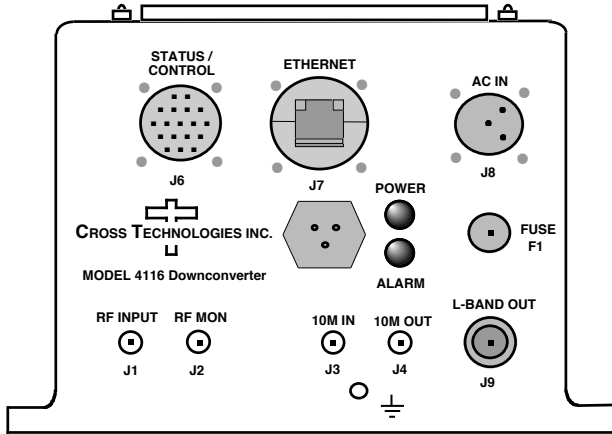


4116-200 Ka-band Block Downconverter, Weather Resistant**

The 4116-200 Ka-band Block Downconverter converts 17.7 - 21.2 GHz to 0.95 - 1.95 GHz in four selectable fixed bands. Front panel LEDs provide indication of DC Power and PLL Alarms. The L-band to RF gain is +30 dB. Connectors are **Super SMA** for RF In and RF Monitor, SMA for external reference input and output, and Type N (**all female**) for L-band out. Gain, band select, and internal 10 MHz frequency are controlled by the Ethernet M&C. **In AUTO, the 10 MHz reference stays in external if the external level is in the +2 to +8 dBm range.** The unit is powered by a 100-240 ±10% VAC power supply, and is mounted in a 8"W X 6"H X 16"D Weather Resistant* enclosure.



***Weather Resistant** enclosures are designed to be water resistant for installation in an outdoor enclosure/antenna hut OR mounted outdoors on an antenna assembly at their specified temperature ranges. They are designed to be located "out in the elements" (water, sleet, snow, etc.) but they are *not* designed to be "submerged under" water.

If an extended temperature range is required, there is an **Extended Temperature** option (**Option W21**; -30°C to +60°C) available at an additional cost. Contact Cross for quote.

EQUIPMENT SPECIFICATIONS*

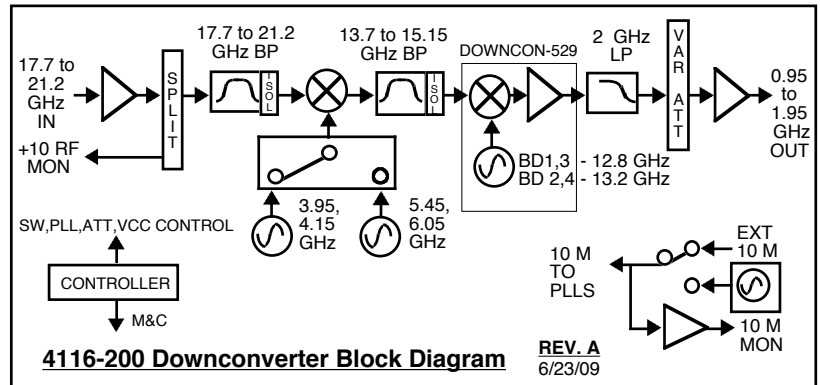
Input Characteristics

Impedance/Return Loss 50Ω/14 dB
 Frequency (GHz) BAND1 17.7 to 18.7
 BAND2 18.3 to 19.3
 BAND3 19.2 to 20.2
 BAND4 20.2 to 21.2

Noise Figure, Max. 20 dB max gain
 Input Level range -50 to -30dBm

Output Characteristics

Impedance/Return Loss 50Ω/14 dB
 Frequency 0.95 to 1.95 GHz
 Output Level Range -20 to 0 dBm
 Output 1 dB compression +10 dBm, **max gain**



Channel Characteristics

Gain at F_c +30 ±3 dB, (+30 to 0 dB variable in 0.5 dB steps)
 Image Rejection > 60 dB, min
 Spurious, Inband SIG. REL. <-50dBc, -15 to 0dBm out; 2X_{Fo} <-45dBc; SIG. INDEP., <-60dBm; 95-1.95 GHz out, G_{max}
 Spurious, Out of band <-55 dBm, **signal independent; 0.5-2.45 GHz out**
 Intermodulation <-50 dBc for two carriers at 4 MHz spacing, each at -5 dBm out
 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

Gain, Band, 10M Freq. Gain, band select, and internal 10 MHz frequency via Ethernet M&C or Status/Control Connector.
 PLL Alarm Red LED, External contact closure
 Power Green LED

Other

Connectors*	Connector Part #	Mating Connector Part #	Additional Connector Specifications*		
Status/Control Connector	MS3112E14-18S	MS3116F14-18P	RF In, RF Mon.	L-Band	10MHz
Ethernet Connector/RJ45	RJF21B	RJF6G	Super SMA (27 GHz)	Type N	SMA
AC Input Connector**	CL1M1102	CL1F1101	Female; 50Ω	(Female) 50Ω	(Female), 50Ω

Size 8" Wide X 6" High X 16" Deep Weather Resistant* Enclosure
 Power 100-240 ±10% VAC, 47 - 63 Hz, 25 watts maximum

*All Connectors are Weather Resistant

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