



## 2116-14T11 Block Translator, 14.0 - 14.5 GHz to 10.95 - 11.45 GHz

The 2116-14T11 Block Translator converts 14.0 - 14.5 GHz to 10.95 - 11.45 GHz with a local oscillator at 3.05 GHz. Front panel LEDs provide indication of DC Power, External 10 MHz, and PLL Alarm. The gain is -40 dB to Output #1 and -50 to Output #2. Connectors are SMA female for RF and BNC female for the external reference input and reference output. A three-way switch controls which 10 MHz reference is being used. In the INT position, the internal reference is used, in the EXT position, the external reference is used, and in the AUTO position, the internal reference is used unless a +3 dBm ± 3 dB, 10MHz reference signal is connected to the external reference input. The 2116 is powered by a 100-240 ±10% VAC power supply, and mounted in a 1 3/4" X 19" X 14" rack mount chassis.



**Front Panel**

### EQUIPMENT SPECIFICATIONS\*

#### Input Characteristics

Impedance / Return Loss      50Ω / 15 dB, typ., 14dB min.  
 Frequency                      14.0 to 14.5 GHz  
 Input Level range              -30 to 0 dBm  
 Input 1 dB compression      **+10 dBm**

#### Output Characteristics

Impedance/Return Loss      50Ω / 15 dB, typ., 14dB min.  
 Frequency                      10.95 to 11.45 GHz  
 Output Level Range (#1)      -70 to -40 dBm  
 Output Level Range (#2)      -80 to -50 dBm

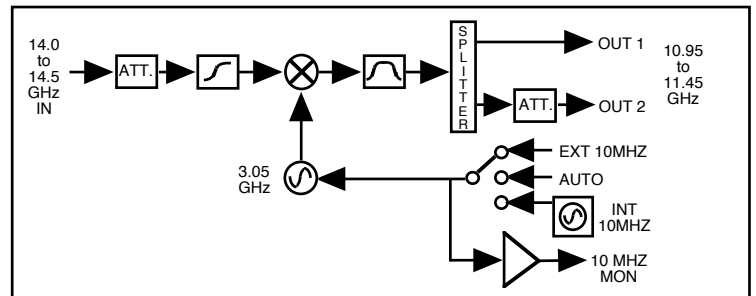
#### Channel Characteristics

Gain                                -30 dB ±2 dB (Output #1); -50 dB ±2 dB (Output #2)  
 Input/Output Isolation        60 dB, min  
 Intermodulation                < -50 dBC for two carriers each at -13 dBm in  
 Spurious                         < -40 dBC  
 Frequency Response          ±1.5 dB, over frequency band; ± 0.5 dB, 40 MHz BW  
 Frequency Sense                Non-inverting

#### LO Characteristics

LO Frequency                    3.05 GHz  
 Frequency Accuracy          ± 0.01 ppm max over temp internal reference; ext. ref. input  
 10 MHz In/Out Level         +3 dBm ± 3 dB

| Phase Noise @ F (Hz) > | 100 | 1K  | 10K | 100K | 1M   |
|------------------------|-----|-----|-----|------|------|
| dBC/Hz                 | -70 | -80 | -90 | -100 | -110 |



**Block Diagram**

#### Controls, Indicators

Power                                Green LED  
 PLL Alarm                        Red LED, External contact closure  
 Ext 10 MHz                        Yellow LED, indicates external 10 MHz reference selected (rear panel DPDT switch)  
 10 MHz Reference                3-way Switch (selects INTERNAL, EXTERNAL, or AUTO mode)

#### Other

RF Connectors                    SMA (female), 50Ω  
 10 MHz Connectors              BNC (female), 50Ω/75Ω  
 Alarm Connector                DB9 - NO or NC contact closure on Alarm  
 Size                                19 inch standard chassis 1.75" high X 14" deep  
 Power                               100-240 ±10% VAC, 47 - 63 Hz, 45 watts max.

**Available Options**  
 Connectors/Impedance  
 NN - 50Ω N-type (RF)

\*0°C to 50°C; Specifications subject to change without notice

