Metroplex® 6000

Local Management, Operation

General DataComm

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Revision History

Table-1   Revision History

Issue Number	Date	Description of Change
1	Jun/96	First issue.
2	Nov/96	This issue updates the Local Management with support for OCU-DP and 4WTO on the Flexi-Voice Plus card and Frac-Data support.
3	Mar/97	This issue updates the Local Management with support for DSX-1 option card for the Frac-Data card, and support for Ethernet option card SNMP and PPP.
4A	Apr/97	This issue updates the Local Management with support for the Dual G.703/64k option card for the Flexi-Voice Plus card, the FXS Octet card, and the DSX-1 LIU option card for the Platform card.
4E	Jun/97	This issue updates the Local Management with support for the E1 LIU option card for the Platform card.
5	Oct/97	General updates for E1 LIU and Dial-Out on alarm
6	Apr/98	Adds HDSL and E1 updates.
7	Jul/98	Adds T1 updates.

Table of Contents

Local Management

Overview

This manual describes local (TERM) and remote (DIAL) management sessions that allow you to control the Metroplex® 6000 from a VT100-type terminal. You can monitor status, run diagnostics and configure circuits from the terminal. This manual describes how to navigate among the various screen menus, describes each screen and lists the possible choices for each field. A brief description of each option is presented. For more detailed information refer to the associated product card manual.

If your Platform Card supports SNMP network management, the Local Management VT-100 screens are also accessible from a LAN workstation using Telnet.

The Metroplex® 6000 can also be managed from a Unix-based workstation running Solaris and HP OpenView, Hewlett Packard HPux, or launched under IBM Netview to run on AIX operating system. For more details refer to manual No. *086R608-002 Metroplex® 6000 TEAM 6000 for Unix.*

Compatibility

Channel basecards require a certain revision level of Platform Card firmware for correct operation. To check the Platform Card firmware revision level, go to the System Utilities screen on the Local Manager. Select Card Revisions. Read the firmware revision level of the Platform Card under the `F/W` column. The revision level starts at `--` and proceeds in the order `A-`, `B-`, `C-`, etc.

The Platform Card firmware revision is also shown on the opening screen.

Option cards require a certain revision level of firmware on both the channel basecard and on the Platform Card for correct operation. You can check the firmware revision level of the channel basecards under the `F/W` column on the same Card Revisions screen.

If a basecard is not in a slot, or an option card is not populated on a basecard, the card name appears as `None` in the `Card Type` or `OptCrd` headings on the Card Revisions screen. If a basecard or option card is populated, but not supported by your Platform Card firmware, the card name appears as `Unknown`.

If the firmware revision level of a channel card is not compatible with the Platform Card firmware revision level, a "`Communication Error`" message may appear. If this occurs, check that the Platform Card and/or the channel basecard have up-to-date firmware. Refer to Table 1

.
Table 1   Platform Card Compatibility

Platform Card Firmware Revision	Local Management Manual Issue	Cards: Features Supported	Model No.
- -	Issue 1	6-Slot Wallmount Enclosure	MP6960, MP6960R
		Platform Card	MP6001
		CSU T1 option card	MP6001/CSU-1
		Flexi-Voice/Flexi-Voice Plus Card	MP6360
		Dual OB option card	MP6360/OB-1
		Dual TB option card	MP6360/TB-1
		Dual 4W E&M option card	MP6360/EM-1
		Flexi-Data Card	MP6440
		Flexi-Data Card	MP6441
		422/V.11 option card	MP6440/422-1
		V.35 option card	MP6440/V.35-1
		EIA232 option card	MP6440/232-1
A -	Issue 2	All of the above, plus	
		4-slot or 8-slot USS backplane	MP-4/BP
		Dual OCU-DP option card	MP6360/OCU-DP1
		Dual 4W TO option card	MP6360/4WTO-1
		Frac-Data card	MP6520
		422/V.11 option card	MP6440/422-1
		V.35 option card	MP6440/V.35-1
C-	Issue 3	All of the above, plus	
		Frac-Data DSX-1 option card	MP6520/DSX1-1
		Ethernet option card	MP6001/ETH-2
		SNMP management (086P020-003 and 086P020-004 Only)	
		Telnet management (086P020-003 and 086P020-004 Only)	
E-	Issue 4	Dual G.703/64k option card	MP6360/G.703-1
		FXS Octet card	MP6380
		Platform DSX-1 option card	MP6001/DSX-1
G-	Issue 5	All of the above, plus	
		Platform E1 option card	MP6001/E1-1
		T1/E1 Frac-Data card	MP6521
		Dial-Out on Alarm	
		Alarm Thresholds and Masks	
		Flexi-Data card 2.4, 4.8, 19.2 kbps data rates	MP6441
H-	Issue 6	All of the above, plus	
		Platform HDSL-E1 option card	MP6001/HDSL-E1-1
		Frac-Data E1 option card	MP6521/E1
		EIA-232 Async/Sync option card	MP6441/232-2
L-	Issue 7	All of the above, plus	
		Platform HDSL-T1 option card	MP6001/HDSL-T1-1

Terminal

Any standard terminal (VT-100 or ANSI terminal or personal computer (PC) emulating a VT100-type terminal) equipped with an EIA/TIA-232-E communication interface can be used to control the unit's operation. All management sessions are menu driven. This means that selections are made from on-screen menus which are displayed on the terminal.

Set the terminal communications parameters as follows:

1. data rate = 9600 bps

2. character format =1 start bit

>   8 data bits
>
>   no parity
>
>   1 stop bit

A management session is active as soon as you connect the terminal cable to the Platform Card's front panel TERM port of an operating Metroplex® 6000. Note that the TERM port does not provide the DSR control lead.

Dial-In

Everything you can do from a VT100 terminal attached directly to the Platform Card TERM port, you can also do through a VT100 terminal remotely located and attached through a dial-up modem link to the Platform Card DIAL port. The communication parameters are the same as for the TERM port.

To initiate a dial-in VT-100 session, dial the number of the modem attached to the Metroplex® 6000 DIAL port. Note that the Node Name of the unit appears in the top bar of the opening screen. To terminate a dial-in session, you simply hang-up the call by typing +++ATH or a similar command to cause the modem to hang-up.

The Metroplex® 6000 supports simultaneous management on both the DIAL and TERM ports. For example if a modem is connected to the DIAL port of the Metroplex® 6000, a local terminal may be attached to the TERM port without disrupting the remote terminal. The Metroplex® 6000 responds to whichever user last entered a command or changed a parameter. Some parameters update periodically on the screen to allow you to see the current value. All parameters below the "==" line on the Configuration and Diagnostic screens won't update.

Important   *Pressing "~" on a dial-in session causes the dial-in port to change modes. The call must be disconnected (DCD must drop) and reconnected for operations to continue.*

Dial-Out

The Metroplex® 6000 can dial-out to a centralized maintenance center in the event of an alarm condition. It dials out via a modem attached to the DIAL port. If a dial-in session is active when an alarm occurs, it stores the alarm until the DIAL port is free. After the Metroplex® 6000 dials out with an alarm, it maintains the call for a certain interval before hanging up. During that interval, the maintenance center operator can start a dial-in session to further diagnose the alarm condition.

For details on setting up the DIAL port and configuring the modem, see *Appendix B "Dial-Out On Alarm"*.

Telnet

The 086P020-003 or 086P020-004 Platform Cards support Telnet, through either the SNMP port or DIAL port. The SNMP port uses either Ethernet or a serial link using the Point-to-Point Protocol (PPP) depending on Jumper X15 setting (see the Platform Card Manual for description). To use Telnet, your Platform Card must be configured with an IP address.

PPP communications parameters are the same as those specified for the terminal interface. The PPP link operates at 9600 bps, and the PPP link must be established before Telnet commands can be sent.

The DIAL port supports either VT100 Terminal emulation or PPP. The default protocol is VT100 emulation. Receipt of a PPP message switches the DIAL port automatically to PPP. To return to VT100 protocol, clear the call so that the Data Carrier Detect (DCD) control line is turned off.

Telnet on the Metroplex$^®$ 6000 supports a VT100 (xterm) session only which is available on most workstations. This allows the Telnet session to have the same look and feel as the VT100 Local Management screens described in this manual. There is no support for a teletype (cmdtool) session.

The Metroplex$^®$ 6000 supports simultaneous management on all ports (TERM, DIAL and SNMP) even if Telnet is used. Only one Telnet session can be active at a time. If a session is active and another user wants to establish a session, the message "Connection refused" is displayed. A Telnet session times-out automatically after 10 minutes of no user input.

To use Telnet type "Telnet" on your workstation and the IP address of a Metroplex$^®$ 6000. If no other Telnet session is active you get the opening VT-100 screen where you can type in your password. The screens in this manual appear the same in Telnet. While in Telnet you can type <ctrl>] to get you to the Telnet prompt where you can close the session by either typing "close" or "quit". Other options are also available at the Telnet prompt and can be seen by typing "?" and return.

Mode

The Metroplex$^®$ 6000 can operate in either T1 or E1 Mode. The mode is determined by LIU A. If LIU A is a CSU or DSX-1, the T1 Mode screens are displayed. If LIU A is E1 or HDSL-E1, the E1 Mode screens are displayed. Throughout this manual, menu screens indicate the mode associated with the screen. If no mode is specified, the screen is the same for both T1 and E1.

Miscellaneous

Are You Sure? (Y/N) messages are displayed when the action being requested can interrupt passing data.

Default configuration values are bolded in the table description, except where more than one default can occur, then it is noted in the description.

Screen Organization

A VT-100 screen provides 24 lines and 80 columns of work space. Figure 2 shows a sample screen. Arrows are used to indicate different sections on the screen.

Current Screen Name   Node Name   Slot or LIU if Applicable

```
Voice Channel Configuration                    **MIDDLEBURY**   Slot 3

                   Chan 1    Chan 2    Chan 3    Chan 4    Chan 5    Chan 6
                                                           E&M       E&M
Option Type:       OB        OB        TB        TB
Total TLP
        Xmt(dB):   3.0       3.0        3.0       3.0       3.0       3.0
        Rcv(dB):  -9.0      -9.0       -3.0      -3.0      -3.0      -3.0
==========================================================================
Interface Type:    FXS/LS    FXS/LS    FXO/LS    FXO/LS    4WE&M     4WE&M
LIU:               A         A         A         A         A         A
Timeslot:          11        12        13        14        15        16
Default TLP:       Def1      Def1      Def1      Def1      Def1      Def1
Adjust TLP
   Xmt(dB):        0.0       0.0       0.0       0.0       0.0       0.0
   Rcv(dB):        0.0       0.0       0.0       0.0       0.0       0.0
Signaling Mode:    Stnd      Stnd      Stnd      Stnd      Stnd      Stnd
Network Loopback
   Freq(Hz):       N/A       N/A       N/A       N/A       N/A       N/A
   Timeout (Min):  N/A       N/A       N/A       N/A       N/A       N/A


                              Save Configuration
                        Main Menu          Exit
 LIU A = No Alarms     LIU B = No Alarms          Metroplex 6000

 Hit space bar to change value
```

Data Pertinent to Screen (Cannot be Modified Directly)

Data Pertinent to Screen (Can be Modified Directly)

Action Menus to perform a function or exit the screen

LIU Alarm Status and Power Supply Alarm

Queries or Informational Messages

Figure 2   Sample Screen

Operating Procedures

Typing upper or lower case characters provides the same result. Arrow key and action keys provide you with easy mobility to the fields on the screen.

The screen has several types of fields which contain selections:

- toggle field - where selections are changed through the use of the space bar. When you are on the last selection, press the spacebar to return to the first selection. The enter key or an arrow key is used to accept the selected value.

- action field - where menus are immediately performed when the **bolded** letter is pressed. This is used to exit the current screen, save the current screen options, etc. These menus can also be highlighted through the use of the arrow keys and then hitting the enter key to perform the function.

- user input field - where you can change a selection by typing in a string and then hitting the enter key.

- user input/toggle field - which is a selection that allows you to hit the space bar to cycle through the selections or to type in a string and hitting the enter key. This is useful when the selection has many options (e.g. Timeslot field or TLP adjust field).

Besides the arrow keys, the return key can also take you to the next selection. The selection sequence is top to bottom, left to right followed by the next menu field.

Exit is shown at the bottom of every screen, except for the power-up/opening screen which contains a help section in the center above the bottom highlighted line. You can either highlight the line by moving the arrow keys or you can type "**E**" to exit. All screens except the Main Menu screen also have a'Main Menu' field for immediate return to the Main Menu.

You can use the ↑ and ↓ to cycle through the current column. If you wish to switch between columns, the → and the ← can be used. When you use the arrow keys to scroll up or down, or left to right, and the highlighted selection reaches the ends, it wraps around in the same column or row.

Screen Display Summary

Figure 3 is a summary of all the available screens (some are password protected).
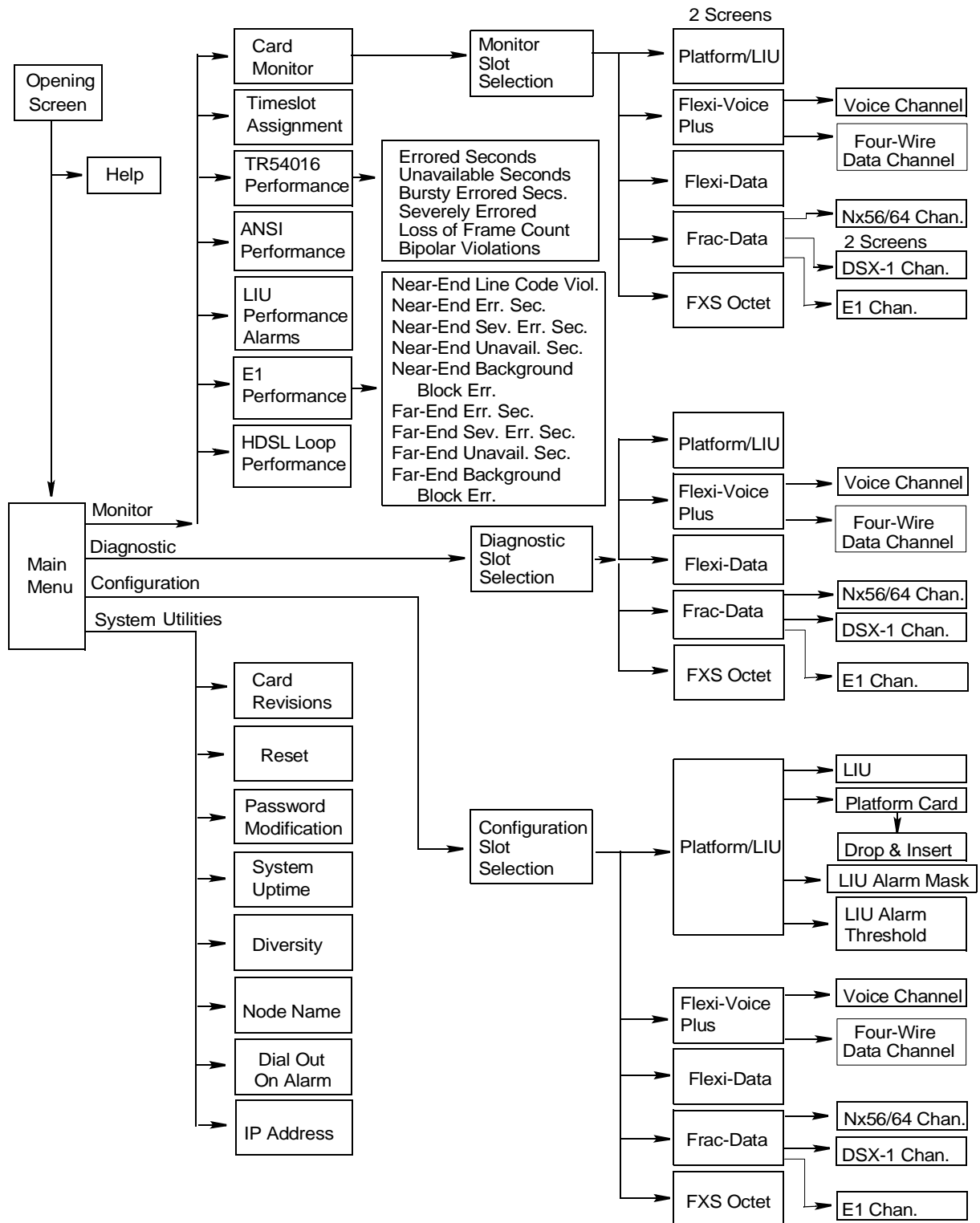
Figure 3   Screen Summary

Opening Screen

The opening screen shown in Figure 4, includes the following selections:

Password - Highlight the password field if it isn't highlighted, and enter the correct password and hit Enter (You may change the password using the System Utilities selections). The main menu is displayed.

The following are the default passwords:

>   MON - monitor only
>
>   DIAG - monitor and diagnostics
>
>   SYSTEM - allows access to all screens in this document

Help - Contains a few pages on how you can use the system. To view the help screens, highlight the field and press enter.

The opening screen's top line indicates Metroplex® 6000, or Metroplex® 6000 with SNMP (086P020-003 and 086P020-004 versions only).

```
                        Metroplex 6000


                                      * * * * *
                                      * * * * *
                            * * * * * * * * * * * * * * * *
                            * * * * * * * * * * * * * * * *
                            * * * *             * * * * *
                            * * * *
                            * * * *             * * * * *
                            * * * * * * * * * * * * * * * *
                            * * * * * * * * * * * * * * * *
                                                * * * * *
                            * * * * * * * * * * * * * * * *
                            * * * * * * * * * * * * * * * *

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                           Revision: --
            Power-up Selftest Status: Passed
                          Password:

                          Help
LIU A = No Alarms     LIU B = No Alarms
 Enter Password
```

Figure 4   Opening Screen

Main Menu

Depending on the level of password, the main menu includes the following selections.
See Figure 5.

- • Monitor
- • Diagnostics
- • Configuration
- • System Utilities

These selections are described in the following text.

```
 Main Menu



                              Monitor

                              Diagnostics

                              Configuration

                              System Utilities






                              Exit
  LIU A = No Alarms      LIU B = No Alarms                    Metroplex 6000
 Hit Enter to activate
```

Figure 5   Main Menu

Monitor

When you select Monitor, the screen displays a monitor menu which is dependent on the mode in which the system is operating: T1, T1/HDSL, E1, or E1/HDSL. Figure 6 shows the monitor screen for T1/HDSL, and Figure 7 shows the monitor screen forE1/HDSL. The T1 and E1 monitor screens each match those shown, but without the HDSL Loop Performance selection. Selections include `Card Monitor`, `Timeslot Assignment`, `TR54016 Performance`, `ANSI Performance`, and `LIU Performance Alarms`.

The Card Monitor screen summarizes the configuration options selected in the configuration screens and diagnostic screens and also displays alarms and status. All selections periodically update on the screen.

```
Monitor

                         Card Monitor

                         Timeslot Assignment

                         TR54016 Performance

                         ANSI Performance

                         HDSL Loop Performance

                         LIU Performance Alarms




                         Main Menu    Exit
LIU A = No Alarms     LIU B = No Alarms                    Metroplex 6000
Hit Enter to activate
```

Figure 6   Monitor Selections (T1/HDSL Mode)

```
Monitor

                         Card Monitor

                         Timeslot Assignment

                         E1 Performance

                         HDSL Loop Performance

                         LIU Performance Alarms









                         Main Menu    Exit
LIU A = No Alarms  LIU B = Red Alarm                       Metroplex 6000
```

Figure 7   Monitor Selections (E1/HDSL Mode)

Card Monitor Slot Selection

In the Main Menu screen, arrow to the Monitor field and hit Enter or type M to get to the Monitor Screen. Then arrow to the Card Monitor field and hit Enter or type C to get to the Card Monitor Slot Selection screen.

When you select the slot from the Card Monitor Slot Selection screen, the available monitor screen (specific to the card type in the slot) is displayed. Cards must be physically present in the slot in order to be monitored. An empty slot is shown as "`--`" under `Card Type`. This screen is dynamic to the number of slots available in the shelf. See Figure 8. Refer to Table 2.

```
 Card Monitor Slot Selection
                                          LIU State/Timeslots Used
Slot     Card Type                Status  A                  B
1        Platform                 OK      Active             Active

2        Frac-Data                OK      9-13               7-10

3        Flexi-Data               OK      7,8                1,2

4        Flexi-Voice Plus         OK      1,2,3,4            5,6

5        FXS Octet                OK      14,15              11,20

6        --                       --      --                 --




                    Main Menu    Exit
 LIU A = No Alarms    LIU B = No Alarms              Metroplex 6000
Hit Enter to activate
```

Figure 8   Card Monitor Slot Selections

Table 2   Card Monitor Status

Field	Possible Values	Description
Card Type	Platform, Frac-Data, Flexi-Voice Plus, Flexi-Data, FXS Octet, Unknown	Specifies Card Type read from card. Unknown indicates Platform Card does not recognize Card Type. Check the firmware revision in Table 1.
Status	OK, Fail, Test, Alrm	This provides an overall status of the card. OK - card has passed selftest and has no alarms. Fail - card has not passed selftest or channel card has stopped communicating with the Platform Card (this could be due to the removal of the channel card from the shelf). Test - a diagnostic test is running on the card. Alrm - one of the LIUs on the Platform Card is in alarm or a channel is in alarm.
LIU State	Active, Inactive, --	This indicates the state of the LIUs on the Platform Card. Active - timeslots are assigned to the LIU. Inactive - timeslots are not assigned to the LIU. -- - the LIU is not present.
Timeslots Used	None, 1-31, -- 1-24 - for T1 1-31 - for E1	This indicates the timeslots used by each card type. Timeslots can be displayed, e.g. 1 when a channel uses one timeslot. When more than one timeslot is assigned to a channel the display indicates, e.g. 1-3 for the channel. None - when no timeslots are assigned to a LIU. -- - the LIU is not present.

Platform/LIU Monitor

When you select the Platform Card's slot number, the first page of the appropriate Platform/LIU Monitor screen appears. There are separate monitor screens for the system operating in T1 Mode or E1 Mode. Each set of screens consists of two pages. Platform/LIU monitor screens show the configuration, diagnostics, alarm and status information for the LIU on the Platform Card (refer to Diagnostics and Configuration paragraphs for selection and message descriptions).

The Platform/T1 LIU Monitor screens are shown in Figure 9 and Figure 10. The Platform/E1 LIU Monitor screens are shown in Figure 11 and Figure 12. T1 LIU alarms are described in Table 3, HDSL alarms are described in Table 4, and E1 LIU alarms are described in Table 5.

```
Platform/T1 LIU Monitor                                           Slot 1

                                     LIU A               LIU B
        Interface Type:              CSU                 HDSL-T1
        HDSL Major Alarm BER Threshold: N/A              10E-4
        HDSL Minor Alarm BER Threshold: N/A              10E-6
        Local Loopback:              ToChan              None
        T1 Alarms:                   Red                 None
        HDSL Loop Exchange:          N/A                 No Exchange
        HDSL Loop 1 Noise Margin (dB):  N/A              15.0
                 Pulse Atten (dB):   N/A                 2.0
                 Loop Alarms:        N/A                 None
        HDSL Loop 2 Noise Margin (dB):  N/A              15.0
                 Pulse Atten (dB):   N/A                 2.0
                 Loop Alarms:        N/A                 None



                      Main Menu    Exit
 LIU A = No Alarms    LIU B = No Alarms               Metroplex 6000
Hit Enter to activate
```

Figure 9   Platform/T1 LIU Monitor, Page 1

```
Platform/T1 LIU Monitor                                              Slot 1

                                     LIU A              LIU B
      Interface Type:                 CSU              HDSL-T1
      Line Code:                      B8ZS               N/A
      Frame Type:                     ESF                ESF
      Line Build-Out:                7.5dB               N/A
      Pre-Equalization:               N/A                N/A
      ESF Mode:                      TR54016             None
      HDSL Unit Type:                 N/A                NTU
     HDSL 1 Loop (2W)/ 2 Loops (4W): N/A              1 Loop
      Start Timeslot:                 N/A                 2




                         Main Menu    Exit
LIU A = No Alarms     LIU B = No Alarms
Hit Enter to activate
```

Figure 10   Platform/T1 LIU Monitor, Page 2

Table 3   T1 LIU Alarm States

Field	Values	Description
Alarms	LOS, OOF, RAI, AIS, None	Specifies the current alarm state of the LIU. LOS (Loss Of Signal) or OOF (Out Of Frame) is detected as defined in TR 62411. RAI (Remote Alarm Indication) is being received from the network. AIS (Alarm Indication Signal) is being received from the network. This is not valid for a T1-HDSL LIU option card.

Table 4   HDSL LIU Alarm States

Field	Values	Description
HDSL Loop Exchange	N/A, No Exchange, Loop Exchange	Specifies the current HDSL loop connection state No Exchange indicates that the loops are correctly connected. Loop Exchanged indicates that the loops are crossed over. N/A is for non-HDSL LIU option cards.
Noise Margin	N/A, -64.0 through +63.5 in 0.5 dB increments	Specifies the noise margin on the HDSL loop. N/A is for non-HDSL LIU option cards.
Pulse Atten	N/A, 0.0 through 127.5 in.5 dB increments	Specifies the pulse attenuation on the HDSL loop. N/A is for non-HDSL LIU option cards.
Loop Alarms	N/A, LOS, Loss HDSL Sync, Major BER, Minor BER, None	Specifies the current state of the HDSL Loop Alarms. LOS (Loss of Signal) is detected Loss HDSL Sync (Loss of HDSL Sync Word) is detected Major BER (Bit Error Rate) is detected depending on Threshold setting. Minor BER (Bit Error Rate) is detected depending on Threshold setting. N/A is for non-HDSL LIU option cards.

```
Platform/E1 LIU Monitor                                                      Slot 1
                                        LIU A                    LIU B
    Interface Type:                     E1                       HDSL-E1
    HDSL Major Alarm BER Threshold:     N/A                      10E-4
    HDSL Minor Alarm BER Threshold:     N/A                      10E-6
    Local Loopback:                     ToChan                   None
    E1 Alarms:                          Red                      None
    TS16 Alarms:                        OOF                      None
    HDSL Loop Exchange:                 N/A                      No Exchange
    HDSL Loop 1 Noise Margin (dB):      N/A                      15.0
                Pulse Atten (dB):       N/A                      2.0
                Loop Alarms:            N/A                      None
    HDSL Loop 2 Noise Margin (dB):      N/A                      15.0
                Pulse Atten (dB):       N/A                      2.0
                Loop Alarms:            N/A                      None




                            Next Page
                       Main Menu    Exit
LIU A = No Alarms   LIU B = No Alarms                           Metroplex 6000
```

Figure 11   Platform/E1 LIU Monitor, Page 1

```
Platform/E1 LIU Monitor                                                      Slot 1
                                        LIU A                    LIU B
    Interface Type:                     E1                       HDSL-E1
    Interface Impedance (Ohms):         120                      N/A
    CRC-4:                              On                       Off
    Chan. Assoc. Sig. (CAS):            On                       Off
    HDSL Unit Type:                     N/A                      NTU
    HDSL 1 Loop (2W)/ 2 Loops (4W):     N/A                      2 Loops
    HDSL Start Timeslot:                N/A                      N/A










                          Previous Page
                       Main Menu    Exit
LIU A = No Alarms   LIU B = No Alarms                           Metroplex 6000
```

Figure 12   Platform/E1 LIU Monitor, Page 2

Table 5   E1 LIU Alarm States

Field	Values	Description
E1 Alarms	LOS, OOF, RAI, AIS, None	Specifies the current alarm state of the LIU. LOS (Loss Of Signal) or OOF (Out Of Frame) is detected. RAI (Remote Alarm Indication) is being received from the network. AIS (Alarm Indication Signal) is being received from the network.
TS 16 Alarms	OOF, RAI, AIS, None	Specifies the current alarm state of Timeslot 16 on the LIU. OOF (Out Of Frame) is detected. RAI (Remote Alarm Indication) is being received from the network. AIS (Alarm Indication Signal) is being received from the network.

Flexi-Voice Plus Card Monitor Menu

The Flexi-Voice Plus Card Monitor menu allows you to select between monitor screens for the voice channels or Four-Wire data channels. Figure 13 illustrates a typical screen.

```
Flexi-Voice Plus Card Monitor Menu                              Slot 4



                        Voice Channel Monitor

                        Four-Wire Data Channel Monitor









                         Main Menu    Exit

LIU A = No Alarms      LIU B = No Alarms            Metroplex 6000
Hit Enter to activate
```

Figure 13   Flexi-Voice Plus Monitor Menu

Voice Channel Monitor

Voice Channel monitor screen shows the configuration, diagnostics, alarm and status information for the voice channels on the Flexi-Voice Plus Card. See Figure 14. (Refer to Diagnostics and Configuration paragraphs for selection and message descriptions). Table 6 describes additional status values. These status values depend on hardware jumper settings, or channel activity.

```
Voice Channel Monitor                                                    Slot 4

                  Chan 1   Chan 2   Chan 3   Chan 4   Chan 5   Chan 6

Interface Type:    FXS/LS   FXS/LS   FXO/LS   FXO/LS   4WE&M    4WE&M
Total TLP
    Xmt(dB):       3.0      3.0      3.0      3.0      3.0      3.0
    Rcv(dB):       -9.0     -9.0     -3.0     -3.0     -3.0     -3.0
LIU:               A        A        A        A        A        A
Timeslot:          11       12       13       14       15       16
Signaling Mode:    Stnd     Stnd     Stnd     Stnd     Stnd     Stnd
Network Loopback:
  Freq(Hz):        N/A      N/A      N/A      N/A      N/A      N/A
  Timeout(Min):    N/A      N/A      N/A      N/A      N/A      N/A
Local Loopback:    ToNet    ToNet    None     None     None     None
Dig. mWatt:        Off      On       Off      Off      Off      Off
Conditioning:      None     None     None     None     None     None
Impedance (Ohms):  N/A      N/A      600      600      N/A      N/A
Signaling Type:    N/A      N/A      N/A      N/A      III      III
Channel Status:    Idle     Idle     Idle     Idle     Idle     Idle

                       Main Menu    Exit
 LIU A = No Alarms    LIU B = No Alarms                       Metroplex 6000
Hit Enter to activate
```

Figure 14   Voice Channel Monitor

Table 6   Voice Channel Status Values

Field	Values	Description
Impedance	600, 900, N/A	Indicates the value read from the option card. 600 or 900 Ohms is read from the jumper set on the TB option card. All other option card types read N/A.
Signaling Type	I, II, III, V, N/A	Indicates the value read from the option card. I, II, III, V signaling type is read from the jumper set on the E&M option card. All other option card types read N/A.
Channel Status	Idle, Busy	Indicates the current status of the channel. Busy means the channel is currently being used. Idle indicate the channel is available for use.

FXS Octet Monitor

FXS Octet monitor screen shows the configuration, diagnostics, alarm and status information for the OB channels on the card. See Figure 15. (*R*efer to Diagnostics and Configuration paragraphs for selection and message descriptions). Table 7 describes additional status values. These status values depend on channel activity.

```
FXS Octet Monitor                                                  Slot 4

                Chan 1   Chan 2   Chan 3   Chan 4   Chan 5   Chan 6  Chan 7   Chan 8

Interface Type:  FXS/LS   FXS/LS   FXS/LS   FXS/LS   FXS/LS   FXS/LS  FXS/LS   FXS/LS
Total TLP
     Xmt(dB):     3.0      3.0      3.0      3.0      3.0      3.0     3.0      3.0
     Rcv(dB):    -9.0     -9.0     -3.0     -3.0     -3.0     -3.0    -3.0     -3.0
LIU:              A        A        A        A        A        A       A        A
Timeslot:         11       12       13       14       15       16      17       18
Signaling Mode:  Stnd     Stnd     Stnd     Stnd     Stnd     Stnd    Stnd     Stnd
Local Loopback:  ToNet    ToNet    None     None     None     None    None     None
Dig. mWatt:      Off      On       Off      Off      Off      Off     Off      Off
Conditioning:    None     None     None     None     None     None    None     None
Channel Status:  Idle     Idle     Idle     Idle     Idle     Idle    Idle     Idle




                         Main Menu    Exit
LIU A = No Alarms     LIU B = No Alarms                       Metroplex 6000
Hit Enter to activate
```

Figure 15   FXS Octet Monitor

Table 7   FXS Octet Status Values

Field	Values	Description
Channel Status	Idle, Busy	Indicates the current status of the channel. Busy means the channel is currently being used. Idle indicates the channel is available for use.

Four-Wire Data Channel Monitor

Four-Wire Data Channel monitor screen shows the configuration, diagnostics, alarm and status information for the OCU-DP channels and the G.703 channels on the Flexi-Voice Plus Card. See Figure 16. (Refer to Diagnostics and Configuration paragraphs for selection and message descriptions). Table 8 describes additional status values. These status values depend on hardware jumper settings, or channel activity.

```
Four-Wire Data Channel Monitor                                          Slot 4

                      Chan 1     Chan 2     Chan 3     Chan 4     Chan 5     Chan 6

Interface Type:       G.703      G.703      OCU-DP     OCU-DP      4WTO       4WTO
LIU:                  A          B          A          A           -          -
Timeslot:             5          1          3          4           -          -
Service:              N/A        N/A        DDS        DDS         -          -
Secondary Channel:    N/A        N/A        Off        On          -          -
Data Rate:            64kbps     64kbps     64kbps     56kbps      -          -
ZCS Control:          N/A        N/A        Disable    Enable      -          -
Latching Loopback:    N/A        N/A        Enable     Disable     -          -
LOS Alarm:            Masked     Masked     Masked     Reported    -          -
LOF Alarm:            N/A        N/A        Masked     Masked      -          -
OutOfService:   back: ToChan     ToNet      ToChan     ToNet       -          -
Tx Mode:              N/A        N/A        N/A        Off         -          -
Alarms:               N/A        N/A        N/A        N/A         -          -
                      LOS        None       LOS        N/A         -          -




                        Main Menu    Exit
LIU A = No Alarms    LIU B = LOS Alarm                         Metroplex 6000
Hit Enter to activate
```

Figure 16   Four-Wire Data Channel Monitor

Table 8   Four-Wire Data Channel Status Values

Field	Values	Description
Out Of Service	Off, ON, N/A, -	Network Out Of Service code received from the network. N/A is displayed when the channel is not configured or is running at 64kbps. OCU-DP only
Tx Mode	Control, Data, N/A, -	Indicates whether the channel is transmitting data or control information from the DSU. N/A is displayed when the channel is not configured, when an alarm is active or when a ToNet or OCU loopback is active. OCU-DP only
Alarms	None, LOS, LOF, N/A, -	Specifies the current alarm state of the channel. LOS - Loss Of Signal detected. LOF - Loss Of Frame detected. (OCU-DP only) N/A is displayed when the channel is not configured or the following diagnostics are active on an OCU-DP channel: ToNet, OCU-LL, OCU-NLL.

Flexi-Data Monitor

Flexi-Data monitor screen shows the configuration, diagnostics, alarm and status information for the Flexi-Data Card. See Figure 17. (Refer to *Diagnostics* and *Configuration* paragraphs for selection and message descriptions). Table 9 describes additional status values.

```
Flexi-Data Monitor                                               Slot 2

                        Chan 1     Chan 2     Chan 3     Chan 4
Option Type:            422/V.11   EIA232     EIA232AS   422/V.11
Interface Type:         X.21       EIA232     EIA232     EIA530A
LIU:                    A          A          A          A
Timeslot:               1          2          3          4
Service:                DDS        DDS        DDS        DDS
Data Rate:              56kbps     9.6kbps    2.4kbps    56kbps
Sync/Async:             Sync       Sync       Async      Sync
Async Char Length:      N/A        N/A        10         N/A
Ext. Transmit Timing:   Off        Off        N/A        Off
DCD Control:            Force-on   Normal     Force-on   Normal
CTS Control:            N/A        Force-on   Force-on   Switched
DSR Control:            N/A        Normal     Force-on   Normal
Latching Loopback:      Disable    Disable    Disable    Disable
Loopback:               ToDTE      ToDTE      None       None
TX(RTS):                Off        Off        Off        Off
RX(DCD):                On         On         On         Off
DTR:                    On         On         On         Off
Out Of Service:         Off        Off        Off        Off
                        Main Menu    Exit
LIU A = No Alarms   LIU B = Red Alarm                     Metroplex 6000
```

Figure 17   Flexi-Data Monitor

Table 9   Flexi-Data Status Values

Field	Values	Description
TX(RTS)	Off, On	Displays the current status of the local DTE interface RTS lead.
RX(DCD)	Off, On	Displays the current status of the local DTE interface DCD lead.
DTR	Off, On	Displays the current status of the local DTE interface DTR lead.
Out of Service	Off, On	Network Out Of Service code received from the network.

Frac-Data Card Monitor Menu

The Frac-Data Card Monitor menu allows you to select between monitor screens for N x 56/64k (e.g. V.35) or DSX-1 or E1 channels. Figure 18 illustrates a typical T1 screen and Figure 19 illustrates a typical E1 screen.

```
 Frac-Data Card Monitor Menu                                         Slot 3




                              N x 56/64k Channel Monitor

                              DSX-1 Channel Monitor











                              Main Menu    Exit

 LIU A = No Alarms     LIU B = No Alarms                   Metroplex 6000
 Hit Enter to activate
```

Figure 18   Frac-Data Card Monitor Menu (T1 Mode)

```
 Frac-Data Card Monitor Menu                                         Slot 3



                              N x 56/64k Channel Monitor

                              E1 CHannel Monitor












                              Main Menu    Exit

 LIU A = No Alarms  LIU B = Red Alarm                      Metroplex 6000

```

Figure 19   Frac-Data Card Monitor Menu (E1 Mode)

N x 56/64k Channel Monitor

N x 56/64k Channel monitor screen shows the configuration, diagnostics, alarm and status information for the N x 56/64k channels on the Frac-Data Card. See Figure 20 for the first page and Figure 21 for the second page of monitored selections. (*R*efer to Diagnostics and Configuration paragraphs for selection and message descriptions). Table 10 describes additional status values.

```
Frac-Data N x 56/64k Channel Monitor                                   Slot 2
                                       Chan 1              Chan 2
 Interface Type:                       V.35                DSX-1
 Bit Error Rate:                       0                   -
 Total Bit Errors:                     0                   -
 Elapsed Time:                         Off
 Local Loopback:                       ToChan              -
 Remote Loopback:                      Off                 -
 Pattern Generation:                   None                -
 TX(RTS):                              Off                 -
 RX(DCD):                              On                  -
 DTR:                                  On                  -
 RL/LL:                                Off                 -
 TM:                                   Off                 -




                         Next Page
                  Main Menu    Exit
 LIU A = No Alarms    LIU B = No Alarms              Metroplex 6000
 Hit Enter to activate
```

Figure 20   N x 56/64k Channel Monitor - Page 1

```
Frac-Data N x 56/64k Channel Monitor                                   Slot 2
                                       Chan 1              Chan 2
   Interface Type:                     V.35                DSX-1
   Data Rate:                          256kbps             -
   N X 56k/64k:                        64k                 -
  LIU:                                 A                   -
  Start Timeslot:                      19                  -
  Number Of Timeslots:                 4                   -
  Alternate Timeslots:                 Off                 -
  PN127 (RmtLpbk) Response:            Enable              -
  Ext. Transmit Timing:                Off                 -
  Invert Transmit Timing:              Normal              -
  Ext. Loopback Control:               OK                  -
  DCD Control:                         Forced-on           -
  CTS Control:                         Forced-on           -
  DSR Control:                         Forced-on           -



                         Previous Page
                  Main Menu    Exit
 LIU A = No Alarms    LIU B = No Alarms              Metroplex 6000
 Hit Enter to activate
```

Figure 21   N x 56/64k Channel Monitor - Page 2

Table 10 N x 56/64k Channel Status Values

Field	Values	Description
TX(RTS)	Off, On	Displays the current status of the local DTE interface RTS lead.
RX(DCD)	Off, On	Displays the current status of the local DTE interface DCD lead.
DTR	Off, On	Displays the current status of the local DTE interface DTR lead.
RL/LL	Off, RL, LL	Displays the current status of the local RL and LL leads.
TM	Off, TM	Displays the current status of the TM lead.

DSX-1 Channel Monitor

DSX-1 Channel monitor screen shows configuration, diagnostics, and alarm information for the DSX-1 channels on the Frac-Data Card. See Figure 22 for the monitored selections. Refer to Diagnostics and Configuration paragraphs for selection and message descriptions, and Table 11 for alarm descriptions.

```
 Frac-Data DSX-1 Channel Monitor                              Slot 3


                                    Chan 1              Chan 2
        Interface Type:             V.35                DSX-1
        Data Rate:                  -                   128kbps
        LIU:                        -                   A
        Start Timeslot:             -                   22
        Number Of Timeslots:        -                   2
        Line Code:                  -                   B8ZS
        Frame Type:                 -                   ESF
        Pre-Equalization:           -                   0-133ft
        Channel Type:               -                   Clear
        LOS Alarm:                  -                   Masked
        OOF Alarm:                  -                   Masked
        AIS Alarm:                  -                   Masked
        RAI Alarm:                  -                   Masked
        Local Loopback:             -                   ToChan
        Alarms:                     -                   None




                        Main Menu    Exit

  LIU A = No Alarms    LIU B = No Alarms              Metroplex 6000
  Hit Enter to activate
```

Figure 22 DSX-1 Channel Monitor

Table 11 DSX-1 Channel Alarm Values

Field	Values	Description
Alarms	LOS, OOF, RAI, AIS, None	Specifies the current alarm state of the Frac DSX-1 option type. LOS (Loss Of Signal) or OOF (Out Of Frame) is detected as defined in TR 62411. RAI (Remote Alarm Indication) is being received from the network. AIS (Alarm Indication Signal) is being received from the network.

E1 Channel Monitor

E1 Channel monitor screen shows configuration, diagnostics, and alarm information for the E1 channels on the Frac-Data Card. See Figure 23 for the monitored selections. Refer to Diagnostics and Configuration paragraphs for selection and message descriptions, and Table 12 for alarm descriptions.

```
Frac-Data E1 Channel Monitor                                        Slot 3
                                    Chan 1              Chan 2
    Interface Type:                 V.35                E1
    Interface Impedance (ohms):     -                   120
    Channel Assoc. Sig. (CAS)       -                   On
    LIU:                            -                   A
    Start Timeslot:                 -                   22
    Number Of Timeslots:            -                   2
    CRC-4:                          -                   Off
    LOS Alarm:                      -                   Masked
    OOF Alarm:                      -                   Masked
    AIS Alarm:                      -                   Masked
    RAI Alarm:                      -                   Masked
    Timeslot 16 OOF Alarm:          -                   Masked
    Timeslot 16 AIS Alarm:          -                   Masked
    Timeslot 16 RAI Alarm:          -                   Masked
    Local Loopback:                 -                   ToChan
    Alarms:                         -                   None
    TS16 Alarms:                    -                   None
    Transmit Frame Slip:            -                   None
                         Main Menu    Exit
 LIU A = No Alarms  LIU B = Red Alarm                    Metroplex 6000
```

Figure 23   E1 Channel Monitor

Table 12   E1 Channel Alarm Values

Field	Values	Description
E1 Alarms	LOS, OOF, RAI, AIS, None	Specifies the current alarm state of the Frac E1 option type. LOS (Loss Of Signal) or OOF (Out Of Frame) is detected as defined in TR 62411. RAI (Remote Alarm Indication) is being received from the channel. AIS (Alarm Indication Signal) is being received from the channel.
TS16 Alarms	OOF, RAI, AIS, None	Specifies the current alarm state of Timeslot 16 on the Frac E1 option type. OOF (Out Of Frame) is detected. RAI (Remote Alarm Indication) is being received from the channel. AIS (Alarm Indication Signal) is being received from the channel.
Transmit Frame Slip	Slip, None	Specifies the detection of a frame slip.

Timeslot Assignment

A typical T1 Timeslot Assignment monitor screen is shown in Figure 24.   A similar screen is also available for E1 except that the number of timeslots is 31.

The screen displays the current timeslot allocation for the specified LIU. `D&I Sig` represents a Drop and Insert timeslot configured for signaling and `D&I Clr` represents a Drop and Insert timeslot configured as a clear channel.

```
Timeslot Assignment                                                    LIU A
  Time                Chan      Shelf        Time                Chan      Shelf
  Slot   Chan Type    Status Slot  Chan      Slot   Chan Type    Status Slot  Chan
  1      E&M          OK     4     1          13     D&I Sig      -      -     -
  2      E&M          OK     4     2          14     D&I Clr      -      -     -
  3      OB           OK     4     3          15     D&I Clr      -      -     -
  4      OB           OK     4     4          16     D&I Sig      -      -     -
  5      TB           OK     4     5          17     V.35         OK     2     1
  6      TB           OK     4     6          18     V.35         OK     2     1
  7      V.35         OK     3     1          19     -            -      -     -
  8      EIA232       OK     3     2          20     -            -      -     -
  9      D&I Sig      -      -     -          21     -            -      -     -
  10     D&I Sig      -      -     -          22     -            -      -     -
  11     D&I Sig      -      -     -          23     -            -      -     -
  12     D&I Clr      -      -     -          24     -            -      -     -




                              Main Menu    Exit
 LIU A = No Alarms      LIU B = No Alarms                   Metroplex 6000
 Hit Enter to activate
```

Figure 24   T1 Timeslot Assignment

TR54016 Performance

Figure 25 shows the TR54016 performance parameters for a T1 System. After selecting a parameter you are presented with the 24 hour statistics for that one performance parameter. Figure 26 is an example of one of the performance screens (Errored Seconds). You can clear the counts for all the performance parameters by selecting the `Initialize Counters` action menu, or by resetting the Platform Card.

```
 TR54016 Performance                                                 LIU A



                              ERrored Seconds

                              Unavailable Seconds

                              Bursty Errored Seconds

                              Severely Errored Seconds

                              Loss of Frame Count

                              BiPolar Violation Count




                               Initialize Counters

                              Main Menu    Exit
 LIU A = No Alarms     LIU B = No Alarms              Metroplex 6000
 Hit Enter to activate
```

Figure 25   Performance Selections

Note   *Metroplex provides an indication of Severely Errored Seconds with a ± 10% resolution.*

Figure 26 shows the counts for each 15-minute interval of each hour for the previous 24 hours, the current total and the 24 hour total. The `Current Total` represents errors in the current 15-minute interval, which may not yet be completed. When the current interval is completed, its count is copied into the first column of interval 1.

```
 Errored Seconds                                                          LIU A

Intvl   1st    2nd    3rd    4th              Intvl   1st    2nd    3rd    4th
1       0      0      0      1                13      0      0      0      0
2       1      0      0      0                14      0      0      0      0
3       5      4      1      0                15      0      0      0      0
4       0      0      0      0                16      0      0      0      0
5       0      0      0      0                17      0      0      0      0
6       0      0      0      0                18      0      0      0      0
7       0      0      0      0                19      0      0      0      0
8       3      7      9      9                20      0      30     20     10
9       10     5      3      1                21      5
10      0      0      0      0                22
11      0      0      0      0                23
12      0      0      0      0                24


     Current Total: 0                                      24 Hour Total: 125




                              Main Menu     Exit
 LIU A = No Alarms     LIU B = No Alarms                        Metroplex 6000
 Hit Enter to activate
```

Figure 26   One T1 Performance Display

E1 Performance

Figure 27 shows the Performance parameters for an E1 System. After selecting a parameter you are presented with the 24 hour statistics for that one performance parameter.

```
 Performance                                                              LIU A



                          Near-End Line Code Violations
                          Near-End Errored Seconds
                          Near-End Severely Errored Seconds
                          Near-End Unavailable Seconds
                          Near-End Background Block Errors

                          Far-End ERrored Seconds
                          Far-End SeVerely Errored Seconds
                          Far-End UnAvailable Seconds
                          Far-End BackGround Block Errors




                          Initialize Counters

                          Main Menu    Exit
 LIU A = No Alarms     LIU B = No Alarms                        Metroplex 6000
 Hit Enter to activate
```

Figure 27   E1 Performance Selections

Figure 28 is an example of one of the performance screens (Errored Seconds). You can clear the counts for all the performance parameters by selecting the `Initialize Counters` action menu, or by resetting the Platform Card shows the counts for each 15-minute interval of each hour for the previous 24 hours, the current interval total, the current 24 hour total, and the recent 24 hour total.

- `Current Interval Total:` This line displays error counts for the uncompleted 15-minute interval on which information is presently being collected.

- `Current 24 Hour Total:` This line displays the total error counts for up to a 24-hour period, whose error counts do not exist in the `Recent 24 Hour Total`.

- `Recent 24 Hour Total:` This line displays the total error counts for the 24-hour period not counted in the `Current 24 Hour Total`.

When `Intvl` (1-24 hours Interval) is filled (from power-up or initilize) the `Current 24 Hour Total` is placed into the `Recent 24 Hour Total` line. The `Current 24 Hour` total is then cleared. When the `Current Interval Total` is completed, it's error count is placed into the first column of `Intvl 1` and it is also added to the `Current 24 Hour Total`. Each 24- hour period, this sequence is repeated.

```
 Errored Seconds                                                          LIU A

Intvl    1st    2nd    3rd    4th            Intvl    1st    2nd    3rd    4th
1        0      0      0      1              13       0      0      0      0
2        1      0      0      0              14       0      0      0      0
3        5      4      1      0              15       0      0      0      0
4        0      0      0      0              16       0      0      0      0
5        0      0      0      0              17       0      0      0      0
6        0      0      0      0              18       0      0      0      0
7        0      0      0      0              19       0      0      0      0
8        3      7      9      9              20       0      30     20     10
9        10     5      3      1              21       5
10       0      0      0      0              22
11       0      0      0      0              23
12       0      0      0      0              24


     Current Interval Total: 0              Current 24 Hour Total: 125
                                            Recent 24 Hour Total:  0



                            Main Menu    Exit
 LIU A = No Alarms     LIU B = No Alarms                   Metroplex 6000
 Hit Enter to activate
```

Figure 28   One E1 Performance Display

HDSL Performance

Figure 29 shows the Performance parameters for a HDSL System. After selecting a parameter you are presented with the 24 hour statistics for that one performance parameter.
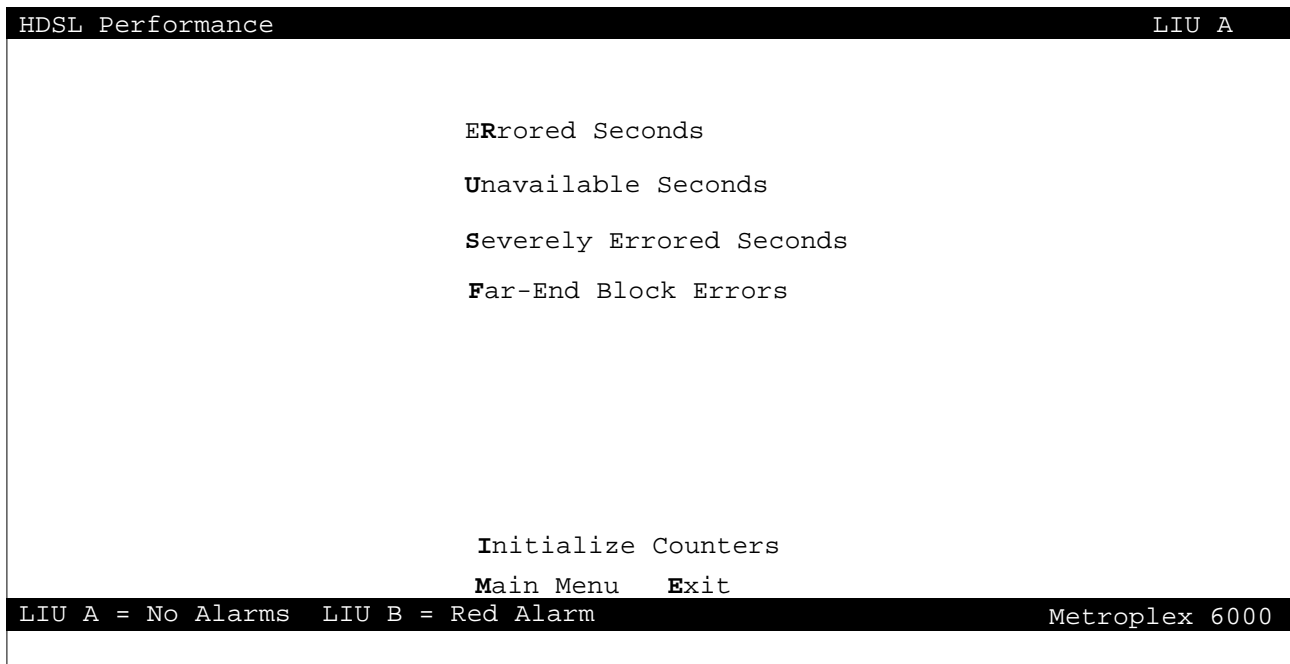
```
  .
┌────────────────────────────────────────────────────────────────────────┐
│HDSL Performance                                                  LIU A  │
│                                                                         │
│                                                                         │
│                         ERrored Seconds                                 │
│                                                                         │
│                         Unavailable Seconds                             │
│                                                                         │
│                         Severely Errored Seconds                        │
│                                                                         │
│                         Far-End Block Errors                            │
│                                                                         │
│                                                                         │
│                                                                         │
│                                                                         │
│                                                                         │
│                                                                         │
│                                                                         │
│                         Initialize Counters                             │
│                                                                         │
│                         Main Menu    Exit                               │
│LIU A = No Alarms   LIU B = Red Alarm                    Metroplex 6000  │
│                                                                         │
└────────────────────────────────────────────────────────────────────────┘
```

Figure 29   HDSL Performance Selections

Figure 30 shows an example of one of the performance screens (Errored Seconds). You can clear
the counts for all the performance parameters by selecting the `Initialize Counters` action
menu, or by resetting the Platform Card shows the counts for each 15-minute interval of each hour
for the previous 24 hours, the current interval total, the current 24 hour total, and the recent 24 hour
total.

*   `Current Interval Total:` This line displays error counts for the uncompleted 15-
    minute interval on which information is presently being collected.

*   `Current 24 Hour Total:` This line displays the total error counts for up to a 24-hour
    period, whose error counts do not exist in the `Recent 24 Hour Total`.

When the `Current Interval Total` is completed, it's error count is placed into the first
column of `Intvl 1` and it is also added to the `Current 24 Hour Total`. Each 24- hour
period, this sequence is repeated.

To switch between loops, select `Next HDSL Loop` at the bottom of the screen.

```
 HDSL Errored Seconds                                                      LIU A
                                      Loop 1
Intvl   1st    2nd   3rd   4th              Intvl   1st    2nd   3rd    4th
1       65535  0     0     0                13
2                                           14
3                                           15
4                                           16
5                                           17
6                                           18
7                                           19
8                                           20
9                                           21
10                                          22
11                                          23
12                                          24


     Current Total: 0                                  24 Hour Total: 65535



                           Next HDSL Loop
                          Main Menu    Exit
 LIU A = No Alarms   LIU B = Red Alarm                        Metroplex 6000
```

Figure 30   One HDSL Performance Display

ANSI Performance

Figure 31 shows the ANSI (T1.403) performance parameters for the past 4 seconds.

```
 ANSI Performance                                                          LIU A


                         1st    2nd    3rd    4th
                         Sec    Sec    Sec    Sec
 Severe Errors           0      0      0      0

 CRC Errors              0      0      0      0

 Frame Errors            0      0      0      0

 Code Violations         0      0      0      0

 Active Payload Loops    0      0      0      0




                          Main Menu    Exit
 LIU A = No Alarms    LIU B = No Alarms                       Metroplex 6000
 Hit Enter to activate
```

Figure 31   ANSI Performance Display

LIU Performance Alarms

Figure 32 shows the LIU Performance Alarms for a T1 system. Table 13 describes alarm status values.

```
T1 Performance Alarm Monitor                                              Slot 1

                                        LIU A                 LIU B
   Bipolar Violations:                  Inactive              Inactive
   CRC Errors:                          Inactive              Inactive
   Errored Seconds:                     Inactive              Inactive
   Bursty Errored Seconds:              Inactive              Inactive
   Severely Errored Seconds:            Inactive              Inactive
   Unavailable Seconds:                 Inactive              Inactive











                          Main Menu    Exit
LIU A = No Alarms   LIU B = Red Alarm                         Metroplex 6000

```
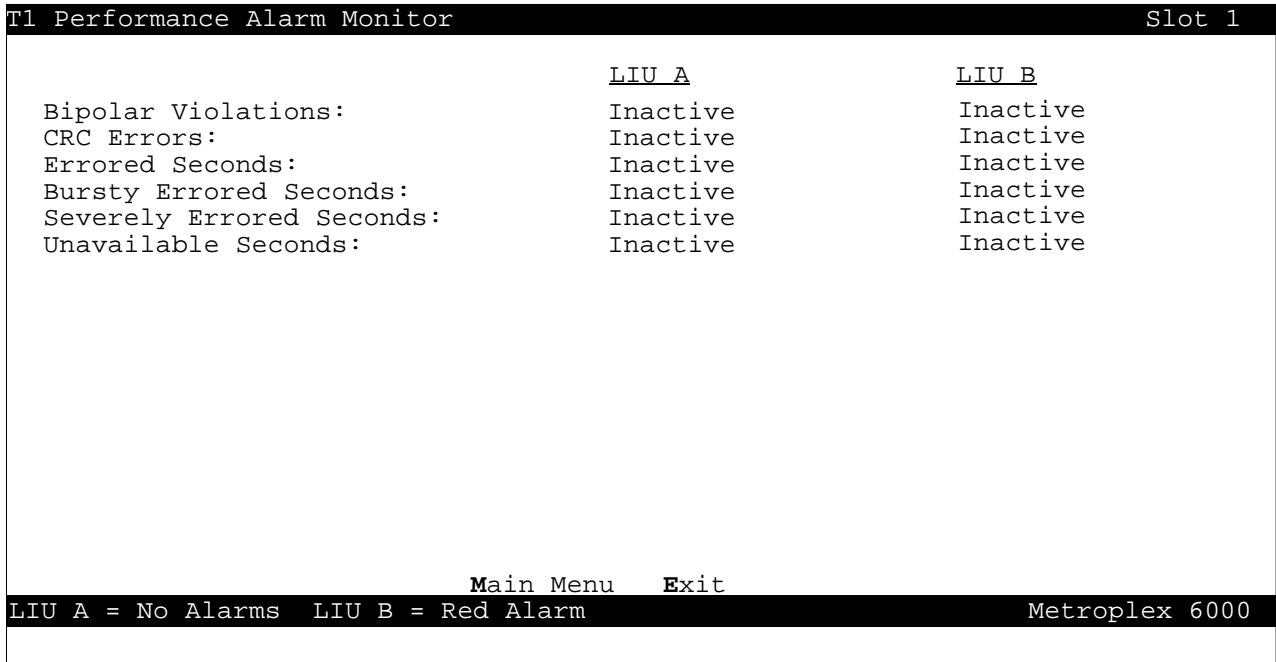
Figure 32   T1 Performance Alarm Monitor

Table 13   T1 Performance Alarm Monitor Values

Field	Values	Description [Depends on the threshold and interval settings in Configuration]
Bipolar Violations	Inactive, Active	Status of Bipolar Violations Performance Alarm.
CRC Errors	Inactive, Active	Status of CRC Errors Performance Alarm.
Errored Seconds	Inactive, Active	Status of Errored Seconds Performance Alarm.
Bursty Errored Seconds	Inactive, Active	Status of Bursty Errored Seconds Performance Alarm.
Severely Errored Seconds	Inactive, Active	Status of Severely Errored Seconds Performance Alarm.
Unavailable Seconds	Inactive, Active	Status of Unavailable Seconds Performance Alarm.
Note: Metroplex provides an indication of Severely Errored Seconds with a ± 10% resolution.		

Figure 33 shows the LIU Performance Alarms for an E1 system. Table 14 describes alarm status values.

```
 E1 Performance Alarm Monitor                                              Slot 1

                                          LIU A                  LIU B
   Near-End Line Code Violations:       Inactive               Inactive
   Near-End Errored Seconds:            Inactive               Inactive
   Near-End Severely Errored Seconds:   Inactive               Inactive
   Near-End Unavailable Seconds:        Inactive               Inactive
   Near-End Background Block Errors:     Inactive               Inactive

   Far-End Errored Seconds:             Inactive               Inactive
   Far-End Severely Errored Seconds:    Inactive               Inactive
   Far-End Unavailable Seconds:         Inactive               Inactive
   Far-End Background Block Errors:      Inactive               Inactive








                           Main Menu    Exit
 LIU A = No Alarms   LIU B = Red Alarm                         Metroplex 6000
```

Figure 33   E1 Performance Alarm Monitor

Table 14   E1 Performance Alarm Monitor Values

Field	Values	Description [Depends on the threshold and interval settings in Configuration]
Near-End Line Code Violations	Inactive, Active	Status of Near-End Line Code Violations Performance Alarm
Near-End Errored Seconds	Inactive, Active	Status of Near-End Errored Seconds Performance Alarm
Near-End Severely Errored Seconds	Inactive, Active	Status of Near-End Severely Errored Seconds Performance Alarm
Near-End Unavailable Seconds	Inactive, Active	Status of Near-End Unavailable Seconds Performance Alarm
Near-End Background Block Errors	Inactive, Active	Status of Near-End Background Block Errors Performance Alarm
Far-End Errored Seconds	Inactive, Active	Status of Far-End Errored Seconds Performance Alarm
Far-End Severely Errored Seconds	Inactive, Active	Status of Far-End Severely Errored Seconds Performance Alarm
Far-End Unavailable Seconds	Inactive, Active	Status of Far-End Unavailable Seconds Performance Alarm
Far-End Background Block Errors	Inactive, Active	Status of Far-End Background Block Errors Performance Alarm

Diagnostics

In the Main Menu screen, arrow to the Diagnostic field and hit Enter or type D to get to the Diagnostic Slot Selection screen.

When you select the slot from the Diagnostic Slot Selection screen, the available diagnostic screen (specific to the card type in the slot) is displayed. Cards must be physically present in the slot in order to be diagnosed. An empty slot is shown as "`--`" under `Card Type`. This screen is dynamic to the number of slots available in the shelf. See Figure 34. Refer back to Table 2 for a description of the possible `Status` values.

A selftest can be performed on the shelf. Refer to Table 15. The results are displayed above the Shelf Selftest action menu after the selftest is run. Exiting and returning to the screen clears the selftest result.

Important   *Selecting Shelf Selftest in the Diagnostic Slot Selection menu causes each card in the system to perform a self-test. Since this test is disruptive, you must disconnect the network connection to the* NETWORK A *and* NETWORK B *ports on the Platform Card, before running the test. After the shelf selftest is complete, restore the network connection.*

```
Diagnostic Slot Selection
                                            LIU State/Timeslots Used
Slot      Card Type                Status   A                    B
1         Platform                 OK       Active               Active

2         Frac-Data                OK       9-13                 7-10

3         Flexi-Data               OK       7,8                  1,2

4         Flexi-Voice Plus         OK       1,2,3,4              5,6

5         FXS Octet                OK       14,15                11,20

6         --                       --       --                   --




                         Shelf Selftest
                       Main Menu    Exit
LIU A = No Alarms    LIU B = No Alarms                    Metroplex 6000
Hit Enter to activate
```

Figure 34   Diagnostic Slot Selection Menu

Table 15   Selftest Selections and Messages

Field	Selection	Description
Card Type	Platform, Frac-Data, Flexi-Voice Plus, Flexi-Data, FXS Octet, Unknown	Specifies card type read from card. Unknown indicates Platform Card does not recognize Card Type. Check the firmware revision in Table 1.
Messages		
Are You Sure? (Y/N)		Displayed if you want to perform a shelf selftest.

Platform/LIU Diagnostics

When you select the Platform Card's slot number the appropriate Platform/LIU Diagnostic screen appears depending on whether the system is operating in T1 or E1 Mode.

Figure 35 shows a typical screen of the Platform/T1 LIU, and Table 16 describes the selections and messages.

```
Platform/T1 LIU Diagnostics                                           Slot 1

                                          LIU A                LIU B

     Interface Type:                      CSU                  HDSL-T1
     Line Code:                           B8ZS                 N/A
     Line Build-Out:                      7.5dB                N/A
     Preequalization:                     N/A                  N/A
     Frame Type:                          ESF                  ESF
     ESF Mode:                            TR54016              TR54016
     HDSL Unit Type:                      N/A                  NTU
     HDSL 1 Loop (2W)/ 2 Loops (4W):      N/A                  1 Loop
     HDSL Start Timeslot:                 N/A                  2
     HDSL Major Alarm BER Thresh:         N/A                  10E-4
     HDSL Minor Alarm BER Thresh:         N/A                  10E-6

========================================================================================
     Local Loopback:                      ToChan               None
     Timeout (min):                       10                   10


          Activate Selection                  Card Selftest
                        Main Menu     Exit
  LIU A = No Alarms   LIU B = No Alarms                     Metroplex 6000
```

Figure 35 Platform/T1 LIU Diagnostics

Table 16 Platform/T1 LIU Diagnostic Selections and Messages

Field	Selection	Description
Local Loopback	Manager -Initiated: None, ToChan, Payload Network-Initiated (status): None, Payload, Line	Specifies the possible loopbacks available. This field indicates the loopback selected by the Manager, or the status of a Network-Initiated Loopback. ToChan - this loops back all data to the channels and sends an AIS to the network. Payload - this loopback can be either a manager-initiated loopback or network-initiated through the FDL. When network-initiated, it cannot be changed by the manager. Line - this is a read-only network-initiated loopback.
Timeout (min)	1-255	Timeout used on manager-initiated tests. Default is 10 minutes.
Activate Selection		Implements the selected diagnostic.
Card Selftest		Performs a self-test on the card. This selection disrupts data. The pass or fail results are displayed on the screen.
Messages		
Loopback On - Exit (Y/N)		Displayed if you want to exit the diagnostic screen with a loopback in operation.
Are You Sure? (Y/N)		Displayed if you want to perform a card selftest. If you press "Y" the card selftest is performed, "Card Selftest in Progress, Please Wait.....", then, "Test Results: Passed" (or Failed) otherwise you return to the screen.
1. Dashes indicate the channel is not present. An option card may be missing. 2. A Network-initiated test overrides a manager-initiated test. 3. A Network-initiated T1 test overrides all network-initiated channel tests.		

Figure 36 shows a typical screen of the Platform/E1 LIU, and Table 17 describes the selections and messages.

```
 Platform/E1 LIU Diagnostics                                             Slot 1

                                          LIU A                LIU B

      Interface Type:                     E1                   HDSL-E1
      Interface Impedance (Ohms):         120                  N/A
      CRC-4:                              On                   Off
      Chan. Assoc. Sig. (CAS):            On                   Off
      HDSL Unit Type:                     N/A                  NTU
      HDSL 1 Loop (2W)/ 2 Loops (4W):     N/A                  2 Loops
      HDSL Start Timeslot:                N/A                  2
      HDSL Major Alarm BER Threshold:     N/A                  10E-4
      HDSL Minor Alarm BER Threshold:     N/A                  10E-6



 ===============================================================================

      Local Loopback:                     ToChan               None
      Timeout (min):                      10                   10


          Activate Selection                          Card Selftest
                          Main Menu    Exit
  LIU A = No Alarms   LIU B = No Alarms                     Metroplex 6000
```

Figure 36   Platform/E1 LIU Diagnostics

Table 17   Platform/E1 LIU Diagnostic Selections and Messages

Field	Selection	Description
Local Loopback	None, ToChan, Payload	Specifies the possible loopbacks available. This field indicates the loopback selected by the Manager. ToChan - this loops back all data to the channels and sends an AIS to the network. Payload - this loopback the payload to the network.
Timeout (min)	1-255	Timeout used on local loopback tests. Default is 10 minutes.
Activate Selection		Implements the selected diagnostic.
Card Selftest		Performs a self-test on the card. This selection disrupts data. The pass or fail results are displayed on the screen.
Messages		
Loopback On - Exit (Y/N)		Displayed if you want to exit the diagnostic screen with a loopback in operation.
Are You Sure? (Y/N)		Displayed if you want to perform a card selftest. If you press "Y" the card selftest is performed, "Card Selftest in Progress, Please Wait.....", then, "Test Results: Passed" (or Failed) otherwise you return to the screen.
1. Dashes indicate the channel is not present. An option card may be missing.		

Flexi-Voice Plus Card Diagnostics Menu

The Flexi-Voice Plus Diagnostic menu is used to access the diagnostics for the voice channels, the diagnostics for the four-wire OCU-DP channels and the G.703 data channels and the card selftest for the card. Figure 37 illustrates a typical screen and messages are listed in Table 18.

```
┌─────────────────────────────────────────────────────────────────────────────┐
│ Flexi-Voice Plus Card Diagnostics Menu                              Slot 4    │
│                                                                               │
│                                                                               │
│                                                                               │
│                           Voice Channel Diagnostics                           │
│                                                                               │
│                           Four-Wire Data Channel Diagnostics                  │
│                                                                               │
│                           Card Selftest                                       │
│                                                                               │
│                                                                               │
│                                                                               │
│                                                                               │
│                                                                               │
│                                                                               │
│                                                                               │
│                           Main Menu    Exit                                   │
│─────────────────────────────────────────────────────────────────────────────│
│ LIU A = No Alarms      LIU B = No Alarms                     Metroplex 6000   │
│ Hit Enter to activate                                                         │
└─────────────────────────────────────────────────────────────────────────────┘
```
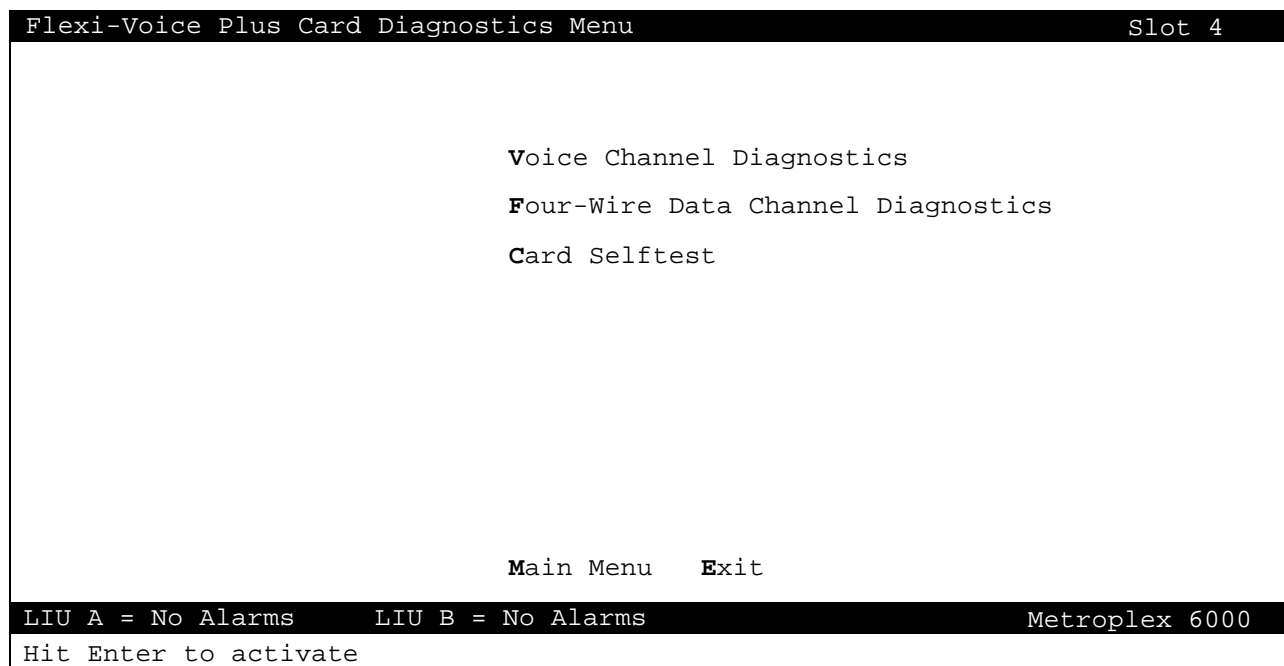
Figure 37   Flexi-Voice Plus Diagnostics Menu

Table 18   Flexi-Voice Plus Diagnostic Selections and Messages

Field	Selection	Description
Card Selftest		Performs a self-test of the card, which disrupts data and signaling. The pass or fail results are displayed on the screen.
Messages		
Are You Sure? (Y/N)		Displayed if you want to perform a card selftest. If you press "Y" the card selftest is performed, "Card Selftest in Progress, Please Wait.....", then, "Test Results: Passed" (or Failed) otherwise you return to the screen.
No Timeslot Available, Cannot Perform Selftest Function		Displayed if there are no timeslots assigned to the card under test and all timeslots are assigned to other cards. If this message is displayed, reconfigure the system to free up at least one timeslot in order to run Card Selftest.

Voice Channel Diagnostics

The Voice Channel Diagnostics selections are shown in <u>Figure 38</u> and <u>Table 19</u> lists the selections and messages.

```
Voice Channel Diagnostics                                                    Slot 4

                   Chan 1   Chan 2   Chan 3   Chan 4   Chan 5   Chan 6

Interface Type:   FXS/LS   FXS/LS   FXO/LS   FXO/LS   4WE&M    4wE&M
Total TLP
     Xmt(dB):      3.0      3.0      3.0      3.0      3.0      3.0
     Rcv(dB):     -9.0     -9.0     -3.0     -3.0     -3.0     -3.0
LIU:               A        A        A        A        A        A
Timeslot:          11       12       13       14       15       16
Signaling Mode:   Stnd     Stnd     Stnd     Stnd     Stnd     Stnd
Network Loopback:
  Freq(Hz):       N/A      N/A      N/A      N/A      N/A      N/A
  Timeout(Min):   N/A      N/A      N/A      N/A      N/A      N/A
==============================================================================

Local Loopback:   ToNet    ToNet    None     None     None     None
Dig. mWatt:       Off      On       Off      Off      Off      Off
Conditioning:     None     None     None     None     None     FBusy

                        Activate Selection
                         Main Menu    Exit
LIU A = No Alarms     LIU B = No Alarms                  Metroplex 6000
Hit space bar to change value
```

Figure 38   Voice Channel Diagnostics

Table 19   Voice Channel Diagnostic Selections and Messages

Field	Selection	Description
Local Loopback	ToNet, None, Network	Specifies the available loopbacks. The VF path is looped, but not the signaling. This selection is also a status field if the current active diagnostic is not a user selectable option. ToNet loops the received signal back towards the network. Network - this is a read-only network-initiated loopback for the 4WTO interface type.
Dig. mWatt (Digital Millwatt)	Off, On	Allows you to inject a 1000 Hz test tone at a 0 dBm level into the receive time slot towards the channel card interface. It appears on the channel interface as a 1000 Hz receive signal at a level equal to the assigned TLP level. If the channel interface is also put into loopback, this signal is looped back into the transmit timeslot.
Conditioning	FBNI, FIdle, FBusy, None, N/A	Conditions the channel and network interface to a known state. FBNI - Force Busy Next Idle, forces the channel busy after it goes to an idle state. FIdle - Force Idle, immediately conditions the channel to idle. FBusy - Force Busy, immediately conditions the channel to busy. None - performs no conditioning. N/A - is displayed for the 4WTO interface type since signaling is not supported.
Activate Selection		Implements the selected diagnostic.
Messages		
Loopback On - Exit (Y/N)		Displayed if you want to exit the diagnostic screen with a loopback in operation.

Table 19 - (Sheet 1 of 2)

Table 19 Voice Channel Diagnostic Selections and Messages (Continued)

Are You Sure? (Y/N)	Displayed if you want to activate a selection. If you press "Y" the diagnostic is activated, otherwise you return to the screen.
Channel Busy: Are You Sure? (Y/N)	Displayed if you have selected the Activate Selection and the channel is currently busy. If you press "Y" the diagnostic is activated, otherwise you return to the screen.
Cannot Enable Digital Milliwatt on an E1 System	Displayed if you attempt to turn the Digital Milliwatt test on without a CSU or DSX-1 LIU.
Notes: 1. Dashes in the interface type indicate the channel is not present. An option card may be missing. When the interface type is displayed, but the selections contain dashes, the option type cannot be tested through the current screen. 2. Digital Milliwatt can only be performed on a voice channel with a CSU or DSX-1 LIU. 3. Local Loopback, Dig. mWatt and Conditioning are not available on unconfigured channels. 4. If Communication Error, Channel Card Not Changed appears on the screen, the Platform Card had problems communicating to the specified channel card. This could be due to a missing channel card. If the channel card is not missing from the shelf, check the firmware revisions in Table 1.	

Table 19 - (Sheet 2 of 2)

FXS Octet Diagnostics

The FXS Octet Diagnostics selections are shown in Figure 39 and Table 20 lists the selections and messages.

```
FXS Octet Diagnostics                                            Slot 4

                Chan 1   Chan 2   Chan 3   Chan 4   Chan 5   Chan 6   Chan 7   Chan 8

Interface Type: FXS/LS   FXS/LS   FXS/LS   FXS/LS   DPO      DPO      DPO      DPO
Total TLP
      Xmt(dB):   3.0      3.0      3.0      3.0      3.0      3.0      3.0      3.0
      Rcv(dB):  -9.0     -9.0     -3.0     -3.0     -3.0     -3.0     -3.0     -3.0
LIU:            A        A        A        A        A        A        A        A
Timeslot:       11       12       13       14       15       16       17       18
Signaling Mode: Stnd     Stnd     Stnd     Stnd     Stnd     Stnd     Stnd     Stnd




=============================================================================
Local Loopback:  ToNet    ToNet    None     None     None     None     None     None
Dig. mWatt:      Off      On       Off      Off      Off      Off      Off      Off
Conditioning:    None     None     None     None     None     FBusy    FBusy    FBusy
             Activate Selection                 Card Selftest
                         Main Menu    Exit
LIU A = No Alarms    LIU B = No Alarms                    Metroplex 6000
Hit space bar to change value
```

Figure 39 FXS Octet Diagnostics

Table 20   FXS Octet Diagnostic Selections and Messages

Field	Selection	Description
Local Loopback	ToNet, None	Specifies the available loopbacks. The VF path is looped, but not the signaling. ToNet loops the received signal back towards the network.
Dig. mWatt (Digital Millwatt)	Off, On	Allows you to inject a 1000 Hz test tone at a 0 dBm level into the receive time slot towards the channel card interface. It appears on the channel interface as a 1000 Hz receive signal at a level equal to the assigned TLP level. If the channel interface is also put into loopback, this signal is looped back into the transmit timeslot.
Conditioning	FBNI, FIdle, FBusy, None	Conditions the channel and network interface to a known state. FBNI - Force Busy Next Idle, forces the channel busy after it goes to an idle state. FIdle - Force Idle, immediately conditions the channel to idle. FBusy - Force Busy, immediately conditions the channel to busy. None - performs no conditioning.
Activate Selection		Implements the selected diagnostic.
Card Selftest		Performs a selftest of the card, which disrupts data. The pass or fail result is displayed on the screen.
Messages		
Loopback On - Exit (Y/N)		Displayed if you want to exit the diagnostic screen with a loopback in operation.
Are You Sure? (Y/N)		Displayed if you want to activate a selection. If you press "Y" the diagnostic is activated, otherwise you return to the screen.
Channel Busy: Are You Sure? (Y/N)		Displayed if you have selected the Activate Selection and the channel is currently busy. If you press "Y" the diagnostic is activated, otherwise you return to the screen.
No Timeslot Available, Cannot Perform Selftest Function		Displayed if there are no timeslots assigned to the card under test and all timeslots are assigned to other cards. If this message is displayed, reconfigure the system to free up at least one timeslot in order to run Card Selftest.
Digital Milliwatt Test On - Exit (Y?N)		Displayed if you want to exit the diagnostic screen with a Dig. mWatt test in operation.
Notes: 1. Local Loopback, Dig. mWatt and Conditioning are not available on unconfigured channels. 2. If Communication Error, Channel Card Not Changed appears on the screen, the Platform Card had problems communicating to the specified channel card. This could be due to a missing channel card. If the channel card is not missing from the shelf, check the firmware revisions in Table 1.		

Four-Wire Data Channel Diagnostics

The Four-Wire Data Channel Diagnostics Figure 40 illustrates a typical screen and Table 21 describes selections and messages.

```
 Four-Wire Data Channel Diagnostics                                    Slot 4

                   Chan 1      Chan 2      Chan 3      Chan 4      Chan 5      Chan 6
 Interface Type:   G.703       G.703       OCU-DP      OCU-DP       4WTO        4WTO
 LIU:              A           B           A           A           -           -
 Timeslot:         5           1           3           4           -           -
 Service:          N/A         N/A         DDS         DDS         -           -
 Secondary Channel: N/A        N/A         Off         On          -           -
 Data Rate:        64kbps      64kbps      64kbps      56kbps      -           -
 ZCS Control:      N/A         N/A         Disable     Disable     -           -
 Latching Loopback: N/A        N/A         Enable      Disable     -           -
 LOS Alarm:        Masked      Masked      Masked      Reported    -           -
 LOF Alarm:        N/A         N/A         Masked      Masked      -           -
 ===============================================================================
 Local Loopback:   ToChan      ToNet       ToChan      ToNet       _           _




                          Activate Selection
                          Main Menu    Exit
 LIU A = No Alarms     LIU B = No Alarms                      Metroplex 6000
 Hit space bar to change value
```

Figure 40 OCU-DP Channel Diagnostics

Table 21 Four-Wire Data Channel Diagnostic Selections and Messages

Field	Selection	Description
Local Loopback	ToNet, ToChan, None, OCU-LL, CSU-LL, OCU-NLL, CSU-NLL CSU-MGR	Specifies the possible loopbacks available. ToNet loops the received signal back towards the network. ToChan loops data towards the channel. When performing a ToChan loopback on a SW56 channel, the call must first be established. OCU-LL (Latching Loopback), CSU-LL, OCU-NLL (Non-Latching Loopback), CSU-NLL are read-only network-initiated loopbacks. If any of these are in effect, you cannot perform a manager-initiated loopback on that channel. (OCU-DP Only) CSU-MGR - This requests the DSU to loop the data towards the network by reversing the current on the OCU-DP 4-wire loop. (OCU-DP Only)
Activate Selection		Implements the selected diagnostic.
Messages		
Loopback On - Exit (Y/N)		Displayed if you want to exit the diagnostic screen with a loopback in operation.
Are You Sure? (Y/N)		Displayed if you want to activate a selection. If you press "Y" the diagnostic is activated, otherwise you return to the screen.
Notes: 1. Dashes in the interface type indicate the channel is not present. An option card may be missing. When the interface type is displayed, but the selections contain dashes, the option type cannot be tested through the current screen. 2. Local Loopbacks are not available on unconfigured channels. 4. If Communication Error, Channel Card Not Changed appears on the screen, the Platform Card had problems communicating to the specified channel card. This could be due to a missing channel card. If the channel card is not missing from the shelf, check the firmware revisions in Table 1.		

Flexi-Data Diagnostics

Figure 41 illustrates a typical Flexi-Data Diagnostics screen. Selections and messages are listed in Table 22.

```
Flexi-Data Diagnostics                                                    Slot 2

                            Chan 1     Chan 2      Chan 3      Chan 4
Option Type:                422/V.11   EIA232      EIA232AS    422/V.11
Interface Type:             X.21       EIA232      EIA232AS    EIA530A
LIU:                        A          A           A           A
Timeslot:                   1          2           3           4
Service:                    DDS        DDS         DDS         DDS
Data Rate:                  56kbps     9.6kbps     2.4kbps     56kbps
Sync/Async:                 Sync       Sync        Async       Sync
Async Char Length:          N/A        N/A         10          N/A
Ext. Transmit Timing:       Off        Off         N/A         Off
DCD Control:                Force-on   Normal      Force-on    Normal
CTS Control:                N/A        Switched    Force-on    Switched
DSR Control:                N/A        Normal      Force-on    Normal
Latching Loopback:          Disable    Disable     Disable     Disable

 ===============================================================================

 Local Loopback:            ToDTE      ToDTE       None        None


          Activate Selection                       Card Selftest
                            Main Menu     Exit
 LIU A = No Alarms   LIU B = Red Alarm                           Metroplex 6000
```

Figure 41   Flexi-Data Diagnostics

Table 22   Flexi-Data Diagnostic Selections and Messages

Field	Selection	Description
Local Loopback	ToDTE, ToNet, OCU, CSU, DSU, None.	Specifies the available loopbacks. ToDTE loops data towards the channel and can be used on an unconfigured channel. ToNet loops received data from the network towards the network. OCU, CSU, DSU are read-only and indicate the presence of a network-initiated loopback. If any of these are in effect, you cannot perform a manager-initiated loopback on that channel.
Activate Selection		Implements the selected diagnostic.
Card Selftest		Performs a self-test of the card, which disrupts data. The pass or fail results is displayed on the screen.
Messages		
Loopback On - Exit (Y/N)		Displayed if you want to exit the diagnostic screen with a loopback in operation.
Are You Sure? (Y/N)		Displayed if you want to perform a card selftest. If you press "Y" the card selftest is performed, "Card Selftest in Progress, Please Wait.....", then, "Test Results: Passed" (or Failed) otherwise you return to the screen.
No Timeslot Available, Cannot Perform Selftest Function		Displayed if there are no timeslots assigned to the card under test and all timeslots are assigned to other cards. If this message is displayed, reconfigure the system to free up at least one timeslot in order to run Card Selftest.
Notes: 1. Dashes indicate the channel is not present. An option card may be missing.		
2. All Local Loopback selections, except ToDTE, are not available on unconfigured channels.		
3. DDS network-initiated loopbacks are stopped if a T1 network loopback is initiated.		
4. If Communication Error, Channel Card Not Changed appears on the screen, the Platform Card had problems communicating to the specified channel card. This could be due to a missing channel card. If the channel card is not missing from the shelf, check the firmware revisions in Table 1.		

Frac-Data Card Diagnostic Menu

The Frac-Data Card Diagnostic menu allows you to select between diagnostics for the N x 56/64k channels, DSX-1 channels (T1) or E1 channels (E1) or the card selftest for the card. Figure 42 and Figure 43 illustrates typical screens and messages are listed in Table 23.

```
Frac-Data Card Diagnostic Menu                                     Slot 2



                            N x 56/64k Channel Diagnostic

                            DSX-1 Channel Diagnostic

                            Card Selftest








                            Main Menu    Exit
LIU A = No Alarms     LIU B = No Alarms                    Metroplex 6000
Hit Enter to Activate
```

Figure 42   Frac-Data Diagnostics Menu (T1 Mode)

```
 Frac-Data Card Diagnostic Menu                                     Slot 3



                            N x 56/64k Channel Diagnostic

                            E1 CHannel Diagnostic

                            Card Selftest








                            Main Menu    Exit
LIU A = No Alarms   LIU B = Red Alarm                    Metroplex 6000
```

Figure 43   Frac-Data Diagnostics Menu (E1 Mode)

Table 23 Frac-Data Diagnostic Selections and Messages

Field	Selection	Description
Card Selftest		Performs a self-test of the card which disrupts data and signaling. The pass or fail results are displayed on the screen.
Messages		
Are You Sure? (Y/N)		Displayed if you want to perform a card selftest. If you press "Y" the card selftest is performed, "Card Selftest in Progress, Please Wait.....", then, "Test Results: Passed" (or Failed) otherwise you return to the screen.
No Timeslot Available, Cannot Perform Selftest Function		Displayed if there are no timeslots assigned to the card under test and all timeslots are assigned to other cards. If this message is displayed, reconfigure the system to free up at least one timeslot in order to run Card Selftest.

N x 56/64k   Channel Diagnostics

The N x 56/64k Channel Diagnostics selections are shown in Figure 44 and Table 24 lists the selections and messages.

```
Frac-Data N x 56/64k Channel Diagnostics                              Slot 2
                                     Chan 1              Chan 2
  Interface Type:                    V.35                DSX-1
  Data Rate:                         256kbps             -
  N X 56k/64k:                       64k                 -
  LIU:                               A                   -
  Start Timeslot:                    19                  -
  Number Of Timeslots:               4                   -
  Alternate Timeslots:               Off                 -
  PN127 (RmtLpbk) Response:          Enable              -
  Ext Loopback Control:              Enable              -
  Bit Error Rate                     0                   -
  Total Bit Errors:                  0                   -
  Elapsed Time:                      Off                 -
========================================================================
  Local Loopback:                    ToChan              -
  Remote Loopback:                   Off                 -
  Pattern Generation:                None                -

               Activate Selection     Reset Counters
                         Main Menu    Exit
 LIU A = No Alarms    LIU B = No Alarms              Metroplex 6000
```

Figure 44 Frac-Data N x 56/64k   Channel Diagnostics

Table 24　Frac-Data N x 56/64k　Channel Diagnostic Selections and Messages

Field	Selection	Description
Bit Error Rate	These values are not selectable by the user.	This read-only field is used to indicate the bit error rate when Pattern Generation is started.
Total Bit Errors	These values are not selectable by the user.	This read-only field is used to indicate the total number of errors for the elapsed time.
Elapsed Time	These values are not selectable by the user.	This read-only field specifies the elapsed time since the Pattern Generation was started and the pattern has been synchronized. Off - when Pattern Generation is set to None. NoSync - when Pattern Generation is set to 511 or 2047, but the pattern is not currently being detected. Elapsed Time - the elapsed time in days, hours, minutes and seconds.
Local Loopback	ToChan, ToNet, None, DTE-LL, DTE-RL, PN127Loop	Specifies the available local loopbacks. ToChan loops the data back to the channel interface. ToNet loops the data back towards the network. DTE-LL, DTE-RL and PN127 Loop are read-only and indicate the presence of a network-initiated or DTE-initiated loopback. If any of these are in effect, a manager-initiated loopback cannot be started on that channel.
Remote Loopback	Off, On	Allows you to send a PN127 Loop-up pattern into the network. If a Local Loopback is active, a Remote Loopback cannot be performed.
Pattern Generation	None, 511, 2047	Allows a test pattern to be sent to the network. If both the Remote Loopback and Pattern Generation are started at the same time, the Remote Loopback is sent first and then the Pattern is sent. If a Local Loopback is active, Pattern Generation cannot be started.
Activate Selection		Implements the selected diagnostic.
Reset Counters		Clear Bit Error Rate count, Total Bit Errors count, and Elapsed Time.
Messages		
Loopback On - Exit (Y/N)		Displayed if you want to exit the diagnostic screen with a local loopback in operation.
Pattern Generation and/or Remote Loopback On - Exit (Y/N)		Displayed if you want to exit the diagnostic screen when Pattern Generation and/or Remote Loopback is started.
Are You Sure? (Y/N)		Displayed if you want to activate a selection. If you press "Y" the diagnostic is activated, otherwise you return to the screen.

Notes:　1.　Dashes in the interface type indicate the channel is not present. An option card may be missing. When the interface type is displayed, but the selections contain dashes, the option type cannot be tested through the current screen.

　　　　2.　Local Loopback, Remote Loopback and Pattern Generation are not available on unconfigured channels.

　　　　3.　The Local Loopback field is not updated automatically. To refresh this field, exit the screen and re-enter it, or highlight the Local Loopback field and press the spacebar.

　　　　4.　If Communication Error, Channel Card Not Changed appears on the screen, the Platform Card had problems communicating to the specified channel card. This could be due to a missing channel card. If the channel card is not missing from the shelf, check the firmware revisions in Table 1.

DSX-1 Channel Diagnostics

The DSX-1 Channel selections are shown in Figure 45 and Table 25 lists the selections and messages.

```
Frac-Data DSX-1 Channel Diagnostics                               Slot 3


                                        Chan 1                Chan 2
       Interface Type:                  V.35                  DSX-1
       Data Rate:                       -                     128kbps
       LIU:                             -                     A
       Start Timeslot:                  -                     22
       Number Of Timeslots:             -                     2
       Line Code:                       -                     B8ZS
       Frame Type:                      -                     ESF
       Pre-Equalization:                -                     0-133ft
       Channel Type:                    -                     Clear
       LOS Alarm:                       -                     Masked
       OOF Alarm:                       -                     Masked
       AIS Alarm:                       -                     Masked
       RAI Alarm:                       -                     Masked
=================================================================================
       Local Loopback:                  -                     ToChan


                              Activate Selection
                              Main Menu     Exit
     LIU A = No Alarms     LIU B = No Alarms              Metroplex 6000
```

Figure 45   Frac-Data DSX-1 Channel Diagnostics

Table 25   Frac-Data DSX-1 Channel Diagnostic Selections and Messages

Field	Selection	Description
Local Loopback	ToChan, ToNet, None	Specifies the available loopbacks. ToChan loops the data back to the channel interface. ToNet loops the data back towards the network.
Activate Selection		Implements the selected diagnostic.
Messages		
Loopback On - Exit (Y/N)		Displayed if you want to exit the diagnostic screen with a local loopback in operation.
Are You Sure? (Y/N)		Displayed if you want to activate a selection. If you press "Y" the diagnostic is activated, otherwise you return to the screen.
Notes:1. Dashes in the interface type indicate the channel is not present. An option card may be missing. When the interface type is displayed, but the selections contain dashes, the option type cannot be tested through the current screen. 2. Local Loopback is not available on unconfigured channels. 3. The Local Loopback field is not updated automatically. To refresh this field, exit the screen and re-enter it, or highlight the Local Loopback field and press the spacebar. 4. If Communication Error, Channel Card Not Changed appears on the screen, the Platform Card had problems communicating to the specified channel card. This could be due to a missing channel card. If the channel card is not missing from the shelf, check the firmware revisions in Table 1.		

E1 Channel Diagnostics

The E1 Channel selections are shown in Figure 46 and Table 26 lists the selections and messages.

```
 Frac-Data E1 Channel Diagnostics                                    Slot 3
                                        Chan 1              Chan 2
    Interface Type:                     V.35                E1
    Interface Impedance (ohms):         -                   120
    Chan. Assoc. Sig. (CAS):            -                   On
    LIU:                                -                   A
    Start Timeslot:                     -                   22
    Number Of Timeslots:                -                   2
    CRC-4:                              -                   On
    LOS Alarm:                          -                   Masked
    OOF Alarm:                          -                   Masked
    AIS Alarm:                          -                   Masked
    RAI Alarm:                          -                   Masked
    Timeslot 16 OOF Alarm:              -                   Masked
    Timeslot 16 AIS Alarm:              -                   Masked
    Timeslot 16 RAI Alarm:              -                   Masked
===============================================================================
    Local Loopback:                     -                   ToChan


                          Activate Selection

                          Main Menu   Exit
 LIU A = No Alarms  LIU B = Red Alarm                       Metroplex 6000
```

Figure 46   Frac-Data E1 Channel Diagnostics

Table 26   Frac-Data E1 Channel Diagnostic Selections and Messages

Field	Selection	Description
Local Loopback	ToChan, ToNet, None	Specifies the available loopbacks. ToChan loops the data back to the channel interface. ToNet loops the data back towards the network.
Activate Selection		Implements the selected diagnostic.
Messages		
Loopback On - Exit (Y/N)		Displayed if you want to exit the diagnostic screen with a local loopback in operation.
Are You Sure? (Y/N)		Displayed if you want to activate a selection. If you press "Y" the diagnostic is activated, otherwise you return to the screen.
Notes:1. Dashes in the interface type indicate the channel is not present. An option card may be missing. When the interface type is displayed, but the selections contain dashes, the option type cannot be tested through the current screen. 2. Local Loopback is not available on unconfigured channels. 3. The Local Loopback field is not updated automatically. To refresh this field, exit the screen and re-enter it, or highlight the Local Loopback field and press the spacebar. 4. If Communication Error, Channel Card Not Changed appears on the screen, the Platform Card had problems communicating to the specified channel card. This could be due to a missing channel card. If the channel card is not missing from the shelf, check the firmware revisions in Table 1.		

Configuration

In the Main Menu screen, arrow to the Configuration field and hit Enter or type C to get to the Configuration Slot Selection screen.

When you select the slot from the Configuration Slot Selection screen (see Figure 47), the available configuration screen (specific to the card type in the slot) is displayed. Cards must be physically present in the slot in order to be configured. An empty slot is shown as "`--`" under `Card Type`. This screen is dynamic to the number of slots available in the shelf. Refer back to Table 2 for a description of the possible `Status` values.

```
Configuration Slot Selection
                                        LIU State/Timeslots Used
Slot      Card Type              Status  A                    B
1         Platform               OK      Active               Active

2         Frac-Data              OK      9-13                 7-10

3         Flexi-Data             OK      7,8                  1,2

4         Flexi-Voice Plus       OK      1,2,3,4              5,6

5         FXS Octet              OK      14,15                11,20

6         --                     --      --                   --




                       Main Menu    Exit
LIU A = No Alarms     LIU B = No Alarms
Hit Enter to activate
```

Figure 47   Slot Selection - Configuration Menu

Platform Card Configuration Menu

The appropriate Platform Card Configuration Menu - T1, T1/HDSL, E1, or E1/HDSL - is displayed automatically by the system. Figure 48 illustrates the Platform Card Configuration menu for a T1/HDSL system. The menu for a T1 system without HDSL is identical, except that it does not include "LIU HDSL Alarm Mask Config". The menu allows you to configure each LIU and to configure Platform Card dependent information.

```
Platform Card Configuration Menu                                    Slot 1



                          LIU Configuration
                          Platform Card Configuration
                          LIU Basic Alarm Mask Config
                          LIU HDSL Alarm Mask Config
                          LIU Alarm Threshold Config
                          Default Configuration







                          Main Menu    Exit
LIU A = No Alarms    LIU B = No Alarms                    Metroplex 6000
Hit Enter to activate
```

Figure 48   Platform Card Configuration Menu (T1/HDSL Mode)

Figure 49 illustrates the Platform Card Configuration menu for an E1/HDSL system. The menu for an E1 system without HDSL is identical, except that it does not include "LIU HDSL Alarm Mask Config".This menu allows you to configure each LIU and to configure Platform Card dependent information.

```
Platform Card Configuration Menu                                    Slot 1



                          LIU Configuration
                          Platform Card Configuration
                          LIU Basic Alarm Mask Config
                          LIU Performance Alarm Mask Config
                          LIU HDSL Alarm Mask Config
                          LIU Near-End Threshold Config
                          LIU Far-End Threshold Config
                          Default Configuration







                          Main Menu    Exit
LIU A = No Alarms    LIU B = No Alarms                    Metroplex 6000
Hit Enter to activate
```

Figure 49   Platform Card Configuration Menu (E1/HDSL Mode)

Table 27 lists the selections and messages.

Table 27 Platform Card Configuration Menu Messages

Messages	
Service may not be operational. Are you sure? (Y/N)	Displayed if you select Default Configuration. If you press "Y" the card is set to default. If you press "N" you return to the screen.

LIU Configuration

When you select the LIU Configuration menu, the appropriate LIU configuration screen appears depending on whether the system is operating in T1 or E1 mode. Figure 50 illustrates a typical T1 LIU screen. The selections and choices are listed in Table 28.

```
 T1 LIU Configuration                                            Slot 1

                                      LIU A              LIU B

    Interface Type:                   CSU                HDSL-T1
=============================================================================
    Line Code:                        B8ZS               N/A
    Line Build-Out:                   7.5dB              N/A
    Preequalization:                  N/A                N/A
    Frame Type:                       ESF                ESF
    ESF Mode:                         TR54016            TR54016
    HDSL Unit Type:                   N/A                NTU
    HDSL 1 Loop (2W)/ 2 Loops (4W):   N/A                1 Loop
    HDSL Start Timeslot:              N/A                2
    HDSL Major Alarm BER Thresh:      N/A                10E-4
    HDSL Minor Alarm BER Thresh:      N/A                10E-6




                         Save Configuration
                         Main Menu    Exit
  LIU A = No Alarms   LIU B = No Alarms              Metroplex 6000
```

Figure 50 T1 LIU Configuration

Table 28 T1 LIU Configuration Selections and Messages

Field	Selection	Description
Interface Type (read only)	CSU, DSX-1, HDSL-T1, Unknown	Specifies the Interface Type read from card. Unknown indicates Platform Card does not recognize Interface Type. Check the firmware revision in Table 1.
Line Code	**B8ZS**, AMI	This sets the line code for the equipment side to AMI (Alternate Mark Inversion, with no bipolar violations) or B8ZS (Bipolar with 8 Zero Substitution, with bipolar violations). This selection must match the line code used on your T1 line.
Line Build-Out	0.0dB, **-7.5dB**, -15.0dB, N/A	Line Build-Out - This sets the Line Build-Out to one of the following attenuation levels: 0 dB, -7.5 dB, or -15 dB. Select the Line Build-Out to compensate for the cable loss to the first T1 repeater (e.g. 0dB for a high cable loss). N/A is displayed for DSX-1 Interface Type.

Table 28 - (Sheet 1 of 2)

Table 28   T1 LIU Configuration Selections and Messages (Continued)

Preequalization	**0-133 ft**, 133-266 ft, 266-399 ft, 399-533 ft, 533-655 ft, N/A	This sets the Preequalization for the specified length of cable. N/A is displayed for CSU Interface Type.
Frame Type	D4, **ESF**	This sets the frame format to D4 (D4 Superframe Format) or ESF (Extended Superframe Format).
ESF Mode	ANSI, TR54016, **None**	This sets Central Office compatibility to ANSI or TR54016. These publications define, in part, the manner in which signal quality or performance measurements are determined, transmitted, and responded to. The ANSI mode (not available in HDSL) supports Bellcore Scheduled Performance Report Messages (PRMs) and Unscheduled Messages, messages initiated by the Telco and contained in the Data Link subchannel provided in ESF framing. The TR54016 mode supports their Telemetry Asynchronous Block Serial Protocol (TABS), a maintenance message protocol initiated by the Telco and contained in the Data Link subchannel provided in ESF framing.
HDSL Unit Type	N/A, **NTU**, LTU	This is used only for HDSL LIUs, in all other cases the value is always N/A. When a HDSL LIU is specified, it can be configured as an NTU (Network Terminating Unit) or LTU (Line Terminating Unit). In most cases a HDSL LIU on the Metroplex 6000 is configured as a NTU.
HDSL 1 Loop (2W)/ 2 Loops (4W)	N/A,1 Loop, **2 Loops**	This is used only for HDSL LIUs, in all other cases the value is always N/A. This specifies the number of loops that are connected to the network.
HDSL Start Timeslot	**N/A**, 1-13 (T1)	N/A for non-HDSL LIU or HDSL LIU with 2 loops.
HDSL Major Alarm BER Threshold	N/A, **10E-4**, 10E-5, 10E-6, 10E-7, 10E-8	This is used only for HDSL LIUs, in all other cases the values always N/A. This specifies the threshold at which an alarm is indicated for the BER (Bit Error Rate) to indicate a major alarm.
HDSL Minor Alarm BER Threshold	N/A, 10E-4, 10E-5, **10E-6**, 10E-7, 10E-8	This is used only for HDSL LIUs, in all other cases the value is always N/A This specifies the threshold at which an alarm is indicated for the BER (Bit Error Rate) to indicate a minor alarm.
Messages		
Configuration Not Saved - Exit? (Y/N)		Displayed if you made a change on the screen but did not select save first. If you select "N", the screen becomes active and you can then select the save option. If you select "Y", the screen is exited and the configuration changes are lost.
Are You Sure? (Y/N)		Displayed if you have selected save configuration for the card. If you press "Y" configuration is saved, otherwise you return to the screen.

Notes:1.   LIU B is not displayed unless it is plugged into the Platform Card.
     2.   Some configuration parameters are not changeable when an LIU is in a diagnostic test.
     3. Defaults in bold.		

Table 28 - (Sheet 2 of 2)

Figure 51 illustrates a typical E1 LIU screen. The selections and choices are listed in Table 29.

```
E1 LIU Configuration                                                 Slot 1

                                        LIU A              LIU B

    Interface Type:                     E1                 HDSL-E1
    Interface Impedance (Ohms):         120                75
====================================================================================
    CRC-4:                              On                 Off
    Chan. Assoc. Sig. (CAS):            On                 Off
    HDSL Unit Type:                     N/A                NTU
    HDSL 1 Loop (2W)/ 2 Loops (4W):     N/A                2 Loops
    HDSL Start Timeslot:                N/A                2
    HDSL Major Alarm BER Threshold:     N/A                10E-4
    HDSL Minor Alarm BER Threshold:     N/A                10E-6




                        Save Configuration
                   Main Menu   Exit
 LIU A = No Alarms LIU B = LOS Alarm                         Metroplex 6000
```

Figure 51   E1 LIU Configuration

Table 29   E1 LIU Configuration Selections and Messages

Field	Selection	Description
Interface Type (read only)	E1, HDSL-E1, Unknown	Specifies the Interface Type read from card. Unknown indicates Platform Card does not recognize Interface Type. Check the firmware revision in Table 1.
Interface Impedance (Ohms) (read only)	75, 120, Jumper Error	Specifies the Line Impedance. Jumper Error indicates that the jumpers X1 and X2 on the E1 Option Card (086P023-001) are not correctly installed. Jumpers can be missing or not configured the same on X1 and X2.(Refer to the Platform Card manual 086R602-001)
CRC-4	On, Off	This turns CRC-4 Multiframe On or Off.
Chan. Assoc. Sig. (CAS)	On, Off	This turns Channel Associated Signaling On or Off.
HDSL Unit Type	N/A, **NTU**, LTU	This is used only for HDSL LIUs, in all other cases the value is always N/A. When a HDSL LIU is specified, it can be configured as a NTU (Network Terminating Unit) or LTU (Line Terminating Unit). In most cases a HDSL LIU on the Metroplex 6000 is configured as a NTU.
HDSL 1 Loop (2W)/ 2 Loops (4W)	N/A,1 Loop, **2 Loops**	This is used only for HDSL LIUs, in all other cases the value is always N/A. This specifies the number of loops that are connected to the network.
HDSL Start Timeslot	**N/A**, 1-14 (E1)	N/A for non-HDSL LIU or HDSL LIU with 2 loops.
HDSL Major Alarm BER Threshold	N/A, **10E-4**, 10E-5, 10E-6, 10E-7, 10E-8	This is used only for HDSL LIUs, in all other cases the value is always N/A. This specifies the threshold at which an alarm is indicated for the BER (Bit Error Rate) to indicate a major alarm.

Table 29 - (Sheet 1 of 2)

Table 29   E1 LIU Configuration Selections and Messages (Continued)

HDSL Minor Alarm BER Threshold	N/A, 10E-4, 10E-5, **10E-6**, 10E-7, 10E-8	This is used only for HDSL LIUs, in all other cases the value is always N/A This specifies the threshold at which an alarm is indicated for the BER (Bit Error Rate) to indicate a minor alarm.
Messages		
Configuration Not Saved - Exit? (Y/N)		Displayed if you made a change on the screen but did not select save first. If you select "N", the screen becomes active and you can then select the save option. If you select "Y", the screen is exited and the configuration changes are lost.
Are You Sure? (Y/N)		Displayed if you have selected save configuration for the card. If you press "Y" the configuration is saved, otherwise you return to the screen.
Cannot Enable CAS, Timeslot 16 is Assigned to a Channel		Displayed if timeslot 16 is assigned to a channel and you attempt to turn on CAS.
Cannot Disable CAS, Assigned Timeslot Uses Signaling		
Notes:1. LIU B is not displayed unless it is plugged into the Platform Card. 2. All configuration parameters are not changeable when an LIU is in a diagnostic test. 3. Defaults in bold.		

Table 29 - (Sheet 2 of 2)

Platform Card Configuration

The Platform Card Configuration screen is used to configure system dependent selections. See Figure 52. When the `Drop & Insert LIU Interface Mode` is specified an additional screen is required to configure each of the timeslots. Figure 53 shows a typical T1 system screen. A similar screen for E1 is also available with 31 timeslots. Table 30 describes both the Platform Card Configuration and the Drop & Insert Timeslot Configuration screen selections.

```
Platform Card Configuration                                              Slot 1


          LIU Interface Mode:              Drop & Insert
          Transmit Timing:                 Network A
          Backup Transmit Timing:          Internal
          Ext. Power Supply Alarm:         Disable
          Int. Power Supply Alarm          Disable






          Drop & Insert Configuration (Timeslot passthru between A and B)
            Start Timeslot:               12
            Stop Timeslot:                24

            Save Configuration              D&I Config
                          Main Menu    Exit
LIU A = No Alarms      LIU B = No Alarms                    Metroplex 6000
Hit space bar to change value
```

Figure 52   Platform Card Configuration

```
Drop & Insert Timeslot Configuration                                  Slot 1

        Drop & Insert Channel                  Drop & Insert Channel

        1    --                                13  Clear Channel
        2    --                                14  Clear Channel
        3    --                                15  Signaling Channel
        4    --                                16  Signaling Channel
        5    --                                17  Signaling Channel
        6    --                                18  Clear Channel
        7    --                                19  --
        8    --                                20  --
        9    --                                21  --
       10    --                                22  --
       11    --                                23  --
       12    --                                24  --




                        Save Configuration

                    Main Menu    Exit
LIU A = No Alarms    LIU B = No Alarms                      Metroplex 6000
Hit space bar to change value
```

Figure 53   Drop and Insert T1 Timeslot Configuration

The screen displays 24 timeslots for T1 and 31 timeslots for E1.

Table 30   Platform Card Selections and Messages

Field	Selection	Description
LIU Interface Mode	**Network Link**, Diverse Link, Drop and Insert	Specifies the operation of the LIUs. Network Link is used when one or both LIUs are connected to the network independently. Diverse Link allows LIU B to backup LIU A. When a failure occurs on LIU A, LIU B is instructed to take over. This selection is not available if channels are assigned to LIU B or if LIU B is not present. Drop and Insert is used when timeslots on LIU A are redirected through LIU B and are therefore not available for channel cards. This selection is not available if LIU B is not present.
Transmit Timing	**Network A**, Internal	Specifies the transmit timing source. Internal is used when the Metroplex$^®$ 6000 provides the timing to the network. Network A is used when the network connected to LIU A provides the timing.
Backup Transmit Timing	Network B, **Internal**	Specifies the backup transmit timing source. This is used when an LIU A failure occurs. The available timing options are dependent on Transmit Timing selection. Internal is used when the Metroplex$^®$ 6000 provides the timing in the network. Network B is used when the network connected to LIU B provides the timing.
Ext. Power Supply Alarm	**Disable**, Enable	Specifies whether or not the external power supply alarm status is displayed on the alarm line. Select Disable if you are not using an external power supply. Automatically disabled if not Wallmount Enclosure.
Int. Power Supply Alarm	Disable, **Enable**	Specifies whether or not the internal power supply alarm status is displayed on the alarm line. Select Disable if you are not using an external power supply. Automatically disabled if not Wallmount Enclosure.

Start Timeslot	**Off** and 1-31	Specifies the start timeslot for Drop and Insert. Use'0' (zero) to specify Off. 1-24 is available on a T1 system and 1-31 is available on an E1 system.
Stop Timeslot	**Off** and 1-31	Specifies the stop timeslot for Drop and Insert. This timeslot must be equal to or greater than start timeslot. Use'0' (zero) to specify Off. 1-24 is available on a T1 system and 1-31 is available on an E1 system.
Drop & Insert Channel Type	**Clear Channel,** Signaling Channel	Select Signaling Channel for voice channels which require robbed-bit signaling in T1 (E1 when CAS is On). Otherwise select Clear Channel which passes all eight bits of the timeslot. Signaling Channel requires CAS to be on for an E1 system.
Messages		
Configuration Not Saved - Exit? (Y/N)		Displayed if you made a change on the screen but did not select save first. If you select "N", the screen becomes active and you can then select the save option. If you select "Y", the screen is exited and the configuration changes are lost.
Are You Sure? (Y/N)		Displayed if you selected Save Configuration. If you press "Y" the configuration is saved. If you press "N" you return to the screen.
CAS Must be Enabled Prior to Signaling Channel		Displayed for E1 system when you attempt to change the Drop & Insert Channel Type to Signaling Channel and both LIUs do not have CAS turned on.
Notes: 1. Drop & Insert Start and Stop Timeslot indicates Off if you do not select an LIU Interface Mode of Drop & Insert. 2. D&I Config takes you to the Drop & Insert Timeslot Configuration screen. 3. Some configuration parameters are not changeable when an LIU is in a diagnostic test. 4. Defaults in bold.		

LIU Alarm Mask Configuration

The LIU Alarm Mask Configuration screen is used to configure alarms as reported or masked. This configuration is in reference to Dial-Out On Alarm and SNMP Traps. Refer to Dial-Out On Alarm in the System Utilities section later in this manual. Alarms are always displayed on Monitor screens regardless of their reported/masked configuration. Performance alarms such as Errored Seconds for T1/E1 require additional configuration of thresholds and measurement interval windows. The appropriate LIU Alarm Mask Configuration screen is displayed automatically based on the system type, T1 orE1. Figure 54 depicts a typical screen for T1, Figure 55 and Figure 56 depicts typical screens for E1, and Figure 57 shows the HDSL screen. Selections for T1, E1 and HDSL are described in Table 31 through Table 34.

```
 T1 Alarm Mask Configuration                                       Slot 1

                                       LIU A                 LIU B

      Interface Type:                  CSU                   DSX-1
 =============================================================================
      Loss Of Signal (LOS):            Reported              Reported
      Out Of Frame (OOF):              Reported              Reported
      Alarm Indication Signal (AIS):   Reported              Reported
      Remote Alarm Indication (RAI):   Reported              Reported

      Bipolar Violations:              Masked                Masked
      CRC Errors:                      Masked                Masked
      Errored Seconds:                 Masked                Masked
      Bursty Errored Seconds:          Masked                Masked
      Severely Errored Seconds:        Masked                Masked
      Unavailable Seconds:             Masked                Masked



                         Save Configuration
                         Main Menu    Exit
 LIU A = No Alarms   LIU B = Red Alarm                      Metroplex 6000
```

Figure 54   T1 Alarm Mask Configuration Screen

Table 31   T1 Alarm Mask Configuration Selections and Messages

Field	Selection	Description
Loss Of Signal (LOS)	N/A, Masked**, Reported**	Specifies the aggregate Loss Of Signal alarm mask. N/A displayed for an HDSL LIU.
Out Of Frame (OOF)	Masked, **Reported**	Specifies the aggregate Out Of Frame alarm mask.
Alarm Indication Signal (AIS)	N/A, Masked, **Reported**	Specifies the aggregate Alarm Indication Signal alarm mask. N/A displayed for an HDSL LIU.
Remote Alarm Indication (RAI)	Masked, **Reported**	Specifies the aggregate Remote Alarm Indication alarm mask.
Bipolar Violations	N/A, **Masked**, Reported	Specifies the T1 Bipolar Violations performance alarm mask. N/A displayed for an HDSL LIU.
CRC Errors	N/A, **Masked**, Reported	Specifies the T1 CRC Errors performance alarm mask.
Errored Seconds	N/A, **Masked**, Reported	Specifies the T1 Errored Seconds performance alarm mask.
Bursty Errored Seconds	N/A, **Masked**, Reported	Specifies the T1 Bursty Errored Seconds performance alarm mask.
Severely Errored Seconds	N/A, **Masked**, Reported	Specifies the T1 Severely Errored Seconds performance alarm mask.
Unavailable Seconds	N/A, **Masked**, Reported	Specifies the T1 Unavailable Seconds performance alarm mask.
Messages		
Configuration Not Saved - Exit? (Y/N)	Displayed if you made a change on the screen but did not select save first. If you select "N", the screen becomes active and you can then select the save option. If you select "Y", the screen is exited and the configuration changes are lost.	
Are You Sure? (Y/N)	Displayed if you selected Save Configuration. If you press "Y" the configuration is saved. If you press "N" you return to the screen.	
Notes:1. Defaults in bold.		

```
 E1 Alarm Masks Configuration                                       Slot 1
                                        LIU A                LIU B
     Interface Type:                    E1                   E1
=============================================================================
     Loss Of Signal (LOS):             Reported             Reported
     Out Of Frame (OOF):               Reported             Reported
     Alarm Indication Signal (AIS):    Reported             Reported
     Remote Alarm Indication (RAI):    Reported             Reported

     Timeslot 16 Alarm Masks:
       Out of Frame (OOF):             Masked               Masked
       Alarm Indication Signal (AIS):  Masked               Masked
       Remote Alarm Indication (RAI):  Masked               Masked





                         Save Configuration
                         Main Menu    Exit
 LIU A = No Alarms   LIU B = Red Alarm                     Metroplex 6000
```

Figure 55   E1 Alarm Mask Configuration Screen

Table 32   E1 Alarm Masks Configuration Selections and Messages

Field	Selection	Description
Loss Of Signal (LOS)	N/A, Masked**, Reported**	Specifies the aggregate Loss Of Signal alarm mask. N/A displayed for an HDSL LIU.
Out Of Frame (OOF)	Masked, **Reported**	Specifies the aggregate Out Of Frame alarm mask.
Alarm Indication Signal (AIS)	N/A, Masked, **Reported**	Specifies the aggregate Alarm Indication Signal alarm mask. N/A displayed for an HDSL LIU.
Remote Alarm Indication (RAI)	Masked, **Reported**	Specifies the aggregate Remote Alarm Indication alarm mask.
Timeslot 16 Out of Frame (OOF)	**Masked**, Reported	Specifies the E1 Out of Frame Timeslot 16 alarm mask.
Timeslot 16 Alarm Indication Signal (AIS)	**Masked,** Reported	Specifies the E1 Alarm Indication Signal Timeslot 16 alarm mask.
Timeslot 16 Remote Alarm Indication (RAI)	**Masked,** Reported	Specifies the E1 Remote Alarm IndicationTimeslot 16 alarm mask.
Messages		
Configuration Not Saved - Exit? (Y/N)	Displayed if you made a change on the screen but did not select save first. If you select "N", the screen becomes active and you can then select the save option. If you select "Y", the screen is exited and the configuration changes are lost.	
Are You Sure? (Y/N)	Displayed if you selected Save Configuration. If you press "Y" the configuration is saved. If you press "N" you return to the screen.	
Notes: 1. Defaults in bold.		

```
 Performance Alarm Masks Configuration                             Slot 1
                                           LIU A              LIU B
      Interface Type:                      E1                 E1
===========================================================================
     Near-End Line Code Violations:    Masked                 Masked
     Near-End Errored Seconds:         Masked                 Masked
     Near-End Severely Errored Seconds: Masked                Masked
     Near-End Unavailable Seconds:     Masked                 Masked
     Near-End Background Block Errors:  Masked                Masked
     Far-End Errored Seconds:          Masked                 Masked
     Far-End Severely Errored Seconds:  Masked                Masked
     Far-End Unavailable Seconds:      Masked                 Masked
     Far-End Background Block Errors:   Masked                Masked




                        Save Configuration
                        Main Menu   Exit
  LIU A = No Alarms  LIU B = Red Alarm                     Metroplex 6000
```

Figure 56   Performance Alarm Mask Configuration Screen

Table 33   Performance Alarm Masks Configuration Selections and Messages

Field	Selection	Description
Near-End Line Code Violations	N/A, **Masked**, Reported	Specifies the E1 Near-End Line Code Violations performance alarm mask. N/A displayed for an HDSL LIU.
Near-End Errored Seconds	**Masked**, Reported	Specifies the E1 Near-End Errored Seconds performance alarm mask.
Near-End Severely Errored Seconds	**Masked**, Reported	Specifies the E1 Near-End Severely Errored Seconds performance alarm mask.
Near-End Unavailable Seconds	**Masked**, Reported	Specifies the E1 Near-End Unavailable Seconds performance alarm mask.
Near-End Background Block Errors	**Masked**, Reported	Specifies the E1 Near-End Background Block Errors performance alarm mask.
Far-End Errored Seconds	**Masked**, Reported	Specifies the E1 Far-End Errored Seconds performance alarm mask.
Far-End Severely Errored Seconds	**Masked**, Reported	Specifies the E1 Far-End Severely Errored Seconds performance alarm mask.
Far-End Unavailable Seconds	**Masked**, Reported	Specifies the E1 Far-End Unavailable Seconds performance alarm mask.
Far-End Background Block Errors	**Masked**, Reported	Specifies the E1 Far-End Background Block Errors performance alarm mask.

Table 33 - (Sheet 1 of 2)

Table 33   Performance Alarm Masks Configuration Selections and Messages (Continued)

Messages	
Configuration Not Saved - Exit? (Y/N)	Displayed if you made a change on the screen but did not select save first. If you select "N", the screen becomes active and you can then select the save option. If you select "Y", the screen is exited and the configuration changes are lost.
Are You Sure? (Y/N)	Displayed if you selected Save Configuration. If you press "Y" the configuration is saved. If you press "N" you return to the screen.
Notes: 1. Defaults in bold.	

<div align="right">

Table 33 - (Sheet 2 of 2)

</div>

```
 HDSL Alarm Mask Configuration                                          Slot 1

                                       LIU A                   LIU B

     Interface Type:                   E1                      HDSL-E1
 ===============================================================================
     Loss Of Signal (LOS):             N/A                     Reported
     Remote Loss Of Signal (R-LOS):    N/A                     Reported
     Loss HDSL Sync:                   N/A                     Reported
     Major BER:                        N/A                     Reported
     Minor BER:                        N/A                     Reported






                         Save Configuration
                         Main Menu    Exit
 LIU A = No Alarms   LIU B = No Alarms                         Metroplex 6000
```

<div align="center">

Figure 57   T1 or E1 HDSL Alarm Mask Configuration

</div>

Table 34   T1 or E1 HDSL Alarm Mask Configuration Selections and Messages

Field	Selection	Description
Loss of Signal (LOS)	N/A, Masked, **Reported**	Specifies the HDSL Loop Loss of Signal alarm mask
Remote Loss of Signal (R-LOS)	N/A, Masked, **Reported**	Specifies the Remote Loss of Signal alarm mask
Loss HDSL Sync	N/A, Masked, **Reported**	Specifies the HDSL Loss of Synchronization alarm mask
Major BER	N/A, Masked, **Reported**	Specifies the Major Bit Error Rate alarm mask.
Minor BER	N/A, Masked, **Reported**	Specifies the Minor Bit Error Rate alarm mask.
Messages		

<div align="right">

Table 34 - (Sheet 1 of 2)

</div>

Table 34   T1 or E1 HDSL Alarm Mask Configuration Selections and Messages (Continued)

Configuration Not Saved - Exit? (Y/N)	Displayed if you made a change on the screen but did not select save first. If you select "N", the screen becomes active and you can then select the save option. If you select "Y", the screen is exited and the configuration changes are lost.
Are You Sure? (Y/N)	Displayed if you selected Save Configuration. If you press "Y" the configuration is saved. If you press "N" you return to the screen.
Notes:1. Defaults in bold.	

Table 34 - (Sheet 2 of 2)

LIU Alarm Threshold Configuration

Performance alarms such as Errored Seconds for T1/E1 require additional configuration of thresholds and measurement interval windows. The appropriate LIU Alarm Threshold Configuration screen is displayed automatically based on the system type, T1 or E1.

In order to completely configure a performance alarm, the threshold and measurement interval must be specified. A performance alarm is set to active when the number of errors accumulated within the measurement interval is greater than or equal to the threshold. A performance alarm is cleared to inactive if the number of errors accumulated within the measurement interval is less than the threshold. A new measurement interval is started when the threshold is reached or when the end of the previous interval is reached.

For example, assume Errored Seconds has a measurement interval of 1 minute, and an associated error threshold of 10 errors. As soon as the tenth error within a measurement interval is counted, the alarm is set to active, and a new measurement interval begins. The alarm clears at the end of the next interval thereafter which accumulates fewer than ten errors. In this example, it takes a minimum of 10 seconds for the alarm to activate, and a minimum of 1 minute for the alarm to clear.

Figure 58 depicts a typical screen for T1, and Figure 59 and Figure 60 depict typical screens for E1. Selections for both T1 and E1 are described in Table 34.

```
T1 Alarm Threshold Configuration                                      Slot 1

                                      LIU A                LIU B

    Interface Type:                   CSU                  DSX-1
================================================================================
    Bipolar Violations    Interval:   10  Seconds          10   Seconds
                          Threshold:   1000                10000
    CRC Errors            Interval:    10  Seconds          10   Seconds
                          Threshold:   1000                1000
    Errored Sec.          Interval:    10  Seconds          10   Seconds
                          Threshold:   10                  10,000
    Bursty Errored Sec.   Interval:    10  Seconds          10   Seconds
                          Threshold:   10                  10
    Severely Errored Sec. Interval:    10  Seconds          10   Seconds
                          Threshold:   1                   10
    Unavailable Sec.      Interval:    1   Second          1    Second
                          Threshold:   1                   1



                    Save Configuration
                      Main Menu    Exit
 LIU A = No Alarms  LIU B = Red Alarm                      Metroplex 6000
```

Figure 58   T1 Alarm Threshold Configuration Screen

```
 E1 Near-End Alarm Threshold Configuration                               Slot 1

                                        LIU A                  LIU B

    Interface Type:                      E1                    E1
==============================================================================
    Line Code Violations    Interval: 10 Seconds              10 Seconds
                            Threshold: 10000                  10,000
    Errored Seconds          Interval: 10 Seconds             10 Seconds
                            Threshold: 10                     10,000
    Severely Err. Sec. (SES) Interval: 10 Seconds             10 Seconds
                            Threshold: 10                     10
    Unavailable Seconds      Interval: 1  Second              10 Seconds
                            Threshold: 1                      1
    Background Block Errors  Interval: 10 Seconds             10 Seconds
                            Threshold: 1000                   1000




                        Save Configuration
                          Main Menu    Exit
 LIU A = No Alarms   LIU B = Red Alarm                        Metroplex 6000
```

Figure 59   E1 Near-End Alarm Threshold Configuration Screen

```
 E1 Far-End Alarm Threshold Configuration                                Slot 1

                                        LIU A                  LIU B

    Interface Type:                      E1                    E1
==============================================================================


    Errored Seconds          Interval: 10 Seconds             10 Seconds
                            Threshold: 10                     10
    Severely Err. Sec. (SES) Interval: 10 Seconds             10 Seconds
                            Threshold: 1                      10
    Unavailable Seconds      Interval: 1 Second               10 Seconds
                            Threshold: 1                      1
    Background Block Errors  Interval: 10 Seconds             10 Seconds
                            Threshold: 1000                   10000




                        Save Configuration
                          Main Menu    Exit
 LIU A = No Alarms   LIU B = Red Alarm                        Metroplex 6000
```

Figure 60   E1 Far-End Alarm Threshold Configuration Screen

Table 35   Alarm Threshold Configuration Selections and Messages

Field	Selection	Description
Line Code Violations Interval	1 Second, **10 Seconds**, 30 Seconds, 1 Minute, 15 Minutes, 1 Hour, 24 Hours, No Limit, N/A (T1-HDSL only)	Specifies the T1 Line Code Violations performance alarm measurement interval.
Line Code Violations Threshold	1, 3, 10, 100, 1000, **10000**	Specifies the T1 Line Code Violations performance alarm error threshold.
CRC Errors Interval	1 Second, **10 Seconds**, 30 Seconds, 1 Minute, 15 Minutes, 1 Hour, 24 Hours, No Limit	Specifies the T1 CRC Errors performance alarm measurement interval.
CRC Errors Threshold	1, 3, 10, 100, **1000**, 10000	Specifies the T1 CRC Errors performance alarm error threshold.
Errored Sec. Interval	1 Second, **10 Seconds**, 30 Seconds, 1 Minute, 15 Minutes, 1 Hour, 24 Hours, No Limit	Specifies the T1 Errored Seconds performance alarm measurement interval.
Errored Sec. Threshold	1, 3, **10**, 100, 1000, 10000	Specifies the T1 Errored Seconds performance alarm error threshold.
Bursty Errored Sec. Interval	1 Second, **10 Seconds**, 30 Seconds, 1 Minute, 15 Minutes, 1 Hour, 24 Hours, No Limit	Specifies the T1 Bursty Errored Seconds performance alarm measurement interval.
Bursty Errored Sec. Threshold	1, 3, **10**, 100, 1000, 10000	Specifies the T1 Bursty Errored Seconds performance alarm error threshold.
Severely Errored Sec. Interval	1 Second, **10 Seconds**, 30 Seconds, 1 Minute, 15 Minutes, 1 Hour, 24 Hours, No Limit	Specifies the T1 Severely Errored Seconds performance alarm measurement interval.
Severely Errored Sec. Threshold	1, 3, **10**, 100, 1000, 10000	Specifies the T1 Severely Errored Seconds performance alarm error threshold.
Unavailable Sec. Interval	**1 Second**, 10 Seconds, 30 Seconds, 1 Minute, 15 Minutes, 1 Hour, 24 Hours, No Limit	Specifies the T1 Unavailable Seconds performance alarm measurement interval.
Unavailable Sec. Threshold	**1**, 3, 10, 100, 1000, 10000	Specifies the T1 Unavailable Seconds performance alarm error threshold.
(Near-End) Line Code Violations Interval	1 Second, **10 Seconds**, 30 Seconds, 1 Minute, 15 Minutes, 1 Hour, 24 Hours, No Limit	Specifies the E1 Near-End Line Code Violations performance alarm measurement interval.
(Near-End) Line Code Violations Threshold	**1**, 3, 10, 100, 1000, 10000	Specifies the E1 Near-End Line Code Violations performance alarm error threshold.
(Near-End) Errored Seconds interval	1 Second, **10 Seconds**, 30 Seconds, 1 Minute, 15 Minutes, 1 Hour, 24 Hours, No Limit	Specifies the E1 Near-End Errored Seconds performance alarm measurement interval.
(Near-End) Errored Seconds Threshold	1, 3, **10**, 100, 1000, 10000	Specifies the E1 Near-End Errored Seconds performance alarm error threshold.
(Near-End) Severely Err. Sec. (SES) interval	1 Second, **10 Seconds**, 30 Seconds, 1 Minute, 15 Minutes, 1 Hour, 24 Hours, No Limit	Specifies the E1 Near-End Severely Errored Seconds performance alarm measurement interval.

Table 35 - (Sheet 1 of 2)

Table 35   Alarm Threshold Configuration Selections and Messages (Continued)

(Near-End) Severely Err. Sec. (SES) Threshold	1, 3, 10, 100, 1000, 10000	Specifies the E1 Near-End Severely Errored Seconds performance alarm error threshold.
(Near-End) Unavailable Seconds interval	**1 Second**, 10 Seconds, 30 Seconds, 1 Minute, 15 Minutes, 1 Hour, 24 Hours, No Limit	Specifies the E1 Near-End Unavailable Seconds performance alarm measurement interval.
(Near-End) Unavailable Seconds Threshold	**1**, 3, 10, 100, 1000, 10000	Specifies the E1 Near-End Unavailable Seconds performance alarm error threshold.
(Near-End) Background Block Errors interval	1 Second, **10 Seconds**, 30 Seconds, 1 Minute, 15 Minutes, 1 Hour, 24 Hours, No Limit	Specifies the E1 Near-End Background Block Errors performance alarm measurement interval.
(Near-End) Background Block Errors Threshold	1, 3, 10, 100, **1000**, 10000	Specifies the E1 Near-End Background Block Errors performance alarm error threshold.
(Far-End) Errored Seconds interval	1 Second, **10 Seconds**, 30 Seconds, 1 Minute, 15 Minutes, 1 Hour, 24 Hours, No Limit	Specifies the E1 Far-End Errored Seconds performance alarm measurement interval.
(Far-End) Errored Seconds Threshold	1, 3, **10**, 100, 1000, 10000	Specifies the E1 Far-End Errored Seconds performance alarm error threshold.
(Far-End) Severely Err. Sec. (SES) interval	1 Second, **10 Seconds**, 30 Seconds, 1 Minute, 15 Minutes, 1 Hour, 24 Hours, No Limit	Specifies the E1 Far-End Severely Errored Seconds performance alarm measurement interval.
(Far-End) Severely Err. Sec. (SES) Threshold	1, 3, **10**, 100, 1000, 10000	Specifies the E1 Far-End Severely Errored Seconds performance alarm error threshold.
(Far-End) Unavailable Seconds interval	**1 Second**, 10 Seconds, 30 Seconds, 1 Minute, 15 Minutes, 1 Hour, 24 Hours, No Limit	Specifies the E1 Far-End Unavailable Seconds performance alarm measurement interval.
(Far-End) Unavailable Seconds Threshold	**1**, 3, 10, 100, 1000, 10000	Specifies the E1 Far-End Unavailable Seconds performance alarm error threshold.
(Far-End) Background Block Errors interval	1 Second, **10 Seconds**, 30 Seconds, 1 Minute, 15 Minutes, 1 Hour, 24 Hours, No Limit	Specifies the E1 Far-End Background Block Errors performance alarm measurement interval.
(Far-End) Background Block Errors Threshold	1, 3, 10, 100, **1000**, 10000	Specifies the E1 Far-End Background Block Errors performance alarm error threshold.
Messages		
Configuration Not Saved - Exit? (Y/N)	Displayed if you made a change on the screen but did not select save first. If you select "N", the screen becomes active and you can then select the save option. If you select "Y", the screen is exited and the configuration changes are lost.	
Are You Sure? (Y/N)	Displayed if you selected Save Configuration. If you press "Y" the configuration is saved. If you press "N" you return to the screen.	

Notes:1.   Defaults in bold.

2.   A performance alarm having a measurement interval of *No Limit* never clears to inactive after being set to active. Therefore, *No Limit* is essentially a performance alarm latch. In order to clear an alarm which has been set to active with a measurement interval of *No Limit*, the measurement interval must be changed to some finite length. As long as the error threshold is not reached when the new interval expires, the performance alarm clears to inactive when the new interval expires.

Table 35 - (Sheet 2 of 2)

Flexi-Voice Plus Card Configuration Menu

From the Flexi-Voice Plus Card Configuration screen, you can select Voice Channel Configuration for voice channels, or Four-Wire Data Channel Configuration for OCU-DP channels and G.703 channels. You can also remove a card's configuration (if the card is no longer in the slot), or restore all channels on a card to the default configuration. Figure 61 illustrates a typical screen, and messages are listed in Table 36.

```
Flexi-Voice Plus Card Configuration Menu                              Slot 4



                            Voice Channel Configuration

                            Four-Wire Data Channel Configuration

                            Remove Configuration

                            Default Configuration






                            Main Menu    Exit

LIU A = No Alarms     LIU B = No Alarms
Hit Enter to activate
```
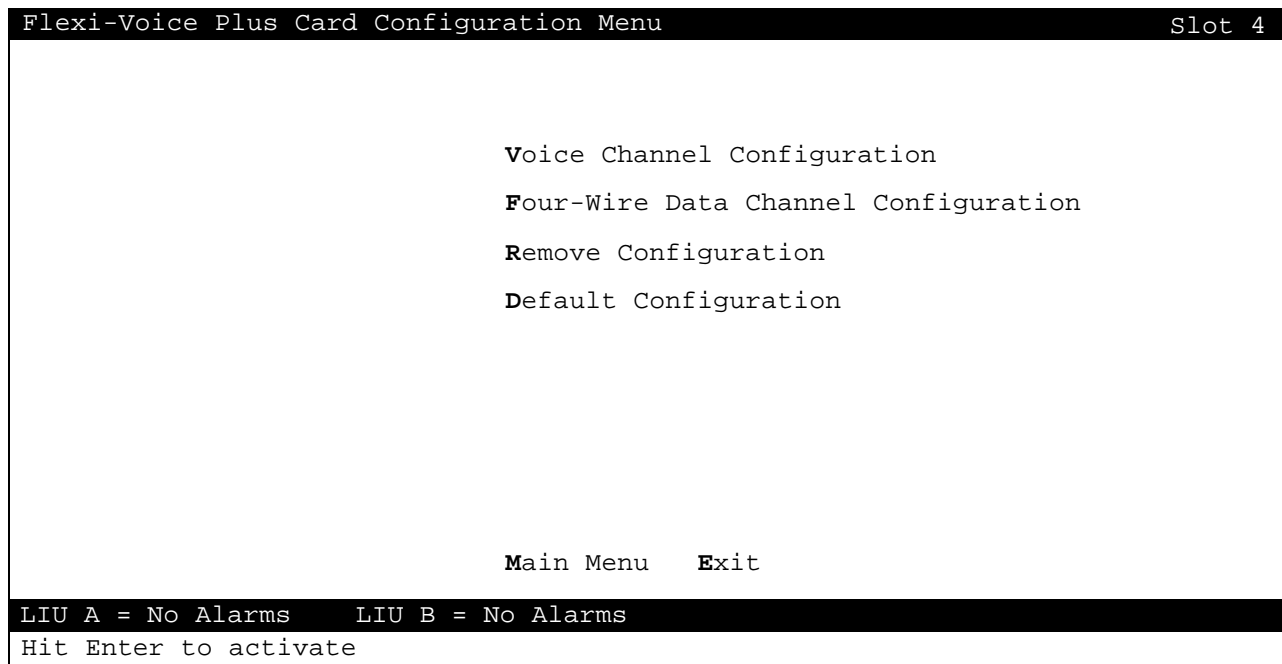
Figure 61   Flexi-Voice Plus Configuration Menu

Table 36   Flexi-Voice Plus Configuration Messages

Messages	
Are You Sure? (Y/N)	Displayed if you selected Remove Configuration or Default Configuration. If you press "Y" the card is removed or set to default. If you press "N" you return to the screen.
Note: 1. The Remove Configuration option removes the information stored for a slot. This can be used to remove a card that is no longer in a slot. If a remove is performed and the card still resides in the slot, the card is set to all defaults.	

Voice Channel Configuration

Figure 62 illustrates a typical Voice Channel Configuration screen.

```
Voice Channel Configuration                                          Slot 4

                Chan 1   Chan 2   Chan 3   Chan 4   Chan 5   Chan 6
Option Type:      OB       OB       TB       TB      E&M      E&M
Total TLP
     Xmt(dB):     3.0      3.0      3.0      3.0      3.0      3.0
     Rcv(dB):    -9.0     -9.0     -3.0     -3.0     -3.0     -3.0
=============================================================================
Interface Type:  FXS/LS   FXS/LS   FXO/LS   FXO/LS   4WE&M    4WE&M
LIU:             A        A        A        A        A        A
Timeslot:        11       12       13       14       15       16
Default TLP:     DEF1     DEF1     DEF1     DEF1     DEF1     DEF1
Adjust TLP
  Xmt(dB):       0.0      0.0      0.0      0.0      0.0      0.0
  Rcv(dB):       0.0      0.0      0.0      0.0      0.0      0.0
Signaling Mode:  Stnd     Stnd     Stnd     Stnd     Stnd     Stnd
Network Loopback:
  Freq(Hz):      N/A      N/A      N/A      N/A      N/A      N/A
  Timeout(Min):  N/A      N/A      N/A      N/A      N/A      N/A


                   Save Configuration
                     Main Menu    Exit
LIU A = No Alarms     LIU B = No Alarms               Metroplex 6000
Hit space bar to change value
```

Figure 62   Voice Channel Configuration

Selections and messages are listed in Table 37.

Table 37   Voice Channel Configuration Selections and Messages

Field	Selection	Description
Option Type (read only)	OB, TB, E&M, 4WTO, Unknown	Specifies Option Type read from card. Unknown indicates Platform Card does not recognize Option Type. Check the firmware revision in Table 1.
Interface Type	**FXS/LS**, FXS/GS, DPO	The interface type (how the channel is operating) is associated with the option type. FXS/LS, FXS/GS and DPO are available with the OB option card.
	FXO/LS, FXO/GS, DPT,	FXO/LS, FXO/GS and DPT are available with the TB option card.
	4WE&M	4WE&M is available with the E&M card.
	4WTO	4WTO is available with the 4WTO card.
LIU	**A**,B	Allows you to select the LIU to which a channel is assigned. If LIU B is not present only LIU A is available.
Timeslot	**Off** and 1-31	Allows you to select the timeslot to which a channel is assigned. The timeslots are skipped if used somewhere else. Use'0' (zero) to specify Off. 1-24 is available on a T1 system and 1-31 is available on an E1 system.
Default TLP	**DEF1**, DEF2, DEF3	TLP - Allows you to select a default Transmission Level Point. All option types may not support 3 default settings.
Adjust Xmt TLP	**0.0**, 0.1dB increments	Allows you to adjust the transmit TLP relative to the selected default. You can hit the space bar to increase the adjust value in 0.1 dB increments or type in the adjusted value directly. The range depends on Default TLP and type of channel.

Table 37 - (Sheet 1 of 2)

Table 37   Voice Channel Configuration Selections and Messages (Continued)

Field	Selection	Description
Adjust Rcv TLP	**0.0**, 0.1dB increments	Allows you to adjust the receive TLP relative to the selected default. You can hit the space bar to increase the adjust value in 0.1dB increments or type in the adjust value directly. The range depends on Default TLP and type of channel.
Signaling Mode	**Stnd**, Cnvsn, PLAR, No Sig	Signaling Mode specifies what type of signaling protocol is used to the network. It depends on the Option Type and the Interface Type selected. Stnd - Standard Signaling available on E&M, OB and TB option types. Cnvsn - Conversion to E&M signaling only available on the OB option type. PLAR - Private Line Auto Ringdown only available on the OB option type. No Sig - No Signaling is available for 4WTO, since no signaling is supported.
Network Loopback Freq (Hz)	**2713**, 2813, N/A	This specifies the frequency that must be received in order to start a network-initiated tone loopback. This is only available for the 4WTO option type and displays N/A for all other option types.
Network Loopback Timeout (Min)	**4**, 20, N/A	This specifies the maximum length of time in minutes the loopback remains active if no deactivation signal is received. This is only available for the 4WTO option type and displays N/A for all other option types.
Messages		
Configuration Not Saved - Exit? (Y/N)		Displayed if you made a change on the screen, but did not select save first. If you select "N" the screen becomes active again and you can then select the save option. If you select "Y", the screen is exited and the configuration changes are lost.
Are You Sure? (Y/N)		Displayed if you selected save configuration. If you press "Y" the card configuration is saved. If you press "N" you return to the screen.
Cannot Turn on Timeslot Until CAS is Enabled		Displayed for E1 system when you attempt to assign a timeslot which requires signaling to a LIU which has CAS disabled.

Notes:1.   The Adjust TLP resets to zero when a new default is selected.
    2.   Dashes in the option type indicate the channel is not present. An option card may be missing. When the option type is displayed, but the selections contain dashes, the option type cannot be configured through the current screen.
    3.   Some configuration parameters are not changeable when a channel is in a diagnostic test.
    4.   If Communication Error, Channel Card Not Changed appears on the screen, the Platform Card had problems communicating to the specified channel card. This could be due to a missing channel card. If the channel card is not missing from the shelf, check the firmware revisions in Table 1.
    5. Defaults in bold.		

<div align="right">

Table 37 - (Sheet 2 of 2)
</div>

Four-Wire Data Channel Configuration

illustrates a typical Four-Wire Data Channel Configuration screen.

```
Four-Wire Data Channel Configuration                                          Slot 4

                    Chan 1     Chan 2     Chan 3     Chan 4     Chan 5     Chan 6

 Option Type:       G.703      G.703      OCU-DP     OCU-DP       TO         TO

=============================================================================

Interface Type:     G.703      G.703      OCU-DP     OCU-DP       -          -
LIU:                A          B          A          A            -          -
Timeslot:           5          1          3          4            -          -
Service:            N/A        N/A        DDS        DDS          -          -
Secondary Channel:  N/A        N/A        Off        On           -          -
Data Rate:          64kbps     64kbps     64kbps     56kbps       -          -
ZCS Control:        N/A        N/A        Enable     Disable      -          -
Latching Loopback:  N/A        N/A        Enable     Disable      -          -
LOS Alarm:          Masked     Masked     Masked     Reported     -          -
LOF Alarm:          N/A        N/A        Masked     Masked       -          -



                          Save Configuration
                         Main Menu    Exit
 LIU A = No Alarms     LIU B = LOS Alarm                        Metroplex 6000
 Hit space bar to change value
```

Figure 63   Four-Wire Data Channel Configuration

Selections and messages are listed in Table 38.

Table 38   Four-Wire Data Channel Configuration Selections and Messages

Field	Selection	Description
Option Type (read only)	OCU-DP, G.703 Unknown	Specifies Option Type read from card. Unknown indicates Platform Card does not recognize Option Type. Check revision compatibility Table 1.
Interface Type	OCU-DP, G.703	The interface type (how the channel is operating) is associated with the option type. OCU-DP is available with the OCU-DP option card. G.703 is available with the G.703 option card.
LIU	**A**,B	Allows you to select the LIU to which a channel is assigned. If LIU B is not present only LIU A is available.
Timeslot	**Off** and 1-31	Allows you to select the timeslot to which a channel is assigned. The timeslots are skipped if used somewhere else. Use '0' (zero) to specify Off. 1-24 is available on a T1 system and 1-31 is available on an E1 system.
Service	DDS, Sw56, N/A	The service supported on the channel. DDS - compatible with DDS service. Sw56 - Switched 56k data service. (T1 system only) Default service for OCU-DP is DDS. G.703 is always N/A.
Secondary Channel	Off, On, N/A	Supports DDSII Secondary Channel. Secondary Channel is set to "Off" when operating at Sw56 or a Data Rate of 64kbps. Default secondary channel for OCU-DP is Off. G.703 is always N/A.

Table 38 - (Sheet 1 of 2)

Table 38   Four-Wire Data Channel Configuration Selections and Messages (Continued)

Field	Selection	Description
Data Rate	2.4kbps, 4.8kbps,9.6kbps, 19.2kbps, 56kbps, 64kbps	The data rate supported at the channel interface. Only 56kbps is available when service is Sw56. Default data rate for OCU-DP is 56kbps, G.703 default is 64kbps Only 64kbps is available with the G.703 option card.
ZCS Control	Enable, Disable, N/A	This specifies whether or not zero code suppression is used on the channel. Default ZCS control for OCU-DP is Disable. G.703 is always N/A.
Latching Loopback	Enable, Disable, N/A	Support Latching DDS loopbacks. This can be enabled at all data rates. Default latching loopback for OCU-DP is Disable. G.703 is always N/A.
LOS Alarm	**Masked**, Reported	Specifies the Loss Of Signal alarm mask.
LOF Alarm	**Masked**, Reported	Specifies the Loss Of Frame alarm mask. G.703 is always N/A.
Messages		
Configuration Not Saved - Exit? (Y/N)		Displayed if you made a change on the screen, but did not select save. If you select "N" the screen becomes active again and you can then select the save option. If you select "Y", the screen is exited and the configuration changes are lost.
Are You Sure? (Y/N)		Displayed if you selected save configuration. If you press "Y" the card configuration is saved. If you press "N" you return to the screen.

Notes:
1. Dashes in the option type indicate the channel is not present. An option card may be missing. When the option type is displayed, but the selections contain dashes, the option type cannot be configured through the current screen.
2. Some configuration parameters are not changeable when a channel is in a diagnostic test.
3. If Communication Error, Channel Card Not Changed appears on the screen, the Platform Card had problems communicating to the specified channel card. This could be due to a missing channel card. If the channel card is not missing from the shelf, check the firmware revisions in Table 1.
4. Defaults in bold.

Table 38 - (Sheet 2 of 2)

FXS Octet Configuration

Figure 64 illustrates a typical FXS Octet Configuration screen.

```
FXS Octet Configuration                                              Slot 4

                Chan 1   Chan 2   Chan 3   Chan 4   Chan 5   Chan 6  Chan 7   Chan 8

Total TLP
     Xmt(dB):     3.0      3.0      3.0      3.0      3.0      3.0     3.0      3.0
     Rcv(dB):    -9.0     -9.0     -3.0     -3.0     -3.0     -3.0    -3.0     -3.0
=====================================================================================
Interface Type: FXS/LS  FXS/LS   FXS/LS   DPO      FXS/GS  FXS/LS  FXS/LS  FXS/LS
LIU:            A        A        A        A        A       A       A       A
Timeslot:       11       12       13       14       15      16      17      18
Default TLP:    DEF1     DEF1     DEF1     DEF1     DEF1    DEF1    DEF1    DEF1
Adjust TLP:
  Xmt(dB):      0.0      0.0      0.0      0.0      0.0     0.0     0.0     0.0
  Rcv(dB):      0.0      0.0      0.0      0.0      0.0     0.0     0.0     0.0
 Signaling Mode: Stnd    Stnd     Stnd     Stnd     Stnd    Stnd    Stnd    Stnd




        Save Configuration   Remove Configuration  Default Configuration
                          Main Menu    Exit
 LIU A = No Alarms     LIU B = No Alarms                     Metroplex 6000
Hit space bar to change value
```

Figure 64   FXS Octet Configuration

Selections and messages are listed in Table 39.

Table 39   FXS Octet Configuration Selections and Messages

Field	Selection	Description
Interface Type	**FXS/LS**, FXS/GS, DPO	The interface type (how the channel is operating) is associated with the option type. FXS/LS, FXS/GS and DPO are available.
LIU	**A**,B	Allows you to select the LIU to which a channel is assigned. If LIU B is not present only LIU A is available.
Timeslot	**Off** and 1-31	Allows you to select the timeslot to which a channel is assigned. The timeslots are skipped if used somewhere else. Use'0' (zero) to specify Off. 1-24 is available on a T1 system and 1-31 is available on an E1 system.
Default TLP	**DEF1**, DEF2, DEF3	TLP - Allows you to select one of three default Transmission Level Points
Adjust Xmt TLP	**0.0**, 0.1dB increments	Allows you to adjust the transmit TLP relative to the selected default. You can hit the space bar to increase the adjust value in 0.1 dB increments or type in the adjusted value directly. The range depends on Default TLP and type of channel.
Adjust Rcv TLP	**0.0**, 0.1dB increments	Allows you to adjust the receive TLP relative to the selected default. You can hit the space bar to increase the adjust value in 0.1dB increments or type in the adjust value directly. The range depends on Default TLP and type of channel.

Table 39 - (Sheet 1 of 2)

Table 39   FXS Octet Configuration Selections and Messages (Continued)

Signaling Mode	**Stnd**, Cnvsn, PLAR	Signaling Mode specifies what type of signaling protocol is used to the network. It depends on the Interface Type selected. Stnd - Standard Signaling available on all interface types. Cnvsn - Conversion to E&M signaling only available on FXS/LS and FXS/GS interface type. PLAR - Private Line Auto Ringdown only available on FXS/LS interface type.
Messages		
Configuration Not Saved - Exit? (Y/N)		Displayed if you made a change on the screen, but did not select save first. If you select "N" the screen becomes active again and you can then select the save option. If you select "Y", the screen is exited and the configuration changes are lost.
Are You Sure? (Y/N)		Displayed if you selected save configuration. If you press "Y" the card configuration is saved. If you press "N" you return to the screen.
Cannot Turn On Timeslot Until CAS is Enabled		Displayed for E1 system when you attempt to assign a timeslot which requires signaling to LIU which has CAS disabled.
Notes: 1. The Adjust TLP resets to zero when a new default is selected. 2. Some configuration parameters are not changeable when a channel is in a diagnostic test. 3. If Communication Error, Channel Card Not Changed appears on the screen, the Platform Card had problems communicating to the specified channel card. This could be due to a missing channel card. If the channel card is not missing from the shelf, check the firmware revisions in Table 1. 4. Defaults in bold.		

Table 39 - (Sheet 2 of 2)

Flexi-Data Configuration

Figure 65 illustrates a typical Flexi-Data screen.

```
Flexi-Data Configuration                                                  Slot 2

                        Chan 1     Chan 2     Chan 3     Chan 4

 Option Type:           422/V.11  EIA232     EIA232AS  422/V.11

===============================================================================
Interface Type:        X.21       EIA232     EIA232     EIA530A
LIU:                   A          A          A          A
Timeslot:              1          2          3          4
Service:               DDS        DDS        DDS        DDS
Data Rate:             56kbps     9.6kbps    2.4kbps    56kbps
Sync/Async:            Sync       Sync       Async      Sync
Async Char Length:     N/A        N/A        10         N/A
Ext. Transmit Timing:  Off        Off        N/A        Off
DCD Control:           Force-on   Normal     Force-on   Normal
CTS Control:           N/A        Switched   Force-on   Switched
DSR Control:           N/A        Normal     Force-on   Normal
Latching Loopback:     Enable     Disable    Enable     Disable


         Save Configuration   Remove Configuration  Default Configuration
                             Main Menu    Exit
 LIU A = No Alarms  LIU B = Red Alarm                          Metroplex 6000
```
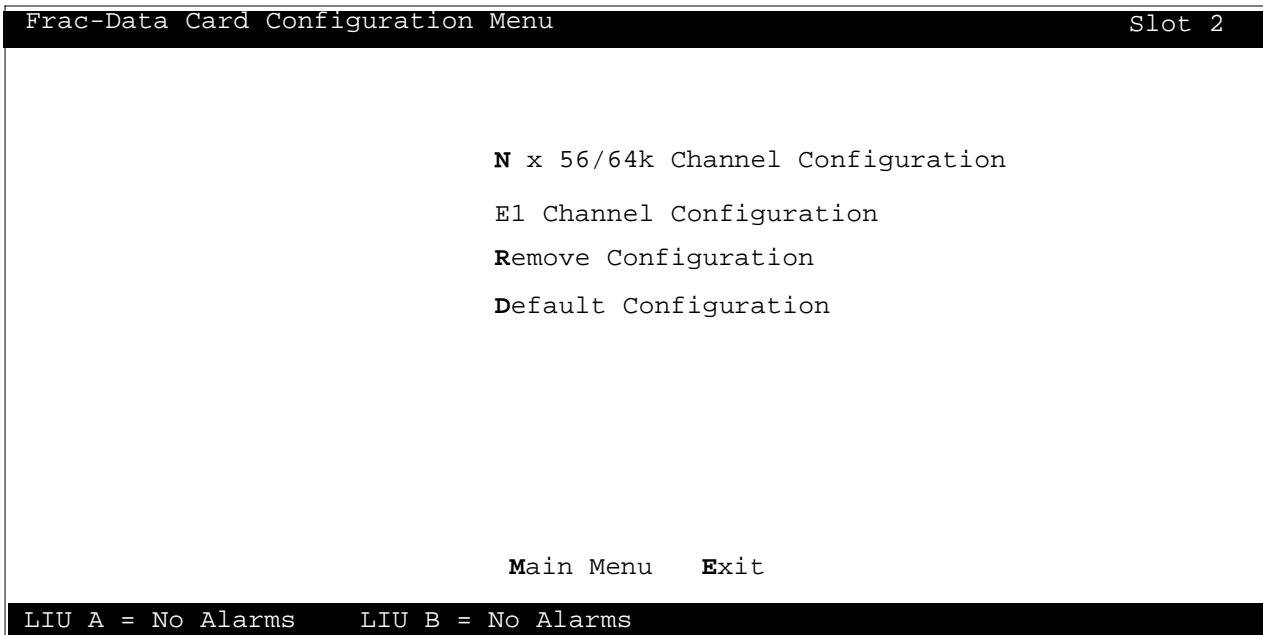
Figure 65   Flexi-Data Configuration

Selections and messages are listed in Table 40.

Table 40 Flexi-Data Configuration Selections and Message

Field	Selection	Description
Option Type (read only)	422/V.11, V.35, EIA232, Unknown	Specifies Option Type read from card. Unknown indicates Platform Card does not recognize Option Type. Check revision compatibility Table 1.
Interface Type	X.21, **EIA530A**, V.36	The interface type (how the channel is operating) is associated with the option type. X.21, EIA530A, V.36 are available with the 422/V.11 option card.
	V.35	V.35 is available with the V.35 card.
	EIA232	EIA232 is available with the EIA232 or EIA 232AS card.
LIU	**A**,B	Displays the LIU used and allows you to select the LIU to which a channel is assigned. If LIU B is not present only A is available.
Timeslot	1-31 and **Off**	Displays the plug-in cards by timeslot and allows you to select the timeslot to which a channel is assigned. The timeslots are skipped if used somewhere else. Use'0' (zero) to specify Off. 1-24 is available on a T1 system and 1-31 is available on an E1 system.
Service	**DDS**, Sw56	The service supported on the channel. DDS - compatible with DDS service. Sw56 - Switched 56kbps data service. (T1 system only)
Data Rate	1.2kbps, 1.8kbps, 2.4kbps, 4.8kbps, 9.6kbps, 19.2kbps, 56kbps, 64kbps	The data rate supported at the channel interface. Default data rate for EIA232 is 9.6kbps, all other option types default is 56kbps. 1.2kbps and 1.8kbps data rates are asynchronous only. 56kbps and 64kbps data rates are synchronous only.
Sync/Async	**Sync**, Async	Async is selectable only on the EIA 232AS option type.
Async Char Length	**N/A**, 8,9,10,11	Specifies the number of bits in the Asynchronous character including start and stop bits, parity and data N/A is for Synchronous data rates
Ext. Transmit Timing	**Off**, On, N/A	Off - Data channel uses internal timing to clock in transmit data from the DTE. On - Timing provided by the DTE on the External Timing lead used to clock in transmit data. External Timing must be synchronous to the Metroplex® 6000 internal timing. N/A - is for Asynchronous data rates.
DCD Control	Force-on, **Normal**	This controls the Data Carrier Detect control lead to the local DTE interface. Force-on turns the control lead ON always. Normal means that DCD follows RTS at the far end, except at a data rate of 64kbps when DCD stays on. When normal is selected, DCD is turned off during certain diagnostics (refer to the Flexi-Data manual 086R604-002).
CTS Control	Force-on, **Switched,** N/A	This controls the Clear to Send control lead to the local DTE interface. Force-on turns the control lead on always. Switched means that CTS follows RTS, except during certain diagnostics (refer to the Flexi-Data manual 086R604-002) when it is turned off. Displays N/A when you select Interface Type of X.21.
DSR Control	Force-on, **Normal,** N/A	This controls the Data Set Ready control lead to the local DTE interface. Force-on turns the control lead on always. Normal means that DSR is normally on, except during certain diagnostics (refer to the Flexi-Data manual 086R604-002). Displays N/A when you select Interface Type of X.21.
Latching Loopback	Enable, **Disable**	Support Latching DDS loopbacks. This can only be enabled at 64kbps data rate.

Table 40 - (Sheet 1 of 2)

Local Management   **Main Menu**

Table 40   Flexi-Data Configuration Selections and Message (Continued)

Field	Selection	Description
Messages		
Configuration Not Saved - Exit? (Y/N)		Displayed if you made a change on the screen, but did not select save first. If you select "N" the screen becomes active again and you can then select the save option. If you select "Y", the screen is exited and the configuration changes are lost.
Are You Sure? (Y/N)		Displayed if you selected card Remove Configuration, Default Configuration or Save Configuration. If you press "Y" the card is removed, set to default or configuration is saved. If you press "N", you return to the screen.
Cannot Turn On Switched 56 Until CAS is Enabled		Displayed for E1 system when you attempt to turn on Switched 56 (which requires signaling) to a LIU which has CAS disabled.
Notes:1. Dashes indicate the channel does not exist. An option card may be missing.		
2. The Remove Configuration option removes the information stored in the selected Platform Card. This can be used to remove a card that is no longer in the slot, If a remove is performed and the card still resides in the slot, the next poll detects the card and performs the start-up procedure.		
3. Some configuration parameters are not changeable when a channel is in a diagnostic test.		
4. If Communication Error, Channel Card Not Changed appears on the screen, the Platform Card had problems communicating to the specified channel card. This could be due to a missing channel card. If the channel card is not missing from the shelf, check the firmware revisions in Table 1.		
5. Defaults in bold.		

Table 40 - (Sheet 2 of 2)

Frac-Data Card Configuration Menu

From the Frac-Data Card Configuration Menu screen, you can select `N x 56/64k Channel Configuration` for V.35, EIA-530A, etc. channels, and `DSX-1 Channel Configuration` for DSX-1 channels or `E1 Channel Configuration` for E1 channels. You can also remove a card's configuration (if the card is no longer in the slot), or restore all channels on a card to the default configuration. Figure 66 illustrates typical screens.

```
 Frac-Data Card Configuration Menu                              Slot 2




                         N x 56/64k Channel Configuration

                         DSX-1 Channel Configuration

                         Remove Configuration

                         Default Configuration








                         Main Menu    Exit

  LIU A = No Alarms    LIU B = No Alarms                    Metroplex 6000
```

```
 Frac-Data Card Configuration Menu                              Slot 2


                          N x 56/64k Channel Configuration

                          E1 Channel Configuration
                          Remove Configuration
                          Default Configuration




                             Main Menu    Exit
 LIU A = No Alarms     LIU B = No Alarms
```

Figure 66   Frac-Data Configuration Menu (T1 and E1 Modes)

Selections and messages are listed in Table 41.

Table 41   Frac-Data Card Configuration Messages

Messages	
Are You Sure? (Y/N)	Displayed if you selected Remove Configuration or Default Configuration. If you press "Y" the card is removed or set to default. If you press "N" you return to the screen.
Note: 1. The Remove Configuration option removes the information stored for a slot. This can be used to remove a card that is no longer in a slot. If a remove is performed and the card still resides in the slot, the card is set to all defaults.	

Frac-Data N x 56/64k Channel Configuration

Figure 67 illustrates a typical N x 56/64k Channel Configuration screen.

```
  Frac-Data N x 56/64k Channel Configuration                                Slot 2
                                        Chan 1                Chan 2
     Option Type:                       V.35                  DSX-1
     Data Rate:                         256kbps               -
    ================================================================================
     N X 56k/64k:                        64k                  -
     Interface Type:                     V.35                 -
     LIU:                                A                    -
     Start Timeslot:                     19                   -
     Number of Timeslots:                4                    -
     Alternate Timeslots:                Off                  -
     PN127 (RmtLpbk) Response:           Enable               -
     Ext. Transmit Timing:               Off                  -
     Invert Transmit Timing:             Normal               -
     Ext. Loopback Control:              Enable               -
     DCD Control:                        Forced-on            -
     CTS Control:                        Forced-on            -
     DSR Control:                        Forced-on            -



                          Save Configuration
                         Main Menu   Exit
   LIU A = No Alarms     LIU B = No Alarms                    Metroplex 6000

```

Figure 67   Frac-Data N x 56/64k Channel Configuration

Selections and messages are listed in Table 42.

Table 42   Frac-Data N x 56/64k Channel Configuration Selections and Messages

Field	Selection	Description
Option Type (read only)	422/V.11, V.35, EIA232, Unknown	Specifies Option Type read from card. Unknown indicates Platform Card does not recognize Option Type. Check revision compatibility Table 1.
N x 56k /64k	56k, 64k	This specifies a single timeslot rate.
Interface Type	X.21, **EIA530A**, V.36	The interface type (how the channel is operating) is associated with the option type. X.21, EIA530A, V.36 are available with the 422/V.11 option card.
	V.35	V.35 is available with the V.35 card.
LIU	**A**,B	Allows you to select the LIU to which a channel is assigned. If LIU B is not present only A is available.
Start Timeslot	1-31 and **Off**	Allows you to select the start timeslot to which a channel is assigned. The timeslots are skipped if used somewhere else. Use'0' (zero) to specify Off. 1-24 is available on a T1 system and 1-31 is available on an E1 system.
Number of Timeslots	**0** and 1-31	Allows you to select the number of timeslots for the channel. Maximum number of timeslots may be less than 31 if timeslots are used somewhere else and depending on whether the system is T1 or E1.

Table 42 - (Sheet 1 of 2)

Table 42   Frac-Data N x 56/64k Channel Configuration Selections and Messages (Continued)

Field	Selection	Description
Alternate Timeslots	**Off**, On	Allows you to select the use of alternate timeslots. This may be required to satisfy One's Density requirement. Off - Only the Number of Timeslots is used. On - Two times the Number of Timeslots specified are used. The alternate timeslots are filled with the idle code to the network and do not carry customer data. If not enough timeslots are available, this option is not available. Not available on an E1 system.
PN127 (RmtLpbk) Response	Enable, **Disable**	Enable - Allows the channel to detect PN127 loop up codes (ANSI T1.403-1995) Disable - Data channel does not go into network loopback if the PN127 loop up code is received.
Ext. Transmit Timing	**Off**, On	Off - Data channel uses internal timing to clock in transmit data from the DTE. On - Timing provided by the DTE on the External Timing lead used to clock in transmit data. External Timing must be synchronous to the Metroplex® 6000 internal timing.
Invert Transmit Timing	**Normal**, On	Normal - Leaves the transmit timing in its normal state. On - Used to invert the transmit timing from the DTE. This may be beneficial when using high data rates and long cables.
Ext. Loopback Control	Enable, **Disable**, N/A	Enable - allows the channel to use the V.54 control leads to cause a local loopback (LL) or a remote loopback (RL) Disable - Data channel does not go into a loopback with the request from the V.54 control leads. Displays N/A when you select an Interface Type of X.21.
DCD Control	**Forced-on**, Controlled	This controls the Data Carrier Detect control lead to the local DTE interface. Forced-on turns the control lead on always. Controlled means that DCD follows the state of the RTS control at the far end, when the channel is set for Nx56K. DCD is on when the channel is set for Nx64k. At either rate, DCD is turned off during certain diagnostics (refer to the Frac-Data manual 086R606-001).
CTS Control	**Forced-on**, Switched, N/A	This controls the Clear To Send control lead to the local DTE interface. Forced-on turns the control lead on always. Switched means that CTS follows RTS after a nominal 10 ms delay, except during certain diagnostics when CTS is turned off. Displays N/A when you select an Interface Type of X.21.
Messages		
DSR Control	**Forced-on**, Controlled, N/A	This controls the Data Set Ready control lead to the local DTE interface. Forced-on turns the control lead on always, even during diagnostics. Controlled means that DSR is normally on, except during certain diagnostics. Displays N/A when you select an interface type of X.21.
Configuration Not Saved - Exit? (Y/N)		Displayed if you made a change on the screen, but did not select save first. If you select "N" the screen becomes active again and you can then select the save option. If you select "Y", the screen is exited and the configuration changes are lost.
Are You Sure? (Y/N)		Displayed if you selected save configuration. If you press "Y" the card configuration is saved. If you press "N" you return to the screen.
Notes: 1. Dashes in the option type indicate the channel is not present. An option card may be missing. When the option type is displayed, but the selections contain dashes, the option type cannot be configured through the current screen. 2. Some configuration parameters are not changeable when a channel is in a diagnostic test. 3. When Communication Error, Channel Card Not Changed appears on the screen, the Platform Card had problems communicating to the specified channel card. This could be due to a missing channel card. If the channel card is not missing from the shelf, check the firmware revisions in Table 1. 4. DSX-1 not available for E1. 5. Defaults in bold.		

Table 42 - (Sheet 2 of 2)

Frac-Data DSX-1 Channel Configuration

Figure 68 illustrates a typical DSX-1 Channel Configuration screen.

```
Frac-Data DSX-1 Channel Configuration                              Slot 5


                                    Chan 1                  Chan 2
Option Type:                        V.35                    DSX-1

=========================================================================
Interface Type:                     -                       DSX-1
LIU:                                -                       A
Start Timeslot:                     -                       22
Number of Timeslots:                -                       2
Line Code:                          -                       B8ZS
Frame Type:                         -                       ESF
Pre-Equalization:                   -                       0-133ft
Channel Type:                       -                       Clear
LOS Alarm:                          -                       Masked
OOF Alarm:                          -                       Masked
AIS Alarm:                          -                       Masked
RAI Alarm:                          -                       Masked
                           Save Configuration
                           Main Menu    Exit

LIU A = No Alarms     LIU B = No Alarms              Metroplex 6000
```

Figure 68   DSX-1 Channel Configuration Screen

Selections and messages are listed in Table 43.

Table 43   Frac-Data DSX-1 Channel Configuration Selections and Messages

Field	Selection	Description
Option Type (read only)	DSX-1, Unknown	Specifies Option Type read from card. Unknown indicates Platform Card does not recognize Option Type. Check revision compatibility Table 1. DSX-1 Option Type is only available on a T1 system.
Data Rate (read only)	N x 64k	This specifies the channel rate. N = number of timeslots dedicated to the channel.
Interface Type	DSX-1	The interface type is DSX-1.
LIU	**A**,B	Allows you to select the LIU to which a channel is assigned. If LIU B is not present only A is available.
Start Timeslot	1-24 and **Off**	Allows you to select the start timeslot to which a channel is assigned. The timeslots are skipped if used somewhere else. Use'0' (zero) to specify Off.
Number of Timeslots	**0** and 1-24	Allows you to select the number of timeslots for the channel. Maximum number of timeslots may be less than 24 if timeslots are used somewhere else.
Line Code	**B8ZS**, AMI	Allows you to select either B8ZS or AMI as the line code for the channel.
Frame Type	**ESF**, D4	Allows you to select either ESF or D4 as the framing format for the channel.

Table 43 - (Sheet 1 of 2)

Table 43   Frac-Data DSX-1 Channel Configuration Selections and Messages (Continued)

Pre-Equalization	0 - 133 ft 133 - 266 ft 266 - 399 ft 399 - 533 ft 533 - 655 ft	Allows you to select the pre-equalization which corresponds to the line length used.
Channel Type	**Clear,** Signaling	Select Signaling for voice channels which require robbed-bit signaling. Otherwise select Clear which passes all eight bits of the timeslot.
LOS Alarm	**Masked**, Reported	Specifies the Loss Of Signal alarm mask.
OOF Alarm	**Masked**, Reported	Specifies the Out of Frame alarm mask.
AIS Alarm	**Masked**, Reported	Specifies the Alarm Indication Signal alarm mask.
RAI Alarm	**Masked**, Reported	Specifies the Remote Alarm Indication alarm mask.
Messages		
Configuration Not Saved - Exit? (Y/N)		Displayed if you made a change on the screen, but did not select save first. If you select "N" the screen becomes active again and you can then select the save option. If you select "Y", the screen is exited and the configuration changes are lost.
Are You Sure? (Y/N)		Displayed if you selected save configuration. If you press "Y" the card configuration is saved. If you press "N" you return to the screen.
Notes: 1. Dashes in the option type indicate the channel is not present. An option card may be missing. When the option type is displayed, but the selections contain dashes, the option type cannot be configured through the current screen. 　　2. Some configuration parameters are not changeable when a channel is in a diagnostic test. 　　3. If Communication Error, Channel Card Not Changed appears on the screen, the Platform Card had problems communicating to the specified channel card. This could be due to a missing channel card. If the channel card is not missing from the shelf, check the firmware revisions in Table 1. 　　4. Defaults in bold.		

Table 43 - (Sheet 2 of 2)

Frac-Data E1 Channel Configuration

Figure 69 illustrates a typical E1 Channel Configuration screen.

```
 Frac-Data E1 Channel Configuration                                Slot 5
                                         Chan 1              Chan 2
    Option Type:                         V.35                E1
    Interface Impedance (Ohms):          -                   120
    Channel Assoc. Sig. (CAS):           -                   On
 ==========================================================================
    Interface Type:                      -                   E1
    LIU:                                 -                   A
    Start Timeslot:                      -                   22
    Number of Timeslots:                 -                   2
    CRC-4:                               -                   On
    LOS Alarm:                           -                   Masked
    OOF Alarm:                           -                   Masked
    AIS Alarm:                           -                   Masked
    RAI Alarm:                           -                   Masked
    Timeslot 16 OOF Alarm:               -                   Masked
    Timeslot 16 AIS Alarm:               -                   Masked
    Timeslot 16 RAI Alarm:               -                   Masked


                           Save Configuration
                           Main Menu    Exit
  LIU A = No Alarms   LIU B = Red Alarm                    Metroplex 6000
```

Figure 69   E1 Channel Configuration Screen

Selections and messages are listed in .

Table 44   Frac-Data E1 Channel Configuration Selections and Messages

Field	Selection	Description
Option Type (read only)	E1, Unknown	Specifies Option Type read from card. Unknown indicates Platform Card does not recognize Option Type. Check revision compatibility Table 1. E1 Option Type is only available on an E1 system.
Interface Impedance (Ohms) (read only)	75, 120, Jumper Error	Specifies the Line Impedance. Jumper Error indicates that the jumpers X1 on the Frac-E1 Option Card (086P086-001) are not correctly installed. Jumpers can be missing or not configured the same on X1. (Refer to the Frac-Data Card manual 086R606-001)
Interface Type	E1	The interface type is E1.
CAS (read only)	On, Off	This turns Channel Associated Signaling On or Off.
LIU	**A**,B	Allows you to select the LIU to which a channel is assigned. If LIU B is not present only A is available.
Start Timeslot	1-31 and **Off**	Allows you to select the start timeslot to which a channel is assigned. The timeslots are skipped if used somewhere else. Use'0' (zero) to specify Off.
Number of Timeslots	**0** and 1-31	Allows you to select the number of timeslots for the channel. Maximum number of timeslots may be less than 31 if timeslots are used somewhere else.
CRC-4	On, Off	This turns CRC-4 Multiframe On or Off.
LOS Alarm	**Masked**, Reported	Specifies the Loss Of Signal alarm mask.

Table 44 - (Sheet 1 of 2)

Table 44   Frac-Data E1 Channel Configuration Selections and Messages (Continued)

OOF Alarm	**Masked**, Reported	Specifies the Out of Frame alarm mask.
AIS Alarm	**Masked**, Reported	Specifies the Alarm Indication Signal alarm mask.
RAI Alarm	**Masked**, Reported	Specifies the Remote Alarm Indication alarm mask.
Timeslot 16 OOF Alarm	**Masked**, Reported	Specifies the E1 Out of Frame Timeslot 16 alarm mask.
Timeslot 16 AIS Alarm	**Masked**, Reported	Specifies the E1 Alarm Indication Signal Timeslot 16 alarm mask.
Timeslot 16 RAI Alarm	**Masked**, Reported	Specifies the E1 Remote Alarm IndicationTimeslot 16 alarm mask.
Messages		
Configuration Not Saved - Exit? (Y/N)	Displayed if you made a change on the screen, but did not select save first. If you select "N" the screen becomes active again and you can then select the save option. If you select "Y", the screen is exited and the configuration changes are lost.	
Are You Sure? (Y/N)	Displayed if you selected save configuration. If you press "Y" the card configuration is saved. If you press "N" you return to the screen.	
Notes: 1. Dashes in the option type indicate the channel is not present. An option card may be missing. When the option type is displayed, but the selections contain dashes, the option type cannot be configured through the current screen.		
2. Some configuration parameters are not changeable when a channel is in a diagnostic test.		
3. If Communication Error, Channel Card Not Changed appears on the screen, the Platform Card had problems communicating to the specified channel card. This could be due to a missing channel card. If the channel card is not missing from the shelf, check the firmware revisions in Table 1.		
4. Defaults in bold.		

Table 44 - (Sheet 2 of 2)

System Utilities

System Utilities allows you to view which cards are in the system and their revisions. You can also reset a card in a slot, modify a password, see how long the system has been up, manually restore diversity after a switch has occurred, define a node name for the system and change the IP addresses. Figure 70 shows the System Utilities Menu selections.

```
 System Utilities


                            Card Revisions
                            Reset
                            Password
                            System Uptime
                            Diversity
                            Node Name
                            Dial-Out On Alarm
                            IP Addresses













                       Main Menu    Exit
 LIU A = No Alarms     LIU B = No Alarms                     Metroplex 6000
 Hit Enter to activate
```

Figure 70   System Utilities Selections

Card Revisions

See Figure 71 for a typical Card Revision screen. The `F/W` (Firmware) column shows the firmware revision of the basecard. The `H/W` column shows the assembly revision of the basecard hardware. Option cards on the basecards are also displayed under the heading `OptCrd 1` ---- `OptCrd 4`. The option `Card Type` is shown along with its assembly revision. Note that the Platform Card's option cards are the LIUs and/or an Ethernet card. Also note that for the Flexi-Voice Plus Card, each option card provides two channels.

The firmware and hardware revisions start at -- and go in sequence; A-, B-, C- etc.

```
 Card Revisions

Slot Card Type      F/W    H/W    OptCrd 1    OptCrd 2    OptCrd 3    OptCrd 4
1    Platform       --     --     CSU         CSU         Ethernet    N/A
                                  --          --
2    Flexi-Data     --     --     422/V.11    422/V.11    V.35        EIA232
                                  A-          --          --          --
3    Flexi-Voice + --     --     Dual-E&M    Dual-TB     Dual-OB     N/A
                                  --          --          --          --
4    Frac-Data      --     --     V.35        DSX-1       N/A         N/A
                                  A-          A-
5    FXS Octet      --     --     N/A         N/A         N/A         N/A

6    None           N/A    N/A    N/A         N/A         N/A         N/A




                              Main Menu     Exit
 LIU A = No Alarms     LIU B = No Alarms                       Metroplex 6000
 Hit Enter to activate
```

Figure 71   Card Revisions Display

Reset (Reset Card)

Figure 72 shows the reset screen. To reset a card, select the slot number of the card. Resetting a card is disruptive to passing data and the card reconfigures to the stored configuration.

Default System Configuration clears out saved configuration for all channel cards as well as the Platform Card. The Platform Card is reset and restarted. It takes approximately 30 seconds to complete and then the opening screen is displayed.

```
 Reset

        Slot         Card Type
        1            Platform

        2            Flexi-Data

        3            Flexi-Voice Plus

        4            Frac-Data

        5            FXS Octet

        6            --




                         Default System Configuration
                              Main Menu    Exit
 LIU A = No Alarms      LIU B = No Alarms                        Metroplex 6000
 Hit Enter to activate
```

Figure 72   Reset Card Display

Messages are listed in Table 45.

Table 45   Reset Card Display Messages

Messages	
Are You Sure? (Y/N)	Displayed if you want to reset a card or set the system to its defaults. If you press "Y" the reset or default is performed. If you press "N" you return to the screen.

Password Modification

Figure 73 shows the password modification screen. Three passwords are available to provide three levels of access. A password may contain a maximum number of 10 characters, either letters or numbers. All letters are converted to uppercase. Note that since 'M' and 'E' are valid letters to use in a password, you cannot use them to go directly to the action menus `Main Menu` and `Exit.` Instead use the arrow keys to highlight the `Main menu` or `Exit` and then hit Enter.

```
 Password Modification

        Password Type                                    Current Password
        Monitor Only                                     MON

        Monitor and Diagnose                             DIAG

        Monitor, Diagnose and Configure                  SYSTEM














                          Main Menu       Exit
 LIU A = No Alarms     LIU B = No Alarms                     Metroplex 6000
 Hit Enter to activate
```

Figure 73   Password Modification Display

Messages are listed in Table 46.

Table 46   Password Modification Messages

Messages	
Are You Sure? (Y/N)	Displayed if you want to exit and a password has been changed. If you press "Y" the password is saved.

System Uptime

Figure 74 show the amount of time the system has been up and running, in days, hours, minutes and seconds.

```
 System Uptime



      System Uptime:          1 day(s) 3:10:05
















                              Main Menu    Exit
LIU A = No Alarms     LIU B = No Alarms                   Metroplex 6000
Hit Enter to activate
```

Figure 74   System Uptime Display

Diversity

Figure 75 shows the Diversity display.

```
 Diversity



      LIU Status:             Normal














                          Restore Primary LIU
                          Main Menu    Exit
LIU A = No Alarms     LIU B = No Alarms                   Metroplex 6000
Hit Enter to activate
```

Figure 75   Diversity Display

Diversity Descriptions are described in Table 47.

Table 47   Diversity Display Descriptions

Field	Values	Description
LIU Status	Normal, Diversity	Displays the current status of the Platform Card's LIUs. Normal: LIU Interface Mode is set to Diverse Link and LIUA is operating normally; or LIU Interface Mode is set to Network Link or Drop and Insert, and LIU is operating normally. Diversity: LIU Interface Mode is set to Diverse Link and LIU A has failed and LIU B has taken over.
Restore Primary LIU		Activation of this selection forces traffic back to LIU A from LIU B.

Node Name

Figure 76 shows the Node Name display. The contents of this screen are for informational purposes only.

```
Node Name


      Node Name:

      Address:

      Contact:

      Telephone:

      Comments:







                         Main Menu    Exit
LIU A = No Alarms     LIU B = No Alarms              Metroplex 6000
Hit Enter to activate
```

Figure 76   Node Name Display

Node Name Descriptions are described in Table 48.

Table 48   Node Name Descriptions

Field	Description
Node Name	Displays an optional Node Name. The Node Name contains a maximum of 10 ASCII characters. This Node Name is displayed in the top right hand section of the Title Bar of each screen, preceded and followed by "**".
Address	Displays an optional Address. This selection is free format and contains a maximum of 50 characters.
Contact	Displays an optional Contact. This selection is free format and contains a maximum of 50 characters.
Telephone	Displays an optional Telephone Number. This selection is free format and contains a maximum of 50 characters.
Comments	Displays optional Comments. This selection is free format and contains a maximum of 50 characters.

Dial-Out On Alarm

The Metroplex 6000 supports a dial-out on alarm reporting capability. The primary function is to notify a centralized maintenance location of an alarm condition at the remote Metroplex® 6000 site. Refer to the Platform Card manual 086R602-001 for more details on this function.

An example of the Dial-Out On Alarm system utility screen is depicted in Figure 77, and the selections are described in Table 49. Refer to Appendix B for the alarm reporting format for ASCII reporting.

```
 Dial-Out On Alarm


    Dial-Out Status:        OK
==============================================================================
   Modem Init String:       AT &F0 V0 E0 Q0 \N3 &A0 \K3 %K1 %C0 &C1
                            &R3 %E0 &M0 &S1 &D2 \Q0 \P2 M0 \T7 %R7
                            %Q0 X4 S0=2 &W0 &Y0

   Primary Phone Number:    9,,1,203,7581811
   Backup#1 Phone Number:   9,1,617,6225900
   Backup#2 Phone Number:   9,1,510,7694500
   Alarm Reporting Method:  ASCII
   Disconnect Timeout(min): 2






                          Reinit Dial-Out
                          Main Menu    Exit
 LIU A = No Alarms   LIU B = Red Alarm                        Metroplex 6000
```

Figure 77   Dial-Out On Alarm Screen

Table 49   Dial-Out On Alarm Selections and Messages

Field	Selection	Description
Dial-Out Status (read only)	OK, Last Dial Fail	Specifies the Dial-Out on Alarm current status. Last Dial Fail is displayed when all numbers are tried. If the Metroplex® 6000 was unable to connect, it retries in 15 minutes.
Modem Init String	See Figure 77 for default string.	Specifies the AT command string entered by the user to initialize the modem connected to the DIAL port. This command string is sent to the modem before dialing-out. Maximum 120 characters (40 x 3 lines). The default modem initialization string is for a GDC V.F. 28.8 modem.
Primary Phone Number	default is NULL (dial out function disabled)	The primary number is the first number that is attempted. It is retried up to three times before attempting to use the backup number(s). The system waits 30 seconds between retries. If no number is entered then dial-out is disabled.
Backup#1 Phone Number	default is NULL	The first of 2 backup phone numbers used if the primary number fails. If no backup numbers are entered, then only the primary number is attempted.

Table 49 - (Sheet 1 of 2)

Table 49   Dial-Out On Alarm Selections and Messages (Continued)

Field	Selection	Description
Backup#2 Phone Number	default is NULL	The second of 2 backup phone numbers used if the primary number fails. If no backup numbers are entered, then only the primary number is attempted.
Alarm Reporting Method	None, ASCII, SNMP	NONE: The dial-out port does not output alarms. (default = function disabled) ASCII: The alarms is output in ASCII format. SNMP: The alarms is output as SNMP alarm traps.
Disconnect Timeout(min)	0 - 15 minutes	Specifies the time, in minutes, that the Metroplex® 6000 waits for the maintenance personnel to begin a remote terminal session over the existing dial-out connection. If no session is attempted within the timeout period, then the Metroplex® 6000 is disconnect the call.
Reinit Dial-Out		This over-rides the 15 minute timeout when Dial-Out Alarm indicates "Last Dial Fail".
Messages		
Are You Sure? (Y/N)		Displayed if you have selected save configuration for the card. If you press "Y" the configuration is saved, otherwise you return to the screen.

Notes: 1.   Defaults in bold.

2.   The dial strings that are entered by the user are the primary phone number and up to two backup numbers. The dial string characters consist of the standard phone number digits (0-9) and the '-', '(', ')', and space delimiters. The '-', '(', ')', and space delimiters, if entered by the user, is ignored.

The standard pause characters, ',' or '<', may be used to specify delay during dial-out. The amount of delay can be set in the modem initialization string. A default of 2 seconds per pause character is typical.

Table 49 - (Sheet 2 of 2)

IP Addresses

Figure 78 shows the IP Addresses display. Refer to Appendix A for sample network diagrams. describes the display.

```
IP Addresses


      Option Type:                        Ethernet
      Hardware Address:                   00:C0:64:00:C0:00
=========================================================================
      SNMP Port IP Address:               172.16.3.202
      SNMP Port Subnet Mask:              255.255.0.0
      DIAL Port IP Address:               0.0.0.0
      DIAL Port Subnet Mask:              255.255.255.0
      Default Router IP Address:          172.16.0.1
      Default Router Port:                SNMP Port




                      Main Menu    Exit
LIU A = No Alarms LIU B = LOS Alarm                      Metroplex 6000
```

Figure 78   IP Addresses Display

Table 50   IP Address Display Description

Field	Values	Description
Option Type (read only)	Ethernet, PPP	Displays the current status of the PPP/ETH jumper setting of the Platform Card.
Hardware Address (read only)	00:c0:64:00:xx:xx, None	The current MAC Address if the Option Type is Ethernet, or else None when the Option Type is PPP.
SNMP Port IP Address		Enter the current IP Address assigned to the SNMP Port. An IP Address is of the form xxx.xxx.xxx.xxx, where xxx is in a range of 0 to 255. Default IP Address is 0.0.0.0. This number should be requested from a network administrator.
SNMP Port Subnet Mask		Enter the current Subnet Mask associated with the SNMP Port. Default Subnet Mask is 255.255.0.0
DIAL Port IP Address		Enter the current IP Address assigned to the DIAL Port. An IP Address is of the form xxx.xxx.xxx.xxx, where xxx is in a range of 0 to 255. Default IP Address is 0.0.0.0.
DIAL Port Subnet Mask		Enter the current Subnet Mask associated with the DIAL Port. Default Subnet Mask is 255.255.255.0
Default Router IP Address		Enter the IP Address of the Router associated with either the SNMP or DIAL port. This number should be requested from a network administrator. Default IP Address is 0.0.0.0
Default Router Port	SNMP Port, DIAL Port, None	Enter the port associated with the Default Router.

Appendix A

You must configure IP Addresses and Sub-Net masks in order for the Metroplex® 6000 to communicate to the Network Manager. The following examples helps you set IP addresses and Subnet Masks. Remember to request IP addresses from your network administrator.

Manager Communications via LAN

Figure 79 illustrates an installation where the Network Manager and one or more Metroplex® 6000s are connected to the same 10-Base-T LAN segment. All communication between the Network Manager and the Metroplex® 6000 takes place over the Ethernet link. Each Metroplex® 6000 system can communicate independently using its own MAC (the Ethernet Address) and SNMP port IP Address. The IP addresses of the Network Manager and the Platform Card in the Metroplex® 6000 should be set for the same subnetwork--thus no Default Router address is required.
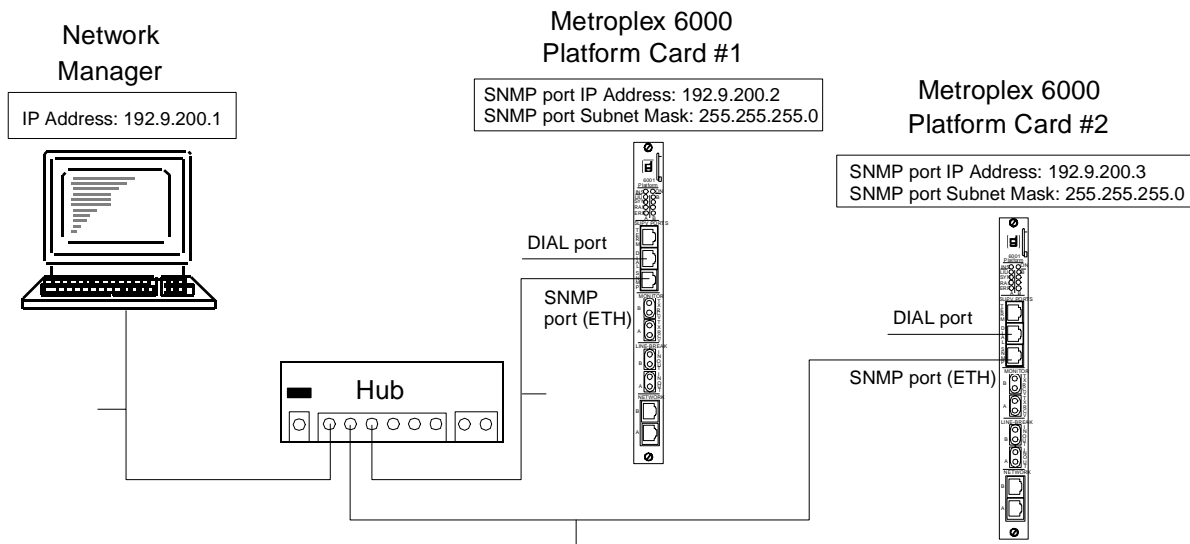
Figure 79   LAN Based Configuration

Manager Communications via Segmented LAN

Figure 80 illustrates an installation where the Network Manager and the Metroplex® 6000 are connected to different LAN segments. All of the communications between the Network Manager and the Metroplex® 6000 has to pass through the router, which acts as the gateway between the two LAN segments. The IP addresses of the Network Manager and the Metroplex® 6000 should each be set for its own subnetwork. The Metroplex® 6000 requires a Default Router IP Address, which is the IP address of the router. The default Router Address should reflect the IP Address on the Router (LAN Segment 2) associated with the Platform Card

Network Manager

IP Address: 192.9.200.2

Metroplex 6000
Platform Card #1

SNMP port IP Address: 192.9.100.3
SNMP port Subnet Mask: 255.255.255.0
Default Router IP Address: 192.9.100.40
Default Router Port: SNMP port

Router

LAN Segment 1 IP Address: 192.200.40
LAN Segment 2 IP Address: 192.100.40

LAN Segment 1

LAN Segment 2

DIAL port
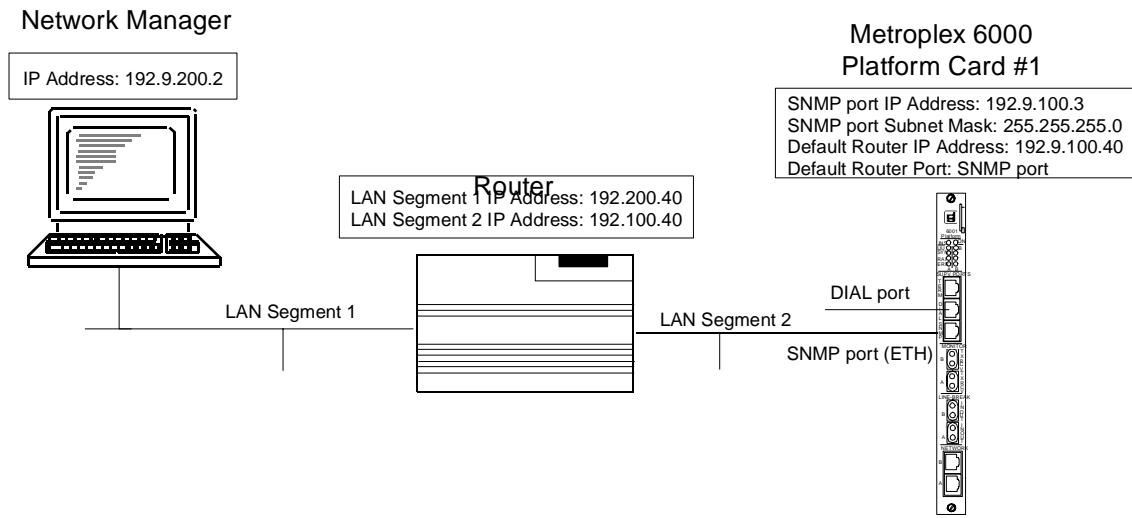
SNMP port (ETH)

Figure 80   Segmented LAN Based Configuration

Manager Communications via WAN through DIAL and SNMP port

Figure 81 shows you an installation where the Network Manager communicates with one or more Metroplex® 6000 systems by means of WAN PPP connections. Metroplex® 6000 #1 is connected via a dial-up line to its DIAL port and Metroplex® 6000 #2 is connected directly to its SNMP port. Each Metroplex® 6000 communicates with the Network Manager independently, using its own IP address and employing Point-to-Point Protocol (PPP). The IP addresses of the Network Manager and the Metroplex® 6000 WAN interface should be set for the same subnetwork--so no Default router IP address is required.
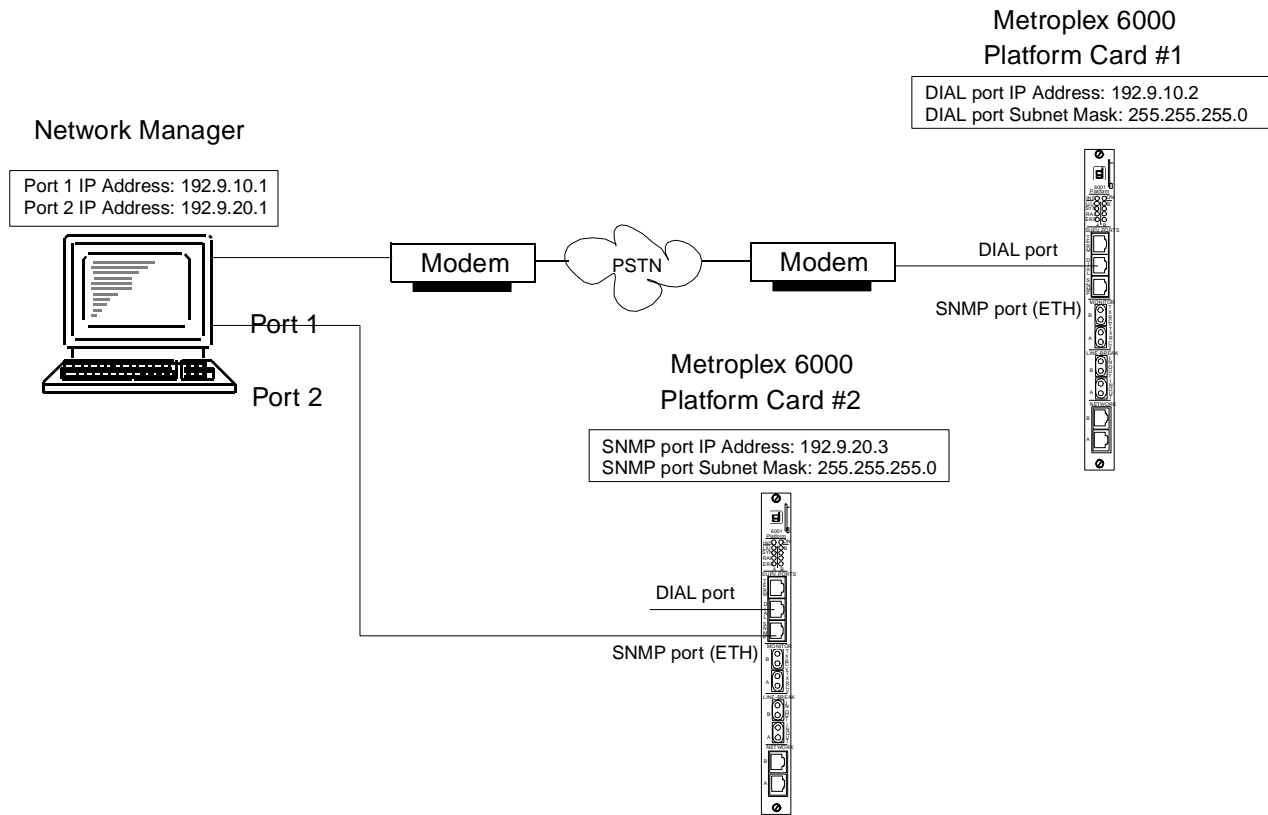
Figure 81   Local WAN Configuration

Manager Communications via WAN through a Terminal Server/LAN Connection

Figure 82 shows you an installation where Network Manager and the Metroplex® 6000 communicate through a terminal server on the Network Manager's LAN. The terminal server connection to the Metroplex® 6000 is made through a WAN PPP connection to either the SNMP or DIAL port. The WAN connection IP Address should be the same as the Segment IP Address of the terminal server. The default Router Address should reflect the IP Address on the Terminal Server (PPP Segment 2) associated with the Platform Card.

Network Manager

IP Address: 192.9.200.2

Metroplex 6000
Platform Card #1

SNMP port IP Address: 192.9.100.41
SNMP port Subnet Mask: 255.255.255.0
Default Router IP Address: 192.9.100.40
Default Router Port: SNMP port

Terminal Server

Segment 1 IP Address: 192.9.200.40
Segment 2 IP Address: 192.9.100.40

DIAL port

LAN Segment 1

PPP Segment 2

SNMP port (ETH)
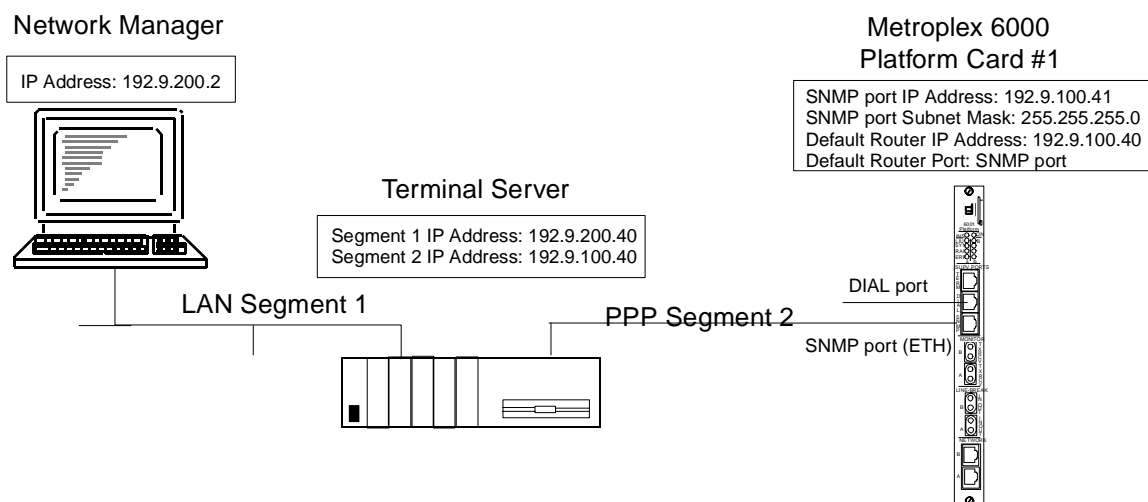
Figure 82   Segmented Connection Configuration -- LAN Based Manager with WAN Connection
to Metroplex® 6000

Appendix B - Dial Out On Alarm

Compatibility - This feature is available in revision G- or later of the Platform Card firmware.

Dial Out On Alarm is a Platform Card feature that notifies a centralized Maintenance Center of an alarm condition at a remote Metroplex® 6000 site. It uses a modem attached to the Platform Card's DIAL port t send the alarm information.

Features

- reports alarms either as ASCII text or as an SNMP TRAP (support of SNMP TRAPs requires a -003 or -004 Platform Card).

- supports one primary and two backup numbers to dial.

- automatically disconnects after a programmable time-out.

- provides status when all phone numbers have been tried and the dial-out connection is not made.

- supports VT-100 Terminal Session access after alarms have been reported.

Installation

Connect a modem to the Platform Card's DIAL port. Configure the Dial-Out connection through the Dial-Out On Alarm Screen (System Utilities->Dial-Out On Alarm). Specify the Modem Init. String, Phone numbers, Alarm Reporting Method and Disconnect Time-out. The "Modem Initialization String" should contain at minimum the following configuration settings:

- Non-verbal result codes - V0 (modem compatibility requires that Non-verbal results code for connecting at 9600 be a 12)

- Local Echo Off - E0

- Result codes transmitted to DTE - Q0

- Enable Call Progress Message (CPM) response codes and monitoring - X4

- DCO on after link - &C1

- Recognize DTR, respond with hang-up - &D2

Select Alarm Reporting Method: ASCII to report alarms to a dumb terminal or printer or to an alarm logger. Select Alarm Reporting Method: SNMP to send TRAPs to an SNMP-based network manager.

Set the disconnect timeout to at least one minute if you want to start a terminal session or when working with SNMP and TEAM 6000.

Configure the modem at the Maintenance Center in the same way, except for:

- No result codes transmitted to DTE - Q1.

Figure 83 shows a typical example of a Dial-Out Alarm application for either ASCII or SNMP reporting method.
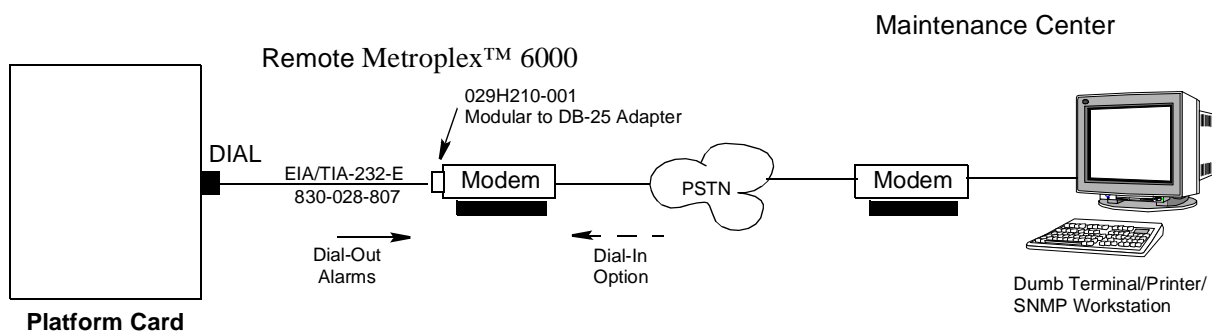
Figure 83   Dial-Out Alarm Setup

Operation

When an alarm condition occurs, the Metroplex® 6000 signals the modem to place a call to the Maintenance Center. You may configure the system to try a primary and up to two back-up numbers. Each number is attempted three times before trying the next number. If a connection is not made after attempting all the configured numbers, the system waits for 15 minutes before repeating, and continues until a connection is made. If the DIAL port is being used by a dial-in session, alarm data is stored until the DIAL port is free. Once a connection is made, the alarm data is sent to the remote site.

After all of the alarms have been sent the modem are disconnect based on the disconnect time-out setting. Should any new alarms occur while waiting for the time-out, they are sent immediately to the Maintenance Center.

Alarm data is stored until a connection is made and the oldest alarm is sent first. Once the buffer is full, any new alarms are lost. The buffered alarms are sent along with an "alarms lost" alarm, when a connection is eventually made.

When working with ASCII and connected to a dumb terminal you have the disconnect time-out period in which to start a terminal session. You start the session by entering CNTRL-X sequence twice. You can end this session only by sending the modem it's disconnect string. New alarms generated after a terminal session has been activated is buffered and sent after a new connection when the terminal session has ended.

When working with SNMP there is no method to keep the session active until the user at the Maintenance Center requests a disconnect. Should any new alarm occur while waiting for the time-out, a TRAP is sent immediately to the Maintenance Center. Before the disconnect time-out expires, SNMP messages may be sent by the workstation running SNMP to the Metroplex® 6000.

Testing

You can test the system by simulating an alarm on an LIU or Channel. Make sure to set the selected alarm to "Reported" in the Configuration screen. The Platform Card dial-outs to the Maintenance Center and report the alarms.

If Dial-Out Status indicates "`Last Dial Fail`", the call could not be established. Check configuration (initialization string and phone numbers), cables and modem for correctness. Once everything is checked, select "`Reinit Dial-Out`" to restart the Dial-Out mechanism (otherwise a 15 minute wait is required before the call is retried).

ASCII Report Format Message

When the alarm reporting method is set to ASCII, the alarm data sent are ASCII characters describing the alarm. The alarm message contains the following fields:

`node name: slot number: card type: channel number: channel type: alarm: status.`

Figure 84 shows examples of alarm messages. Refer to Table 51 for an explanation of the various fields.

```
     UNIV_HAWAI:SLOT#03:MP6360:CHAN#06:OCU  :LOS  :ACT
```

```
  UNIV_HAWAI:SLOT#01:MP6001:CHN1LP2:HDSLT1:LOOP LOSW :ACT
```

Figure 84   Alarm Message on Maintenance Center Screen

Table 51   Dial-Out On Alarm Messages

Field	Description
Node Name	The node name entered on the System Utilities Node Name screen.
Slot Number	The slot number of the card generating the alarm.
Card Type	
MP6001	MP6001 - Platform Card

Table 51 - (Sheet 1 of 3)

Table 51 Dial-Out On Alarm Messages (Continued)

Field	Description
MP6360	MP6360 - Flexi-Voice Plus Card
MP6380	MP6380 - FXS Octet Card
MP6441	MP6441 - Flexi-Data Card
MP6520	MP6520 - Frac-Data Card (T1)
MP6521	MP6521 Frac-Data Card (T1/E1)
Channel Number	The number of the channel on the card.
Channel Type	
HDSLT1	HDSL T1 LIU Option Card
HDSLE1	HDSL E1 LIU Option Card
CSU	T1 CSU LIU Option Card
DSX	DSX-1 LIU Option Card or Frac-Data DSX-1 channel card
E1	E1 LIU Option Card or Frac-Data E1 channel card
OCU-DP	OCU-DP Channel Type
G.703	G.703 Channel Type
None	Alarm From Basecard
UNKNWN	Unknown Card or Channel Type
Alarm	
SysPwrUp	System Power-Up
PRI#FAIL	Primary Number Failed Dial-Out On Alarm
ALRMOVRFL	Dial-Out On Alarm Buffer Overflowed
NoResp	No Response from card
OOF	Out Of Frame detected
LOS	Loss Of Signal detected
AIS	Alarm Indication Signal received
RAI	Remote Alarm Indication received
IntPwrSup	Internal Power Supply (Wallmount only)
ExtPwrSup	External Power Supply (Wallmount only)
BPV	BiPolar Violations (T1)
LCV	Line Code Violations (E1)
ErrSec	Errored Seconds
SevErrSec	Severely Errored Seconds
UnavalSec	Unavailable Seconds
BES	Bursty Errored Seconds
BBE	Background Block Errors
CRC	Cyclic Redundancy Check Errors
FarErrSec	Severely Errored Seconds
FESES	Far End Severely Errored Seconds (E1 Only)
FEUAS	Far End Unavailable Seconds (E1 Only)
FEBBE	Far End Background Block Errors (E1 Only)
LOF	Loss Of Frame (OCU-DP Only)

Table 51 - (Sheet 2 of 3)

Table 51   Dial-Out On Alarm Messages (Continued)

Field	Description
UNKNOWN	Unknown Alarm Reported
TS16 AIS	Timeslot 16 Alarm Indication Signal
TS16 OOF	Timeslot 16 Out Of Frame
TS16 RAI	Timeslot 16 Remote Alarm Indication
HDSL Maj	Major Alarm BER Threshold
HDSL Min	Minor Alarm BER Threshold
Loop LOS	HDSL Loop Loss of Signal Detected
Loop LOSW	HDSL Loop Loss of Sync Word
Remote LOS	Remote Loss of Signal
Status	
ACT	Alarm is active.
CLR	Alarm has cleared.

Table 51 - (Sheet 3 of 3)

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