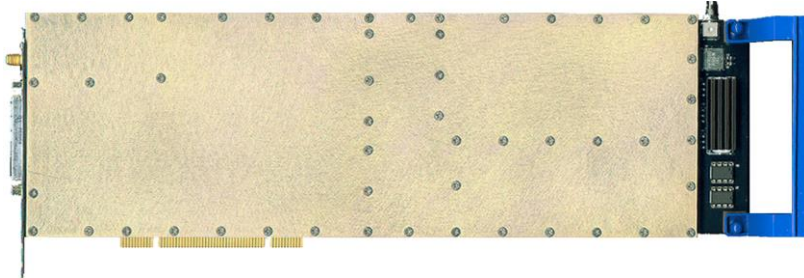


# LUMISTAR

## LS-25-P2 Multi-Band FM PCI Data/Tracking Receiver Data Sheet

### Description:

The Lumistar LS-25-P2 Multi-Band FM Receiver is the second generation quad-band, single-slot, full-length PCI FM Receiver. The receiver is manufactured with one, two, three or four frequency bands. This wideband design supports PCM data rates up to 25 Mbps and includes an FM demodulated output for PCM data. The unit also supports auto-tracking functions. It includes two 70 MHz IF outputs, AM and linear AGC outputs (for auto-tracking). The design offers 12



software selectable IF and Video bandwidths. AC coupling with a low frequency filter is employed to ensure a high quality data link with long strings of NRZ-L ones or zeroes. Down-converter / tracking receiver versions of this design are available (LS-27-D

Multi-Band Dual-Channel, the LS-25-D2 Single Channel Multi-Band Downconverter) and can be used with the LS-35-R series IF Digital Receiver/Combiner (see LS-35-R data sheet). The 20 MHz Reference I/O allows the local oscillators of two down-converters to be locked together to achieve the high performance required in pre-detection diversity combining applications.

### Key Features:

- Single, Dual, Tri, or Quad Band Single Slot PCI Receiver with FM Demodulation
- AM, Controlled AGC, and Linear AGC Outputs for Tracking Receiver support
- Supports FM Data Rates up to 25 Mbps
- 8 dB Noise Figure (maximum); 6 dB (typical)
- 70 MHz IF Outputs from Down-converter and 70MHz IF input to IF Receiver
- 20 MHz Reference I/O for use with Combining applications
- Spectral and Eye Pattern Display Options using LS-35 or LS-22 Series cards
- Compatible with LDPS and LRRS Software

**Frequency Band Options:** Specify up to 4 bands from the table below

P	215-320 MHz	C1	4400-4940 MHz
L	1435-1540 MHz	C2	5091-5150 MHz
U	1710-1850 MHz	C2e	5091-5250 MHz
S	2200-2400 MHz	CIF	400-1150 MHz
E	2185-2485 MHz	CIFe	300-1150 MHz
I	70 MHz IF Input	K	Custom ( <i>consult factory</i> )

## Tuner:

Input Bands	Specify up to 4 (examples): 2185 – 2480 MHz (E-Band) 2200 – 2400 MHz (S-Band) 1710 – 1850 MHz (UL-Band) 1435 – 1540 MHz (L-Band) 215-320 MHz (P-Band)
IF Bandwidths	70 MHz IF Input (no tuner) 12 Standard Values: 0.25, 0.5, 1, 2, 4, 6, 8, 10, 12, 16, 20, 32 MHz
Tuner Resolution	50 KHz
Frequency Accuracy	0.002%
Noise Figure	8 dB (Maximum); 6 dB (Typical)
Operating Input Level	+10 to threshold
Maximum Input Level	+18 dBm without damage

## Demodulator Outputs:

Demodulation Type	FM and AM
Post-Detection BW	12 Software Selectable Video Filters. Unless otherwise specified, they will be set for 50% of the IF Bandwidths
Data Output Level	Bi-Polar (with software controlled output level to +/-3.5 Vp-p) with 75 Ohm output impedance
AGC Output	0-4 V into 1K $\Omega$ , 0 V is -100 dBm, +4V is 0 dBm
AGC Time Constant	4 selectable time constants 1, 10, 100, 1000 ms
AGC Linearity	+/- 2 dB into best fit straight Line -15 dBm to threshold +5 dB
AM Output	4 Vp-p into 10 K $\Omega$ 2.5 Vp-p into 75 $\Omega$
AM Freq Response	Selectable AM Low Pass Filters: 50, 500, 5K, and 50 KHz

## Additional Inputs/Outputs:

AGC Controlled	-15 +/- 5 dBm signal
70 MHz IF	into 50 Ohms
Linear 70 MHz IF	35 dB Gain (typ) into 50 Ohms. Max output of +5 dBm

## 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

## Physical:

Form Factor	Full Size PCI Board
IF Loop-back	Software controlled
Input Connections	SMA for RF in
Reference Connector	SMB for Ref I/O
Input/Output Connector	D-Series 13W3 provided with
D-Series to BNC/SMA cable	BNC for Baseband 1 Out BNC for Baseband 2 Out BNC for AM Out BNC for AGC Out SMA for 70 MHz IF Out1 SMA for 70 MHz IF Out2 SMA for Linear IF Out
Power Required	11 Watts Maximum 325 mA at +5V 530 mA at +12V 215 mA at -12V

## Part Numbering: where X = Band

LS-25-PBX	Single Band
LS-25-PBXX	Dual Band
LS-25-PBXXX	Tri Band
LS-25-PBXXXX	Quad Band

See p. 1 of this document for Band Designations