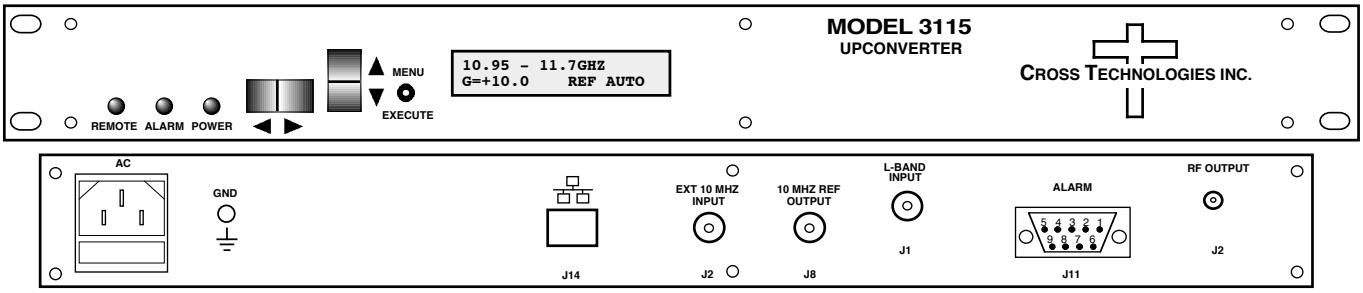
CROSS TECHNOLOGIES, INC.

DATA SHEET
REV_A
1/21/25

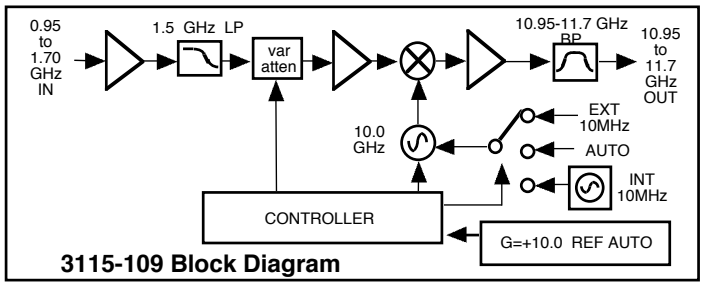
3115-109 Block Upconverter, 0.95 - 1.70 GHz to 10.95 - 11.7 GHz

The 3115-109 Upconverter converts 0.95 - 1.70 GHz to 10.95 - 11.7 GHz (non-inverted) with a 10.0 GHz local oscillator. The gain is **+30 dB** maximum and is adjustable in 0.5 ± 0.5 dB steps. Front panel LEDs provide indication of Remote operation, PLL Alarm and DC Power. Gain and internal/external/Auto reference frequency selection are controlled by front panel switches or remote selection (via RS-232C/485, standard; Ethernet Optional) and are viewable on the LCD Display. Connectors are SMA female for the RF and BNC female for the L-Band and external reference input and reference output. In AUTO, the 10 MHz reference stays in external if the external level is **+3 dBm, ±3 dB**. The 3115 is powered by a 100-240 ± 10% VAC power supply, and housed in a 1 3/4" X 19" X 14" rack mount chassis.



EQUIPMENT SPECIFICATIONS*

Front and Rear Panel (Shown with optional Ethernet)



3115-109 Block Diagram

Input Characteristics

Impedance/Return Loss	50Ω/14 dB
Frequency	0.95 to 1.70 GHz
Noise Figure, Max.	20 dB max gain
Input Level range	-40 to **-25 dBm**

Output Characteristics

Impedance/Return Loss	50Ω /14 dB
Frequency	10.95 to 11.7 GHz
Output Level Range	-20 to -5 dBm
Output 1 dB compression	+5 dBm at max. gain

Channel Characteristics

Gain, max; adjustment	**+30 dB ±2 dB,** max. gain **at Fc**; **30 dB** adjustment in **0.5 ±0.5 dB** Steps
Image Rejection	> 60 dB, min
Spurious, In Band	SIGNAL RELATED<-60 dBc in band, -5 dBm out; SIGNAL INDEPENDENT,<-60 dBm
Spurious, Out of Band	**<-50 dBm, 10.0 to 10.94 and 11.71 to 12.7 GHz**
Intermodulation	<-50 dBc for two carriers each at -10 dBm out, GAIN = **+30 dB**
Frequency Response	±1.5 dB, 10.95 -11.7 GHz out; ± 0.5 dB, 40 MHz BW
Frequency Sense	Non-inverting

LO Characteristics

LO Frequency	**10.0 GHz**
Frequency Accuracy	± 0.01 ppm max over temp internal reference; ext. ref. input
10 MHz In/Out Level	3 dBm, ± 3 dB, w/ Auto-detect

Phase Noise @ F (Hz) >	***10***	***100***	***1K***	***10K***	***100K***	***1M***
dBc/Hz	*-55*	*-70*	*-80*	*-85*	*-100*	*-110*

Controls, Indicators

Gain; Ext Ref Selection	direct readout LCD; pushbutton switches or remote
Pwr; Alarm; Rem; Mute	Green LED; Red LED; Yellow LED; Yellow LED
Remote	RS232C/RS485/422, 9600 baud (Ethernet Optional)

Other

RF Connector	SMA (female), 50Ω
L-Band Connector	BNC (female), 50Ω
10 MHz Connectors	BNC (female)**, 75Ω, works with 50 or 75 ohms**
Alarm/Remote Conn.	DB9 - NO or NC contact closure on Alarm
Size	19 inch standard chassis 1.75" high X 10.95" deep
Power	100-240 ± 10% VAC, 47 - 63 Hz, 45 watts max.

Available Options

W31 0 to +50 degrees C operation

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

Available Connector Options

N - 50Ω N-type (RF), 75Ω BNC (L-BAND)
NF - 50Ω N-type (RF), 75Ω F-type (L-BAND)
NN - 50Ω N-type (RF), 50Ω N-type (L-BAND)
S7 - 50Ω SMA (RF), 75Ω BNC (L-BAND)
SF- 50Ω SMA (RF), 75Ω F-type (L-BAND)
SN - 50Ω SMA (RF), 50Ω N-type (L-BAND)
SS - 50Ω SMA (RF), 50Ω SMA (L-BAND)

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

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