



# LDV-2

## Data Over Voice Multiplexer

### FEATURES

- Simultaneous data and voice over 2-wire
- Synchronous or asynchronous
- Data rates up to 19.2 kbps
- Extended range up to 9 km (at 9.6 kbps)
- Diagnostic capabilities
- VLSI implementation
- Integral or separate telephone filters
- Point-to-point or multipoint



### DESCRIPTION

■ The LDV-2 Data Over Voice Multiplexer provides an easy and cost-effective means to use existing telephone lines for simultaneous transmission of data and voice. Data can be transmitted over standard telephone lines carrying normal voice and signaling traffic, without affecting telephone operation.

■ The LDV-2 operates with all types of telephones and all types of signalling (touch-tone or rotary dial). Easy-to-install, the LDV-2 enables local networking and access to external networks. Multipoint applications with the LDV-2, using existing 2-wire telephone lines, is achieved by linking the data outputs of the filter units together. This provides multiple device access to a single circuit in a polled environment, such as terminals to a host.

■ LDV-2 operates at full or half duplex with synchronous or asynchronous transmission format over unconditioned telephone lines. It operates at selectable data rates up to 19,200 bps, including 1200/75 bps for videotex.

■ With extended range of 9 km (5.6 miles), the LDV-2 can operate with almost any existing telephone line. Its V.54 diagnostic capabilities, enabling local and unattended remote loopbacks, are essential to telephone operating companies for monitoring and testing the network up to the end user.

■ The carrier transmission can be controlled by the terminal (using RTS signal) or remotely by detecting the received carrier.

■ The LDV-2 is available as a desktop unit or as a card for a 19" rack. The rack can carry up to 14 cards. The telephone filters are built into the LDV-2. In the rack-mount version, they can be separated to prevent telephone disconnections during service.

# SPECIFICATIONS

## DATA CHARACTERISTICS

### Data Rates

Asynchronous: Up to 9.6 kbps  
Synchronous: 900, 1200, 1800, 2400, 3600, 4800, 7200, 9600, 14400, 19200 bps

### Transmission Timing

Internal clock, External clock, Receive clock

### Transmission Line

Two wire unloaded telephone line

Data Rate (bps)	Approximate Range					
	22 AWG (0.6mm)		24 AWG (0.5 mm)		26 AWG (0.4 mm)	
	km	miles	km	miles	km	miles
0-9,600	9.0	5.6	7.3	4.5	4.8	3.0
19,200	7.2	4.5	6.0	3.8	4.2	2.7

### Modulation

Continuous phase frequency shift keying (CP-FSK)

### Carrier Frequencies

Local unit: 38.4 and 44.3 KHz  
Remote unit: 76.8 and 88.6 KHz  
Selectable local or remote unit

### Output Level

Local unit:  
-6, -9, -12 dBm selectable  
Remote unit:  
0, -3, -6 dBm selectable

### Received Carrier Threshold

-50 dBm, -40 dBm, -30 dBm selectable

### Line Impedance

135 ohm

### RTS-CTS Delay

0, 8, 68 msec selectable

### Interface

EIA RS-232-C/CCITT V.24

### Connector

25-pin D-type female

## VOICE CHARACTERISTICS

### Bandwidth

0-3,500 Hz

### Line Impedance

600 ohm

### Added Loop Resistance

Less than 20 ohm

### Insertion Loss

Less than 0.5 db at 1004 Hz

### Longitudinal Balance

60 dB

### Ringer Equivalence

0.6 REN

### Line Connector

Stand Alone: RJ-11C  
Rack Mount: Terminal Block

## CARRIER CONTROL MODES

### Continuous Mode

Constant carrier

### RTS-Controlled Mode

Transmits carrier only when RTS signal exists, enables half-duplex operation

### Carrier-Detect Mode

Transmits Carrier only when it detects carrier from the other LDV-2

### Indicators

Power on (PWR)  
Transmit data (TD)  
Receive data (RD)  
Data Carrier detect (DCD)  
Request-to-send (RTS)  
Test (TEST)

### Diagnostics

Digital Loop-back:  
Activated manually  
Remote Loop-back:  
Activated manually or by pin 21 or EIA interface  
Loop 1/Data Clamp:  
Activated manually or by pin 18 of EIA interface

## Physical

Stand-alone unit:

Height: 24.3 cm / 9.6 in (1U)  
Width: 19.3cm / 17 in  
Depth: 4.0 cm / 1.6 in  
Weight: 1.4 kg / 3.1 lb

Rack Mount unit:

up to 14 cards per 19" chassis (4U)

### Power

115 or 230 VAC, (+10%, -15%)  
47 - 63 Hz 3.5 W

### Environment

Temperature: 0-50°C/32-122°F  
Humidity: Up to 95%, non-condensing

# ORDERING

### LDV-2/SA\*

DOV multiplexer, stand alone

### LDV-2/R

Card for rack mount

ASM-MN-214/+/&

19" rack mount for 14 cards

### LDV-BP

Two telephone bypass filter cards

### LDV-BP/RM

Wall-mounted 8 slot card cage for LDV-BP filters

Length: 8.4 in / 21.5 cm

Height: 2.75 in / 7.0 cm

Width: 4.0 in / 10.0 cm

\* Specify stand alone power supply:

**115** for 115 VAC

**230** for 230 VAC

Specifications are subject to change without prior notification



**data communications**

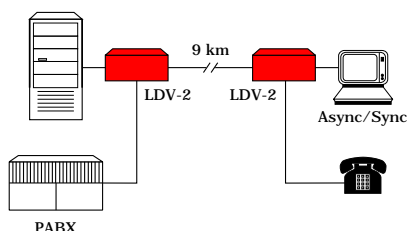
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# APPLICATION



- + Specify rack main power supply:
  - 115 for 115 VAC
  - 230 for 230 VAC
  - 48 for -48 VDC
- & Specify rack secondary power supply:
  - (See main power supply for options)