

58529A

GPS Line Amplifier with L1 Bandpass Filter



Key Features

- Provides gain in installations where a GPS receiver and its antenna must be separated by large distances
- Accepts power between +4.5Vdc to +13Vdc

Key Benefits

- Minimizes interference from nearby transmitters
- Rugged, waterproof, corrosion resistant, and easy to install
- Contains built-in diode protection to minimize damage from lightning strikes

The Symmetricom® 58529A GPS Line Amplifier with L1 Bandpass Filter provides gain to overcome cable losses in installations where a GPS receiver and its antenna must be separated by large distances. With over 20 dB (typical) of gain, the 58529A increases the maximum cable length from 115 to 240 meters between the 58532A GPS Antenna and a timing receiver. Two amplifiers may be used in series to achieve distances up to 360 meters.

An active device, the 58529A accepts power between +4.5 Vdc to +13 Vdc. The unit is designed to pass DC power up to the GPS antenna.

Added Interference Protection

Antennas located in high-signal environments occasionally need interference protection above and beyond the filter provided in the 58532A GPS Antenna. The 58529A includes a narrow bandwidth filter with steep rolloff to minimize interference from nearby transmitters.

Improved Immunity to Lightning

Electromagnetic fields caused by nearby lightning strikes can induce surge voltages in the antenna cable, damaging components in the antenna system. The 58529A has improved immunity to these voltages through built-in diode protection. However, Symmetricom recommends the 58538A and 58539A lightning arrestors for full lightning protection.

Durable and Easy to Install

Symmetricom's third generation GPS antenna line amplifier, the 58529A is even more durable and easier to install than its predecessors. New features include a more rugged package design and a streamlined installation scheme.

The 58529A is designed to be compatible with the 58532A GPS Antenna. The 58529A's cylindrical shape allows it to fit inside the mounting mast of the 58532A GPS Antenna for shelter from the environment. To facilitate installation, a Type-N plug to Type-N plug adapter is provided to conveniently attach the 58529A directly to the output connector of the 58532A. This allows the 58529A to be installed close to the antenna for best system noise margin.

The 58529A is rugged, waterproof, and corrosion resistant so it can also be installed outside of the 58532A mounting mast. Option AUB with the 58529A provides a mounting bracket for convenient mounting to wood, masonry, or a pole.

Shrink tubing is also provided with the 58529A to protect connector joints from moisture. Use of the shrink tubing inside the 58532A mounting mast provides additional moisture protection, but it is not necessary and can be omitted to further simplify installation.

58529A

Specifications

ELECTRICAL SPECIFICATIONS

Input/Output Impedance:	50 Ω
Gain:	>20 dB (25 dB typical) in the passband
Filter Attenuation:	>15 dB @ L1 ±75 MHz >30 dB @ L1 ±140 MHz
Reverse Isolation:	>40 dB (typical)
Noise Figure:	<4.3 dB (3.8 dB typical)
VSWR:	Input 1.4:1 (typical)
Output:	1.7:1 (typical)
RF Input Level:	-25 dBm maximum
dc Power:	+4.5 V to +13 V, <13 ma dc power is passed to GPS antenna

PHYSICAL SPECIFICATIONS

Connectors:	2 Type-N Jacks
Dimensions (including connectors):	32 mm D 110 mm L
Weight:	440 g

ENVIRONMENTAL SPECIFICATIONS

Operating Temperature:	-40°C to +80°C
Vibration (58529A coupled directly to 58532A):	
Single 58529A, operating:	5-500 Hz, 0.04 g ² /Hz
Two 58529As in series, operating:	5-500 Hz, 0.0002 g ² /Hz
Moisture Resistance:	IP 66 (according to IEC 529)
Corrosion:	Saltspray test according to MIL-STD-202, Method 101, Condition B.

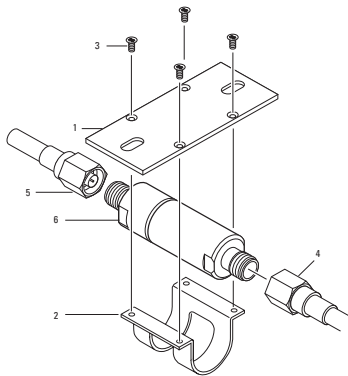


Figure 2. Items 1, 2, and 3 are supplied in 58529A-AUB Mounting Hardware. Items 4 and 5 are Type-N plug connectors (2) for LMR-400 cable. Item 6 is the 58529A.

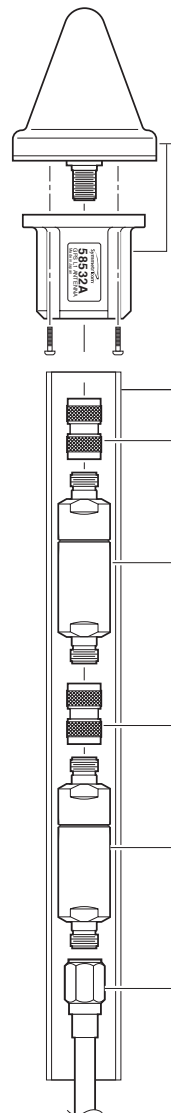


Figure 1. Diagram showing the 58529A installed inside the mounting mast of the 58532A

58532A
GPS L1 Reference
Antenna

58532A
Option AUB
Mounting Mast

Type-N Plug to
Type-N Plug adapter
(provided with 58529A)

58529A to
increase LMR-400
cable length up to
240 meters.

Type-N Plug to
Type-N Plug adapter
(provided with 58529A)

58529A to increase
LMR-400
cable length up to
360 meters.

Type - N Plug
connector for
LMR-400 Cable.

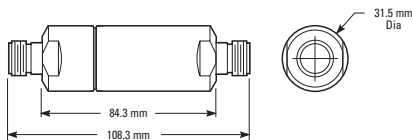


Figure 3. Line Amplifier/L1 Bandpass Filter Dimensions

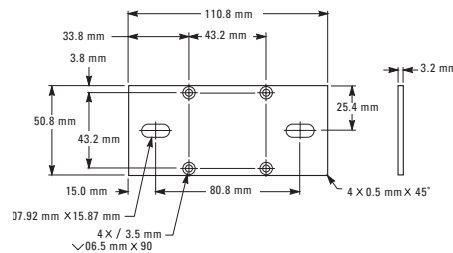


Figure 4. Option AUB Mounting Bracket Dimensions

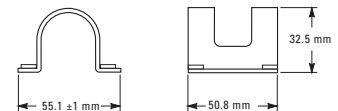


Figure 5. Option AUB Cylindrical Housing Clamp Dimensions