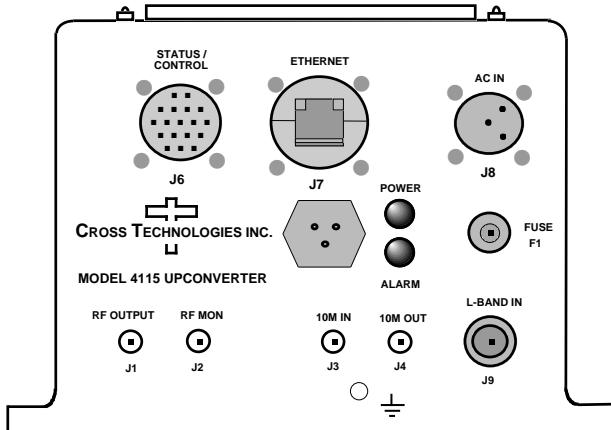


## 4115-41-212 Ka-band Block Upconverter, Weather Resistant

The 4115-41-212 Ka-band Block Upconverter converts 0.95 - 1.95 GHz up to 17.7 - 21.2 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 2.92mm for RF Out and RF Monitor, SMA for the external reference input and reference output and Type N (all female) for the L-band. 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.** It 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/Ret. Loss    50Ω/14 dB  
 Frequency                0.95 to 1.95 GHz  
 Noise Figure, Max.     20 dB max gain  
 Input Level range      -40 to -15 dBm

#### Output Characteristics

Impedance/Ret. Loss    50 Ω /14 dB, **Mute & UnMute**  
 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  
 Output Level Range    -15 to 0 dBm  
 Output 1 dB comp.     +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 dB steps)  
 Spurious, Inband        SIG REL <-50 dBc in band, -15 to 0 dBm out; SIG IND, <-55 dBm; **Over 17.0 to 22.0 GHz band**  
 Spurious, Out of band   <-55 dBc; **Over 17.0 to 22.0 GHz band**  
 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

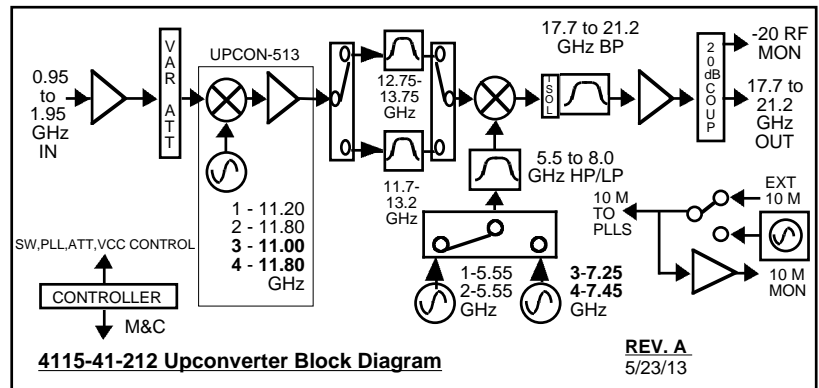
Phase Noise @ F (Hz) >	100	1K	10K	100K	1M
dBC/Hz	-65	-75	-80	-95	-105

#### 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

RF Out, RF Mon. Conn. 2.92mm (40GHz) female, 50Ω  
 L-Band Connector        Type N (female), 50Ω  
 10 MHz Connector        SMA (female), 50Ω  
 Status/Control Conn.    **Multipin MS3112E14-18S Weather Resistant Connector**  
 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 Weather Resistant Connector



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