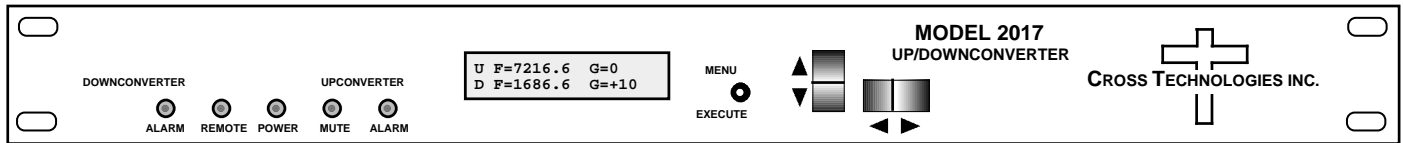


## 2017-7216 Up/Downconverter

The 2017-7216 Up/Downconverter converts 70 MHz to **7.2166** GHz (Up) and **1.6866** GHz 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 Downconverter frequency sense (non-invert/invert), Loopback (on/off), 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 +10dB for the upconverter and downconverter. The Loopback gain is -10dB. 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 except the upconverter RF output which is SMA female. A high stability ( $\pm 0.01$ ppm) OCXO is included. 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  $\pm$  20 MHz  
 Level 0 to -20 dBm

##### Output Characteristics (RF)

Impedance/Return Loss 50Ω/14 dB  
 Frequency **7.2166** GHz  
 Level -10 to +10 dBm  
 1dB compression +20 dBm

##### Channel Characteristics

Gain **+10 dB, fixed**  
 Frequency Sense Non-inverting

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

##### Channel Characteristics

Frequency Response  $\pm 0.5$  dB, 40 MHz BW ( $\pm 1.0$  dB Loopback)  
 Spurious Response  $< -50$  dBC  
 Group Delay, max 0.015 ns/MHz<sup>2</sup> parabolic; 0.05 ns/MHz linear; 1 ns ripple  
 Loopback gain -10dB

##### Synthesizer Characteristics

Frequency Accuracy  $\pm 0.01$  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	-75	-85	-100

##### Controls, Indicators

Freq/Gain Indication Direct readout LCD (no control)  
 Power; Alarm; Remote Green LED; Red LED; Yellow LED  
 Remote RS232C, 9600 baud (**options** RS485/Ethernet, **Q / W8,W18**)

##### Other

RF Connector Upconv.: SMA (female), Downconv.: BNC 50Ω (female)  
 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

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

#### -----DOWNCONVERTER-----

##### Input Characteristics (RF)

Impedance/Return Loss 50Ω /14 dB  
 Frequency **1.6866** GHz  
 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  $\pm$  20 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

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)