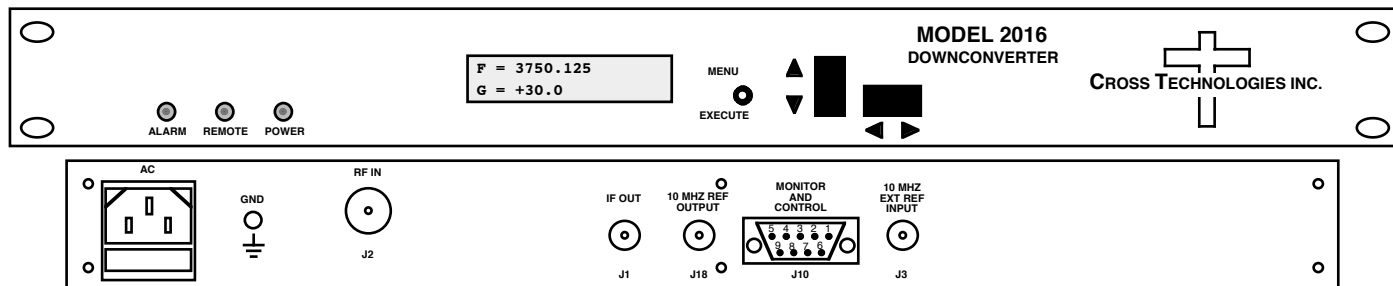


2016-35 Downconverter, 3.4 - 4.2 GHz to 70 ± 18 MHz

The 2016-35 Downconverter converts 3.4 to 4.2 GHz to 70 ± 18 MHz in 125 kHz steps (**1 kHz steps, option X1005**) with low group delay and flat frequency response. Synthesized local oscillators (LO) provide **frequency selection with ±0.01 ppm** stability. 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 by the front panel push-button switches. Remote **M&C** allows selection of the **10 MHz reference**, 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 (**other connector configurations available**). A 10 MHz output connector contains either the internal or external 10 MHz reference signal. The unit is powered by a 100-240 ±10% VAC power supply, and housed in a 1 3/4" X 19" X 16" rack mount chassis.



Front and Rear Panels

EQUIPMENT SPECIFICATIONS*

Input Characteristics (RF)

Impedance/Return Loss **50Ω/14 dB min**
Frequency **3.4 to 4.2 GHz**
Noise Figure, max. 15 dB (max gain)
Level **-70 to -30 dBm**

Output Characteristics (IF)

Impedance/Return Loss **75Ω /18 dB**
Frequency **70 ± 18 MHz**
Level **-20 to 0 dBm**
1dB compression **+10 dBm**

Channel Characteristics

Max. Gain; range **+50 ± 2 dB; +30 to +50 dB, 0.5 ± 0.5 dB steps**
Image Rejection **> 50 dB, min**
Spurious Response **<-50 dBC, maximum**
Intermodulation **<-50 dBC for two carriers at 4 MHz spacing, each at -5 dBm out, Gain +50**
Frequency Response **±1.5 dB, 3.4-4.2 GHz ; ± 0.5 dB, 36 MHz BW**
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 internal reference or external reference input**
Frequency Step **125 kHz minimum; (1 kHz steps, option X1005)**
10 MHz In/Out Level **3 dBm ± 3 dB**

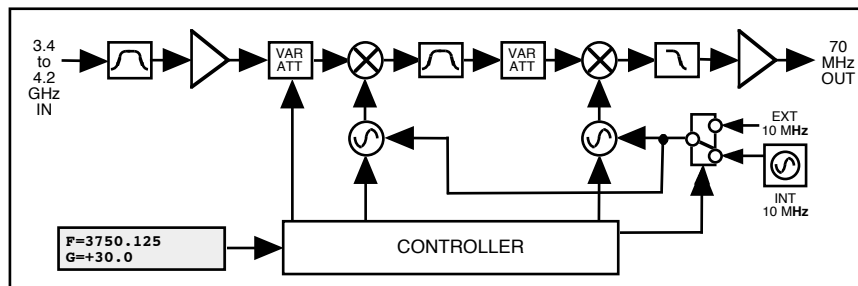
| Phase Noise @ Freq | 100 Hz | 1kHz | 10kHz | 100kHz | 1 MHz |
|--------------------|--------|------|-------|--------|-------|
| dBC/Hz | -70 | -75 | -80 | -95 | -110 |

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; RS485/422 or Ethernet optional**

Other

RF / IF Connectors **RF - Type N (female), 50Ω / IF - BNC (female), 75Ω**
10 MHz Connectors **BNC (female), 75Ω, works with 50 or 75 ohms**
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 ± 10% VAC, 47-63 Hz, 45 watts max**



Block Diagram

Available Options

W7 - RF/IF Monitor Ports (Front)
W31 - Ext. Temp 0C to +50C
X1005 - 1 kHz frequency step
Remote M&C Interfaces:
Q - RS485/422
W8 - Ethernet; w/Web Browser (WB)
W18 - Ethernet; w/WB & SNMP
W28 - Ethernet; w/TCP/IP, Telnet
Connectors/Impedance
STD. - 50Ω Type N (RF), 75Ω BNC (IF)
M - 50Ω Type N (RF), 50Ω BNC (IF)
S - 50Ω SMA (RF), 50Ω BNC (IF)
S7 - 50Ω SMA (RF), 75Ω BNC (IF)
Contact Cross for other options

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