3116-76-1200 Block Downconverter, 7.675 - 8.725 GHz to 1200 ± 325 MHz

The 3116-76-1200 Downconverter converts 7.675 - 8.725 GHz (Fc = 8.0 - 8.4 GHz) to 1200 ± 325 MHz (non-inverted) in 1 MHz steps with a 6.80 - 7.20 GHz local oscillator. The gain is +35 dB maximum with a 30 dB adjustment in 0.5 ± 0.5 dB steps. Front panel LEDs provide indication of Remote operation, PLL Alarm and DC Power. Frequency and internal/external/Auto reference mode selection are controlled by front panel switches or remote selection (via RS-232C/485, standard; Ethernet Optional) and are viewable on the LCD Display. Connectors are Type N female for the RF and BNC female for the L-Band and external reference input and reference output. In AUTO, the 10 MHz reference stays in external if the external level is +3 dBm, ±3 dB. The 3116 is powered by a 100-240 ± 10% VAC power supply, and housed in a 1 3/4" X 19" X 14" rack mount chassis.

**Equipment Specifications**

**Input Characteristics (RF)**
- Impedance/Return Loss: 50Ω/14 dB
- Frequency: 7.675 to 8.725 GHz (Fc = 8.0 - 8.4 GHz)
- Noise Figure, Max.: 12 dB
- Input Level range: -55 to -35 dBm
- Input 1 dB compression: -25 dBm

**Output Characteristics (L-Band)**
- Impedance/Return Loss: 50Ω ± 15 db
- Frequency: 1200 ± 325 MHz
- Output Level Range: -20 to 0 dBm
- Output 1 dB compression: +10 dBm at max. gain

**Channel Characteristics**
- Gain at Fc, Max.; adj.: +35 dB ± 2 dB, max. gain; 30 dB adjustment in 0.5 ± 0.5 dB Steps (Fc = 8.0 - 8.4 GHz)
- Image Rejection: > 60 dB, min.
- Spurious, In Band: SIGNAL RELATED < -45 dBC, 0 dBm out; SIGNAL INDEPENDENT, < -55 dBm (1200 ± 325 MHz Out)
- Spurious, Out of Band: < -50 dBm (0.3-0.87 and 1.55-2.0 GHz Out)
- Intermodulation: < -50 dBC for two carriers at 4 MHz spacing, each at -10 dBm out, at Gmax.
- Frequency Response: ± 2.0 dB over the band, ± 1.0 dB 1200 ± 325 MHz out;
- Frequency Sense: Non-inverting

**LO Characteristics**
- LO Frequency: 6.80 - 7.20 GHz, 1 MHz steps
- Frequency Accuracy: ± 0.01 ppm max over temp internal reference; ext. ref. input
- 10 MHz In/Out Level: 3 dBm, ± 3 dB, w/ Auto-detect

**Phase Noise @ F (Hz)**

<table>
<thead>
<tr>
<th>Standard</th>
<th>dBc/Hz</th>
</tr>
</thead>
<tbody>
<tr>
<td>10</td>
<td>-55</td>
</tr>
<tr>
<td>100</td>
<td>-75</td>
</tr>
<tr>
<td>1K</td>
<td>-80</td>
</tr>
<tr>
<td>10K</td>
<td>-80</td>
</tr>
<tr>
<td>100K</td>
<td>-100</td>
</tr>
<tr>
<td>1M</td>
<td>-120</td>
</tr>
</tbody>
</table>

**Controls, Indicators**
- Freq.: Ext Ref Selection: Direct readout LCD; pushbutton switches or remote
- Pwr.: Alarm: Red LED; Yellow LED; Yellow LED
- Remote: RS232C/RS485/422, 9600 baud (Ethernet Optional)

**Other**
- RF Connector: N-Type (female), 50Ω
- L-Band Connector: BNC (female), 50Ω
- 10 MHz Connectors: BNC (female), 75Ω, works with 50 or 75 ohms
- Alarm/Remote Conn.: DB9 - NO or NC contact closure on Alarm
- Size: 19 inch standard chassis 1.75" high X 14.0" deep
- Power: 100-240 ± 10% VAC, 47 - 63 Hz, 30 watts max.

*R10°C to 40°C; Specifications subject to change without notice*