3115-145-1600 Block Upconverter, 1600 ± 420 MHz to 14.58 - 15.42 GHz

The 3115-145-1600 Upconverter converts 1.18 - 2.02 GHz (1600 ± 420 MHz) to 14.58 - 15.42 GHz (Fc =15.0 GHz) (non-inverted) with a 13.4 GHz local oscillator. The maximum gain is +20 dB (adjustable in 0.5 ± 0.5 dB steps). Front panel LEDs provide indication of Remote operation, PLL Alarm and DC Power. Gain and internal/external/Auto reference frequency 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 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 external if the external level is +3 dBm, ±3 dB. 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 Panel and Rear Panel (shown with optional Ethernet)

**EQUIPMENT SPECIFICATIONS**

**Input Characteristics**
- Impedance/Return Loss: 50Ω/14 dB
- Frequency: 1.18 to 2.02 GHz
- Noise Figure, Max.: 20 dB max gain
- Input Level range: -40 to -25 dBm

**Output Characteristics**
- Impedance/Return Loss: 50Ω /14 dB
- Frequency: 14.58 to 15.42 GHz
- Output Level Range: -20 to -5 dBm
- Output 1 dB compression: +5 dBm at max. gain

**Channel Characteristics**
- Gain, max; adjustment: +20 dB ±2 dB, max. gain at Fc; 20 dB adjustment in 0.5 ±0.5 dB Steps
- Image Rejection: > 60 dB, min
- Spurious, In Band: SIGNAL RELATED <60 dBc in band, -5 dBm out; SIGNAL INDEPENDENT, <60 dBm
- Spurious, Out of Band: <50 dBm, 13.0 to 14.57 and 15.43 to 16.5GHz
- Intermodulation: <50 dBc for two carriers each at -10 dBm out, GAIN = +20 dB
- Frequency Response: ±1.5 dB, 14.58 -15.42 GHz out; ± 0.5 dB, 40 MHz BW
- Frequency Sense: Non-inverting

**LO Characteristics**
- LO Frequency: 13.4 GHz, fixed LO
- 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>100</th>
<th>1K</th>
<th>10K</th>
<th>100K</th>
<th>1M</th>
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<tr>
<td>-70</td>
<td>-80</td>
<td>-85</td>
<td>-100</td>
<td>-110</td>
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**Controls, Indicators**
- Gain: Ext Ref Selection: direct readout LCD; pushbutton switches or remote
- Pwr; Alarm; Rem; Mute: Green LED; Red LED; Yellow LED; Yellow LED
- Remote: RS232C/RS485/422, 9600 baud (Ethernet Optional)

**Other**
- RF Connector: SMA (female), 50Ω
- L-Band Connector: BNC (female), 50Ω
- 10 MHz Connectors: BNC (female), 50Ω, 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 14.58” deep
- Power: 100-240 ± 10% VAC, 47 - 63 Hz, 45 watts max.

**Available Options**
- W31 0 to +50 degrees C operation

**Remote M&C Ethernet Options**
- W8 - 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)
- NN - 50Ω N-type (RF), 50Ω N-type (L-BAND)
- S7 - 50Ω SMA (RF), 75Ω BNC (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.*