
	>1620 MHz	>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

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/wp-content/uploads/Current-Ordering-Guide.pdf) for the current and complete list of available connectors.

Tallysman Wireless Inc

36 Steacie Drive
Ottawa ON K2K 2A9 Canada
Tel +1 613 591 3131 Fax 613 591 3121
sales@tallysman.com

Rev 5.1