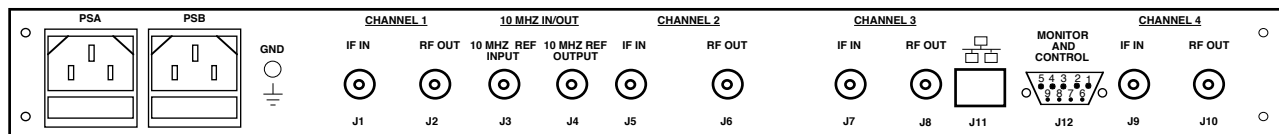
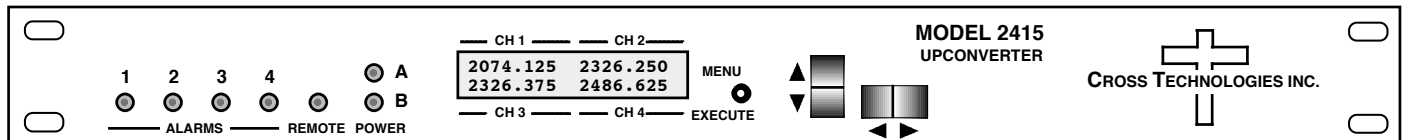


2415-425 Upconverter, 2.00 - 2.50 GHz, Four Channel

2415-325 Three Channel • 2415-225 Two Channel • 2415-125 One Channel

The 2415-425 Upconverter has four individual channels, each one converts 70 MHz to 2000 to 2500 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. Push button switches select the output 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 in 0.5 ± 0.5 dB steps. 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 BNC female for the RF, IF and external 10 MHz reference input and output. The table below shows available options. The unit is powered by a 100-240 ±10% VAC, 47-63 Hz power supply, and is in a 1 3/4" X 19" X 16" rack mount chassis.



Front and Rear Panels (2415-425 Four Channel with Options R and W8 shown)

EQUIPMENT SPECIFICATIONS*

Input Characteristics

Impedance/Return Loss 75Ω/18 dB
Frequency 70 ± 18 MHz
Noise Figure, max. 20dB (set to min input, max gain)
Input Level range -35 to -10 dBm

Output Characteristics

Impedance/Return Loss 50 Ω /12 dB
Frequency 2000 to 2500 MHz
Output Level range -20 to 0 dBm
Output 1 dB compression +10 dBm, max. gain

Channel Characteristics

Gain range (adjustable) 0 to +30 dB in 0.5 ± 0.5 dB steps
Frequency Response ±1.5 dB, 2000 - 2500 MHz; ± 0.5 dB, 36 MHz BW; ±1.0 dB, 40 MHz BW
Spurious < -50 dBC, in band; < -45 dBC, out of band (1.5-1.99 GHz and 2.51-3.0 GHz)
Intermodulation < -50 dBC for two carriers at 4 MHz spacing, each at -5 dBm out (set to -30 dBm input, 30dB gain)
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 Non-inverting

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

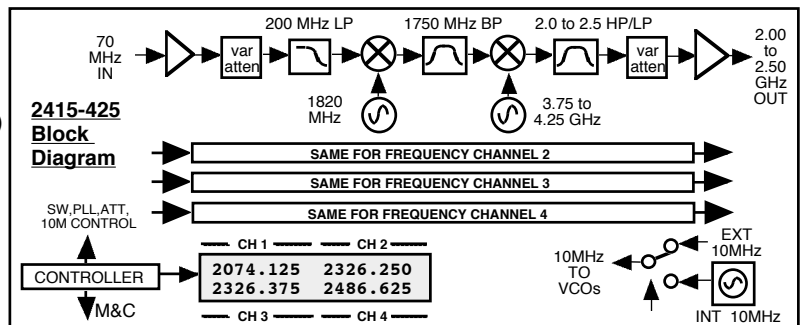
10 MHz Level (In or Out) 3 dBm, ± 3 dB, 75 ohms

Controls, Indicators

Freq/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 50Ω BNC (female)
IF, 10 MHz Connectors 75Ω BNC (female), 75Ω BNC (female) works with 50 & 75 Ω
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) Int Ref
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 Frequency Step Size
Connectors/Impedance
STD - 50Ω BNC (RF), 75Ω BNC (IF)
Dx - 50Ω BNC (RF), 50Ω BNC (IF)
Sx - 50Ω SMA (RF), 50Ω BNC (IF)
S7x - 50Ω SMA (RF), 75Ω BNC (IF)
x = # of Channels
Contact Cross for other options

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