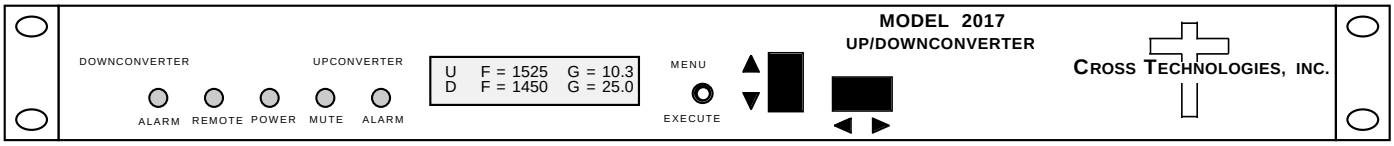
CROSS TECHNOLOGIES, INC.

DATA SHEET
REV. 0
09/29/08

2017-93 L-Band Up/Downconverter

The 2017-93 L-band Up/Downconverter converts 70 MHz to 950-1525 MHz (up) and 950-1525 MHz to 70 MHz (down) 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 for up and downconverters (red), remote operation (yellow), and Upconverter mute (yellow). Gain is manually controlled over a -10.0 to +30.0 dB range for the upconverter (in 0.1 dB steps) and over a 0 to +50 dB range for the downconverter (in 1 dB steps) as adjusted by the front panel multi-function 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 and the 10 MHz external reference input and output, and Type F female for RF. LNB +24 VDC (down) and SSPB +24 VDC (up) are inserted on the RF lines when the corresponding rear panel fuse is installed. The 10 MHz reference is also inserted on the RF lines. A high stability (±0.01ppm) option is available. Powered by a 100-240 ±10% VAC power supply and housed in a 1.75" X 19" X 16" rack chassis.



EQUIPMENT SPECIFICATIONS*

----------UPCONVERTER----------

Input Characteristics (IF)

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

Output Characteristics (RF)

Impedance/Return Loss	75Ω/10 dB
Frequency	950 to 1525 MHz
Output Level	0 to -20 dBm
Output 1dB comp	+5 dBm

Channel Characteristics

Gain range (adjustable)	-10.0 to +30.0 dB, 0.1 dB steps
Frequency Response	±1.5 dB, 950 - 1525 MHz ± 0.5 dB, 36 MHz BW
Spurious Response	< -50 dBc in band
Group Delay, max	.01 ns/MHz2 parab, .03 ns/MHz, linear, 1ns, ripple
Frequency Sense	Non-inverting

--------UP and DOWNCONVERTER--------

Channel Characteristics

Frequency Response	±1.5 dB, in band; ±0.5 dB, 36 MHz BW
Spurious Response	<-50 dBC
Group Delay, max	0.01 ns/MHz^2 parabolic; 0.03 ns/MHz linear; 1 ns ripple

Synthesizer Characteristics

Frequency Accuracy	±1.0 ppm (± 0.1 ppm option -H)
Frequency Step	1 MHz (125 kHz**, option X**)

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

10 MHz Level (In or Out)	0 dBm, ± 3 dB, 75 ohms

Controls, Indicators

Frequency Selection	Direct readout LCD; manual or remote selection
Gain Selection	Direct readout LCD; manual or remote selection
Power; Alarm; Remote	Green LED; Red LED; Yellow LED
Remote	RS485, 9600 baud

Other

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

----------DOWNCONVERTER---------

Input Characteristics (RF)

Impedance/Return Loss	75Ω /10 dB
Frequency	950 to 1525 MHz
Noise Figure, max.	15 dB (max gain)
Level	-20 to -70 dBm
1dB compression	-15 dBm

Output Characteristics (IF)

Impedance/Return Loss	75Ω/18 dB
Frequency	70 ± 18 MHz
Level/Max Linear	-20 dBm / -10 dBm
1dB compression	-5 dBm

Channel Characteristics

Gain range (adjustable)	0.0 to +50.0 dB, 1dB steps
Image Rejection	> 50 dB, min
Frequency Response	±1.5 dB, 950 to 1525 MHz ± 0.5 dB, 36 MHz BW
Spurious Response	< -50 dBc, in band
Group Delay, max	.01 ns/MHz2 parab, .03 ns/MHz, Linear,1 ns, ripple
Frequency Sense	Inverting or Non-inverting (Selectable)

Available Options

H – High stability (±0.1 ppm) internal reference
Connectors/Impedance
B – 75Ω BNC (RF), 75Ω BNC (IF)
C – 50Ω 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)
X – 125 kHz frequency steps

Other (continued)

LNB Power (RF IN)	+24 VDC, 400ma max
SSPB Power (RF Out)	+24 VDC, 25000ma max
External 10MHZ in level	0dB ±3dB

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