Ka-Band Low Noise Block Converter

TLNB20000X.0001

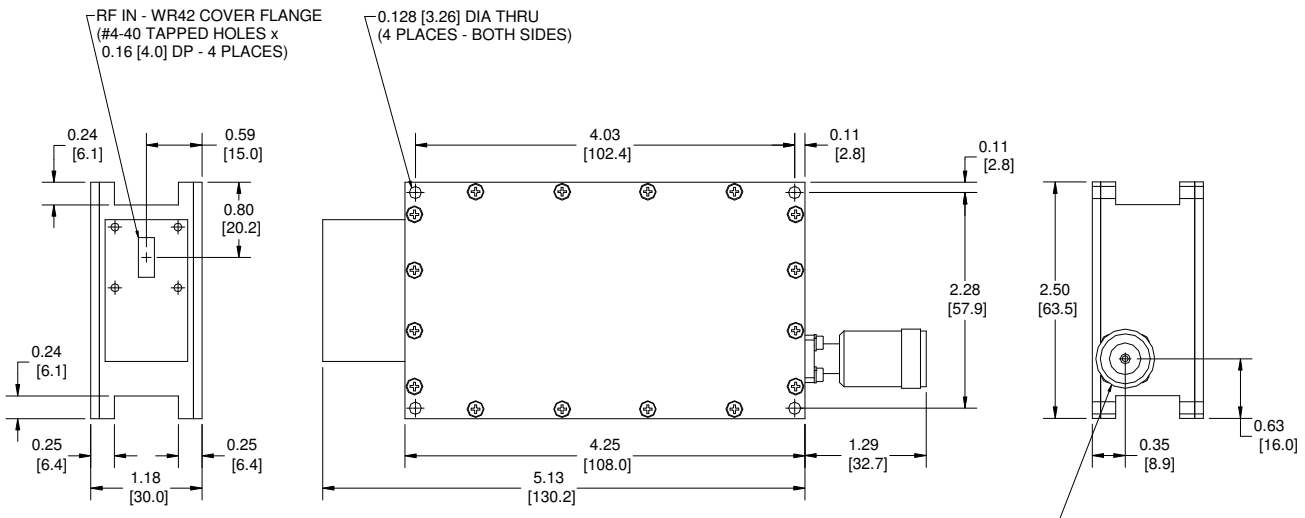
Introduction

The TLNB-20000X 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-20000X has the quality, stability, and performance required for demanding receiver applications in today's SATCOM systems.

Features

- Low noise temperature
- High reliability HEMT design
- Phase-locked oscillator
- Excellent phase noise
- Reverse polarity protection
- Wide operating temperature range, -40 ℃ to +70 ℃

Outline Drawing



NOTES:

1. DIMENSIONS ARE IN INCHES AND [MILLIMETERS].
2. TOLERANCE - ± 0.02 [0.5].
3. PAINT: COLOR TO BE DESERT TAN, SHERWIN WILLIAMS F63TXH13876

Outline 21104-1

GENERAL DYNAMICS
SATCOM Technologies

Specifications

Parameter	Notes	Min.	Nom./Typ.†	Max.	Units
Input Frequency		20.2		21.2	GHz
Output Frequency		1000		2000	MHz
Output Spectrum			Non-Inverted		
Local Oscillator Frequency			19.20		GHz
LO Phase Noise with external reference	10 Hz 100 Hz 1 kHz 10 kHz 100 kHz 1 MHz			-32 -62 -72 -82 -92 -102	dBc/Hz dBc/Hz dBc/Hz dBc/Hz dBc/Hz dBc/Hz
Spurious	Signal related; IF Band Non-signal related; IF Band			-60 -70	dBc dBm
Gain (Nominal)		56	60	64	dB
Gain Flatness	Full-band Per 40 MHz			±1.5 ±0.30	dB dB
Gain Stability	Per week, constant temp vs. temp.		 ±2	±0.5	dB dB
Power Output	At 1 dB compression	+15	+18		dBm
3rd Order Output Intercept Point		+25	+28		dBm
Noise Temperature	At +23 °C		110	120	K
VSWR	Input Output		1.25 1.50	1.35 1.80	:1 :1
Connectors	RF Input IF Output/DC In/Ref. In		WR42 Cover Flange Type N Female		
Power Requirements	Voltage Current	+12	 300	+22 350	Vdc mA
Operating Temperature	T_{AMB}	-40		+70	°C

External Reference Requirements:

Parameter	Notes	Min	Nom.Typ†	Max	Units
Frequency			10.00		MHz
Input Level		-5	0	+5	dBm
Input Impedance			50		ohms
Phase Noise at Offset Frequency	10 Hz 100 Hz 1 kHz 10 kHz			-105 -135 -145 -150	dBc/Hz dBc/Hz dBc/Hz dBc/Hz

† When there is only one value on a line, the Nom./Typ. column is a nominal value; otherwise it is a typical value. Typical values are intended to illustrate typical performance, but are not guaranteed.

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.

GENERAL DYNAMICS
SATCOM Technologies

60 Decibel Road, Suite 200 • State College, PA 16801 USA • Tel. +1-814-238-2700 • FAX +1-814-238-6589
Email: satcom@gd-ms.com • www.gdsatcom.com/electronics.php