

2017-T03 Test Up/Downconverter, 950 - 1525 MHz

The 2017-T03 Test L-band Up/Downconverter converts 70 MHz to/from 950-1525 MHz in 1 MHz steps without local display or control. The Remote RS 232 input selects 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-T03 Test Up/Downconverter does. Front panel LEDs provide indication of DC power, Remote, and PLL alarm. Parameter selection and frequency and gain settings can be changed via the Remote RS 232 input 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
 Level -45 to -25 dBm

Output Characteristics (RF)

Impedance/Return Loss 75Ω/12 dB
 Frequency 950 to 1525 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/MHz² 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 1525 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