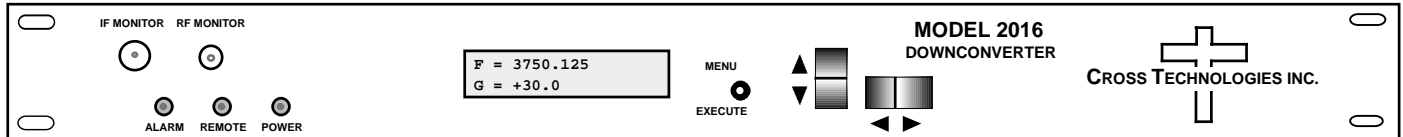


2016-37-T Downconverter, 3.4 - 4.2 GHz

The 2016-37T Downconverter converts 3.4 to 4.2 GHz in 125 kHz steps 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 +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 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. 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	50Ω/15 dB typical
Frequency	3.4 to 4.2 GHz
Noise Figure, max.	12 dB (0 dB attenuation)
Level	-60 to -20 dBm
Max Sig. Non-damage	+15 dBm
1dB compression	-15 dBm

Output Characteristics (IF)

Impedance/Return Loss	75Ω / 20 dB
Frequency	70 ± 18 MHz
Level	-15 to +5 dBm
1dB compression	+10 dBm

Channel Characteristics

Gain range / Stability	+30 to +50 dB, 0.5 dB steps / ± 0.25 dB/day max. stability
Image Rejection	> 50 dB, min
Spurious Response	<-50 dBC
Intermodulation	<-50 dBC for two carriers each at -8 dBm out
Frequency Response	± 1.5 dB, 3.4-4.2 GHz ; Slope 0.05 dB/MHz max.; ± 0.5 dB, 36 MHz BW
AM/PM Conversion:	0.1 deg/dB max for 5 dBm output
Group Delay, max	0.015 ns/MHz² parabolic; 0.05 ns/MHz linear; 1 ns ripple
Frequency Sense	Non-inverting

Synthesizer Characteristics

Frequency Accuracy	± 0.01 ppm (1×10^{-8}) internal reference ($\pm 1 \times 10^{-7}$ per year); External reference input available
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	-80	-80	-90	-100

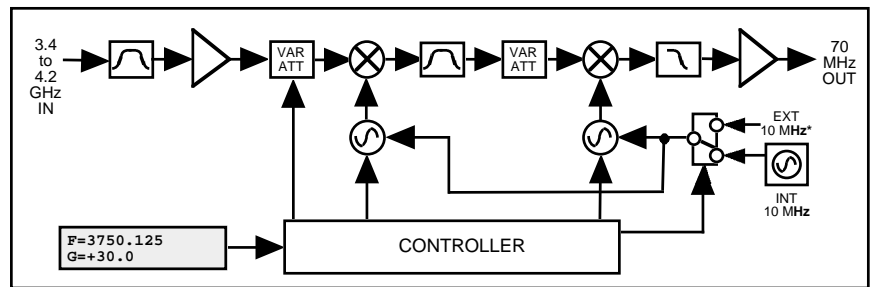
Controls, Indicators

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 / IF Connectors	RF - Type N (female) / IF - BNC (female)
RF / IF Monitor Ports	-20 dBC Levels; Connectors RF-SMA Female; IF - 75Ω BNC female

10 MHz Connectors	BNC (female), 50Ω/75Ω
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 / Temp Range	100-240 $\pm 10\%$ VAC, 47-63 Hz, 45 watts max / 0°C to 50°C; 95% Humidity, non-condensing



Block Diagram

Available Options

- Remote M&C Interfaces
- W8 - Ethernet
- W13 - LO1 Monitor Port (Rear Panel)
- W18 - Ethernet (w/SNMP)

Connectors/Impedance

- M - 50Ω Type N (RF), 50Ω BNC (IF)

* 0°C to 50°C Specifications subject to change without notice