

Down/Up Converter



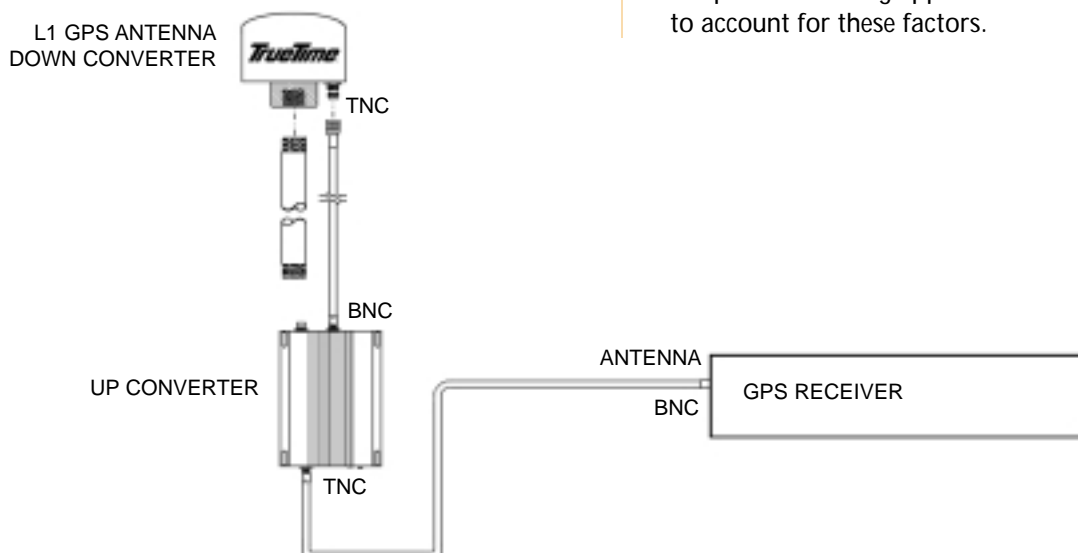
L1 GPS Antenna Down/Up Converter

- Increase 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 downconversion delays need to be entered into the receiver.

The Down/Up Converter may also work with non-TrueTime 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: 16.368MHz @ 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° to + 70°C
Storage Temperature: -55° to + 85°C
Humidity: 100%, condensing

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: 16.368MHz @ 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° to + 50°C
Storage Temperature: -40° 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 12Vdc 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).

Specifications subject to change without notice.

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