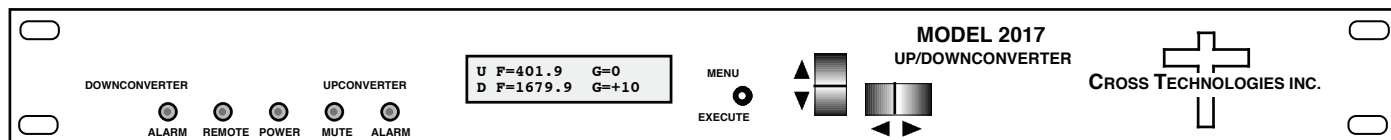


2017-0416 Up/Downconverter

The 2017-0416 Up/Downconverter converts 70 MHz to **401.9 or 402.2** MHz selectable (Up) and **1679.9 or 1680.2** MHz selectable to 70 MHz (Down) with low group delay and flat frequency response. An integrated Loopback translator is included. Multi-function push button switches select the frequency, Loopback, reference mode and remote interface 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 is fixed at 0 dB for the upconverter, +10 dB for the downconverter and -10dB for Loopback. Remote operation allows selection of all user front panel settings with the exception of remote interface. Frequency and gain appear on the LCD display except when Loopback is indicated. All connectors are 50Ω BNC female. The unit 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 50Ω /14 dB
Frequency 70 $\pm$ 10 MHz
Level 0 to -30 dBm

Output Characteristics (RF)

Impedance/Return Loss 50Ω/14 dB
Frequency **401.9 or 402.2** MHz
Level 0 to -30 dBm
1dB compression +10 dBm

Channel Characteristics

Gain **0 dB, fixed**
Frequency Sense Non-inverting

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

Channel Characteristics

Frequency Response $\pm$ 0.5 dB, 20 MHz BW ($\pm$ 1.0 dB Loopback)
Spurious Response <-50 dBC
Group Delay, max 0.015 ns/MHz² parabolic; 0.05 ns/MHz linear; 1 ns ripple
Loopback Gain -10dB

Synthesizer Characteristics

Frequency Accuracy $\pm$ 1 ppm
Frequency Step **fixed**
10 MHz In/Out Level 3 dBm $\pm$ 3 dB (**option E**)

Phase Noise @ Freq	100 Hz	1kHz	10kHz	100kHz	1 MHz
dBC/Hz	-70	-70	-80	-90	-100

Controls, Indicators

Frequency Selection Direct readout LCD; pushbutton switches or remote selection
Power; Alarm; Remote Green LED; Red LED; Yellow LED
Remote RS232C, 9600 baud (**options** RS485/Ethernet, **Q / W8,W18**)

Other

RF Connector BNC (female), 50Ω
IF Connector BNC (female), 50Ω
10 MHz Connectors BNC (female), 50Ω (**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

----- DOWNCONVERTER -----

Input Characteristics (RF)

Impedance/Return Loss 50Ω /14 dB
Frequency **1679.9 or 1680.2** MHz
Noise Figure, max. 15 dB (max gain)
Level -50 to -20 dBm
1dB compression -10 dBm

Output Characteristics (IF)

Impedance/Return Loss 50Ω/14 dB
Frequency 70 $\pm$ 10 MHz
Output Level Range -40 dBm to -10 dBm
1dB compression 0 dBm

Channel Characteristics

Gain (fixed) +10 dB
Image Rejection > 50 dB, min
Frequency Sense Selectable

Available Options

E - External 10 MHz ref
H - High Stability ($\pm$ 0.01ppm) Internal Ref.
M&C Remote Interfaces:
Q - RS485
W8 - Ethernet w/Web Browser
W18 - Ethernet w/Web & SNMP
W28 - Ethernet w/TCPIP
W77 - FP Monitors IF/RF (BNC/SMA)

Connectors/Impedance

M - 50Ω N-type (RF), 50Ω BNC (IF)

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