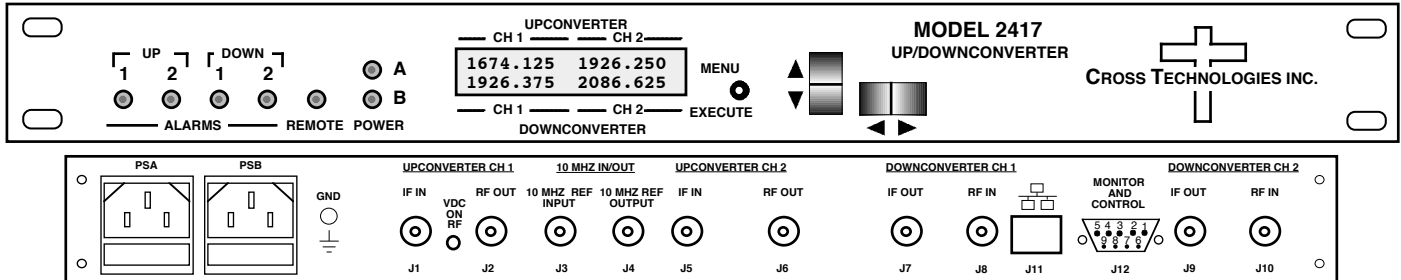


2417-422 Dual L Band Up/Downconverter

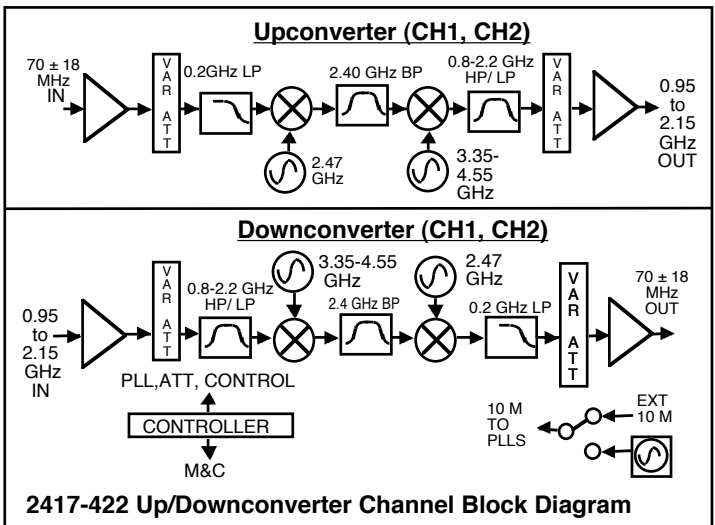
2417-411, 1UP 1DN • 2417-412, 1UP 2DN • 2417-421 2UP 1DN • 2417-422 2UP 2DN

The 2417-422 L-band Up/Downconverter has up to 2 upconverters (70 MHz, 140 MHz optional, to 950-2150 MHz) and 2 downconverter (950-2150 MHz to 70 MHz, 140 MHz optional) channels utilizing 125 KHz step size, PLL in "exact frequency mode" with low group delay and flat frequency response. Multi-function switches select the frequency, gain (upconverter 0 to +30 dB; downconverter 0 to +30 dB), and other parameters. Front panel LEDs provide indication of DC power (green), PLL alarm (red), remote operation (yellow). Remote operation allows selection of frequency, gain and external 10 MHz reference. L-Band Frequency settings for all 4 channels appear on the LCD display. Connectors are BNC female for the IF and ext 10 MHz and Fconnectors for the RF. A high stability (± 0.01 ppm) option (H) is also available. It is powered by a 100-240 $\pm 10\%$ VAC power supply and housed in a 1.75" X 19" X 16" 1RU chassis.



Front and Rear Panel (Shown with options W8, V1)

| EQUIPMENT SPECIFICATIONS* | | |
|--|----------------------------|----------------------------|
| Input Characteristics | UP | DOWN |
| Impedance/Return Loss | 75 Ω /18 dB | 75 Ω /12 dB |
| Frequency | 70 \pm 18 MHz | 0.95-2.15 GHz |
| Noise Figure, Max. | 20 dB @ max gain | 15 dB @ max gain |
| Input Level range | -35 to -10 dBm | -50 to -20 dBm |
| Output Characteristics | | |
| Impedance/Return Loss | 75 Ω /12 dB | 75 Ω /18 dB |
| Frequency (GHz) | 0.95-2.15 GHz | 70 \pm 18 MHz |
| Output Level Range | -20 to 0 dBm | -20 to -10 dBm |
| 1 dB comp, max gain | +10 dBm | 0 dBm |
| Mute @ 0 dBm out | >60 dB | N/A |
| Channel Characteristics | | |
| Gain, max. at Fc | +30 \pm 3 dB | +30 \pm 3 dB |
| Gain, range, 0.5 \pm 0.5 dB step | +30 to 0 dB | +30 to 0 dB |
| Image Rejection | N/A | > 50 dB, min |
| Spurious, Inband | <-50 dBc, 0dBm | <-50 dBc, -10dBm |
| 1 Spurious, Out of band | <-45 dBc, Gmax | <-50 dBc, Gmax |
| 2 Intermod - 2 carriers 4MHz | <-50 dBc, Gmax | <-50 dBc, Gmax |
| Frequency Resp. band | \pm 1.5 dB | \pm 1.5 dB |
| Frequency Resp. 36,40 MHz | \pm 0.5 dB, \pm 1.0 dB | \pm 0.5 dB, \pm 1.0 dB |
| Frequency Sense | Non-inverting | Inv/Non-Inv |
| NOTES: | | |
| 1. For 0.2-0.94 GHz and 2.16-3.0 GHz | | |
| 2. Carriers spaced 4 MHz about Fc, each at -5dB from max. output | | |



2417-422 Up/Downconverter Channel Block Diagram

Synthesizer Characteristics

Frequency Accuracy \pm 1.0 ppm internal reference (± 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, \pm 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

Alarm/Remote Connector DB9 (female) - NO or NC contact closure on Alarm
RF, IF, 10 MHz Conn. Type F (female), 75 Ω BNC (female), 75 Ω BNC (female) works with 50 & 75 Ω
Size 19 inch, 1RU standard chassis 1.75" high X 16.0" deep
Power 100-240 \pm 10% VAC, 47-63 Hz, 45 watts max

Available Options

H - High Stability (± 0.01 ppm) Int Ref
V1-SSPB UPC, CH1(ONLY), +24VDC, 2.5 A
R - Redundant Power Supply
W8 - Ethernet; w/Web Browser (WB)
W18 - Ethernet; w/WB & SNMP
W28 - Ethernet; w/TCP/IP, Telnet
W828 - Ethernet; W8 +W18 +W28
W113- Rear Fan
W140-x- 140 \pm 36 MHz
W140/70-x- 140 \pm 36/70 \pm 18 MHz Selectable
X1002-x - 1 kHz Frequency Step Size
Connectors/Impedance
STD - 75 Ω Type F (RF), 75 Ω BNC (IF)
Bx - 75 Ω BNC (RF), 75 Ω BNC (IF)
Cx - 50 Ω BNC (RF), 75 Ω BNC (IF)
Dx - 50 Ω BNC (RF), 50 Ω BNC (IF)
Jx - 75 Ω Type F (RF), 50 Ω BNC (IF)
Kx - 75 Ω BNC (RF), 50 Ω BNC (IF)
x = # of Channels
Contact Cross for other options

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