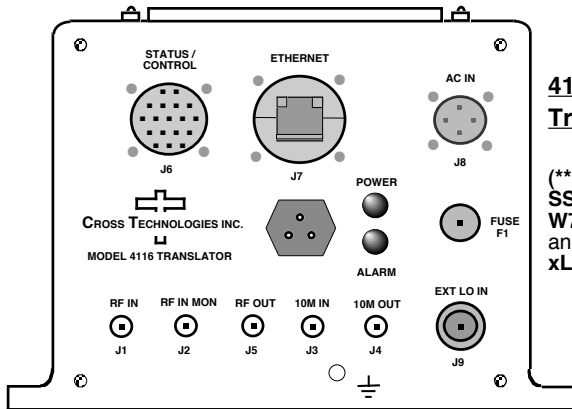


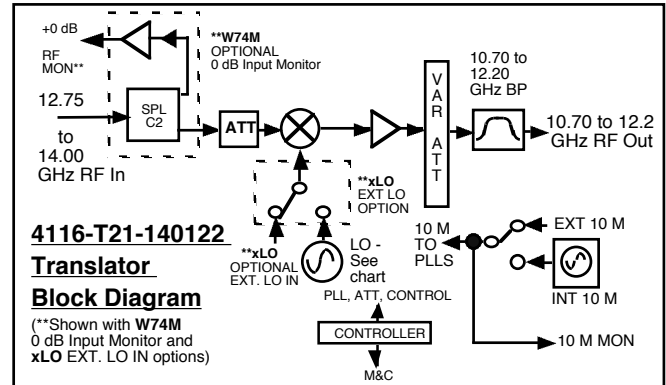
4116-T21-140122 Multi-Band, Block Translator, Weather Resistant*

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 $\pm 10\%$ 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 Spur:

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
Frequency (GHz)
Input Level range
Max. No Damage Input

50 Ω /18 dB, min
SEE BAND CHART
-25 to +0 dBm, at Fc
+8 dBm

Output Characteristics

Impedance/Return Loss
Frequency (GHz)
Output Level Range
Output 1 dB comp., max. gain
Output mute., max. gain

50 Ω /18 dB, min
SEE BAND CHART
-17 to +8 dBm, at Fc
+10 dBm, at max gain, at Fc
>50 dBc, at max gain (>60 dBc with Option W109), at Fc

Channel Characteristics

Gain at Fc
Input to Output Isolation
Spurious, Inband

+8 $\pm$ 3 dB max., (+8 to -17 dB variable in 0.5 $\pm$ 0.5 dB steps), at Fc
> 60 dBc, min (at max gain and 0 dBm out), at Fc
> 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)
<-50 dBm, signal independent; fc $\pm$ 1 GHz, except for harmonics of LOs (See Chart) in this band
 ± 1.5 dB, over RF band; ± 0.5 dB, 40 MHz BW
Non-inverting

LO Characteristics

LO Frequency
Frequency Accuracy/Stability

Band Specific; Option xLO = 1.5 - 2.5 GHz, +3 $\pm$ 3 dBm level in
 ± 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, 50 Ω Type-N, (female) OPT SS, SMA	L-Band Mon Type N (female) 50 Ω	10MHz Connectors SMA (female) 50 Ω
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 $\pm 10\%$ 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 $\pm$ 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