

LUMISTAR

LS-27-Q Four-Band PCI Down-Converter Board Data Sheet

Description:



The Lumistar LS-27-Q Four-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 up to 4 RF frequency Bands

typically encountered in flight test operations to a 70 MHz IF. Two typical applications for the LS-27-Q are shown in the block diagrams below where the Four-Band PCI Down Converter is used with the LS-32-R IF Receiver providing a receiver with 4 selectable bands, multi-mode demodulation, bit synchronization, and multi-function PCM decommutation in 2 PCI boards or with the LS-33-P Diversity Combiner which allows a diversity solution from the RF to the decom in 3 PCI boards. The Down Converter is manufactured with up to four frequency bands which are to be specified at the time of order.

Key Features:

- **Four-Band Down Conversion from RF to 70 MHz in a single board**
- **Compatible with LS-32-R IF Receiver BEAST and LS-33-DD Diversity BEAST**
- **Limited and Linear AGC Outputs, AM Output**
- **Supports data rates up to 20 Mbps**
- **8 dB Noise Figure (maximum); 5dB (typical)**
- **Meets ARTM Tier 0, I & II Phase Noise Specification**
- **6 SAW Filters**

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Tuner:

Input Bands	Specify up to 4 bands on 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 Beast products.
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
Reference Connector	SMB on top for Ref I/O
Input/Output Connector	DB-9 Female
Primary Output Connector	SMB for Output 1
Secondary Output Connector	Switchable for AGC or Linear Output
	SMB for Output 2
D-Series to BNC/SMA cable	Provided with BNC for AM Out BNC for AGC Out
Current Required	11 Watts Typical 325 mA at +5V 530 mA at +12V 215 mA at -12V

Part Number Examples:

LS-27-QPLUS	P, Lower L, Upper L & S-Band
LS-27-QPLUE	P, Lower L, Upper L & E-Band

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

Additional Inputs/Outputs:

Two 70 MHz IF Outputs
2nd LO Lock interface for Diversity Combiner

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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