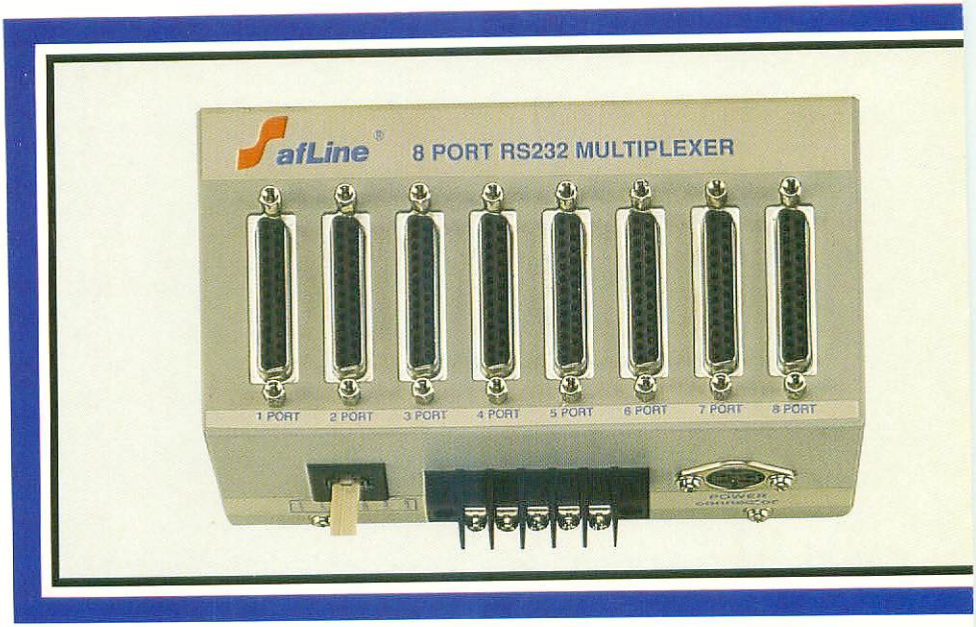
SAFLINE 4-PORT AND 8 PORT MULTIPLEXER BOX USER MANUAL



SAFLINE MULTIPLEXER BOX USER MANUAL

CONTENTS:

PART 1
SAFLINE USER MANUAL
4 PORT MULTIPLEXER BOX

CONTENTS:

CHAPTER 1 INTRODUCTION

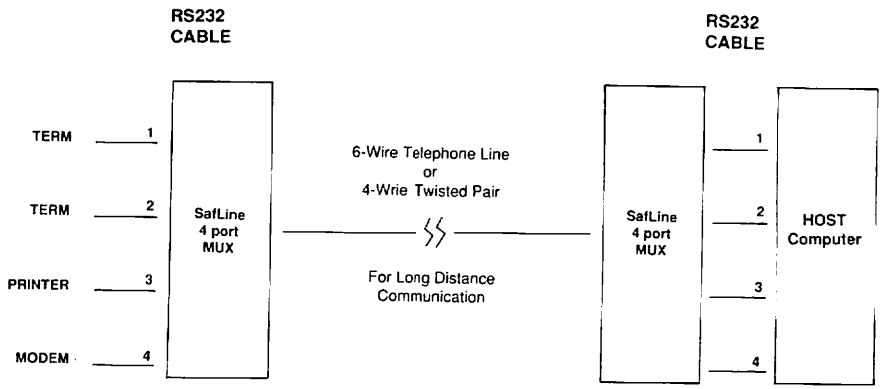
The SafLine 4 port multiplexer box is a concentrator which accepts input from four RS232 port cables and outputs the signals onto a single output line, by using single 6 wire telephone line or 4 wire twisted pair which transmits data to remote multiplexer, then convert the data onto four RS232 port cables signal.

The advantages of using multiplexer is that when you construct the communication link from host to terminal, you only need use one inexpensive 6 wire telephone line or 4 wire twisted pair to replace the four RS232 cables, it extends communication distance and reduces cabling cost.

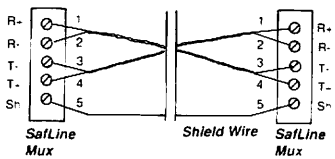
The hardware configuration of 4 port multiplexer box are shown in the following, user may use the multiplexer to connect the communication ports (RS232C), which link the computer and serial peripheral devices such as terminals, serial printers, plotters, etc.

4 PORT RS-232 MULTIPLEXER BOX

CONFIGURATION



4-Wire Twisted Pair Connection



The features of the SafLine 4 port multiplexer box are:

* Only one 4 wire twisted pair or 6 wire telephone line to replace eight RS232C asynchronous communication cables.

* Maximum transmission distance over 500M.

* Baud rate selectable for each individual port, and maximum baud rate up to 38400.

* Software handshaking (XON/XOFF) and hardware handshaking (RTS/CTS or DTR/DSR) selectable.

* Maximum data transfer rate on the communication line up to 200K.

* Time Division Multiplexing (TDM) method is used on the transmission protocol.

* Build in RJ-11 connector and twisted pair connector for communication line.

* Support DCE (Data Circuit terminating Equipment) and full MODEM signal.

* 120 VAC / 60 HZ or 230 VAC / 50HZ power which is auto switch.

CHAPTER 2 UNPACKING INFORMATION

Check that your SafLine 4 port multiplexer box package includes the following items:

* SafLine 4 port multiplexer box.
* Power adapter.
* User manual.
* Warranty form.

CHAPTER 3 HARDWARE INSTALLATION

Your SafLine 4 port multiplexer box is designed to be connected to 4 male connectors. Please follow the steps listed below:

1. Turn off all power to your computer and all peripheral devices before installing your SafLine 4 port multiplexer box.

2. Connect 4 port male connector into multiplexer box, and connect 4 peripheral devices connector to remote multiplexer box.

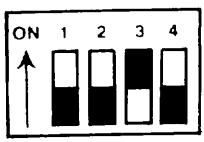
3. Route the 6 wire telephone line (or twisted pair) as desired, then plug RJ11 connector (twisted pair connector) into both multiplexer box.

4. Plug the power cable into wall outlet.

CHAPTER 4 SWITCH SETTINGS

The switch on the SafLine 4 port multiplexer box must be configured correctly in accordance with your requirements.

SW1



SW1 is used to select maximum baud rate. If you select 9600 as the maximum baud rate, it means the baud rate of each 4 communication ports can not more than 9600; and you can set any baud rate below 9600 individually.

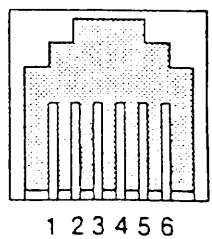
SW1	Baud Rate
1	9600
2	19200
3	38400
4	none

CHAPTER 5 CABLING INFORMATION

5.1 Telephone Line

The signal assignment of 6 wire telephone line is shown in the following.

Pin#	Description
1	Tx+
2	Tx-
3	GND
4	GND
5	Rx-
6	Rx+

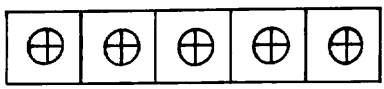


To connect telephone line between two multiplexer boxes, please refer the following configuration.

Signal	Pin #		Pin	Signal
Tx+	1	——▶	6	Rx+
Tx-	2	——▶	5	Rx-
GND	3	——	3	GND
GND	4	——	4	GND
Rx-	5	◀——	2	Tx-
Rx+	6	◀——	1	Tx+

5.2 Twisted Pair

The signal assignment of twisted pair is shown in the following.



Pin#	Description
1	Rx+
2	Rx-
3	Tx-
4	Tx+
5	GND

To connect twisted pair between two multiplexer boxes, please refer the following configuration.

Signal	Pin #		Pin	Signal
Tx+	4	——▶	1	Rx+
Tx-	3	——▶	2	Rx-
Rx-	2	◀——	3	Tx-
Rx+	1	◀——	4	Tx+
GND	5	——	5	GND

Only need use either telephone line or twisted pair to connect two multiplexer boxes.

5.3 RS232 Signal Assignment

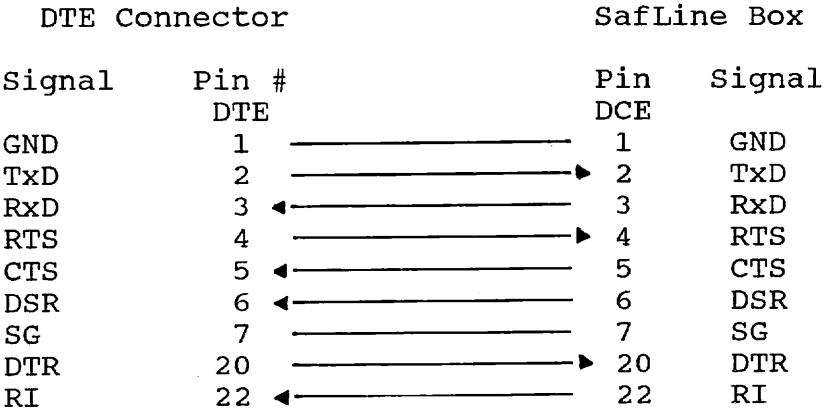
The communication interface follows the EIA RS232C standard. The signal assignments for a standard DB25 connector are shown below:

Male DB25 Pin #	Signal Name	RS-232C Name	Signal Direction
1	Chassis Ground(GND)	AA	Common
2	Transmit Data(TxD)	BA	Output
3	Receive Data(RxD)	BB	Input
4	Request to Send(RTS)	CA	Output
5	Clear to Send(CTS)	CB	Input
6	Data Set Ready(DSR)	CC	Input
7	Signal Ground(SG)	AB	Common
8	Data Carrier Detect(DCD)	CF	Input
20	Data Terminal Ready(DTR)	CD	Output
22	Ring Indicator(RI)	CE	Input

The signal assignment of SafLine multiplexer box is DCE, which is treated as MODEM device, and provides female DB25 connector. In the following, we show the DCE signal. Where the DCD and DTR signals are short by internal circuit.

Female DB25 Pin #	Signal Name	RS-232C Name	Signal Direction
1	Chassis Ground(GND)	AA	Common
2	Transmit Data(TxD)	BA	Input
3	Receive Data(RxD)	BB	Output
4	Request to Send(RTS)	CA	Input
5	Clear to Send(CTS)	CB	Output
6	Data Set Ready(DSR)	CC	Output
7	Signal Ground(SG)	AB	Common
8	Data Carrier Detect(DCD)	CF	Output
20	Data Terminal Ready(DTR)	CD	Input
22	Ring Indicator(RI)	CE	Output

To connect the SafLine 4 port multiplexer box to peripheral devices or the other DTE equipment, the DTE to DCE connection is shown below:



Please note that, you must connect DB25 connectors to both multiplexer boxes correctly.

PART 2
SAFLINE USER MANUAL
8 PORT MULTIPLEXER BOX

CONTENTS:

Rev. Date: 1991 DEC. 15

CHAPTER 1 INTRODUCTION

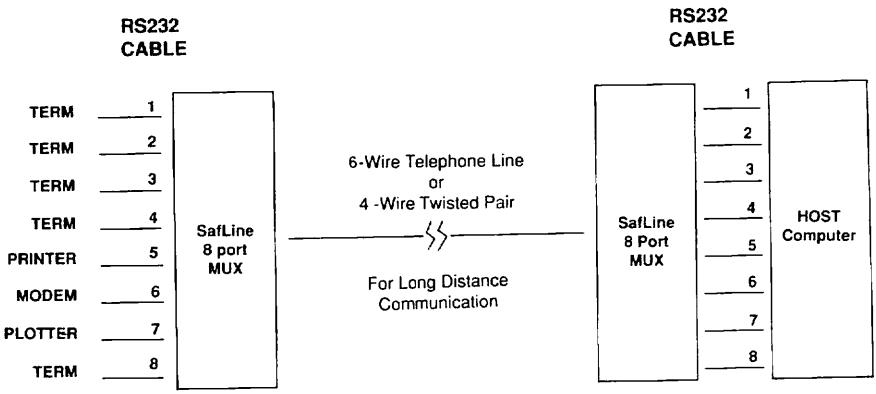
The SafLine 8 port multiplexer box is a concentrator which accepts input from eight RS232 port cables and outputs the signals onto a single output line, by using single 6 wire telephone line or 4 wire twisted pair which transmits data to remote multiplexer, then convert the data onto eight RS232 port cables signal.

The advantages of using multiplexer is that when you construct the communication link from host to terminal, you only need use one inexpensive 6 wire telephone line or 4 wire twisted pair to replace the eight RS232 cables, it extends communication distance and reduces cabling cost.

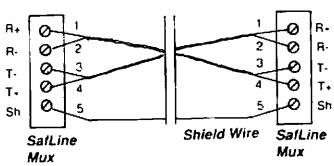
The hardware configuration of 8 port multiplexer box are shown in the following, user may use the multiplexer to connect the communication ports (RS232C), which link the computer and serial peripheral devices such as terminals, serial printers, plotters, etc.

8 PORT RS-232 MULTIPLEXER BOX

CONFIGURATION



4-Wire Twisted Pair Connection



The features of the SafLine 8 port multiplexer box are:

* Only one 4 wire twisted pair or 6 wire telephone line to replace eight RS232C asynchronous communication cables.

* Maximum transmission distance over 500M.

* Baud rate selectable for each individual port, and maximum baud rate up to 38400.

* Software handshaking (XON/XOFF) and hardware handshaking (RTS/CTS) selectable.

* Maximum data transfer rate on the communication line up to 200K.

* Time Division Multiplexing (TDM) method is used on the transmission protocol.

* Build in RJ-11 connector and twisted pair connector for communication line.

* Support DCE (Data Circuit terminating Equipment) and Tx, Rx, RTS, CTS signal.

* 120 VAC / 60 HZ or 230 VAC / 50HZ power which is auto switch.

CHAPTER 2 UNPACKING INFORMATION

Check that your SafLine 8 port multiplexer box package includes the following items:

* SafLine 8 port multiplexer box.
* Power adapter.
* User manual.
* Warranty form.

CHAPTER 3 HARDWARE INSTALLATION

Your SafLine 8 port multiplexer box is designed to be connected to 8 male connectors. Please follow the steps listed below:

1. Turn off all power to your computer and all peripheral devices before installing your SafLine 8 port multiplexer box.

2. Connect 8 port male connector into multiplexer box, and connect 8 peripheral devices connector to remote multiplexer box.

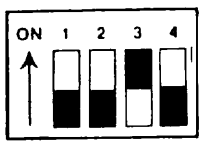
3. Route the 6 wire telephone line (or twisted pair) as desired, then plug RJ11 connector (twisted pair connector) into both multiplexer box.

4. Plug the power cable into wall outlet.

CHAPTER 4 SWITCH SETTINGS

The switch on the SafLine 8 port multiplexer box must be configured correctly in accordance with your requirements.

SW1



SW1 is used to select maximum baud rate. If you select 9600 as the maximum baud rate, it means the baud rate of each 8 communication ports can not more than 9600; and you can set any baud rate below 9600 individually.

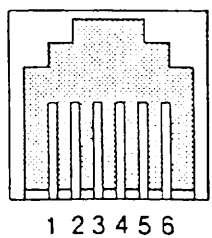
SW1	Baud Rate
1	9600
2	19200
3	38400
4	none

CHAPTER 5 CABLING INFORMATION

5.1 Telephone Line

The signal assignment of 6 wire telephone line is shown in the following.

Pin#	Description
1	Tx+
2	Tx-
3	GND
4	GND
5	Rx-
6	Rx+

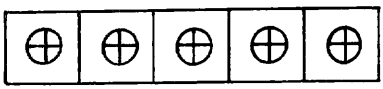


To connect telephone line between two multiplexer boxes, please refer the following configuration.

Signal	Pin #		Pin	Signal
Tx+	1	——▶	6	Rx+
Tx-	2	——▶	5	Rx-
GND	3	——	3	GND
GND	4	——	4	GND
Rx-	5	◀——	2	Tx-
Rx+	6	◀——	1	Tx+

5.2 Twisted Pair

The signal assignment of twisted pair is shown in the following.



Pin#	Description
1	Rx+
2	Rx-
3	Tx-
4	Tx+
5	GND

To connect twisted pair between two multiplexer boxes, please refer the following configuration.

Signal	Pin #		Pin	Signal
Tx+	4	——►	1	Rx+
Tx-	3	——►	2	Rx-
Rx-	2	◄——	3	Tx-
Rx+	1	◄——	4	Tx+
GND	5	——	5	GND

Only need use either telephone line or twisted pair to connect two multiplexer boxes.

5.3 RS232 Signal Assignment

The communication interface follows the EIA RS232C standard. The signal assignments for a standard DB25 connector are shown below:

Male DB25 Pin #	Signal Name	RS-232C Name	Signal Direction
1	Chassis Ground(GND)	AA	Common
2	Transmit Data(TxD)	BA	Output
3	Receive Data(RxD)	BB	Input
4	Request to Send(RTS)	CA	Output
5	Clear to Send(CTS)	CB	Input
6	Data Set Ready(DSR)	CC	Input
7	Signal Ground(SG)	AB	Common
8	Data Carrier Detect(DCD)	CF	Input
20	Data Terminal Ready(DTR)	CD	Output
22	Ring Indicator(RI)	CE	Input

The signal assignment of SafLine multiplexer box is DCE, which is treated as MODEM device, and provides female DB25 connector. In the following, we show the DCE signal.

Female DB25 Pin #	Signal Name	RS-232C Name	Signal Direction
1	Chassis Ground(GND)	AA	Common
2	Transmit Data(TxD)	BA	Input
3	Receive Data(RxD)	BB	Output
4	Request to Send(RTS)	CA	Input
5	Clear to Send(CTS)	CB	Output
7	Signal Ground(SG)	AB	Common

To connect the SafLine 8 port multiplexer box to peripheral devices or the other DTE equipment, the DTE to DCE connection is shown below:

DTE Connector			SafLine Box	
Signal	Pin # DTE		Pin DCE	Signal
GND	1	———	1	GND
TxD	2	———▶	2	TxD
RxD	3	◀———	3	RxD
RTS	4	———▶	4	RTS
CTS	5	◀———	5	CTS
SG	7	———	7	SG

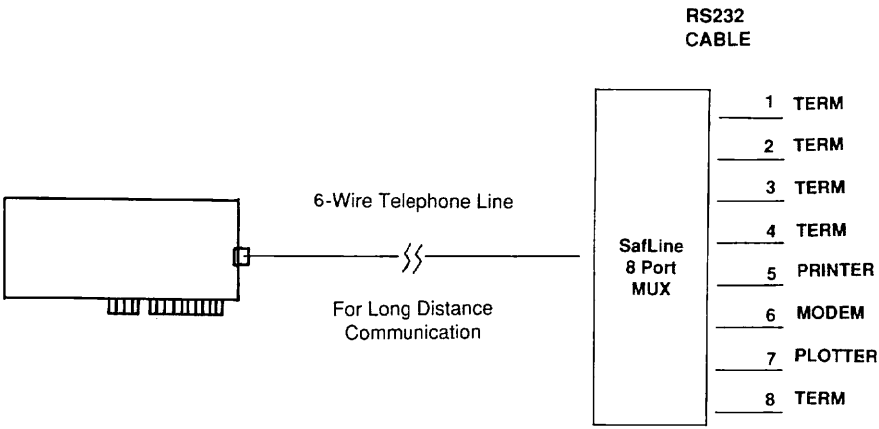
Please note that, you must connect DB25 connectors to both multiplexer boxes correctly.

PART 3 SPECIAL NOTES

SafLine 8 port multiplexer serial adapter is another DECISION product, which can be used to connect the SafLine 8 port multiplexer box. In the following, we introduce the SafLine 8 port multiplexer serial adapter. You may order the product from the DECISION or DECISION distributor in your local country.

The SafLine 8 port multiplexer serial adapter provides eight asynchronous serial communication ports (RS232C), which transmits communication signal by using single 6 wire telephone line to remote 8 port multiplexer box, then the 8 port multiplexer box separate signals into 8 RS232 ports (DB25). The hardware configuration of 8 port multiplexer serial adapter and 8 port multiplexer box are shown in the next page. User may use this configuration to link the computer and serial peripheral devices such as modems, serial printers, plotters, etc.

The advantages of using 8 port multiplexer serial adapter and 8 port multiplexer box is that when you construct the communication link from PC to peripheral devices, you only need use one inexpensive 6 wire telephone line to replace the eight RS232 cables, it extends communication distance and reduces cabling cost.



The SafLine 8 port multiplexer adapter is particularly suited to facilitate the connection of terminals (VDUs) in multi-user operating systems.

The SafLine multiplexer board may be installed in any IBM PC/AT, PC/386, PC/486 or hardware compatible system. To accommodate a variety of operating systems three switch banks permit maximum flexibility of configuration. You may select which interrupt (IRQ2 - IRQ15), I/O address, and interrupt vector you desire.

The features of the SafLine 8 port multiplexer adapter are:

* Eight RS232C ports for asynchronous communications.

* Suitable for XENIX/UNIX, PICK, MS/DOS, PC-MOS/386, CONCURRENT DOS, Dr. DOS, etc.

* IBM PC/AT, PC/386, PC/486 hardware compatible.

* ISA bus IRQ selectable. (IRQ2 - IRQ15)

* I/O address selectable.

* Interrupt vector address selectable.

* Only one 6 wire telephone line to replace eight RS232C asynchronous communication cables.

* Maximum transmission distance over 500M.

* Baud rate selectable for each individual port, and maximum baud rate up to 38400.

* Software handshaking (XON/XOFF) and hardware handshaking (RTS/CTS) selectable.

* Maximum data transfer rate on the communication line up to 200K.

* Time Division Multiplexing (TDM) method is used on the transmission protocol.

* Build in RJ-11 connector for communication line.

* Support DCE (Data Circuit terminating Equipment) and Tx, Rx, RTS, CTS signal.

PART 4. WARRATY INFORMATION

P4.1 Copyright

P4.2 Warranty Information

SafLine warrants that for a period of one year from the date of purchase (unless otherwise specified in the warranty card) that the goods supplied will perform according to the specifications defined in the user manual. Furthermore that the SafLine product will be supplied free from defects in materials and workmanship and be fully functional under normal usage.

In the event of the failure of a SafLine product within the specified warranty period, SafLine will, at its option, replace or repair the item at no additional charge. This limited warranty does not cover damage resulting from incorrect use, electrical interference, accident, or modification of the product.

All goods returned for warranty repair must have the serial number intact. Goods without serial numbers attached will not be covered by the warranty.

Transportation costs for goods returned must be paid by the purchaser. Repaired goods will be dispatched at the expense of SafLine.

To ensure that your SafLine product is covered by the warranty provisions, it is necessary that you return the Warranty card.

Under this Limited Warranty, SafLine's obligations will be limited to repair or replacement only, of goods found to be defective as specified above during the warranty period. SafLine is not liable to the purchaser for any damages or losses of any kind, through the use of, or inability to use, the SafLine product.

SafLine reserves the right to determine what constitutes warranty repair or replacement.

Return Authorization: It is necessary that any returned goods are clearly marked with an RA number that has been issued by SafLine. Goods returned without this authorization will not be attended to.

NOTE: