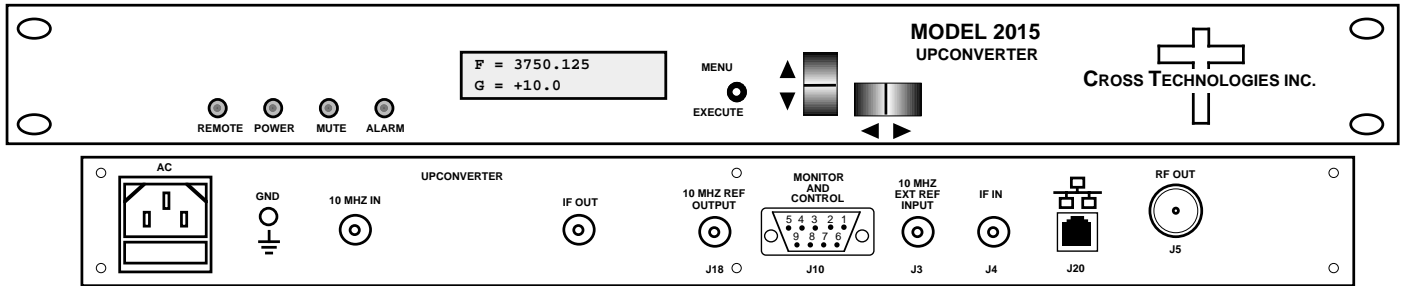


## 2015-35 Upconverter, 70 ± 18 MHz to 3.4 - 4.2 GHz

The 2015-35 Upconverter converts 70 ± 18 MHz to 3.4 to 4.2 GHz in 125 kHz steps (**1 kHz steps, option X1005**) with low group delay and flat frequency response. Synthesized local oscillators (LO) provide frequency selection with ±0.01 ppm stability. Push button switches select the RF frequency, gain, and other parameters. Front panel LEDs provide indication of DC power (green), remote operation (yellow), PLL alarm (red), or the TX carrier is muted (yellow). Variable attenuators for the IF input and RF output provide a gain range of 0 to **+30 dB** as adjusted by the front panel pushbutton switches. Remote **M&C** allows selection of the **10 MHz reference**, frequency and gain. Parameter selection and frequency and gain settings appear on the LCD display. Connectors are BNC female for IF input and 10MHz reference input and output, and Type N female for the RF output (other connector configurations available). The unit is powered by a 100-240 ±10% VAC power supply; and housed in a 1.75" X 19" X 16" rack mount chassis.



Front and Rear Panels (shown with optional Ethernet & W70/10)

### EQUIPMENT SPECIFICATIONS\*

#### Input Characteristics (IF)

Impedance/Return Loss 75Ω/18 dB min.  
 Frequency 70 ± 18 MHz  
 Input Level -30 to -10 dBm

#### Output Characteristics (RF)

Impedance/Return Loss 50Ω/14 dB min.  
 Frequency 3.4 to 4.2 GHz  
 Output level -20 to 0 dBm  
 Output 1 dB compression +10 dBm, **Gain = +30**

#### Channel Characteristics

Max. Gain; range **+30 ± 2 dB**; 0 to +30 dB, 0.5 ± 0.5 dB steps  
 Spurious Response <-50 dBC  
 Intermodulation <-50 dBC for two carriers each at -5 dBm out  
 Frequency Response ±1.5 dB, 3.4-4.2 GHz; ±0.5 dB, 36 MHz BW  
 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 ±0.01 ppm; Ext. ref. input  
 Frequency Step 125 kHz minimum; (**1 kHz steps, option X1005**)  
 10 MHz In/Out Level 3 dBm ± 3 dB

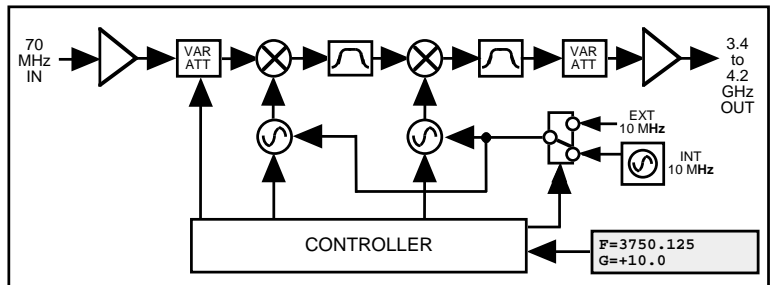
Phase Noise @ Freq	100 Hz	1kHz	10kHz	100kHz	1 MHz
dBC/Hz	-70	-75	-80	-95	-110

#### Controls, Indicators

Freq/Gain Selection direct readout LCD; pushbutton switches or remote selection  
 Pwr; Alarm; Rem; Mute Green LED; Red LED; Yellow LED; Yellow LED  
 Remote **M&C** RS232C, 9600 baud; **RS485/422 or Ethernet optional**

#### Other

RF / IF Connectors RF - Type N (female) / IF - BNC (female)  
 10 MHz Connectors BNC (female), **75Ω, works with 50 or 75 ohms**  
 Alarm/Remote Connector DB9 - NO or NC contact closure on Alarm  
 Size 19 inch, 1RU standard chassis 1.75" high X 16.0" deep  
 Power / Temp Range 100-240 ±10% VAC, 47-63 Hz, 45 watts max /



Block Diagram

#### Available Options

W7 - RF/IF Monitor Ports (Front)  
 W31 - Ext. Temp 0C to +50C  
 X1005 - 1 kHz frequency step  
**W70/10 - 70 MHz In / 100 MHz Out**  
**Remote M&C Interfaces:**  
 Q - RS485/422  
 W8 - Ethernet; w/Web Browser (WB)  
 W18 - Ethernet; w/WB & SNMP  
 W28 - Ethernet; w/TCP/IP, Telnet  
**Connectors/Impedance**  
 STD. - 50Ω Type N (RF), 75Ω BNC (IF)  
 M - 50Ω Type N (RF), 50Ω BNC (IF)  
 S - 50Ω SMA (RF), 50Ω BNC (IF)  
 S7 - 50Ω SMA (RF), 75Ω BNC (IF)  
**Contact Cross for other options**

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