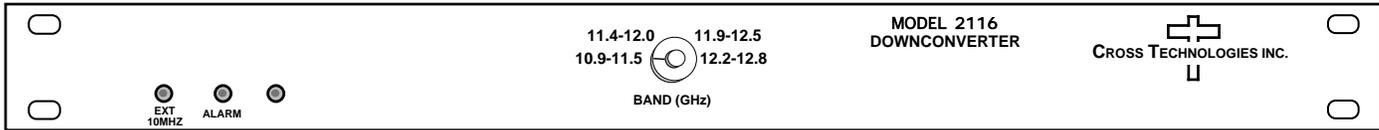
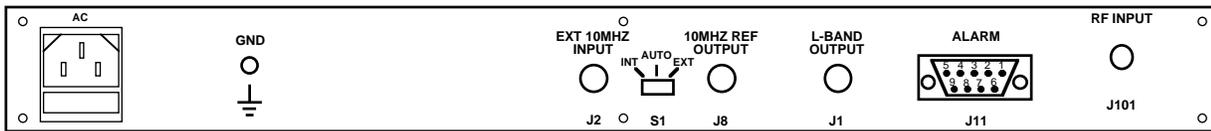


2116-41-109# Block Downconverter, 10.9-12.8 GHz to 0.15-0.75 GHz, 4 Bands

The 2116-41-109# Downconverter, 4 Bands converts **10.9 - 12.8 GHz to 0.15 - 0.75 GHz** with dual conversion and a 4 band switchable local oscillator. Front panel LEDs provide indication of DC Power, External 10 MHz, and PLL Alarm. The gain is **0 ±2 dB**. Connectors are SMA female for the RF and BNC female for the 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 (**design goal**), 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 mounted in a 1 3/4" X 19" X 14" rack mount chassis.



(SHOWN WITH CUSTOM SP4T BAND SWITCH)



Front and Rear Panels

EQUIPMENT SPECIFICATIONS

Input Characteristics (RF)

Impedance/Return Loss	50Ω/14 dB
Frequency	10.9 - 12.8 GHz (in 4 Bands)
Noise Figure, Max.	25 dB
Level	-20 to -10 dBm
Input 1 dB compression	0 dBm

Output Characteristics

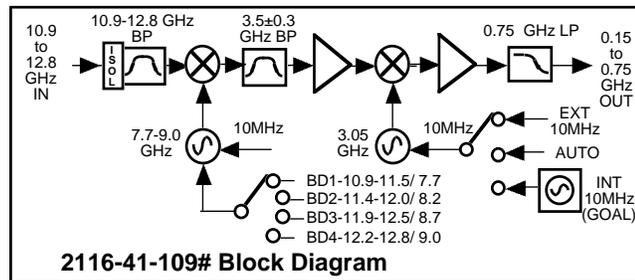
Impedance/Return Loss	50Ω/14 dB
Frequency	0.15 to 0.75 GHz, 4 bands
Level	-20 to -10 dBm
1dB Compression	0 dBm

Channel Characteristics

Gain	0 ±2 dB at Fc
Image Rejection	> 30 dB, 0.15-0.40 GHz out; > 40 dB, 0.41-0.75 GHz out;
Spurious, In Band	<-40 dBc in band, -10 dBm out, 10.9 -12.8 GHz in, 0.15-0.75 GHz out
Spurious, Out of Band	<-40 dBm, .05 - 0.149 and 0.751 to 1.3 GHz out
Intermodulation	<-50 dBc for two carriers each at -15 dBm out
Frequency Response	±1.5 dB, 0.15-0.75 GHz out; ± 0.5 dB, 40 MHz BW
Frequency Sense	Non-inverting

LO Characteristics

LO Frequency	Varies with bands, dual conversion
Frequency Accuracy	ext. ref. input; ± 1 ppm max over temp internal reference; design goal
10 MHz level In/Out	+3 dBm ± 3 dB



Phase Noise @ F (Hz) >	100	1K	10K	100K	1M
dBC/Hz	-60	-70	-80	-95	-105

Controls, Indicators

Band Select Switch	Rotary switch Selects Band 1-4 (front panel SP4T switch)
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 Connector	SMA (female), standard
IF Connector	BNC (female), 50Ω, standard
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

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