ITAR FREE K-BAND LNB

LNB-192-212-XXX

19.2 GHz - 21.2 GHz

Description

This ITAR-FREE K-Band Low Noise Block (LNB) is designed to meet the extended K-Band Satcom bands and is ideally suited for airborne or SWaP applications where size weight and power are critical.

The unit provides 1.5dB Noise Figure over the full 2 GHz bandwidth from 19.2 to 21.2 GHz in 1 GHz electronically switchable bands. Options at time of order include internal or external 10 or 50 MHz ref in addition to a wide input voltage range. The unit also includes a digital attenuator and PLL lock indicator.

With a total weight of 1.1 lbs and approx size of 5.5” x 3.5” x 0.96” the unit is ideal for todays integrated light weight Ka-Band terminals.

Other Products

Low Noise Block Converters (Ku & X-Band)
Block Up Converters (Ku & X-Band)
Low Noise Amplifiers (Ku & K-Band)
Solid State Power Amplifiers (X, Ku & Ka-Band)
Synthesizers (L, C or X-Band)

Features:

Small Size Weight and Power

Supports both 10 MHz and 50 MHz Ref

Internal Low G-Sensitivity Ref Options

Wide Input Voltage Range

Operates over 19.2 to 21.2 GHz

Electronic Gain Control

Internal Built in Lock Alarm

Hermetically Sealed

ITAR-FREE

TELEDYNE
MICROWAVE SOLUTIONS
Everywhereyoulook™

1274 Terra Bella Avenue, Mountain View, CA 94043
Tel: 1.800.832.6869 or +1.650.962.6944 Fax: +1.650.962.6845
www.teledynemicrowave.com microwave@teledyne.com

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Specifications:

Parameter		Value
Input Freq. Range	(Switchable) 19.2 to 21.2 GHz	
Input Power	1.5:1 Source VSWR	-90 to -25 dBm
Maximum Input Power		+10 dBm
Output Frequency Range	Switched LO, Low side	1.0 to 2.0GHz
Output Power, OP1dB	1.5:1 Load VSWR	+10 dBm min
Gain	Selectable	40, 50 or 60 dB
Spectrum Inversion	Receive	None
VSWR Input		1.5:1
VSWR Output		1.7:1
Noise Figure	+23 ^{O}C	1.5 dB typ
Gain Variation	Over any 120MHz IF bandwidth	2.0 dBp-p
Gain Variation with Temperature	-30 to +60C	+/-2.0 dB
OIP3	Linear gain, -5dBm output	+20 dBm
In-Band Spurious @ IF port	<=2.1GHz, >=1.1GHz, -5dBm OUT	-50 dBc min.
Out of Band Spurious @ IF port	</=1.1GHz, >/=2.1GHz, -5dBm OUT	-65 dBc min.
LO Leakage @ RF port	18.2GHz / 19.2GHz	-70 dBm max.
LO Frequency	Switched LO, Low side	18.2 GHz 19.2 GHz
Phase Noise	10 Hz Offset	-32 dBc/Hz
	100 Hz Offset	-62 dBc/Hz
	1 KHz Offset	-75 dBc/Hz
	10 KHz Offset	-82 dBc/Hz
	100 KHz Offset	-92 dBc/Hz
	1 MHz Offset	-105 dBc/Hz
	10 MHz Offset	-112 dBc/Hz
Reference Clock Input Freq.		10 or 50 MHz

Parameter		Value
Reference Clock Input Level	25 C	0 +/-3 dBm
Reference Clock Waveform	50 Ohm load	Sinusoidal
External Reference Clock Phase Noise Requirement	10 Hz Offset	-120 dBc/Hz
	100 Hz Offset	-150 dBc/Hz
	1 KHz Offset	-150 dBc/Hz
Input Voltage		+12 to +36 VDC
Input Current	Steady State	600mA max @ 24V
Output Connector		SMA(F) or N(F)
Input Interface	Waveguide Facing Mounting Surface	WR42
Size	Excluding connectors	5.5" x 3.5" x 1.1"
Weight	Aluminum Chassis, 6061-T6	1.1 lbs max.
Finish	Body	Painted
	Mounting Surface	Chem. Film
	Waveguide Flange surface	Chem. Film
Operating Temperature		-40 to +73 ^{O}C
Altitude	Operational	20,000 feet
	Non-operational	30,000 feet
Shock	Mil-STD-810E	10g, 11ms Half Sine
Finish	Body	Electroless Nickel
Relative Humidity		100%
Shock	Mil-STD-810E	10g, 11ms Half Sine

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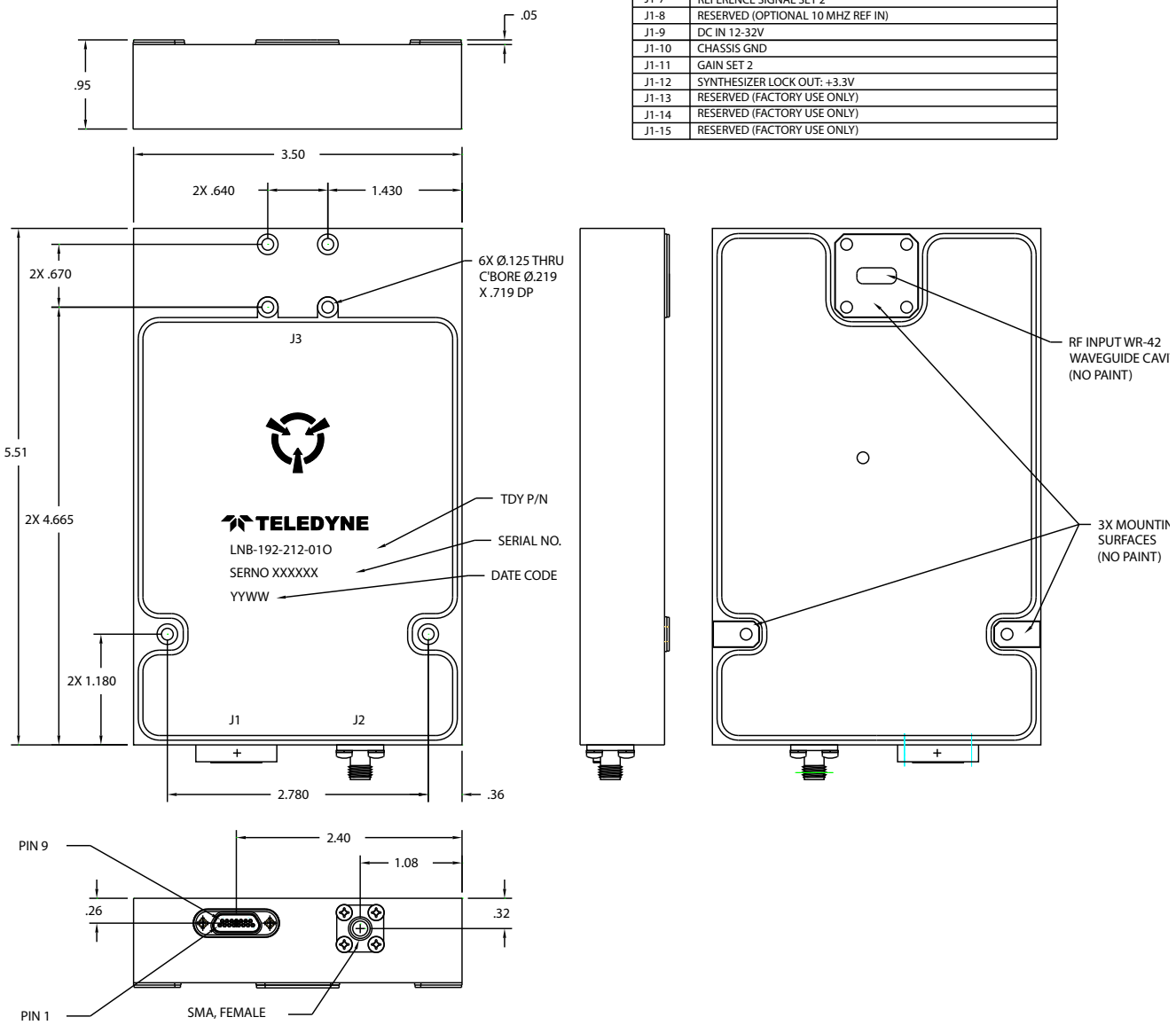
Outline:

TABLE 1: J1 15 PIN MICRO D CONNECTOR, M83513/04B11N	
PIN	FUNCTION
J1-1	DC IN 12-32V
J1-2	CHASSIS GND
J1-3	GAIN SET 1
J1-4	GAIN SET 3
J1-5	BAND SELECT (L=LOW, H=HIGH) TTL
J1-6	REFERENCE SIGNAL SET 1
J1-7	REFERENCE SIGNAL SET 2
J1-8	RESERVED (OPTIONAL 10 MHZ REF IN)
J1-9	DC IN 12-32V
J1-10	CHASSIS GND
J1-11	GAIN SET 2
J1-12	SYNTHESIZER LOCK OUT: +3.3V
J1-13	RESERVED (FACTORY USE ONLY)
J1-14	RESERVED (FACTORY USE ONLY)
J1-15	RESERVED (FACTORY USE ONLY)



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Part Numbering System:

LNB192212 - _ - _ - _ - _ - _ -

Parameter	Value	Code
IF band	1000-2000 MHz	1
	950-1950 MHz	9
Input Voltage	+12 to +16 V	A
	+16 to +36 V	B
IF Connector	SMA (f)	S
	N-Type (f)	N
Max Gain	60 dB	6
	70 dB	7
Reference	External 10MHz via IF Connector	A
	External 10MHz via Separate SMA (f) Connector	B
	External 50MHz via IF Connector	C
	External 50MHz via Separate SMA (f) Connector	D
	Internal Standard $3e^{-9}$g G Sensitivity (Default)	E
	Internal Standard $5e^{-11}$g G Sensitivity (High Vib Enviro)	F
	Internal Reference (no ext. ref. required)	G

Example: LNB-192-212-1-A-S-6-A

Has the following options:

- 1000-2000 MHz IF Frequency
- +12 V to +16 V Supply Voltage
- An SMA(f) IF Connector
- A max Gain of 60 dB
- Reference Frequency of 10 MHz supplied externally over the IF connector
- Note: The internal reference type is “Not Applicable” since the Reference is external.

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