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.
- Low current: 10mA typ.
- 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
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Specifications

At: Vcc = 3V, over full bandwidth, T=25°C

Antenna

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

Electrical

Architecture
TW1320
TW1322
Filtered LNA Frequency Bandwidth
1574MHz to 1606MHz
28dB min., TW1320; 26dB min, TW1322,
Gain
 TW1320: <1500MHz >35dB. TW1322: >70dB.
 TW1320: <1550MHz >25dB. TW1322: >45dB.
 TW1320: >1650MHz >35dB. TW1322: >70dB.

Out-of-Band Rejection
VSWR (at LNA output)
<1.5:1
Noise Figure
TW1320: 1 dB typ. TW1322: 3.5dB typ.
Supply Voltage Range (over coaxial cable)
+/- 2.5VDC to 16VDC nominal
Supply Current
10mA max.
ESD Circuit Protection
15KV air discharge

Mechanicals & Environmental

Mechanical Size
35mm dia. x 7.25mm
Connectors
U.FL standard, Other connectors available on request
Cable
1.38mm OD, 15 cm. Custom lengths optional
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

Ordering Information

TW1320 – OEM GPS/GLONASS antenna, 32-1320-XX –YYYY ZZ
TW1322 – Pre-filtered OEM GPS/GLONASS antenna, 32-1322-XX –YYYY ZZ
XX= Connector type, YYYY = cable length in mm, ZZ customer version
Please contact Tallysman Wireless for additional information

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