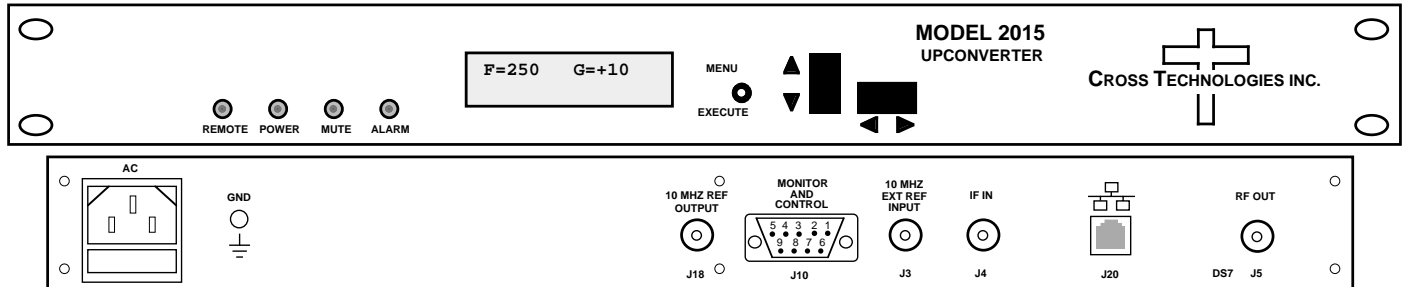


2015-95 Upconverter, 70 MHz to 250 - 950 MHz

The 2015-95 Upconverter converts 70 ± 18 MHz to 250 to 950 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) or the TX carrier is muted (yellow). Variable attenuators for the IF input and output provide a gain range of -10 to +30 dB (**1 ± 1 dB steps**) as adjusted by the front panel pushbutton 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 optional external 10MHz reference input and output, and Type F (female) for the RF output. **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 internal reference (**option H**, ± 0.01 ppm) is also available. The unit is powered by a **100-240 $\pm 10\%$ VAC** power supply, and housed in a 1 3/4" X 19" X 16" rack mount chassis.



Front and Rear Panels (Shown with optional Ethernet)

EQUIPMENT SPECIFICATIONS*

Input Characteristics

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

Output Characteristics

Impedance/Return Loss 75 Ω /10 dB
Frequency 250 to 950 MHz
Output level -20 to 0 dBm
Output 1 dB compression **+10 dBm**

Channel Characteristics

Gain max / range (adj.) +30 \pm 3 dB / -10.0 to +30.0 dB, 1 ± 1 dB steps
Spurious Response < -50 dBc, in band
2nd Harmonic < 40 dB, in band
Frequency Response ± 1.5 dB, 250-750 MHz; ± 2.5 dB, 750-950 MHz; ± 0.5 dB, 36 MHz BW; **± 1.0 dB, 40 MHz BW**
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 1.0 MHz (**125 kHz to 1 kHz step options available**)
External 10 MHz level +3 dBm ± 3 dB, 50/75 Ω (**option E**)

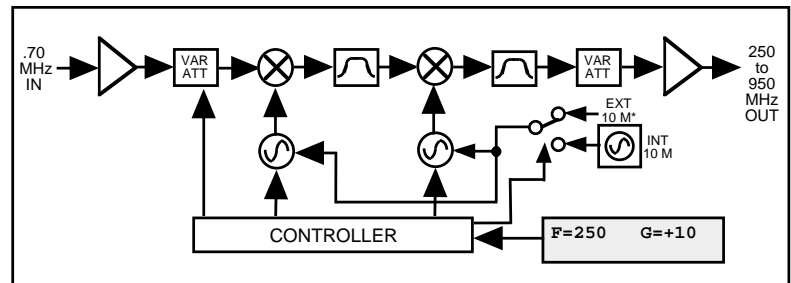
Phase Noise @ Freq	100 Hz	1kHz	10kHz	100kHz	1 MHz
dBC/Hz	-70	-70	-80	-90	-100

Controls, Indicators

Freq/Gain Selection direct readout LCD; manual or remote selection
Pwr; Alm; Remote; 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"high X 16.0" deep
Power **100-240 $\pm 10\%$ VAC**, 47-63 Hz, **25** watts max.



Block Diagram

Available Options

E - External 10 MHz ref in & out; RF Ins.
H - High Stability (± 0.01 ppm) Internal Ref
X or X1- 125 kHz or 100 kHz step size
X1001 - 1 kHz step, includes option H
Z 5- Attenuator 0.5 \pm 0.5 dB steps
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.