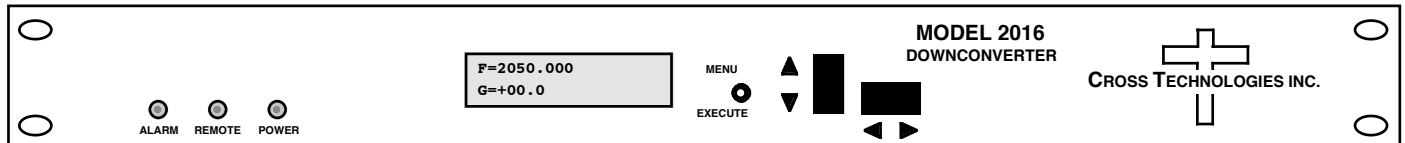


## 2016-125 Downconverter, 2.0 - 2.5 GHz

The 2016-125 Downconverter converts 2000 to 2500 MHz to  $70 \pm 18$  MHz in 1kHz, 10kHz, 100kHz or 125kHz steps (user selectable) with low group delay and flat frequency response. Synthesized local oscillators (LO) provide very low phase noise and  $\pm 0.01$  ppm stability 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 (red), and remote operation (yellow). Variable attenuators for the IF input and output provide a gain range of 0 to +50 dB 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 Input, RF output and the optional external reference input and output, The External 10 MHz option includes a 10 MHz input and output connector. The unit is powered by a 90-260 VAC power supply, and housed in a 1 3/4" X 19" X 16" rack mount chassis.



**Front Panel**

### **EQUIPMENT SPECIFICATIONS\***

#### **Input Characteristics (RF)**

Impedance/Return Loss 50 $\Omega$  /12 dB  
Frequency 2.0 to 2.5 GHz  
Input Level Range -70 to -20 dBm  
Input 1dB compression -15 dBm

#### **Output Characteristics (IF)**

Impedance/Return Loss 50 $\Omega$ /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  
Image Rejection > 50 dB, min.  
Frequency Response  $\pm 1.5$  dB, 2025 to 2300 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  
Frequency Sense Inverting or Non-inverting (selectable)

#### **Synthesizer Characteristics**

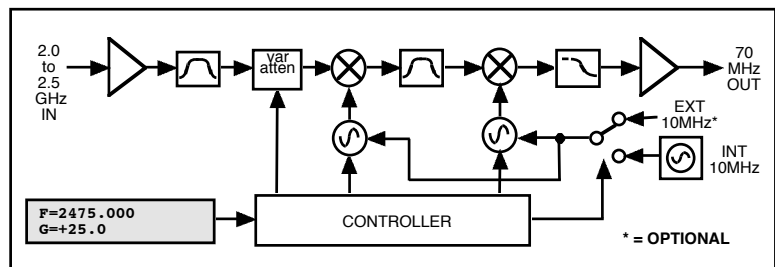
Frequency Accuracy  $\pm .01$  ppm internal reference  
Frequency Step 1kHz, 10kHz, 100kHz, or 125kHz (user selectable)  
10 MHz In/Out Level 3 dBm  $\pm$  3 dB (option E)  
Phase Noise @ Freq | 100Hz 1kHz 10kHz 100kHz 1MHz  
dBc/Hz | < -75 < -90 < -95 < -105 < -115

#### **Controls, Indicators**

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

#### **Other**

RF/IF Connectors BNC (female)  
10MHz Connectors BNC (female), 50 $\Omega$ /75 $\Omega$  (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 90-260 VAC, 47-63 Hz, 45 W max



**Block Diagram**

#### **Available Options**

E - External 10 MHz ref input & output w/ RF insertion  
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)  
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