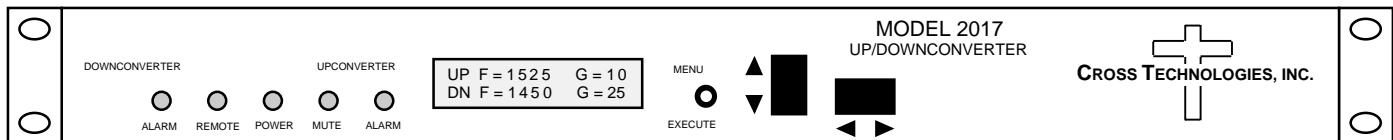


**2017-03 L-Band Up/Downconverter**

The 2017-03 L-band Up/Downconverter converts 70 MHz to 950-1525 MHz (Up) and 950-1525 MHz to 70 MHz (Down) 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 Type F female for RF. LNB or SSPB +24 VDC and 10 MHz reference can be inserted on the RF lines as added options. A high stability ( $\pm 0.01$ ppm) option is also available. It is powered by a 90-260 VAC power supply and housed in a 1.75" X 19" X 16" 1RU chassis.



**2017-03 Up/Downconverter Front Panel**

**EQUIPMENT SPECIFICATIONS\***

**-----UPCONVERTER-----**

**Input Characteristics (IF)**

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

**Output Characteristics (RF)**

Impedance/Return Loss 75  $\Omega$ /12 dB  
Frequency 950 to 1525 MHz  
Output level 0 to -20 dBm  
Output 1 dB comp. +5 dBm

**Channel Characteristics**

Gain range (adjustable) -10.0 to +30.0 dB  
Frequency Sense Non-inverting

**-----UP AND DOWNCONVERTER-----**

**Channel Characteristics**

Frequency Response  $\pm 1.5$  dB, 950 - 1525 MHz;  $\pm 0.5$  dB, 36 MHz BW  
Spurious Response < -50 dBc in band  
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 max over temp ( $\pm 0.01$  ppm, option H)  
Frequency Step 1.0 MHz (as low as 1 kHz steps available)  
Phase Noise (dBc/Hz) < -70 @ 100Hz, 1kHz; < -80 @ 10kHz;  
< -95 @ 100kHz; < -110 @ 1 MHz  
10 MHz Level (In or Out) 3 dBm,  $\pm 3$  dB, 75 ohms (option E)

**Controls, Indicators**

Frequency Selection direct readout LCD; manual or remote selection  
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 Connectors Type F (female)  
IF, 10 MHz Connectors BNC (female)  
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 90-260 VAC, 47-63 Hz, 45 watts max

**-----DOWNCONVERTER-----**

**Input Characteristics (RF)**

Impedance/Return Loss 75  $\Omega$  /12 dB  
Frequency 950 to 1525 MHz  
Noise Figure, max. 15 dB (max gain)  
Input Level Range -20 to -70 dBm  
Input 1dB compression -15 dBm

**Output Characteristics (IF)**

Impedance/Return Loss 75  $\Omega$ /18 dB  
Frequency 70  $\pm$  18 MHz  
Output level/max linear -20dBm / -10dBm  
Output 1 dB comp. -5 dBm

**Channel Characteristics**

Gain range (adjustable) 0.0 to +50.0 dB  
Image Rejection > 50 dB, min.  
Freq Sense (selectable) Inverting or Non-inverting

**Available Options**

E – External 10 MHz ref input & output w/ RF insertion  
H – High Stability ( $\pm 0.01$ ppm) internal reference  
L – LNB Voltage, +24VDC, 0.4 amps  
V – SSPB Voltage, +24VDC, 2.5 amps  
Q – RS485 Remote Interface  
T – Temperature Sensor  
Connectors/Impedance  
B – 75 $\Omega$  BNC (RF), 75 $\Omega$  BNC (IF)  
C – 50 $\Omega$  BNC (RF), 75 $\Omega$  BNC (IF)  
D – 50 $\Omega$  BNC (RF), 50 $\Omega$  BNC (IF)  
N – 50 $\Omega$  N-type (RF), 75 $\Omega$  BNC (IF)  
M – 50 $\Omega$  N-type (RF), 50 $\Omega$  BNC (IF)

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