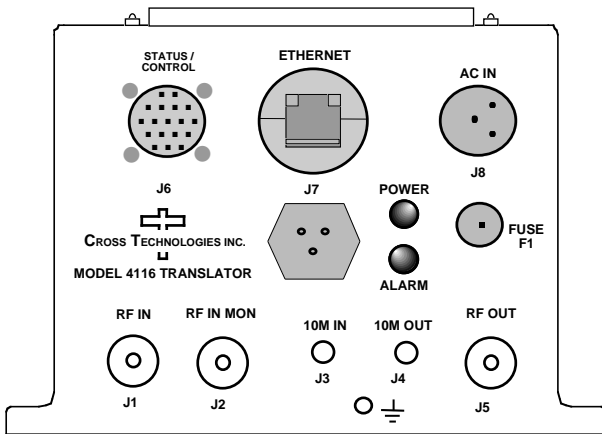


4116-21T23 Translator, 2.02 - 2.12 to 2.20 - 2.30 GHz, Weather Resistant*

The 4116-21T23 Translator converts 2.02 - 2.12 GHz to 2.20 - 2.30 GHz. Front panel LEDs provide indication of DC Power, and PLL Alarm. **The RF in to RF out gain is adjustable from 0 to -60 dB (1 ±1 dB steps).** Connectors are Type N female for the RF out, RF in and RF in Monitor and SMA female for the external 10 MHz reference input. Gain, mute, and internal 10 MHz frequency are controlled by the M&C (**Ethernet and/or Status/Control**). 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/Return Loss 50Ω/14 dB
 Frequency **2.02 to 2.12 GHz**
 Noise Figure, Max. **24 dB at max gain**
 Input Level range -30 to **0 dBm**

Output Characteristics

Impedance/Return Loss 50 Ω /14 dB, **Mute & UnMute**
 Frequency **2.20 to 2.30 GHz**
 Output **Gain Adj.** Range **-60 to 0 dBm**
 Output 1 dB compr. +10 dBm, **max. gain**
Mute >50 dB @ 0 dBm output

Channel Characteristics

Gain at Fc **4 ±2 dB max., (+0 to -60 dB variable in 1±1 dB steps)**
 Input to Output Isolation **> 45 dB, min, at +0 dB gain**
 Spurious, Inband **SIGNAL RELATED <-50 typ., -45 min dBc; SIGNAL INDEPENDENT, <-60 dBm, 2.20-2.30 GHz, max. gain**
 Spurious, Out of band **<-50 dBm spurious, signal independent; 1.0 - 2.19 and 2.31 - 3.0 GHz out, max. gain**
 Intermodulation **<-50 dBc for two carriers at 4 MHz spacing, each at -5 dBm out, max. gain**
 Frequency Response **±1.5 dB, over RF band; ± 0.5 dB, 40 MHz BW**
 Frequency Sense Non-inverting

LO Characteristics

LO step size None; Fixed translation
 Frequency Accuracy ± 0.05 ppm max over temp internal reference; ext. ref. input
 10 MHz level In/Mon Input=+2 to +8 dBm in. Monitor Output = Input Level ± 1.0 dB, 50Ω

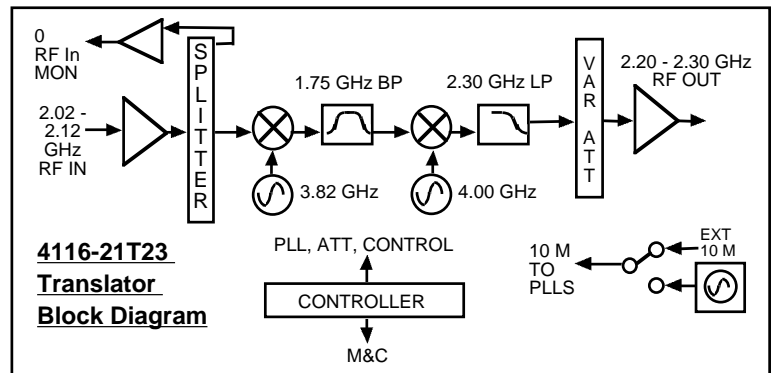
Phase Noise @ F (Hz) >	100	1K	10K	100K	1M
dBc/Hz	-70	-70	-80	-95	-110

Controls, Indicators

Gain, 10M Frequency Gain 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 In, Mon. Conn. Type N (female), 50Ω
 RF Out Connector Type N (female), 50Ω
 M&C Connector(s) **Status/Control - MS3112E14-18S Weatherized Connector; (Contact closure Alarms, RS232/422/485) Ethernet - Standard RJ45 Weatherized Connector (Web Browser & SNMP User Interface, Standard)**
 SMA (female), 50Ω
 10 MHz connectors 8"W X 6"H X 16"D Weather Resistant* Enclosure.
 Size 100-240 ±10% VAC, 47 - 63 Hz, **25 watts max./ FCI Clipper Series CL1M1102 Connector.**
 Power



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