

Installation

In This Chapter

This chapter provides detailed installation instructions for the D/ESAM 820 mixer. Following is a partial list of topics discussed in this chapter. For a complete list, refer to the Table of Contents.

- System ComponentsPage 5-2
- System Input/Output 5-2
- Control Panel..... 5-4
- Meter Panel 5-6
- Electronics Chassis..... 5-7
- Equipment Interconnection..... 5-9
- D/ESAM Power Cord Connections 5-10
- Audio Connectors..... 5-11
- Analog and Digital Input Connections 5-12
- Analog Output Connections..... 5-14
- Digital Output Connections 5-15
- Monitoring..... 5-16
- Reference Video Connection..... 5-17
- Editor Connection..... 5-17
- RS-232C Terminal..... 5-18
- Maintenance Terminal Procedures 5-20
- Power-Up/Reset Message 5-21
- Main Menu - Menu 0..... 5-21
- Virtual Machine Operations - Menu 1 5-22
- Logical Machine Operations - Menu 2 5-25
- Editor Operations - Menu 3 5-26
- Module Operations - Menu 4..... 5-36
- System Operations - Menu 5 5-38
- Maintenance Operations - Menu 6..... 5-45
- Maintenance Terminal Setup - Menu 7 5-49
- Maintenance Backup And Restore - Menu 8 5-54
- GPI Connection 5-57
- D/ESAM 820 Terminal Emulation Program 5-58

System Components

The standard D/ESAM 820 system consists of two hardware components:

- Electronics Chassis
- Control Panel

The table below itemizes all components of the standard D/ESAM 820 system. Notes are provided to clarify items as required.

Equipment List

Qty	Description	Note
1	Control Panel	
1	Electronic Chassis	
1	25-conductor cable. Connects Control panel to Chassis	a.
1	15-conductor cable.	
2	AC Power Cords	
1	Audio Adjustment Screwdriver	
1	Manuals	

Notes

- a. 25 ft. length is standard. Other custom cable lengths are available.

System Input/Output

The D/ESAM 820 includes the following system input and output capabilities:

■ **Inputs**

- Up to 255 virtual machines
- Up to 56 physical inputs
- Up to 10 tracks per virtual machine
- Up to seven input cards. Each card can be either analog or digital audio format and each processes eight input sources. If inputs are analog, signals are converted to digital. All digital inputs are 20-bit AES/EBU format digital pairs which can be mixed separately once in the virtual environment.
- A mix of up to 16 inputs. There are no dedicated inputs – any physical input can be electronically assigned to any fader, any fader can be assigned to any combination of output buses.

- Four GPI contact closures dedicated to “Transition Start” on buses 1 through 4. GPI inputs are configured as standard pull-down closures to ground.
- One reference loop, either composite sync or video.
- One input jack for connection of up to three optional Assignment Panels.
- Two Panel Bus jacks for connection of optional Floppy Disk unit and audio effects units.
- One jack for connecting an RS-232 maintenance terminal.

■ Outputs

- **Four analog Program:** connect to analog recorder or analog routing switcher. Outputs are balanced with adjustable line levels.
- **Four analog Monitor:** connect to amplifier and speaker systems for monitoring and preview. Also use these outputs for analog metering. Outputs are balanced with adjustable line levels.
- **Two dual-channel digital Program:** connect to digital VTR or digital routing switcher. Outputs are 20/24-bit AES/EBU format digital pairs.
- **Four digital or analog Metering:** (selectable VU or PPM). Connect to GPS metering panel.
- One **Status Display** output for displaying various system functions on a monochrome monitor.

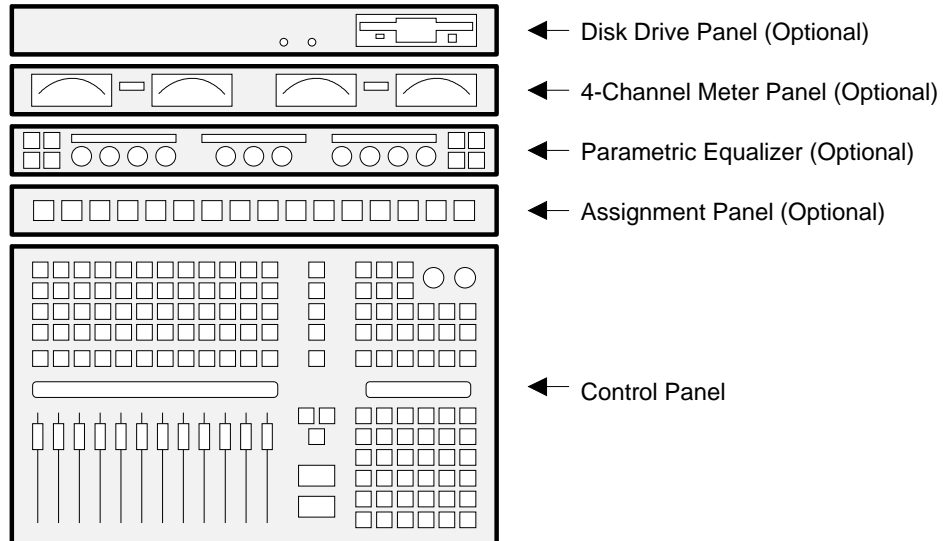
Effects processing loops are optional. Refer to Chapter 2, “**System Theory**,” for a discussion of audio flow through the mixer.

The following sections provide information, specifications and recommendations for D/ESAM installation in the machine room and edit suite. For installation, the following items should be provided by the customer:

- RS-232 Cable: connects a terminal or PC (Personal Computer) with terminal software to main rack unit.
- RS-422 Cable: connects the edit controller to the D/ESAM chassis.
- GPI connector (25-pin “D”) and cables.

Edit Suite Equipment

All standard and optional equipment panels are rack-mountable. They can be installed as shown below or they can be mounted *per your requirements* anywhere in the edit suite for maximum convenience and flexibility.



Equipment Layout

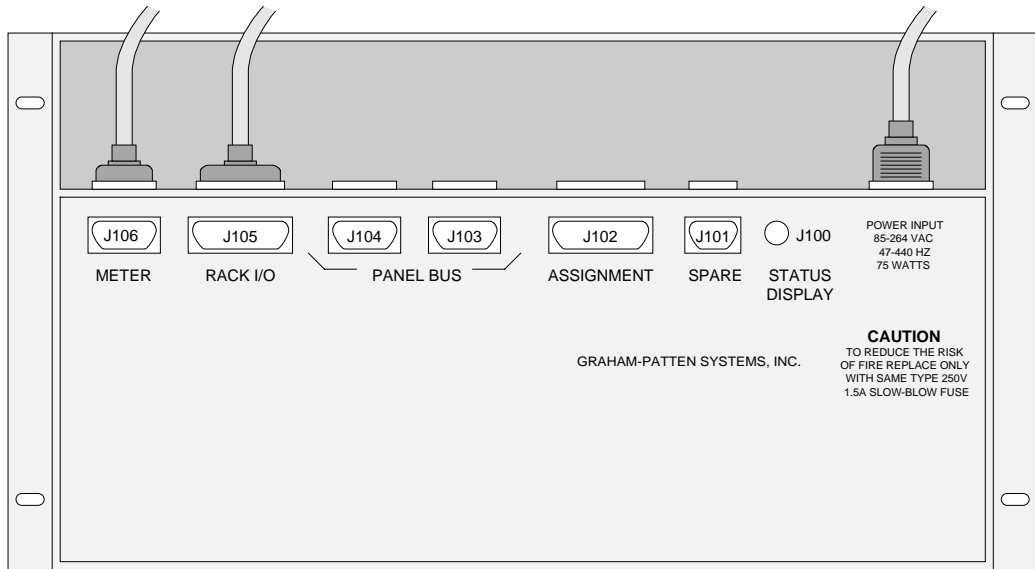
Following are specifications for all standard D/ESAM edit suite equipment. Additional information is included for monitoring and equipment wiring requirements.

Control Panel

The Control Panel is connected to the chassis using RS-422 communication levels and can be stationed up to 200 feet from the chassis. The panel has its own microprocessor and receives control data down the serial line. *All* audio is processed in the chassis — no audio is processed in the Control Panel.

With up to 56 inputs and 12 faders, the panel emulates an extremely sophisticated routing switcher, linking logical names to virtual machines and using logical machine names in any panel location. There is no physical wiring between inputs and faders.

The figure below shows a rear view of the Control Panel:



Control Panel Rear View

The rear panel includes connections for meters, chassis, panel bus, optional assignment panels and a Status Display. Connector locations face the *top* of the panel — silk-screens assist with interconnection. Mount the Panel for maximum access and visibility and make allowances for cable lengths to other panels.

The table below lists Control Panel specifications:

Control Panel Specifications

Item	Specification	Note
Dimensions	8.75" H, 19" W, 4" D	a.
Viewing Angle	Recommended: 30° from center of panel	
Voltage	85-264 VAC	b.
Frequency	47-440 Hz	b.
Power	75 Watts maximum	
Status Monitor Output	Monochrome, 1 volt peak-to-peak NTSC and PAL compatible	c.

Notes

- a. All cables connect approximately 3" in from the panel top, parallel to the front surface. Allow for extra depth *under* the panel, for storage of excess cable length from other D/ESAM panels.
- b. Meter and Assignment Panels receive power from the Control Panel.
- c. Status output is provided for convenience and is *not* required for operations. Status output includes displays of various parameters such as memory registers, maintenance setups, EQ and fader values. If you wish to have these displays available, provide rack mount or tabletop space for an NTSC or PAL monochrome monitor.

Meter Panel

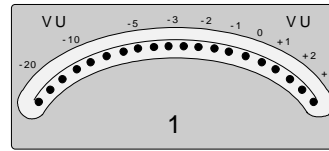


The Metering panel is available in four configurations: analog VU or PPM and digital VU or PPM. The digital VU panel is shown below:



Digital Metering Panel

Each digital meter is composed of 20 LEDs which duplicate the ballistics of an analog VU meter. The figure below shows a close-up of an individual digital meter:



Digital VU Meter

Mount the Meter Panel in the edit suite for maximum convenience and visibility, with allowances for cable length. Using supplied standard cable, the meter panel can be mounted up to 6 feet from the Control Panel. The table below lists Meter Panel specifications:

Meter Panel Specifications

Item	Specification	Note
Dimensions	1.75" H, 19" W, 2" D	
Connectors	15-pin "D"	
Cables	6 ft. cable	a.

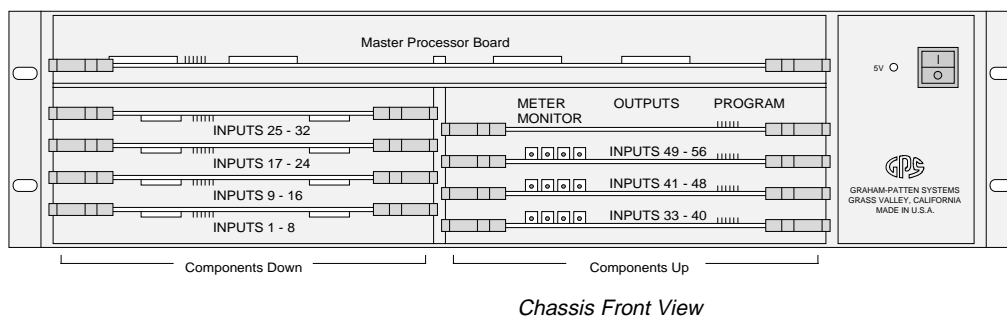
Notes

- a. 6 ft. length is standard. Other custom cable lengths are available.

Electronics Chassis

The electronics chassis contains system power supply, master processor board, all interface electronics, one output board and seven slots capable of handling any combination of analog or digital input boards. If the optional Equalizer is installed, small **Slave Processor Modules** are installed on the **Master Processor** board.

The power supply is a completely separate unit within the chassis and is easily removable. The only operator control is the power switch. The figure below shows a front view of the chassis with the cover removed:



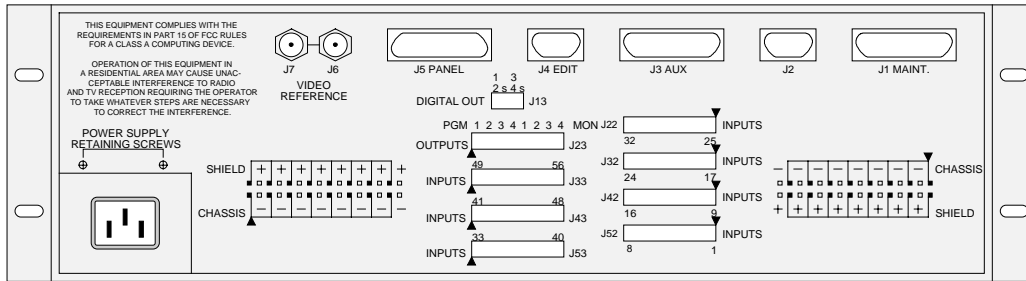
Each input board can accommodate eight audio tracks, for a total of 56 inputs. Boards for inputs 1 through 32 are installed component side *down*. Boards for inputs 33 through 56 are mounted component side *up*. This layout carries through to the rear chassis connectors.

NOTE

All input slots can be configured to accept either analog or digital boards and can be re-configured as required. The process of “configuration” supplies the Master Processor with locations of specific types of inputs. This is done by GPS to your specifications prior to shipment and can be easily re-configured in the field.

The rear chassis includes jacks for all inputs, analog and digital outputs, two BNC's for reference loop and connections for control panel, editing system and GPI. An RS-232 port is provided for connecting a maintenance terminal for system alignment, diagnostics and virtual machine configuration.

The figure below illustrates the rear panel of chassis:



Chassis Rear View

The chassis requires power and composite sync (or video reference). Input and output jacks reflect the orientation of the boards, with detailed silk-screens provided to facilitate wiring. An arrow indicates **Pin 1** in all cases.

The Chassis is designed for a standard 19" rack. Mount the chassis in a convenient location with easy front and rear chassis access. The chassis does not require rear support. The table below lists Chassis specifications:

Electronics Chassis Specifications

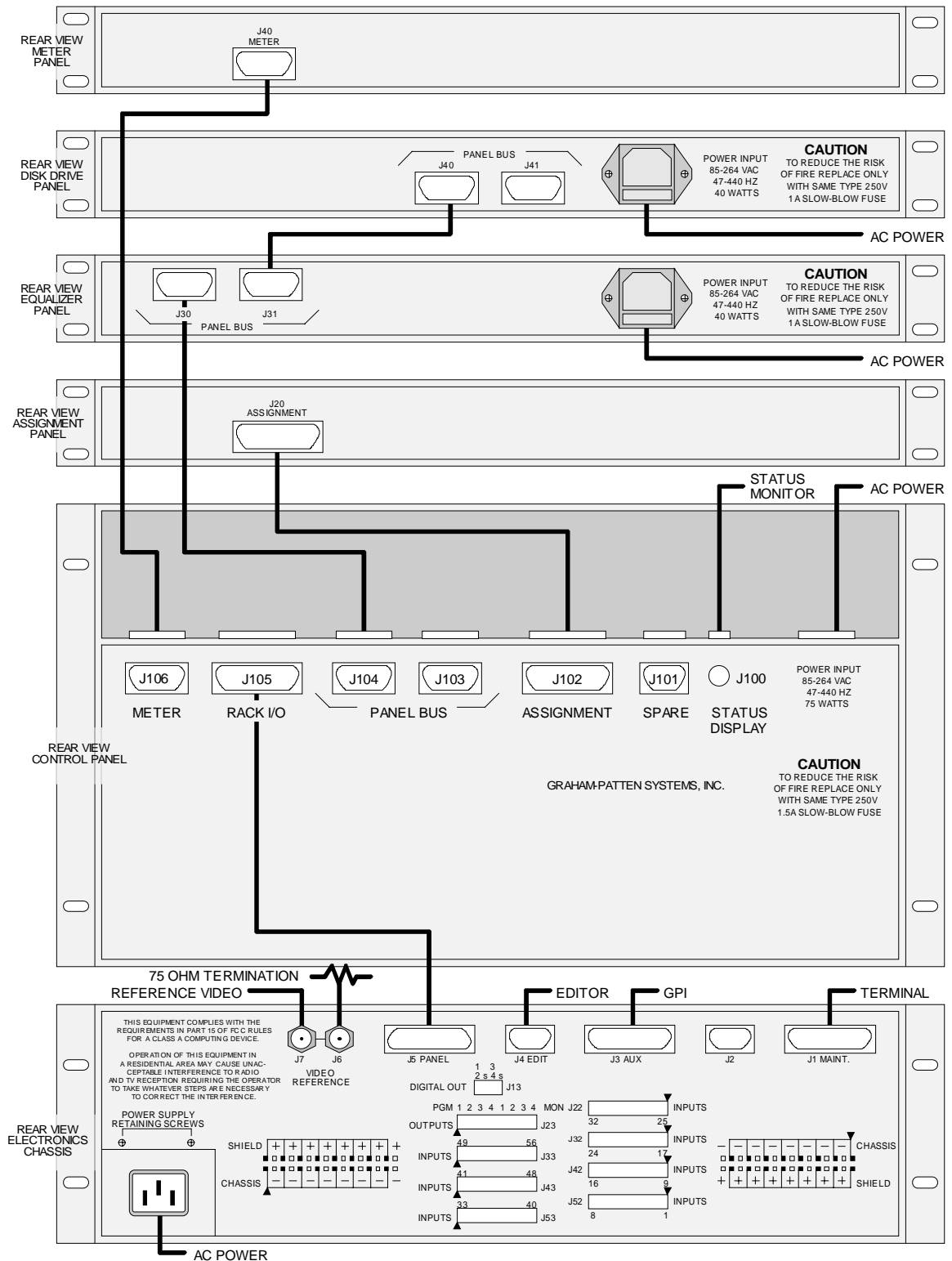
Item	Specification	Note
Dimensions	5.25" H, 19" W, 13" D	
Voltage	85-264 VAC	
Frequency	47-440 Hz	
Power	80 Watts maximum	
Ventilation	Through chassis sides	a.

Notes

- a. All Electronics Chassis ventilation occurs through the *side panels*. Top or bottom ventilation is not required. However, if the chassis is rack-mounted on top of warm equipment, it is recommended that you provide one open rack space (1.75") for ventilation between the units.

Equipment Interconnection

The figure below illustrates system interconnection:



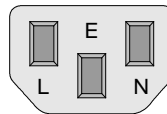
The figure above shows *all* standard and optional D/ESAM equipment. The table below lists system interconnections:

System Interconnections

Item	From	To
1	AC Power	Chassis, Control Panel, Equalizer Panel, Disk Drive Panel
2	J1 Electronics Chassis	RS-232 Maintenance Terminal
3	J3 Electronics Chassis	GPI sources
4	J4 Electronics Chassis	Edit Controller
5	J5 Electronics Chassis	J105 Control Panel
6	J6 Electronics Chassis	Reference Video source
7	J7 Electronics Chassis	Terminate or Loop
8	J100 Control Panel	Monochrome Video Monitor
9	J102 Control Panel	J20 Assignment Panel
10	J104 Control Panel	J30 (or J31) EQ Panel. Either can be used.
11	J30 (or J31) EQ Panel	J40 (or J41) Disk Drive Panel.
12	J106 Control Panel	J40 Meter Panel

D/ESAM Power Cord Connections

To properly identify the neutral lead of the power cord before connecting it to the equipment receptacle, connect the cord to the supply and view the female connector as shown below.



Viewing IEC 320 Connector Mating End

- Measuring voltage between **E** and **N** should display a very low voltage.
- Measuring voltage between **E** and **L** should display the supply voltage.

NOTE

If possible, verify that the **E** lead is grounded.

Audio Connectors

This section discusses digital and analog chassis input and output connectors. Wiring information applies to both analog and digital modules:

- **Pre-wired harnesses**

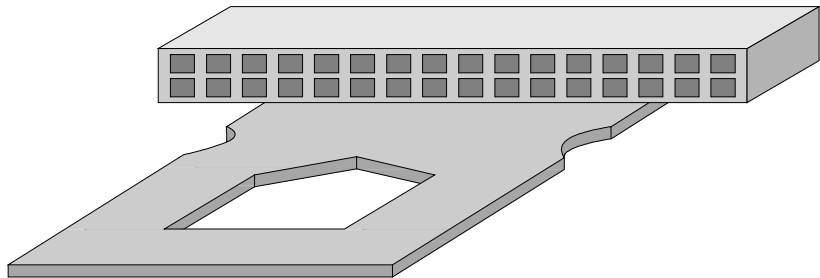
GPS provides one pre-wired cable harness for each audio input and output module. Each cable consists of one 32-pin connector with 5-foot cables. Other configurations of pre-wired harnesses may be ordered. Contact GPS for information.

NOTE

Maximum recommended cable length for digital signals is 100 feet.

- **Strain Relief Brackets**

Each 32-pin connector includes an integral *strain relief bracket* as shown below:

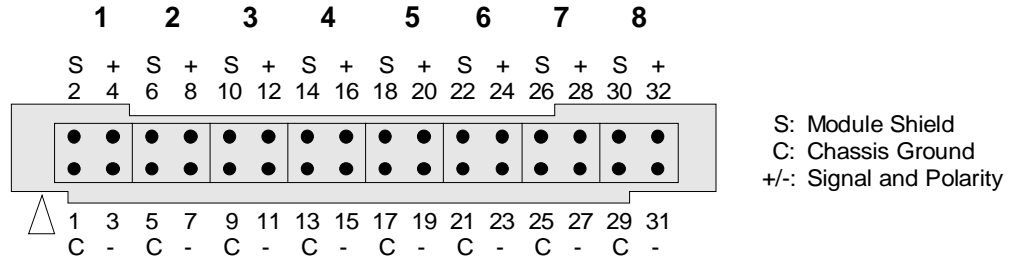


32-Pin Connector and Integral Strain Relief Bracket

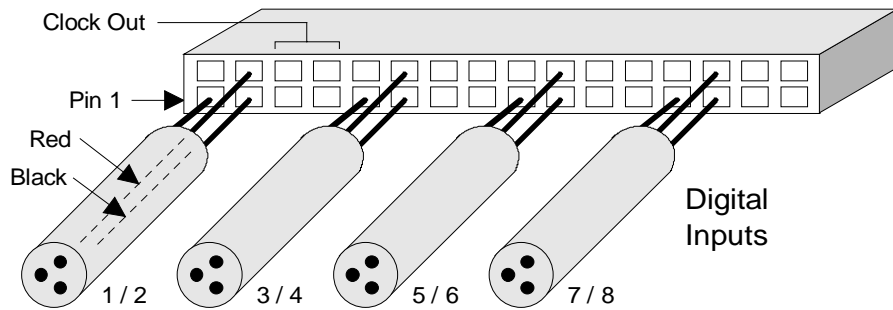
To simplify the connector drawings that follow, the strain relief bracket is *not shown* in the illustrations.

Analog and Digital Input Connections

Each 32-pin connector is divided into eight groups of four pins to provide the eight available inputs per connector. The input indicated by the arrow is the *lowest* numbered input of a group, for example, input 1 in group 1-8, input 33 in group 33-40. The figure below illustrates the connector division and the individual connections per module:



Within the 32-pin connector, each digital input channel uses an 8-pin group for a pair of inputs, of which only 3 pins are used. This is due to the fact that in the digital domain, two inputs (or outputs) are multiplexed onto *one cable*, as shown below:



Wiring for AES (digital) signals may require special consideration. The standard AES signal is a non-polarized balanced signal designed for runs of up to 100' using standard two-conductor shielded cable. For *all* cable runs, including those up to (and over) 100', use higher quality cable (i.e., Belden 9180). The digital input module is set up to have passive cable equalization networks added for long runs.

Use the table below for connecting digital input sources to D/ESAM:

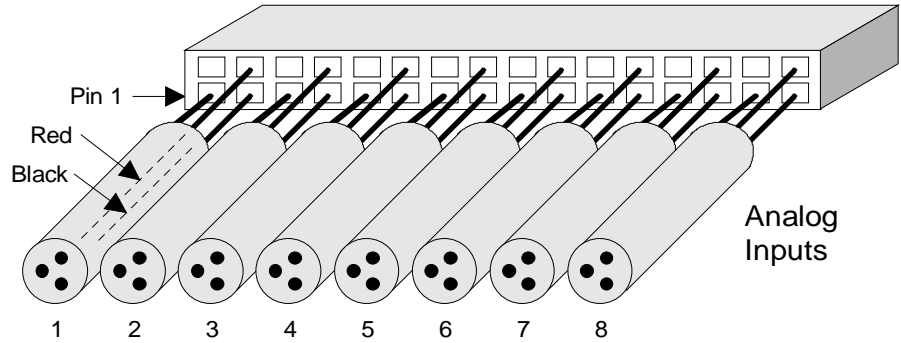
Digital Inputs

D/ESAM	Source
+ (Red)	+ or -
- (Black)	+ or -
C (Chassis)	GND

NOTE

All digital AES connections are made to the odd numbered chassis inputs. Even numbered connections are not used since each digital AES signal contains two discrete channels.

Within the 32-pin connector, each analog input uses a 4-pin group for a single input, of which 3 pins are utilized. The figure below shows four analog channels utilizing four successive 4-pin modules:



Use the table below for connecting balanced analog input sources to D/ESAM:

Balanced Analog Inputs

D/ESAM	Source
Balanced Inputs	
+ (Red)	+
- (Black)	-
C (Chassis)	Shield

Use the following table for connecting unbalanced analog input sources:

Unbalanced Analog Inputs

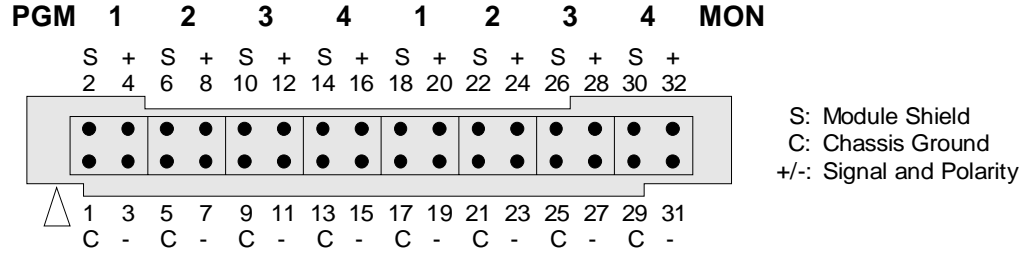
D/ESAM	Source
Unbalanced Inputs	
+ (Red)	Active line
Shield & - (Black)	GND

NOTE

D/ESAM has two sources for ground, C for Chassis ground and S for Shield. When the S is used, ground is made at the actual module — whereas with C, ground is made at the chassis.

Analog Output Connections

The analog output jack (**J23**) also uses a 32-pin connector, divided in half between program and monitor output. The figure below shows the analog audio output connector:



Pin utilization is identical to the digital input connector. Use the table below for connecting balanced analog outputs:

Balanced Analog Outputs

D/ESAM	Source
Balanced Outputs	
+	+
- (Black)	-
C (Chassis)	Shield

Use the table below for connecting unbalanced analog outputs:

Unbalanced Analog Outputs

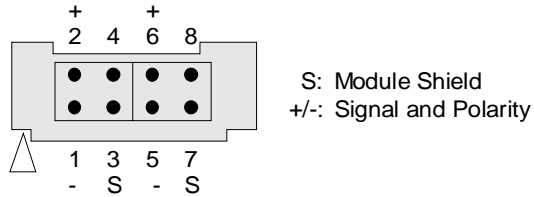
D/ESAM	Source
Unbalanced Outputs	
+	+
-	Open (NC)
S (Shield)	GND

NOTE

Because D/ESAM uses active balanced drivers, D/ESAM's - (minus) or + (plus) outputs must not be connected to ground.

Digital Output Connections

Digital output jack (**J13**) uses an 8-pin connector similar to the 32-pin connectors. Digital output signals are also multiplexed onto one cable. The figure below diagrams the digital audio output connector, with outputs 1 and 2 on the left, 3 and 4 on the right. Note that *only* with digital output connector are side-by-side modules used for digital audio connection.



Use the table below for connecting D/ESAM's digital outputs:

Digital Outputs

D/ESAM	Source
1 PGM 1/2-	+ or -
2 PGM 1/2+	+ or -
3 GND	GND
5 PGM 3/4-	+ or -
6 PGM 3/4+	+ or -
7 GND	GND

Monitoring

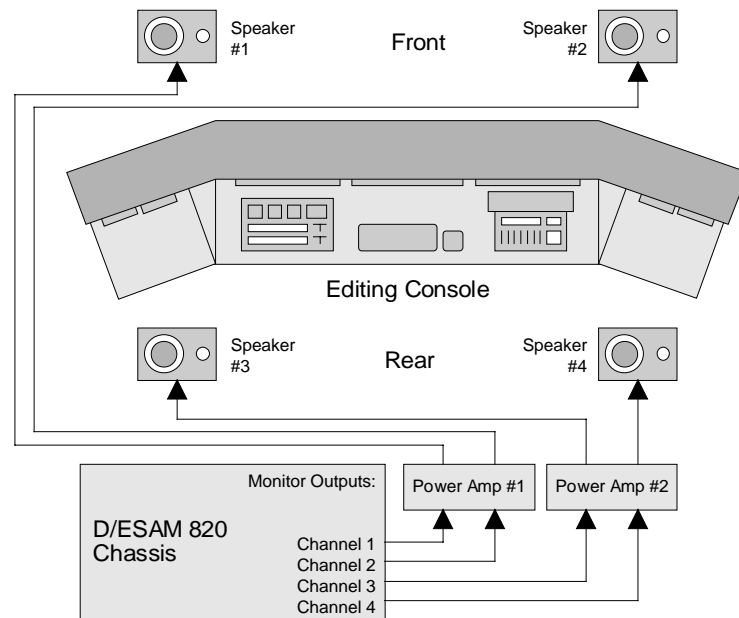
D/ESAM provides four-channel monitoring capability. Each monitor channel has its own analog output designed to feed an audio power amplifier or a speaker with a “built-in” amplifier. The monitor output can *not* drive a speaker directly:

- For 2-speaker installations, a single stereo power amplifier or two “powered” speakers are required. If you wish to use two monitor speakers, use D/ESAM monitor outputs 1 and 2 only.
- For 4-speaker installations, two stereo power amplifiers or four “powered” speakers are required. If you wish to use four speakers, use D/ESAM monitor outputs 1 through 4 respectively.

NOTE

For 2-speaker installations, channels 3 and 4 can be monitored and/or mixed with channels 1 and 2.

The figure below illustrates a typical 4-channel monitor layout in an edit suite.



In the diagram, monitor outputs 1 and 2 feed front speakers 1 and 2 through power amp #1. Outputs 3 and 4 feed rear speakers 3 and 4 through power amp #2. In this configuration, speakers 1 and 2 can also monitor channels 3 and 4 or a mix of channels 1 + 3 and 2 + 4.

A 2-channel installation would only use front speakers 1 and 2, connected through power amp #1. The capabilities of monitoring channels 3 and 4 through speakers 1 and 2 are identical.

Reference Video Connection

D/ESAM requires a video reference for synchronizing digital audio to video and for edit timing. The reference signal can be either composite sync or composite video. Connection is made through the loop-through BNC connectors **J6** and **J7**. Reference *must* be terminated into 75Ω.

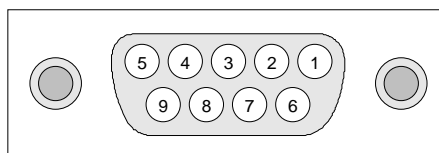
Note that the D/ESAM 820 system includes automatic sync detection and will lock to the incoming frame rate. Should a sync signal *not* be present, the default “TV Standard” value is used and the **LOCK / UNLK** button flashes. Refer to the “**System Operations - Menu 5**” section for instructions on setting the frame rate.

Editor Connection

D/ESAM’s RS-422 serial interface (**J4 EDIT**, female contacts) permits full or partial control from videotape editing systems equipped with serial ports dedicated (or assignable) to mixer control. Because many manufacturers make *several* different editing systems, we recommend that you contact your editing system manufacturer to confirm your system has the proper software to support D/ESAM and the most advanced features of the Graham-Patten ESAM II protocol. Refer to Chapter 6 for details on the level of ESAM II protocol implementation provided by the various editing system manufacturers.

Parameters of the RS-422 connection can be set with the RS-232 Terminal. Refer to the “**Editor Communications - Menu 3.1**” section for information. The table below lists edit connection pinouts:

RS-422 Editor Connection Pinouts



Pin	Specification	Pin	Specification
1	GND	6	GND
2	TX A	7	TX B
3	RX B	8	RX A
4	GND	9	GND
5	NC		

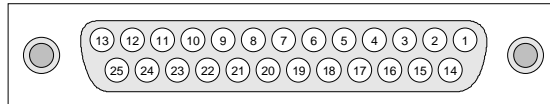
Refer to Chapter 6, “**Interfaces,**” for information *specific* to your editing system. If you have any interface questions, please contact Graham-Patten Customer Service.

RS-232C Terminal

A maintenance RS-232C port is provided to allow you to configure Virtual Machines, Edit system communications and to perform system alignment. The table below illustrates the D/ESAM RS-232C connector pinouts.

NOTE The D/ESAM RS-232C port (**J1 MAINT**) has female contacts and communicates at 9600 baud, 8 data bits, no parity and 1 stop bit.

RS-232C Pinouts



Pin	Specification	Pin	Specification
1	GND	14	
2	TXD Transmit Data (Data Out)	15	
3	RXD Receive Data (Data In)	16	
4	RTS Request to Send (Out)	17	
5	CTS Clear to Send (In)	18	
6	DSR Data Set Ready (In)	19	
7	GND	20	DTR Data Terminal Ready (Out)
8	Data Carrier Detect (In)	21	
9		22	R1 Ring Indicator (In)
10		23	
11		24	
12		25	
13			

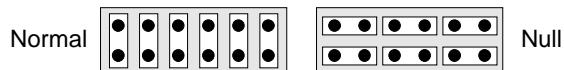
The table below illustrates the D/ESAM to RS-232C terminal hook-up:

Standard RS-232C Hook-up

Terminal Connector		D/ESAM J1 (MAINT.)
Pin 3* RX	→	Pin 2 TX
Pin 2* TX	→	Pin 3 RX
Pin 7 GND	→	Pin 7 GND

Note

* **Null Modem:** Terminal pins 2 and 3 may have to be swapped depending on the model. This can be accomplished by changing jumper positions of **J491** on the **Master Processor Module** as shown below:

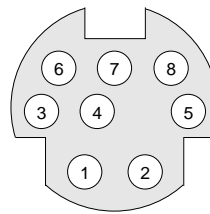


The table below shows the D/ESAM to IBM 9-pin and 25-pin connector hook-up:

IBM 9-Pin And 25-Pin RS-232C Hook-up

IBM 9-Pin Connector		IBM 25-Pin Connector	D/ESAM J1 (MAINT.)
Pin 1	DCD	Pin 8 DCD	No Contact
Pin 2	RX	Pin 3 RX →	Pin 2 TX
Pin 3	TX	Pin 2 TX →	Pin 3 RX
Pin 4	DTR	Pin 20 DTR →	Pin 6 DSR
Pin 5	GND	Pin 7 GND →	Pin 7 GND
Pin 6	DSR	Pin 6 DSR →	Pin 20 DTR
Pin 7	RTS	Pin 4 RTS →	Pin 5 CTS
Pin 8	CTS	Pin 5 CTS →	Pin 4 RTS
Pin 9	RI	Pin 22 RI	No Contact

The figure below illustrates the Macintosh Mini-8 connector. Note that this view represents the cable connector, *not* the chassis connector:



The table below illustrates the D/ESAM to Macintosh Mini-8 connector hook-up:

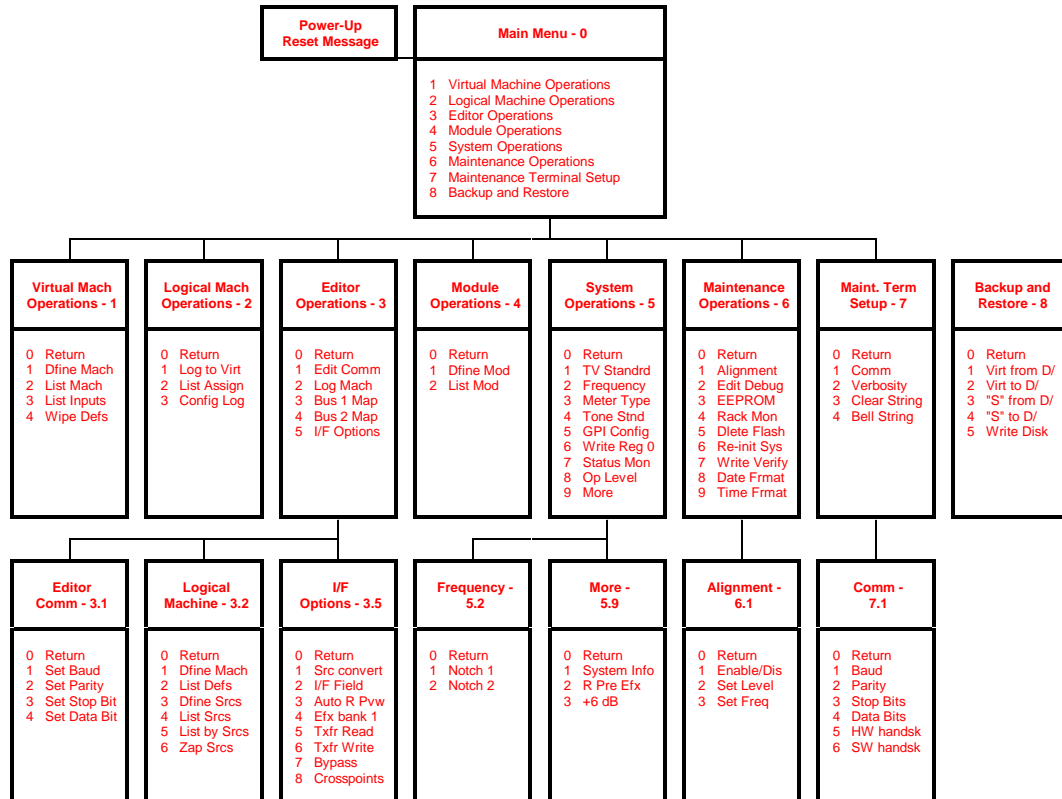
Macintosh Mini-8 RS-232C Hook-up

Macintosh Mini-8 Connector		D/ESAM J1 (MAINT.)
Pin 1	HSKo →	Pin 8 DCD
Pin 2	HSKi →	Pin 6 DSR
Pin 3	TXD – →	Pin 3 RX
Pin 4	GND →	Pin 1 GND
Pin 5	RXD – →	Pin 2 TX
Pin 6	TXD + →	No Contact
Pin 7	GPi →	No Contact
Pin 8	RXD + →	No Contact
		Jumpers:
		• Install jumper from Pin 4 to Pin 5
		• Install jumper from Pin 6 to Pin 20

Maintenance Terminal Procedures

This section discusses procedures available through the maintenance terminal. If your terminal has not been connected, refer to the “RS-232C Terminal” section for information.

All maintenance information is accessed through a series of menus, logically arranged in a menu “tree”. The tree lists each menu name, number and available functions. Menus are also named and numbered on the terminal screen for your reference.



Several specific rules apply during maintenance terminal operations:

- In most cases, pressing **ESCAPE** aborts a sequence and leaves parameters unchanged.
- Pressing the **SPACE BAR** toggles through a list of choices. Where applicable, you can also enter the *first character* of the desired value.
- Selections are accepted by typing **RETURN** or **ENTER**.

The following sections describe each maintenance menu.

Power-Up/Reset Message

The message shown below appears on the terminal screen after D/ESAM has been powered-up or reset. This message displays D/ESAM's software version and editor interface protocol.

```
D/ESAM 820 RACK Version 4.1
Serial Editor I/F: ESAM II extended and D/ESAM IV
Starting D/ESAM ...

Press a key to enter the maintenance menus ...
```

Main Menu - Menu 0

The Main Menu (0) is the directory of all maintenance terminal options:

```
                D / E S A M  8 2 0
                Maintenance menu
                Main menu - 0

1   Virtual Machine Operations
2   Logical Machine Operations
3   Editor Operations
4   Module Operations
5   System Operations
6   Maintenance Operations
7   Maintenance Terminal Setup
8   Backup And Restore
```

To access a specific menu, enter the number of the desired option.

Virtual Machine Operations - Menu 1

The Virtual Machine Operations Menu (1) assigns and lists physical inputs to Virtual Machines and is also used to set default virtual machine delay values:

```
D / E S A M 8 2 0
Maintenance menu
Virtual Machine Operations - 1

0   Return to main menu - 0
1   Edit / Define Machine
2   List Machines
3   List Inputs
4   Wipe Out All Virtual Machine definitions
```

Enter the number of the desired option:

0. **Return to main menu**

Press **0** to return to the main menu.

1. **Edit / Define Machine**

Press **1** to define new Virtual Machines, to change existing Virtual Machines and to set default virtual machine delay values. The following display appears:

```
Enter machine name or virtual machine number ...
```

- a. Enter the name or number of the Virtual Machine that you wish to define or change and press **RETURN**. You can *change* the existing name by typing it in or you can *add* a new name in the same manner. Names can be up to 9 characters in length. The following display appears:

Name	Number	Cue	1	2	3	4	5	6	7	8	9	Delay
VTR1	1	0	1	2	3	4	0	0	0	0	0	0.0

The display shows a heading with the selected Virtual Machine, followed by a listing of the machine’s current input-to-track assignments and default delay value.

- b. Enter the desired physical input assignments for the selected machine. Press **TAB** to advance to the next field or press **BACKSPACE** to return to the previous field.
- c. To set the machines default delay, press **TAB** to advance to last field, “**Delay**.” Enter the desired delay value, in “frames” and “tenths-of-frames.” The valid range is from 0.0 to 7.0 frames, in both 525 and 625 standards.

- d. Press **RETURN** to accept the new data and continue. Repeat as required from step “a,” or press **ESCAPE** to return to menu 1.
- e. To activate *all* changes, press **RESET** on the Main Chassis.

Note the following points regarding Virtual Machine definitions:

- Any virtual machine may be named “TONE,” and assigned inputs in the normal manner. When **TONE** is defined and is accessible on an Assignment Panel, only the first four inputs (1 through 4) have significance. When pressed, the **TONE** button lights, all current mixer crosspoints are turned off and each **TONE** input is assigned to its respective output bus. When pressed again, the mixer returns to its previous state.

If *no inputs* are assigned to the **TONE** machine, the system uses an internally generated tone signal of **937 Hz** or **1KHz** with a level **20, 18, 16, or 12 dB** below digital clipping, depending on the selected system operating level. If inputs *are* assigned to the **TONE** machine, an externally generated tone signal is used. Refer to the “**System Operations - Menu 5**” section for details on setting the tone standard and system operating level.

- Up to ten User Virtual Machines can be configured from the Terminal and given a virtual number (a number which appears on an Assignment Panel is recommended). User Virtual Machines must be designated **USR0** through **USR9**. An initial set of inputs *need not* be assigned, however. Once configured, you can define virtual machines from the Control Panel. In Chapter 3, refer to the “**User Virtual Machines**” section for details.

Note the following points regarding virtual machine delay:

- Virtual machine delays can be viewed on status screens 2 and 5, but can *only* be changed via the Maintenance Terminal.
- Delay values for “User” virtual machines are entered as part of the **Extended Functions** dialogue, using the Control Panel’s User Virtual Machines Menu.
- Virtual Machine assignments (and their associated delays) are stored in register 0 and in the 20 User Configuration Registers, but *not* in D/MEM registers.

2. List Machines



Press **2** to list all current Virtual Machine assignments, their associated D/ESAM inputs and their associated default virtual machine delays. The list is sorted by Virtual Machines. The following display appears:

Name	Number	Cue	1	2	3	4	5	6	7	8	9	Delay
VTR1	1	0	1	2	3	4	0	0	0	0	0	0.0
VTR2	2	0	5	6	7	8	0	0	0	0	0	0.0
VTR3	3	0	9	10	11	12	0	0	0	0	0	0.0
VTR4	4	21	13	14	15	16	0	0	0	0	0	0.0
ATR1	5	0	33	34	35	36	37	38	39	40	0	0.0
CD1	6	0	40	42	0	0	0	0	0	0	0	0.0

... and continues to the end of all assignments. If more machines are assigned than can fit on one screen, you will be prompted to “**Type any key to continue.**” Press **ESCAPE** to return to menu 1.

3. List Inputs

Press **3** to list which Virtual Machines are currently using which physical inputs. The list is sorted by D/ESAM input. The following display appears:

Input	Machine	Machine	Machine	Machine	Machine	Machine	Machine
1	VTR1		NEW				
	1		7				
2	VTR1		NEW				
	1		7				
3	VTR1						
	1						
4	VTR1						
	1						
5	VTR2						
	2						

If more virtual machines use a specific input than can be shown on one line, the display wraps-around as shown below:

Input	Machine	Machine	Machine	Machine	Machine	Machine	Machine
6	VTR2	NEW	NEW1	C3	C4	C5	C6
	2	11	12	21	22	23	25
6	C8	C9	C10	C11			
	26	26	28	29			

The display continues through all 56 inputs. You will be prompted to “**Type any key to continue**” after each full screen. Press **ESCAPE** to return to menu 1.

4. Wipe Out All Virtual Machine Definitions

Press **4** to completely reset *all* Virtual Machine assignments. Use this function to re-configure your installation from the ground up or, for example, to move the D/ESAM mixer from one suite to another. You will be prompted to confirm your selection:

- a. Press **Y** to confirm and reset all machines. Press *any other key* to abort and return to menu 1.

NOTE

You can not delete a Virtual Machine if that Virtual Machine is currently assigned to a Logical Machine.

Logical Machine Operations - Menu 2

The Logical Machine Operations Menu (2) lists Logical-to-Virtual Machine assignments:

```
D / E S A M 8 2 0
Maintenance menu
Logical Machine Operations menu - 2

0 Return to main menu - 0
1 Assign Logical to Virtual
2 List Assignments
3 Configure Logical Machine
```

Enter the number of the desired option:

0. **Return to main menu**

Press **0** to return to the main menu.

1. **Assign Logical to Virtual**

Press **1** to assign logical letters to virtual machines. The following display appears:

```
Setting the logical machine to define.
SPACE to desired value. RETURN to select.
```

a. Press **SPACE BAR** to toggle through the values or enter the first character of the desired logical machine. Available options are:

```
A          B          C          D
E          F          G          H
AUX       R
```

b. Press **RETURN** to select. The following display appears:

```
Which virtual machine should logical machine [n] be assigned to?
```

c. Enter the number of the desired virtual machine (from 1 to 255) and press **RETURN** to select.

2. List Assignments



Press **2** to list all *current* Logical-to-Virtual Machine assignments. The following display appears:

Logical Machine	Virtual Machine	Number of Inputs	Cue?
A	1	4	N
B	2	4	N
C	3	4	N
D	4	4	Y
E	5	8	N
F	6	8	N
G	7	2	N
H	8	2	N
AUX	9	1	N
R	10	4	N

Press **ESCAPE** to return to menu 2.

3. Configure Logical Machine

This function is not yet implemented.

Editor Operations - Menu 3

The Editor Operations Menu (3) configures the D/ESAM 820 for various edit systems:

	D / E S A M 8 2 0
	Maintenance menu
	Editor Operations - 3
0	Return to main menu - 0
1	Communications
2	Logical Machines (ESAM II only)
3	Set Bus 1 Map (ESAM II only)
4	Set Bus 2 Map (ESAM II only)
5	I/F Options

Enter the number of the desired option:

0. Return to main menu

Press **0** to return to the main menu.

1. Communications

Press **1** to go to the Editor Communications Menu (3.1).

2. Logical Machines (Esam II Only)

Press **2** to go to the Logical Machines Menu (3.2).



3. Set Bus1 Map (Esam II Only)

Press **3** to set D/ESAM to remap the editing system's bus 1 control codes to another combination of buses. This allows an editor which *normally* controls 2 buses to control up to 4 buses. The default condition remaps bus 1 to control bus 1. This function only applies when the mixer is controlled via ESAM II protocol.

a. Press **SPACE BAR** to toggle through the desired combinations:

1			
1	2	3	4
	2		
		3	
			4
1	2		
1		3	
	2		4
1			4
1	2	3	
1	2		4
	2	3	
	2	3	4
1		3	4
		3	4

Press **RETURN** to select.



4. Set Bus2 Map (Esam II Only)

Press **4** to set D/ESAM to remap the editing system's bus 2 control codes to another combination of buses. This allows an editor which *normally* controls 2 buses to control up to 4 buses. The default condition remaps bus 2 to control bus 2. This function only applies when the mixer is controlled via ESAM II protocol.

a. Press **SPACE BAR** to toggle through the desired combinations:

	2		
1	2	3	4
1			
		3	
			4
1	2		
1		3	
1			4
1	2	3	
1	2		4
	2	3	
	2		4
	2	3	4
1		3	4
		3	4

Press **RETURN** to select.

5. I/F Options

Press **5** to go to I/F Options Menu (3.5).

Editor Communications - Menu 3.1

The Editor Communications Menu (3.1) sets RS-422 communication port parameters:

```
D / E S A M 8 2 0
Maintenance menu
Editor Communications - 3.1

0   Return to Editor Operations menu - 3
1   Set Baud Rate
2   Set Parity
3   Set Stop Bits
4   Set Data Bits
```

Enter the number of the desired option:

0. Return to Editor Operations menu - 3

Press **0** to return to Editor Operations menu (3).

1. Set Baud Rate

Press **1** to set the editor baud rate.

a. Press **SPACE BAR** to toggle through values:

150	1200	9600
300	2400	19200
600	4800	38400

Press **RETURN** to select.

2. Set Parity

Press **2** to set editor parity.

a. Press **SPACE BAR** to toggle through the values or enter the first character of the desired value. Available values are:

EVEN	SPACE	NONE
ODD	MARK	

Press **RETURN** to select.

3. Set Stop Bits

Press **3** to set editor stop bits.

a. Press **SPACE BAR** to toggle through values or enter the first character of the desired value. Available values are:

1
2

Press **RETURN** to select.

4. Set Data Bits

Press **4** to set editor data bits.

- a. Press **SPACE BAR** to toggle through values or enter the first character of the desired value. Available values are:

7
8

Press **RETURN** to select.

NOTE

Status

A “Break-Escape” sequence must be sent by the editing system to enable edit communications and light the Edit Port Enable LED on the rack unit’s master processor board. The “Break-Escape” command varies between edit systems and is usually transparent to the operator.

Logical Machines (ESAM II only) - Menu 3.2

The Logical Machines (ESAM II only) menu sets editing system-to-D/ESAM source configuration. All operations in this menu are ESAM II specific, and as a result do not apply to mixers operating under D/ESAM IV protocol.

```
                D / E S A M  8 2 0
                Maintenance menu
                Logical Machines - 3.2 (ESAM II only)

0   Return to Editor Operations menu - 3
1   Edit / Define Machines
2   List Machine Definitions
3   Edit / Define Sources
4   List Sources by Machine
5   List Sources by Sources
6   Zap All Source Definitions
```

Enter the number of the desired option:

0. Return to Editor Operations menu - 3

Press **0** to return to the Editor Operations menu (3).

1. Edit/Define Machines

Press **1** to set which Editor source number (crosspoint) equates to which D/ESAM logical machine. Use this function for Editing Systems which communicate with entire logical *machines*. The following display appears:

```
Setting the logical machine to define
SPACE to desired value. RETURN to select.
A
```

Press **SPACE BAR** to toggle through the values or enter the first character of the desired logical machine name. Options are:

Silent	D	H
A	E	AUX
B	F	R
C	G	TONE

The following display appears:

Which machine number is the editor sending to select machine A?

- Enter in the number of the machine crosspoint and press **RETURN**. Available numbers are from 1 to 255.
- Repeat for each machine. **ESCAPE** returns to Editor Operations menu (3).

2. List Machine Definitions

Status

Press **2** to list current Edit System-to-D/ESAM sources.

Logical Machine	Editor	Crosspoint
Silent		0
A		1
B		2
C		3
D		4
E		5
F		6
G		7
H		8
AUX		9
R		10
TONE		11

Press **ESCAPE** to return to menu 3.2.

3. Edit/Define Sources

Press **3** to set starting source numbers which equate to D/ESAM logical tracks. Use this function for Editing Systems which communicate with logical *tracks*. The following display appears:

1

- a. Enter a source number or accept the number displayed. The following appears:

1	A	1
---	---	---

- b. The cursor is on the **Logical Machine** letter (field). Accept the logical machine letter or enter a different one. Press **TAB** to accept. The cursor moves to the **Logical Track** number (field).
- c. Accept the logical track number or enter a different one.
- d. Press **RETURN** to accept. Continue from step “b,” or press **ESCAPE** to return to menu 3.2.

4. List Sources by Machine

Press **4** to display a list of D/ESAM logical track-to-edit system source number assignments. The following table appears, which lists all current settings:

LOGICAL MACHINE	Q	TRACK								
	1	2	3	4	5	6	7	8	9	
A	---	---	---	---	---	---	---	---	---	---
	1	2	3	4	5	6	7	8	9	
	91	92	93	94	95	96	97	98	99	
	181	182	183	184	185	186	187	188	189	
B	10	11	12	13	14	15	16	17	18	
	100	101	102	103	104	105	106	107	108	
	190	191	192	193	194	195	196	197	198	
C	19	20	21	22	23	24	25	26	27	
	109	110	111	112	113	114	115	116	117	
	199	200	201	202	203	204	205	206	207	
D	28	29	30	31	32	33	34	35	36	
	118	119	120	121	122	123	124	125	126	
	208	209	210	211	212	213	214	215	216	
E	37	38	39	40	41	42	43	44	45	
	127	128	129	130	131	132	133	134	135	
	217	218	219	220	221	222	223	224	225	

Type any key to display the second page of source assignments. Type any key to return to menu 3.2.

LOGICAL MACHINE	TRACK									
	Q	1	2	3	4	5	6	7	8	9
F	---	---	---	---	---	---	---	---	---	---
		46	47	48	49	50	51	52	53	54
		136	137	138	139	140	141	142	143	144
		226	227	228	229	230	231	232	233	234
G		55	56	57	58	59	60	61	62	63
		145	146	147	148	149	150	151	152	153
		235	236	237	238	239	240	241	242	243
H		64	65	66	67	68	69	70	71	72
		154	155	156	157	158	159	160	161	162
		244	245	246	247	248	249	250	251	252
AUX		73	74	75	76	77	78	79	80	81
		163	164	165	166	167	168	169	170	171
		253	254	255						
R		82	83	84	85	86	87	88	89	90
		172	173	174	175	176	177	178	179	180

5. List Sources by Sources

Press **5** to display a list of edit system source-to-D/ESAM logical tracks. The following display appears:

Source	Logical Track	Source	Logical Track
1	A1	13	E1
2	A2	14	E2
3	A3	15	E3
4	A4	16	E4
5	C1	17	E5
6	C2	18	E6
7	C3	19	E7
8	C4	20	E8
9	D1	21	AUX1
10	D2	22	AUX2
11	D3	23	A1
12	D4	24	A2

The display continues through all 256 source numbers. You will be prompted to “**Type any key to continue**” after each full screen. Silent sources are not shown in the list of logical tracks.

Press **ESCAPE** to return to menu 3.2.

6. Zap All Source Definitions

Press **6** to reset *all* source definitions to “silent.”

- a. Press **Y** to confirm. Press *any other key* to abort and return to menu 3.2.

I/F Options - Menu 3.5

The I/F Options Menu (3.5) sets a variety of interface options:

```
D / E S A M 8 2 0
Maintenance menu
I/F Options - 3.5

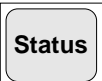
0 Return to Editor Operations menu - 3
1 Source to Machine conversion ON/OFF (ESAM II only)
2 Editor I/F Active Field
3 Auto R Select on Preview when Mix Out turned Off (ESAM II only)
4 Set save/recall action for effects bank 1 (ESAM II only)
5 Set transfer read action for effects bank 1 (ESAM II only)
6 Set transfer write action for effects bank 1 (ESAM II only)
7 Editor Port Protocol Bypass
8 Enable/Disable XPT Assignment (ESAM II only)
```

Enter the number of the desired option:

0. Return to Editor Operations menu - 3

Press **0** to return to the Editor Operations menu (3).

1. Source to Machine conversion ON / OFF (ESAM II only)



Press **1** to select whether or not the Editing System communicates with logical *tracks* or with entire logical *machines*. Note that this function only applies when the mixer is controlled via ESAM II protocol.

When **Source to Machine** conversion is OFF, the editing system communicates with logical machines. Pressing **1** toggles the mode. When pressed, if the current mode is *disabled*, the display reads:

```
Source to machine conversion is now active.
```

If the current mode is *active*, the display reads:

```
Source to machine conversion is now disabled.
```

After selection, the display returns to I/F Options Menu (3.5).

2. Editor I/F Active Field

Press **2** to set the active field used to start the next D/ESAM command sequence. Setting "BOTH" allows D/ESAM to change as the edit system changes.

- a. Press **SPACE BAR** to toggle through the options or enter the first character of the desired option. Available options are:

Both Fields Odd Field Even Field

Press **RETURN** to select.

3. **Auto R Select on Preview when Mix Out turned Off (ESAM II only)**



Press **3** to enable or disable automatic Record machine selection when the edit system turns the **MIX OUT** button *OFF* during previews. Note that this function only applies when the mixer is controlled via ESAM II protocol. Pressing **3** toggles the mode.

When pressed, if the current mode is *disabled*, the display reads:

```
Auto Preview R Machine is now active.
```

If the current mode is *active*, the display reads:

```
Auto Preview R Machine is now disabled.
```

After selection, the display returns to I/F Options Menu (3.5).

4. **Set save/recall action for effects bank 1 (ESAM II only)**

ESAM II protocol specifies D/ESAM bank 1 as the mixer (the entire panel) and bank 2 as effects (such as EQ). Bank 2 *always* stores effects data, but bank 1 is selectable via this function. Note that this function only applies when the mixer is controlled via ESAM II protocol.

Press **4** to select whether or not effects information is included or excluded in bank 1, when D/ESAM registers are saved and recalled from an editing system. The following display appears:

```
Setting the save/recall action for effects bank 1  
SPACE to desired value. RETURN to select.
```

a. Press **SPACE BAR** to toggle through the options:

```
Save/Recall the mixer and all effects.  
Save/Recall only the mixer
```

Press **RETURN** to select.

5. **Set transfer read action for effects bank 1 (ESAM II only)**

This function is provided because some edit systems can not accommodate the large amount of data when *combined* mixer and effects data is transferred from D/ESAM bank 1 to the editor. This function only applies when the mixer is controlled via ESAM II.

Press **5** to select whether or not effects data is included or excluded in bank 1 when D/ESAM registers are transferred to an editing system. The following display appears:

```
Setting transfer read action for effects bank 1  
SPACE to desired value. RETURN to select.
```

- a. Press **SPACE BAR** to toggle through the options.

Transfer mixer and all effects to the editor.
Transfer only the mixer to the editor

Press **RETURN** to select.

6. **Set transfer write action for effects bank 1 (ESAM II only)**

This function only applies when the mixer is controlled via ESAM II protocol. Press **6** to select whether or not effects information is included or excluded in bank 1 when registers are transferred from an editing system to D/ESAM. The following display appears:

Setting transfer write action for effects bank 1
SPACE to desired value. RETURN to select.

- a. Press **SPACE BAR** to toggle through the options:

Receive mixer and all effects from the editor.
Receive only the mixer from the editor.

Press **RETURN** to select.

7. **Editor Port Protocol Bypass**

Press **7** to select whether or not the mixer allows editor control from systems which do not use SMPTE standard protocol. Pressing **7** toggles the mode. If the current mode is *disabled*, the display reads:

Editor port protocol bypass is now active

If the current mode is *active*, the display reads:

Editor port protocol bypass is now disabled

After selection, the display returns to I/F Options Menu (3.5).

8. **Enable/Disable XPT Assignment (ESAM II only)**

This function only applies when the mixer is controlled via ESAM II. Press **8** to select whether or not the mixer allows editor control over crosspoint-to-logical machine assignments (as listed under “**List Logical Machines**” Menu 3.2, selection 2). Pressing **8** toggles the mode. When pressed, if the current mode is *enabled* (default), the display reads:

Editor crosspoint assignment is now disabled.

If the current mode is *disabled*, the display reads:

Editor crosspoint assignment is now active.

After selection, the display returns to I/F Options Menu (3.5).

Module Operations - Menu 4

The Module Operations Menu (4) defines which type of audio module resides in which chassis position:

```
D / E S A M 8 2 0
Maintenance menu
Module Operations - 4

0   Return to main menu - 0
1   Define Module Type
2   List Module Type
```

Enter the number of the desired option:

0. **Return to Main Menu - 0**

Press **0** to return to the Main Menu (0).

1. **Define Module Type**

Press **1** to set the configuration of audio modules in the electronics chassis. *All* module positions must be defined. The following display appears:

```
Define which module?
```

- a. Enter the chassis slot number of the module to define.
- b. Press **SPACE BAR** to toggle through the list of module options or enter the first character of the desired option:

```
No Module At All
Analog Input Module (40127/40142)
Analog Input Module - 18 bit (40160)
Analog Input Module - 20 bit (40160)
Digital Input Module (40141)
Digital Input Module (40148)
Digital Input Module w/Src (40164)
Digital Processing Loop Module (40156)
Analog Processing Loop Module (40158)
Output Module (40130)
```

- c. Press **RETURN** to select.

NOTE

```
Availability of the Analog Processing Loop Module (40158) to be announced.
```

- d. If a Proc Loop module is defined, the following display appears:

```
Setting the loop numbers for this module.
SPACE to desired value. RETURN to select.
```

This function allows you to select a unique set of processing loop numbers, for use during “loop” operations on the Control Panel. Press **SPACE BAR** to toggle through the list of number options. The following options are available:

- Loops 1-4
- Loops 5-8
- Loops 9-12
- Loops 13-16

It is recommended that you select “**Loops 1-4**” for the first Processing Loop Module, “**Loops 5-8**” for the second module and so on.

- e. When the desired option appears, press **RETURN** to select.
- f. Continue with step “a,” for each additional module or press **ESCAPE**.
- g. To activate *all* module changes, press **RESET** on the Chassis.

2. **List Module Type**



Press **2** to list chassis audio module configurations. The following display appears:

Module Number	Inputs	Type
1	1 thru 8	Digital Input Module (40141)
2	9 thru 16	Digital Input Module (40141)
3	17 thru 24	Digital Input Module (40141)
4	25 thru 32	Analog Input Module - 20 bit (40160)
5	33 thru 40	Analog Input Module - 20 bit (40160)
6	41 thru 48	No Module At All
7	Loops 1 thru 4	Digital Processing Loops Module (40156)
8	Outputs	Output Module (40130)

Note that a column for “**Loops**” column is provided.

- a. Press **ESCAPE** to return to menu 4.

NOTE

Processing “loop” number selections can also be verified on Status Screen 3.

System Operations - Menu 5

The System Operations Menu (5) sets a variety of system parameters:

```
D / E S A M 8 2 0
Maintenance menu
System Operations - 5

0 Return to main menu - 0
1 TV Standards
2 Frequencies
3 Meter Type
4 Tone Standard
5 GPI Port Configuration
6 Enable one time write to register 0
7 Status Monitor Sync Standard
8 Set System Operating Level
9 More ...
```

Enter the number of the desired option:

0. **Return to Main Menu - 0**

Press **0** to return to the Main Menu (0).

1. **TV Standards**



Press **1** to select the “default” TV standard. Note that the system includes automatic sync detection and locks to the incoming frame rate. Should sync not be present, the default “TV Standard” value is used. The display reads

```
Setting the TV frame rate
```

a. Press **SPACE BAR** to toggle through the values or enter the first character of the desired value. Available values are:

```
30 frames/sec
25 frames/sec
```

b. Press **RETURN** to select or press **ESCAPE** to return to menu 5.

2. **Frequencies**



Press **2** to go to Frequencies Menu (5.2). Refer to the “**Frequencies Menu - 5.2**” section for instructions.

3. Meter Type

Status

Press **3** to select the meter type. The display reads

```
Setting the meter type
SPACE to desired value. RETURN to select.
```

- a. Press **SPACE BAR** to toggle through the options:

```
GPS Digital VU
GPS Digital PPM
Analog (VU or PPM)
```

- b. Press **RETURN** to select or press **ESCAPE** to return to menu 5.

4. Tone Standard

Press **4** to set the TONE standard. The display reads

```
Setting new tone standard
SPACE to desired value. RETURN to select.
```

- a. Press **SPACE BAR** to toggle through the values:

```
1000 Hz
937 Hz
```

- b. Press **RETURN** to select or press **ESCAPE** to return to menu 5.

5. GPI Port Configuration

Press **5** to select which mixer functions the GPI ports control. The display reads

```
Setting the GPI Port Configuration
SPACE to desired value. RETURN to select.
```

- a. Press **SPACE BAR** to toggle through the five available GPI options:

```
PVW Machine R,A-F,AUX, TX Start 1-4, Panel TX Start, Mix Out 1-4, D/MEM Trigger
Select Pvw Machines, TX Start 1-4, Panel TX Start, Enable Mix Out 1-4
GPI Ports Disabled
GPI Debug Mode (OUTPUTS! - Factory Use Only)
TX Start 1-4 Only
```

- b. Press **RETURN** to select or press **ESCAPE** to return to menu 5.

6. Enable one time write to register 0

D/ESAM provides the capability of saving register 0 from the Control Panel. This register can be used as a default system configuration which includes everything in a normal register, plus Logical-to-Virtual machine assignments.

The “one time write” is enabled using this maintenance function, while the actual “save” occurs at the Control Panel, using normal procedures for saving memory registers. Once saved, if you try to re-save to register 0, the system does not allow it unless “one time write” is re-enabled at the Maintenance Terminal.

Pressing **6** enables the one-time write to register 0 and returns the system to menu 5.

7. Status Monitor Sync Standard

Press **7** to set the status monitor sync standard. The display reads

```
Setting the Status Monitor Sync Standard.  
SPACE to desired value. RETURN to select.
```

- a. Press **SPACE BAR** to toggle through the two sync options:

```
Monitor Sync same as Incoming Sync.  
Monitor Sync same as Default TV Standard.
```

- b. Press **RETURN** to select or press **ESCAPE** to return to menu 5.

8. Set System Operating Level

Press **8** to set the internal operating level (internal tone level) of the system. The display reads:

```
Setting the Internal Operating Level  
SPACE to desired value. RETURN to select.
```

- a. Press **SPACE BAR** to toggle through the options:

```
-20dB from digital clipping  
-18dB from digital clipping  
-16dB from digital clipping  
-12dB from digital clipping
```

- b. Press **RETURN** to select or press **ESCAPE** to return to menu 5.

9. More ...

Press **9** to go to the “More” Menu (5.9). Refer to the “**System Operations (More) - Menu - 5.9**” section for instructions.

Frequencies - Menu 5.2

The Frequencies Menu (5.2) sets the frequencies of the two Equalizer notch filters, labeled **NOTCH 1** and **NOTCH 2** on the panel.

```
D / E S A M 8 2 0
Maintenance menu
Frequencies - 5.2

0 Return to System Operations Menu - 5
1 Set EQ Notch1 Frequency (Upper Push-button)
2 Set EQ Notch2 Frequency (Lower Push-button)
```

When a new notch filter frequency is chosen, that frequency becomes active only when the selected notch filter button is re-selected on the EQ panel. For example, channels A1 through A4 are on the mixer. Notch filters 1 and 2 for A1 and A2 are set to 50 and 60 Hz respectively. When A1 and A2 are *deselected* from the EQ panel, effects processing is still active. Now, select A3 and A4 and on the maintenance terminal, change notch frequencies to 100 and 120 Hz. When effects are enabled for A3 and A4 (**EQ IN**), the new frequencies take effect. Current EQ values are displayed on the status display. Note also that notch filter frequencies are saved with the logical machine.

0. Return to System Operations Menu - 5

Press **0** to return to the System Operations Menu (5).

1. Set EQ Notch 1 Frequency (Upper Push-button)

Press **1** to set the frequency of the **NOTCH 1** filter on the EQ panel. The following display appears:

```
Setting the Frequency of notch 1.
SPACE to desired value. RETURN to select.
```

- a. Press **SPACE BAR** to toggle through values. Available values (in Hz) are:

50	120	De-Emphasis
60	150	
100	180	

Press **RETURN** to select. The following message appears:

```
Notch frequency will change when it is re-selected.
```

2. Set EQ Notch 2 Frequency (Lower Push-button)

Press **2** to set the frequency of the **NOTCH 2** filter on the EQ panel.
The following display appears:

```
Setting the Frequency of notch 2.  
SPACE to desired value. RETURN to select.
```

a. Press **SPACE BAR** to toggle through the values (in Hz):

```
50      120      De-Emphasis  
60      150  
100     180
```

Press **RETURN** to select. The following message appears:

```
Notch frequency will change when it is re-selected.
```

System Operation (More) - Menu 5.9

The System Operations (More) Menu (5.9) provides additional system options:

```
D / E S A M  8 2 0  
Maintenance menu  
Frequencies - 5.2  
  
0   Return to System Operations Menu - 5  
1   System Info  
2   Set R-machine pre-efx on preview bus  
3   Set +6dB mixer gain
```

Enter the number of the desired option:

0. Return to System Operations Menu - 5

Press **0** to return to the System Operations Menu (5).

1. System Info



Press **1** to display a list of D/ESAM information:

```
D/ESAM 820 RACK Version 4.1  
Serial Editor I/F: ESAM II Extended and D/ESAM IV.  
Serial number 2  
Tested 2/6 1996 by mike.  
Panel #0 : FX Addr 1-PANEL: Software Version 4.1  
Panel #2 : FX Addr 2-EQ: Software Version 4.0  
Panel #15 : FX Addr 255-DISK: Software Version 4.0  
Type any key to continue...
```

Status

2. Set R-machine pre-efx on preview bus

Press **2** to select the preview mode for the **R** machine (as selected in the Control Panel's **Preview Section**). Two modes are supported:

- When **R Pre-efx** is disabled, effects (such as EQ) are added to the R machine when it is selected on Preview.
- When **R Pre-efx** is enabled, effects are *not* added to the R machine when selected on Preview. The machine can essentially be monitored “clean.”

Pressing **2** toggles the mode.

When pressed, if the current mode is *enabled* (default), the display reads:

```
R-machine pre-efx on preview bus is now disabled.
```

If the current mode is *disabled*, the display reads:

```
R-machine pre-efx on preview bus is now active.
```

After selection, the display returns to the System Operations (More) Menu (5.9).

3. Set +6dB mixer gain

Press **3** to raise the overall mixer gain by 6dB or reset mixer gain to the default value. When gain is raised by 6dB, the top range of fader travel is 12dB, 0 is +6, and -6 is 0.

NOTE

This mode is designed for special “rack-only” D/ESAM configurations that do not use the D/ESAM control panel, and it is *not* intended for use in normal editing situations. As a result, in this special mode, the *only* indication of increased gain appears on the Maintenance terminal at system bootup.

When **3** is pressed, the following display appears:

```
Setting the overall 6dB mixer gain mode.  
SPACE to desired value. RETURN to select.
```

- a. Press **SPACE BAR** to toggle through the options:

```
Normal mixer gain  
+6dB additional mixer gain
```

Press **RETURN** to select.

b. If Normal mixer gain is selected, the following appears:

This change requires a System reset.
Restart system now? (y or n).

Press **Y** to restart the system, or **N** to have the mixer gain stay the same until the next mixer restart or power cycle.

c. If +6dB additional mixer gain is selected, the following message appears:

WARNING! The +6dB gain setting is designed for rack-only systems.
The Panel fader indications will not be accurate with +6dB of mixer gain. Please Confirm (y or n)

Press **Y** to confirm or **N** to cancel the mode. If **Y** is selected, the following appears:

This change requires a System reset.
Restart system now? (y or n).

Press **Y** to restart the system, or **N** to have the mixer gain stay the same until the next mixer restart or power cycle.

Maintenance Operations - Menu 6

The Maintenance Operations Menu (6) sets a variety of maintenance parameters:

```
D / E S A M 8 2 0
Maintenance menu
Maintenance Operations - 6

0   Return to main menu - 0
1   Alignment
2   Editor Debugging
3   Re-burn EEPROM
4   Rack Monitor
5   Delete Flash Configuration Registers
6   Re-initialize System
7   Enable/Disable write verification on disk
8   Change Date format
9   Change Time format
```

Enter the number of the desired option:

0. **Return to Main Menu - 0**

Press **0** to return to the Main Menu (0).

1. **Alignment**

Press **1** to go to the Alignment Menu (6.1). See the “**Alignment Menu - 6.1**” section for instructions.

2. **Editor Debugging**

Press **2** to toggle the Debug mode. Available options are:

```
Editor Debug mode is now active.
Editor Debug mode is now disabled.
```

The system automatically returns to Menu 6.

3. **Re-burn EEPROM**

Press **3** to re-burn the system EEPROM. The display reads:

```
Burning ... done
```

The system automatically returns to Menu 6.

4. **Rack Monitor**

This function is not for customer use at this time.

5. Delete Flash Configuration Registers

Press **5** to delete Flash Configuration registers. The display reads:

```
WARNING!!! All configuration registers will be deleted from
memory! Including register 0!!!
Please confirm. (Y or N)
```

Press **Y** to delete registers or press **N** or **ESCAPE** to return to menu 6.

6. Re-initialize System

Press **6** to re-initialize D/ESAM and clear all system registers. The following display appears:

```
WARNING!!! All registers will be lost!
Please confirm. (Y or N)
```

If **y** (yes) is entered, you are asked to reconfirm. If **n** (no) is entered, the following message appears:

```
Aborted
```

The system automatically returns to Menu 6.

7. Enable/Disable write verification on disk

Press **7** to toggle the write verification mode. The display reads

```
Setting the write verification mode.
SPACE to desired value. RETURN to select.
```

Available options are:

```
Yes - do verify.
No - don't verify.
```

- a. Toggle to the desired setting.
- b. Press **RETURN** to select or press **ESCAPE** to return to menu 6.

8. Change Date Format

Press **8** to change the date format which appears on the **Date And Time Menu** (in the extended function menus). The display reads

```
Setting the system date format.
SPACE to desired value. RETURN to select.
```

Available options are:

MM-DD-YY
YY-MM-DD
DD-MM-YY

- a. Toggle to the desired setting.
- b. Press **RETURN** to select or press **ESCAPE** to return to menu 6.

9. Change Time Format

Press **9** to change the time format which appears on the **Date And Time Menu** (in the extended function menus). The display reads

```
Setting the system time format.  
SPACE to desired value. RETURN to select.
```

Available options are:

12-Hour format
24-Hour format

- a. Toggle to the desired setting.
- b. Press **RETURN** to select or press **ESCAPE** to return to menu 6.

Alignment - Menu 6.1

The Alignment Menu (6.1) enables and disables the alignment tone and sets the tone's frequency and level:

```
                D / E S A M  8 2 0  
                Maintenance menu  
                Alignment - 6.1  
  
0      Return to Maintenance Operations menu 6  
1      Enable / Disable  
2      Set Level  
3      Set Frequency
```

Enter the number of the desired option:

0. Return to Main Menu - 0

Press **0** to return to the Maintenance Operations Menu (6).

1. Press **1** to toggle the Alignment mode, which places tone on all outputs when enabled. Available options are:

Alignment mode is now active.
Alignment mode is now disabled.

The system automatically returns to Menu 6.1.

2. Press **2** to set the alignment tone's level. The display reads:

```
Setting the alignment tone level.  
SPACE to desired value. RETURN to select.
```

Available levels are:

```
Full digital level  
Reference level (-20 dBFS)  
Reference level (-18 dBFS)  
Reference level (-16 dBFS)  
Reference level (-12 dBFS)  
Distortion trims (-40 dB)  
Digital silence (- infinity dB)  
Full test level for +8 dB systems (-4 dB)
```

- a. Toggle to the desired level.
 - b. Press **RETURN** to select or press **ESCAPE** to return to menu 6.1. The new level remains in effect until changed or until the Alignment mode is disabled.
 - c. When all entries are complete, reboot the system to activate the new level settings.
3. Press **3** to set the alignment tone's frequency. The display reads:

```
Setting the alignment tone frequency.  
SPACE to desired value. RETURN to select.
```

If the tone standard is set to 937 Hz, available frequencies are:

```
375 Hz  
937 Hz  
3937 Hz  
9937 Hz
```

If the tone standard is set to 1000 Hz, available frequencies are:

```
400 Hz  
1000 Hz  
4000 Hz  
10,000 Hz
```

- a. Toggle to the desired frequency.
- b. Press **RETURN** to select or press **ESCAPE** to return to menu 6.1. The new frequency remains in effect until changed or until the Alignment mode is disabled.

NOTE

Refer to the “**System Operations - Menu 5**” section for instructions on setting the system tone standard.

Maintenance Terminal Setup - Menu 7

The Maintenance Terminal Setup Menu (7) changes maintenance terminal communication port parameters:

```

                                D / E S A M  8 2 0
                                Maintenance menu
                                Maintenance Terminal Setup menu - 7

0      Return to main menu - 0
1      Maintenance Terminal Communications
2      Set Verbosity Level
3      Set Clear Screen String
4      Set Bell String
```

Enter the number of the desired option:

0. **Return to Main Menu - 0**

Press **0** to return to the Main Menu (0).

1. **Maintenance Terminal Communications**

Press **1** to go to the Maintenance Terminal Communications Menu (7.1). Refer to the “**Maintenance Terminal Communications Menu - 7.1**” section for instructions.

2. **Set Verbosity Level**

Press **2** to set the verbosity level when interacting with the Terminal. Three levels are available:

- **Confirm Everything** — the maximum amount of questions are asked to ensure that no operator errors are made.
- **Confirm Only Very Important Things** — questions are only asked when critical choices are required.
- **Confirm Nothing** — an absolute minimum amount of questions are asked.

The default level is “**Confirm Everything**.” Press **SPACE BAR** to toggle through the options. Press **RETURN** to select.

3. **Set Clear Screen String**

Press **3** to enter a character sequence which performs a “clear screen” function on your Terminal each time you return to a primary menu.

```

The clear screen string is now ^[*
(precede any return escapes with backslashes)
Now enter the new sequence:
```

Enter the new sequence, with a limit of 5 characters. Press **RETURN** to accept. For example, to enter **^[***, type a backslash (which does not appear on screen), then press **ESCAPE, SHIFT + 8**, then **RETURN**.

4. Set Bell String

Press **4** to enter a specific character sequence to indicate an error condition on your terminal (bell, flash, etc.). The following display appears:

```
The input error (bell) string is now ^G
Now enter the new sequence: ^G
```

Enter the new character sequence, with a limit of 5 characters. Press **RETURN** to accept.

Terminal Communications - Menu 7.1

The Maintenance Terminal Communications Menu (7.1) sets a variety of terminal communication parameters:

```
                D / E S A M  8 2 0
                Maintenance menu
                Maintenance Terminal Communications - 7.1

0   Return to Maintenance Terminal Setup menu - 7
1   Set Baud Rate
2   Set Parity
3   Set Stop Bits
4   Set Data Bits
5   Hardware Handshaking ON/OFF
6   Software Handshaking ON/OFF (XON-XOFF)
```

Enter the number of the desired option.

0. Return to Maintenance Terminal Setup Menu - 0

Press **0** to return to the Maintenance Terminal Setup Menu (7).

1. Set Baud Rate

Press **1** to set the D/ESAM Maintenance Terminal port's baud rate.

a. Press **SPACE BAR** to toggle through the values:

150	1200	9600
300	2400	19200
600	4800	38400

b. Press **RETURN** to accept the new baud rate. This value is now *temporarily* in effect for 60 seconds.

c. At the terminal, change the baud rate to match the value entered above, using the method specified in the terminal's installation manual.

d. Press **Y** to permanently accept the baud rate entered above. If no response is entered within 60 seconds, the system returns to the old parameters.

2. Set Parity

Press **2** to set the D/ESAM Maintenance Terminal port's parity.

- a. Press **SPACE BAR** to toggle through values or enter the first character of the desired value. Available values are:

EVEN	SPACE	NONE
ODD	MARK	

- b. Press **RETURN**. This value is now *temporarily* in effect for 60 seconds.
- c. At the terminal, change parity to match the value entered above, using method specified in the terminal's installation manual.
- d. Press **Y** (on terminal's keyboard) to permanently accept parity entered above. If no response is entered within 60 seconds, the system returns to the old parameters.

3. Set Stop Bits

Press **3** to set the D/ESAM Maintenance Terminal port's stop bits.

- a. Press **SPACE BAR** to toggle through values or enter the first character of the desired value. Available values are:

1
2

- b. Press **RETURN** to accept the new stop bits. This value is now *temporarily* in effect for 60 seconds.
- c. At the terminal, change the stop bits to match the value entered above, using the method specified in the terminal's installation manual.
- d. Press **Y** (on terminal's keyboard) to permanently accept the entry. If no response is entered within 60 seconds, system returns to old parameters.

4. Set Data Bits

Press **4** to set the D/ESAM Maintenance Terminal port's data bits.

- a. Press **SPACE BAR** to toggle through the values or enter the first character of the desired value. Available values are:

7
8

- b. Press **RETURN** to accept the new data bits. This value is now *temporarily* in effect for 60 seconds.
- c. At the terminal, change data bits to match the value entered above, using the method specified in the terminal's installation manual.
- d. Press **Y** (on terminal's keyboard) to permanently accept the entry. If no response is entered within 60 seconds, the system returns to the old parameters.

5. Hardware Handshaking ON / OFF

- a. Press **5** to enable or disable the D/ESAM Terminal port's hardware handshake.
 - If the mode is currently *inactive*, when pressed the display reads

```
WARNING!! RTS/CTS (pins 4 & 5) must be connected to the host
terminal (or tied together) or the maintenance terminal will
lock up! Please confirm (Y or N).
```

Press **Y** to continue or **N** to return to the Maintenance Terminal Communications Menu (7.1). If **Y** is pressed, you are asked to confirm. Upon confirmation, the display reads

```
Hardware handshake is now active
```

- If the mode is currently *active*, the warning is not shown and the display reads

```
Hardware handshake is now disabled
```

This value is now *temporarily* in effect for 60 seconds.

- b. At the terminal, change the Hardware Handshake to match that entered above, using the method specified in the terminal's installation manual.
 - c. Press **Y** (on terminal's keyboard) to permanently accept the Hardware Handshake option entered above. If no response is entered within 60 seconds, the system returns to the old parameters.
- ## 6. Software Handshaking ON / OFF (XON-XOFF)

- a. Press **6** to enable or disable the D/ESAM Terminal port's Software Handshake.
 - If the mode is currently *inactive*, when pressed the display reads

```
Software handshake is now active
```

- If the mode is currently *active*, the display reads

```
Software handshake is now disabled
```

This value is now *temporarily* in effect for 60 seconds.

- b. At the terminal, change the Software Handshake to match that entered above, using the method specified in the terminal's installation manual.
- c. Press **Y** (on terminal's keyboard) to permanently accept the Software Handshake option entered above. If no response is entered within 60 seconds, the system returns to old parameters.

NOTE

If problems in Maintenance Terminal functions arise or if you suspect a communications problem between D/ESAM and the Maintenance Terminal, use the status menu to determine D/ESAM's current settings. Refer to Chapter 3 for further information.

Maintenance Backup And Restore - Menu 8

The Maintenance Backup And Restore Menu (8) saves and recalls Maintenance configurations to and from PC (Personal Computer) disk.

```
D / E S A M 8 2 0
Maintenance menu
Maintenance Backup And Restore - 8

0 Return to Main Menu - 0
1 Virtual Machines from D/ESAM
2 Virtual Machines to D/ESAM
3 EEPROM "S" Records from D/ESAM
4 EEPROM "S" Records to D/ESAM
5 Create/Write Maintenance Disk
```

All backup and restore operations require the use of a personal computer with a serial port running a modem or terminal program. This program *must* provide the following capabilities:

- Capture and store data on a disc drive
- Read data from a disc drive
- Send data to a serial port

With each D/ESAM 820 system, GPS supplies a floppy disk which contains a terminal emulation program. If you wish to use this program for these maintenance functions, refer to the “**D/ESAM 820 Terminal Emulation Program**” section for complete details. With the appropriate PC connections made, proceed with **Backup** and **Restore** operations as follows:

Enter the number of the desired option.

0. Return to Main Menu - 0

Press **0** to return to the Main Menu (0).

1. Virtual Machines from D/ESAM

Press **1** to transfer all of D/ESAM’s virtual machine data to the PC’s serial port. Note that the text file includes a field for virtual machine “delay” values, as shown below in a sample printout for virtual machine 2:

```
V2, VTR2, 0, 5, 6, 7, 8, D1.0
```

The field “**D1.0**” indicates a virtual machine delay of 1 frame.

- a. Typically, a terminal program allows the user to select a filename for downloading and saving virtual data.
- b. Select an ASCII protocol to transfer the data.
- c. Close the file by instructing the terminal program.
- d. Strike any key to return to Menu 8.

2. Virtual Machines to D/ESAM

Press **2** to transfer virtual machine data from a PC file to D/ESAM. This overwrites any virtual machine data in D/ESAM. Note that this action also recalls the “delay” field.

- a. Select a filename for reading and uploading virtual data.
- b. Strike any key to return to Menu 8.

NOTE

A virtual machine text file which was saved using a software version *prior* to 4.0, can still be read by version 4.0 software. The default virtual machine delay value is 0 (zero), if no delay field is present.

3. EEPROM S Records from D/ESAM

Press **3** to transfer various other D/ESAM setup data (e.g., port communication configurations, module map, source to machine data, etc.) to the PC’s serial port.

- a. Select a filename for downloading and saving the data.
- b. Select an ASCII protocol to transfer the data.
- c. Close the file by instructing the terminal program.
- d. Strike any key to return to Menu 8.

4. EEPROM S Records to D/ESAM

Press **4** to transfer setup data from a PC file to D/ESAM. This overwrites any setup data in D/ESAM.

- a. Select a filename for reading and uploading setup data.
- b. Strike any key to return to Menu 8.
- c. Turn rack unit power *OFF* and *ON* to have the system recognize new setup data.

5. Create/Write Maintenance Disk

When the **Floppy Disk** option is installed, this function can be performed using the option’s DOS-compatible 3.5" floppy disk drive. Press **5** to create and write a Maintenance Disk. The display reads:

```
Disk Volume ID: [disk label]
This disk will be erased! Proceed? (Y or N)
```

- a. Press **N** to cancel and return to Menu 8 or press **Y** to generate a new Maintenance disk. The display reads

```
Enter a panel setup description message (38 characters max).
```

- b. Enter a phrase in the form of a question. For example:

```
Edit suite 3's setup disk. Load it?
```

This phrase (followed by the **YES/NO** prompt) appears on the CHANNEL STATUS DISPLAY whenever an attempt to read the setup disk is made. If you attempt to write to the setup disk from the control panel, a message alerts you that the current disk can not be overwritten.

If a message is not entered, the system generates a default message which reads:

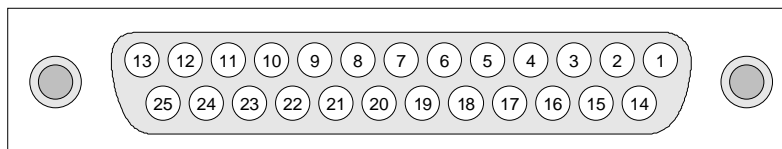
```
Do you want to load system setup disk?
```

- c. Press **ENTER** to accept the message string and begin writing the Maintenance (Setup) disk. Note that all Maintenance disks contains all virtual machines currently in D/ESAM, all EEPROM data and Register 0.

GPI Connection

D/ESAM's GPI (General Purpose Interface) connection (**J3 AUX**, female contacts) provides active low inputs and can be driven by TTL logic or by contact closures to ground. The table below lists GPI connection pinouts:

GPI Pinouts



Pin	Specification	Note	Pin	Specification	Note
1			14		
2	Transition Start Bus 4		15		
3	Transition Start Bus 3		16		
4	Transition Start Bus 2	a.	17	GND	
5	Transition Start Bus 1	a.	18	MIX OUT CH. 1	c.
6	D/MEM Trigger / PVW H	d.	19	MIX OUT CH. 2	c.
7	D/MEM Reset / PVW G	e.	20	MIX OUT CH. 3	c.
8	PVW F	b.	21	MIX OUT CH. 4	c.
9	PVW E	b.	22	Panel Transition	f.
10	PVW D	b.	23	PVW OFF	b.
11	PVW C	b.	24	PVW R	b.
12	PVW B	b.	25	PVW AUX	b.
13	PVW A	b.			

Note

- a. GPI's for Transition Start Bus 1 and Bus 2 can be re-configured through the RS-232 terminal.
- b. GPI is interlocking. New GPI pulse accepts new Preview source and cancels previous Preview source.
- c. When a specific channel(s) is pulled low (active), the remaining Mix Out channel(s) is pulled high.
- d. This GPI can be switched between "**Preview Select**" and "**D/MEM trigger**" functions. Refer to the "**System Operations - Menu 5**" section for instructions on configuring the GPI port. When set to "D/MEM trigger" capability, a GPI can be used to trigger one of D/ESAM's three D/MEM functions: **Save**, **Recall** and **Recall Preset**. Refer to Chapter 3 for instructions.
- e. This GPI can be switched between "**Preview Select**" and "**D/MEM trigger**" functions. Refer to the "**System Operations - Menu 5**" section for instructions on configuring the GPI port. When set to "D/MEM trigger" capability, a GPI can reset the register value in the active register group.
- f. A GPI pulse can start any bus enabled for auto-transition.

D/ESAM 820 Terminal Emulation Program

With each D/ESAM 820 system, GPS provides a floppy disk which contains a Terminal Emulation program. This program utilizes a PC to access all maintenance terminal functions and to save and restore D/ESAM virtual machine data. See the “**Maintenance Terminal Procedures**” and “**Maintenance Backup and Restore - Menu 8**” sections for information on D/ESAM’s backup and restore functions.

The Terminal Emulation Program is contained on a single 720K 3.5" floppy disk and runs on PC systems which use DOS 2.1 or higher. The program works with the following computer types and associated graphics displays:

- Computer types: PC, XT, AT, 386, 486, Pentium and PS2
- Graphics Displays: Monochrome, HGC, EGA and VGA

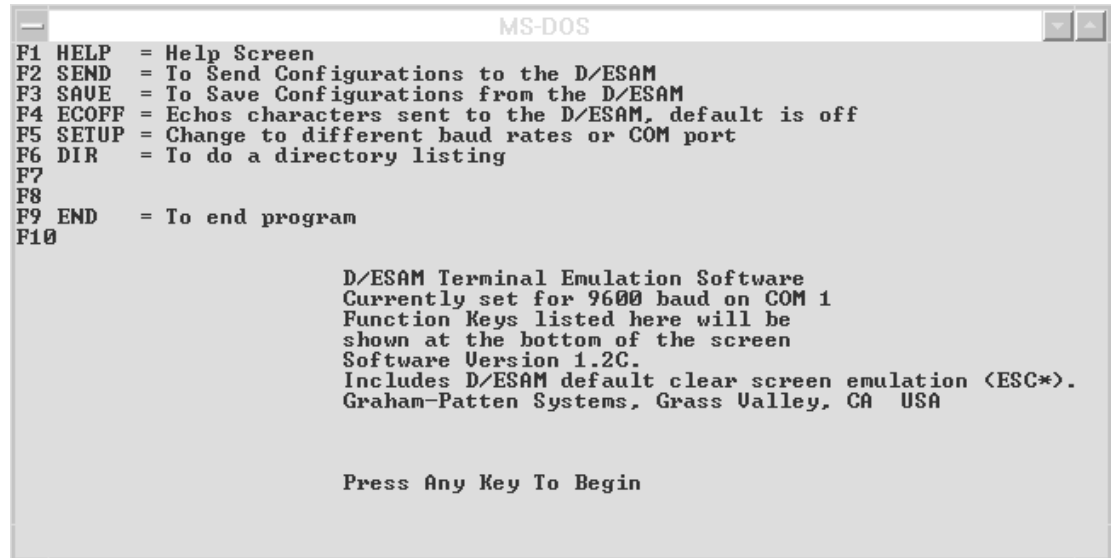
Use the following procedure to connect your PC to the D/ESAM rack unit:

1. Provide an RS-232 cable of sufficient length to reach between the D/ESAM rack unit’s rear panel and your PC’s location.
2. Connect one cable end to the maintenance port (**J1**) on the D/ESAM and the other end to the **COM 1** or **COM 2** port on the PC. Refer to the “**RS-232C Terminal**” section for D/ESAM to IBM 9-pin and 25-pin connector hook-up information. Three connections are required for proper operation:
 - Signal ground
 - Transmit data
 - Receive data
3. If you experience connection problems or if you already have interconnect wiring in your facility, you may wish to swap pins 2 and 3 of the D/ESAM **J1** connector. Refer to the “**RS-232C Terminal**” section for instructions on using the null modem jumpers on the Master Processor Board.
4. Using normal DOS copy procedures, copy the Terminal Emulation program to your PC’s hard drive, for fast boot-up and read/write operations.
5. Set the PC’s baud rate, data bits, stop bits and parity to the same settings as D/ESAM’s maintenance port. Refer to the “**TEP Setup Screen**” section for information on the Terminal Emulation program’s Setup function and the “**Maintenance Terminal Setup - Menu 7**” section for procedures on setting terminal communication parameters.

The following sections detail each Terminal Emulation Program (TEP) screen.

TEP Boot-Up Screen

On the PC, change to the drive and directory containing the **DESAM.EXE** program. From the DOS prompt, type **DESAM** to run the Terminal Emulation program on your PC. **The Boot-Up Screen appears as shown below.**



```
MS-DOS
F1 HELP = Help Screen
F2 SEND = To Send Configurations to the D/ESAM
F3 SAVE = To Save Configurations from the D/ESAM
F4 ECOFF = Echos characters sent to the D/ESAM, default is off
F5 SETUP = Change to different baud rates or COM port
F6 DIR = To do a directory listing
F7
F8
F9 END = To end program
F10

D/ESAM Terminal Emulation Software
Currently set for 9600 baud on COM 1
Function Keys listed here will be
shown at the bottom of the screen
Software Version 1.2C.
Includes D/ESAM default clear screen emulation (ESC*).
Graham-Patten Systems, Grass Valley, CA USA

Press Any Key To Begin
```

Terminal Emulation Program Boot-Up Screen

The PC is now in Terminal mode and it obeys conventions outlined in the “**Maintenance Terminal Procedures**” section.

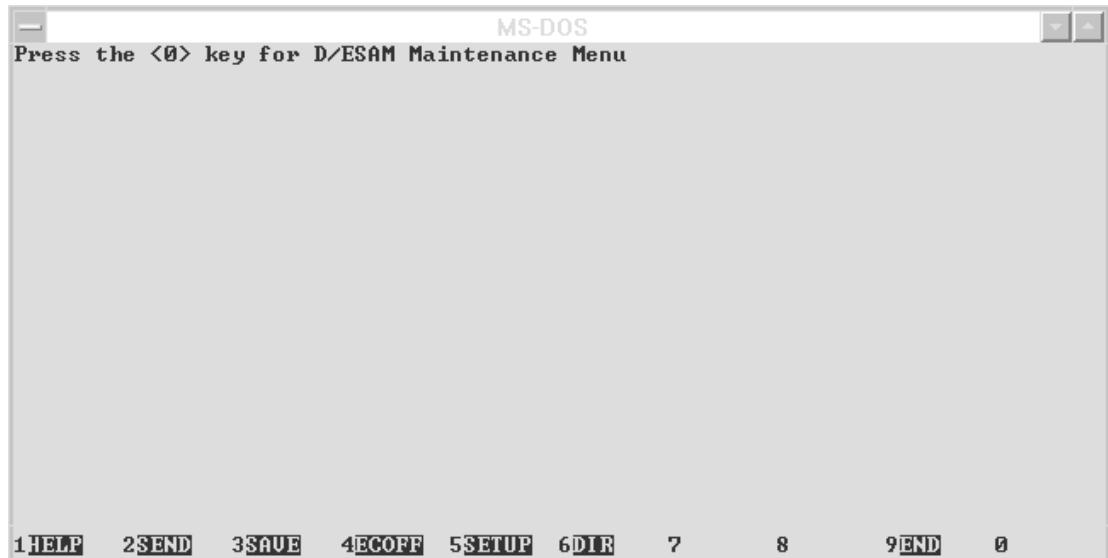
The **Boot-Up Screen** presents a directory of functions supported by the Terminal Emulation Program. Function key labels and their definitions are displayed on this screen only; thereafter, they are listed along the bottom of the Standard Screen.

The **Boot-Up Screen** also displays the communications port in use, the baud rate and the software version of the Terminal Emulation Program. If required, use the Setup Screen (**F5**) to change baud rate and/or communications port.

Press any key to switch to the **Standard Screen**.

TEP Standard Screen

The figure below illustrates the **Standard Screen**:



Terminal Emulation Program Standard Screen

The **Standard Screen** is effectively the Terminal Emulation Program's "home" screen. All active function keys are listed along the bottom of the screen, with abbreviated titles. Press the desired function key to switch to a specific menu or execute a function.

Note that function **F4**, Echo, is an alternate action function. When the label reads **ECOFF**, pressing **F4** turns Echo ON; when the label reads **ECON**, pressing **F4** turns Echo OFF. When Echo is enabled, keys which are pressed appear on screen.

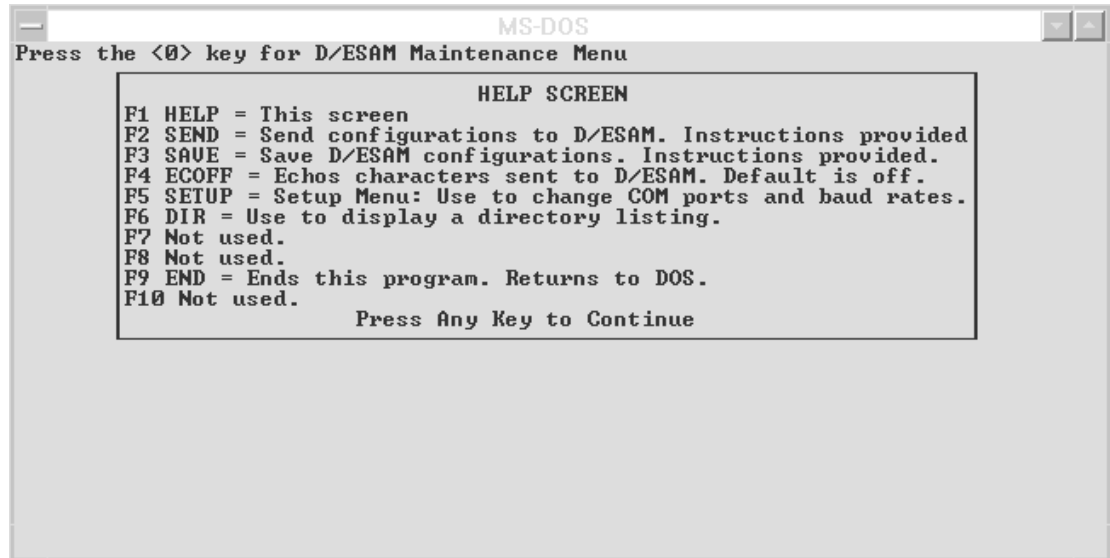
NOTE

It is recommended that you leave Echo OFF, with the function key label reading "ON."

To end the Terminal Emulation Program, press **F9**. The program ends and the DOS prompt reappears.

TEP Help Screen

Pressing **F1** from the **Standard Screen** brings up the Terminal Emulation Program's **Help Screen**.



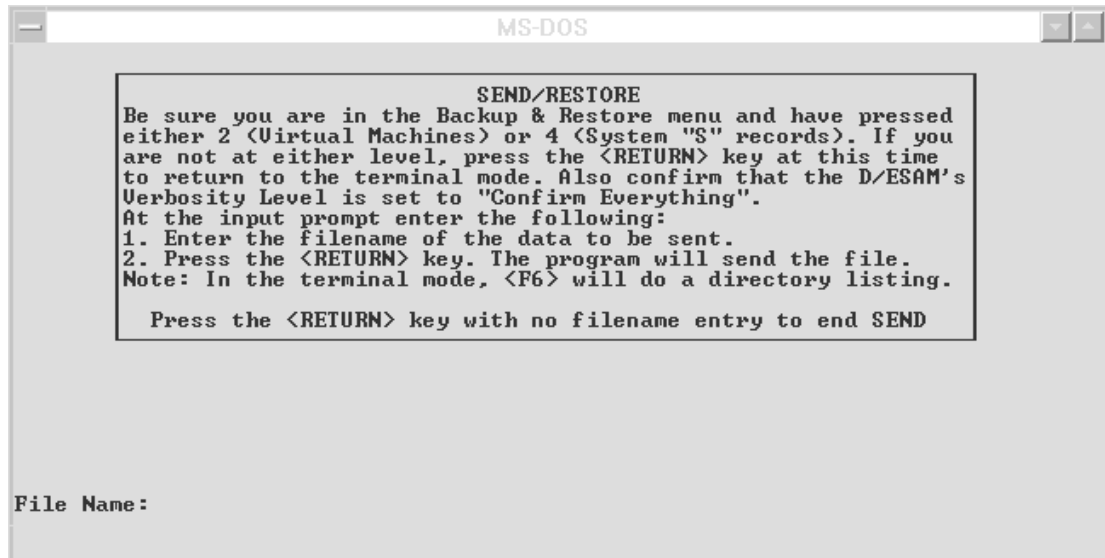
Terminal Emulation Program Help Screen

The **Help Screen** summarizes the functions available on the Terminal Emulation Program and repeats information which was displayed on the **Boot-Up Screen**.

Press any key to return to the **Standard Screen**.

TEP Send And Save Screens

Pressing **F2** from the **Standard Screen** brings up the Send Screen.

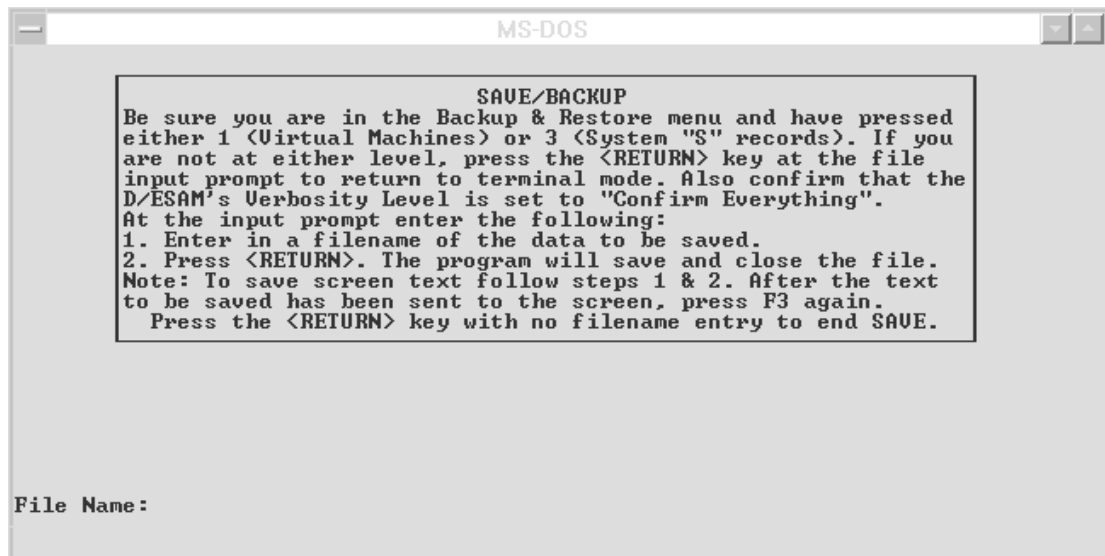


Terminal Emulation Program Send Screen

The **Send Screen** sends a file containing either Virtual Machine or EEPROM "S" records from the PC to D/ESAM. Follow the procedures on screen to restore a file from the PC to D/ESAM. Use standard DOS conventions for all filenames.

Press **RETURN** with no filename entry to return to the **Standard Menu**.

Pressing **F3** from the **Standard Screen** brings up the **Save Screen**.



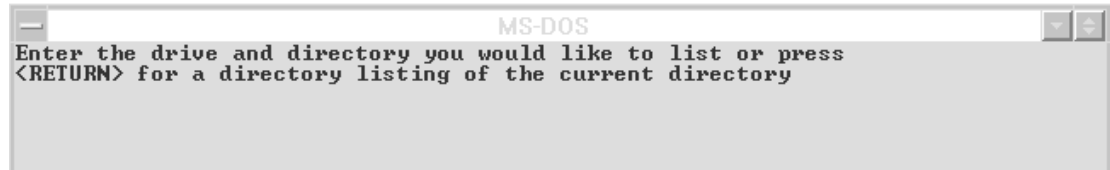
Terminal Emulation Program Save Screen

The **Save Screen** saves a file containing either Virtual Machine or EEPROM S records from D/ESAM to PC. Follow the procedures outlined on screen to backup a file from D/ESAM to PC. Use standard DOS conventions for all filenames.

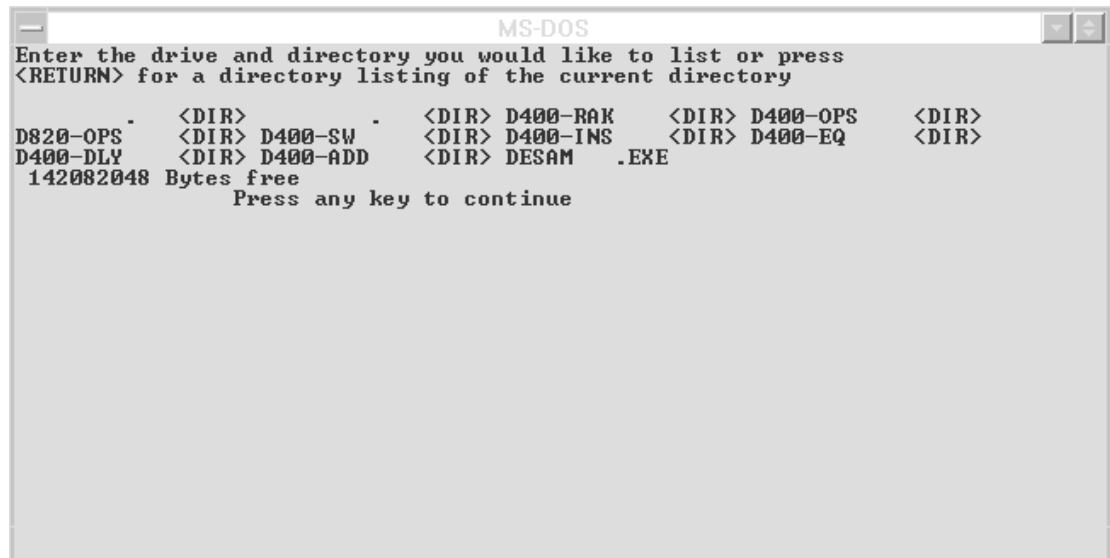
Press **RETURN** with no filename entry to return to the **Standard Menu**.

TEP Directory Screen

Pressing **F6** from the **Standard Screen** clears the screen and displays a message.



Press **RETURN** to display the Terminal Emulation Program's **Directory Screen**.

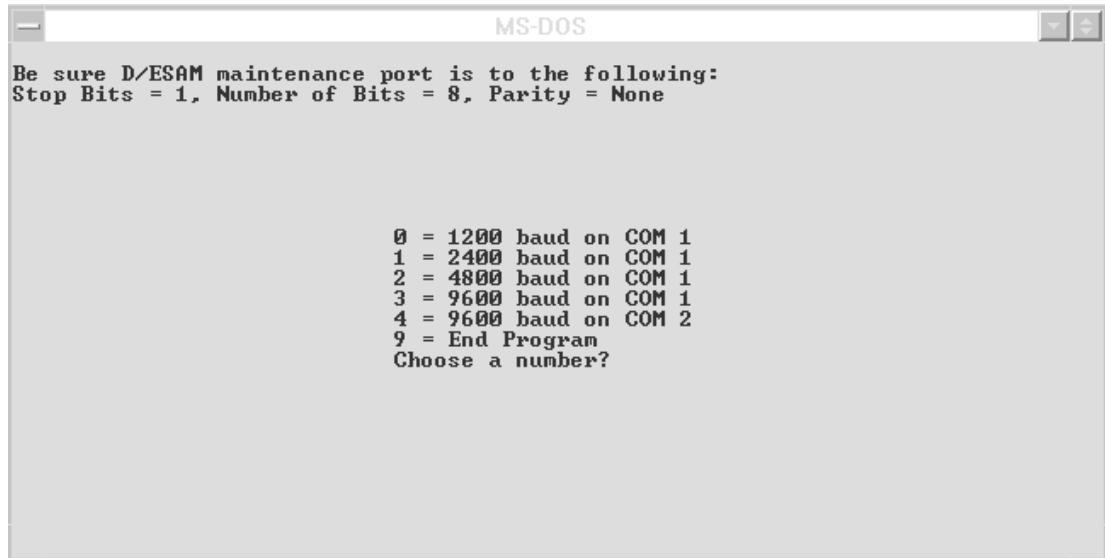


Terminal Emulation Program Directory Screen

The **Directory Screen** is useful for checking if files are present in the selected directory on disk, in preparation for both the **Save** and **Restore** functions.

TEP Setup Screen

Pressing **F5** from the **Standard Screen** brings up the Terminal Emulation Program's **Setup Screen**.



Terminal Emulation Program Setup Screen

The **Setup Screen** is used to change the baud rate or the communications port which the PC is currently using to communicate with D/ESAM. Note that the default Terminal settings of D/ESAM's maintenance port (**J1**) must be set to the following:

- Stop Bits: 1
- Data Bits: 8
- Parity: None

Make your selection and press **ENTER**. The program automatically returns to the **Standard Screen**.