2116-275-1800 Block Downconverter, 27.5 - 28.5 GHz to 1.3 - 2.3 GHz

The 2116-275-1800 Downconverter converts 27.5 - 28.5 GHz to 1.3 - 2.3 GHz (Fc=1800 MHz) with a local oscillator at 26.2 GHz. Front panel LEDs provide indication of DC Power, External 10 MHz, and PLL Alarm. The gain is +30 dB. Connectors are 2.92 mm female for the RF input and BNC female for the RF output (designated 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. It is powered by a 100-240 ± 10% VAC power supply, and in a 1 3/4" X 19" X 14" rack mount chassis.

**EQUIPMENT SPECIFICATIONS**

**Input Characteristics (RF)**
- Impedance/Return Loss: 50Ω/14 dB
- Frequency: 27.5 to 28.5 GHz
- Noise Figure, Max.: 12 dB max gain
- Level: -50 to -30 dBm
- 1dB Compression: -20 dBm

**Output Characteristics (designated L-Band)**
- Impedance/Return Loss: 50Ω/14 dB
- Frequency: 1.3 to 2.3 GHz
- Level: -20 to 0 dBm
- 1dB Compression: +10 dBm

**Channel Characteristics**
- Gain: +30 dB ±2 dB at Fc
- Image Rejection: > 60 dB, min
- Spurious, In Band: SIGNAL RELATED<-60 dBC in band, 0 dBm out; SIGNAL INDEPENDENT,<-60 dBm
- Spurious, Out of Band: <-50 dBm (0.5-1.3 GHz and 2.3-3.3 GHz Out)
- Intermodulation: <-55 dBC for two carriers each at -10 dBm out
- Frequency Response: ±2.0 dB, 1.3-2.3 GHz out; ±0.5 dB, 40 MHz BW
- Frequency Sense: Non-inverting

**LO Characteristics**
- LO Frequency: 26.2 GHz
- Frequency Accuracy: ±0.01 ppm max over temp internal reference; ext. ref. input

<table>
<thead>
<tr>
<th>Phase Noise @ F (Hz)</th>
<th>100</th>
<th>1K</th>
<th>10K</th>
<th>100K</th>
<th>1M</th>
</tr>
</thead>
<tbody>
<tr>
<td>dB/Hz</td>
<td>-70</td>
<td>-75</td>
<td>-80</td>
<td>-90</td>
<td>-110</td>
</tr>
</tbody>
</table>

10 MHz level
- +3 dBm, ±3 dB, 75 ohms, External In or Internal out

**Controls, Indicators**
- INT/AUTO/EXT Switch: Selects internal or external 10 MHz (rear panel DP3T switch)
- Ext 10 MHz: Yellow LED, indicates external 10 MHz reference selected
- PLL Alarm: Red LED, External contact closure
- Power: Green LED

**Available Connector Options**
- 297 - 50Ω 2.92 mm (RF), 75Ω BNC (L-BAND)
- 29N - 50Ω 2.92 mm (RF), 50Ω N-type (L-BAND)
- 29S - 50Ω 2.92 mm (RF), 50Ω 9.2 mm (L-BAND)

**Other**
- RF In Connector: 2.92 mm (female), 50Ω
- RF Out Connector: BNC (female), 50Ω (designated L-band)
- 10 MHz connectors: BNC (female), 75Ω connector; works with 50Ω or 75Ω
- Alarm Connector: 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, 25 watts maximum

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