2116-107 Block Downconverter, 10.7 - 11.7 GHz to 0.95 - 1.95 GHz

The 2116-107 Downconverter converts 10.7 - 11.7 GHz to 0.95 - 1.95 GHz with a local oscillator at 9.75 GHz. Front panel LEDs provide indication of DC Power, External 10 MHz, and PLL Alarm. The gain is +35 dB. Connectors are SMA female for the RF and BNC female for the L-Band and external reference input and reference output. A three-way switch controls which 10 MHz reference is being used. In the INT position, the internal reference is used, in the EXT position, the external reference is used, and in the AUTO position, the internal reference is used unless a +3 dBm ± 3 dB, 10MHz reference signal is connected to the external reference input. The 2116 is powered by a 90-260 VAC power supply, and mounted in a 1 3/4” X 19” X 14” rack mount chassis.

**Equipment Specifications**

**Input Characteristics (RF)**
- Impedance/Return Loss: 50Ω/14 dB
- Frequency: 10.7 to 11.7 GHz
- Noise Figure, Max.: 20 dB max gain
- Level: -55 to -35 dBm
- 1 dB Compression: -25 dBm

**Output Characteristics (IF/L-Band)**
- Impedance/Return Loss: 50Ω/14 dB
- Frequency: 0.95 to 1.95 GHz
- Level: -20 to 0 dBm
- 1 dB Compression: +10 dBm

**Channel Characteristics**
- Gain: +35 dB ± 2 dB
- Image Rejection: > 60 dB, min
- Spurious, In Band: SIGNAL RELATED < -60 dBc in band, 0 dBm out; SIGNAL INDEPENDENT, < -60 dBc
- Spurious, Out of Band: < -50 dBm
- Intermodulation: < -55 dBc for two carriers each at -10 dBm out
- Frequency Response: ± 1.5 dB, 950 - 1950 MHz out; ± 0.5 dB, 40 MHz BW
- Frequency Sense: Non-inverting

**LO Characteristics**
- LO Frequency: 9.75 GHz
- Frequency Accuracy: ± 0.01 ppm max over temp internal reference; ext. ref. input
- 10 MHz Level In/Out: +3 dBm ± 3 dB
- Phase Noise: @ Freq 100Hz 1kHz 10kHz 100kHz 1MHz
  - dBC/Hz  < -70  < -80  < -85  < -100  < -110

**Controls, Indicators**
- Ext 10 MHz: Yellow LED, indicates external 10 MHz reference selected (rear panel DPDT switch)
- PLL Alarm: Red LED, External contact closure
- Power: Green LED

**Available Options**

<table>
<thead>
<tr>
<th>Connectors/Impedance</th>
<th>Options</th>
</tr>
</thead>
<tbody>
<tr>
<td>FN - 50Ω N-type (RF)</td>
<td>M - 50Ω N-type (RF), 50Ω BNC (IF)</td>
</tr>
<tr>
<td>75Ω F-type (IF)</td>
<td>N - 50Ω N-type (RF), 75Ω BNC (IF)</td>
</tr>
<tr>
<td>NN - 50Ω N-type (RF)</td>
<td>NN - 50Ω N-type (RF), 50Ω N-type (IF)</td>
</tr>
<tr>
<td>NS - 50Ω SMA (RF)</td>
<td>NS - 50Ω SMA (RF), 50Ω N-type (IF)</td>
</tr>
</tbody>
</table>

*+10 to +40 degrees C; Specifications subject to change without notice*