2116-13T11 Block Translator, 13.75 - 14.50 GHz to 10.95 - 11.70 GHz

The 2116-13T11 Block Translator converts 13.75 - 14.50 GHz to 10.95 - 11.70 GHz with a local oscillator at 2.8 GHz. Front panel LEDs provide indication of external 10 MHz (yellow), PLL alarm (red), and DC power (green). The gain is -30 dB to Output #1 and -50 dB 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, 10 MHz reference signal is connected to the external reference input. The 2116 is powered by a 100-240 ±10% VAC power supply, and housed in a 1 3/4" X 19" X 14" rack mount chassis.

**EQUIPMENT SPECIFICATIONS**

**Input Characteristics**
- Impedance / Return Loss: 50Ω / 15 dB, typ., 14dB min.
- Frequency: 13.75 to 14.50 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 11.70 GHz
- Output Level Range (#1): -60 to -30 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, except known spur at 11.2 GHz (Spec -25 with -10 dBm In / -5 dBc with -30 dBm In)
- Frequency Response: ±1.5 dB, over frequency band; ± 0.5 dB, 40 MHz BW
- Frequency Sense: Non-inverting

**LO Characteristics**
- LO Frequency: 2.8 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) > dBC/Hz**

<table>
<thead>
<tr>
<th>Frequency (Hz)</th>
<th>100</th>
<th>1K</th>
<th>10K</th>
<th>100K</th>
<th>1M</th>
</tr>
</thead>
<tbody>
<tr>
<td>dBc/Hz</td>
<td>-70</td>
<td>-80</td>
<td>-90</td>
<td>-100</td>
<td>-110</td>
</tr>
</tbody>
</table>

**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.

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