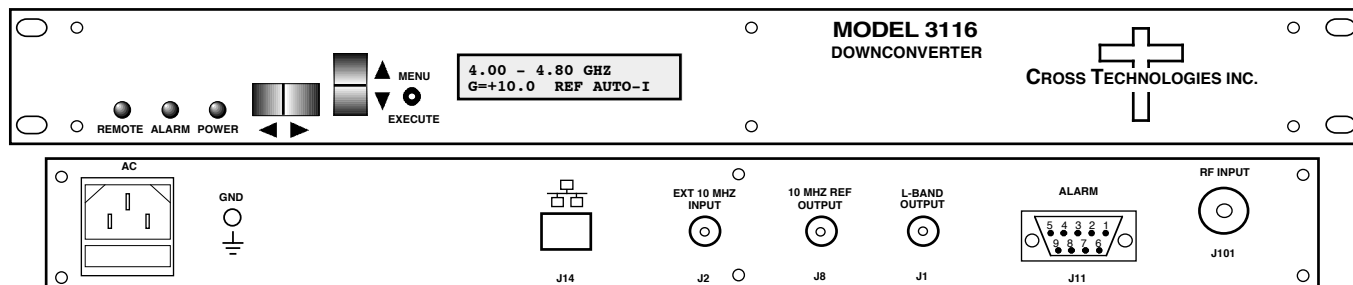


3116-4048 Block Downconverter, 4.00 - 4.80 GHz to 0.95 - 1.75 GHz

The 3116-4048 Downconverter converts 4.00 - 4.80 GHz to 0.95 - 1.75 GHz (inverted) with a 5.750 GHz local oscillator. The gain is +35 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 Type N 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.



EQUIPMENT SPECIFICATIONS*

Input Characteristics (RF)

| | |
|------------------------|--------------------------------|
| Impedance/Return Loss | 50Ω/14 dB |
| Frequency | 4.00 to 4.80 GHz |
| Noise Figure, Max. | 12 dB at max gain (Gmax), Fc |
| Input Level range | -55 to -35 dBm |
| Input 1 dB compression | -25 dBm at min gain (Gmin), Fc |

Output Characteristics (L-Band)

| | |
|-------------------------|---------------------|
| Impedance/Return Loss | 50Ω / 14 dB |
| Frequency | 0.95 to 1.75 GHz |
| Output Level Range | -20 to 0 dBm, at Fc |
| Output 1 dB compression | +10 dBm at Gmax, Fc |

Channel Characteristics

| | |
|-----------------------|---|
| Gain, max; adjustment | +35 dB ± 2 dB, Gmax, at Fc; 30 dB adjustment in 0.5 ± 0.5 dB Steps |
| Image Rejection | > 60 dB, min |
| Spurious, In Band | <-55 dBc in band, 0 dBm out; (0.95-1.75 GHz Out), at Gmax |
| Spurious, Out of Band | <-50 dBm (0.5-0.95 GHz and 1.750-2.5 GHz Out), at Gmax |
| Intermodulation | <-55 dBc for two carriers spaced at $F_c \pm 2$ MHz, each at -10 dBm out, at Gmax |
| Frequency Response | ± 1.5 dB, 0.95 - 1.75 GHz out; ± 0.5 dB, 40 MHz BW |
| Frequency Sense | Inverting |

LO Characteristics

| | |
|---------------------|--|
| LO Frequency | 5.750 GHz |
| 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 |
|------------------------|-----|-----|-----|------|------|
| Standard dBc/Hz | -60 | -70 | -80 | -90 | -110 |

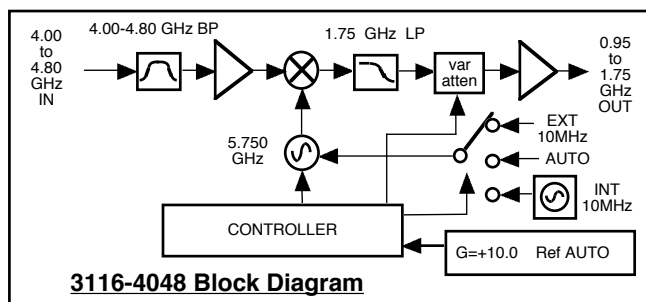
Controls, Indicators

| | |
|-------------------------|---|
| Gain; Ext Ref Selection | 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 Connector | Type N (female), 50Ω |
| L-Band Connector | 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. |

Front and Rear Panel (Shown with optional Ethernet)



Available Options

DREF 50Ω BNC Conn. for 10 MHz IN/OUT
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 - W8 +W18 +W28

Connector Options

N - 50Ω N-type (RF), 75Ω BNC (L-BAND)
NN - 50Ω N-type (RF), 50Ω N-type (L-BAND)
S7 - 50Ω SMA (RF), 75Ω BNC (L-BAND)
SN - 50Ω SMA (RF), 50Ω N-type (L-BAND)
SS - 50Ω SMA (RF), 50Ω SMA (L-BAND)

Contact Cross for other options

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