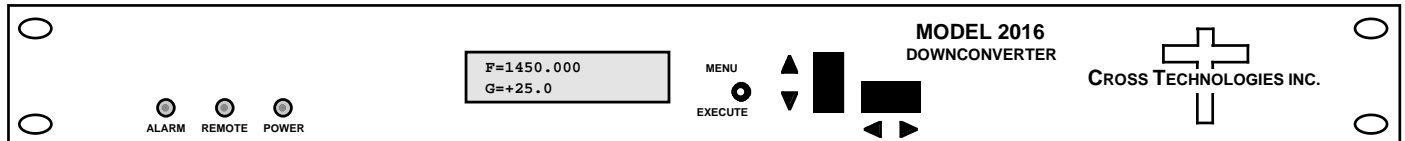


2016-22 Downconverter, 950 - 2150 MHz

The 2016-22 L-band Downconverter converts 950 to 2150 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 IF output and the optional external reference input and 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. The unit is powered by a 100-240 $\pm 10\%$ 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 75 Ω /12 dB
 Frequency 950 to 2150 MHz
 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 75 Ω /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, 950 to 2150 MHz ; ± 0.5 dB, 36 MHz BW
 Spurious Response < -50 dBc, in band
 Group Delay, max 0.01 ns/MHz² 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, or 125kHz (user selectable)
 10 MHz In/Out Level 3 dBm \pm 3 dB (option E)

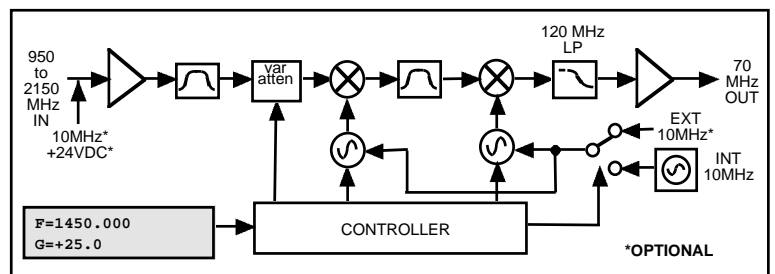
Phase Noise @ Freq	100Hz	1kHz	10kHz	100kHz	1MHz
dBC/Hz	-75	-85	-90	-110	-120

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 Type F (female), BNC (female)
 10MHz Connectors BNC (female), 50 Ω /75 Ω (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



Block Diagram

Available Options

E - External 10 MHz ref input & output w/ RF insertion
 L - LNB Voltage, +24VDC, 0.4 amps
 Q - RS485 Remote Interface
 T - Temperature Sensor
 Connectors/Impedance
 B - 75 Ω BNC (RF), 75 Ω BNC (IF)
 C - 50 Ω BNC (RF), 75 Ω BNC (IF)
 D - 50 Ω BNC (RF), 50 Ω BNC (IF)
 N - 50 Ω N-type (RF), 75 Ω BNC (IF)
 M - 50 Ω N-type (RF), 50 Ω BNC (IF)

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