

TW4421



GPS-L1/GLONASS-G1 Antenna

Frequency Coverage: GPS L1 | GLONASS G1

Overview

The TW4421 employs Calian's patented Accutenna® technology covering the GPS-L1, GLONASS-G1, and SBAS (WAAS, EGNOS & MSAS) frequency band (1575 to 1606 MHz). The TW4421 features a novel 25 mm (diameter) dual-feed wideband patch element that provides a more linear carrier phase response by virtue of the axial ratio that is greatly improved across the full frequency bandwidth.

It provides truly circular response over its entire bandwidth thereby producing superior multipath signal rejection. It is especially suitable for high accuracy applications while providing high out-of-band signal rejection.

The two feeds from the patch element are summed in a 90° Hybrid then input to a first stage low-noise amplifier (LNA), followed by a mid-section SAW and a second low noise gain stage.

The TW4421 is the smallest dual-feed, high performance antenna available. It is housed in a compact IP68 magnetic or adhesive mount enclosure. It is available with a wide range of cable and connector options.

The antenna can be ordered without the magnet. In such cases, the magnet is replaced with a plastic plug to provide a smooth under surface, with the option of ordering it with or without 1.1 mm thick doublesided VHB tape on the bottom.



Applications

- Cost Sensitive Mission Critical Positioning
- Law enforcement and public safety
- Covert surveillance
- Fleet management and asset tracking

Features

- Dual-feed patch element
- Axial ratio: 2 dB max. (GPS & GLONASS)
- Low noise LNA: 1 dB
- High-rejection mid-section SAW filter
- High-gain (28 dB typ.)
- Wide voltage input range: 2.5 to 16 VDC
- IP68 weather proof housing
- Low Power (12 mA typ. current consumption)

Benefits

- 1 dB Bandwidth Includes GPS-L1 & GLONASS
- Excellent multipath rejection
- Improved GNSS reliability
- Excellent signal-to-noise ratio
- CE RED, REACH, and RoHS compliant
- Ideal for harsh environments
- Excellent out-of-band signal rejection

About Calian: With global headquarters and manufacturing in Ottawa, Canada, Calian is a leading manufacturer of high-precision antennas and components for Global Navigation Satellite System (GNSS) applications. Calian'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.calian.com

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Antenna

Technology Dual-feed RHCP ceramic patch

		Gain dBic typ. at Zenith	Axial Ratio dB at Zenith
GNSS			
GPS / QZSS	L1	4.5	≤ 2
	L2	-	-
	L5	-	-
GLONASS	G1	4.5	≤ 2
	G2	-	-
	G3	-	-
Galileo	E1	-	-
	E5A	-	-
	E5B	-	-
	E6	-	-
BeiDou	B1	-	-
	B2b	-	-
	B2a	-	-
	B3	-	-
IRNSS / NavIC	L5	-	-
QZSS	L6	-	-
L-Band Services (1525 MHz - 1559 MHz)		-	-
Satellite Communications			
Iridium		-	-
Globalstar		-	-
Other			
Axial Ratio at 10°	-	Efficiency	-
PC Variation	-		

Mechanicals

Size	38.6 mm (sq.) x 14.7 mm (h.)
Weight	34 g (without cable)
Radome	LEXAN™ EXL9330
Mount	Adhesive, magnetic
Available Connectors	Please see ordering guide

Environmental

Operating Temperature	-40 °C to +85 °C
Storage Temperature	-55 °C to +95 °C
Vibration	MIL-STD-810-G - Test Method 514.6
Shock	MIL-STD-810-G - Test Method 516.6
Salt Fog	MIL-STD-810-F - Test Method 509.5
IP Rating	IP68
Compliance	IPC-A-610, FCC, RED / CE Mark, RoHS, REACH

Warranty

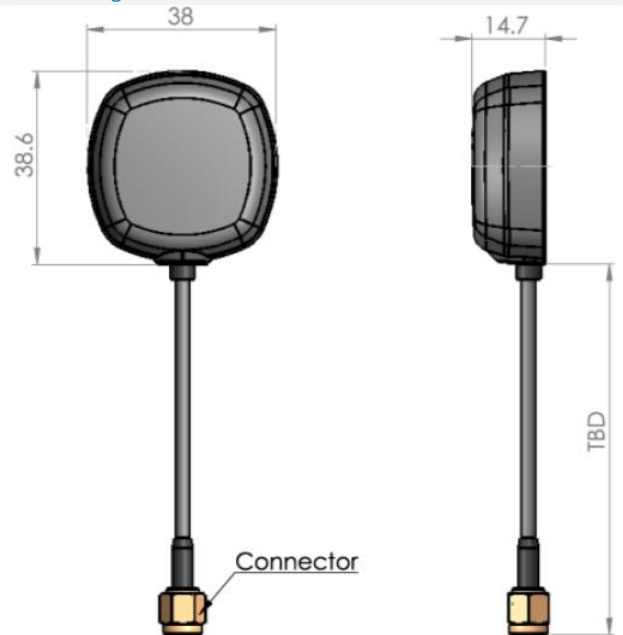
Parts and Labour	3-year standard warranty
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Low Noise Amplifier (LNA) - Measured at 3V and 25°C

Frequency Bandwidth	Out of Band Rejection
1575 - 1606 MHz	> 32 dB @ < 1500 MHz > 25 dB @ < 1550 MHz > 60 dB @ > 1640 MHz

Architecture	Non pre-filtered
Gain	28 dB typ., 26 dB min.
Noise Figure	1 dB typ.
VSWR	< 1.5:1 typ. 1.8:1 max.
Supply Voltage Range	2.5 to 16 VDC nominal (12 VDC rec. max.)
Supply Current	12 mA typ.
ESD Circuit Protection	15 kV air discharge
P 1dB Output	-
Group Delay	-
PCO	-

Mechanical Diagram



Ordering Information

Part Number 33-4421-xx-yyyy

Where xx = connector type and 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/>