

LUMISTAR

LS-25-B Modular Drive Bay Dual-Band Receiver Data Sheet

Description:

The Lumistar LS-25-B Modular Drive Bay Receiver is the next generation dual-band modular high performance FM Receiver. The receiver is available with either one or two frequency bands.



This wideband design supports PCM data rates up to 20 Mbps and includes both an FM demodulated output for PCM data, and AM/linear AGC outputs for tracking receivers. The design offers up to 12 IF Bandwidths and 12 Video Filters. AC coupling with a low pass filter is employed to ensure a high quality data link with long strings of NRZ-L ones or zeroes. The unit provides a software selectable 10MHz reference I/O port for locking local oscillators to a high precision external source or to arrange multiple units in a master/slave arrangement. The receiver's

control and status is achieved via auto-switched RS-232 or "2-wire" RS-485. When utilizing the RS-485 interface, multi-drop configurations can be accommodated. The auto switching is based on the unit address. A USB to RS-485 adapter is available for easy control from a laptop.

Key Features:

- **Single or Dual-Band Modular Drive Bay Receiver with FM Demodulation**
- **AM, Controlled AGC, and Linear AGC Outputs**
- **Supports data rates up to 20 Mbps**
- **8 dB Noise Figure (maximum); 6dB (typical)**
- **70 MHz IF Output from Down-converter and 70MHz IF input to IF Receiver**
- **Compatible with LDPS Software and RS-232 Interface**

Frequency Band Options: Specify up to 2 bands from the table below:

- P 215-320 MHz**
- CIF 400-1150 MHz Down Converter Lower and Mid C band**
- L 1435-1540 MHz**
- U 1710-1850 MHz**
- S 2200-2400 MHz**
- E 2185-2485 MHz**
- I 70 MHz IF Input**
- K Custom, consult factory**

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Tuner:

Input Bands	Specify up to 2: 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) 70 MHz IF Input (no tuner)
IF Bandwidths	4 or 12 (depending on model) 0.5, 1, 1.5, 2.5, 3.5, 4, 6, 8, 10, 12, 16, 20 22, 24, 26, 28, 30 MHz, please specify at time of order
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	4 or 12 Software Selectable. 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	SW selectable,: 0 to +1V, 0 to +2V, 0 to +4V, 0 to -1V, 0 to -2V, 0 to -4V, into 1K Ω .
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 Ω 2.5 Vp-p into 75 Ω SW selectable Invert command
AM Freq Response	Selectable AM Low Pass Filters: 50, 500, 5K, and 50 KHz

Additional Inputs/Outputs:

AGC Controlled	-15 +/- 5 dBm signal into 50 Ohms
70 MHz IF	50-55 dB Gain (typ) into 50 Ohms. User adjustable.
Linear 70 MHz IF	Max output @ +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	5.785" D x 4.0" W x 1.25" H (5.25" hard drive compatible)
Input Connections	SMA for RF in
Reference Connector	SMA for 10 MHz Ref I/O
Output Connections	SMA for 70 MHz Limited IF output and 70 MHz Limited/Linear output
Input/Output Connector	D-Series 44 pin for power and data interfaces
D-Series to BNC-M cable	BNC for Baseband 1 Out BNC for Baseband 2 Out BNC for AM Out BNC for AGC Out
Current Required	8 Watts Typical 325 mA at +5V 530 mA at +12V

Part Numbering: where X = Band

LS-25-BA(X)	Single Band 4IF/4Video
LS-25-BB(X)	Single Band 12IF/12Video
LS-25-BA(XX)	Dual Band 4IF/4Video
LS-25-BB(XX)	Dual Band 12IF/12Video