



USB – RS485 CONVERTOR

MODEL: LD-U485



Introduction

Milestone model LD-U485 is a USB to RS485 converter and is designed for high-speed data transmission between computer system through its USB port and peripherals or other devices having RS485 interface over long distance under high noise conditions.

Application

Application for these converters can be for factory automation, programmable logic controllers, attendance recording systems, Barcode Readers, remote data transmission, remote terminals, EPABX etc.

Specifications:	
Input	USB 2.0 Compliant
Output	Baud Rate: 300 bps to 921.6 Kbps
	Asynchronous RS485 Interface – Tx+, Tx-, Rx+, Rx- (D9 Male Connector). Each signal is protected by spike Suppressor.
	<i>Data Format Supported:</i> Data Bits: 8, Stop Bits: 1, Parity: Odd, Even, No parity, Baud Rate:300 bps to 921.6 Kbps
	X-On / X-Off handshake Protocol
	Receive Buffer : 512 Bytes, Transmit Buffer 512 Bytes
Selection Switch	Rear side has 2-way SELECT switch for selecting 2-wire or 4-wire mode in RS422 / RS485 application.
Output Cable	Needs Shielded Twisted pair cable – CAT-5
Front Panel LED	Power, Rx, Tx.
Power Supply	Through USB port
Size	115mm X 30mm X 50mm



Installation

Kit Contents

1. Converter Box
2. Floppy Disk for installation

Software Setup

The included Floppy Disk contains the virtual COM Port Driver & USB Bridge for the converter. This converter has to be used with PC with Window Operating System. Before connecting this converter to a PC to its USB Port, a 'Virtual COM Port' has to be created which interfaces to USB Port on the PC.

1. Extract Virtual COM Port Driver

Run ****_Drivers.exe to copy driver file for WINDOW to a specified directory or default directory, "C:\Mile****" .

2. Install Windows Virtual COM Port Driver

Run Setup.exe located in WIN directory created in 1 above. Driver files are installed into the "C:\Program Files\CSUB USB to RS-232 Bridge controller" directory. COM port properties for the device can be selected in the device manager (COM Port number, baud rate etc.).

Hardware Setup

1. 2-WAY SELECT SWITCH:
Select 2-wire (half duplex) or 4-wire (full duplex) mode on 2-way switch on the back panel.
2. Connect USB Port on the converter to the USB Port of a PC.
3. Connect RS485 port of converter with appropriate connections to RS485 device.



Table-I USB Port – Pin Description

Pin No.	Signal Name
1	VBUS
2	D-
3	D+
4	Signal Ground

TABLE II: Output port-D9 Male connector

Line Driver Port	Signal – 4 Wire	Signal – 2 Wire
3	-RX	
4	+RX	
5	+TX	+TX / +RX
6	-TX	-TX / -RX
7	GND	GND
1	Frame Ground	Frame Ground

LED Indication:

Signal	LED Indication
Power	Power to the Unit
TD	TX Data on RS485
RD	RX Data on RS485



LONG DISTANCE CABLE LAYING

Long distance cable between two RS422/RS485 interfaces must be a twisted pair shielded cable. The pair should be used for each signal type + and – signal. This gives high common mode noise rejection. While laying the cable, care should be taken not to lay this cable parallel to power line cables. The cable resistance should not be more than 90 ohms/1000 meters. The cable should be run through conduit pipe for physical protection.

TABLE IV: OUTPUT CABLE – 4 Wire

D-9 Male	Pin No.	Instrument
-RX	3	-TX
+RX	4	+TX
+TX	5	+RX
-TX	6	-RX

TABLE V: OUTPUT CABLE – 2 Wire

D-9 Male	Pin No.	Instrument
+TX/+RX	5	+TX / +RX
-TX/-RX	6	-TX / -RX