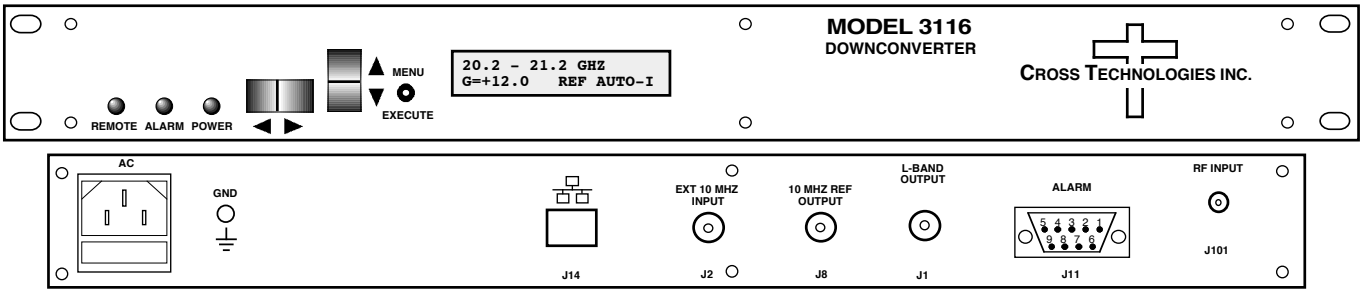
CROSS TECHNOLOGIES, INC.

DATA SHEET
REV. A
9/27/21

3116-202#-1700 Block Downconverter, 20.2 - 21.2 GHz to 0.70 - 1.70 GHz

The **3116-202#-1700 Block Downconverter** converts **20.2 - 21.2 GHz to 0.70 - 1.70 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 ± 10% VAC power supply, and in a 1 3/4" X 19 " X 11.7" rack mount chassis.



Front Panel and Rear Panel (shown with optional Ethernet)

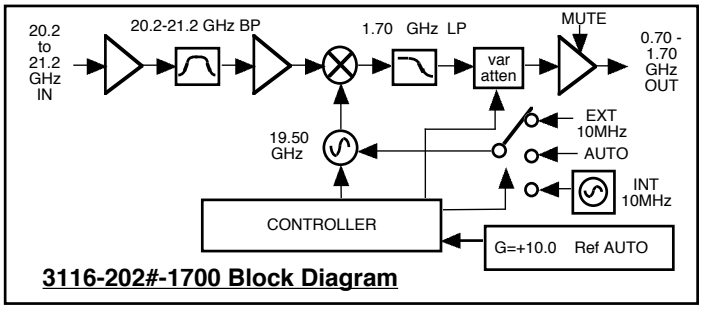
EQUIPMENT SPECIFICATIONS*

Input Characteristics (RF)

Impedance/Return Loss	50Ω/14 dB
Frequency	20.2 to 21.2 GHz
Noise Figure, Max.	12 dB at max gain**, Gmax**
Input Level range	**-50 to -30 dBm**
Input 1 dB compression	**-20 dBm** at min gain**, Gmin**

Output Characteristics (L-Band)

Impedance/Return Loss	50Ω /14 dB
Frequency	**0.70 - 1.70 GHz**
Output Level Range	-20 to 0 dBm
Output 1 dB compression	+10 dBm **at Gmax**
Mute	**>60 dB @ 0 dBm output (On alarm and via M&C; shown on LCD display)**



3116-202#-1700 Block Diagram

Channel Characteristics

Gain, max; adjustment	+30 dB ±2 dB, **Gmax, at Fc**; **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**, Gmax**
Spurious, Out of Band	<-50 dBm, **0.3-0.69 GHz and 1.71- 2.5 GHz, at Gmax**
Intermodulation	<-50 dBm for two carriers at Fc ±2 MHz each at **-5 dBm** out, **at Gmax**
Frequency Response	**±1.5 dB, 0.70 - 1.70 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***
dBm	*-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 ± 10% VAC, 47 - 63 Hz, **30** 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 - Ethernet; W8,W18,W28

Available Connector Options

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

Contact Cross for other options

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

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