

# TW1721



When precision matters.®

## TW1721 Accutenna® Single-Band Embedded GNSS Antenna

Frequency Coverage: GPS/QZSS-L1 + GLONASS-G1 + Galileo-E1 + BeiDou-B1

### Overview

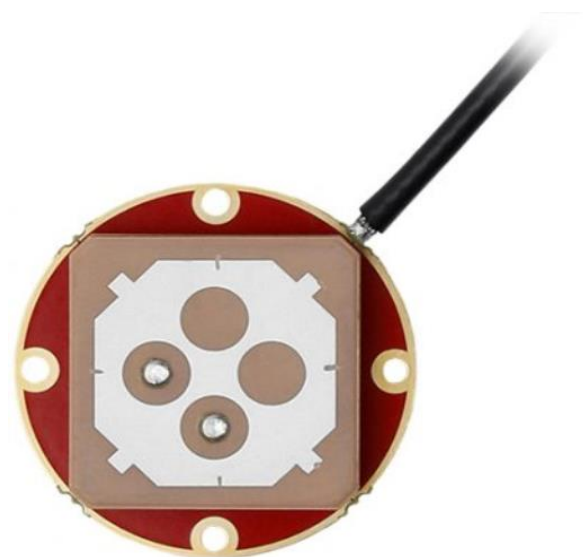
The TW1721 is a compact wideband GNSS antenna employing patented Accutenna® technology. This antenna provides accurate reception for all upper-band GPS/QZSS-L1, GLONASS-G1, Galileo-E1, and BeiDou-B1 signals and associated augmentation signals (WAAS, EGNOS and MSAS).

The TW1721 features a novel 25 mm dual-feed wideband patch element that, in sharp contrast with its competitors, provides a truly circularly polarized response, with a typical axial ratio of less than 2.0 dB over the full bandwidth. This provides a more linear carrier phase response, substantially improved multipath rejection, and tight phase centre variation (PCV), making the TW1721 ideal for applications that require high-precision positioning and timing in a small form factor.

The TW1721 features a two-stage low-noise amplifier (LNA) with a mid-section filter. The Accutenna® technology provides an excellent axial ratio that is constant across the supported bandwidth.

The built-in 35 mm 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

- High-accuracy GNSS positioning
- Precision agriculture, mining & construction
- Law enforcement & public safety
- Fleet management & asset tracking
- Avionics

### Features

- Compact dual-feed patch element
- Low noise LNA: < 1.0 dB
- Axial ratio: 2.0 dB typ. over the full bandwidth
- LNA gain: 28 dB typ.
- Voltage input range: 1.8 to 16 VDC
- ESD circuit protection: 15 kV
- Temperature-compensated gain
- RoHS and REACH compl

### Benefits

- Great multipath rejection
- Increased system accuracy
- Improved carrier phase linearity
- Excellent signal-to-noise ratio
- Great out-of-band signal rejection
- Compact form factor
- Reliable performance

**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](http://www.tallysman.com)

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## Antenna

Technology Dual-feed RHCP ceramic patch

		Gain *	Axial Ratio
		dBic typ. at Zenith	dB at Zenith
<b>GNSS</b>			
GPS / QZSS	L1	4.5	≤ 2.0
	L2	-	-
	L5	-	-
GLONASS	G1	4.0	≤ 2.0
	G2	-	-
	G3	-	-
Galileo	E1	4.5	≤ 2.0
	E5A	-	-
	E5B	-	-
	E6	-	-
BeiDou	B1	4.5	≤ 2.0
	B2	-	-
	B2a	-	-
	B3	-	-
IRNSS / NavIC	L5	-	-
QZSS	L6	-	-
L-Band Services (1525 MHz - 1559 MHz)		-	-
<b>Satellite Communications</b>			
Iridium		-	-
Globalstar		-	-
<b>Other</b>			
Axial Ratio at 10°	-	Efficiency	-
PC Variation	-		

\* with 100 mm ground plane

## Mechanicals

Size 35 mm (dia.) x 7.25 mm (h.)  
 Weight 18 g  
 Radome -  
 Mount Adhesive | 4 M2 screws

## Environmental

Operating Temperature -40 °C to +85 °C  
 Storage Temperature -50 °C to +95 °C  
 Vibration MIL-STD-810-D  
 Shock Vertical axis: 50 G, other axes: 30 G  
 Salt Fog Not Applicable  
 IP Rating Not Applicable  
 Compliance IPC-A-610, FCC, RED / CE Mark, RoHS, REACH

## Warranty:

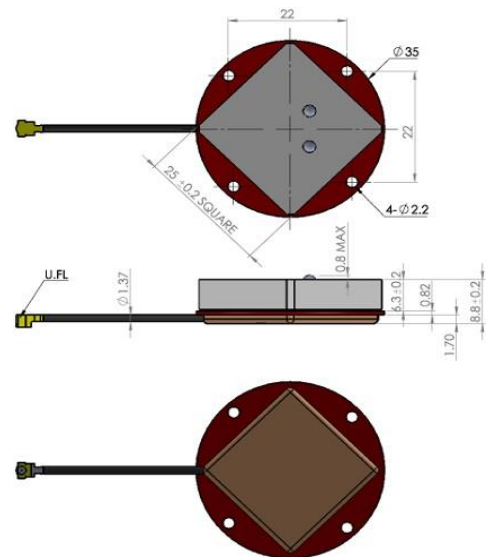
Parts and Labour One year (extended warranty available)

## Low Noise Amplifier (LNA) - Measured at 3V and 25°C

Frequency Bandwidth		Out of Band Rejection	
		Upper Band	Lower Band
1559 - 1606 MHz	-	< 1500 MHz > 40 dB < 1525 MHz > 45 dB > 1630 MHz > 45 dB	-

Architecture LNA stage 1 → filter → LNA stage 2  
 Gain 28 dB typ., 25 dB min.  
 Noise Figure 1.0 dB typ.  
 VSWR < 1.5:1 typ. | 1.8:1 max.  
 Supply Voltage Range 1.8 VDC min. to 16 VDC max. (+12 VDC rec. max.)  
 Supply Current 10 mA typ. | 15 mA max. (@ 85 °C)  
 ESD Circuit Protection 15 kV air discharge.  
 P 1dB Output -  
 Group Delay -

## Mechanical Diagram



## Ordering Information

Part Number **33-1721-xx-yyyy-zz**

Where xx = connector type; yyyy = cable length (in mm); and zz = reserved for Tallysman's use

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