4116-253 Ka-band Block Downconverter, Weather Resistant*

The 4116-253 Ka-band Block Downconverter converts 25.3 - 26.3 GHz to 0.95 - 1.95 GHz. Front panel LEDs provide indication of DC Power and PLL Alarms. The L-band to RF gain is +30 ± 3 dB maximum and is adjustable in 0.5 ± 0.5 dB steps. Connectors are 2.92 mm for RF In, SMA for external reference input and output, and Type N (female) for L-band out. Gain and internal 10 MHz frequency are controlled by the Ethernet M&C. In AUTO, the 10 MHz reference stays in external if the external level is in the +2 to +8 dBm range. The unit is powered by a 100-240 ±10% VAC power supply, and is mounted in a 8"W X 6"H X 16"D Weather Resistant* enclosure.

**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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**EQUIPMENT SPECIFICATIONS**

**Input Characteristics**
- Impedance/Return Loss: 50Ω/14 dB
- Frequency (GHz): 25.3 to 26.3
- Noise Figure, Max.: 20 dB max gain
- Input Level range: -50 to -30 dBm

**Output Characteristics**
- Impedance/Return Loss: 50Ω/14 dB
- Frequency: 0.95 to 1.95 GHz
- Output Level Range: -20 to 0 dBm
- Output 1 dB compr.: +10dBm, max gain, Gmax

**Channel Characteristics**
- Gain at Fc: +30 ± 3 dB, (+30 to 0 dB variable in 0.5± 0.5 dB steps)
- Image Rejection: > 60 dB, min
- Spurious, Inband: SIG. REL. < -50dBc, < -15 to 0dBm out; 2XFo < -45dBc; SIG. INDEP. < -60dBm; 95.1-1.95 GHz out, Gmax
- Spurious, Out of Band: < -55 dBm, 0.5-0.94 GHz and 1.96 - 2.45 GHz; at Gmax
- Intermodulation: < -50dBc for two carriers at 4 MHz spacing, each at -5 dBm out; at Gmax
- Frequency Response: ±1.5 dB, 950 -1950 MHz out; ±1.0 dB, 1150 -1550 MHz out (25.5 - 25.9 GHz In)
- Phase Linearity: ±5 degrees max. from linear phase, 1150 -1550 MHz out (25.5 - 25.9 GHz In)
- Frequency Sense: Non-inverting

**LO Characteristics**
- LO Frequency: 24.35 GHz
- Frequency Accuracy: ± 0.01 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

<table>
<thead>
<tr>
<th>Phase Noise @ F (Hz)</th>
<th>100</th>
<th>1K</th>
<th>10K</th>
<th>100K</th>
<th>1M</th>
<th>10M-40M</th>
</tr>
</thead>
<tbody>
<tr>
<td>dBc/Hz</td>
<td>-65</td>
<td>-75</td>
<td>-80</td>
<td>-95</td>
<td>-110</td>
<td>-120</td>
</tr>
</tbody>
</table>

**Controls, Indicators**
- Gain, 10M Freq.: Gain 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 Connector: 2.92 mm (female), 50Ω
- L-Band Connector: Type N (female), 50Ω
- 10 MHz Connectors: SMA (female), 50Ω
- Ethernet Connector: Standard RJ45 Weatherized Connector, RJF6G
- Size: 8" Wide X 6" High X 16" Deep Weather Resistant* Enclosure
- Power: 100-240 ±10% VAC, 47 - 63 Hz, 25 watts max./ FCI Clipper Series CL1M1102 Connector

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