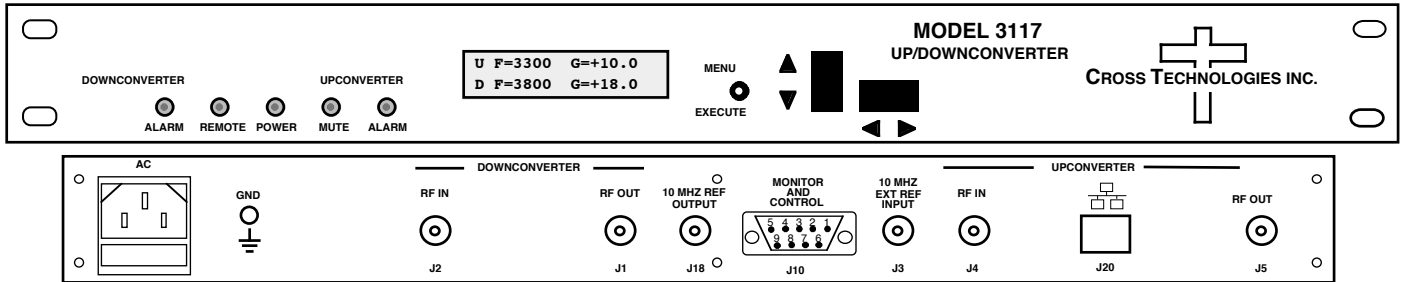


## 3117-3338#-720 Up/Downconverter, 0.72 to 3.3 and 3.8 to 0.72 GHz ( $\pm 0.3$ GHz)

The 3117-3338#-720 Up/Downconverter converts **0.72 to 3.3 and 3.8 to 0.72 GHz ( $\pm 0.3$  GHz)** with **non-inverting spectrums**. Front panel LEDs provide indication of **Remote, DC Power, upconverter mute, and PLL Alarm**. The maximum gain is **+20 dB for the upconverter and +20 dB for the downconverter** (adjustable in  **$0.5 \pm 0.5$  dB** steps). Gain and internal/external/Auto reference frequency selection are controlled by front panel switches or remote selection (via RS-232C/485, standard; Ethernet Optional) and are viewable on the LCD Display. Connectors are **Type N female for the RF DOWN IN and RF UP OUT** and **BNC female for the RF UP IN, RF DOWN OUT** and external reference input and reference output. In AUTO, the 10 MHz reference stays in external if the external level is **+3 dBm,  $\pm 3$  dB**. The 3117 is powered by a **100-240  $\pm$  10% VAC** power supply, and in a **1 3/4" X 19" X 14"** rack mount chassis.



**Front and Rear Panels (SHOWN WITH ETHERNET OPTION)**

EQUIPMENT SPECIFICATIONS*		
Input Characteristics	UP	DOWN
Impedance/Return Loss	50 $\Omega$ /14 dB	50 $\Omega$ /14 dB
Frequency	0.72 $\pm$ 0.3 GHz	3.80 $\pm$ 0.3 GHz
Noise Figure, Max.	15 dB @ max gain	15 dB @ max gain
Input Level range	-40 to -20 dBm	-40 to -20 dBm
Output Characteristics		
Impedance/Return Loss	50 $\Omega$ /14 dB	50 $\Omega$ /14 dB
Frequency (GHz)	3.30 $\pm$ 0.3 GHz	0.72 $\pm$ 0.3 GHz
Output Level Range	-20 to 0 dBm	-20 to 0 dBm
1 dB comp, max gain	+10 dBm	+10 dBm
Channel Characteristics		
Gain, max. at Fc	+20 $\pm$ 1 dB	+20 $\pm$ 1 dB
Gain, range, 0.5 $\pm$ 0.5 dB steps	0 to +20	0 to +20
Image Rejection	>50 dBc	>50 dBc
Spurious, Inband, sig. rel.,  v	<-45 dBc, 0dBm	<-45 dBc, 0dBm
Spurious, Inband, sig. ind.	<-50 dBc, Gmax	<-50 dBc, Gmax
Spurious, Out of band, Fc $\pm$ 0.6G	<-50 dBm, Gmax	<-50 dBm, Gmax
2 tone Fc $\pm$ 2MHz del, -10 ea	<-50 dBc, Gmax	<-50 dBc, Gmax
Frequency Resp. Fc $\pm$ 0.3 GHz	$\pm$ 1.5 dB	$\pm$ 1.5 dB
Frequency Resp. 40 MHz	$\pm$ 0.5 dB	$\pm$ 0.5 dB
Frequency Sense	non-inverting	non-inverting

### LO Characteristics

Frequency Step **None; 2.58 GHz Up, 3.08 GHz Down fixed frequency LO**  
 Frequency Accuracy  **$\pm 0.01$  ppm max over temp internal reference; ext. ref. input**

Phase Noise @ F (Hz) >	100	1K	10K	100K	1M
dBc/Hz - Standard	-75	-80	-85	-95	-110

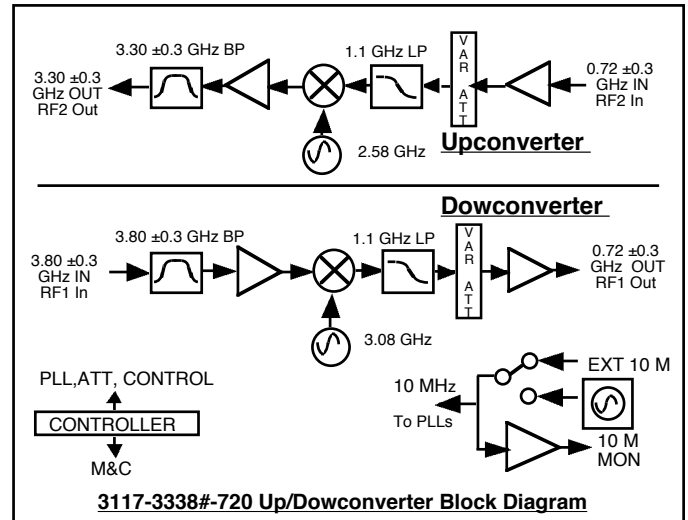
10 MHz In/Out Level **3 dBm,  $\pm 3$  dB, w/ Auto-detect**

### Controls, Indicators

Gain; Ext Ref Selection **Direct readout LCD; pushbutton switches or remote**  
 Power; Alarm; Remote **Green LED; Red LED; Yellow LED;**  
 Remote **RS232C/RS485/422, 9600 baud (Ethernet Optional)**

### Other

RF In/Out, L-BAND Con. **N-type (female), 50 $\Omega$  / BNC (female), 50 $\Omega$**   
 10 MHz connectors **BNC (female), 75 $\Omega$  connector; works with 50 $\Omega$  or 75 $\Omega$**   
 Alarm Connector **DB9 - NO or NC contact closure on Alarm**  
 Size **19 inch standard chassis 1.75" high X 16" deep**  
 Power **100-240  $\pm$  10% VAC, 47 - 63 Hz, 50 watts maximum**



### Available Options

R = Redundant AC Power Supply

#### Remote M&C Ethernet Options

W8 - Ethernet w/web browser Interface  
 W18 - Ethernet w/SNMP (and MIB) Interface  
 W28 - Ethernet w/direct TCP/IP Interface  
**W828 - Ethernet W8 +W18 +W28**

#### Connector Options

N = 50 $\Omega$  N-type (RF), 75 $\Omega$  BNC (L-Band)  
 NN = 50 $\Omega$  N-type (RF), 50 $\Omega$  N-type (L-Band)  
 S = 50 $\Omega$  SMA (RF), 50 $\Omega$  BNC (L-Band)  
 S7 = 50 $\Omega$  SMA (RF), 75 $\Omega$  BNC (L-Band)  
 SS = 50 $\Omega$  SMA (RF), 50 $\Omega$  SMA (L-Band)

**Contact Cross for other options**

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