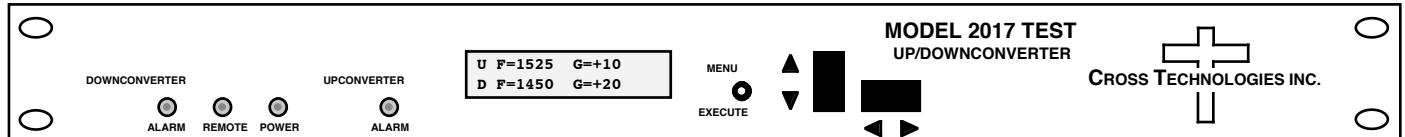


2017-TD02 Test Up/Downconverter, 950 - 2150 MHz

The 2017-TD02 Test L-band Up/Downconverter converts 70 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 \pm 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 75 Ω /18 dB
 Frequency 70 \pm 18 MHz or 140 \pm 36 MHz
 Level -45 to -25 dBm

Output Characteristics (RF)

Impedance/Return Loss 75 Ω /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

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

Channel Characteristics

Frequency Response \pm 1.5 dB, in band; \pm 0.5 dB, 36 MHz BW; \pm 0.75 dB, 72 MHz BW
 Spurious Response $<$ -50 dBC, $F_o \pm$ 18 MHz/70 MHz IF; \pm 36 MHz/140 MHz IF; LO and other sideband present for upconverter
Group Delay, max 0.01 ns/MHz² parabolic; 0.03 ns/MHz linear; 1 ns ripple any 36 MHz band

Synthesizer Characteristics

Frequency Accuracy \pm 1.0 ppm internal reference (\pm 0.01 ppm, option H)
 Frequency Step 1 MHz
 10 MHz In/Out Level 3 dBm \pm 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 75 Ω BNC (female)
 10 MHz Connectors BNC (female), 50 Ω /75 Ω (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 \pm 10% VAC, 47-63 Hz, 45 watts max

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

-----DOWNCONVERTER-----

Input Characteristics (RF)

Impedance/Return Loss 75 Ω /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 75 Ω /18 dB
 Frequency 70 \pm 18 MHz or 140 \pm 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)

Available Options

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

Connectors/Impedance

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