LOOP-AM
MODEL 3440
USER'S MANUAL

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07/2003 version 2.1

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1 Product Description

1.1 Function Description

The Loop-AM 3440 is an Access Multiplexer that can combine various digital access interfaces into multiple E1 or T1 lines for convenient transport and switching. Interfaces include HDSL, U type used in ISDN, RS232, E&M, and V.35. These interfaces are compatible with other Loop products such as the Loop-H 3900 for HDSL and Loop-U 3500 for U. Using these products, a DTE interface can be extended over copper wire pairs. Up to as many n x 64 Kbps interfaces are then multiplexed to fill an E1 or T1 line, with full flexibility of time slot assignment.

The Loop-AM 3440 supports management through a VT100 console port as well as Ethernet, SLIP, Telnet, and SNMP, so that it can be controlled and diagnosed from remote locations as well as on site. Optional in-band management channel and LoopView with GUI are available. There are multiple status LEDs which can assist in on-site diagnoses.

The Loop- AM 3440 features extensive diagnostics menus to assist installers and operators in troubleshooting line problems should they occur. On both the E1/T1 network side and customer U interface side, the Loop- AM 3440 offers local loopback, payload loopback, and line loopback. The Loop- AM 3440 also provides remote loopback capabilities so that a single operator can diagnose both the E1/T1 line and the U-interface line. Loop-AM has a built-in BERT that generates test pattern and detects pattern errors.

1.2 Physical Description

Although it can be used as a desk-top unit, the Loop-AM 3440 is designed for rack mounting. Typically this unit is to be installed in a Central Office location and is available with a single or dual –48 Vdc power supply.

The front of the unit can accept 4 E1/T1 interfaces and multiple U/ V.35/ HDSL/ RS232 interface lines. In addition a SLIP port is provided for connection to TELNET, Ethernet, or Inband management. Also featured is a console port for connection to a VT-100 terminal.

The rear of the unit is blank except for DC fan connectors which will supply power to an external fan tray, if warranted.

1.3 Application

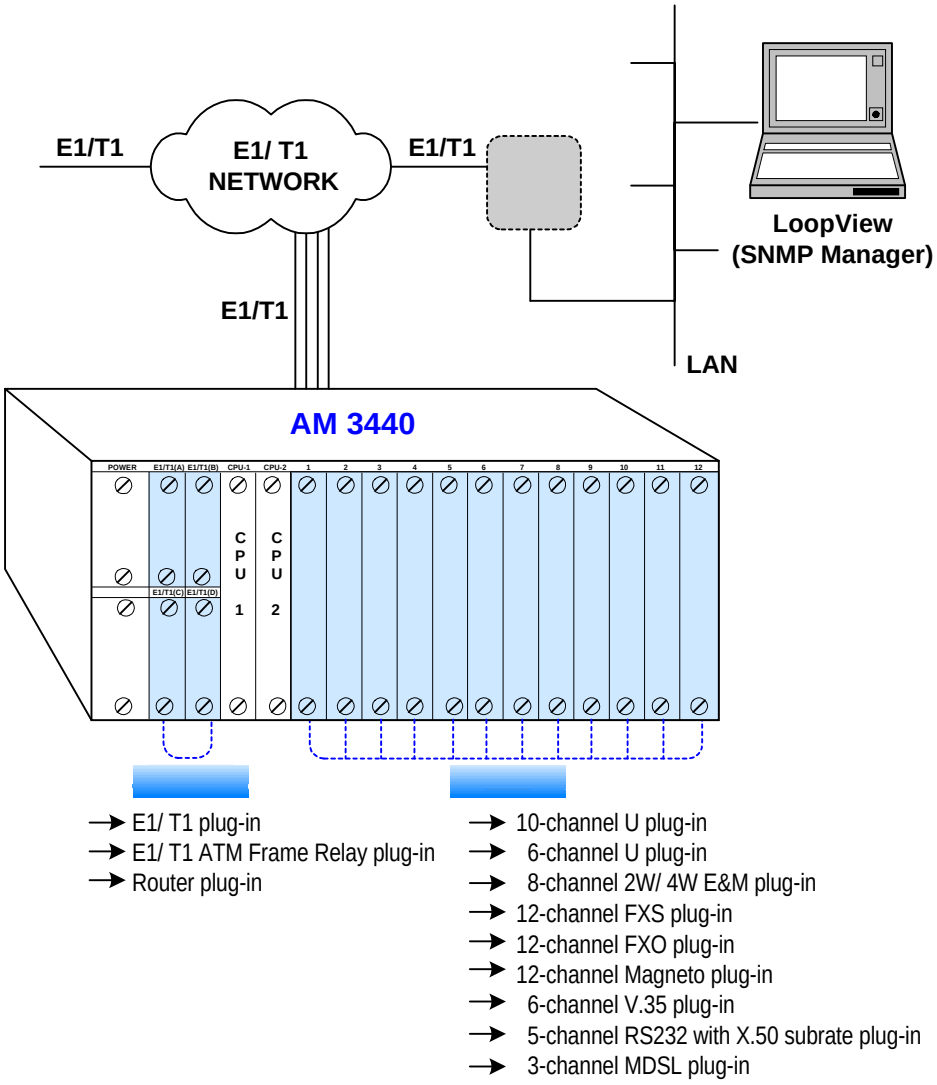


Figure 1- 1 Loop-AM 3440 Application Illustration 1 of 2

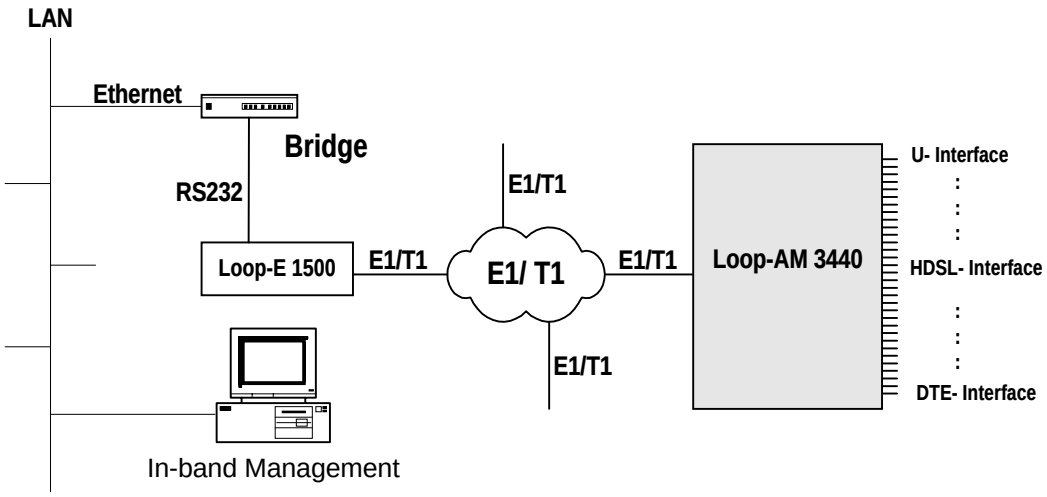


Figure 1- 2 Loop-AM 3440 Application Illustration 2 of 2

1.4 Specifications

MDSL Line Interface

Up to twelve 3-port MDSL cards.
Up to 2M max. data rate for each MDSL card.
Up to six cards with line power option, as the line power cards use two plug-in slots.
Full duplex with adaptive echo cancellation MDSL line coding.
Unconditioned 19-26 AWG twisted pair.
Line rate: 272, 400, 528, 784, 1168, 1552, 2064, 2320 for data rates n x 64 Kbps.

U Interface

Data Port	Up to twelve 10-port or 6-port DTU cards
Type	Full duplex with echo cancellation
Line Type	Unconditioned twisted pair 19-26 AWG
Line Rate	56, 64, 112 or 128 Kbps
Line Coding	2B1Q
Connector	RJ48C

DTE Interface (V.35)

Data Port	Up to six 6-port DTE V.35 cards
Data Rate	n x 64 Kbps (Max. bandwidth total 2M for each card)
Connector	DB25S (optional conversion cable DB25S to M34 connector)

DTE Interface (RS232-X.50 mux.)

Data Port	Up to six 5-port RS232 cards with X.50 plug-in, subrate, with subrate mux	
MUX	(a) 5 independent RS232, or (b) 5 subrate RS232 (X.50) muxed to 64K	
Data Rate	Mode (a) 5 independent RS232：	1.2K, 2.4K, 4.8K, 9.6K, 19.2K, 38.4K, 48K , 64K SYNC
		1.2K, 2.4K, 4.8K, 9.6K, 19.2K ASYNC
	Mode (b) 5 mux together：	1.2K, 2.4K, 4.8K, 9.6K SYNC
		1.2K, 2.4K, 4.8K, 9.6K ASYNC
	NOTE: Mode (a) and mode (b) cannot be muxed.	
Connector	DB25S	

Network Line Interface - T1

Line Rate	1.544 Mbps ± 50 bps	Output Signal	DSX1
Line Code	AMI or B8ZS	Framing	D4/ESF (selectable)
Input Signal	ABAM cable length up to 655 feet	Connector	RJ48C

Network Line Interface - E1

Line Rate	2.048 Mbps ± 50 ppm	Framing	ITU G.704
Line Code	AMI or HDB3	Connector	BNC/RJ48C
Input Signal	ITU G.703 to -10dB	Electrical	75 ohm Coax/120 ohm twisted pair
Output Signal	ITU G.703	Jitter	ITU G.823

Router Interface

Number of ports	2 LAN ports, Max. 31 WAN ports
Physical Interface	10 Base T x 1, 10/100 BaseT x 1
Connector	RJ45
Supporting routing protocol	RIP-I, RIP-II
Data Rates	Channelized N x 64 Kbps up to T1/E1 capacity
Supporting Protocols	TCP/IP, PPP, HDLC
Management	VT-100, SNMP

ATM Frame Relay Network Line Interface

- Supporting Network Interworking (FRF.5) and service interworking (FRF.8).
- Network Interface:
  - T1 Module: *T1 ATM UNI*
    FR (n x 64 Kbps, n=1 to 31)
  - E1 Module: *E1 ATM UNI*
    FR (n x 64 Kbps, n= 1 to 31)
- Up to 31 logical FR channels can be concentrated/ de-concentrated to FR or ATM.
- Service Ports:
  - T1/FT1 interface: *n x 64 Kbps, n=1 to 24*
  - E1/FE1 interface: *n x 64 Kbps, n= 1 to 31*
- Support HDLC to FR
- Support HDLC to ATM
- Supporting FR to FR multiplexing.
- Support up to 128 DLCIs for total of 31 FR interfaces.
- Support up to 128 VCs.
- Peak cell rate on DLCI basis.
- Manufacturing disable/enable ATM scrambling for internal testing (E1 ATM only).
- AAL0 and AAL5 are supported in the ATM adaptation layer.
- Support VBR service.
- ITU FR management protocols are supported.
- Flash memory software download through RS485.
- Only the PVC type of ATM/FR service is supported.

Voice Card (E&M)

Connector	RJ45 connector
Alarm Conditioning	CGA busy after 2.5 seconds of LOS, LOF
Encoding	A-law or μ-law, user selectable together for all
Impedance	Balanced 600 or 900 ohms
Longitudinal Rejection	55 dB
Loss Adjustment	-21 to +10 dB / 0.1dB step transmit & receive
Signal/Distortion	> 46dB with 1004 Hz, 0dBm input
Frequency Response	- 0.25 to -1 dB from 300 to 3400 Hz
Signaling	Type 1, Type 2, Type 3, Type 4, and Type 5, Transmit only, A side and B side for all types

- All in-band signaling tones are carried transparently by the digitizing process.
- Customer is responsible for in-band signaling compatibility between a telephone and a switch, or between a PBX and a switch.

E&M Signaling Bits

		E&M							
		M - Tx				E - Rx			
		A	B	C	D	A	B	C	D
Normal	IDLE - ON HOOK	0	0	0	1	0	0	*	*
	ACTIVE - OFF HOOK	1	1	0	1	1	1	*	*
A-Bit Invert	IDLE - ON HOOK	1	1	0	1	1	1	*	*
	ACTIVE - OFF HOOK	0	0	0	1	0	0	*	*

NOTE: * = Don't care.

Voice Card (FXS - Automatic Ringdown, FXO - Manual Ringdown)

Connector	RJ11
Alarm Conditioning	CGA busy after 2.5 seconds of LOS, LOF
Encoding	A-law or μ-law, user selectable together for all
Impedance	Balanced 600 or 900 ohms (selectable together for all)
Longitudinal Rejection	55 dB
Longitudinal Max	2.5 volts peak AC
Loss Adjustment	-21 to +10 dB / 0.1dB step transmit & receive
Signal/ Distortion	> 46dB with 1004 Hz, 0dBm input
Frequency Response	- 0.25 to -1 dB from 300 to 3400 Hz, coincide with ITU-T G.712
Idle Channel Noise	Max. –65 dBmop
Inter-Modulation	Coincide with ITU-T B.712
Loop Resistance	Min. 300 ohm, Max. 1800 ohm
2-Wire Return Loss	>28 dB echo, >20 dB signing
FXS Loop Feed	Nominal - 48Vdc with 10mA current limit
FXS Ringing	1 REN at 5K meters per port 16.5Hz, 20Hz, 25Hz, 50Hz, user selectable for all 78 Vrms (sine wave) 2 sec on 4 sec off, or 1 sec on 2 sec off optional for PLAR
Signaling	Loop Start, DTMF, pulse, PLAR, Battery Reverse
Optional Signaling *(for special order)*	Ground Start, Metering pulse (12KHz, 16KHz)
Signaling Bit A,B,C,D	Programable

- All in-band signaling tones are carried transparently by the digitizing process.
- Customer is responsible for in-band signaling compatibility between a telephone and a switch, or between a PBX and a switch.

Voice Card (Magneto)

Minimum Detectable Ringing Voltage	48 Vdc
Ringing Detactable Across	Tip and Ring, Tip and Ground, Ring and Ground
Ringing Generation	Voltage: 78RMS Frequency: 20Hz Cadence: 1 sec on 2 sec off, or 2 sec on 4 sec off
Ringing Send Across	Tip and Ring, Tip and Ground, Ring and Ground

Front Panel

LED	1 per U/MDSL/V.35-interface, ACO, Power, SYNC/TEST, LOF, BPV, RAI/AIS

Physical /Electrical

Dimensions	435 x 225.5 x 220 mm (W×H×D)
Power	Single/ Dual -48V DC, 100 Watts max.
Temperature	0-50°C
Humidity	0-95%RH (non-condensing)
Mounting	Desk-top stackable, 19” /23” rack mountable
Line Power Supply	(For MDSL card only) Available only with DC power. (For MDSL card only) 60 mA constant current source, selectable peak voltage of 190 Vdc
Sealing Current Supply	(For MDSL card only) 20 mA constant current source.

Clock Source

Internal, E1/T1 Line, External

Alarm Relay

Alarm Relay, Fuse alarm, and performance alarm

System Configuration Parameters

Active Configuration, Stored Configuration, and Default Configuration (Stored in Non-volatile Memory)

Supervisor

RS232, VT100 - front panel

SLIP - front panel

10 Base-T, Ethernet, SNMP - front panel

In-band 64 Kbps

Performance Monitor

Performance Registers	Last 24 hours performance in 15 minutes interval and last 7 days in 24 hours summary
Separate Registers	12 MDSL ports, network, user, and remote site
Performance Reports	Reports include MDSL port unsync Date & Time, Errored Second, Unavailable Second, E1 Bursty Errored Second, Severe Errored Second, Degraded Minutes, and Controlled Slip Second. Also available in Statistics (%).
Alarm Queue	Containing 40 alarm records which record the latest alarm type, location, and date & time
Threshold	Bursty Seconds, Severely Errored Second, Degraded Minutes

Diagnostics Test Line

Loopback	E1/T1 interface (Line Loopback, Payload Loopback, Local Loopback) MDSL interface (Payload Loopback, Local loopback) U interface (Local Loopback, Payload Loopback)
Test Pattern	E1/T1 interface (2^{15}-1 PRBS, 3-in-24, 1-in-8, 2-in-8, 1:1 patterns) U/MDSL/DTE interface (2^{11}-1 BERT)

2 Installation

CAUTION:

- **Never install telephone wiring during a lightning storm.**
- **Never install telephone jacks in wet locations unless the jack is specifically designed for wet locations.**
- **Never touch uninsulated telephone wires or terminals unless the telephone line has been disconnected at the network interface.**
- **Use caution when installing or modifying telephone lines.**

2.1 Site Selection

The following list indicates a site selection guideline. User need to follow this guideline to select a proper installation site.

- Location of the Rack should be part of the central office equipment layout design. Considerations should be given to entrance cable routing and -48 Vdc power.
- The installation site should have -48 Vdc power. An optional AC/DC power converter can be used. Use Only with Class 2 power source, -48 Vdc, 100 watts.

2.2 Mechanical Installation

Loop-AM can be installed as a desk top unit or mounted on a 19 inch or a 23 inch rack. Mounting of the unit in a rack follows standard telephone rack mount practices. Accessories to install on a 19 inch or 23 inch rack is provided. As a desk-top unit Loop-AM is stackable.

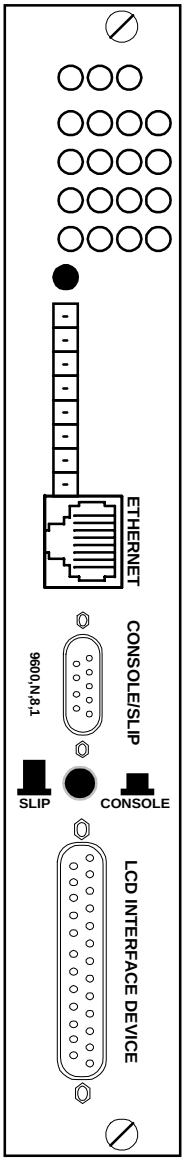


Figure 2- 2 CPU Front Panel

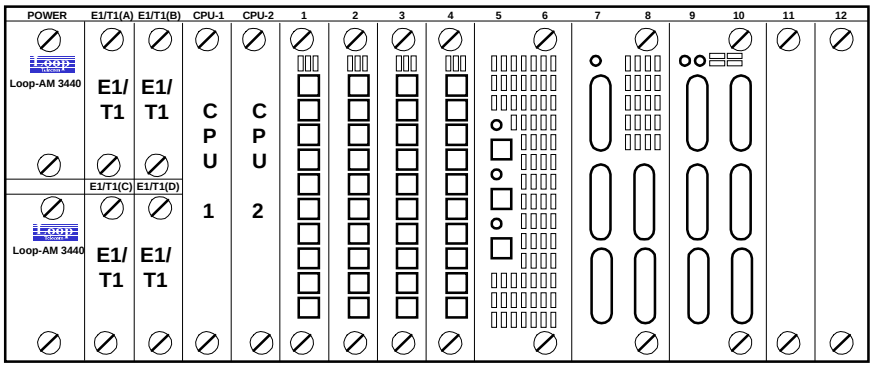


Figure 2- 1 Loop-AM 3440 Front Panel

2.3 Electrical Installation

Central office -48 Vdc power is wired to terminal blocks in the front of the Loop-AM, shown in Figure 2-1. Central office alarm system is wired to the Alarm Relay terminal blocks. For connection to the CONSOLE/SLIP (button down/ button up) connector for maintenance and administration, a CONSOLE/SLIP port with DB9 connector is located on the front panel, see also Figure 2-2. The RJ45 connector is for an Ethernet connection. For direct modem or VT-100 terminal connection, use a null modem cable to connect the CONSOLE/SLIP port on the front panel.

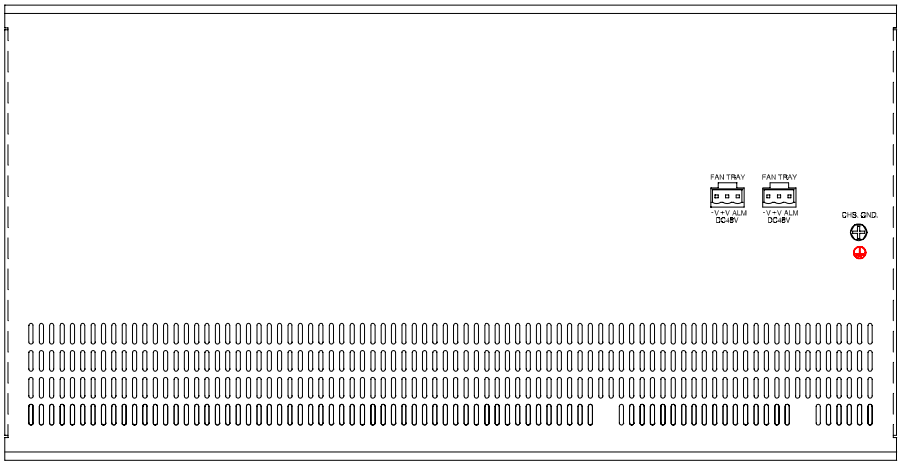
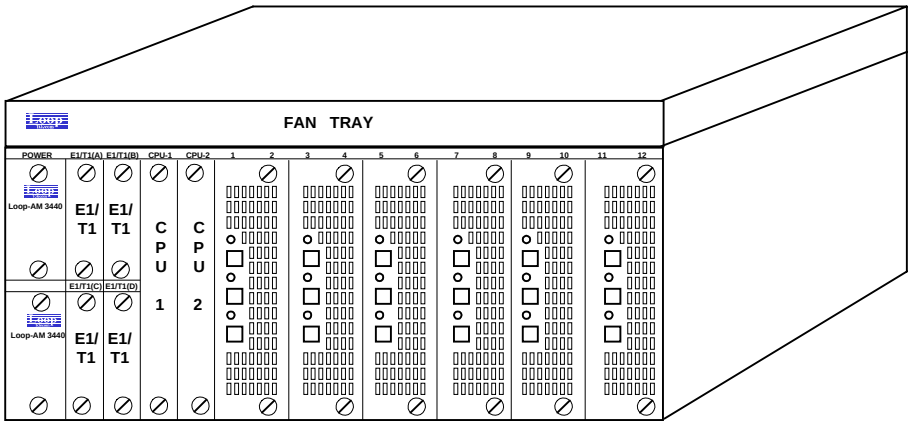


Figure 2- 3 Loop-AM 3440 Rear Panel

2.3.1 Fan Tray Setting



Important Note: Install a fan tray on the top of a Loop-AM 3440 to reduce the temperature when the following modules are pluggined into the Loop-AM 3440 at the same time:
1. Six or more MDSL cards with line power cards;
2. Six or more MDSL cards with sealing current cards.

Figure 2- 4 Front Panel View of Fan Tray

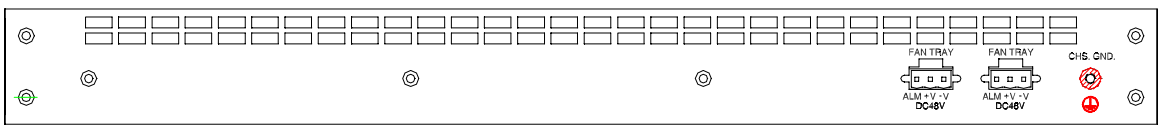


Figure 2- 5 Rear Panel View of Fan Tray

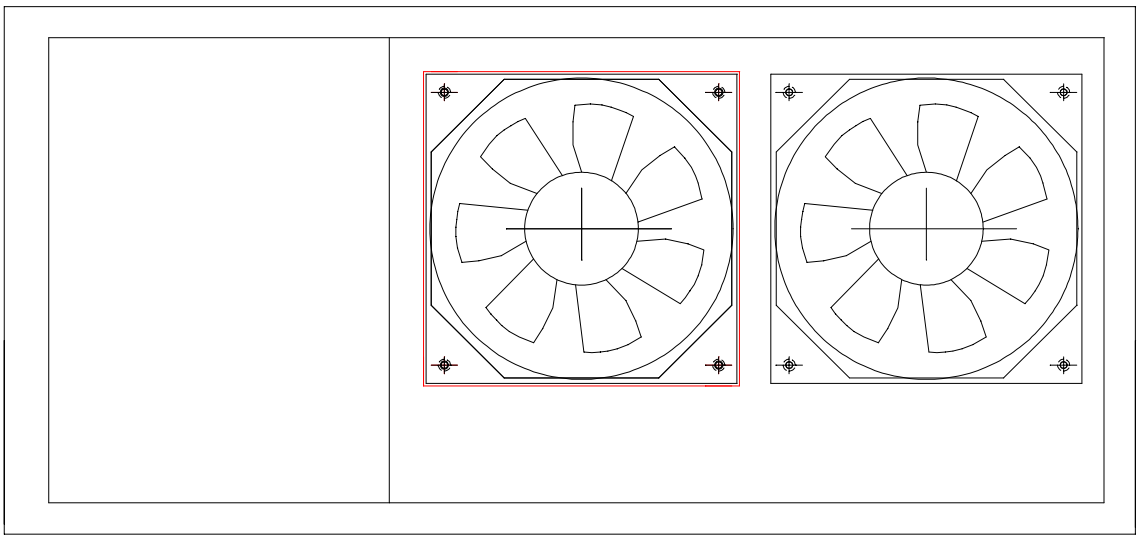


Figure 2- 6 Top View of Fan Tray

Table 2- 1 Power Connector for Fan Tray

Pin Number	Signal	Description
1	ALM	Alarm
2	+ V	+DC Return
3	- V	-DC 48 Volts

Table 2- 2 Power Connector for Main Unit

Pin Number	Signal	Description
1	-V	-DC 48 Volts
2	+V	+DC Return
3	⏚	Chassis Ground

Table 2- 3 Alarm Relay Connector

Pin Number	Signal	Description
1	NC	Fuse Relay - Normally Close
2	C	Fuse Relay - Common
3	NO	Fuse Relay - Normally Open
4	NC	Alarm Relay –Normally Close
5	C	Alarm Relay –Common
6	NO	Alarm Relay –Normally Open

The console port is configured as a DCE device with a DB-9 female connector. Pin definitions and pin connections are listed in Table 2-4 below.

Table 2- 4 Console Port

Pin Number	Signal	Source
1	Data Carrier Detect	To DTE
2	Receive Data	To DTE
3	Transmit Data	From DTE
4	Unassigned	
5	Signal Ground	
6	Data Set Ready	To DTE
7	Unassigned	
8	Clear to send	To DTE
9	Unassigned	

SLIP port can be connected via RS232 interface. Pin definition is listed in Table 2-5.

Table 2- 5 SLIP Port (9 Pin)

Pin Number	Signal	Source
1	Data Carrier Detect	From DCE
2	Receive Data	From DCE
3	Transmit Data	To DTE
4	Data Terminal Ready	To DTE
5	Signal Ground	

Ethernet port can be connected via Ethernet 10-Base-T interface. Pin definition is listed in Table 2-6.

Table 2- 6 Ethernet Port

Pin Number	Signal	Description
1	TPTX+	TP Driver Output
2	TPTX-	
3	TPRX+	TP Receive Input
6	TPRX-	

Table 2- 7 E1 BNC/ RJ 45

Pin Number	Signal
1	R TIP
2	R RING
4	T TIP
5	T RING
7	Chassis Ground/ Unassigned
8	Chassis Ground/ Unassigned

Normally the choice for the E1 connector, balanced 120 ohm or unbalanced BNC 75 ohm, is installed at the factory according to the customer order. Users can change this choice by opening the case and changing the jumper pins as indicated in the Table 2-8.

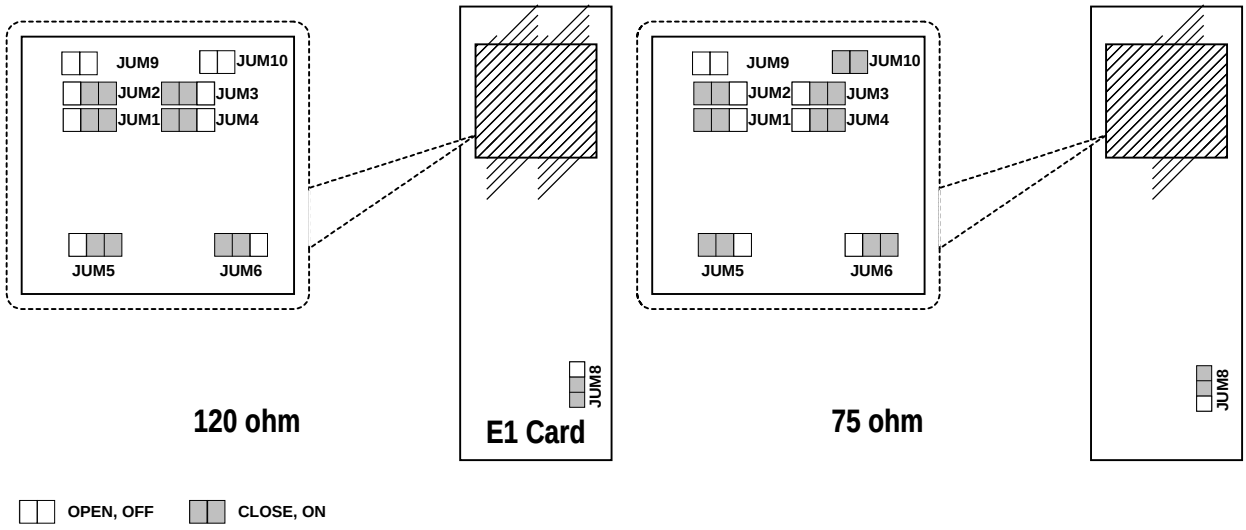


Figure 2- 7 Jumper Locations for E1 Card

NOTE: For 75 ohm E1 card, jumper 9 can be OPEN or ON. If the jumper 9 is OPEN, BNC connector is set to Unassigned. If the jumper 9 is ON, BNC connector is set to Chassis Ground.

NOTE: For 120 ohm E1 card, jumper 9 can be OPEN or ON. If the jumper 9 is OPEN, port 7 and port 8 of BNC connector is set to Unassigned. If the jumper 9 is ON, port 7 and port 8 of BNC connector is set to Chassis Ground.

NOTE: BNC is open if jumper 10 is opened, BNC is grounded if jumper 10 is closed.

Below is a diagram of the rear panel of the interface card. The left hand jack is the 10-Base-T port, and the right jack is the 10/100-Base-T port.

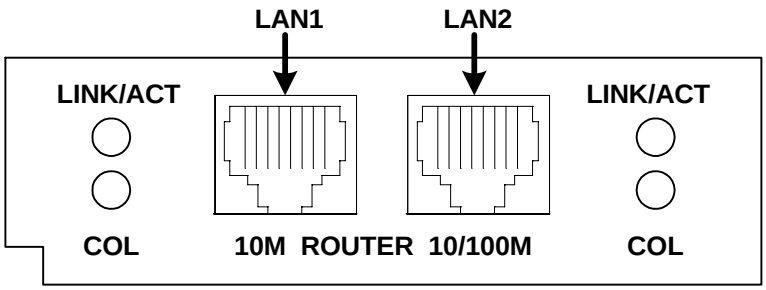


Figure 2- 8 Rear Panel of Router interface

The two RJ45 jacks are wired as follows:

Table 2- 8 RJ-45 for 10M and 10/100M Pin Assignment

Pin Number	Signal	Signal Direction
1	Transmit Data +	Output from AM3440
2	Transmit Data -	Output from AM3440
3	Receive Data +	Input to AM3440
4	No Connection	
5	No Connection	
6	Receive Data -	Input to AM3440
7	No Connection	
8	No Connection	

For each of the U-interface ports, U-PORTs, connection to the line is by RJ48C connector. The pin definition is listed in Table 2-9.

Table 2- 9 U- PORT U-Interface RJ48C Terminals

Pin Number	Signal
4	TIP
5	RING

Table 2- 10 Line HDSL Connector

Pin Number	Signal	Signal Description
1	Unassigned	
2	Unassigned	
3	Unassigned	
4	Loop 1 Tip	Tip
5	Loop1 Ring	Ring
6	Unassigned	
7	Chassis Ground/ Unassigned	
8	Chassis Ground/ Unassigned	

Table 2- 11 RJ45 Pin Assignment for E&M interface

Pin Number	Signal	Signal Description
8	SG	
7	E	
6	TIP1	
5	TIP	
4	RING	
3	RING1	
2	M	
1	SB	

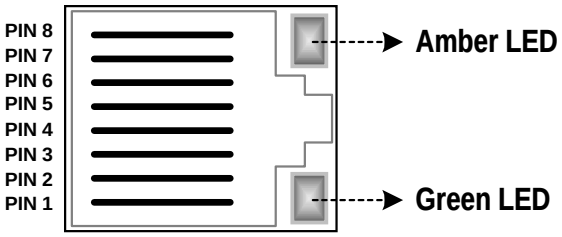


Figure 2- 9 RJ45 Connector for E&M interface

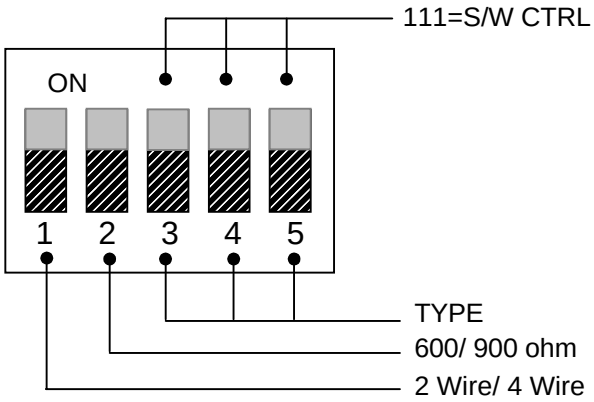
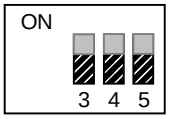
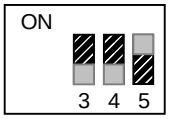


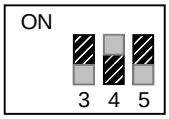
Figure 2- 10 DIP Switch Control for E&M interface



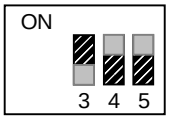
E&M Type Setup by Software Control (not for SIDE A and SIDE B)
[DEFAULT]



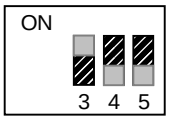
Setup by Hardware Control
E&M TYPE 1



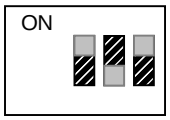
Setup by Hardware Control
E&M TYPE 2



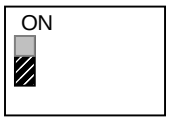
Setup by Hardware Control
E&M TYPE 3



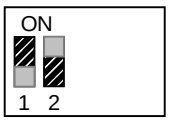
Setup by Hardware Control
E&M TYPE 4



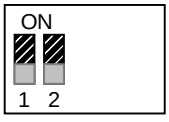
Setup by Hardware Control
E&M TYPE 5



Setup by Hardware Control
4 WIRE 600 ohm



Setup by Hardware Control
2 WIRE 600 ohm



Setup by Hardware Control
2 WIRE 900 ohm

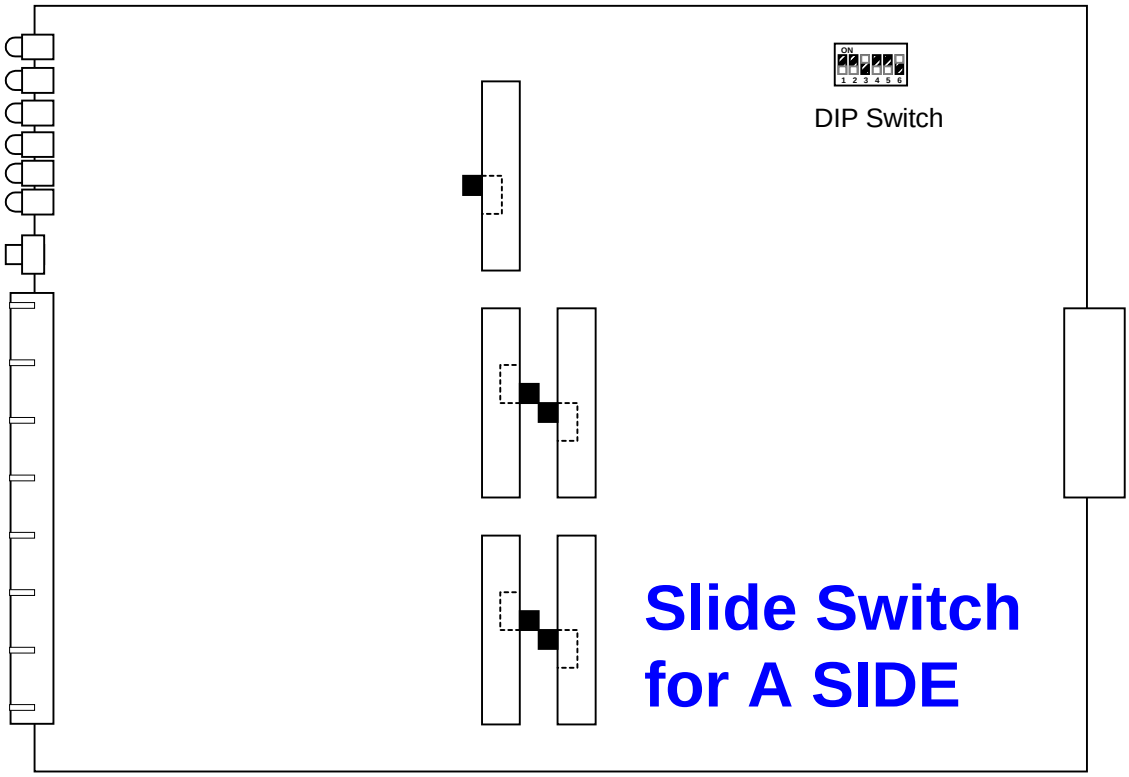


Figure 2- 11 Slide Switch for A Side of E&M interface

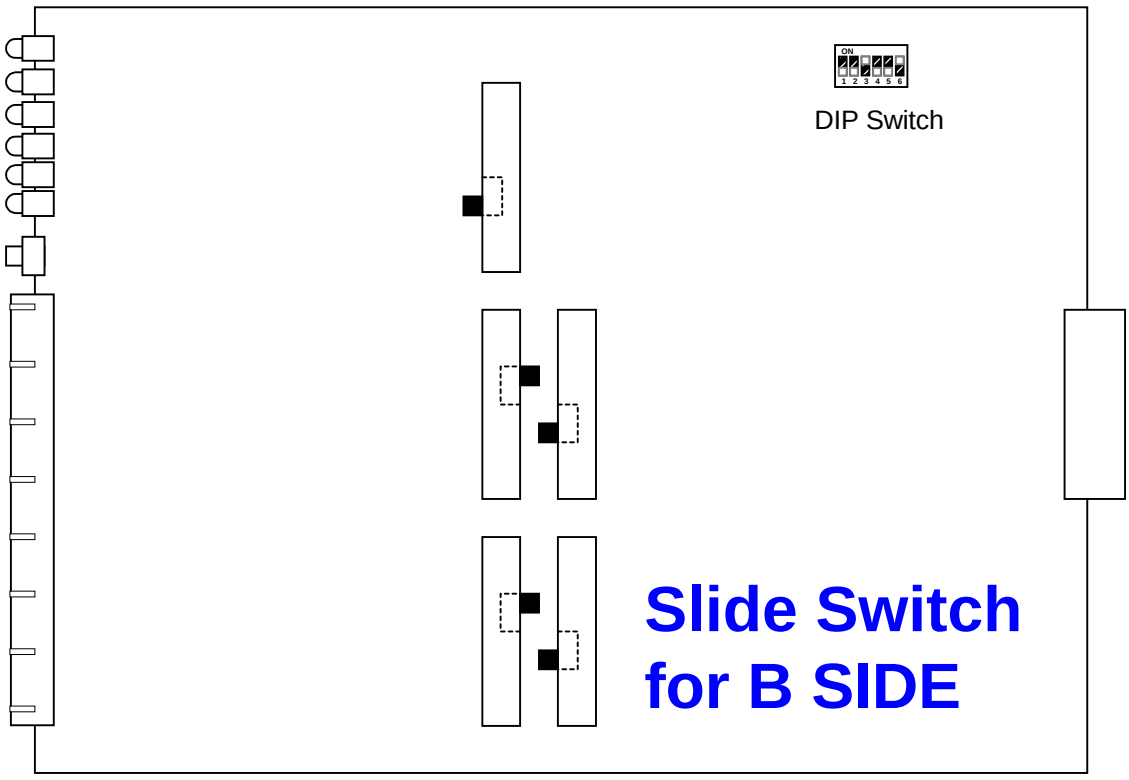


Figure 2- 12 Slide Switch for B Side of E&M interface

Table 2- 12 E&M Voice Signaling Bits

Signaling / Bit	A SIDE				B SIDE			
	E lead		M lead		M lead		E lead	
	Open	Ground	Open	Close	Open	Ground	Open	Close
A	0	1	0	1	0	1	0	1
B	0	1	*	1	0	1	*	1
C	0	0	*	*	0	0	*	*
D	1	1	*	*	1	1	*	*

Table 2- 13 E&M Voice Channel Direction

Mode / Pin	2 Wire	4 Wire	
	A, B Side	A Side	B Side
Tip, Ring	Transmit, Receive	Transmit	Receive
Tip1, Ring1	—	Receive	Transmit

Table 2- 14 E&M Signaling Channel Direction

Signaling Direction		A Side		B Side	
A to B	**B to A**	**E lead**	**M lead**	**M lead**	**E lead**
ON HOOK	ON HOOK	OPEN	OPEN	OPEN	OPEN
ON HOOK	OFF HOOK	GROUND	OPEN	OPEN	CLOSE
OFF HOOK	ON HOOK	OPEN	CLOSE	GROUND	OPEN
OFF HOOK	OFF HOOK	GROUND	CLOSE	GROUND	CLOSE

Table 2- 15 RJ11 Connector for Magneto Interface

Pin Number	Line Color	Description
1	White	Unassigned
2	Black	Unassigned
3	Red	L2 Line
4	Green	L1 Line
5	Yellow	GND Line
6	Blue	Unassigned

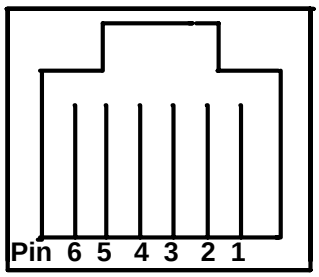


Figure 2- 13 RJ11 Connector for Magneto Interface

2.4 Configuration Setting

2.4.1 Software Configuration Setting

There are three system configurations:

- Factory default
- Current working
- User stored

Factory default configurations are not changeable. Each Loop-AM is shipped with all three configurations set to the factory default configuration.

The current working configuration, which can be saved into nonvolatile memory as a user-stored configuration, can be changed at any time. When the system is reset, the previous configuration will be retrieved as the current working configuration. The user-stored configuration can be retrieved at any time. User can retrieve the user-stored configuration to overwrite the current working configuration. Please refer to the section 6.1.8 Store/ Retrieve Configuration for the detail operation.

2.4.2 Replacement of Plug-in Card

When a plug-in card is removed and replaced with a card of a different type, default configuration is assigned to the new card. The user must set the configuration for each change of card type. If the same type card is inserted, depending on card type, then the following happens:

- For E1, T1, and DTE plug-in cards, the previous configuration is automatically downloaded.
- For Router plug-in card, the factory default configuration is assigned to the new card.
- For E1/ T1 ATM Frame Relay plug-in card, (a) The port configuration for E1 or T1 is automatically downloaded, (b) The Frame Relay management setup is factory default configuration.

Table 2- 16 V.35/DB25 DTE Port Pin Definition

Pin Number	Signal	Source
1	Cable Shield	
2	Transmit Data	DTE
3	Receive Data	DCE
4	Request To Send	DTE
5	Clear To Send	DCE
6	Data Set Ready	DCE
7	Signal Ground	
8	Data Carrier Detect	DCE
9	Receive Clock Return	DCE
10	Unassigned	
11	External Clock Return	DTE
12	Transmit Clock Return	DCE
13	Unassigned	
14	Transmit Data Return	DTE
15	Transmit Clock	DCE
16	Receive Data Return	DCE
17	Receive Clock	DCE
18	Local Loopback	DTE
19	Unassigned	
20	Data Terminal Ready	DTE
21	Remote Loopback	DTE
22	Unassigned	
23	Unassigned	
24	External Clock	DTE
25	Test Mode	DCE

Table 2- 17 Default Software Configuration

Console Port	Fixed
Baud Rate	9600
Data Bit	8
Stop Bit	1
Parity Bit	NONE
XON-XOFF	OFF
Interface	TERMINAL
SNMP	OFF

E1 Line Item	Default
Line Frame	FAS
Line Code	HDB3
Interface	Card setting
Line FDL	OFF
FDL Sa-bit	Sa4
Line AIS	OFF
Line RAI	ON
Line CRC	ON
Idle Code	0Xd5

T1 Line Item	Default
Line Frame	ESF
Line Code	B8ZS
Interface	Long Haul
Line LBO	0dB
Line EQU	0-133 ft
Line AIS	OFF
Line YEL	ON
Line Inband	OFF
Idle Code	0xFF

HDSL Items	Default
XDSL MODE	Master
CLOCK SOURCE	Internal
LINE RATE	768k bps
LINE CODE	2B1Q

DTE (V.35) Item	Default
RATE	64K
CLOCK	Normal
DATA	Normal
RTS	Activate
TTM	Off
V.54	Off
INTERFACE	V.35

DTE (X.50) Item	Default
X50 MUX	NO_MUX
SYNC MODE	SYNC
RATE	1.2K
PHASE	Fixed
4.8K SEL	Fixed
CLOCK	Normal
DATA	Normal
RTS	Permanent
TTM	Off
INTERFACE	RS-232
WARNING	No

U-PORT Line Item (All ports)	Default
Channel	B1
Speed	64 Kbps

ATM FR T1 Line Items	Default
Frame Format Mode	ESF
Line Code Mode	B8ZS
Line Build Out	0 dB
Yellow Alarm	ON
Alarm Indication Signal	FRAMED
Interface	LONG HAUL

ATM FR E1 Line Items	Default
Frame Format Mode	ON
Line Code Mode	HDB3
CRC	ON
RAI	ON
Alarm Indication Signal	FRAMED
CAS	OFF
FDL	OFF
Sa_bit	Sa4
Interface	120 Ohm (Hardware)

E&M Item	Default
A SIDE/ B SIDE	A SIDE
LINE	4-WIRE
IMPEDANCE	600 ohm
SIGNALING	TYPE5
A/ μ-LAW	A LAW
Tx GAIN	-3.0 dB
Rx GAIN	-3.0 dB

FXO Item		Default			
A-Law / μ-Law		A-Law			
Impedance		600 ohm			
Tx Gain		-3.0 dB			
Rx Gain		-3.0 dB			
Tx Signaling Bit		A	B	C	D
	RINGING:	0	0	0	1
	NO RING:	0	1	0	1
	BATT-REV:	0	1	0	0
	PULSE ON:	0	1	0	0
	TIP-OPEN:	1	1	1	1
Rx Signaling Bit		A	B	C	D
	OFF-HOOK:	1	1	*	*
	OOS ON:	*	*	*	*
	RING-GND:	0	0	0	1
		* : Don't care.			
Trunk Condition		ON-HOOK			
Line Polarity		NORMAL			
Metering Pulse Frequency		16 KHz			
Pulse Detect Mode		NORMAL			
Minimum Pulse Decode Level (L1 – L12)		-27 dBm			

FXS Item		Default			
A-Law / μ-Law		A-Law			
Impedance		600 ohm			
Tx Gain		-3.0 dB			
Rx Gain		-3.0 dB			
Tx Signaling Bit		A	B	C	D
	ON HOOK:	0	1	0	1
	OFF-HOOK:	1	1	0	1
	RING-GND:	Not Available			
	PLAR OFF-HOOK:	1	1	1	1
Rx Signaling Bit		A	B	C	D
	RING ON:	0	0	*	*
	BATT-REV & PLS ON:	0	1	0	0
	OOS-ALARM:	*	*	*	*
	TIP-OPEN	Not Available			
	PLAR RING ON:	1	1	1	1
		* : Don't care.			
PLAR Ring cadence		2"ON, 4"OFF			
Ring Frequency		20 Hz			
Metering Pulse		OFF			
Metering Frequency		16 KHz			
Metering Level		0 dBm			
PLAR (L1 – L12)		OFF			

Magneto Item		Default			
A-Law / μ-Law		A-Law			
Impedance		900 ohm			
Tx Gain		-3.0 dB			
Rx Gain		-3.0 dB			
Tx Signaling Bit		A	B	C	D
	TX-RING (L1 & L2):	1	1	1	0
	TX-RING (L1 & GND):	1	1	0	0
	PLAR TX-RING (L1 & L2):	1	1	1	1
	PLAR TX-RING (L1 & GND):	1	1	0	1
	NO TX-RING:	0	1	0	1
Rx Signaling Bit		A	B	C	D
	TX-RING (L1 & L2):	1	1	1	0
	TX-RING (L1 & GND):	1	1	0	0
	PLAR TX-RING (L1 & L2):	1	1	1	1
	PLAR TX-RING (L1 & GND):	1	1	0	1
	NO TX-RING:	0	0	0	0
NOTE: 0000 for no available.					
PLAR Ring cadence		1"ON, 2"OFF			
PLAR (L1 – L12)		OFF			

Router Setup	Default
Net_Address	000.000.000.000
Netmask	000.000.000.000
Gateway_Address	000.000.000.000
NI_Address	000.000.000.000
Metric	01

Miscellaneous	Default
Password	LOOP
Device Name	LOOP-AM-3440

3 Operation

Using a VT100 terminal, the Loop-AM provides a comprehensive user interface. The Loop-AM uses out-of-band link within the U-interface to communicate to the matching remote Loop-AM unit so that an operator from one side can obtain information on both sides of the U-interface line. The configuration changes on one side can be viewed from the other side.

Note: With the Loop-AM 3440 at one end, the Loop-AM 3440 must be, by default, configured as LT. The remote Loop-AM unit, when connected to the Loop-AM 3440 must be configured as NT.

Loop-AM also uses out-of-band link within the E1 interface to communicate to the matching Loop-AM at the far end of the E1 network so that an operator from one side can obtain information on both sides of the E1 network. The configuration changes on one side can be viewed from the other side. The E1 channel assignment changes can be sent to the remote unit when the link between two units is up. Through use of FDL data link, the remote unit updates its configuration accordingly upon receipt of the new configuration.

3.1 Quick Start for Loop-AM

After installation, the user may want to familiarize himself with the equipment immediately. The following abbreviated instructions will give the user a quick start.

3.1.1 Power On

Turn power on by attaching a power cable to the front of the unit.

3.1.2 Return to Default Setting

The unit is shipped with factory default setting.

3.1.3 Using Front Panel

There is no front panel on the Loop-AM3440. A hand-held LCD device, which will take the place of a front panel, is currently under development. This device will allow configuration of and access to the various features without the need of a VT100 terminal.

Please stay in contact with your Loop vendor for availability of this device.

3.1.3.1 Review of Default Settings

All the default settings can be reviewed or changed. This is done by selecting the menu item. Either a sub-menu is shown or the selected setting is indicated with an asterisk.

3.1.3.2 Map Setup

Connect a VT100 terminal to the Console port. Press <o> to logon, then press <s> for system setup. Move the cursor to MAP and press <Enter>.

To change the settings, use arrow keys to select time slot. Press <Tab> to change the port values and enter numbers for the time slot. Press <Esc> to exit the TSI map.

3.1.3.3 DS1

Next, adjust the DS1 settings.

3.1.3.4 Unit Selection

To review or change U-port or HDSL settings, press <u> from the main menu.

3.1.4 Using Terminal

To use the RS232 interface to configure the unit, connect a VT-100 terminal to the CONSOLE/SLIP (button down/ button up) connector using a null modem cable. The VT-100 terminal can be a PC running a VT-100 emulator software. The unit is configured as a DTE. Thus a null modem is needed for direct connection to a VT-100.

Upon connection, press ENTER and ESC alternately to bring the main menu into view.

Press O (Log On) to see the full menu.

Press S (System Setup) to review or change the configuration.

3.1.5 Unit Status

The first screen on the terminal has a line on U-PORT/ HDSL-PORT Status. For each of the plug-in slots, an I means that the unit is in place. S means SYNC.

3.1.6 Review of Default Settings

The entire configuration is shown when S is pressed. To change any setting, use the arrow keys to move to the target setting. Then press the TAB key repeatedly to cycle to the desired setting for any selected parameter.

3.2 System Operation

3.2.1 Date

Loop-AM is equipped with a RTC (Real Time Clock). User can change the current date and time as necessary. To save RTC battery life, the RTC is activated by the manufacturer just before shipping. The RTC battery has a 10 years power-off life cycle.

3.2.2 Master Clock

This product has a system clock PLL (Phase Lock Loop) which may be phase locked to the DS1 line clock or internal clock. The default master is the DS1 line clock.

> NOTE: If no DS1 line clock is available, Loop-AM will automatically switch to the internal clock source. Loop-AM will automatically switch back to the DS1 line clock when card plug-in.

3.2.3 Console Port

The console port allows the user either to use a local VT-100 terminal via null-modem connection or use a remote VT-100 terminal via modem for system configuration, diagnostics, polling status reports, etc. The console port baud, data bit length, stop bit length, parity bit length, XON-XOFF flow control, and interface type are as shown below.

Table 3- 1 Console Port Setting

Item	Fixed Setting
Baud	9600
Data Bit	8
Stop Bit	1
Parity Bit	NONE
XON-XOFF	OFF
Interface	TERMINAL

3.2.4 Menu Lock

The terminal is used to read alarms, system configurations, and system status. It also can be used to change system configurations and clear the alarm queue, etc. By enabling the menu-lock, only read operations are allowed. Modifications to the current status are not allowed. Users may not change system configurations or clear performance data.

- Password and menu-clock options are disabled by default
- The default password is LOOP

3.2.5 Logon, Logoff, and Password

Logoff prevents system configuration changes at the terminal, while logon allows system configuration changes. The password feature is used to augment lock control against unauthorized terminal users from changing system parameters from the terminal. With password enabled, logon requires entering the correct password. If password is disabled, no password is required to logon.

- The default option of the password is disabled.
- The default password is LOOP.

If password is enabled, users must enter the password when logging in to gain the privilege to change system configurations by the terminal. To change the password for the first time, enter the default password when prompted for the old password.

3.3 DS0 Channel Map

DS0 channel multiplexing is done by the MAP command. A map contains 31 DS0 channels (E1) or 24 DS0 channel (T1) where a single DS0 channel can be assigned to the B1 or B2 channel of any U-PORT or n x 64 Kbps HDSL port. If in-band management is need, select 1 DS0 channel map to SNMP. An idle code is transmitted on all unused channels.

NOTE: For E1 network interface with HDB3 coding or T1 network interface with B8ZS coding all remote DTE ports with 56 Kbps, all channels are available for any DS0 assignment, data or voice.
However, for either network interface with AMI coding, user should assign only alternate odd or even DS0 channels for 64 Kbps data. This is to guarantee one's density requirement.

3.4 DS1 Network Line Configuration

A detailed option list of E1 line configuration is in Table 3-2. The following paragraphs will describe each item.

3.4.1 Frame Format

For the E1 line interface, the frame format is ITU G.704. Either 2-frame, or 16-frame structure can be selected. Only the 16-frame provides CRC and optional CAS. For the T1 line interface, either D4 or ESF frame format is

available. In ESF frame format mode, user can choose either AT&T or ANSI facility data link protocol. ESF & T1.403 chooses ANSI ESF data link protocol and one second performance report will be sent to the network every second automatically. Also, ANSI and AT&T data link message is acceptable in ANSI ESF frame format mode. However, AT&T ESF frame format mode only accept AT&T ESF data link protocol.

3.4.2 Line Code

For the T1 line interface, either AMI (Alternate Mark Inverting) or B8ZS (bipolar with 8 zero substitution) line code format can be chosen. For theE1 line interface, either AMI (Alternate Mark Inverting) or HDB3 (high density bipolar of length 3) line code format can be chosen. Be sure the line code chosen matches that used on the network.

3.4.3 Interface

The T1 interface can be long haul or short haul. Long haul has higher powered output to drive long lines, while short haul is more appropriate for intraoffice connections. E1 interface will only display 120 Ohm twisted pair or 75 Ohm coaxial cable, which is a jumper choice.

3.4.4 Facility Data Link

Whereas for T1, the FDL (facility data link) is part of the ESF structure, for E1, this is not part of the standard. Loop-AM 3440 uses a proprietary FDL within the E1 frame structure to facilitate remote control and remote performance and statistics monitoring. This FDL, for E1 only, can be turned ON or OFF. For E1, user can set Sa-bit (Sa4-Sa8) to select FDL channel.

3.4.5 Equalization (Line Build-Out)

For the T1 line long haul interface, the transmit LBO (line build-out) can be programmed to either 0 dB, -7.5 dB, or -15 dB.

For the T1 line short haul interface, the equalization can be set to equivalent cable distances up to 655 feet.

3.4.6 Equalization

Whether long haul or short haul, for T1, further refinements of the output signal can be made using the EQU controls. For long haul, the choices are in dB of inserted loss. For short haul, the choices are in equivalent distances of inserted loss.

3.4.7 AIS

AIS, alarm indication signal, notifies the far end that an alarm condition or a loopback and diagnostic test are in progress. Thus customer signals are blocked. The AIS can be sent two ways. In the framed mode, all time slots will have all ones sent but the framing pattern will be preserved. In the unframed mode, all ones are sent for all time slots.

3.4.8 RAI (Remote Alarm Indication)

Loop-AM transmits RAI (Remote Alarm Indication) when it detects LOS (Loss of Signal), AIS (Alarm Indication Signal), or OOF (Out of Frame) for 2.5 $\pm$ 0.5 seconds. User can disable this feature by disable RAI (Remote Alarm Indication) command.

3.4.9 CRC (Cycle Redundancy Check) Format

Loop-AM can be used in two frame or multiframe mode. For two frame mode, set CRC to OFF. For multiframe mode, set CRC to ON. A proprietary facility data link is implemented in both modes to facilitate remote system control and performance and statistics monitoring.

3.4.10 In-Band Signaling

In all cases, Loop-AM utilizes a proprietary facility data link, FDL for E1, or in-band signaling for T1, to achieve remote system control and performance and statistics monitoring.

3.4.11 Idle Code

Any DS0 channel which is not assigned to any U-PORT is an idle channel. An idle code is transmitted on idle DS0 channel. User may program the idle channel to any bit pattern from 0x00 to 0xFF.

Note: Due to one's density requirement, it is advised that idle code to be set as 0xD5. Or, user must program idle code to contain at least two bits of '1'. The factory default idle code is 0xD5.

Table 3- 2 E1 Line Default Setting

Item	Options	Default
Line Frame	FAS	FAS
Line Code	HDB3, AMI	HDB3
Interface	75 Ohm Coaxial Cable, 120 Ohm Twisted Pair	Jumper setting
Line FDL	OFF, ON	OFF
FDL Sa-bit	Sa4, Sa5, Sa6, Sa7, Sa8	Sa4
Line AIS	OFF, ON	OFF
Line RAI	OFF, ON	ON
Line CRC	OFF, ON	ON
Idle Code	0x00 - 0xFF	0xD5

Table 3- 3 T1 Line Default Setting

Item	Options	Default
Line Frame	D4, ESF, ESF$T1.403	ESF
Line Code	B8ZS, AMI	B8ZS
Interface	Long Haul, Short Haul	Long Haul
Line LBO	0dB, -7.5dB, -15dB	0dB
FDL EQU	0-133ft, 133-266ft, 266-399ft, 399-533ft, 533-655ft	0-133ft
Line AIS	OFF, ON	OFF
Line YEL	OFF, ON	ON
Line Inband	OFF, ON	OFF
Idle Code	0x00 - 0xFF	0xFF

3.5 Remote DTE Configuration

Although for the Loop-AM 3440, the channel assignment of each U-PORT or H-PORT is independent of the configuration of the remote Loop-AM unit, for compatibility with other Loop-AM products, which allows remote DTE configuration, such commands are also available for the Loop-AM 3440. The two configurations suitable for remote control are Channel and Speed. Another two settings for Loop-AM operation, mode and link, are also important, but must be locally set. The following paragraphs describe each, which is also summarized in Table 3-4.

3.5.1 Channel

When a DTE port is configured to run at 64 Kbps or above, the channel to associate with the DTE port can be either B1 or B2. Else it must be B1+B2. IDLE means no channel is assigned, which applies only if the speed is 0, or idle

3.5.2 Mode

When two Loop-AM are interconnected through the U-interface, one Loop-AM must be mode NT, and the other LT. The Loop-AM 3440 must be the LT. Therefore this parameter is fixed for the Loop-AM 3440. The remote unit, NT, updates its configuration accordingly upon receipt of the new configuration. Whenever the link between two units is established, the LT transmits its DTE configuration to NT. The NT changes its DTE configuration accordingly.

3.5.3 Remote Link

The channel used to transmit the configuration information can be only the M channel. Both LT and NT units must use the same channel.

3.5.4 TTM

In a normal operating mode, the CSU/DSU uses the transmit clock (from CSU/DSU) to sample the transmit data sent from the DTE. In the Terminal Timing Mode (TTM) the CSU/DSU uses the external clock from the DTE to sample the transmit data. This avoids data reception problems due to phase delay caused by long cables. If the DTE cable is too long, the transmit data, after traversing the cable, may not be in-phase with the transmit clock. By using this feature the transmit data will be in phase with the sampling clock, which in this case will be the external clock from the DTE.

Note that the "external clock" from the DTE can also be used as the CSU/DSU system clock. This choice is independent of the TTM option. See the section on Master Clock for the details.

Table 3- 4 DTE Port Default Setting

Item	Options	DTE Default
Channel	IDLE, B1, B2, B1+B2	B1
Speed	0, 1.2, 2.4, 4.8, 9.6, 19.2, 38.4, 56, 64, 112, 128 Kbps	64K
Mode	LT (NT not allowed)	LT
Link	M-channel	M-channel

3.6 Alarms and Reports

3.6.1 Alarms

Loop-AM has many types of alarm . This includes system alarm, as listed in Table 3-5, alarms from the E1 network port, as listed in Table 3-6, and each of the U-PORTs, as listed in Table 3-8. HDSL alarm is listed in Table 3-9. Also, Loop-AM has alarm queue which record the latest 40 alarms with time stamp. Loop-AM also has alarm history and alarm status registers which is used to track the alarm count. Each alarm can be individually enabled or disabled. When disabled, no action is taken. When enabled, alarm counter increments on the occurrence of the specific type of alarm. When alarm occurs or the counter threshold exceeds, alarm is triggered.

When alarm is triggered, a dial-out is activated if it is enabled. Otherwise, no action is taken and only the specific alarm count is incremented. Dial-out is to dial out through modem to a remote terminal. When threshold level is implemented, it is based on the 15 minutes alarm count register.

All alarms are disabled by default. The dial-out is also disabled by default.

Individual fault counts are updated every second. Bipolar Violation (BPV) counts are updated every second, but the BPV alarm is based on an average Bit Error Rate (BER) that is calculated over a 15-minute interval. Therefore, BPV alarm status is updated every 15 minutes after the average BER is calculated. If the average BPV rate exceeds the preset threshold — i.e., from 10^{-9} up to 10^{-5}, an alarm can be declared (assuming BPV alarm is enabled). ES and UAS employ threshold-triggered alarms, but these alarms are declared as soon as the recorded account exceeds the preset threshold. The 15-minute integration interval does not apply to ES and UAS alarms. Alarm register states are reset every 15 minutes, but preserved in the Alarm History display.

When any of the U-PORTs report an alarm condition, such as loss of synchronization, the ALARM will cause the corresponding LED on the front panel to turn red color, and if enabled, turn the ACO LED on as well. This LED can be turned off by pressing the ACO key. For each unit and for each type of alarm condition, the alarm can be disabled. The system alarm type are listed in table 3-5, the E1 network interface alarm types are listed in table 3-6 below.

Table 3- 5 System Alarm Type Table

Alarm Type	Alarm Description	Threshold
Slot Inactive	Alarm happens when plug-in cards are been pulled out or plugged in, or dead.	no
Slot Start-up	Alarm happens when plug-in cards are been started up.	no
Alarm Cut Off	Alarm happens when the "Alarm Cut Off" function is activated.	no
Slot Clock Loss	Alarm happens when clock source of a slot is failed.	no
Primary Start-up	Alarm happens when the primary card is been started up.	no
Redundant Loss	Alarm happens when the redundant card is failed.	no
Power Module Fail	Alarm happens when the power module is failed.	no
Link Switch	Alarm happens when the "Link Backup Function" is activated.	no

Table 3- 6 E1 Network Interface Alarm Type Table

Alarm Type	Alarm Description	Threshold
"RAI, LINE"	E1 Line Yellow Alarm	no
"AIS, LINE"	E1 Line Alarm Indication Signal	no
"LOS, LINE"	E1 Line Loss of Signal	no
"LOF, LINE"	E1 Line Loss of Frame	no
"BPV, LINE"	E1 Line Bipolar Violation	yes (default 5)
"ES, LINE"	E1 Line Error Second	yes (default 1)
"UAS, LINE"	E1 Line Unavailable Second	yes (default 1)
"CSS, LINE"	E1 Line Control Slip Second	yes (default 1)

Table 3- 7 T1 Network Interface Alarm Type Table

Alarm Type	Alarm Description	Threshold
"YEL, LINE"	T1 Line Yellow Alarm	no
"AIS, LINE"	T1 Line Alarm Indication Signal	no
"LOS, LINE"	T1 Line Loss of Signal	no
"LOF, LINE"	T1 Line Loss of Frame	no
"BPV, LINE"	T1 Line Bipolar Violation	yes (default 5)
"ES, LINE"	T1 Line Error Second	yes (default 1)
"UAS, LINE"	T1 Line Unavailable Second	yes (default 1)
"CSS, LINE"	T1 Line Control Slip Second	yes (default 1)

Table 3- 8 HDSL Alarm Type Table

Alarm Type	Alarm Description	Threshold
"LOS, MASTER-LOOP1"	Master Loop-1 Loss of signal/ LOSW*	None
"LOS, SLAVE-LOOP1"	Slave Loop-1 Loss of signal/ LOSW*	None
"ES15M, MASTER-LOOP1"	Master Loop-1 Error Second in current 15-minute interval	1-900 (default 1)
"ES15M, SLAVE-LOOP1"	Slave Loop-1 Error Second in current 15-minute interval	1-900 (default 1)
"SES15M, MASTER-LOOP1"	Master Loop-1 severely Error Second in current 15-minute interval	1-900 (default 1)
"SES15M, SLAVE-LOOP1"	Slave Loop-1 Severely Error Second in current 15-minute interval	1-900 (default 1)
"ES24H, MASTER-LOOP1"	Master Loop-1 Error Second in current 24 hours	1-65535 (default 1)
"ES24H, SLAVE-LOOP1"	Slave Loop-1 Error Second in current 24 hours	1-65535 (default 1)
"SES24H, MASTER-LOOP1"	Master Loop-1 Severely Error Second in current 24 hours	1-65535 (default 1)
"SES24H, SLAVE-LOOP1"	Slave Loop-1 Severely Error Second in current 24 hours	1-65535 (default 1)

Table 3- 9 U-PORT Alarm Type Table

Alarm Type	Alarm Description	Threshold
"slot-m U#n UNSYNC"	UNSYNC, U-interface (slot number = m; port number = n, n=1-10)	no
"slot-m U#n UNSYNC"	UNSYNC, U-interface (slot number = m; port number = n, n=1-6)	no

Table 3- 10 DTE-PORT Alarm Type Table

Alarm Type		Alarm Description	Threshold
V.35	"slot-m DTE#n UNSYNC"	RTS Loss, V.35-interface (slot number = m; port number = n, n=1-6)	no
X.50	"slot-m X50#n UNSYNC"	RTS Loss,RS232-interface (slot number = m; port number = n, n=1-5)	no

3.6.2 Reports

For DS1 line receiver, Loop-AM has three sets of performance registers. These are line, user, and far-end. The line performance register tracks the DS1 line receiver performance status. The user performance register tracks the DS1 line receiver as well, but user may clear at any time. The far-end performance register tracks the far-end DS1 receiver status. The performance parameters are listed in Table 3-11. User performance register have an additional parameter, CSS (controlled slip second).

Each performance parameter has ninety six sets of registers to record 24 hours history in 15 minute intervals.

Table 3- 11 Performance Parameter List

Performance Parameter	Description	Definition 2 Frame/Multiframe	Definition 16 Frame/Multiframe
ES	Error Second	BPV≥1, OOF≥1, or CS≥1.	CRC6 ERROR ≥ 1, OOF ≥1, or CS ≥1.
BES	Bursty Error Second	1 < BPV < 2048	1 < CRC6 < 860
SES	Severe Error Second	BPV ≥ 2048, or OOF ≥ 1	CRC6 ≥ 860, or OOF ≥ 1
DM	Degraded Minute	BPV≥ 123	CRC6 ≥ 47
LOFC	Loss Of Frame Count	OOF for 2.5 ± 0.5 sec	OOF for 2.5 ± 0.5 sec
UAS	Unavailable Second	≥ 10 consecutive SES	≥ 10 consecutive SES
CSS	Controlled Slip Second	frame slip ≥ 1	frame slip ≥ 1

Table 3-11 lists the types of reports available, performance parameters provided by each report, and the reset commands for each report.

Table 3- 12 Performance Report Options

Report Type [Menu Command]	Category	Report					
		ES	UAS	BES	SES	CSS	LOFC
Front Panel Reports	USER [Network]	Y	Y	Y	Y	Y	Y
1-Hour Terminal Reports Menu Option [1]	USER [Network]	Y	Y	Y	Y	Y	Y
	LINE [Network]	N/C	N/C	N/C	N/C	N/C	N/C
	FAR-END	N/C	N/C	N/C	N/C	N/C	N/C
24-Hour Terminal Reports Menu Option [2]	USER [Network]	Y	Y	Y	Y	Y	Y
	LINE [Network]	N/C	N/C	N/C	N/C	N/C	N/C
	FAR-END	N/C	N/C	N/C	N/C	N/C	N/C
CRC Error Count Terminal Reports Menu Option [E]	USER [Network]	—	—	—	—	—	—
	LINE [Network]	—	—	—	—	—	—
	FAR-END	—	—	—	—	—	—

Y = Report available and can be cleared by admin terminal command "Y".

N/C = No clear. Report available, but counts cannot be cleared by the user.

– = Report not available.

For the U-Ports, the performance reports include the last 24-hour reports in 15-minute intervals, and the last 8-day reports in 24-hour intervals. Performance reports are the UAS (unavailable seconds) counts.

3.7 HDSL Reports

From the master unit, by use of a terminal connected to the Loop-H, the current status of both master and slave units can be obtained.

Also, by use of the terminal connected to the master, the performance report of both master and slave unit can be obtained. Performance reports contain performance parameters recorded in 15-minute intervals for the past 24 hours. Reports for each of the following parameters are available.

Table 3- 13 Performance Parameter

Performance Parameter	Description
ES	Error Seconds
SES	Severe Error Second
UAS	Unavailable Second

3.8 LED Operation

The front of the Loop-AM 3440 has LEDs for operation and error indications. The indication can be in one or more colors. For each of the U-PORTs there are associated multicolored LEDs. Table 3-14 lists each LED and its color and meaning it represents. Note that when powering up and self test is in progress, the unit front panel LEDs are also used to indicate fault conditions. See section 4.1.

Table 3- 14 Front-Panel LED Table (DS1, DTU, HDSL, DTE, ATM/FR)

LED		Color	Indication
POWER		Off Green	Power off Power on and operational
CPU	*Primary CPU*		
	Power	Off Green	Power off Power on and operational
	Active	Off Flashing Green	CPU fails Normal
	Alarm	Off Red	Normal or alarm disable Alarm
	Redundant CPU		
	Power	Off Flashing Green	Power off Normal
	Active	Off Flashing Green	CPU fails Normal
	Alarm	Off Red ➔ Off	Normal Redundant CPU board is synchronizing to primary CPU board. ➔ The synchronization is done.
DS1 LINE	SYNC/TEST	Off Green Flash Green	Not existed E1 line frame in sync E1 line is under testing
	LOF	Off Red	Normal Loss of Frame (LOF) or Loss of Signal (LOS)
	BPV	Off Red	Normal E1 line has bipolar violation
	YEL/AIS	Off Amber Amber	Normal Receive remote alarm indication from DS1 line Receive alarm indication signal from DS1 line
UPORT	SYNC (One per port)	Off Green Flashing Green Red	No signal or port not equipped Normal, U-interface in sync U-interface loopback test in progress Normal, U-interface is unsync
HDSL	Loop 1	Off Green Red Flashing Amber	Not existed Normal, Loop 1 is in sync Loop 1 is not sync HDSL line-side test is in progress.
DTE	DTE port-V.35	Off Flashing Green Green Flashing stable RED	Not existed Transmit/ Receive data present Normal Loopback Test Alarm
	DTE port-X.50	Off Flashing Green • 0.1 sec on, 0.1 sec off • 0.4 sec on, 0.4 sec off • 1.6 sec on, 1.6 sec off Green RED	Not existed • Transmit and Receive data present • Transmit or Receive data present • Loopback Test Normal Alarm

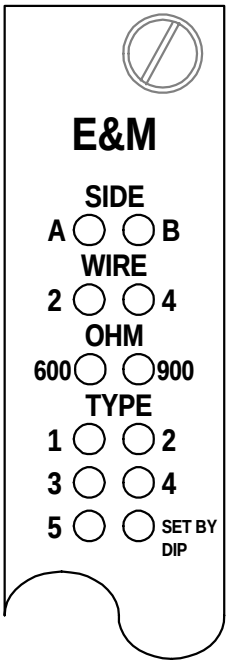
LED		Color	Indication
ATM/FR		Off Green Flash Green Red Amber Flashing Amber	Not existed E1 line frame in sync E1 line is under testing Loss of Frame (LOF) or Loss of Signal (LOS) Receive yellow alarm from DS1 line Receive alarm indication signal (AIS) from DS1 line
ROUTER	LINK/ACT	ON	Link. A valid network connection on the RJ-45 Ethernet port.
		Flashing	Activity. Data is being transmitted or received through the RJ-45 Ethernet port.
	COL	ON	Collision Detected.

Table 3- 15 Front-Panel LED Table (E&M)

● No Light ○ Light Flashing

■ A SIDE/ B SIDE

LED		Indication
A	B	
○	●	A side mode
●	○	B side mode
	●	A side testing mode
	○	B side testing mode
		Alarm (Loss SYNC, AIS, RAI)
●	●	NC -48V or AB SW FAIL



■ 2 Wire/ 4 Wire

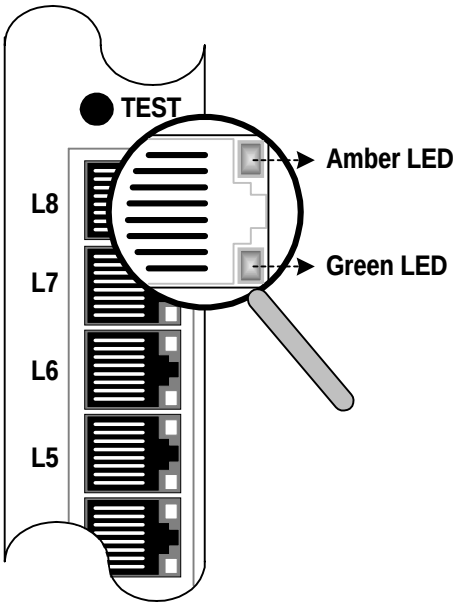
LED		Indication
2	4	
○	●	2 Wire mode
●	○	4 Wire mode

■ 600 ohm/ 900 ohm

LED		Indication
600	900	
○	●	600 ohm mode
●	○	900 ohm mode

■ TYPE

LED	Setup by S/W Control									
	TYPE 1		TYPE 2		TYPE 3		TYPE 4		TYPE 5	
TYPE	○	●	●	○	●	●	●	●	●	●
	●	●	●	●	○	●	●	○	●	●
1 ○ ○ 2	●	●	●	●	●	●	●	●	○	●
3 ○ ○ 4	Setup by H/W Control									
5 ○ ○	TYPE 1		TYPE 2		TYPE 3		TYPE 4		TYPE 5	
SET BY	○	●	●	○	●	●	●	●	●	●
DIP	●	●	●	●	○	●	●	○	●	●
	●	○	●	○	●	○	●	○	○	○

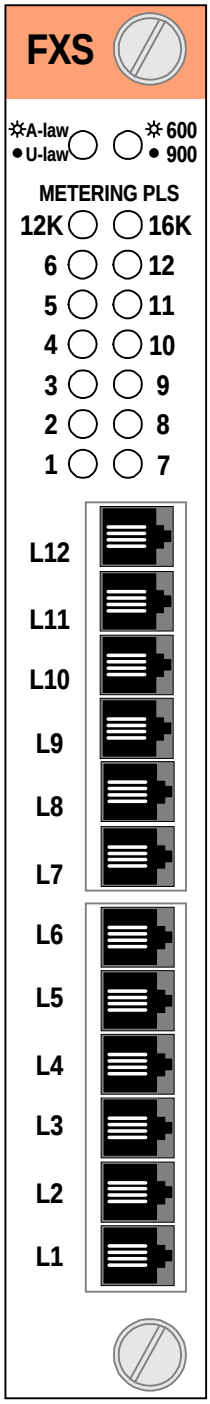


Condition	LED	A Side Mode	B Side Mode
Normal	Amber □ Green ■	E lead ground.	M lead ground.
	Amber ■ Green □	M lead close.	E lead close.
	Amber ■ Green ■	E lead open. M lead open.	M lead open. E lead open.
Test (TEST button of the front panel)	Amber ■ Green □	(All ports: L1 to L8) M lead close.	(All ports: L1 to L8) E lead close

■ No Light □ Light

Table 3- 16 Front-Panel LED Table (FXS)

● No Light ○ Light Show Flashing △ Fast Flashing



■ LED Indication for Encoding/ Impedance: A-law, μ-law/ 600 ohm, 900 ohm

LED			Indication
Encoding	Impedance	Color	
A-law μ-law	600 900		
○	○	Green	A-law mode, 600 ohm
○	●	Green	A-law mode, 900 ohm
●	○	Green	μ-law mode, 600 ohm
●	●	Green	μ-law mode, 900 ohm

■ LED Indication for Metering Pulse

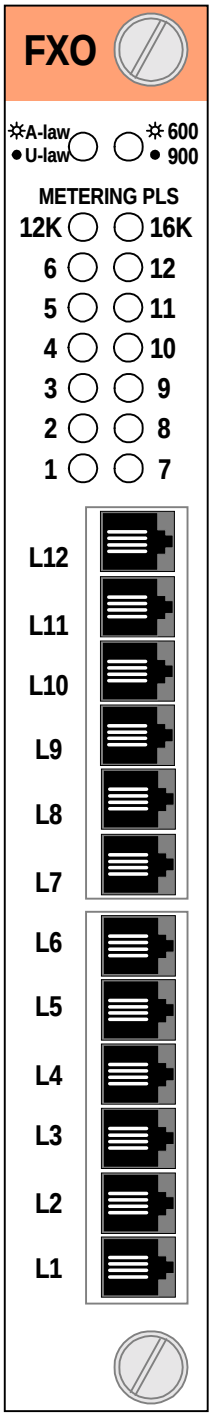
LED			Indication
12K	16K	Color	
●	●	Off	Metering Pulse is OFF
○	●	Green	12 KHz metering is ON
	●	Green	12 KHz pulse is active
●	○	Green	16 KHz metering is ON
●		Green	16 KHz pulse is active

■ LED Indication for Line 1 to Line 12

LED		Indication
L1 to L12	Color	
●	Off	Tip Lead Open
○	Green	Normal
	Green flashing (slow 1Hz)	Off Hook
△	Green flashing (fast 4Hz)	Ring Lead Ground
○	Red	Alarm
⊖	Green + Red	Ringing

Table 3-17 Front-Panel LED Table (FXO)

● No Light ○ Light Show Flashing △ Fast Flashing



■ **LED Indication for Encoding/ Impedance: A-law, μ-law/ 600 ohm, 900 ohm**

LED			Indication
Encoding	Impedance	Color	
A-law μ-law	600 900		
○	○	Green	A-law mode, 600 ohm
○	●	Green	A-law mode, 900 ohm
●	○	Green	μ-law mode, 600 ohm
●	●	Green	μ-law mode, 900 ohm

■ **LED Indication for Metering Pulse**

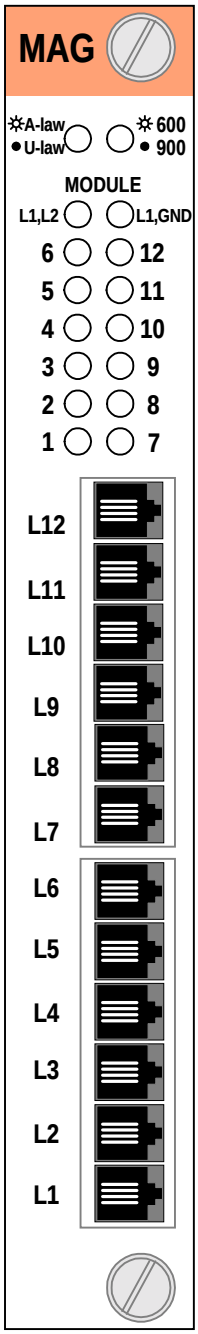
LED			Indication
12K	16K	Color	
●	●	Off	Metering Pulse is OFF
○	●	Green	12 KHz metering is ON
△	●	Green (fast 4Hz)	12 KHz pulse is active
●	○	Green	16 KHz metering is ON
●	△	Green (fast 4Hz)	16 KHz pulse is active

■ **LED Indication for Line 1 to Line 12**

LED		Indication
L1 to L12	Color	
●	Off	Tip Lead Open
○	Green	Normal
	Green flashing (slow 1Hz)	Off Hook
△	Green (fast 4Hz)	Ring Lead Ground
○	Red	Alarm
⊖	Green + Red	Ringing

Table 3- 18 Front-Panel LED Table (Magneto)

● No Light ○ Light Flashing



■ **LED Indication for Encoding/ Impedance: A-law, μ-law/ 600 ohm, 900 ohm**

LED			Indication
Encoding	Impedance	Color	
A-law μ-law	600 900		
○	○	Green	A-law mode, 600 ohm
○	●	Green	A-law mode, 900 ohm
●	○	Green	μ-law mode, 600 ohm
●	●	Green	μ-law mode, 900 ohm

■ **LED Indication for module**

LED			Indication
L1,L2	L1,GND	Color	
○	○	Green	Ring across L1 & L2, L1 & GND
○	●	Green	Ring across L1 & L2
●	○	Green	Ring across L1 & GND

■ **LED Indication for Line 1 to Line 12**

LED		Indication
L1 to L12	Color	
○	Green	Normal
●	Off	PLAR On
	Green	Ringing
⊖	Green + Red	Crank Magneto Gen
○	Red	Alarm

3.9 Telnet Connectivity

To manage the system from internet, Loop-AM controller offers Telnet connectivity to allow user access to the Loop-AM controller from any workstation in the network. There are three interfaces for Telnet function, one is Ethernet port, second is SLIP port, and the other is HDLC port (in-band management). To use Ethernet interface, use Ethernet/RJ45 port at back panel to connect with Ethernet network directly as shown in Figure 3-1. To use SLIP interface, use CONSOLE/SLIP port of front panel, make sure the button is up, to connect with a Terminal server and link to Ethernet indirectly as show in Figure 3-2. To use HDLC port, set MAP to assign a time slot to SNMP and connect as Figure 3-3. Ethernet and SLIP and HDLC cannot be used at the same time. Console and SLIP cannot be used at the same time.

To use the Telnet function, make sure IP Address, and Interface parameters are matched. Please refer to section 5.1.1.1 or section 6.1.9.

Once the IP parameters are set, users can verify that the Loop-AM is operating properly by using the ping command to check for a response from Loop-AM:

```
$ping 192.1.100.45

192.1.100.45 is active
```

The Telnet utility simulates VT-100 to connect with the Loop-AM controller. The controller main menu of terminal screen described at Chapter 6 will be displayed after Telnet connection is established. Refer to Chapter 6 to manage Loop-AM controller. Loop-AM controller can maintain several Telnet connections simultaneously.

The most popular Telnet utility in the public domain is provided by NCSA.

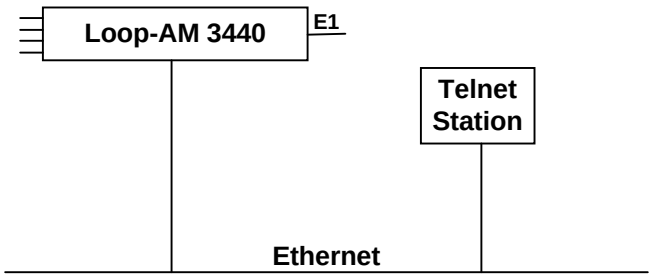


Figure 3- 1 Telnet: Ethernet interface

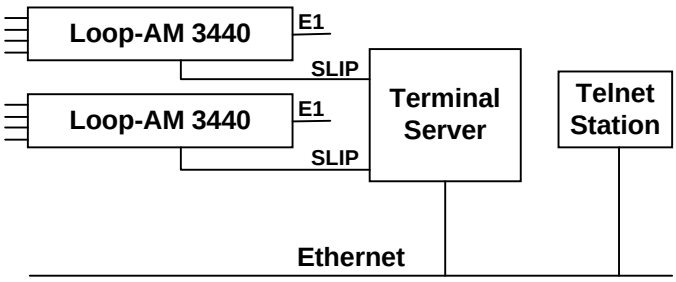


Figure 3- 2 Telnet: SLIP Interface

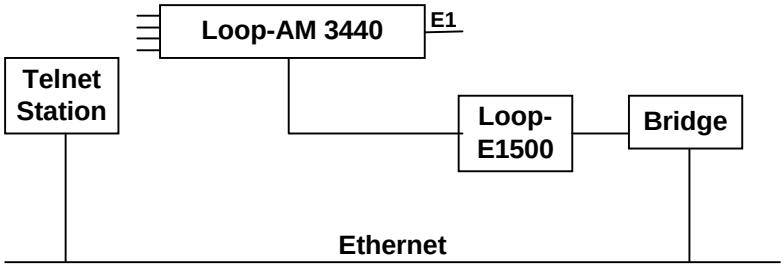


Figure 3- 3 HDLC

Table 3- 19 Operation by Console/ SLIP/ Ethernet/ HDLC concurrently

PORT	Console	SLIP	Ethernet	HDLC
Console	-	x	✓	✓
SLIP	x	-	x	x
Ethernet	✓	x	-	x
HDLC	✓	x	x	-

3.10 Embedded SNMP Agent

The embedded SNMP agent for Loop-AM offers standard RFC 1213 MIB II and RFC 1406 DS1 MIB as well as Loop Telecom's enterprise MIB. Network manager can use any SNMP compatible network management system such as Sun Connect's Sun Net Manager and Hewlett-Packard's HP Open View to monitor and control Loop-AM. This enables user to integrate WAN equipment management with LAN SNMP network management systems. The embedded SNMP agent also includes Telnet implementation to allow user to access Loop-AM terminal interface from any workstation in the network.

Before SNMP is enabled, make sure the IP address for Loop-AM is configured correctly and the communication parameters match the Terminal server port.

Once the SNMP agent is activated, user can verify whether the Loop-AM is running successfully by using ping command to check if Loop-AM is responding or not. e.g.

```
$ ping 192.1.100.45

  192.1.100.45 is alive
```

Please refer to each respective SNMP manager operation instruction to incorporate the Loop-T enterprise MIB to the system.

Telnet capability comes with embedded SNMP agent. Once SNMP agent is running, user can use telnet program that is simulated on a VT-100 to access Loop-AM command screen. The most popular Telnet utility in the public domain is provided by NCSA. It can maintains several telnet connections simultaneously. It is recommended to set the COMM port running at the highest speed to reduce the jittery output on terminal. The Loop-AM can run reliably at 38.4 Kbps.

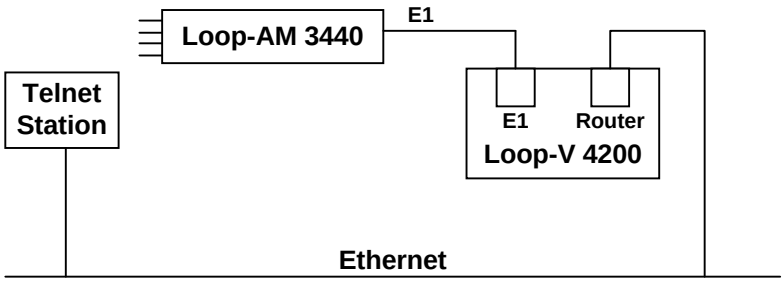
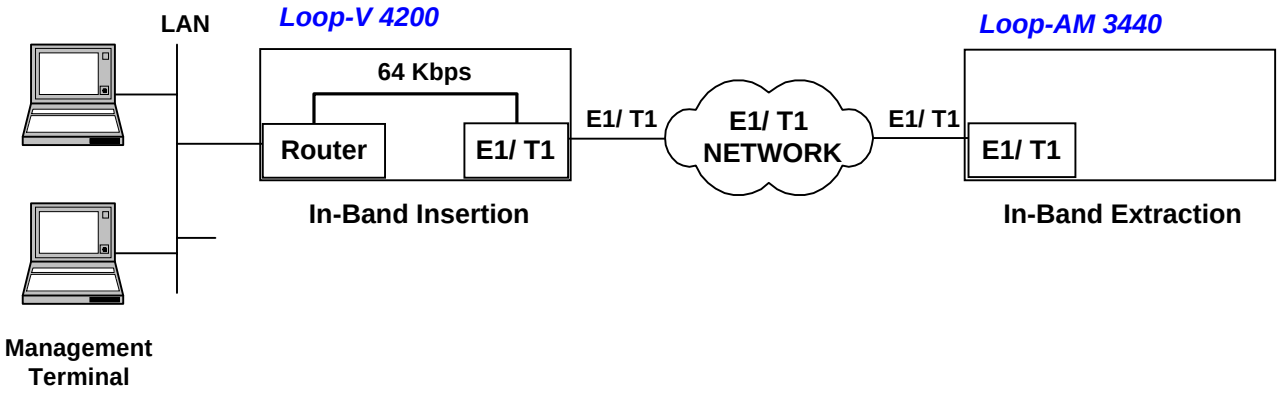


Figure 3- 4 HDLC using Loop-V 4200

3.11 In-Band Management Setup

In addition to the console port and the Ethernet port, Loop-AM 3440 can also allow remote management through a 64 Kbps time slot from the network line. To achieve remote management using this “in-band” technique, two steps are necessary.

First, the Ethernet connection of the remote management terminal must be inserted to a designated time slot in the network. This time slot can be a DS0 channel in a E1 or T1 line, or a DS0 channel in any of the broadband facilities, such as E3, DS3, STM1, or OC3. This can be achieved though a router-CSU/DSU-mux series of equipment or in one step through a router interface on a Loop-V 4200.



Next, the equipment to be management, namely this Loop-AM 3440 must extract this 64 Kbps time slot to the management port. This is accomplished through the TSI screen, illustrated below.

For the Loop-AM 3440, the management port is named HD. The incoming in-band management time slot, which is 01 (time slot number), is assigned to the management channel, as shown.

```
LOOP AM3440                === System Setup (MAP) ===       11:30:53 12/12/2001
ARROW KEYS: CURSOR MOVE, TAB: ROLL OPTIONS
MAP NO: MAP_1
            Source Slot    E1     NON-CAS         Dest. Slot     HDLC
Source Slot PO/TS D SL/PO TS PO/TS D SL/PO TS  PO/TS D SL/PO TS PO/TS D SL/PO TS
Slot   :  C  ===== ========== ===== ==========  ===== ========== ===== ==========
Port   :         1 d HD      1    17 d              1 d  C      1
T.S.   : 01      2 d              18 d
                 3 d              19 d
                 4 d              20 d
T.S.#  : 01      5 d              21 d
Clear  : No      6 d              22 d
d/v    : d       7 d              23 d
                 8 d              24 d
                 9 d              25 d
Dest Slot       10 d              26 d
Slot   : HD     11 d              27 d
Port   :        12 d              28 d
T.S.   : 01     13 d              29 d
                14 d              30 d
Update? Yes     15 d              31 d
Confirm?Yes     16 d

<< Press ESC to return to Controller Setup menu, then Press D to active >>
```

Table 3- 20 Error Message Table

The error messages defined here should be corresponded to the error codes.

Error Code	Error Description
ERROR01	A loopback is in effect
ERROR02	LCD operation is locked
ERROR03	Channel is already in use
ERROR04	can't be in TTM if MCLK=DTE
ERROR05	DTEn is in TTM or speed is 0
ERROR06	Line unsync
ERROR07	No channel is assigned
ERROR08	Please select speed first
ERROR09	A test is in progress
ERROR10	DTE loopback is in progress
ERROR11	Please reduce speed first
ERROR12	Illegal Date/Time format
ERROR13	the DTE1 channel should be B2
ERROR14	the DTE1 channel should be B1+B2
ERROR15	the DTE1 channel should be B1
ERROR16	the DTE1 channel should be B1/B2
ERROR17	Remote doesn't have this function
ERROR18	Remote unit rejected this request
ERROR19	Remote unit didn’t respond
ERROR20	Remote DTE1 TTM should be off
ERROR21	the DTE1 channel should be IDLE
ERROR22	the DTE1 is not installed
ERROR23	undefined response
ERROR24	the unit didn't response
ERROR25	speed can't be zero if MCLK=DTEn
ERROR26	the unit is not installed
ERROR27	ESF or ESF&T1.403 mode is required
ERROR28	ESF&T1.403 mode is required
ERROR29	E1 CRC and FDL must set to be on
ERROR30	LLB or LOCAL LOOPBACK activated
ERROR31	EOC is not ready
ERROR32	Current slot is not HDSL card
ERROR33	Current slot is not DTE card
ERROR34	Not enough channels
ERROR35	Slot need to download firmware
ERROR36	Time slot conflict
ERROR37	Reserved for future use
ERROR38	Reserved for future use
ERROR39	Reserved for future use
ERROR40	Reserved for future use
ERROR41	Reserved for future use

4 Maintenance

4.1 Self-Test

When Loop-AM is powered up, a complete self-test routine is run to check all I/O ports, read/write memory, and data paths to validate system integrity.

4.2 Diagnostics

A 15-bit register PRBS (Pseudo-Random Bit Sequence) patterns, is used in E1. A 20-bit register QRSS (Quasi-Random Signal Sequence) pattern is used in T1, while a 11-bit PRBS patterns is used in Loop-AM. The PRBS/QRSS test pattern is used to test local Loop-AM system integrity by local loopback test. It can also be used to measure the DS1 line quality and the U-interface line quality. The diagnostics scenario is as follows:

1. First, send a remote loopback command to cause the remote facility to loopback DS0 channels in the case of E1 line, or B channels in the case of U line.
2. Then, activate the local PRBS/QRSS diagnostics operation, use Test command to enable PRBS and choose to test DS0 channels in a bundle of U-PORTs, all 31 channels, or only idle channels, or, in the case of U-interface, channels in use (B1, B2, or B1+B2), or full (always B1+B2).
3. The FULL PRBS/QRSS diagnostic uses a framed pattern. This is useful for testing full E1/T1 loopbacks at the far-end.

   When the PRBS pattern sync is found, a bit error counter tracks total bit errors. It is advised to send PRBS for more than 15 minutes interval to evaluate the quality of loop condition and facility reliability.

User may utilize '>' key to inject single error, '<' key to reset error counter, and 'ESC' key to terminate PRBS test. User may also read performance report to understand type of error occurs.

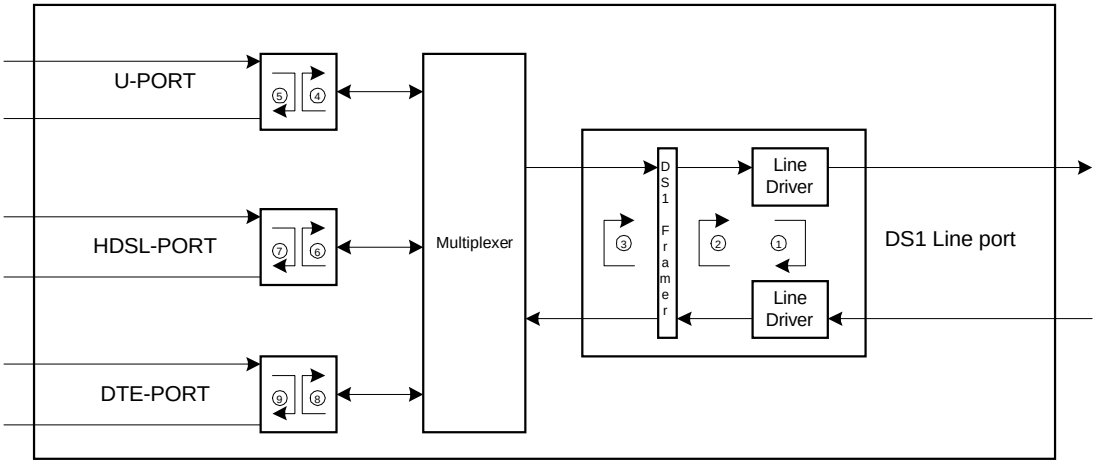
4.3 Near End Loopback

The near end loopbacks such as local loopback, line loopback, payload loopback, U-PORT loopback, and HDSL loopback, are activated by the Loop-AM. The loopbacks are at the near end facility. The following paragraph describes each loopback in detail.

NOTE: Deactivate the near-end loopbacks from the terminal, depending on where it was activated.

4.3.1 Local Loopback

Local loopback is illustrated in Figure 4-1. The outgoing DS1 signal is looped back through the DS1 PCM transceiver. All 31 DS0 channels are looped back to the receiver path. This loopback test is activated by the Test command. This loopback test can be used with the PRBS diagnostic test pattern to validate the local Loop-AM's integrity. An AIS (Alarm Indication Signal) is sent to the network during the local loopback test. The local loopback test can be activated from terminal.



① Local Loopback
② Line Loopback (LLB)
③ Payload Loopback (PLB)
④ U-PORT TO-E1 Loopback and Remote U to E Loopback
⑤ U-PORT TO-U Loopback and Remote U to U Payload Loopback
⑥ HDSL-PORT TO-E1 Loopback and Remote HDSL to E Loopback
⑦ HDSL-PORT TO-LINE Loopback and Remote HDSL to LINE Payload Loopback
⑧ DTE-PORT TO-DS1 Loopback
⑨ DTE-PORT TO-DTE Loopback

Figure 4- 1 Loopback Block Diagram

4.3.2 Line Loopback

Line loopback is illustrated in Figure 4-1. The incoming DS1 line signal is loopback to the outgoing DS1 signal before the DS1 transceiver framer. This loopback is used to isolate the local equipment from a troubled DS1 transmission line. Line loopback test can be activated from the terminal.

4.3.3 Payload Loopback

Payload loopback is illustrated in Figure 4-1. The incoming signal is loopback to the outgoing DS1 signal after the DS1 transceiver framer. This loopback is used to isolate the U-PORTs from the troubled DS1 transmission line. Payload loopback test can be activated from the terminal.

4.3.4 U-PORT Loopbacks

U-PORT loopbacks are illustrated in Figure 4-1. There are two types of local loopbacks, TO-U (payload) and TO-DS1 (local). TO-U is that the U-interface incoming signal is loopback to the U-interface outgoing signal. This is used to isolate the DS1 equipment from a troubled U-interface line. TO-DS1 is that U-interface outgoing signal is loopback to the U-interface incoming signal. This loopback is used to validate the system integrity of U-interface facility. U-PORT loopback test can be activated from the terminal. While in TO-U loopback, all ones are send to DS1 network line outgoing direction on U-PORT associated DS0 channels.

NOTE: U-PORT loopbacks work only when one or more DS0 channels are mapped to the U-PORT.

4.3.5 HDSL-PORT Loopbacks

Trouble isolation of the entire HDSL system is facilitated by the use of loopbacks. By determining where one loopback is successful and another is not, the repair personnel can isolate the fault to a particular line or equipment. Loopbacks can be towards the network, or towards the customer.

4.4 Far End Loopback

Far-end loopbacks (remote line loopback, remote payload loopback, remote channel loopback, U-PORT loopback, and HDSL loopback) can be activated by the local Loop-AM to cause a remote loopback commands to the far-end facility. Inband code words are supported by FDL (facility data link) to initiate the loopback in the case of the DS1 line, and either M channel in the case of the U-interface line. When using FDL messages, FDL must be turned ON. All remote loopback can be activated from the terminal.

If the remote facility responds to a remote loopback activate command, a LOOPED message appears in the lower left corner of the display. If the remote facility responds to a remote loopback deactivate command, a NO LOOP message appears. If the remote activation/deactivation fails, an error message appears.

Either proprietary remote loopback commands can be used, or the industry standard V.54 loopback codes can be used.

It is best to use remote loopbacks in conjunction with PRBS diagnostics testing to measure the DS1 network line or U line integrity. The procedure is as follows:

1. Send a remote loopback command to cause the remote facility to perform a loopback.
2. Activate the PRBS or QRSS diagnostics test.

4.5 Test Pattern

To test the DS1 line, four test patterns are available to determine faults such as deficient clock recovery, fault ALBO level recovery, inadequate jitter margin, presence of bridge taps, and mis-optioned network interface. These four patterns are framed pattern with proper DS1 frame pattern as described in the following paragraph.

4.6 Verifying Loop-AM Operations

The purpose of this section is not to help the user determine where a possible fault in the network may lie. For this, the user needs to know the exact geometry of the network. Then standard network trouble shooting procedures should be followed, which involve sectionalizing the network and performing loopback tests on pieces of the network.

The purpose here is to help the user determine whether the Loop-AM equipment is at fault after tests have pointed a suspicious finger at this equipment. The procedures outlined here depends on test equipment and other equipment the user may have on hand.

The organization of these procedures start from the simple to the complex. The procedure ends when a definitive conclusion is made that the Loop-AM equipment is at fault. To verify that the Loop-AM equipment is not at fault, specialized equipment such as a BERT (bit error rate test) set is needed.

4.6.1 Quick Test

4.6.1.1 LCD/Display

LCD currently not available.

4.6.1.2 Independent Test

Remove all line and U-interface connections to Loop-AM. Remove power. After a few seconds, re-apply power. Observe the power-AMp self-test sequence. If this fails, then Loop-AM has failed. See if the LEDs show any abnormal displays. If yes, use the LED indications to guide the user to test other parts of the network, such as the E1 line, or U-interface plug-in.

Especially during initial installation, excessive errors may be due to (a) incorrect configuration of either Loop-AM or of the equipment at the other end of the line, or (b) due to faulty line installation, which results in excessive noise, cross talk, or impedance mismatch. Especially in electrically noisy environments, such as central offices, use of shielded cables are mandatory.

4.6.2 Substitution

If a spare Loop-AM plug-in is available, then replace the working one with the spare. The user must carefully configure the spare exactly as the working one. If the substitution clears the problem, then the original working one is suspect. Note that this is not definitive as other reasons may cause the same symptom. A good practice is to reconfigure the original one and swap once more.

If both units behave the same, then the problem is probably elsewhere.

4.6.3 Using Loopback Plugs

Without a spare, loopback plugs are handy for diagnosis. Note that internal loopback facilities of the Loop-AM does not include the interface circuitry. Thus a set of plugs, one for each of the interfaces, line and DTE, are needed for complete tests. These plugs are wired such that signals from the Loop-AM are loopback by hard wire back to the receive pin of the same plug.

Replace the line connector with a loopback plug. Observe if the line is in sync. If not then Loop-AM has failed. Then perform a PRBS test towards the line. If this fails, then Loop-AM has failed.

For the U-PORTs, a loopback plug must be used in concert with a far end Loop-AM if such a terminal is available, then a PRBS test will determine if that U-PORT is at fault.

Note that if a far end terminal is available, the first test should be a local line loopback to see if the line is good.

If tests with loopback plugs all pass, then the problem is probably elsewhere.

4.6.4 Using Bert Test Set

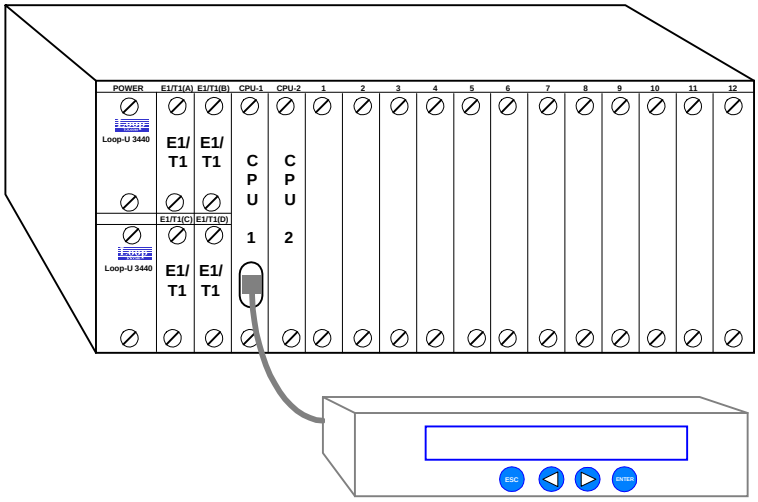
If a BERT (bit error rate test) set and another Loop-AM are available, such as the Fireberd 6000, then a comprehensive suite of test are available to examine the health of the Loop-AM. If another Loop-AM is not available, use of the loopback plugs would provide some of the tests otherwise possible.

With a BERT, each of the ports of the Loop-AM can be tested individually. The user must configure the BERT in the exact way the Loop-AM is configured. This is easily done by comparing each of the options one by one. After checking that the configuration matches, if any one of the ports fails, then Loop-AM has failed.

5 Front Panel Operation

The hand-held LCD of the Loop-AM 3440 utilizes a 2-line by 40 character display and four keys labeled ESC, ENTER, left arrow '<', and right arrow '>', as shown in Figure 5-1. The ENTER key is to enable a selection, while the left and right arrow keys move the cursor to the left and right respectively. The ESC key returns to the next higher level of selection or to the main menu without performing any operation.

NOTE: For each selection or change, ENTER key must be pressed to confirm.



Hand-held LCD Device

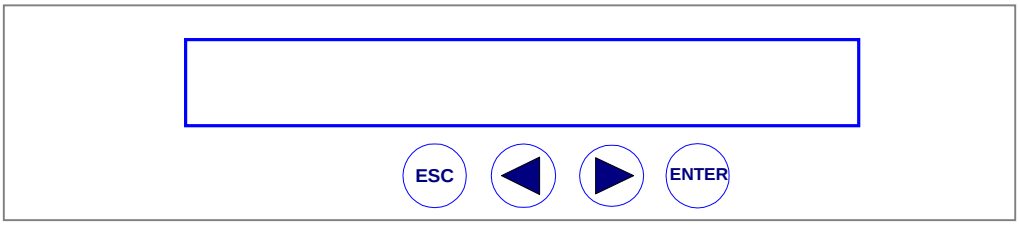


Figure 5- 1 Front Panel of the hand-held LCD

The LCD menu tree is shown below. By successively selecting the menu item at each level, the desired operation or display can be obtained.

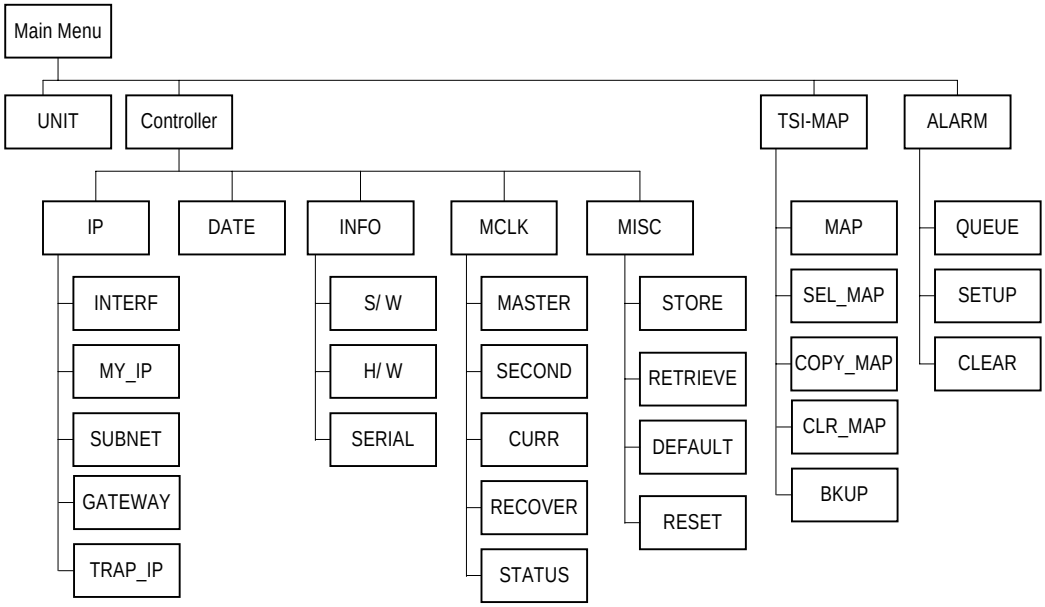


Figure 5- 2 LCD Menu Tree – Main Menu (1 of 6)

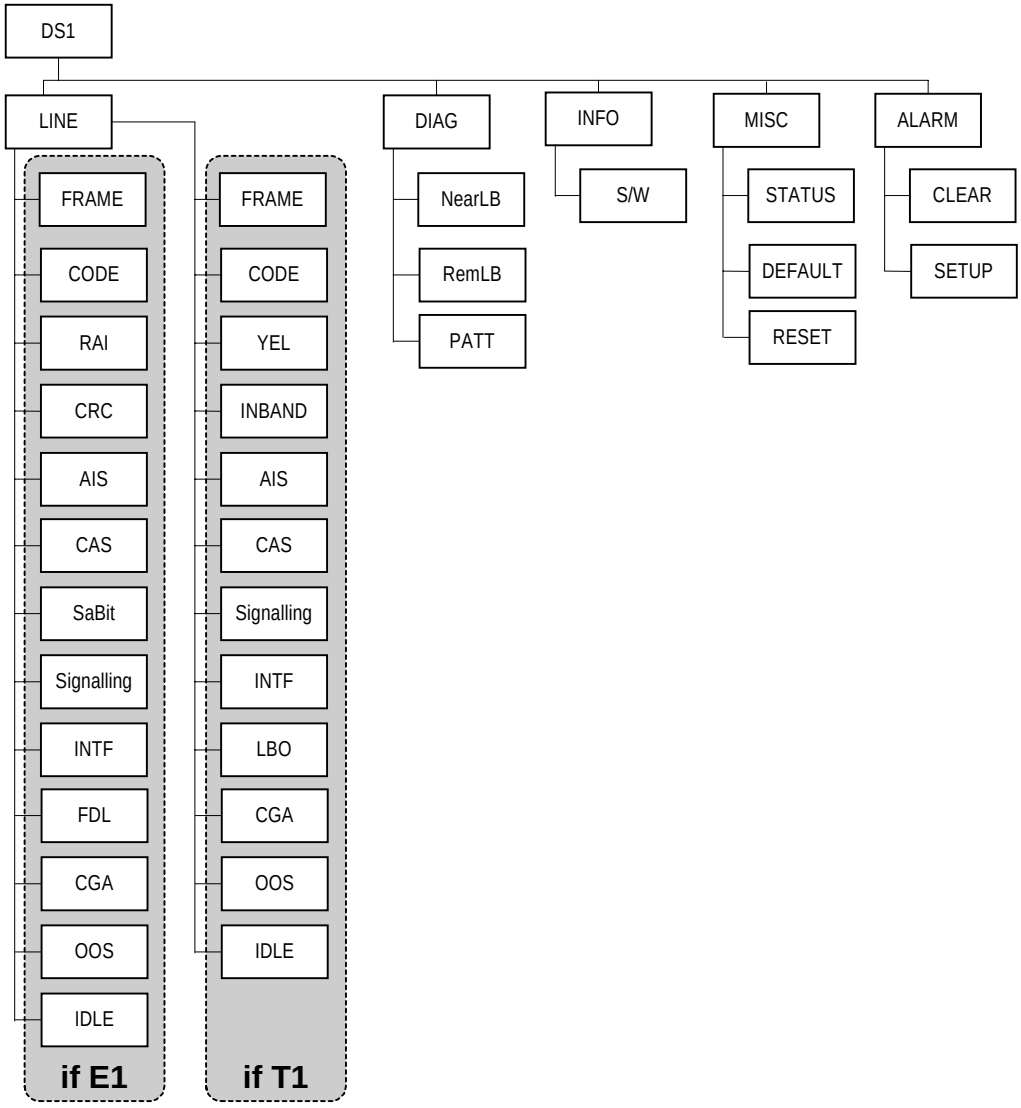


Figure 5- 3 LCD Menu Tree – DS1 Menu (2 of 6)

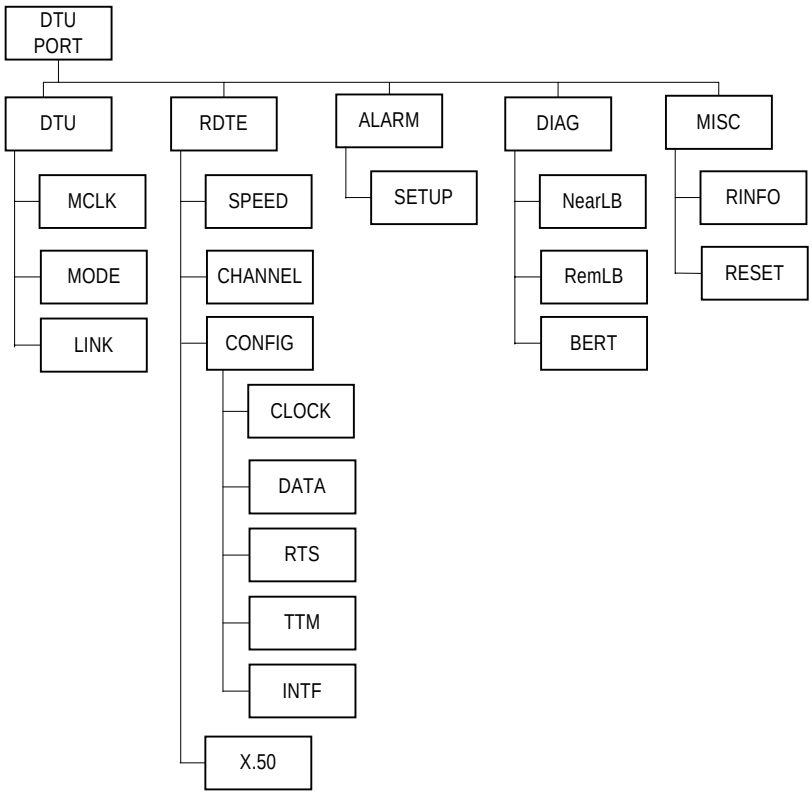


Figure 5- 4 LCD Menu Tree – DTU Menu (3 of 6)

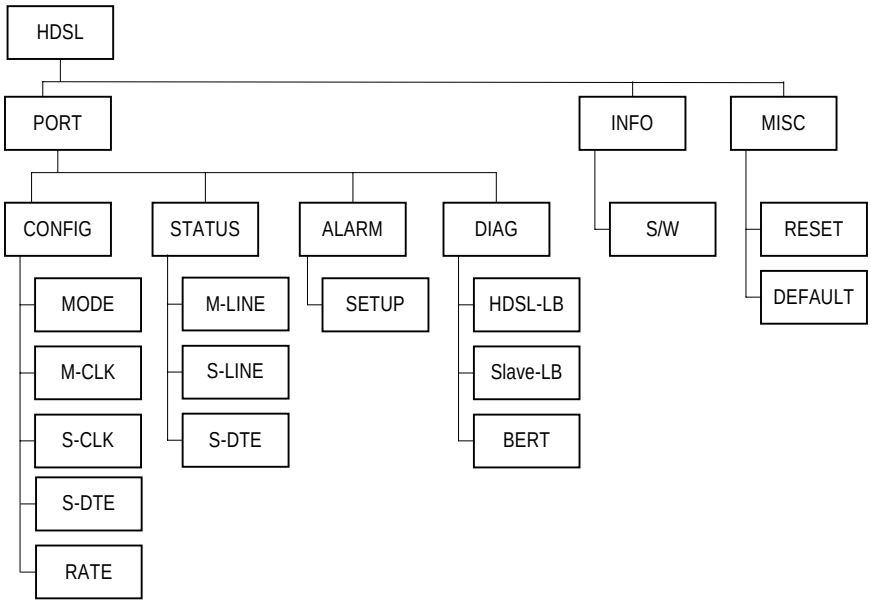


Figure 5- 5 LCD Menu Tree – HDSL Menu (4 of 6)

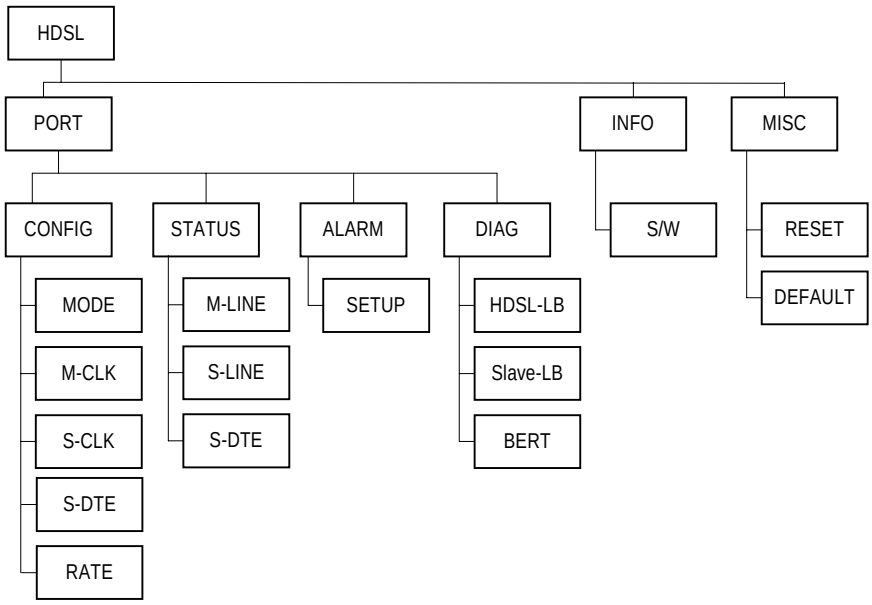


Figure 5- 6 LCD Menu Tree – DTE Menu (5 of 6)

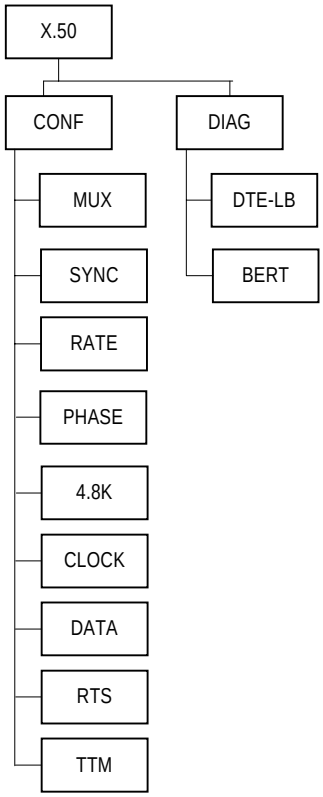


Figure 5- 7 LCD Menu Tree – X.50 Menu (6 of 6)

5.1 Main Menu

5.1.1 Unit

Use arrow keys to move the cursor to the UNIT option.

```
                LOOP AM3440
<< UNIT  CONTROLLER  TSI-MAP  ALARM >>
```

Press ENTER, then move the cursor to select the desired unit.

```
UNIT> Select Unit: <FE1>
A B C D 1 2 3 4 5 6 7 8 9 10 11 12
```

5.1.2 Controller

Use arrow keys to move the cursor to the CONTROLLER option.

```
                LOOP AM3440
<< UNIT  CONTROLLER  TSI-MAP  ALARM >>
```

5.1.2.1 IP

Press ENTER from the CONTROLLER menu. Move the cursor to the IP option.

```
CONTROLLER>IP DATE INFO MCLK MISC
IP>INTERF MY-IP SUBNET GATEWAY TRAP-IP
```

5.1.2.1.1 Interface

Press ENTER from the above menu. When the cursor is at the INTERF option, the system will show as below. The current selection will be highlighted by an asterisk (*). Two interfaces, Ethernet and HDLC, are available.

```
IP>INTERF MY-IP SUBNET GATEWAY TRAP-IP
      *ETHERNET  HDLC
```

5.1.2.1.2 My-IP

Under IP menu, move the cursor to the MY-IP option, the system will show My IP Address immediately.

```
IP>INTERF MY-IP SUBNET GATEWAY TRAP-IP
       My IP Address = 140.133.031.040
```

5.1.2.1.3 Subnet

Under IP menu, move the cursor to the SUBNET option, the system will show My IP Subnet as below.

```
IP>INTERF MY-IP SUBNET GATEWAY TRAP-IP
       My IP Subnet = 255.255.000.000
```

5.1.2.1.4 Gateway

Under IP menu, move the cursor to the GATEWAY option, the system will show My IP Gateway immediately.

```
IP>INTERF MY-IP SUBNET GATEWAY TRAP-IP
       My IP Gateway = 140.133.001.254
```

5.1.2.1.5 Trap-IP

Under IP menu, move the cursor to the TRAP-IP option, the system will show Trap IP Address as below.

```
IP>INTERF MY-IP SUBNET GATEWAY TRAP-IP
       Trap IP Address = 140.133.001.200
```

5.1.2.2 Date

Press ESC to exit the IP menu. Under CONTROLLER menu, move the cursor to DATE, the system will show the current time.

```
CONTROLLER>IP DATE INFO MCLK MISC
      17:34:07 01/28/2002
```

5.1.2.3 Information

Under CONTROLLER menu, move the cursor to INFO option, the system will show up the related information about software version, hardware version, and serial number.

```
CONTROLLER>IP DATE INFO MCLK MISC
INFO>S/W  H/W  SERIAL
```

5.1.2.3.1 Software Version

```
INFO>S/W  H/W  SERIAL
Version: V2.04 02/08/2002
```

5.1.2.3.2 Hardware Version

```
INFO>S/W  H/W  SERIAL
Version: ver.a 07/2001
```

5.1.2.3.3 Serial Number

```
INFO>S/W  H/W  SERIAL
Serial Number: 8312
```

5.1.2.4 MCLK

Under CONTROLLER menu, move the cursor to MCLK option. Five options are available in the MCLK menu: master clock, second clock, current active clock, recover, and status.

```
CONTROLLER>IP DATE INFO MCLK MISC
MCLK>MASTER SECOND CURR RECOVER STATUS
```

5.1.2.4.1 Master Clock

Use arrow keys to select the desired option, then press ENTER. The current selection will be highlighted by an asterisk (*).

```
MCLK>MASTER SECOND CURR RECOVER STATUS
*INT.  A  B  C  D  EXT.
```

5.1.2.4.2 Second Clock

Use arrow keys to select the desired option, then press ENTER. The current selection will be highlighted by an asterisk (*).

```
MCLK>MASTER SECOND CURR RECOVER STATUS
*INT.  A  B  C  D  EXT.
```

5.1.2.4.3 Current Active Clock

Use arrow keys to select the desired option, then press ENTER. The current selection will be highlighted by an asterisk (*).

```
MCLK>MASTER SECOND CURR RECOVER STATUS
      *MASTER_CLK  SECOND_CLK  INTERNAL
```

5.1.2.4.4 Recover

Use arrow keys to select the desired option, then press ENTER. The current selection will be highlighted by an asterisk (*).

```
MCLK>ASTER SECOND CURR RECOVER STATUS
      MANUAL  *AUTOMATIC
```

5.1.2.4.5 Status

The STATUS menu will show the current clock status.

```
MCLK>ASTER SECOND CURR RECOVER STATUS
     NORMAL
```

5.1.2.5 Miscellaneous

Press ESC from the MCLK menu. Move the cursor to MISC option, the system will show up four options: STORE, RETRIEVE, DEFAULT, and RESET.

```
CONTROLLER>IP DATE INFO MCLK MISC
       STORE  RETRIEVE  DEFAULT  RESET
```

5.1.2.5.1 Store

Move the cursor to STORE option, press ENTER. The following LCD will show up when the system finish storing.

```
MISC>STORE  RETRIEVE  DEFAULT  RESET
     STORING...done
```

5.1.2.5.2 Retrieve

Move the cursor to RETRIEVE option, press ENTER. Then system will request users to enter password in next LCD.

```
MISC>STORE  RETRIEVE  DEFAULT  RESET
```

Use arrow keys to pick the character, followed by ENTER. There are 66 characters to choose from. Password modification can only be done using terminal operation. The default password is LOOP. Move the cursor to YES, then press ENTER when the entire password is assembled.

```
Enter Password:                    YES
0123456789ABCDEFGHIJKLMNOPQRSTUVWXYZ!"#$
```

```
Enter Password: XXXX                    YES
     RETRIEVING...done
```

5.1.2.5.3 Default

Move the cursor to DEFAULT option, press ENTER. Then system will request users to enter password in next LCD.

```
MISC>STORE  RETRIEVE  DEFAULT  RESET
     Load Default.....waiting...
```

Use arrow keys to pick the character, followed by ENTER. There are 66 characters to choose from. Password modification can only be done using terminal operation. The default password is LOOP. Move the cursor to YES, then press ENTER when the entire password is assembled.

```
Enter Password:                         YES
0123456789ABCDEFGHIJKLMNOPQRSTUVWXYZ!"#$
```

```
Enter Password: XXXX                    YES
     Load Default.....waiting...
```

5.1.2.5.4 Reset

Move the cursor to RESET option, press ENTER. The system will show two options, PRIMARY and REDUNDANT. Use arrow keys to select the desired option, press ENTER. Then system will request users to enter password in next LCD.

```
MISC>STORE  RETRIEVE  DEFAULT  RESET
     PRIMARY  REDUNDANT
```

Use arrow keys to pick the character, followed by ENTER. There are 66 characters to choose from. Password modification can only be done using terminal operation. The default password is LOOP. Move the cursor to YES, then press ENTER when the entire password is assembled.

```
Enter Password:                         YES
0123456789ABCDEFGHIJKLMNOPQRSTUVWXYZ!"#$
```

5.1.3 TSI-MAP

Use arrow keys to move the cursor to the TSI-MAP option.

```
                LOOP AM3440
<< UNIT  CONTROLLER  TSI-MAP  ALARM >>
```

5.1.3.1 Map

Press ENTER from the TSI-MAP menu, then move the cursor to MAP option, the system will show as below.

```
TSIMAP>MAP SEL_MAP COPY_MAP CLR_MAP BKUP
MAP>MAP-1 MAP-2 MAP-3
```

Press ENTER from the above menu, the following LCD will show up.

```
MAP>MAP-1 MAP-2 MAP-3
TSIMAP_1>Select Slot:
```

Use arrow keys to select the desired slot.

```
TSIMAP_1>Select Slot:  <FT1>
A B C D 1 2 3 4 5 6 7 8 9 10 11 12 HD
```

Press ENTER from the above menu.

NOTE: **D_07** means the seventh time slot of slot D.
XX means idle.
d means data. Switch **d** to **v** (voice) by pressing ENTER.
P 1 means Port 1.

```
MAP>[idiiiiddddddddddiiiiiiii]
D_07(FT1 ,XX ,d)<->5_07(HDSL,P 1,d)
```

Press ENTER from the above LCD to view the current status. The currently active status will be highlighted by an asterisk (*).

NOTE: Option **C** means command. Three options are available for the C command: **C**(clear), **S**(setup), and **A** (clear and setup). Press ENTER to switch these commands.

```
D  TS PORT T<->SLOT PORT TS  T# C CHANGE
   07 *XX  *d  *5   *P 1 *07 01 A
```

5.1.3.2 Select Map

Move the cursor to SEL_MAP option to select the desired map. Press ENTER

```
TSIMAP>MAP SEL_MAP COPY_MAP CLR_MAP BKUP
SEL_MAP>MAP-1 MAP-2 MAP-3
```

Use arrow keys to select the desired map, then press ENTER. The current selection will be highlighted by an asterisk (*).

```
SEL_MAP>MAP-1 MAP-2 MAP-3
          *                                    OK
```

5.1.3.3 Copy Map

To copy map by moving the cursor to the COPY_MAP option. Press ENTER.

```
TSIMAP>MAP SEL_MAP COPY_MAP CLR_MAP BKUP
COPY_MAP>FROM   TO   COPY
```

Move the cursor to FROM option, then press ENTER to switch maps. Same action for the TO option. Then move the cursor to COPY option, press ENTER to confirm the command.

```
COPY_MAP>FROM    TO     COPY
         MAP_1   MAP_2
```

5.1.3.4 Clear Map

Move the cursor to CLR_MAP to clear map. Press ENTER.

```
TSIMAP>MAP SEL_MAP COPY_MAP CLR_MAP BKUP
CLEAR_MAP>MAP   CLEAR
```

Press ENTER to switch maps. Move the cursor to CLEAR and press ENTERTo confirm the clear command

```
CLEAR_MAP>MAP    CLEAR
          MAP_1
```

5.1.3.5 Backup

This menu is used to backup the link for slot A, B, C, and D. Move the cursor to the BKUP, there are four options are available: FUNCTION, MODE, SETUP, and STATUS.

```
TSIMAP>MAP SEL_MAP COPY_MAP CLR_MAP BKUP
BACKUP>FUNCTION MODE SETUP STATUS
```

5.1.3.5.1 Function

Move the cursor to FUNCTION option, then press ENTER to enable or disable it.

```
BACKUP>FUNCTION MODE SETUP STATUS
BACKUP_FUNC>OFF ON
```

The current selection will by highlighted by an asterisk (*).

```
BACKUP_FUNC>OFF ON
              *
```

5.1.3.5.2 Mode

Press ENTER from the MODE option. This menu is used to revert the linking backup or not.

```
BACKUP>FUNCTION MODE SETUP STATUS
BACKUP_MODE>NON-REVERTIBLE  REVERTIBLE
```

The currently active selection will be highlighted by an asterisk (*).

```
BACKUP_MODE>NON-REVERTIBLE  REVERTIBLE
               *
```

5.1.3.5.3 Setup

Use this menu to setup the link for slot A, B, C, and D.

```
BACKUP>FUNCTION MODE SETUP STATUS
BACKUP>LINK-A LINK-B LINK-C LINK-D  SET
```

The following LCD means that LINK-A is backup by LINK-B. X means no backup for the links. To confirm the setup by moving the cursor to SET with pressing ENTER.

```
BACKUP>LINK-A LINK-B LINK-C LINK-D  SET
        B     *X     *X     *X
```

5.1.3.5.4 Status

This menu is used to view the linking status. Move the cursor to STATUS, then press ENTER.

```
BACKUP>FUNCTION MODE SETUP STATUS
BACKUP>LINK-A LINK-B LINK-C LINK-D
```

The following LCD means that LINK-A, whose linking status is N (normal), is backup by LINK-B. No backup for LINK-B, LINK-C, and LINK-D.

```
BACKUP>LINK-A LINK-B LINK-C LINK-D
        B  N   X  N   X  N   X  N
```

5.1.4 Alarm

Under LOOP AM3440 main menu, use arrow keys to move the cursor at the ALARM option, which is used to view alarm queue, to setup or clear alarm.

```
                LOOP AM3440
<< UNIT  CONTROLLER  TSI-MAP  ALARM >>
```

5.1.4.1.1 Alarm Queue

Press ENTER from the above menu, the system will show up three options, QUEUE, SETUP, and CLEAR, as below.

```
ALARM>QUEUE  SETUP  CLEAR
QUEUE>NEXT  PREV
```

5.1.4.1.2 Alarm Setup

```
ALARM>QUEUE  SETUP  CLEAR
SETUP>NEXT  PREV  EDIT
```

5.1.4.1.3 Alarm Clear

```
ALARM>QUEUE  SETUP  CLEAR
       Clear All Alarm ?  NO  YES
```

5.2 E1 Interface Menu

Under Main menu, move the cursor to UNIT option. Press ENTER.

```
                LOOP AM3440
<< UNIT  CONTROLLER  TSI-MAP  ALARM >>
```

Use arrow keys to select FE1 unit as below.

```
UNIT> Select Unit: <FE1>
A B C D 1 2 3 4 5 6 7 8 9 10 11 12
```

5.2.1 Line

Press ENTER from the above menu. Move the cursor to LINE option, the system will show as below.

```
C>LINE DIAG INFO MISC ALARM
C LINE>FRAME CODE RAI CRC AIS CAS SaBit
```

5.2.1.1 Frame

Press ENTER from the LINE menu. Move the cursor to the desired option, the system will show up the related message immediately. The current selection will be highlighted by an asterisk (*).

```
C LINE>FRAME CODE RAI CRC AIS CAS SaBit
     *ON
```

5.2.1.2 Code

Two codes, AMI and HDB3,are available here. The current selection will be highlighted by an asterisk (*).

```
C LINE>FRAME CODE RAI CRC AIS CAS SaBit
      AMI *HDB3
```

5.2.1.3 RAI

Use arrow keys to select ON or OFF, then press ENTER to enable or disable the option.

```
C LINE>FRAME CODE RAI CRC AIS CAS SaBit
     *ON  OFF
```

5.2.1.4 CRC

The cyclic redundancy check function can be turned on or off. Unlike bipolar violation, which can monitor only one span, CRC menu allows error monitoring through multiple spans of E1 line. For two frame mode, set CRC to OFF. For multi-frame mode, set CRC to ON.

```
C LINE>FRAME CODE RAI CRC AIS CAS SaBit
     *ON  OFF
```

5.2.1.5 AIS

AIS menu shows the configuration set for the alarm indication signal. Using left and right arrow key cycle through to ON or OFF, and then press ENTER. The current selection is highlighted by an asterisk (*).

```
C LINE>FRAME CODE RAI CRC AIS CAS SaBit
     *FRAME  UNFRAME  OFF
```

5.2.1.6 CAS

Using left and right arrow key cycle through to ON or OFF, and then press ENTER. The current selection is highlighted by an asterisk (*).

```
C LINE>FRAME CODE RAI CRC AIS CAS SaBit
      ON *OFF
```

5.2.1.7 SaBit

To change a channel for FDL, move cursor to Sabit, and use left or right arrow keys to select a channel, press ENTER. The current selection is highlighted by an asterisk (*).

```
C LINE>FRAME CODE RAI CRC AIS CAS SaBit
     *Sa4  Sa5  Sa6  Sa7  Sa8  Sa4+Sa5
```

5.2.1.8 Signalling

Move the cursor to the signalling item. Use arrow keys to select "TRANS" or "CD=01". The current selection will be highlight by an asterisk (*).

```
C LINE>SIGNALLING INTF FDL CGA OOS IDLE
     *TRANS  CD=01
```

5.2.1.9 Interface

After moving cursor to INTERF, the system will show 75 Ohm twisted pair or 120 Ohm coaxial cable for the current interface.

```
C LINE>SIGNALLING INTF FDL CGA OOS IDLE
     *120ohm  75ohm
```

5.2.1.10 FDL

FDL menu shows the facility data link. To enable FDL by moving cursor to ON, while to disable it by moving cursor to OFF, and press ENTER. The current selection is highlighted by an asterisk "*".

```
C LINE>SIGNALLING INTF FDL CGA OOS IDLE
      ON *OFF
```

5.2.1.11 CGA

To configure CGA as NORMAL or TRANSPARENT, use the arrow keys to cycle through to the proper selection and press ENTER.

```
C LINE>SIGNALLING INTF FDL CGA OOS IDLE
     *NORM  TRANS
```

5.2.1.12 OOS

To change the OOS protocol, use the arrow keys to cycle through to the proper selection and Press ENTER.

```
C LINE>SIGNALLING INTF FDL CGA OOS IDLE
   *BUSY  IDLE  BUSY_IDLE IDLE_BUSY
```

5.2.1.13 IDLE

Press ENTER for the Line Idle Code menu.

The Idle menu shows the transmission idle code when a DS0 time slot is in idle mode. To change the idle code, press ENTER to cycle through the selections. This operation must be concluded by moving the arrow keys to YES position and pressing ENTER to enable the changes.

```
C LINE>SIGNALLING INTF FDL CGA OOS IDLE
C IDLE>Idle Code = 0xD5  YES
```

5.2.2 Diagnostic

Diagnostics group includes near loopback, remote loopback, and test pattern.

```
C>LINE  DIAG  INFO  MISC ALARM
C DIAG>NearLB RemLB PATT
```

5.2.2.1 Near Loopback

Near loopback menus are used to control near end E1 or T1 line side loopback operation, such as local loopback test, payload loopback test, and line loopback test. Under diagnostics menu, use left or right keys to select near loopback menu.

```
DIAG> NearLB  RemLB  PATT
     *OFF  LOCAL  PLB  LLB
```

5.2.2.2 E1 Remote Loopback

E1 remote loopback is used to activate E1 line remote loopback test. To activate or deactivate E1 remote loopback, use left or right arrow keys cycle through to a desired selection and press ENTER.

```
RemLB> ACTIVATE  DEACTIVATE
      *PAYLOAD  LINE
```

5.2.2.3 T1 Remote Loopback

T1 remote loopback is used to activate T1 line remote loopback test. To activate or deactivate T1 remote loopback, use left or right arrow keys cycle through to a desired selection and press ENTER. To select IN-BAND for remote line loopback inband coding, AT&T-P for remote payload loopback AT&T FDL coding, ANSI-P for remote payload loopback, ANSI-L for remote line loopback ANSI FDL coding.

```
RemLB> ACTIVATE  DEACTIVATE
      *IN_BAND  AT&T-P  ANSI-P  ANSI-L
```

5.2.2.4 PATTERN

Press ENTER from testing pattern menu. Using left or right arrow keys cycle through to a desired test pattern, and press ENTER.

```
PATT> PATT
     *OFF  QRSS-FULL
```

```
PRBS> FULL UNSYNC   ERROR SECONDS:1
TOTAL SECONDS:1     ERROR BITS   :65535
```

5.2.3 Information

The INFO menu provides the software version number.

```
C>LINE  DIAG  INFO  MISC ALARM
C INFO>S/W
```

5.2.4 Miscellaneous

Under the DS1 PORT menu, move the cursor to MISC option, then the system will show as below.

```
C>LINE  DIAG  INFO  MISC ALARM
C MISC>STATUS  DEFAULT  RESET
```

5.2.4.1 Status

Press ENTER from the above menu. Move the cursor to STATUS option to view the line status with pressing ENTER.

```
B MISC>STATUS  DEFAULT  RESET
      Show Line Status
```

5.2.4.2 Default

Move the cursor to DEFAULT option to download default configuration.

```
B MISC>STATUS  DEFAULT  RESET
B DEFAULT>Load Default Configuration
```

Use arrow keys to pick the character, followed by ENTER. There are 66 characters to choose from. Password modification can only be done using terminal operation. The default password is LOOP. Move the cursor to YES, then press ENTER when the entire password is assembled.

```
Enter Password:                        YES
0123456789ABCDEFGHIJKLMNOPQRSTUVWXYZ!"#$
```

```
Enter Password: XXXX                   YES
Successful to load default configuration
```

5.2.4.3 Reset

Move the cursor to RESET option. Then press ENTER to reset unit.

```
B MISC>STATUS  DEFAULT  RESET
      Reset Unit
```

5.2.5 Alarm

Alarm menu for DS1 is used to clear alarm and setup alarm threshold.

```
C>LINE  DIAG  INFO  MISC ALARM
C ALM>CLEAR  SETUP
```

5.2.5.1 Alarm Clear

Press ENTER from the above menu. Move the cursor to NO or YES to confirm the alarm clear.

```
C ALM>CLEAR  SETUP
      Clear Unit Alarm ?  NO  YES
```

5.2.5.2 Alarm Setup

Move the cursor to NEXT or PREV to view alarm, then go to EDIT option with pressing ENTER to do alarm setup.

```
C ALM>CLEAR  SETUP
C SETUP>NEXT  PREV  EDIT
```

5.3 T1 Interface Menu

Under Main menu, move the cursor to UNIT option. Press ENTER.

```
                LOOP AM3440
<< UNIT  CONTROLLER  TSI-MAP  ALARM >>
```

Use arrow keys to select FT1 unit as below.

```
UNIT> Select Unit: <FT1>
A B C D 1 2 3 4 5 6 7 8 9 10 11 12
```

5.3.1 Line

Press ENTER from the above menu. Move the cursor to LINE option, the system will show as below.

```
B>LINE DIAG INFO MISC ALARM
B LINE>FRAME CODE YEL INBAND AIS CAS
```

5.3.1.1 Frame

To change the frame type, use the arrow keys to cycle through to a proper selection and press ENTER. For example, ESF&T1.403 indicates ESF frame format is chosen and facility data link message follows ANSI T1.403 standard. While ESF indicates ESF frame format is chosen and facility data link follows AT&T PUB 54016 standard. An asterisk (*) is placed by the currently selected item. Use the arrow keys to change the setting, and press ENTER.

```
B LINE>FRAME CODE YEL INBAND AIS CAS
      D4 *ESF ESF&T1.403 NONE
```

5.3.1.2 Code

To select the coding scheme, use the arrow keys cycle through to a proper selection and press ENTER. The choices for T1 are AMI and B8ZS. An asterisk (*) is placed by the currently selected item. Using the arrow keys to change the setting, and press ENTER. Be sure that this setting matches that of the network.

```
B LINE>FRAME CODE YEL INBAND AIS CAS
      AMI *B8ZS
```

5.3.1.3 YEL

Yellow alarm for T1 shows the current alarm transmission state when the port reports loss of signal or loss of frame sync. To enable this alarm being automatically send out when loss of signal and loss of frame sync, use the arrow keys to cycle through to ON and press ENTER. To disable yellow alarm sending, use the arrow keys cycle through to OFF and press ENTER. An asterisk (*) is placed by the currently selected item.

```
B LINE>FRAME CODE YEL INBAND AIS CAS
     *ON  OFF
```

5.3.1.4 INBAND

The INBAND menu shows the remote inband loopback diagnostics code recognition. The current selection is highlighted by an asterisk (*). To enable it, move the cursor to ON and press ENTER. To disable it, move the cursor to OFF and press ENTER.

```
B LINE>FRAME CODE YEL INBAND AIS CAS
      ON  *OFF
```

5.3.1.5 AIS

The AIS menu shows the configuration set for the alarm indication signal. Use the arrow keys to cycle through to FRAME or UNFRAMED and press ENTER. The current selection is highlighted by an asterisk (*).

```
B LINE>FRAME CODE YEL INBAND AIS CAS
     *FRAME  UNFRAME  OFF
```

5.3.1.6 CAS

Signaling is either CAS (channel associated signalling) or out-of-band such as CCIS (common channel interoffice signalling). To change the signaling type, use the arrow keys to choose from CAS ON or CAS OFF and press ENTER.

```
B LINE>FRAME CODE YEL INBAND AIS CAS
      ON *OFF
```

5.3.1.7 Signalling

Move the cursor to the signalling item. Use arrow keys to select "TRANS", press ENTER. The current selection will be highlight by an asterisk (*).

```
B LINE>SIGNALLING INTF LBO CGA OOS IDLE
     *TRANS
```

5.3.1.8 Interface

After moving cursor to INTERF, the system will show LONG_HAUL and SHORT_HAUL options for the current interface.

```
B LINE>SIGNALLING INTF LBO CGA OOS IDLE
     *LONG_HAUL  SHORT_HAUL
```

5.3.1.9 LBO

The LBO menu shows the current transmission LBO as 0, -7.5, or -15 dB by placing an asterisk (*), by the appropriate entry. To change the LBO, move the cursor to the proper selection and press ENTER.

```
B LINE>SIGNALLING INTF LBO CGA OOS IDLE
      *0dB  -7.5dB  -15dB
```

5.3.1.10 CGA

To configure CGA as NORMAL or TRANSPARENT, use the arrow keys to cycle through to the proper selection and press ENTER.

```
B LINE>SIGNALLING INTF LBO CGA OOS IDLE
     *NORM  TRANS
```

5.3.1.11 OOS

To change the OOS protocol, use the arrow keys to cycle through to the proper selection and Press ENTER.

```
B LINE>SIGNALLING INTF LBO CGA OOS IDLE
   *BUSY  IDLE  BUSY_IDLE IDLE_BUSY
```

5.3.1.12 IDLE

Press ENTER for the Line Idle Code menu.

The Idle menu shows the transmission idle code when a DS0 time slot is in idle mode. To change the idle code, press ENTER to cycle through the selections. This operation must be concluded by moving the arrow keys to YES position and pressing ENTER to enable the changes.

```
B LINE>SIGNALLING INTF LBO CGA OOS IDLE
B IDLE>Idle Code = 0xFF  YES
```

5.3.2 Diagnostic

Move the cursor to DIAG option, the system will show as below.

```
B>LINE DIAG INFO MISC ALARM
B DIAG> NearLB  RemLB  PATT
```

5.3.2.1 Near Loopback

Near loopback menus are used to control near end E1 or T1 line side loopback operation, such as local loopback test, payload loopback test, and line loopback test. Under diagnostics menu, use left or right keys to select near loopback menu.

```
B DIAG> NearLB  RemLB  PATT
     *OFF  LOCAL  PLB  LLB
```

5.3.2.2 E1 Remote Loopback

E1 remote loopback is used to activate E1 line remote loopback test. To activate or deactivate E1 remote loopback, use left or right arrow keys cycle through to a desired selection and press ENTER.

```
RemLB> ACTIVATE  DEACTIVATE
      *PAYLOAD  LINE
```

5.3.2.3 T1 Remote Loopback

T1 remote loopback is used to activate T1 line remote loopback test. To activate or deactivate T1 remote loopback, use left or right arrow keys cycle through to a desired selection and press ENTER. To select IN-BAND for remote line loopback inband coding, AT&T-P for remote payload loopback AT&T FDL coding, ANSI-P for remote payload loopback, ANSI-L for remote line loopback ANSI FDL coding.

```
RemLB> ACTIVATE  DEACTIVATE
      *IN_BAND  AT&T-P  ANSI-P  ANSI-L
```

5.3.2.4 PATTERN

Testing pattern menus is used to perform PRBS diagnostics or select a variety of test pattern. Under Diagnostics menu, use left or right arrow keys to select testing pattern menu.

Press ENTER from testing pattern menu. Using left or right arrow keys cycle through to a desired test pattern, and press ENTER.

```
PATT> PATT
     *OFF  PRBS-FULL
```

PRBS us used to perform PRBS (Pseudo-Random Bit Sequence 215-1) test. PRBS test channel is selected by a bundle of designated FULL (all DS1 channel) or PAYLOAD (mapped channel). When PRBS is activated, the LCD display shows the results of pattern synchronization, test DTE channel, and errors count. If PRBS pattern is received, PRBS SYNC is shown on the LCD display. Else, PRBS UNSYNC is shown and bit error count is displayed which counts all single error. User many use ">" key to inject single bit error, "<" key to reset error counter, and ESC key to quit PRBS test.

```
PRBS> FULL UNSYNC   ERROR SECONDS:1
TOTAL SECONDS:1     ERROR BITS   :65535
```

5.3.3 Information

Move the cursor to INFO option, the system will show as below.

```
B>LINE DIAG INFO MISC ALARM
B INFO>S/W
```

5.3.4 Miscellaneous

Under the DS1 PORT menu, move the cursor to MISC option, then the system will show as below.

```
B>LINE  DIAG  INFO  MISC ALARM
B MISC>STATUS  DEFAULT  RESET
```

5.3.4.1 Status

Press ENTER from the above menu. Move the cursor to STATUS option to view the line status with pressing ENTER.

```
B MISC>STATUS  DEFAULT  RESET
      Show Line Status
```

5.3.4.2 Default

Move the cursor to DEFAULT option to download default configuration.

```
B MISC>STATUS  DEFAULT  RESET
B DEFAULT>Load Default Configuration
```

Use arrow keys to pick the character, followed by ENTER. There are 66 characters to choose from. Password modification can only be done using terminal operation. The default password is LOOP. Move the cursor to YES, then press ENTER when the entire password is assembled.

```
Enter Password:                          YES
0123456789ABCDEFGHIJKLMNOPQRSTUVWXYZ!"#$
```

```
B MISC>Load Default Configuration
Successful to load default configuration
```

5.3.4.3 Reset

Move the cursor to RESET option. Then press ENTER to reset unit.

```
B MISC>STATUS  DEFAULT  RESET
      Reset Unit
```

5.3.5 Alarm

Alarm menu for DS1 is used to clear alarm and setup alarm threshold.

```
B>LINE  DIAG  INFO  MISC ALARM
B ALM>CLEAR  SETUP
```

5.3.5.1 Alarm Clear

Press ENTER from the above menu. Move the cursor to NO or YES to confirm the alarm clear.

```
B ALM>CLEAR  SETUP
      Clear Unit Alarm ?  NO  YES
```

5.3.5.2 Alarm Setup

Move the cursor to NEXT or PREV to view alarm, then go to EDIT option with pressing ENTER to do alarm setup.

```
B ALM>CLEAR  SETUP
B SETUP>NEXT  PREV  EDIT
```

5.4 DTU Interface Menu (10-Port/ 6-Port)

Under Main menu, move the cursor to UNIT option. Press ENTER.

```
              LOOP AM3440
<< UNIT CONTROLLER TSI-MAP ALARM >>
```

Use arrow keys to select 10-port DTU interface as below.

```
12U> Select Port Number
12U>UUUUUUUUUU
```

Use arrow keys to select 6-port DTU interface as below.

```
6U> Select Port Number
6U>UUUUUU
```

The following PORT menus are applied for 10-port and 6-port DTU interfaces.

5.4.1 DTU

Press ENTER from the above LCD to enter in the DTU menu, which has there options: MCLK, MODE, and LINK.

```
12U-10 PORT> DTU RDTE ALARM DIAG MISC
12U-10 DTU> MCLK  MODE  LINK
```

Only Internal is available for MCLK menu.

```
12U-10 DTU> MCLK  MODE  LINK
            *Internal
```

Only LT mode is available for MODE menu.

```
12U-10 DTU> MCLK  MODE  LINK
            *LT mode
```

Only M-channel is available for LINK menu.

```
12U-10 DTU> MCLK  MODE  LINK
            *M-channel
```

5.4.2 RDTE (Remote DTE)

The RDTE menu is used to select and setup the speed, channel, and configuration.

5.4.2.1 Speed for DTE

If the speed mode of remote DTE is SYNC, the choices of speed are 1.2, 2.4, 4.8, 9.6, 19.2, 38.4, 48.0, 64, 56, 128, 112, or 0K.

If the speed mode of remote DTE is ASYNC, the choices of speed are 1.2, 2.4, 4.8, 9.6, 19.2, or 38.4K.

```
12U-10 RDTE> SPEED  CHANNEL CONFIG
U-A1 RDTE> *SYNC   ASYNC
```

To use left or right arrow key to select SYNC, and press ENTER, the following LCD for choices of speed is shown. Then to keep moving cursor by using right key, the second LCD is shown. The current selection is highlighted by an asterisk (*).

```
12U-10 RDTE> SYNC
   1.2K  2.4K  4.8K  9.6K  19.2K  *38.4K
```

```
12U-10 RDTE> SYNC
   *64K  56K  128K  112K  0K
```

To use left or right arrow key to select ASYNC, and press ENTER, the following LCD for choices of speed is shown.

```
12U-10 RDTE> SPEED  CHANNEL CONFIG
12U-10 RDTE> SYNC   *ASYNC
```

```
12U-10 RDTE> ASYNC
   1.2K  2.4K  4.8K  9.6K  19.2K  *38.4K
```

5.4.2.2 Speed for DTE - X.50

The following RDTE menu is used to select and setup the speed, channel, configuration, and X.50 interface.

```
12U-10 PORT> DTU RDTE ALARM DIAG MISC
12U-10 DTU> SPEED CHANNEL CONFIG X.50
```

If user want to select X.50 menu of Remote DTE menu from ASYNC submenu, move cursor to SYNC submenu. Press ENTER to enter in the LCD for choices of speed, as the third LCD shows. After pressing ESC key to return the Remote DTE menu, the X.50 submenu is shown.

```
12U-10 RDTE> SPEED CHANNEL CONFIG X.50
12U-10 RDTE> *SYN  A_8  A_9  A_10  A_11
```

```
12U-10 RDTE>  SYNC
    1.2  2.4  4.8  9.6  19.2 *38.4  48.0K
```

5.4.2.3 Channel

The options of channel for remote DTE are IDLE, B1, B2, or B1+B2 channels.

```
12U-10 RDTE> SPEED CHANNEL CONFIG X.50
    IDLE  B1  B2 *B1+B2
```

5.4.2.4 Configuration

The options of configuration for remote DTE are CLOCK, DATA, RTS, TTM and INTF.

```
12U-10 RDTE> SPEED CHANNEL CONFIG X.50
12U-10 CONF> CLOCK DATA RTS TTM INTF
```

5.4.2.5 X.50 Configuration

Use arrow keys to select X.50 option, the LCD will show as below.

```
12U-10 RDTE> SPEED CHANNEL CONFIG X.50
12U-10 RDTE> IDLE_CODE  MAP  STATUS
```

Press ENTER from the above menu. Move the cursor to IDLE_CODE option to view the idle code.

```
12U-10 RDTE> IDLE_CODE  MAP  STATUS
        0x2B
```

Press ENTER from the X.50 menu. Move the cursor to MAP option, the LCD will show as below.

```
12U-10 RDTE> IDLE_CODE  MAP  STATUS
        [1111111111111111iiii]
```

To view the current status, press ENTER from the X.50 menu. Move the cursor to STATUS option, the LCD will show as below.

```
12U-10 RDTE> IDLE_CODE  MAP  STATUS
        [11111111111111110000]
```

5.4.3 Alarm

Under DTU PORT menu, move the cursor to ALARM option.

```
12U-2 PORT> DTU RDTE ALARM DIAG MISC
12U-2 DTU> SETUP
```

Press ENTER from the above menu, then use arrow keys to select the desired option.

```
12U-10 ALARM> SETUP
12U-10 UNSYNC_ALM> ENABLE   SAVE
```

Use arrow keys and ENTER key to disable or enable the alarm setup.

```
12U-10 UNSYNC_ALM> ENABLE   SAVE
              *DISABLE  ENABLE
```

5.4.4 Diagnostic

Under DTU PORT menu, move the cursor to DIAG option, the system will show as below. Three options are available here: Near Loopback, Remote Loopback, and BERT.

```
12U-2 PORT> DTU RDTE ALARM DIAG MISC
12U-2 DTU> NearLB  RemoteLB  BERT
```

Press ENTER from the above menu to enter in the near loopback. The current selection will be highlighted by an asterisk (*).

```
12U-10 DIAG> NearLB  RemoteLB  BERT
         *OFF  LOCAL  PAYLOAD
```

```
12U-10 DIAG> NearLB  RemoteLB  BERT
         *OFF  PAYLOAD  DTE1
```

```
12U-10 DIAG> NearLB  RemoteLB  BERT
          OFF *ON
```

Press ENTER from the BERT menu, the LCD will show as below.

```
12U-10 BERT> UNSYNC      Err Secs: 65535*
Total Seconds: 65535     Err Bits: 65535
```

5.4.5 Miscellaneous

Under the DTU PORT menu, move the cursor to MISC option, then the system will show as below.

```
12U-2 PORT> DTU RDTE ALARM DIAG MISC
12U-2 DTU> RINFO  RESET
```

5.4.5.1 Remote Information

Move the cursor to RINFO option to view the remote information for software version and serial number.

```
12U-10 MISC> RINFO  RESET
12U-10 Remote INFO> S/W  SERIAL
```

```
12U-10 Remote INFO> S/W  SERIAL
S/W Version: V 1.10 09/10/1997
```

```
12U-10 Remote INFO> S/W  SERIAL
Serial Number: 1234          01/1999
```

5.4.5.2 Reset

Move the cursor to RESET option, the system will request the confirmation. Use arrow keys to select NO or YES.

```
12U-10 MISC> RINFO  RESET
Reset U01?  NO  YES
```

Then press ENTER from the above menu.

```
12U-10 MISC> RINFO  RESET
12U-10  Resetting....
```

5.5 HDSL Interface Menu

Move the cursor to UNIT option, then press ENTER.

```
              LOOP AM3440
<< UNIT CONTROLLER TSI-MAP ALARM >>
```

Use arrow keys to select a unit for HDSL interface.

```
UNIT> Select Unit: <HDSL>
A B C D 1 2 3 4 5 6 7 8 9 10 11 12
```

5.5.1 HDSL Port Menu

Press ENTER from the above menu. The system will show up three submenu: PORT, INFO, and MISC.

```
05H > PORT  INFO  MISC
      SELECT PORT :
```

Use arrow keys to select the desired port.

```
05H > SELECT PORT :
      PORT-1  PORT-2  PORT-3
```

5.5.1.1 Configuration

Press ENTER from the PORT-1 menu, to enter in the CONFIG menu, which provides five options: MODE, M-CLK, S-CLK, S-DTE, and RATE.

```
05H-1> CONFIG STATUS ALARM DIAG
       CFG>MODE M-CLK S-CLK S-DTE RATE
```

5.5.1.1.1 MODE

The mode of HDSL is master only.

```
05H-1 CFG>MODE M-CLK S-CLK S-DTE RATE
          MASTER
```

5.5.1.1.2 M-CLK

Master clock menu shows the current clock source are internal.

```
05H-1 CFG>MODE M-CLK S-CLK S-DTE RATE
          INTERNAL
```

5.5.1.1.3 S-CLK

Slave clock menu is used to view the current clock source of the slave are line, internal, or DTE by placing an asterisk (*) at the appropriate selection. To change the selection, move cursor to the desired selection and press ENTER.

```
05H-1 CFG>MODE M-CLK S-CLK S-DTE RATE
        *LINE  INTERNAL  DTE
```

5.5.1.1.4 S-DTE

Slave DTE menu is used to configure DTE port operation mode of the slave. There are the following choices are available: MAP, clock mode, data mode, RTS, TTM (Terminal Timing Mode), V.54, and interface type.

```
05H-1 CFG>MODE M-CLK S-CLK S-DTE RATE
   S-DTE> MAP CLK DATA RTS TTM V.54 INTF
```

MAP menu shows the current assigned ports for each DS0 channel. In the MAP menu, i indicates idle, 1 indicates corresponding DTE port numbers. To change a specific DS0 channel port assignment, move the cursor to a the desired port and press ENTER. The cursor will return to the upper line and the LCD will show the channel number. Slave map will auto setup whenever the Master MAP (main menu) is changed.

```
S-DTE> MAP CLK DATA RTS TTM V.54 INTF
        [ii1111111111]  (10:640Kbps)
```

Clock menu shows the current slave DTE clock polarity status (either normal or inverted) by placing an asterisk (*) at the appropriate selection. To change the DTE clock polarity, move the cursor to a the desired port and press ENTER.

```
S-DTE> MAP CLK DATA RTS TTM V.54 INTF
        *NORMAL  INVERTED
```

To change the DTE data polarity to NORMAL or INVERTED, use left and right arrow keys to cycle through to a proper selection and press ENTER.

```
S-DTE> MAP CLK DATA RTS TTM V.54 INTF
        *NORMAL  INVERTED
```

To change the DTE RTS operation mode to ACTIVE or PERMANENT, move the cursor to a the desired port and press ENTER.

```
S-DTE> MAP CLK DATA RTS TTM V.54 INTF
      *ACTIVE  PERMANENT
```

To change the DTE terminal timing mode, use left and right arrow keys to cycle through to a proper selection and press ENTER.

```
S-DTE> MAP CLK DATA RTS TTM V.54 INTF
        *OFF  ON
```

To change the DTE V.54 channel to OFF or ON, move the cursor to a the desired port and press ENTER.

```
S-DTE> MAP CLK DATA RTS TTM V.54 INTF
      *OFF  ON
```

To view the DTE interface, use left and right arrow keys to cycle through to a proper selection.

```
S-DTE> MAP CLK DATA RTS TTM V.54 INTF
        V.35
```

5.5.1.1.5 RATE

The Rate menu shows the current line rate.

```
05H-1 CFG>MODE M-CLK S-CLK S-DTE RATE
          *784Kbps
```

Move the cursor at UP or DOWN options to select the desired line rate. Then go to OK option by pressing ENTER to change setup.

```
05H-1 CFG>MODE M-CLK S-CLK S-DTE RATE
          *784Kbps    UP   DOWN   OK
```

5.5.1.2 Status

Status menu is used to monitor the signal status of master line, slave line, and slave DTE or E1.

```
05H-1> CONFIG STATUS ALARM DIAG
       STATUS>M-LINE S-LINE S-DTE
```

5.5.1.2.1 Master Line Status

```
05H-1 STATUS>M-LINE S-LINE S-DTE
   MASTER-LINE STATUS:
```

```
05H-1 MASTER-LINE STATUS:
LOOP-1 SYNC
```

5.5.1.2.2 Slave Line Status

```
05H-1 STATUS>M-LINE S-LINE S-DTE
   SLAVE-LINE STATUS:
```

5.5.1.2.3 Slave DTE Status

```
05H-1 SLAVE-LINE STATUS:
LOOP-1 SYNC
```

```
05H-1 STATUS>M-LINE S-LINE S-DTE
   STATUS:
```

The asterisk " * " is shown only when the signal is ON.

```
05H-1   STATUS:
   *DSR  *CTS  *DCD  *DTR  *RTS
```

5.5.1.3 Alarm

Move the cursor to ALARM option to do alarm setup. The Setup menu is used to set up alarm relays and auto dial out functions. To set up these functions, press ENTER to move to the following display. Move cursor to NEXT or PREVIOUS and press ENTER to view each alarm type. To edit the threshold level, alarm relay, and dial out functions, move cursor to EDIT and press ENTER.

```
05H-1> CONFIG STATUS ALARM DIAG
       ALM>SETUP
```

```
05H-1> ALM>SETUP
SETUP>NEXT PREV EDIT
```

```
SETUP>NEXT PREV EDIT
  LOS,MASTER-LOOP>DISABLE
```

5.5.1.4 Diagnostic

Diagnostics group includes HDSL, slave Loopback, and BERT menu.

```
05H-1> CONFIG STATUS ALARM DIAG
       DIAG>HDSL-LB SlaveLB BERT
```

5.5.1.4.1 HDSL Loopback

HDSL Loopback menu are used to control near end HDSL line side loopback operation such as TO-DS1 loopback test, TO-LINE. Under Diagnostics menu, use left or right key to select HDSL Loopback menu. The current selection is highlighted by an asterisk (*).

```
05H-1 DIAG>HDSL-LB SlaveLB BERT
     *OFF  TO-DS1  TO-LINE
```

5.5.1.4.2 Slave Loopback

Slave Loopback menu is used to active the slave's loopback test. A proprietary message is sent to request the slave Loop-AM 3420 to perform line or DTE loopback. Under SlaveLB menu, use left or right key to select the desired selection. The current selection is highlighted by an asterisk (*).

```
05H-1 DIAG>HDSL-LB SlaveLB BERT
     SlaveLB> HDSL-SIDE  DTE-SIDE
```

```
05H-1 SlaveLB> HDSL-SIDE  DTE-SIDE
      *OFF  HDSL-TO-LINE  HDSL-TO-DTE
```

```
05H-1 SlaveLB> HDSL-SIDE  DTE-SIDE
     *OFF  DTE-TO-LINE  DTE-TO-DTE
```

5.5.1.4.3 BERT

Moving cursor to select BERT menu to start the bit error rate test.

```
05H-1 DIAG>HDSL-LB SlaveLB BERT
      *OFF  ON
```

```
05H-1 BERT> UNSYNC        Err Secs: 0
      Total Seconds: 0    Err Bits: 0
```

5.5.2 Information

The Information menu provides software version number.

```
05H > PORT  INFO  MISC
INFO >S/W
```

```
05H    INFO >S/W
Version: V1.00 04/10/2001
```

5.5.3 Miscellaneous

Move the cursor to MISC option, the LCD will show as below.

```
05H > PORT  INFO  MISC
     MISC >RESET DEFAULT
```

5.5.3.1 Reset

Under Miscellaneous menu, moving cursor to RESET, then press ENTER to reset the HDSL cards. The current selection will be highlighted by an asterisk (*).

```
05H   MISC >RESET DEFAULT
       Card Reset ?        *NO  YES
```

5.5.3.2 Default

Move the cursor to DEFAULT option to download default.

```
05H   MISC >RESET DEFAULT
      Load Default Port :
```

Press ENTER from the above menu, then use arrow keys to select the desired port.

```
05H > Load Default Port :
      PORT-1  PORT-2  PORT-3
```

Move the cursor to NO or YES to confirm the download. The current selection will be highlighted by an asterisk (*).

```
05H > Load Default Port :
     Port 1 Load default ?  *NO  YES
```

5.6 DTE Interface Menu

Move the cursor to UNIT option, then press ENTER.

```
              LOOP AM3440
<< UNIT CONTROLLER TSI-MAP ALARM >>
```

Use arrow keys to select a unit for DTE interface.

```
8D > Select Unit Number:
8D-1 DDDDDD
```

5.6.1 Configuration

Press ENTER from the above menu, the following LCD will show up.
CONF menu is used to configure DTE-port operation modes, such as data rate, clock mode, data mode, RTS (request to send) mode, TTM (terminal timing mode) mode, V.54, and interface.

```
8D-1 > CONF  DIAG  ALARM  STATUS  INFO
8D-1  CONF> RATE CLK DAT RTS TTM V54 INF
```

5.6.1.1 Rate

The Rate menu shows the current DTE data rate is either 64 or 56 Kbps. To change the DTE data rate, move cursor to the desired selection and press ENTER. The current selection will be highlighted by an asterisk (*).

```
8D-1  CONF> RATE CLK DAT RTS TTM V54 INF
      *64K  56K
```

5.6.1.2 Clock

The Clock menu shows the current DTE clock polarity status (either normal or inverted) by placing an asterisk (*) at the appropriate selection. To change the DTE clock polarity, move cursor to the desired selection and press ENTER.

```
8D-1  CONF> RATE CLK DAT RTS TTM V54 INF
      *NORMAL  INVERTED
```

5.6.1.3 Data

The Data menu shows the current DTE data polarity (either normal or inverted) by placing an asterisk (*) at the appropriate selection. To change the DTE data polarity, move cursor to the desired selection and press ENTER.

```
8D-1  CONF> RATE CLK DAT RTS TTM V54 INF
      *NORMAL  INVERTED
```

5.6.1.4 RTS

The RTS menu shows the current DTE RTS operation mode (either activate or permanent) by placing an asterisk (*) at the appropriate selection. To change the DTE RTS operation mode, move cursor to the desired selection and press ENTER.

```
8D-1  CONF> RATE CLK DAT RTS TTM V54 INF
      *ACTIVATE  PERMANENT
```

5.6.1.5 TTM

TTM menu shows the current DTE terminal timing mode (either OFF or ON) by placing an asterisk (*) at the appropriate selection. To change the DTE terminal timing mode, move cursor to the desired selection and press ENTER.

```
8D-1  CONF> RATE CLK DAT RTS TTM V54 INF
      *OFF  ON
```

5.6.1.6 V.54

V54 menu shows the current DTE V.54 mode (either OFF or ON) by placing an asterisk (*) at the appropriate selection. To change the DTE V.54 mode, move cursor to the desired selection and press ENTER.

```
8D-1  CONF> RATE CLK DAT RTS TTM V54 INF
      *OFF  ON
```

5.6.1.7 Interface

The Interface menu shows the current DTE interface type.

```
8D-1  CONF> RATE CLK DAT RTS TTM V54 INF
       V.35
```

5.6.2 Diagnostic

Diagnostics group includes DTE Loopback, V54 Loopback, and BERT menu.

```
8D-1 > CONF  DIAG  ALARM  STATUS  INFO
8D-1  DIAG> DTE-LB  V54-LB  BERT
```

5.6.2.1 DTE Loopback

DTE Loopback menu are used to control near end DTE loopback operation such as TO-DS1and TO-LINE loopback test. The current selection is highlighted by an asterisk "*'.

```
8D-1  DIAG> DTE-LB  V54-LB  BERT
      *OFF  TO-DTE  TO-DS1
```

5.6.2.2 V.54 Loopback

The V54 menu is used to control remote V54 channel loopback tests.

```
8D-1  DIAG> DTE-LB  V54-LB  BERT
      *OFF  TO-DTE  TO-DS1
```

To activate or deactivate V54 loopback, first by moving cursor to the desired selection, press ENTER. Then the current selection will be highlighted by an asterisk (*).

```
8D-1  V.54 LOOP> ACTIVATE  DEACTIVATE
             *DTE
```

5.6.2.3 BERT

To start the bit error rate test by moving cursor to ON or OFF, then press ENTER. The current selection will be highlighted by an asterisk (*).

```
8D-1  DIAG> DTE-LB  V54-LB  BERT
     *OFF  ON
```

```
8D-1 BERT> UNSYNC        Err Secs: 65535
Total Seconds: 65535     Err Bits: 65535
```

5.6.3 Alarm

```
8D-1 > CONF  DIAG  ALARM  STATUS  INFO
8D-1  ALARM> SETUP
```

The Setup menu is used to set up alarm relays and auto dial out functions.

```
8D-1  ALARM> SETUP
8D-1  DTE_ALARM> DISABLE  SAVE
```

The current selection is highlighted by an asterisk (*).

```
8D-1 DTE_ALARM> DISABLE SAVE
     *DISABLE  ENABLE
```

5.6.4 Status

Status menu is used to monitor the signal status of DSR, CTS, DCD, DTR, RTS, E_LS (External Clock Loss), and RTS_LS (RTS Clock Loss).

```
8D-1 > CONF  DIAG  ALARM  STATUS  INFO
8D-1 STATUS> DSR CTS DCD DTR RTS E_LS RTS_LS
```

The asterisk "*" is shown only when the signal is ON.

```
8D-1 STATUS>DSR CTS DCD DTR RTS E_LS RTS_LS
             *       *
```

5.6.5 Information

The information menu provides software version number.

```
8D-1 > CONF  DIAG  ALARM  STATUS  INFO
8D-1  INFO> S/W
```

```
8D-1  INFO> S/W
S/W Version: V 1.00 08/01/1999
```

5.7 DTE (X.50) Interface Menu

Move the cursor to UNIT option, then press ENTER.

```
              LOOP AM3440
<< UNIT CONTROLLER TSI-MAP ALARM >>
```

Use arrow keys to select a unit for X.50 interface.

```
10X> Select Unit Number:
10X-1>XXXXX
```

5.7.1 Configuration

CONF menu is used to configure X.50-port operation modes, such as MUX, SYNC, RATE, PHASE, 4.8K, CLCOK, DATA, RTS (request to send) mode, and TTM (terminal timing mode) mode.

```
10X-1> CONF    DIAG
10X-1> MUX  SYNC  RATE  PHASE  4.8K
```

5.7.1.1 Mux

Press ENTER from the “CONFIG” menu, then move the cursor to the “MUX” to select “NO-MUX” or “MUX”. The current selection will be highlighted by an asterisk (*).

```
10X-1> MUX  SYNC  RATE  PHASE  4.8K
       *NO_MUX  MUX
```

5.7.1.2 Sync

Move the cursor to the “SYNC”. Under the “SYNC” menu, there are five options, SYNC, ASYN-8, ASYN-9, ASYN-10, ASYN-11, are available to be selected. The current selection will be highlighted by an asterisk (*).

```
10X-1> MUX  SYNC  RATE  PHASE  4.8K
       *SYNC  ASYN-8  ASYN-9  ASYN-10  ASYN-11
```

5.7.1.3 Rate

The Rate menu shows the current X.50 data rate as below: 1.2, 2.4, 4.8, 9.6, 19.2, 38.4, 48, or 64Kbps by placing an asterisk (*) at the selected option. To change the X.50 data rate, move the cursor to the desired selection, press ENTER.

```
10X-1> MUX  SYNC  RATE  PHASE  4.8K
       *1.2  2.4  4.8  9.6  19.2  38.4  48  64
```

5.7.1.4 Phase

Press ENTER from the “CONFIG” menu, then move the cursor to the “PHASE”. Use left of right arrow key to move the cursor to the desired position, then press ENTER to confirm the selection. The current selection will be highlighted by an asterisk (*).

NOTE:
When “NO-MUX”, the option of the “MUX” menu, is selected, user is allowed to select “FIXED” only of the “PHASE” menu.

```
10X-1> MUX  SYNC  RATE  PHASE  4.8K
       *PH_1  PH_2  PH_3  PH_4  PH_5  FIXED
```

5.7.1.5 4.8K

Press ENTER from the “CONFIG” menu, then move the cursor to the “4.8K”. Use left of right arrow key to move the cursor to the desired position, then press ENTER to confirm the selection. The current selection will be highlighted by an asterisk (*).

NOTE:
When “NO-MUX”, the option of the “MUX” menu, is selected, user is allowed to select “FIXED” only of the “4.8K” menu.

```
10X-1> MUX  SYNC  RATE  PHASE  4.8K
       F-HALF  L-HALF  OD-PAIR  EV-PAIR *FIXED
```

5.7.1.6 Clock

The Clock menu shows the current X.50 clock polarity status (either normal or inverted) by placing an asterisk (*) at the appropriate selection. To change the X.50 clock polarity, move cursor to the desired selection and press ENTER.

```
10X-1> CLOCK DATA RTS TTM
       *NORMAL  INVERTED
```

5.7.1.7 Data

The Data menu shows the current X.50 data polarity (either normal or inverted) by placing an asterisk (*) at the appropriate selection. To change the X.50 data polarity, move cursor to the desired selection and press ENTER.

```
10X-1> CLOCK DATA RTS TTM
       *NORMAL  INVERTED
```

5.7.1.8 RTS

The RTS menu shows the current X.50 RTS operation mode (either activate or permanent) by placing an asterisk (*) at the appropriate selection. To change the X.50 RTS operation mode, move cursor to the desired selection and press ENTER.

```
10X-1> CLOCK DATA RTS TTM
        ACTIVE  *PERMANENT
```

5.7.1.9 TTM

TTM menu shows the current X.50 terminal timing mode (either OFF or ON) by placing an asterisk (*) at the appropriate selection. To change the X.50 terminal timing mode, move cursor to the desired selection and press ENTER.

```
10X-1> CLOCK DATA RTS TTM
       *OFF  ON
```

5.7.2 Diagnostic

Diagnostics group includes DTE Loopback, V54 Loopback, and BERT menu.

```
10X-1> CONF    DIAG
10X-1> DTE-LB  BERT
```

5.7.2.1 DTE Loopback

DTE Loopback menu are used to control near end DTE loopback operation such as TO-DS1and TO-LINE loopback test. Under Diagnostics menu, use left or right key to select DTE Loopback menu, The current selection is highlighted by an asterisk "*'.

```
10X-1 DIAG> DTE-LB  BERT
      *OFF  TO-DTE  TO-DS1
```

5.7.2.2 BERT

To start the bit error rate test by moving cursor to ON or OFF, then press ENTER. The current selection will be highlighted by an asterisk (*).

```
10X-1 DIAG> DTE-LB  BERT
      *OFF  ON
```

```
10X-1 BERT> UNSYNC       Err Secs: 65535* bert full
Total Seconds: 65535     Err Bits: 65535
```

6 Terminal Operation

Loop-AM 3440 provides comprehensive report and enhanced configuration capability through the console port on the front panel. Using single-character commands and arrow keys, the Loop-AM, including all of its ports, can be configured and monitored through the use of a VT-100 terminal. The single-character commands are not case sensitive. On each screen, the available commands and the configurable fields are highlighted.

When a VT-100 terminal is connected to the CONSOLE/SLIP port of front panel, make sure the button is up, upon power up, a main menu is shown. The main menu consists of three groups of commands, Display, Log, Setup, and MISC. Initially only Display and Access commands are available. To enable Setup and MISC, user has to log on using the "O" command, after which the full screen is shown.

```
==>> Input the unit number (A~D or 1~12): A
```

If the password option is turned on, a prompt asking for password is shown.

```
==>> Enter password : xxxx
```

With the password option is turned on, only after a valid password is entered, the full menu is shown, otherwise user is asked to enter the correct password again.

```
>>Invalid input of password ! Try again ?[Y/N]
```

If password is correctly entered, or if the password option is OFF, the full controller main menu is shown. Otherwise, only display menu items will be shown, which are in the lower left half of the screen.

6.1 Main Menu

If the terminal screen is illegible, press the "enter" and "esc" key alternatively to bring up the main menu. This is particularly needed if the terminal is connected to the controller while the power is already applied. If the main menu still fails to appear, check to see that the terminal is configured as 9600, 8, n, 1, and that a proper null modem or a null modem cable is used.

```
LOOP AM3440                === Controller Menu ===         14:21:58 06/30/2003

Serial Number   : 8670                  Redundant Controller: Disabled
Hardware Version: ver.b 07/2001         Start Time  : 15:20:21 06/24/2003
Software Version: S3.D0 05/08/2003



[DISPLAY]                               [SETUP]
C -> System Configuration               S -> System Setup
B -> Clock source Configuration         M -> System Alarm Setup
Q -> Alarm Queue Summary                W -> Firmware Transfer
I -> Information Summary                V -> Store/Retrieve Configuration
                                        K -> Clock source Setup


[LOG]                                   [MISC]
U -> Choose a Slot                      A -> Alarm Cut Off
F -> Log Off [SETUP],[MISC] Menu        X -> Clear Alarm Queue
O -> Log On  [SETUP],[MISC] Menu        Y -> Controller Return to Default
                                        Z -> Controller Reset


>>SPACE bar to refresh or enter a command ===>
```

6.1.1 System Configuration

Press “C” from the Controller Menu, the screen of System Configuration will show as below.

```
LOOP AM3440            === Controller Configuration ===    13:10:18 05/24/2001



                          A -> System
                          B -> Clock source
                          C -> TSI map
                          D -> Current TSI map
                          E -> Link backup function









<< Press ESC key to return to Main Menu or enter a command >>
```

6.1.1.1 System

Press “A” from the Controller Configuration Menu, the screen of System Configuration will show as below.

```
LOOP AM3440              === System Configuration ===      16:58:09 01/13/2002

[System]
IP Address     :140.139.034.040         Subnet Mask : 255.255.000.000
Trap IP Address:140.132.010.010         Gateway IP  : 140.139.001.254
Community Name :public
Device Name    :LOOP AM3440
System Location:8F, No.8, HSIN ANN ROAD
                SCIENCE-BASED INDUSTRIAL PARK
                HSINCHU, 30077 TAIWAN


System Contact :Name: FAE   Tel:+886-3-5787696  Fax:+886-3-5787695
                 E-mail:FAE@loop.com.tw

IP Interface   : HDLC_PORT
[CONSOLE port]                          [SLIP port]
Baud Rate      : 9600                   Baud Rate      : 38400
Data Length    : 8-Bits                 Data Length    : 8-Bits
Stop Bit       : 1-Bit                  Stop Bit       : 1-Bit
Parity         : NONE                   Parity         : NONE
XON_XOFF       : XOFF                   XON_XOFF       : XOFF

<< ESC key to return to previous menu, SPACE bar to refresh >>
```

6.1.1.2 Clock Source

Press “B” from the Controller Configuration Menu, the screen of Clock Source Setup will show as below.

```
LOOP AM3440               === Clock Source Setup ===       19:07:29 03/01/2001



Master_Clk Source : SLOT_A
Second_Clk Source : SLOT_D
Current Clock     : INTERNAL
Clk_Recover_Mode  : MANUAL
Clock Status      : NORMAL

<< ESC key to return to previous menu, SPACE bar to refresh >>
```

6.1.1.3 TSI Map

Press “C” from the Controller Configuration Menu, the screen of TSI Map will show as below.

```
LOOP AM3440          === System Configuration (Map) ===   15:36:48 03/02/2001
ARROW KEYS: CURSOR MOVE, TAB: ROLL OPTIONS
Map  Number:MAP_1

Slot Number: 9   DTU     PO/TS D SL/PO TS PO/TS D SL/PO TS
                         ===== ========== ===== ==========
                          1  1 d  9  2  3  9 17 d  9 10 19
                          1  2 d  9  2  4  9 18 d  9 10 20
                          2  3 d  9  1  1 10 19 d  9  9 17
                          2  4 d  9  1  2 10 20 d  9  9 18
                          3  5 d  9  4  7
                          3  6 d  9  4  8
                          4  7 d  9  3  5
                          4  8 d  9  3  6
                          5  9 d  9  6 11
                          5 10 d  9  6 12
                          6 11 d  9  5  9
                          6 12 d  9  5 10
                          7 13 d  9  8 15
                          7 14 d  9  8 16
                          8 15 d  9  7 13
                          8 16 d  9  7 14


<< Press ESC to return to Controller Setup menu, then Press D to active >>
```

```
LOOP AM3440          === System Configuration (Map) ===   17:00:10 01/13/2002
ARROW KEYS: CURSOR MOVE, TAB: ROLL OPTIONS
Map  Number:MAP_1

Slot Number: A   E1      PO/TS D SL/PO TS PO/TS D SL/PO TS
                         ===== ========== ===== ==========
                             1 d  1  1  1    17 d
                             2 d  1  2  2    18 d
                             3 d HD     1    19 d
                             4 d  1  3  3    20 d
                             5 d  1  3  4    21 d
                             6 d  1  3  5    22 d
                             7 d  1  3  6    23 d
                             8 d  1  3  7    24 d
                             9 d  1  3  8    25 d
                            10 d  1  3  9    26 d
                            11 d  1  3 10    27 d
                            12 d  1  3 11    28 d
                            13 d  1  3 12    29 d
                            14 d  1  3 13    30 d
                            15 d             31 d
                            16 d

<< Press ESC to return to previous menu >>
```

6.1.1.4 Current TSI Map

Press “D” from the Controller Configuration Menu, the screen of Current TSI Map will show as below.

```
LOOP AM3440       === System Configuration (Current Map) ==15:37:15 03/02/2001
ARROW KEYS: CURSOR MOVE, TAB: ROLL OPTIONS
Current Map

Slot Number: 9   DTU     PO/TS D SL/PO TS PO/TS D SL/PO TS
                         ===== ========== ===== ==========
                          1  1 d  9  2  3  9 17 d  9 10 19
                          1  2 d  9  2  4  9 18 d  9 10 20
                          2  3 d  9  1  1 10 19 d  9  9 17
                          2  4 d  9  1  2 10 20 d  9  9 18
                          3  5 d  9  4  7
                          3  6 d  9  4  8
                          4  7 d  9  3  5
                          4  8 d  9  3  6
                          5  9 d  9  6 11
                          5 10 d  9  6 12
                          6 11 d  9  5  9
                          6 12 d  9  5 10
                          7 13 d  9  8 15
                          7 14 d  9  8 16
                          8 15 d  9  7 13
                          8 16 d  9  7 14


<< Press ESC key to return to main menu or save system setup >>
<< Press ESC key to return to main menu or save system setup >>
```

```
LOOP AM3440       === System Configuration (Current Map) ==17:00:57 01/13/2002
ARROW KEYS: CURSOR MOVE, TAB: ROLL OPTIONS
Current Map

Slot Number: A   E1      PO/TS D SL/PO TS PO/TS D SL/PO TS
                NON-CAS  ===== ========== ===== ==========
                             1 d  1  1  1    17 d
                             2 d  1  2  2    18 d
                             3 d HD     1    19 d
                             4 d  1  3  3    20 d
                             5 d  1  3  4    21 d
                             6 d  1  3  5    22 d
                             7 d  1  3  6    23 d
                             8 d  1  3  7    24 d
                             9 d  1  3  8    25 d
                            10 d  1  3  9    26 d
                            11 d  1  3 10    27 d
                            12 d  1  3 11    28 d
                            13 d  1  3 12    29 d
                            14 d  1  3 13    30 d
                            15 d             31 d
                            16 d

<< Press ESC to return to previous menu >>
```

6.1.1.5 Link Backup Function

To view the screen of Link Backup Function, press “E” from the Controller Configuration Menu.

```
LOOP AM3440             === System Setup (backup) ===      13:10:22 05/24/2001



Backup function  :  ON
Mode             :  non-revertible

                    Link A  Link B  Link C  Link D
                    T1      T1      E1
                   ---------------------------------
Backup  Link     :  Link B  ------  ------  ------
Link backup fun  :  ON      ON      OFF     OFF
Link status      :  Working Idle    Normal  Normal









<< Press ESC key to return to main menu or save system setup >>
```

6.1.2 Clock Source Configuration

Press “B” to view the Clock Source Configuration, the screen will show as below.

```
LOOP AM3440               === Clock Source Setup ===       19:08:09 03/01/2001



Master_Clk Source : SLOT_A
Second_Clk Source : SLOT_D
Current Clock     : INTERNAL
Clk_Recover_Mode  : MANUAL
Clock Status      : NORMAL









<< ESC key to return to previous menu, SPACE bar to refresh >>
```

6.1.3 Alarm Queue Summary

Press “Q” to view the Alarm Queue Summary, the screen will show as below.

```
LOOP AM3440              === Alarm Queue Summary ===       19:08:13 03/01/2001
  1 -- Controller: SLOT 9  STARTUP---------19:03:10 03/01/2001
  2 -- Controller: PRIMARY START-UP--------19:03:07 03/01/2001
```

6.1.4 Information Summary

Press “I” to view the Information Summary, the screen will show as below.

```
LOOP AM3440              === Information Summary ===       19:08:18 03/01/2001

Slot Alm Interface     Software Version
==== === ============= ================
 A
 B
 C
 D

==== === ============= ================
 1
 2
 3
 4
 5
 6
 7
 8
 9     0 DTE_6         S1.C0  02/28/2001
 10
 11
 12

<< ESC key to return to previous menu, SPACE bar to refresh >>
```

6.1.5 System Setup

Press "S" to enter in the screen of Controller Setup. Under the Controller Menu, press “A” to enter in the screen of System Setup as below. Press “B” to enable or change password, “C” to setup TSI map, "D" to select a new TSI map, "E" to copy a TSI map to another, "F" to clear a TSI map, and "G" to setup Link backup function.

```
LOOP AM3440                === Controller Setup ===        13:09:29 05/24/2001



                           A -> System
                           B -> Password
                           C -> TSI map setup
                           D -> Select a new TSI map
                           E -> Copy a TSI map to another
                           F -> Clear a TSI map
                           G -> Link backup function









<< Press ESC key to return to Main Menu or enter a command >>
```

6.1.5.1 System

```
LOOP AM3440             === System Setup (SYSTEM) ===      23:12:21 06/17/2001
ARROW KEYS: CURSOR MOVE, Please Input: hh:mm:ss mm/dd/yyyy, BACKSPACE to edit
[System]
Time/Date      :23:12:21 06/17/2001
IP Address     :140.132.010.101         Subnet Mask : 255.255.000.000
Trap IP Address:140.132.001.193         Gateway IP  : 140.132.001.254
Community Name :public
Device Name    :LOOP AM3440
System Location:8F, No.8, HSIN ANN ROAD
                SCIENCE-BASED INDUSTRIAL PARK
                HSINCHU, 30077 TAIWAN

System Contact :Name: FAE   Tel:+886-3-5787696  Fax:+886-3-5787695
                 E-mail:FAE@loop.com.tw

IP Interface   : ETHERNET_PORT
[CONSOLE port]                          [SLIP port]
Baud Rate      : 38400                  Baud Rate      : 38400
Data Length    : 8-Bits                 Data Length    : 8-Bits
Stop Bit       : 1-Bit                  Stop Bit       : 1-Bit
Parity         : NONE                   Parity         : NONE
XON_XOFF       : XOFF                   XON_XOFF       : XOFF

<< Press ESC key to return to previous menu >>
```

6.1.5.2 Password

```
LOOP AM3440                                                 19:08:31 03/01/2001
ARROW KEYS: CURSOR MOVE, TAB: ROLL OPTIONS


       Enable Password : YES
       Change Password : NO









<< Press ESC key to return to previous menu >>
```

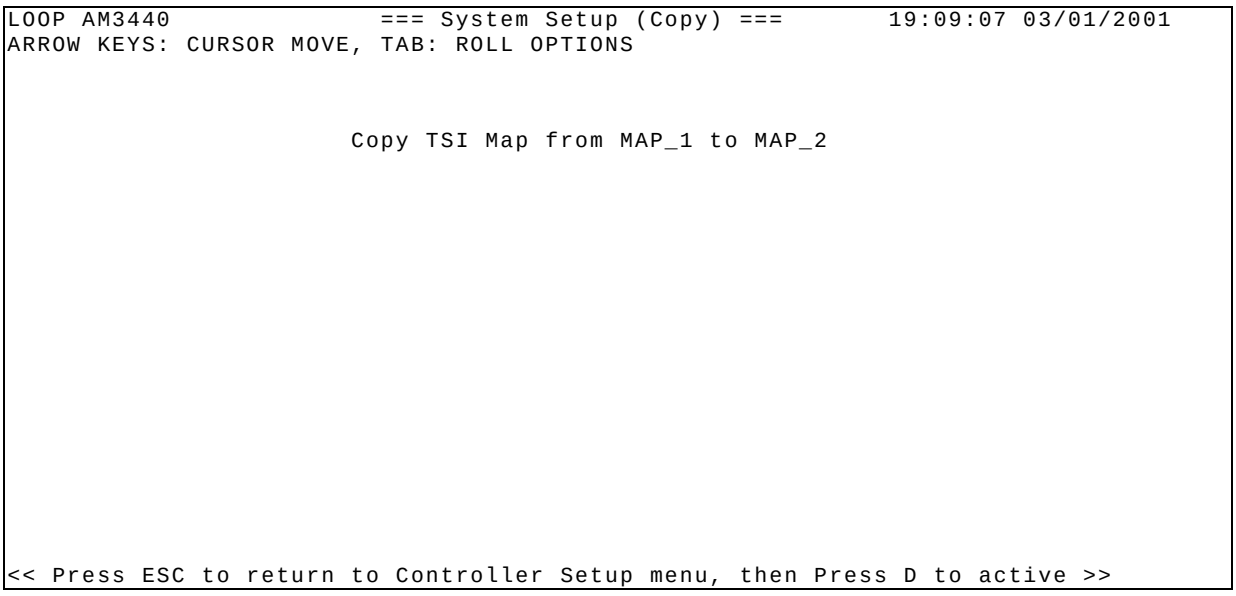
6.1.5.3 TSI Map Setup

```
LOOP AM3440               === System Setup (MAP) ===       19:08:34 03/01/2001
ARROW KEYS: CURSOR MOVE, TAB: ROLL OPTIONS
MAP NO: MAP_1
            Source Slot   V.35                 Dest. Slot
Source Slot PO/TS D SL/PO TS PO/TS D SL/PO TS  PO/TS D SL/PO TS PO/TS D SL/PO TS
Slot  :  9  ===== ========== ===== ==========  ===== ========== ===== ==========
Port  : P1   1  1 d  9  2  2    17 d
T.S.  : 01   2  2 d  9  1  1    18 d
                3 d             19 d
                4 d             20 d
T.S.# : 01      5 d             21 d
Clear : No      6 d             22 d
d/v   : d       7 d             23 d
                8 d             24 d
                9 d             25 d
Dest Slot      10 d             26 d
Slot  :  9     11 d             27 d
Port  : P2     12 d             28 d
T.S.  : 02     13 d             29 d
               14 d             30 d
Update? Yes    15 d             31 d
Confirm?Yes    16 d             32 d

<< Press ESC to return to Controller Setup menu, then Press D to active >>
```

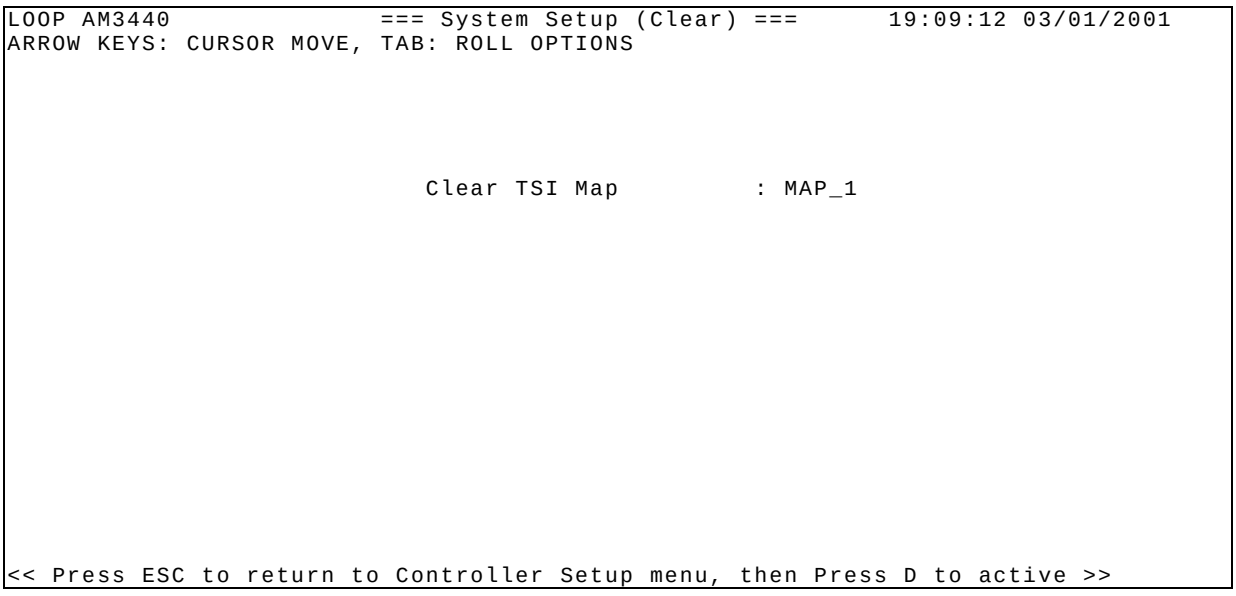
6.1.5.4 Select a New TSI Map

```
LOOP AM3440            === System Setup (New map) ===     19:09:01 03/01/2001
ARROW KEYS: CURSOR MOVE, TAB: ROLL OPTIONS



                          Last activated TSI Map: MAP_1

                          Change to TSI Map     : MAP_1

<< Press ESC to return to Controller Setup menu, then Press D to active >>
```

6.1.5.5 Copy a TSI Map to another



6.1.5.6 Clear a TSI Map



6.1.5.7 Link Backup Function

```
LOOP AM3440             === System Setup (backup) ===      13:10:02 05/24/2001
ARROW KEYS: CURSOR MOVE, TAB: ROLL OPTIONS


Backup function  :  ON
Mode             :  non-revertible

                    Link A  Link B  Link C  Link D
                    T1      T1      E1
                   --------------------------------
Backup  Link     :  Link B  ------  ------  ------
Link backup fun  :  ON      ON      OFF     OFF
Link status      :  Working Idle    Normal  Normal
```

6.1.6 System Alarm Setup

Under the Controller Menu, press “M” to setup system alarm as below.

```
LOOP AM3440               === System Alarm Setup ===       19:09:18 03/01/2001
ARROW KEYS: CURSOR MOVE, TAB: ROLL OPTIONS

[Alarm Action]
ALARM          : ENABLE
RELAY          : ENABLE

[Alarm Type]
ALARM CUT OFF : ENABLE
PORT INACTIVE : ENABLE
PORT START-UP : ENABLE
CLK LOSS ALM  : ENABLE









<< Press ESC key to return to previous menu >>
```

6.1.7 Firmware Transfer

Under the Controller Menu, press “W” to enter in the screen of File Transfer as below. Press “A” to download mainboard firmware, “B” to upload mainboard firmware, and "R" to copy firmware to redundant.

```
LOOP AM3440                  === File Transfer ===          17:07:20 01/13/2002



                        A -> Download Mainboard Firmware
                        B -> Upload Mainboard Firmware
                        C -> Download Configuration
                        D -> Upload Configuration
                        R -> Copy Firmware to Redundant

<< Press ESC key to return to Main Menu or enter a command >>
```

6.1.7.1 Download Mainboard Firmware

```
LOOP AM3440               === Download Firmware ===        19:09:25 03/01/2001
ARROW KEYS: CURSOR MOVE, Please Input: nnn.nnn.nnn.nnn, BACKSPACE to edit

Firmware 1 Version   : S1.T1  03/01/2001
Firmware 2 Version   : Disabled
Current Firmware Bank: 1
Next Boot Firmware   : 1
TFTP Server IP       : 000.000.000.000
Firmware File Name   :

<< Press ESC key to return to previous menu >>
```

6.1.7.2 Upload Mainboard Firmware

```
LOOP AM3440                 === Upload Firmware ===          19:09:30 03/01/2001
ARROW KEYS: CURSOR MOVE, Please Input: nnn.nnn.nnn.nnn, BACKSPACE to edit


Firmware 1 Version   : S1.T1  03/01/2001
Firmware 2 Version   : Disabled
Current Firmware Bank: 1
TFTP Server IP       : 000.000.000.000
Firmware File Name   :
Firmware Bank Number : 1









<< Press ESC key to return to previous menu >>
```

6.1.7.3 Download Configuration

```
LOOP AM3440              === Download Configuration ===     14:52:11 01/07/2002
ARROW KEYS: CURSOR MOVE, Please Input: nnn.nnn.nnn.nnn, BACKSPACE to edit




TFTP Server IP       : 000.000.000.000
Config File Name     :









<< Press ESC key to return to previous menu >>
```

6.1.7.4 Upload Configuration

```
LOOP AM3440              === Upload Configuration ===      14:52:21 01/07/2002
ARROW KEYS: CURSOR MOVE, Please Input: nnn.nnn.nnn.nnn, BACKSPACE to edit




TFTP Server IP       : 000.000.000.000
Config File Name     :









<< Press ESC key to return to previous menu >>
```

6.1.7.5 Copy Firmware to Redundant

```
LOOP AM3440         ===Copy Firmware to Redundant Board=== 17:10:18 01/13/2002


 Current Firmware Bank: 2
 NextBootFirmware Bank: 2
 Copy firmware to Redundant Board - are you sure ?
```

6.1.8 Store/ Retrieve Configuration

Under the Controller Menu, press “V” to store or retrieve the current configuration as the following screen shows. Use TAB key to select STORE or RETRIEVE, press ENTER. The current selection will be highlighted by an asterisk (*).

```
LOOP AM3440          ===Store/Retrieve Configuration===    19:09:51 03/01/2001



>> Select ?   *STORE      RETRIEVE
```

Then the system will prompt the following message, shown in the bottom line. Enter “Y” to confirm the setting or “N” to quit the setting.

```
LOOP AM3440          ===Store/Retrieve Configuration===    19:09:51 03/01/2001



>> Select ?   *STORE      RETRIEVE
>> Store Current Configuration ? [Y/N]
```

6.1.9 Clock Source Setup

Under the Controller Menu, press “K” to setup clock source as below.

```
LOOP AM3440              === System Setup (CLOCK) ===      19:10:05 03/01/2001
ARROW KEYS: CURSOR MOVE, TAB: ROLL OPTIONS


Master_Clk Source : EXTERNAL
Second_Clk Source : SLOT_D
Current Clock     : INTERNAL
Clk_Recover_Mode  : MANUAL
Clock Status      : NORMAL









<< Press ESC key to return to previous menu >>
```

6.1.10 Alarm Cut Off

Press "A" to show the alarm cut off screen.

```
>> Use TAB key to select unit, and ENTER key to clear alarm: ALL SLOTs
```

```
>> Clear alarm queue of ALL SLOTs - are you sure ? [Y/N]
```

```
>> Cut off alarm - are you sure (Y/N)?
```

6.1.11 Clear Alarm Queue

Press "X" to show the clear alarm queue screen.

```
=>> Clear Alarms (Y/N)?
```

6.1.12 Return to Default

Press "Y" to show the return to default screen.

```
>> Return to default - are you sure ? [Y/N]
```

6.1.13 Controller Reset

Press "Z" to show t he system reset screen.

```
>> Select ?   *Redundant  Primary    Both
>> Reset – are you sure ? [Y/N]
```

6.2 DS1 (FE1) Sub-Menu

When FE1 port is selected, the following Port Menu will show up.

```
SLOT A  FE1                    === Port Menu ===            08:13:11 01/09/2002

Version      : SW V3.00  02/07/2001




[DISPLAY]                                [SETUP]
1 -> Unit 1-Hour Perf. Report            L -> Unit Loopback Setup
2 -> Unit 24-Hour Perf. Report           S -> Unit System Setup
A -> Unit Line Availability              K -> Unit Clear Performance Data
C -> Unit Configuration                  M -> Unit Alarm Setup
I -> Unit Status                         X -> Unit Clear Alarm Queue & History
H -> Unit Alarm History
Q -> Unit Alarm Queue


[LOG]                                    [MISC]
U -> Choose a Port                       Y -> Unit Load Default Config
F -> Log Off [SETUP],[MISC] Menu         Z -> Unit Reset
O -> Log On  [SETUP],[MISC] Menu
E -> Return to Controller Main Menu

>>SPACE bar to refresh or enter a command ===>
```

6.2.1 Unit 1-Hour Performance Report

Press “1” from FE1 Port Menu to view the 1-hour performance report. Use TAB key to select register type, USER or LINE. The current selection will be highlighted by an asterisk (*).

```
SLOT A  FE1              === Port 1-Hour Perf. Report ===     08:17:45 01/09/2002




>> Select Register Type ? *USER  LINE
```

After pressing ENTER from the above screen, the following screen will show up.

```
SLOT A  FE1              === Port 1-Hour Perf. Report ===     08:17:50 01/09/2002
USER
-- Valid Seconds in Current 15-Min Interval : 23 seconds
                                  (ES)   (UAS)  (BES)  (SES)  (DM)   (CSS)
   Current 15-Min Interval     : 1      0      0      0      0      1
   1st Nearest 15-Min Interval : -----  -----  -----  -----  -----  -----
   2nd Nearest 15-Min Interval : -----  -----  -----  -----  -----  -----
   3rd Nearest 15-Min Interval : -----  -----  -----  -----  -----  -----
   4th Nearest 15-Min Interval : -----  -----  -----  -----  -----  -----

-- Valid 15-Min Intervals in Current 24-Hour Interval: 0
                                  (ES)   (UAS)  (BES)  (SES)  (DM)   (CSS)
   Current 24-Hour Interval    : -----  -----  -----  -----  -----  -----
   01/08/2002                  : -----  -----  -----  -----  -----  -----
   01/07/2002                  : -----  -----  -----  -----  -----  -----
   01/06/2002                  : -----  -----  -----  -----  -----  -----
   01/05/2002                  : -----  -----  -----  -----  -----  -----
   01/04/2002                  : -----  -----  -----  -----  -----  -----
   01/03/2002                  : -----  -----  -----  -----  -----  -----
   01/02/2002                  : -----  -----  -----  -----  -----  -----


<< TAB key to show Statistics Report >>
<< ESC key to return to previous menu, SPACE bar to refresh >>
```

6.2.2 Unit 24-Hour Performance Report

Press “2” from FE1 Port Menu to view the 24-hour performance report. Use TAB key to select register type, USER or LINE, press ENTER. Then move the cursor to select the desired parameter. The current selection will be highlighted by an asterisk (*).

```
SLOT A  FE1           === Port 24-Hour Perf. Report ===    08:18:13 01/09/2002




>> Select Register Type ? *USER  LINE
>> Select Parameter ? *ES  UAS  BES  SES  CSS  DM  AS  EFS  BPV
```

After pressing ENTER from the above screen, the following screen will show up.

```
SLOT A  FE1           === Port 24-Hour Perf. Report ===    08:18:27 01/09/2002
USER ES
-- Valid Seconds in Current 15-Min Interval : 60 seconds
-- Valid 15-Min Intervals in Current 24-Hour Interval: 0
                                (ES)   (UAS)  (BES)  (SES)  (DM)   (CSS)
   Current 15-Min Interval     : 3      0      0      0      0      3
   Current 24-Hour Interval    : -----  -----  -----  -----  -----  -----

-- USER, ES, Last 96 15-Min Interval :
   01-08 > ----- ----- ----- ----- ----- ----- ----- -----
   09-16 > ----- ----- ----- ----- ----- ----- ----- -----
   17-24 > ----- ----- ----- ----- ----- ----- ----- -----
   25-32 > ----- ----- ----- ----- ----- ----- ----- -----
   33-40 > ----- ----- ----- ----- ----- ----- ----- -----
   41-48 > ----- ----- ----- ----- ----- ----- ----- -----
   49-56 > ----- ----- ----- ----- ----- ----- ----- -----
   57-64 > ----- ----- ----- ----- ----- ----- ----- -----
   65-72 > ----- ----- ----- ----- ----- ----- ----- -----
   73-80 > ----- ----- ----- ----- ----- ----- ----- -----
   81-88 > ----- ----- ----- ----- ----- ----- ----- -----
   89-96 > ----- ----- ----- ----- ----- ----- ----- -----

<< TAB key to show Statistics Report >>
<< ESC key to return to previous menu, SPACE bar to refresh >>
```

6.2.3 Unit Line Availability

Under Port Menu, press “A” to view the line availability as the following screen shows.

```
SLOT A  FE1             === Port Line Availability ===     08:18:37 01/09/2002

-- Line Availability during Last 24-Hour:
   Valid Seconds      : 70 seconds
   Available Seconds  : 70 seconds
   Unavailable Seconds: 0 seconds
   Line Avaliability  : 100.0 %









<< ESC key to return to previous menu, SPACE bar to refresh >>
```

6.2.4 Unit Configuration

To view the unit configuration, press “C” from Port Menu, then the screen will show as below.

```
SLOT A  FE1              === Port System Setup ===        08:18:53 01/09/2002


     FRAME     = ON
     CODE      = HDB3
     CRC       = ON
     RAI       = ON
     AIS       = FRAMED
     CAS       = OFF
     SIGNALLING= TRANS
     CGA       = NORM
     OOS       = BUSY
     FDL       = OFF
     Sa_bit    = Sa4
     IDLE      = D5
     INTF      = 120 Ohm









<< ESC key to return to previous menu, SPACE bar to refresh >>
```

6.2.5 Unit Status

Press “I” from Port Menu, to show the screen of Unit Status as below.

```
SLOT A  FE1                  === Port Status ===          08:19:05 01/09/2002


-- LINE --
   LOS     : NO
   LOF     : NO
   RCV AIS : NO
   RCV RAI : NO
   XMT AIS : NO
   XMT RAI : NO
   BPV ERROR COUNT : 0
   ES  ERROR COUNT : 5

-- TEST --
   PATTERN TRANSMITTED : OFF
   NEAR-END LOOPBACK   : OFF









<< ESC key to return to previous menu, SPACE bar to refresh >>
```

6.2.6 Unit Alarm History

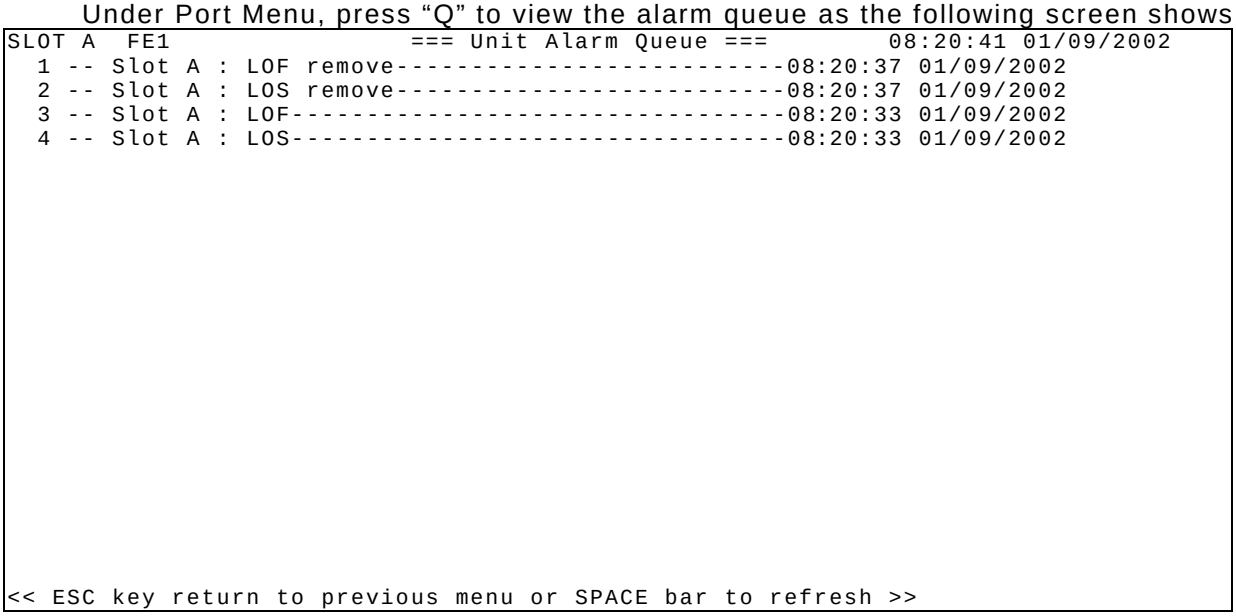
To view the unit alarm history, press “H” from Port Menu.

```
SLOT A  FE1               === Port Alarm History ===       08:19:17 01/09/2002
LOCAL
[ALARM-TYPE]   [THRESHOLD]   [CURR-STATE]   [COUNT]   [ALARM]
RAI                             OK           2        ENABLE
AIS                             OK           0        ENABLE
LOS                             OK           2        ENABLE
LOF                             OK           3        ENABLE
BPV               10E-5         OK           1        ENABLE
ES                1             ALM          61       ENABLE
UAS               1             OK           95       ENABLE
CSS               1             ALM          154      ENABLE









<< ESC key to return to previous menu, SPACE bar to refresh >>
```

6.2.7 Unit Alarm Queue

Under Port Menu, press “Q” to view the alarm queue as the following screen shows.

```
SLOT A  FE1                 === Unit Alarm Queue ===        08:20:41 01/09/2002
  1 -- Slot A : LOF remove-------------------------08:20:37 01/09/2002
  2 -- Slot A : LOS remove-------------------------08:20:37 01/09/2002
  3 -- Slot A : LOF--------------------------------08:20:33 01/09/2002
  4 -- Slot A : LOS--------------------------------08:20:33 01/09/2002
```



6.2.8 Unit Loopback Setup

Under Port Menu, press “L” to do Loopback Test, then the screen will show as below. Use arrow keys to move the cursor, press ENTER key to select items.

```
SLOT A  FE1              === Port Loopback Test ===       08:14:32 01/09/2002
ARROW KEYS : CURSOR MOVE , ENTER KEY : ITEM SELECT

- NEAR-END LOOPBACK   : *OFF  LOCAL  PLB  LLB

- SEND LOOPBACK ACTIVATE CODE TO FAR-END:
        *PAYLOAD  LINE
- SEND LOOPBACK DEACTIVATE CODE TO FAR-END:
        *PAYLOAD  LINE
- SEND TEST PATTERN:
        *OFF  PRBS-FULL









- STATUS:

<< Press ESC key to return to previous menu >>
```

6.2.9 Unit System Setup

To setup unit system, press “S” from Port Menu, then the following screen will show up. Use arrow keys to move the cursor, TAB key to roll up options.

```
SLOT A  FE1               === Port System Setup ===       08:14:47 01/09/2002
ARROW KEYS: CURSOR MOVE, TAB: ROLL OPTIONS

     FRAME     = ON
     CODE      = HDB3
     CRC       = ON
     RAI       = ON
     AIS       = FRAMED
     CAS       = OFF
     SIGNALLING= TRANS
     CGA       = NORM
     OOS       = BUSY
     FDL       = OFF
     Sa_bit    = Sa4
     IDLE      = D5
     INTF      = 120 Ohm









<< Press ESC key to return to previous menu >>
```

6.2.10 Unit Clear Performance Data

Press “K” from Port Menu to clear performance data, the screen will show as below. Press “Y” or “N” to confirm the commend.

```
SLOT A  FE1                    === Port Menu ===            08:14:53 01/09/2002

Version      : SW V3.00  02/07/2001




[DISPLAY]                                [SETUP]
1 -> Unit 1-Hour Perf. Report            L -> Unit Loopback Setup
2 -> Unit 24-Hour Perf. Report           S -> Unit System Setup
A -> Unit Line Availability              K -> Unit Clear Performance Data
C -> Unit Configuration                  M -> Unit Alarm Setup
I -> Unit Status                         X -> Unit Clear Alarm Queue & History
H -> Unit Alarm History
Q -> Unit Alarm Queue


[LOG]                                    [MISC]
U -> Choose a Port                       Y -> Unit Load Default Config
F -> Log Off [SETUP],[MISC] Menu         Z -> Unit Reset
O -> Log On  [SETUP],[MISC] Menu
E -> Return to Controller Main Menu

==> Clear performance data - are you sure [Y/N] ?
```

6.2.11 Unit Alarm Setup

To do alarm setup, press “M” from Port Menu, then the following screen will show up.

```
SLOT A  FE1                 === Port Alarm Setup ===        08:15:41 01/09/2002
ARROW KEYS: CURSOR MOVE, TAB: ROLL OPTIONS

[TYPE]    [THRESHOLD] [ALARM]
RAI                   ENABLE
AIS                   ENABLE
LOS                   ENABLE
LOF                   ENABLE
BPV          10E-5    ENABLE
ES             001    ENABLE
UAS            001    ENABLE
CSS            001    ENABLE









<< Press ESC key to return to previous menu >>
```

6.2.12 Unit Clear Alarm Queue & History

Under Port Menu, press “X” to clear alarm queue and history, then press “Y” or ”N” to confirm it.

```
SLOT A  FE1                    === Port Menu ===            08:15:49 01/09/2002

Version      : SW V3.00  02/07/2001




[DISPLAY]                                [SETUP]
1 -> Unit 1-Hour Perf. Report            L -> Unit Loopback Setup
2 -> Unit 24-Hour Perf. Report           S -> Unit System Setup
A -> Unit Line Availability              K -> Unit Clear Performance Data
C -> Unit Configuration                  M -> Unit Alarm Setup
I -> Unit Status                         X -> Unit Clear Alarm Queue & History
H -> Unit Alarm History
Q -> Unit Alarm Queue


[LOG]                                    [MISC]
U -> Choose a Port                       Y -> Unit Load Default Config
F -> Log Off [SETUP],[MISC] Menu         Z -> Unit Reset
O -> Log On  [SETUP],[MISC] Menu
E -> Return to Controller Main Menu

>> Clear alarm queue of SLOT A  - are you sure ? [Y/N]
```

6.2.13 Unit Load Default Configuration

Press “Y” to return to default, then confirm it by pressing “Y” or “N”.

```
SLOT A  FE1                    === Port Menu ===            08:20:49 01/09/2002

Version      : SW V3.00  02/07/2001




[DISPLAY]                                [SETUP]
1 -> Unit 1-Hour Perf. Report            L -> Unit Loopback Setup
2 -> Unit 24-Hour Perf. Report           S -> Unit System Setup
A -> Unit Line Availability              K -> Unit Clear Performance Data
C -> Unit Configuration                  M -> Unit Alarm Setup
I -> Unit Status                         X -> Unit Clear Alarm Queue & History
H -> Unit Alarm History
Q -> Unit Alarm Queue


[LOG]                                    [MISC]
U -> Choose a Port                       Y -> Unit Load Default Config
F -> Log Off [SETUP],[MISC] Menu         Z -> Unit Reset
O -> Log On  [SETUP],[MISC] Menu
E -> Return to Controller Main Menu

>> Return to default - are you sure ? [Y/N]
```

6.2.14 Unit Reset

Under Port Menu, press “Z” to reset unit. Press “Y” or “N” to confirm it.

```
SLOT A  FE1                    === Port Menu ===            08:20:49 01/09/2002

Version      : SW V3.00  02/07/2001




[DISPLAY]                                [SETUP]
1 -> Unit 1-Hour Perf. Report            L -> Unit Loopback Setup
2 -> Unit 24-Hour Perf. Report           S -> Unit System Setup
A -> Unit Line Availability              K -> Unit Clear Performance Data
C -> Unit Configuration                  M -> Unit Alarm Setup
I -> Unit Status                         X -> Unit Clear Alarm Queue & History
H -> Unit Alarm History
Q -> Unit Alarm Queue


[LOG]                                    [MISC]
U -> Choose a Port                       Y -> Unit Load Default Config
F -> Log Off [SETUP],[MISC] Menu         Z -> Unit Reset
O -> Log On  [SETUP],[MISC] Menu
E -> Return to Controller Main Menu

Reset - are you sure ? [Y/N]
```

6.3 DS1 (FT1) Sub-Menu

When FT1 port is selected, the following Port Menu will show up.

```
SLOT D  FT1                    === Port Menu ===            08:21:38 01/09/2002

Version      : SW V3.02  07/15/2001




[DISPLAY]                                [SETUP]
1 -> Unit 1-Hour Perf. Report            L -> Unit Loopback Setup
2 -> Unit 24-Hour Perf. Report           S -> Unit System Setup
A -> Unit Line Availability              K -> Unit Clear Performance Data
C -> Unit Configuration                  M -> Unit Alarm Setup
I -> Unit Status                         X -> Unit Clear Alarm Queue & History
H -> Unit Alarm History
Q -> Unit Alarm Queue


[LOG]                                    [MISC]
U -> Choose Other Slot                   Y -> Unit Load Default Config
F -> Log Off [SETUP],[MISC] Menu         Z -> Unit Reset
O -> Log On  [SETUP],[MISC] Menu
E -> Return to Controller Main Menu

>>SPACE bar to refresh or enter a command ===>
```

6.3.1 Unit 1-Hour Performance Report

Press “1” from FT1 Port Menu to view the 1-hour performance report. Use TAB key to select register type, USER or LINE. The current selection will be highlighted by an asterisk (*).

```
SLOT D  FT1           === Port 1-Hour Perf. Report ===     08:23:03 01/09/2002


>> Select Register Type ? *USER  LINE
```

After pressing ENTER from the above screen, the following screen will show up.

```
SLOT D  FT1           === Port 1-Hour Perf. Report ===     08:23:03 01/09/2002
USER
-- Valid Seconds in Current 15-Min Interval : 94 seconds
                               (ES)   (UAS)  (BES)  (SES)  (CSS)  (LOFC)
   Current 15-Min Interval     : 0      94     0      0      0      1
   1st Nearest 15-Min Interval : -----  -----  -----  -----  -----  -----
   2nd Nearest 15-Min Interval : -----  -----  -----  -----  -----  -----
   3rd Nearest 15-Min Interval : -----  -----  -----  -----  -----  -----
   4th Nearest 15-Min Interval : -----  -----  -----  -----  -----  -----

-- Valid 15-Min Intervals in Current 24-Hour Interval: 0
                               (ES)   (UAS)  (BES)  (SES)  (CSS)  (LOFC)
   Current 24-Hour Interval    : -----  -----  -----  -----  -----  -----


<< TAB key to show Statistics Report >>
<< ESC key to return to previous menu, SPACE bar to refresh >>
```

6.3.2 Unit 24-Hour Performance Report

Press “2” from FE1 Port Menu to view the 24-hour performance report. Use TAB key to select register type, USER or LINE, press ENTER. Then move the cursor to select the desired parameter. The current selection will be highlighted by an asterisk (*).

```
SLOT D  FT1           === Port 24-Hour Perf. Report ===    08:23:29 01/09/2002




>> Select Register Type ? *USER  LINE
>> Select Parameter ? *ES  UAS  BES  SES  CSS  LOFC  AS  EFS  BPV  ESF
```

After pressing ENTER from the above screen, the following screen will show up.

```
SLOT D  FT1           === Port 24-Hour Perf. Report ===    08:23:32 01/09/2002
USER ES
-- Valid Seconds in Current 15-Min Interval : 124 seconds
-- Valid 15-Min Intervals in Current 24-Hour Interval: 0
                               (ES)   (UAS)  (BES)  (SES)  (CSS)  (LOFC)
   Current 15-Min Interval     : 0      124    0      0      0      1
   Current 24-Hour Interval    : -----  -----  -----  -----  -----  -----

-- USER, ES, Last 96 15-Min Interval :
   01-08 > ----- ----- ----- ----- ----- ----- ----- -----
   09-16 > ----- ----- ----- ----- ----- ----- ----- -----
   17-24 > ----- ----- ----- ----- ----- ----- ----- -----
   25-32 > ----- ----- ----- ----- ----- ----- ----- -----
   33-40 > ----- ----- ----- ----- ----- ----- ----- -----
   41-48 > ----- ----- ----- ----- ----- ----- ----- -----
   49-56 > ----- ----- ----- ----- ----- ----- ----- -----
   57-64 > ----- ----- ----- ----- ----- ----- ----- -----
   65-72 > ----- ----- ----- ----- ----- ----- ----- -----
   73-80 > ----- ----- ----- ----- ----- ----- ----- -----
   81-88 > ----- ----- ----- ----- ----- ----- ----- -----
   89-96 > ----- ----- ----- ----- ----- ----- ----- -----

<< TAB key to show Statistics Report >>
<< ESC key to return to previous menu, SPACE bar to refresh >>
```

6.3.3 Unit Line Availability

Under Port Menu, press “A” to view the line availability as the following screen shows.

```
SLOT D  FT1             === Port Line Availability ===     08:23:41 01/09/2002

-- Line Availability during Last 24-Hour:
   Valid Seconds      : 132 seconds
   Available Seconds  : 0 seconds
   Unavailable Seconds: 132 seconds
   Line Avaliability  : 0.0 %









<< ESC key to return to previous menu, SPACE bar to refresh >>
```

6.3.4 Unit Configuration

To view the unit configuration, press “C” from Port Menu, then the screen will show as below.

```
SLOT D  FT1               === Port System Setup ===        08:23:47 01/09/2002


     FRAME     = ESF
     CODE      = B8ZS
     YEL       = ON
     AIS       = FRAMED
     CAS       = OFF
     SIGNALLING= TRANS
     CGA       = NORM
     OOS       = BUSY
     INBAND    = OFF
     IDLE      = FF
     INTF      = LONG HAUL
     LBO       = 0 dB









<< ESC key to return to previous menu, SPACE bar to refresh >>
```

6.3.5 Unit Status

Press "I" from Port Menu, to show the screen of Unit Status as below.

```
SLOT D  FT1                  === Port Status ===           08:23:51 01/09/2002


-- LINE --
   LOS      : YES
   LOF      : YES
   RCV AIS : NO
   RCV YEL : NO
   XMT AIS : NO
   XMT YEL : YEL
   BPV ERROR COUNT : 0
   ES  ERROR COUNT : 0

-- TEST --
   PATTERN TRANSMITTED : OFF
   NEAR-END LOOPBACK   : OFF









<< ESC key to return to previous menu, SPACE bar to refresh >>
```

6.3.6 Unit Alarm History

To view the unit alarm history, press "H" from Port Menu.

```
SLOT D  FT1               === Port Alarm History ===       08:23:56 01/09/2002
LOCAL
[ALARM-TYPE]   [THRESHOLD]   [CURR-STATE]   [COUNT]   [ALARM]
YEL                             OK            0        ENABLE
AIS                             OK            0        ENABLE
LOS                             ALM           1        ENABLE
LOF                             ALM           1        ENABLE
BPV               10E-5         OK            0        ENABLE
ES                1             OK            0        ENABLE
UAS               1             OK            0        ENABLE
CSS               1             OK            0        ENABLE












<< ESC key to return to previous menu, SPACE bar to refresh >>
```

6.3.7 Unit Alarm Queue

Under Port Menu, press “Q” to view the alarm queue as the following screen shows.

```
SLOT D  FT1               === Unit Alarm Queue ===        08:24:01 01/09/2002
  1 -- Slot D : LOF---------------------------------08:21:33 01/09/2002
  2 -- Slot D : LOS---------------------------------08:21:33 01/09/2002









<< ESC key return to previous menu or SPACE bar to refresh >>
```

6.3.8 Unit Loopback Setup

Under Port Menu, press “L” to do Loopback Test, then the screen will show as below. Use arrow keys to move the cursor, press ENTER key to select items.

```
SLOT D  FT1               === Port Loopback Test ===       08:22:06 01/09/2002
ARROW KEYS : CURSOR MOVE , ENTER KEY : ITEM SELECT

- NEAR-END LOOPBACK   : *OFF  LOCAL  PLB  LLB

- SEND LOOPBACK ACTIVATE CODE TO FAR-END:
        *IN-BAND  AT&T-P  ANSI-P  ANSI-L
- SEND LOOPBACK DEACTIVATE CODE TO FAR-END:
        *IN-BAND  AT&T-P  ANSI-P  ANSI-L
- SEND TEST PATTERN:
        *OFF  QRSS-FULL









- STATUS:

<< Press ESC key to return to previous menu >>
```

6.3.9 Unit System Setup

To setup unit system, press “S” from Port Menu, then the following screen will show up. Use arrow keys to move the cursor, TAB key to roll up options.

```
SLOT D  FT1              === Port System Setup ===        08:22:12 01/09/2002
ARROW KEYS: CURSOR MOVE, TAB: ROLL OPTIONS

     FRAME     = ESF
     CODE      = B8ZS
     YEL       = ON
     AIS       = FRAMED
     CAS       = OFF
     SIGNALLING= TRANS
     CGA       = NORM
     OOS       = BUSY
     INBAND    = OFF
     IDLE      = FF
     INTF      = LONG HAUL
     LBO       = 0 dB









<< Press ESC key to return to previous menu >>
```

6.3.10 Unit Clear Performance Data

Press “K” from Port Menu to clear performance data, the screen will show as below. Press “Y” or “N” to confirm the commend.

```


==> Clear performance data - are you sure [Y/N] ?
```

6.3.11 Unit Alarm Setup

To do alarm setup, press “M” from Port Menu, then the following screen will show up.

```
SLOT D  FT1                === Port Alarm Setup ===        08:22:24 01/09/2002
ARROW KEYS: CURSOR MOVE, TAB: ROLL OPTIONS

[TYPE]    [THRESHOLD] [ALARM]
YEL                   ENABLE
AIS                   ENABLE
LOS                   ENABLE
LOF                   ENABLE
BPV          10E-5    ENABLE
ES             001    ENABLE
UAS            001    ENABLE
CSS            001    ENABLE









<< Press ESC key to return to previous menu >>
```

6.3.12 Unit Clear Alarm Queue & History

Under Port Menu, press “X” to clear alarm queue and history, then press “Y” or ”N” to confirm it.

```
>> Clear alarm queue of SLOT D  - are you sure ? [Y/N]
```

6.3.13 Unit Load Default Configuration

Press “Y” to return to default, then confirm it by pressing “Y” or “N”.

```
>> Return to default - are you sure ? [Y/N]
```

6.3.14 Unit Reset

Under Port Menu, press “Z” to reset unit. Press “Y” or “N” to confirm it.

```
Reset - are you sure ? [Y/N]
```

6.4 U-port Sub-Menu (10-PORT)

Then the following Port Menu of DTU-port will show as below.

```
SLOT 2 DTU PORT 2              === Port Menu ===            15:37:32 03/02/2001

Version      : SW V1.02  02/07/2002




[DISPLAY]                                   [SETUP]
D -> System Configuration                   S -> System Setup
I -> Remote Information                     L -> Loopback Test
H -> Alarm History                          M -> Alarm Setup
R -> Performance Report


[LOG]                                       [MISC]
F -> Log Off                                Y -> Clear all Ports Performance Data
O -> Log On                                 B -> Load and Reset current U port
U -> Choose Other Slot                      Z -> Reset current U port
P -> Choose DTU Port
E -> Return to Main Menu


>>SPACE bar to refresh or enter a command ===>
```

6.4.1 System Configuration

To view the screen of System Configuration, press "D" from the Port Menu.

Example 1:

```
SLOT 2 DTU PORT 2        === System Configuration ===      14:23:01 10/19/2000

[DTU SETUP]      ****** Local ******      **** Remote DTUs ****

Master Clock   : Internal                  Internal
Operating Mode : D-channel                 D-channel
Protocol       : M-channel                 M-channel

[Remote DTU] [Speed] [Channel] [Clock]  [Data]   [RTS]     [TTM]  [Interface]

 Unit 12# 1:  19.2K   B1+B2    Inverted Inverted Permanent  Off   RS232 X.50
 Unit 12# 2:  19.2K   B1+B2    Inverted Inverted Permanent  Off   RS232 X.50
 Unit 12# 3:  19.2K   B1+B2    Inverted Inverted Permanent  Off   RS232 X.50
 Unit 12# 4:  19.2K   B1+B2    Inverted Inverted Permanent  Off   RS232 X.50
 Unit 12# 5:  19.2K   B1+B2    Inverted Inverted Permanent  Off   RS232 X.50
 Unit 12# 6:  19.2K   B1+B2    Inverted Inverted Permanent  Off   RS232 X.50
 Unit 12# 7:  19.2K   B1+B2    Inverted Inverted Permanent  Off   RS232 X.50
 Unit 12# 8:  19.2K   B1+B2    Inverted Inverted Permanent  Off   RS232 X.50
 Unit 12# 9:  19.2K   B1+B2    Inverted Inverted Permanent  Off   RS232 X.50
 Unit 12#10:  19.2K   B1+B2    Inverted Inverted Permanent  Off   RS232 X.50



<< ESC key to return to previous menu, SPACE bar to refresh >>
```

Example 2:

```
SLOT 2 DTU PORT 2        === System Configuration ===      14:45:09 06/12/2002

[DTU SETUP]      ****** Local ******      **** Remote DTUs ****

Master Clock   : Internal                Line
Operating Mode : LT                      NT
Protocol       : M-channel               M-channel

[Remote DTU] [Speed] [Channel] [Clock]  [Data]   [RTS]     [TTM]  [Interface]

 Unit  2# 1: Empty
 Unit  2# 2:    64K   B1       N/A      N/A      N/A        N/A   G.703
 Unit  2# 3: Empty
 Unit  2# 4: Empty
 Unit  2# 5: Empty
 Unit  2# 6:    64K   B1       Normal   Normal   Active     Off   RS232 X.50
 Unit  2# 7: Empty
 Unit  2# 8: Empty
 Unit  2# 9: Empty
 Unit  2#10: Empty



<< ESC key to return to previous menu, SPACE bar to refresh >>
```

6.4.2 Remote Information

Under the Port Menu, press "I" to view the screen of Remote Information.

```
SLOT 2 DTU PORT 2     === Remote DTUs Information ===     14:23:08 10/19/2000



[DTU]    [Date]  [Serial Number]  [Software Version]   [Configuration]
LOCAL:   01/97    1238             v 1.30 07/22/1997     1 DTU port
12# 1:   01/97    1238             v 1.30 07/22/1997     1 DTU port
12# 2:   01/97    1238             v 1.30 07/22/1997     1 DTU port
12# 3:   01/97    1238             v 1.30 07/22/1997     1 DTU port
12# 4:   01/97    1238             v 1.30 07/22/1997     1 DTU port
12# 5:   01/97    1238             v 1.30 07/22/1997     1 DTU port
12# 6:   01/97    1238             v 1.30 07/22/1997     1 DTU port
12# 7:   01/97    1238             v 1.30 07/22/1997     1 DTU port
12# 8:   01/97    1238             v 1.30 07/22/1997     1 DTU port
12# 9:   01/97    1238             v 1.30 07/22/1997     1 DTU port
12#10:   01/97    1238             v 1.30 07/22/1997     1 DTU port









<< ESC key to return to previous menu, SPACE bar to refresh >>
```

6.4.3 Alarm History

Under the Port Menu, press "H" to view the screen of Alarm History.

```
SLOT 2 DTU PORT 2          === Alarm History ===          14:23:16 10/19/2000


   [Port]     [State]  [Count]  [Alarm]

 Unit 12# 1:    OK          0    DISABLE
 Unit 12# 2:    OK          0    DISABLE
 Unit 12# 3:    OK          0    DISABLE
 Unit 12# 4:    OK          0    DISABLE
 Unit 12# 5:    OK          0    DISABLE
 Unit 12# 6:    OK          0    DISABLE
 Unit 12# 7:    OK          0    DISABLE
 Unit 12# 8:    OK          0    DISABLE
 Unit 12# 9:    OK          0    DISABLE
 Unit 12#10:    OK          0    DISABLE









<< ESC key to return to previous menu, SPACE bar to refresh >>
```

6.4.4 Performance Report

To view the screen of Performance Report, press "R" from the Port Menu.

```
SLOT 2 DTU PORT 2        === Performance Report ===       14:23:23 10/19/2000

U port : Unit 12# 1    Line Unsync
[15 Minute Registers]
             [---------Unavailable Seconds---------]
Current:       97
01-08 14:15     3    3    3    3    3    3    3    3
09-16 12:15     .    .    .    .    .    .    .    .
17-24 10:15     .    .    .    .    .    .    .    .
25-32 08:15     .    .    .    .    .    .    .    .
33-40 06:15     .    .    .    .    .    .    .    .
41-48 04:15     .    .    .    .    .    .    .    .
49-56 02:15     .    .    .    .    .    .    .    .
57-64 00:15     .    .    .    .    .    .    .    .
65-72 22:15     .    .    .    .    .    .    .    .
73-80 20:15     .    .    .    .    .    .    .    .
81-88 18:15     .    .    .    .    .    .    .    .
89-96 16:15     .    .    .    .    .    .    .    .

[24 Hour Registers]
    [10/19]  [10/18]  [10/17]  [10/16]  [10/15]  [10/14]  [10/13]  [10/12]
UAS:     20       20       20       20       20        .        .        .

<< ESC key: Exit;  SPACE bar: Refresh;  TAB key: Next Unit;  Z key: Reset >>
```

6.4.5 System Setup

Remote Router Setup:

Press "S" to setup the system, the screen will show as below. There are five options are available: DSO MAP, LAN1,WAN1,WAN2, Static Route, Router Reset, and Router Load Default. Move the cursor to the desired option, then press ENTER. The current selection will be highlighted by an asterisk (*).

```
SLOT 2 DTU PORT 2    ====== U Remote Router Setup ======   10:57:58 02/08/2002

                                        << DS0 MAP >>

[DTU SETUP]     ****** LOCAL ******     ****** REMOTE ******
Master Clock  : Internal                Line
Operating Mode: LT                      NT
Remote Link   : M-channel               M-channel

                                        [ROUTER]

                                        *DS0 MAP
                                         LAN1,WAN1,WAN2
                                         Static Route
                                         Router Reset
                                         Router Load Default









<< Select item or press ESC to return >>
```

Remote DTE Setup:

```
SLOT 2 DTU PORT 2    === System and Remote DTE Setup ===   14:45:27 06/12/2002
ARROW KEYS: CURSOR MOVE, TAB: ROLL OPTIONS
                    Line Sync

[DTU SETUP]     ****** LOCAL ******     ****** REMOTE ******
Master Clock  : Internal                Line
Operating Mode: LT                      NT
Remote Link   : M-channel               M-channel

[DTE SETUP]                             [DTE-1]
Speed         :                         SYNC
                                        64K
Channel       :                         B1
Clock         :
Data          :
RTS           :
TTM           :
Interface     :                         G.703







<< ESC key to previous menu, SPACE bar to another page >>
```

6.4.5.1 U Remote Router Setup - DS0 MAP

Move the cursor to “DS0 MAP”, then press ENTER. The screen will show as below.

```
SLOT 2 DTU PORT 2    ====== U Remote Router Setup ======   10:57:58 02/08/2002

                                        << DS0 MAP >>

[DTU SETUP]      ****** LOCAL ******      ****** REMOTE ******
Master Clock  : Internal                  Line
Operating Mode: LT                        NT
Remote Link   : M-channel                 M-channel

                                          [ROUTER]

                                          *DS0 MAP
                                           LAN1,WAN1,WAN2
                                           Static Route
                                           Router Reset
                                           Router Load Default

<< Select item or press ESC to return >>
```

Press ENTER from the above menu. The following screen will show up.

```
SLOT 2 DTU PORT 2    ====== U Remote Router Setup ======   10:57:58 02/08/2002
ARROW KEYS: CURSOR MOVE, TAB: ROLL OPTIONS

Channel  WANPort
 B1  :   WAN1
 B2  :   Idle

<< Press ESC key to return to previous menu >>
```

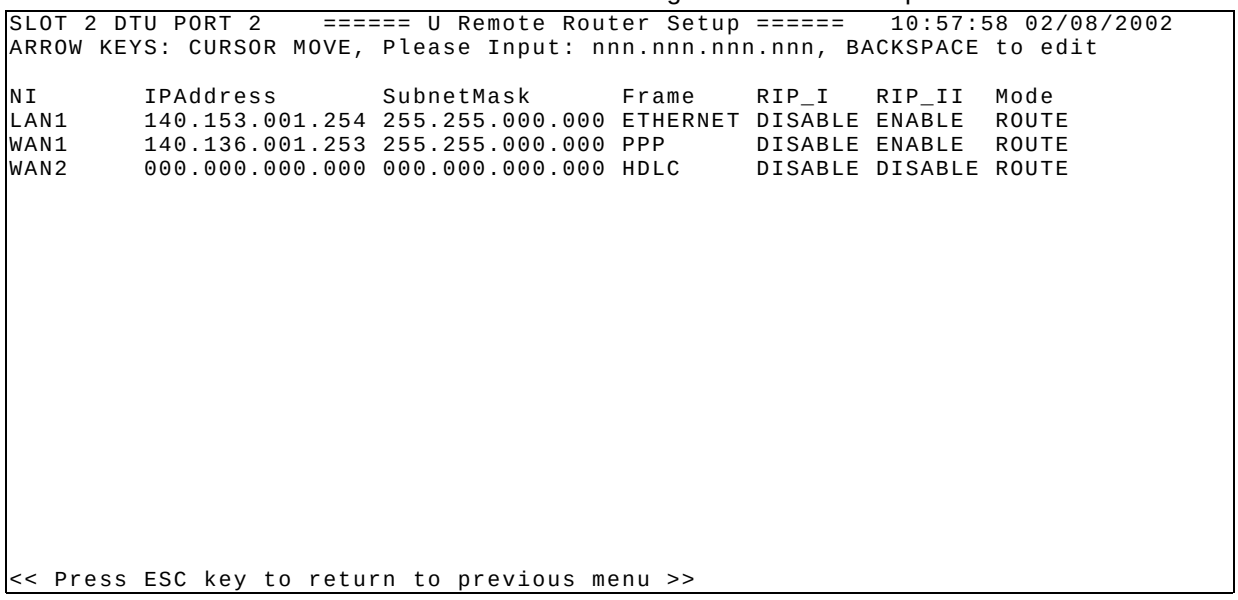
6.4.5.2 U Remote Router Setup - LAN1,WAN1,WAN2

Press “S” from Port Menu. Then move the cursor to “LAN1,WAN1,WAN2”.

```
SLOT 2 DTU PORT 2    ====== U Remote Router Setup ======   10:57:58 02/08/2002

                                        << DS0 MAP >>

[DTU SETUP]     ****** LOCAL ******     ****** REMOTE ******
Master Clock  : Internal                Line
Operating Mode: LT                      NT
Remote Link   : M-channel               M-channel

                                        [ROUTER]

                                         DS0 MAP
                                        *LAN1,WAN1,WAN2
                                         Static Route
                                         Router Reset
                                         Router Load Default









<< Select item or press ESC to return >>
```

Press ENTER from the above menu. The following screen will show up.

```
SLOT 2 DTU PORT 2    ====== U Remote Router Setup ======   10:57:58 02/08/2002
ARROW KEYS: CURSOR MOVE, Please Input: nnn.nnn.nnn.nnn, BACKSPACE to edit

NI       IPAddress       SubnetMask      Frame    RIP_I   RIP_II  Mode
LAN1     140.153.001.254 255.255.000.000 ETHERNET DISABLE ENABLE  ROUTE
WAN1     140.136.001.253 255.255.000.000 PPP      DISABLE ENABLE  ROUTE
WAN2     000.000.000.000 000.000.000.000 HDLC     DISABLE DISABLE ROUTE
```



6.4.5.3 U Remote Router Setup - Static Route

Press “S” from Port Menu. Then move the cursor to “Static Route”.

```
SLOT 2 DTU PORT 2    ====== U Remote Router Setup ======   10:57:58 02/08/2002

                                        << DS0 MAP >>

[DTU SETUP]     ****** LOCAL ******     ****** REMOTE ******
Master Clock  : Internal                Line
Operating Mode: LT                      NT
Remote Link   : M-channel               M-channel

                                        [ROUTER]

                                         DS0 MAP
                                         LAN1,WAN1,WAN2
                                        *Static Route
                                         Router Reset
                                         Router Load Default







<< Select item or press ESC to return >>
```

Press ENTER from the above menu. The screen will show as below.

```
SLOT 2 DTU PORT 2    ====== U Remote Router Setup ======   10:57:58 02/08/2002
ARROW KEYS: CURSOR MOVE, Please Input: nnn.nnn.nnn.nnn, BACKSPACE to edit
                                        << Static Route >>
   Net_Address     Netmask         Gateway_Address NI_Address      Metric
   000.000.000.000 000.000.000.000 000.000.000.000 000.000.000.000 01
   000.000.000.000 000.000.000.000 000.000.000.000 000.000.000.000 01
   000.000.000.000 000.000.000.000 000.000.000.000 000.000.000.000 01
   000.000.000.000 000.000.000.000 000.000.000.000 000.000.000.000 01
   000.000.000.000 000.000.000.000 000.000.000.000 000.000.000.000 01
   000.000.000.000 000.000.000.000 000.000.000.000 000.000.000.000 01
   000.000.000.000 000.000.000.000 000.000.000.000 000.000.000.000 01
   000.000.000.000 000.000.000.000 000.000.000.000 000.000.000.000 01
   000.000.000.000 000.000.000.000 000.000.000.000 000.000.000.000 01
   000.000.000.000 000.000.000.000 000.000.000.000 000.000.000.000 01
   000.000.000.000 000.000.000.000 000.000.000.000 000.000.000.000 01
   000.000.000.000 000.000.000.000 000.000.000.000 000.000.000.000 01
   000.000.000.000 000.000.000.000 000.000.000.000 000.000.000.000 01
   000.000.000.000 000.000.000.000 000.000.000.000 000.000.000.000 01
   000.000.000.000 000.000.000.000 000.000.000.000 000.000.000.000 01
   000.000.000.000 000.000.000.000 000.000.000.000 000.000.000.000 01



<< Press ESC key to return to previous menu >>
```

6.4.5.4 U Remote Router Setup - Router Reset

Press “S” from Port Menu. Then move the cursor to “Router Reset”. Press ENTER to reset Router.

```
SLOT 2 DTU PORT 2    ====== U Remote Router Setup ======   10:57:58 02/08/2002

                                        << DS0 MAP >>

[DTU SETUP]     ****** LOCAL ******     ****** REMOTE ******
Master Clock  : Internal                Line
Operating Mode: LT                      NT
Remote Link   : M-channel               M-channel

                                        [ROUTER]

                                         DS0 MAP
                                         LAN1,WAN1,WAN2
                                         Static Route
                                        *Router Reset
                                         Router Load Default









<< Select item or press ESC to return >>
```

6.4.5.5 U Remote Router Setup - Router Load Default

Press “S” from Port Menu. Then move the cursor to “Router Reset”. Press ENTER to load default.

```
SLOT 2 DTU PORT 2    ====== U Remote Router Setup ======   10:57:58 02/08/2002

                                        << DS0 MAP >>

[DTU SETUP]     ****** LOCAL ******     ****** REMOTE ******
Master Clock  : Internal                Line
Operating Mode: LT                      NT
Remote Link   : M-channel               M-channel

                                        [ROUTER]

                                         DS0 MAP
                                         LAN1,WAN1,WAN2
                                         Static Route
                                         Router Reset
                                        *Router Load Default









<< Select item or press ESC to return >>
```

6.4.6 Loopback Test

Press "L" to setup the loopback test.

```
SLOT 2 DTU PORT 2        === Loopback and Test ===        14:22:46 10/19/2000
ARROW KEYS: CURSOR MOVE; ENTER KEY: ITEM SELECT; TAB,'`': NEXT/PREV UNIT

U port : Unit 12# 1    Line Unsync

Near   Loopback   : *OFF   LOCAL     PAYLOAD
Remote Loopback   : *OFF   PAYLOAD   DTE
Send Test Pattern : *OFF   ON
Status            :









<< Press ESC key to return to previous menu >>
```

6.4.7 Alarm Setup

Press "M" to configure the alarm setup.

```
SLOT 2 DTU PORT 2          === Alarm Setup ===          14:22:53 10/19/2000
ARROW KEYS: CURSOR MOVE, TAB: ROLL OPTIONS


   [Port]     [Alarm]   [Relay]

 Unit 12# 1:  DISABLE   DISABLE
 Unit 12# 2:  DISABLE   DISABLE
 Unit 12# 3:  DISABLE   DISABLE
 Unit 12# 4:  DISABLE   DISABLE
 Unit 12# 5:  DISABLE   DISABLE
 Unit 12# 6:  DISABLE   DISABLE
 Unit 12# 7:  DISABLE   DISABLE
 Unit 12# 8:  DISABLE   DISABLE
 Unit 12# 9:  DISABLE   DISABLE
 Unit 12#10:  DISABLE   DISABLE









<< Press ESC key to return to previous menu or save setup >>
```

6.4.8 Clear 10 Ports Performance Data

Press "Y" to clear performance data.

```
=>> Clear All Performance Data (Y/N) ?
```

6.4.9 Load and Reset Current U Port

Press "B" to load and reset the current U port.

```
>> Reset – are you sure ? [Y/N]
```

6.4.10 Reset Current U Port

Press "Z" to reset the current U port.

```
>> Reset – are you sure ? [Y/N]
```

6.5 U-port Sub-Menu (6-PORT)

Press "U" from the controller menu, then choose DTU port. The port menu for DTU port will show as below.

```
SLOT 6 DTU PORT 1              === Port Menu ===            17:07:52 07/26/2001

Version      : SW V1.00  07/25/2001




[DISPLAY]                                   [SETUP]
D -> System Configuration                   S -> System Setup
I -> Remote Information                     L -> Loopback Test
H -> Alarm History                          M -> Alarm Setup
R -> Performance Report


[LOG]                                       [MISC]
F -> Log Off                                Y -> Clear all Ports Performance Data
O -> Log On                                 B -> Load and Reset current U port
U -> Choose Other Slot                      Z -> Reset current U port
P -> Choose DTU Port
E -> Return to Main Menu


>>SPACE bar to refresh or enter a command ===>
```

6.5.1 System Configuration

Press "D" from the above menu to view the system configuration.

```
SLOT 6 DTU PORT 1         === System Configuration ===      17:08:26 07/26/2001

[DTU SETUP]      ****** Local ******      **** Remote DTUs ****

Master Clock   : Internal                  Line
Operating Mode : LT                        NT
Protocol       : M-channel                 M-channel

[Remote DTU] [Speed] [Channel] [Clock]  [Data]   [RTS]     [TTM]  [Interface]

 Unit  6# 1:    64K   B1       Normal   Normal   Active     Off   V.35
 Unit  6# 2: Empty
 Unit  6# 3: Empty
 Unit  6# 4: Empty
 Unit  6# 5: Empty
 Unit  6# 6: Empty









<< ESC key to return to previous menu, SPACE bar to refresh >>
```

6.5.2 Remote Information

Press "I" from the port menu to view the remote DTU information, then the screen will show as below.

```
SLOT 6 DTU PORT 1      === Remote DTUs Information ===     17:08:47 07/26/2001



[DTU]    [Date]  [Serial Number]  [Software Version]   [Configuration]

 6# 1:   10/00    12554            V 1.37 08/19/2000     1 DTU port
 6# 2:   EMPTY
 6# 3:   EMPTY
 6# 4:   EMPTY
 6# 5:   EMPTY
 6# 6:   EMPTY










<< ESC key to return to previous menu, SPACE bar to refresh >>
```

6.5.3 Alarm History

To view the alarm history, press "H" from the port menu, then the following screen will show.

```
SLOT 6 DTU PORT 1           === Alarm History ===          17:08:54 07/26/2001


   [Port]     [State]  [Count]  [Alarm]

 Unit  6# 1:    OK         0    DISABLE
 Unit  6# 2:    OK         0    DISABLE
 Unit  6# 3:    OK         0    DISABLE
 Unit  6# 4:    OK         0    DISABLE
 Unit  6# 5:    OK         0    DISABLE
 Unit  6# 6:    OK         0    DISABLE










<< ESC key to return to previous menu, SPACE bar to refresh >>
```

6.5.4 Performance Report

To view the performance report, press "R" from the port menu, then the following screen will show.

```
SLOT 6 DTU PORT 1          === Performance Report ===        17:08:58 07/26/2001

U port : Unit  6# 1    Line  SYNC
[15 Minute Registers]
              [---------Unavailable Seconds---------]
Current:        8
01-08 17:00     .    .    .    .    .    .    .    .
09-16 15:00     .    .    .    .    .    .    .    .
17-24 13:00     .    .    .    .    .    .    .    .
25-32 11:00     .    .    .    .    .    .    .    .
33-40 09:00     .    .    .    .    .    .    .    .
41-48 07:00     .    .    .    .    .    .    .    .
49-56 05:00     .    .    .    .    .    .    .    .
57-64 03:00     .    .    .    .    .    .    .    .
65-72 01:00     .    .    .    .    .    .    .    .
73-80 23:00     .    .    .    .    .    .    .    .
81-88 21:00     .    .    .    .    .    .    .    .
89-96 19:00     .    .    .    .    .    .    .    .

[24 Hour Registers]
    [ 7/26]  [ 7/25]  [ 7/24]  [ 7/23]  [ 7/22]  [ 7/21]  [ 7/20]  [ 7/19]
UAS:      .        .        .        .        .        .        .        .

<< ESC key: Exit;  SPACE bar: Refresh;  TAB key: Next Unit;  Z key: Reset >>
```

6.5.5 System and Remote DTE Setup

Press "S" from the port menu to setup the system, then the following screen will show.

```
SLOT 6 DTU PORT 1    === System and Remote DTE Setup ===   17:08:08 07/26/2001
ARROW KEYS: CURSOR MOVE, TAB: ROLL OPTIONS
                    Line Sync

[DTU SETUP]      ****** LOCAL ******      ****** REMOTE ******
Master Clock  : Internal                 Line
Operating Mode: LT                       NT
Remote Link   : M-channel                M-channel

[DTE SETUP]                              [DTE-1]
Speed         :                          SYNC
                                         64K
Channel       :                          B1
Clock         :                          Normal
Data          :                          Normal
RTS           :                          Active
TTM           :                          Off
Interface     :                          V.35




<< ESC key to previous menu, SPACE bar to another page >>
```

6.5.6 Loopback and Test

Press "L" from the port menu to setup the loopback, then the screen will show as below.

```
SLOT 6 DTU PORT 1          === Loopback and Test ===          17:08:14 07/26/2001
ARROW KEYS: CURSOR MOVE; ENTER KEY: ITEM SELECT; TAB,'`': NEXT/PREV UNIT

U port : Unit  6# 1    Line  SYNC

Near   Loopback    : *OFF   LOCAL     PAYLOAD
Remote Loopback    : *OFF   PAYLOAD   DTE
Send Test Pattern  : *OFF   ON
Status             :









<< Press ESC key to return to previous menu >>
```

6.5.7 Alarm Setup

Press "M" from the port menu to setup the alarm, then the screen will show as below.

```
SLOT 6 DTU PORT 1             === Alarm Setup ===             17:08:17 07/26/2001
ARROW KEYS: CURSOR MOVE, TAB: ROLL OPTIONS


   [Port]      [Alarm]   [Relay]

 Unit  6# 1:  DISABLE   DISABLE
 Unit  6# 2:  DISABLE   DISABLE
 Unit  6# 3:  DISABLE   DISABLE
 Unit  6# 4:  DISABLE   DISABLE
 Unit  6# 5:  DISABLE   DISABLE
 Unit  6# 6:  DISABLE   DISABLE









<< Press ESC key to return to previous menu or save setup >>
```

6.6 HDSL Sub-Menu

Under the Controller Menu, press “U” to choose a slot for the HDSL port.

```
LOOP AM3440                === Controller Menu ===         08:54:40 01/14/2002

Serial Number   : 8060                  Redundant Controller: Enabled
Hardware Version: ver.as5 04/2001       Start Time  : 17:38:43 01/13/2002
Software Version: S2.D3 01/10/2002



[DISPLAY]                               [SETUP]
C -> System Configuration               S -> System Setup
B -> Clock source Configuration         M -> System Alarm Setup
Q -> Alarm Queue Summary                W -> Firmware Transfer
I -> Information Summary                V -> Store/Retrieve Configuration
                                        K -> Clock source Setup


[LOG]                                   [MISC]
U -> Choose a Slot                      A -> Alarm Cut Off
F -> Log Off [SETUP],[MISC] Menu        X -> Clear Alarm Queue
O -> Log On  [SETUP],[MISC] Menu        Y -> Controller Return to Default
                                        Z -> Controller Reset


==>> Input the unit number (A~D or 1~12): 9
```

Then the following Port Menu of HDSL-port will show as below.

```
SLOT 9 – HDSL#1               === Port Menu ===           14:43:09 10/19/2000

Version      : SW V1.00 10/17/2000




[DISPLAY]                               [SETUP]
C -> HDSL Configuration                 S -> System Setup
I -> HDSL Status                        L -> Loopback Test
H -> Alarm History                      M -> Alarm Setup
R -> Performance Report                 B -> Line Rate


[LOG]                                   [MISC]
F -> Log Off                            Y -> Clear Performance Data
O -> Log On                             Z -> Reset current HDSL board
U -> Choose Other Slot                  D -> Port Return to Default
P -> Choose HDSL Port
E -> Return to Main Menu


>>SPACE bar to refresh or enter a command ===>
```

6.6.1 Unit Configuration

By pressing "C", the unit setup menu is displayed as follows.

```
AM3440-12                === Unit Configuration ===       14:43:20 10/19/2000

Slot 9: HDSL#1 Line Rate: 784Kbps (1 pair)

[-------- LOCAL --------]              [------- FAR-END -------]
HDSL MODE     : MASTER                 NA




E1 Time Slots :
    [111iiiiiiiiiiiiiiiiiiiiiiiiiii]
HDSL carries E1 time slots as:
    TS 01 02 03




<< ESC key to return to previous menu, SPACE bar to refresh >>
```

6.6.2 Unit Status

To enter the xDSL status menu, press " I ". The following screen appears.

```
AM3440-12                   === Unit Status ===           14:43:34 10/19/2000

Slot 9: HDSL#1 Line Rate: 784Kbps (1 pair)
[------------- MASTER ------------]     [------------- SLAVE -------------]
S/W: V1.00 10/17/2000                  Serial Number: NA
[LOOP-1]                               [LOOP-1]            [DTE]
SYNC : NO                              SYNC : NO           DSR : NA
ES   : 0                               ES   : 0            CTS : NA
SES  : 0                               SES  : 0            DCD : NA
UAS  : 176                             UAS  : 176          DTR : NA
                                                           RTS : NA


[Loopback Status]
HDSL Loopback  : OFF
SLAVE Loopback : OFF
BERT           : OFF




<< ESC key to return to previous menu, SPACE bar to refresh >>
```

6.6.3 Alarm History

To show the alarm history report, enter "H". The count column, [Cnt], is the total alarm occurrences. The state column is the current alarm state.

```
AM3440-12                 === Unit Alarm History ===       14:43:46 10/19/2000
Slot 9: HDSL#1

[----Alarm Type----][Cnt][Sta][-Setup-]
LOS,MASTER-LOOP     1     DIS DIS
LOS,SLAVE-LOOP      1     DIS DIS
ES15M,MASTER-LOOP   0     DIS DIS 0
ES15M,SLAVE-LOOP    0     DIS DIS 0
SES15M,MASTER-LOOP  0     DIS DIS 0
SES15M,SLAVE-LOOP   0     DIS DIS 0
ES24H,MASTER-LOOP   0     DIS DIS 0
ES24H,SLAVE-LOOP    0     DIS DIS 0
SES24H,MASTER-LOOP  0     DIS DIS 0
SES24H,SLAVE-LOOP   0     DIS DIS 0









<< ESC key to return to previous menu, SPACE bar to refresh >>
```

6.6.4 Performance Report

To view the performance report of xDSL, enter "R".

```
AM3440-12              === Unit Performance Report ===     14:43:54 10/19/2000
Slot 9: HDSL#1
Location: MASTER-LOOP1
Valid Seconds in Current 15-Min Interval : 196 seconds
Valid 15-Min Intervals in Current 24-hour: 0
[15 Minute registers]
         [------ ES ------]      [------ SES -----]      [------ UAS -----]
Current:   0                       0                     196
   1-4 :   .    .    .    .        .    .    .    .        .    .    .    .
   5-8 :   .    .    .    .        .    .    .    .        .    .    .    .
  9-12 :   .    .    .    .        .    .    .    .        .    .    .    .
 13-16 :   .    .    .    .        .    .    .    .        .    .    .    .
 17-20 :   .    .    .    .        .    .    .    .        .    .    .    .
 21-24 :   .    .    .    .        .    .    .    .        .    .    .    .
 25-28 :   .    .    .    .        .    .    .    .        .    .    .    .
 29-32 :   .    .    .    .        .    .    .    .        .    .    .    .

[24 hour registers]
   [Current]    [ 1 ]    [ 2 ]    [ 3 ]    [ 4 ]    [ 5 ]    [ 6 ]    [ 7 ]
ES :       0        .        .        .        .        .        .        .
SES:       0        .        .        .        .        .        .        .
UAS:     196        .        .        .        .        .        .        .

<<TAB to change location, SPACE bar to refresh, ESC to return to previous menu>>
```

6.6.5 System Setup

Press “S” to setup the system.

```
AM3440-12                  === Unit Setup ===            14:43:20 10/19/2000
ARROW KEYS: CURSOR MOVE, TAB: ROLL OPTIONS
Slot 9: HDSL#1 Line Rate: 784Kbps (1 pair)

[-------- LOCAL --------]                [------- FAR-END -------]
HDSL MODE     : MASTER                   HDSL MODE     : SLAVE
                                         [Router]
                                         Mode: ROUTER
                                         LAN interface
                                         IP  Address: 140.150.001.254
                                         Subnet Mask: 255.255.000.000

E1 Time Slots :                          WAN interface
    [1iiiiiiiiiiiiiii11111111iiiiiii]    IP  Address: 140.133.001.253
HDSL carries E1 time slots as:           Subnet Mask: 255.255.000.000
    TS 01 16 17 18 19 20 21 22 23 24
                                         Default Gateway: 140.133.001.254









<< Press ESC key to return to previous menu >>
```

6.6.6 Loopback and Test

To enter the Loopback and Test screen, press "L". The following screen appears.

```
AM3440-12               === Unit Loopback and Test ===     14:44:12 10/19/2000
ARROW KEYS : CURSOR MOVE , ENTER KEY : ITEM SELECT
Slot 9: HDSL#1
[TEST MENU]
HDSL Loopback  : *OFF  TO-E1   TO-LINE
Slave Loopback : *OFF  DTE-TO-LINE  HDSL-TO-LINE  DTE-TO-DTE  HDSL-TO-DTE
BERT           : *OFF  ON
                                                                  
                                                                  
                                                                  
                                                                  
                                                                  
                                                                  
                                                                  
                                                                  
                                                                  
                                                                  
                                                                  
<< Press ESC key to return to previous menu >>
```

6.6.7 Alarm Setup

To set up the alarm configuration, press "M". The following screen is displayed.

```
AM3440-12                  === Unit Alarm Setup ===        14:44:18 10/19/2000
ARROW KEYS: CURSOR MOVE, TAB: ROLL OPTIONS
Slot 9: HDSL#1
[----- Type ------] [Alarm] [Threshold]
LOS,MASTER-LOOP     DISABLE
LOS,SLAVE-LOOP      DISABLE
ES15M,MASTER-LOOP   DISABLE 000
ES15M,SLAVE-LOOP    DISABLE 000
SES15M,MASTER-LOOP  DISABLE 000
SES15M,SLAVE-LOOP   DISABLE 000
ES24H,MASTER-LOOP   DISABLE 00000
ES24H,SLAVE-LOOP    DISABLE 00000
SES24H,MASTER-LOOP  DISABLE 00000
SES24H,SLAVE-LOOP   DISABLE 00000









<< Press ESC key to return to previous menu >>
```

6.6.8 Line Rate

To view the line rate, press "B".

```
AM3440-12                     === Line Rate ===            14:44:26 10/19/2000
ARROW KEYS: CURSOR MOVE, TAB: ROLL OPTIONS



LINE RATE : 784Kbps

<< Press ESC key to return to previous menu >>
```

6.7 DTE (V.35) Sub-Menu

Under the Controller Menu, press "U" to choose a slot for the DTE (V.35) port. Then the following Port Menu of DTE (V.35) port will show.

```
SLOT 9 DTE PORT 1              === Port Menu ===            18:34:51 03/01/2001

Version      : SW S1.C0  02/28/2001




[DISPLAY]                                  [SETUP]
C -> DTE Configuration                     S -> System Setup
I -> DTE Status                            L -> Loopback Test
H -> Alarm History                         M -> Alarm Setup


[LOG]                                      [MISC]
F -> Log Off                               Y -> Clear Current Port Performance Data
O -> Log On                                B -> DTE board Return to Default
U -> Choose Other Slot                     Z -> Reset current DTE board
P -> Choose DTE Port
E -> Return to Main Menu



>>SPACE bar to refresh or enter a command ===>
```

6.7.1 DTE Configuration

By pressing "C", the unit setup menu is displayed as follows.

```
SLOT 9 DTE PORT 1          === Unit Configuration ===       18:35:23 03/01/2001




[-------- LOCAL --------]
Channel   : 0
Rate      : 64KBps
Clock     : Normal
Data      : Normal
RTS       : Active
TTM       : Off
V.54      : Off
INTERFACE : V.35









<< ESC key to return to previous menu, SPACE bar to refresh >>
```

6.7.2 DTE Status

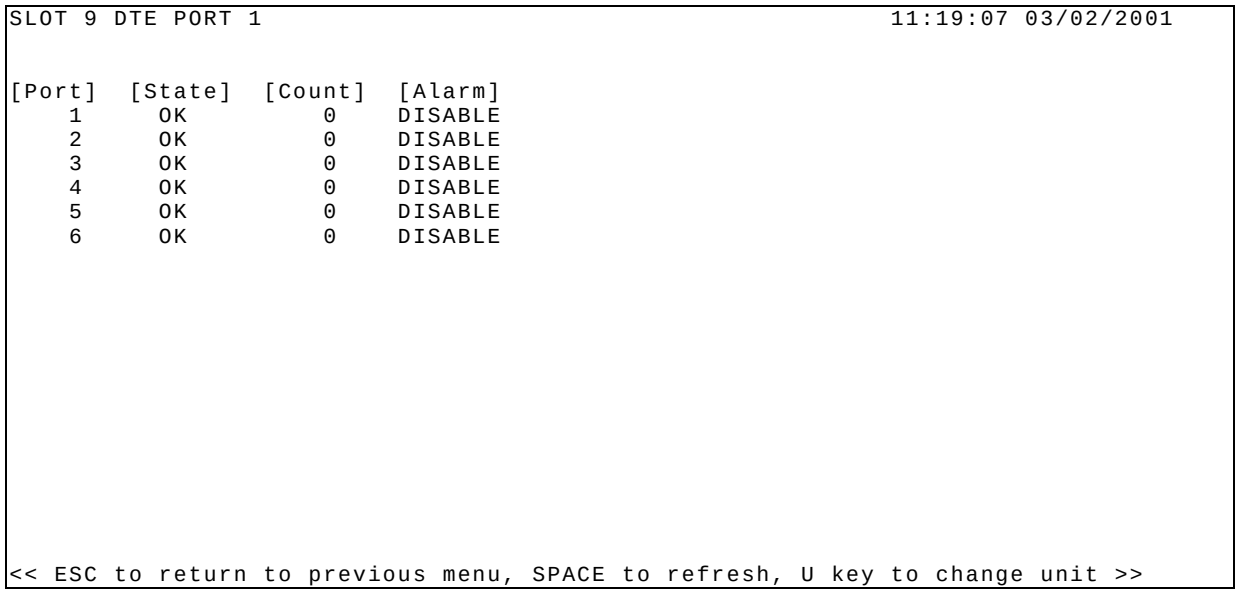
To enter the DTE status menu, press " I ". The following screen appears.

```
SLOT 9 DTE PORT 1            === Unit Status ===          18:35:27 03/01/2001


[------ LOCAL ------]
DTE-M1 existed : YES
RTS LOSS       : YES
EXT_CLK LOSS   : NO
DSR : YES
CTS : NO
DCD : YES
DTR : NO
RTS : NO

[Loopback Status]
DTE Loopback   : OFF
BERT           : OFF









<< ESC key to return to previous menu, SPACE bar to refresh >>
```

6.7.3 Alarm History

Press “H” to view the alarm history.

```
SLOT 9 DTE PORT 1                                          11:19:07 03/02/2001


[Port]  [State]  [Count]  [Alarm]
    1     OK         0    DISABLE
    2     OK         0    DISABLE
    3     OK         0    DISABLE
    4     OK         0    DISABLE
    5     OK         0    DISABLE
    6     OK         0    DISABLE
```



6.7.4 System Setup

Press “S” to setup the system.

```
SLOT 9 DTE PORT 1        === Setup Configeration ===       18:35:35 03/01/2001
ARROW KEYS: CURSOR MOVE, TAB: ROLL OPTIONS



[-------- LOCAL --------]
Channel   : 0
Rate      : 64KBps
Clock     : Normal
Data      : Normal
RTS       : Active
TTM       : Off
V.54      : Off
INTERFACE : V.35









<< ESC key to previous menu, SPACE bar to another page >>
```

6.7.5 Loopback Test

To enter the Loopback and Test screen, press "L". The following screen appears.

```
SLOT 9 DTE PORT 1       === Unit Loopback and Test ===     18:35:39 03/01/2001
ARROW KEYS: CURSOR MOVE; ENTER KEY: ITEM SELECT; TAB,'`': NEXT/PREV UNIT

DTE Port 1

[TEST MENU]
DTE Loopback                          : *OFF  TO-DTE  TO-DS1
Send V.54 Activate Code to Far-End    : *DTE
Send V.54 Deactivate Code to Far-End  : *DTE
Send BERT                             : *OFF  ON









<< Press ESC key to return to previous menu >>
```

6.7.6 Alarm Setup

To set up the alarm configuration, press "M". The following screen is displayed.

```
SLOT 9 DTE PORT 1            === Alarm Setup ===           18:35:43 03/01/2001
ARROW KEYS: CURSOR MOVE, TAB: ROLL OPTIONS


   [Port]      [Alarm]   [Relay]

 Unit  9# 1:  DISABLE   DISABLE
 Unit  9# 2:  DISABLE   DISABLE
 Unit  9# 3:  DISABLE   DISABLE
 Unit  9# 4:  DISABLE   DISABLE
 Unit  9# 5:  DISABLE   DISABLE
 Unit  9# 6:  DISABLE   DISABLE









<< Press ESC key to return to previous menu or save setup >>
```

6.7.7 Clear Current Port Performance Data

To clear current port performance data, press "X".

```
SLOT 9 DTE PORT 1             === Port Menu ===            18:35:45 03/01/2001



=>> Clear Performance Data (Y/N)?
```

6.7.8 Return to Default

Press "Y" to return to default.

```
SLOT 9 DTE PORT 1             === Port Menu ===            18:35:45 03/01/2001



>> Return to default - are you sure ? [Y/N]
```

6.7.9 Reset Current DTE Board

To reset DTE board, press "Z".

```
SLOT 9 DTE PORT 1             === Port Menu ===            18:35:45 03/01/2001



=>> Reset Board 9 (Y/N)?
```

6.8 DTE (X.50) Sub-Menu

Under the Controller Menu, press “U” to choose a slot for the DTE (X.50) port. Then the following screen will show.

```
SLOT 9 X50 PORT 1             === Port Menu ===            09:45:22 05/23/2001

Version      : SW S1.B0  5/04/2001




[DISPLAY]                                  [SETUP]
C -> DTE Configuration                     S -> System Setup
I -> DTE Status                            L -> Loopback Test
H -> Alarm History                         M -> Alarm Setup


[LOG]                                      [MISC]
F -> Log Off                               Y -> Clear Current Port Performance Data
O -> Log On                                B -> DTE board Return to Default
U -> Choose Other Slot                     Z -> Reset current DTE board
P -> Choose DTE Port
E -> Return to Main Menu



>>SPACE bar to refresh or enter a command ===>
```

6.8.1 DTE Configuration

Under the Port Menu, press "C" to view the unit configuration, the screen will show as below.

```
SLOT 9 X50 PORT 1          === Unit Configuration ===       09:46:37 05/23/2001




[-------- LOCAL --------]
Channel   : 72
X50 MUX   : NO_MUX
SYNC mode : SYNC
Rate      : 1.2K
Phase     : fixed
4.8k sel  : fixed
Clock     : Normal
Data      : Normal
RTS       : Permanent
TTM       : Off
Interface : RS-232
Warning   : NO




<< ESC key to return to previous menu, SPACE bar to refresh >>
```

6.8.2 DTE Status

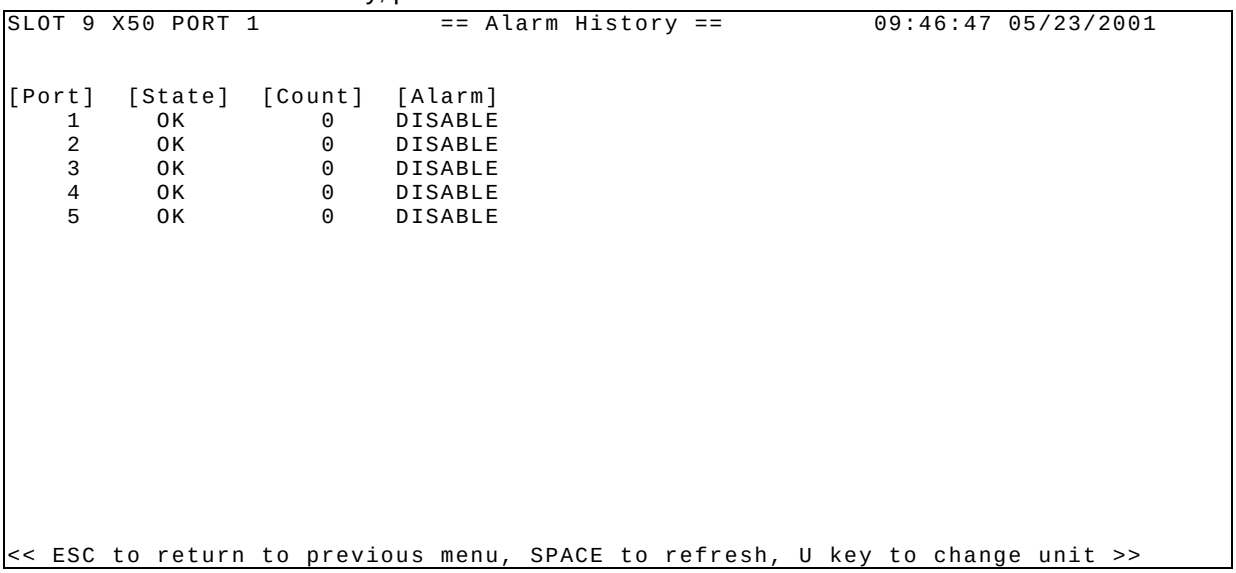
Under the Port Menu, press "I" to view the unit status, the screen will show as below.

```
SLOT 9 X50 PORT 1            === Unit Status ===          09:46:44 05/23/2001


[------ LOCAL ------]
DTE-M1 existed : YES
RTS LOSS       : NO
EXT_CLK LOSS   : NO
DSR : YES
CTS : YES
DCD : YES
DTR : NO
RTS : YES

[Loopback Status]
DTE Loopback   : OFF
BERT           : OFF









<< ESC key to return to previous menu, SPACE bar to refresh >>
```

6.8.3 Alarm History

To view the alarm history, press "H" from the Port Menu. The screen will show as below.

```
SLOT 9 X50 PORT 1            == Alarm History ==          09:46:47 05/23/2001


[Port]  [State]  [Count]  [Alarm]
    1     OK         0    DISABLE
    2     OK         0    DISABLE
    3     OK         0    DISABLE
    4     OK         0    DISABLE
    5     OK         0    DISABLE
```



6.8.4 System Setup

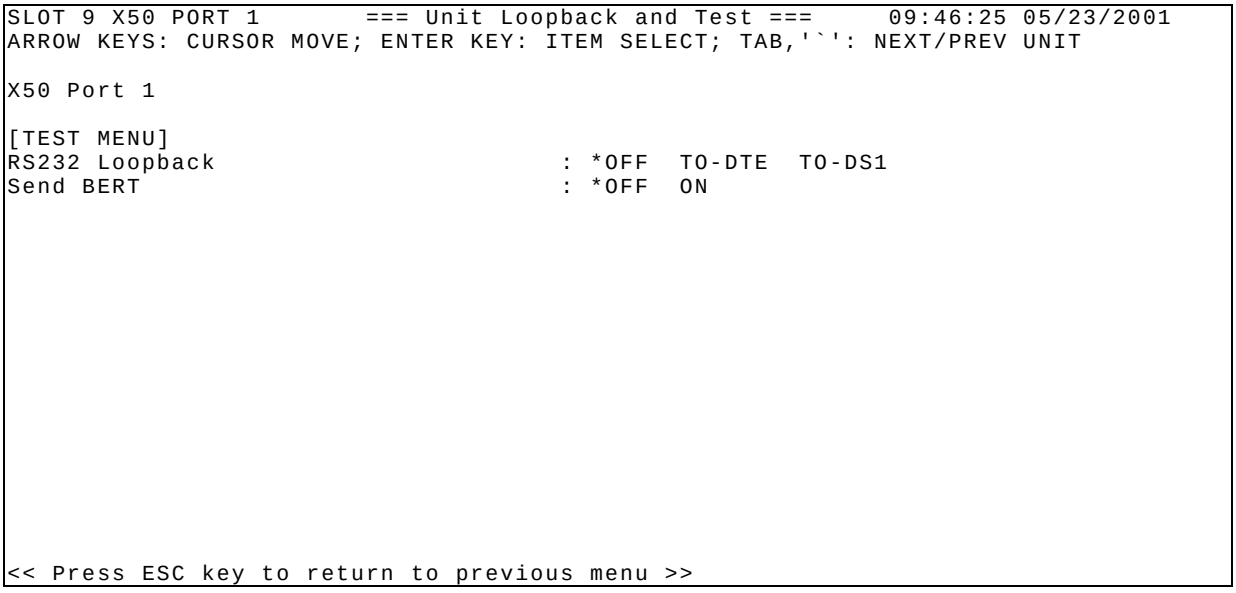
To setup the system, press "S" from the Port Menu. The screen will show as below.

```
SLOT 9 X50 PORT 1        === Setup Configeration ===       09:45:59 05/23/2001
ARROW KEYS: CURSOR MOVE, TAB: ROLL OPTIONS



[-------- LOCAL --------]
Channel   : 72
X50 MUX   : NO_MUX
SYNC mode : SYNC
Rate      : 1.2K
Phase     : fixed
4.8k sel  : fixed
Clock     : Normal
Data      : Normal
RTS       : Permanent
TTM       : Off
Interface : RS-232
Warning   : NO




<< ESC key to previous menu, SPACE bar to another page >>
```

6.8.5 Loopback Test

To setup the loopback test, press "L" from the Port Menu. The screen will show as below.

```
SLOT 9 X50 PORT 1       === Unit Loopback and Test ===     09:46:25 05/23/2001
ARROW KEYS: CURSOR MOVE; ENTER KEY: ITEM SELECT; TAB,'`': NEXT/PREV UNIT

X50 Port 1

[TEST MENU]
RS232 Loopback                        : *OFF  TO-DTE  TO-DS1
Send BERT                             : *OFF  ON
```



```
<< Press ESC key to return to previous menu >>
```

6.8.6 Alarm Setup

To setup the alarm setup, press "M" from the Port Menu. The screen will show as below.

```
SLOT 9 X50 PORT 1            === Alarm Setup ===           09:46:30 05/23/2001
ARROW KEYS: CURSOR MOVE, TAB: ROLL OPTIONS


   [Port]     [Alarm]   [Relay]

 Unit  9# 1:  DISABLE   DISABLE
 Unit  9# 2:  DISABLE   DISABLE
 Unit  9# 3:  DISABLE   DISABLE
 Unit  9# 4:  DISABLE   DISABLE
 Unit  9# 5:  DISABLE   DISABLE









>> Change configuration (Y/N)? (Note:to save,please use V-command)
```

6.8.7 Clear Current Port Performance Data

To clear current port performance data, press "X".

```
SLOT 9 X50 PORT 1            === Port Menu ===           09:46:30 05/23/2001



=>> Clear Performance Data (Y/N)?
```

6.8.8 Return to Default

Press "Y" to return to default.

```
SLOT 9 X50 PORT 1            === Port Menu ===           09:46:30 05/23/2001



>> Return to default - are you sure ? [Y/N]
```

6.8.9 Reset Current DTE Board

To reset DTE board, press "Z".

```
SLOT 9 X50 PORT 1            === Port Menu ===           09:46:30 05/23/2001



=>> Reset Board 9 (Y/N)?
```

6.9 ATM Frame Relay Sub-Menu

Under the Controller Menu, press “U” to choose a slot for the ATM/ FR port. Then the following screen will show.

```
SLOT D  ATM/FR E1              === Port Menu ===            09:41:53 09/13/2002

Version      : SW V3.03 01/03/2002




[DISPLAY]                                [SETUP]
1 -> Unit 1-Hour Perf. Report            L -> Unit Loopback Setup
2 -> Unit 24-Hour Perf. Report           M -> Unit Alarm Setup
A -> Unit Statistics                     S -> Unit System Setup
C -> Unit Configuration                  X -> Unit Clear Alarm Queue & History
H -> Unit Alarm History                  K -> Unit Clear Performance Data
I -> Unit Status                         D -> Unit Upgrade Firmware
Q -> Unit Alarm Queue


[LOG]                                    [MISC]
U -> Choose a Port                       Y -> Unit Load Default Config
F -> Log Off [SETUP],[MISC] Menu         Z -> Unit Reset
O -> Log On  [SETUP],[MISC] Menu
E -> Return to Controller Main Menu


>>SPACE bar to refresh or enter a command ===>
```

6.9.1 1-Hour Performance Report

6.9.1.1 ATM Frame Relay - T1

Press "1" from the port menu, the following screen will show. To view ATM FR T1 port 1-hour performance report by selecting register type, USER or LINE. The current selection will be highlighted by an asterisk (*).

```
SLOT D ATM/FR T1      === Port 1-Hour Perf. Report ===      17:17:44 07/21/2002



>> Select Register Type ? *USER  LINE
```

```
SLOT D ATM/FR T1       === Port 1-Hour Perf. Report ===      17:17:49 07/21/2002
USER
-- Valid Seconds in Current 15-Min Interval : 290 seconds
                                (ES)   (UAS)  (BES)  (SES)  (CSS)  (LOFC)
   Current 15-Min Interval     : 0      0      0      0      0      0
   1st Nearest 15-Min Interval : -----  -----  -----  -----  -----  -----
   2nd Nearest 15-Min Interval : -----  -----  -----  -----  -----  -----
   3rd Nearest 15-Min Interval : -----  -----  -----  -----  -----  -----
   4th Nearest 15-Min Interval : -----  -----  -----  -----  -----  -----

-- Valid 15-Min Intervals in Current 24-Hour Interval: 0
                                (ES)   (UAS)  (BES)  (SES)  (CSS)  (LOFC)
   Current 24-Hour Interval    : -----  -----  -----  -----  -----  -----









<< TAB key to show Statistics Report >>
<< ESC key to return to previous menu, SPACE key to refresh >>
```

```
SLOT D ATM/FR T1       === Port 1-Hour Stat. Report ===      17:18:05 07/21/2002
USER
-- Valid Seconds in Current 15-Min Interval : 290 seconds
                          (%AS)  (%EFS)   (%ES)  (%BES)  (%SES)  (%CSS) (%LOFC)
   Current 15-Min      :100.00% 100.00% 0.0000% 0.0000% 0.0000% 0.0000% 0.0000%
   1st Nearest 15-Min  :------- ------- ------- ------- ------- ------- -------
   2nd Nearest 15-Min  :------- ------- ------- ------- ------- ------- -------
   3rd Nearest 15-Min  :------- ------- ------- ------- ------- ------- -------
   4th Nearest 15-Min  :------- ------- ------- ------- ------- ------- -------

-- Valid 15-Min Intervals in Current 24-Hour Interval: 0
                          (%AS)  (%EFS)   (%ES)  (%BES)  (%SES)  (%CSS) (%LOFC)
   Current 24-Hour     :------- ------- ------- ------- ------- ------- -------









<< TAB key to show Performance Report >>
<< ESC key to return to previous menu, SPACE key to refresh >>
```

```
SLOT D ATM/FR T1        === Port 1-Hour Perf. Report ===      17:18:20 07/21/2002
LINE
-- Valid Seconds in Current 15-Min Interval : 321 seconds
                            (ES)   (UAS)  (BES)  (SES)  (CSS)  (LOFC)
   Current 15-Min Interval     : 0      0      0      0      0      0
   1st Nearest 15-Min Interval : -----  -----  -----  -----  -----  -----
   2nd Nearest 15-Min Interval : -----  -----  -----  -----  -----  -----
   3rd Nearest 15-Min Interval : -----  -----  -----  -----  -----  -----
   4th Nearest 15-Min Interval : -----  -----  -----  -----  -----  -----

-- Valid 15-Min Intervals in Current 24-Hour Interval: 0
                            (ES)   (UAS)  (BES)  (SES)  (CSS)  (LOFC)
   Current 24-Hour Interval    : -----  -----  -----  -----  -----  -----









<< TAB key to show Statistics Report >>
<< ESC key to return to previous menu, SPACE key to refresh >>
```

```
SLOT D ATM/FR T1        === Port 1-Hour Stat. Report ===      17:18:23 07/21/2002
LINE
-- Valid Seconds in Current 15-Min Interval : 321 seconds
                          (%AS)  (%EFS)   (%ES)  (%BES)  (%SES)  (%CSS) (%LOFC)
   Current 15-Min      :100.00% 100.00% 0.0000% 0.0000% 0.0000% 0.0000% 0.0000%
   1st Nearest 15-Min  :------- ------- ------- ------- ------- ------- -------
   2nd Nearest 15-Min  :------- ------- ------- ------- ------- ------- -------
   3rd Nearest 15-Min  :------- ------- ------- ------- ------- ------- -------
   4th Nearest 15-Min  :------- ------- ------- ------- ------- ------- -------

-- Valid 15-Min Intervals in Current 24-Hour Interval: 0
                          (%AS)  (%EFS)   (%ES)  (%BES)  (%SES)  (%CSS) (%LOFC)
   Current 24-Hour     :------- ------- ------- ------- ------- ------- -------









<< TAB key to show Performance Report >>
<< ESC key to return to previous menu, SPACE key to refresh >>
```

6.9.1.2 ATM Frame Relay - E1

To view ATM FR E1 port 1-hour performance report by selecting register type. The current selection will be highlighted by an asterisk (*).

```
SLOT D ATM/FR E1          === Port 1-Hour Perf. Report ===      16:29:59 07/24/2002
USER
-- Valid Seconds in Current 15-Min Interval : 16 seconds
                              (ES)   (UAS)  (BES)  (SES)  (DM)   (CSS)
   Current 15-Min Interval    : 0      16     0      0      0      16
   1st Nearest 15-Min Interval : -----  -----  -----  -----  -----  -----
   2nd Nearest 15-Min Interval : -----  -----  -----  -----  -----  -----
   3rd Nearest 15-Min Interval : -----  -----  -----  -----  -----  -----
   4th Nearest 15-Min Interval : -----  -----  -----  -----  -----  -----

-- Valid 15-Min Intervals in Current 24-Hour Interval: 0
                              (ES)   (UAS)  (BES)  (SES)  (DM)   (CSS)
   Current 24-Hour Interval   : -----  -----  -----  -----  -----  -----
   07/23/2002                 : -----  -----  -----  -----  -----  -----
   07/22/2002                 : -----  -----  -----  -----  -----  -----
   07/21/2002                 : -----  -----  -----  -----  -----  -----
   07/20/2002                 : -----  -----  -----  -----  -----  -----
   07/19/2002                 : -----  -----  -----  -----  -----  -----
   07/18/2002                 : -----  -----  -----  -----  -----  -----
   07/17/2002                 : -----  -----  -----  -----  -----  -----


<< TAB key to show Statistics Report >>
<< ESC key to return to previous menu, SPACE key to refresh >>
```

```
SLOT D  ATM/FR E1          === Port 1-Hour Stat. Report ===      16:30:04 07/24/2002
USER
-- Valid Seconds in Current 15-Min Interval : 16 seconds
                           (%AS)  (%EFS)   (%ES)  (%BES)  (%SES)   (%DM)  (%CSS)
   Current 15-Min       :0.0000% 0.0000% 0.0000% 0.0000% 0.0000% 0.0000% 100.00%
   1st Nearest 15-Min   :------- ------- ------- ------- ------- ------- -------
   2nd Nearest 15-Min   :------- ------- ------- ------- ------- ------- -------
   3rd Nearest 15-Min   :------- ------- ------- ------- ------- ------- -------
   4th Nearest 15-Min   :------- ------- ------- ------- ------- ------- -------

-- Valid 15-Min Intervals in Current 24-Hour Interval: 0
                           (%AS)  (%EFS)   (%ES)  (%BES)  (%SES)   (%DM)  (%CSS)
   Current 24-Hour      :------- ------- ------- ------- ------- ------- -------
   07/23/2002           :------- ------- ------- ------- ------- ------- -------
   07/22/2002           :------- ------- ------- ------- ------- ------- -------
   07/21/2002           :------- ------- ------- ------- ------- ------- -------
   07/20/2002           :------- ------- ------- ------- ------- ------- -------
   07/19/2002           :------- ------- ------- ------- ------- ------- -------
   07/18/2002           :------- ------- ------- ------- ------- ------- -------
   07/17/2002           :------- ------- ------- ------- ------- ------- -------


<< TAB key to show Performance Report >>
<< ESC key to return to previous menu, SPACE key to refresh >>
```

```
SLOT D  ATM/FR E1        === Port 1-Hour Perf. Report ===      16:30:16 07/24/2002
LINE
-- Valid Seconds in Current 15-Min Interval : 33 seconds
                              (ES)   (UAS)  (BES)  (SES)  (DM)   (CSS)
   Current 15-Min Interval     : 0      33     0      0      0      33
   1st Nearest 15-Min Interval : -----  -----  -----  -----  -----  -----
   2nd Nearest 15-Min Interval : -----  -----  -----  -----  -----  -----
   3rd Nearest 15-Min Interval : -----  -----  -----  -----  -----  -----
   4th Nearest 15-Min Interval : -----  -----  -----  -----  -----  -----

-- Valid 15-Min Intervals in Current 24-Hour Interval: 0
                              (ES)   (UAS)  (BES)  (SES)  (DM)   (CSS)
   Current 24-Hour Interval    : -----  -----  -----  -----  -----  -----
   07/23/2002                  : -----  -----  -----  -----  -----  -----
   07/22/2002                  : -----  -----  -----  -----  -----  -----
   07/21/2002                  : -----  -----  -----  -----  -----  -----
   07/20/2002                  : -----  -----  -----  -----  -----  -----
   07/19/2002                  : -----  -----  -----  -----  -----  -----
   07/18/2002                  : -----  -----  -----  -----  -----  -----
   07/17/2002                  : -----  -----  -----  -----  -----  -----


<< TAB key to show Statistics Report >>
<< ESC key to return to previous menu, SPACE key to refresh >>
```

```
SLOT D  ATM/FR E1        === Port 1-Hour Stat. Report ===      16:30:20 07/24/2002
LINE
-- Valid Seconds in Current 15-Min Interval : 33 seconds
                         (%AS)  (%EFS)   (%ES)  (%BES)  (%SES)   (%DM)  (%CSS)
   Current 15-Min      :0.0000% 0.0000% 0.0000% 0.0000% 0.0000% 0.0000% 100.00%
   1st Nearest 15-Min  :------- ------- ------- ------- ------- ------- -------
   2nd Nearest 15-Min  :------- ------- ------- ------- ------- ------- -------
   3rd Nearest 15-Min  :------- ------- ------- ------- ------- ------- -------
   4th Nearest 15-Min  :------- ------- ------- ------- ------- ------- -------

-- Valid 15-Min Intervals in Current 24-Hour Interval: 0
                         (%AS)  (%EFS)   (%ES)  (%BES)  (%SES)   (%DM)  (%CSS)
   Current 24-Hour     :------- ------- ------- ------- ------- ------- -------
   07/23/2002          :------- ------- ------- ------- ------- ------- -------
   07/22/2002          :------- ------- ------- ------- ------- ------- -------
   07/21/2002          :------- ------- ------- ------- ------- ------- -------
   07/20/2002          :------- ------- ------- ------- ------- ------- -------
   07/19/2002          :------- ------- ------- ------- ------- ------- -------
   07/18/2002          :------- ------- ------- ------- ------- ------- -------
   07/17/2002          :------- ------- ------- ------- ------- ------- -------


<< TAB key to show Performance Report >>
<< ESC key to return to previous menu, SPACE key to refresh >>
```

6.9.2 24-Hour Performance Report

6.9.2.1 ATM Frame Relay – T1

Press "2" from the port menu, the following screen will show. To view ATM FR T1 port 24-hour performance report by selecting register type and parameter. The current selection will be highlighted by an asterisk (*).

```
SLOT D ATM/FR T1         === Port 24-Hour Perf. Report ===     17:18:33 07/21/2002




>> Select Register Type ? *USER  LINE
>> Select Parameter ? *ES  UAS  BES  SES  CSS  LOFC  AS  EFS  BPV  ESF
```

```
SLOT D ATM/FR T1          === Port 24-Hour Perf. Report ===     17:18:44 07/21/2002
USER ES
-- Valid Seconds in Current 15-Min Interval : 345 seconds
-- Valid 15-Min Intervals in Current 24-Hour Interval: 0
                              (ES)   (UAS)  (BES)  (SES)  (CSS)  (LOFC)
   Current 15-Min Interval     : 0      0      0      0      0      0
   Current 24-Hour Interval    : -----  -----  -----  -----  -----  -----

-- USER, ES, Last 96 15-Min Interval :
   01-08 > ----- ----- ----- ----- ----- ----- ----- -----
   09-16 > ----- ----- ----- ----- ----- ----- ----- -----
   17-24 > ----- ----- ----- ----- ----- ----- ----- -----
   25-32 > ----- ----- ----- ----- ----- ----- ----- -----
   33-40 > ----- ----- ----- ----- ----- ----- ----- -----
   41-48 > ----- ----- ----- ----- ----- ----- ----- -----
   49-56 > ----- ----- ----- ----- ----- ----- ----- -----
   57-64 > ----- ----- ----- ----- ----- ----- ----- -----
   65-72 > ----- ----- ----- ----- ----- ----- ----- -----
   73-80 > ----- ----- ----- ----- ----- ----- ----- -----
   81-88 > ----- ----- ----- ----- ----- ----- ----- -----
   89-96 > ----- ----- ----- ----- ----- ----- ----- -----

<< TAB key to show Statistics Report >>
<< ESC key to return to previous menu, SPACE key to refresh >>
```

```
SLOT D ATM/FR T1         === Port 24-Hour Stat. Report ===     17:18:48 07/21/2002
USER %ES
-- Valid Seconds in Current 15-Min Interval : 345 seconds
-- Valid 15-Min Intervals in Current 24-Hour Interval: 0
                           (%ES)  (%UAS)  (%BES)  (%SES)  (%CSS) (%LOFC)
   Current 15-Min      :0.0000% 0.0000% 0.0000% 0.0000% 0.0000% 0.0000%
   Current 24-Hour     :------- ------- ------- ------- ------- -------

-- USER, %ES, Last 96 15-Min Interval :
   01-08 > ------- ------- ------- ------- ------- ------- ------- -------
   09-16 > ------- ------- ------- ------- ------- ------- ------- -------
   17-24 > ------- ------- ------- ------- ------- ------- ------- -------
   25-32 > ------- ------- ------- ------- ------- ------- ------- -------
   33-40 > ------- ------- ------- ------- ------- ------- ------- -------
   41-48 > ------- ------- ------- ------- ------- ------- ------- -------
   49-56 > ------- ------- ------- ------- ------- ------- ------- -------
   57-64 > ------- ------- ------- ------- ------- ------- ------- -------
   65-72 > ------- ------- ------- ------- ------- ------- ------- -------
   73-80 > ------- ------- ------- ------- ------- ------- ------- -------
   81-88 > ------- ------- ------- ------- ------- ------- ------- -------
   89-96 > ------- ------- ------- ------- ------- ------- ------- -------

<< TAB key to show Performance Report >>
<< ESC key to return to previous menu, SPACE key to refresh >>
```

6.9.2.2 ATM Frame Relay – E1

Press "2" from the port menu, the following screen will show. To view ATM FR E1 port 24-hour performance report by selecting register type. The current selection will be highlighted by an asterisk (*).

```
SLOT D  ATM/FR E1         === Port 24-Hour Perf. Report ===     16:30:29 07/24/2002
USER ES
-- Valid Seconds in Current 15-Min Interval : 46 seconds
-- Valid 15-Min Intervals in Current 24-Hour Interval: 0
                              (ES)   (UAS)  (BES)  (SES)  (DM)   (CSS)
   Current 15-Min Interval    : 0      46     0      0      0      46
   Current 24-Hour Interval   : -----  -----  -----  -----  -----  -----

-- USER, ES, Last 96 15-Min Interval :
   01-08 > ----- ----- ----- ----- ----- ----- ----- -----
   09-16 > ----- ----- ----- ----- ----- ----- ----- -----
   17-24 > ----- ----- ----- ----- ----- ----- ----- -----
   25-32 > ----- ----- ----- ----- ----- ----- ----- -----
   33-40 > ----- ----- ----- ----- ----- ----- ----- -----
   41-48 > ----- ----- ----- ----- ----- ----- ----- -----
   49-56 > ----- ----- ----- ----- ----- ----- ----- -----
   57-64 > ----- ----- ----- ----- ----- ----- ----- -----
   65-72 > ----- ----- ----- ----- ----- ----- ----- -----
   73-80 > ----- ----- ----- ----- ----- ----- ----- -----
   81-88 > ----- ----- ----- ----- ----- ----- ----- -----
   89-96 > ----- ----- ----- ----- ----- ----- ----- -----

<< TAB key to show Statistics Report >>
<< ESC key to return to previous menu, SPACE key to refresh >>
```

```
SLOT D  ATM/FR E1         === Port 24-Hour Stat. Report ===     16:30:33 07/24/2002
USER %ES
-- Valid Seconds in Current 15-Min Interval : 46 seconds
-- Valid 15-Min Intervals in Current 24-Hour Interval: 0
                           (%ES)  (%UAS)  (%BES)  (%SES)   (%DM)  (%CSS)
   Current 15-Min      :0.0000% 100.00% 0.0000% 0.0000% 0.0000% 100.00%
   Current 24-Hour     :------- ------- ------- ------- ------- -------

-- USER, %ES, Last 96 15-Min Interval :
   01-08 > ------- ------- ------- ------- ------- ------- ------- -------
   09-16 > ------- ------- ------- ------- ------- ------- ------- -------
   17-24 > ------- ------- ------- ------- ------- ------- ------- -------
   25-32 > ------- ------- ------- ------- ------- ------- ------- -------
   33-40 > ------- ------- ------- ------- ------- ------- ------- -------
   41-48 > ------- ------- ------- ------- ------- ------- ------- -------
   49-56 > ------- ------- ------- ------- ------- ------- ------- -------
   57-64 > ------- ------- ------- ------- ------- ------- ------- -------
   65-72 > ------- ------- ------- ------- ------- ------- ------- -------
   73-80 > ------- ------- ------- ------- ------- ------- ------- -------
   81-88 > ------- ------- ------- ------- ------- ------- ------- -------
   89-96 > ------- ------- ------- ------- ------- ------- ------- -------

<< TAB key to show Performance Report >>
<< ESC key to return to previous menu, SPACE key to refresh >>
```

6.9.3 Port Statistics

Press "A" from the port menu, the screen will show as below. To view the statistics of ATM FR port by selecting statistics type. The current selection will be highlighted by an asterisk (*).

```
SLOT D  ATM/FR E1              === Port Statistics ===          17:23:15 07/21/2002




>> Select  Statistics  Type ?  *T1/E1 Line    FR Statistics   ATM Statistics
```

6.9.3.1 T1/E1 Line Availability

```
SLOT D  ATM/FR E1           === Port Line Availability ===      17:23:19 07/21/2002

-- Line Availability during Last 24-Hour:
   Valid Seconds      : 621 seconds
   Available Seconds  : 621 seconds
   Unavailable Seconds: 0 seconds
   Line Avaliability  : 100.0 %









<< ESC key to return to previous menu, SPACE key to refresh >>
```

6.9.3.2 Frame Relay Statistics

```
SLOT D  ATM/FR E1        === Port Frame Relay Statistics ===    17:23:33 07/21/2002









 Channel : 1
 PVC Number : 1      Total PVC : 1

<< Input PVC ( 0 for channel summary ) or ESC to previous menu >>
```

```
SLOT D  ATM/FR E1        === Port Frame Relay Statistics ===    17:23:33 07/21/2002



   Channel  :    1
   PVC      :    1
   DLCI     :  100



  [Recived]                          [Transmitted]
   Bytes    :          0             Bytes       :          0
   Frames   :          0             Frames      :          0
   Discards :          0             Discards    :          0
   Drops    :          0             Drops       :          0




 Channel : 1
 PVC Number : 1      Total PVC : 1

<< ESC key to return to previous menu, SPACE key to refresh >>
```

6.9.3.3 ATM Statistics

```
SLOT D  ATM/FR E1            === Port ATM Statistics ===        17:23:53 07/21/2002

Total Connections :  37              [Bad HEC]:  0
    [VPI/VCI] [Rx_Frames][Tx_Frames][Congestion] [Bad CRC]  [Bad Len]
    ------------------------------------------------------------------
  1  12   101          0           0            0           0
  2  12   105          0           0            0           0
  3  12   106          0           0            0           0
  4  12   107          0           0            0           0
  5  12   108          0           0            0           0
  6  12   109          0           0            0           0
  7  12   110          0           0            0           0
  8  12   111          0           0            0           0
  9  12   112          0           0            0           0
 10  12   113          0           0            0           0
 11  12   114          0           0            0           0
 12  12   115          0           0            0           0
 13  12   116          0           0            0           0
 14  12   117          0           0            0           0
 15  12   118          0           0            0           0
 16  12   119          0           0            0           0


<< ESC key to return to previous menu, SPACE key to refresh >>
```

6.9.4 Unit Configuration

The interface setting displays the egress port type (E1 or T1).
The Protocol setting specifies the protocol on the line (ATM or Frame Relay).
The Channel Map setting specifies the type of traffic. "1" specifies layer 2 traffic, and "i" is idle.
When the line carries ATM traffic, this setting cannot be modified.
To view the port configuration, press "C" from the port menu, the screen will show as below.

6.9.4.1 System Setup – ATM/ FR T1

To view the port configuration, press "C" from the port menu.

```
SLOT D  ATM/FR T1            === Port System Setup ===        17:35:29 03/23/2002


     FRAME     = ESF                   Interface  : T1
     CODE      = B8ZS                  Protocol   : ATM
     YEL       = ON                    Channel Map:
     AIS       = FRAMED                [111111111111111111111111]
     INBAND    = OFF
     INTF      = LONG HAUL
     LBO       = 0 dB









<< ESC key to return to previous menu, SPACE bar to refresh >>
```

6.9.4.2 System Setup – ATM/ FR E1

To view the port configuration, press "C" from the port menu.

```
SLOT D  ATM/FR E1            === Port System Setup ===        15:56:08 03/27/2002


     FRAME     = ON                    Interface  : E1
     CODE      = HDB3                  Protocol   : ATM
     CRC       = ON                    Channel Map:
     RAI       = ON                    [111111111111111i111111111111111]
     AIS       = FRAMED
     CAS       = OFF
     FDL       = OFF
     Sa_bit    = Sa4
     INTF      = 120 Ohm









<< Press ESC key to return to previous menu >>
```

6.9.5 Alarm History

Press "H" from the port menu to view the alarm history.

6.9.5.1 Alarm History - FR to ATM

```
SLOT D  ATM/FR E1              === Port Alarm History ===        17:24:14 07/21/2002
LOCAL
[ALARM-TYPE]    [THRESHOLD]    [CURR-STATE]    [COUNT]    [ALARM]
RAI                               OK             0         ENABLE
AIS                               OK             0         ENABLE
LOS                               OK             0         ENABLE
LOF                               OK             0         ENABLE
BPV                10E-5          OK             0         ENABLE
ES                 1              OK             0         ENABLE
UAS                1              OK             0         ENABLE
CSS                1              OK             0         ENABLE
ATM LOS                           OK             0         ENABLE
ATM AIS                           ALM            37        ENABLE
ATM RDI                           ALM            1         ENABLE
ATM LOC                           OK             0         ENABLE
FR LKD                            DISABLE        1         DISABLE




<< ESC key to return to previous menu, SPACE key to refresh >>
```

6.9.5.2 Alarm History - FR to FR

```
SLOT D  ATM/FR E1              === Port Alarm History ===        17:24:14 07/21/2002
LOCAL
[ALARM-TYPE]    [THRESHOLD]    [CURR-STATE]    [COUNT]    [ALARM]
YEL                               OK             0         ENABLE
AIS                               OK             0         ENABLE
LOS                               OK             1         ENABLE
LOF                               OK             1         ENABLE
BPV                10E-5          OK             0         ENABLE
ES                 1              OK             0         ENABLE
UAS                1              ALM            1         ENABLE
CSS                1              OK             0         ENABLE
FR LKD                            ALM            2         ENABLE




<< ESC key to return to previous bar to refresh >>
```

6.9.6 Port Status

Press "I" from the port menu, the following screen will show. To view the port status for the ATM FR T1 interface by selecting ATM status type. The current selection will be highlighted by an asterisk (*).

NOTE: When Frame Relay is selected, ATM Status will be hidden.

```
SLOT D  ATM/FR T1                 === Port Status ===            17:24:32 07/21/2002




>> Select ATM Status Type ?   *T1/E1 Status     FR Status        ATM Status
```

6.9.6.1 T1/ E1 Status

```
SLOT D  ATM/FR T1                 === Port Status ===            17:24:37 07/21/2002


-- LINE --
   LOS     : NO
   LOF     : NO
   RCV AIS : NO
   RCV YEL : NO
   XMT AIS : NO
   XMT YEL : NO
   BPV ERROR COUNT : 0
   ES  ERROR COUNT : 0

-- TEST --
   PATTERN TRANSMITTED : OFF
   NEAR-END LOOPBACK   : OFF




<< ESC key to return to previous menu, SPACE key to refresh >>
```

6.9.6.2 Frame Relay Status

6.9.6.2.1 FR to ATM

```
SLOT D  ATM/FR T1           === Port Frame Relay Status ===      17:24:42 07/21/2002



      [CH]  [Link]              [CH]  [Link]
     ------------------       ------------------
        1    Up                 17    Inactive
        2    Inactive           18    Inactive
        3    Inactive           19    Inactive
        4    Inactive           20    Inactive
        5    Inactive           21    Inactive
        6    Inactive           22    Inactive
        7    Inactive           23    Inactive
        8    Inactive           24    Inactive
        9    Inactive           25    Inactive
       10    Inactive           26    Inactive
       11    Inactive           27    Inactive
       12    Inactive           28    Inactive
       13    Inactive           29    Inactive
       14    Inactive           30    Inactive
       15    Inactive           31    Inactive
       16    Inactive

<< ESC key to return to previous menu, SPACE key to refresh >>
```

6.9.6.2.2 FR to FR

```
SLOT D  ATM/FR T1          === Port Frame Relay Status ===      16:03:29 03/27/2002


      [CH]  [Link]              [CH]  [Link]
     -------------------      -------------------
      T1/E1  Up                  16    Inactive
        1    Down                17    Inactive
        2    Inactive            18    Inactive
        3    Inactive            19    Inactive
        4    Inactive            20    Inactive
        5    Inactive            21    Inactive
        6    Inactive            22    Inactive
        7    Inactive            23    Inactive
        8    Inactive            24    Inactive
        9    Inactive            25    Inactive
       10    Inactive            26    Inactive
       11    Inactive            27    Inactive
       12    Inactive            28    Inactive
       13    Inactive            29    Inactive
       14    Inactive            30    Inactive
       15    Inactive            31    Inactive

<< ESC key to return to previous menu, SPACE key to refresh >>
```

6.9.6.3 ATM Status

6.9.6.3.1 ATM Status – T1

```
SLOT D  ATM/FR T1              === Port ATM Status ===          17:24:50 07/21/2002

   ATM LINE :  SYNC

        [Active] [AIS] [RDI] [LOC]           [Active] [AIS] [RDI] [LOC]
   -------------------------------      -------------------------------
    1     Yes      Yes    Yes    No       21    Yes      Yes    Yes    No
    6     Yes      Yes    Yes    No       22    Yes      Yes    Yes    No
    7     Yes      Yes    Yes    No       23    Yes      Yes    Yes    No
    8     Yes      Yes    Yes    No       24    Yes      Yes    Yes    No
    9     Yes      Yes    Yes    No       25    Yes      Yes    Yes    No
   10     Yes      Yes    Yes    No       26    Yes      Yes    Yes    No
   11     Yes      Yes    Yes    No       27    Yes      Yes    Yes    No
   12     Yes      Yes    Yes    No       28    Yes      Yes    Yes    No
   13     Yes      Yes    Yes    No       29    Yes      Yes    Yes    No
   14     Yes      Yes    Yes    No       30    Yes      Yes    Yes    No
   15     Yes      Yes    Yes    No       31    Yes      Yes    Yes    No
   16     Yes      Yes    Yes    No       32    Yes      Yes    Yes    No
   17     Yes      Yes    Yes    No       33    Yes      Yes    Yes    No
   18     Yes      Yes    Yes    No       34    Yes      Yes    Yes    No
   19     Yes      Yes    Yes    No       35    Yes      Yes    Yes    No
   20     Yes      Yes    Yes    No       36    Yes      Yes    Yes    No

<< ESC key to return to previous menu, SPACE key to refresh >>
```

6.9.6.3.2 ATM Status – E1

```
SLOT D  ATM/FR E1                === Port Status ===           15:46:07 07/24/2002


-- LINE --
   LOS     : YES
   LOF     : FAS
   RCV AIS : NO
   RCV RAI : NO
   XMT AIS : NO
   XMT RAI : RAI
   BPV ERROR COUNT : 0
   ES  ERROR COUNT : 0

-- TEST --
   PATTERN TRANSMITTED : OFF
   NEAR-END LOOPBACK   : OFF









<< ESC key to return to previous menu, SPACE key to refresh >>
```

6.9.7 Alarm Queue

Press "Q" form the port menu to view the alarm queue.

```
SLOT D  ATM/FR E1             === Unit Alarm Queue ===         17:24:57 07/21/2002
  1 -- Port   A: ATM RDI--------------------17:13:34 07/21/2002
  2 -- Port   A: ATM AIS--------------------17:13:34 07/21/2002
  3 -- Port   A: FR LKD---------------------17:13:33 07/21/2002
```

6.9.8 Loopback Test

6.9.8.1 ATM Frame Relay – T1

Under the port menu, press "L" to setup the loopback test for the ATM FR T1 interface.

```
SLOT D  ATM/FR T1            === Port Loopback Test ===       17:43:55 03/23/2002
ARROW KEYS : CURSOR MOVE , ENTER KEY : ITEM SELECT

- NEAR-END LOOPBACK   : *OFF  LOCAL  PLB  LLB

- SEND LOOPBACK ACTIVATE CODE TO FAR-END:
        *IN-BAND  AT&T-P  ANSI-P  ANSI-L
- SEND LOOPBACK DEACTIVATE CODE TO FAR-END:
        *IN-BAND  AT&T-P  ANSI-P  ANSI-L
- SEND TEST PATTERN:
        *OFF  QRSS-FULL  1-IN-8









- STATUS:

<< Press ESC key to return to previous menu >>
```

6.9.8.2 ATM Frame Relay – E1

Under the port menu, press "L" to setup the loopback test for the ATM FR E1 interface.

```
SLOT D  ATM/FR E1            === Port Loopback Test ===       15:44:49 07/24/2002
ARROW KEYS : CURSOR MOVE , ENTER KEY : ITEM SELECT

- NEAR-END LOOPBACK   : *OFF  LOCAL  PLB  LLB

- SEND LOOPBACK ACTIVATE CODE TO FAR-END:
        *PAYLOAD  LINE
- SEND LOOPBACK DEACTIVATE CODE TO FAR-END:
        *PAYLOAD  LINE
- SEND TEST PATTERN:
        *OFF  PRBS-FULL









- STATUS:

<< Press ESC key to return to previous menu >>
```

6.9.9 Alarm Setup

Under the port menu, press "M' to setup alarm.

6.9.9.1 Alarm Setup - FR to ATM

```
SLOT D  ATM/FR E1             === Port Alarm Setup ===        17:45:51 03/23/2002
ARROW KEYS: CURSOR MOVE, TAB: ROLL OPTIONS

[TYPE]    [THRESHOLD] [ALARM]
YEL                   ENABLE
AIS                   ENABLE
LOS                   ENABLE
LOF                   ENABLE
BPV           10E-5   ENABLE
ES              001   ENABLE
UAS             001   ENABLE
CSS             001   ENABLE
ATM LOS               ENABLE
ATM AIS               ENABLE
ATM RDI               ENABLE
ATM LOC               ENABLE
FR LKD                ENABLE




<< Press ESC key to return to previous menu >>
```

6.9.9.2 Alarm Setup - FR to FR

```
SLOT D  ATM/FR E1             === Port Alarm Setup ===        17:25:38 07/21/2002
ARROW KEYS: CURSOR MOVE, TAB: ROLL OPTIONS

[TYPE]    [THRESHOLD] [ALARM]
YEL                   ENABLE
AIS                   ENABLE
LOS                   ENABLE
LOF                   ENABLE
BPV           10E-5   ENABLE
ES              001   ENABLE
UAS             001   ENABLE
CSS             001   ENABLE
FR LKD                ENABLE




<< Press ESC key to return to previous menu >>
```

6.9.10 AM 3440 TSI MAP Setup

Before the ATM-FR card can be set up, the TSI map for the card must be set up first. From the main controller menu, choose S - System Setup to do this.

Enter the required information where the cursor appears in the left-hand side column of the screen. In the example below three screens are shown in sequence to display the choices available to the user.

6.9.10.1 Map slot D (ATM/FR) to slot B (E1 card)

```
LOOP AM3440                === System Setup (MAP) ===       10:08:40 09/13/2002
ARROW KEYS: CURSOR MOVE, TAB: ROLL OPTIONS
MAP NO: MAP_1
            Source Slot    ATM/FR                Dest. Slot     E1     NON-CAS
Source Slot PO/TS D SL/PO TS PO/TS D SL/PO TS   PO/TS D SL/PO TS PO/TS D SL/PO TS
Slot   :  D  ===== ========== ===== ==========   ===== ========== ===== ==========
Port   :          1 d  B      1     17 d            1 d  D      1     17 d
T.S.   : 01       2 d  B      2     18 d            2 d  D      2     18 d
                  3 d  B      3     19 d            3 d  D      3     19 d
                  4 d  B      4     20 d            4 d  D      4     20 d
T.S.# : 04        5 d               21 d            5 d               21 d
Clear : No        6 d               22 d            6 d               22 d
d/v   : d         7 d               23 d            7 d               23 d
                  8 d               24 d            8 d               24 d
                  9 d               25 d            9 d               25 d
Dest Slot        10 d               26 d           10 d               26 d
Slot   :  B      11 d               27 d           11 d               27 d
Port   :          12 d               28 d           12 d               28 d
T.S.   : 01       13 d               29 d           13 d               29 d
                  14 d               30 d           14 d               30 d
Update? Yes       15 d               31 d           15 d               31 d
Confirm?Yes       16 d                              16 d

<< Press ESC to return to Controller Setup menu, then Press D to active >>
```

6.9.10.2 Map slot D (ATM/FR) to slot 6 (V.35 card)

```
LOOP AM3440                === System Setup (MAP) ===       10:08:40 09/13/2002
ARROW KEYS: CURSOR MOVE, TAB: ROLL OPTIONS
MAP NO: MAP_1
            Source Slot    ATM/FR                Dest. Slot     RTR
Source Slot PO/TS D SL/PO TS PO/TS D SL/PO TS   PO/TS D SL/PO TS PO/TS D SL/PO TS
Slot   :  D  ===== ========== ===== ==========   ===== ========== ===== ==========
Port   :          1 d  B      1     17 d            1 d  D      5     17 d
T.S.   : 05       2 d  B      2     18 d            2 d  D      6     18 d
                  3 d  B      3     19 d            3 d  D      7     19 d
                  4 d  B      4     20 d            4 d  D      8     20 d
T.S.# : 04        5 d  61     1     21 d            5 d               21 d
Clear : No        6 d  61     2     22 d            6 d               22 d
d/v   : d         7 d  61     3     23 d            7 d               23 d
                  8 d  61     4     24 d            8 d               24 d
                  9 d               25 d            9 d               25 d
Dest Slot        10 d               26 d           10 d               26 d
Slot   :  6      11 d               27 d           11 d               27 d
Port   : P1       12 d               28 d           12 d               28 d
T.S.   : 01       13 d               29 d           13 d               29 d
                  14 d               30 d           14 d               30 d
Update? Yes       15 d               31 d           15 d               31 d
Confirm?Yes       16 d                              16 d               32 d

<< Press ESC to return to Controller Setup menu, then Press D to active >>
```

6.9.10.3 Map slot D (ATM/FR) to slot 1 (V.35 card)

```
LOOP AM3440              === System Setup (MAP) ===       10:08:40 09/13/2002
ARROW KEYS: CURSOR MOVE, TAB: ROLL OPTIONS
MAP NO: MAP_1
            Source Slot   ATM/FR              Dest. Slot    V.35
Source Slot PO/TS D SL/PO TS PO/TS D SL/PO TS  PO/TS D SL/PO TS PO/TS D SL/PO TS
Slot  :  D  ===== ========== ===== ==========  ===== ========== ===== ==========
Port  :          1 d  B     1    17 d            1  1 d  D     9    17 d
T.S.  : 09       2 d  B     2    18 d            1  2 d  D    10    18 d
                 3 d  B     3    19 d            1  3 d  D    11    19 d
                 4 d  B     4    20 d            1  4 d  D    12    20 d
T.S.# : 04       5 d  A     1    21 d               5 d              21 d
Clear : No       6 d  A     2    22 d               6 d              22 d
d/v   : d        7 d  A     3    23 d               7 d              23 d
                 8 d  A     4    24 d               8 d              24 d
                 9 d  1  1  1    25 d               9 d              25 d
Dest Slot       10 d  1  1  2    26 d              10 d              26 d
Slot  :  1      11 d  1  1  3    27 d              11 d              27 d
Port  : P1      12 d  1  1  4    28 d              12 d              28 d
T.S.  : 01      13 d             29 d              13 d              29 d
                14 d             30 d              14 d              30 d
Update? Yes     15 d             31 d              15 d              31 d
Confirm?Yes     16 d                               16 d              32 d

<< Press ESC to return to Controller Setup menu, then Press D to active >>
```

6.9.10.4 Map slot D (ATM/FR) to HDLC (Inband Channel)

```
LOOP AM3440              === System Setup (MAP) ===       10:08:40 09/13/2002
ARROW KEYS: CURSOR MOVE, TAB: ROLL OPTIONS
MAP NO: MAP_1
            Source Slot   ATM/FR              Dest. Slot    HDLC
Source Slot PO/TS D SL/PO TS PO/TS D SL/PO TS  PO/TS D SL/PO TS PO/TS D SL/PO TS
Slot  :  D  ===== ========== ===== ==========  ===== ========== ===== ==========
Port  :          1 d  B     1    17 d               1 d  D     13
T.S.  : 13       2 d  B     2    18 d
                 3 d  B     3    19 d
                 4 d  B     4    20 d
T.S.# : 01       5 d  A     1    21 d
Clear : No       6 d  A     2    22 d
d/v   : d        7 d  A     3    23 d
                 8 d  A     4    24 d
                 9 d  1  1  1    25 d
Dest Slot       10 d  1  1  2    26 d
Slot  : HD      11 d  1  1  3    27 d
Port  :         12 d  1  1  4    28 d
T.S.  : 01      13 d HD    1    29 d
                14 d             30 d
Update? Yes     15 d             31 d
Confirm?Yes     16 d

<< Press ESC to return to Controller Setup menu, then Press D to active >>
```

6.9.11 System Setup

6.9.11.1 ATM/ FR Card Configuration

From the main system menu, press “U” to select the PORT, in this case, PORT D. Then from the PORT menu, press “S” for Unit System Setup. The following screen is shown. At the bottom, four setup choices are given. For initial setup, each of these four setup screens should be filled in. An asterisk will highlight the current selection (*). Use arrow keys to change selection. Press ENTER to activate.

```
SLOT D  ATM/FR E1            === Port System Setup ===        17:35:29 03/23/2002




>> Select ATM_setup  Type ?     *T1/E1    CH_MAP    FR_MAN    CONN_TAB
```

When the setup choice T1/E1 is entered. The following screen is shown.
The Interface setting displays the egress port type (E1 or T1).
The Protocol setting allows the user to specify the protocol on the line (ATM or Frame Relay).
The Channel Map, with 31 time slot positions, specifies the type of traffic. A “1” specifies presence of layer 2 traffic in that time slot, and an “i” indicates an idle time slot. For ATM traffic, this setting cannot be modified.

All of the E1 line settings, Frame, Code, CRC, and others, must match that of the ATM network settings.

NOTE: Although the following illustrations are for the E1 interface the procedure for the T1 interface are similar except for the 24 available time slots for T1 compared to 30 for E1.

6.9.11.2 System Specific to ATM Protocol

In the following, further setup will be for the ATM protocol. For Frame Relay protocol, see later sections.

6.9.11.2.1 Port System Setup

```
SLOT D  ATM/FR T1            === Port System Setup ===        17:35:29 03/23/2002
ARROW KEYS: CURSOR MOVE, TAB: ROLL OPTIONS

     FRAME     = ESF                    Interface  : T1
     CODE      = B8ZS                   Protocol   : ATM
     YEL       = ON                     Channel Map:
     AIS       = FRAMED                 [111111111111111111111111]
     INBAND    = OFF
     INTF      = LONG HAUL
     LBO       = 0 dB









<< ESC key to return to previous menu, SPACE bar to refresh >>
```

```
SLOT D  ATM/FR E1         === Port System Setup ===        10:24:07 09/13/2002
ARROW KEYS: CURSOR MOVE, TAB: ROLL OPTIONS

     FRAME     = ON                     Interface  : E1
     CODE      = HDB3                   Protocol   : ATM
     CRC       = ON                     Channel Map:
     RAI       = ON                     [11111111111111i111111111111111]
     AIS       = FRAMED
     CAS       = OFF
     FDL       = OFF
     Sa_bit    = Sa4
     INTF      = 75 Ohm









<< Press ESC key to return to previous menu >>
```

6.9.11.2.2 Channel Map Setup

Select the CH_MAP item on the Port System Setup menu. Use this channel map to tell the ATM/FR card what time slots are combined to be a logical frame relay channel. The logical channel number can be 1 to 31. A 00 will indicate an idle time slot.

```
SLOT D  ATM/FR E1       === Port Channel Map Setup ===     10:24:58 09/13/2002
Please Input: 1~10, BACKSPACE to edit



  Time Slot  :  01 02 03 04 05 06 07 08 09 10 11 12 13 14 15 16
  FR Channel : [01 01 01 01 02 02 02 02 03 03 03 03 04 00 00 00]

  Time Slot  :  17 18 19 20 21 22 23 24 25 26 27 28 29 30 31
  FR Channel : [00 00 00 00 00 00 00 00 00 00 00 00 00 00 00]









<< Press ESC key to return to previous menu >>
```

6.9.11.2.3 Frame Relay Management Setup – FR to ATM

Select the FR_MAN item on the Port System Setup menu. Use this management setup to tell the protocol details of the ATM network. The logical channel number can be 1 to 31. The meanings of the parameters are as follows:

Column Heading	Options	Meaning
CH	1 to 31	Logical channel number
Active	YES NO	Activated by user An idle frame relay channel
Protocol	ITU ANSI	Using Q.933 Annex A protocol Using T1.617 Annex D protocol
Direction	User Network Bidirection	Acts as user side device (periodically issues polling messages to network side) Acts as network side device (waits for polling messages from user side) This channel can issue polling messages and respond to polling messages
T391 Polling Interval	5-30 seconds	The interval between Status Inquiry message from user to network, else error counted.
T392 Response time	5-30 seconds	The max allowed interval between Status Inquiry and network response, else error counted.
N391 PVC Polling Interval	1-255 seconds	The interval between PVC Status Inquiry message from user to network, else error counted.
N392 Error count	1-10	Determine service affecting condition by detecting N392 errors in the last N393 events.
N393 Error count	1-10	See N392

These parameters must be coordinated with the ATM network parameters.

Important Note:

The procedure for changing Port FR Management setting, which has been saved in the system, are:

1. Go to "Port Connection Table Setup" screen, as the 2nd screen shows,

2. Then change [CH] from 04 to 00, as the 3rd screen shows.

3. Go back to "Port FR Management Setup" screen, as 1st screen shows, to change the previous setting.

1st screen

```
SLOT D  ATM/FR E1      === Port FR Management Setup ===    10:25:33 09/13/2002
ARROW KEYS: CURSOR MOVE, TAB: ROLL OPTIONS

[CH] [Active]  [Protocol] [Direction]  [T391] [T392] [N391] [N392] [N393]
-------------------------------------------------------------------------
1      YES        FR-ITU     Network      10     15     006    03     04
2      YES        HDLC
3      YES        FR-ITU     Network      10     15     006    03     04
4      YES        HDLC
5      NO         FR-ITU     Network      10     15     006    03     04
6      NO         FR-ITU     Network      10     15     006    03     04
7      NO         FR-ITU     Network      10     15     006    03     04
8      NO         FR-ITU     Network      10     15     006    03     04
9      NO         FR-ITU     Network      10     15     006    03     04
10     NO         FR-ITU     Network      10     15     006    03     04
11     NO         FR-ITU     Network      10     15     006    03     04
12     NO         FR-ITU     Network      10     15     006    03     04
13     NO         FR-ITU     Network      10     15     006    03     04
14     NO         FR-ITU     Network      10     15     006    03     04
15     NO         FR-ITU     Network      10     15     006    03     04
16     NO         FR-ITU     Network      10     15     006    03     04


<< Press ESC key to return to previous menu >>
```

2nd screen

```
SLOT D  ATM/FR E1    === Port Connection Table Setup ===   10:25:48 09/13/2002
Please Input: 1~10, BACKSPACE to edit


                [CH] [DLCI] [VPI] [VCI] [BR]       [IWK & Translation] [DE-CLP]

 index : 4       04  (HDLC)  103  00103 0064                              MAP
          ------------------------------------------------------------------
          125     0      0     0      0    0<   0>    Network             MAP
          126     0      0     0      0    0<   0>    Network             MAP
          127     0      0     0      0    0<   0>    Network             MAP
          128     0      0     0      0    0<   0>    Network             MAP
            1     1     16   100    100   64<  64>    Network             MAP
            2     2      0   101    101  256<   0>    Network             0
            3     3     18   102    102   64<  64>    Network             MAP
            4     0      0     0      0    0<   0>    Network             MAP
            5     0      0     0      0    0<   0>    Network             MAP
            6     0      0     0      0    0<   0>    Network             MAP
            7     0      0     0      0    0<   0>    Network             MAP
            8     0      0     0      0    0<   0>    Network             MAP
            9     0      0     0      0    0<   0>    Network             MAP


<< Press ESC key to return to previous menu >>
```

3rd screen

```
SLOT D  ATM/FR E1    === Port Connection Table Setup ===   10:25:48 09/13/2002
Please Input: 1~10, BACKSPACE to edit


                [CH] [DLCI] [VPI] [VCI] [BR]       [IWK & Translation] [DE-CLP]

 index : 4       00  (HDLC)  103  00103 0064                            MAP
           ------------------------------------------------------------------------
           125     0      0     0      0    0<   0>    Network             MAP
           126     0      0     0      0    0<   0>    Network             MAP
           127     0      0     0      0    0<   0>    Network             MAP
           128     0      0     0      0    0<   0>    Network             MAP
             1     1     16   100    100   64<  64>    Network             MAP
             2     2      0   101    101  256<   0>    Network             0
             3     3     18   102    102   64<  64>    Network             MAP
             4     0      0     0      0    0<   0>    Network             MAP
             5     0      0     0      0    0<   0>    Network             MAP
             6     0      0     0      0    0<   0>    Network             MAP
             7     0      0     0      0    0<   0>    Network             MAP
             8     0      0     0      0    0<   0>    Network             MAP
             9     0      0     0      0    0<   0>    Network             MAP


<< Press ESC key to return to previous menu >>
```

6.9.11.2.4 Connection Table Setup – FR to ATM

Select the CONN_TAB item on the Port System Setup menu. Use this management setup to link the connection table to that of the ATM network. The channel number can be 1 to 31. All the numerical entries must be coordinated with the ATM network. The meanings of the table columns are as follows:

Column Heading	Options	Meaning
CH	1-31	Logical channel number
DLCI	16-991	Data Link Connection Identifier within the channel
VPI	1-255	Virtual Path Identifier, from ATM
VCI	1-65535	Virtual Channel Identifier, from ATM
BR	1-1920	Bit Rate requested in Kilobits/sec for this VC
[Blank]	1-1920	Actual Bit Rate allocated I Kilobits/sec
IWK & Translation	Network	Network inter-working, FRF.5
	SVC-Mode1	Service inter-working, FRF.8, Map FECN field in Frame Relay to ATM EFCI field
	SVC-Mode 2	Service inter-working, FRF.8, ATM EFCI is always set to “congestion net experienced”
	SVC-YES	Translation column appears in table, see Translation below.
	SVC-NO	Translation column appears in table, see Translation below.
	SVC-YES	Do translation between Frame Relay (FRF-3) and ATM (RFC1483)
	SVC-NO	Forward encapsulations unaltered
DE-CLP	MAP	Maps content of DE (discard eligibility) in Frame Relay or CLP (cell loss probability) in ATM to CLP in ATM, DE in Frame Relay
	0	Regardless of contend of DE and CLP, set outgoing DE and CLP to constant 0.
	1	Regardless of contend of DE and CLP, set outgoing DE and CLP to constant 1.

```
SLOT D  ATM/FR E1    === Port Connection Table Setup ===   10:25:48 09/13/2002
Please Input: 1~10, BACKSPACE to edit


                [CH] [DLCI] [VPI] [VCI] [BR]       [IWK & Translation] [DE-CLP]

 index : 4        04  (HDLC)  103  00103 0064                              MAP
            ------------------------------------------------------------------
           125     0      0     0      0    0<   0>    Network              MAP
           126     0      0     0      0    0<   0>    Network              MAP
           127     0      0     0      0    0<   0>    Network              MAP
           128     0      0     0      0    0<   0>    Network              MAP
             1     1     16   100    100   64<  64>    Network              MAP
             2     2      0   101    101  256<   0>    Network              0
             3     3     18   102    102   64<  64>    Network              MAP
             4     0      0     0      0    0<   0>    Network              MAP
             5     0      0     0      0    0<   0>    Network              MAP
             6     0      0     0      0    0<   0>    Network              MAP
             7     0      0     0      0    0<   0>    Network              MAP
             8     0      0     0      0    0<   0>    Network              MAP
             9     0      0     0      0    0<   0>    Network              MAP


<< Press ESC key to return to previous menu >>
```

The entire connection table can be viewed by paging through the line numbers using the space bar. Each of the line numbers (line index) can be edited. The procedure is as follows.

(1) Move the cursor to the “index” number. Type in the line number followed by ENTER.

(2) Edit any of the entry by moving the cursor to that entry. For numbers, enter the new number followed by ENTER. For option choices, use TAB key to cycle through the availabe choices.

6.9.11.3 Setup Specific to FR-FR Protocol

In the following, setup will be for the FR-FR protocol. From the E1/T1 menu, select Frame Relay for the Protocol. Screen below illustrates that for the T1 interface.

6.9.11.3.1 Port System Setup

```
SLOT D  ATM/FR T1          === Port System Setup ===        22:50:06 07/15/2002
ARROW KEYS: CURSOR MOVE, TAB: ROLL OPTIONS

     FRAME     = ESF                   Interface  : T1
     CODE      = B8ZS                  Protocol   : Frame Relay
     YEL       = ON                    Channel Map:
     AIS       = FRAMED                [111111111111111111111111]
     INBAND    = OFF
     INTF      = LONG HAUL
     LBO       = 0 dB









<< Press ESC key to return to previous menu >>
```

```
SLOT D  ATM/FR E1          === Port System Setup ===        10:16:36 09/13/2002
ARROW KEYS: CURSOR MOVE, TAB: ROLL OPTIONS

     FRAME     = ON                    Interface  : E1
     CODE      = HDB3                  Protocol   : Frame Relay
     CRC       = ON                    Channel Map:
     RAI       = ON                    [11111111111111111111111111111111]
     AIS       = FRAMED
     CAS       = OFF
     FDL       = OFF
     Sa_bit    = Sa4
     INTF      = 75 Ohm









<< Press ESC key to return to previous menu >>
```

6.9.11.3.2Channel Map Setup

Select the CH_MAP item on the Port System Setup menu. Use this channel map to tell the ATM/FR card what time slots are combined to be a logical frame relay channel (FR channel). The logical FR channel number can be 1 to 31 (eg. FR 1 to FR 31). A 0 will indicate an idle time slot.

```
SLOT D  ATM/FR E1       === Port Channel Map Setup ===     10:17:28 09/13/2002
Please Input: 1~10, BACKSPACE to edit



  Time Slot  :  01 02 03 04 05 06 07 08 09 10 11 12 13 14 15 16
  FR Channel : [01 01 01 01 02 02 02 02 03 03 03 03 04 00 00 00]

  Time Slot  :  17 18 19 20 21 22 23 24 25 26 27 28 29 30 31
  FR Channel : [00 00 00 00 00 00 00 00 00 00 00 00 00 00 00]









<< Press ESC key to return to previous menu >>
```

6.9.11.3.3Frame Relay Management Setup – FR to FR

Select the FR_MAN item on the Port System Setup menu. Use this management setup to tell the protocol details of the ATM network. The logical channel number can be 1 to 31. The meanings of the parameters are the same as for FR to ATM.

```
SLOT D  ATM/FR E1      === Port FR Management Setup ===    10:18:27 09/13/2002
ARROW KEYS: CURSOR MOVE, TAB: ROLL OPTIONS

[CH] [Active]  [Protocol] [Direction]  [T391] [T392] [N391] [N392] [N393]
-------------------------------------------------------------------------
T1/E1           FR-ITU     User         10     15     006    03     04
-------------------------------------------------------------------------
1     YES       FR-ITU     Network      10     15     006    03     04
2     YES       HDLC
3     YES       FR-ITU     Network      10     15     006    03     04
4     YES       HDLC
5     NO        FR-ITU     Network      10     15     006    03     04
6     NO        FR-ITU     Network      10     15     006    03     04
7     NO        FR-ITU     Network      10     15     006    03     04
8     NO        FR-ITU     Network      10     15     006    03     04
9     NO        FR-ITU     Network      10     15     006    03     04
10    NO        FR-ITU     Network      10     15     006    03     04
11    NO        FR-ITU     Network      10     15     006    03     04
12    NO        FR-ITU     Network      10     15     006    03     04
13    NO        FR-ITU     Network      10     15     006    03     04
14    NO        FR-ITU     Network      10     15     006    03     04
15    NO        FR-ITU     Network      10     15     006    03     04
16    NO        FR-ITU     Network      10     15     006    03     04
<< Press ESC key to return to previous menu >>
```

6.9.11.3.4Connection Table Setup – FR to FR

Select the CONN_TAB item on the Port System Setup menu. Use this management setup to link the connection table to that of the Frame Relay network. The channel number can be 1 to 31. All the numerical entries must be coordinated with the Frame Relay network. The meanings of the table columns are as follows:

Column Heading	Options	Meaning
CH	1-31	Logical channel number
DLCI	16-991	Data Link Connection Identifier within the egress E1/T1 port
CIR	1-1920	Committed Information Rate
Bc	1-1920	Committed Burst Size
Be	1-1920	Excess Burst Size

DLCI: DLCI in egress E1/T1 port.
CIR-Be: Information rate committed on E1/T1 side.
( ): Actual allocated bandwidth.

```
SLOT D  ATM/FR E1    === Port Connection Table Setup ===   10:20:01 09/13/2002
Please Input: 1~10, BACKSPACE to edit


                 [CH  DLCI] <=> [DLCI   CIR          Bc     Be]

 index : 4         04 (HDLC)       019  0064        0064  0000
            ------------------------------------------------
           126     0     0           0     0(   0)    0      0
           127     0     0           0     0(   0)    0      0
           128     0     0           0     0(   0)    0      0
             1     1    16          16   256( 256)  256      0
             2     2     0          17   256( 256)  256      0
             3     3    18          18    64(  64)   64      0
             4     4     0          19    64(  64)   64      0
             5     0     0           0     0(   0)    0      0
             6     0     0           0     0(   0)    0      0
             7     0     0           0     0(   0)    0      0
             8     0     0           0     0(   0)    0      0
             9     0     0           0     0(   0)    0      0
            10     0     0           0     0(   0)    0      0


<< Press ESC key to return to previous menu, available DLCI : 16 ~ 991 >>
```

The procedure for modifying this table is the same as for the FR-ATM protocol.

6.9.12 Clear Alarm Queue and History

Press "X" to clear alarm queue and history, then enter "Y" or "N" to confirm it.

```
LOOP AM3440                 === Controller Menu ===          09:40:35 09/13/2002

Serial Number    : 100001                 Redundant Controller: Disabled
Hardware Version: TEST                    Start Time  : 09:30:28 09/13/1999
Software Version: S2.A6 09/04/2002



[DISPLAY]                                 [SETUP]
C -> System Configuration                 S -> System Setup
B -> Clock source Configuration           M -> System Alarm Setup
Q -> Alarm Queue Summary                  W -> Firmware Transfer
I -> Information Summary                  V -> Store/Retrieve Configuration
                                          K -> Clock source Setup


[LOG]                                     [MISC]
U -> Choose a Slot                        A -> Alarm Cut Off
F -> Log Off [SETUP],[MISC] Menu          X -> Clear Alarm Queue
O -> Log On  [SETUP],[MISC] Menu          Y -> Controller Return to Default
                                          Z -> Controller Reset


>> Clear alarm queue of PORT D - are you sure ? [Y/N]
```

6.9.13 Clear Performance Data

Under the port menu, press "K" to clear performance data.

```
SLOT D  ATM/FR E1              === Port Statistics ===          15:44:43 07/24/2002









>> Clear  Statistics  Type ?   *T1/E1 Line    FR Statistics   ATM Statistics
```

6.9.14 Upgrade Firmware

Under the port menu, press "D" to download firmware.

```
SLOT D  ATM/FR E1            === Download Firmware ===         17:27:03 07/21/2002
ARROW KEYS: CURSOR MOVE, BACKSPACE to edit, ESC to abort


Bank 1 Firmware Ver. : V2.04 07/10/2002  (Good)
Bank 2 Firmware Ver. : V2.04 06/07/2002  (Good)
Working Firmware Bank: 1
TFTP Server IP       : 140.132.1.156
Firmware File Name   : lv_s_f_c.run_____________________________________________









<< Press ESC key to return to previous menu >>
```

6.9.15 Unit Load Default Configuration

Under the port menu, press "Y" to download firmware. Then press “Y” or “N” to confirm the selection.

```
SLOT D  ATM/FR E1            === Download Firmware ===         17:27:03 07/21/2002



>> Return to default - are you sure ? [Y/N]
```

6.9.16 Unit Reset

Press “Z” from Port Menu to reset the unit. Then press “Y” or “N” to confirm the selection.

```
SLOT D  ATM/FR E1            === Download Firmware ===         17:27:03 07/21/2002


Reset - are you sure ? [Y/N]
```

6.10 E&M Sub-Menu

Under the Controller Menu, press “U” to choose a slot for the E&M port. Then the following screen will show.

```
SLOT 8  E&M                    === Port Menu ===            18:14:49 06/12/2001

Version      : SW V1.00  06/08/2001




[DISPLAY]                                  [SETUP]
C -> System Configuration                  S -> System Setup
I -> E&M Status                            T -> Self Test



[LOG]                                      [MISC]
U -> Choose Other Slot                     Y -> Unit Load Default Config
F -> Log Off
O -> Log On
E -> Return to Main Menu
```

6.10.1 System Configuration

Press "C" to view the system configuration as below.

```
SLOT 8  E&M              === System Configuration ===      13:46:32 06/15/2001


Side: A
Above Set by HW

     Line: 4-WIRE
Impedance: 600 ohm
Signaling: TYPE5
Above Set by SW

A/u-Law: A
Tx Gain:  -3.0 dB
Rx Gain:  -3.0 dB
Above Set by SW









<< ESC key to return to previous menu, SPACE bar to refresh >>
```

6.10.2 E&M Status

Press "I" from the port menu to view the E&M status.

```
SLOT 8  E&M                    === E&M Status ===          13:47:18 06/15/2001


Side: A


E-Led:  E1  E2  E3  E4  E5  E6  E7  E8
M-Led:  M1  M2  M3  M4  M5  M6  M7  M8

-48V Power: OK









<< press ESC key to return to main menu, SPACE key to refresh >>
```

6.10.3 System Setup

Press "S" from the main menu to setup the system.

```
SLOT 8  E&M                   === System Setup ===         18:11:08 06/12/2001
ARROW KEYS: CURSOR MOVE, TAB: ROLL OPTIONS

Side: A
Above Set by HW

     Line: 4-WIRE
Impedance: 600 ohm
Signaling: TYPE5
Above Set by SW

A/u-Law: A
Tx Gain:  -3.0 dB
Rx Gain:  -3.0 dB
Above Set by SW









<< Press ESC key to return to previous menu >>
```

6.10.4 Self Test

Press "T" from the main menu to enter in the following screen. When the "Self Test" screen shows, press SPACE to start the self-test.

```
SLOT 8  E&M                    === Self Test ===            18:12:57 06/12/2001


Side: A
Test Button: START  9

E-Led:  E1  E2  E3  E4  E5  E6  E7  E8
M-Led:  M1  M2  M3  M4  M5  M6  M7  M8

-48V Power: OK









<< Press SPACE key to push Test Button  >>
<< press ESC key to return to main menu >>
```

6.10.5 Unit Load Default Config

Press "Y" to return to default.

```
SLOT 8  E&M                    === Port Menu ===            18:14:49 06/12/2001



>> Return to default - are you sure ? [Y/N]
```

6.11 FXS Sub-Menu

Under the Controller Menu, press “U” to choose a slot for the FXS port. Then the following screen will show.

```
SLOT 7  FXS                    === Port Menu ===            14:23:04 07/22/2002

Version      : SW V1.00 06/10/2002




[DISPLAY]                                  [SETUP]
C -> System Configuration                  S -> System Setup
I -> FXS Status                            T -> Diagnostic Test



[LOG]                                      [MISC]
U -> Choose Other Slot                     Y -> Unit Load Default Config
F -> Log Off                               Z -> Unit Reset
O -> Log On
E -> Return to Main Menu


>>SPACE bar to refresh or enter a command ===>
```

6.11.1 System Configuration

Press "C" to view the system configuration as below.

```
SLOT 7  FXS              === System Configuration ===      14:31:46 07/22/2002

A/u-Law   :     A
Impedance :   600 ohm
Tx Gain   :  -3.0 dB    ( -21 ~ +10 )
Rx Gain   :  -3.0 dB    ( -21 ~ +10 )

Tx Signaling Bit  A  B  C  D       Rx Signaling Bit      A  B  C  D
       ON  HOOK : 0  1  0  1                   RING ON : 0  0  *  *
       OFF HOOK : 1  1  0  1         BATT-REV & PLS ON : *  *  *  1
       RING-GND : ( NA )                       OOS ON : *  *  *  *
                                             TIP-OPEN : ( NA )
Ring Cadence    : 2"ON,4"OFF                   ( * for don't care )
Ring Freq.      : 20   Hz

Metering Pulse  : OFF
Metering Freq.  :  16
Metering Level  :   0

PLAR       L1   L2   L3   L4   L5   L6   L7   L8   L9   L10  L11  L12
           OFF  OFF  OFF  OFF  OFF  OFF  OFF  OFF  OFF  OFF  OFF  OFF


<< ESC key to return to previous menu, SPACE bar to refresh >>
```

6.11.2 FXS Status

Press "I" from the Port Menu to view the FXS status.

```
SLOT 7  FXS                    === FXS Status ===           14:32:15 07/22/2002


 1.OFF HOOK        :  L1  L2  L3  L4  L5  L6  L7  L8  L9  L10  L11  L12

 2.RING ON         :  L1  L2  L3  L4  L5  L6  L7  L8  L9  L10  L11  L12

 3.METERING PULSE  :  L1  L2  L3  L4  L5  L6  L7  L8  L9  L10  L11  L12

 4.TIP-OPEN        :  NA  NA  NA  NA  NA  NA  NA  NA  NA  NA   NA   NA

 5.RING-GND        :  NA  NA  NA  NA  NA  NA  NA  NA  NA  NA   NA   NA

 6.PLAR ON         :  L1  L2  L3  L4  L5  L6  L7  L8  L9  L10  L11  L12

 7.ALARM ON        :  L1  L2  L3  L4  L5  L6  L7  L8  L9  L10  L11  L12









<< press ESC key to return to main menu, SPACE key to refresh >>
```

6.11.3 System Setup

Press "S" from the Port Menu to setup system configuration. Use arrow keys to move cursor and TAB key to roll options.

NOTE1: ALL = L1 : YES, means that PLAR setting of L2 to L12 are same as L1.
ALL = L1 : NO, means that PLAR setting of L2 to L12 are different from L1.

NOTE2: The option, **OOS ON**, is only available for new E1 and new T1 interfaces.

```
SLOT 7  FXS                    === System Setup ===         14:31:51 07/22/2002
ARROW KEYS: CURSOR MOVE, TAB: ROLL OPTIONS
A/u-Law   :     A
Impedance :   600 ohm
Tx Gain   :  -3.0 dB    ( -21 ~ +10 )
Rx Gain   :  -3.0 dB    ( -21 ~ +10 )

Tx Signaling Bit  A  B  C  D       Rx Signaling Bit      A  B  C  D
       ON  HOOK : 0  1  0  1                  RING ON : 0  0  *  *
       OFF HOOK : 1  1  0  1        BATT-REV & PLS ON : *  *  *  1
       RING-GND : ( NA )                      OOS ON : *  *  *  *
                                            TIP-OPEN : ( NA )
Ring Cadence    : 2"ON,4"OFF                  ( * for don't care )
Ring Freq.      : 20   Hz

Metering Pulse  : OFF
Metering Freq.  :  16
Metering Level  :   0

PLAR       L1   L2   L3   L4   L5   L6   L7   L8   L9   L10  L11  L12
           OFF  OFF  OFF  OFF  OFF  OFF  OFF  OFF  OFF  OFF  OFF  OFF
ALL = L1 : NO

<< Press ESC key to return to previous menu >>
```

6.11.4 Diagnostic Test

Press “T” from the Port Menu to do diagnostic test. Use TAB key to select the desired option. The current selection will be highlighted by an asterisk (*).

```
SLOT 7  FXS              === FXS Diagnostic Test ===       14:32:20 07/22/2002



 *1.RING TEST         2.METERING PULSE TEST         3.BATTERY REVERSE

- STATUS :

<< press ESC key to return to main menu >>
```

Press ENTER after done the selection. As the following example shows, the system is doing RING TEST.

```
SLOT 7  FXS              === FXS Diagnostic Test ===       14:32:20 07/22/2002



 *1.RING TEST         2.METERING PULSE TEST         3.BATTERY REVERSE

- STATUS :  Remain 12 seconds.

<< press ESC key to return to main menu >>
```

6.11.5 Unit Load Default Configuration

Press “Y” from Port Menu to return the default. Then press “Y” or “N” to confirm the selection.

```
SLOT 7  FXS              === FXS Diagnostic Test ===       14:32:20 07/22/2002



>> Return to default - are you sure ? [Y/N]
```

6.11.6 Unit Reset

Press “Z” from Port Menu to reset the unit. Then press “Y” or “N” to confirm the selection.

```
SLOT 7  FXS              === FXS Diagnostic Test ===       14:32:20 07/22/2002



Reset - are you sure ? [Y/N]
```

If users enter "Y" to confirm the reset, the system will request users to enter the password, LOOP, then press ENTER.

```
SLOT 7  FXS              === FXS Diagnostic Test ===       14:32:20 07/22/2002



==>> Enter password :
```

6.12 FXO Sub-Menu

Under the Controller Menu, press “U” to choose a slot for the FXO port. Then the following screen will show.

```
SLOT 8  FXO                    === Port Menu ===            18:14:49 06/12/2001

Version      : SW V1.00 05/17/2002




[DISPLAY]                                  [SETUP]
C -> System Configuration                  S -> System Setup
I -> FXO Status                            T -> Diagnostic Test



[LOG]                                      [MISC]
U -> Choose Other Slot                     Y -> Unit Load Default Config
F -> Log Off                               Z -> Unit Reset
O -> Log On
E -> Return to Main Menu


>>SPACE bar to refresh or enter a command ===>
```

6.12.1 System Configuration

Under the above menu, press "C" to view the system configuration as below.

EXAMPLE 1: When Metering Pulse is not available, the screen will show as below.

```
SLOT 8  FXO                    === System Setup ===          14:42:54 09/24/2002

A/u-Law   :     A
Impedance :   600 ohm
Tx Gain   :  -3.0 dB    ( -21 ~ +10 )
Rx Gain   :  -3.0 dB    ( -21 ~ +10 )

 Tx Signaling Bit        A  B  C  D       Rx Signaling Bit  A  B  C  D
               RINGING : 0  0  0  1               OFF-HOOK : 1  1  *  *
               NO RING : 0  1  0  1                OOS ON  : *  *  *  *
              BATT-REV : 0  1  0  0               RING-GND : 0  0  0  1
                                                    ( * for don't care )
              TIP-OPEN : 1  1  1  1
Trunk Condition : ON-HOOK
Line Polarity   : NORMAL









<< Press ESC key to return to previous menu >>
```

EXAMPLE 2: When Metering Pulse is available, the screen will show as below.

```
SLOT 8  FXO                    === System Setup ===          14:42:54 09/24/2002

A/u-Law   :     A
Impedance :   600 ohm
Tx Gain   :  -3.0 dB    ( -21 ~ +10 )
Rx Gain   :  -3.0 dB    ( -21 ~ +10 )

 Tx Signaling Bit        A  B  C  D       Rx Signaling Bit  A  B  C  D
               RINGING : 0  0  0  1               OFF-HOOK : 1  1  *  *
               NO RING : 0  1  0  1                OOS ON  : *  *  *  *
              BATT-REV : 0  1  0  0               RING-GND : 0  0  0  1
              PULSE ON : 0  1  0  0                 ( * for don't care )
              TIP-OPEN : 1  1  1  1
Trunk Condition : ON-HOOK
Line Polarity   : NORMAL

Metering Pulse Frequency : 16 KHz
Pulse Detect Mode        : NORMAL
Minimum Pulse Decode Level ( -19 ~ -47 )
             L1   L2   L3   L4   L5   L6   L7   L8   L9   L10  L11  L12
            -27  -27  -27  -27  -27  -27  -27  -27  -27  -27  -27  -27  (dBm)
ALL = L1 : NO

<< Press ESC key to return to previous menu >>
```

6.12.2 FXO Status

Under FXO Port Menu, press "I" to display status of FXO interface, then the screen will show as below.

EXAMPLE 1:

When Ground Start is not available, the system will show up "NO AVAILABLE" for TIP-OPEN and RING-GND. When Metering Pulse is not available, the system will show up "NO AVAILABLE" for PULSE ON.

```
SLOT 8  FXO                    === FXO Status ===           18:14:17 06/12/2001

 1.RINGING     :  L1  L2  L3  L4  L5  L6  L7  L8  L9  L10  L11  L12

 2.OFF-HOOK    :  L1  L2  L3  L4  L5  L6  L7  L8  L9  L10  L11  L12

 3.TIP-OPEN    :  NO AVAILABLE

 4.RING-GND    :  NO AVAILABLE

 5.BATT-REV    :  L1  L2  L3  L4  L5  L6  L7  L8  L9  L10  L11  L12

 6.PULSE ON    :  NO AVAILABLE

 7.ALARM ON    :  L1  L2  L3  L4  L5  L6  L7  L8  L9  L10  L11  L12



<< press ESC key to return to main menu, SPACE key to refresh >>
```

EXAMPLE 2:

When Ground Start and Metering Pulse are available, the screen will show as below.

```
SLOT 8  FXO                    === FXO Status ===           14:26:31 09/24/2002

 1.RINGING     :  L1  L2  L3  L4  L5  L6  L7  L8  L9  L10  L11  L12

 2.OFF-HOOK    :  L1  L2  L3  L4  L5  L6  L7  L8  L9  L10  L11  L12

 3.TIP-OPEN    :  L1  L2  L3  L4  L5  L6  L7  L8  L9  L10  L11  L12

 4.RING-GND    :  L1  L2  L3  L4  L5  L6  L7  L8  L9  L10  L11  L12

 5.BATT-REV    :  L1  L2  L3  L4  L5  L6  L7  L8  L9  L10  L11  L12

 6.PULSE ON    :  L1  L2  L3  L4  L5  L6  L7  L8  L9  L10  L11  L12

 7.ALARM ON    :  L1  L2  L3  L4  L5  L6  L7  L8  L9  L10  L11  L12



<< press ESC key to return to main menu, SPACE key to refresh >>
```

NOTE1: L1 means the status of Line1 and L1 means the status of Line1 is active.

As the above example shows:

1. RINGING: L3 means the status of Line 3 is receiving RINGING;
2. TIP-OPEN: L1 means the status of Line 1 is Tip-Open;
3. PULSE ON: L6 means the status of Line 6 is receiving PULSE signal.

6.12.3 System Setup

Under FXO Port Menu, press “S” to setup FXO system, then the following screen will show up.

EXAMPLE 1: When Metering Pulse is not available, the screen will show as below.

```
SLOT 8  FXO                  === System Setup ===          14:42:54 09/24/2002
ARROW KEYS: CURSOR MOVE, TAB: ROLL OPTIONS
A/u-Law   :     A
Impedance :   600 ohm
Tx Gain   :  -3.0 dB    ( -21 ~ +10 )
Rx Gain   :  -3.0 dB    ( -21 ~ +10 )

 Tx Signaling Bit        A  B  C  D       Rx Signaling Bit  A  B  C  D
               RINGING : 0  0  0  1              OFF-HOOK : 1  1  *  *
               NO RING : 0  1  0  1               OOS ON  : *  *  *  *
              BATT-REV : 0  1  0  0              RING-GND : 0  0  0  1
                                                   ( * for don't care )
              TIP-OPEN : 1  1  1  1
Trunk Condition : ON-HOOK
Line Polarity   : NORMAL




<< Press ESC key to return to previous menu >>
```

EXAMPLE 2: When Metering Pulse is available, the screen will show as below. This screen is allowed to setup metering pulse frequency, pulse mode, and minimum pulse decode level for each line.

```
SLOT 8  FXO                  === System Setup ===          18:11:08 06/12/2001
ARROW KEYS: CURSOR MOVE, TAB: ROLL OPTIONS
A/u-Law   :     A
Impedance :   600 ohm
Tx Gain   :  -3.0 dB    ( -21 ~ +10 )
Rx Gain   :  -3.0 dB    ( -21 ~ +10 )

 Tx Signaling Bit        A  B  C  D       Rx Signaling Bit  A  B  C  D
               RINGING : 0  0  0  1              OFF-HOOK : 1  1  *  *
               NO RING : 0  1  0  1               OOS ON  : *  *  *  *
              BATT-REV : 0  1  0  0              RING-GND : 0  0  0  1
              PULSE ON : 0  1  0  0                ( * for don't care )
              TIP-OPEN : 1  1  1  1
Trunk Condition : ON-HOOK
Line Polarity   : NORMAL

Metering Pulse Frequency : 16 KHz
Pulse Detect Mode        : NORMAL
Minimum Pulse Decode Level ( -19 ~ -47 )
             L1   L2   L3   L4   L5   L6   L7   L8   L9   L10  L11  L12
            -27  -27  -27  -27  -27  -27  -27  -27  -27  -27  -27  -27  (dBm)
ALL = L1 : NO

<< Press ESC key to return to previous menu >>
```

NOTE1: When L1's decode level value is changed, L2's value will be automatically changed by the system. Also if L2's value is changed, L1's value will be changed too.

Same operation is applied for L3 and L4, L5 and L6, L7 and L8, L9 and L10, L11 and L12.

NOTE2: **Pulse Detect Mode,** this option is allowed to select a desired detect mode of pulse. Two modes, **NORMAL** and **PACKET**, are available here. Use TAB key to switch a desired item.

For **NORMAL** mode (Tone Follower mode), a logic level for the period of a correct decode.

For **PACKET** mode, respond/ de-respond after a cumulative period of tone or no-tone in a preset period.

NOTE2: **ALL = L1 : NO,** this option is allowed to copy Line 1's pulse decode value to all lines or not. Use TAB key to switch YES (copy to all) or NO (not copy to all).

6.12.4 Diagnostics Test

Under FXO Port Menu, press “T” to do diagnostics test, then the screen will show as below. Two options are available for diagnostics test: OFF-HOOK TEST and PULSE DECODE LEVEL SCAN. Use TAB key to select the desired option. The current selection will be highlighted by an asterisk (*).

1. OFF-HOOK TEST

```
SLOT 9  FXO              ===  Diagnostic Test ===          11:05:47 05/17/2002


 *1.OFF-HOOK TEST         2.PULSE DECODE LEVEL SCAN



- STATUS :  Remain 11 seconds.









<< press ESC key to return to main menu >>
```

2. PULSE DECODE LEVEL SCAN

After done the scan of pulse decode level, the system will show up detected value of each line in the screen. Press “Y” to copy the detected value to Pulse Decode Level of System Setup screen. Or press “N” or ESC key to cancel the copy.

NA means no found any signal in line.

```
SLOT 8  FXO              === FXO Diagnostic Test ===       14:27:05 09/24/2002


  1.OFF-HOOK TEST        *2.PULSE DECODE LEVEL SCAN




- STATUS :

Detected Value
           L1   L2   L3   L4   L5   L6   L7   L8   L9  L10  L11  L12
          -24  -21  -20   NA  -20   NA   NA  -24  -21  -20   NA  -21  (dBm)

Copy Detected Value to System Setup (Pulse Decode Level) (Y/N)



<< press ESC key to return to main menu >>
```

6.12.5 Unit Load Default Configuration

Press “Y” from Port Menu to return the default. Then press “Y” or “N” to confirm the selection.

```
SLOT 9  FXO              ===  Diagnostic Test ===          11:05:47 05/17/2002


>> Return to default - are you sure ? [Y/N]
```

6.12.6 Unit Reset

Press “Z” from Port Menu to reset the unit. Then press “Y” or “N” to confirm the selection.

```
SLOT 9  FXO              ===  Diagnostic Test ===          11:05:47 05/17/2002


Reset - are you sure ? [Y/N]
```

If users enter "Y" to confirm the reset, the system will request users to enter the password, LOOP, then press ENTER.

```
SLOT 9  FXO              ===  Diagnostic Test ===          11:05:47 05/17/2002


==>> Enter password :
```

6.13 Magneto Sub-Menu

Under the Controller Menu, press “U” to choose a slot for the Magneto port. Then the port menu will show as below.

```
SLOT 10 Magneto                === Port Menu ===            14:34:46 06/30/2003

Version      : SW S1.A0  04/25/2003




[DISPLAY]                                  [SETUP]
C -> System Configuration                  S -> System Setup
I -> Magneto Status                        T -> Diagnostic Test



[LOG]                                      [MISC]
U -> Choose Other Slot                     Y -> Unit Load Default Config
F -> Log Off                               Z -> Unit Reset
O -> Log On
E -> Return to Main Menu


>>SPACE bar to refresh or enter a command ===>>>
```

6.13.1 System Configuration

Under the above menu, press "C" to view the system configuration as below.

```
SLOT 10 Magneto                                              14:35:24 06/30/2003


Ring Mode : RING ACROSS (L1 & L2) AND (L1 & GND)
A/u-Law   :     A
Impedance :   900 ohm
Tx Gain   :  -3.0 dB    ( -21 ~ +10 )
Rx Gain   :  -3.0 dB    ( -21 ~ +10 )

     Tx Signaling Bit      A  B  C  D     Rx Signaling Bit         A  B  C  D
      TX-RING(L1 & L2 ) : 1  1  1  0         RX-RING(L1 & L2 ) : 1  1  1  0
      TX-RING(L1 & GND) : 1  1  0  0         RX-RING(L1 & GND) : 1  1  0  0
 PLAR TX-RING(L1 & L2 ) : 1  1  1  1    PLAR RX-RING(L1 & L2 ) : 1  1  1  1
 PLAR TX-RING(L1 & GND) : 1  1  0  1    PLAR RX-RING(L1 & GND) : 1  1  0  1
   NO TX-RING           : 0  1  0  1       OOS-ALARM           : 0  0  0  0
                                                ( 0000 for no available )
PLAR Ring Cadence : 1"ON,2"OFF

PLAR       L1   L2   L3   L4   L5   L6   L7   L8   L9   L10  L11  L12
           OFF  OFF  OFF  OFF  OFF  OFF  OFF  OFF  OFF  OFF  OFF  OFF



<< ESC key to return to previous menu, SPACE bar to refresh >>
```

6.13.2 Magneto Status

Under the Port Menu, press "I" to display the Magneto system status, then the screen will show as below.

```
SLOT 10 Magneto              === Magneto Status ===          14:35:42 06/30/2003


 1. TX-RING(L1&L2 ) :  L1  L2  L3  L4  L5  L6  L7  L8  L9  L10  L11  L12

 2. TX-RING(L1&GND) :  L1  L2  L3  L4  L5  L6  L7  L8  L9  L10  L11  L12

 3.   PLAR   ON     :  L1  L2  L3  L4  L5  L6  L7  L8  L9  L10  L11  L12

 4.   ALARM  ON     :  L1  L2  L3  L4  L5  L6  L7  L8  L9  L10  L11  L12









<< press ESC key to return to main menu, SPACE key to refresh >>
```

6.13.3 System Setup

Under the Port Menu, press "S" to setup system configuration. Use arrow keys to move the cursor and TAB key to roll up options.

```
SLOT 10 Magneto               === System Setup ===          14:35:59 06/30/2003
ARROW KEYS: CURSOR MOVE, TAB: ROLL OPTIONS

Ring Mode : RING ACROSS (L1 & L2) AND (L1 & GND)
A/u-Law   :     A
Impedance :   900 ohm
Tx Gain   :  -3.0 dB    ( -21 ~ +10 )
Rx Gain   :  -3.0 dB    ( -21 ~ +10 )

     Tx Signaling Bit      A  B  C  D     Rx Signaling Bit        A  B  C  D
      TX-RING(L1 & L2 ) : 1  1  1  0         RX-RING(L1 & L2 ) : 1  1  1  0
      TX-RING(L1 & GND) : 1  1  0  0         RX-RING(L1 & GND) : 1  1  0  0
 PLAR TX-RING(L1 & L2 ) : 1  1  1  1    PLAR RX-RING(L1 & L2 ) : 1  1  1  1
 PLAR TX-RING(L1 & GND) : 1  1  0  1    PLAR RX-RING(L1 & GND) : 1  1  0  1
   NO TX-RING           : 0  1  0  1       OOS-ALARM           : 0  0  0  0
                                                ( 0000 for no available )
PLAR Ring Cadence : 1"ON,2"OFF

PLAR       L1   L2   L3   L4   L5   L6   L7   L8   L9   L10  L11  L12
           OFF  OFF  OFF  OFF  OFF  OFF  OFF  OFF  OFF  OFF  OFF  OFF
ALL = L1 : NO


<< Press ESC key to return to previous menu >>
```

NOTE1: Because of the operational complexity, PLAR ON is not recommended."

6.13.4 Diagnostic Test

Under the Port Menu, press "T" to do diagnostic test, then the screen will show as below.

```
SLOT 10 Magneto        === Magneto Diagnostic Test ===     14:36:19 06/30/2003




 *1.RX-RING(L1&L2) TEST    2.RX-RING(L1&GND) TEST    3.TX-RING TEST
    (PLAR ON only)           (PLAR ON only)

- STATUS :

<< press ESC key to return to main menu >>
```

6.13.5 Unit Load Default Configuration

Under the Port Menu, press "Y" to load default configuration. Then press “Y” to confirm or “N” to abandon it.

```
SLOT 10 Magneto               === Port Menu ===            14:36:32 06/30/2003

Version      : SW S1.A0  04/25/2003




[DISPLAY]                                  [SETUP]
C -> System Configuration                  S -> System Setup
I -> Magneto Status                        T -> Diagnostic Test




[LOG]                                      [MISC]
U -> Choose Other Slot                     Y -> Unit Load Default Config
F -> Log Off                               Z -> Unit Reset
O -> Log On
E -> Return to Main Menu



>> Return to default - are you sure ? [Y/N]
```

6.13.6 Unit Reset

Under the Port Menu, press "Z" to reset the system. Then press “Y” to confirm or “N” to abandon it.

```
SLOT 10 Magneto               === Port Menu ===           14:36:32 06/30/2003

Version      : SW S1.A0  04/25/2003




[DISPLAY]                                   [SETUP]
C -> System Configuration                   S -> System Setup
I -> Magneto Status                         T -> Diagnostic Test



[LOG]                                       [MISC]
U -> Choose Other Slot                      Y -> Unit Load Default Config
F -> Log Off                                Z -> Unit Reset
O -> Log On
E -> Return to Main Menu


Reset - are you sure ? [Y/N]
```

6.14 Router Sub-Menu

Under the Controller Menu, press “U” to choose a slot for the Router port. Then the port menu will show as below.

```
SLOT C  RTR LAN/WAN           === Port Menu ===            14:26:47 06/30/2003

Version      : SW V3.05 12/03/2002




[DISPLAY]                                [SETUP]
C -> Unit System(LAN1-WAN16) Display  S -> Unit System(LAN1-WAN16) Setup
B -> Unit System(WAN17-WAN32) Display A -> Unit System(WAN17-WAN32) Setup
X -> Unit Route Display               R -> Unit Route Setup
T -> Unit DS0 MAP Display             M -> Unit DS0 MAP Setup
                                      D -> Unit Firmware Upgrade




[LOG]                                 [MISC]
U -> Choose a Slot                    Y -> Unit Load Default Config
F -> Log Off [SETUP],[MISC] Menu      Z -> Unit Reset
O -> Log On  [SETUP],[MISC] Menu
E -> Return to Controller Main Menu

>>SPACE bar to refresh or enter a command ===>
```

6.14.1 System Display (LAN1 – WAN16)

Under the Port Menu, press ”C” to show up the system display for LAN1 to WAN16. Then the screen will show as below.

```
SLOT C  RTR LAN/WAN === Port System(LAN1-WAN16) Setup ===  14:27:32 06/30/2003


NI       IPAddress       SubnetMask      Frame      RIP_I   RIP_II  Mode
LAN1     000.000.000.000 000.000.000.000 ETHERNET   DISABLE DISABLE ROUTE
LAN2     140.132.042.009 255.255.000.000 ETHERNET   ENABLE  ENABLE  ROUTE
WAN1     100.001.001.002 255.000.000.000 HDLC       DISABLE ENABLE  ROUTE
WAN2     000.000.000.000 000.000.000.000 HDLC       DISABLE DISABLE ROUTE
WAN3     000.000.000.000 000.000.000.000 HDLC       DISABLE DISABLE ROUTE
WAN4     000.000.000.000 000.000.000.000 HDLC       DISABLE DISABLE ROUTE
WAN5     000.000.000.000 000.000.000.000 HDLC       DISABLE DISABLE ROUTE
WAN6     000.000.000.000 000.000.000.000 HDLC       DISABLE DISABLE ROUTE
WAN7     000.000.000.000 000.000.000.000 HDLC       DISABLE DISABLE ROUTE
WAN8     000.000.000.000 000.000.000.000 HDLC       DISABLE DISABLE ROUTE
WAN9     000.000.000.000 000.000.000.000 HDLC       DISABLE DISABLE ROUTE
WAN10    000.000.000.000 000.000.000.000 HDLC       DISABLE DISABLE ROUTE
WAN11    000.000.000.000 000.000.000.000 HDLC       DISABLE DISABLE ROUTE
WAN12    000.000.000.000 000.000.000.000 HDLC       DISABLE DISABLE ROUTE
WAN13    000.000.000.000 000.000.000.000 HDLC       DISABLE DISABLE ROUTE
WAN14    000.000.000.000 000.000.000.000 HDLC       DISABLE DISABLE ROUTE
WAN15    000.000.000.000 000.000.000.000 HDLC       DISABLE DISABLE ROUTE
WAN16    000.000.000.000 000.000.000.000 HDLC       DISABLE DISABLE ROUTE

<< ESC key to return to previous menu, SPACE bar to refresh >>
```

6.14.2 System Display (WAN17 – WAN32)

Under the Port Menu, press ”B” to show up the system display for WAN17 to WAN32. Then the screen will show as below.

```
SLOT C  RTR LAN/WAN=== Port System(WAN17-WAN32) Setup ===  14:28:52 06/30/2003


NI       IPAddress       SubnetMask      Frame      RIP_I   RIP_II  Mode
WAN17    000.000.000.000 000.000.000.000 HDLC       DISABLE DISABLE ROUTE
WAN18    000.000.000.000 000.000.000.000 HDLC       DISABLE DISABLE ROUTE
WAN19    000.000.000.000 000.000.000.000 HDLC       DISABLE DISABLE ROUTE
WAN20    000.000.000.000 000.000.000.000 HDLC       DISABLE DISABLE ROUTE
WAN21    000.000.000.000 000.000.000.000 HDLC       DISABLE DISABLE ROUTE
WAN22    000.000.000.000 000.000.000.000 HDLC       DISABLE DISABLE ROUTE
WAN23    000.000.000.000 000.000.000.000 HDLC       DISABLE DISABLE ROUTE
WAN24    000.000.000.000 000.000.000.000 HDLC       DISABLE DISABLE ROUTE
WAN25    000.000.000.000 000.000.000.000 HDLC       DISABLE DISABLE ROUTE
WAN26    000.000.000.000 000.000.000.000 HDLC       DISABLE DISABLE ROUTE
WAN27    000.000.000.000 000.000.000.000 HDLC       DISABLE DISABLE ROUTE
WAN28    000.000.000.000 000.000.000.000 HDLC       DISABLE DISABLE ROUTE
WAN29    000.000.000.000 000.000.000.000 HDLC       DISABLE DISABLE ROUTE
WAN30    000.000.000.000 000.000.000.000 HDLC       DISABLE DISABLE ROUTE
WAN31    000.000.000.000 000.000.000.000 HDLC       DISABLE DISABLE ROUTE
WAN32    000.000.000.000 000.000.000.000 HDLC       DISABLE DISABLE ROUTE



<< ESC key to return to previous menu, SPACE bar to refresh >>
```

6.14.3 Route Display

Under the Port Menu, press ”X” to view the Router configuration, then the following screen will show up.

```
SLOT C  RTR LAN/WAN       === Port ROUTE Setup ===         14:29:42 06/30/2003


   Net_Address     Netmask         Gateway_Address NI_Address      Metric
   000.000.000.000 000.000.000.000 000.000.000.000 000.000.000.000  1
   000.000.000.000 000.000.000.000 000.000.000.000 000.000.000.000  1
   000.000.000.000 000.000.000.000 000.000.000.000 000.000.000.000  1
   000.000.000.000 000.000.000.000 000.000.000.000 000.000.000.000  1
   000.000.000.000 000.000.000.000 000.000.000.000 000.000.000.000  1
   000.000.000.000 000.000.000.000 000.000.000.000 000.000.000.000  1
   000.000.000.000 000.000.000.000 000.000.000.000 000.000.000.000  1
   000.000.000.000 000.000.000.000 000.000.000.000 000.000.000.000  1
   000.000.000.000 000.000.000.000 000.000.000.000 000.000.000.000  1
   000.000.000.000 000.000.000.000 000.000.000.000 000.000.000.000  1
   000.000.000.000 000.000.000.000 000.000.000.000 000.000.000.000  1
   000.000.000.000 000.000.000.000 000.000.000.000 000.000.000.000  1
   000.000.000.000 000.000.000.000 000.000.000.000 000.000.000.000  1
   000.000.000.000 000.000.000.000 000.000.000.000 000.000.000.000  1
   000.000.000.000 000.000.000.000 000.000.000.000 000.000.000.000  1
   000.000.000.000 000.000.000.000 000.000.000.000 000.000.000.000  1



<< ESC key to return to previous menu, SPACE bar to refresh >>
```

6.14.4 DS0 Map Display

Under the Port Menu, press ”T” to display DS0 Map setting, then the following screen will show up.

```
SLOT C  RTR LAN/WAN      === Port DS0 MAP Setup ===        14:30:44 06/30/2003


TimeSlot WANPort        TimeSlot WANPort
TS1  :   WAN1           TS17 :   Idle
TS2  :   Idle           TS18 :   Idle
TS3  :   Idle           TS19 :   Idle
TS4  :   Idle           TS20 :   Idle
TS5  :   Idle           TS21 :   Idle
TS6  :   Idle           TS22 :   Idle
TS7  :   Idle           TS23 :   Idle
TS8  :   Idle           TS24 :   Idle
TS9  :   Idle           TS25 :   Idle
TS10 :   Idle           TS26 :   Idle
TS11 :   Idle           TS27 :   Idle
TS12 :   Idle           TS28 :   Idle
TS13 :   Idle           TS29 :   Idle
TS14 :   Idle           TS30 :   Idle
TS15 :   Idle           TS31 :   Idle
TS16 :   Idle           TS32 :   Idle



<< ESC key to return to previous menu, SPACE bar to refresh >>
```

6.14.5 System Setup (LAN1 – WAN16)

Under the Port Menu, press ”S” to do system setup for LAN1 to WAN16, then the following screen will show up.

```
SLOT C  RTR LAN/WAN === Port System(LAN1-WAN16) Setup ===  14:30:59 06/30/2003
ARROW KEYS: CURSOR MOVE, Please Input: nnn.nnn.nnn.nnn, BACKSPACE to edit

NI       IPAddress       SubnetMask      Frame      RIP_I   RIP_II  Mode
LAN1     000.000.000.000 000.000.000.000 ETHERNET   DISABLE DISABLE ROUTE
LAN2     140.132.042.009 255.255.000.000 ETHERNET   ENABLE  ENABLE  ROUTE
WAN1     100.001.001.002 255.000.000.000 HDLC       DISABLE ENABLE  ROUTE
WAN2     000.000.000.000 000.000.000.000 HDLC       DISABLE DISABLE ROUTE
WAN3     000.000.000.000 000.000.000.000 HDLC       DISABLE DISABLE ROUTE
WAN4     000.000.000.000 000.000.000.000 HDLC       DISABLE DISABLE ROUTE
WAN5     000.000.000.000 000.000.000.000 HDLC       DISABLE DISABLE ROUTE
WAN6     000.000.000.000 000.000.000.000 HDLC       DISABLE DISABLE ROUTE
WAN7     000.000.000.000 000.000.000.000 HDLC       DISABLE DISABLE ROUTE
WAN8     000.000.000.000 000.000.000.000 HDLC       DISABLE DISABLE ROUTE
WAN9     000.000.000.000 000.000.000.000 HDLC       DISABLE DISABLE ROUTE
WAN10    000.000.000.000 000.000.000.000 HDLC       DISABLE DISABLE ROUTE
WAN11    000.000.000.000 000.000.000.000 HDLC       DISABLE DISABLE ROUTE
WAN12    000.000.000.000 000.000.000.000 HDLC       DISABLE DISABLE ROUTE
WAN13    000.000.000.000 000.000.000.000 HDLC       DISABLE DISABLE ROUTE
WAN14    000.000.000.000 000.000.000.000 HDLC       DISABLE DISABLE ROUTE
WAN15    000.000.000.000 000.000.000.000 HDLC       DISABLE DISABLE ROUTE
WAN16    000.000.000.000 000.000.000.000 HDLC       DISABLE DISABLE ROUTE

<< Press ESC key to return to previous menu >>
```

6.14.6 System Setup (WAN17 – WAN32)

Under the Port Menu, press ”A” to do system setup for WAN17 to WAN32, then the following screen will show up.

```
SLOT C  RTR LAN/WAN=== Port System(WAN17-WAN32) Setup ===  14:31:46 06/30/2003
ARROW KEYS: CURSOR MOVE, Please Input: nnn.nnn.nnn.nnn, BACKSPACE to edit

NI       IPAddress       SubnetMask      Frame      RIP_I   RIP_II  Mode
WAN17    000.000.000.000 000.000.000.000 HDLC       DISABLE DISABLE ROUTE
WAN18    000.000.000.000 000.000.000.000 HDLC       DISABLE DISABLE ROUTE
WAN19    000.000.000.000 000.000.000.000 HDLC       DISABLE DISABLE ROUTE
WAN20    000.000.000.000 000.000.000.000 HDLC       DISABLE DISABLE ROUTE
WAN21    000.000.000.000 000.000.000.000 HDLC       DISABLE DISABLE ROUTE
WAN22    000.000.000.000 000.000.000.000 HDLC       DISABLE DISABLE ROUTE
WAN23    000.000.000.000 000.000.000.000 HDLC       DISABLE DISABLE ROUTE
WAN24    000.000.000.000 000.000.000.000 HDLC       DISABLE DISABLE ROUTE
WAN25    000.000.000.000 000.000.000.000 HDLC       DISABLE DISABLE ROUTE
WAN26    000.000.000.000 000.000.000.000 HDLC       DISABLE DISABLE ROUTE
WAN27    000.000.000.000 000.000.000.000 HDLC       DISABLE DISABLE ROUTE
WAN28    000.000.000.000 000.000.000.000 HDLC       DISABLE DISABLE ROUTE
WAN29    000.000.000.000 000.000.000.000 HDLC       DISABLE DISABLE ROUTE
WAN30    000.000.000.000 000.000.000.000 HDLC       DISABLE DISABLE ROUTE
WAN31    000.000.000.000 000.000.000.000 HDLC       DISABLE DISABLE ROUTE
WAN32    000.000.000.000 000.000.000.000 HDLC       DISABLE DISABLE ROUTE



<< Press ESC key to return to previous menu >>
```

6.14.7 Route Setup

Under the Port Menu, press ”R” to setup Router configuration, then the following screen will show up. Use arrow keys to move the cursor and BACKSPACE to edit.

```
SLOT C  RTR LAN/WAN       === Port ROUTE Setup ===         14:32:39 06/30/2003
ARROW KEYS: CURSOR MOVE, Please Input: nnn.nnn.nnn.nnn, BACKSPACE to edit

   Net_Address     Netmask         Gateway_Address NI_Address      Metric
   000.000.000.000 000.000.000.000 000.000.000.000 000.000.000.000 01
   000.000.000.000 000.000.000.000 000.000.000.000 000.000.000.000 01
   000.000.000.000 000.000.000.000 000.000.000.000 000.000.000.000 01
   000.000.000.000 000.000.000.000 000.000.000.000 000.000.000.000 01
   000.000.000.000 000.000.000.000 000.000.000.000 000.000.000.000 01
   000.000.000.000 000.000.000.000 000.000.000.000 000.000.000.000 01
   000.000.000.000 000.000.000.000 000.000.000.000 000.000.000.000 01
   000.000.000.000 000.000.000.000 000.000.000.000 000.000.000.000 01
   000.000.000.000 000.000.000.000 000.000.000.000 000.000.000.000 01
   000.000.000.000 000.000.000.000 000.000.000.000 000.000.000.000 01
   000.000.000.000 000.000.000.000 000.000.000.000 000.000.000.000 01
   000.000.000.000 000.000.000.000 000.000.000.000 000.000.000.000 01
   000.000.000.000 000.000.000.000 000.000.000.000 000.000.000.000 01
   000.000.000.000 000.000.000.000 000.000.000.000 000.000.000.000 01
   000.000.000.000 000.000.000.000 000.000.000.000 000.000.000.000 01
   000.000.000.000 000.000.000.000 000.000.000.000 000.000.000.000 01



<< Press ESC key to return to previous menu >>
```

6.14.8 DS0 Map Setup

Under the Port Menu, press ”M” to do DS0 Map setting, then the following screen will show up. Use arrow keys to move the cursor and TAB key to roll options.

```
SLOT C  RTR LAN/WAN      === Port DS0 MAP Setup ===        14:33:19 06/30/2003
ARROW KEYS: CURSOR MOVE, TAB: ROLL OPTIONS

TimeSlot WANPort        TimeSlot WANPort
TS1  :   WAN1           TS17 :   Idle
TS2  :   Idle           TS18 :   Idle
TS3  :   Idle           TS19 :   Idle
TS4  :   Idle           TS20 :   Idle
TS5  :   Idle           TS21 :   Idle
TS6  :   Idle           TS22 :   Idle
TS7  :   Idle           TS23 :   Idle
TS8  :   Idle           TS24 :   Idle
TS9  :   Idle           TS25 :   Idle
TS10 :   Idle           TS26 :   Idle
TS11 :   Idle           TS27 :   Idle
TS12 :   Idle           TS28 :   Idle
TS13 :   Idle           TS29 :   Idle
TS14 :   Idle           TS30 :   Idle
TS15 :   Idle           TS31 :   Idle
TS16 :   Idle           TS32 :   Idle



<< Press ESC key to return to previous menu >>
```

6.14.9 Firmware Upgrade

Under the Port Menu, press ”D” to upgrade firmware, then the screen will show as below. Use arrow keys to move the cursor and BACKSPACE to edit.

```
LOOP AM3440              === Download Firmware ===        14:33:39 06/30/2003
ARROW KEYS: CURSOR MOVE, Please Input: nnn.nnn.nnn.nnn, BACKSPACE to edit




Current Software Downloading...: ROUTER!!
TFTP Server IP       : 192.168.100.208
Firmware File Name   :

<< Press ESC key to return to previous menu >>
```

6.14.10 Unit Load Default Configuration

Under the Port Menu, press "Y" to load default configuration. Then press “Y” to confirm or “N” to abandon it.

```
SLOT C  RTR LAN/WAN           === Port Menu ===           14:33:55 06/30/2003

Version      : SW V3.05 12/03/2002




[DISPLAY]                              [SETUP]
C -> Unit System(LAN1-WAN16) Display   S -> Unit System(LAN1-WAN16) Setup
B -> Unit System(WAN17-WAN32) Display  A -> Unit System(WAN17-WAN32) Setup
X -> Unit Route Display                R -> Unit Route Setup
T -> Unit DS0 MAP Display              M -> Unit DS0 MAP Setup
                                       D -> Unit Firmware Upgrade




[LOG]                                  [MISC]
U -> Choose a Slot                     Y -> Unit Load Default Config
F -> Log Off [SETUP],[MISC] Menu       Z -> Unit Reset
O -> Log On  [SETUP],[MISC] Menu
E -> Return to Controller Main Menu

>> Return to default - are you sure ? [Y/N]
```

6.14.11 Unit Reset

Under the Port Menu, press "Z" to reset the system. Then press “Y” to confirm or “N” to abandon it.

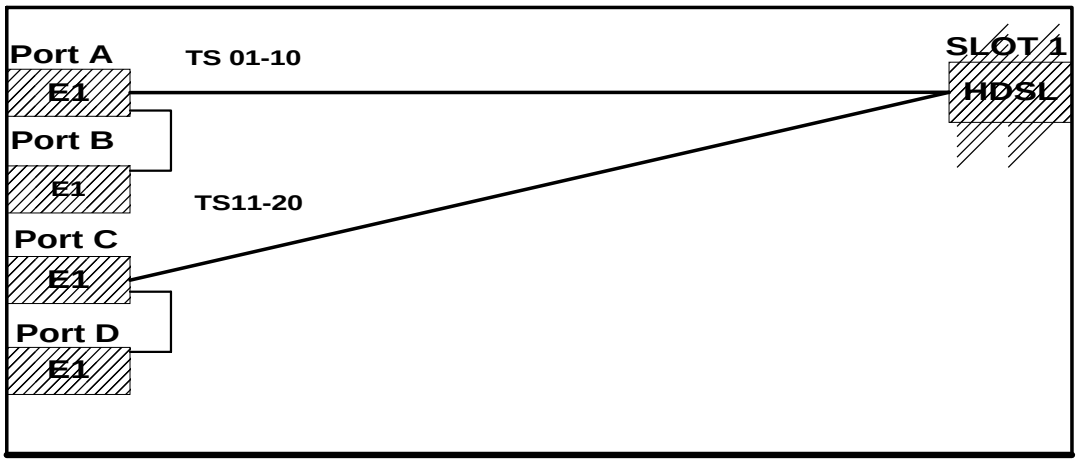
```
SLOT C  RTR LAN/WAN           === Port Menu ===           14:33:55 06/30/2003

Version      : SW V3.05 12/03/2002




[DISPLAY]                              [SETUP]
C -> Unit System(LAN1-WAN16) Display   S -> Unit System(LAN1-WAN16) Setup
B -> Unit System(WAN17-WAN32) Display  A -> Unit System(WAN17-WAN32) Setup
X -> Unit Route Display                R -> Unit Route Setup
T -> Unit DS0 MAP Display              M -> Unit DS0 MAP Setup
                                       D -> Unit Firmware Upgrade




[LOG]                                  [MISC]
U -> Choose a Slot                     Y -> Unit Load Default Config
F -> Log Off [SETUP],[MISC] Menu       Z -> Unit Reset
O -> Log On  [SETUP],[MISC] Menu
E -> Return to Controller Main Menu

Reset - are you sure ? [Y/N]
```

7 Appendix A – 1 : 1 Protection

7.1 Introduction

Among the many applications of the Loop AM3440, an IAD (integrated access device) is 1:1 protection. This occurs when the system is set up so that a backup line (or lines in the case of 1:n) will be switched into service if the working line fails. In such a case, it must be switched in at each end of the line.

Note:	The 1:1 protection function exists only for E1 and T1 cards. Four slots on the Loop-AM 3440 are available for use with E1 /T1 cards.



In the above AM3440 example, PORT A is backed up by PORT B. Similarly,
PORT C is backed up by PORT D. All cards in this example are E1 cards. Time Slots 01-10 of PORT A are mapped to the HDSL module in Slot 1. Time Slots 11-20 of PORT C are also mapped to the HDSL module in Slot 1.

7.2 Hardware

Install the Loop AM 3440 according to instructions in the user manual.
Install E1 plug-in cards into Ports A, B, C, and D.
This particular AM 3440 has an HDSL module plugged into Slot 1.
Install a VT-100 terminal to the “console” port on the front of the Loop AM 3440.

7.3 Setting up the TSI Map

Press “S” from the Controller Menu to access the Controller Setup screen.

```
LOOP AM3440                 === Controller Menu ===         13:32:06 01/23/2002

Serial Number   : 8060                  Redundant Controller: Enabled
Hardware Version: ver.as5 04/2001       Start Time  : 15:10:37 01/22/2002
Software Version: V2.03 01/22/2002



[DISPLAY]                               [SETUP]
C -> System Configuration               S -> System Setup
B -> Clock source Configuration         M -> System Alarm Setup
Q -> Alarm Queue Summary                W -> Firmware Transfer
I -> Information Summary                V -> Store/Retrieve Configuration
                                        K -> Clock source Setup


[LOG]                                   [MISC]
U -> Choose a Slot                      A -> Alarm Cut Off
F -> Log Off [SETUP],[MISC] Menu        X -> Clear Alarm Queue
O -> Log On  [SETUP],[MISC] Menu        Y -> Controller Return to Default
                                        Z -> Controller Reset


>>SPACE bar to refresh or enter a command ===>
```

Press “G” from the Controller Setup screen.

```
LOOP AM3440                 === Controller Setup ===        14:32:09 01/23/2002



                          A -> System
                          B -> Password
                          C -> TSI map setup
                          D -> Select a new TSI map
                          E -> Copy a TSI map to another
                          F -> Clear a TSI map
                          G -> Link backup function









<< Press ESC key to return to Main Menu or enter a command >>
```

The System Setup (BACKUP) screen will appear as shown below. Use the ‘arrow’ keys and the TAB key to set the “Backup function” to “ON” as shown below. Then set the “Mode” to “revertible”.

Backup links can be established for two port pairs. In the example below, PORT A is backed up by PORT B and PORT C is backed up by PORT D.

To set this up, go to the “Link A” column and use the ‘arrow’ keys and ‘TAB’ key to select “Link B” as the backup for “Link A”. PORT B is now set up to be the backup port for PORT A. Repeat the same procedure to have PORT C backed up by PORT D. When finished, press ‘ESC’ to save the configuration. A prompt will ask, “Are you sure? Y/N”. Press ‘Y’. You will automatically return to the Controller Setup screen

```
LOOP AM3440             === System Setup (Backup) ===      14:33:56 01/23/2002
ARROW KEYS: CURSOR MOVE, TAB: ROLL OPTIONS


Backup function  :  ON
Mode             :  revertible

                    Link A  Link B  Link C  Link D
                    E1      E1      E1      E1
                   --------------------------------
Backup  Link     :  Link B  ------  Link D  ------
Link backup fun  :  ON      ON      ON      ON
Link status      :  Working Idle    Working Idle


>> Are you sure <Y/N>?
```

Press “C” from the Controller Setup menu. The System Setup (MAP) screen will appear

```
LOOP AM3440                === Controller Setup ===        14:32:09 01/23/2002



                          A -> System
                          B -> Password
                          C -> TSI map setup
                          D -> Select a new TSI map
                          E -> Copy a TSI map to another
                          F -> Clear a TSI map
                          G -> Link backup function


<< Press ESC key to return to Main Menu or enter a command >>
```

For demonstration purposes, several values have been highlighted on the left-hand side of the System Setup (MAP) screen depicted below. We initially want to map time slots 1-10 of PORT A to PORT 1 of the HDSL module in SLOT 1.

Use arrow keys and TAB key to select “MAP _1”.

Then drop down a few lines to the Source Slot section and set “Slot” to “A”.

Leave the “Port” value blank and set “T.S. (starting time slot) “at “01”.

Continue down to “T.S.#” (ending time slot) and set it at “10”.

Set “Clear” at “No” and set “d/v” at “d” for data.

Continue down to the Destination Slot section and set “Slot” at “1”.

Then set “Port” at “P1” and set “T.S.” (starting tmeslot) at “01”.

Set “Update?” at “YES” and “Confirm?” at “YES”.

The map will appear as shown below. Do not press ESC key yet. Instead, press the down arrow key to bring on another page so that we can do our PORT C mapping.

```
LOOP AM3440                === System Setup (MAP) ===       14:34:15 01/23/2002
ARROW KEYS: CURSOR MOVE, TAB: ROLL OPTIONS
MAP NO: MAP_1
            Source Slot   E1    NON-CAS        Dest. Slot    HDSL
Source Slot PO/TS D SL/PO TS PO/TS D SL/PO TS  PO/TS D SL/PO TS PO/TS D SL/PO TS
Slot  :  A  ===== ========== ===== ==========  ===== ========== ===== ==========
Port  :          1 d  1  1  1    17 d            1  1 d  A     1    17 d
T.S.  : 01       2 d  1  1  2    18 d            1  2 d  A     2    18 d
                 3 d  1  1  3    19 d            1  3 d  A     3    19 d
                 4 d  1  1  4    20 d            1  4 d  A     4    20 d
T.S.# : 10       5 d  1  1  5    21 d            1  5 d  A     5    21 d
Clear : No       6 d  1  1  6    22 d            1  6 d  A     6    22 d
d/v   : d        7 d  1  1  7    23 d            1  7 d  A     7    23 d
                 8 d  1  1  8    24 d            1  8 d  A     8    24 d
                 9 d  1  1  9    25 d            1  9 d  A     9    25 d
Dest Slot       10 d  1  1 10    26 d            1 10 d  A    10    26 d
Slot  :  1      11 d             27 d              11 d               27 d
Port  : P1      12 d             28 d              12 d               28 d
T.S.  : 01      13 d             29 d              13 d               29 d
                14 d             30 d              14 d               30 d
Update? Yes     15 d             31 d              15 d               31 d
Confirm?Yes     16 d                               16 d               32 d

<< Press ESC to return to Controller Setup menu, then Press D to active >>
```

Time Slots 1-10 of PORT C will be mapped to Time Slots 11-20 of PORT 2 of the HDSL module in SLOT1. To set this up automatically, follow the same procedure that was used above to do the PORT A mapping. A demonstration screen is shown below with the appropriate settings highlighted.

When the mapping is complete, press ESC key to return to the Controller Menu. Then press 'D' to activate the map.

```
LOOP AM3440                === System Setup (MAP) ===       14:34:15 01/23/2002
ARROW KEYS: CURSOR MOVE, TAB: ROLL OPTIONS
MAP NO: MAP_1
            Source Slot   E1    NON-CAS        Dest. Slot    HDSL
Source Slot PO/TS D SL/PO TS PO/TS D SL/PO TS  PO/TS D SL/PO TS PO/TS D SL/PO TS
Slot  :  C ===== ========== ===== ==========  ===== ========== ===== ==========
Port  :          1 d  1  2 11    17 d            1  1 d  A     1  2 17 d  C     7
T.S.  : 01       2 d  1  2 12    18 d            1  2 d  A     2  2 18 d  C     8
                 3 d  1  2 13    19 d            1  3 d  A     3  2 19 d  C     9
                 4 d  1  2 14    20 d            1  4 d  A     4  2 20 d  C    10
T.S.# : 10       5 d  1  2 15    21 d            1  5 d  A     5    21 d
Clear : No       6 d  1  2 16    22 d            1  6 d  A     6    22 d
d/v   : d        7 d  1  2 17    23 d            1  7 d  A     7    23 d
                 8 d  1  2 18    24 d            1  8 d  A     8    24 d
                 9 d  1  2 19    25 d            1  9 d  A     9    25 d
Dest Slot       10 d  1  2 20    26 d            1 10 d  A    10    26 d
Slot  :  1      11 d             27 d            2 11 d  C     1    27 d
Port  : P2      12 d             28 d            2 12 d  C     2    28 d
T.S.  : 11      13 d             29 d            2 13 d  C     3    29 d
                14 d             30 d            2 14 d  C     4    30 d
Update? Yes     15 d             31 d            2 15 d  C     5    31 d
Confirm?Yes     16 d                             2 16 d  C     6    32 d

<< Press ESC to return to Controller Setup menu, then Press D to active >>
```

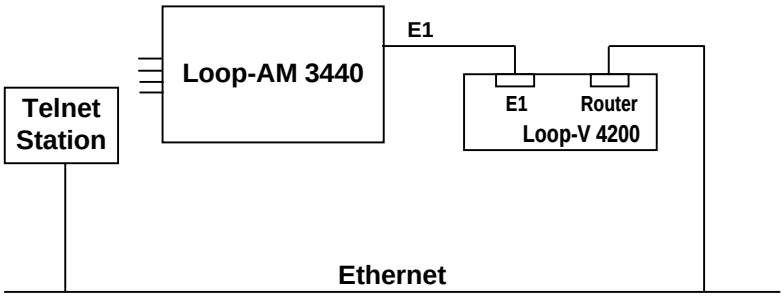
8 Appendix B – Inband Management

8.1 Introduction

The advantage of Inband Management is that saves money because management is through the line itself and a separate line is not needed for management functions. The disadvantage is that if you do anything to break the management channel, you cannot get it back.

In Inband Management, the management function is inserted into the working line. There are several ways to do this. One is to use a router connected to the CSU/DSU and routed out to the line. Another is to use a Loop-V 4200-28 with a router card as shown in the diagram below. Using the Router card, management of a local, as well as one or more remote Loop products (up to 32 inband management capable devices per card) is possible.

Note: The inband management function of the Loop-AM 3440 is available only for E1 and T1 applications. The diagram below illustrates an E1 application.



8.2 Hardware

1. Install the Loop-AM 3440 according to instructions in the user manual.
2. Load Ports A, B, C and D with E1 or T1 cards.
3. Connect a VT-100 terminal to the Loop-AM 3440 via the Ethernet

8.3 Setup TSI Map

Press “S” from the Controller Menu to access the Controller Setup screen.

```
LOOP AM3440                === Controller Menu ===         10:54:04 02/06/2002

Serial Number   : 8060                  Redundant Controller: Enabled
Hardware Version: ver.as5 04/2001       Start Time  : 10:46:43 02/06/2002
Software Version: S2.S3 01/23/2002



[DISPLAY]                               [SETUP]
C -> System Configuration               S -> System Setup
B -> Clock source Configuration         M -> System Alarm Setup
Q -> Alarm Queue Summary                W -> Firmware Transfer
I -> Information Summary                V -> Store/Retrieve Configuration
                                        K -> Clock source Setup


[LOG]                                   [MISC]
U -> Choose a Slot                      A -> Alarm Cut Off
F -> Log Off [SETUP],[MISC] Menu        X -> Clear Alarm Queue
O -> Log On  [SETUP],[MISC] Menu        Y -> Controller Return to Default
                                        Z -> Controller Reset


>>SPACE bar to refresh or enter a command ===>
```

Press “A” from the Controller Setup menu to access the System Setup (SYSTEM) screen.

```
LOOP AM3440                === Controller Setup ===        10:56:08 02/06/2002



                          A -> System
                          B -> Password
                          C -> TSI map setup
                          D -> Select a new TSI map
                          E -> Copy a TSI map to another
                          F -> Clear a TSI map
                          G -> Link backup function









<< Press ESC key to return to Main Menu or enter a command >>
```

Use arrow keys to move the cursor, and then key in the 'IP Address', 'Subnet Mask', Trap IP Address' and 'Gateway IP'. Next, move the cursor down to 'IP Interface' and use TAB key to scroll that setting to 'HDLC_PORT'. For demonstration purposes these areas are highlighted on the screen below. When done, press ESC to return to the Controller Setup Menu.

```
LOOP AM3440             === System Setup (SYSTEM) ===      10:56:15 02/06/2002
ARROW KEYS: CURSOR MOVE, Please Input: hh:mm:ss mm/dd/yyyy, BACKSPACE to edit
[System]
Time/Date      :10:56:16 02/06/2002
IP Address     :140.139.034.040         Subnet Mask : 255.255.000.000
Trap IP Address:140.132.001.183         Gateway IP  : 140.139.001.254
Community Name :public
Device Name    :LOOP AM3440
System Location:8F, No.8, HSIN ANN ROAD
                SCIENCE-BASED INDUSTRIAL PARK
                HSINCHU, 30077 TAIWAN

System Contact :Name: FAE   Tel:+886-3-5787696  Fax:+886-3-5787695
                 E-mail:FAE@loop.com.tw

IP Interface   : HDLC_PORT
[CONSOLE port]                          [SLIP port]
Baud Rate      : 9600                   Baud Rate      : 38400
Data Length    : 8-Bits                 Data Length    : 8-Bits
Stop Bit       : 1-Bit                  Stop Bit       : 1-Bit
Parity         : NONE                   Parity         : NONE
XON_XOFF       : XOFF                   XON_XOFF       : XOFF


<< Press ESC key to return to previous menu >>
```

From the Controller Setup menu press "C" to access the System Setup (MAP) screen. Use arrow keys and the TAB key to set up the HDLC TSI map. You must select a time slot to use for inband management. In the example below we decided to map Time Slot 1 of Port A to Time Slot 1 of the HDLC Port for this purpose. When you have completed your TSI map, press "ESC" to return to the Controller Setup menu. Then press "D" from that menu to activate the new map.

```
LOOP AM3440               === System Setup (MAP) ===       10:56:26 02/06/2002
ARROW KEYS: CURSOR MOVE, TAB: ROLL OPTIONS
MAP NO: MAP_2
            Source Slot   E1    NON-CAS        Dest. Slot    HDLC
Source Slot PO/TS D SL/PO TS PO/TS D SL/PO TS  PO/TS D SL/PO TS PO/TS D SL/PO TS
Slot  :  A  ===== ========== ===== ==========  ===== ========== ===== ==========
Port  :         1 d HD     1    17 d               1 d  A     1
T.S.  : 01      2 d             18 d
                3 d             19 d
                4 d             20 d
T.S.# : 01      5 d             21 d
Clear : No      6 d             22 d
d/v   : d       7 d             23 d
                8 d             24 d
                9 d             25 d
Dest Slot      10 d             26 d
Slot  : HD     11 d             27 d
Port  :        12 d             28 d
T.S.  : 01     13 d             29 d
               14 d             30 d
Update? Yes    15 d             31 d
Confirm?Yes    16 d


<< Press ESC to return to Controller Setup menu, then Press D to active >>
```

8.4 Setting The Loopback Timer

Note: When you are setting the Inband Management configuration a loopback timer will appear on your screen. If you are planning to do any loopback testing while in the Inband Management (HDLC) mode you must set the timer for a period (in seconds) suitable to your testing requirements. The inband management function will be unavailable for the duration of the loopback testing. If you are not planning to do any Loopback testing while in the Inband Management mode leave the timer at its default setting of "0" seconds.

The purpose of the timer is to prevent the irretrievable loss of your inband management line while doing loopback testing. When you are not in the inband management mode and wish to do loopback testing you can ignore the timer.

Press 'U' to choose a slot (port).

```
LOOP AM3440                === Controller Menu ===         15:58:51 02/21/2002

Serial Number   : 8060                 Redundant Controller: Disabled
Hardware Version: ver.as5 04/2001      Start Time  : 14:30:26 02/20/2002
Software Version: V2.03 01/31/2002



[DISPLAY]                              [SETUP]
C -> System Configuration              S -> System Setup
B -> Clock source Configuration        M -> System Alarm Setup
Q -> Alarm Queue Summary               W -> Firmware Transfer
I -> Information Summary               V -> Store/Retrieve Configuration
                                       K -> Clock source Setup


[LOG]                                  [MISC]
U -> Choose a Slot                     A -> Alarm Cut Off
F -> Log Off [SETUP],[MISC] Menu       X -> Clear Alarm Queue
O -> Log On  [SETUP],[MISC] Menu       Y -> Controller Return to Default
                                       Z -> Controller Reset


>>SPACE bar to refresh or enter a command ===>
```

Key in the letter of the port you mapped to the HDLC port. In our example it was port 'A'.

```
LOOP AM3440                === Controller Menu ===         15:58:51 02/21/2002

Serial Number   : 8060                 Redundant Controller: Disabled
Hardware Version: ver.as5 04/2001      Start Time  : 14:30:26 02/20/2002
Software Version: V2.03 01/31/2002



[DISPLAY]                              [SETUP]
C -> System Configuration              S -> System Setup
B -> Clock source Configuration        M -> System Alarm Setup
Q -> Alarm Queue Summary               W -> Firmware Transfer
I -> Information Summary               V -> Store/Retrieve Configuration
                                       K -> Clock source Setup


[LOG]                                  [MISC]
U -> Choose a Slot                     A -> Alarm Cut Off
F -> Log Off [SETUP],[MISC] Menu       X -> Clear Alarm Queue
O -> Log On  [SETUP],[MISC] Menu       Y -> Controller Return to Default
                                       Z -> Controller Reset


==>> Input the unit number (A~D or 1~12): A
```

The Port Menu will appear as below. Press 'L'.

```
SLOT A  FE1                  === Port Menu ===           15:59:27 02/21/2002

Version      : SW V3.00  02/07/2001




[DISPLAY]                              [SETUP]
1 -> Unit 1-Hour Perf. Report          L -> Unit Loopback Setup
2 -> Unit 24-Hour Perf. Report         S -> Unit System Setup
A -> Unit Line Availability            K -> Unit Clear Performance Data
C -> Unit Configuration                M -> Unit Alarm Setup
I -> Unit Status                       X -> Unit Clear Alarm Queue & History
H -> Unit Alarm History
Q -> Unit Alarm Queue


[LOG]                                  [MISC]
U -> Choose a Port                     Y -> Unit Load Default Config
F -> Log Off [SETUP],[MISC] Menu       Z -> Unit Reset
O -> Log On  [SETUP],[MISC] Menu
E -> Return to Controller Main Menu

>>SPACE bar to refresh or enter a command ===>
```

The Port Loopback screen will appear. Go to 'NEAR END LOOPBACK' (highlighted below) and use the arrow keys to move the cursor to 'LOCAL'

```
SLOT A  FE1              === Port Loopback Test ===       15:59:33 02/21/2002
ARROW KEYS : CURSOR MOVE , ENTER KEY : ITEM SELECT

- NEAR-END LOOPBACK   : *OFF  LOCAL  PLB  LLB

- SEND LOOPBACK ACTIVATE CODE TO FAR-END:
        *PAYLOAD  LINE
- SEND LOOPBACK DEACTIVATE CODE TO FAR-END:
        *PAYLOAD  LINE
- SEND TEST PATTERN:
        *OFF  PRBS-FULL

- STATUS:

<< Press ESC key to return to previous menu >>
```

When the HDLC TSI map is setup, go to E1 "Port Loopback Test" menu. After moving the cursor to LOCAL, PLB, or LLB, the system will request to enter loopback time in Period(in second) option.

```
SLOT A  FE1                === Port Loopback Test ===       08:14:32 01/09/2002
ARROW KEYS : CURSOR MOVE , ENTER KEY : ITEM SELECT

- NEAR-END LOOPBACK   : OFF  *LOCAL  PLB  LLB   Period(in second):

- SEND LOOPBACK ACTIVATE CODE TO FAR-END:
        *PAYLOAD  LINE
- SEND LOOPBACK DEACTIVATE CODE TO FAR-END:
        *PAYLOAD  LINE
- SEND TEST PATTERN:
        *OFF  PRBS-FULL









- STATUS:

<< Press ESC key to return to previous menu >>
```