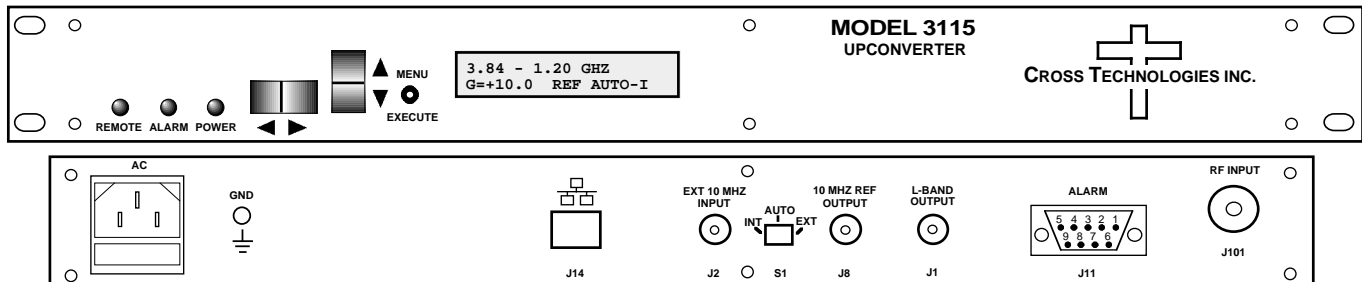


## 3116-35 Block Downconverter, 3.59 - 4.09 GHz to 0.95 - 1.45 GHz

The 3116-35 Downconverter converts 3.59 - 4.09 GHz to 0.95 - 1.45 GHz (non-inverted) with 8.84 and 11.48 GHz local oscillators. The gain is +35 dB maximum and is adjustable in  $0.5 \pm 0.5$  dB steps. Front panel LEDs provide indication of Remote operation, PLL Alarm and DC Power. 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 RF In and BNC female for the L-band 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 3116 is powered by a 100-240  $\pm 10\%$  VAC power supply, and housed in a 1 3/4" X 19" X 14" rack mount chassis.



### EQUIPMENT SPECIFICATIONS\*

#### Input Characteristics (RF)

Impedance/Return Loss	50Ω/14 dB
Frequency	3.59 to 4.09 GHz
Noise Figure, Max.	15 dB max gain
Input Level range	-55 to -35 dBm
Input 1 dB compression	-25 dBm

#### Output Characteristics

Impedance/Return Loss	50Ω /14 dB
Frequency	0.95 to 1.45 GHz
Output Level Range	-20 to 0 dBm
Output 1 dB compression	+10 dBm at max. gain

#### Channel Characteristics

Gain, max; adjustment	+35 dB $\pm 2$ dB, max. gain; 30 dB adjustment in $1 \pm 1$ dB Steps
Image Rejection	> 60 dB, min
Spurious, In Band	-55 dBc in band, 0 dBm out; (0.95-1.45 GHz Out)
Spurious, Out of Band	<-50 dBm (0.5-0.95 GHz and 1.45-2.5 GHz Out)
Intermodulation	<-55 dBc for two carriers each at -10 dBm out
Frequency Response	$\pm 1.0$ dB, 0.95 -1.45 GHz out; $\pm 0.5$ dB, 40 MHz BW
Frequency Sense	Non-inverting

#### LO Characteristics

LO Frequencies	8.84 and 11.48 GHz
Frequency Accuracy	$\pm 0.01$ ppm max over temp internal reference; ext. ref. input
10 MHz In/Out Level	3 dBm, $\pm 3$ dB, w/ Auto-detect

Phase Noise @ F (Hz) >	10	100	1K	10K	100K	1M
Standard	-55	-70	-80	-80	-95	-110

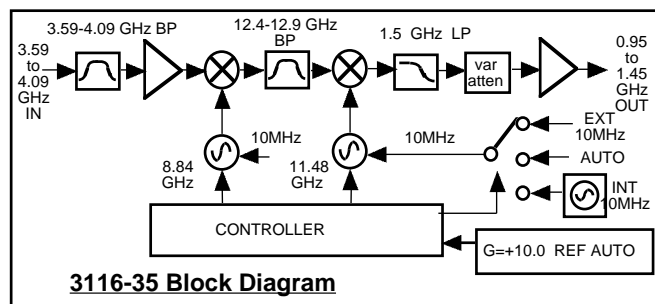
#### Controls, Indicators

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

#### Other

RF In Connector	Type N (female), 50Ω
L-band Connector	BNC (female), 50Ω
10 MHz Connectors	BNC (female), 75Ω, works with 50 or 75 ohms
Alarm/Remote Conn.	DB9 - NO or NC contact closure on Alarm
Size	19 inch standard chassis 1.75" high X 14.0" deep
Power	100-240 $\pm 10\%$ VAC, 47 - 63 Hz, 30 watts max.

### Front and Rear Panel



### Available Options

W31 0 to +50 degrees C operation

#### 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

#### Connector Options

N - 50Ω N-type (RF), 75Ω BNC (L-BAND)  
NF - 50Ω N-type (RF), 75Ω F-type (L-BAND)  
NN - 50Ω N-type (RF), 50Ω N-type (L-BAND)  
S7 - 50Ω SMA (RF), 75Ω BNC (L-BAND)  
SF - 50Ω SMA (RF), 75Ω F-type (L-BAND)  
SN - 50Ω SMA (RF), 50Ω N-type (L-BAND)  
SS - 50Ω SMA (RF), 50Ω SMA (L-BAND)

**Contact Cross for other options**

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