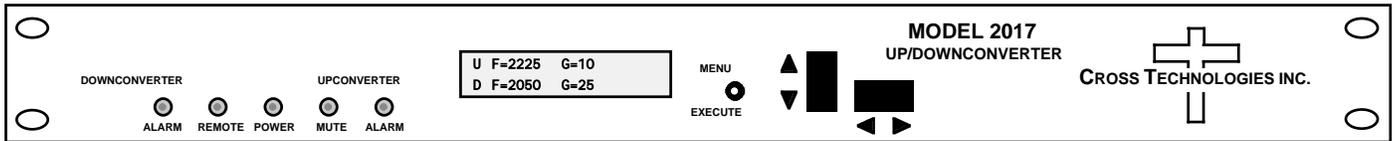


## 2017-25 Up/Downconverter, 2.0 - 2.5 GHz

The 2017-25 Up/Downconverter converts 70 MHz to 2000-2500 MHz (Up) and 2000-2500 MHz to 70 MHz (Down) in 1 MHz steps (**500 kHz, option -5**) 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 (75Ω) for IF and the optional external reference input and output, and BNC female (50Ω) for RF. A high stability ( $\pm 0.01$  ppm) option is also available. The unit is powered by a 100-240  $\pm 10\%$  VAC power supply and housed in a 1.75" X 19" X 16" rack mount chassis.



**Front Panel**

### EQUIPMENT SPECIFICATIONS\*

#### UPCONVERTER

##### Input Characteristics (IF)

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

##### Output Characteristics (RF)

Impedance/Return Loss 50Ω/10 dB  
Frequency 2.0 to 2.5 GHz  
Output level -20 to 0 dBm  
Output 1 dB compression +5 dBm

##### Channel Characteristics

Gain range (adjustable) -10 to +30 dB  
Frequency Sense Non-inverting

#### UP AND DOWNCONVERTER

##### Channel Characteristics

Frequency Response  $\pm 1.5$  dB, in band ;  $\pm 0.5$  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 internal reference ( $\pm 0.01$  ppm, option H)  
Frequency Step 1.0 MHz (500 kHz, **option -5**, 125 kHz, option X)  
10 MHz In/Out Level 3 dBm  $\pm$  3 dB (option E only)

Phase Noise @ F (Hz) >	100	1K	10K	100K	1M
dBC/Hz	-70	-70	-80	-95	-105

##### Controls, Indicators

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

##### Other

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

#### DOWNCONVERTER

##### Input Characteristics (RF)

Impedance/Return Loss 50Ω /10 dB  
Frequency 2.0 to 2.5 GHz  
Noise Figure, max. 15 dB (max gain)  
Input Level Range -70 to -20 dBm  
Input 1dB compression -15 dBm

##### Output Characteristics (IF)

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

##### Channel Characteristics

Gain range (adjustable) 0.0 to +50.0 dB, 1dB steps  
Frequency Sense Inverting or Non-inverting (selectable)

##### Available Options

E - External 10 MHz ref input 7 output  
H - Stability internal reference ( $\pm 0.01$  ppm)  
L - LNB +24VDC, 0.4 Amps, current readout  
Q - RS-422/RS-485 Remote capability  
T - Temperature Sensor  
V - SSPB +24 VDC, 2.5 Amps max, with readout of current  
X - 125 kHz step size  
W1 - Output Level Detector  
W8 - Ethernet M&C Remote Interface  
Z - Attenuator 0.1 dB step size  
-5 - 500 kHz frequency steps  
Connectors/Impedance  
B - 75Ω BNC (RF), 75Ω BNC (IF)  
D - 50Ω BNC (RF), 50Ω BNC (IF)  
N - 50Ω N-type (RF), 75Ω BNC (IF)  
M - 50Ω N-type (RF), 50Ω BNC (IF)

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