

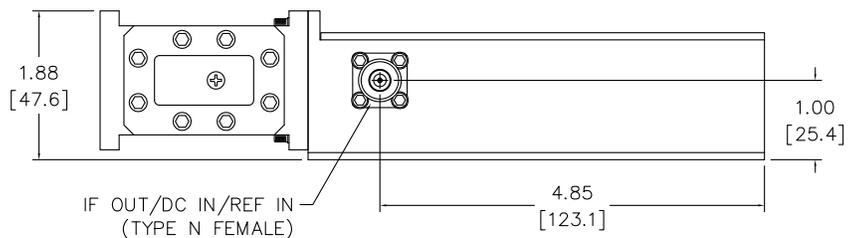
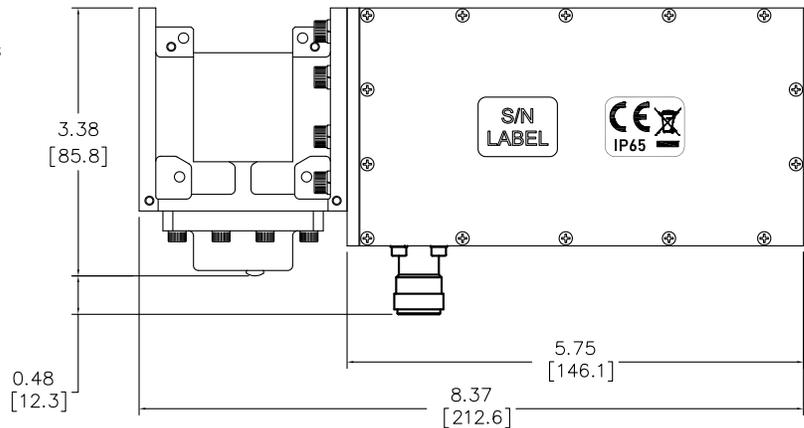
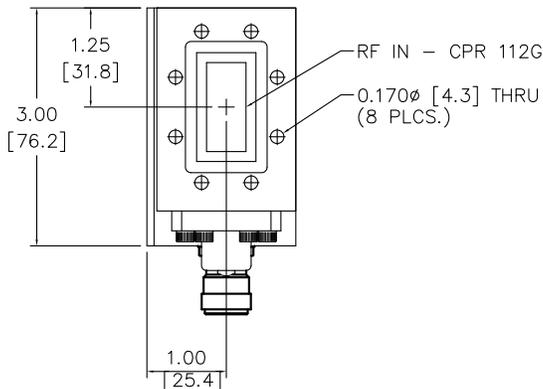
The TLNB-7500AS X-Band Low Noise Block Converter is specially designed for SATCOM applications. Utilizing state-of-the-art HEMT and GaAs FET technology, this block converter has been designed for both fixed and transportable applications.

The TLNB-7500AS has the quality, stability, and performance required for demanding receiver applications in today's SATCOM systems. Internal reference oscillator allows operation when external reference is not present.

### FEATURES:

- Low noise temperature
- High reliability HEMT design
- Phase-locked LO
- Excellent phase noise
- Reverse polarity protection
- Wide operating temperature range, -40 °C to +70 °C
- Internal reference power muted when external reference is present

### Outline Drawing



#### NOTES:

1. DIMENSIONS ARE IN INCHES AND [MILLIMETERS].
2. TOLERANCE -  $\pm 0.02$  [0.5].
3. PAINT: COLOR TO BE COMMERCIAL WHITE.

Outline - 22077-8

| Parameter  | Notes  | Specification   |
|--|--|---|
| Input Frequency  |  | 7.25 to 7.75 GHz  |
| Output Frequency   |  | 950 to 1450 MHz   |
| Output Spectrum  |  | Non-Inverted  |
| Local Oscillator Frequency   |  | 6.30 GHz typical  |
| LO Phase Noise with external reference   | 10 Hz<br>100 Hz<br>1 kHz<br>10 kHz<br>100 kHz<br>1 MHz         | -32 dBc/Hz max.<br>-62 dBc/Hz max.<br>-72 dBc/Hz max.<br>-82 dBc/Hz max.<br>-92 dBc/Hz max.<br>-102 dBc/Hz max. |
| LO Stability with external reference Arstrat compliant   |  | 11 Hz (24 hours)<br>1000 Hz (90 days)   |
| LO Phase Noise with internal reference   | 10 Hz<br>100 Hz<br>1 kHz<br>10 kHz<br>100 kHz<br>1 MHz         | -28 dBc/Hz max.<br>-58 dBc/Hz max.<br>-68 dBc/Hz max.<br>-80 dBc/Hz max.<br>-90 dBc/Hz max.<br>-100 dBc/Hz max. |
| LO Stability with internal reference versus temperature  | -40°C to +70°C<br>including setting at +25°C                   | ±10 kHz   |
| Spurious   | Signal related, IF Band<br>Non-signal related, IF Band         | -60 dBc max.<br>-60 dBm max.  |
| Gain (Nominal)   |  | 60 dB min., 63 dB typical, 66 dB max.   |
| Gain Flatness  |  | ±1.0 dB full band<br>±0.30 dB per 40 MHz  |
| Gain Stability   |  | ±0.5 dB max., per week, constant temperature<br>±2 dB typical versus temperature                                |
| Power Output at 1dB compression (P <sub>1dB</sub> )  |  | +15 dBm min., +18 dBm typical   |
| 3 <sup>rd</sup> Order Output Intercept Point (OIP <sub>3</sub> )   |  | +25 dBm min., +28 dBm typical   |
| Noise Temperature, System  | At +23°C   | 45 K typical, 50 K max.   |
| VSWR   | Input<br>Output  | 1.20:1 typical, 1.25:1 max.<br>1.50:1 typical, 1.80:1 max.  |
| Connectors   | RF Input<br>IF Output/DC In/Ref. In                            | CPR112G Flange<br>Type N Female   |
| Power Requirements   | Voltage<br>Current   | +12 VDC min., +22 VDC max.<br>400 mA typical, 450 mA max.   |
| Operating Temperature  | TAMB   | -40°C to +70°C  |
| <b>External Reference Requirements</b>   |  |   |
| Parameter  | Notes  | Specification   |
| Frequency  |  | 10.00 MHz max.  |
| Input Level  |  | -5 dBm min., 0 dBm typical, +5 dBm max.   |
| Input Impedance  |  | 50 ohms typical   |
| Phase Noise at Offset Frequency  | 10 Hz offset<br>100 Hz offset<br>1 kHz offset<br>10 kHz offset | -105 dBc/Hz max.<br>-135 dBc/Hz max.<br>-145 dBc/Hz max.<br>-150 dBc/Hz max.                                    |
| <b>Caution:</b> To prevent potential equipment damage from water intrusion, which will VOID the warranty, use waterproof cable and apply waterproof tape or heatshrink tubing to protect external connections. |  |   |