



When precision matters...

A Tallysman Accutenna® TW7872 Dual Band GNSS Antenna

The TW7872 is precision tuned triple band, Accutenna® technology antenna for reception of GPS L1/L2, GLONASS G1/G2, BeiDou B1, Galileo E1 and is especially designed for precision dual frequency positioning. The TW7872 provides superior multi-path rejection and axial ratio, a linear phase response, and tight Phase Centre Variation (PCV), while protecting against intermodulation and saturation caused by high level cellular 700MHz signals. This antenna is ideal for precision agriculture, autonomous vehicle tracking and guidance, and other applications where precision matters.

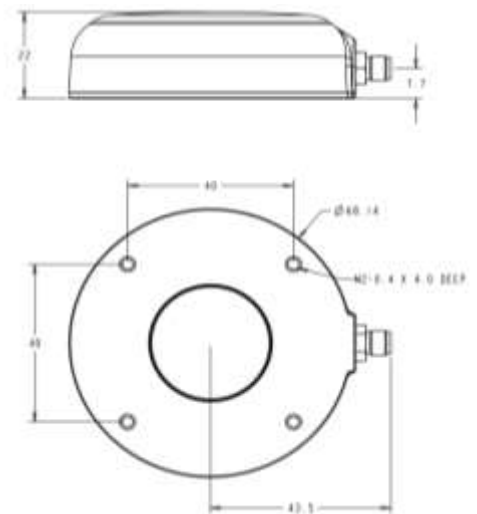
The TW7872 features a precision tuned, twin circular dual feed, stacked patch element. The signals from the two orthogonal feeds are combined in a hybrid combiner, pre-filtered to minimize interference from out of band signals such as Cellular LTE then amplified in a wide-band LNA and band-split for additional filtering and amplification stages prior to recombination at the output.

The TW7872 provides reception for signals in the bands 1213MHz to 1261MHz and 1557MHz to 1606MHz. It is housed in a magnetic mount, weather-proof enclosure.

This product is also available in an OEM format (TW3867 for 28dB and TW3872E for 35dB)



TW7872 Dimensions (mm)



Applications

- Precision GPS position
- Dual Frequency RTK systems
- Mission Critical GPS Timing
- Military & Security

Features

- Very low Noise Preamp, < 2dB
- Axial ratio: <2dB typ.
- Tight Phase Center Variation
- LNA Gain 32 dB typ.
- Low current: 20 mA typ.
- ESD circuit protection: 15 KV
- Invariant performance from: +2.5 to 16VDC

Benefits

- Ideal for dual band RTK surveying systems
- Great multipath rejection
- Increased system accuracy
- Great 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	Circular, Dual Feed, Dual Stacked Patch
L2 Gain (100mm ground plane), 1227.6-1246MHz	3.8 dBic Min at Zenith on 100mm Ground Plane
L1 Gain (100mm ground plane), 1575.42MH-1606MHz	4.5 dBic Min at Zenith on 100mm Ground Plane
Axial Ratio, over full bandwidth, both L1 & L2	≤ 2dB typ., 1 dB max. at Zenith, 3dB max at horizon
1dB Bandwidth,	L2: 1227MHz-1250MHz L1: 1557MHz-1606MHz
Polarization	RHCP

Electrical

Bandwidth	L2: 1213MHz-1261MHz (Filter bandwidth)	L1: 1557 MHz-1606MHz (Filter bandwidth)
Overall LNA Gain	32dB typ, 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	
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	20 mA typ. at 25°C, 25mA max at 75°C.	
ESD Circuit protection	15 KV air discharge.	
Out-of-Band Rejection	L1	L2
	<1450 MHz	>40 dB
	<1520 MHz	>30 dB
	>1650 MHz	>35 dB
	<1130 MHz	>40 dB
	<1190 MHz	>30 dB
	>1284 MHz	>32 dB

Mechanicals & Environmental

Mechanical Size, Ground Plane	69mm (dia) x 22mm (H)
Operating Temperature Range	-40°C to +85°C
Enclosure	Radome: EXL9330, Base: Zamak White Metal
Weight	180 g
Attachment Method	Magnetic Mount. Four-threaded holes in the base allow for screw mounting.
Environmental	IP67, 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
Salt fog / spray	MIL STD 810D

Ordering Information

TW7872 – Dual Band GNSS antenna 33-7872-xx-yyyy
 Where xx = connector type and yyyy = cable length in mm (where applicable)

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

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