

# DUC-1

## DOWN/UP CONVERTER (COAXIAL)

SIGNAL LOSS SOLUTIONS FOR CABLE  
RUNS UP TO 450M



GPS L1

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Long cable run signal loss solution

### SIGNAL LOSS ISSUES

GNSS signals become attenuated as they travel through long cable runs, this reduced signal gain can limit the ability of the receiver to provide a position solution to the point where the signal is completely undetectable by the receiver. Receivers specify an ideal gain strength to ensure the most robust positioning; a long cable run can result in a signal reaching the receiver that is below the ideal strength required.

### SIGNAL CONVERSION SOLUTIONS

StarLink GPS DOWN/UP Converter (DUC) makes it possible for long cable runs up to 450 meters. The DOWN lowers the frequency of the GPS signal enabling it to travel a greater distance. The signal is then raised by the UP before reaching the receiver.

The DUC DOWN consists of a combined GPS antenna and down-converter.

The DUC converters are the perfect add-on for L1 GPS installations where long antenna cables are needed and a simple in-line amplifier will not suffice.

### HIGH FIDELITY SIGNAL TRANSPORTATION

The technology phase locks the converter pair to provide high fidelity signal transport. This technique uses the same reference for up and down conversion, eliminating frequency error.

The DUC product is optimized for generic RG-58 cable and can be used for lengths of up to 450 metres. Higher specification cables can enable greater distances to be achieved.

### SPECIFICATIONS

GPS Frequency: L1 (1575.42 MHz)

Cable Distance to Antenna: 457.2m (1500 ft)

Cable Distance to Receiver: 30m (100 ft)

Coax Cable Type: 50 Ohm

## DUC-1 SPECIFICATIONS

### DOWN CONVERTER



#### APPLICATIONS

- Low emissions.
- Replaces long cable runs & high gain antennas.
- Easy installation, since cable length is not critical.
- Decreased susceptibility to lightning strike damage.

#### SPECIFICATIONS

Frequency:	GPS L1
Gain Combined:	35 (min)
Axial Rate:	3 dB (max)
Noise Figure:	2.5 dB (max)
Termination:	50 $\Omega$

#### SIZE AND WEIGHT

Height:	89 mm (3.5")
Diameter:	114 mm (4.5")
Weight:	<0.45 kg (1.0 lbs)

#### ENVIRONMENTAL

Relative Humidity:	0-100% condensing
Storage Temperature:	-55°C to +85°C
Operating Temperature:	-40°C to +65°C
Altitude:	6,096 m (20,000 ft)

#### OTHER

Connection:	TNC, Female
Packaging:	Waterproof (IP67) enclosure
Mounting:	Standard marine mount, 1" - 14 or 3/4" NPT

### UP CONVERTER



#### SIZE AND WEIGHT

Dimensions:	44 x 130 x 170 mm (1.75 x 5.12 x 6.68 in)
Weight:	0.6 kg (1.3 lbs)

#### POWER

Power Requirements:	9-12 VDC via antenna bias <sup>2</sup> or 12 $\pm$ 10% VDC external
Power Consumption:	<250 mA @ 12 VDC (both units)

#### ENVIRONMENTAL

Relative Humidity:	0-95% non-condensing
Storage Temperature:	-50°C to +85°C
Operating Temperature:	0°C to +50°C
Altitude:	6,096 m (20,000 ft)

#### OTHER

Connection:	BNC connector to down converter, TNC to GPS receiver.
Indications:	Power Fault for Down converter Cable open or short

#### ANTENNA CABLE LENGTHS (Max.)

Copper DUC	450 m (1,500 ft)*
*RG-58 cable	
US patent 5,999,795	