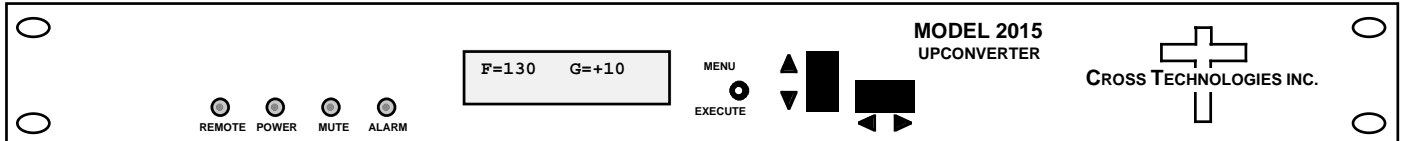


**2015-1351 Upconverter, 130 - 512 MHz**

The 2015-1351 Upconverter converts 70 ± 10 MHz to 130 to 512 MHz in 1 MHz steps with low group delay and flat frequency response. Synthesized local oscillators (LO) provide frequency selection. Multi-function 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 RF output provide a gain range of -10 to +20 dB as adjusted by the front panel multi-function 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 for the RF output. The unit is powered by a 100-240 ±10% VAC power supply, and housed in a 1 3/4" X 19" X 16" rack mount chassis.



**Front Panel**

**EQUIPMENT SPECIFICATIONS\***

**Input Characteristics**

Impedance **50 Ω**  
 Return Loss **18 dB**  
 Frequency **70 ± 10 MHz**  
 Input Level **-55 to -25 dBm**

**Output Characteristics**

Impedance **50 Ω**  
 Return Loss **12 dB**  
 Frequency **130 to 512 MHz**  
 Output level **-65 to -5 dBm**  
 Output 1 dB compression **+5 dBm, max gain**

**Channel Characteristics**

Gain range (adjustable) **-10.0 to +20.0 dB, 1 dB steps (±1 dB accuracy)**  
 Spurious Response **< -50 dBC, -25 dBm in, -10 to +20 dB gain ; < -20 dBC, -55 TO -30 dBm in**  
 2nd Harmonic **< 30 dB**  
 Frequency Response **±1.5 dB, 130 to 512 MHz ; ± 1.0 dB, 20 MHz BW**  
 Group Delay, max **0.1 ns/MHz<sup>2</sup> parabolic; 0.15 ns/MHz linear; 1 ns ripple**  
 Frequency Sense **Non-inverting**

**Synthesizer Characteristics**

Frequency Accuracy **± 1.0 ppm max over temp (± 0.01 ppm, opt-H) internal ref.**  
 Frequency Step **1.0 MHz minimum**  
 External 10 MHz level **+3 dBm ± 3 dB, 50/75 Ω (opt-E)**

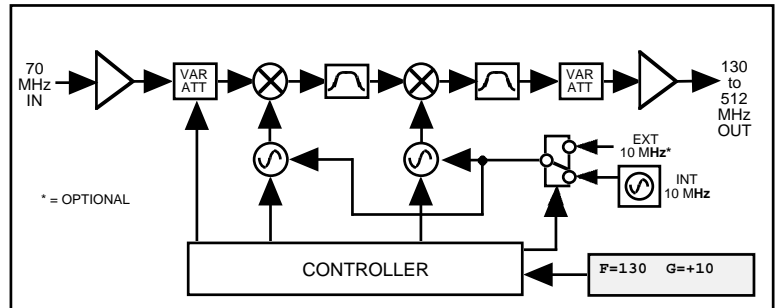
Phase Noise @ Freq	100 Hz	1kHz	10kHz	100kHz	1 MHz
dBC/Hz	-70	-70	-80	-95	-105

**Controls, Indicators**

Frequency Selection **direct readout LCD; pushbutton switches or remote selection**  
 Gain Selection **direct readout LCD; pushbutton switches or remote selection**  
 Pwr; Alm; Remote; Mute **Green LED; Red LED; Yellow LED; Yellow LED**  
 Remote **RS232C, 9600 baud (RS422/485/opt.-Q, Ethernet/opt-W8; W18)**

**Other**

RF, IF Connectors **BNC, 50Ω (female), BNC,50Ω (female)**  
 10MHz Connectors **BNC (female), 50Ω/75Ω (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 ±10% VAC, 47-63 Hz, 45 watts max**



**Block Diagram**

**Available Options**

- E - External 10 MHz ref input & output
- H - High Stability (± 0.01 ppm) Int. Ref
- Q - RS485 Remote Interface
- W8 - Ethernet; w/Web Browser (WB)
- W18 - Ethernet; w/WB & SNMP
- W36 - 0 to 60dB, 1dB Step Attenuator**
- X - 125 kHz step size
- Connectors/Impedance**
- B - 75Ω BNC (RF), 75Ω BNC (IF)
- C - 50Ω BNC (RF), 75Ω BNC (IF)
- K - 75Ω BNC (RF), 50Ω BNC (IF)
- M - 50Ω N-type (RF), 50Ω BNC (IF)
- N - 50Ω N-type (RF), 75Ω BNC (IF)
- S - 50Ω SMA (RF), 50Ω BNC (IF)
- SS - 50Ω SMA (RF), 50Ω SMA (IF)**

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