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, Remote, Mute 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.

**EQUIPMENT SPECIFICATIONS**

**Input Characteristics**
- Impedance/Return Loss
- 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
- Frequency (GHz) SEE BAND CHART
- Output Level Range -60 to 0 dBm
- Output Characteristics
  - Gain, maximum +20 ±3 dB
  - Gain Range: 1 dB Steps +20 to -40 dB;
  - In to Out Isolation, Min. >45 dBC, >60 typ.
  - Spurious, Inband +20 ±3 dB
  - Spurious, LO, out of band >45 dB, >60 typ.
  - Frequency Sense Non-inverting
- Frequency Sense
- Frequency Sensitivity ±0.5 dB
- Frequency Sense

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

**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, Mute Green LED, Yellow 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 500Ω
- 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

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

**BAND CHART**

<table>
<thead>
<tr>
<th>BAND</th>
<th>IN RANGE</th>
<th>OUT RANGE</th>
<th>LO</th>
<th>LO STEP</th>
<th>OUT &amp; IN BAND FIXED Spurs</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>5.85-6.95</td>
<td>3.4-4.5</td>
<td>2.45</td>
<td>2.05-3.05</td>
<td>1 85 dBC 2.05 to 2.25, Carrier related 20 dB C</td>
</tr>
<tr>
<td>2</td>
<td>7.90-8.40</td>
<td>7.25-7.75</td>
<td>0.65</td>
<td>0.65</td>
<td>FIXED</td>
</tr>
<tr>
<td>3</td>
<td>13.75-14.85</td>
<td>10.7-11.8</td>
<td>3.05</td>
<td>2.05-3.05</td>
<td>1 85 dBC 2.14 to 2.36; 2.675 to 2.95</td>
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<tr>
<td>4</td>
<td>13.75-14.85</td>
<td>11.7-12.8</td>
<td>2.05</td>
<td>2.05-3.05</td>
<td>1 85 dBC 2.05 to 2.12; 3.24 to 2.565; 2.925 to 3.05</td>
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<tr>
<td>5</td>
<td>13.75-14.85</td>
<td>11.7-12.8</td>
<td>1.5</td>
<td>1.24-1.80</td>
<td>1 85 dBC 1.24 to 1.40; 1.15 to 1.6 ; 1.75 to 1.8</td>
</tr>
<tr>
<td>6</td>
<td>17.3-18.4</td>
<td>10.7-11.8</td>
<td>6.6</td>
<td>6.6</td>
<td>FIXED</td>
</tr>
<tr>
<td>7</td>
<td>17.3-18.4</td>
<td>11.7-12.8</td>
<td>5.6</td>
<td>5.1-5.6</td>
<td>5 85 dBC None</td>
</tr>
</tbody>
</table>

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

**DATA SHEET**

REV. F 10/01/15

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