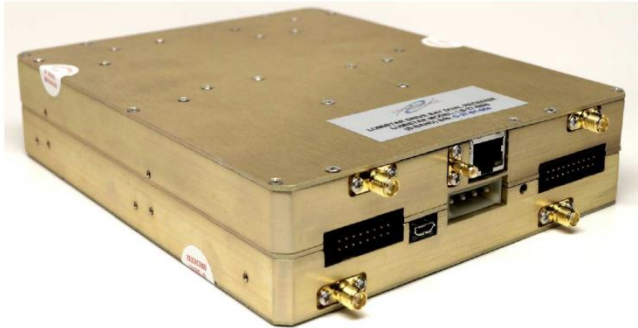


LUMISTAR

LS-27-B Modular Dual Channel Tri-Band Tracking and Data Receiver Data Sheet

Description: The Lumistar LS-27-B Modular Dual Channel Tri-Band Tracking and Data Receiver is Lumistar's third generation of modular high performance FM Receivers. This wideband design supports one or two independent channels of PCM with data rates up to 20 Mbps. The unit includes both an optional FM demodulated output for PCM data, and standard



programmable AM/linear AGC outputs for auto-tracking receivers. The design offers 8 IF Bandwidths and 8 Video Filters per channel for each receiver. 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 10 MHz 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 Ethernet, USB or auto-switched RS-232 (or "4-wire" RS-485 in place of 232). When utilizing the RS-422 interface, multi-drop configurations can be accommodated.

Key Features:

- **Single/Dual-Channel --- Single/Dual/Tri-Band Modular FM Receiver**
- **Supports two independent data streams**
- **Programmable AM and AGC, with Linear AGC Freeze Outputs**
- **Supports data rates up to 20 Mbps**
- **8 dB Noise Figure (maximum); 6dB (typical)**
- **Automatic G/T Test and Calculations for Antenna Systems**
- **70 MHz IF Output from Down-converter and 70MHz IF input to IF Receiver**
- **Compatible with LDPS and LRRS Software**

Frequency Band Examples: Specify up to 3 bands below (300 MHz to 6 GHz available):

P: 215-320 MHz	S: 2200-2400 MHz
L: 1435-1540 MHz	E: 2185-2485 MHz
U: 1710-1850 MHz	C1: 4400-5150 MHz
C2E: 5091-5250 MHz	I: 70 MHz

Note: Custom bands available, please consult factory.

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

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Tuner:

Input Bands	Specify upon order 2185 – 2480 MHz (E-Band) 2200 – 2400 MHz (S-Band) 4400-5150 (C-band) 1710 – 1850 MHz (UL-Band) 1435 – 1540 MHz (L-Band) 215-320 MHz (P-Band) 70 MHz IF Input (no tuner)
IF Bandwidths	8 selectable IF Bandwidths 0.25, 0.5, 1, 2, 5, 10, 20, 40 MHz (Standard), Custom IF BW sets available
Tuner Resolution	50 KHz
Frequency Accuracy	0.002 ppm
Noise Figure	8 dB (Maximum); 6 dB (Typical)
Operating Input Level	+10 to threshold
Maximum Input Level	+30 dBm without damage

Demodulator Outputs:

Demodulation Type	FM and AM
Video BW	8 Software Selectable, unless otherwise specified shall be set for 50% of the IF Bandwidths (standard)
Data Output Level	Bi-Polar (with software controlled output level to +/-3.5 Vp-p) with 75 Ohm output impedance
AGC Output	Fully Programmable, SW selectable,,: any slope and any endpoints, -4 to +4 V into 1K Ω .
AGC Time Constant	5 selectable time constants 0.1, 1, 10, 100, 1000 ms
AGC Linearity	+/- 1 dB into best fit straight Line -15 dBm to threshold
AM Output	4 Vp-p into 10 K Ω 2.5 Vp-p into 75 Ω SW selectable Invert command Envelope detection (standard) Coherent detection (optional)
AM Freq Response	Software selectable AM Low Pass Filters: thirty-two from 50 Hz to 50 KHz

Additional Inputs/Outputs:

AGC Controlled	-15 +/- 5 dBm signal into 50 Ohms
70 MHz IF	
Linear 70 MHz IF	50-55 dB Gain (typ) into 50 Ohms. User adjustable. 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	7.00" L x 5.75" W x 1.625" H
Input Connections	SMA for RF in 1/2
Reference Connector	SMA for 10 MHz Ref I/O
Output Connections	SMA for 70 MHz IF output 1/2
Input/Output Connectors	Tyco/Molex multi-pin connectors for power, control, status and data interfaces, RJ-45 and USB
Power Required	22 Watts Typical +11 to +36 VDC

Part Numbering: where X = Band

LS-27-B(X)	Single Channel/ Single Band
LS-27-B(XX)	Single Channel/Dual Band
LS-27-B(XXX)	Single Channel/Tri-Band
LS-27-BB(X)	Dual Channel/Single Band
LS-27-BB(XX)	Dual Channel/Dual Band
LS-27-BB(XXX)	Dual Channel/Tri Band

Consult Factory for Other Options and Examples

Airborne Capable Models Available Upon Request

Refer to Document "USM-27B-03-001-04" for more information

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