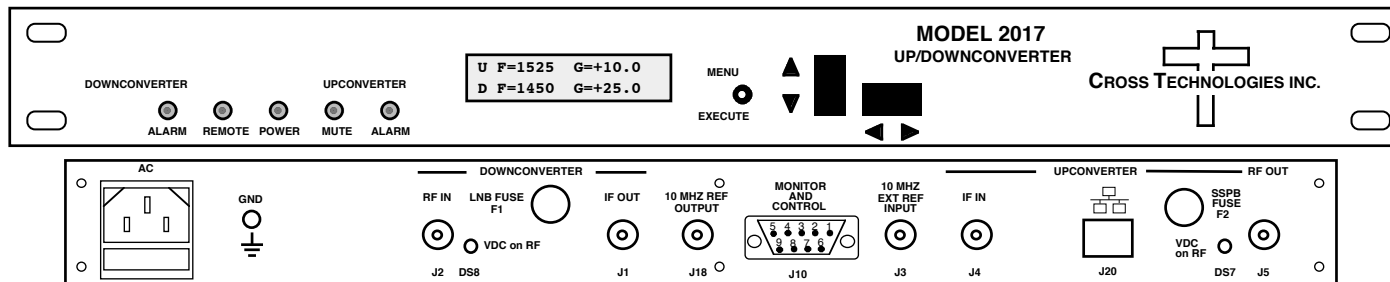


2017-02A Up/Downconverter, 950 - 2150 MHz

The 2017-02A L-band Up/Downconverter converts 70 MHz to 950-2150 MHz (Up) and 950-2150 MHz to 70 MHz (Down) in 1 MHz steps with low group delay and flat frequency response. The 2017-02A has lower RF level out of the upconverter and higher RF level into the downconverter than the **2017-02** and is typically used to interface an L-band modem to a 70 MHz IF upconverter and downconverter. 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 can be manually adjusted over a -25 to +15 dB range for the upconverter and over a 0 to +50 dB range for the downconverter 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. A high stability (± 0.01 ppm) option is also available. 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 and Rear Panel (Ethernet option shown)

EQUIPMENT SPECIFICATIONS*

----- UPCONVERTER -----

Input Characteristics (IF)

Impedance/Return Loss 75 Ω /18 dB
Frequency 70 \pm 18 MHz
Level -40 to -10 dBm

Output Characteristics (RF)

Impedance/Return Loss 75 Ω /12 dB
Frequency 950 to 2150 MHz
Level **-35 to -15 dBm**
1dB compression **-10 dBm, (max gain)**

Channel Characteristics

Gain range (adjustable) **-25 to +15 dB, 1 \pm 1 dB steps**
Frequency Sense Non-inverting

----- 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, **in band**
Group Delay, max 0.0035 ns/MHz² parabolic; 0.025 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 \pm 3 dB

Phase Noise @ Freq	100 Hz	1kHz	10kHz	100kHz	1 MHz
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 BNC (female)
10 MHz Connectors BNC (female), **75 Ω , works with 50 or 75 ohms (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, 25 watts max.

----- DOWNCONVERTER -----

Input Characteristics (RF)

Impedance/Return Loss 75 Ω /12 dB
Frequency 950 to 2150 MHz
Noise Figure, max. 15 dB (max gain)
Level **-60 to -10 dBm**
1dB compression **-5 dBm, (min gain)**

Output Characteristics (IF)

Impedance/Return Loss 75 Ω /18 dB
Frequency 70 \pm 18 MHz
Level **-10 to 0 dBm**
1dB compression **+5 dBm, (max gain)**

Channel Characteristics

Gain range (adjustable) 0 to +50 dB, **1 \pm 1 dB steps**
Image Rejection > 50 dB, min.
Frequency Sense Inverting or Non-inverting (selectable)

Available Options

E - External 10 MHz ref. with RF insertion
H - High Stability (± 0.01 ppm) internal ref.
L - LNB Voltage, +24VDC, 0.4 amps
V - SSPB Voltage, +24VDC, 2.5 amps
X - 125 kHz frequency steps

Comm. Interface/Standard RS232

Q - RS485 Remote Interface
W8 - Ethernet; w/Web Browser (WB)
W18 - Ethernet; w/WB & SNMP
W28 - Ethernet; w/TCP/IP, Telnet

Connectors/Impedance

B - 75 Ω BNC (RF), 75 Ω BNC (IF)
C - 50 Ω BNC (RF), 75 Ω BNC (IF)
D - 50 Ω BNC (RF), 50 Ω BNC (IF)
J - 75 Ω F-type (RF), 50 Ω BNC (IF)
N - 50 Ω N-type (RF), 75 Ω BNC (IF)
M - 50 Ω N-type (RF), 50 Ω BNC (IF)

Contact Cross for other options

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