

TW120

25 dB GPS L1 In-Line Amplifier

Frequency Coverage: GPS L1 | Galileo E1 | Beiidou B1

The TW120 is a rugged waterproof, low cost, low noise, low power, narrow band 25 dB gain in-line amplifier, specially designed to tightly filter and boost weak GPS L1, Galileo E1, and Beiidou B1 signals, while maintaining low antenna noise figure.

The TW120 provides for much longer cable runs from antenna to receiver, for applications such as mast-mount, roof-top and large vehicle installations, without any degradation of system sensitivity.

The TW120 passes DC directly from input to output to support centre conductor DC supply to the antenna, and so avoiding the need for an additional bias source or bias "T". A clip for mounting is also available.

Amplifiers are directional and must be installed in the orientation indicated on the product label (arrow points away from antenna).



Applications

- GNSS and Telematics Systems
- Wireless Telecom & Cellular Base Station Timing Applications
- Commercial and Industrial Timing and Synchronization Applications

Features

- Very low noise figure
- Wide input voltage range, 3 to 12 VDC
- Powered via antenna coax from receiver
- 50 Ohm port impedance
- Cylindrical nickel-plated brass, IP67 compliant housing
- Gold-plated connectors
- CE RED, REACH, and RoHS compliant

Benefits

- Improves signal reception
- Enables extended cable runs
- Avoid installation of costly low-loss cable
- Fits in-line with antenna cable
- No external voltage supply needed
- Maintains low antenna LNA noise figure
- Easy to install – mounting clamp included

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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Electrical Specifications

Parameter	Value
Operational Frequency	1559 to 1591 MHz
I/O VSWR (50 Ω)	1.5 typ., 2 max.
Gain and Flatness	26 dB typ., 25 dB min., ±1 dB ripple
Noise Figure	1.8 dB typ.
Supply Current	13 mA typ., 16 mA max.
Out-of-band Rejection	> 35 dB @ < 1530 MHz and > 35 dB @ > 1620 MHz
Reverse Isolation	35 dB min.
Supply Voltage Range	3 to 12 VDC nominal
Output P1dB (Compression Level)	-10 dBm
Output IP3	0 dBm
Maximum Input RF Power	-5 dBm
Group Delay Variation	15 ns

Mechanicals

Size	59 mm (l.) x 20 mm (dia.)
Weight	85 g
Enclosure	Nickel-plated brass
Mount	-
Connectors	SMA, TNC, or type-N (female)

Environmental

Operating Temperature	-40 °C to 85 °C
Storage Temperature	-55 °C to 95 °C
Vibration	-
Shock	-
Salt Fog	-
IP Rating	IP67
Compliance	CE RED, RoHS, and REACH compliant

Warranty

Parts and Labour	-
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Ordering Information

Part Number **32-0120-xx**

Where xx = 00 for SMA (female), 01 for TNC (female) or 14 for type-N (female)

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

Mechanical Diagram - Units in 'mm'

