The XTLSLIN-80X-B1 High Power Solid State Block Upconverters (BUC) are a series of compact fully integrated antenna mount units designed for low cost operation and longevity. This unit generates over 50W of linear power providing the most linear output power available in a package this size. By using the latest in high efficiency GaN technology, this linear power can be achieved with a prime power consumption of only 450 watts.

Intended for outdoor operation in challenging environments, the XTLSLIN-80X-B1 is light weight and allows for direct mount to the antenna, minimizing waveguide RF losses. Forced air cooling is implemented in the package to allow reliable operation over an extended temperature range. The monitor and control (M&C) interface provides a component system status via Ethernet or RS-485 and RS-232.
<table>
<thead>
<tr>
<th>Parameters</th>
<th>XTLSIN-80X-B1</th>
</tr>
</thead>
<tbody>
<tr>
<td>FREQUENCY RANGE</td>
<td></td>
</tr>
<tr>
<td>Output</td>
<td>7.9 to 8.4 GHz</td>
</tr>
<tr>
<td>Input</td>
<td>950 to 1450 MHz</td>
</tr>
<tr>
<td>LO Frequency</td>
<td>6950 MHz</td>
</tr>
<tr>
<td>Input Level, w/o damage (maximum)</td>
<td>10 dBm</td>
</tr>
<tr>
<td>Reference Signal Frequency</td>
<td>external 10 MHz</td>
</tr>
<tr>
<td>10 MHz Power Level</td>
<td>0 dBm ± 5 dB</td>
</tr>
<tr>
<td>IF/Reference Input Impedance</td>
<td>50 Ohms</td>
</tr>
<tr>
<td>OUTPUT POWER</td>
<td></td>
</tr>
<tr>
<td>Linear Power (minimum)</td>
<td>80W (49 dBm)</td>
</tr>
<tr>
<td>GAIN</td>
<td></td>
</tr>
<tr>
<td>Small Signal (minimum)</td>
<td>58 dB</td>
</tr>
<tr>
<td>Adjustable Attenuator Range</td>
<td>25 dB min, 0.1 dB steps</td>
</tr>
<tr>
<td>Maximum SSG Variation Over</td>
<td></td>
</tr>
<tr>
<td>Any Narrow Band</td>
<td>± 0.5 dB per 40 MHz</td>
</tr>
<tr>
<td>Full Band</td>
<td>± 1.50 dB</td>
</tr>
<tr>
<td>Slope (maximum)</td>
<td>± 0.04 dB/MHz</td>
</tr>
<tr>
<td>Stability, 24 hr. (maximum)</td>
<td>± 0.25 dB</td>
</tr>
<tr>
<td>Stability, Temperature (maximum)</td>
<td>± 2.0 dB over temperature range at any frequency</td>
</tr>
<tr>
<td>INTERMODULATION (maximum) with respect to sum of two carriers</td>
<td>-25 dBc @ Linear Power</td>
</tr>
<tr>
<td>SPECTRAL REGROWTH @ Linear Power</td>
<td>-30 dBc, 1 SR, OQPSK</td>
</tr>
<tr>
<td>HARMONIC OUTPUT (maximum)</td>
<td>-60 dBc</td>
</tr>
<tr>
<td>AM/PM CONVERSION (maximum)</td>
<td>2.0 deg/db at Linear Power</td>
</tr>
<tr>
<td>NOISE POWER (maximum)</td>
<td></td>
</tr>
<tr>
<td>Transmit Band</td>
<td>-75 dBW/4 kHz</td>
</tr>
<tr>
<td>Receive Band</td>
<td>-75 dBW/4 kHz</td>
</tr>
<tr>
<td>OUTPUT SPURIOUS @ RATED POWER (P&lt;sub&gt;lin&lt;/sub&gt;) excluding 2 MHz centered on the carrier</td>
<td>-60 dBc</td>
</tr>
<tr>
<td>PHASE NOISE (maximum)</td>
<td></td>
</tr>
<tr>
<td>100 Hz</td>
<td>-63 dBc/Hz</td>
</tr>
<tr>
<td>1 kHz</td>
<td>-73 dBc/Hz</td>
</tr>
<tr>
<td>10 kHz</td>
<td>-83 dBc/Hz</td>
</tr>
<tr>
<td>100 kHz</td>
<td>-93 dBc/Hz</td>
</tr>
<tr>
<td>1 MHz</td>
<td>-103 dBc/Hz</td>
</tr>
<tr>
<td>10 MHz REFERENCE PHASE NOISE (maximum)</td>
<td></td>
</tr>
<tr>
<td>1 kHz</td>
<td>-150 dBc/Hz</td>
</tr>
<tr>
<td>10 kHz</td>
<td>-160 dBc/Hz</td>
</tr>
<tr>
<td>100 kHz</td>
<td>-160 dBc/Hz</td>
</tr>
<tr>
<td>VSWR</td>
<td></td>
</tr>
<tr>
<td>Input (maximum)</td>
<td>1.5:1</td>
</tr>
<tr>
<td>Output (maximum)</td>
<td>1.3:1</td>
</tr>
</tbody>
</table>
**BLOCK DIAGRAM**

```
10 MHz/RF INPUT
TYPE N FEMALE

L-BAND
UPCONVERTER

ISOLATOR

SSPA

ISOLATOR

HARMONIC
FILTER

PORT 2
RF OUTPUT
WR-112
TAPPED

PORT 3
FWD PWR

PORT 4
REV PWR
```

**OUTLINE DRAWING**

- **DIMENSIONS (max)**

<table>
<thead>
<tr>
<th></th>
<th>INCHES</th>
<th>CENTIMETERS</th>
</tr>
</thead>
<tbody>
<tr>
<td>L</td>
<td>11.16</td>
<td>28.35</td>
</tr>
<tr>
<td>H</td>
<td>4.43</td>
<td>11.25</td>
</tr>
<tr>
<td>W</td>
<td>5.40</td>
<td>13.76</td>
</tr>
</tbody>
</table>

- **WEIGHT (Typical)**

  10 lb. 4.6 kg.
PRIME POWER
36 to 52 VDC
450 VA Typical at Linear Power

ENVIRONMENT
NONOPERATING TEMPERATURE RANGE -50°C to +70°C
OPERATING TEMPERATURE RANGE -40°C to +60°C
(2°C/1000 Feet Derating)
HUMIDITY Up to 100% Condensing
ALTITUDE 12,000 Feet MSL Max.
SHOCK AND VIBRATION Normal Transportation
COOLING Forced Air

INTERFACE

<table>
<thead>
<tr>
<th>Type</th>
<th>Function</th>
</tr>
</thead>
<tbody>
<tr>
<td>REMOTE CONTROL</td>
<td>Transmit ON/OFF</td>
</tr>
<tr>
<td></td>
<td>RF Inhibit</td>
</tr>
<tr>
<td></td>
<td>Fault Reset</td>
</tr>
<tr>
<td>REMOTE STATUS</td>
<td>Transmit ON/OFF</td>
</tr>
<tr>
<td></td>
<td>Temperature (°C)</td>
</tr>
<tr>
<td></td>
<td>Forward Power</td>
</tr>
<tr>
<td></td>
<td>Summary Fault</td>
</tr>
<tr>
<td></td>
<td>RF Inhibit (ON/OFF)</td>
</tr>
<tr>
<td></td>
<td>Fault Identification</td>
</tr>
<tr>
<td></td>
<td>Lock Detect</td>
</tr>
<tr>
<td></td>
<td>Over Temperature</td>
</tr>
<tr>
<td>XICOM COMMAND SET</td>
<td>ASCII Commands</td>
</tr>
</tbody>
</table>

OPTIONS

- External AC Power Supply, 90 to 264 VAC, 47 to 63 Hz
- SNMP V3 via Ethernet

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