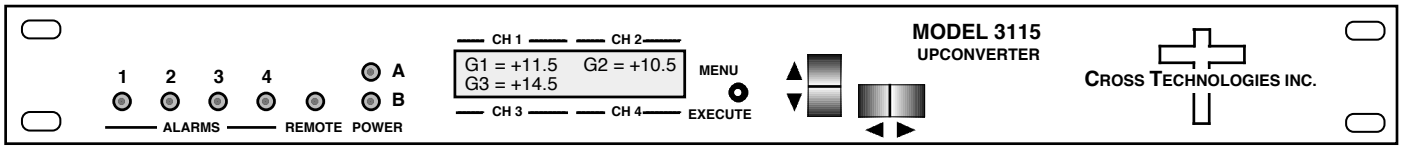
CROSS TECHNOLOGIES, INC.

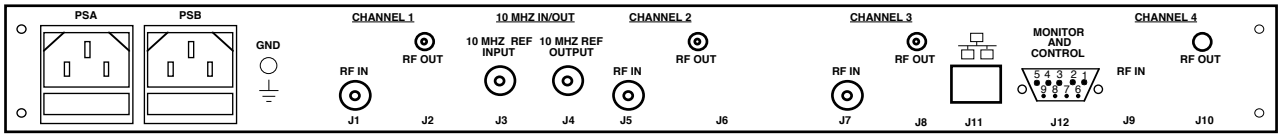
DATA SHEET

REV. B 10/29/20

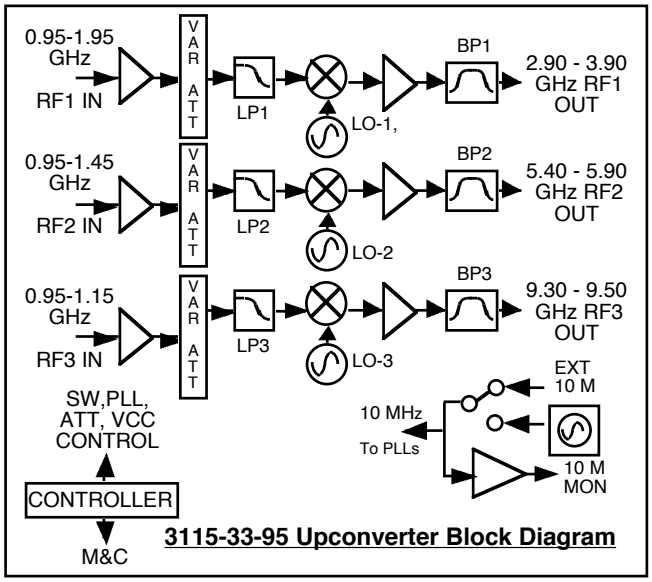
3115-33-95 Block Upconverter, 3 Channel

The 3115-33-95 Block Upconverter, 3 Channel converts 0.95 - 1.95 GHz, maximum range, to three different RF bands (See Channel Chart) with **high side LOs (inverted spectrums)**. The L-band to RF gain is +15 dB, maximum. Connectors are SMA female for the RF OUT and BNC female for the L-band input for all three channels and external reference input and selected reference output. Front panel LEDs indicate Remote Operation, DC Power, and PLL Alarm. Gain and internal/external/Auto reference selection are controlled by front panel switches or remote M&C (via the RS-232C/485 connector or optional Ethernet) and shown on the LCD Display. In AUTO, the 10 MHz reference stays in external if the external level is in the +3 ±3 dBm range. It is powered by a 100-240 ± 10% VAC power supply, and in a 1RU rack mount chassis, 1.75" H X 19.0" W X **16.0**" deep.





Front and Rear Panel (shown with Ethernet and R options)



3115-33-95 Upconverter Block Diagram

EQUIPMENT SPECIFICATIONS*

Input Characteristics

Impedance/Return Loss	50Ω/14 dB
Frequency (GHz)	**0.95 - 1.95 GHz (See Channel Chart)**
Noise Figure, Max.	**20 dB at max. gain (G_{max})**
Input Level Range	**-30 to -10 dBm**
Non-damage input	**+10 dBm at max. gain**

Output Characteristics

Impedance/Return Loss	50 Ω /14 dB
Frequency (GHz)	**See Channel Chart**
Output Level Range	**-15 to 0 dBm**
Output 1 dB Compr.	**+10 dBm, min. at max gain**

Channel Characteristics

Gain **at F_C**	+15 ±3 dB max., (+15 to 0 dB variable in **0.5±0.5 dB** steps)
Spurious, Inband	**> 50 dBc sig dep. or sig indep.. (G_{max})**
Spurious, Out of band	**<-50 dBm, signal independent; fc ± 2 GHz**
Intermod **2 Tone**	**> 50 dBc, each at Fc±2 MHz, -5 dBm** out**, G_{max}**
Frequency Response	**±1.5 dB**, over RF band; ± 0.5 dB, 40 MHz BW
Frequency Sense	**Inverted Spectrum**

LO Characteristics

LO Frequency	Channel Specific, **See Channel Chart**
Frequency Accuracy	**± 0.01** ppm max over temp internal reference; ext. ref. input

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

10 MHz Level (In or Out) **3 dBm, ± 3 dB, 50 ohms; Works with 75Ω**

Controls, Indicators

Gain, 10M Freq.	**LCD; PB switches or via M&C, (Ethernet optional)**
Remote, Power	**Yellow LED, Green LED**
PLL Alarm	**Red LED, External contact closure**

Other

RF In, RF Out,. Conn.	**BNC 50Ω, SMA (female)**
10 MHz connectors	**BNC (female), 50 ohms; Works with 75Ω**
Monitor/Control Conn.	**RS232C/485, DB9, Female; Ethernet (Optional), RJ45**
Size	**1RU rack mount chassis, 1.75" H X 19.0" W X 16.0" deep**
Power	100-240 ±10% VAC, 47-63 Hz, **25** watts max

*** +10 to +40 degrees C Operating; -30 to +60 degrees C Non-operating; 95% relative humidity, non-condensing;**
Specifications subject to change without notice

Channel Chart - Frequencies, LOs

CHANNEL NO.	IN RANGE (GHz)	OUT RANGE (GHz)	LO* (GHz)
1	0.95-1.95	2.90-3.90	**4.85**
2	0.95-1.45	5.40-5.90	**6.85**
3	0.95-1.15	9.30-9.50	**10.45**
		*** BOLD = INVERTED**	

Options

R - Redundant Power Supply

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
W828 - W8 + W18 + W28

Connector Options

S7 - 50Ω SMA (RF), 75Ω BNC (L-BAND)
SS - 50Ω SMA (RF), 50Ω SMA (L-BAND)
Contact Cross for other options

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