

LUMISTAR

LS-27-D Two-Channel, Dual-Band PCI Down-Converter Board Data Sheet

Description:



The Lumistar LS-27-D Two-Channel, Dual-Band PCI Down Converter board is a high-density, high performance down converter designed using the same advanced technology as in the LS-

25-P2 PCI Receiver. This down-converter converts two independent channels from two of the RF frequencies typically encountered in flight test operations to a 70 MHz IF. Two typical applications are where the LS-27-D Two-Channel Dual-Band PCI Down Converter is used with the LS-32-R IF Receiver providing two independent multi-mode IF receivers, demodulators, bit synchronizers, and multi-function decommutators in 2 PCI boards. The LS-27-D can also be used with the LS-33-P Diversity Combiner to form a two board solution for a Pre or Post-Detection Diversity Receiver with bit synchronizer and multi-function decom. The Down Converter is manufactured with two frequency bands for each channel - to be specified at the time of order.

Key Features:

- **Two Channels of Dual-Band Down Conversion in a single board**
- **Each channel down converts from RF to 70 MHz IF**
- **Compatible with LS-32-R IF Receiver and LS-33-P Diversity Combiner**
- **Limited and Linear AGC Outputs and AM Outputs**
- **Supports data rates up to 20 Mbps for FM; 40 Mbps for QPSK and SOQPSK**
- **8 dB Noise Figure (maximum); 5dB (typical)**
- **Meets ARTM Tier 0, I & II Phase Noise Specification**
- **6 SAW Filters per channel**

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Tuner:

Input Bands	Specify 2 bands on each channel at the time of order: 2185 – 2480 MHz (E-Band) 2200 – 2400 MHz (S-Band) 1710 – 1850 MHz (U-Band) 1435 – 1540 MHz (L-Band) 830-1130 MHz (N-Band) 680 - 760 MHz (K-Band) 215-320 MHz (P-Band) Custom Bands are Available
IF Bandwidths	6 SAW filters are installed on the down converter which allows software control of 22 IF Bandwidths when used with the LS-32-R IF receiver.
Tuner Resolution	50 KHz
Frequency Accuracy	0.002%
Noise Figure	8 dB (Maximum); 5 dB (Typical)
Input Level Range	-10 dBm to threshold
Maximum Input Level	+10 dBm without damage

Physical:

Board Form Factor	Extra Tall Full Size PCI
Board Size	4.5" tall; 12.375" long
Input Connections	SMB for RF input 1 SMB for RF input 2
Reference Connector	SMB on top for Ref I/O
Input/Output Connector	DB-9 Female
Primary Output	SMB for Channel 1 SMB for Channel 2
Secondary Output	Switchable for Limited or Linear AGC Output SMA for Channel 1 SMA for Channel 2
D-Series to BNC/SMA cable	provided with BNC for AM Out 1 BNC for AM Out 2 BNC for AGC Out 1 BNC for AGC Out 2
Current Required	11 Watts Typical 325 mA at +5V 530 mA at +12V 215 mA at -12V

Demodulator Outputs:

AGC Time Constants	selectable 1, 10, 100, 1000 ms
AM Output Level	Programmable
AM Freq Response	Selectable AM Low Pass Filter for 50, 500, 5K, and 50KHz

Part Number Examples:

Single Channel Part Number Examples

LS-27-DLS	1 Channel, Lower L & S-Band
LS-27-DPU	1 Channel, P & Upper L-Band
LS-27-DPS	1 Channel, P & S-Band
LS-27-DLU	1 Channel, Lower & Upper L-Band

Additional Inputs/Outputs:

Two 70 MHz IF Outputs from each Down-Converter
2nd LO Lock interface for Diversity Combiner

Dual Channel Part Number Examples

LS-27-DLSLS	Both Lower L & S-Band
LS-27-DPSLS	One Channel P & S-Band One Channel Lower L & S-Band

Bus Outputs:

Signal Strength and Peak Deviation
AM Modulation Depth
AM Frequency

Environmental:

Operating Temperature	0° to +50° C
Non-Operating Temperature	-25° to +70° C
Operating Humidity	0 to 90% (Non-condensing)
Non-Operating Humidity	Protect from moisture and contamination

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Specifications are subject to change. Please verify the latest specifications at time of order.

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