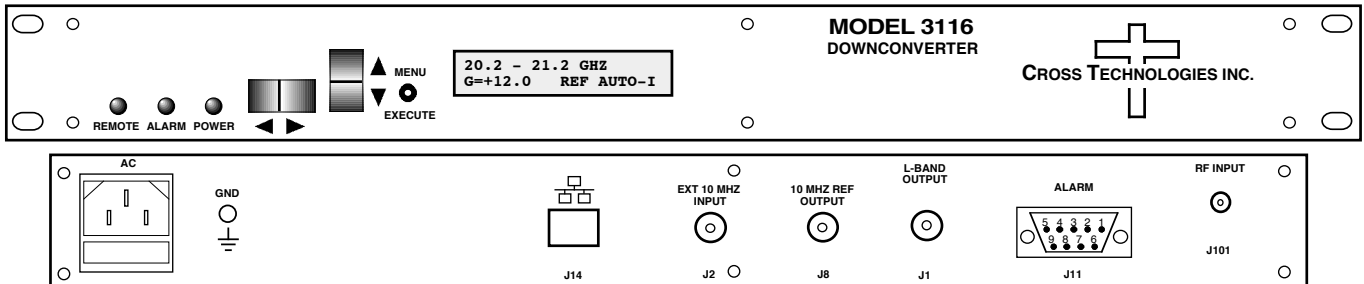


**3116-202 Block Downconverter, 20.2 - 21.2 GHz to 0.95 - 1.95 GHz**

The **3116-202 Block Downconverter** converts **20.2 - 21.2 GHz** to **0.95 - 1.95 GHz** (non-inverted) with a **19.25 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 12" 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 **0.95 - 1.95 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)

**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, 0.3-0.94 GHz and 1.96- 3.0 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, 0.95 - 1.95 GHz** out; **± 0.5 dB, 40 MHz BW**
- Frequency Sense Non-inverting

**LO Characteristics**

- LO Frequency **19.25 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**

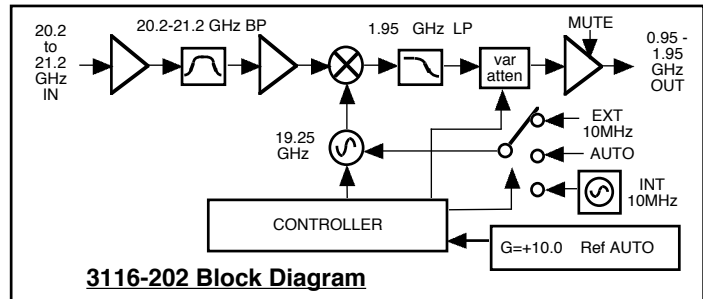
Phase Noise @ F (Hz) >	10	100	1K	10K	100K	1M
dBm	-55	-70	-80	-85	-95	-105

**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 12" deep
- Power 100-240 ± 10% VAC, 47 - 63 Hz, **30 watts** max.



**3116-202 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** 50Ω Super SMA (RF), 75Ω BNC (L-BAND)
- 26N** 50Ω Super SMA (RF), 50Ω N-type (L-BAND)
- 26S** 50Ω Super SMA (RF), 50Ω SMA (L-BAND)

**Contact Cross for other options**

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