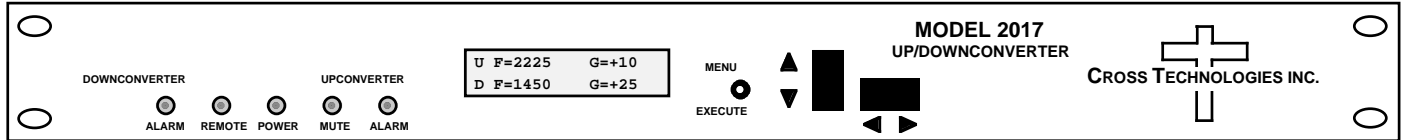


## 2017-36 Up/Downconverter, 950-1525 MHz Up, 2.0-2.5 GHz Down

The 2017-36 RF Up/Downconverter converts 2.0-2.5 GHz to 70 MHz (Down) and 70 MHz to 950-1525 MHz (Up) in 1 MHz steps with low group delay and flat frequency response. Synthesized local oscillators (LO) provide frequency selection. Multi-function push button switches select the RF frequency, gain, and other parameters. Front panel LEDs provide indication of DC power (green), PLL alarm for up and downconverters (red), remote operation (yellow), and Upconverter mute (yellow). Gain is manually controlled over a -10 to +30 dB range for the upconverter and over a 0 to +50 dB range for the downconverter as adjusted by the front panel multi-function push-button switches. Remote operation allows selection of frequency and gain. Parameter selection and frequency and gain settings appear on the LCD display. Connectors are BNC female for IF and the optional external reference input and output, and BNC female for RF. A high stability ( $\pm 0.01$ ppm) option is also available. It is powered by a 100-240  $\pm 10\%$  VAC power supply and housed in a 1.75" X 19" X 16" 1RU chassis.



**Front Panel**

### EQUIPMENT SPECIFICATIONS\*

#### -----UPCONVERTER-----

##### Input Characteristics (IF)

Impedance/Return Loss 75 $\Omega$  /18 dB  
Frequency 70  $\pm$  18 MHz  
Level -40 to -10 dBm

##### Output Characteristics (RF)

Impedance/Return Loss 50 $\Omega$ /12 dB  
Frequency 950 to 1525 MHz  
Level -20 to 0 dBm  
1dB compression +5 dBm

##### Channel Characteristics

Gain range (adjustable) -10 to +30 dB  
Frequency Sense Non-inverting  
Frequency Response  $\pm 1.5$  dB, 950-1525 MHz;  $\pm 0.5$  dB, 36 MHz BW

#### -----UP and DOWNCONVERTER-----

##### Channel Characteristics

Spurious Response <-50 dBC  
Group Delay, max 0.01 ns/MHz<sup>2</sup> parabolic; 0.03 ns/MHz linear; 1 ns ripple

##### Synthesizer Characteristics

Frequency Accuracy  $\pm 1.0$  ppm internal reference ( $\pm 0.01$  ppm, **option H**)  
Frequency Step 1 MHz(125 KHz, **option X**)  
10 MHz In/Out Level 3 dBm  $\pm$  3 dB (**option E**)  
Phase Noise @ Freq | 100Hz 1kHz 10kHz 100kHz 1MHz  
dBc/Hz | < -70 < -70 < -80 < -95 < -110

##### Controls, Indicators

Freq/Gain Selection direct readout LCD; manual or remote selection  
Power; Alarm; Remote Green LED; Red LED; Yellow LED  
Remote RS232C, 9600 baud (RS485, **option Q**)

##### Other

RF Connector BNC (female), 50 $\Omega$   
IF Connector BNC (female), 75 $\Omega$   
10 MHz Connectors BNC (female), 50 $\Omega$ /75 $\Omega$   
Alarm/Remote Connector DB9 (female) - NO or NC contact closure on Alarm  
Size 19 inch, 1RU standard chassis 1.75"H X 16.0"D  
Power 100-240  $\pm 10\%$  VAC, 47-63 Hz, 45 watts max

#### -----DOWNCONVERTER-----

##### Input Characteristics (RF)

Impedance/Return Loss 50 $\Omega$  /12 dB  
Frequency 2.0 to 2.5 GHz  
Noise Figure, max. 15 dB (max gain)  
Level -70 to -20 dBm  
1dB compression -15 dBm at min. gain

##### Output Characteristics (IF)

Impedance/Return Loss 75 $\Omega$ /18 dB  
Frequency 70  $\pm$  18 MHz  
Level/Max Linear -20 dBm / -10 dBm  
1dB compression -5 dBm

##### Channel Characteristics

Gain range (adjustable) 0 to +50 dB  
Image Rejection > 50 dB, min  
Freq. Sense (selectable) Inverting or Non-inverting  
Frequency Response  $\pm 1.5$  dB, 2.0-2.5 GHz  
 $\pm 0.5$  dB, 36 MHz BW

##### Available Options

E - External 10 MHz reference  
H - High Stability ( $\pm 0.01$ ppm) internal ref  
Q - RS485 Remote Interface  
T - Temperature Sensor  
X- 125 kHz frequency steps  
V - SSPB Voltage, +24VDC, 2.5 amps  
Connectors/Impedance  
B - 75 $\Omega$  BNC (RF), 75 $\Omega$  BNC (IF)  
N - 50 $\Omega$  N-type (RF), 75 $\Omega$  BNC (IF)  
M - 50 $\Omega$  N-type (RF), 50 $\Omega$  BNC (IF)  
S - 50 $\Omega$  SMA (RF), 50 $\Omega$  BNC (IF)

\*10°C to 40°C; Specifications subject to change without notice