



Lumistar LS-96M-P1 Series Portable Data Re-Transmission System

**A Complete Full Duplex Data Receiving/Processing
Recording & RF Re-Transmission
Ground Station in a *Lunchbox Case!***

**The LS-96-M Series is Designed
Specifically to Support of
IRIG Flight Test Operations**



Lumistar's Newest & Most Compact Telemetry System Product

LS-96-M-P1 Series Features:

- Utilizes Lumistar's LS-28-DRSM and LS-76-M Technology Mated Together To Create a "Re-Transmission System"
 - TM Receiving/Processing Module About the Size of a Hard Drive
 - Modular Dual-Channel Solid State IF to RF Upconversion
- Ground, Mobile, Airborne/Shipboard & Remote Ops
- AC or Rechargeable Battery Operable w/Hot Swap
- IP-67 Rated "Pistol" Case
- Flexible/Extensible Firmware-Based Personalities
- Dual Channel – Up to 5-Band Receiving & Combining
 - RF Bands From 200 MHz to 7 GHz
- Take Your Data From Ether to Ethernet
 - RF to UDP TMOIP Multicast in a Single Portable Unit
- RF to Traditional PCM Bit Sync Clock/Data
 - Three Independent Bit Sync Outputs
 - CH1/CH2 and Combined
 - TTL and Differential High Speed 422 Simultaneously
- Data Retransmission in Two Modes
 - Bent Pipe Mode - Retransmission of the RF spectrum at a different RF frequency
 - Re-Formatting Mode - Allows retransmission of received data at a different modulation format and RF frequency
- Multi-Mode Mod/Demod Formats Licensed for Rx/Tx
 - Digital & Analog PCM/FM, SOQPSK, Multi-H CPM, BPSK, QPSK, OQPSK, AUQPSK, PCM/PM, Subcarrier, NTSC & PAL, Others
 - Data rates to 60 Mbps
- Three 70 MHz IF Outputs
 - CH1/CH2 and Combined
- Software Selectable Dual Channel Bit Sync Mode
- Supports Decryption of Data (if required)
- LDPC in accordance with IRIG 106 (*Optional with Rx and/or Tx*)
- STC Capable
- Receiver Parameter Performance Logging Tool
- Automated G/T Test Tool for Legacy Track Antenna Stations



Lumistar LS-96-M-P1 Series

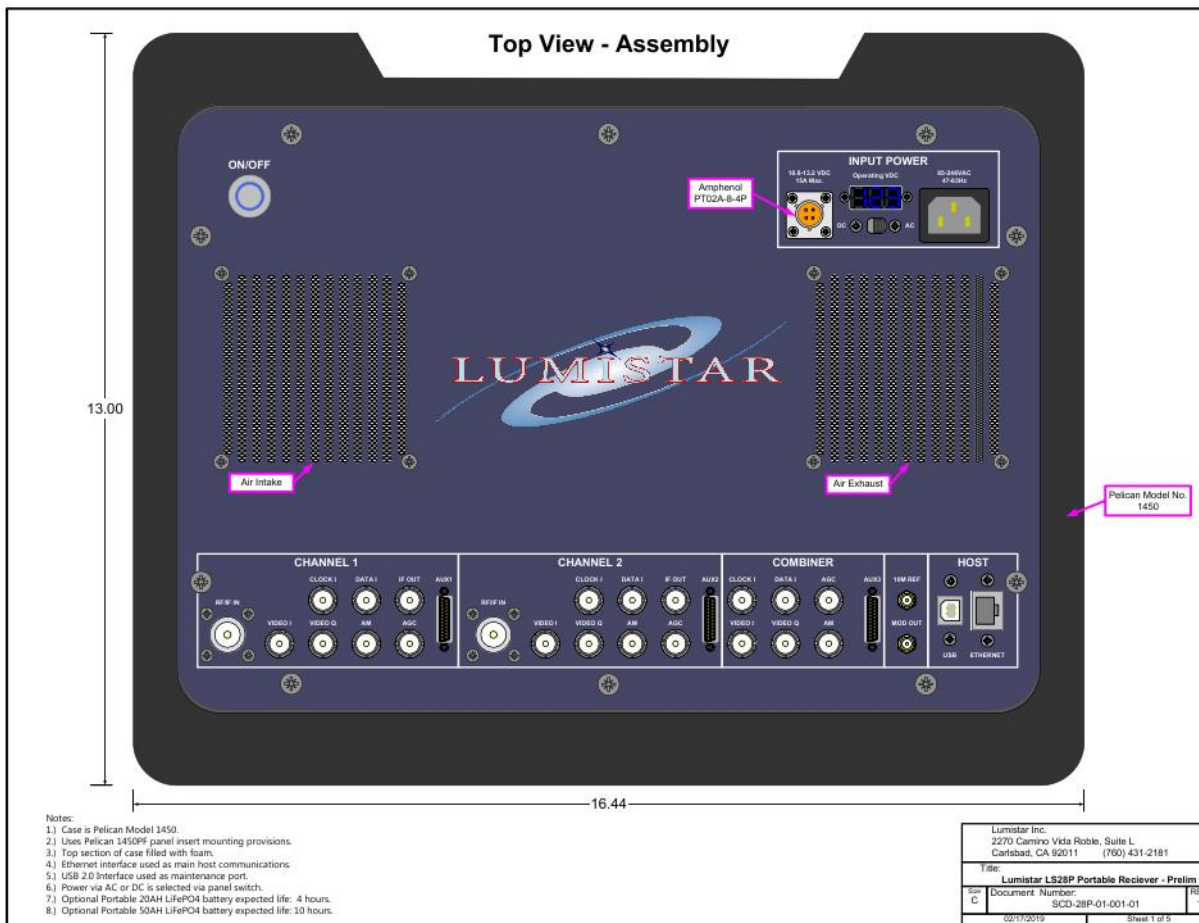
Portable Data Re-Transmission System Features

- 4 dB Noise Figure at S band with up to 120 dB Dynamic Range
- Data IF Bandwidth Resolution of 10 KHz
 - Over 40,000 IF Bandwidth Selections
 - Bandwidth Selections <50 KHz to >40 MHz
- +10 dBm Operational, +29 dBm Non-Damage at Start-Up
- Data Recording and Playback (Optional)
 - 64GB per data channel x three channels (*18 hours at 8 Mbps per channel*)
- Spectral Displays (CH1 and CH2)
- O-scope Displays (CH1, CH2 & COMBINED)
- Bit Error Rate Reader (CH 1, CH2 & COMBINED for I&Q Channels)
- Internal PCM Simulation and IF Modulator
 - Excellent for Loop Back Tests using Internally Generated Data Patterns or Frames
- 70 MHz to RF Upconverter
- User Programmable AGC outputs for Track Receiver Applications
 - Extremely Linear, High Sensitivity, +/- 5V
- Thirty-two User Selectable Lowpass Filtered AM Outputs for Tracking
- IRIG Time Code Reader / Generator Option
- Used for Stamp of Ethernet Packets/Decom Data/Logging Receiver Performance
- No OS
 - Control / Status over Ethernet, USB and RS-232
- Small Size and Weight
 - 16.5" x 13.0" x 6.8"
 - Approx. 16 pounds
 - IP 67, ATA Specification 300, Military Standard C-4150J
 - BUOYANCY: Waterproof (lid closed) / Floats in Salt Water
- AC or Optional Battery Operation
 - Up to 8 hour battery life w/ hot swap AC<>DC
 - 80 watts power dissipation (typical)
- Auto-Boot to Last Saved Configuration on Power On Mode
 - No Operator Intervention Needed in this Mode
 - Enhances Remote Operability
- Also Available in Dual Channel Modular or 1U Rack Mounted Configurations

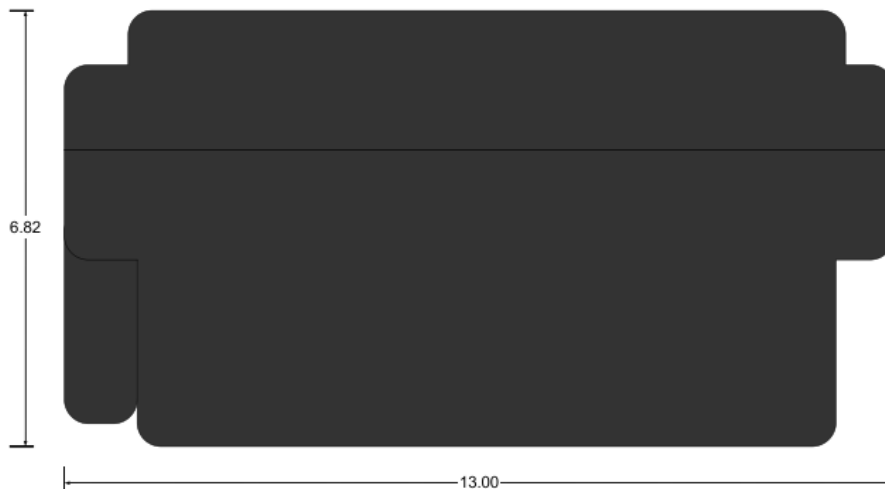
Upconversion Specifications

- **Standard RF Upconversion Frequencies (MHz):**
 - 215-320, 400-1150, 1435-1535, 1710-1850, 2200-2395, 2185-2485, 4400-4950, 5091-5150, 5091-5250
(Many Custom Bands Available, Please Consult Lumistar)
- **Number of Upconversion Bands:**
 - Up to 5 plus IF pass-thru
- **RF Tuning Step:**
 - 50 kHz step size (typical); to 10Hz upon request
- **Maximum IF Input Signal without damage:**
 - +27 dBm
- **IF Input Frequency:**
 - 70MHz typical, Variable from 30 MHz to 100MHz
- **RF Output P1dB:**
 - Variable; +20 dBm to -96dBm;
- **Rf Output Fading:**
 - Software controlled; 20 kHz fade rate, with 14-bit resolution
- **VSWR:**
 - 1.5:1 typical or better
- **Frequency Accuracy:**
 - 0.002 ppm
- **Input/Output Impedance:**
 - 50 ohms
- **IF Inputs:**
 - Two inputs; SW selectable; linear and limited gain controls

Outline and Dimensions - with Signal I/O

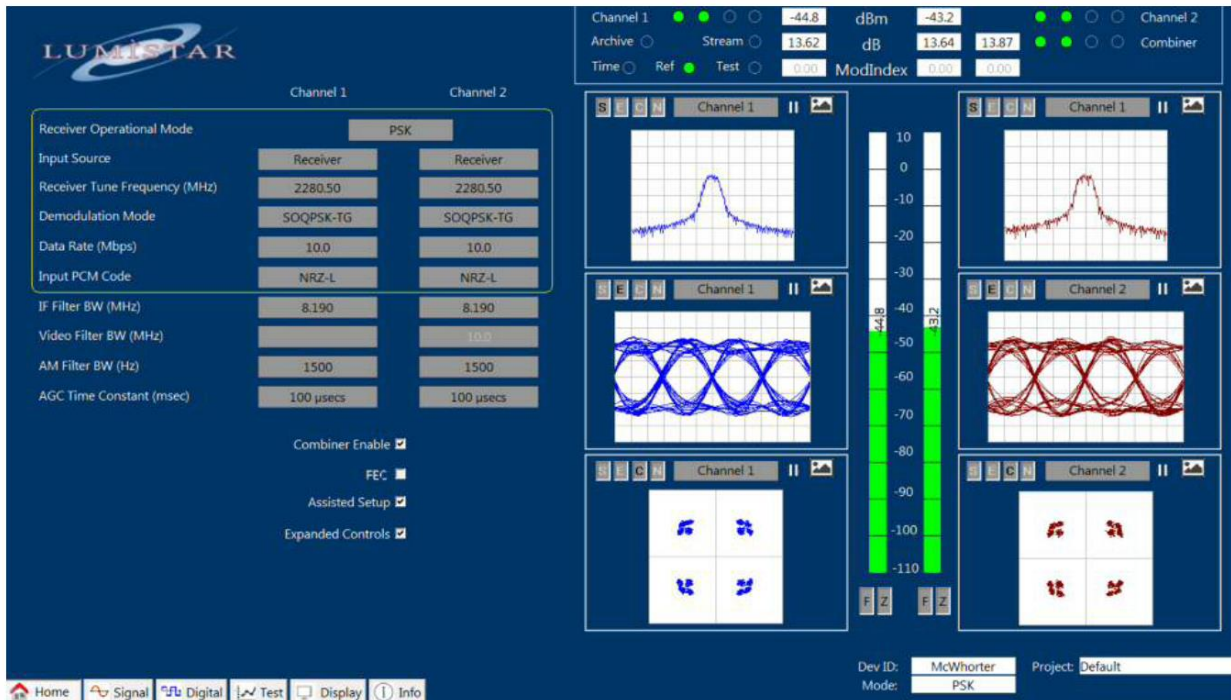


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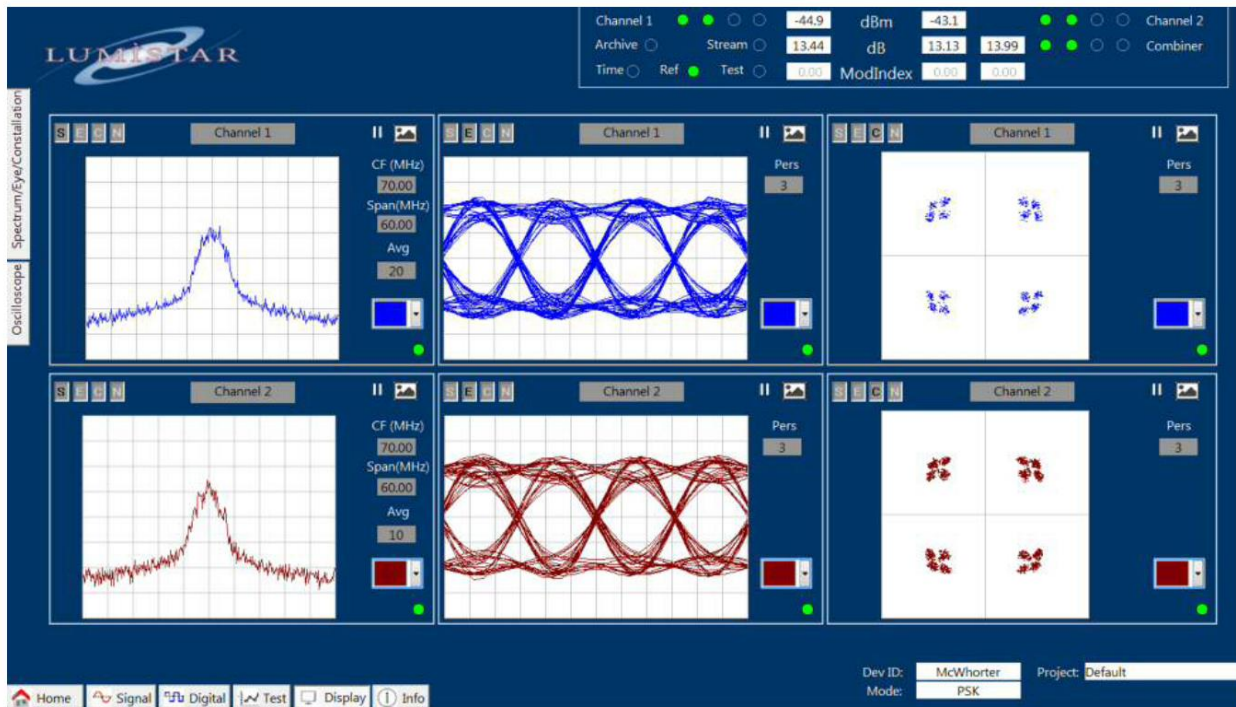


Typical Lumistar GUI Examples

Home Page



Display Page





**For Additional Information,
Please Visit the Lumistar Website:**

Data Sheet for the LS-28-DRSM

<https://lumi-star.com/uploads/LS-28-DRSM.pdf>

User Manual for the LS-28-DRSM

http://lumi-star.com/uploads/MANUALS/LS-28-DRSM/LS-28-DRSM_UserManual.pdf

Interface Control Drawing for the LS-28-DRSM

http://lumi-star.com/uploads/MANUALS/LS-28-DRSM/LS-28-DRSM_ICD.pdf

Updated: December 2019