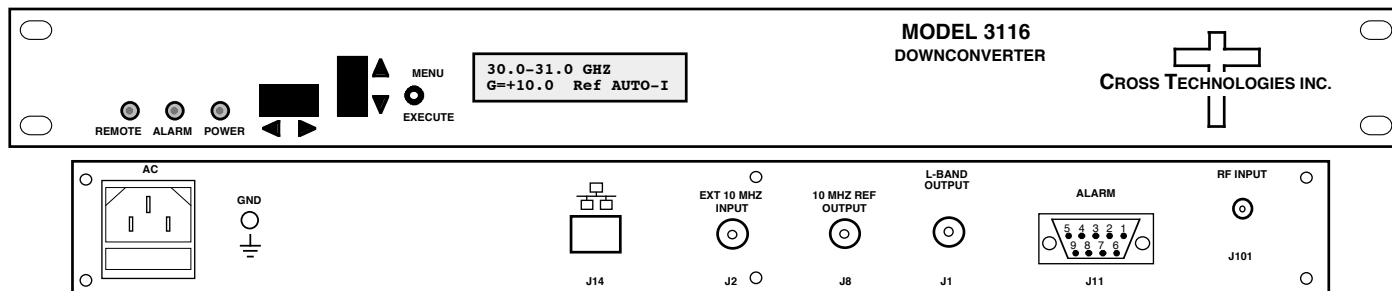


3116-300 Block Downconverter, 30.0 - 31.0 GHz to 0.95 - 1.95 GHz

The **3116-300 Block Downconverter** converts **30.0 - 31.0 GHz** to **0.95 - 1.95 GHz** with low phase noise and flat frequency response. Frequency translation is via a **29.05 GHz** local oscillator. The gain is $+35 \pm 2$ 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, standard; Ethernet Optional) and are viewable on the LCD Display. Connectors are **2.92 mm** 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 3116 is powered by a $100-240 \pm 10\%$ VAC power supply, and housed 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 (RF)

Impedance/Return Loss	50Ω/14 dB
Frequency	30.0 to 31.0 GHz
Noise Figure, Max.	12 dB at max gain
Input Level range	-55 to -35 dBm
Input 1 dB compression	-25 dBm

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 max. gain

Channel Characteristics

Gain, max; adjustment	+35 dB ± 2 dB, max. gain; +5 to +35 dB adjustment range in 0.5 ± 0.5 dB Steps at Fc
Image Rejection	> 60 dB, min
Spurious, In Band	SIGNAL RELATED <-55 dBC in band, 0 dBm out; SIGNAL INDEPENDENT, <-60 dBm
Spurious, Out of Band	<-50 dBm, 0.5-0.94 GHz and 1.96- 3.0 GHz, at max. gain
Intermodulation	<-50 dBC for two carriers spaced 4 MHz, each at -10 dBm out
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	29.05 GHz , fixed LO
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

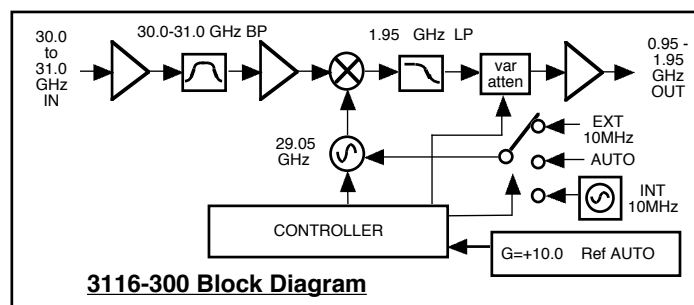
Phase Noise @ F (Hz) >	100	1K	10K	100K	1M
dBC/Hz	-65	-70	-80	-90	-100

Controls, Indicators

Freq., Gain, Ext Ref Sel.	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/L-Band Connector	2.92 mm (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 14.0" deep
Power	100-240 $\pm 10\%$ VAC, 47 - 63 Hz, 30 watts max.



Available Options

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**

Extended Temperature Option

- W31 - 0°C to 50°C

Connector Options

- 297 - 2.92 mm (RF), 75Ω BNC (L-BAND)
- 29N - 2.92 mm (RF), 50Ω N-type (L-BAND)
- 29S - 2.92 mm (RF), 50Ω SMA (L-BAND)

Contact Cross for other options

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