The 2415-402 Upconverter has four individual channels, each one converts 70 MHz to 950 to 2150 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 Type F external 10 MHz reference input and output.

The 2415-402 Upconverter, 0.95 - 2.15 GHz, Four Channel
2415-302 Three Channel • 2415-202 Two Channel • 2415-102 One Channel

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.

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 75Ω/12 dB
- Frequency 950 to 2150 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, 950 - 2150 MHz; ± 0.5 dB, 36 MHz BW; ± 1.0 dB, 40 MHz BW
- Spurious < -50 dBc, in band < -45 dBc, out of band (0.2-0.94 GHz and 2.16-3.0 GHz)
- Intermodulation < -50 dBc for two carriers at 4 MHz spacing, each at -5 dBm out (set to -30 dB 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 Type F (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 V1-SSPB DC, CH1(ONLY), +24VDC, 2.5 A
- R - Redundant Power Supply W8 - Ethernet; w/Web Browser (WB)
- W18 - Ethernet; w/WB & SNMP W28 - Ethernet; w/10MHz Ref, Telnet
- W140- x 10MHz IN/OUT W140/70-x 140±36/70±18 MHz Selectable
- SAME FOR FREQUENCY CHANNEL 1
- SAME FOR FREQUENCY CHANNEL 2
- SAME FOR FREQUENCY CHANNEL 3
- SAME FOR FREQUENCY CHANNEL 4

Connectors/Impedance
- STD - 75Ω Type F (RF), 75Ω BNC (IF)
- Bx - 750 BNC (RF), 750 BNC (IF)
- Cx - 500 BNC (RF), 750 BNC (IF)
- Dx - 500 BNC (RF), 500 BNC (IF)
- Jx - 75Ω Type F (RF), 50Ω BNC (IF)
- Kx - 75Ω BNC (RF), 50Ω BNC (IF)

Contact Cross for other options