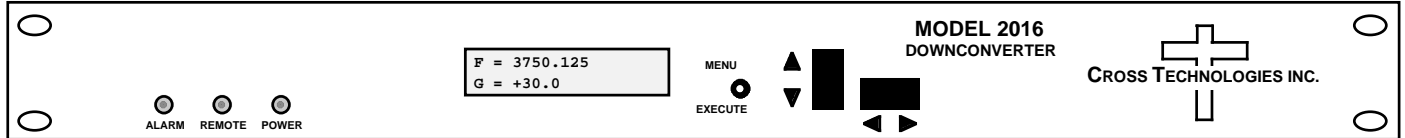


2016-38 Downconverter, 3.4 - 4.2 GHz

The 2016-38 Downconverter converts 3.4 to 4.2 GHz in 1 kHz steps to 140 ± 36 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 +25 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 10MHz reference input and output, and Type N (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 / 20 dB
 Frequency 3.4 to 4.2 GHz
 Noise Figure, max. 12 dB (max gain)
 Level -60 to -20 dBm
 1dB compression -15 dBm

Output Characteristics (IF)

Impedance/Return Loss 75 Ω / 23 dB
 Frequency 140 \pm 36 MHz
 Level -25 to -10 dBm
 1dB compression +10 dBm
 Intermodulation < -55 dBC; -60 dBC typ. (2 carriers @ -10 dBm input)

Channel Characteristics

Gain range (adjustable) +25 to +50 dB, 1dB steps
 Image Rejection > 60 dB, min
 Spurious Response < -60 dBC, carrier related to spurious at 0 dBm
 Frequency Response ± 1.5 dB, 3.4-4.2 GHz; ± 0.6 dB, 72 MHz BW; ± 1.0 dB, 80 MHz BW
 Group Delay, max 0.0035 ns/MHz² parabolic; 0.025 ns/MHz linear; 1 ns ripple
 Frequency Sense Non-inverting

Synthesizer Characteristics

Frequency Accuracy ± 0.01 ppm internal reference; external reference input
 Frequency Step 1 kHz
 10 MHz In/Out Level 3 dBm \pm 3 dB

Phase Noise @ Freq	100 Hz	1kHz	10kHz	100kHz	1 MHz
dBC/Hz	-70	-80	-88	-100	-120

Controls, Indicators

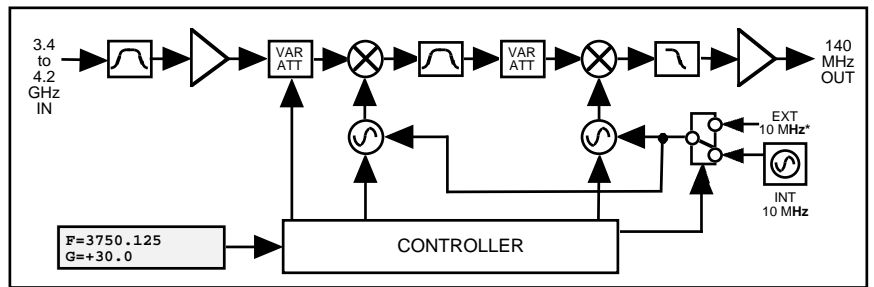
Freq/Gain Selection direct readout LCD; pushbutton switches or remote selection
 Power; Alarm; Remote Green LED; Red LED; Yellow LED
 Remote RS232C, 9600 baud

Other

RF Connector Type N (female), 50 Ω
 IF Connector BNC (female), 75 Ω
 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

Available Options

Q - RS485/RS422 Remote Interface
 Connectors/Impedance
 M - 50 Ω Type N (RF), 50 Ω BNC (IF)



Block Diagram

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