



## TW120 25 dB GPS L1 In-line Amplifier

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

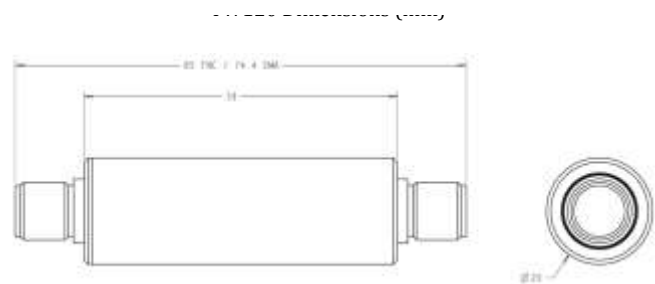
The TW120 passes DC directly from input to output to support centre conductor DC supply to the antenna, and so avoiding the need for an additional bias source or bias “T”.

A clip for mounting is also available.

**IMPORTANT:** 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
- Wide input voltage range, 3 to 10 VDC
- Powered via antenna coax from receiver
- 50 Ohm port impedance
- Cylindrical nickel-plated brass, IP67 compliant housing
- Gold-plated connectors
- 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



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## Specifications

Vcc =3.3V, over full bandwidth, T=25 °C

### Electrical

• Gain	25dB min, 26dB typ
• Noise Figure	<1.5dB typ.
• -3dB Bandwidth	1555 to 1590 MHz
• I/O VSWR 1562 to 1662MHz	<1.5 typ, <2 max.
• Lower Stop band Attenuation	-35dB, f < 1530 MHz
• Upper Stop band Attenuation	-35dB, f > 1620 MHz
• Input Return Loss Zo=50	>12dB (1570 to 1580 MHz)
• Output Return Loss Zo=50	>9dB (1570 to 1580 MHz)
• Reverse Isolation	>35 dB
• Group Delay (w/o cable)	49.5nS @ 1573.42MHz, 38.7nS @ 1575.42MHz, 52.2nS @ 1577.42MHz
• Output 1dB Compression Level	>-10 dBm
• Output IP3	>0 dBm
• Maximum Input Level	-5 dBm
• Supply Voltage Range	+3 to 10 VDC Nominal
• Supply Current	13 mA typical, 16 mA max.

### Mechanicals & Environmental

• Mechanical Size (body dimensions only)	59 mm L x 20 mm Dia. (2.32" L x 0.787" Dia.)		
• Weight	<85 g		
• Connectors	SMA Jack, TNC Jack or N-Type		
• <b>Torque Limitations (lbs)</b>	<b>N-type</b>	<b>TNC</b>	<b>SMA</b>
	<b>6.1</b>	<b>8</b>	<b>3</b>
• Operating Temp. Range	-40 to +85 °C		
• Enclosure	Nickel-plated brass		
• Environmental	RoHS and IP67 compliant		
• Warranty	One year – parts and labour		

### Ordering Information

• TW120 - 25dB gain In-Line Amp with SMA Jack	32-0120-00
• TW120 - 25dB gain In-Line Amp with TNC Jack	32-0120-01
• TW120 - 25dB gain In-Line Amp with N-Type	32-0120-14

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