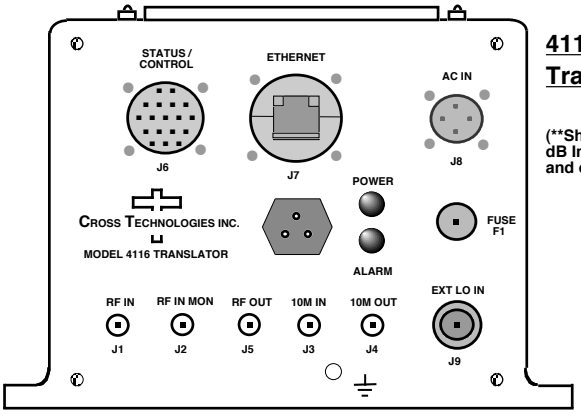
CROSS TECHNOLOGIES, INC.

DATA SHEET

REV. A 11/17/20

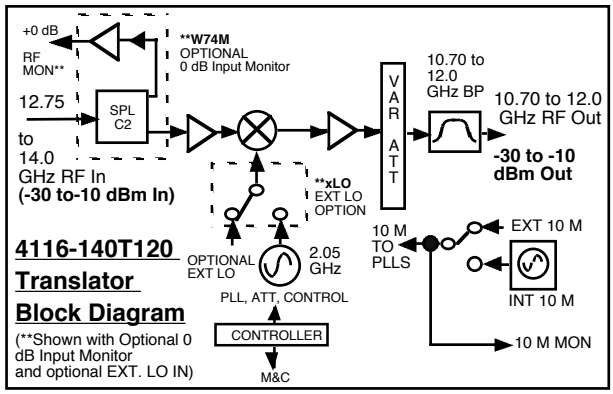
4116-140T120, Ku-Band Block Translator, Weather Resistant*

The 4116-140T120 Translator converts the 12.75 - 14.0 GHz band to the 10.70 - 12.0 GHz band. Front panel LEDs provide indication of DC Power, and PLL Alarm. The RF to RF gain is **+0 dB**, maximum. Connectors are SMA female for the RF out, RF in and RF in Monitor (optional) and SMA female for the external reference input and reference output. Gain, **LO frequency**, 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 (the selected 10 MHz is on the front panel 10 M OUT connector).** The 4116 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.



4116-140T120 Translator

(Shown with Optional 0 dB Input Monitor and optional EXT. LO IN)**



4116-140T120 Translator Block Diagram

(**Shown with Optional 0 dB Input Monitor and optional EXT. LO IN)

Options

W74M - 0dB Input Monitor
W109 - 60dB Output Mute
X10054 - 1 kHz Tuning step
xLO- Ext +3±2 dBm LO in

EQUIPMENT SPECIFICATIONS**

Input Characteristics

Impedance/Return Loss	**50Ω/18dB**
Frequency (GHz)	12.75 - 14.0 GHz
Noise Figure, Max.	20 dB at max gain
Input Level range, **Fc**	**-30 to -10 dBm; +8 dBm no-damage input**

Output Characteristics

Impedance/Return Loss	**50Ω/18 dB**
Frequency (GHz)	10.70 - 12.0 GHz
Output Level Range, **Fc**	**-30 to -10 dBm**
Output 1 dB compression	**+0 dBm, at Fc**

LO Harmonically-related Fixed Spur Frequencies - Out of Band

BAND NO.	OUT RANGE (GHz)	TRANSLATE RANGE (GHz)	2XLO Fixed Spurs (25 dBC at -10 in) (5 dBC at -30 in)
1	10.70-12.0	2.01-2.09	10.25, 12.30, Out of Band

Channel Characteristics

Gain	**+0 ±2 dB max., (+0 to -30 dB variable in 0.5±0.5 dB steps), at Fc**
Input to Output Isolation	**> 60 dBC, min., 12.75 - 14.0 GHz**
Spurious, Inband	> 40 dBC signal-related,**< -50 dBm signal independent;** at -10 dBm out
Spurious, LO	<-60 dBm LO; **5X,LO 6XLO, 25 dBC (> 30 dBC typ.) at -10 dBm out (See Chart)**
2 Tone intermod	**> 45 dBC, > 50 dBC typ. (@-13 dBm in ,-13 dBm out, ea)**
Frequency Response	**±1.5 dB max.**, over RF band; ± 0.5 dB, 40 MHz BW
Frequency Sense	Non-inverting

LO Characteristics

LO Frequency	**2.050 GHz, tunable from 2.01 to 2.09 GHz** in **1 MHz steps; Option X10054 - 1 kHz Tuning step**
Frequency Accuracy	± 0.05 ppm max over temp 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***	***105***	***115***

10 MHz level In, 50Ω	+2 to +8 dBm in
10 MHz Level Out, 50Ω	**External selected**, Monitor Output = input level **± 1.0 dB** **Internal selected, +4 dBm ± 2 dB**

Controls, Indicators

Gain, **LO,** 10M Freq.	Gain, **LO Frequency,** 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., Out Conn.	SMA (female), 50Ω
10 MHz connectors	SMA (female), 50Ω
Status/Control Connector	MS3116F14-18P; RJ45 Weather Resistant* Ethernet Connector
Size	8" W X 6" H X 16" D Weather Resistant* enclosure
Power	100-240 ±10% VAC, 47 - 63 Hz, **25 watts** max./ FCI Clipper Series CL1M1102 connector

***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 operating) available at an additional cost. Contact Cross for quote.

** *+0 to +50 degrees C ; **-30 to +60 degrees C Non-operating; (Option W21; -30 to +60 operating) ; 95% relative humidity,/non-condensing;***
Specifications subject to change without notice

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