2115-21-202 Block Upconverter, Dual, 0.95-1.45 to 18.3-18.8 and 19.7-20.2 GHz

The 2115-21-202 Block Upconverter converts two separate 950 - 1450 MHz signals to 18.3-18.8 GHz (LO=17.35 GHz) and to 19.7-20.2 GHz (LO=3.19 & 15.56 GHz). Front panel LEDs provide indication of DC power, external 10 MHz, and PLL alarm. Gain is 0 ±3 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 unless a +3 dBm ± 3 dB, 10MHz signal is received on 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.

Front and Rear Panels

Block Diagram

EQUIPMENT SPECIFICATIONS*

Input Characteristics
- Impedance/Return Loss: 50Ω / 14 dB
- Frequency, Input 1, Input 2: 950 to 1450 MHz (each input)
- Noise Figure, Max.: 20 dB max gain
- Input Lvl Range - comp: -11 to -31 dBm
- Input Lvl Range/carrier: -22 to -42 dBm
- Input 1 dB compression: +4 dBm

Output Characteristics
- Impedance/Return Loss: 50Ω / 10 dB
- Frequency: 18.3-18.8 & 19.7-20.2 GHz
- Output Lvl Range - comp: -11 to -31 dBm
- Output Lvl Range/carrier: -22 to -42 dBm
- Output 1 dB compression: +4 dBm

Channel Characteristics
- Gain: 0 dB ±3 dB
- Image Rejection: > 50 dB, min
- Spurious, Inband: < -70 dBm
- Spurious, Out of band, LO: < -60 dBm
- Intermodulation: < -50 dBC for two carriers each at -14 dBm out
- Frequency Response: ± 2 dB, 18.3-18.8 GHz and 19.7-20.2 GHz out; ± 1 dB, 40 MHz BW
- Frequency Sense: Non-inverting

LO Characteristics
- LO Frequency: 17.35 GHz (Band 1) and 3.190 & 15.56 GHz (Band 2)
- LO Frequency Accuracy: ± 0.01 ppm max over temp internal reference; external reference input
- 10 MHz In/Out Level: 3 dBm ± 3 dB

Phase Noise @ Freq
<table>
<thead>
<tr>
<th>100 Hz</th>
<th>1kHz</th>
<th>10kHz</th>
<th>100kHz</th>
<th>1 MHz</th>
</tr>
</thead>
<tbody>
<tr>
<td>100 Hz</td>
<td>-55</td>
<td>-65</td>
<td>-80</td>
<td>-100</td>
</tr>
</tbody>
</table>

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

Available Connector Options
- Std. - 50Ω SMA (RF), 50Ω BNC (L-BAND)
- S7 - 50Ω SMA (RF), 75Ω BNC (L-BAND)
- SF - 50Ω SMA (RF), 75Ω F-type (L-BAND)
- SN - 50Ω SMA (RF), 50Ω N-type (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, 45 watts max.

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