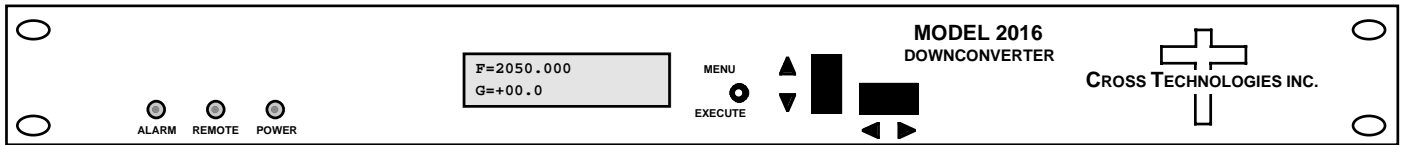


**2016-123 Downconverter, 2025 - 2300 MHz**

The 2016-123 Downconverter converts 2025 to 2300 MHz (in 1 kHz, 10 kHz, or 125 kHz steps - user selectable) to 70 ± 18 MHz with low group delay and flat frequency response. Synthesized local oscillators (LO) provide very low phase noise and ±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). Gain is adjustable manually over a 0 to +50 dB range 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 RF Input, IF outputs and the 10MHz external reference input and 10MHz reference output. The 10MHz reference signal (internal or external) can be sent to the 10MHz reference output connector and/or to the RF IN connector. The IF signal is split into two signals (A and B). 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 50Ω/12 dB  
 Frequency 2025 to 2300 MHz  
 Input Level Range -70 to -20 dBm  
 Input 1dB compression -15 dBm

**Output Characteristics (IF)**

Impedance/Return Loss 50Ω/18 dB  
 Frequency 70 ± 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 ±1.5 dB, 2025 to 2300 MHz ; ± 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**

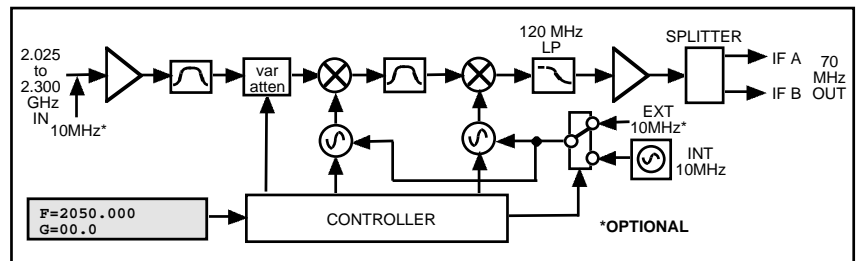
Frequency Accuracy ± .01 ppm internal reference  
 Frequency Step 1kHz, 10kHz, or 125kHz (user selectable)  
 10 MHz In/Out Level 3 dBm ± 3 dB (option E)  
 Phase Noise @ Freq | 100Hz 1kHz 10kHz 100kHz 1MHz  
 dBC/Hz | < -75 < -90 < -97 < -107 < -117

**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 Connector BNC (female)  
 IF Connectors 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 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 - 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)

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