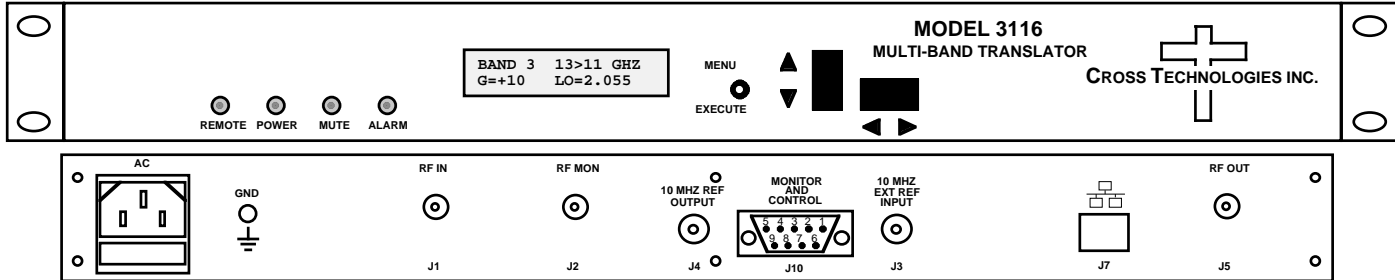


**3116-T71 Multi-Band, Block Translator**

The 3116-T71 Translator converts one of four input RF bands to one of four output RF bands in seven different translations. Front panel LEDs provide indication of DC Power, and PLL Alarm. 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. In AUTO, the 10 MHz reference switches to internal when the external is below +1 dBm. Gain, band, LO frequency, and internal 10 MHz frequency are controlled by the Ethernet M&C or the Monitor/Control connector. The 3116-T71 is powered by a 100-240 ±10% VAC power supply and is in a 1.75" X 19" X 19" rack mount chassis.



**3116-T71 FRONT AND REAR PANELS**

**EQUIPMENT SPECIFICATIONS\***

**Input Characteristics**

Impedance/Return Loss **50Ω/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 compression **+8 dBm, +10 typ.**

**Channel Characteristics**

Gain, maximum **+20 ±3 dB**  
Gain Range; 1 dB Steps **+20 to -40 dB;**  
In to Out Isolation, Min. **>45dBc, >60 typ.**  
Spurious, Inband **>40 dBc, except 25 dBc (>30 dBc typ.) @ -10 dBm in where harmonics of LO falls in-band (See Chart)**  
Spurious, LO, out of band **<-60 dBm**  
2 tone @-20dBm in ea **>45 dBc, 50 typ**  
Freq. Response, band **±2 dB**  
Freq. Response, 40MHz **± 0.5 dB**  
Frequency Sense **Non-inverting**

**LO Characteristics**

LO Frequency **Band Specific**  
Frequency Accuracy **± 0.01 ppm max over temp internal reference; ext. ref. input**

Phase Noise @ F (Hz) >	100	1K	10K*	100K	1M
dBC/Hz	70	80	SEE BAND CHART	100	110

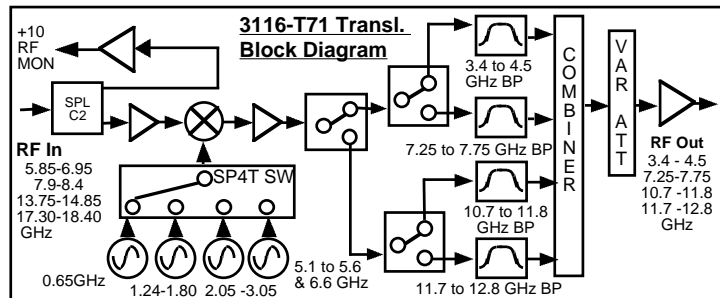
10 MHz In/Out Level **+5 dBm ±3 dB; Manual Local/Remote; Auto, switches to internal when the external falls below +1 dBm**

**Controls, Indicators**

Gain, Band, 10M Freq. **Gain, band select, and internal 10 MHz frequency via Ethernet M&C or Monitor/Control connector.**  
PLL Alarm **Red LED, External contact closure**  
Power **Green LED**  
Remote **Ethernet and RS232C, 9600 baud (RS485 Optional)**

**Other**

RF In, Out, Mon. Conn. **SMA (female), 50Ω**  
10 MHz connectors **BNC (female), 75 ohms; Works with 50Ω**  
Monitor/Control Conn. **Ethernet, RJ45, Female; RS232C, DB9, Female**  
Size **19 inch, 1RU standard chassis, 1.75" high X 19.0" deep**  
Power **100-240 ±10% VAC, 47-63 Hz, 30 watts max**



**BAND CHART-Frequencies, Translations, Phase Noise, Spurs**

BAND NO.	IN RANGE (GHz)	OUT RANGE (GHz)	LO (GHz)	LO RANGE (GHz)	LO STEP (MHz)	PH NOISE @ 10 kHz	In-Band Fixed Spurs (25dBc @ -10 In; 5dBc @ -30 In)
1	5.85-6.95	3.4-4.5	2.45	2.05-3.05	1	85dBc	2.05 to 2.25, Carrier related 20 dBc
2	7.90-8.40	7.25-7.75	0.65	0.65	FIXED	85dBc	None
3	13.75-14.85	10.7-11.8	3.05	2.05-3.05	1	85dBc	2.14 to 2.36; 2.675 to 2.95
4	13.75-14.85	11.7-12.8	2.05	2.05-3.05	1	85dBc	2.05 to 2.1; 2.34 to 2.565; 2.925 to 3.05
5	13.75-14.85	11.7-12.8	1.5	1.24-1.80	1	85dBc	1.24 to 1.40 ; 1.5 to 1.6 ; 1.75 to 1.8
6	17.3-18.4	10.7-11.8	6.6	6.6	FIXED	85 dBc	None
7	17.3-18.4	11.7-12.8	5.6	5.1-5.6	5	85 dBc*	None

\* 5 MHz steps; >75 dBc for 1 MHz steps

\* +10 to +40 degrees C Operating; -30 to +60 degrees C Non-operating; 95% relative humidity, non-condensing; Specifications subject to change without notice