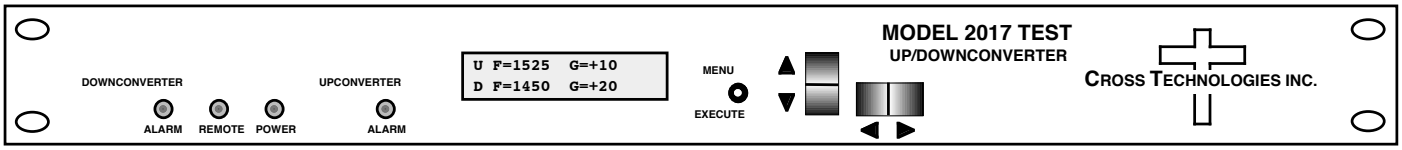
CROSS TECHNOLOGIES, INC.

DATA SHEET
Rev. B
12/14/16

2017-TD02 Up/Downconverter, 950 - 2150 MHz

The 2017-TD02 L-band Up/Downconverter for loop-back applications converts **70 MHz or 140 MHz** to/from 950-2150 MHz in 1 MHz steps. Multi-function push button switches select RF frequency, gain, and other parameters. The 2017-TD02 is used in applications such as connecting L-band modems to IF Up/downconverters. In this application, when converting an IF signal (70 or 140 MHz) to L-band, the modem itself contains internal filtering making it unnecessary for the 2017-TD02 to filter out all the other products (LO and other sideband). In the 2017-TD02 down conversion, because the L-band modem's transmit output is a clean signal with no image frequency, the signal can be converted to IF (70 or 140 MHz) without filtering. Front panel LEDs indicate DC power, PLL alarm, and remote operation. 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 Type F female for RF. 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	70 ± 18 MHz or 140 ± 36 MHz
Level	-45 to -25 dBm

Output Characteristics (RF)

Impedance/Return Loss	75Ω/12 dB
Frequency	**950 to 2150 MHz with 70 MHz in**
Frequency	**1050 to 2000 MHz with 140 MHz in**
Level	-45 to -25 dBm
1dB compression	**-15 dBm**

Channel Characteristics

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

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

Input Characteristics (RF)

Impedance/Return Loss	75Ω /12 dB
Frequency	**950 to 2150 MHz with 70 MHz out**
Frequency	**1050 to 2000 MHz with 140 MHz out**
Noise Figure, max.	15 dB (max gain)
Level	-35 to -5 dBm

Output Characteristics (IF)

Impedance/Return Loss	75Ω/18 dB
Frequency	70 ± 18 MHz or 140 ± 36 MHz
Level	-25 to -5 dBm
1dB compression	**+5 dBm**

Channel Characteristics

Gain range (adjustable)	0 to +20 dB, 1dB steps
Image Rejection	None; no filtering
Frequency Sense	Inverting or Non-inverting (selectable)

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

Channel Characteristics

Frequency Response	**±1.5 dB, in band; ±0.5 dB, 36 MHz BW; ±0.75 dB, 72 MHz BW**
Spurious Response	<-50 dBC, Fo ± 18 MHz/70 Mhz IF; ± 36 MHz/140 MHz IF; LO and other sideband present for upconverter
Group Delay, max	**0.01 ns/MHz^2 parabolic; 0.03 ns/MHz linear; 1 ns ripple any 36 MHz band**

Synthesizer Characteristics

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

Phase Noise @ F (Hz) >	*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	75Ω BNC (female)
10 MHz Connectors	BNC (female), 50Ω/75Ω (option E)
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 max

Available Options

E - External 10 MHz ref with RF insertion
H - High Stability (±0.01ppm) internal ref
Q - RS485 Remote Interface

Connectors/Impedance
B - 75Ω BNC (RF), 75Ω BNC (IF)
C - 50Ω BNC (RF), 75Ω BNC (IF)

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

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