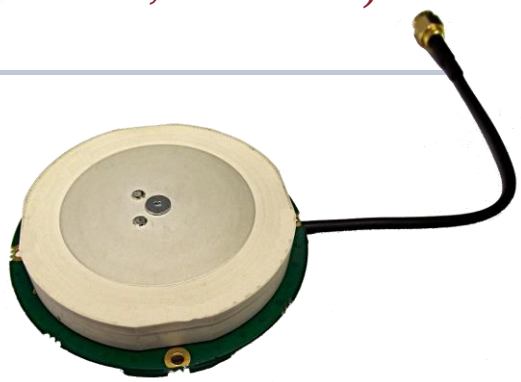
A Tallysman *Accutenna*®
TW3876E Embedded Dual Band (L1/G1/E1/B1, L6/E6/B3) GNSS Antenna

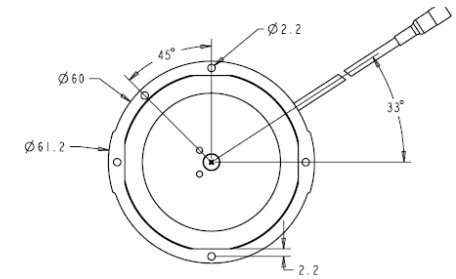


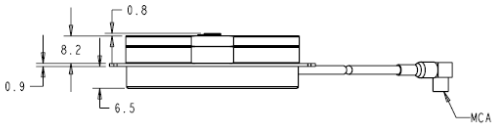
The TW3876E is a precision tuned dual band *Accutenna* technology antenna, providing dual band GPS L1, QZSS L1/L6, GLONASS G1, Galileo E1/E6 and BeiDou B1/B3 coverage and is especially designed for precision dual frequency positioning. The TW3876E provides superior multi-path rejection and axial ratio, a linear phase response and tight Phase Centre Variation (PCV), while protecting against intermodulation and saturation caused by high level cellular signals.

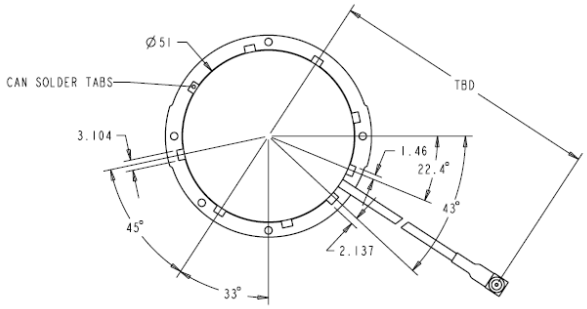
The antenna features a precision tuned, twin circular, dual feed, stacked patch element. The signals from the two orthogonal feeds are combined in a hybrid combiner, pre-filtered to minimize interference from out of band signals such as cellular LTE then amplified in a wide-band LNA, then band-split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

The antenna is supplied with a coaxial cable terminated with a connector (right angle MCX is shown in the drawing). Mounting holes are provided for attachment to larger ground planes. Custom tuning and ground plane options may be available, depending on purchase level commitment.

TW3876E Dimensions (mm)







Applications

- Precision GPS position
- Dual Frequency RTK receivers
- Mission Critical GPS Timing
- Military & Security
- Network Timing and Synchronization

Features

- Very low Noise Preamp, < 2dB
- Axial ratio: <2dB typ.
- Tight Phase Center Variation
- LNA Gain 35 dB typ.
- Low current: 24 mA typ.
- ESD circuit protection: 15 KV
- Invariant performance from: +2.5 to 16VDC

Benefits

- Ideal for L1/E1, L6/E6 RTK surveying systems
- Great multipath rejection
- Increased system accuracy
- Great signal to noise ratio
- IP67 and RoHS compliant

TW3876E Embedded Dual Band (L1/L6) GNSS Antenna

Specifications (Measured a Vcc = 3V, and Temperature=25°C)

Antenna

Patch Architecture	Circular, Dual Feed, Dual Stacked RHCP Ceramic Patch
L1 Gain (100mm ground plane), 1559-1606MHz	4.5 dBic Min at Zenith on 100mm Ground Plane
L6 Gain (100mm ground plane), 1263-1293MHz	3.8 dBic Min at Zenith on 100mm Ground Plane
Axial Ratio, L1	≤ 1dB typ., 1.5 dB max.
Axial Ratio, L6	≤ 1.5dB typ., 2 dB max.
Polarization	RHCP,

Electrical

Bandwidth	L1: 1559MHz-1614MHz (Filter bandwidth) L6: 1257MHz-1300MHz (Filter bandwidth)
Overall LNA Gain	34dB typ,, each of L1 and L6 Bands,
Gain Variation with Temperature.	3dB max over operational temperature range
LNA Noise Figure	2.5dB typ at 25°C
VSWR (at LNA output)	<1.5:1 typ. 1.8:1 max.
Supply Voltage Range	+5 to 16VDC nominal, up to 50mV p-p ripple
EMI Immunity	50V/Meter, excepting L1+/-100MHz and L2 +/- 100MHz
Supply Current	24 mA typ. at 25°C, 25mA max at 75°C.
ESD Circuit protection	15 KV air discharge.

Out-of-Band Rejection

L1/G1/E1/B1		L6/E6/B3	
<1400 MHz	>41 dB	<1100MHz	>40 dB
>1650 MHz	>43 dB	<1200MHz	>49 dB
		<1240MHz	>48 dB
		>1320MHz	>45 dB

Mechanicals & Environmental

Mechanical Size, Ground Plane	60mm diameter, 0.75mm thick, see mechanical drawing
Operating Temperature Range	-40°C to +85°C
Weight	75 g
Attachment Method	Through hole screws in PCB
Environmental	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

Ordering Information

TW3876E – Pre-filtered Embedded L1/L6 antenna 33-3876E-xx-yyyy-zz
Where xx = connector type, yyyy= cable length in mm and zz is reserved for Tallysman's use

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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