

**AdLib®**  
**GOLD**

# Developer Toolkit

Reproduction

# **Ad Lib Gold Developer Toolkit Version 1.01**

## **Release Notes**

### **RL2DRV.EXE**

The current version of the ROL2 playback TSR does not check for the presence of other drivers. The drivers used by RL2DRV.EXE must be loaded prior to executing this TSR.

When loading the ROL2 playback driver, the current directory must be the directory where the .SMP files are located.

### **SAMPL.EXE**

The current version of the Sample Editor does not use the AD Lib Gold drivers. It uses linkable libraries that conflict with the drivers.

In order to execute the Sample Editor, all drivers must be removed from memory, otherwise the program may hang or display an "Insufficient Memory" message.

### **Disabling Interrupts when accessing the hardware**

In order to avoid possible conflicts between applications that try to access the same hardware at the same time, it is recommended that interrupts be disabled when accessing the OPL3, the Control Chip or the MMA. This will avoid conflicts between applications, TSR programs and drivers that will be supplied with the Gold card in the future.

This procedure should be strictly adhered to for all software developed for the Gold card.

To insure that the interrupt flag status is not destroyed when re-enabling interrupts, the following procedure is recommended:

To disable interrupts:

```
pushf      ; push flags, include interrupt flags  
cli       ; clear interrupts
```

To re-enable interrupts:

```
popf      ; pop flag, includes interrupt flags
```

### **TSR Hotkey reconfiguration**

The Mixer Panel TSR and ROL2 Playback TSR hotkeys can now be reconfigured from the SETUP.EXE application. Please the README.TXT file for more details on the changes that were made to SETUP.EXE, RL2DRV.EXE and MIXER.EXE

### **MIDI Driver, SCSI Driver, Windows DLLs**

To be released



# **Ad Lib Gold**

## **Developer Toolkit**

**Version 1.01**

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Developers are authorized to incorporate the example source code provided with the Developer Toolkit into their products.

The no cost right to distribute Ad Lib Gold drivers provided with the Developer's Toolkit must be obtained through the Ad Lib Developer Support Department, at (418) 529-9676.

In order to ensure that third party applications operate in a consistent environment, we strongly recommend that developers contact the Ad Lib Developer Support Department.

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# **Table of Contents**

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<b>1. Introduction</b>	<b>1-1</b>
<b>2. Quick Start and Evaluation Software</b>	<b>2-i</b>
Installing the Hardware	2-1
Installing the Software	2-1
Using the Gold Card Evaluation Software	2-2
Adjusting the Volume	2-3
<b>3. Gold Hardware</b>	<b>3-i</b>
3.1 Description of the Hardware	3-1
3.2 Getting Installed	3-9
3.3 Surround Sound Module	3-15
<b>4. Software Applications</b>	<b>4-i</b>
4.1 Software Installation and Configuration	4-1
4.2 Test Program	4-5
4.3 Mixer Panel TSR	4-7
4.4 Juke Box Gold Music Playback Program	4-13
4.5 Instrument Maker Gold	4-17
4.6 Sample Maker	4-19
4.7 Surround Sound Editor	4-23
4.8 Batch File Utilities	4-29
4.9 ROL2 Playback TSR	4-31

## **Table of Contents**

---

---

<b>5. DOS Software Drivers</b>	<b>5-i</b>
5.1 Interfacing DOS Drivers with Applications	5-1
5.2 DOS Control Features Driver	5-3
5.3 DOS FM Synthesis Driver	5-57
5.4 DOS Wave Driver	5-71
5.5 DOS Timer Driver	5-93
5.6 DOS MIDI Driver (To be released)	
5.7 DOS SCSI CD-ROM Driver (To be released)	
<b>6. Windows DLLs</b>	
(To be released)	
<b>7. Low-level Programming</b>	<b>7-i</b>
7.1 Mixer and Setup Features	7-1
7.2 FM Synthesis	7-15
7.3 Digital Input and Output (Digital Audio and MIDI)	7-37
<b>Appendices</b>	
Appendix A: Gold Sound Standard	A-i
Appendix B: YM7128 - Surround Processor	B-i
Appendix C: Pin Out for Joystick-MIDI Connector	C-1
Appendix D: List of Installed Files	D-1

# **Introduction**

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The Ad Lib Gold Developer Toolkit is a set of software applications, libraries, documentation and other information that will accelerate application support for the Ad Lib Gold series of cards.

The Developer Toolkit covers the following areas:

- **Quick Start and Evaluation Software**

This section is for developers who want to try the software provided with the Gold Card and get a quick look at all programming possibilities. It summarizes the installation of the Gold card and briefly describes some of the available applications. The evaluation software provides tools for a variety of sound quality tests.

- **Gold Hardware**

This section describes the physical layout of the Gold card, and the procedure for installing the card in your computer. It also provides a short description of the Surround Sound Module.

- **Software Applications**

Describes the applications and TSRs that you can use with the Gold card. Some of these applications can be used to create FM sounds, digitized sounds, and Surround presets, that the developer can use in his/her applications.

- **Software Drivers**

This section explains how your applications can interface with the memory-resident drivers. It also contains a complete function directory for each of the drivers. Sample source code is supplied on diskette to provide a better understanding of the use of the drivers and associated interface libraries. The MIDI driver, SCSI driver and Windows DLLs will be included with the next version.

- **Low-Level Programming**

Details the I/O map of each of the hardware sections of the Gold Card. This section is intended for programmers who want to directly access the hardware, instead of using the software drivers.

- **Appendices**

The appendices provide additional information on the Yamaha Gold Sound Standard, the Surround Processor chip (YM7128), a diagram covering the MIDI / Joystick connector, and a list of files copied to the hard drive during installation.

Please read the README.TXT file on DISK 1 for more information.



# **Chapter 2 - Quick Start and Evaluation Software**

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<b><u>Installing the Hardware</u></b>	<b>1</b>
Installing the Gold Card	1
Connect the Other Peripherals	1
<b><u>Installing the Software</u></b>	<b>1</b>
Read the README.TXT File	1
Install Gold Applications and Resources	2
Test Hardware	2
<b><u>Using the Gold Card Evaluation Software</u></b>	<b>2</b>
Running Gold DOS Applications	2
<b><u>Adjusting the Volume</u></b>	<b>3</b>



# Quick Start and Evaluation Software

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The Quick Start is intended for developers who want to have quick access to some of the evaluation programs provided with the Gold card.

## Installing the Hardware

### **Installing the Gold card**

1. Make sure that the on-board jumpers, the "Game port enable jumper", the "Port address jumper" and the "Dual joystick selector jumpers", are in the desired position.
2. Plug the Gold card into the computer in a free slot as far as possible from the video adapter card.

\* *NOTE: Certain cards, such as video adapters, produce high-frequency signals which can interfere with the sound quality of the sound card.*

- See "3.2: Getting Installed".

### **Connect the Other Peripherals**

- Plug headphones or external speakers into the main audio output of the card, or connect the output to the input of a stereo system.
- Connect your microphone to the microphone input of the card.

- Connect the output of your stereo source (CD player, CD-ROM drive, synthesizer or cassette player) to the stereo auxiliary input of the card, using a stereo cable.
  - Connect your joystick to the DB-15 game port of the card. If you plan to use the MIDI interface, connect your MIDI device with the Ad Lib adapter cable.
- See "3.2: Getting Installed".

## Installing the Software

### **Read the README.TXT File**

We suggest that you examine the README.TXT file prior to installing the software. This file contains information on the latest program updates, and other necessary information.

- Insert Ad Lib diskette No. 1 into the floppy drive, set the current drive to A (or B, depending on which drive you are using), and type the following command:

`A:>type readme.txt`

**Installing the Software**

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**Install Gold Applications and Resources**

- Run the Gold Setup Program by typing the following commands:

**A:\>ctrldrv**

**A:\>setup**

- See "4.1: Software Installation and Configuration".

**Test Hardware**

Once installation is complete, run the Test program to verify that the Ad Lib Gold card is functioning properly.

- Go to the directory where you placed the Gold Test Program at installation and load this program by typing the following command:

**testgold**

- See "4.2: Test Program".

**Using the Gold Card Evaluation Software**

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**Running Gold DOS Applications**

Once the Gold hardware and software are installed, you can run any Ad Lib Gold application by proceeding as follows:

1. Set the current directory to the one where you placed the Gold programs during the installation process.

2. Load the Mixer Panel TSR program first, which serves to control the different sound parameters (balance, tone, volume, etc.), by typing the following command:

**mixer**

3. Load the program you want by typing the corresponding command:

**jukegold** Juke Box Gold Music Playback Program

**insgold** Instrument Maker Gold Program

**samp1** Sample Maker Program

**surround** Juke Box Gold Music Playback Program including the Surround Sound Editor

Note that the Juke Box Gold Music Playback Program offers on-line Help containing summarized information on how to operate the program and how to use the various features.

- See "Chapter 4 - Software Applications".

### Adjusting the Volume

When running a program with the Gold card, you can adjust output volume at any time, without opening the Mixer Panel, using the following shortcuts:

**[Alt]-[Up]-U** For increasing output volume.

**[Alt]-[Up]-D** For decreasing output volume.

- See "4.3: Mixer Panel TSR".



# **Chapter 3 - Gold Hardware**

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<b>3.1 Description of the Hardware</b>	<b>1</b>
Functionality	1
Digital Recording	1
Digitized and Synthesized Sound Playback	1
MIDI Recording and Playback	2
Game Port	2
SCSI Interface	2
Layout of the Card	2
Bracket Connectors	2
On-board Connectors and Main Components	3
The On-board Jumpers	6
Available Interrupt Lines and DMA Channels	7
<b>3.2 Getting Installed</b>	<b>9</b>
System Requirements	9
Installing the Hardware	9
Hardware Configuration Settings	9
Removing the Computer Cover	11
Removing the Slot Cover	11
Installing the Gold Card	11
Connecting Other Peripherals	12
<b>3.3 Surround Sound Module</b>	<b>15</b>
Required Equipment	15
Installing the Surround Sound Module	15
Remove the Computer Cover	15
Remove the Sound Card	16
Attach the Surround Sound Module	17
Reinstall the Sound Card	17

## **Chapter 3 - Gold Hardware**

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### **Table of Contents**

---

<b>Using the Surround Sound Option</b>	<b>18</b>
<b>Surround-based Applications</b>	<b>19</b>
<b>Using Surround Sound with Other Sound Sources</b>	<b>19</b>
<b>Programming the Surround Sound Module</b>	<b>20</b>

## Functionality

Your Ad Lib Gold Stereo Sound Adapter is a multifunction card with digital recording, playback of digitized and synthesized sounds, analog audio mixing, MIDI recording and playback, game port, and (for model Gold 2000) SCSI/CD-ROM interface.

### Digital Recording

With the Ad Lib Gold card, you can record from:

- A microphone, using Voice Pad or third party software;
- An audio tape or a compact disk, using Voice Pad or third party software;
- A telephone, using the optional add-on board contained in the Ad Lib PC Telephone Answering System.

## Digitized and Synthesized Sound Playback

With the Gold card, you can play back:

- Digitized sounds: The Gold card has two channels for digitized sounds. These channels can be used in a variety of ways, such as for voice notes with the Voice Pad program, percussion sounds in the Juke Box Gold songs, or third party software using stereo music or music with voiceover.
- Synthesized sounds: The Gold card has a 20-voice FM synthesizer which is used for Juke Box Gold songs and third party software music.

The sound capability of the Gold card also features:

- Audio mixing: The internal analog mixer of the Gold card controls the volume of various audio sources, through programming, such as within third party software, or manually using the Mixer Panel (see "Mixer Panel TSR" section).
- Volume control: The output volume of the Gold card is software controlled (see "Mixer Panel TSR").

## Description of the Hardware

### Functionality

- Tone control: Bass and treble controls are software controlled (see "Mixer Panel TSR").

### **MIDI Recording and Playback**

The MIDI (Musical Instrument Digital Interface) interface of the Gold card allows MIDI files to be recorded and played back using a MIDI adapter cable, any external MIDI instrument and an Ad Lib Gold supporting sequencer program.

### **Game Port**

The Ad Lib Gold card allows a standard IBM compatible joystick to be connected.

### **SCSI Interface**

The Gold card SCSI interface (optional with Gold 1000 and included on-board with Gold 2000) allows a CD-ROM drive or any SCSI type peripheral to be connected.

### Layout of the Card

#### **Bracket Connectors**

Ad Lib Gold Stereo Sound Adapters have three 1/8" connectors and one DB-15 connector on the support brackets, as shown in the diagrams (Figures 1 and 2).

These connectors are:

- The microphone input (No. 7), for sampling and/or mixing with other audio sources.
- The stereo auxiliary input (No. 8), for connecting an external source such as a CD or cassette player, a synthesizer or any audio source, in order to sample and/or mix with other audio sources.
- The main stereo audio output (No. 9), for connecting to standard headphones, bookshelf speakers or a stereo system.
- The Game Port/MIDI connector (No. 10), for using a standard PC joystick and/or a MIDI device. This requires an optional MIDI cable adapter available from Ad Lib.

## On-Board Connectors and Main Components

Ad Lib Gold Stereo Sound Adapters have on-board connectors to support many different options and internal/external devices. These connectors are shown in the diagrams (Figures 1 and 2).

These connectors are:

- On model Gold 2000, the SCSI port connector (Figure 2: No. 22), to connect a SCSI device, such as a CD-ROM, hard disk or tape backup drive. A 50-pin flat cable is provided for connecting an internal device. Cabling for connecting an external device is optional.
- On model Gold 1000, the SCSI option connectors (Figure 2: No. 20), to snap on a SCSI piggyback board.
- The Surround Sound option connectors (No. 1), to connect a Surround Sound Module. This module is used to provide stereo and depth enhancements.
- The telephone option connector (No. 2), to connect a telephone line interface add-on board. This board allows the Ad Lib Gold card to be connected to a standard telephone line and provides access to various functions, such as creating a completely digital telephone answering system capable of leaving

personalized messages for callers and recording and playing back messages left by callers directly to and from a hard disk, or creating an interactive automated telephone routing and database navigation station. It is also capable of automated dialing.

- The internal stereo auxiliary input (No. 4), to connect a PC internal audio device (such as an internal CD-ROM drive) for direct input. This connector is in parallel with and has exactly the same functions as the external stereo auxiliary input connector on the support bracket.

\* *NOTE: It is not recommended to use both the external and internal stereo auxiliary input at the same time, because this will decrease the volume of the auxiliary audio source.*

- The PC speaker connector (No. 3), to connect the signal of the PC's internal speaker directly to the Ad Lib Gold card, so that it is mixed with the other audio signals on the card and can be heard through the headphones or speakers.

## Description of the Hardware

### Layout of the Card

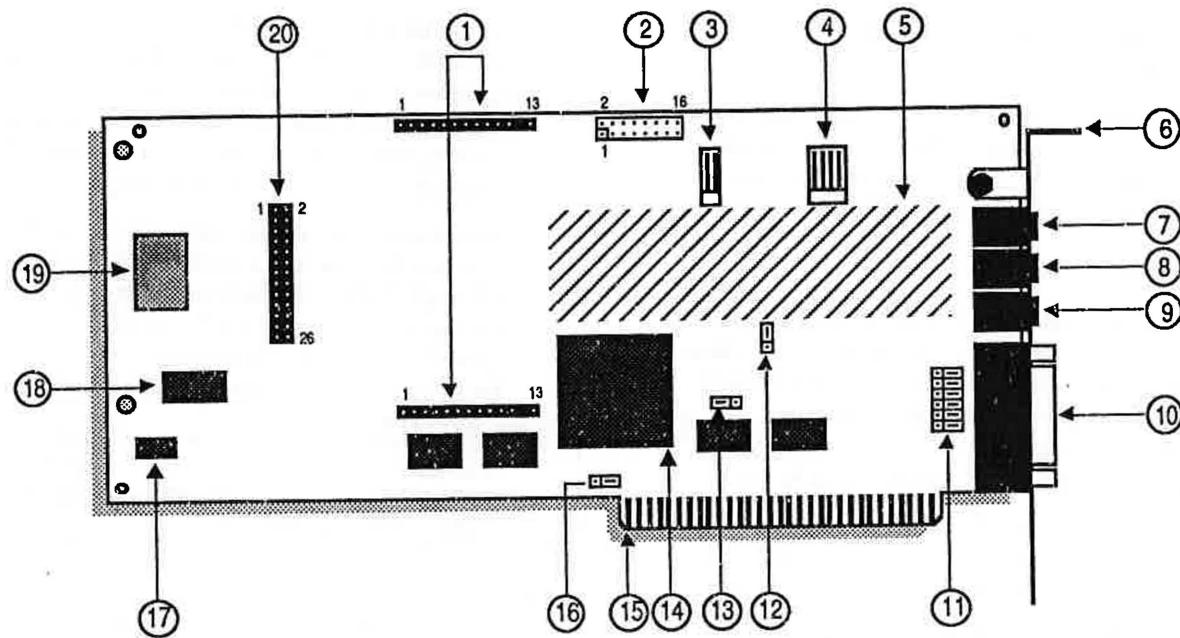


Figure 1: Gold 1000 diagram

- |                                     |  |                                       |
|-------------------------------------|--|---------------------------------------|
| 1. Surround Sound option connectors | 8. Stereo aux. input                       | 15. Bus connector                     |
| 2. Telephone option connector       | 9. Main audio output                       | 16. Game port enable jumper (JP1)     |
| 3. PC speaker connector             | 10. Game port/MIDI DB-15 connector         | 17. 16-bit FM DAC                     |
| 4. Internal stereo aux. input       | 11. Dual joystick selector jumpers (JP2-7) | 18. Professional FM synthesis chip    |
| 5. Power amp and analog mixer       | 12. Port address jumper (JP8)              | 19. Sampling 12-bit DAC and MIDI chip |
| 6. Bracket                          | 13. Control chip reset jumper (JP9)        | 20. SCSI option connector             |
| 7. Microphone input (mono)          | 14. Custom control VLSI chip               |                                       |

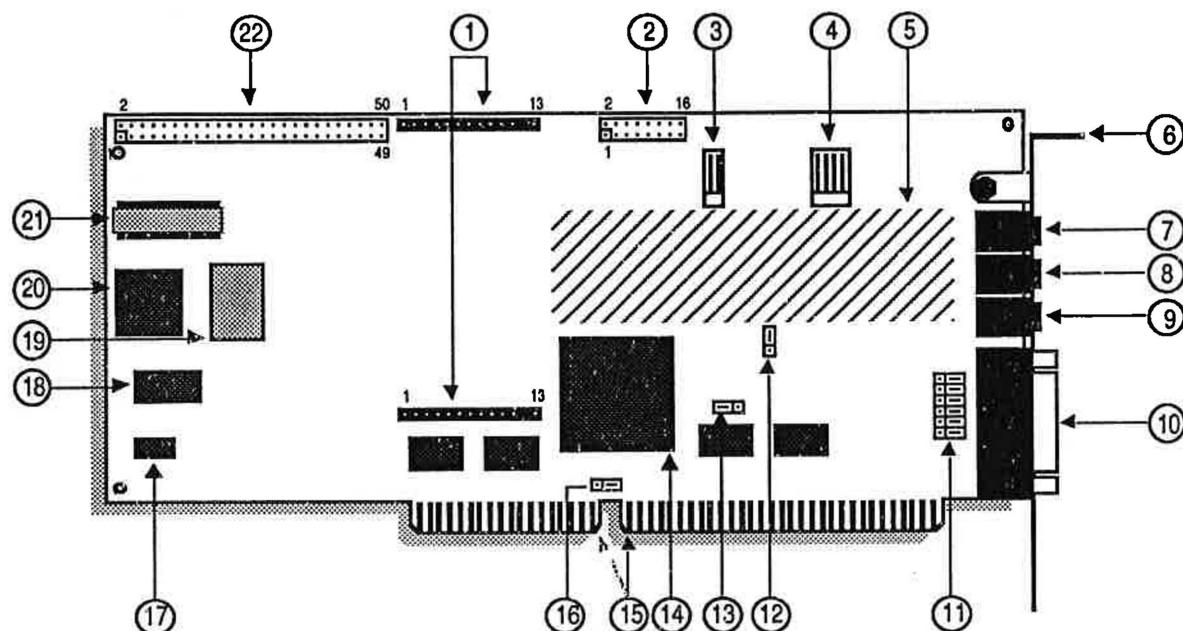


Figure 2: Gold 2000 diagram

- |                                     |  |                                       |
|-------------------------------------|--|---------------------------------------|
| 1. Surround Sound option connectors | 9. Main audio output                       | 17. 16-bit FM DAC                     |
| 2. Telephone option connector       | 10. Game port/MIDI DB-15 connector         | 18. Professional FM synthesis chip    |
| 3. PC speaker connector             | 11. Dual joystick selector jumpers (JP2-7) | 19. Sampling 12-bit DAC and MIDI chip |
| 4. Internal stereo aux. input       | 12. Port address jumper (JP8)              | 20. SCSI chip                         |
| 5. Power amp and analog mixer       | 13. Control chip reset jumper (JP9)        | 21. SCSI terminator resistor          |
| 6. Bracket                          | 14. Custom control VLSI chip               |                                       |
| 7. Microphone input (mono)          | 15. Bus connector                          |                                       |
| 8. Stereo aux. input                | 16. Game port enable jumper (JP1)          |                                       |

### The On-board Jumpers

To make it easier to configure the Ad Lib Gold card, we have made the Interrupt lines (IRQ) and DMA channels software selectable, thereby keeping the amount of jumpers to a minimum. The four remaining jumper sets are the game port enable jumper (JP1), the dual joystick selector jumpers (JP2-7), the port address change jumper (JP8), and the Control chip reset jumper (JP9).

The Gold card jumpers are the following:

- **Game port enable jumper (No. 16)**  
This jumper lets the user enable/disable Ad Lib Gold's on-board game port interface. The interface should be disabled in cases where the user already has a standard PC game port interface inside his/her PC, to avoid conflicts.

Jumper setting is shown here:



Game port enabled

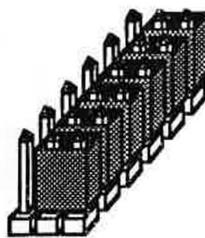


Game port disabled

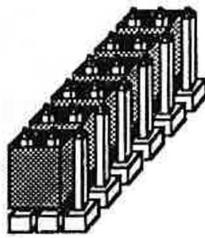
Figure 3: Game port jumper enabling

\* *NOTE: The jumper is factory set to the game port enabled position.*

- **Dual joystick selector jumpers (No. 11)**  
These jumpers let the user change the factory-set "joystick plus MIDI" option (all jumpers on the bracket side) to the "two joysticks without MIDI" option (all jumpers on the opposite side). All jumpers in this selector must be changed to the same position, as shown in the following illustrations.



Single joystick with MIDI option (factory-set)



Dual joystick option

Figure 4: Dual joystick jumper selection

- **Port address jumper (No. 12)**

This jumper lets the user choose a single or double port address for the Gold card. The Ad Lib Gold card addresses can be assigned by software programming. The default port address of the Gold card is 388H and can be changed by software in cases where another card inside the PC uses the same address, in order to avoid conflicts. In the case where the software cannot recognize the programmed address, the port address jumper is used to force the Gold card into answering at both the programmed address and at the default factory address 388H.

\* **NOTE:** *The port address jumper is factory set to single port address position (jumper plugged on the two pins on the bracket side) which enables only one port address to be used at a time.*

The port address jumper can be changed to double port address position (jumper plugged on the side opposing the bracket) which forces the default address 388H to be used in conjunction with any other user-defined one.

- **Control chip reset jumper (No. 13)**

This jumper is used where the programmed configuration of the control chip is lost. In some cases, losing the configuration can cause the card to use addresses that are already in use by other hardware. Removing

the control chip reset jumper disables certain functions of the Gold card that could cause hardware conflicts. Once the jumper is removed, reconfigure the Gold card to the factory preset values by issuing the following command:

**setup /R**

Once the Gold card is reconfigured, replace the control chip reset jumper.

#### Available Interrupt Lines and DMA Channels

- There are four software selectable interrupt lines (IRQ 3, 4, 5 and 7) on the Gold 1000, and four additional choices on the Gold 2000 (IRQ 10, 11, 12 and 15).
- DMA channels 1,2 and 3 are software selectable on the Gold 1000, and DMA channels 0, 1, 2, and 3 are software selectable on the Gold 2000.



## System Requirements

To use the Ad Lib Gold card and the Gold software, you need the following:

1. For the Gold 1000: an IBM PC, XT, AT (286), 386, 486 compatible computer, PS/2 Model 25 and 30, or Tandy 1000 (except EX/HX), a disk drive (1.2 MB 5 1/4" or 720 KB 3 1/2") and 640K of RAM.  
For the Gold 2000: an IBM AT (286), 386 and 486 compatible computer, a disk drive (1.2 MB 5 1/4" or 720 KB 3 1/2") and 640K of RAM.
2. A hard disk.
3. Graphics adapter, any model.
4. PC/MS-DOS 3.0 or higher.
5. Headphones, an external speaker or a home stereo system.
6. A microphone.

## Installing the Hardware

We suggest that you read this section thoroughly before you begin. This will familiarize you with the standard installation procedure.

These instructions are for installing your Ad Lib Gold card in your computer. We recommend that you read the owner's manual supplied with your computer for instructions specific to your model of computer.

## **Hardware Configuration Settings**

To install the Ad Lib Gold card, there are two types of configuration settings: hardware settings and software settings. The Gold card uses software for most of the configuration settings (see the sections on installation and configuration below). Only three hardware settings, made with jumpers, are necessary: game port enabling/disabling, dual joystick selection and port address. These should be made before installing the Gold card in your computer.

**To Set Game Port Enable/Disable Jumper**

The game port enable/disable jumper lets the user enable or disable Ad Lib Gold's on-board game port interface. The interface should be disabled in cases where the user already has a standard PC game port interface inside his/her PC, in order to avoid conflicts. To obtain the desired setting:

1. Locate the jumpers for the game port enable/disable setting (refer to Figure 1 or 2, No. 15).
2. If your computer does not have a game port, make sure that the jumper is over the two left pins as shown in Figure 3. This jumper is factory set in the game port enabled position.
3. If your computer has a game port, unplug the jumper from the two left pins and replug it onto the two right pins as shown in Figure 3.

**To Set Dual Joystick Selector Jumpers**

The dual joystick selector jumpers let the user change the factory-set "joystick plus MIDI" option to the "two joysticks without MIDI" option. All jumpers in this selector must be changed to the same position, as shown in Figure 4. To obtain the desired setting:

1. Locate the dual joystick selection jumpers (refer to Figure 1 or 2, No. 11).
2. If you wish to use the Gold card's game port in the "single joystick with MIDI option", leave the jumpers in the factory-set position (i.e. plugged into the bracket side of the card) as shown in Figure 4.
3. If you want to use the Gold card's game port in the "dual joystick option", unplug all six jumpers and replug them onto the jumpers, as shown in Figure 4.

**To Set Port Address Jumper**

The port address jumper lets the user choose a single or double port address for the Gold card. The default port address of the Gold card is 388H. It can be changed with the Setup program in cases where another card inside the PC uses the same address as the Ad Lib card.

The port address jumper is factory set to the single port address position which enables only one port address to be used at a time. These port addresses can be modified by software. It can be changed to double port address position, which forces the default address 388H to be used in conjunction with any other.

To obtain the desired setting:

1. Locate the jumpers for the port address setting (refer to Figure 1 or 2, No. 12).
2. If you wish to use only one port address at a time (388H or any other), make sure that the jumper is over the two upper pins. This jumper is factory set in the single port address position.
3. If you wish to force the default port address 388H to be used in conjunction with another one, unplug the jumper from the two upper pins and replug it onto the two lower pins.

#### Removing the Computer Cover

1. Switch off the computer.
2. Disconnect the power cord and all peripheral devices and cables.
3. Set the computer on a flat, clear surface.
4. Remove the mounting screws that hold the computer cover.
5. Remove the computer cover.

#### Removing the Slot Cover

1. Choose a free slot as far as possible from the video adapter card.

\* *NOTE: Certain cards, such as video adapters, produce high-frequency signals which can interfere with the sound quality of the sound card.*

2. Remove the screw that holds the slot cover in place.
3. Lift the slot cover to remove it.

! *WARNING: If a screw falls into the computer, you absolutely must remove it before switching your system back on. If a metal object is left loose inside the casing of your computer, it may cause a short circuit that will damage your system.*

#### Installing the Gold Card

1. Place the card immediately above the slot without inserting it into the socket.
2. Make sure that the bracket is inserted in the groove previously occupied by the slot cover.
3. Press the card down into the socket.

4. Put the card's bracket screw back on and tighten it.
5. Put the computer cover back on and tighten the screws.
6. Reconnect the power cord and other cables.

### **Connecting Other Peripherals**

The card is equipped with jacks and plugs for connecting various peripherals. These allow devices to be connected to: stereo audio output, microphone input, line-level stereo audio input, MIDI/game port, PC internal speaker and SCSI port (Gold 2000 model only).

#### Audio Output

The Gold card is equipped with three 1/8" jacks for connecting audio equipment. The main audio output is the lowermost of the three jacks, located above the DB-15 connector (refer to Figure 3 or 4). This jack can be connected to headphones, external speakers or a stereo system using stereo adapters and cables. Model Gold 2000 comes with a cable. To avoid distortion when connecting to a stereo system, connect the card to an auxiliary-type input.

#### Microphone Input

The microphone input is the uppermost of the three audio jacks on the card's bracket (refer to Figure 3 or 4). This connector lets the audio signal from a standard microphone be mixed with other audio sources or to be used as a source for sampling sounds.

#### Stereo Auxiliary Input – External Connector

The external stereo auxiliary input connector is located in the center of the three audio jacks on the card's bracket (refer to Figure 3 or 4). This connector lets audio signals from a stereo source (such as a CD player, CD-ROM drive, synthesizer or cassette player) be mixed with the other audio sources or to be used as a source for sampling sounds.

! **WARNING:** To avoid distortion, it is important to keep the audio level of the device you are connecting to this input jack at low volume and to adjust the volume using the software controls explained in the next section. Also, make sure that you are using the auxiliary output of the device you are connecting to the card, instead of using the speaker output which would overload the card's amplifier.

connect one of the following three options:

1. An IBM compatible joystick.
2. A MIDI device. (This requires an adapter cable.)
3. Dual joystick. (This requires a special adapter, which is usually supplied by the joystick manufacturer.—See Figure 4 for related jumper settings.)

#### Stereo Auxiliary Input – Internal Connector

As mentioned in the "Description of the Hardware: Layout of the Card" section, there is an internal connector (see No. 4 in Figure 1 or 2) for connecting the audio output of an internal CD-ROM drive. This connector is electrically in parallel with the external stereo auxiliary input connector. Thus, to obtain good sound results, you may only use one of these at a time.

#### MIDI/Game Port

The Ad Lib Gold card features a standard DB-15 connector at the bottom of its supporting bracket (refer to Figure 1 or 2). This connector lets the user



Ad Lib Gold Stereo Sound Adapters have an expansion connector for an optional plug-in module capable of adding a "surround" sound effect to the audio output of the card. This effect can range from stereo depth simulation to artificial reverberation and echo.

The Ad Lib Surround Sound Module is a piggyback card and so does not require its own dedicated slot.

## Required Equipment

To use the Ad Lib Surround Sound Module, you need the following equipment:

1. An Ad Lib Gold Stereo Sound Adapter: Gold 1000 or Gold 2000.
2. For the Gold 1000: an IBM PC, XT, AT (286), 386, 486 compatible computer, PS/2 Model 25 and 30, or Tandy 1000 (except EX/HX), a disk drive (1.2 MB 5 1/4" or 720 KB 3 1/2") and 640K of RAM.  
For the Gold 2000: an IBM AT (286), 386 and 486 compatible computer, a disk drive (1.2 MB 5 1/4" or 720 KB 3 1/2") and 640K of RAM.
3. A hard disk.

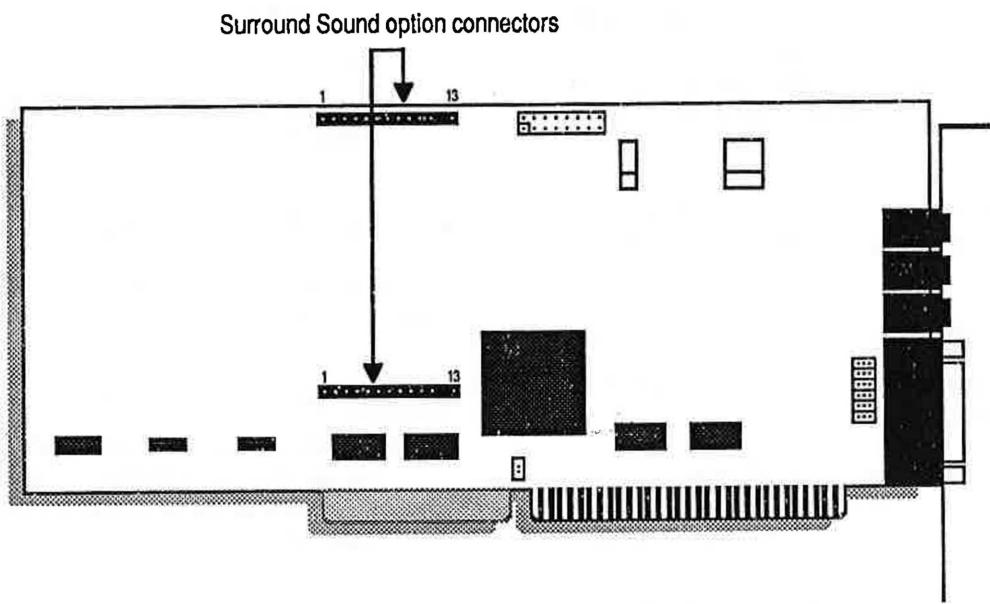
4. An operating system: PC/MS-DOS 3.0 or later.
5. A graphics adapter (monitor).
6. Headphones, external speaker(s) or home stereo system.

## Installing the Surround Sound Module

To install the Surround Module onto the Ad Lib Gold card, proceed as follows:

### **Remove the Computer Cover**

1. Switch off the computer, disconnect the power cord, and disconnect all peripheral devices and cables connected to the computer.
2. Set the computer on a flat, clear surface.
3. Remove the mounting screws at the back of the computer (consult your hardware user's guide).
4. Remove the computer cover (consult your hardware user's guide).



**Figure 1:** Location of the Surround Sound option sockets on the Ad Lib Gold 1000 and 2000 cards

**Remove the Sound Card**

! **WARNING:** *Users should ground themselves before handling the card. Please read the manual before beginning Installation.*

1. Remove the sound card bracket screw.
2. Take the sound card out of the computer and place it on a flat surface so that it is positioned as in Figure 1.

**Attach the Surround Sound Module**

1. Locate the Surround Sound option sockets on the sound card (see Figure 1).
2. Place the module connector pins immediately above the socket holes on the sound card.
3. Make sure that the No. 1 pins of the module line up with the No. 1 holes of the sound card. (If properly aligned, the Ad Lib logo will be in an upright position.)
4. Simultaneously press both ends of the module firmly into the card sockets (see Figure 2).

! **WARNING:** *The module only fits in one way, since both No. 12 pins are missing and the No. 12 socket holes are stoppered. Do not force the module in if you feel resistance; it may be incorrectly positioned.*

Surround Sound Module

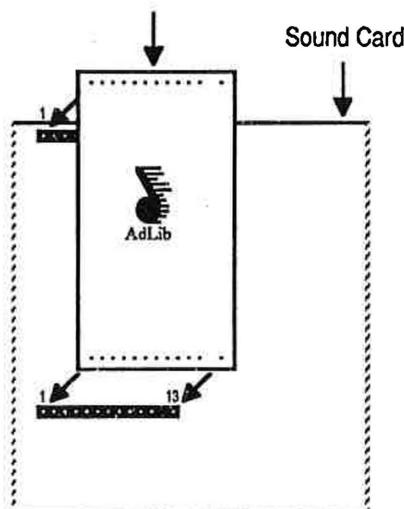


Figure 2: Attaching the Surround Sound Module

**Reinstall the Sound Card**

1. Place the card immediately above the slot without inserting it into the socket.
2. Make sure that the bracket is inserted in the groove previously occupied by the slot cover.
3. Press the card down into the socket.

## Surround Sound Module

### Installing the Surround Sound Module

4. Put the card's bracket screw back on and tighten it.
5. Put the computer cover back on and tighten the screws.
6. Reconnect the power cord and other cables.

### Using the Surround Sound Option

Once your module is connected to the sound card, the Surround Sound option is ready to use. Ad Lib's control software offers the user a choice of various pre-programmed audio enhancements that create totally new, compelling effects. To use the Surround Sound option, simply proceed as follows:

1. Load the Ad Lib Gold Mixer Panel Utility (see the Gold card user guide for complete information on the Mixer Panel).
2. Activate the Mixer Panel. **Alt**-**Shift**-**M** are the default activation keys, but you may change this combination with the "Keys" window of the Mixer Panel.
3. Press the **F3** key when in the Mixer Panel main window to open the Surround Features control window (see Figure 3).

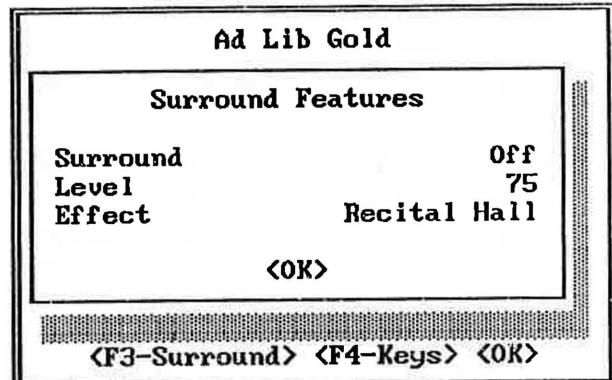


Figure 3: Mixer Panel Surround Features window

- \* NOTE: If the Surround Sound Module is not installed, or not correctly installed, the program will display the message: "OPTION NOT INSTALLED" and changes you make to the parameters will have no effect.
4. Using the arrow keys, select (with **↓** and **↑**) and set (with **→** and **←**) the Surround Sound option parameters:

**Surround**

A toggle On/Off allows the Surround Sound option to be enabled or disabled. The default setting is Surround Off. The Mixer Panel also allows you to use a combination of keys for enabling and disabling the surround sound effect. The default combination is [Alt]-[]-[], but you may change this combination with the "Keys" window of the Mixer Panel.

**Level**

Sets the volume level of the surround sound effect.

! **WARNING:** *Do not set the level of the surround sound effect too high, because it may result in distortion in some cases. It is advisable to increase the level by only a few units at a time.*

**Effect**

Sets the type of surround sound effect you want from among the presets.

<OK> ( or )

Closes the Surround Features control window, then the main Mixer Panel window with the changes you made in the parameter settings.

**Surround-based Applications**

Software does not have to be specially written to take advantage of the Ad Lib Surround Sound module. The module will instantly enhance any music and sound program written with Ad Lib sound support. Nevertheless, software developers can program surround sound effect changes within their application for contrast and drama.

**Using Surround Sound with Other Sound Sources**

Besides sound and music software, any audio source mixed with the Gold card can take advantage of Surround effects. The internal analog mixer allows you to blend FM and sampling sounds, with live mike sounds, a CD or cassette player, a synthesizer, a CD-ROM drive, etc. Simply connect your instrument, choose the surround effect you want and set the output balance for these sound sources with the Ad Lib Gold Mixer Panel Utility. Please refer to your *Ad Lib Gold Stereo Sound Adapter and DOS Software* user guide for details on the mixer and Mixer Panel.

## **Surround Sound Module**

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### **Using the Surround Sound Option**

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It is also possible to add surround sound effects to regular tape recordings. To do so, simply connect the audio source (microphone, synthesizer, etc.) to the input connector of the Gold card, and the output of the card to the tape input of your tape recorder.

### **Programming the Surround Sound Module**

If you do your own programming, it is possible to program the Surround Sound Module with the Ad Lib Gold Programmer's Manual. It shows you how to program your own presets and dynamic surround changes, to add extra contrast and drama to your Ad Lib Gold Sound applications.

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3-20

Ad Lib Gold

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Mon, Mar 23, 1992

# **Chapter 4 - Software Applications**

<b><u>4.1 Software Installation and Configuration</u></b>	<b>1</b>
Using the Setup Program	1
Configuration Environment Variable	3
<b><u>4.2 Test Program</u></b>	<b>5</b>
Testing the Hardware	5
Preparing the Test Program	5
Loading the Test Program	5
To Continue the Test	5
To Cancel the Test and Exit the Program	6
Choosing Test Options	6
<b><u>4.3 Mixer Panel TSR</u></b>	<b>7</b>
Loading the Mixer Panel TSR	7
Activating the Mixer Panel	8
Using the Mixer Panel	8
Sound Parameters	8
Sub Mixer	9
Surround Features	10
ALT-SHIFT Keys (Short Cuts)	11
Closing the Mixer Panel	12
Removing the Mixer Panel TSR	12
<b><u>4.4 Juke Box Gold Music Playback Program</u></b>	<b>13</b>
Loading Juke Box Gold	13
Selecting Songs	14
Creating a Selection of Songs	14
To Remove Songs from the Selection	14

## **Chapter 4 - Software Applications**

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### **Table of Contents**

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Playing Music	14
To Play Songs	14
To Stop Music Playback	14
To Pause and Resume Music Playback	14
To Scan Songs	15
Adjusting the Sound	15
To Adjust the Volume, Bass or Treble	15
To Set the Stereo/Mono Option	15
Asking for Help	15
Exiting the Program	16
Using the ROL2 Playback TSR	16
<b>4.5 Instrument Maker Gold</b>	<b>17</b>
Loading Instrument Maker Gold	17
Using Menu Commands	17
<input type="checkbox"/> F5 File	17
<input type="checkbox"/> F6 Options	17
<input type="checkbox"/> F7 Document	18
Editing FM Instrument Sounds	18
<b>4.6 Sample Maker</b>	<b>19</b>
Loading Sample Maker	19
Using Menu Commands	19
<input type="checkbox"/> F5 File	19
<input type="checkbox"/> F6 Edit	19
<input type="checkbox"/> F7 Sampling	20
<input type="checkbox"/> F8 Options	20

Important Warnings for this Development Version of Sample Maker	21
Sampling Rate Limitations	21
Sampling Length Limitation	21
Scope Mode	21
Graphic Display in Different PCM Format	21
<b>4.7 Surround Sound Editor</b>	<b>23</b>
Ad Lib Surround Sound Editor	23
Technical Features	23
Opening the Surround Sound Editor	23
Using the Surround Sound Editor	24
Channel Line Attenuation Sections	25
Global Level and Feedback Parameter Section	25
Filter Parameter Section	25
Global Delay Line Parameter Section	25
Editing Surround Sound Presets	26
Using Menu Commands	26
File Menu	26
Panel Menu	27
Closing the Surround Sound Editor	27
<b>4.8 Batch File Utilities</b>	<b>29</b>
ROL2 Playback Utility	29
Digitized Sound Playback Utility	29
<b>4.9 ROL2 Playback TSR</b>	<b>31</b>
Using the ROL2 Playback TSR	31
ROL2 Playback TSR Data Files	31
ROL2 Playback TSR Options	32



The running and using of the Ad Lib Gold card drivers and programs require hard disk space of 3 megabytes. They must be installed onto the hard disk following a precise procedure. For this purpose, the Gold software package includes a special Setup Program. This program enables you to install the drivers and all associated programs, and to configure your Ad Lib Gold card.

## Using the Setup Program

The Ad Lib diskettes are not copy-protected. We recommend that you make a back-up copy before installing Gold software. Put the originals away in a safe place. This way, if a diskette is lost or damaged, you will have a replacement. We suggest that you use the DISKCOPY command. (For all details concerning the copy commands, refer to your DOS manual.)

### To Load the Setup Program

To load the Ad Lib Gold Setup Program:

1. Insert the first Ad Lib diskette into the floppy drive.
2. Set the current drive to A (or B, depending on the drive you are using).
3. Type the following commands:

A : \>ctrldrv

A : \>setup

When the program opens, a window entitled "Installation Notes" introduces you to the Setup Program and its basic commands. Two main buttons are displayed at the bottom of each screen: <Cancel> and <Continue>.

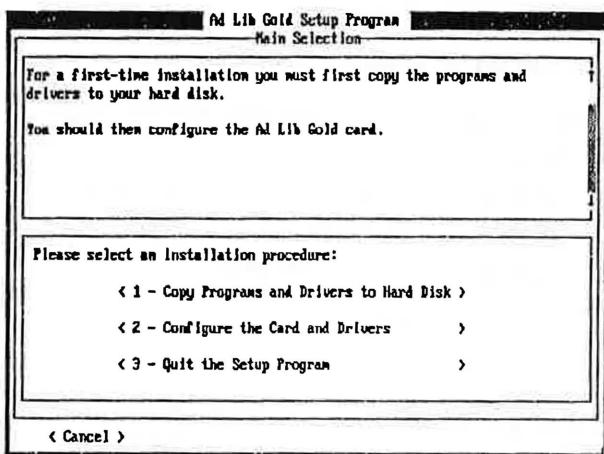
Activating the <Continue> button in the Installation Notes introductory screen makes the Setup Program open the Main Selection menu (see Figure 5).

This menu lets you choose and access the three following submenus:

1. Copy programs and drivers to hard disk
2. Configure the card and drivers
3. Leave the Installation Program

## **Software Installation and Configuration**

### **Using the Setup Program**



**Figure 5:** Setup Program's Main Selection menu

#### To Cancel the Setup Process

At any moment, you can interrupt the setup process by clicking on the <Cancel> button at the lower left corner of the screen, or by pressing the [Esc] key. Doing this will abort the setup and cancel the steps you have made. The changes you made are not saved in permanent memory on the card. When you reboot your system, these changes will not be restored. So, if you have a problem after making a change, just reboot your system.

\* **NOTE:** Certain elements cannot be reversed and will remain installed, such as copied files. To cancel the entire operation, it is necessary to re-run the Setup Program and reverse the corresponding steps, or delete the copied files. See Appendix A for a list of the installed files.

#### To Continue the Setup Process

In the setup process, activating the <Continue> button lets you close the current dialog box and access the next step. Doing this will initiate the changes you made in this dialog box, if there were any.

#### To Answer Program Questions

During each step of the setup procedure, you will be asked to choose between different options or to enter answers in edit fields. The program suggests an answer that will be correct in most situations. You can use this default, or enter your own answer.

### **Configuration Environment Variable**

A special environment variable, called "GOLD" is used by the software to recognize the base address of the Gold card. When the card is relocated by the Setup program, the program automatically modifies the environment variable in the AUTOEXEC.BAT file.

To change the GOLD environment variable, type the following command, which should be preferably put in the AUTOEXEC.BAT file:

```
SET GOLD = xxxx
```

Where **xxxx** is the hexadecimal value of the Gold card base address (Control chip address).

When the Gold environment variable is not defined, the programs assume a default base address of 388H.



### Testing the Hardware

The Ad Lib Gold Test Program, which is supplied with the Gold software, enables you to verify that the Gold card is functioning properly. These tests are not only used to test the Ad Lib hardware, but also to test the connections to all associated peripherals (MIDI ports, joystick, SCSI, etc.).

### **Preparing the Test Program**

Prior to running the Test Program:

1. Make sure that the Gold card is properly installed. If necessary, refer to the previous section, "Installing the Hardware".
2. Connect headphones, a speaker or stereo system to the audio jack.
3. Connect the peripherals you plan to use with the Gold card.
4. Turn on your computer. If it is already on, we recommend resetting it.

### **Loading the Test Program**

To load the Test Program:

1. Make the directory where you placed the Gold software the current directory. For example:

C:\>cd gold

2. Load the TEST program by typing the following command at the DOS prompt:

C:\GOLD>test

When the program opens, a first window entitled "Installation Notes" introduces you to the Test Program and its basic commands. Two main buttons are displayed at the bottom of each screen: <Cancel> and <Continue>.

Before each test, the program will explain what the test does. It will also point out the procedure to follow to complete the test. This information is shown at the top of each test screen. To see the whole text, click on the scroll bar with the mouse, or select the scroll bar with the **Tab** key and use the vertical arrow keys (**↓** and **↑**).

If a test does not succeed, a message will appear giving probable causes and solutions.

### **To Continue the Test**

The <Continue> button lets the user access the next step of the test.

**To Cancel the Test and Exit the Program**

When all tests are finished, or anytime within the test procedure, you can exit the Test Program and return to DOS by activating the <Cancel> button.

**Choosing Test Options**

Clicking on the <Continue> button in the Installation Notes introductory screen opens the Selection Panel dialog box (see Figure 6). This dialog box presents the list of the tests you can execute:

- |                  |                         |
|------------------|-------------------------|
| • Configuration  | • Joystick              |
| • Audio          | • MIDI Interface        |
| • SCSI Interface | • Sampling and Playback |
| • Timers         | • Telephone             |
| • FM Sound       | • Mixer                 |

Some of these options may be grayed to indicate that they are disabled depending on the available hardware. Checking off any of these check boxes will let you access the corresponding tests.

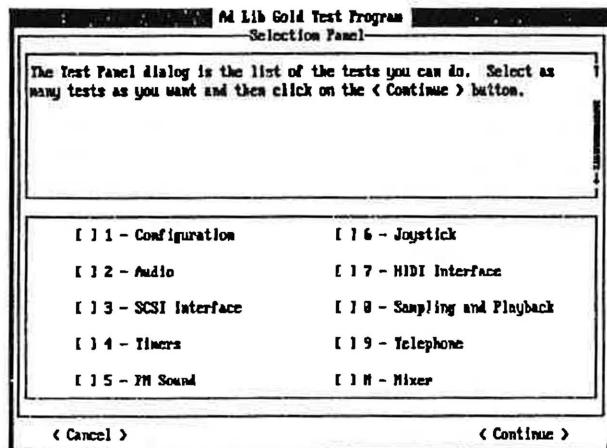


Figure 6: Test Program's Selection Panel

The options can be selected by using either the mouse, the Tab key (**Tab**) or (**Shift**-**Tab**) or the arrow keys (**→** or **←**). Select the option you wish to test and then activate the <Continue> button. You can also test several options in a row by selecting the options you want and activating the <Continue> button. Any test can be executed more than once if desired.

Each test panel displays information on the test currently being performed and describes the problems and solutions which may be encountered during the test.

The Ad Lib Gold cards (models 1000 and 2000) have an on-board analog mixer that permits the volume of different audio sources to be controlled, as well as overall output volume, balance and tone. These features can be accessed using the Mixer Panel TSR.

The Mixer Panel TSR is a program that allows you to set the different sound parameters of the Ad Lib Gold card at anytime and from within any application. This memory resident program includes four different control windows:

1. Sound Parameters
2. Sub Mixer
3. Surround Features
4. Activation and Volume Keys

? *TSR stands for Terminate-and-Stay Resident program, which is also called memory resident program. It is a utility program designed to remain in the computer's memory at all times after loading so the user can activate it with a keystroke at any time, even while running another program. For more information on TSRs, see Appendix D.*

---

#### Loading the Mixer Panel TSR

To load the Mixer Panel TSR, set the current directory to the one where you placed the Mixer Panel at installation and type the following command:

**mixer**

\* *NOTE: This command can be placed in a batch file so that it is loaded automatically. See your DOS user guide for details.*

When the program is loaded, it will display a message indicating that the program has been successfully loaded. It will also indicate which keys must be used to activate the Mixer Panel.

The Mixer Panel window will not open upon loading and has to be activated as explained in the next section. If you want the Mixer Panel window open upon loading the program, you can use the option "/a" with the loading command. To do this, go to the appropriate directory and type the following at the DOS prompt:

**mixer /a**

**Activating the Mixer Panel**

[Alt]-[Space]-[M] are the default activation keys, but you may change this combination, as explained in the "Activation and Volume Keys" section. To activate the Mixer Panel, press all of the activation keys down at the same time and release them. Upon releasing the keys, the main Mixer Panel window will appear as shown in Figure 7.

This TSR can be activated at any time with applications supporting the Ad Lib Gold. The screen will be returned to its original state and mode when you exit the Mixer Panel window.

\* *NOTE: If you use a Hercules card with a MGA monitor, the Mixer Panel can be activated only in text mode. If you activate the Mixer Panel while in graphics mode, this may cause problems with your system.*

**Using the Mixer Panel**

Each window of the Mixer Panel displays the different parameters and options of the Gold card (see Figure 7). To set one of these:

1. Select the item you want using the vertical arrow keys (↓ and ↑).
2. After this, you can modify the chosen item in one of the following ways:

- increase or decrease the numerical parameters and option words one step at a time using the horizontal arrow keys (→ and ←);
- increase or decrease the numerical parameters ten steps at a time using Shift with the horizontal arrow keys ([Space]-→ and [Space]-←);
- toggle On/Off parameters using the Space bar.

**Sound Parameters**

When the program is activated, you will see a window appear for setting the basic sound parameters of the Gold card.

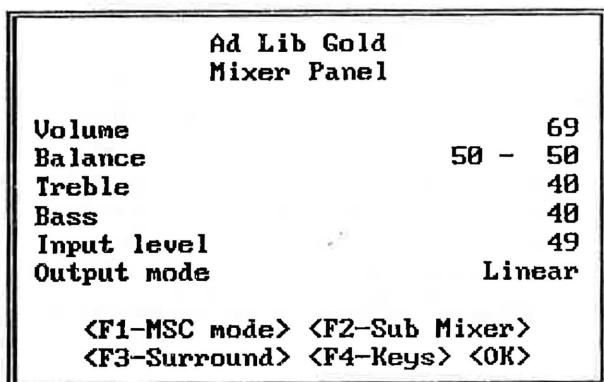


Figure 7: The main Mixer Panel window