4115-31 Tri-Band Block Upconverter - Weather Resistant

The 4115-31 Block Upconverter converts 0.95 - 2.05 GHz to one of three RF bands. Front panel LEDs provide indication of DC Power, and PLL Alarm. The L-band to RF gain is +30 dB. Connectors are Type N for the L-band, RF and RF Monitor and SMA (all female) for the external reference input and reference output. Gain, band select, and internal 10 MHz frequency are controlled by the Ethernet M&C or via the Status/Control connector. In AUTO, the 10 MHz reference stays in external if the external level is in the +2 to +8 dBm range. The 4115 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.

**EQUIPMENT SPECIFICATIONS**

**Input Characteristics**
- Impedance/Return Loss: 50Ω/14 dB
- Frequency: 0.95 to 2.05 GHz
- Noise Figure, Max.: 20 dB max gain
- Input level range: -40 to -15 dBm

**Output Characteristics**
- Impedance/Return Loss: 50 Ω/14 dB, Mute & UnMute
- Frequency (GHz): BAND1-5.85 to 6.95
- BAND2-13.75 to 14.85
- BAND3-17.3 to 18.4 GHz
- Output Level Range: -15 to 0 dBm
- Output 1 dB compr.: +10 dBm, max gain
- Mute: >60 dB @ 0 dBm output

**Channel Characteristics**
- Gain at Fc: -30 ±3 dB, (+30 to 0 dB variable in 0.5dB steps)
- Spurious, Inband: SIGNAL RELATED < -55 dBc in band; -15 to 0 dBm out; SIGNAL INDEPENDENT, < -60 dBm
- Spurious, Out of band: < -55 dBc for two carriers at 4 MHz spacing, each at -5 dBm out, max gain
- Intermodulation: < -50 dBc at 4 MHz spacing
- Frequency Response: ±2 dB, over RF band; ± 0.5 dB, 40 MHz BW
- Frequency Sense: Non-inverting

**LO Characteristics**
- LO Frequency: Band Specific
- Frequency Accuracy: ± 0.05 ppm max over temp internal reference; ext. ref. input
- 10 MHz level In/Mon: +2 to +8 dBm in; Monitor Output = input level ± 1.0 dB, 50 ohms

**Phase Noise @ F (Hz) >**

<table>
<thead>
<tr>
<th></th>
<th>100</th>
<th>1K</th>
<th>10K</th>
<th>100K</th>
<th>1M</th>
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<tbody>
<tr>
<td>dBc/HZ</td>
<td>-70</td>
<td>-80</td>
<td>-85</td>
<td>-98</td>
<td>-110</td>
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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**
- RF In, Mon. Connector: Type N (female), 50Ω
- L-Band Connector: Type N (female), 50Ω
- 10 MHz connectors: SMA (female), 50Ω
- Status/Control Conn.: Multipin MS3112E14-18S Weather Resistant Connector
- Ethernet Connector: Standard RJ45 Weather Resistant* Ethernet Connector, RJF6G
- 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 Weatherized Connector

*+0 to +50 degrees C; Specifications subject to change without notice

“Weather Resistant” enclosures are designed to be weather 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.