3116-77#-1200 Block Downconverter, 7.75 - 8.45 GHz to 1200 ± 20 MHz

The 3116-77#-1200 Downconverter converts 7.75 - 8.45 GHz to 1200 ± 20 MHz (non-inverted) in 100 kHz steps with a 6.55 - 7.25 GHz local oscillator. The gain is -5 ± 2 dB. Front panel LEDs provide indication of Remote operation, PLL Alarm and DC Power. Frequency and internal/external/Auto reference mode 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 Type N 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 ±3 dBm. The 3116 is powered by a 100-240 ± 10% VAC power supply, and housed in a 1 3/4” X 19” X 14” rack mount chassis.

EQUIPMENT SPECIFICATIONS*

**Input Characteristics (RF)**
- Impedance/Return Loss: 50Ω/14 dB
- Frequency: 7.75 to 8.45 GHz
- Noise Figure, Max.: 20 dB
- Input Level Range: -10 to 0 dBm
- Input Non-damage: +10 dBm

**Output Characteristics (L-Band)**
- Impedance/Return Loss: 50Ω/14 dB
- Frequency: 1200 ± 20 MHz
- Output Level Range: -15 to -5 dBm
- Output 1 dB compression: +5 dBm

**Channel Characteristics**
- Gain at Fc: -5 dB ±2 dB
- Image Rejection: > 60 dB, min
- Spurious, In Band: SIGNAL RELATED <-45 dBC, -5 dBm out; SIGNAL INDEPENDENT,<-60 dBm (1200 ±20 MHz Out)
- Spurious, Out of Band: <-50 dBm (0.5-1.17 and 1.23-2.0 GHz Out)
- Intermodulation: <-50 dBc for two carriers at 4 MHz spacing, each at -15 dBm out
- Frequency Response: ±1.5 dB over the band, ± 0.75 dB 1200 ±20 MHz out;
- Frequency Sense: Non-inverting

**LO Characteristics**
- LO Frequency: 6.55 - 7.25 GHz, 100 kHz steps
- 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>Frequency (Hz)</th>
<th>Standard dBC/Hz</th>
</tr>
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<tbody>
<tr>
<td>10</td>
<td>-55</td>
</tr>
<tr>
<td>100</td>
<td>-75</td>
</tr>
<tr>
<td>1K</td>
<td>-80</td>
</tr>
<tr>
<td>10K</td>
<td>-80</td>
</tr>
<tr>
<td>100K</td>
<td>-100</td>
</tr>
<tr>
<td>1M</td>
<td>-120</td>
</tr>
</tbody>
</table>

**Available Options**
- W71 - IF Monitor Port (-20 dB, Front)
- 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

**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)

**Contact Cross for other Options**

**Controls, Indicators**
- Freq.: 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: N-Type (female), 50Ω
- L-Band Connector: BNC (female), 50Ω
- 10 MHz Connectors: BNC (female), 75Ω, 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 14.0” deep
- Power: 100-240 ± 10% VAC, 47 - 63 Hz, 30 watts max.

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