**DATA SHEET**

**REV. H 09/26/11**

**4116-T24 Translator, UHF to UHF, Weather Resistant**

The 4116-T24 Translator converts a 20 MHz bandwidth signal from the UHF input band (0.2 to 0.4 GHz) to a 20 MHz bandwidth signal on the UHF output band (0.2 to 0.4 GHz), in 0.1 MHz steps. Front panel LEDs provide indication of DC Power, and PLL Alarm. The UHF to UHF gain is +20 dB, maximum. Connectors are Type N female for the UHF out, UHF in and UHF in Monitor and SMA female for the external 10 MHz reference input. Gain, band select, mute, and internal 10 MHz frequency are controlled by the M&C (Ethernet and/or Status/Control). In AUTO, the 10 MHz reference stays in external if the external level is in the +2 to +8 dBm range. The 4116 is powered by a 100-240 ± 10% VAC power supply, and mounted in a 8"W X 6"H X 16"D Weather Resistant* enclosure.

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**EQUIPMENT SPECIFICATIONS**

**Input Characteristics**
- Impedance/Return Loss: 50Ω/14 dB
- Frequency: 0.2 to 0.4 GHz
- Noise Figure, Max.: 20 dB at max gain
- Input Level range: -30 to -10 dBm

**Output Characteristics**
- Impedance/Return Loss: 50Ω/14 dB, Mute & UnMute
- Frequency: 0.2 to 0.4 GHz
- Output Level Range: -60 to 0 dBm
- Output 1 dB compr.: +10 dBm, max. gain
- Mute: >60 dB @ 0 dBm output

**Channel Characteristics**
- Gain at Fc: +20 ±5 dB max., +20 to -40 dB variable in 1 dB steps
- Input to Output Isolation: >45 dB, min., +20 dB gain
- Spurious, Inband: <40 dBc in band, -15 to 0 dBm out, <50 dBc, typical; Fin ≠ Fout
- Spurious, LO: <60 dBm LO
- Intermodulation: <50 dBc for two carriers at 4 MHz spacing, each at -5 dBm out
- Frequency Response: ±2 dB, over UHF band; ± 0.5 dB, 20 MHz BW
- Frequency Sense: Non-inverting

**LO Characteristics**
- LO step size: 0.1 MHz, input and output selection; Fin ≠ Fout
- Frequency Accuracy: ±0.05 ppm max over temp internal reference, ext. ref. input
- 10 MHz level In/Mon: Input=+2 to +8 dBm in, Monitor Output = Input Level ± 1.0 dB, 50Ω

**Phase Noise @ F Hz > dBC/Hz**

<table>
<thead>
<tr>
<th>Hz</th>
<th>-100</th>
<th>-1K</th>
<th>-10K</th>
<th>-100K</th>
<th>-1M</th>
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<tr>
<td>dBc/Hz</td>
<td>-70</td>
<td>-75</td>
<td>-85</td>
<td>-100</td>
<td>-110</td>
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</tbody>
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**Controls, Indicators**
- Gain, Band, 10M Freq.: Gain, band select, and internal 10 MHz frequency via Ethernet M&C or Status/Control Connector.
- PLL Alarm: Red LED, External Contact Closure.
- Power: Green LED.

**Other**
- UHF In, Mon. Connector: Type N (female), 50Ω
- UHF Out Connector: Type N (female), 50Ω
- M&C Connector(s): Status/Control Connector, MS3112E14-18S Weather Resistant Connector; Ethernet Connector, Standard RJ45 Weatherized Connector, RJF6G
- 10 MHz connectors: SMA (female), 50Ω.
- Size: 8"W X 6"H X 16"D Weather Resistant* Enclosure.
- Power: 100-240 ±10% VAC, 47 - 63 Hz, 25 watts max./ FCI Clipper Series CL1M1102 Connector.

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*Weather Resistant enclosures are designed to be water resistant for installation in an outdoor enclosure/antenna hut OR mounted outdoors on an antenna assembly at their specified temperature ranges. They are designed to be located “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.

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