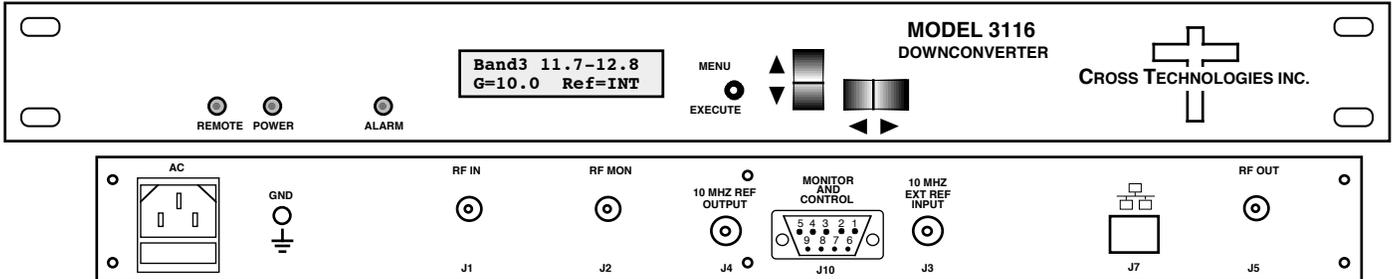


3116-31 Multi-Band Block Downconverter

The 3116-31 Block Downconverter converts one of three RF bands to 0.95 - 2.05 GHz (Band 1 to 0.95 - 1.75 GHz). The RF to L-band gain is +30 dB, maximum. **Connectors are SMA female for the L-band, RF and RF Monitor and BNC female for the external reference input and reference output.** Front panel LEDs provide indication of Remote Operation, DC Power, and PLL Alarm. Gain, band select, and internal/external/Auto reference selection are controlled by front panel switches or remote selection (Ethernet M&C or via the RS-232C/485 Monitor and Control connector) and are viewable on the LCD Display. 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 1RU rack mount chassis, 1.75" H X 19.0" W X 19.0" deep.



3116-31 FRONT AND REAR PANELS

EQUIPMENT SPECIFICATIONS*

Input Characteristics

Impedance/Return Loss 50Ω/14 dB
 Frequency (GHz) BAND 1 - 3.4 to 4.2
 BAND 2 - 10.7 to 11.8
 BAND 3 - 11.7 to 12.8
 Noise Figure, Max. 15 dB **at max. gain (G_{max})**
 Input Level Range -50 to -30 dBm
Non-damage input 0 dBm at max. gain

Output Characteristics

Impedance/Return Loss 50 Ω /14 dB
 Frequency (GHz) BAND 1 - 0.95 to 1.75
 BAND 2 - 0.95 to 2.05
 BAND 3 - 0.95 to 2.05
 Output Level Range -20 to 0 dBm
 Output 1 dB Compr. +10 dBm, **min. at max gain**

Channel Characteristics

Gain at F_c, R-L; RF Mon +30 ±3 dB maximum, (+30 to 0 dB variable in 0.5 ± 0.5 dB steps); RF Mon +10 dB of RF In, ±2 dB
 Input to Output Isolation > 45 dB, min; (at max gain and -30 dBm input)
 Image Rejection > 60 dB, min at max gain
 Spurious, Inband SIG. REL. <-50dBC, -15 to 0dBm out; 2XFO <-40dBC; SIG. INDEP. <-60dBm; 95-1.75 or 2.05 GHz out, G_{max} <-50 dBm, sig indep; <-50 dBm, LO; <-40 dBC sig rel; 0.5-0.95, F_{max}-3.05 GHz out; -15 to 0dBm out, G_{max}
 Spurious, Out of band <-50 dBC for two carriers at 4 MHz spacing, each at -5 dBm out, G_{max}
 Intermodulation <-50 dBC for two carriers at 4 MHz spacing, each at -5 dBm out, G_{max}
 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

Phase Noise @ F (Hz)	> 100	1K	10K	100K	1M
Specification dBC/Hz	-70	-78	-83	-100	-110

10 MHz level In/Mon Input=+2 to +8 dBm in; Monitor Output = Input Level ± 1.0 dB, 50 ohms

Controls, Indicators

Gain, Band, 10M Freq. **Direct readout LCD; pushbutton switches** or via Ethernet M&C or Monitor and Control Connector.
 PLL Alarm Red LED, External contact closure
Remote, Power, Alarm Yellow LED: Green LED: Red LED

Other

RF In, Out, Mon. Conn. **SMA (female), 50Ω**
 10 MHz connectors **BNC (female), 50 ohms; Works with 75Ω**
 Monitor/Control Conn. **RS232C/485, DB9, Female; Ethernet, RJ45, Female, w/Web Browser & SNMP User interfaces.**
 Size **1RU rack mount chassis, 1.75" H X 19.0" W X 19.0" deep**
 Power **100-240 ±10% VAC, 47-63 Hz, 25 watts max**

* +0 to +50 degrees C Operating; -30 to +60 degrees C Non-operating; 95% relative humidity, non-condensing; Specifications subject to change without notice

