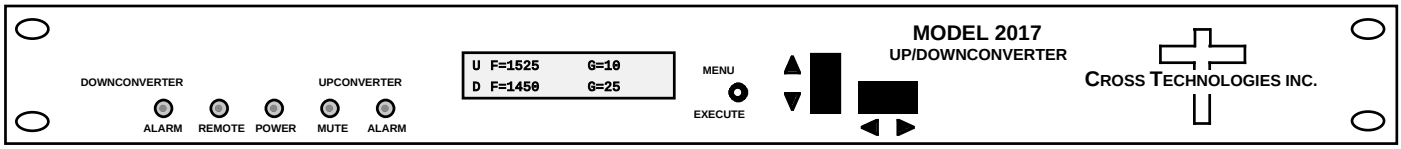
CROSS TECHNOLOGIES, INC.

DATA SHEET
REV C
05/24/10

2017-05 Up/Downconverter, 950-1525 MHz, 140 MHz IF

The 2017-05 L-band Up/Downconverter converts 140 MHz to 950-1525 MHz (Up) and 950-1525 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 & 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**
Input Level Range	-40 to -10 dBm

Output Characteristics (RF)

Impedance/Return Loss	75Ω/12 dB
Frequency	950 to 1525 MHz
Output level	-20 to 0 dBm
Output 1 dB compression	+5 dBm

Channel Characteristics

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

DOWNCONVERTER

Input Characteristics (RF)

Impedance/Return Loss	75Ω /12 dB
Frequency	950 to 1525 MHz
Noise Figure, max.	15 dB (max gain)
Input Level Range	-70 to -20 dBm
Input 1dB compression	-15 dBm

Output Characteristics (IF)

Impedance/Return Loss	75Ω/18 dB
Frequency	140 ± 36 MHz
Output level/max linear	-20 dBm / -10 dBm
Output 1 dB compression	-5 dBm

Channel Characteristics

Gain range (adjustable)	0 to +50 dB
Frequency Sense	Inverting or Non-inverting (selectable)

UP AND DOWNCONVERTER

Channel Characteristics

Frequency Response	±1.5 dB, 950 to 1525 MHz ; ± 0.5 dB, 72 MHz BW
Spurious Response	< -50 dBc, in band
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 (±.01 ppm, **option H**)
Frequency Step	1 MHz (125 kHz, **option X**)
10 MHz In/Out Level	3 dBm ± 3 dB (**option E** only)

Phase Noise @ F (Hz) >	*100*	*1K*	*10K*	*100K*
dBC/Hz	*-70*	*-80*	*-90*	*-100*

Controls, Indicators

Freq/Gain Selection	Direct readout LCD; manual or remote selection
Power; Alarm; Up Mute	Green LED; Red LED; Yellow LED
Remote	Yellow LED; RS232C, 9600 baud (RS485, **option Q**)

Other

RF, IF Connectors	Type F (female), BNC (female)
10MHz Connectors	BNC (female), 50Ω/75Ω (**option E** only)
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 W max

Available Options

E - External 10 MHz ref input & output
H - High Stability (±0.01) Internal Ref
Q - RS485 Remote Interface
L - LNB Voltage (+24VDC, 0.4 amps max)
V - SSPB Voltage (+24VDC, 2.5 amps max)
T - Temperature Sensor
X - 125 kHz Frequency Steps
Z - 0.1 dB Attenuator Steps on Upconverter
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)

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

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