Advanced Wave Table Upgrade

Plug and Play

USER'S GUIDE

User's Guide

Version 1.0

January 1996

The hardware on your card is covered by one or more of the following U.S. Patents:
4,404,529; 4,506,579; 4,699,038; 4,987,600; 5,013,105; 5,072,645; 5,111,727; 5,144,676;

Regulatory Information

The following sections provide regulatory information for this product.

Notice for the USA

FCC Part 15: This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try one or more of the following measures:

- ❑ Reorient or relocate the receiving antenna.
- ❑ Increase the separation between the equipment and receiver.
- ❑ Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- ❑ Consult the dealer or an experienced radio/TV technician for help.

Caution

To comply with the limits for the Class B digital device, pursuant to Part 15 of the FCC Rules, this device must be installed in computer equipment certified to comply with the Class B limits.

All cables used to connect the computer and peripherals must be shielded and grounded. Operation with non-certified computers or non-shielded cables may result in interference to radio or television reception.

Modifications

Any changes or modifications not expressly approved by the grantee of this device could void the user's authority to operate the device.

Notice for Canada

This apparatus complies with the Class "B" limits for radio interference as specified in the Canadian Department of Communications Radio Interference Regulations.

Cet appareil est conforme aux normes de CLASSE "B" d'interference radio tel que spe'cifie' par le Ministère Canadien des Communications dans les règlements d'interfe'rence radio.

Safety Information

CAUTION: This device is intended to be installed by the user in a CSA/TUV/UL certified/listed IBM AT or compatible personal computers in the manufacturer's defined operator access area. Check the equipment operating/installation manual and/or with the equipment manufacturer to verify/confirm if your equipment is suitable for user-installed application cards.

ATTENTION: Ce carte est destiné à être installé par l'utilisateur, dans un ordinateur compatible certifié CSA/TUV/UL ou listé IBM AT, à l'intérieur de la zone définie par le fabricant. Consulter le mode d'emploi ou le fabricant de l'appareil pour vérifier ou confirmer si l'utilisateur peut y installer lui-même des cartes périphériques.

Compliance

This product is in conformity with the following Council Directive:

- Directive 89/336/EEC, 92/31/EEC (EMC)

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Introduction

Welcome to the next wave of multimedia computing. Your synthesizer card allows you to obtain realistic acoustic reproduction through digitized sound samples.

Your synthesizer card supports the following features:

- ❑ Plug and Play ISA Specification version 1.0a compliant
- ❑ Major MIDI standards such as General MIDI, GS, and MT-32
- ❑ SoundFont editing and playback

In addition, your synthesizer card can be used side-by-side with any Sound Blaster compatible sound card.

Before You Begin

This section provides information you should know before using this manual. It is organized as below:

- ❑ Checking System Requirements
- ❑ Getting Latest Information
- ❑ Making a Copy of Your Diskettes
- ❑ Using the Documentation
- ❑ Document Conventions

Checking System Requirements

The system requirements are:

- ❑ A 386 computer (486 recommended)
- ❑ An EGA or VGA card installed (VGA recommended).
- ❑ 7.5 MB of hard disk space for your synthesizer card's software.
- ❑ 4 MB RAM (8 MB recommended for Windows 95).
- ❑ Windows 95 or Windows 3.x.

Getting Latest Information

Your package may come with a CD-ROM or diskettes to install your synthesizer card's software. The README file, found in the CD-ROM or installation diskette, contains the latest information and changes not available at the time of printing. Please read the file before you continue.

If you are about to follow the steps for reading the README file on your card's software installation CD-ROM, we assume that you already have a CD-ROM drive installed.

To view the file in Windows 95:

1. Start Windows 95.
2. Insert the installation diskette or CD-ROM into a drive.
   If you inserted the CD-ROM and it starts playing automatically, choose Cancel at the first screen.
3. Double-click the My Computer icon on your Desktop.
   Your system's drive icons are displayed.
4. Double-click the icon representing the drive containing your installation diskette or CD-ROM.
5. Double-click the README.TXT file.
   The Notepad application starts and displays the README.TXT file.

To view the file in DOS/Windows 3.x:

1. Start your computer.
2. Insert the installation diskette or CD-ROM into a drive
3. At the DOS prompt, change to the drive containing the diskette or CD-ROM. Normally, this is drive A or B for a diskette and drive D for a CD-ROM.
4. Type **README** and press <Enter>.

If you want to read the file in Windows 3.x, you can do so by going to the Windows DOS box and following steps 3 and 4.

Making a Copy of Your Diskettes

If you have not made a copy of the original diskettes that come with your package, you should do so before installing the software in your system. Store your original diskettes in a safe place.

Using the Documentation

The documentation in this guide provides information on how to install your synthesizer card. The guide is arranged as follows:

Chapter 1, "Knowing Your Synthesizer Card"
Contains information about the various hardware components on your synthesizer card. If you are new to synthesizer cards, we recommend that you read this chapter before you set up your card.

Chapter 2, "Setting Up Your Synthesizer Card"
Guides you through the process of installing the card in your system.

Chapter 3, "Installing Software in Windows 95"
If you are using Windows 95, this chapter helps you install the software for the operating system.

Chapter 4, "Installing Software in DOS/Windows 3.x"
If you are using DOS or Windows 3.x, this chapter shows you how to install the software in these operating systems.

Chapter 5, "Using Advanced WavEffects Control for Windows 95"
Details how to use the Windows 95 application that controls the features of your synthesizer card.

Chapter 6, "Using DOS/Windows 3.x Advanced WavEffects Utilities"
Describes how to use the Windows 3.x application and DOS program to control your synthesizer card.

Appendix A, "General Specifications"
Describes the general specifications of your synthesizer card.

Appendix B, "Changing DRAM Expansion Jumper Settings"
Instructs you on how to change the DRAM Expansion jumper configuration when you add more RAM to your synthesizer card.

Appendix C, "Hardware Information"
Provides information on the connectors used to direct sound from your synthesizer card to your motherboard.

Appendix D, "MIDI Specifications"
Lists the MIDI specifications of your synthesizer card.

Appendix E, "Troubleshooting"
Provides tips and strategies for some of the problems you might encounter with your synthesizer card either during installation or normal use.

Document Conventions

This manual follows certain conventions to help you locate and identify the information that you need. These conventions are described in the following sections:

- ❑ Text Conventions
- ❑ Icons

Text Conventions

The following text conventions are used to help you distinguish elements of the text in this manual (see Table i).

Table i: Text Conventions.

Text Element	Use
bold	Command names, switches, and any text that must be entered exactly as it appears.
italic	Title of a book. When presented at the DOS command line, it is a placeholder that represents information you must provide. This information usually appears in the parameter listing after the command is presented.
UPPERCASE	Directory name, file name, or acronym.
< >	Symbols, letters, and key names on the keyboard.

Icons

In this manual, icons are used to highlight areas of text that require your attention (see Table ii).

Table ii: Icons.

Icon	Use
	Information or instructions that must not be taken lightly and should be noted.
	Cautions or warnings that you must pay attention to. Information highlighted by this icon tells you how to avoid situations such as the risk of not enough memory or even damages to your system.

1

Knowing Your Synthesizer Card

This chapter helps you locate and identify the components of your synthesizer card. The components of the synthesizer card comprise the following:

- ❑ Line-Out Jack
- ❑ SPDIF Connector
- ❑ Memory Module Expansion Slots
- ❑ DRAM Expansion Jumpers
- ❑ Motherboard Audio Connectors
- ❑ Knowing the Software-Configurable I/O Address Setting

These components are shown in Figure 1-1 below.

In addition, the section "Knowing the Software-Configurable I/O Address Setting" is included in this chapter to get you acquainted with the settings of your synthesizer card that can be changed through software.

Place the synthesizer card in front of you as you go through this chapter. This will help you identify the various components described.

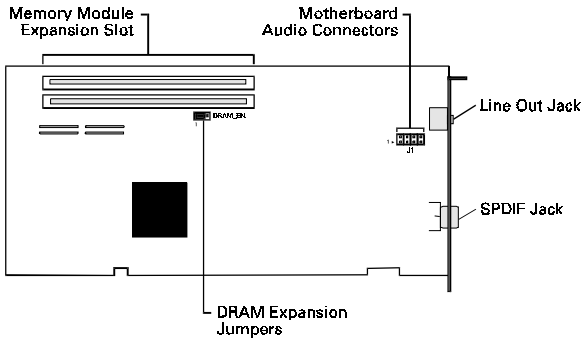

Figure 1-1: The components of your synthesizer card.

Line-Out Jack

The Line-Out jack is a one-hole connecting interface on your synthesizer card. It allows you to connect your card to powered speakers or an external amplifier for audio output. The section "Connecting to Powered Speakers or External Amplifier" in page 2-4 shows you how to make the connections.

This jack may not be available on your card.

SPDIF Connector

The SPDIF (Sony/Philips Digital Interface Format) connector allows you to transfer digital audio signals from one digital device to another. In this way, the fidelity of a transferred digital signal is preserved. You can transfer digital signals from your synthesizer card to a digital

device such as a DAT player through the SPDIF connector. The section “Connecting to External Digital Devices” in page 2-5 provides information on how to make the connections.

This connector may not be available on your card,

Memory Module Expansion Slots

The Memory Module Expansion slots allow you to install SIMMs (Single In-line Memory Modules) on your synthesizer card so that you can have more RAM for your MIDI instrument samples. You can add up to a maximum of 28 MB of RAM using SIMMs. When you want to use these SIMMs, you need to change the setting of the DRAM jumper on your card. Refer to the section “DRAM Expansion Jumpers” in this chapter.

We recommend that you use a pair of SIMMs with the same capacity. The SIMM RAM access time must be 80 nanoseconds or faster.

DRAM Expansion Jumpers

If you have installed SIMMs in your synthesizer card’s Memory Module Expansion slots, you can use the DRAM_EN jumper on your synthesizer card to choose between the on-board 512KB or installed SIMMs.

The factory default setting of jumper DRAM_EN is to use the on-board 512KB. Refer to Appendix B, “Changing DRAM Expansion Jumper Settings” for more information on setting the jumper.

Some synthesizer cards may not come with the on-board 512KB. Such cards do not have the DRAM Expansion jumper.

Motherboard Audio Connectors

These connectors are used to connect your synthesizer card to your motherboard's audio chips, if present. See Appendix C, "Hardware Information" for detailed information on these connectors.

Knowing the Software-Configurable I/O Address Setting

Your synthesizer card supports Plug and Play. This feature allows a Plug and Play system to assign, using software, resources such as I/O addresses required by your newly added synthesizer card.

I/O addresses are areas of memory used by your computer's microprocessor to distinguish among various peripheral devices connected to your system when sending or receiving data. Your synthesizer card is one such device. A possible combination of I/O addresses that it uses is 620H to 623H, A20H to A23H, and E20H to E23H.

You do not need to change the I/O addresses assigned by your Plug and Play system. When the system boots up, it automatically searches for free I/O addresses that are not used by other peripheral cards and reserves them for your synthesizer card. If a previously assigned set of addresses is taken up by another card, the system will search for other free addresses to assign to your synthesizer card.

2

Setting Up Your Synthesizer Card

This chapter guides you through the process of installing your synthesizer card in your system. It is organized as follows:

- ❑ Installing the Card
- ❑ Connecting to Output Devices

IMPORTANT:
If you are installing your synthesizer card in a system that is running Windows 3.x, you need to install a Plug and Play Configuration Manager before you proceed with the installation. The Plug and Play Configuration Manager allows you to configure your Plug and Play synthesizer card in a non Plug and Play system.

Installing the Card

Installing the synthesizer card in your system is a straightforward process. Please follow the instructions below.

To install the synthesizer card:

1. Switch off your system and all peripheral devices. Unplug the power cord from the wall outlet.

The power cord and wall outlet shown may be different in your country.

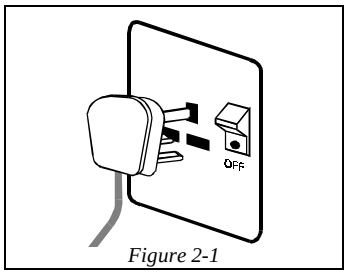

Figure 2-1

2. Touch a metal plate on your system to ground yourself and discharge any static electricity.

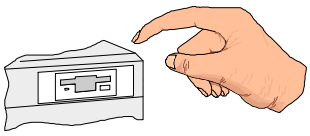

Figure 2-2

3. Remove the cover from your system.

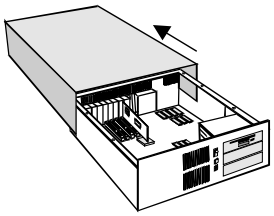

Figure 2-3

4. Find a free 16-bit expansion slot in your system.

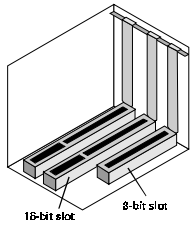

Figure 2-4

5. Remove the metal plate from the slot you have chosen and put the screw aside.

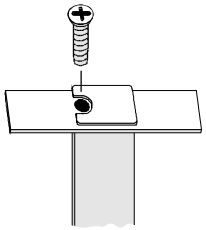

Figure 2-5

6. Align your card's 16-bit slot connector with the expansion slot and gently lower the card into the free slot as shown.

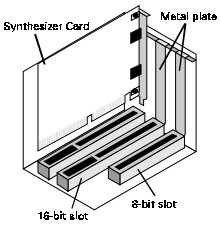

Figure 2-6

7. Secure the card to the expansion slot with the screw you removed from the metal plate.
8. Replace the cover of your system.

Connecting to Output Devices

Once the synthesizer card has been mounted in your system, you can connect it to the following devices:

- ❑ Powered Speakers or External Audio Amplifier
- ❑ Audio Card
- ❑ External Digital Device

If your card does not have any connectors or jacks on its rear metal plate (also known as rear bracket), skip all the sections below.

Connecting to Powered Speakers or External Amplifier

To play audio directly from your synthesizer card, you can connect your card to powered speakers or an external audio amplifier. Connect the stereo phone jack from the speakers' or amplifier's input connection to the Line-Out jack on the back panel of your synthesizer card. See Figure 2-7 below.

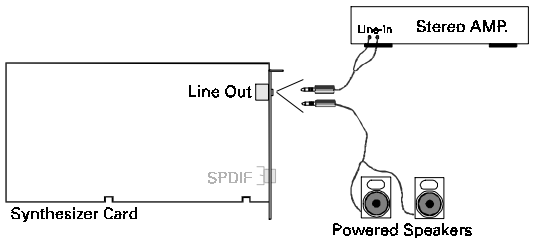

Figure 2-7: Connecting powered speakers or external amplifier to synthesizer card.

Connecting to Audio Card

If you have an audio card in your system, you can connect the synthesizer and audio cards together. You can then control audio from your synthesizer card with the audio card's software. To connect the two cards together, use a stereo phono cable with a stereo phone plug at each end to connect the synthesizer card's Line-Out jack with the audio card's Line-In jack. Use Figure 2-8 below as a guide.

Some games do not work when the synthesizer and audio cards are installed in your system. If your game software does not appear to work in such a situation, contact the game's developer for help.

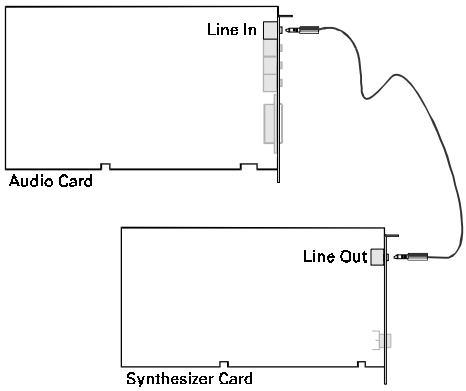

Figure 2-8: Connecting synthesizer and audio cards.

Connecting to External Digital Devices

You can send digital audio from your synthesizer card to a digital device for high quality audio playback or recording. To connect your synthesizer card to an external digital device, use a RCA cable with a RCA plug at each end to connect the synthesizer card's SPDIF jack with the digital device's input jack.

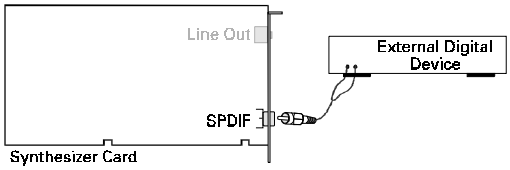

Figure 2-9: Connecting external digital devices to synthesizer card.

3

Installing Software in Windows 95

After you have installed your synthesizer card hardware, you can begin to install the software. This chapter guides you through the process of installing the synthesizer card's software in Windows 95 and comprises the following sections:

- ❑ Setting Up Synthesizer Card Drivers
- ❑ Installing Your Synthesizer Card's Applications
- ❑ Testing the Installation
- ❑ Uninstalling your Synthesizer Card Software

Setting Up Synthesizer Card Drivers

You need device drivers to control your synthesizer card. Installing these drivers in Windows 95 is easy as the operating system detects the existence of synthesizer card components, and either automatically installs the drivers or prompts you for the drivers. To set up the drivers for your synthesizer card, you need your Windows 95 installation diskettes or CD-ROM. Your synthesizer card drivers are in them.

To set up the drivers:

Some of the dialog boxes shown below may not appear if you have previously installed a synthesizer card or an audio card with a wavetable synthesizer in your Windows 95 system.

1. Switch your system on.
   The wavetable synthesizer on your card is detected. A dialog box similar to the one in Figure 3-1 appears.

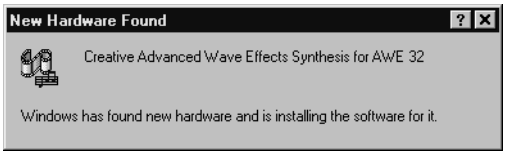

Figure 3-1: The New Hardware Found dialog box.

2. If you are prompted for a Windows 95 installation diskette or CD-ROM, insert the indicated diskette or CD-ROM in a drive.
3. If you inserted a Windows 95 diskette, specify the drive containing the diskette and choose OK.

The drivers for your synthesizer card are now set up. Go on to the next section to install your card's applications.

Installing Your Synthesizer Card's Applications

Your synthesizer card applications can be installed from a CD-ROM or a diskette depending on whether an installation CD-ROM or an installation diskette is supplied in your package.

To install from CD-ROM:

1. Ensure that your CD-ROM drive is installed and working properly. If not, refer to your drive's documentation to troubleshoot it.

2. Load your synthesizer card's software installation CD-ROM into your CD-ROM drive.
   The CD-ROM supports Windows 95 AutoPlay mode and starts running automatically. If it does not, refer to Appendix E, "Troubleshooting".
3. Follow the instructions on the screen to finish installing your synthesizer card's applications.

To install the applications from diskette:

1. Insert the applications' installation diskette into the appropriate drive in your system.
2. Click Start in the task bar.
   The Start popup menu appears
3. Select Settings from the Start popup menu as shown in Figure 3-2.

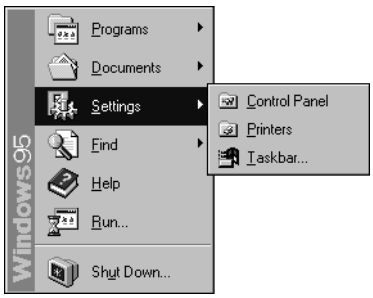

Figure 3-2: Start popup menu.

4. Select Control Panel from the Settings sub-menu.
   The Control Panel group box similar to Figure 3-3 appears.

Figure 3-3: The Control Panel group box.

5. Double-click the Add/Remove Programs icon.
   The Add/Remove Programs Properties dialog box similar to Figure 3-4 appears.

Figure 3-4: Add/Remove Programs properties dialog box.

6. Choose Install.
7. Follow the instructions on the screen to finish the installation.

Testing the Installation

When the applications have been installed, you can test your synthesizer card to find out if it is working properly.

The testing procedure requires the Windows 95 Media Player. Follow the Start button's menus, as depicted in Figure 3-7, to see if the Media Player icon is displayed. If it is not displayed, follow the instructions below to install the Media Player. If it is displayed, jump to the instructions to test the synthesizer card.

To install the Media Player:

1. Click the Start button.
2. Select Settings and then Control Panel.
   The Control Panel group box is displayed.
3. Double-click the Add/Remove Programs icon.
   The Add/Remove Programs Properties dialog box appears.
4. Click the Windows Setup tab.
   The dialog box shown in Figure 3-5 appears.

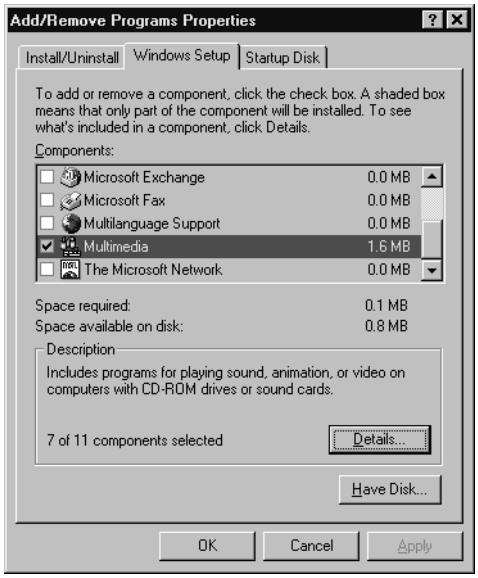

Figure 3-5: The Windows Setup, Add/Remove Programs Properties dialog box.

5. Select Multimedia and choose Details.
   The Multimedia dialog box shown in Figure 3-6 appears.

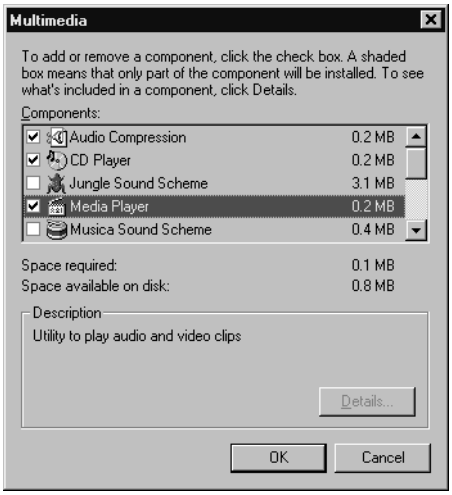

Figure 3-6: The Multimedia dialog box.

6. Click the Media Player check box and choose OK.
7. Follow the instructions that appear on Media Player installation.

The Media Player is now installed. Perform the following instructions to test your synthesizer card.

To test the synthesizer card:

1. Click Start in the task bar.
2. Select Programs, Accessories, Multimedia, and Media Player as shown in Figure 3-7. The Media Player appears and is shown in Figure 3-8.

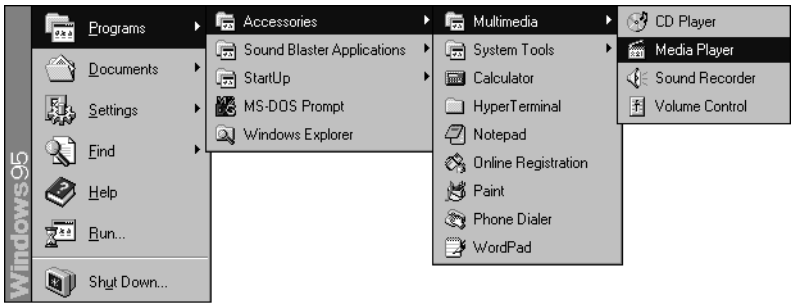

Figure 3-7: Programs popup menu.

Figure 3-8: Media Player.

3. In the File menu, select the Open command.
   The Open dialog box appears with a list of sound files (see Figure 3-9).

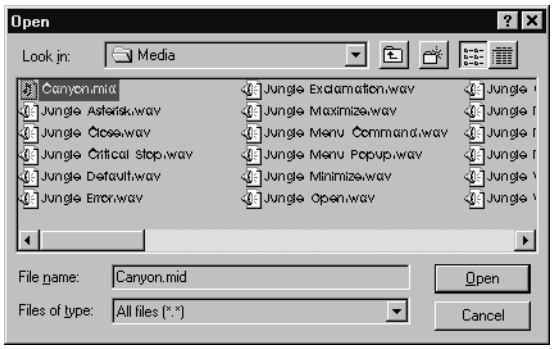

Figure 3-9: The Open dialog.

4. Select CANYON.MID from the list of files.
   You can also select any other file with the MID extension.
5. Choose Open.
6. Click ▶ on the Media Player.
   You should hear the file being played.

If there is no sound during the test, check the following:

- ❑ An output device is connected to the card's Line-Out jack.
- ❑ Volume control of the output device (if any) is set at mid-range.
- ❑ If your synthesizer card is connected to an audio card, make sure that an external amplifier or powered speakers is/are connected to the audio card's Line-Out jack if you decide not to use the audio card's internal power amplifier.
- ❑ No hardware conflicts between the synthesizer card and another peripheral device.

You can also test the synthesizer card by running AWEDIAG in Single-DOS mode or in a DOS box. See the section "Testing the Installation" in page 4-3 for more details.

Uninstalling your Synthesizer Card Software

Many applications share resources and make modifications throughout your system. The Windows 95 uninstall feature allows you to remove applications cleanly or re-install them to correct problems, change configurations, or make version upgrades. You can use the uninstall feature on your synthesizer card's software.

Please quit all your synthesizer card applications before carrying out the uninstall procedure. If a card's application is running during the uninstall procedure, that application will not be uninstalled.

To uninstall the software:

1. Click Start in the task bar.
2. Select Settings from the Start popup menu as shown in Figure 3-10.

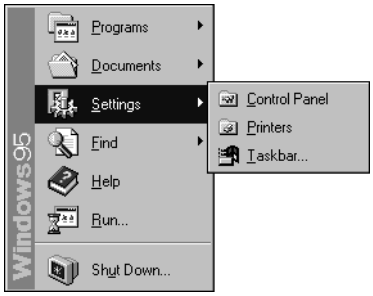

Figure 3-10: Start popup menu.

3. Select Control Panel from the Settings sub-menu shown in Figure 3-10.
   The Control Panel group box like the one in Figure 3-11 appears.

Figure 3-11: The Control Panel group box.

4. Double-click the Add/Remove Programs icon.
   The Add/Remove Programs Properties dialog box similar to the one in Figure 3-12 appears.

Figure 3-12: The Add/Remove Programs Properties dialog box.

5. Select Sound Blaster AWE32 Software from the list and choose Remove.
   The files pertaining to your synthesizer card applications are deleted.
6. Follow the instructions on screen to complete the uninstall process.

4

Installing Software in DOS/Windows 3.x

This chapter provides instructions to install your synthesizer card's software in a DOS/Windows 3.x system. It also tells you how to test the card and change the card's resources. It consists of the following sections:

- Installing From CD-ROM
- Installing From Diskettes
- Testing the Installation
- Understanding the Installation Program
- Changing Resource Settings

Your package may come with an installation CD-ROM or an installation diskette to install your synthesizer card's software. Please use the appropriate section based on the installation media provided in your package.

You need to have a Plug and Play Configuration Manager installed in your system before you install your synthesizer card's software. Your system cannot detect the card without a Plug and Play Configuration Manager.

Installing From CD-ROM

Before you can install the synthesizer card's software from the CD-ROM, a CD-ROM drive must be installed and working properly in your system.

If you have not yet installed a CD-ROM drive and associated drivers, refer to your CD-ROM drive's documentation for instructions.

To install the synthesizer card's software from CD-ROM:

1. Quit to DOS if you are in Windows.

   

   The installation will not work if you install from the Windows DOS prompt.

2. Insert the installation CD-ROM into your CD-ROM drive.
3. At the DOS prompt, change to the drive containing your CD-ROM. For example, type **D:**.
4. Change to the WIN31 directory (e.g. type **CD WIN31**).
5. Type **INSTALL** and press <Enter>.
6. Follow the instructions presented on the screen to complete the installation.

When you have completed the installation and rebooted, proceed to the section Testing the Installation in this chapter to find out if your installation works.

Installing From Diskettes

If a diskette is provided, to install the synthesizer card's software:

1. Quit to DOS if you are in Windows.

   

   The installation will not work if you install from the Windows DOS prompt.

2. Insert your synthesizer card's installation diskette into a drive.

3. At the DOS prompt, change to the drive containing your diskette. For example, if your diskette is in drive A, type **A:**.
4. Type **INSTALL** and press <Enter>.
5. Follow the instructions presented on the screen to complete the installation.

When you have completed the installation and rebooted, proceed to the section "Testing Your Installation" in this chapter to find out if your installation works.

Testing the Installation

Once you have installed the card, run the test program AWEDIAG to make sure the card has been installed properly. This program checks the I/O addresses used by the synthesizer card. It then displays a menu to let you test the card's music output.

To run the test program:

1. At the DOS prompt, change to the directory containing your synthesizer card's software.

   

   If your system contains a Sound Blaster audio card, the software can be found in the same directory as your audio card's software (e.g. C:\SB16). Otherwise, it can be found in the C:\CTSND directory or the directory you specified during installation.
2. Type **AWEDIAG** and press <Enter>.
3. Follow the instructions on the screen to complete the test.

If the test program stops or displays an error message when it is checking the I/O addresses, it may be due to a conflict between the synthesizer card and another peripheral device. To resolve the conflict, you have to change the I/O addresses of your synthesizer card. (See the section "Changing Resource Settings" in page 4-7 or Appendix E, "Troubleshooting" on how to change the settings and resolve the conflicts.)

If there is no sound output during the test, check the following:

- ❑ An output device is connected to the card's Line-Out jack.
- ❑ Volume control of the output device (if any) is set at mid-range.
- ❑ If your synthesizer card is connected to an audio card and if you decide not to use the audio card's internal power amplifier, make sure that an external amplifier or powered speakers is/are connected to the audio card's Line-Out jack.
- ❑ No hardware conflicts exist between the synthesizer card and another peripheral device.

Understanding the Installation Program

The installation program creates a directory you specify, and copies the software provided into that directory. It then allows you to set up your Windows applications by adding a command to the WIN.INI file to run WINSETUP.EXE. This command automatically creates the synthesizer card program group and the application icons when you next run Windows.

You can also choose to set up your Windows applications at a later time by running INSTALL from the synthesizer card's directory in your hard disk. INSTALL also allows you to selectively set up components that were not installed previously.

The installation program also modifies your AUTOEXEC.BAT file. Details are provided in the following section.

Modifications to AUTOEXEC.BAT File

Modifications made to the AUTOEXEC.BAT file vary depending on whether you have a Sound Blaster audio card installed in your system.

- If you do not have a Sound Blaster audio card installed, the installation program adds the following statements to the AUTOEXEC.BAT file:

  ```
  SET BLASTER=E620
  SET MIDI=SYNTH:1 MAP:E MODE:0
  C:\CTSND\AWEDIAG /S /W=C:\WINDOWS
  ```

  The first 2 statements set up the BLASTER and MIDI environment variables for your synthesizer card. The last statement runs the AWEDIAG utility. The CTSND directory is the default directory that stores your synthesizer card's software. If you specified another directory to install to during the installation process, that directory is reflected instead. Similarly, the same statement assumes that C:\WINDOWS contains your Windows program. If you installed it to another directory, that directory is reflected instead.

- If you have a Sound Blaster audio card installed, three modifications will be made to the AUTOEXEC.BAT file:

  — An E parameter is added to the SET BLASTER statement.

  — A MODE parameter is added to the SET MIDI statement.

  — A statement to run AWEDIAG is added after the statement to run DIAGNOSE for your Sound Blaster card.

  The resultant statements for your Sound Blaster and synthesizer cards may look like:

  ```
  SET BLASTER=A220 I5 D1 H5 P330 E620 T6
  SET SOUND=C:\SB16
  SET MIDI=SYNTH:1 MAP:E MODE:0
  C:\SB16\DIAGNOSE /S
  C:\SB16\MIXERSET /P /Q
  C:\SB16\AWEDIAG /S /W=C:\WINDOWS
  ```

  

  The statement to run AWEDIAG should always be after the statement to run DIAGNOSE.

The E parameter in the SET BLASTER statement specifies the I/O address of your synthesizer card. Refer to your Sound Blaster audio card's *Getting Started* manual for more information on the additional parameters. The SB16 directory is the default directory that stores your Sound Blaster audio card's software. If your audio card's software is stored in another directory, that directory is reflected instead. Similarly, the last statement assumes that C:\WINDOWS contains your Windows program. If you installed it to another directory, that directory is reflected instead.

The SET BLASTER statement is added or modified by the AWEDIAG utility. The values shown above may differ from those in your system. Running AWEDIAG with the /S parameter updates the E parameter of the BLASTER environment with the I/O address of your synthesizer card (retrieved from the Plug and Play Configuration Manager). Running AWEDIAG with the /W parameter updates the SYSTEM.INI file with the same value.

The SET MIDI statement specifies the MIDI file format used. If you have a Sound Blaster audio card in your system, it's installation program will have created the SET MIDI statement. In this case, the MODE parameter is added to that existing statement by your synthesizer card's installation program.

The parameters in the SET MIDI statement are:

Parameter	Description
SYNTH:*x*	*x* can be 1 or 2. 1 (default setting) specifies the Advanced Wave Table synthesizer. 2 specifies MIDI port on your audio card.
MAP:*x*	*x* can be G, E, or B. G specifies General MIDI file format. E (default setting) specifies Extended MIDI file format. B specifies Basic MIDI file format.
MODE:*x*	*x* can be 0, 1, or 2. 0 (factory default) specifies General MIDI mode. 1 specifies GS mode. 2 specifies MT-32 mode.

Changing Resource Settings

When your synthesizer card encounters a conflict with another peripheral device, you need to change the resource settings of your synthesizer card. This can be done by running the ISA Configuration Utility that comes with your system's Plug and Play Configuration Manager. This utility shows you which resources are available for your synthesizer card and allows you to choose them. You can refer to the documentation for your Plug and Play Configuration Manager for more information.

When you have changed the resource settings, you will be asked to reboot. During reboot, your system's environment will be updated with the new settings. You can view the new resource settings in the system's environment by typing **SET** at the DOS prompt.

5

Using Advanced WavEffects Control for Windows 95

You can use the Advanced WavEffects chip to control effects and MPU-401 MIDI Emulation of your synthesizer card. This chapter explores these capabilities using a Windows 95 application called AWE32 Control. The AWE32 Control allows you to add and control the effects of your MIDI playback in Windows. It also allows you to specify the Synthesizer and User Banks.

This chapter is organized as follows:

- Starting AWE32 Control
- Setting Effects for Playback
- Changing Synthesizer Bank
- Changing User Bank
- Changing WaveFx Samples
- Auditioning Your Banks
- Viewing the Memory Status Display
- Selecting AWE Devices
- Browsing Sound Sample Files or SoundFont Banks
- Using Context-Menu

Starting AWE32 Control

To start AWE32 Control:

1. Choose AWE32 Control from your synthesizer card's program group.
   The AWE32 Control window similar to that shown in Figure 5-1 appears.

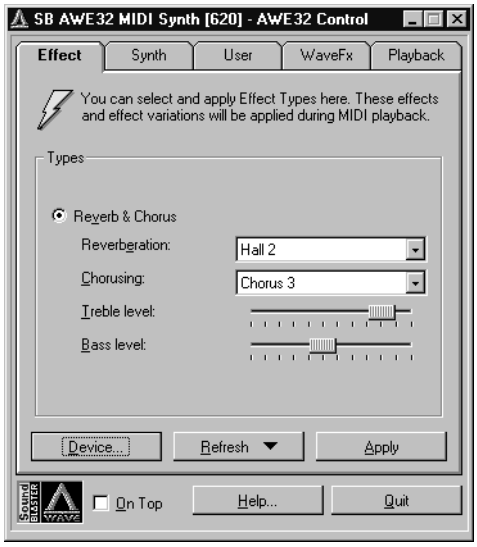

Figure 5-1: The AWE32 Control windows.

As AWE32 Control takes its settings directly from the hardware, the appearance of the AWE32 Control window may differ slightly.

Setting Effects for Playback

You can add effects like Reverb and Chorus to enhance your MIDI playback.

To add effects:

1. Choose the Effect tab.
   The tab panel similar to Figure 5-1 appears.
2. Select the desired effect.
3. Choose Apply to enable the effect.
   The effect is used as the default setting immediately.

If the Reverb & Chorus effect is selected, you can further specify the reverb and chorus variations.

Reverb

Reverb adds a spacious quality to the sound. Listening to a sound containing Reverb is an experience similar to listening to music at an indoor concert.

The Reverb consists of eight variations:

- Room 1
- Room 2
- Room 3
- Hall 1
- Hall 2
- Plate
- Delay
- Planning Delay

Each variation defines a different degree of reverberation.

To select Reverb variations:

1. Choose the Reverb drop-down list box.
   The dropped-down list similar to Figure 5-2 appears.

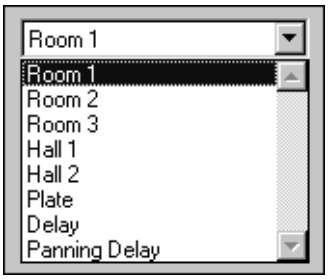

Figure 5-2: The Reverb drop-down list box.

2. Choose the desired reverb variation.

Chorus

Chorus adds depth and warmth to the sound. This function is designed to give audio playback orchestral fullness and resonance.

The Chorus consists of eight variations:

- ❑ Chorus 1
- ❑ Chorus 2
- ❑ Chorus 3
- ❑ Chorus 4
- ❑ Feedback Delay
- ❑ Flanger
- ❑ Short Delay
- ❑ Short Delay Feed Back

Each variation defines a different degree of chorus effect.

To select Chorus variations:

1. Choose the Chorus drop-down list box.
   The dropped-down list similar to Figure 5-3 appears.

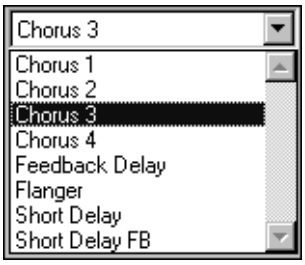

Figure 5-3: The Chorus drop-down list box.

2. Choose the desired chorus variation.

Treble and Bass Level

Treble refers to the higher frequencies (or pitches) of sound while bass refers to the lower frequencies of sound. Increasing the treble level increases the volume of the higher pitches of sound. Increasing the bass level increases the volume of the lower pitches of sound.

Changing Synthesizer Bank

You can specify the Synthesizer Bank required to support your MIDI playback using the Available Synth drop-down list box on the Synth tab panel.

Three predefined standards are available: General MIDI, GS, and MT-32. These standards take their settings from the SYNTHGM.SBK, SYNTHGS.SBK, and SYNTHMT.SBK bank files respectively.

It is also possible to specify a customized Synthesizer Bank which consists of a set of instruments you have pre-arranged.

To choose the Synthesizer Bank:

1. Choose the Synth tab.
   The tab panel similar to Figure 5-4 appears.

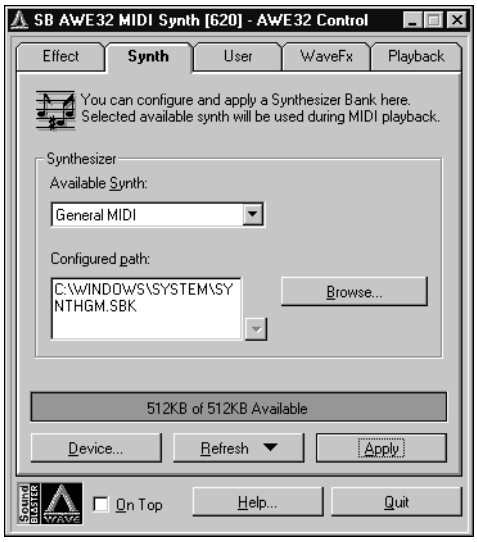

Figure 5-4: The Synthesizer Bank drop-down list box.

2. Choose the desired Synthesizer Emulation standard from the Available Synth drop-down box.

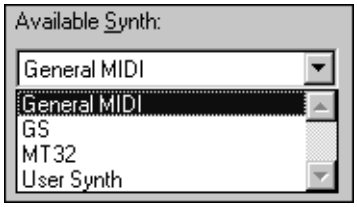

Figure 5-5: Available Synth drop-down list.

3. Choose Apply to save your selection.
   This synthesizer type is subsequently used as the default synthesizer type the next time you start Wndows.

To change the Synthesizer bank to a user custom sythesizer bank:

1. Choose the User Synth option from the Available Synth drop-down box.
2. Type the path for the user custom SoundFont bank in the Configured path edit box.
   Alternatively, choose Browse to search the path. You may also choose the Configured Path drop-down list box to view the most recently used file.
3. Choose Apply to set changes.

Changing User Bank

You can change a user bank by uploading a new user bank to the pre-arranged bank files using the User tab panel (see Figure 5-6).

Uploading User Bank

To upload a User Bank:

1. Choose the User tab.
   The tab panel similar to Figure 5-6 appears.

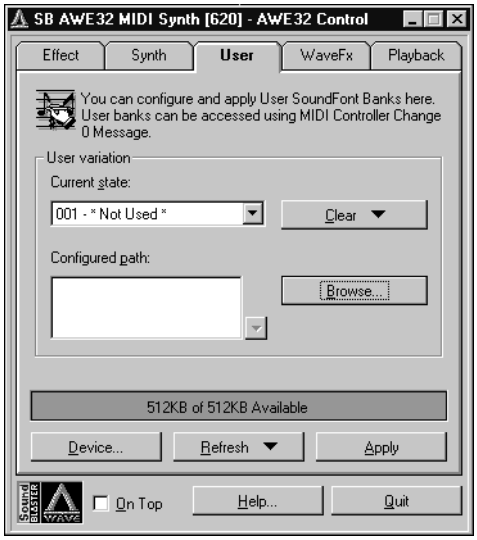

Figure 5-6: The User Bank section of Selection group box.

2. Choose the Current State drop-down list.
3. Select a user bank from the drop-down list.
4. Type the path of the user bank in the Configured path edit box. Alternatively, choose Browse to search for your SoundFont bank. You may also choose the Configured Path drop-down list box to view the most recently used sample.
5. Choose Apply to set changes.

Clearing User Banks

To clear the current user bank:

1. Choose the user bank to clear from the Current state drop-down list.
2. Choose the Clear button.
   The popup menu similar to Figure 5-7 appears.

Figure 5-7: Popup menu.

3. Select the Current User Bank option.

To Clear all user banks:

1. Choose the Clear button.
2. Select All User Banks option.

Changing WaveFx Samples

You can upload wave files as sound samples for your synthesizer card hardware and use them as instruments during MIDI playback.

Uploading Instruments

To upload instruments

1. Choose the WaveFx tab.
   The WaveFx tab panel similar to Figure 5-8 appears.

Figure 5-8: The WaveFax tab panel.

2. Choose the Instrument drop-down list.
3. Select a desired instrument from the drop-down list.
4. Type the path of the sound sample in the Sound sample path edit box. Alternatively, choose Browse to search for your Sound samples. You may also choose the Sound Sample Path drop-down list box to view the most recently used file.
5. Choose Apply to set changes.

Clearing WaveFx Instruments

To clear the current WaveFx Instrument

1. In AWE32 Control, click on the WaveFx tab.
2. Select a instrument from the Instrument drop-down list.
3. Choose the Clear button.
   The popup menu similar to Figure 5-9 appears.

Figure 5-9: Popup menu.

4. Select the Current Instrument option.

To clear all WaveFx Instruments

1. Choose the Clear button and select the All Instruments option.

Auditioning Your Banks

The virtual keyboard allows you to test samples as you audition them. By clicking different keys in this keyboard, you will hear the same instrument at different pitches. This instrument is specified in the Instrument list box. Also, clicking different regions of a key simulate different velocity pressure exerted on that key.

To playback an existing instrument from a bank

1. Choose the Playback tab.
   The Playback tab panel similar to Figure 5-10 appears.

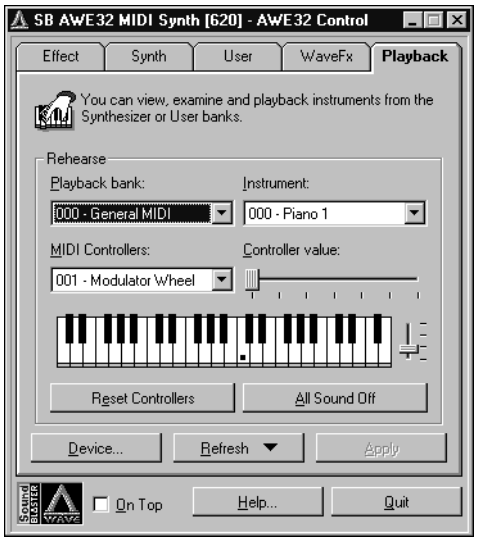

Figure 5-10: The Playback tab panel.

2. Choose the Playback bank drop-down list.
3. Select a bank from the drop list.
4. Choose the Instrument drop-down list.
5. Select an instrument from the drop list.
6. Play the keys on the Virtual Keyboard to test the instrument.

To test instruments with MIDI Controllers:

1. Choose the Playback tab.
2. Select the desired instrument to test from the Instrument drop-down list.
3. Choose the MIDI Controller from the MIDI controller drop-down list.
4. Change the value of the MIDI controller using the Controller value slider.
5. Play the keys on the virtual keyboard to test the instrument.

To change the octave range:

1. Click the vertical slider next to the virtual keyboard.
2. Select the desired range by moving the slider up or down.
3. Play the virtual keyboard to test the instrument.

To reset the MIDI Controllers:

1. Choose the Reset Controllers button.

To silence all MIDI sustain sounds:

1. Choose the All Sound Off button.

Viewing the Memory Status Display

The Memory Status Display allows you to monitor the RAM memory status on your synthesizer card. The memory space will decrease when the file you assign to the bank number has embedded sound samples. The memory space will decrease accordingly by sample file size.

For the case of the display in Figure 5-11, 100% represents 512K.

Figure 5-11: 100% available memory space.

In Figure 5-12, the available memory space is 94.7% of 512K after some sample files are loaded.

Figure 5-12: 94.7% available memory space.

Selecting AWE Devices

If you have multiple synthesizer cards or audio cards with synthesizer hardware installed in your system, you can choose which synthesizer to control using the Device Selection dialog.

To select other AWE devices:

1. Choose the Device button.
   The Device Selection dialog similar to Figure 5-13 appears.

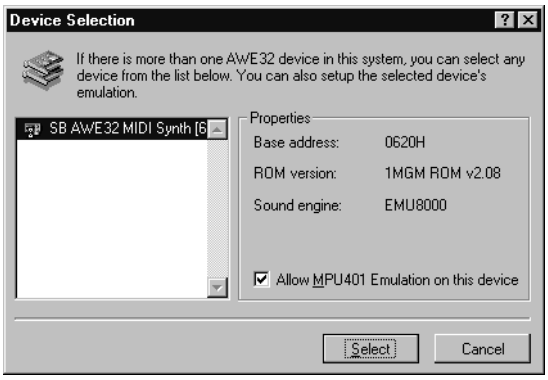

Figure 5-13: The Device Dialog.

2. Select your desired device from the device list.
   The selected device's properties appear in the Properties display box.
3. Choose the Select button to confirm selection.

The check box at the lower right, if available, allows you to enable your selected device to have MPU-401 MIDI Emulation. The following section describes how to use MPU-401 MIDI Emulation.

Using MPU-401 MIDI Emulation

If you have games or other software that utilize the MPU-401 port and that do not have native support for Advanced WavEffects synthesis, you can use MPU-401 MIDI Emulation to allow them to use Advanced WavEffects synthesis. With MPU-401 MIDI Emulation enabled, music output to the MPU-401 port is redirected to the Advanced WavEffects synthesizer.

For MPU-401 MIDI Emulation to work, ensure that you select General MIDI or MPU-401 MIDI Out as the output music device for the game or software. If the game or software installation prompts you for the address of the music device, you need to select the value of the P parameter in the BLASTER environment (e.g. P330). You can view the BLASTER environment by typing **SET** at the DOS prompt and reading the BLASTER= statement. In the case where the P parameter is not shown or where its value does not match any of the choices provided by the game or software installation, you should select another option.

Or, you can change the value of the P parameter to match those provided by the game or software installation.

To change the value of the P parameter:

1. Open the Control Panel folder.
2. Double-click the System icon.
   The System Properties dialog appears.
3. Click the Device Manager tab.
4. Double-click “Sound, video and game controllers”.
5. Select the Creative SBAWE MPU-401 Emulation device and choose Properties.
   The properties dialog for the selected device appears.
6. Click the Resources tab.
   The resource settings for the Creative SBAWE MPU-401 Emulation device are displayed.
7. Click the “Use automatic settings” check box to disable it.
8. Click the “Setting based on:” drop-down list and select a Basic configuration other than the one originally shown.
   The Input/Output Range setting in the table changes. This new value will then be reflected by the P parameter in the BLASTER environment.
9. Choose OK when done.

For DOS boxes only, MPU-401 MIDI Emulation is on the first time you start Advanced WavEffects Control. To disable the feature, you need to disable the check box shown in Figure 5-13. For Windows applications, MPU-401 MIDI Emulation is not applicable.

Browsing Sound Sample Files or SoundFont Banks

To browse for sound sample or SoundFont banks:

1. Choose Browse button within the Synth, User or WaveFx tab panel. Browse dialog similar to Figure 5-14 appears.

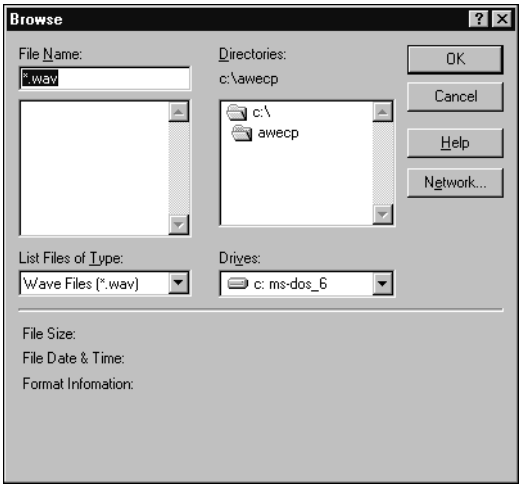

Figure 5-14: The Browse dialog.

2. Click on the drop list directly below List Files of Type and select the desired file type from the list.
3. Choose the desired file listed in the file list box.
4. Choose OK to confirm selection.

Information of the selected file will appear at the bottom of the Browse dialog. If there is no description displayed, the selected file could be an unsupported format.

Using Context-Menu

The context-menu provides you with quick assess to controls on the various tab panels.

To use context-menu:

1. Place your mouse cursor on any part of the tab panel.
2. Click your right mouse button.
   The context-menu similar to Figure 5-15 appears.

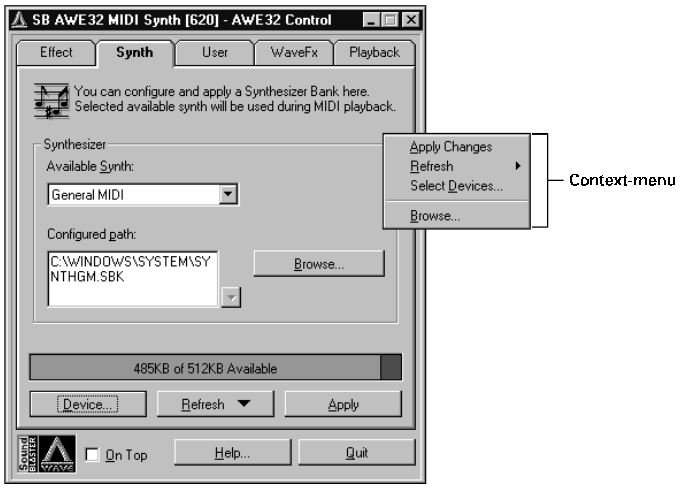

Figure 5-15: Context-menu.

3. Select your desired option by clicking your left mouse button.

6

Using DOS/Windows 3.x Advanced WavEffects Utilities

If you have a Windows 3.x/DOS system, you can use the synthesizer card to perform MIDI Emulation (MPU-401 MIDI Emulation). This chapter explores this capability and others using a DOS utility called AWEUTIL and a Windows 3.x application called AWE Control.

This chapter is organized as follows:

- Using AWEUTIL
- Using AWE Control

Using AWEUTIL

AWEUTIL allows you to perform the following:

- Initialize AWE Hardware
- Use MIDI Emulation to support computer games
- Troubleshooting

For more information about your AWEUTIL options, do the following:

1. Change to the directory containing your synthesizer card's software.
2. Type **AWEUTIL /?** and press <Enter>.
   AWEUTIL options available for your synthesizer card appear:

/U	Unload.
/S	Initialize only.
/EM:GM	Enable MIDI Emulation using General MIDI.
/EM:GS	Enable MIDI Emulation using GS

	Emulation.
/EM:MT32	Enable MIDI Emulation using MT32 Emulation.

Initializing AWE Hardware

The command line for initializing the AWE hardware is:

AWEUTIL /S

This command initializes the AWE hardware only and does not leave the program resident in memory.

Using MIDI Emulation to Support Computer Games

AWEUTIL allows you to enable the MIDI Emulation feature of your synthesizer card. This feature allows games and other software that do not support wave table synthesis to play wave table music from the synthesizer card.

Protected mode software does not support MIDI Emulation. You can still play music from this software using the 4-operator synthesizer chip on your audio card if you have one.

The command line for specifying the type of MIDI emulation is :

AWEUTIL [EM:*xx*] [/U]

The parameters for this command line are as follows:

/EM:*xx*	Specifies the type of MIDI emulation where *xx* represents GM, MT32, or GS.
/U	Unloads the program from memory.

The /U command leaves the program resident in memory. The Windows driver (SBAWE32.DRV) disables MIDI emulation if you run Windows. Therefore, you will need to enable MIDI emulation again after you exit Windows.

Using the AWE Control

The AWE Control allows you to add and control the effects of your MIDI playback in Windows 3.x. It also allows you to specify the Synthesizer and User Banks.

This section is organized as follows:

- ❑ Starting AWE Control
- ❑ Setting Effects for Your Playback
- ❑ Changing Synthesizer Bank
- ❑ Changing User Bank
- ❑ Using the Control Menu
- ❑ Viewing the Memory Status Display
- ❑ Using the Break-Out-Box Button
- ❑ Quitting AWE Control

Starting AWE Control

To start AWE Control:

1. Double-click the AWE Control icon in your synthesizer card's group window.
   The AWE Control window similar to the Figure 6-1 appears.

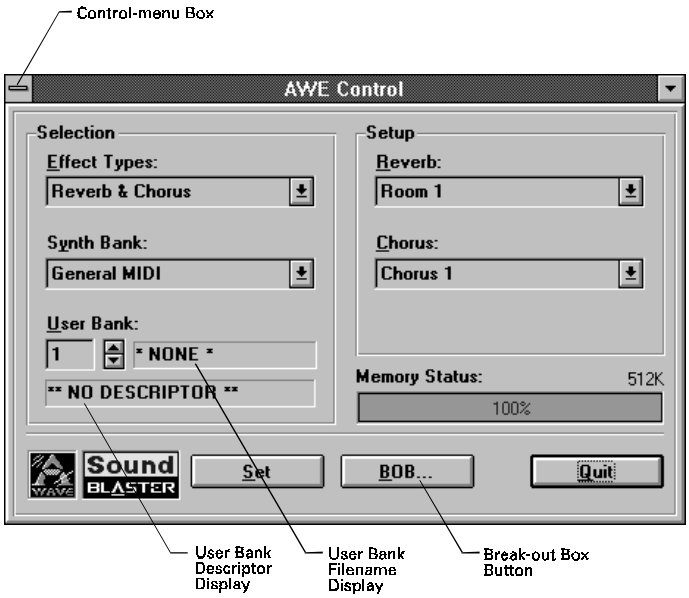

Figure 6-1: The AWE Control window.

As AWE Control takes its settings directly from the hardware, the appearance of the AWE Control window may differ slightly.

Setting Effects for Your Playback

You can add effects like Reverb and Chorus to enhance your MIDI playback.

To add Effect:

1. Choose the Effects Type drop-down list box.
   The dropped-down list similar to Figure 6-2 appears.

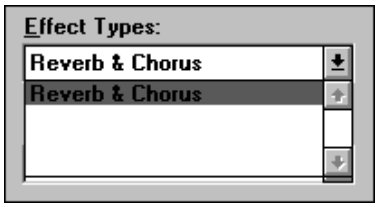

Figure 6-2: The Effect Types drop-down list box.

2. Select the desired effect.
3. Choose Set to save the effect.

If the Reverb and Chorus effect is selected, you can further specify the reverb and chorus variations within the Setup group box.

Reverb

Reverb adds a spacious quality to the sound. Listening to a sound containing Reverb is an experience similar to listening to music at an indoor concert.

The Reverb consists of eight variations:

- Room 1
- Room 2
- Room 3
- Hall 1
- Hall 2
- Plate
- Delay
- Planning Delay

Each variation defines a different degree of reverberation.

To select Reverb variations:

1. Choose the Reverb drop-down list box.
   The dropped-down list similar to Figure 6-3 appears.

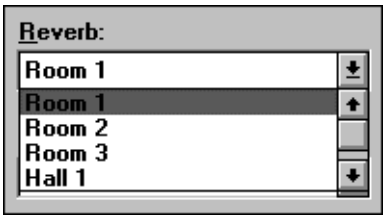

Figure 6-3: The Reverb drop-down list box.

2. Choose the desired reverb variation.

Chorus

Chorus adds depth and warmth to the sound. This function is designed to give audio playback orchestral fullness and resonance.

The Chorus consists of eight variations:

- Chorus 1
- Chorus 2
- Chorus 3
- Chorus 4
- Feedback Delay
- Flanger
- Short Delay
- Short Delay Feed Back

Each variation defines a different degree of chorus effect.

To select Chorus variations:

1. Choose the Chorus drop-down list box.
   The dropped-down list similar to Figure 6-4 appears.

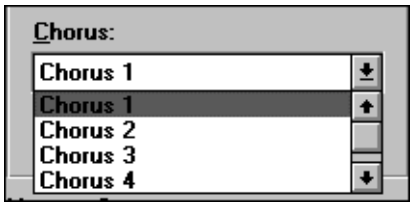

Figure 6-4: The Chorus drop-down list box.

2. Choose the desired chorus variation.

Changing Synthesizer Bank

You can specify the Synthesizer Bank required to support your MIDI playback using the Synth Bank drop-down list box on the AWE Control.

Three predefined standards are available: General MIDI, GS, and MT-32. These standards take their settings from SYNTHGM.SBK, SYNTHGS.SBK, and SYNTHMT.SBK bank files respectively.

It is also possible to specify a customized Synthesizer Bank which consists of a set of instruments you have pre-arranged.

To choose the Synthesizer Bank:

1. Choose the Synth Bank drop-down list box.
   The dropped-down list similar to Figure 6-5 appears.

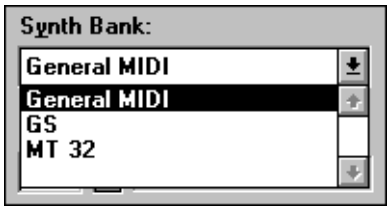

Figure 6-5: The Synthesizer Bank drop-down list box.

2. Choose the desired Synthesizer Emulation standard.
3. Choose Set to save your selection.
   This synthesizer type is subsequently used as the default synthesizer type the next time you start Wndows.

Changing User Bank

You can assign bank numbers to the pre-arranged bank files using the User Bank section (see Figure 6-6) of the Selection group box.

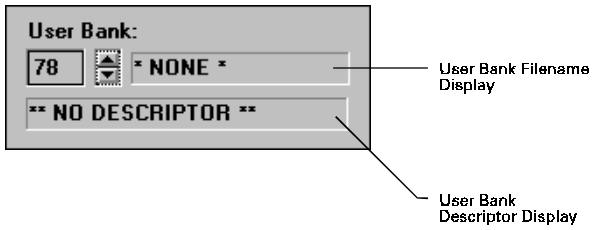

Figure 6-6: The User Bank section of Selection group box.

- ❑ The User Bank Descriptor Display shows the description of the particular user bank selected.
- ❑ The User Bank Filename Display shows the name of the file designated to the Bank Number displayed in the spinner box.

To change a User Bank:

1. Choose the number to assign the user bank using the spinner buttons.
   The Setup group box changes to the one shown in Figure 6-7.

Figure 6-7: To assign User Bank in Setup group box.

2. If you need to get a user bank from another path, choose Set Dir. The Set Directory dialog box shown in Figure 6-8 appears.

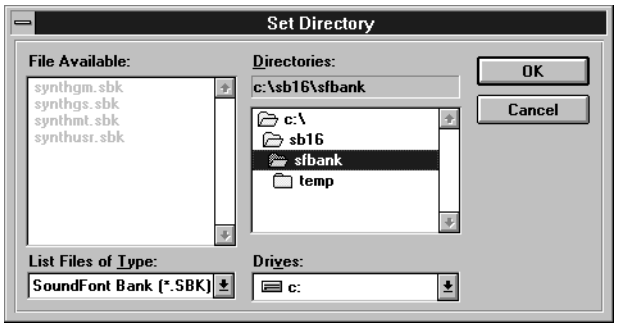

Figure 6-8: The Set Directory dialog box.

3. Select the path of the user bank you want to use and choose OK.
4. Choose the desired bank file (with SBK extension) from the Setup group box.
   Choose Clear to cancel the bank file assigned to the bank number.

You can assign up to 127 user banks.

Using the Control Menu

To use the Control menu:

1. Choose the Control-menu box.
   The menu similar to Figure 6-9 appears.

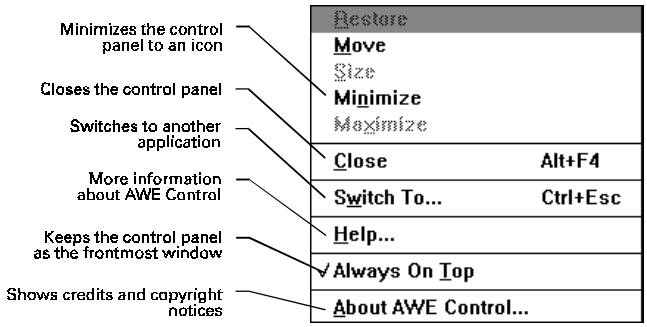

Figure 6-9: The Control Menu.

2. Select the option that you want to perform.

Viewing the Memory Status Display

The Memory Status Display allows you to monitor the RAM memory status on your AWE 32 card. The memory space will decrease when the file you assign to the bank number has embedded sound samples. The memory space will decrease accordingly by the sample file size.

For the case of the display in Figure 6-10, 100% represents 512K.

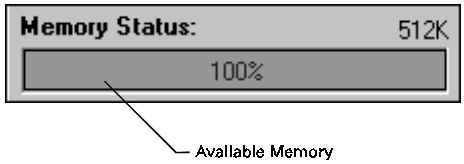

Figure 6-10: 100% available memory space.

In Figure 6-11, the available memory space is 61% of 512K after some sample files are loaded.

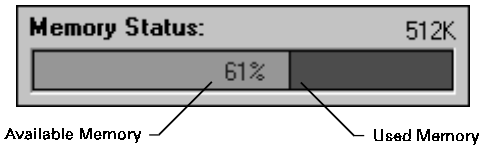

Figure 6-11: 61% available memory space.

Using the Break-Out-Box Button

When you choose BOB (Break-Out-Box button), the AWE Controller Break-Out Box dialog box similar to Figure 6-12 appears. This dialog box contains sliders that generate MIDI controller events as you move them. You can use the sliders to generate controller events in playback mode. The sliders automatically slide during playback to reflect the values of controller events in the assigned slots.

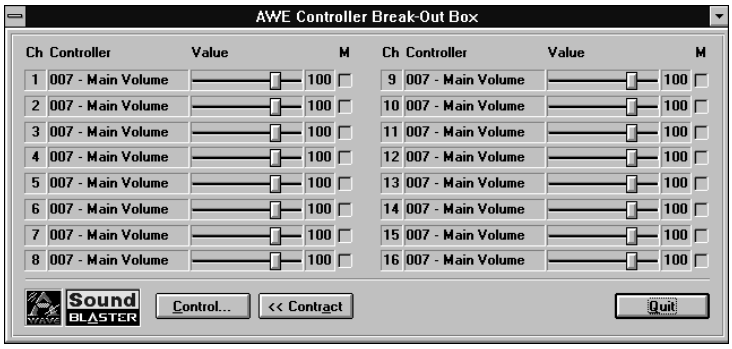

Figure 6-12: The AWE Controller Break-Out-Box dialog box.

Quitting AWE Control

To quit AWE Control:

1. Choose Quit.
   Alternatively, double-click the Control-menu box.

A

General Specifications

This appendix lists the general specifications of your synthesizer card.

Plug and Play

- ISA specification version 1.0a compliant.

Advanced WavEffects 32 Music Synthesizer

- 32-voices polyphony.
- 16 parts multi-timbral.
- 1 MB ROM of General MIDI sample.
- 512 KB built-in DRAM (not available on some cards).

Upgrade Options

- SIMM RAM modules for more sound samples.

B

Changing DRAM Expansion Jumper Settings

Skip this appendix if your card does not have the on-board 512KB.

The jumper DRAM_EN configures your synthesizer card to use the on-board 512 KB DRAM or the optional Single Inline Memory Modules (SIMMs). The factory default setting specifies use of the 512 KB DRAM.

To change the DRAM usage, enable the jumper corresponding to the setting shown in Figure B-1.

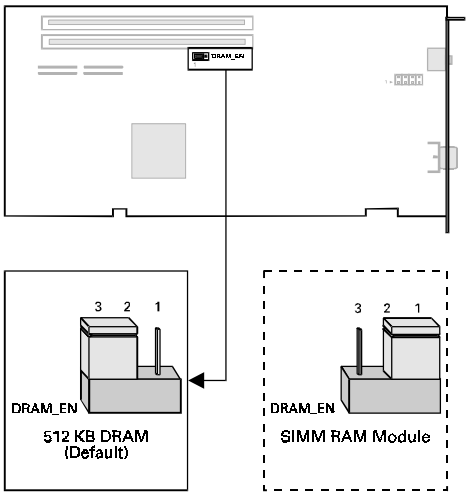

Figure B-1: The available DRAM expansion settings.

C

Hardware Information

You may want to internally connect your synthesizer card to the audio chips on your system's motherboard. This appendix defines the pins of the motherboard audio connector on your synthesizer card.

Read this section only if you are an advanced user who knows how to use the pin assignments. You should be familiar with your system's motherboard and know where to find your system's audio chip connectors. Obtain help from a qualified technician if you are unsure.

Figure C-1 shows you the position of each of the four pins.

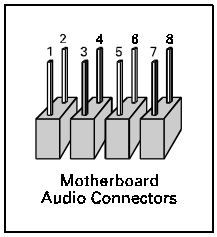

Figure C-1: The position of each pin of the motherboard audio connector.

Table C-1 shows you the pin descriptions.

Table C-1: Motherboard Audio Connector Pin Assignments.

Pin	Signal
1	Right Channel
2	Ground
3	Left Channel
4	Ground
5	Keyed
6	Ground
7	Ground
8	Ground

If you want to locate the motherboard audio connecters on your synthesizer card, see Figure 1-1.

D

MIDI Specifications

This appendix is organized as follows:

- MIDI Implementation Chart
- GS Drum Preset Maps
- Preset Organization

MIDI Implementation Chart

This section lists your synthesizer card's MIDI implementation chart. If you are not familiar with how to use the chart, read the following section on "Using MIDI Implementation Chart".

Table D-1: MIDI Implementation Chart.

Function	Transmitted	Received	Remarks
MIDI Channel	X	1 - 16 1 - 16	
Mode	X	3	
Note Number	X	0 - 127	
Velocity Note On Note Off	 X X	9n, V = 0 - 127 8n, V = 0 - 127	
Key Aftertouch Channel Aftertouch	X X	X O	
Pitch Bend *1	X	O	+/-2 Octave PitchBend Sensitivity recognized
Control Change *1 0, 32 1 6, 38 7 10 11 64 91 93 98 99 100 101 120 121 123	 X X X X X X X X X X X X X X X X	 O O O O O O O O O O O O O O O O	 Bank select Modulation Data entry Main Volume Pan Expression Damper Pedal Reverb Depth Chorus Depth NRPN LSB NRPN MSB RPN LSB RPN MSB All Sounds Off Reset All Controllers All Notes Off
Program Change	X	O 0 - 127	
Notes: *1 : All channels respond to MIDI volume (including drums) Default power up : Bend = 2 semitones, master volume = 100, Controllers normal.			

Mode 1: OMNI ON, POLY Mode 3: OMNI OFF, POLY O: Yes
Mode 2: OMNI ON, MONO Mode 4: OMNI OFF, MONO X: No

Using MIDI Implementation Chart

A “MIDI Implementation Chart” is included with every MIDI device.

To check feature compatibility between two MIDI devices:

1. Fold the MIDI implementation sheets vertically along the line between the Transmitted and Received columns.
2. Put the Transmitted column of the device you will use to send MIDI messages next to the Received column of the receiving devices.
3. Compare the sending and receiving features to see whether features are compatible between the devices. See Figure D-1.

If the feature is followed by matching Os, then the devices can use that feature together by means of MIDI. If either feature is marked with an X, then the two devices cannot be used together. Features that show ranges of numbers can be used together only in the values that overlap within two ranges.

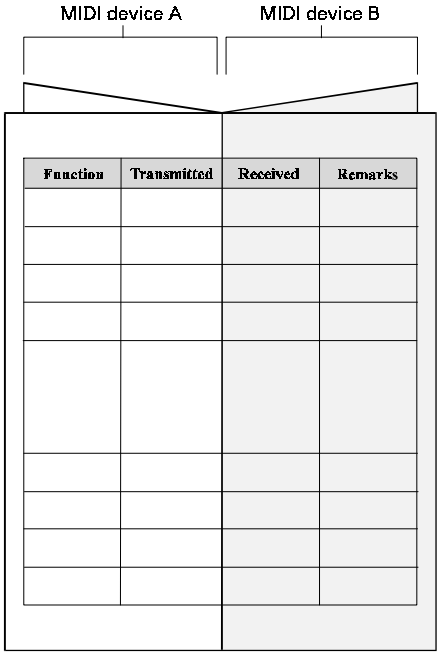

Figure D-1: Comparing your MIDI implementation charts.

GS Drum Preset Maps

You need to insert the SIMM RAM to have GS and MT-32 support. Otherwise, please skip this section.

The following tables list the drum preset maps used by your synthesizer card. If you are not familiar with how to use the maps, read the following section on “Using GS Drum Preset Maps”.

Table D-2: GS Drum Preset Maps.

	Note Number / Prog#	1:STANDARD Set 33:JAZZ Set	9:ROOM Set	17:POWER Set	25:ELECTRONIC Set
	27	High Q			
	28	Slap			
	29	Scratch Push			
	30	Scratch Pull			
	31	Sticks			
	32	Square Click			
	33	Metronome Click			
	34	Metronome Bell			
	35	Kick Drum 2			
C2	36	Kick Drum 1		MONDO Kick	Elec BD
	37	Side Stick			
	38	Snare Drum 1		Gated SD	Elec SD
	39	Hand Clap			
	40	Snare Drum 2			Gated SD
	41	Low Tom 2	Room Low Tom 2	Room Low Tom 2	Elec Low Tom 2
	42	Closed Hi - hat			
	43	Low Tom 1	Room Low Tom 1	Room Low Tom 1	Elec Low Tom 1
	44	Pedal Hi - hat			
	45	Mid Tom 2	Room Mid Tom 2	Room Mid Tom 2	Elec Mid Tom 2
	46	Open Hi - hat			
	47	Mid Tom 1	Room Mid Tom 1	Room Mid Tom 1	Elec Mid Tom 1
C3	48	High Tom 2	Room Hi Tom 2	Room Hi Tom 2	Elec Hi Tom 2
	49	Crash Cymbal 1			
	50	High Tom 1	Room Hi Tom 1	Room Hi Tom 1	Elec Hi Tom 1
	51	Ride Cymbal 1			
	52	Chinese Cymbal			Reverse Cymbal
	53	Ride Bell			
	54	Tambourine			
	55	Splash Cymbal			
	56	Cowbell			
	57	Crash Cymbal 2			
	58	Vibra - slap			
	59	Ride Cymbal 2			

Blank : Same as the percussion sound of "STANDARD"

Table D-3: GS Drum Preset Maps.

	Note Number / Prog#	1:STANDARD Set 33:JAZZ Set	9:ROOM Set	17:POWER Set	25:ELECTRONIC Set
C4	60	High Bongo			
	61	Low Bongo			
	62	Mute High Conga			
	63	Open High Conga			
	64	Low Conga			
	65	High Timbale			
	66	Low Timbale			
	67	High Agogo			
	68	Low Agogo			
	69	Cabasa			
	70	Maracas			
	71	Short Hi Whistle			
C5	72	Long Low Whistle			
	73	Short Guiro			
	74	Long Guiro			
	75	Claves			
	76	High Wood Block			
	77	Low Wood Block			
	78	Muted Cuica			
	79	Open Cuica			
	80	Mute Triangle			
	81	Open Triangle			
	82	Shaker			
	83	Jingle Bell			
C6	84	Belltree			
	85	Castanets			
	86	Mute Surdo			
	87	Open Surdo			
	88				

Blank : Same as the percussion sound of "STANDARD"

Table D-4: GS Drum Preset Maps.

	Note Number \ Prog#	26:TR-808 Set	41:BRUSH Set	49:ORCHESTRA Set
	27			Closed Hi-Hat
	28			Pedal Hi-Hat
	29			Open Hi-Hat
	30			Hide Cymbal
	31			
	32			
	33			
	34			
	35			Concert BD 2
C2	36	808 Bass Drum		Concert BD 1
	37	808 Rim Shot		
	38	808 Snare Drum	Brush Tap	Concert SD
	39		Brush Slap	Castanets
	40		Brush Swirl	Concert SD
	41	808 Low Tom 2		Timpani F
	42	808 CHH		Timpani F#
	43	808 Low Tom 1		Timpani G
	44	808 CHH		Timpani G#
	45	808 Mid Tom 2		Timpani A
	46	808 OHH		Timpani A#
	47	808 Mid Tom 1		Timpani B
C3	48	808 Hi Tom 2		Timpani c
	49	808 Cymbal		Timpani c#
	50	808 Hi Tom 1		Timpani d
	51			Timpani d#
	52			Timpani e
	53			Timpani f
	54			
	55			
	56			
	57			Concert Cymbal 2
	58			
	59			Concert Cymbal 1

Blank : Same as the percussion sound of "STANDARD"

Table D-5: GS Drum Preset Maps.

	Prog# / Note Number	26:TR-808 Set	41:BRUSH Set	49:ORCHESTRA Set
C4	60			
	61			
	62	808 High Conga		
	63	808 Mid Conga		
	64	808 Low Conga		
	65			
	66			
	67			
	68			
	69			
	70	808 Maracas		
	71			
C5	72			
	73			
	74			
	75	808 Claves		
	76			
	77			
	78			
	79			
	80			
	81			
	82			
	83			
C6	84			
	85			
	86			
	87			
	88			Applause

Blank : Same as the percussion sound of "STANDARD"

Table D-6: GS Drum Preset Maps.

	Note Number \ Prog#	57:SFX Set
	39	High Q
	40	Slap
	41	Scratch Push
	42	Scratch Pull
	43	Sticks
	44	Square Click
	45	Metronome Click
	46	Metronome Bell
	47	Guitar sliding finger
C3	48	Guitar cutting noise (down)
	49	Guitar cutting noise (up)
	50	String slap of double bass
	51	Fl. Key Click
	52	Laughing
	53	Screaming
	54	Punch
	55	Heart Beat
	56	Footsteps1
	57	Footsteps2
	58	Applause
	59	Door Creaking
C4	60	Door
	61	Scratch
	62	Windchime
	63	Car-Engine
	64	Car-Stop
	65	Car-Pass
	66	Car-Crash
	67	Siren
	68	Train
	69	Jetplane
	70	Helicopter
	71	Starship
C5	72	Gun Shot
	73	Machine Gun
	74	Lasergun
	75	Explosion
	76	Dog
	77	Horse-Gallop
	78	Birds
	79	Rain
	80	Thunder
	81	Wind
	82	Seashore
	83	Stream
C6	84	Bubble

Table D-7: GS Drum Preset Maps.

Note Number \ Prog#	128:CM-64/32L Set
35	Acoustic Bass Drum
C2 36	Acoustic Bass Drum
37	Rim Shot
38	Acoustic Snare Drum
39	Hand Clap
40	Electronic Snare Drum
41	Acoustic Low Tom
42	Closed High Hat
43	Acoustic Low Tom
44	Open High Hat 2
45	Acoustic Middle Tom
46	Open High Hat 1
47	Acoustic Middle Tom
C3 48	Acoustic High Tom
49	Crash Cymbal
50	Acoustic High Tom
51	Ride Cymbal
52	- - -
53	- - -
54	Tambourine
55	
56	Cowbell
57	- - -
58	- - -
59	- - -
C4 60	High Bongo
61	Low Bongo
62	Mute High Conga
63	High Conga
64	Low Conga
65	High Timbale
66	Low Timbale
67	High Agogo
68	Low Agogo
69	Cabasa
70	Maracas
71	Short Whistle

Note Number \ Prog#	128:CM-64/32L Set
C5 72	Long Whistle
73	Quijada
74	- - -
75	Claves
76	Laughing
77	Screaming
78	Punch
79	Heartbeat
80	Footsteps 1
81	Footsteps 2
82	Applause
83	Creaking
C6 84	Door
85	Scratch
86	Windchime
87	Engine
88	Car-Stop
89	Car-Pass
90	Crash
91	Siren
92	Train
93	Jet
94	Helicopter
95	Starship
C7 96	Pistol
97	Machine Gun
98	Lasergun
99	Explosion
100	Dog
101	Horse-Gallop
102	Birds
103	Rain
104	Thunder
105	Wind
106	Waves
107	Stream
C8 108	Bubble

- - - = No Sound

Using GS Drum Preset Maps

This section helps you to understand what a drum kit is and how to use the GS drum preset maps.

In the GS synthesizer mode, you can select any drum kit out of a selection of 10 drum kits (which includes the Standard Drum Kit) to play through MIDI channel 10. The choice of more drum kits offers you the flexibility to listen to songs with a wider variety of percussive instruments. These drum kits are shown in Table D-8.

Each drum kit is essentially an instrument that you can select in the same way you select a melodic instrument. For example, to select the TR-808 drum kit, all you need to do is change the program in MIDI channel 10 to 26. All percussion sounds will then be played back through the TR-808 drum kit.

Table D-8: Drum kits for GS synthesizer mode.

Name	Prog#	Description
Standard/Jazz	1/33	Standard General MIDI drum kit. Jazz is similar to the Standard drum kit.
Room	9	Similar to that of the Standard kit except that it has more room ambiance.
Power	17	Similar to that of the Standard kit, but with more powerful kick and snare drums.
Electronic	25	Electronic drum kit. Most of the percussion instruments in this drum kit are reminiscent of old analog and digital rhythm machines (e.g., the Roland TR-707 and TR-909 rhythm machines).
TR-808	26	Electronic drum kit, reminiscent of the Roland TR-808 rhythm machine.
Brush	41	Similar to the Standard kit except that brushes have been added. This kit is mostly used for Jazz MIDI pieces.
Orchestra	49	An immense collection of concert drums and timpani.
SFX	57	A collection of sound effects.
CM-64/32L	128	Same as the MT-32 drum kit. This drum kit contains standard percussion at the lower range of the keyboard, and sound effects at the higher range of the keyboard.

Preset Organization

This section lists the various preset organizations of your synthesizer card.

GM & GS Preset (Capitol tones)

This section lists the Capitol tones for GM & GS preset.

Table D-9: GM & GS Preset (Capitol tones).

	Prog#	Instrument	Prog#	Instrument
Piano	1	Piano 1	2	Piano 2
	3	Piano 3	4	Honky-tonk
	5	E. Piano 1	6	E. Piano 2
	7	Harpsichord	8	Clav.
Chromatic Percussion	9	Celesta	10	Glockenspiel
	11	Music Box	12	Vibraphone
	13	Marima	14	Xylophone
	15	Tubular-bell	16	Santur
Organ	17	Organ 1	18	Organ 2
	19	Organ 3	20	Church Org. 1
	21	Reed Organ	22	Accordion Fr
	23	Harmonica	24	Bandneon
Guitar	25	Nylon-str. Gt	26	Steel-str. Gt
	27	Jazz Gt.	28	Clean Gt.
	29	Muted Gt.	30	Overdrive Gt.
	31	Distortion Gt.	32	Gt. Harmonics
Bass	33	Acoustic Bs.	34	Fingered Bs.
	35	Picked Bs.	36	Fretless Bs.
	37	Slap Bass 1	38	Slap Bass 2
	39	Synth Bass 1	40	Synth Bass 2

Table D-10: GM & GS Preset (Capitol tones).

	Prog#	Instrument	Prog#	Instrument
Strings / orchestra	41	Violin	42	Viola
	43	Cello	44	Contrabass
	45	Tremolo Str	46	PizzicatoStr
	47	Harp	48	Timpani
Ensemble	49	Strings	50	Slow Strings
	51	Syn. Strings1	52	Syn. Strings2
	53	Choir	54	Voice Oohs
	55	SynVox	56	OrchestaHit
Brass	57	Trumpet	58	Trombone
	59	Tuba	60	MutedTrumpet
	61	French Horn	62	Brass 1
	63	Synth Brass1	64	Synth Brass2
Reed	65	Soprano Sax	66	Alto Sax
	67	Tenor Sax	68	Baritone Sax
	69	Oboe	70	English Horn
	71	Bassoon	72	Clarinet
Pipe	73	Piccolo	74	Flute
	75	Recorder	76	Pan Flute
	77	Bottle Blow	78	Shakuhachi
	79	Whistle	80	Ocarina
Synth lead	81	Square Wave	82	Saw Wave
	83	Syn. Calliope	84	Chiffer Lead
	85	Charang	86	Solo Vox
	87	5th Saw Wave	88	Bass & Lead

Table D-11: GM & GS Preset (Capitol tones).

	Prog#	Instrument	Prog#	Instrument
Synth pad etc.	89	Fantasia	90	Warm Pad
	91	Polysynth	92	Space Voice
	93	Bowed Glass	94	Metal Pad
	95	Halo Pad	96	Sweeo Pad
Synth SFX	97	Ice Rain	98	Soundtrack
	99	Crystal	100	Atmosphere
	101	Brightness	102	Goblin
	103	Echo Drops	104	Star Theme
Ethnic	105	Sitar	106	Banjo
	107	Shamisen	108	Koto
	109	Kalima	110	Bag Pipe
	111	Fiddle	112	Shannai
Percussive	113	Tinkle Bell	114	Agogo
	115	Steel Drums	116	Woodblock
	117	Taiko	118	Melo Tom 1
	119	Synth Drum	120	ReverseCym.
SFX	121	Gt. FretNoise	122	Breath Noise
	123	Seashore	124	Bird
	125	Telephone 1	126	Helicopter
	127	Applause	128	Gun Shot

GS Preset (Variation Tones)

Table D-12 and Table D-13 list the variation tones for GS preset. If you are not familiar with how to use use the table, please read the following section on “Using GS Preset (Variation Tones)”.

Table D-12: GS preset (Variation tones).

Prog#	Bank Number	Instrument	Prog#	Bank Number	Instrument
5	8	Detuned EP 1	32	8	Gt. Feedback
6	8	Detuned EP 2	39	8	Synth Bass 3
7	8	Coupled Hps.	40	8	Synth Bass 4
15	8	Church Bell	49	8	Orchestra
17	8	Detuned Or. 1	51	8	Syn. Strings3
18	8	Detuned Or. 2	62	8	Brass 2
20	8	Church Org. 2	63	8	Synth Brass3
22	8	Accordion It	64	8	Synth Brass4
25	8	Ukulele	81	8	Sine Wave
26	8	12-str. Gt	108	8	Taisho Koto
	16	Mandolin	116	8	Castanets
27	8	Hawaiian Gt.	117	8	Concert BD
28	8	Chorus Gt.	118	8	Melo. Tom 2
29	8	Funk Gt.	119	8	808 Tom
31	8	Feedback Gt.			

Table D-13: GS preset (Variation tones).

Prog#	Bank Number	Instrument	Prog#	Bank Number	Instrument
121	0	Gt. FretNoise	126	0	Helicopter
	1	Gt. Cut Noise		1	Car-Engine
	2	String Slap		2	Car-Stop
122	0	Breath Noise		3	Car-Pass
	1	Fl. Key Click		4	Car-Crash
123	0	Seashore		5	Siren
	1	Rain		6	Train
	2	Thunder		7	Jetplane
	3	Wind		8	Starship
	4	Stream		9	Burst Noise
	5	Bubble	127	0	Applause
124	0	Bird		1	Laughing
	1	Dog		2	Screaming
	2	Horse-Gallop		3	Punch
125	0	Telephone 1		4	Heart Beat
	1	Telephone 2		5	Footsteps
	2	DoorCreakin	128	0	Gun Shot
	3	Door		1	Machine Gun
	4	Scratch		2	Lasergun
	5	Windchime		3	Explosion

Using GS Preset (Variation Tones)

This section helps you understand what a user bank is and how it relates to the GS preset maps shown in Table D-12 on page D-15 and Table D-13 on page D-16.

Your synthesizer card offers GS compatibility by including the user bank instruments found in GS. Instruments in a user bank are those that are similar in class or variation. For example, GM instrument number 25 is Nylon String Guitar (see Table D-9 on page D-12) and its variation is Ukulele (see Table D-12 on page D-15).

An instrument from a user bank (called variation instrument) is just like any GM instrument. Assume you are editing a MIDI file and one of the tracks is using Nylon String Guitar. Upon the playback of that track, you find that Nylon String Guitar does not produce the sound that you want. You can then choose to use Ukulele, the variation for Nylon String Guitar.

To do this, you need to insert a MIDI bank number of 8 (the bank number of Ukulele) into that track, followed by a program change of 25 to select “Ukelele” as the instrument.

The user bank instruments are available only in the “GS” mode of your synthesizer card. You can switch to “GS” mode via the Control Panel.

MT-32 Preset

The following tables list the MT-32 preset.

Table D-14: MT-32 Preset.

Prog#	Instrument	Prog#	Instrument	Prog#	Instrument
1	Acou Piano 1	25	Syn Brass 1	49	Str Sect 1
2	Acou Piano 2	26	Syn Brass 2	50	Str Sect 2
3	Acou Piano 3	27	Syn Brass 3	51	Str Sect 3
4	Elec Piano 1	28	Syn Brass 4	52	Pizzicato
5	Elec Piano 2	29	Syn Bass 1	53	Violin 1
6	Elec Piano 3	30	Syn Bass 2	54	Violin 2
7	Elec Piano 4	31	Syn Bass 3	55	Cello 1
8	Honkytonk	32	Syn Bass 4	56	Cello 2
9	Elec Org 1	33	Fantasy	57	Contrabass
10	Elec Org 2	34	Harmo Pan	58	Harp 1
11	Elec Org 3	35	Chorale	59	Harp 2
12	Elec Org 4	36	Glasses	60	Guitar 1
13	Pipe Org 1	37	Soundtrack	61	Guitar 2
14	Pipe Org 2	38	Atmosphere	62	Elec Gtr 1
15	Pipe Org 3	39	Warm bell	63	Elec Gtr 2
16	Accordion	40	Funny Vox	64	Sitar
17	Harpsi 1	41	Echo Bell	65	Acou Bass 1
18	Harpsi 2	42	Ice Rain	66	Acou Bass 2
19	Harpsi 3	43	Oboe 2001	67	Elec Bass 1
20	Clavi 1	44	Echo Pan	68	Elec Bass 2
21	Clavi 2	45	Doctor Solo	69	Slap Bass 1
22	Clavi 3	46	School Daze	70	Slap Bass 2
23	Celesta 1	47	Bellsinger	71	Fretless 1
24	Celetra 2	48	Square Wave	72	Fretless 2

Table D-15: MT-32 Preset.

Prog#	Instrument	Prog#	Instrument	Prog#	Instrument
73	Flute 1	92	Trombone 2	111	Bottleblow
74	Flute 2	93	Fr Horn 1	112	Breathpipe
75	Piccolo 1	94	Fr Horn 2	113	Timpani
76	Piccolo 2	95	Tuba	114	Melodic Tom
77	Recorder	96	Brs Sect 1	115	Deep Snare
78	Pan Pipes	97	Brs Sect 2	116	Elec Perc 1
79	Sax 1	98	Vibe 1	117	Elec Perc 2
80	Sax 2	99	Vibe 2	118	Taiko
81	Sax 3	100	Syn Mallet	119	Taiko Rim
82	Sax 4	101	Windbell	120	Cymbal
83	Clarinet 1	102	Glock	121	Castanets
84	Clarinet 2	103	Tube Bell	122	Triangle
85	Oboe	104	Xylophone	123	Orche Hit
86	Engl Horn	105	Marimba	124	Telephone
87	Bassoon	106	Koto	125	Bird Tweet
88	Harmonica	107	Sho	126	One Note Jam
89	Trumpet 1	108	Shakuhachi	127	Water Bell
90	Trumpet 2	109	Whistle 1	128	Jungle Tune
91	Trombone 1	110	Whistle 2		

If you set your synthesizer card to the sound arrangement of MT-32, you will be able to play in the same manner as if you were playing the MT-32. However, since the sound module of MT-32 is organized differently from your synthesizer card, you will not be able to perfectly duplicate the operations of the MT-32.

The delicate changes in the sound will appear different to those of the MT-32, when you change the sound of an instrument using such features as velocity, modulation, and aftertouch.

Your synthesizer card cannot recognize MT-32 exclusive messages. Therefore, if MT-32 exclusive messages are received by your synthesizer card, the settings of your synthesizer card will not be changed.

E

Troubleshooting

This appendix provides some tips and strategies for some of the problems you might encounter with your synthesizer card either during installation or normal use.

Problems Installing Synthesizer Card Software from CD-ROM

The following are problems that you may encounter when installing your synthesizer card's software from CD-ROM.

Problem The CD-ROM does not automatically run after you insert it in the drive.

Cause The AutoPlay notification setting in your Windows 95 system may not be enabled.

Solution

1. Enable the "Auto Insert Notification" check box. This check box can be found in your CD-ROM drive's properties page. To display this page:
    1. Click the Start button.
    2. Select Settings and then Control Panel.
    3. Double-click the System icon.
    4. Click the Device Manager tab and select your CD-ROM drive.
    5. Choose Properties.
    The properties page for your drive appears.

2. Alternatively, if you do not want to enable the "Auto Insert Notification" check box, perform the following steps:
    1. Double-click the My Computer icon on your Windows 95 desktop.
    2. Using your right mouse button, click the icon representing your CD-ROM drive.
       A pop-up menu appears.
    3. Select AutoPlay in the menu.
    4. Follow the instructions that appear.

Problems with Sound

The following are general problems you might encounter when trying to obtain sound.

Problem No output when running the test program.

Causes
1. Volume knob of your powered speakers or gain of your external amplifier is not set properly.
2. Your synthesizer card's output is connected to the wrong jack on the powered speakers, external amplifier, external digital device, or audio card.
3. If you connected your synthesizer card to an audio card, the audio card's mixer may be mute or set to an inaudible level.

Solutions
1. Check that the audio card's volume knob or any other volume control found on the speaker or amplifier is not set to zero. You may also want to check your audio card's software mixer is set at an audible level.
2. Make sure the synthesizer card is connected to the correct input jack on your speaker, amplifier, digital device, or the Line-In jack on your audio card.
3. Check that the audio card mixer's master and Line-In volume settings are set to audible levels.

Problems in DOS

The following are problems you might encounter in DOS.

Problem BLASTER environment could not be found.

Cause The command to set up the BLASTER environment might not be included in the AUTOEXEC.BAT file. The BLASTER environment specifies the I/O address setting of your synthesizer card. It needs to be set up in the DOS environment. When you install your synthesizer card's software, the commands to set up the environment is automatically added to the AUTOEXEC.BAT file so that the environment is set up whenever your system is started. Whenever you make changes to the environment, it is advisable that the changes be reflected in the AUTOEXEC.BAT file.

Solution To add the command to set up the BLASTER environment in the respective system files, run AWEDIAG (see the sections "Testing the Installation" in page 4-3 and "Understanding the Installation Program" in page 4-4). Remember to reboot for the changes to take effect.

Problem Error message "Out of environment space".

Cause The system environment space is used up.

Solution Add the statement SHELL=C:\COMMAND.COM /E:512 /P to the CONFIG.SYS file. /E defines a new size for the system environment space. You can choose a higher value if the environment size is already 512 bytes. (Normally, the next value is 1024 bytes.) For more information on the above statement, refer to your DOS manual.

Problems in Windows 3.x

The following are problems you might encounter when in Windows 3.x.

Problem No sound when running your synthesizer card's Windows applications.

Cause One or more of the synthesizer drivers might not be included in the SYSTEM.INI file.

Solution Check the SYSTEM.INI file by following the steps below:

1. Choose Run from the File menu in Program Manager.
2. Type **SYSEDIT** in the Command Line text box and choose OK.
3. Make sure the following statements are present:

```
[drivers]
timer=timer.drv
midimapper=midimap.drv
MIDI=sbawe32.drv

[sndblst.drv]
AWEPort=640
```

The value shown in the [sndblst.drv] group may be different in your system.

If one or more of the statements are missing, run INSTALL in DOS. INSTALL rewrites SYSTEM.INI to set up the drivers. It also sets up the Windows applications.

Resolving Conflicts

Conflicts occur when two or more peripheral devices contend for the same resources. Conflicts between your synthesizer card and another peripheral device may occur if your card and the other device are set to use the same I/O addresses.

Resolving Conflicts in Windows 95

To resolve conflicts in Windows 95, run Device Manager to change the resource settings of your synthesizer card or the peripheral card in your system.

To run Device Manager:

1. Click  on the task bar of your Windows 95 screen.
2. Select Settings from the Start popup menu.
3. Select Control Panel from the Settings popup menu.
4. Double-click the System icon within the Control Panel group box.
5. Click the Device Manager tab from the System Properties dialog box.
6. Select Sound, Video and Game Controllers.
7. Select your synthesizer card's name and choose Properties.
8. In your synthesizer card's Properties dialog box, click the Resources tab.
9. Click the Use automatic settings check box.
   If this check box is already enabled, you need to go into the Properties dialog box of the conflicting peripheral device and click the same check box there.
10. Reboot your system to allow Windows 95 to reassign resources to your synthesizer card and/or the conflicting peripheral card.

You can see which peripheral device is conflicting with your synthesizer card in the Device Status box in the General tab of your card's Properties dialog box.

Resolving Conflicts in DOS/Windows 3.x

To resolve conflicts in DOS/Windows 3.x:

1. Run the ISA Configuration Utility of your system's Plug and Play Configuration Manager. The peripheral devices that conflict with your synthesizer card are noted.
2. Reselect the resource settings of your synthesizer card that are in conflict with another card.

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