

Down/Up Converter

L1 GPS Antenna Down/Up Converter



KEY FEATURES

- Increases Antenna Cable Length Up to 1500 ft. (457 meters)
- Excellent Signal Noise Immunity
- Signal Conversion Transparent to the GPS Receiver
- Eliminates Need for Cable Amplifiers

GPS signal down/up conversion is required when signal losses in the antenna cable limit the distance between the receiver and the antenna assembly. At just over 250 feet (76 meters) in cable length, the benefits can be realized using a Down/Up Converter assembly versus the use of low loss cable and amplifiers. Signal strengths and noise immunity as well as the cost benefits over the use of low loss cable and amplifiers are the main advantages of using the Antenna Down/Up Converter assembly.

The down converter antenna and up converter unit replace the standard L1 GPS antenna. Power for the system is provided by the GPS receiver or an optional external power supply. The down/up conversion process is transparent to the GPS receiver. As with any precision timing GPS receiver, only cable delay and down conversion delays need to be entered into the receiver.

The Down/Up Converter may also work with non- Microsemi L1 GPS receivers. The signal output from the converter is L1 C/A code that can be decoded by any L1 GPS receiver. Since the Down/Up Converter can be externally powered, L1 GPS receivers that can interface to the Down/Up Converter BNC connector should be able to use the signal. However, note that the Down/Up Converter introduces latency in the signal in addition to cable delay. For precision timing applications the receiver must be able to account for these factors.

Specifications

Antenna Down Converter

Physical Specifications	
Size	4.4" W x 2.1" H (11.17 cm W x 6.85 cm H)
Weight (including mounting mast)	0.60 lb. (0.272 kg)
Cable	RG-58 Available lengths = 250 -1500' (76-457 m), 50' (15 m) standard, 2.7 lb. (1.23 kg) per 100' (30 m) Recommended: Belden 8219 or Belden Plenum 88240
Operating specifications	
Power: +12 Vdc @ 135 mA ±10%	
LO frequency: 16.368 MHz @ 1 Vp-p	
IF frequency: 4.092 MHz @ 1 Vp-p	
Antenna frequency (L1): 1575.42 MHz	
Input code: L1 C/A Code	
I/O connector: Female TNC	
Environmental specifications	
Operating temperature: -40°C to + 70°C	
Storage temperature: -55°C to + 85°C	
Humidity: 100%, condensing	

Antenna Up Converter

Physical Specifications	
Size	6.8" L x 4.2" W x 1.8" H (17.27 cm L x 10.67 cm W x 4.57 cm H)
Weight	1.5 lb. (0.68 kg)
Cable	RG-59 3 ft. (91 cm) Recommended: Belden 9104 or Belden Plenum 9104P
Operating specifications	
Power	+12 Vdc @ 200 mA ±10% including Down Converter
Input LO frequency	16.368 MHz @ 1 Vp-p received from the Down Converter
Input IF frequency	4.092 MHz @ 1 Vp-p received from the Down Converter
Output frequency (L1)	1575.42 MHz
Output Code	L1 C/A Code
Environmental specifications	
Operating temperature	0°C to + 50°C
Storage temperature	-40°C to + 85°C
Humidity	95%, noncondensing
Up converter connection To antenna	Female BNC
To receiver	Female TNC

Certifications

- FCC, CE, UL

Product Includes

- L1 GPS antenna down converter
- Up converter
- 1 ft. Mounting mast (30 cm)
- 2 Clamps
- 3 ft. Up converter cable (91 cm)
- 50 ft. Antenna cable (15 m)*
- Manual

Options

- External 12 Vdc power supply for computer plug-in card applications
Input: 100-240 Vac, 47-63 Hz
DC output: +12 Vdc/2.1 A
- Lightning arrestor
- Antenna cables: 250, 500, 750, 1000, 1250 and 1500 feet, (76, 152, 228, 305, 381 and 457 meters)

*Optional extended cable lengths are provided in lieu of 50 ft. cable

