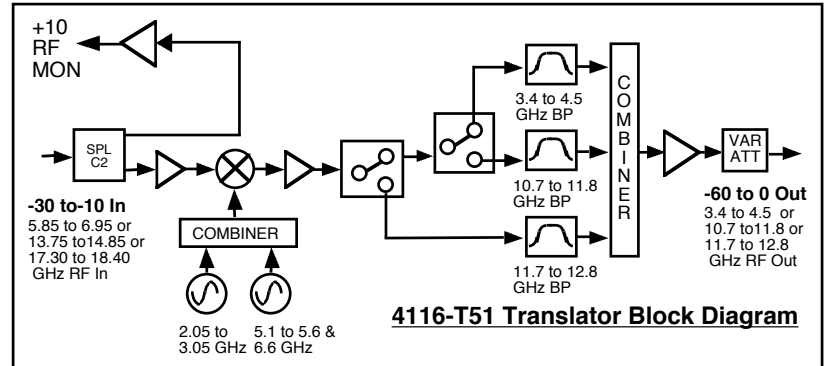
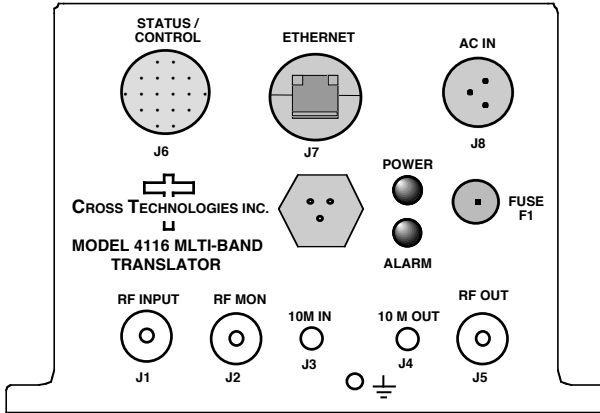


4116-T51 Multi-Band, Block Translator, Weather Resistant*

The 4116-T51 Translator converts one of three input RF bands to one of three output RF bands in five combinations. Front panel LEDs provide indication of DC Power, and PLL Alarm. The RF to RF gain is +20 dB, maximum. Connectors are Type N female for the RF out, RF in and RF in Monitor 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 is in a 8"W X 6"H X 16"D Weather Resistant* enclosure.



EQUIPMENT SPECIFICATIONS**

Input Characteristics

Impedance/Return Loss: 50 Ω /12 dB, 14 dB typ
Frequency (GHz): SEE BAND CHART
Noise Figure, Max.: 20 dB at max gain
Input Level range: -30 to -10 dBm

Output Characteristics

Impedance/Return Loss: 50 Ω /10 dB, 14 dB typ
Frequency (GHz): SEE BAND CHART
Output Level Range: -60 to 0 dBm
Output 1 dB comp., max. gain: +8 dBm, +10 typ.

Channel Characteristics

Gain: +20 ± 3 dB max., (+20 to -40 dB variable in 1 ± 1 dB steps)
Input to Output Isolation: > 45 dBC, min; > 60 dBC typ.
Spurious, Inband, at max. gain: > 30 dBC in band, except 25 dBC (> 30 dBC typ.) at -10 dBm in where harmonic of LO falls in-band (See Chart)

Spurious, Sig. Rel., Band 1

Spurious, LO (at input): > 20 dBC, at max. gain
2 Tone @ -20dBm in, -5 out, ea: < -60 dBm LO
Frequency Response: > 45 dBC (> 50 dBC typ.), at max. gain

LO Characteristics

LO Frequency: Band Specific, SEE BAND CHART
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	70	80	85	95	110
Typical dBC/Hz	75	85	90	100	125

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 M&C or Status/Control connector.
PLL Alarm: Red LED, External contact closure
Power: Green LED

Other

RF In, Mon., Out Connector: Type N (female), 50 Ω
10 MHz connectors: SMA (female), 50 Ω
Status/Control Connector: MS3116F14-18S; RJ45 Weather Resistant* Ethernet Connector
Size: 8" W X 6" H X 16" D Weather Resistant* enclosure
Power: 100-240 $\pm 10\%$ VAC, 47 - 63 Hz, 25 watts max./ FCI Clipper Series CL1M1102 connector

Band Chart - Frequencies, Translations, 10kHz Phase Noise

BAND NO.	IN RANGE (GHz)	OUT RANGE (GHz)	TRANSLATE DEFAULT (GHz)	TRANSLATE RANGE (GHz)	TRANSLATE STEP (MHz)	PH NOISE @ 10 kHz
1	5.85-6.95	3.4-4.5	2.45	2.05-3.05	1	85
2	13.75-14.85	10.7-11.8	3.05	2.05-3.05	1	85
3	13.75-14.85	11.7-12.8	2.05	2.05-3.05	1	85
4	17.3-18.4	10.7-11.8	6.6	6.6	FIXED	85
5	17.3-18.4	11.7-12.8	5.6	5.1-5.6	5	85*

* 5 MHz steps; >75 dBC for 1 MHz steps

LO Harmonically-related In-Band Fixed Spur Frequencies

BAND NO.	OUT RANGE (GHz)	TRANSLATE RANGE (GHz)	In-Band Fixed Spurs (25 dBC at -10 in) (5 dBC at -30 in)
1	3.4-4.5	2.05-3.05	2.05 to 2.25, Carrier related 20dBC
2	10.7-11.8	2.05-3.05	2.14 to 2.36; 2.675 to 2.95
3	11.7-12.8	2.05-3.05	2.05 to 2.1; 2.34 to 2.565; 2.925 to 3.05
4	10.7-11.8	6.6	None
5	11.7-12.8	5.1-5.6	None

*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.

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