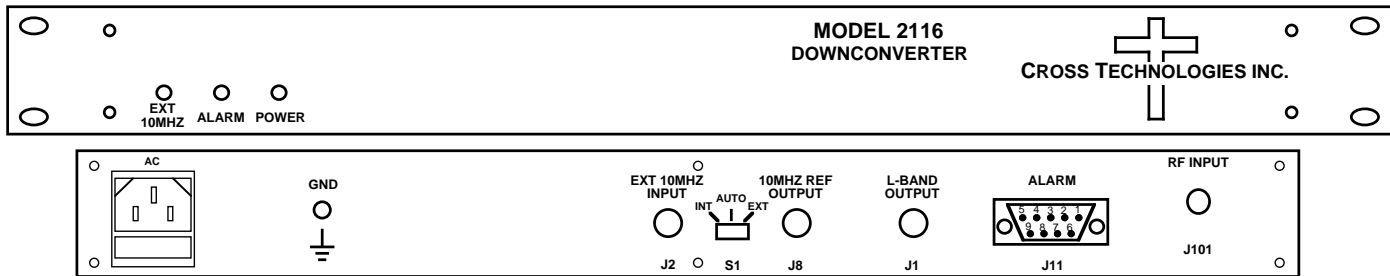


## 2116-275-1800 Block Downconverter, 27.5 - 28.5 GHz to 1.3 - 2.3 GHz

The 2116-275-1800 Downconverter converts **27.5 - 28.5 GHz** to **1.3 - 2.3 GHz (Fc=1800 MHz)** with a local oscillator at **26.2 GHz**. Front panel LEDs provide indication of DC Power, External 10 MHz, and PLL Alarm. The gain is **+30 dB**. Connectors are **2.92 mm** female for the RF input and BNC female for the RF output (designated L-Band) and external reference input and reference output. A three-way switch controls which 10 MHz reference is being used. In the INT position, the internal reference is used, in the EXT position, the external reference is used, and in the AUTO position, the internal reference is used unless a +3 dBm ± 3 dB, 10MHz reference signal is connected to the external reference input. It is powered by a 100-240 ± 10% VAC power supply, and in a 1 3/4" X 19" X 14" rack mount chassis.



**Front and Rear Panels**

### EQUIPMENT SPECIFICATIONS

#### Input Characteristics (RF)

Impedance/Return Loss	50Ω/14 dB
Frequency	<b>27.5 to 28.5 GHz</b>
Noise Figure, Max.	12 dB max gain
Level	<b>-50 to -30 dBm</b>
1dB Compression	<b>-20 dBm</b>

#### Output Characteristics (designated L-Band)

Impedance/Return Loss	50Ω/14 dB
Frequency	<b>1.3 to 2.3 GHz</b>
Level	-20 to 0 dBm
1dB Compression	+10 dBm

#### Channel Characteristics

Gain	<b>+30 dB ±2 dB at Fc</b>
Image Rejection	> 60 dB, min
Spurious, In Band	SIGNAL RELATED <-60 dBC in band, 0 dBm out; SIGNAL INDEPENDENT, <-60 dBm
Spurious, Out of Band	<b>&lt;-50 dBm (0.5-1.3 GHz and 2.3-3.3 GHz Out)</b>
Intermodulation	<-55 dBC for two carriers each at -10 dBm out
Frequency Response	<b>±2.0 dB, 1.3-2.3 GHz</b> out; ± 0.5 dB, 40 MHz BW
Frequency Sense	Non-inverting

#### LO Characteristics

LO Frequency	<b>26.2 GHz</b>
Frequency Accuracy	± 0.01 ppm max over temp internal reference; ext. ref. input

Phase Noise @ F (Hz) >	100	1K	10K	100K	1M
dBC/Hz	-70	-75	-80	-90	-110

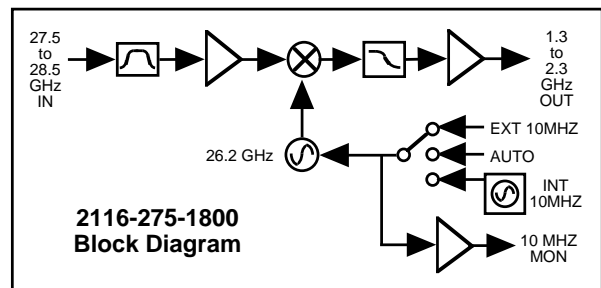
10 MHz level +3 dBm, ± 3 dB, 75 ohms, External In or Internal out

#### Controls, Indicators

INT/AUTO/EXT Switch	Selects internal or external 10 MHz (rear panel DP3T switch)
Ext 10 MHz	Yellow LED, indicates external 10 MHz reference selected
PLL Alarm	Red LED, External contact closure
Power	Green LED

#### Other

RF In Connector	<b>2.92 mm (female), 50Ω</b>
RF Out Connector	BNC (female), 50Ω (designated L-band)
10 MHz connectors	BNC (female), 75Ω connector; works with 50Ω or 75Ω
Alarm Connector	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, 25 watts maximum



**2116-275-1800  
Block Diagram**

#### Available Connector Options

297 - 50Ω 2.92 mm (RF), 75Ω BNC (L-BAND)
29N - 50Ω 2.92 mm (RF), 50Ω N-type (L-BAND)
29S - 50Ω 2.92 mm (RF), 50Ω 2.92 mm (L-BAND)

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