Super Genesis I/O

User's Manual

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Audio Visual Labs

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*****RELEASE NOTE*****

This release of the Super Genesis I/O supports all the Procall 5 and X functions supported by the Genesis Board Set. The Cartridge Memory and Tapetrak features described in this manual will be released in April. Please complete and return the enclosed warranty card to assure prompt delivery of the April update.

Tray Position Command

A tray position command has been added to Procall X. This command in conjunction with the **Super Dove and Simda** projectors will provide random access slide tray control. Used with the **Super Switcher**, it provides volume level setting and video source selection. Contact your AVL representative for more information on these and other AVL products.

Channel Command

Procall X now supports 4 multiplexed channels on each cue output (OUT 1 and OUT 2). This feature quadruples the number of Super Family products that can be controlled on a cue line.

File Compatibility

Files generated using Procall UX 1.70 can be editting using older versions of Procall X and vice versa. In addition, files generated using Procall UE 5.70 can be editted using older versions of Procall 5 and vice versa. The only execption, the AUX commands, is described below.

Aux Commands

Procall X aux command assignments have been updated to make room for the 3rd aux relay available on the Super Dove. A future release of Procall will support the use of this relay. The table below shows the relationship between old Procall and Procall UX 1.70:

	Screen #				
	1	2	3	4	5
Old	AB	CD	EF	HI	JK
UX 1.70	A C	D F	G I	J L	M O

Editting an old cue list with Procall UX 1.70 will automatically convert the aux cues to the new format. In addition, the program will run the same under either Procall.

Editting Procall UX 1.70 programs with the old Procall will require aux cues to be deleted and re-entered.

1. REVISIONS

1-28-90 : Working Copy
3-22-90 : Release 1.0

2. GENERAL

The AVL Super Genesis I/O is a complete package, including software, that adds all the functions required for recording and playback of cues and clock tracks to your MS-DOS computer. Installation is as simple as plugging in the power cord and attaching the RS-232 cable from the Super Genesis I/O to your computer's "com" port.

Once equipped with the ability to generate AVL cues, your computer provides a single, easy to use tool to control your entire presentation room. AVL cues can be sent from your computer, through Super Genesis I/O, to AVL controllers. These controllers consist of all units which operate from Procall 5 or X cues, including:

-Room-mate	*lighting controller*
-Super Dove	*slide projector controller*
-Super X-15	*misc. low voltage device controller*
-Super Switcher	*A/V switcher*
-Show Manager	*automated show starter and monitor*

AVL cues from the Super Genesis I/O can also be recorded directly onto tape, along side a show's audio tracks. The cue output of the tape deck can then be sent directly to Super Family controllers. This provides perfect synchronization of lighting, slide projectors, audio, video, and misc. low voltage devices.

In addition, the Super Genesis I/O can write cues onto credit card size memory cassettes, known as cartridge memories. These cartridges can then be played back through the Super Genesis I/O or they can be inserted directly into one of the Super Family controllers. This is a very powerful capability that provides:

-multi-media speaker support without a computer
-Sync to clock track without a computer

With the Super Genesis I/O's Tapetrak function, programmers efficiency and accuracy during editting and fine tuning of shows is enhanced. This is due to tapetrak's ability to cue the tape to match the program's position in the cue list. In effect, during editting and fine tuning, it does for tape synchronization, what Positrak does for slide synchronization.

3. SUPER GENESIS I/O CONTENTS

The Super Genesis I/O package contains the following components:

- o The Super Genesis I/O itself
- o An RS-232 cable and adapter(may be required)
- o Master Procall X and 5 diskette

4. SAFETY INSTRUCTIONS

Preparation:

- o Before operating the Super Genesis I/O, read and understand all the following Safety Instructions as well as the Operating Instructions contained in this manual.
- o Heed all WARNINGS and FOLLOW ALL INSTRUCTIONS in this manual.
- o Retain the instructions for future reference.

Environmental Requirements:

Temperature:	0 to 45 degrees C (32 to 113 degrees F)	
Humidity:	10 to 90 percent	
Altitude:	Sea level to 12,000 ft.	
Voltage:	90 to 110 Volts A.C.) 108 to 132 Volts A.C.) 198 to 242 Volts A.C.) 216 to 264 Volts A.C.)	Selectable
	50 to 60 Hertz	

Location and Hookup:

- Use a properly grounded three prong AC outlet which provides one of the suitable operating voltages.
- Check that the voltage selector switch on the side of the unit is set to the proper position.
- The Super Genesis I/O was designed to work properly with either 50 or 60 Hz.
- The Super Genesis I/O should not be used near water.
- The Super Genesis I/O should not be used too close to or directly over a heat source.
- The Super Genesis I/O should be positioned so that there is proper ventilation. Make sure the air vents are not blocked.
- The power supply cord should be positioned so that it is not walked on or pinched by other items.

Servicing:

- The user should not attempt to service the unit. Servicing should be performed only by an AVL Repair Center in the US and Canada or your authorized AVL dealer outside the US and Canada. Contact your dealer or call the AVL service department for an SRA # when any of the following have occurred.
  - Objects have fallen, or liquid has been spilled into the unit.
  - The Super Genesis I/O has been exposed to rain.
  - The Super Genesis I/O does not appear to operate normally or exihibits a marked change in performance.
  - The Super Genesis I/O has been dropped, or the cover has been damaged.
  - The power cord is damaged.

5. LOCATION AND FUNCTION OF CONTROLS

5.1. RACK MOUNT VERSION

5.1.1. REAR OF UNIT

1 - Mag Tape Input (2 RCA, 1 Male and 1 Female XLR Receptacles)

This input to the Super Genesis I/O carries clock or cue data.

2 - REMOTE CUE SOCKET

This jack accepts standard Kodak Hand Controls to provide support for the following Procall functions:

- Goto prev run and hold -- F9 -- (REV)
- Run -- F10-- (FWD)

In addition, the hand control is used for running speaker support shows out of cartridge memory.

- Goto prev run and hold -- (REV)
- Run -- (FWD)
- Goto next run and hold -- (FOCUS)

3 - DIGITRAK CONNECTORS (1-male and 1-female)

Two 9-pin D connectors provide communication with other Super Family products.

4 - AC Power Cord

This cord connects the Super Genesis I/O to an appropriate AC outlet.

5 - Mag Tape Output Connectors (1-RCA and 1-XLR-male OUT 2)
(1-RCA and 1-XLR-male OUT 2)

The Super Genesis I/O outputs cue and clock track information through these connectors.

6 - Voltage Selector Switch and Fuse Holder (on side of unit)
This switch sets the unit for operation at 100VAC, 120VAC, 220 VAC, or 240VAC. In addition, the power supply's fuse is located in a center compartment of the switch.

7 - Modem Connector

1 9-pin D connector provides communication with an MS-Dos computer, when connected to the computer's "com" port.

8 - Keyboard Connector

Future use.

9 - Tape Control/Feedback

This 15 position D-connector to interface to the tape deck's Tach, play, stop, pause, fast forward, and rewind lines. This must be connected to the tape deck for proper operation of *tapetrak*.

10 - Main fuse (1/2 amp)

5.1.2. FRONT OF UNIT

1 - AMP LED

When lit, indicates that the unit is receiving a magnetic tape signal of adequate amplitude for processing.

2 - Message Center Controls

These buttons enable the user to make menu selections from the extensive Super Genesis I/O options. (Described later in this manual)

3 - Message Center LCD Panel

Backlit LCD panel for the display of option, status, and error information.

4 - Reset

When the Super Genesis I/O is in INTERNAL mode pressing this button will cause the Super Genesis I/O to goto the first cue in the cartridge memory. This should be done when you first insert a cartridge memory. If this button is pushed again within 5 seconds the Super Genesis I/O will issue a HOME command over the mag tape output lines.

5 - Error Indicator

When Flashing indicates that the Super Genesis I/O has detected an error of some type. The LCD panel will display a message(s) indicating the type of error(s). When in EXT mode pushing the RESET button will clear the error led.

6 - Alert Indicator

When flashing indicates that a Show Manager is in control of the show.

7 - Ok indicator

When flashing indicates that the Super Genesis I/O is operating in an error free mode.

8 - LCD Contrast Adjustment

This hole provides access to the LCD contrast pot. A small plastic flat blade screw driver can be used to adjust the contrast as desired.

9 - Keyboard Connector

For future use.

10 - Cartridge Memory Connector

Cues can be written into and read from cartridge memories (available separately from AVL). More importantly, cues on cartridge memory can be sent out over either or both of the 2 mag tape output channels.

11 - Power Switch
This switch controls power to the Super Genesis I/O.

5.2. DESK-TOP VERSION

5.2.1. REAR OF UNIT

1 - Main Fuse (1/2 amp)

2 - AC Power Cord

The cord connects the Super Genesis I/O to an appropriate AC outlet.

3 - Mag Tape Output Connectors (1-RCA and 1-XLR-male OUT 2)
(1-RCA and 1-XLR-male OUT 2)
The Super Genesis I/O outputs cue and clock track information through these connectors.

4 - Power Switch

This switch controls power to the Super Genesis I/O.

5 - Voltage Selector Switch and Fuse Holder (on side of unit)
This switch sets the unit for operation at 100VAC, 120VAC, 220 VAC, or 240VAC. In addition, the power supply's fuse is located in a center compartment of the switch.

6 - Tape Control/Feedback

This 15 position D-connector to interface to the tape deck's Tach, play, stop, pause, fast forward, and rewind lines. This must be connected to the tape deck for proper operation of *tapetrak*.

5.2.2. FRONT OF UNIT

1 - Keyboard Connector

Future use.

2 - Modem Connector

1 9-pin D connector provides communication with an MS-Dos computer, when connected to the computer's "com" port.

3 - DIGITRAK CONNECTORS (1-male and 1-female)

Two 9-pin D connectors provide communication with other Super Family products.

4 - Mag Tape Input (2 RCA, 1 Male and 1 Female XLR Receptacles)

This input to the Super Genesis I/O carries clock or cue data.

5 - REMOTE CUE SOCKET

This jack accepts standard Kodak Hand Controls to provide support for the following Procall functions:

- Goto prev run and hold -- F9 -- (REV)
- Run -- F10-- (FWD)

In addition, the hand control is used for running speaker support shows out of cartridge memory.

- Goto prev run and hold -- (REV)
- Run -- (FWD)
- Goto next run and hold -- (FOCUS)

6 - Message Center LCD Panel

Backlit LCD panel for the display of option, status, and error information.

7 - Error Indicator

When Flashing indicates that the Super Genesis I/O has detected an error of some type. The LCD panel will display a message(s) indicating the type of error(s). When in EXT mode pushing the RESET button will clear the error led.

8 - Alert Indicator

When flashing indicates that a Show Manager is in control of the show.

9 - Ok indicator

When flashing indicates that the Super Genesis I/O is operating in an error free mode.

10 - LCD Contrast Adjustment

This hole provides access to the LCD contrast pot. A small plastic flat blade screw driver can be used to adjust the contrast as desired.

11 - Message Center Controls

These buttons enable the user to make menu selections from the extensive Super Genesis I/O options. (Described later in this manual)

12 - Reset

When the Super Genesis I/O is in INTERNAL mode pressing this button will cause the Super Genesis I/O to goto the first cue in the cartridge memory. This should be done when you first insert a cartridge memory. If this button is pushed again within 5 seconds the Super Genesis I/O will issue a HOME command over the mag tape output lines.

13 - AMP LED

When lit, indicates that the unit is receiving a magnetic tape signal of adequate amplitude for processing.

14 - Cartridge Memory Connector(side of unit)

Cues can be written into and read from cartridge memories (available separately from AVL). More importantly, cues on cartridge memory can be sent out over either or both of the 2 mag tape output channels.

6. INSTALLATION WITH AN MS-DOS COMPUTER

The process of installing the Super Genesis I/O is simple and independent of the type of MS-DOS computer being used.

1. Make sure both the Super Genesis I/O and computer are powered off.

2. Check the "Voltage Selector and Fuse Holder's" position. If it does not match the voltage being used rotate it using a pair of needle nose pliers it does match.

3. Connect the Super Genesis I/O to your computer's "com" port using the supplied RS-232 cable (and adapter, if required. If you are using a serial printer, connect it to com port 1 and the Super Genesis I/O to com port 2.

If you have a Genesis board set installed, it will be ignored while the Super Genesis I/O is installed. You do not need to remove it. If you want to use the Genesis board set, simply remove the Super Genesis I/O cable from your computer.

4. Plug in the Super Genesis I/O Power cord to the AC outlet.

5. Turn on the Super Genesis I/O, then your computer. On the Super Genesis I/O "AVL SGEN 1.0(C)" is briefly displayed. This message will be followed by COM CHANNEL ERR, since the Super Genesis I/O has not communicated with the computer yet. Use the message center to place the Super Genesis I/O into EXT mode.

6. Insert the Procall X and 5 diskette into the A: drive of your computer. Type:

A:Procallx<CR>
or
A:Procall5<CR>

This will first run some diagnostics to determine which com port the Super Genesis I/O is attached to and then test communications with the Super Genesis I/O.

If communication with the Super Genesis I/O is successful the following message will be displayed on your computer's screen:

Hello, I am Genesis from AVL. What is your name?

Type in your name at this point, followed by a carriage return. Now the computer monitor will display the Procall programming field and the SUper Genesis I/O's message center will display PROCALL O.K..

If communication with the Super Genesis I/O is unsuccessful the following message will be displayed on your computer's screen:

Super Genesis I/O not responding on either COM1 or COM2. Press any key to return to DOS.

7. MESSAGE CENTER AND OPTION SELECTION

The message center consists of a 16 character LCD and the 4 push buttons below it. The LCD dispalys menu selections accessed by the buttons labeled: Next, Previous, Step, and Select. When not in the menu or error mode, the Message Center displays:

```
PROCALL O.K. --------->EXT MODE (OK indicates that
                       the computer interface is ok.)

MT PASS_THRU --------->PASS_THRU MODE

INT "CUE#"TAB--------->INT MODE
                       where "CUE#" = cue position in
                       cartridge memory and TAB = the
                       next TAB in cartridge memory.
```

7.1. OPTION SELECTION

Option selction on the Super Genesis I/O simply involves locating the desired menu and then selecting which of the possible options is desired. The location menus and selection of options is accomplished via the following buttons:

NEXT	display the next menu
PREV	display the previous menu
STEP	step the cursor through the choices within that menu
SELECT	select the choice currently highlighted by the cursor and store it in non volatile memory

7.2. OPTION DESCRIPTIONS

UNIT NUMBER 01

This information is used when the Super Genesis I/O is connected to show Manager. Values between 01 and 30 are valid. When the cursor is on the units digit, each time the SELECT button is pushed the unit number will be increased. When the cursor is positioned on the tens digit, each time the SELECT button is pushed the tens digit will increase and the unit digit will be reset to 0.

POSITRAK OUTPUT ON OFF

When executing cues from cartridge memory this turns Positrak output on or off.

MODE EXT INT PASS

EXT — This mode is used when Super Genesis I/O is running from a computer. This could be called "Super Board Set" mode.

PASS-THRU — In this mode Mag tape cues are sent out channel 1.

INT — This mode is used when the Super Genesis I/O is running from a Cartridge Memory.

CLOCK EDIT INPUT

Used in INT mode only. This will place the Super Genesis I/O in clock edit mode or clock input mode.

7.3. ERROR MESSAGES

MT CLOCK BAD	When in INT or CLOCK INPUT modes, this message is displayed if the clock input is bad.
MT POOR	When in PASS-THRU or EXT modes, this message is displayed if the input contains tolerable errors.
MT BAD CUE	When in PASS-THRU or EXT modes, this message indicates that one or more cues contained intolerable errors.
MT OFF	Mag Tape off.
DIGITRAK ERR	Indicates that the Super Genesis I/O has received a bad Digitrak input.
CONFIG ERR	Indicates that the a hardware module inside the Super Genesis I/O has failed self-diagnostics.
CARTRDG MEM BAD	Data error found inside cartridge memory.
CARTRDG MISSING	Cartridge not plugged in properly or is bad.
CART MEM WRIT PR	Cartridge write requested on a write protected cartridge memory.
COM CHANNEL ERR	Super Genesis I/O unable to communicate with host while in External Mode.

8. CARTRIDGE MEMORY

Cartridge Memory provides an alternative to running from cues stored on magnetic tape or in a computer. They are as portable as running from magnetic tape, yet they provide some of the same benefits found when running from computer. These benefits include the ablility to sync to:

-tapes containing clock track only.
-speaker operated hand control.
-or a combination of the two.

With a 3 button hand control, a speaker can control lighting (Roommate), slide projectors, and auxiliary equipment (curtains, screens, etc.). Once a presentation room is under the control of AVL equipment, an AV person can customize it for a particular use by simply programming a Cartridge Memory and placing it in the Super Genesis I/O. When appropriate, the cartridges can be placed directly into the Super Family controller products in use. (see the applications section for examples)

When executing from Cartidge Memory and using an audio tape for part or all of the presentation, Time, Stop, and Home cues provide tape control.

TIME If a time cue is encountered and the tape is not running, the play relay will be pulsed to start the tape deck.

STOP If a stop cue is encountered and the tape is running, the stop relay will be pulsed to stop the tape deck.

HOME If a home cue is encountered and the tape is running, the rewind relay will be pulsed to rewind the tape deck.

Speaker input to the Super Genesis I/O can come from a kodak hand control or any dry contact closure. A standard Kodak Hand Control (or equivalent) provides access to the following Procall functions:

- Goto prev run and hold -- (REV)
- Run -- (FWD)
- Goto next run and hold -- (FOCUS)

9. SHOW MANAGER INTERFACE

As with all other Super Family products, the Super Genesis I/O interface with AVL's Show Manager to provide feedback and auto-show capabilities. There are 2 basic operational modes in the Show Manager. The first is "Control" and the second is "Monitor".

9.1. SHOW MANGER CONTROL MODE

In "Control" mode the Show Manager starts the show and monitors the show as it runs. The Super Genesis I/O can operate in one of two modes when under Show Manager control. They are internal mode and external mode.

In internal mode the Show Manager commands the Super Genesis I/O via the digitrak link. Here cartridge memory will take the place of the audio tapes's cue track and the Super Genesis I/O will take the place of the tape deck. This mode can be useful when it is not desirable to place the cues on a tape track.

In external mode the Show Manager is connected to a tape deck (the same as it would be if the Super Genesis I/O were not there). However, the tape deck only contains clock track. The show's cues are resident in the cartridge memory. Here a Show Manager Home disables positrak output on the Super Genesis I/O. Positrak output is then re-enabled when the Show Manager searches for the first cue.

9.2. SHOW MANAGER MONITOR MODE

In "Monitor" mode the Show Manager initially, will make sure the Super Genesis I/O is there. During a show the Show Manager will check for the following error conditions:**

- Mag Tape Errors (external clock mode)
- Cartridge Memory Error.
- Computer Interface Error
- Keyboard Error (Future)

**These same errors are checked and will be reported when in "Control" mode.

10. TAPETRAK

Tapetrak is a new programming tool that provides synchronization between the tape deck and the program being developed. It eliminates the need to manually search the tape for the position that corresponds to the current cue in the program.

Using *tapetrak* requires that the *tape control/feedback cable* be connected to the tape deck. Once this is done *tapetrak* can be started by enabling it from your computer. This is done in a manner similar to the enabling/disabling of *Positrak*.

Tapetrak relies on 2 feedback mechanisms. The first, used for high speed coarse searching, is a tach pulse provided by the tape deck electronics. The second, used for normal speed final positioning, is clock track. Therefore, in addition to the cable between the **Super Genesis I/O** and the tape deck, for proper operation of *tapetrak* the tape being used must have the clock track that corresponds to the program being developed.

When a goto is performed during an editting session, tapetrak will position the tape to 5 seconds before the next time cue, if the goto landed between time cues. If the goto is to a time cue, then tapetrak will positon the tape to 5 seconds before that time cue.

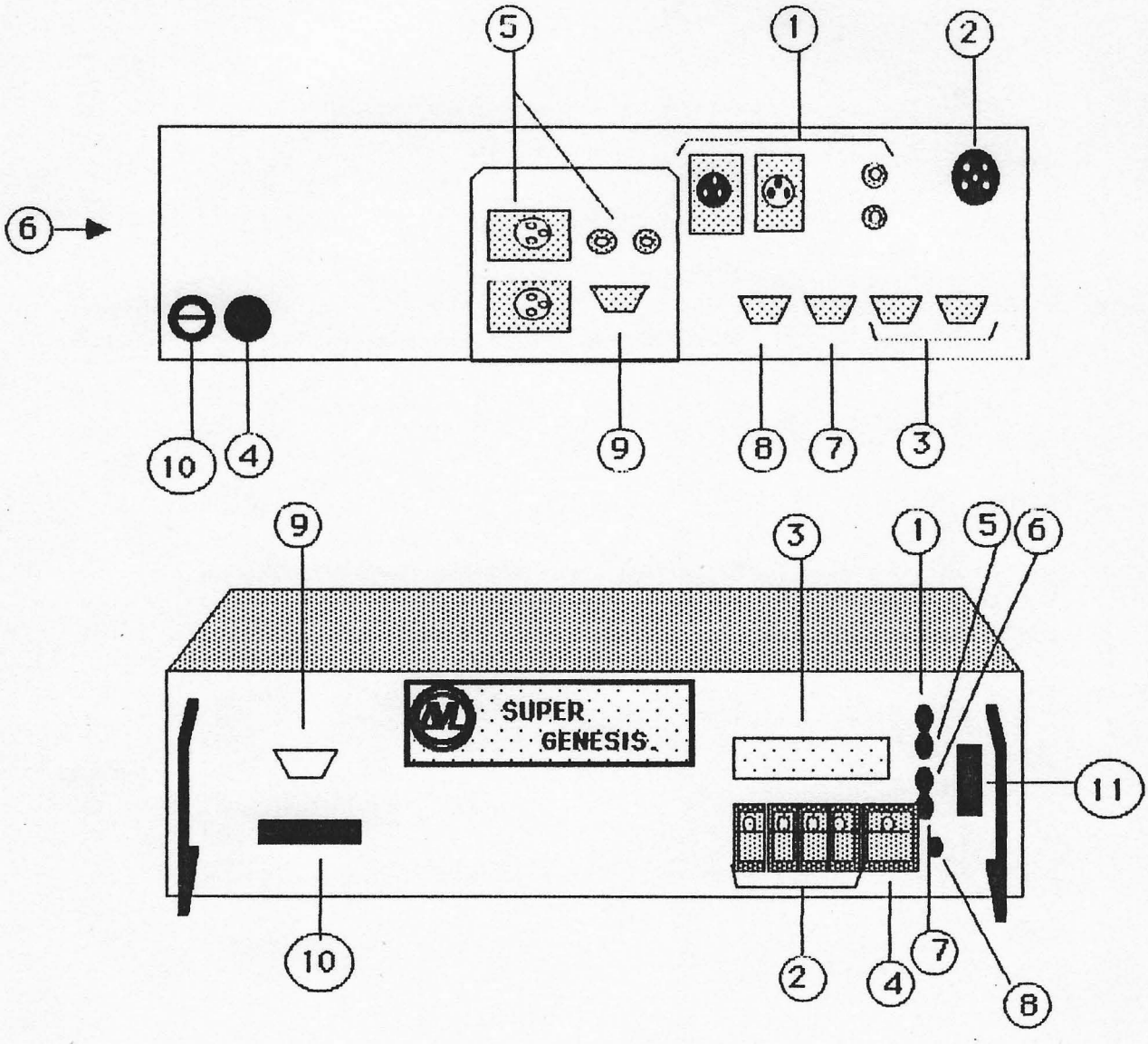

FIG. 1 SUPER GENESIS
RACK MOUNT VERSION

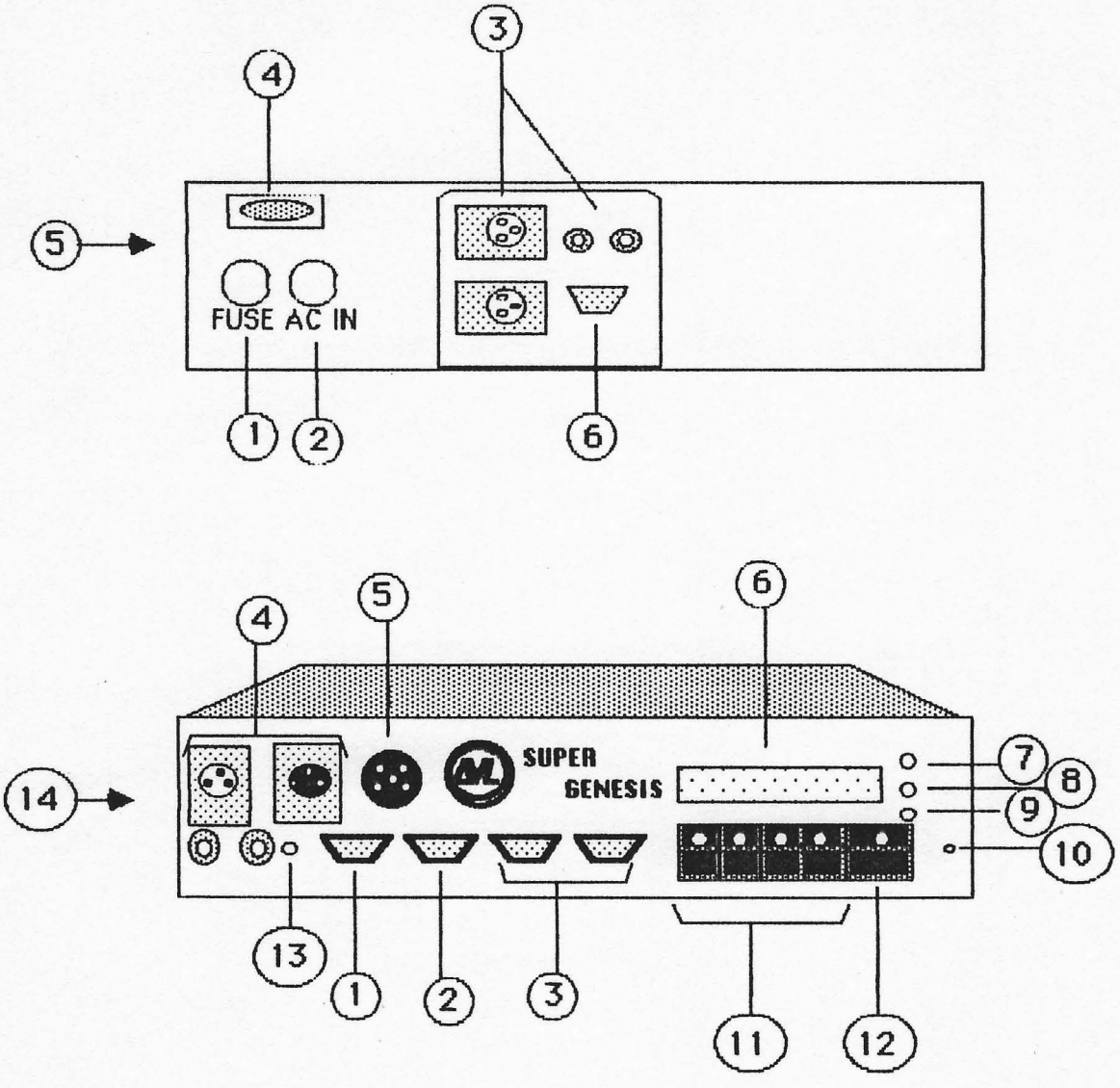

FIG. 2 SUPER GENESIS
DESK-TOP VERSION