

TW7976

TW7976 Triple-Band GNSS Antenna + L-Band

Frequency Coverage: GNSS/QZSS-L1/L2, QZSS-L6, GLONASS-G1/G2, Galileo-E1/E6, BeiDou-B1/B3
+ L-Band correction services

The TW7976 is a precision-tuned Accutenna[®] technology antenna designed for precision positioning, covering the GPS/QZSS-L1/L2, QZSS-L6, GLONASS-G1/G2, Galileo-E1/E6, and BeiDou-B1/B3 frequency bands, including the satellite-based augmentation system (SBAS) available in the region of operation [WAAS (North America), EGNOS (Europe), MSAS (Japan), or GAGAN (India)], as well as L-Band correction services.

This antenna is ideal for Real-Time Kinematic (RTK) and Precise Point Positioning (PPP) applications, as well as precision agriculture, autonomous vehicle tracking and guidance, and other applications where precision matters.

The TW7976 features a dual-feed circular stacked patch element. The signals from the two orthogonal feeds are summed in quadrature, pre-filtered in a low loss filter to protect against a wide range of potentially interfering signals, amplified in high linearity, wideband LNA, then band-split, tightly filtered and amplified prior to signal recombination at the output.

This antenna provides superior multipath rejection and axial ratio, a linear phase response, and tight phase centre variation (PCV), while protecting against intermodulation and saturation caused by high-level LTE 700 MHz signals.

The TW7976 is housed in an IP67 weatherproof enclosure that supports direct screw, magnet, or adhesive tape attachment.



Applications

- Autonomous vehicle tracking and guidance
- Positive Train Control (PTC)
- Positive Train Location (PTL)
- Precision GNSS positioning
- Precision agriculture
- Triple-frequency RTK and PPP receivers
- Law enforcement and public safety

Features

- Very low noise preamp (< 2.5 dB typ.)
- Low axial ratio (< 2.0 dB typ.)
- Tight phase centre variation
- High-gain LNA (32 dB typ.)
- Low current (24 mA typ.)
- ESD circuit protection (15 kV)
- Invariant performance from 2.5 to 16 VDC
- IP67, REACH, and RoHS compliant

Benefits

- Excellent multipath rejection
- Increased system accuracy
- Excellent signal-to-noise ratio

About Tallysman: With global headquarters and manufacturing in Ottawa, Canada, Tallysman is a leading manufacturer of high-precision antennas and components for Global Navigation Satellite System (GNSS) applications. Tallysman's mission is to support the needs of a new generation of positioning systems by delivering unprecedented antenna precision at competitive prices. Learn more at www.tallysman.com

Revision: 1.1

Contact us:
info@tallysman.com
T: +1 613 591-3131

TW7976 Triple-Band GNSS Antenna + L-Band

Frequency Coverage:

GNSS/QZSS-L1/L2, QZSS-L6, GLONASS-G1/G2, Galileo-E1/E6, BeiDou-B1/B3
+ L-Band correction services

Antenna

Technology Dual-feed Stacked RHCP ceramic patch

		Gain	Axial Ratio
		dBic typ. at Zenith	dB at Zenith
GNSS			
GPS / QZSS	L1	4.0	< 1.0
	L2	3.0	< 1.5
	L5	-	-
GLONASS	G1	3.5	< 1.5
	G2	4.0	< 2.0
	G3	-	-
Galileo	E1	4.0	< 1.0
	E5a	-	-
	E5b	-	-
	E6	2.5	< 1.5
BeiDou	B1	4.0	< 1.0
	B2	-	-
	B2a	-	-
	B3	4.0	< 1.5
IRNSS / NavIC	L5	-	-
QZSS	L6	2.5	< 1.5
L-band correction services		3.5	< 1.0
Satellite Communications			
Iridium		-	-
Globalstar		-	-
Other			
Axial Ratio at 10°	-	Efficiency	-
Phase Centre Variation	-		

Mechanicals

Mechanical Size 69 mm (dia.) x 22 mm (h.)
Weight 180 g
Available Connectors see Ordering Guide
Radome / Enclosure Radome: EXL9330, Base: Zamak White Metal
Mount Magnetic

Environmental

Operating Temperature -40 °C to 105 °C
Storage Temperature -50 °C to 105 °C
Mechanical Vibration MIL-STD-810E Method 514.5
Shock and Drop MIL-STD-810G Method 516.6
Salt Fog -
Low Pressure - Altitude -
IP Rating (housing) IP67
Compliance IPC-A-610, FCC, RED / CE Mark, RoHS, REACH

Warranty:

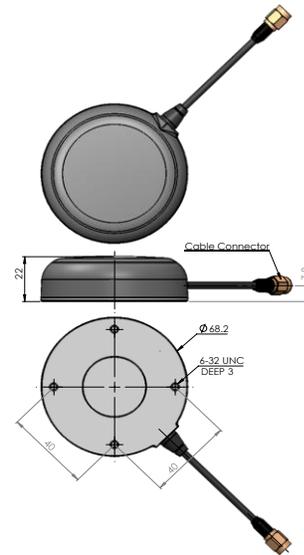
Parts and Labour **3-year standard warranty**

Low Noise Amplifier (LNA) - Measured at 3.0 VDC and 25°C

Frequency Bandwith	Out-of-Band Rejection
Lower Band	1217 - 1300 MHz > 60 dB @ < 1000 MHz > 40 dB @ < 1100 MHz > 20 dB @ > 1350 MHz
L-band corrections services	1539 - 1559 MHz
Upper Band	1559 - 1606 MHz > 32 dB @ < 1500 MHz > 30 dB @ > 1700 MHz

Architecture Pre-filter → LNA stage 1 → filter → LNA stage 2
Gain 32 dB typ.
Noise Figure 2.5 dB typ. @ 25 °C
VSWR < 1.5:1 typ. | 1.8:1 max
Supply Voltage Range 2.5 to 16 VDC nominal, up to 50mV p-p ripple
Supply Current 24 mA typ. @ 25 °C, 25 mA max. @ 75 °C
ESD Circuit Protection 15 kV air discharge
P 1dB Output -
Group Delay Variation -

Mechanical Diagram



Ordering Information

Part Number **33-7976-xx-yyyy**

Where xx = connector type; yyyy = cable length in mm

Please refer to our **Ordering Guide** to review available radomes and connectors at:
<https://www.tallysman.com/resource/tallysman-ordering-guide/>