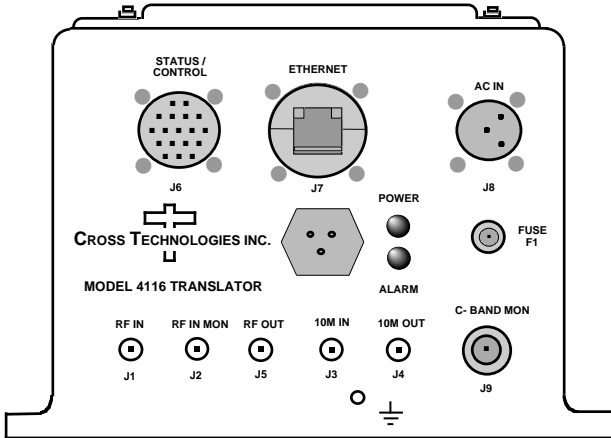


4116-T310 Ka-band Translator, Weather Resistant*

The 4116-T310 Ka-band Translator converts 27.5 - 31.0 GHz to 17.7 - 21.2 GHz in four selectable fixed bands and to 2.5 - 6.0 GHz for monitoring purposes. LEDs provide indication of DC Power, and PLL Alarms. The maximum gain is +20 dB. Connectors are 2.92mm for the **RF In, RF Monitor, and RF Out**, Type N for the C-band monitor, and SMA (all female) for the external reference input and output. Gain, band select, and internal 10 MHz frequency are controlled by the M&C (Ethernet and/or Status/Control) Connectors. In AUTO, the 10 MHz reference stays in external if the external level is in the +2 to +8 dBm range. The 4116-T310 is powered by a 100-240 ±10% VAC power supply and mounted in a 8" Wide X 6" High X 16" Deep, Weather Resistant* enclosure.



BAND CHART-Frequency Band	Band	Input (GHz)	Output (GHz)	Translation (GHz)
	1	27.5 - 28.5	17.7 - 18.7	9.800 (8.8-10.3)
	2	28.0 - 29.0	18.3 - 19.3	9.700 (8.7-10.3)
	3	29.0 - 30.0	19.2 - 20.2	9.800 (8.8-10.3)
	4	30.0 - 31.0	20.2 - 21.2	9.800 (8.8-10.3)
	5	27.5 - 28.5	18.3 - 19.3	9.200 (8.3-10.2)
	6	27.5 - 28.5	19.2 - 20.2	8.300 (8.3-9.3)
	7	28.0 - 29.0	17.7 - 18.7	10.300 (9.3-10.3)
	8	28.0 - 29.0	19.2 - 20.2	8.800 (8.3-9.8)
	9	29.0 - 30.0	18.7 - 19.7	10.300
	10	29.0 - 30.0	19.0 - 20.0	10.000 (9.7-10.3)
	11	30.0 - 31.0	20.0 - 21.0	10.000 (9.8-10.3)

EQUIPMENT SPECIFICATIONS**

Input Characteristics

Impedance/Return Loss 50Ω/14 dB
 Frequency SEE BAND CHART
 Noise Figure, Max. 20 dB max gain

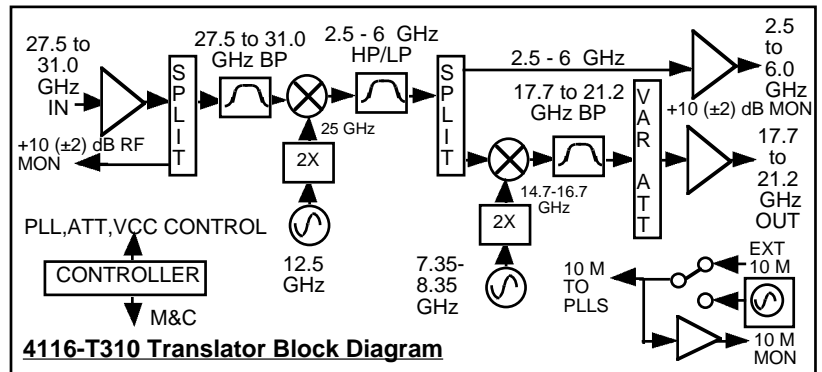
Maximum Input Level -15 dBm

Output Characteristics

Impedance/Return Loss 50 Ω /14 dB, **Mute & UnMute**
 Frequency (GHz) SEE BAND CHART
 Output Level Range -15 to 0 dBm, **Optimum**
 Output 1 dB compr. +10 dBm, **max. gain**

Mute >60 dB @ 0 dBm output

C-Band Mon Gain/1dB +10±2dB/ +5 (+10 goal) dBm



4116-T310 Translator Block Diagram

Channel Characteristics

Gain at **F_c** +20 ±3 dB, (+20 to 0 dB variable in 1±1 dB steps)
 Input to output isolation > 60 dB, min (at max gain and 0 dBm out)
 Spurious, Inband **SIG REL. <-45 (-50 goal) dBC**, -15 to 0 dBm out; **SIG IND. <-50 dBm; f_c ± 0.5 GHz**
 Spurious, Out of band **<-50 dBm, signal independent; f_c ± 1.5 GHz**
 Spurious, LO **<-50 dBm, measured at the input; <-25 dBm, measured at the output**
 Intermodulation <-50 dBC for two carriers at 4 MHz spacing, each at -7 dBm out
 Frequency Response ±2 dB, over RF band; ± 0.5 dB, 40 MHz BW
 Frequency Sense Non-inverting

LO Characteristics

LO Frequency Band Specific, **8.3 to 10.3 GHz translation range, 5 MHz steps**
 Frequency Accuracy ± 0.05 ppm max over temp internal reference; ext. ref. input

Phase Noise @ F (Hz) >	10	100	1K	10K	100K	1M	10M	100M
dBC/Hz	-32	-65	-75	-77	-93	-105	-112	-112

10 MHz level In/Mon +2 to +8 dBm in; Monitor Output = input level ± 1 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.
 Power; PLL Alarm **Green LED**; Red LED, External Contact Closure

Connectors*	Connector Part #	Mating Connector Part #	Additional Connector Specifications*		
Status/Control Connector	MS3112E14-18S	MS3116F14-18P	RF In, RF Mon, & RF Out 2.92 mm, Type-K (female) 50Ω	C-Band Mon Type N (female) 50Ω	10MHz Connectors SMA (female) 50Ω
Ethernet Connector/RJ45	RJF21B	RJF6G			
AC Input Connector**	CL1M1102	CL1F1101			

*All Connectors are Weather Resistant

***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.

Other

Size 8" Wide X 6" High X 16" Deep, Weather Resistant* Enclosure
 Power 100-240 ±10% VAC, 47 - 63 Hz, 30 watts maximum

**+0 to +50 degrees C; Specifications subject to change without notice

