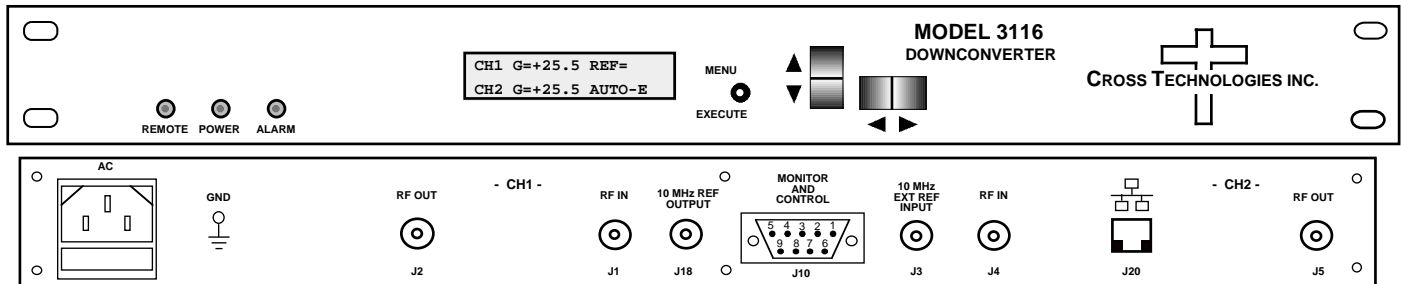


3116-22-23# Two Channel Downconverter, 2300 ± 100 MHz to 1400 ± 100 MHz

The **3116-22-23#** Two Channel Downconverter converts **2300 ± 100 MHz** to **1400 ± 100 MHz** (inverted) with a **3.70 GHz (common)** local oscillator. The gain is +35 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. 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 BNC female for the RF In and RF Out** and external reference input and reference output. In AUTO, the 10 MHz reference stays in external if the external level is **+3 dBm, ±3 dB**. It is powered by a 100-240 ± 10% VAC power supply, and is in a 1 3/4" X 19" X 14" rack mount chassis.



Front and Rear Panel (Shown with option W8)

EQUIPMENT SPECIFICATIONS (Each Channel)*

Input Characteristics (RF)

Impedance/Return Loss	50Ω/14 dB
Frequency	2300 ± 100 MHz
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	1400 ± 100 MHz
Output Level Range	-20 to 0 dBm
Output 1 dB compression	+10 dBm

Channel Characteristics

Gain, max @Fc	+35 dB ±2 dB
Gain, adjustment	30 dB in 0.5 ± 0.5 dB Steps
Image Rejection	> 60 dB, min
Spurious, In Band	>50 dBC, >55 dBC typ., 0 dBm out; (1400 ± 100 MHz Out)
Spurious, Out of Band	<-50 dBm (0.5-1.29 and 1.51-2.0 GHz Out)
Channel-Channel Isol.	>50 dBC, >55 dBC typ., Gain = +35 dB
Intermodulation	<-55 dBC for two carriers at 4 MHz spacing , each at -10 dBm out
Frequency Response	±1.5 dB, 1400 ± 100 MHz out ; ± 0.5 dB, 40 MHz BW;
Frequency Sense	Inverting

LO Characteristics

LO Frequency	3.70 GHz (Common LO to both channels)
Frequency Accuracy	± 0.01 ppm max over temp internal reference; ext. ref. input
10 MHz In/Out Level	3 dBm, ± 3 dB

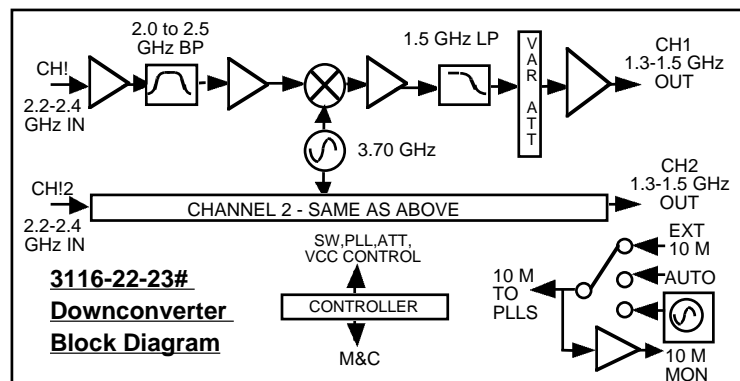
Phase Noise @ Freq	100 Hz	1kHz	10kHz	100kHz	1 MHz
dBC/Hz	-70	-80	-85	-100	-120

Controls, Indicators

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

Other

RF In, RF Out Connector	BNC (female), 50Ω (other options available)
10 MHz Connectors	BNC (female), 75Ω, works with 50 or 75 ohms
Alarm Connector	DB9 - NO or NC contact closure on Alarm
Size	19 inch standard chassis 1.7" high X 17.0" deep
Power	100 - 240 ±10% VAC, 47 - 63 Hz, 25 watts max.



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

SS - 50Ω SMA (RF In), 50Ω SMA (RF Out)

Contact Cross for other options

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