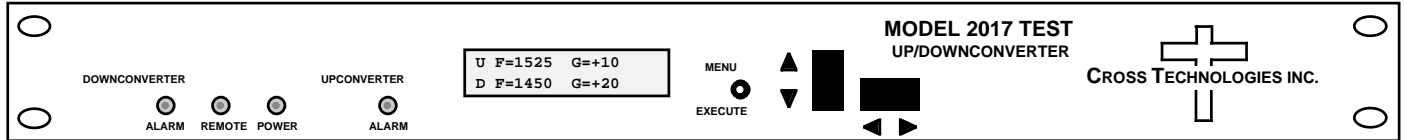


**2017-TD02 Test Up/Downconverter, 950 - 2150 MHz**

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. When converting an IF signal (70 or 140 MHz) to L-band going directly into a receiver, it is not necessary to filter out all the other products (LO and other sideband) because the receiver itself contains internal filtering that will select the desired carrier frequency. In down conversion where there is no image frequency, as with a single, clean signal, the signal can be translated to IF (70 or 140 MHz) without filtering. This is what the 2017-TD02 Test Up/Downconverter does. Front panel LEDs provide indication of 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. The 2017-T02 is like the 2017-TD02 without local display or control.



**Front Panel**

**EQUIPMENT SPECIFICATIONS\***

**-----UPCONVERTER-----**

**Input Characteristics (IF)**

Impedance/Return Loss 75Ω/18 dB  
 Frequency 70 ± 18 MHz  
 Level **-45 to -25 dBm**

**Output Characteristics (RF)**

Impedance/Return Loss 75Ω/12 dB  
 Frequency 950 to 2150 MHz  
 Level **-45 to -25 dBm**  
 1dB compression **+0 dBm**

**Channel Characteristics**

Gain range (adjustable) **-10 to +10 dB**, 1dB steps  
 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, **Fo ± 18 MHz; LO and other sideband present**  
 Group Delay, max 0.01 ns/MHz<sup>2</sup> parabolic; 0.03 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 (**option E**)  
 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 **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

**-----DOWNCONVERTER-----**

**Input Characteristics (RF)**

Impedance/Return Loss 75Ω/12 dB  
 Frequency 950 to 2150 MHz  
 Noise Figure, max. 15 dB (max gain)  
 Level **-35 to -5 dBm**  
 1dB compression **+5 dBm at 0 dB gain**

**Output Characteristics (IF)**

Impedance/Return Loss 75Ω/18 dB  
 Frequency 70 ± 18 MHz  
 Level **-25 to -5 dBm**  
 1dB compression **+5 dBm at min gain**

**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 (±0.01ppm) internal ref  
 Q - RS485 Remote Interface  
 X- 125 kHz frequency steps

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