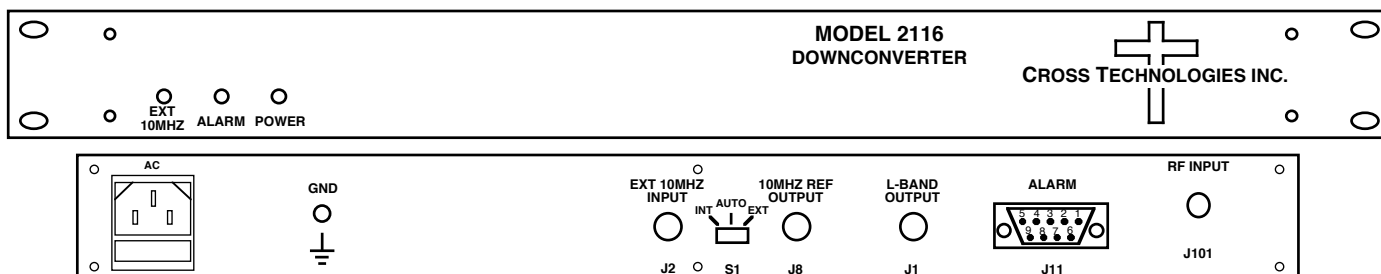


## 2116-300-1600 Block Downconverter, 30.0 - 31.0 GHz to 1100 - 2100 MHz

The 2116-300-1600 Downconverter converts **30.0 - 31.0 GHz** to **1100 - 2100 MHz (Fc=1600 MHz)** with a local oscillator at **28.9 GHz**. Front panel LEDs provide indication of DC Power, External 10 MHz, and PLL Alarm. The gain is **+20 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 **30.0 to 31.0 GHz**  
 Noise Figure, Max. 12 dB max gain  
 Level **-45 to -25 dBm**  
 1dB Compression **-15 dBm**

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

Impedance/Return Loss 50Ω/14 dB  
 Frequency **1100 to 2100 MHz**  
 Level **-25 to -5 dBm**  
 1dB Compression **+5 dBm**

#### Channel Characteristics

Gain **+20 dB ±2 dB at Fc**  
 Image Rejection > 55 dB, min  
 Spurious, In Band SIGNAL RELATED <-55 dBC in band, -5 dBm out; SIGNAL INDEPENDENT, <-60 dBC  
 Spurious, Out of Band **<-50 dBm (0.5-1.1 GHz and 2.1-3.3 GHz Out)**  
 Intermodulation <-55 dBC for two carriers at Fc ± 2MHz, each at -10 dBm out  
 Frequency Response **±2.0 dB, 1100-2100 MHz out; ± 0.5 dB, 40 MHz BW**  
 Frequency Sense Non-inverting

#### LO Characteristics

LO Frequency **28.9 GHz**  
 Frequency Accuracy ± 0.01 ppm max over temp internal reference; ext. ref. input

Phase Noise @ F (Hz) >	100	1K	10K	100K	1M
dBc/Hz	-60	-70	-80	-90	-110

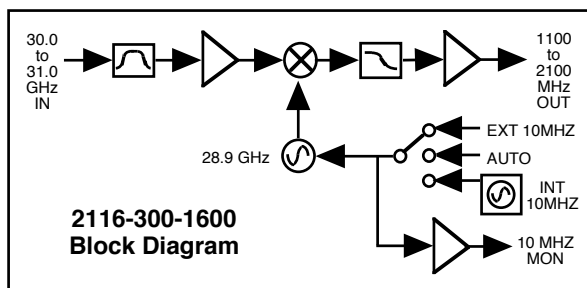
10 MHz level +3 dBm, ± 3 dB, 75 ohms, External In or Internal out

#### 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 **2.92 mm (female), 50Ω**  
 RF Out Connector BNC (female), 50Ω (designated L-band)  
 10 MHz connectors BNC (female), 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



**2116-300-1600 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 SMA (L-BAND)

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