StrobeMux USB User Manual

INTRODUCTION

This manual provides the information required to install Strobe Data's StrobeMux USB on a PC with Windows 2000 or XP. This document is for use with the production version of the board.

GENERAL PRODUCT INFORMATION

Strobe Data's StrobeMux USB is a serial I/O controller board with 16 serial I/O ports. The design provides the flexibility to configure any of the 16 ports to meet the standards of RS-232, RS-422, or 20MA current loop data transmission configurations. Baud rates supported are 50 through 19,200, with less than optimal throughput up to 460,800. Additional StrobeMux USB's may be added through USB hubs so as to support increments of 16 ports. Each port also has full modem controls in RS-232, and Clear to Send in RS-422 to allow hardware flow control from an external device. Current Loop has no hardware flow control capabilities. The StrobeMux USB contains a universal power supply for use on 110/230V 50/60Hz.

With the unique design of the individual drivers and receivers at each port the user may select one of the three transmission protocols (RS-232, RS-422, or 20MA current loop) for each

port. This is accomplished by configuration of the user supplied cables and no internal jumpers or software changes required.

Each of the serial ports provides asynchronous communication using the Exar 16L788 Octal UART. This device has the following features:

a. Eight 16550 compatible full duplex asynchronous receiver/transmitters

b. 64 byte FIFO's for receive and transmit

c. Programmable data format:
   5 to 8 data bits plus parity
   Odd, even, no parity, or force parity
   1, 1.5, or 2 stop bits

d. Baud rate for the receiver and transmitter selectable with fixed rates from 110 to 460.8k baud.

EQUIPMENT SUPPLIED

A Strobe Data StrobeMux USB 16 Port Mux unit, power cord, a two meter USB cable and rack mounting ears are provided with each StrobeMux USB. The cable assembly connects the StrobeMux USB to the PC or USB Hub.

UNPACKING AND INSPECTION

Inspect the shipping carton immediately upon receipt for evidence of mishandling during shipping. If the carton is damaged request the carrier's agent to be present when the carton is unpacked. If the carrier's agent is not present when the carton is unpacked and the contents of the carton are damaged, keep the carton and packing material for the agent's inspection. This will be helpful in resolving claims against the carrier.

WARNING:

Static Electricity has the potential to damage today's sensitive electronic equipment. The time when the equipment is most susceptible to static is when the equipment is first unpacked, moving from one location to another, and installing the electronics in a chassis.

Procedures to prevent this require that you do everything you can to insure that the electric charge is equal between you, the electronics and any chassis to which you connect the electronics.

A good rule to follow is to remove the unit from the static protective bag at the same location. To ground the package, and yourself to the same ground point before you remove the electronics from the anti-static bag. Then to ground yourself and the chassis that the electronics will be installed in before you do the actual installation.

StrobeMux USB INSTALLATION

The Strobe Data StrobeMux USB board plugs into any USB port attached to the host PC, whether directly, or through one or more USB hubs.

When the StrobeMux USB is connected to power, and to the host computer, Windows should detect the unit, and begin procedures to install the software. When it asks for the driver software, insert the software disk in the appropriate drive, tell it where you put it, and Windows should install the StrobeMux USB as the next available 16 COM ports.

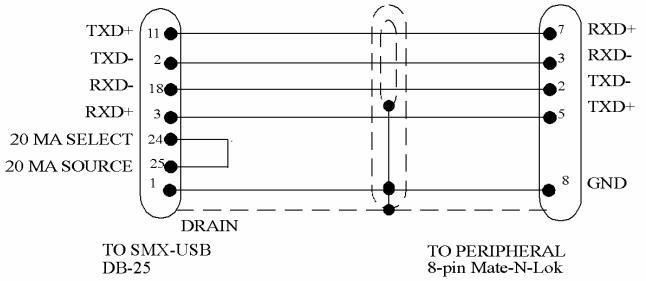
To verify this, and to find which ports you now have, you need to look in the Device Manager. To open the Device Manager, open your Control Panel, and double click on “System Properties”, then click the “Hardware” tab at the top, near the middle. Now click on the “Device Manager” button, and the Device Manager should come up.

In the Device Manager, you should now have a “Multi-port serial adapters” entry, where there should be a “StrobbeMux Multiport Device” entry. If you open the “Ports (COM & LPT) entry, you should find entries like: “Port 1 on StrobeMux Adapter (COM19)”. These entries tell you where your new StrobeMux shows up in your Windows system.

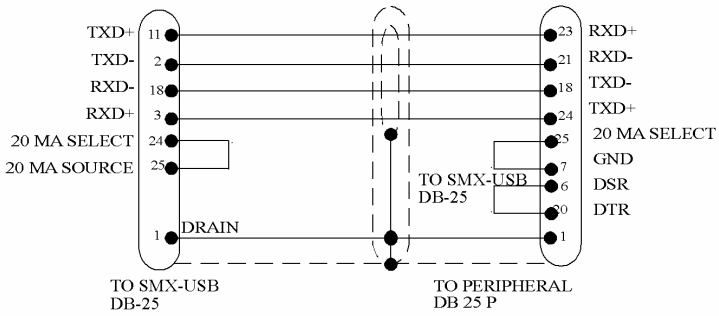
Now you should have 16 more COM ports on your PC. They should behave the same as other COM ports, because the chips are upward compatible. You can fire up HyperTerminal, or any other program that uses COM ports, and it should behave just the same.

Appendix A

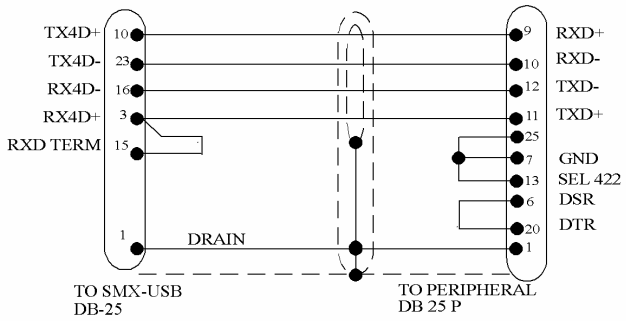
SERIAL CABLE EXAMPLES



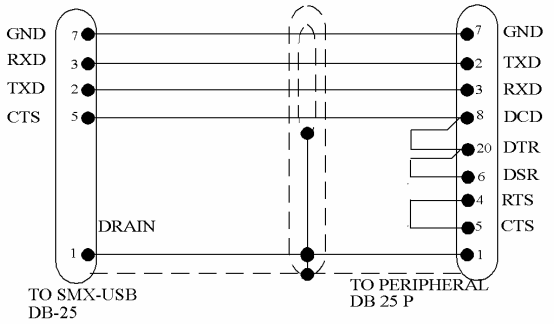
VT 220
20 mA CABLE



D 210
20 mA CURRENT

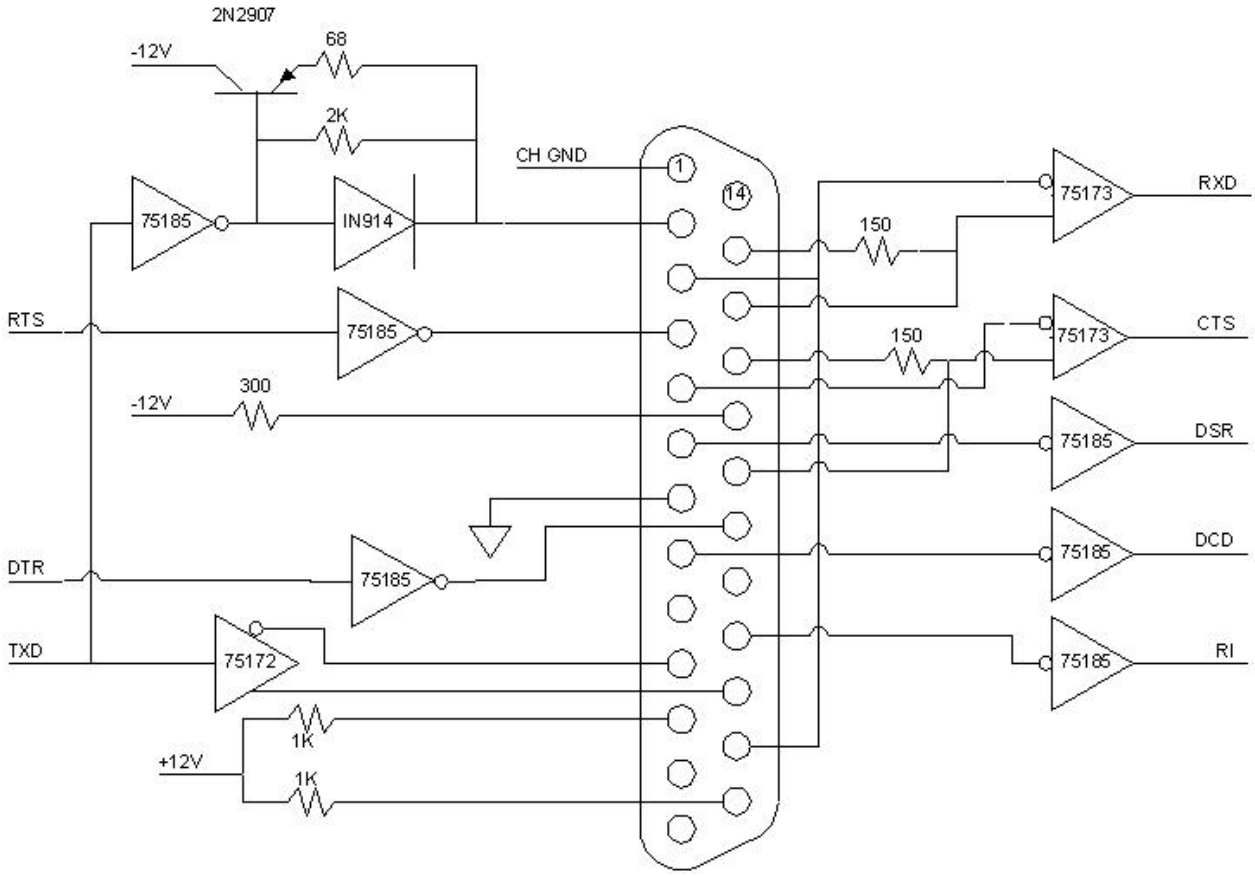


D 210
RS-422 CABLE



RS-232 CABLE

Appendix B


2N2907
-12V
68
2K
CH GND
1
14
75185
IN914
RTS
75185
-12V
300
DTR
75185
TXD
75172
1K
+12V
1K
150
150
75173
RXD
75173
CTS
75185
DSR
75185
DCD
75185
RI

Appendix C.

Connector Pins:

Pin Number	Pin Function	Destination/Source
1	Chassis Ground	
2	Transmit Data RS232	Transistor Driver
3	Receive Data RS232/RS422	75173 -
4	Request To Send RS232	75185 Driver
5	Clear to Send RS232/RS422	75173 -
6	Data Set Ready RS232	75185 Receiver
7	Signal Ground	
8	Data Carrier Detect RS232	75185 Receiver
9	NC	Open
10	RS422 Transmit Data +	75172 Driver -
11	20mA Source	1k Ohm Resistor to +12V
12	NC	Open
13	NC	Open
14	NC	Open
15	RS422 Receive Terminator	150 Ohm Resistor
16	Rs422 Receive Data -	75173 +
17	RS422 CTS Terminator	150 Ohm Resistor
18	Current Loop RXD -	300 Ohm Resistor
19	RS422 Clear To Send -	75173 +
20	Data Terminal Ready RS232	75185 Driver
21	NC	Open
22	Ring Indicate RS232	75185 Receiver
23	RS422 Transmit Data -	75172 Driver +
24	20mA Select	RXD + (Pin 3)
25	20mA Source	1k Ohm Resistor to +12V