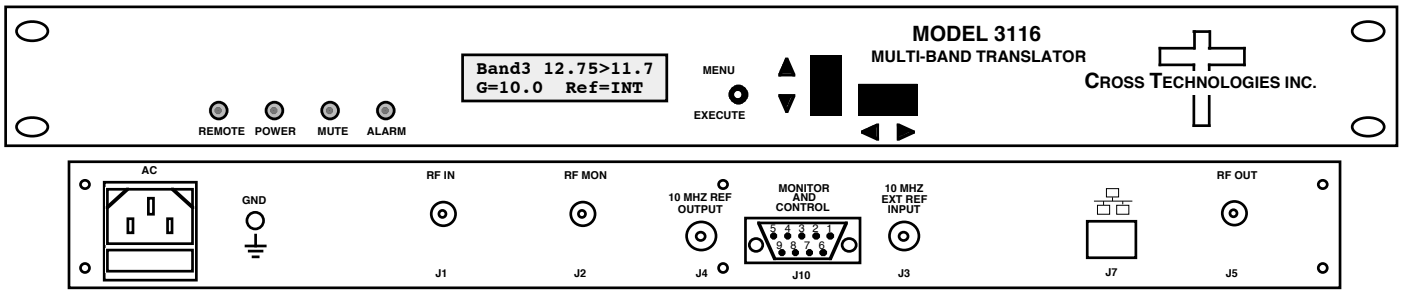
CROSS TECHNOLOGIES, INC.

DATA SHEET

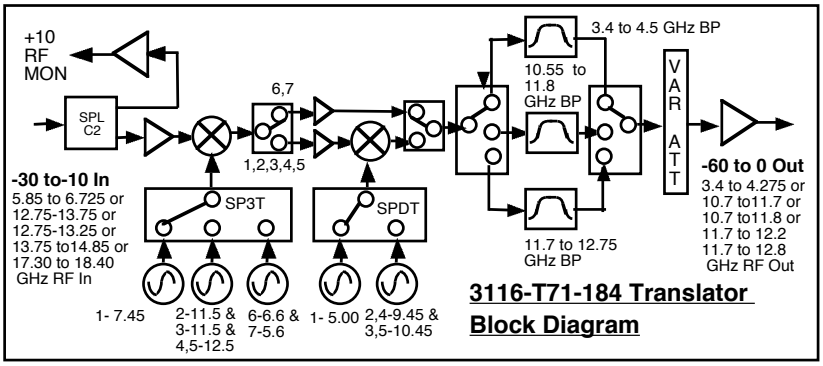
REV. B 05/16/16

3116-T71-184 Multi-Band Translator

The 3116-T71-184 Translator converts one of **five** input RF bands to one of **five** output RF bands in seven unique combinations. The RF to RF gain is **+20 dB**, maximum. **Connectors are SMA female for the RF Out, RF In and RF In Monitor and BNC female for the external reference input and reference output. Front panel LEDs provide indication of Remote Operation, DC Power, Mute, and PLL Alarm. Gain, band select, and internal/external/Auto reference selection are controlled by front panel switches or remote selection (Ethernet M&C or via the RS-232C/485 Monitor and Control connector) and are viewable on the LCD Display.** In AUTO, the 10 MHz reference stays in external if the external level is in the +2 to +8 dBm range. **The 3116 is powered by a 100-240 ± 10% VAC power supply, and housed in a 1RU rack mount chassis, 1.75" H X 19.0" W X 19.0" deep.**



3116-T71-184 FRONT AND REAR PANELS



3116-T71-184 Translator Block Diagram

EQUIPMENT SPECIFICATIONS*

Input Characteristics	
Impedance/Return Loss	50Ω/**12 dB min, 14 dB typ.**
Frequency (GHz)	SEE BAND CHART
Noise Figure, Max.	20 dB **at max. gain (G_{max})**
Input Level range	-30 to -10 dBm
Non-damage input	**0 dBm at max. gain**
Output Characteristics	
Impedance/Return Loss	50 Ω /**10 dB min, 14 dB typ.**
Frequency (GHz)	SEE BAND CHART
Output Level Range	-60 to 0 dBm
Output 1 dB comp.	**+8dBm min., at max gain**
Mute	**>60 dB from 0 dBm unmuted output (RF Mon. not muted)**
Channel Characteristics	
Gain **at F_C**	+20 ±3 dB max., (+20 to -40 dB variable in **1±1 dB** steps)
Input to Output Isolation	**> 45 dB, min; (at max gain and 0 dBm out)**
Spurious, Inband	**> 40 dBC sig dep, <-50dBm sig indep**; -10 dBm in**, 0 dBm output**
Spurious, Out of band	**<-50 dBm, signal independent; fc ± 2 GHz**
Spurious, LO	**<-25 dBm, measured at output, at max gain**
Intermod **2 Tone**	**> 45 dBC (> 50 dBC typ.),** for two carriers **at 4 MHz spacing,** each at **-7 dBm** out**, G_{max}**
Frequency Response	±2 dB, over RF band; ± 0.5 dB, 40 MHz BW
Frequency Sense	Non-inverting
LO Characteristics	
LO Frequency	Band Specific
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***	***-80***	*-95*	*-110*

10 MHz level In/Mon	Input=+2 to +8 dBm in; Monitor Output = Input Level **± 1.0** dB, 50 ohms
Controls, Indicators	
Gain, Band, 10M Freq.	**Direct readout LCD; pushbutton switches or** via Ethernet M&C or Monitor and Control Connector.
PLL Alarm	Red LED, External contact closure
Remote, Power, Mute	**Yellow LED: Green LED: Yellow LED**
Other	
RF In, Out, Mon. Conn.	**SMA (female), 50Ω**
10 MHz connectors	**BNC (female), 50 ohms; Works with 75Ω**
Monitor/Control Conn.	**RS232C/485, DB9, Female; Ethernet, RJ45, Female, w/Web Browser & SNMP User interfaces.**
Size	**1RU rack mount chassis, 1.75" H X 19.0" W X 19.0" deep**
Power	100-240 ±10% VAC, 47-63 Hz, **25** watts max

Band Chart - Frequencies, Translations

BAND NO.	IN RANGE (GHz)	OUT RANGE (GHz)	TRANSLATE (GHz)
1	**5.85-6.725**	**3.4-4.275**	**2.45**
2	**12.75-13.75**	**10.7-11.7**	**2.05**
3	**12.75-13.25**	**11.7-12.2**	**1.05**
4	13.75-14.85	10.7-11.8	3.05
5	13.75-14.85	11.7-12.8	2.05
6	17.3-18.4	10.7-11.8	6.6
7	17.3-18.4	11.7-12.8	5.6

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

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