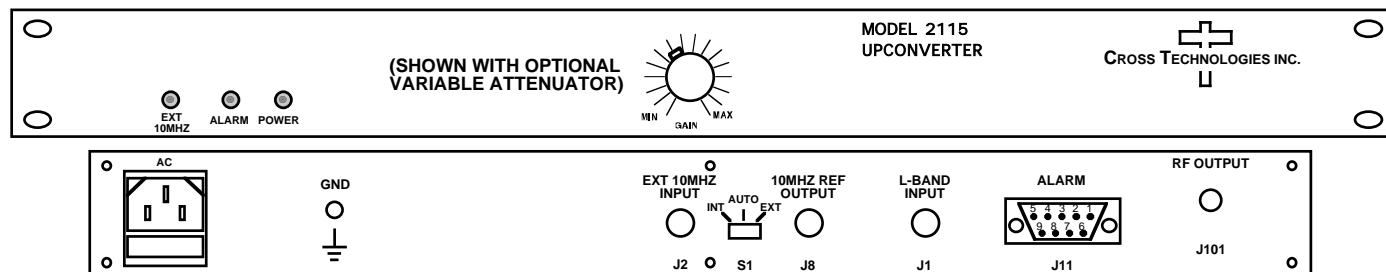


## 2115-137 Block Upconverter, 13.75 - 14.5 GHz

The 2115-137 Block Upconverter converts 0.95 - 1.7 GHz to 13.75 - 14.5 GHz with a local oscillator at 12.8 GHz. Front panel LEDs provide indication of DC Power, External 10 MHz, and PLL Alarm. The L-band to RF gain is +20 dB (+20 to +5 dB continuously variable with Option VA). 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 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.



**Front and Rear Panels**

### EQUIPMENT SPECIFICATIONS\*

#### Input Characteristics

Impedance/Return Loss	50Ω/14 dB
Frequency	0.95 to 1.7 GHz
Noise Figure, Max.	20 dB max gain
Level range	-40 to -25 dBm
1 dB compression	-15 dBm

#### Output Characteristics

Impedance/Return Loss	50 Ω /14 dB
Frequency	13.75 to 14.5 GHz
Level Range	-20 to -5 dBm
1 dB compression	+5 dBm

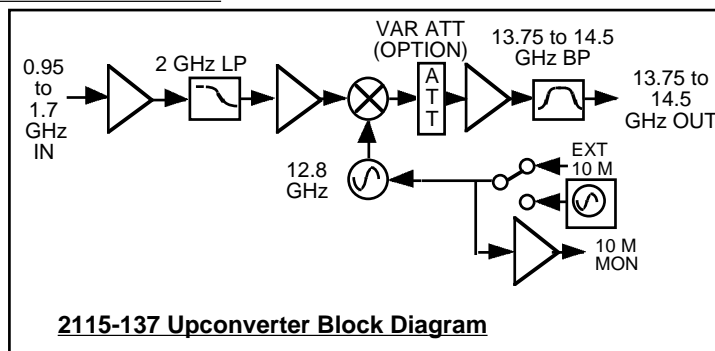
#### Channel Characteristics

Gain	+20 ±1 dB, (+20 to +5 dB continuously variable with <b>-VA</b> Variable Attenuator Option)
Image Rejection	> 60 dB, min
Spurious, Inband	SIGNAL RELATED <-60 dBC in band, -5 dBm out; SIGNAL INDEPENDENT, <-60 dBm
Spurious, Out of band	<-50 dBm
Intermodulation	<-55 dBC for two carriers each at -10 dBm out
Frequency Response	±1 dB, 13.75 - 14.5 GHz out; ± 0.5 dB, 40 MHz BW
Frequency Sense	Non-inverting

#### LO Characteristics

LO Frequency	12.8 GHz
Frequency Accuracy	± 0.01 ppm max over temp internal reference; ext. reference input standard
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	-70	-80	-85	-100	-110



**2115-137 Upconverter Block Diagram**

#### Controls, Indicators

Attenuator Option -VA	+20 to +5 dB continuously variable gain via front panel control.
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), 50Ω, standard
L-Band 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 max.

#### Available Options

VA, +20 to +5 dB continuously variable gain
Connector/Impedance
M - 50Ω N-type (RF), 50Ω BNC (L-BAND)
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 to +40 degrees C; Specifications subject to change without notice