## CROSS TECHNOLOGIES, INC.

## **DATA SHEET**

**REV\_A** 1/20/14

## 2115-21-109# Block Upconverter, 0.95-2.05 to 10.9-11.8 or 11.7-12.8 GHz, 2 Bands

The 2115-21-109# Block Upconverter, Dual Band converts 0.95 - 2.05 GHz to 10.9 - 11.8 or 11.7-12.8 GHz with a switchable filter and switchable local oscillator at 9.95 and 10.75 GHz. Front panel LEDs provide indication of DC Power, External 10 MHz, and PLL Alarm. The L-band to RF gain is +10 ±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, the internal reference (design goal) 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. The 2115 is powered by a 100-240 ± 10% VAC power supply, and mounted in a 1 3/4" X 19" X 14" rack mount chassis.

			10.	9-11.8	11.7-12.8	MODEL 2115 UPCONVERTER	
EXT ALARM POWER				BAND (GHz)			L O
(SHOWN WITH CUSTOM SP2T BAND SWITCH)							
O AC O RFOUTPUT O GND EXT 10MHZ REF L-BAND ALARM							
	O					L-BAND ALA T INPUT	
	Ŧ			J2	° \$1 J8		<u>J101</u> J101 0
Front and Rear Panels							
EQUIPMENT SPECIFICATIONS*							
Input Characteristics							
Impedance/Return Loss	50Ω/14 dB						0.9 to 11.8 BP PWR COMB
Frequency	0.95 to 2.05 GHz				. 220	GHz LP N	
Noise Figure, Max.	20 dB max gain			0.9	<sup>95</sup> . 📐 I		
Input Level range	-30 to -20 dBm -10 dBm			to 2.0			
Input 1 dB compression	-10 c	IBm		GH			
Output Characteristics						.95 r 10.75	11.7 to 12.8 BP
Impedance/Return Loss		2/14 dB			G	Hz	
Frequency	10.9 - 11.8 or 11.7-12.8 GHz			GHZ	1- 10.9-11.8	Q <b>A</b>	
Output Level Range	-20 to -10 dBm				2- 11.7-12.8		
Output 1 dB compression	+0 d	Bm			GHz OUT		verter Block <u>Diagram</u>
Channel Characteristics	40		-				<u> </u>
Gain	+10 ±2 dB at Fc						
Image Rejection	> 60 dB, min						
Spurious, Inband	<-50 dBC in band, -10 dBm out, 10.9 - 11.8 and to 11.7-12.8 GHz						
Spurious, Out of band	<-50 dBm, 9.9 - 10.89 and 12.81 to 13.8 GHz out						
Intermodulation	<-50 dBC for two carriers each at -15 dBm out						
Frequency Response	±2 dB, 10.9 - 11.8 or 11.7-12.8 GHz out; ± 0.5 dB, 40 MHz BW						
Frequency Sense	Non-inverting						
LO Characteristics							
LO Frequency	9.95 or 10.75 GHz, switchable with front panel switch						
Frequency Accuracy	ext. ref. input; ± 1 ppm max over temp internal reference; design goal						
10 MHz level	+3 dBm, ± 3 dB, 75 ohms, External In or Internal out						
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 or 2 (front panel SP2T switch)						
Ext 10 MHz	Yellow LED, indicates external 10 MHz reference selected (rear panel DPDT switch)						
PLL Alarm Power	Red LED, External contact closure Green LED						
Other	Gree						
RF Connector	SMA (female), $50\Omega$						
L-Band Connector	BNC (female), $50\Omega$						
10 MHz connectors	BNC (female), 75 $\Omega$ Connector; Works for 50 $\Omega$ or 75 $\Omega$						
Alarm Connector	DB9 - NO or NC contact closure on Alarm						
Size	19 inch Standard Chassis 1.75" high X 14.0" deep						
Power					25 watts ma	IX.	
*+10 to +40 degrees C; Specifi	cations s	ubject to ch	ange withou	ut notice.			