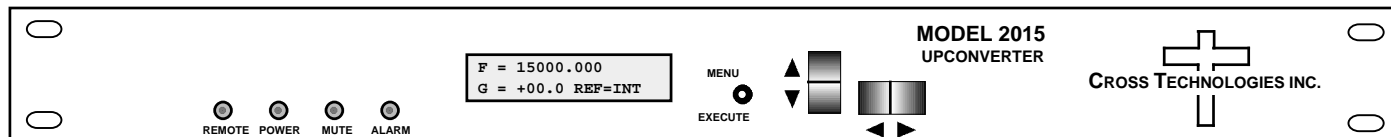
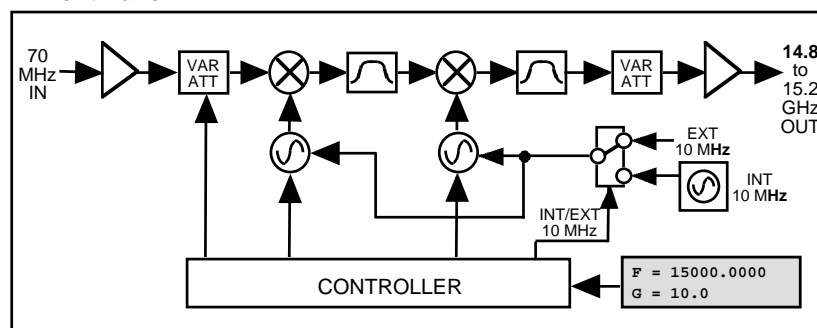


2015-152 Upconverter, 70 MHz IF to 14.8 - 15.2 GHz

The Model 2015-152 Upconverter converts 70 ± 18 MHz to 14.8 to 15.2 GHz in 125 kHz steps with low group delay and flat frequency response. Synthesized local oscillators (LO) provide very low phase noise, ± 0.01 ppm stability frequency selection. Push button switches select the RF frequency, gain, and other parameters. Front panel LEDs provide indication of PLL alarm (red), remote operation (yellow) or the TX carrier is Muted (red). Variable attenuators for the IF input and RF output provide a gain range of 0 to +20 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, external reference input and 10MHz reference output, and SMA (female) for the RF output. The unit is powered by a 100-240 $\pm 10\%$ VAC power supply, and housed in a 1.75" x 19" x 16" 1RU chassis.



Front Panel



2015-152 Block Diagram

EQUIPMENT SPECIFICATIONS*

Input Characteristics

Impedance/Return Loss	75 Ω / 18 dB
Frequency	70 \pm 18 MHz
Input Level	-30 to -10 dBm

Output Characteristics

Impedance/Return Loss	50 Ω /15 dB
Frequency (See Models)	14.8 to 15.2 GHz
Output level	-30 to -10 dBm
Output 1 dB compression	+0 dBm

Channel Characteristics

Gain range (adjustable)	0 to +20 dB, 0.5 \pm 0.5 dB steps (manually adjustable)
Spurious Response	<-50 dBC
Frequency Response	± 1.5 dB, 14.8-15.2 GHz ; ± 0.5 dB, 36 MHz BW
Group Delay, maximum	0.015 ns/MHz ² , parabolic, 0.035 ns/MHz, linear, 1 ns ripple
Frequency Sense	Non-inverting

Synthesizer Characteristics

Frequency Accuracy	± 0.01 ppm internal reference; external reference input
Frequency Step	125 kHz minimum
10 MHz In/Out Level	3 dBm, ± 3 dB

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

Controls, Indicators

Freq/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 (options; RS485, Q; Ethernet)

Other

RF Connector	SMA (female)
IF Connector	BNC (female), 75 Ω
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	100-240 $\pm 10\%$ VAC, 47-63 Hz, 45 watts maximum

Available Options

Z - Attenuator 0.1 dB on Upconverter

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

- M - 50 Ω N-type (RF), 50 Ω BNC (IF)
- N - 50 Ω N-type (RF), 75 Ω BNC (IF)
- S - 50 Ω SMA (RF), 50 Ω BNC (IF)
- SS - 50 Ω SMA (RF), 50 Ω SMA (IF)

Contact Cross for other options

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