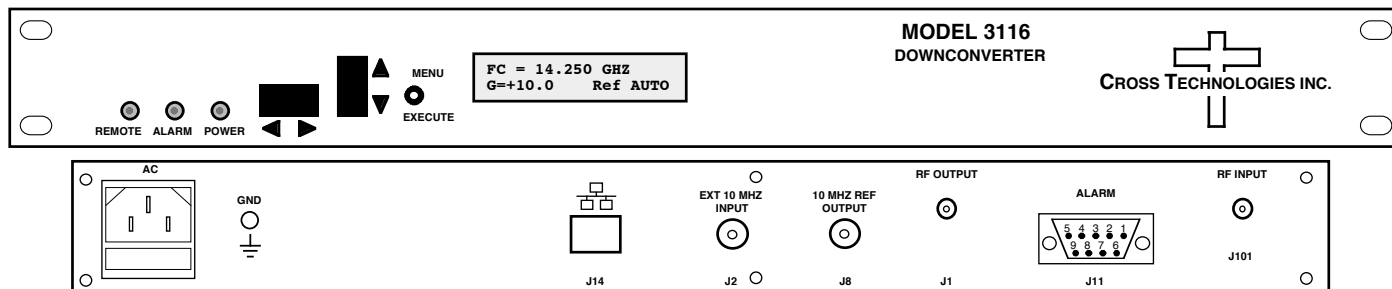


## 3116-140-4110 Agile Block Downconverter, 14.00 - 14.50 GHz to 4110 ± 62.5 MHz

The **3116-140-4110 Agile Block Downconverter** converts 14.00 - 14.50 GHz to **4.11 ± 0.0625 GHz** in **1 MHz steps** with low phase noise and flat frequency response. Frequency translation is via a **9.89 - 10.39 GHz** local oscillator (**Fc =14.0-14.5 GHz**). The gain is **+35 ± 2 dB** maximum and is adjustable in **0.5 ± 0.5 dB** steps. Front panel LEDs provide indication of Remote operation, PLL Alarm and DC Power. Frequency, 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 Input and RF Output** and BNC female for the external reference input and reference output. In AUTO, the 10 MHz reference stays in external if the external level is **+1 to +8 dBm**. The 3116 is powered by a 100-240 ± 10% VAC power supply, and housed in a 1 3/4" X 19" X 14" rack mount chassis.



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

### EQUIPMENT SPECIFICATIONS\*

#### Input Characteristics (RF Input)

Impedance/Return Loss	50Ω/14 dB
Frequency	14.00 to 14.50 GHz
Noise Figure, Max.	12 dB max gain
Input Level range	-55 to -35 dBm
Input 1 dB compression	-25 dBm

#### Output Characteristics (RF Output)

Impedance/Return Loss	50Ω /14 dB
Frequency	<b>4.11 ± 0.0625 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 ±2 dB, max. gain; 30 dB adjustment in <b>0.5 ± 0.5 dB</b> Steps
Image Rejection	> 60 dB, min
Spurious, In Band	SIGNAL RELATED<-55 dBC in band, 0 dBm out; 2Xfo <-45dBC; SIGNAL INDEPENDENT, <-60 dBm
Spurious, Out of Band	<-50 dBm, <b>0.5-4.05 GHz and 4.20- 6.0 GHz</b>
Intermodulation	<-55 dBC for two carriers each at -10 dBm out
Frequency Response	<b>±2 dB, Band; ±1.5 dB, 4.11 ± 0.0625 GHz</b> out; ± 0.5 dB, 40 MHz BW
Frequency Sense	Non-inverting

#### LO Characteristics

LO Frequency	<b>9.89 - 10.39 GHz (Fc =14.0-14.5 GHz)</b>
Frequency Step	<b>1.0 MHz</b>
Frequency Accuracy	± 0.01 ppm max over temp internal reference; ext. ref. input
10 MHz In/Out Level	3 dBm, ± 3 dB, w/ Auto-detect

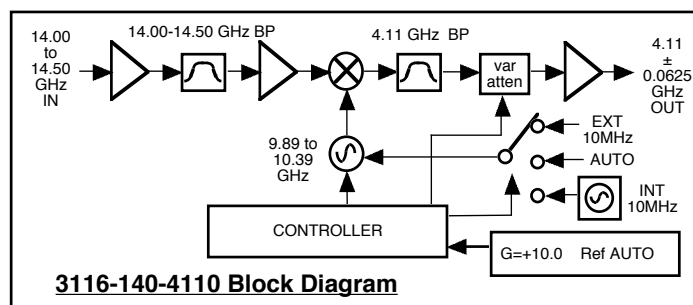
Phase Noise @ F (Hz) >	100	1K	10K	100K	1M
dBC/Hz	-70	-80	-85	-100	-110

#### 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

<b>RF In/RF Out Conn.</b>	<b>SMA (female), 50Ω / SMA (female), 50Ω</b>
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 ± 10% VAC, 47 - 63 Hz, <b>30 watts</b> max.



#### Available Options

**E6-25X** Int 10MHz ref. locked to ext 25 MHz  
W31 0 to +50 degrees C operation

#### Remote M&C Interfaces

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

#### Connector Options

STD - SMA (RF In), 50Ω SMA (RF Out)  
NN - N-type (RF In), 50Ω N-type (RF Out)  
SN - SMA (RF In), 50Ω N-type (RF Out)

**Contact Cross for other options**

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