

LDM80



Signal Powered Fiber Optic Modem

Description

The LDM80 is a small, inexpensive fiber optic transmitter/receiver completely powered by the host RS-232 port. The enclosure for the LDM80 is a conductive shell which greatly reduces RF radiation and susceptibility. The rugged metal enclosure is small enough to mount on the back panel of typical computer equipment saving valuable desk and floor space. A pair of these units allows most RS-232C cable links to be replaced and extended with a duplex fiber optic cable. The normal 50-foot (15m) RS-232 limit may be extended to 2.2 miles (3.5 km). Fiber optic data communications provide complete EMI/RFI rejection, isolation, elimination of ground loops, and reduced error rates. Data security is enhanced by almost nonexistent electromagnetic emissions. The RS-232 connection is through male or female EIA 25-pin connectors. The fiber optic connection is either through SMA (905) or ST connectors.

The LDM80 is equivalent to a 3-wire, full duplex, RS-232 circuit. Handshake signals are locally connected as in Figure 1. Indicating LEDs come on during a "SPACE" on transmit or receive data. A TD/RD reversing DIP switch is provided for connection to DTE (Data Terminal Equipment) or DCE (Data Communication Equipment) ports.

► Features

- Data Rates to 19.2k Baud at 2.2 Miles (3.5km)
- 17dB Optical Link Power Budget
- Powered by RS-232 Host Port Signals
- Full Duplex Asynchronous Operation
- Indicating LEDs
- DCE/DTE Switch
- Designed for FCC Class A Requirements
- Complies with FCC Class A Requirements
- Connected Cables Available
- Pinned or Socketed RS-232 Connectors
- CE Compliant

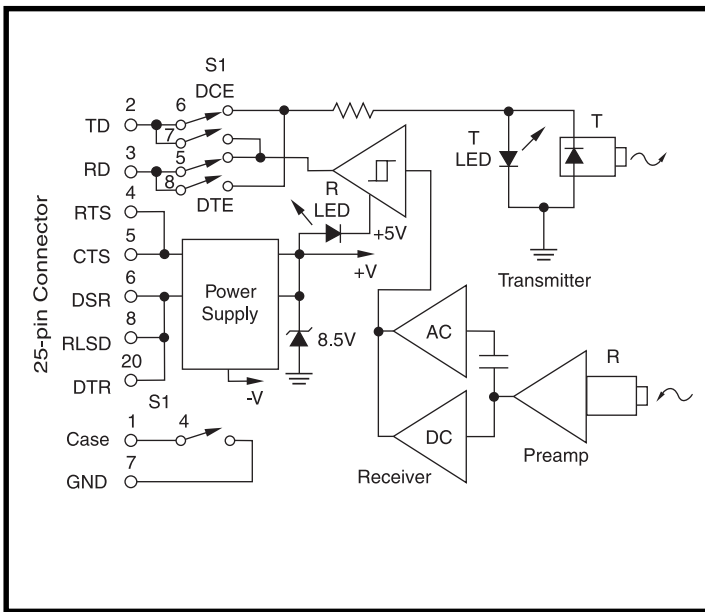


Figure 1: LDM80 Block Diagram

Specifications

Model	LDM80		
Baud Rate Range	0-19.2K		
Distance Over Baud Rate Range			
Fiber Core Diameter (µm)	Max Cable Length	Loss Budget (dB)	
100.0 (glass)	2.2 mi (3.5) (km)	17	
50.0 (glass)	1.6 (2.6)	9	
62.5 (glass)	1.2 (1.9)	11	
85.0 (glass)	2.2 (3.5)	16	
200.0 (glass)	2.2 (3.5)	23	
1000.0 (plastic)	98 feet 30 (meters)	32	
Modes	Asynchronous 2-fiber full duplex, 1-fiber simplex		
Channel Lines ⁽¹⁾	TD, RD		
Control Lines ⁽¹⁾	RTS, CTS, DTR, DSR, RLSD		
Optical Transmitter Output from 1m cable	850 nm wavelength		
Optical Receiver Power Input for 4µs Pulse Distortion	-26dB typ, -27dB min, -18dB max		
Optical Connectors	-44dB min ST, SMA (905) Compatible		
RS-232 Output Voltage with 3kΩ Load	+5V logic 0, -5V logic 1		
DCE/DTE Switch	1		
Diagnostic LEDs	2		
Power Port Power and/or DC operation	+5.0 to +8.5VDC, no current limit, 5mA >+8.5 VDC, 10mA current limit		
Environmental:			
Operating Temperature Range	-20°C to +70°C		
Storage Temperature Range	-40°C to +85°C		
Relative Humidity	0-95% non-condensing		
Dimensions	3.57" x 2.1" x 0.74" (90.7mm x 53.3mm x 18.8mm)		
Weight	4.2 oz (119g) max		
MTTF ⁽²⁾	>100,000 hrs		

Ordering Information

Model	Description
LDM80-P	Pinned RS-232 connector, SMA (905) fiber optic connector
LDM80-S	Socketed RS-232 connector, SMA (905) fiber optic connector
LDM80-P-025	Pinned RS-232 connector, ST fiber optic connector
LDM80-S-025	Socketed RS-232 connector, ST fiber optic connector
LDM85CA1-xxxx ⁽³⁾	Single-channel optical cable, SMA
LDM85CA2-xxxx ⁽³⁾	Dual-channel optical cable, SMA
LDM86CA1-XXXX ⁽³⁾	Single-channel optical cable, ST
LDM86CA2-XXXX ⁽³⁾	Dual-channel optical cable, ST

Pin Descriptions

Fiber Optic

Pin 1	Case	Case Ground	
Pin 2	TD	[3] Transmit Data	T
Pin 3	RD	[2] Receive Data	
Pin 4	RTS	[7] Request To Send	R
Pin 5	CTS	[8] Clear To Send	
Pin 6	DSR	[6] Data Set Ready	
Pin 7	SIG GND	[5] Signal Ground	
Pin 8	RLSD	[1] Receive Line Signal Detect	
Pin 20	DTR	[4] Data Terminal Ready	

Pin numbers given are for the 25-pin connector with the 9-pin equivalent in [].

NOTES:

- (1) TD = Transmit Data, RD = Receive Data, RTS = Request To Send, CTS = Clear To Send, DTR = Data Terminal Ready, DSR = Data Set Ready, RLSD = Received Line Signal Detect.
- (2) Ground-benign environmental conditions (no salt atmosphere, <50°C ambient temperature).
- (3) Specify length to the nearest meter. Example: LDM85CA2-0550 for 550 meters dual cable. Maximum length available is 1000 meters.

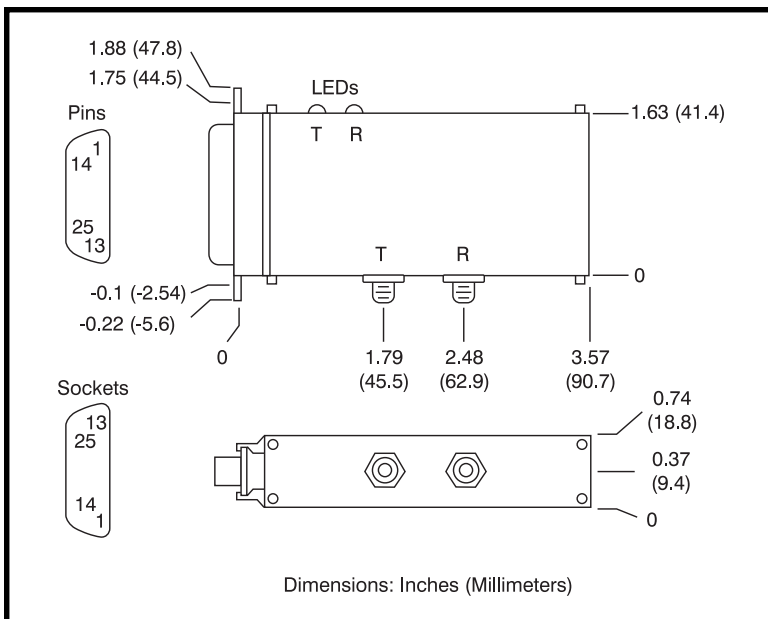


Figure 2: LDM80 Dimensions