

## Product Features

- 36 MHz to 44 MHz IF input
- IF input bandwidth up to 18 MHz
- 50 MHz to 1 GHz RF output, adjustable in 1 Hz steps
- Low phase noise and spurious levels
- Designed for COFDM applications.
- 10 MHz reference from external GPS (primary source) or internal 10 MHz clock
- Remote control and network management capabilities via RS232 interface.
- Intuitive GUI control software
- Calibration performed for 8 MHz bandwidth



## Product Description

The UPC 1010 is used in VHF and UHF transmitter applications when a modulator IF output frequency needs to be converted to a VHF/UHF frequency to drive a power amplifier.

The IF input frequency, RF output frequency and RF conversion gain are all user selectable.

The upconverter 10 MHz reference signal can be obtained from an external GPS receiver, or internally.

The upconverter can be monitored and controlled locally using the front panel display and key pad. The upconverter also includes an on-board local controller, which monitors and controls the unit. A GUI is provided to communicate with the local controller via the RS232 rear panel connector.

The upconverter, which is intended for indoor use, is housed in a standard 19" rack mount enclosure with a height of 1U. The unit operates over a wide temperature range.

## IF to VHF/UHF Upconverter

Model: UPC 1010



Fig.1 - Rear Panel

### Product Specifications

#### IF Input

<b>Connector</b>	BNC (F), 50 $\Omega$
<b>Frequency</b>	36 MHz - 44 MHz Center Frequency adjustable in 1 Hz steps
<b>Channel Bandwidth</b>	up to 8 MHz
<b>Level</b>	-30 dBm to -15 dBm
<b>Return Loss</b>	> 10 dB (1.92:1 VSWR)

#### RF Output

<b>Connector</b>	N-type (F), 50 $\Omega$
<b>Frequency</b>	50 MHz - 1 GHz, in inverted spectrum mode
<b>Step Size</b>	1 Hz
<b>Level</b>	Max 0 dBm @ -15 dBm IF input and 15 dB gain
<b>Conversion Gain</b>	Adjustable: 5dB to 15 dB
<b>Stability</b>	+ 0.5 dB relative to the level at 25° C over the specified operating temperature range
<b>Return Loss</b>	> 14 dB (VSWR 1.5:1)
<b>Amplitude Response</b>	$\pm 0.35$ dB relative to Center Frequency (8 MHz BW)
<b>Phase Noise SSB (measured @ 474 MHz)</b>	10 Hz: < -60dBc/Hz 100 Hz: < -86 dBc/Hz 1 kHz: < -100 dBc/Hz 10 kHz: < -105 dBc/Hz 100 kHz: < -110 dBc/Hz 1 MHz: < -120 dBc/Hz

#### Spurious Level Outside Channel

<b>CW Signal</b>	< -60 dBm below 1000 MHz
<b>Signal Related</b>	< -50 dBc below main digital signal power level at frequencies below 1000 MHz
<b>Shoulder Level</b>	< -52 dB, modulation side band excluded

#### External GPS Reference

<b>Connector</b>	BNC (F), 50 $\Omega$
<b>Frequency</b>	10 MHz
<b>Level</b>	300 mV - 3 V pp

#### Control Interface

<b>RS232 Interface</b>	Connector: DB9 (M) GUI control software (CD included)
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#### Power Supply

<b>Voltage</b>	90 - 250 VAC
<b>Frequency</b>	47 - 63 Hz
<b>Consumption</b>	max. 30 VA

#### Mechanical

<b>Size</b>	1 U of 19" wide cabinet
<b>Dimensions (W x H x D)</b>	483mm x 44mm x 318mm (19.0" x 1.75" x 12.5")
<b>Weight</b>	5 kg (11 lbs)

#### Environmental

<b>Operating Temperature</b>	+5°C to +45°C (+41°F to +113°F)
<b>Storage Temperature</b>	-20°C to +70°C (-4°F to +158°F)
<b>Operating Humidity Range (non-condensing)</b>	max. 95% RH
<b>Cooling</b>	2 Internal fans