The 4116-T310 Ka-band Translator converts 27.5 - 31.0 GHz to 17.7 - 21.2 GHz in four selectable fixed bands and to 2.5 - 6.0 GHz for monitoring purposes. LEDs provide indication of DC Power, and PLL Alarms. The maximum gain is +20 dB. Connectors are 2.92mm for the RF In, RF Monitor, and RF Out. Type N for the C-band monitor, and SMA (all female) for the external reference input and output.

Gain, band select, and internal 10 MHz frequency are controlled by the M&C (Ethernet and/or Status/Control) Connectors. In AUTO, the 10 MHz reference stays in external if the external level is in the +2 to +8 dBm range. The 4116-T310 is powered by a 100-240 ±10% VAC power supply and mounted in a 8" Wide X 6" High X 16" Deep, Weather Resistant* enclosure.

**Specifications Subject to Change Without Notice**

**Equipment Specifications**

**Input Characteristics**
- Impedance/Return Loss: 50Ω/14 dB
- Frequency: SEE BAND CHART
- Noise Figure, Max.: 20 dB max gain
- Maximum Input Level: -15 dBm

**Output Characteristics**
- Impedance/Return Loss: 50Ω/14 dB, Mute & UnMute
- Frequency (GHz): SEE BAND CHART
- Output Level Range: -15 to 0 dBm, Optimum
- Output 1 dB compr.: +10 dBm, max. gain
- Mute: >60 dB @ 0 dBm output
- C-Band Mon Gain/1dB: +10±2dB/ +5 (+10 goal) dBm

**Channel Characteristics**
- Gain at Fc: +20 ±3 dB, (+20 to 0 dB variable in 1±1 dB steps)
- Input to output isolation: > 60 dB, min (at max gain and 0 dBm out)
- Spurious, Inband: SIG REL. <-45 (-50 goal) dBc, > -15 to 0 dBm out; SIG IND. <=-50 dBm; fc ± 0.5 GHz
- Spurious, Out of band: <=-50 dBm, signal independent; fc ± 1.5 GHz
- Spurious, LO: <=-50 dBm, measured at the input; <=-25 dBm, measured at the output
- Intermodulation: <=-50 dBc for two carriers at 4 MHz spacing, each at -7 dBm out
- Frequency Response: ±2 dB, over RF band; ± 0.5 dB, 40 MHz BW
- Frequency Sense: Non-inverting

**LO Characteristics**
- LO Frequency: Band Specific, 8.3 to 10.3 GHz translation range, 5 MHz steps
- Frequency Accuracy: ± 0.05 ppm max over temp internal reference; ext. ref. input

**Phase Noise**

<table>
<thead>
<tr>
<th>Band</th>
<th>Input (GHz)</th>
<th>Output (GHz)</th>
<th>Translation (GHz)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>27.5 - 28.5</td>
<td>17.7 - 18.7</td>
<td>9.800 (8.8-10.3)</td>
</tr>
<tr>
<td>2</td>
<td>28.0 - 29.0</td>
<td>18.3 - 19.3</td>
<td>9.700 (8.7-10.3)</td>
</tr>
<tr>
<td>3</td>
<td>29.0 - 30.0</td>
<td>19.2 - 20.2</td>
<td>9.800 (8.8-10.3)</td>
</tr>
<tr>
<td>4</td>
<td>30.0 - 31.0</td>
<td>20.2 - 21.2</td>
<td>9.800 (8.8-10.3)</td>
</tr>
<tr>
<td>5</td>
<td>27.5 - 28.5</td>
<td>18.3 - 19.3</td>
<td>9.200 (8.3-10.2)</td>
</tr>
<tr>
<td>6</td>
<td>27.5 - 28.5</td>
<td>19.2 - 20.2</td>
<td>8.300 (8.3-9.3)</td>
</tr>
<tr>
<td>7</td>
<td>28.0 - 29.0</td>
<td>17.7 - 18.7</td>
<td>10.300 (9.3-10.3)</td>
</tr>
<tr>
<td>8</td>
<td>28.0 - 29.0</td>
<td>19.2 - 20.2</td>
<td>8.800 (8.3-9.8)</td>
</tr>
<tr>
<td>9</td>
<td>29.0 - 30.0</td>
<td>18.7 - 19.7</td>
<td>10.300</td>
</tr>
<tr>
<td>10</td>
<td>29.0 - 30.0</td>
<td>19.0 - 20.0</td>
<td>10.000 (9.7-10.3)</td>
</tr>
<tr>
<td>11</td>
<td>30.0 - 31.0</td>
<td>20.0 - 21.0</td>
<td>10.000 (9.8-10.3)</td>
</tr>
</tbody>
</table>

*Weather Resistant enclosures are designed to be water resistant for installation in an outdoor enclosure (antenna hut or OR mounted outdoors on a weatherized connector) at their specified temperature ranges. They are designed to be "out in the elements" (water, sleet, snow, etc.) but they are not designed to be "submerged under" water. If an extended temperature range is required, there is an Extended Temperature option (Option W21; -30˚C to +60˚C) available at an additional cost. Contact Cross for quote.

**Cross Technologies, Inc.**

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