The 3115-31-128 Block Upconverter converts 0.95-1.75 to 3.4-4.2 GHz or 0.95-2.05 to 10.70-11.80 GHz or 0.95-2.0 to 11.70-12.75 GHz. The gain range is 0 to +30 dB, adjustable in 0.5 dB steps. Front panel LEDs indicate Remote operation, PLL Alarm and DC Power. Band select, gain and internal/external/Auto reference frequency selection are controlled by front panel switches or remotely via RS 232C or RS485/422 (Ethernet Optional) and are viewable on the LCD Display. Connectors are SMA 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 in the +2 to +8 dBm range. The 3115 is powered by a 100-240 ± 10% VAC power supply, and housed in a 1 3/4” X 19” X 16” rack mount chassis.

**EQUIPMENT SPECIFICATIONS**

**Input Characteristics (RF)**
- Impedance/Return Loss: 50Ω/14 dB
- Frequency Band 1;2;3: 0.95 -1.75; 0.95 -2.05;0.95-2.0 GHz;
- Noise Figure, Max.: 20 dB max gain
- Input Level range: -40 to -20 dBm

**Output Characteristics (L-Band)**
- Impedance/Return Loss: 50Ω/14 dB, Mute and UnMute
- Frequency Band 1;2;3: 3.4-4.2;10.70-11.80;11.70 -12.75 GHz
- Output Level Range: -20 to -5 dBm
- Output 1 dB compression: +5 dBm, at max. gain
- Mute: >60 dB @ 0 dBm out

**Channel Characteristics**
- Gain, max; adjustment: +30 dB ±2 dB, max. gain; 30 dB adjustment in 0.5 ±0.5 dB Steps
- 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, Band 1,2,3; 2.5-3.3 and 4.3-6 GHz ; 9.7-10.7 and 11.9-15.5 GHz; 10.7-11.6 and 12.8-15.5 GHz
- Intermodulation: <-55 dBc for two carriers at 4 MHz spacing, each at -10 dBm out, Gain = +30 dB
- Frequency Response: ±1.5 dB, 3.4-4.2 GHz, 10.70 -11.80 GHz and 11.70 -12.75 GHz out; ± 0.5 dB, 40 MHz BW
- Frequency Sense 1;2;3: Non-inverting

**LO Characteristics**
- LO Freq. Band 1;2;3: 11.40/8.95 GHz; 9.75 GHz; 10.75 GHz
- Frequency Accuracy: ± 0.01 ppm max over temp internal reference; ext. ref. input
- 10 MHz level In/Mon: +2 to +8 dBm in, w/Auto-detect; Monitor Output = +3 ±3 dBm

**Phase Noise @ F (Hz)**

<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>dBc/Hz</td>
<td>-70</td>
<td>-75</td>
<td>-85</td>
<td>-95</td>
<td>-110</td>
</tr>
</tbody>
</table>

**Controls, Indicators**
- Band; Gain:10M Ref Sel. Direct readout LCD; pushbutton switches or remote
- Rem; Alarm; Mute; Pwr: Yellow LED; Red LED; Yellow LED; Green LED
- Remote: RS232C/RG45/422, 9600 baud (Ethernet Optional)

**Other**
- RF Connector: SMA (female), 50Ω
- L-Band Connector: BNC (female), 50Ω
- 10 MHz Connectors: BNC (female), 50Ω/75Ω
- Alarm/Remote Conn.: DB9 - NO or NC contact closure on Alarm
- Size: 19 inch standard chassis 1.75” high X 16.0” deep
- Power: 100-240 ± 10% VAC, 47 - 63 Hz, 45 watts max.

**Available Options**
- Remote M&C Ethernet Options
- W6 - Ethernet w/web browser Interface
- W18 - Ethernet w/SNMP (and MIB) Interface
- W28 - Ethernet w/direct TCP/IP Interface

**Available Connector Options**
- 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)
- 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)
- SS - 50Ω SMA (RF), 50Ω SMA (L-BAND)

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