TLNB20000AS.0007 Ka-Band Low Noise Block Converter

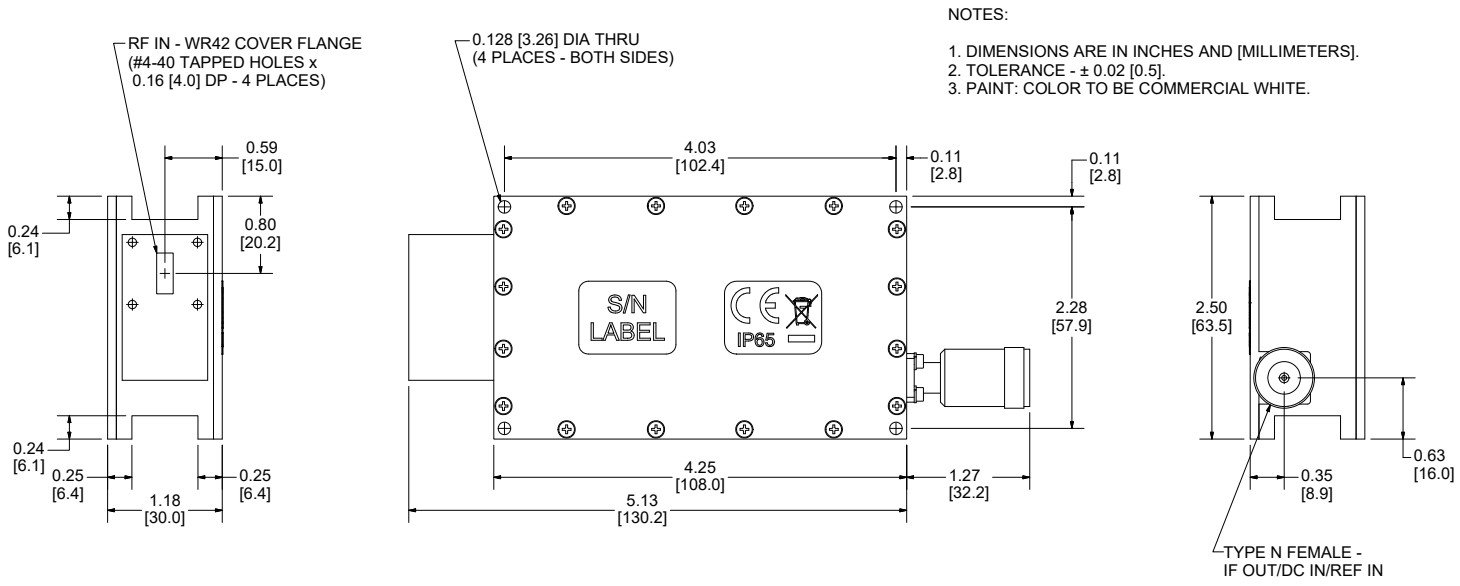
The TLNB-20000AS Ka-Band Low Noise Block Converter is specially designed for SATCOM applications. Utilizing state-of-the-art HEMT and GaAs FET technology, this block converter has been designed for both fixed and transportable applications.

The TLNB-20000AS 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



Outline - 21104-17

CPI Communications & Power Industries

Quality Management System – ISO 9001:2015

CE

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Parameter	Notes	Specification
Input Frequency		20.2 to 21.2 GHz
Output Frequency		1000 to 2000 MHz
Output Spectrum		Non-Inverted
Local Oscillator Frequency		19.20 GHz typical
LO Phase Noise with external reference	10 Hz 100 Hz 1 kHz 10 kHz 100 kHz 1 MHz	-32 dBc/Hz max. -62 dBc/Hz max. -72 dBc/Hz max. -82 dBc/Hz max. -92 dBc/Hz max. -102 dBc/Hz max.
LO Stability with external reference Arstrat compliant		11 Hz (24 hours) 1000 Hz (90 days)
LO Phase Noise with internal reference	10 Hz 100 Hz 1 kHz 10 kHz 100 kHz 1 MHz	-21 dBc/Hz max. -51 dBc/Hz max. -61 dBc/Hz max. -74 dBc/Hz max. -92 dBc/Hz max. -102 dBc/Hz max.
LO Stability with internal reference versus temperature	-40°C to +70°C including setting at +25°C	±29 kHz
Spurious	Signal related, IF Band Non-signal related, IF Band	-60 dBc max. -70 dBc max.
Gain (Nominal)		60 dB min., 63 dB typical
Gain Flatness		±1.0 dB full band ±0.30 dB per 40 MHz
Gain Stability		±0.5 dB max., per week, constant temperature ±2 dB typical versus temperature
Power Output at 1dB compression ($P_{1\,dB}$)		+15 dBm min., +18 dBm typical
3rd Order Output Intercept Point (OIP_3)		+25 dBm min., +28 dBm typical
Noise Temperature, System	At +23°C	110 K typical, 115 K max.
VSWR	Input Output	1.25:1 typical, 1.35:1 max. 1.50:1 typical, 1.80:1 max.
Connectors	RF Input IF Output/DC In/Ref. In	WR42 Cover Flange Type N Female
Power Requirements	Voltage Current	+12 VDC min., +22 VDC max. 400 mA typical, 450 mA max.
Operating Temperature	TAMB	-40°C to +70°C

External Reference Requirements

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 100 Hz offset 1 kHz offset 10 kHz offset	-105 dBc/Hz max. -135 dBc/Hz max. -145 dBc/Hz max. -150 dBc/Hz max.

Caution: 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.

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For more detailed information, please refer to the corresponding CPI technical description if one has been published, or contact CPI. Specifications may change without notice as a result of additional data or product refinement. Please contact CPI before using this information for system design.