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## TW1320/TW1322 Embedded GPS/GLONASS Antenna

The TW1320/TW1322 is a high performance OEM GNSS antenna covering the GPS L1, GLONASS L1 and SBAS (WAAS, EGNOS & MSAS) frequency band (1575 to 1606 MHz). It features a patch element with 40% wider bandwidth than previously available in this format. Unlike its competitors, both GPS-L1 and GLONASS signals are included in the 1dB RHCP received power bandwidth.

The TW1320/TW1322 has a two stage Low Noise Amplifier (LNA) with a mid-section SAW. An optional tight pre-filter is available with part number TW1322 to protect against saturation by high level sub-harmonics and L-Band signals.

The built-in 35mm circular ground plane should ideally be augmented with a local system ground plane or reflecting surface (DC connection not required).

OEM antennas are easily detuned by the local environment. Tallysman offers custom tuning services for optimized integration into OEM end-user modules.

### Applications

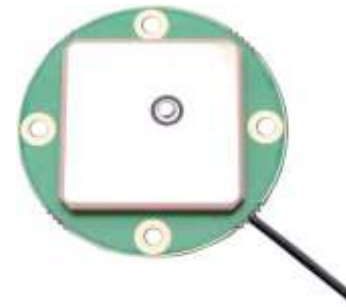
- Embedded OEM applications
- Precision Agriculture, Mining & Construction
- Military & Security
- Avionics
- Law Enforcement & Public Safety
- Fleet Management & Asset Tracking

### Features

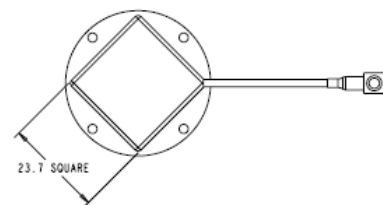
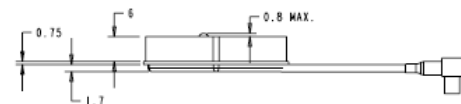
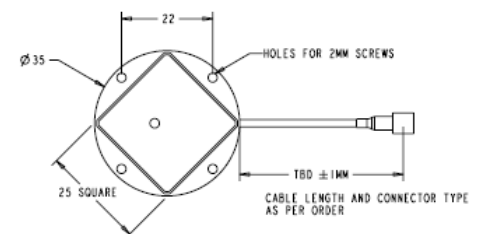
- 1dB bandwidth 1575MHz-1606MHz
- Very low noise LNA: 1 dB
- 4dB Axial Ratio @1590MHz, 8db over B/W
- High rejection SAW filter
- LNA gain: 28dB TW1320, 26dB TW1322 typ.
- Lowest current draw on the market -9mA typical
- ESD circuit protection: 15 KV
- Wide Supply voltage: fixed 2.5V to 16V

### Benefits

- Great multipath rejection
- Increase system accuracy
- Excellent signal to noise ratio
- Great out of band signal rejection
- Compact form factor
- RoHS compliant



TW1320 Dimensions (mm)





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# TW1320/TW1322 Embedded GPS/GLONASS Antenna

## Specifications At; Vcc = 3V, over full bandwidth, T=25°C

### Antenna

Architecture	Wideband Single Feed Patch
Polarization	RHCP
1 dB Bandwidth	31MHz
10dB Return Loss Bandwidth	45Hz
Antenna Gain (with 100mm ground plane)	4.5dBic
Axial Ratio	<=4dB @ 1590MHz, 8dB typical at band edges

### Electrical

Architecture	TW1320	LNA stage 1 -> SAW filter-> LNA stage 2
	TW1322	SAW Prefilter ->LNA stage 1 -> SAW filter-> LNA stage 2
Filtered LNA Frequency Bandwidth		1574MHz to 1606MHz
Gain (1575.42 to 1606 MHz)		28dB min., TW1320; 26dB min, TW1322,
Gain flatness		+/- 2dB, 1575MHz to 1606MHz
Out-of-Band Rejection		TW1320: <1500MHz >35dB. TW1322: >70dB. TW1320: <1550MHz >25dB. TW1322: >45dB. TW1320: >1650MHz >35dB. TW1322: >70dB.
VSWR (at LNA output)		<1.5:1 typ. 1.8:1 max.
Noise Figure		TW1320:1 dB typ. TW1322: 3.5dB typ.
Supply Voltage Range (over coaxial cable)		+2.5VDC to 16VDC nominal (12 VDC recommended max)
Supply Current		9mA typ..
ESD Circuit Protection		15KV air discharge

### Mechanicals & Environmental

Mechanical Size	35mm dia. x 7.25mm
Cable	1.38mm OD,
Operating Temp. Range	-40°C to +85°C
Weight	50g
Attachment Method	Adhesive or screw mount
Environmental	RoHS compliant
Shock	Vertical axis: 50G, other axes: 30G
Vibration	3 axis, sweep = 15 min, 10 to 200 Hz sweep: 3 G
Warranty	One year – parts and labour

### Ordering Information

TW1320 – GPS L1 antenna,	33-1320-xx-yyyy
TW13222 –GPS L1 antenna w/pre-filter	33-1322-xx-yyyy
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.

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