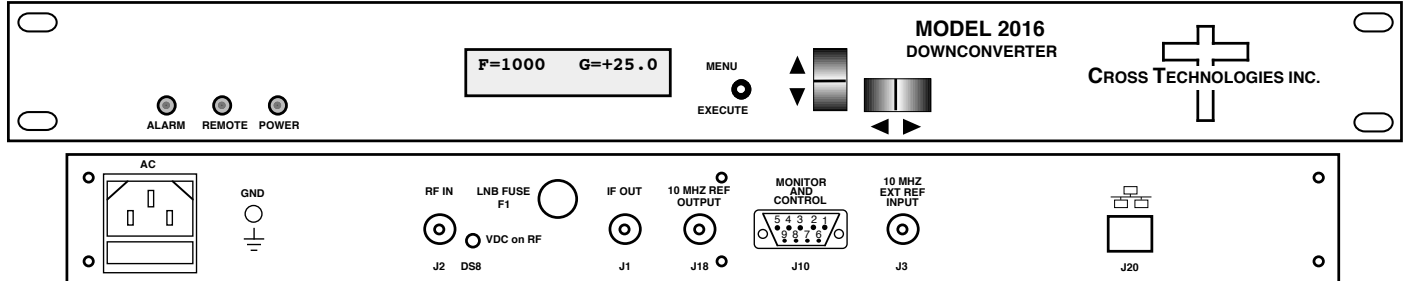


**2016-0510 Downconverter, 0.50 - 1.00 GHz to 70 MHz**

The 2016-0510 Downconverter converts 500 to 1000 MHz to 70 ± 18 MHz in 1 MHz steps (**125 kHz to 1 kHz step options available**). Synthesized local oscillators (LO) provide frequency selection. Push button switches select the input frequency, gain, and other parameters. Front panel LEDs provide indication of DC power (green), PLL alarm (red), and Remote operation (yellow). Gain is adjustable manually (MGC) over a 0 to 50 dB range. 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 the RF input. **The external 10 MHz option E** includes a 10 MHz output connector which contains either the internal or external 10 MHz reference signal. A high stability **option H** (±0.01ppm) is also available. The unit is powered by a 100-240 ± 10% VAC power supply, and housed in a 1 3/4" X 19" X 16" rack mount chassis.



**EQUIPMENT SPECIFICATIONS\***

**2016-0510 Front and Rear Panels**

**Input Characteristics (IF)**

Impedance/Return Loss 75 Ω /10 dB  
 Frequency 500 to 1000 MHz  
 Input Level -70 to -20 dBm

**Output Characteristics (RF)**

Impedance/Return Loss 75 Ω/18 dB  
 Frequency 70 ± 18 MHz  
 Output level -20 to -10 dBm  
 Output 1 dB comp. -5 dBm at maximum gain

**Channel Characteristics**

Gain range (adjustable) 0.0 to +50.0 dB  
 Image Rejection > 50 dB, min.  
 Frequency Response ±1.5 dB, 500 - 1000 MHz; ± 0.5 dB, 36 MHz BW; **±1.0 dB, 40 MHz BW**  
 Spurious Response < -50 dBc, in band  
 Group Delay, max **0.015 ns/MHz<sup>2</sup>** parabolic; **0.05 ns/MHz** linear; 1 ns ripple  
 Frequency Sense Inverting or Non-inverting, selectable

**Synthesizer Characteristics**

Frequency Accuracy ± 1.0 ppm max over temp (±0.01 ppm, option H)  
 Frequency Step 1.0 MHz (**125 kHz to 1 kHz step options available**)

Phase Noise @ F (Hz) >	10	100	1K	10K	100K	1M
dBc/Hz	-55	-70	-70	-80	-90	-110

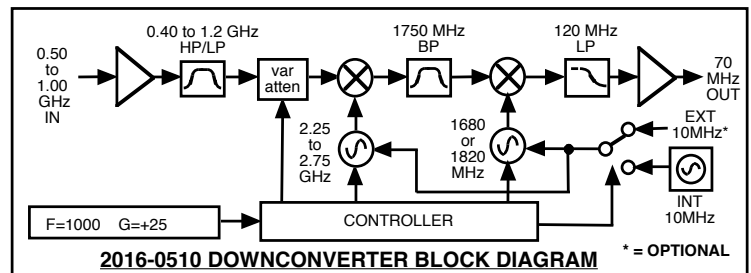
10 MHz Level (In or Out) 3 dBm, ± 3 dB, 75 ohms (option E)

**Controls, Indicators**

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

**Other**

RF, IF Connectors Type F (female), BNC (female)  
 10 MHz Connectors BNC (female), **75Ω, works with 50 or 75 ohms** (option E)  
 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 ±10% VAC, 47-63 Hz, **25 W max.; 24 , 48 VDC Opt.**



**Available Options**

- E - External 10 MHz ref in & out
- H - High Stability (±0.01ppm) Internal Ref
- X or X1- 125 kHz or 100 kHz step size
- X1001 - 1 kHz step, includes option H**
- Comm. Interface/Standard RS232**
- Q - RS485 Remote Interface
- W8 - Ethernet; w/Web Browser (WB)
- W18 - Ethernet; w/WB & SNMP
- W28 - Ethernet; w/TCP/IP, Telnet
- Connectors/Impedance**
- B - 75Ω BNC (RF), 75Ω BNC (IF)
- C - 50Ω 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)
- Contact Cross for other options**

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