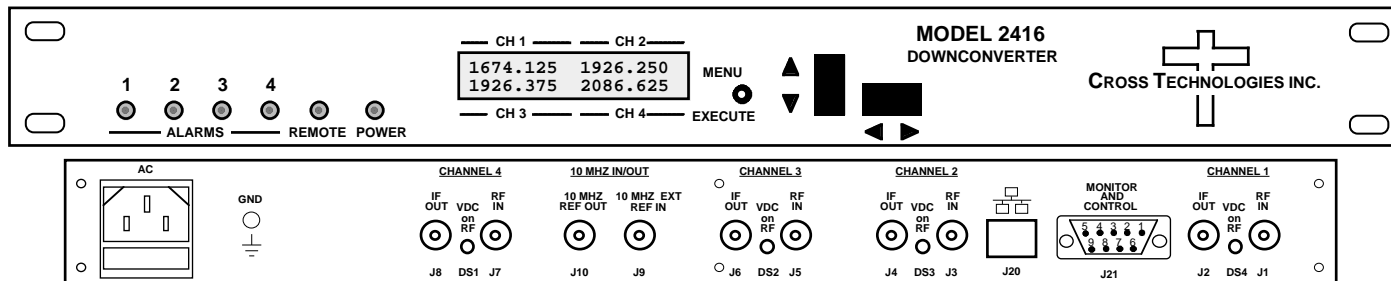


2416-402I Downconverter, 0.95 - 2.15 GHz, Four Channel (Integer mode)
2416-302I Three Channel • 2416-202I Two Channel • 2416-102I One Channel

The 2416-402I Downconverter has four individual channels, each one converts 950 to 2150 MHz to 70 MHz in **125 kHz steps using PLL in "exact frequency mode"** with low group delay and flat frequency response. Synthesized local oscillators (LO) provide frequency selection. Multi-function push button switches select the input frequency, gain, and other parameters. Front panel LEDs provide indication of DC power, PLL alarm or Remote operation. Gain is adjustable manually over a 0 to +30 dB range. The frequency and gain of each channel are also remotely selectable. Parameter selection and frequency and gain settings appear on the LCD display. Connectors are Type F female for the RF, and BNC female for the IF and external 10 MHz reference input and output. The 10 MHz reference can be inserted on all RF lines. The table below shows available options. LNB +24 VDC option L1, can be inserted only on the channel 1 RF line. The 2416-402I is powered by a 100-240 ±10% VAC, 47-63 Hz power supply, and is contained in a 3/4" X 19" X 16" rack mount chassis.



Front and Rear Panels (2416-402I Four Channel shown with optional Ethernet)

EQUIPMENT SPECIFICATIONS*

Input Characteristics

- Impedance/Return Loss 75Ω/10 dB
- Frequency 950 to 2150 MHz
- Noise Figure, Max. 15 dB max gain
- Input Level range -50 to -20 dBm

Output Characteristics

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

Channel Characteristics

- Gain range (adjustable) **0.0 to +30.0 dB, 1±1 dB steps**
- Image Rejection > 50 dB, min.
- Frequency Response ±1.5 dB, 950 to 2150 MHz ; ± 0.5 dB, 36 MHz BW; **±1.0 dB, 40 MHz BW**
- Spurious Response < -50 dBc, in band
- Ch to Ch isolation < -60 dB typ., < -50 dB min. ;G=30, -30 dBm input level
- Group Delay, max 0.015 ns/MHz² parabolic; 0.05 ns/MHz linear; 1 ns ripple
- Frequency Sense Inverting or Non-inverting, selectable

Synthesizer Characteristics

- Frequency Accuracy ± 1.0 ppm max over temp (± 0.01 ppm, option H)
- Frequency Step **125 kHz** (as low as 1 kHz steps available)

Phase Noise @ Freq (Hz)	10	100	1k	10k	100k	1M
Specification dBC/Hz	-60	-65	-75	-80	-90	-110
Typical dBC/Hz	-67	-69	-77	-83	-97	-117

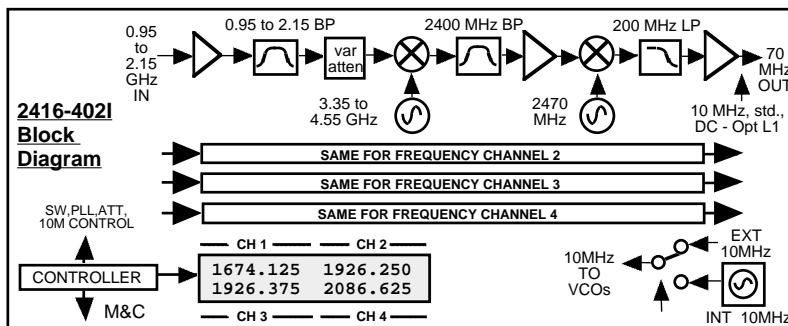
10 MHz Level (In or Out) 3 dBm, ± 3 dB, 75 ohms

Controls, Indicators

- Frequency/Gain Selection direct readout LCD; manual or remote selection
- Power; Alarm; Remote Green LED; Red LED; Yellow LED
- Remote **RS232C/RS485 selectable, (Ethernet optional)**

Other

- RF Connector Type F (female)
- IF, 10 MHz Connectors 75Ω BNC (female), 50/75Ω BNC (female)
- 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 100-240 ± 10% VAC, 47-63 Hz, 45 watts max



Available Options

- H - High Stability (±0.01ppm) Internal Ref
- L1 - LNB Voltage, +24VDC, 0.4 amps
- R- Redundant Power Supply
- W8 - Ethernet; w/Web Browser (WB)
- W18 - Ethernet; w/WB & SNMP
- W28 - Ethernet; w/TCP/IP, Telnet
- W140-x- 140±36 MHz
- W140/70-x- 140±36/70±18 MHz Selectable
- X1002-x - 1 kHz Freq Step Size**
- Connectors/Impedance**
- STD - 75Ω Type F (RF), 75Ω BNC (IF)
- Bx - 75Ω BNC (RF), 75Ω BNC (IF)
- Cx - 50Ω BNC (RF), 75Ω BNC (IF)
- Dx - 50Ω BNC (RF), 50Ω BNC (IF)
- Jx - 75Ω Type F (RF), 50Ω BNC (IF)
- Kx - 75Ω BNC (RF), 50Ω BNC (IF)
- x = # of Channels**
- Contact Cross for other options**

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

