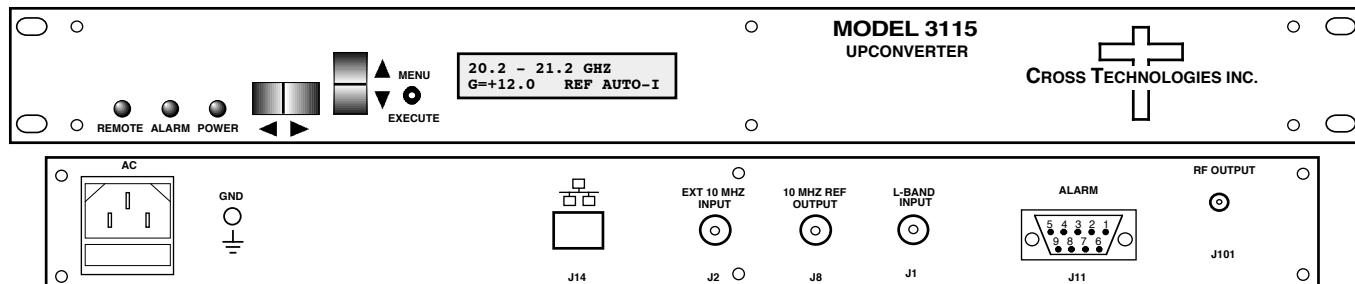


3115-202#-1700 Block Upconverter, 0.7 - 1.7 GHz to 20.2 - 21.2 GHz

The **3115-202#-1700 Block Upconverter** converts **0.7 - 1.7 GHz** to **20.2 - 21.2 GHz** (non-inverted) with a **19.50 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 Super 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**. It is powered by a 100-240 $\pm 10\%$ VAC power supply, and in a 1 3/4" X 19" X 14" rack mount chassis.



Front Panel and Rear Panel (shown with optional Ethernet)

EQUIPMENT SPECIFICATIONS*

Input Characteristics (L-Band)

Impedance/Return Loss	50 Ω /14 dB
Frequency	0.70 to 1.70 GHz
Noise Figure, Max.	20 dB at max gain, G_{max}
Input Level range	-40 to -20 dBm

Output Characteristics (RF)

Impedance/Return Loss	50 Ω /14 dB
Frequency	20.2 to 21.2 GHz
Output Level Range	-20 to 0 dBm
Output 1 dB compression	+10 dBm at G_{max}
Mute	>60 dB @ 0 dBm output (On alarm and via M&C; shown on LCD display)

Channel Characteristics

Gain, max; adjustment	+30 dB ± 2 dB, G_{max}, at F_c; 0 to +30 dB adjustment in 0.5 ± 0.5 dB Steps
Image Rejection	> 60 dB, min
Spurious, In Band	SIGNAL RELATED <-50 dBc in band, 0 dBm out; SIGNAL INDEPENDENT, <-60 dBm, at G_{max}
Spurious, Out of Band	<-50 dBm, 15.0 to 20.19 and 21.21 to 25.0 GHz, at G_{max}
Intermodulation	<-50 dBc for two carriers at F _c ± 2 MHz each at -5 dBm out, at G_{max}
Frequency Response	± 1.5 dB, 20.2 - 21.2 GHz out; ± 0.5 dB, 40 MHz BW
Frequency Sense	Non-inverting

LO Characteristics

LO Frequency	19.50 GHz, fixed LO
Frequency Accuracy	± 0.01 ppm max over temp internal ref.; ext. ref. input
10 MHz In/Out Level	3 dBm, ± 3 dB, w/ Auto-detect

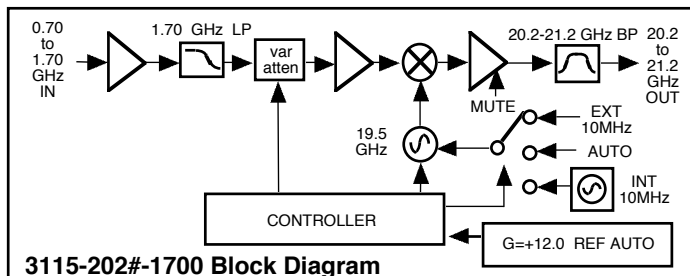
Phase Noise @ F (Hz) >	10	100	1K	10K	100K	1M
dBc/Hz	-55	-70	-80	-85	-95	-105

Controls, Indicators

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

Other

RF/L-Band Connector	Super SMA (female), 50Ω / 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 11.7" deep
Power	100-240 $\pm 10\%$ VAC, 47 - 63 Hz, 30 watts max.



3115-202#-1700 Block Diagram

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 - Ethernet; W8, W18, W28

Available Connector Options

267 - 50 Ω SuperSMA (RF), 75 Ω BNC (L-BAND)
26N - 50 Ω SuperSMA (RF), 50 Ω N-type (L-BAND)
26S - 50 Ω SuperSMA (RF), 50 Ω SMA (L-BAND)

Contact Cross for other options

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