

TW3012



Permanent-Mount GPS-L1 Antenna

Frequency Coverage: GPS L1

The TW3012 is a professional-grade, permanent-mount GPS-L1 antenna, specially designed for precision tracking and timing applications.

The TW3012 features a custom high performance, wide band patch element, a 26 dB gain LNA stage and a high-rejection out-of-band SAW filter. The TW3012 includes a tight SAW pre-filter to provide strong protection against out-of-band signals. It provides ± 10 MHz bandwidth centred on 1575.42 MHz and covers the GPS-L1, and SBAS (WAAS/EGNOS/MSAS) signals. It provides great axial ratio, excellent circular polarized signal reception, strong multipath rejection and very deep out-of-band signal rejection.

The TW3012 is housed in a permanent-mount industrial-grade weatherproof enclosure. Optional components include a 10 cm ground plane (provided for optimal performance), an L-bracket mount (P/N 23-0040-0), or a pipe mount (P/N 23-0065-0).



Applications

- Mission-critical GPS tracking and timing
- Precision agriculture, mining, and construction
- Law enforcement and public safety
- Fleet management and asset tracking
- Avionics

Features

- Great axial ratio
- Low noise LNA (4.3 dB typ.)
- Pre-filter
- High-rejection SAW filter
- High-gain LNA (26 dB typ.)
- Low current (9 mA typ.)
- ESD circuit protection (15 kV)
- Wide supply voltage range (2.5 to 16 VDC)
- IP69K weatherproof housing

Benefits

- Excellent multipath rejection
- Increase system accuracy
- Excellent signal-to-noise ratio
- Very deep out-of-band signal rejection
- Ideal for harsh environments
- CE RED, RoHS, and REACH compliant

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

Revision: 202407

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Antenna

Technology Single-feed RHCP ceramic patch

		Gain	Axial Ratio
		dBic typ. at Zenith	dB at Zenith
GNSS			
GPS / QZSS	L1	4.0	≤ 4
	L2	-	-
	L5	-	-
GLONASS	G1	-	-
	G2	-	-
	G3	-	-
Galileo	E1	-	-
	E5A	-	-
	E5B	-	-
	E6	-	-
BeiDou	B1	-	-
	B2b	-	-
	B2a	-	-
	B3	-	-
IRNSS / NavIC	L5	-	-
QZSS	L6	-	-
L-Band Services (1539 MHz - 1559 MHz)		-	-
Satellite Communications			
Iridium		-	-
Globalstar		-	-
Other			
Axial Ratio at 10°	-	Efficiency	-
PCV Φ > 15°	-	PCO	

Mechanicals

Size	66.5 mm (dia.) x 21 mm (h.)
Weight	150 g
Radome	LEXAN™ EXL9330, Base: Zamac Metal
Mount	Through-hole (100 mm ground plane provided)
Available Connectors	Please refer to ordering guide

Environmental

Operating Temperature	-40 °C to +85 °C
Storage Temperature	-55 °C to +95 °C
Vibration	MIL-STD-810-E - Test Method 514.5
Shock	MIL-STD-810-G - Test Method 516.6
Salt Fog	MIL-STD-810-F - Test Method 509.5
Other Tests	Hail, Humidity, Dust, Rain, Sand, Solar
IP Rating	IP69K
Compliance	IPC-A-610, FCC, CE RED, RoHS, REACH

Warranty

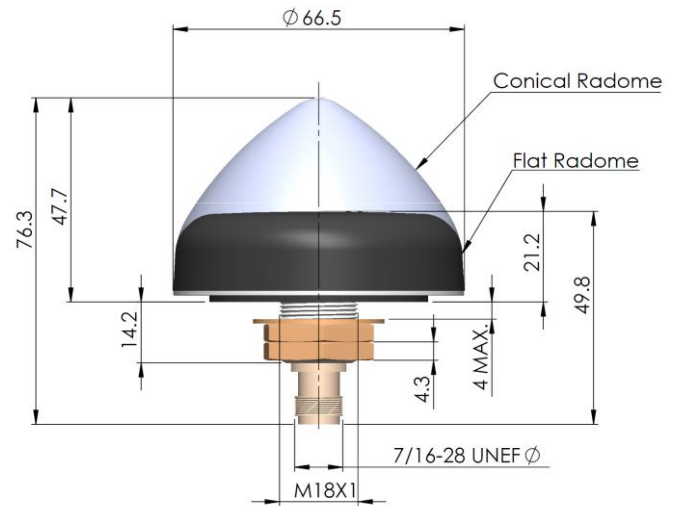
Parts and Labour	3-year standard warranty
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Low Noise Amplifier (LNA) - Measured at 3V and 25°C

Frequency Bandwidth		Out of Band Rejection
Lower Band	-	-
L-Band Corr.	-	≥ 60 dB @ < 1560 MHz ≥ 56 dB @ > 1600 MHz ≥ 80 dB @ > 1620 MHz
Upper Band	1575.42 MHz ± 10 MHz	

Architecture	Pre-filtered
Gain	26 dB typ., 24 dB min.
Noise Figure	4.3 dB typ.
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	9 mA typ.
ESD Circuit Protection	15 kV air discharge
P 1dB Output	4 dBm typ.
Group Delay	35 ns typ. @ (1570.42 - 1580.42 MHz)

Mechanical Diagram - Units in 'mm' or 'inches' where specified



Ordering Information

Part Number 33-3012-xx-yy-zzzz
where xx = connector type, yy = shape and colour of radome, and
zzzz = 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/>