## Tallysman

## TW2010/TW2012 Magnet Mount GPS L1 Antenna

The TW2010/TW2012 by Tallysman Wireless is a professional grade, magnet mount, GPS L1 antenna, specially designed for industrial, agricultural and military precision positioning and timing applications.

The TW2010/TW2012 features a high performance custom tuned ceramic patch element, 15 KV ESD circuit protection, a high gain two-stage low noise amplifier (LNA) with a mid section high rejection SAW filter. The TW2012 also has a tight SAW pre-filter to provide unparalleled out-of-band signal rejection. It covers the GPS L1 and SBAS (WAAS/EGNOS/MSAS) frequency band (1572.5 to 1578 MHz ), and it offers great circular polarized signal reception, multipath rejection and out of band signal rejection.

The TW2010 is housed in a compact, industrial-
 grade weather-proof, magnet mount enclosure.

Dimensions (mm)

## Applications

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



## Features

- Very low noise LNA: 1 dB
- Great axial ratio: $<1 \mathrm{~dB}$ at Zenith
- High rejection SAW filter
- High gain: 28 dB typ.
- Low current: 10 mA typ.
- ESD circuit protection: 15 KV
- Wide voltage input range: +2.5 to 16 VDC
- Weather proof housing: IP67


## Benefits

- Great multipath rejection
- Increase system accuracy
- Excellent signal to noise ratio
- Great out of band signal rejection
- Ideal for harsh environments
- RoHS compliant


## TW2010/TW2012 Magnet Mount GPS L1 Antenna

Specifications $\quad \mathrm{Vcc}=3 \mathrm{~V}$, over full bandwidth, $\mathrm{T}=25^{\circ} \mathrm{C}$

## Antenna

Architecture
Antenna Gain ( 100 mm ground plane)
Axial Ratio (over full bandwidth)

## Electrical

Architecture
Frequency Bandwidth
Polarization
Gain
Out-of-Band Rejection $<1560 \mathrm{MHz}$
$>1600 \mathrm{MHz}$
$>1620 \mathrm{MHz}$
VSWR (at LNA output)
Noise Figure
Supply Voltage Range
Supply Current
ESD Circuit protection

|  | Input LNA, mid section SAW filter, output LNA |
| :--- | :--- |
|  | 1572.5 to 1578 MHz |
|  | RHCP |
|  | 28 dB min (TW2010) 25 dB (TW2012). |
|  | TW2010 $\quad$ TW2012 |
| $<1560 \mathrm{MHz}$ | $>42 \mathrm{~dB}$ |
| $>1600 \mathrm{MHz}$ | $>31 \mathrm{~dB}$ |
| $>1620 \mathrm{MHz}$ | $>45 \mathrm{~dB} \quad>55 \mathrm{~dB}$ |
|  | $<1.5: 1$ typ. $1.8: 1$ max. |
|  | 1 dB typ. (TW2010) 3 dB (TW2012) |
|  | +2.5 to 16 VDC nominal (12 VDC recommended max.) |
|  | 10 mA typ at $25^{\circ} \mathrm{C}$. |

## Mechanicals \& Environmental

Mechanical Size
Cable
Operating Temp. Range
Enclosure
Weight
Attachment Method
Environmental
Shock
Vibration
Warranty

```
Custom single-feed ceramic patch
4 dBic at 90
1dB at 90}\mp@subsup{0}{}{\circ},6\textrm{dB}\mathrm{ at 20
Input LNA, mid section SAW filter, output LNA
1572.5 to 1578 MHz
RHCP
28 dB min (TW2010) 25dB (TW2012).
TW2010 TW2012
>42dB >50 dB
>45 dB >70dB
<1.5:1 typ. 1.8:1 max.
1 dB typ. (TW2010) 3 dB (TW2012)
10 mA typ at 25 ' C.
15 KV air discharge
```

57 mm dia. $\times 15 \mathrm{~mm} \mathrm{H}$
RG174
-40 to $+85{ }^{\circ} \mathrm{C}$
Radome: ASA Plastic, Base: Zamak white metal
150 g
Magnet or permanent (pre-tapped $4 \times 6$-32UNC)
IP67 and RoHS compliant
Vertical axis: 50 G, other axes: 30 G
3 axis, sweep $=15 \mathrm{~min}, 10$ to 200 Hz sweep: 3 G
One year - parts and labour

## Ordering Information

Part Numbers:

$$
\begin{array}{ll}
\text { TW2010 - GPS L1 antenna } & 33-2010-x x-y y y y \\
\text { TW2012 - GPS L1 antenna w/pre-filter } & 33-2012-x x-y y y y
\end{array}
$$

Where $\mathrm{xx}=$ 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.

## Tallysman Wireless Inc

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NavtechGPS

