

HIGH-PERFORMANCE Ka-BAND LOW-NOISE BLOCK DOWNCONVERTER



Ka-BAND LNB WITH IF L-BAND COAXIAL OUTPUT



FEATURES

- Low-noise temperature (including input isolator): 120 K maximum
- Excellent input VSWR: $\leq 1.3:1$
- Waveguide input (WR42)
- High RF output power: +20 dBm at P1dB
- Superior immunity from Tx signals
- Designed to meet MIL-STD-188-164B requirements

OPTIONS

- Paint color: FED-STD-595B green hybrid matte or desert tan
- 15 dB gain adjustment
- See datasheet D-363 for Ka-Band LNB with fiber-optic IF output option - Model DB Series

Low noise block downconverter to convert Ka-Band input to L-Band output. LO source provided internally.

INPUT FREQUENCY (GHz)	OUTPUT FREQUENCY (GHz)	LO FREQUENCY (GHz)	GAIN * (dB)	MODEL NUMBER
18.3 to 18.8	0.95 to 1.45	17.35	58 to 62	LNB-183188-60/120
19.7 to 20.7	1.0 to 2.0	18.7	58 to 62	LNB-197207-60/120
19.7 to 20.7	0.95 to 1.95	18.75	58 to 62	LNB-197207-60/120-1
20.2 to 21.2	1.0 to 2.0	19.2	58 to 62	LNB-202212-60/120
20.2 to 21.2	0.95 to 1.95	19.25	58 to 62	LNB-202212-60/120-1

*Note: Option 5 provides manual gain adjustment over 15 dB range: 43 dB to 47 dB minimum to 58 dB to 62 dB maximum

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SPECIFICATIONS	BLOCK DOWNCONVERTER
Type	Non-inverting
Frequency input	Refer to model number table on page one
Frequency output	Refer to model number table on page one
Gain (23 °C) maximum	58 dB to 62 dB, measured mid-band at 23 °C (See Option 5 for 15 dB manual gain adjustment)
Gain stability	0.5 dB/day constant temperature, ± 1.5 dB/-40 °C to +60 °C (RF/IF)
Amplitude response	± 0.5 dB/ ± 40 MHz, ± 1.0 dB/RF band maximum
Output 1 dB compression point	+20 dBm minimum
Intermodulation distortion (third order)	With two 0 dBm outputs, 60 dBc minimum
Noise temperature with isolator	100 K typical, 110 K maximum at 23 °C ambient
Group delay	1 ns peak-to-peak maximum/RF Band
Spurious	
Signal-related	-65 dBc maximum up to -10 dBm output at maximum gain
Signal-independent	-80 dBm in-band maximum
LO leakage at RF input	-80 dBm maximum
Image rejection	50 dB minimum
NF desensitization from Tx band (30 GHz to 31 GHz)	-10 dBm input, 0.1 dB maximum NF increase
Non-damage input level inband	-20 dBm maximum
Return loss (50 ohms)	
Input	18 dB maximum
Output	15 dB maximum

PHASE NOISE SPECIFICATIONS (3 dB LESS THAN MIL-STD-188-164B)

OFFSET	10 Hz	100 Hz	1kHz	10 kHz	100 kHz	1MHz	10 MHz
Level (dBc/Hz)	45	65	75	85	97	107	115
Required reference level (dBc/Hz)	105	135	148	150	152	152	152

Power and frequency reference on output center conductor.

GENERAL SPECIFICATIONS

PRIMARY POWER REQUIREMENTS

Voltage.....	10 VDC to 28 VDC (other voltages optional)
Current.....	325 mA typical, 350 mA maximum at 24 VDC
Reference	
Frequency.....	10 MHz
Level range.....	0 $\pm$ 5 dBm

PHYSICAL

Weight.....	1.2 lb. [0.5 kg]
Connectors	
RF input.....	WR-42 cover flange (O-ring optional)
IF/Reference/DC power.....	N female
Fiber-optic.....	FC/APC (option only)

ENVIRONMENTAL

Operating	
Ambient temperature.....	-40 °C to +60 °C
Atmospheric pressure.....	Up to 10,000 feet
Relative humidity.....	100% with condensation
Input waveguide pressure.....	1.0 psi maximum
Nonoperating	
Ambient temperature.....	-50 °C to +70 °C
Atmospheric pressure.....	Up to 40,000 feet

OPTIONS

Missing option numbers are not applicable for this product.

1. Phase perturbation testing: MIL-STD-188-164B, paragraph 5.5 requirements under shock, vibration and temperature
4. Paint color (per FED-STD-595B) Note: Standard color is white.
 - A. Green pms 383: Color 34094
 - B. Desert Tan : Color 33303
5. Optional IF gain adjustment. Gain variable by 15 dB nominal with manual adjustment.

REPRESENTATIVE BLOCK DIAGRAM



