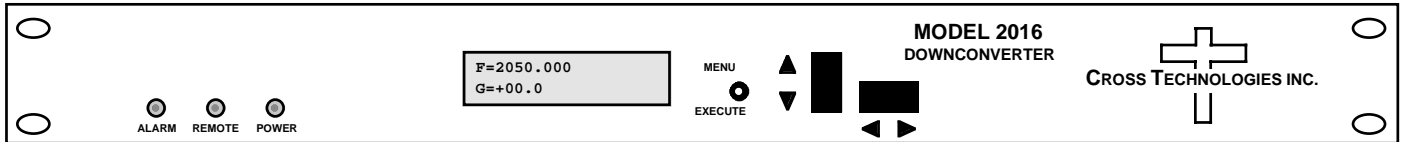


2016-125, -225 Downconverter, 2.0 - 2.5 GHz to 70 MHz

The 2016-125 and 2016-225 Downconverters convert 2000 to 2500 MHz to 70 ± 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 ±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 10MHz option includes a 10MHz input and output connector. The unit is powered by a 90-260 VAC power supply, and housed in a 1RU X 16" chassis.



Front Panel

EQUIPMENT SPECIFICATIONS*

Input Characteristics (RF)

Impedance/Return Loss 50Ω/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 50Ω/18 dB
 Frequency 70 ± 18 MHz
 Output level/max linear -20dBm / -10dBm
 Output 1 dB compression -5 dBm

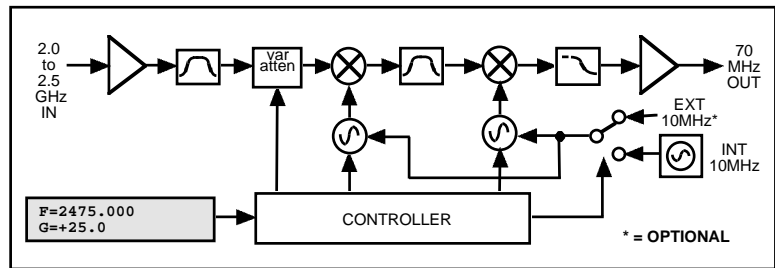
Channel Characteristics

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/MHz² 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, 100kHz, or 125kHz (user selectable)
 10 MHz In/Out Level 3 dBm ± 3 dB (option E)

Phase Noise (2016-125)	@ Freq	100Hz	1kHz	10kHz	100kHz	1MHz
	dBc/Hz	< -75	< -90	< -95	< -105	< -115
Phase Noise (2016-225)	@ Freq	100Hz	1kHz	10kHz	100kHz	1MHz
	dBc/Hz	< -65	< -75	< -85	< -95	< -105



Block Diagram

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), 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

Available Options

E - External 10 MHz ref input & output
 Q - RS485 Remote Interface
 T - Temperature Sensor
 Connectors/Impedance
 B - 75Ω BNC (RF), 75Ω BNC (IF)
 C - 50Ω BNC (RF), 75Ω 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