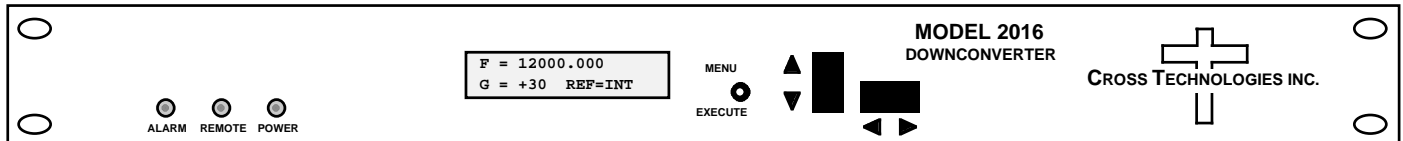


2016-117 Downconverter, 11.7 - 12.2 GHz

The 2016-117 Downconverter converts 11.7 to 12.2 GHz in 125 kHz steps to 70 ± 18 MHz with low group delay and flat frequency response. Synthesized local oscillators (LO) provide 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 +30 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 external reference input and output, and SMA female for the RF input. External 10 MHz is standard. A 10 MHz output connector 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 50 Ω /14 dB
 Frequency 11.7 to 12.2 GHz
 Level -70 to -40 dBm
 1dB Compression -30 dBm @ +30 dB gain

Output Characteristics (IF)

Impedance/Return Loss 75 Ω /18 dB
 Frequency 70 \pm 18 MHz
 Level -25 to -5 dBm
 1dB Compression +5 dBm

Channel Characteristics

Gain range (adjustable) +30 to +50 dB, 1dB steps
 Spurious Response <-50 dBC, in band
 Image Rejection > 50 dB, min.
 Frequency Response ± 1.5 dB, 11.7-12.2 GHz ; ± 0.6 dB, 36 MHz BW
 Group Delay, max 0.01 ns/MHz² parabolic; 0.03 ns/MHz linear, 1 ns ripple
 Frequency Sense Non-inverting

Synthesizer Characteristics

Frequency Accuracy ± 0.01 ppm internal reference; external reference input
 Frequency Step 125 kHz minimum
 10 MHz In/Out Level 3 dBm \pm 3 dB

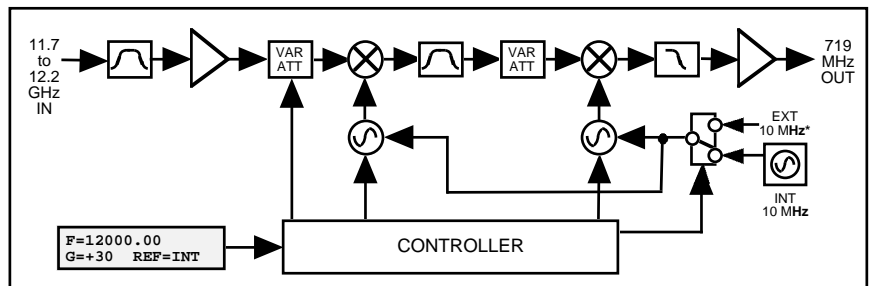
Phase Noise @ Freq	100 Hz	1kHz	10kHz	100kHz	1 MHz
dBC/Hz	-60	-70	-80	-90	-100

Controls, Indicators

Freq/Gain Selection direct readout LCD; pushbutton switches or remote selection
 Pwr; Alm; Remote; Mute Green LED; Red LED; Yellow LED; Yellow LED
 Remote RS232C, 9600 baud

Other

RF Connector SMA (female)
 IF Connector BNC (female)
 10 MHz Connectors BNC (female), 50 Ω /75 Ω
 Alarm/Remote Connector DB9 - 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 watts max



Block Diagram

Available Options

Q - RS485 Remote Interface
 Z - Attenuator 0.1 dB on Upconverter
 Connectors/Impedance
 M - 50 Ω N-type (RF), 50 Ω BNC (IF)
 N - 50 Ω N-type (RF), 75 Ω BNC (IF)
 S - 50 Ω SMA (RF), 50 Ω BNC (IF)

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

