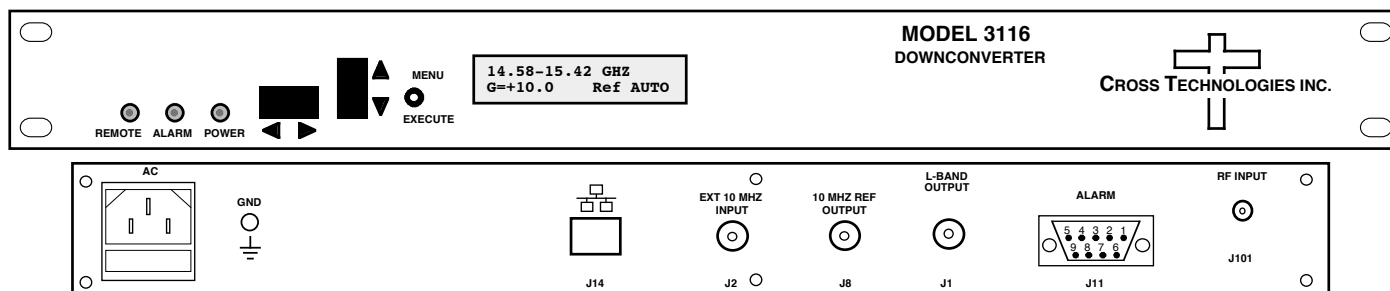


## 3116-145-1600 Block Downconverter, 14.58 - 15.42 GHz to 1600 ± 420 MHz

The **3116-145-1600 Block Downconverter** converts **14.58 - 15.42 GHz** ( $F_c = 15.0$  GHz) to **1.18 - 2.02 GHz** ( $1600 \pm 420$  MHz) with low phase noise and flat frequency response. Frequency translation is via a **13.40 GHz** local oscillator. The gain is  $+35 \pm 2$  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, standard; Ethernet Optional) and are viewable on the LCD Display. Connectors are SMA female for the RF 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  $1 \frac{3}{4} \times 19 \times 14$  rack mount chassis.



**Front Panel and Rear Panel (shown with optional Ethernet)**

### EQUIPMENT SPECIFICATIONS\*

#### Input Characteristics (RF)

Impedance/Return Loss	50Ω/14 dB
Frequency	14.58 to 15.42 GHz
Noise Figure, Max.	12 dB at max gain ( <b>higher with Opt W67</b> )
Input Level range	-55 to -35 dBm ( <b>-55 to 0, Opt W67</b> )
Input 1 dB compression	-25 dBm ( <b>+10, min gain, Opt W67</b> )

#### Output Characteristics (L-Band)

Impedance/Return Loss	50Ω /14 dB
Frequency	<b>1.18 - 2.02 GHz</b>
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 <b><math>0.5 \pm 0.5</math> dB Steps</b>
Image Rejection	> 60 dB, min
Spurious, In Band	SIGNAL RELATED < -55 dBC in band, 0 dBm out; SIGNAL INDEPENDENT, < -60 dBm
Spurious, Out of Band	< -50 dBm, <b>0.5-1.17 GHz and 2.03- 3.0 GHz</b>
Intermodulation	< -55 dBC for two carriers each at -10 dBm out
Frequency Response	<b><math>\pm 1.5</math> dB, 1.18 - 2.02 GHz out; <math>\pm 0.75</math> dB, 80 MHz BW</b>
Frequency Sense	Non-inverting

#### LO Characteristics

LO Frequency	<b>13.40 GHz , fixed LO</b>
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

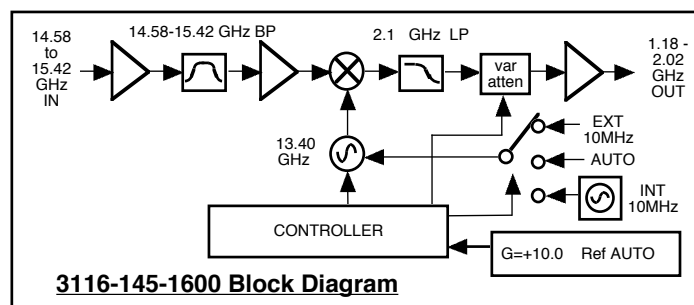
Phase Noise @ F (Hz) >	100	1K	10K	100K	1M
dBC/Hz	-70	-80	-85	-100	-110

#### Controls, Indicators

Freq., Gain, Ext Ref Sel.	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/L-Band Connector	SMA (female), 50Ω / BNC (female), 50Ω
10 MHz Connectors	BNC (female), <b>75Ω, works with 50 or 75 ohms</b>
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, <b>30 watts max.</b>



#### Available Options

W67 - Extends input level to -55 to 0dBm (contact Cross for gain and noise figure implications with this option)

#### 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

#### Extended Temperature Option

W31 - 0°C to 50°C

#### Connector Options

N - 50Ω N-type (RF), 75Ω BNC (L-BAND)  
 NN - 50Ω N-type (RF), 50Ω N-type (L-BAND)  
 S7 - 50Ω SMA (RF), 75Ω BNC (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