TW3142

CALIAN
Confidence. Engineered.

High Gain GPS-L1 Antenna

Frequency Coverage: GPS L1

The TW3142 is a high-gain GPS antenna specifically designed for applications in environments where high levels of nearout-of-band interfering signals can be expected. This antenna features a 40 dB LNA gain to handle long cable runs.

The TW3142 covers the GPS-L1 and SBAS (WAAS, EGNOS & MSAS) frequency band and employs Calian's patented Accutenna® technology to provide excellent cross polarization rejection and greatly enhanced multipath rejection.

The TW3142 features a three (3) stage dual filtered LNA plus an additional SAW pre-filter to provide exceptional rejection of close out-of-band signals and additional protection against saturation by high-level sub-harmonic and L-Band signals.

The TW3142 housing has a permanent-mount, IP69K compliant metal base, and an extended temperature range plastic radome, and is specifically designed to withstand the most challenging environmental conditions.

Two options for pole mounting are available an L-bracket (P/N# 23-0040-0) or a pipe mount (P/N# 23-0065-0).

Applications

- Timing systems
- Long cable runs

Features

- Dual-feed Patch Antenna
- Low Loss SAW Pre-Filter
- Great axial ratio: 1 dB typ.
- Low noise LNA: 3.5 dB typ.
- Dual High-rejection SAW filter
- High-gain LNA: 40 dB min.
- Low current: 20 mA typ.
- Wide voltage input range: 2.5 to 16 VDC
- IP69K weatherproof housing

Benefits

- Great out-of-band rejection
- Excellent multipath rejection
- Excellent circular polarisation
- Excellent signal-to-noise ratio
- Increased system accuracy
- 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/gnss

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Antenna - Measured with a 100 mm ground plane

Technology: Dual-feed RHCP ceramic patch

		Gain dBic typ. at Zenith	Axial Ratio dB at Zenith
GNSS			
GPS / QZSS	L1	4.5	≤ 1
	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

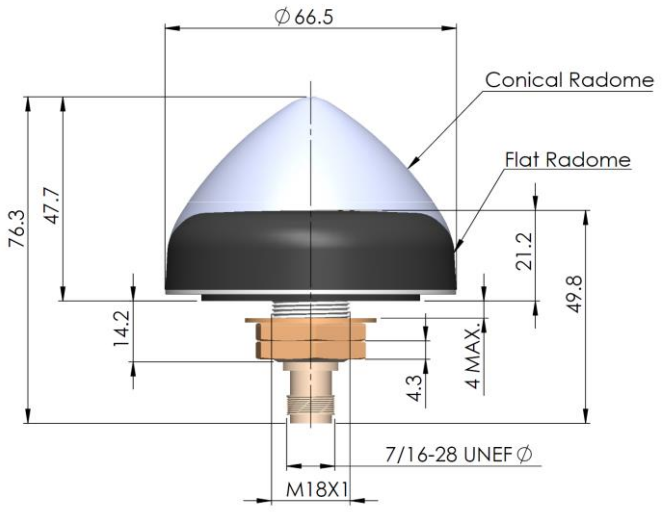
Parts and Labour	3-year standard warranty

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

Frequency Bandwith		Out of Band Rejection
Lower Band	-	-
L-Band Corr.	-	> 80 dB @ < 1545 MHz > 60 dB @ > 1610 MHz
Upper Band	1575 MHz ± 10 MHz	

Architecture	Non pre-filtered
Gain	40 dB min.
Noise Figure	3.5 dB typ.
VSWR	< 1.5:1 typ., 2.0:1 max.
Supply Voltage Range	2.5 to 16 VDC nominal, up to 50mV p-p ripple
Supply Current	20 mA typ.
ESD Circuit Protection	15 kV air discharge
P 1dB Output	-
Group Delay	140 ns typ.

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



Ordering Information

Part Number **33-3142-xx-yy-zzzz**

Where xx = connector type, yy = shape and colour of radome and zzzz = cable length in mm (where applicable)

Please refer to our **Ordering Guide** to review available radomes and connectors at:
https://at.calian.com/gnss/information-support/part-number-ordering-guide/

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