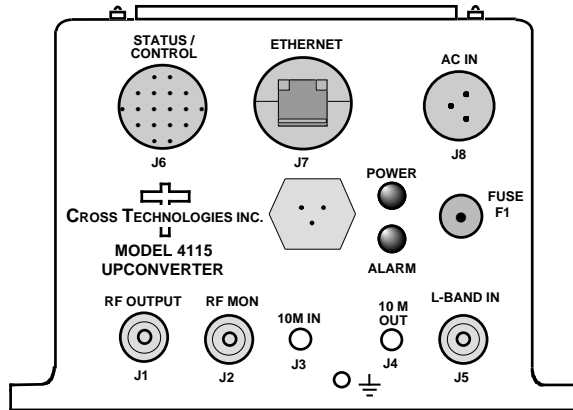


**4115-67 Block Upconverter - Weather Resistant\***

The 4115-67 Block Upconverter converts 0.95 - 1.825 GHz to 5.85 - 6.725 GHz with a 4.9 GHz local oscillator (LO). Front panel LEDs provide indication of DC Power, and PLL Alarm. The L-band to RF gain is +30 dB. Connectors are Type N for the L-band, RF and RF Monitor and SMA (all female) for the external reference input and reference output. Gain and internal 10 MHz frequency are controlled by the Ethernet M&C or via the Status/Control connector. In AUTO, the 10 MHz reference stays in external if the external level is in the +2 to +8 dBm range. The 4115 is powered by a 100-240 ± 10% VAC power supply, and 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 0.95 to 1.825 GHz  
 Noise Figure, Max. 20 dB max gain  
 Input Level range -40 to -15 dBm

**Output Characteristics**

Impedance/Return Loss 50 Ω /14 dB, **Mute & UnMute**  
 Frequency (GHz) 5.85 to 6.725  
 Output Level Range -15 to 0 dBm  
 Output 1 dB compr. +10 dBm, **max gain**  
**Mute** >60 dB @ 0 dBm output

**Channel Characteristics**

Gain at F<sub>c</sub> +30 ±3 dB, (+30 to 0 dB variable in 0.5 ± 0.5 dB steps)  
 Spurious, Inband SIGNAL RELATED <-55 dBc in band, -15 to 0 dBm out; SIGNAL INDEPENDENT, <-60 dBm  
 Spurious, Out of band <-55 dBm; 4.85-5.84 and 6.726-7.725 GHz  
 Intermodulation <-50 dBc for two carriers at 4 MHz spacing, each at -5 dBm out, **max gain**  
 Frequency Response ±2 dB, over RF band; ± 0.5 dB, 40 MHz BW  
 Frequency Sense Non-inverting  
**RF Output monitor** -20 ±2 dB of RF Out; Response ±2 dB, over RF band; ± 0.5 dB, 40 MHz BW

**LO Characteristics**

LO Frequency 4.9 GHz  
 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	-70	-80	-85	<b>-98</b>	-110

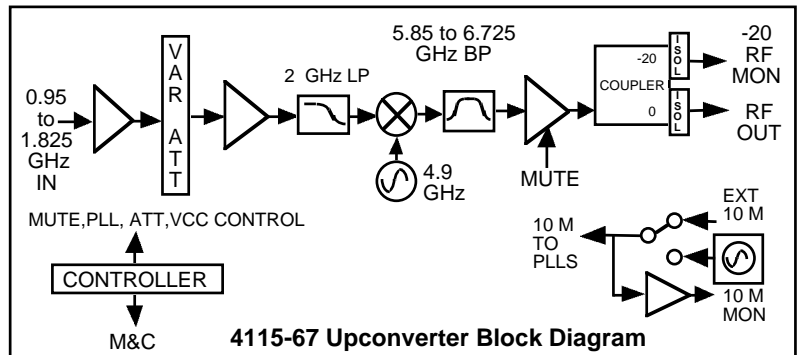
**Controls, Indicators**

Gain, 10M Freq. Gain and internal 10 MHz frequency via Ethernet M&C (w/SNMP) or Status/Control connector.  
 PLL Alarm Red LED, External contact closure  
 Power Green LED

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

\*All Connectors are Weather Resistant

Size 8"W X 6"H X 16"D Weather Resistant\* Enclosure  
 Power 100-240 ±10% VAC, 47 - 63 Hz, 25 watts maximum



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

