2115-109 Block Upconverter, 10.95 - 11.7 GHz

The 2115-109 Block Upconverter converts 0.95 - 1.7 GHz to 10.95 - 11.7 GHz with a local oscillator at 10.0 GHz. Front panel LEDs provide indication of DC Power, External 10 MHz, and PLL Alarm. The L-band to RF gain is +20 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 2115 is powered by a 100-240 ± 10% VAC power supply, and mounted in a 1 3/4" X 19" X 14" rack mount chassis.

EQUIPMENT SPECIFICATIONS*

**Input Characteristics**
- Impedance/Return Loss: 50Ω/14 dB
- Frequency: 0.95 to 1.7 GHz
- Noise Figure, Max.: 20 dB max gain
- Input Level range: -40 to -25 dBm
- Input 1 dB compression: -15 dBm

**Output Characteristics**
- Impedance/Return Loss: 50 Ω/14 dB
- Frequency: 10.95 to 11.7 GHz
- Output Level Range: -20 to -5 dBm
- Output 1 dB compression: +5 dBm

**Channel Characteristics**
- Gain: +20 ±1 dB, (+20 to +5 dB continuously variable with Variable Attenuator - Option VA)
- Image Rejection: > 60 dB, min
- Spurious, Inband: SIGNAL RELATED,< -60 dBC in band, -5 dBm out; SIGNAL INDEPENDENT,< -60 dBm
- Spurious, Out of band: < -50 dBm
- Intermodulation: < -50 dBC for two carriers each at -10 dBm out
- Frequency Response: ± 1 dB, 10.95 - 11.7 GHz out; ± 0.5 dB, 40 MHz BW
- Frequency Sense: Non-inverting

**LO Characteristics**
- LO Frequency: 10.0 GHz
- Frequency Accuracy ± 0.01 ppm max over temp internal reference; ext. ref. input
- 10 MHz level: +3 dBm, ± 3 dB, 75 ohms, External In or Internal out

<table>
<thead>
<tr>
<th>Phase Noise @ F (Hz) &gt;</th>
<th>100</th>
<th>1K</th>
<th>10K</th>
<th>100K</th>
<th>1M</th>
</tr>
</thead>
<tbody>
<tr>
<td>dBC/Hz</td>
<td>-70</td>
<td>-80</td>
<td>-85</td>
<td>-100</td>
<td>-110</td>
</tr>
</tbody>
</table>

**Controls, Indicators**
- Attenuator Option -VA: Provides +20 to +5 dB continuously variable gain via front panel variable potentiometer.
- 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 Connector Options**
- M - 50Ω N-type (RF), 50Ω BNC (L-BAND)
- N - 50Ω N-type (RF), 75Ω BNC (L-BAND)
- NF - 50Ω N-type (RF), 75Ω F-type (L-BAND)
- NN - 50Ω N-type (RF), 50Ω N-type (L-BAND)
- SF - 50Ω SMA (RF), 75Ω F-type (L-BAND)
- SN - 50Ω SMA (RF), 50Ω N-type (L-BAND)
- SS - 50Ω SMA (RF), 50Ω SMA (L-BAND)

**Other**
- RF Connector: SMA (female), 50Ω
- L-Band Connector: BNC (female), 50Ω
- 10 MHz connectors: BNC (female), 75Ω Connector; Works for 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 max.

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