

Ku-Band Low Noise Block Converter

TLNB12000X.0005

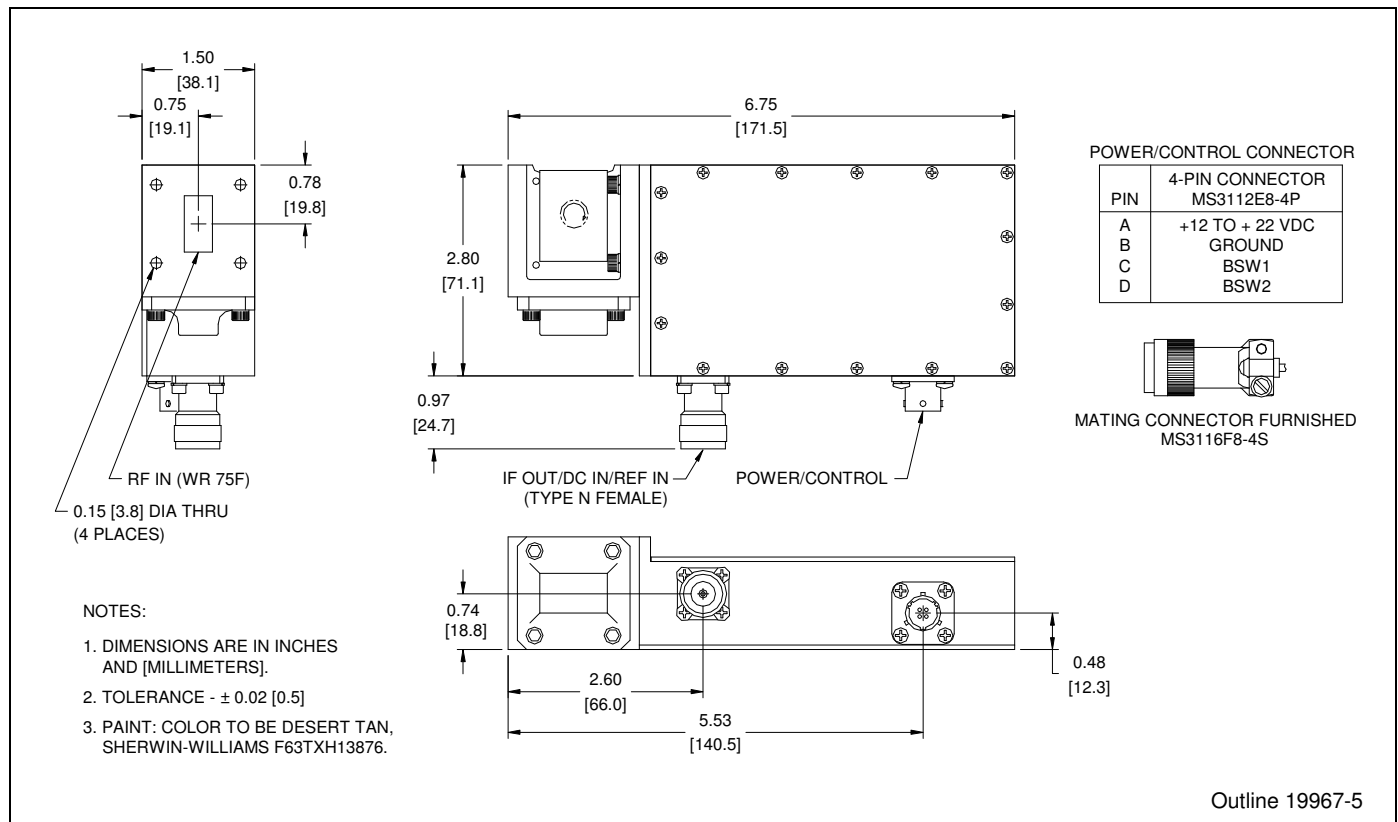
Introduction

The TLNB-12000X band-switching Ku-Band Low Noise Block Converter is specially designed for satellite earth station and other telecommunications 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-12000X has the quality, stability, and performance required for demanding receiver applications in today's diverse satellite communications systems.

Features

- Full Ku-Band coverage via band-switching architecture
- Low noise temperature
- High reliability HEMT design
- Phase-locked oscillator
- Reverse polarity protection
- Wide operating temperature range, -40 °C to +70 °C
- INTELSAT/EUTELSAT compliant phase noise

Outline Drawing



Specifications

Parameter	Notes	Min.	Nom./Typ. [†]	Max.	Units
Input Frequency	Band 1 Band 2 Band 3	10.95 11.70 12.20		11.70 12.20 12.75	GHz GHz GHz
Output Frequency		950		1700	MHz
Output Spectrum			Non-Inverted		
Local Oscillator Frequency*	Muted (BSW1=0, BSW2=0) Band 1 (BSW1=0, BSW2=1) Band 2 (BSW1=1, BSW2=0) Band 3 (BSW1=1, BSW2=1) 2.4 V < Logic 1 < 5 V, 0 V < Logic 0 < 0.4 V @ 30 μ A, typ.		— 10.00 10.75 11.25		GHz GHz GHz
External Reference			10		MHz
LO Phase Noise	100 Hz 1 kHz 10 kHz 100 kHz 1 MHz			-60 -70 -80 -90 -100	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)		60	63		dB
Gain Flatness	Full-band Per 40 MHz			± 1	dB
Gain Stability	Per week, constant temp vs. temp.		± 1	± 0.30 ± 0.5	dB dB
Power Output	At 1 dB compression	+10	+13		dBm
3rd Order Output Intercept Point		+20	+23		dBm
Noise Temperature	At +23 °C		65	75	K
VSWR	Input (50 ohms) Output (50 ohms)		1.20 1.35	1.25 1.50	:1 :1
Connectors	RF Input IF Output/DC In/Ref. In Band Switch/DC In		WR75 Cover Flange Type N Female MS3112E84P (mate supplied)		
Power Requirements	Voltage Current	+12		+22	Vdc mA
Operating Temperature	T _{AMB}	-40	400	500 +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	10 Hz			-105	dBc/Hz
Frequency	100 Hz			-135	dBc/Hz
	1 kHz			-145	dBc/Hz
	10 kHz			-150	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.

* BSW1 (Pin C), BSW2 (Pin D) are pulled up to +3.3 Vdc, referenced to Pin B, through 100 k Ω resistors.

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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