



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 ± 10 MHz bandwidth centred on 1575.42 MHz and covers all GPS L1, Galileo E1 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.

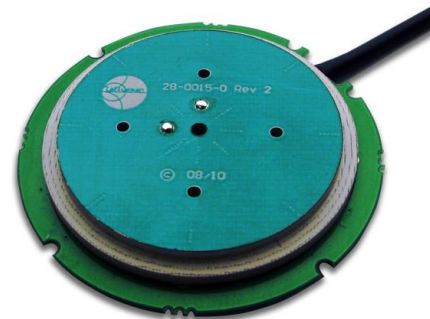
The TW2105 comes in a compact circular form factor with a built-in 50 mm diameter ground plane and with a 15 cm RG174 cable.

Applications

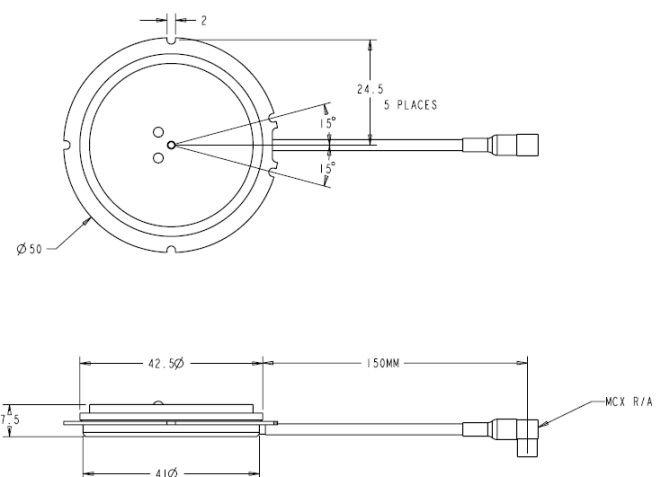
- High Accuracy & Mission Critical GPS
- Precision Agriculture, Mining & Construction
- Military & Security
- Avionics
- Law Enforcement & Public Safety
- Fleet Management & Asset Tracking

Features

- Great axial ratio: <3 dB over full bandwidth
- Low noise LNA: 1 dB
- High rejection SAW filter
- High gain: 28 dB typ.
- Low current: 10 mA typ.
- ESD circuit protection: 15 KV
- Wide voltage input range: +3.0 to 10 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 >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	+3.0 to 10 VDC nominal
Supply Current	10 mA typ.
ESD Circuit Protection	15 KV air discharge

Mechanicals & Environmental

Mechanical Size	50 mm dia. x 7.8 mm H
Connectors	Male, SMA straight, MCX right angle or MMCX right angle, other connectors optional
Cable	RG174 / 15 cm, custom lengths optional
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 – Embedded GPS L1 antenna, 15 cm cable, SMA Male	32-2105-0
TW2105 – Embedded GPS L1 antenna, 15 cm cable, MCX R/A Male	32-2105-5
TW2105 – Embedded GPS L1 antenna, 15 cm cable, MMCX R/A Male	32-2105-6

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Doc # 60-0049-0

Rev 3.0