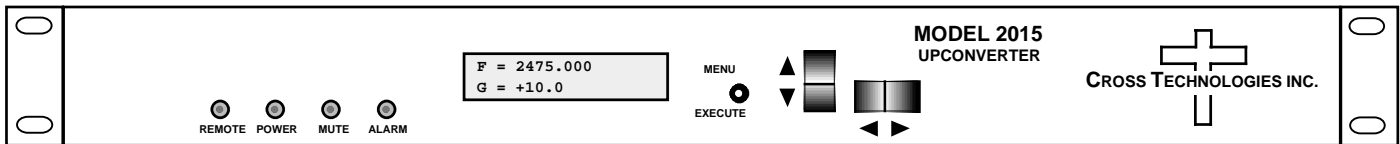


## 2015-25 Upconverter, 70 MHz to 2.0 - 2.5 GHz

The 2015-25 S-band Upconverter converts  $70 \pm 18$  MHz to 2000 to 2500 MHz in 1 MHz steps (**0.5 MHz to 1 kHz step options available**) with low group delay and flat frequency response. 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) or the TX carrier is muted (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 RF, IF and the optional external reference input and output. The **-E external 10 MHz option** includes a 10 MHz output connector which contains either the internal or external 10 MHz reference signal. A **-H high stability** ( $\pm 0.01$  ppm) option is also available. The unit is powered by a  $100\text{-}240 \pm 10\%$  VAC power supply, and housed in a 1 3/4" X 19" X 16" rack mount chassis.



**Front Panel**

### EQUIPMENT SPECIFICATIONS\*

#### Input Characteristics (IF)

Impedance / Return Loss 75Ω / 18dB  
Frequency  $70 \pm 18$  MHz  
Input Level Range -40 to -10 dBm

#### Output Characteristics (RF)

Impedance / Return Loss 50Ω / 12dB  
Frequency 2.0 to 2.5 GHz  
Output level -20 to 0 dBm  
Output 1 dB compression +5 dBm

#### Channel Characteristics

Gain range (adjustable) -10 to +30 dB  
Image Rejection > 50 dB, min.  
Frequency Response  $\pm 1.5$  dB, 2.0-2.5 GHz ;  $\pm 0.5$  dB, 36 MHz BW  
Spurious Response < -50 dBc, in band  
Group Delay, max **0.015 ns/MHz<sup>2</sup> parabolic; 0.05 ns/MHz linear; 1 ns ripple**  
Frequency Sense Non-inverting

#### Synthesizer Characteristics

Frequency Accuracy  $\pm 1.0$  ppm internal reference ( $\pm 0.01$  ppm, option H)  
Frequency Step 1.0 MHz (**0.5 MHz to 1 kHz step options available**)  
10 MHz In/Out Level 3 dBm  $\pm 3$  dB (option -E)

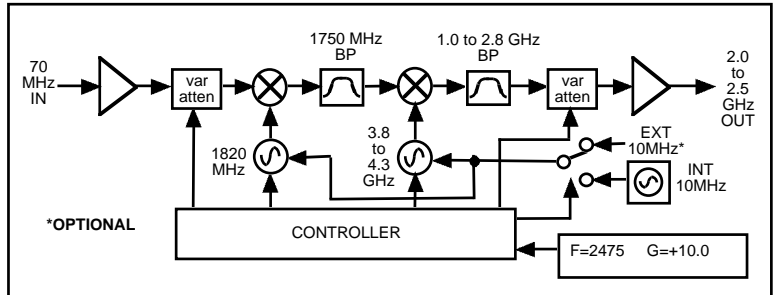
Phase Noise @ F (Hz) >	10	100	1K	10K	100K	1M
Standard-1 MHz steps: dBC/Hz	-55	-70	-70	-80	-95	-105

#### 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 50Ω BNC (female), 75Ω BNC (female)  
10 MHz Connectors BNC (female), **75Ω, 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" high X 16.0" deep  
Power 100-240  $\pm 10\%$  VAC, 47-63 Hz, 45 W max. (**24 and 48 VDC Optional**)



**Block Diagram**

#### Available Options

E - External 10 MHz ref input & output  
H - High Stability ( $\pm 0.01$  ppm) Internal Ref  
Z - Attenuator 0.1 dB steps, Upconverter  
-5 - 0.5 MHz Frequency Steps  
X - 125 kHz step size

**X1004 - 1 kHz step, includes option -H**

#### 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 - 75Ω BNC (RF), 75Ω BNC (IF)  
D - 50Ω BNC (RF), 50Ω BNC (IF)  
N - 50Ω N-type (RF), 75Ω BNC (IF)  
M - 50Ω N-type (RF), 50Ω BNC (IF)  
**SS - 50Ω SMA (RF), 50Ω SMA (IF)**

**Contact Cross for other available options**

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