

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**
- 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, 34MHz, 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:

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|-------------------|---|
| 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:

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|------------------------------------|
| 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 |