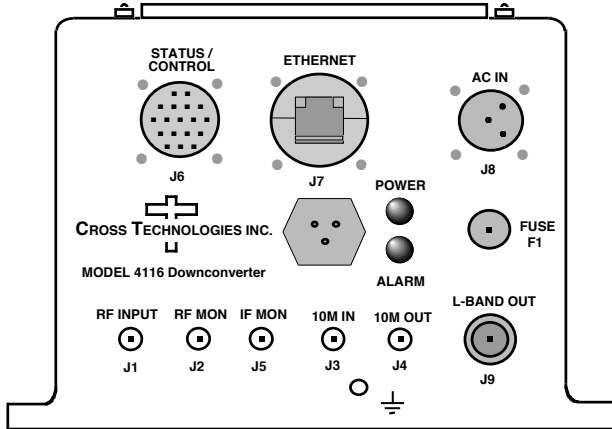


4116-41-212 Ka-band Block Downconverter, Weather Resistant*

The 4116-41-212 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 **RF to L-band** gain is **+20 dB**. Connectors are **2.92 mm** for RF In, **RF Monitor**, and **IF 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 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.

Option W21 - Extended Temperature option (-30 to +60°C operating, -40 to -60 °C storage) 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 at max. gain (**G_{max}**)
- Optimum Input Level -45 to -10 dBm**
- Non-damage input 0 dBm at max. gain**

Output Characteristics

- Impedance/Return Loss 50Ω/14 dB
- Frequency 0.95 to 1.95 GHz
- Output 1 dB compr. **+15 dBm min. at max. gain**

Channel Characteristics

- Gain at Fc **+20 ±2 dB, (+20 to 0 dB variable in 0.5 ± 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; 0.5-0.95 and from 1.95-2.45 GHz 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; **± 1.5 dB, 120 MHz BW; ± 0.5 dB, 10 MHz BW (also for monitors)**
- Frequency Sense Non-inverting
- RF, IF Monitor Gain **+5 ± 2 dB (±1 dB design goal) above RF In for RF (17.7- 21.2 GHz) and IF (13.75- 15.15 GHz) monitors**
- RF, IF Mon P1dB out **+0 dBm for RF (17.7- 21.2 GHz) and IF (13.75- 15.15 GHz) monitors**

LO Characteristics

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

Phase Noise @ F (Hz) >	10	100	1K	10K	100K	1M	10M	100M
dBc/Hz	-32	-65	-75	-84	-95	-105	-114	-114

Controls, Indicators

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

Connectors*	Connector Part #	Mating Connector Part #	Additional Connector Specifications*		
Status/Control Connector*	MS3112E14-18S	MS3116F14-18P	RF In, RF Mon, & IF Monitor 2.92 mm, Type-K (female) 50Ω	L-Band Mon Type N (female) 50Ω	10MHz Connectors SMA (female) 50Ω
Ethernet Connector/RJ45*	RJF21B	RJF6G			
AC Input Connector*	CL1M1102	CL1F1101			

Other

- Size 8" Wide X 6" High X 16" Deep Weather Resistant* Enclosure
- Power 100-240 ±10% VAC, 47 - 63 Hz, 25 watts max./ FCI Clipper Series CL1M1102 Connector

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

