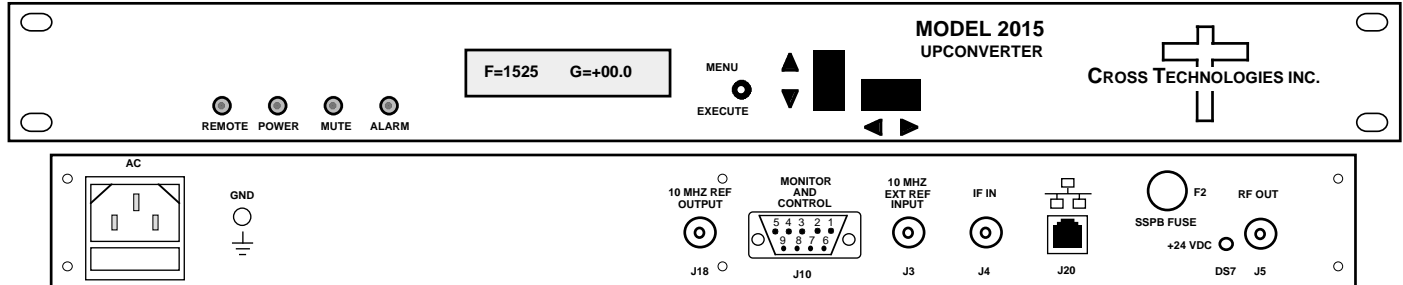


2015-04 Upconverter, 140 MHz to 0.95 - 2.15 GHz

The 2015-04 L-band Upconverter converts 140 ± 36 MHz to 950 to 2150 MHz in 1 MHz steps (**125 kHz to 1 kHz step options available**). Synthesized local oscillators (LO) provide frequency selection. Push button switches select the RF frequency, gain, and other parameters. Front panel LEDs provide indication of DC power (green), PLL alarm (red), remote operation (yellow) and TX carrier MUTE (yellow). Variable attenuators for the IF input and output provide a gain range of -10 to +30 dB as adjusted by the front panel push-button switches. Remote operation allows selection of frequency and gain. Parameter selection and frequency and gain settings appear on the LCD display. Connectors are BNC female for IF and the optional external reference input and output, and Type F female for the RF output. SSPB **+24 or +48 VDC** and 10 MHz reference can be inserted on the RF line as added options. **The external 10 MHz option E** includes a 10 MHz output connector which contains either the internal or external 10 MHz reference signal. A high stability **option H** (± 0.01 ppm) is also available. The unit is powered by a $100\text{-}240 \pm 10\%$ VAC power supply, and housed in a $1\frac{3}{4} \times 19 \times 16$ rack mount chassis.



EQUIPMENT SPECIFICATIONS*

Input Characteristics (IF)

Impedance/Return Loss 75 Ω /18 dB
 Frequency 140 \pm 36 MHz
 Input Level -40 to -10 dBm

Output Characteristics (RF)

Impedance/Return Loss 75 Ω /12 dB
 Frequency 950 to 2150 MHz
 Output level 0 to -20 dBm
 Output 1 dB comp. +5 dBm

Channel Characteristics

Gain range (adjustable) -10.0 to +30.0 dB
 Frequency Response ± 1.5 dB, 950 - 2150 MHz; ± 0.5 dB, 72 MHz BW; **± 1.0 dB, 80 MHz BW**
 Spurious Response < -50 dBC, in band
 Group Delay, max **0.0035 ns/MHz² parabolic; 0.035 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 1.0 MHz (**125 kHz to 1 kHz step options available**)

| Phase Noise @ F (Hz) > | 10 | 100 | 1K | 10K | 100K | 1M |
|------------------------|-----|-----|-----|-----|------|------|
| dBc/Hz | -55 | -70 | -70 | -80 | -90 | -110 |

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

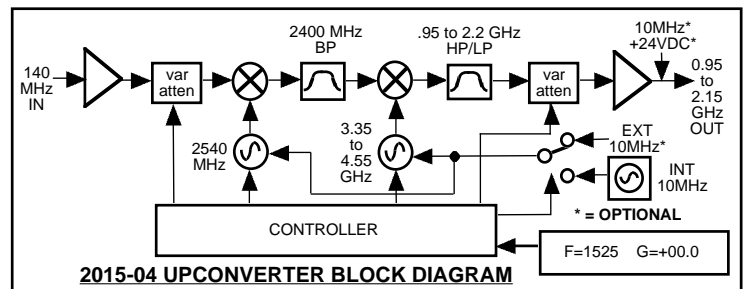
Controls, Indicators

Freq/Gain Selection direct readout LCD; manual or remote selection
 Pwr; Alarm; Rem; Mute Green LED; Red LED; Yellow LED; Yellow LED
 Remote RS232C, 9600 baud (**RS485, Ethernet Optional**)

Other

RF, IF Connectors Type F (female), BNC (female)
 10 MHz Connectors BNC (female), **75 Ω , works with 50 or 75 ohms** (option E)
 Alarm/Remote Connector DB9 (female) - NO or NC contact closure on Alarm
 Size 19 inch, 1RU standard chassis $1.75 \times 16.0 \times 16.0$ D
 Power $100\text{-}240 \pm 10\%$ VAC, 47-63 Hz, **25 W max.**
(24 , 48 VDC Optional)

2015-04 Front and Rear Panels



Available Options

E - External 10 MHz ref in & out; RF Ins.
 H - High Stability (± 0.01 ppm) Internal Ref
 V - SSPB Voltage, +24VDC, 2.5 amps
V48 - SSPB Voltage, +48VDC, 1.25 A
V41 - SSPB Voltage, +48VDC, 2.10 A
 X or X1- 125 kHz or 100 kHz step size
X1002 - 1 kHz step, includes option H
 Z - Attenuator 0.1 dB steps, Upconverter
Comm. Interface/Standard RS232
 Q - RS485 Remote Interface
 W8 - Ethernet; w/Web Browser (WB)
 W18 - Ethernet; w/WB & SNMP
 W28 - Ethernet; w/TCP/IP, Telnet
Connectors/Impedance
 B - 75 Ω BNC (RF), 75 Ω BNC (IF)
 C - 50 Ω BNC (RF), 75 Ω BNC (IF)
 D - 50 Ω BNC (RF), 50 Ω BNC (IF)
 N - 50 Ω N-type (RF), 75 Ω BNC (IF)
 M - 50 Ω N-type (RF), 50 Ω BNC (IF)
Contact Cross for other options

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