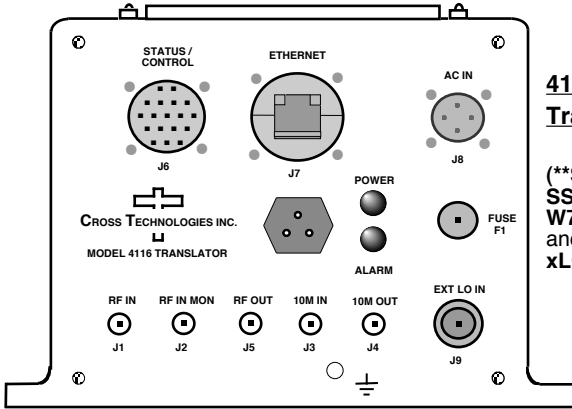


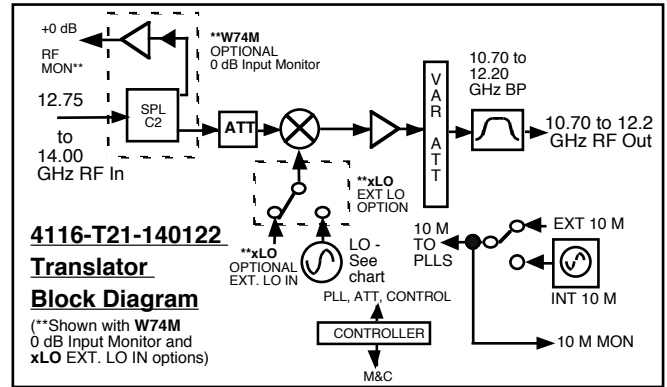
## 4116-T21-140122 Multi-Band, Block Translator, Weather Resistant\*

The 4116-T21-140122 Translator converts a 12.75 - 14.0 GHz input RF band to one of **two** output RF bands. Front panel LEDs provide indication of DC Power, and PLL Alarm. The **RF to RF gain is +8 dB, maximum**. Connectors are Type N female for the RF out, RF in and SMA female for the external reference input and reference output. Gain, band select, 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. 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.



**4116-T21-140122 Translator**

(\*\*Shown with: SS - SMA RF Conn., W74M 0 dB Input Mon., and xLO EXT. LO IN options)



**Band Chart - Frequencies, LOs, LO Harmonically-related Fixed Spurs**

BAND NO.	IN RANGE (GHz)	OUT RANGE (GHz)	LO (GHz)	Fixed Spurs (25 dBc at +0 in) (5 dBc at -25 in)
1	12.75 - 13.50	10.70 - 11.45	2.05*	12.3
2	12.75 - 14.00	10.95 - 12.20	1.80*	10.8, 12.6

\*with Option X10054, tuneable ±5 MHz in 1 kHz steps

### EQUIPMENT SPECIFICATIONS\*\*

#### Input Characteristics

Impedance/Return Loss: **50Ω/18 dB, min**  
 Frequency (GHz): SEE BAND CHART  
 Input Level range: -25 to +0 dBm, at Fc  
 Max. No Damage Input: **+8 dBm**

#### Output Characteristics

Impedance/Return Loss: **50Ω/18 dB, min**  
 Frequency (GHz): SEE BAND CHART  
 Output Level Range: **-17 to +8 dBm, at Fc**  
 Output 1 dB comp., max. gain: **+10 dBm, at max gain, at Fc**  
 Output mute., max. gain: **>50 dBc, at max gain (>60 dBc with Option W109), at Fc**

#### Channel Characteristics

Gain at Fc: **+8 ± 3 dB max., (+8 to -17 dB variable in 0.5±0.5 dB steps), at Fc**  
 Input to Output Isolation: **> 60 dBc, min (at max gain and 0 dBm out), at Fc**  
 Spurious, Inband: **> 40 dBc in band, except 25 dBc (> 30 dBc typ.) at +0 dBm in for harmonics of LOs that fall close to or in-band (See Chart)**  
 Spurious, Out of band: **<-50 dBm, signal independent; fc ± 1 GHz, except for harmonics of LOs (See Chart) in this band**  
 Frequency Response: **±1.5 dB, over RF band; ± 0.5 dB, 40 MHz BW**  
 Frequency Sense: Non-inverting

#### LO Characteristics

LO Frequency: Band Specific; **Option xLO = 1.5 - 2.5 GHz, +3 ± 2 dBm level in**  
 Frequency Accuracy/Stability: **± 0.05 ppm max (0 to +50C) internal reference; ext. ref. input**

Phase Noise @ F (Hz) >	100	1K	10K	100K	1M
Specification dBc/Hz	65	75	85	95	110
Spec w / X10054 dBc/Hz	75	85	90	100	115

10 MHz level In/Mon: +2 to +8 dBm in; Monitor Output = input level ± 1.0 dB, 50 ohms

#### Controls, Indicators

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

#### Other

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

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

\*All Connectors are Weather Resistant

#### Options

**SS - SMA RF Connectors**  
**W21** - -30°C to +60°C  
**W74M** - 0dB Input Monitor  
**W109** - 60dB Output Mute  
**X10054** - 1 kHz Tuning step  
**xLO- Ext +3±2 dBm LO in;**  
**Ext FLO = 1.5 to 2.5 GHz**

**\*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.

\* +0 to +50 degrees C; -30 to +60 degrees C Non-operating; Specifications subject to change without notice