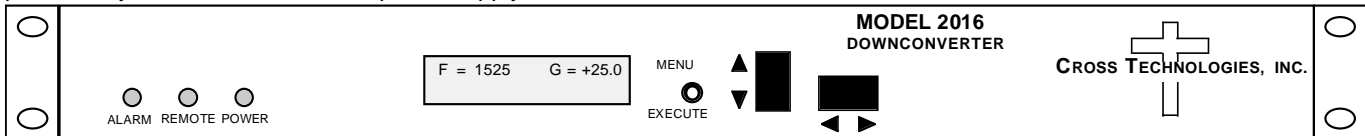


**2016-03A L-Band Downconverter**

**2016-03A L-Band Downconverter** -The 2016-03A L-band Downconverter converts 950-1525 MHz to 70 ( $\pm 18$ ) MHz in 1 MHz steps with low group delay and flat frequency response. The 2016-03A Input and Output levels have been optimized to support transmit from an L-band modem to a 70 MHz IF Upconverter. 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). The gain is adjustable from 0 to +50 dB. Remote operation allows selection of frequency and gain. Parameter selection and frequency and gain settings appear on the LCD display. Standard connectors are BNC female for IF output and the optional external reference input and reference output, and Type F female for the RF input. LNB +24 VDC, 0.4 Amps and 10 MHz reference can be inserted on the RF line as added options. The 10 MHz option also includes a 10 MHz output connector, which contains either the internal or external 10 MHz reference signal. 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" 1RU chassis.



**2016-03A DOWNCONVERTER**

**EQUIPMENT SPECIFICATIONS\***

**Input Characteristics**

Impedance/Return Loss 75 $\Omega$ /10 dB  
 Frequency 950 to 1525 MHz  
 Noise Figure, Max. 15 dB max gain  
 Input Level range -60 to -10 dBm  
 Input 1 dB compression -5 dBm

**Output Characteristics**

Impedance/Return Loss 75  $\Omega$  /18 dB  
 Frequency 70  $\pm$  18 MHz  
 Output Level/max linear -10 - 0 dBm  
 Output 1 dB compression -5 dBm

**Channel Characteristics**

Gain range (adjustable) 0 to +50 dB  
 Image Rejection > 50 dB, min.  
 Frequency Response  $\pm 1.5$  dB, 950 to 1525 MHz;  $\pm 0.5$  dB, 36 MHz BW  
 Spurious Response < -50 dBc, in band, f > 970 MHz  
 Group Delay, max .01 ns/MHz<sup>2</sup> parabolic; .03 ns/MHz linear; 1 ns ripple  
 Freq Sense (selectable) Inverting or Non-inverting (selectable)

**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 @ Freq	100Hz	1kHz	10kHz	100kHz	1MHz
dBC/Hz	-70	-70	-80	-90	-100

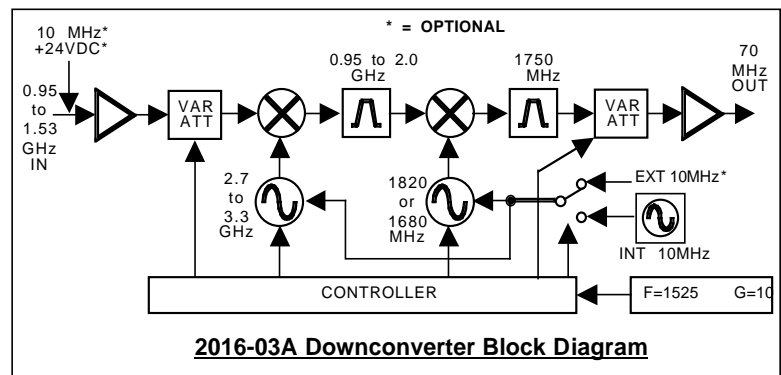
10 MHz Level (In or Out) 3 dBm,  $\pm 3$  dB, 75 ohms (option E)

**Controls, Indicators**

Frequency Selection direct readout LCD; manual or remote selection  
 Gain Selection direct readout LCD; manual or remote selection  
 PWR; Alarm; Rem Green LED; Red LED; Yellow LED  
 Remote RS232C, 9600 baud (RS485 Option Q)

**Other**

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



**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
- 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 to +40 degrees C; Specifications subject to change without notice

