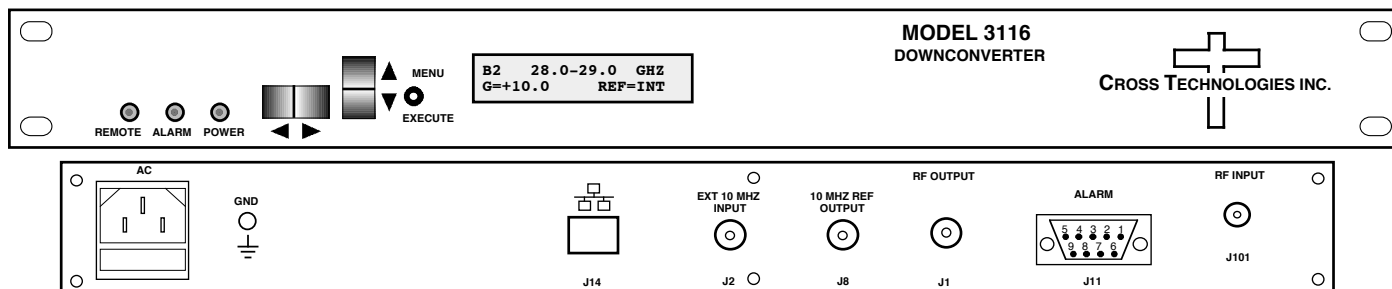


## 3116-41-310 Ka-band Block Downconverter, 4 Band, 27.5-31.0 to 0.95-1.95 GHz

The 3116-41-310 Ka-band Block Downconverter converts 27.5 - 31.0 GHz up to 0.95 - 1.95 GHz in four selectable fixed bands. The RF to L-band gain is +30 dB, adjustable in 0.5 ±0.5 dB steps. Front panel LEDs indicate Remote operation, PLL Alarm and DC Power. Band select, gain and internal/external/Auto reference frequency selection are controlled by front panel switches or remotely via RS 232C or RS485/422 (Ethernet Optional) and are viewable on the LCD Display. Connectors are 2.92mm 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 in the +2 to +8 dBm range. The 3116 is powered by a 100-240 ± 10% VAC power supply, and housed in a 1 3/4" X 19" X 17" rack mount chassis.



**Front and Rear Panel (shown with Ethernet option)**

### EQUIPMENT SPECIFICATIONS\*

#### Input Characteristics

Impedance/Ret. Loss 50Ω/14 dB  
 Frequency (GHz) BAND1 27.5 to 28.5  
 BAND2 28.0 to 29.0  
 BAND3 29.0 to 30.0  
 BAND4 30.0 to 31.0

Noise Figure, Max. 20 dB, **G<sub>max</sub>, F<sub>c</sub>**  
 Input Level range -50 to -30dBm, **F<sub>c</sub>**

#### Output Characteristics

Impedance/Ret. Loss 50Ω/14 dB  
 Frequency 0.95 to 1.95 GHz  
 Output Level Range -20 to 0 dBm, **F<sub>c</sub>**  
 Output 1 dB comp. +10 dBm, **G<sub>max</sub>, F<sub>c</sub>**

#### Channel Characteristics

Gain at **F<sub>c</sub>** +30 ±3 dB, (+30 to 0 dB variable in 0.5 ±0.5 dB steps), **F<sub>c</sub>**  
 Image Rejection > 60 dB, min  
 Spurious, Inband SIG. REL. <-50dB, -15 to 0dBm out; 2X<sub>Fo</sub> <-45dB; SIG. INDEP., <-60dBm; 95-1.95 GHz out, **G<sub>max</sub>**  
 Spurious, Out of band <-55 dBm, **signal independent; 0.5-2.45 GHz out**  
 Intermodulation <-50 dBC for two carriers at **F<sub>c</sub> ±2 MHz**, each at -10 dBm out, **Gain = +30 dB**  
 Frequency Response ±2 dB, over RF band; ± 0.5 dB, 40 MHz BW  
 Frequency Sense Non-inverting

#### LO Characteristics

LO Frequency Band Specific  
 Frequency Accuracy ± 0.05 ppm max over temp internal reference; ext. ref. input  
 10 MHz level In/Mon +2 to +8 dBm in; Monitor Output = input level ± 1.0 dB, 50 ohms

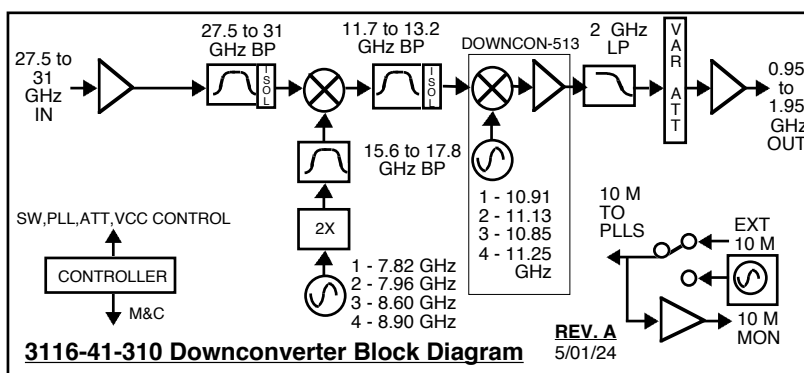
Phase Noise @ F (Hz) >	100	1K	10K	100K	1M
dBC/Hz	-65	-75	-80	-95	-105

#### Controls, Indicators

Band; Gain; 10M Ref Sel. Direct readout LCD; pushbutton switches or remote  
 Rem; Alarm; Mute; Pwr Yellow LED; Red LED; Yellow LED; Green LED  
 Remote RS232C/RS485/422, 9600 baud (Ethernet Optional)

#### Other

RF In Connector 2.92mm (40GHz) female, 50Ω  
 L-Band Connector BNC (female), 50Ω  
 10 MHz Connectors BNC (female), 50Ω/75Ω  
 Alarm/Remote Conn. DB9 - NO or NC contact closure on Alarm  
 Size 19 inch standard chassis 1.75" high X 17.0" deep  
 Power 100-240 ± 10% VAC, 47 - 63 Hz, 35 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**

##### Available Connector Options

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

\*+0 to +50 degrees C; Specifications subject to change without notice