

SRX Frame Relay

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8500053

1. DESCRIPTION

General

The DCB Frame Relay Point-to-MultiPoint multiplexer configuration uses an SRX platform at the host location (called HOST) and an SR platform for remote units (called DROPs). The objective of this configuration is to provide reasonable performance at the remote sites in those applications where a dedicated line from the host is not cost justified. Using high speed digital frame relay service, many distributed site applications can benefit from this configuration.

Performance

The SRX provides excellent performance for asynchronous interactive terminals when using digital lines, especially at a composite speed of 128 Kbps. The SRX is engineered to provide a quarter second or less echo time in typical configurations. This short echo time gives each terminal the appearance of direct connection to its computer port.

Single Host Configuration

A single SRX Host mux can have up to 32 ports in increments of 8 ports. Network configuration is set via the Network Management port. Network configuration (mapping) is determined solely by the host mux. Each host port is mapped internally to a drop port using the network DLCI map. The host mux handles all translation between host and drop port numbers.

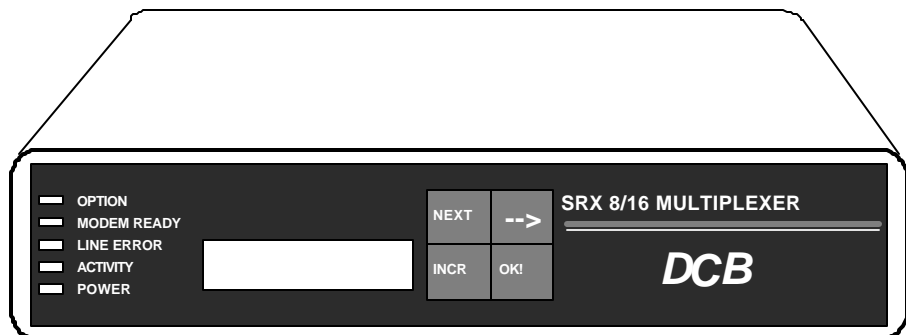
Multiple Host Configuration

The SRX firmware allows the host site to expand to more than a single SRX host. Multiple SRX hosts share the line using an MSU-4 modem sharing unit. A maximum of 64 ports is recommended to maintain satisfactory performance.

Configuration Planning

The network configuration must be mapped before the system will operate. If no host port is assigned to a particular drop, that drop is not active. Host ports must be mapped to drop ports before those drop ports become active. For this reason, some amount of planning is necessary before implementing a point-to-multipoint network.

The network and port configurations are stored in battery backed RAM to survive power failures. To reset all ports to the factory defaults and clear all local IDs and port mappings, press and hold the OK! switch while pressing RESET.



SRX Host Multiplexer, 8 and 16 Channels

2. SPECIFICATIONS

2.1 Product

2.1.1 Data Ports

Port Speeds

Asynchronous only

300, 1200, 2400, 4800, 9600, 19,200 or 38,400

Data Format

10 bits/character, 1 start, 1 stop, 8 data (including parity)

Interface

RS-232D, implemented in RJ-45, 8 position connectors

2.1.2 Composite Port

Speed

Synchronous only, to 128Kbps

Interface

RS-232D, implemented in RJ-45, 8 position connector

2.2 Environmental

Operation: 0 to 65° C, 10 to 85% relative humidity

Storage: -40 to 85° C, 10 to 85% relative humidity

2.3 Physical / Electrical

10¼" W x 9¾" D x 2½" H - 8 and 16 channel units

10¼" W x 9¾" D x 4¼" H - 24 and 32 channel units

120 VAC external power supply

30 watts, .25 amps

2.4 Network Management Port Commands

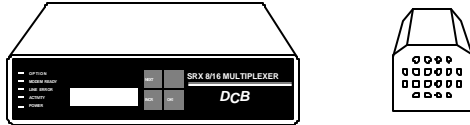
- Show Configuration
- Show Map
- Show Network
- Show Frame Relay Status
- Show ID
- Change Port Configuration
- Change Map
- Change Multiplexer Parameters
- Change Frame Relay Configuration
- Change ID
- Configure Internal DSU
- Activity Counts
- Zero Activity Counts
- Flow Control
- Test Tools
 - Capture Port
 - Copy Command
 - Show RS232
 - Test Message
 - Remote Test Loop
 - Remote Port Ping
 - Monitor Port TX
 - Monitor Port RX
 - NMP Parity
 - Port Reset
 - Reset Mux
- Type
- Repeat Last Command
- Disconnect NMP

3. INSTALLATION

3.1 Unpacking

The following is included with each SRX Multiplexer:

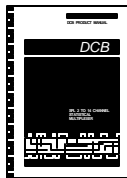
- Multiplexer and external power supply



- Cables for connecting a modem or DSU/CSU and a Network Management terminal.



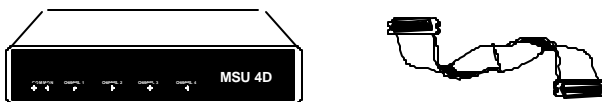
- Manual



- Information regarding warranty, maintenance contracts and repair

If multiple host multiplexers were ordered, additional equipment is required.

- Modem Sharing Unit (one for each combination of multiple muxes up to a recommended total of 64 ports)
- Male to female RS-232 cable (one per MSU)



3.2 Location

Place the multiplexer in a clear area where you can reach the front panel for setup and the rear panel to connect the cables. The multiplexer has an external power supply that requires a properly grounded 120 VAC outlet. The total power cord length is about 12 feet.

3.3 Setup

Setup of the SRX Host Multiplexer is done using the Network Management port. The Network Management port is discussed in Section 5.

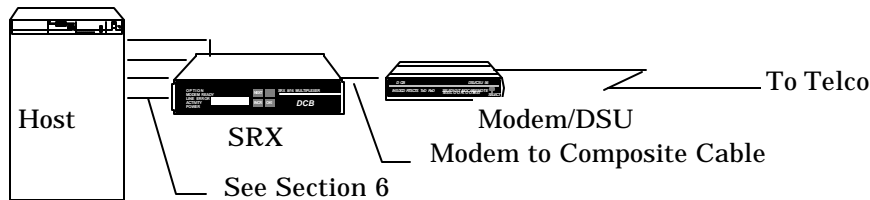
3.4 Resetting Factory Defaults

To reset the unit to factory defaults use the !R command from the network management port.

3.5 Connections

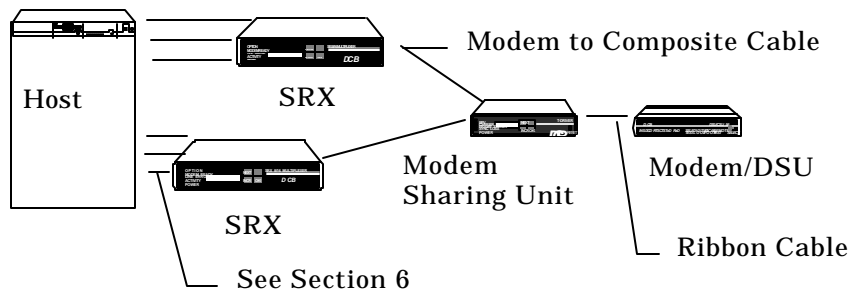
3.5.1 Single Host

Connection to the host modem or DSU/CSU is made using the supplied "Modem to Composite" cable. The host modem or DSU/CSU should be set for constant carrier operation (RTS forced ON). For information regarding host computer port connections, see Section 6.



3.5.2 Multiple Hosts

The point-to-multipoint frame relay firmware allows more than one host mux to be connected to the frame relay line. This requires a Modem Sharing Unit. The SRX Host muxes are connected to the MSU ports using the “Modem to Composite” cable. The MSU is connected to the Modem or DSU/CSU using the male to female RS-232 cable. The modem or DSU/CSU should be set for constant carrier operation (RTS forced ON). For information regarding host computer port connections, see Section 6.



3.6 Installation Summary

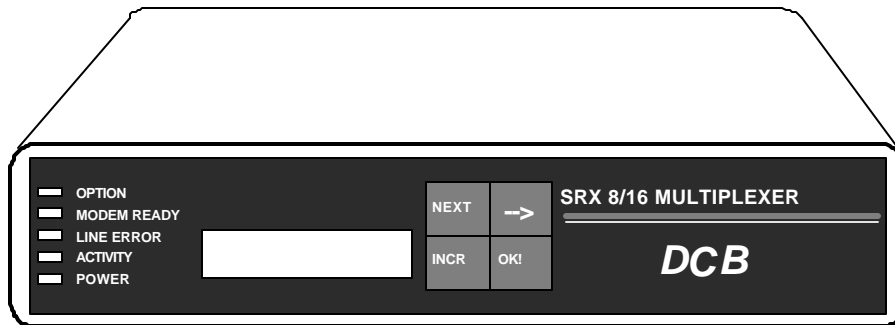
1. Set the host modem or DSU/CSU for constant carrier operation. (RTS forced ON)
2. Connect the host modem or DSU/CSU to the phone line. If this is a multiple host installation, connect the Modem Sharing Unit composite port to the modem or DSU/CSU.
3. Configure the host SRX multiplexer(s).
 - a. Map at least one port to each drop to be installed.
 - b. Configure the SRX ports for correct speed, parity and flow control.
 - c. If this is a single host installation, connect the SRX to modem or DSU/CSU using the Modem to Composite cable supplied.
 - d. If this is a multiple host installation, use the FR command to configure one unit as the Master and the rest as Slaves. Then connect the SRXs to the Modem Sharing Unit using the Modem to Composite cables.
 - e. Connect a properly configured CPU port to each mapped SRX port. See Section 6 for host port cabling information.

4 FRONT PANEL CONTROLS AND INDICATORS

4.1 Controls

4.1.1 Keys

The **NEXT**, **ARROW**, **INCR** and **OK!** keys are disabled and not used on this product.



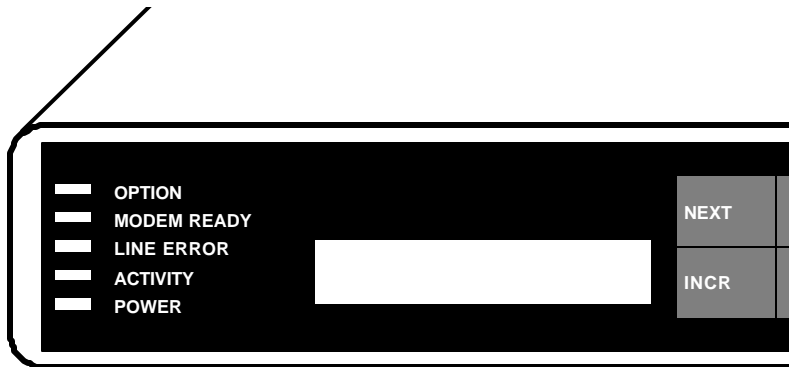
Front Panel Layout

4.1.2 Display

The display on the SRX front panel shows the product name, the number of ports and the firmware version.

4.2 Indicators

| | |
|---------------|--|
| OPTION | not used |
| MODEM READY | |
| ON | Modem is on line. |
| OFF | No DCD from the attached modem. |
| FLASHING FAST | Composite link is active but there are ten blocks of data outstanding without a response from the remote mux. |
| FLASHING SLOW | Problem with the composite link. No local Frame Relay connection. |
| LINE ERROR | Flashes when data error is detected. If flashing together with the ACTIVITY light, indicates a loss of communication with the remote unit(s). |
| ACTIVITY | |
| ON | Multiplexing mode with no data activity. |
| FLICKERING | Multiplexing mode with data activity. |
| FLASHING SLOW | Major composite link problem. |
| POWER | ON when power is applied to the unit. |



5. NETWORK MANAGEMENT PORT

5.1 Introduction

The Network Management port (NMP) is used to configure the SRX multiplexer for proper operation. This connection must be used to enter the system map and to configure the SRX data ports. The NMP can also be used to configure remote (DROP) ports after a link is established between the host and remote sites.

5.2 Connections and Setup

The NMP is accessed through an RJ-45 connector on the rear of the unit. To connect to the NMP, use the cable provided or one of the cables shown in paragraph 6.3.3.

5.2.1 Dedicated Terminal or PC

The NMP functions are available through a port on the rear of the unit labeled Network Management Port. To connect a dedicated terminal to this port, use the green cable provided and the appropriate adapter for either a terminal or PC. Set the terminal device for 9600 bps, 8 data bits, no parity, one stop bit and no flow control.

5.2.2 Using a Modem

To use a dial-in modem for remote access you must fix the DTE interface speed of the modem at 9600 bps, 8,N,1. Refer to your modem manual for appropriate setup procedures. Connection to the modem must be made using the NMP to modem cable shown in paragraph 6.3.3.

5.3 Using the Network Management port

To activate the NMP, press the ENTER key. When you see **AT YOUR COMMAND >>**, the NMP is active and ready for your commands. Type H <Enter> to display the command set.

5.4 Commands

5.4.1 Help

| <u>COMMAND</u> | <u>LOCAL</u> | <u>REMOTE</u> | <u>PARAGRAPH</u> |
|------------------------|--------------|---------------|------------------|
| Show: Config | SC | RSC | 5.4.2 |
| Map | SM | | 5.4.7 |
| Map (Drop#) | SMD# | | 5.4.7 |
| Network | SN | | 5.4.10 |
| FR Status | SS | RSS# | 5.4.9 |
| ID | SI | | 5.4.5 |
| Change: Port Config | CP | RCP | 5.4.3 & 4 |
| Map | CM | | 5.4.8 |
| MUX Param | CO | RCO# | 5.4.12 |
| FR Config | FR | | 5.4.13 |
| ID | ID | | 5.4.6 |
| Config Internal DSU | CN | | 5.4.11 |
| Activity Counters/Zero | AC/Z | RAC | 5.4.14 |
| Flow Control | FC | | 5.4.15 |
| Test Tools | TT | | 5.4.19 |
| Type | TY | RTY# | 5.4.16 |
| Repeat Last Command | * | | 5.4.17 |
| Disconnect NMP | BYE | | 5.4.18 |

5.4.2 Show Config

The Show Config (SC) command shows the current port configuration settings for the local SRX ports. Port numbers may be included with this command to limit the display range. If no port numbers are included, settings for all ports are shown. Use this command to verify proper port configuration.

The Remote Show Config (RSC) command displays similar information about remote (DROP) port configurations.

NOTE

Several commands allow port numbers or port number ranges to be included on the command line. When port numbers are included, the syntax is as follows:

| | |
|----------------|----------------------|
| (Command)1 | Port 1 |
| (Command)1,2,6 | Ports 1, 2 & 6 |
| (Command)1 2 6 | Ports 1, 2 & 6 |
| (Command)2-6 | Ports 2 thru 6 |
| (Command)1,5-8 | Ports 1 and 5 thru 8 |

5.4.3 Change Port Config

The Change Port Config (CP) command sets the local port loopback, flow control and rate configuration. One or more ports may be set with a single command by selecting a range of port numbers. The factory default setting is Xon/Xoff Space, 9600 bps.

5.4.4 Remote Change Port Config

The Remote Change Port Config (RCP) command sets the remote port configuration. This command requires a **local** (Host) port number argument. The host mux sends the configuration to the proper remote drop and port number based on the system map. One or more ports may be set with a single command by selecting a range of port numbers. The syntax is the same as the CP command.

5.4.5 Show ID

The Show ID (SI) command is used to view either mux or port identifiers. If (M)ux is selected, both host and drop mux IDs are displayed. If (P)ort is selected, both host and drop port IDs are displayed.

5.4.6 Change ID

The Change ID (ID) command allows you to set or change both host and drop mux or port identifiers. Port IDs are entered in pairs referenced to the host port number. Pressing <Enter> with no entry will leave the ID unchanged.

5.4.7 Show Map

The Show Map (SM) command shows the mapping, IDs and status of all host ports. If mapping for a particular port(s) or range is desired, that port number or range may be added to the command line. If mapping for a specific drop is desired, use the SMD# command.

5.4.8 Change Map

The Change Map (CM) command is used to map the local host ports to the drop ports. Ports must be mapped in the host multiplexer before that channel can be used. Note that any host port may be mapped to any drop port. The only restriction is with multiple hosts, where each port for a specific drop must be mapped to a single host.

5.4.9 Show Frame Relay Status

The Show Frame Relay Status (SS) command shows current frame relay network statistics including Keep Alive and Full Status frames sent and received at the local network connection.

The RSS# command may be used to view similar statistics for a remote drop. The “#” must be replaced by the appropriate host side DLCI from the system map.

5.4.10 Show Network

The Show Network (SN) command displays the current network connection parameters.

5.4.11 Configure Internal DSU

The Configure Internal DSU (CN) command is only available when the optional internal DSU/CSU is installed. The command is used to configure the DSU/CSU clock source to standard clock or line driver (56K only). The default is 56K Standard Clock.

5.4.12 Change Multiplexer Parameters

The CO / RCO# command allows configuration of global data port parameters. These include RTS Data Gate and Data Carrier Detect. For most systems, these settings will never have to be changed.

The RTS Data Gate is used to insure that no data is transmitted from a data port unless RTS is high from the attached device. This will sometimes stop “streaming” ports.

The state of Data Carrier Detect is critical to proper operation of some host computers. Many computers depend on DCD to issue login prompts. If your host does not issue logins properly, you may need to change this setting.

5.4.13 Change Frame Relay Configuration

The Change Frame Relay Config (FR) command is used to configure the SRX multiplexer for the frame relay network. For single host applications, the multiplexer should setup automatically. For multiple host applications, one multiplexer must be set as the Master and the others as Slaves. The Management, DLCI, Poll Interval, and Full Status Interval settings should not require a change.

5.4.14 Activity Counters / Zero

The Activity Counters (AC / RAC) command shows transmit and receive data statistics for all ports. The data are presented in terms of blocks of information sent and received by the network and each data port. Error counts are also shown. A range of ports may be included with this command to reduce the number of ports shown.

The Z command is used to zero the counters so that current activity can be monitored.

5.4.15 Flow Control

The Flow Control (FC) command displays the current port flow control status for both local and remote ports. A port range may be included with this command.

5.4.16 Type

The Type (TY) command displays information about the host mux. The Remote Type (RTY#) command is used to display similar information about a specific drop. The DLCI must be included on the command line.

5.4.17 Repeat Last Command

To repeat the last command, simply press the * key. This is handy for repeating screens of constantly changing data.

5.4.18 Disconnect NMP

The BYE command toggles the RTS output from the Network Management port. This is used to disconnect equipment such as dial-up modems or the DCB Access Switch.

5.4.19 Test Tools

The Test Tools (TT) menu summarizes the test and troubleshooting commands. These commands are listed separately to reduce the clutter in the main help list, but are always active at the command prompt.

| <u>COMMAND</u> | <u>LOCAL</u> | <u>REMOTE</u> | <u>PARAGRAPH</u> |
|------------------|--------------|---------------|------------------|
| Capture Port | CA# | RCA# | 5.4.20 & 21 |
| Copy Command | CC# | RCC# | 5.4.22 & 23 |
| Show RS232 | SR | RSR | 5.4.24 & 25 |
| Test Message | TM# | RTM# | 5.4.26 & 27 |
| Remote Test Loop | | RTL# | 5.4.28 |
| Remote Port Ping | | RPP# | 5.4.29 |
| Monitor Port TX | MT# | | 5.4.30 |
| Monitor Port RX | MR# | | 5.4.30 |
| NMP Parity | P | | 5.4.31 |
| Port Reset | PR | | 5.4.32 |
| Reset MUX | RESET | RRESET | 5.4.33 |

5.4.20 Capture Port

The Capture Port command (CA#) permits the network management port to capture any of the local ports. While this command is active, the normal data path is interrupted and a two-way communication link is established between the network management port and the captured host port. A port number must be included on the command line.

The Capture command is active until two consecutive ESC characters are issued.

5.4.21 Remote Capture Port

The Remote Capture port command (RCA#) connects the network management port to any mapped drop port. During this time, normal data communications are suspended and the NMP terminal can talk directly to the remote DTE device. The number argument must be a mapped host port number.

The Remote Capture command is active until two consecutive ESC characters are issued.

5.4.22 Copy Command

The Copy Command (CC#) is used for training. This command is used when the instructor is at the host site and the trainee is at the remote. The command is followed by a port number which must be the host port that is mapped to the remote port used by the trainee.

After the command is entered, all data from the local port will be displayed on both terminals. Keyboard inputs from either terminal will be sent to the host port.

The Copy command is active until two consecutive ESC characters are issued by the instructor.

5.4.23 Remote Copy Command

The Remote Copy Command (RCC#) performs the same function when the instructor is located at the remote site. In this case, the port number is the port to which the trainee's terminal is attached. This command is used only at the remote site.

The Remote Copy command is active until two consecutive ESC characters are issued by the instructor.

5.4.24 Show RS-232

The Show RS-232 (SR) command shows the current state of RS-232 control signals on the local ports. A range of port numbers may be included to limit the display.

5.4.25 Remote Show RS-232

The Remote Show RS-232 (RSR) command shows the status of RS-232 control signals at the remote ports. As with the SR command, a range of port numbers may be included on the command line.

5.4.26 Test Message

The Test Message (TM#) command sends a Quick Brown Fox... message to a local port. The QBF message continues until any key is pressed on the network management port terminal.

5.4.27 Remote Test Message

The Remote Test Message (RTM#) command sends a QBF test message to a remote (Drop) port. The message continues until any key is pressed on the network management port terminal. A local port number must be included on the command line. If the port is not mapped, an error message is returned.

5.4.28 Remote Test Loop

The Remote Test Loop (RTL#) command is used to test a data path from end to end. This command enables port loopback in the remote (Drop) mux, then sends a test message to that port. If all is working correctly, the test message is displayed on the network management port terminal. A local port number must be included on the command line. If the port is not mapped, an error message is returned.

5.4.29 Remote Port Ping

The Remote Port Ping (RPP#) command displays the round trip delay (in milliseconds) to the selected remote port. The "#" argument must be a mapped host port number.

5.4.30 Monitor Port TX or RX

The Monitor Port TX (MT#) command monitors data transmitted from the selected port to the corresponding port of the remote (Drop) mux. The Monitor Port RX (MR#) command monitors data received by the selected port from the corresponding port of the remote mux. A local port number must be included on the command line. When port monitor is active, two ESC characters are needed to end the test.

5.4.31 NMP Parity

The Parity command (P) sets the parity for the network management port. The factory default is SPACE.

5.4.32 Port Reset

The Port Reset (PR) command is used to reset flow control to hung ports. A range of host port numbers or ALL may be included with this command. Flow control leads at both the host and drop ports are reset.

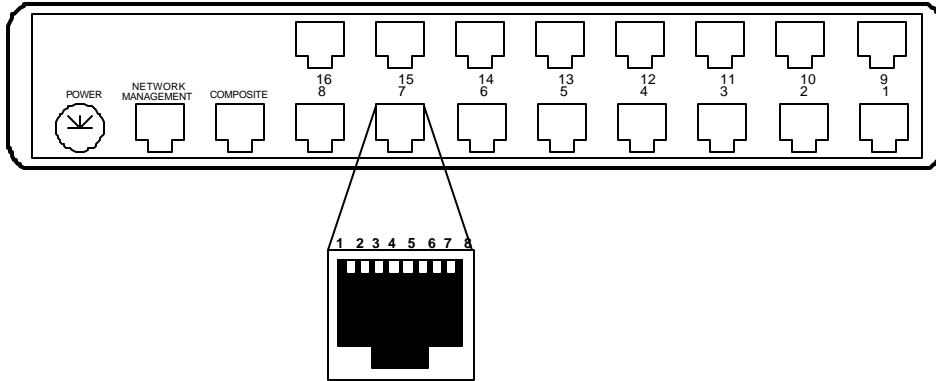
5.4.33 Reset Mux

The Reset Mux (RESET) command performs a local mux reset.

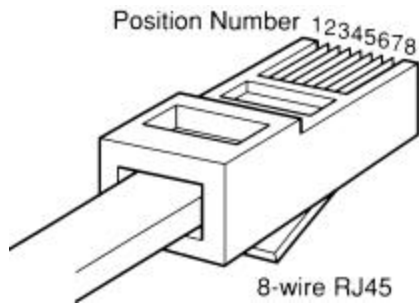
The Remote Reset (RRESET) command resets a remote drop, and requires a DLCI number.

6. INTERFACE SIGNALS AND CABLING

6.1 Connector Location and Pin Reference



SR-16 Rear Panel and RJ-45 Jack



RJ-45 Plug Positions

6.2 Port Interface

6.2.1 Composite Port (RJ-45)

| <u>Pin</u> | <u>Signal</u> | <u>In/Out</u> |
|------------|---------------------|---------------|
| 1 | Receive Clock | IN |
| 2 | Transmit Clock | IN |
| 3 | Data Carrier Detect | IN |
| 4 | Signal Ground | |
| 5 | Transmit Data | OUT |
| 6 | Receive Data | IN |
| 7 | Request to Send | OUT |
| 8 | Clear to Send | IN |

6.2.2 Data Ports (RJ-45)

| <u>Pin</u> | <u>Signal</u> | <u>In/Out</u> |
|------------|---------------------|---------------|
| 1 | Data Set Ready | OUT |
| 2 | Data Carrier Detect | OUT |
| 3 | Busy | IN |
| 4 | Signal Ground | |
| 5 | Receive Data | OUT |
| 6 | Transmit Data | IN |
| 7 | Clear to Send | OUT |
| 8 | Request to Send | IN |

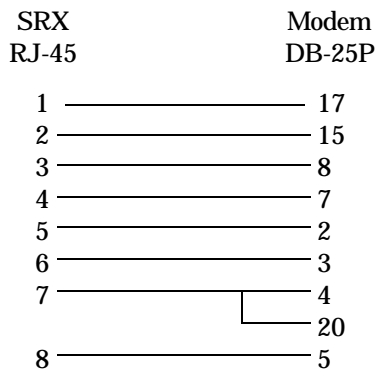
6.2.3 Network Management Port (RJ-45)

| <u>Pin</u> | <u>Signal</u> | <u>In/Out</u> |
|------------|---------------------|---------------|
| 1 | Not Used | |
| 2 | Not Used | |
| 3 | Data Carrier Detect | IN |
| 4 | Signal Ground | |
| 5 | Transmit Data | OUT |
| 6 | Receive Data | IN |
| 7 | Request to Send | OUT |
| 8 | Clear to Send | IN |

6.3 Cables

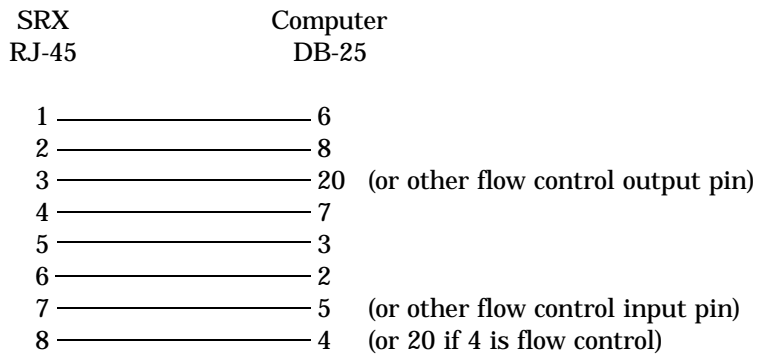
6.3.1 Composite Port to Modem

A two foot composite to modem cable is included with each SRX multiplexer. The configuration is as follows:



6.3.2 Data Ports to Host Computer

Configured as DTE



6.3.2 Data Ports to Host Computer, continued

Configured as DCE

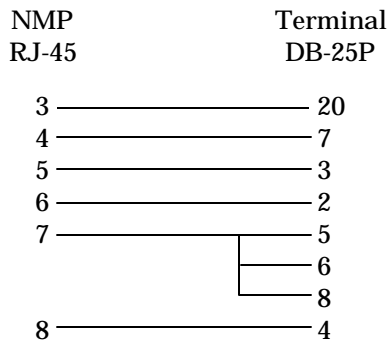
| SRX RJ-45 | Computer DB-25 |
|--------------|--------------------------------------|
| 1 | |
| 2 | 20 (or 4 if 20 is flow control) |
| 3 | 5 (or other flow control output pin) |
| 4 | 7 |
| 5 | 2 |
| 6 | 3 |
| 7 | 4 (or other flow control input pin) |
| 8 | 8 |

To a PC Com Port

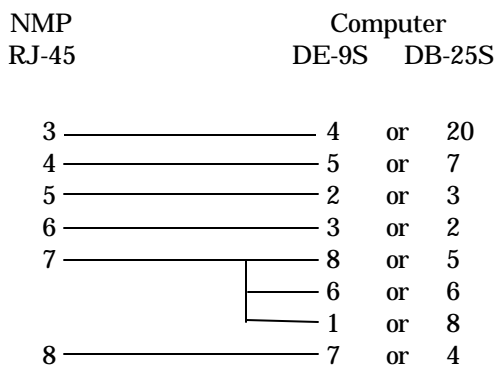
| SRX RJ-45 | Computer DB-25S | DE-9S |
|--------------|--------------------|-------|
| 1 | 6 | or 6 |
| 2 | 8 | or 1 |
| 3 | 4 | or 7 |
| 4 | 7 | or 5 |
| 5 | 3 | or 2 |
| 6 | 2 | or 3 |
| 7 | 5 | or 8 |
| 8 | 20 | or 4 |

6.3.3 Network Management Port

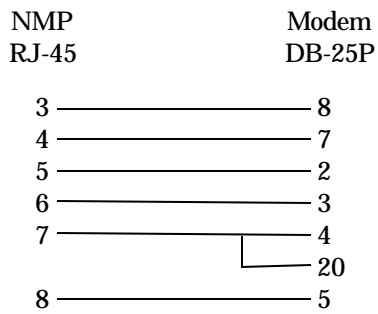
To a TERMINAL



To a PC using terminal emulation

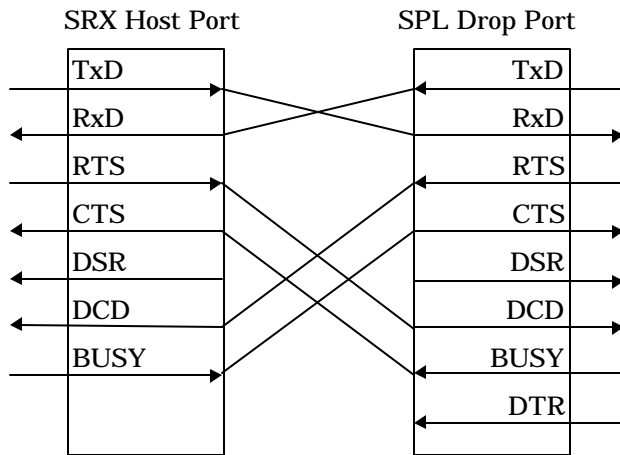


To a dial-up MODEM for remote access



6.4 Signal Paths through Multiplexers

The following diagram shows the signal flow between data ports of an SRX Host multiplexer and an SPL Drop multiplexer.



Transmit Data to Receive Data is the normal required path for data flow.

RTS to DCD is a hardware handshake path used to wake up the remote device. Many host computers require DCD to issue a login prompt.

Busy to CTS is the hardware flow control path. For CTS/Busy flow control, the hardware flow control pin of the attached device must be wired to Busy on the multiplexer.

The DSR output of the multiplexer port is always asserted (high).

Data Terminal Ready (DTR) is an input to the SPL Drop data ports which is passed through to the attached modem

7. TROUBLESHOOTING

7.1 General Approach

When troubleshooting problems, a rational plan can save you many hours of frustration. The following is a brief outline of standard troubleshooting procedures.

1. Gather the facts to determine the exact nature of the problem.
2. Draw a picture of the system showing the equipment at both the host and remote ends and the phone lines or in-house wiring. Use this as a reference to note your observations, test steps and test results. A picture keeps you focused and often saves duplicate effort.
3. Record the front panel indications before changing anything. This is an important part of fact gathering
4. If you change anything, change only one thing at a time.
5. Use the built-in test functions, especially the loopback tests and record your results.

7.2 Loopback Tests

It is best to begin loopback testing at the remote terminal and work toward the host. If all the loopbacks are successful, the data communications equipment and the terminal are working correctly.

Put the remote multiplexer port in loopback and have someone type alpha characters on the keyboard of the affected terminal. If the data appears correctly on the screen, the port is working. Next loop the associated port of the SRX host multiplexer. If data again appears correctly, the communications link and the ports on both multiplexers are working correctly. The problem then is with the host computer port or the cable between the host computer and the multiplexer.

Loopbacks can be turned on and off from the Network Management port of the SRX multiplexer. See paragraphs 5.4.3 and 5.4.4 for details.

7.3 Installation Troubleshooting, Modems or DSUs

First, set up the DSUs without connecting the multiplexers. The DSUs should be set to constant carrier, also called forced Request To Send, or constant RTS.

7.4 Installation Troubleshooting, Multiplexers

Before trying terminals, make sure the multiplexers are able to see the local frame relay switch. Use the "SS" command from the Network Management port to verify that "keep alive" frames are being sent and received by the multiplexer. See paragraph 5.4.9.

As soon as a "full status" frame is received at each location, the multiplexers should come on-line.

Make sure the SRX host is properly mapped. A Drop must be mapped at the host before it will become active.

7.5 Installation Troubleshooting, Terminals

Terminal problems typically fall into four categories:

1. The terminal or printer gets no data
2. The terminal or printer gets "garbage" data
3. Blocks of data are lost
4. Terminals or printers seem to "hang".

When a terminal gets no data, check to see the cables are wired correctly and that flow control is set properly.

If the terminal gets "garbage" data, check the speeds of the host and remote multiplexers, the terminal and the computer ports to make sure they match.

Blocks of data are lost most often when data is sent to a printer or a lot of data is being displayed on a terminal. Most of these problems are due to flow control not matching between the printer or terminal and the multiplexer.

If terminals and printers work for a while and then "hang", check the flow control settings. When Xon/Xoff flow control is set to a different parity on the multiplexer than on the terminal or printer, the result is either a "hung" device that is flow controlled off but never back on, or a device that is never flowed off causing buffer overflow and lost data.

8. WARRANTY

All DCB multiplexers are warranted to be free of defects in materials and workmanship for two years. DCB of Champaign, Inc. will repair or replace any equipment proven to be defective within the warranty period. All warranty work is F.O.B. Dewey, IL. This warranty is exclusive of abuse, misuse, accidental damage, acts of God or consequential damages, etc. DCB liability shall not exceed the original purchase price.

All equipment returned for repair must be accompanied by a Returned Material Authorization (RMA) number. To receive an RMA number, call (217) 897-6600 between the hours of 8 AM and 5 PM central time. Equipment must be shipped prepaid to DCB and will be returned at DCB's expense.

Ship returned items to:

Data Comm for Business
2949 CR 1000E
Dewey, IL 61840

Data Comm for Business, Inc.
PO Box 6329
Champaign, IL 61826-6329

Tel (217) 897-6600
Fax (217) 897-1331
Email support@dcbnet.com

DCB Point-to-MultiPoint Frame Relay Worksheet

| Host (SRX) Port # | Drop DLCI | Drop Port # | Drop Location |
|----------------------|--------------|----------------|---------------|
| 1 | | | |
| 2 | | | |
| 3 | | | |
| 4 | | | |
| 5 | | | |
| 6 | | | |
| 7 | | | |
| 8 | | | |
| 9 | | | |
| 10 | | | |
| 11 | | | |
| 12 | | | |
| 13 | | | |
| 14 | | | |
| 15 | | | |
| 16 | | | |
| 17 | | | |
| 18 | | | |
| 19 | | | |
| 20 | | | |
| 21 | | | |
| 22 | | | |
| 23 | | | |
| 24 | | | |
| 25 | | | |
| 26 | | | |
| 27 | | | |
| 28 | | | |
| 29 | | | |
| 30 | | | |
| 31 | | | |
| 32 | | | |

After you have completed the above table, connect a terminal to the NMP port on the multiplexer and configure the host (SRX) as follows:

1. Use the CM command to map the host (SRX) ports to the remote (DROP) ports by DLCI number.
2. Use the CP command to configure the host data ports for speed, parity and flow control. If Xon/Xoff flow control is used, configure the host ports as XT (Xon/Xoff Transparent).
3. As each drop comes on-line, use the RCP command to set the proper configuration for the remote (Drop) ports. All port number references are to the host (SRX) port numbers. The map will route the information to the correct remote site port. If Xon/Xoff flow control is used, the Drop ports should be set for the same parity as the host computer (XE, XO, XS (none), or XM).

NOTE

The remote ports can also be configured locally using the NMP port or Port 1 Setup on the drop (SR) multiplexer.