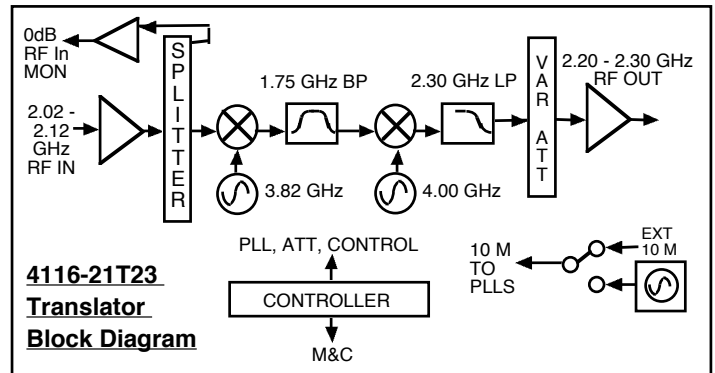
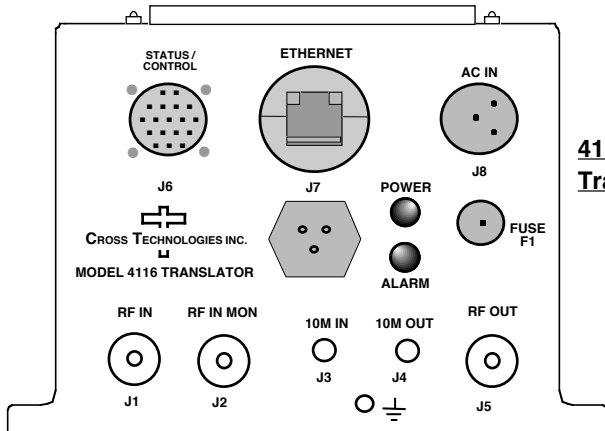


**4116-21T23 Translator, 2.02 - 2.12 to 2.20 - 2.30 GHz, Weather Resistant\***

The 4116-21T23 Translator converts 2.02 - 2.12 GHz to 2.20 - 2.30 GHz. Front panel LEDs indicate DC Power, and PLL Alarm. **The RF in to RF out gain can be adjusted from +4 to -56 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.



**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, Gmax, Fc**  
 Input Level range **-30 to 0 dBm, Fc**

**Output Characteristics**

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

**Channel Characteristics**

Gain at Fc **4±2 dB max., (+4 to -56 dB variable in 1±1 dB steps), Fc**  
 Input to Output Isolation **> 45 dB, min, at +0 dB gain, Fc**  
 Spurious, Inband **SIGNAL RELATED <-50 typ., -45 min dBc; SIGNAL INDEPENDENT, <-60 dBm, 2.20-2.30 GHz, Gmax,**  
 Spurious, Out of band **<-50 dBm spurious, signal independent; 1.0 - 2.19 and 2.31 - 3.0 GHz out, Gmax,**  
 Intermodulation **<-50 dBc for two carriers at Fc ± 2 MHz, 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

**\*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.

**Options**  
**W21 -30° to +60°C Operation**

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

**Controls, Indicators**

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

**Other**

Connectors*	Connector P/N	Mating Connector P/N	Additional Connector Specifications*			M&C Interface
Status/Control Connector	MS3112E14-18S	MS3116F14-18P	RF In, Out	RF MON	10 MHz In/Out	RS232/422/485; Ethernet: Web Browser, SNMP & TCP/IP STD.
AC Input Connector**	CL1M1102	CL1F1101	Type N (F)	Type N (F)	SMA (Female)	
Ethernet Connector / RJ45	RJF21B	RJF6G	50 Ω	50 Ω	50 Ω	

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