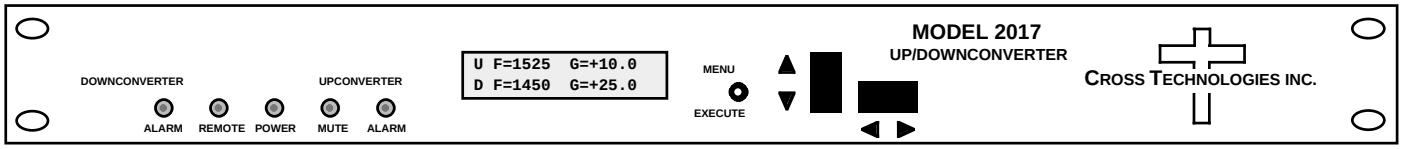
CROSS TECHNOLOGIES, INC.

DATA SHEET
Rev. B
09/30/13

2017-04 Up/Downconverter, 950 - 2150 MHz, 140 MHz IF

The 2017-04 L-band Up/Downconverter converts 140 MHz to 950-2150 MHz (Up) and 950-2150 MHz to 140 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 to +30 dB range for the upconverter and over a 0 to +50 dB range for the downconverter 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 optional external reference input and output, and Type F female for RF. LNB or SSPB +24 VDC and 10 MHz reference can be inserted on the RF lines as added options. A high stability (±0.01ppm) option is also available. It is powered by a **100-240 ±10%** VAC power supply and housed in a 1.75" X 19" X 16" 1RU chassis.



Front Panel

EQUIPMENT SPECIFICATIONS*

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

Input Characteristics (IF)

Impedance/Return Loss	75Ω /18 dB
Frequency	140 ± 36 MHz
Level	-40 to -10 dBm

Output Characteristics (RF)

Impedance/Return Loss	75Ω/12 dB
Frequency	950 to 2150 MHz
Level	-20 to 0 dBm
1dB compression	+5 dBm

Channel Characteristics

Gain range (adjustable)	-10 to +30 dB, 1dB steps
Frequency Sense	Non-inverting

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

Input Characteristics (RF)

Impedance/Return Loss	75Ω /12 dB
Frequency	950 to 2150 MHz
Noise Figure, max.	15 dB (max gain)
Level	-70 to -20 dBm
1dB compression	-15 dBm

Output Characteristics (IF)

Impedance/Return Loss	75Ω/18 dB
Frequency	140 ± 36 MHz
Level/Max Linear	-20 dBm / -10 dBm
1dB compression	-5 dBm

Channel Characteristics

Gain range (adjustable)	0 to +50 dB, 1dB steps
Image Rejection	> 50 dB, min
Frequency Sense	Inverting or Non-inverting (selectable)

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

Channel Characteristics

Frequency Response	±1.5 dB, in band; ±0.5 dB, 72 MHz BW
Spurious Response	<-50 dBC
Group Delay, max	0.0035 ns/MHz^2 parabolic; 0.025 ns/MHz linear; 1 ns ripple

Synthesizer Characteristics

Frequency Accuracy	± 1.0 ppm internal reference (±0.01 ppm, **option H**)
Frequency Step	1 MHz (125 kHz, **option X**)
10 MHz In/Out Level	3 dBm ± 3 dB

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

Controls, Indicators

Freq/Gain Selection	Direct readout LCD; pushbutton switches or remote selection
Power; Alarm; Remote	Green LED; Red LED; Yellow LED
Remote	RS232C, 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"high X 16.0" deep
Power	**100-240 ±10% VAC**, 47-63 Hz, 45 watts maximum

*10˚C to 40˚C; Specifications subject to change without notice

Available Options

E - External 10 MHz ref with RF insertion
H - High Stability (±0.01ppm) internal ref
L - LNB Voltage, +24VDC, 0.4 amps
V - SSPB Voltage, +24VDC, 2.5 amps
Q - RS485 Remote Interface
T - Temperature Sensor
X- 125 kHz frequency step
Connectors/Impedance
B - 75Ω BNC (RF), 75Ω BNC (IF)
C - 50Ω BNC (RF), 75Ω BNC (IF)
D - 50Ω BNC (RF), 50Ω BNC (IF)
J - 75Ω F-type (RF), 50Ω BNC (IF)
N - 50Ω N-type (RF), 75Ω BNC (IF)
M - 50Ω N-type (RF), 50Ω BNC (IF)

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