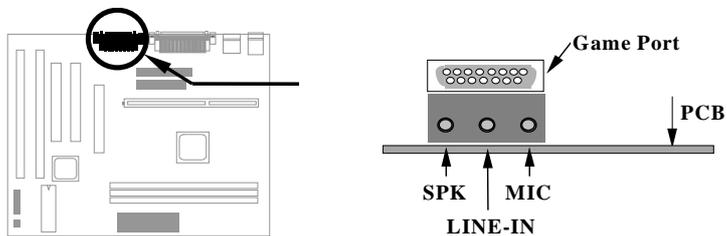


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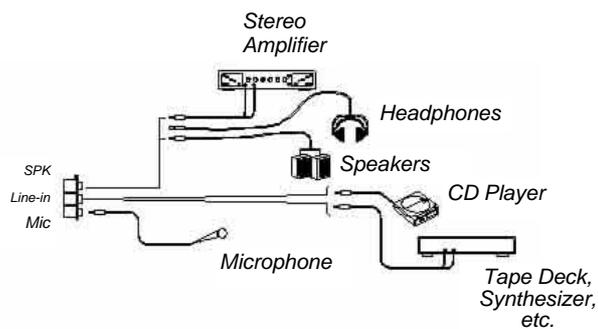
## Chapter 4

# Audio

This motherboard comes with a 16-bit sound processor (Crystal CX4235) onboard.



To fully utilize the audio functions, you may connect various peripheral devices that the audio chip supports. The following figure shows the different devices that you can connect.



# Audio

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## 4.1 Features

The onboard audio has the following features:

### **Advanced technology support**

- Microsoft Direct Sound
- Plug and Play

### **MIDI interface**

- Built-in MIDI interface for external MIDI devices

### **Software-controllable audio**

- Supports various audio devices all controllable through software
- Adjusts master volume, CD audio, line-in, and microphone inputs
- Software setting of I/O address, DMA and IRQ

### **Stereo digitized voice channel**

- Full-duplex, 16-bit digital audio playback and recording in both stereo and mono modes
- Programmable sampling rate from 8 KHz to 44.1 KHz

### **3D Sound-Surround**

- Adjustable Space effect via software
- Preset capability (maximum of three different settings)

## 4.2 Setting Up in Windows 95

The Open Bonus Pack CD-ROM contains the Windows 95 drivers and software (including the Music Center application). Please see the online help for details.



**Note:** Refer to your Windows 95 manual or online help for any questions on Windows 95.

### 4.2.1 Installing the Drivers and the Application

After turning on the system, Windows 95 begins loading and starts detecting new hardware installed on the system.

1. When Windows 95 detects the presence of the onboard audio chip, it begins to build the CX4235 driver database. The New Hardware Found dialog box displays.
2. Select **Driver from disk provided by hardware manufacturer** and click on **OK**. Windows 95 prompts you for the driver disk.
3. Specify the path of the Win95 driver from your CD-ROM drive, then click on **OK**. The system will copy the necessary driver files to your hard disk drive.



**Tip:** Prepare the Windows 95 CD-ROM disk before setting up the onboard audio. Windows 95 will prompt you to insert the Windows 95 CD-ROM disk when you install the joystick or MIDI device.



**Note:** If the file being copied is older than the file currently existing in your system, we suggest you to keep the existing file.

4. Windows 95 makes changes to the system settings and begins detecting the following new hardware components:
  - Crystal PnP Audio System Joystick
  - Crystal PnP Audio System Control Registers
  - Crystal PnP Audio System MPU-401 Compatible

## Audio

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- Crystal PnP Audio System CODEC

5. Upon initial installation, the setup process begins setting up the software.

Windows 95 makes final changes to the system settings.

### 4.2.2 Removing the Drivers

Follow these steps to remove or uninstall the drivers:

1. Execute **SETUP.EXE** on driver disk & click on **Uninstall Driver**.
2. Click on **Uninstall Crystal Drivers** to uninstall the drivers.

The uninstallation process automatically removes the drivers and changes the system registry settings.



**Important:** After removing the drivers, remember to remove the audio chip when you shutdown from the current Windows 95 session; otherwise, Windows 95 will again detect the audio chip at the next startup.

## 4.3 Setting Up in DOS and Windows 3.x

### 4.3.1 Installing the Drivers and the Application

Follow these steps to install the drivers and the application:

1. Insert AOpen Bonus Pack into the appropriate CDROM drive.
2. At the DOS prompt, type

```
x:\Mx6eplus\Sound\Driver\Win31\setup e
```

depending on your CD-ROM drive.

3. Select the **install** option to start the installation process. A confirmation screen displays.
4. This screen describes the files setup will modify during installation. Read this message carefully. Select **Yes** to proceed with the installation. The install path confirmation screen displays.
5. Confirm the installation path by selecting **Begin Installation**. You can modify the source and destination directories. The Windows applications installation screen displays.
6. Press **e** if you want to install the Windows applications and drivers. Otherwise, press **m**. The hardware settings screen displays.
7. Select **Accept the above settings** to install the drivers and applications. You can modify any of the options before you begin installation. If you selected to install the Windows drivers and applications, the Windows-specific hardware settings screen displays.
8. Select **Accept the above settings** to install the Windows drivers and applications. You can modify any of the options before you begin installation. Skip this step if you did not select to install the Windows drivers and applications.
9. Follow the screen instructions to complete the installation. The installation program automatically updates your profiles (AUTOEXEC.BAT, CONFIG.SYS, and SYSTEM.INI) so that your hardware and software work properly.

## Audio

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**Note:** Before any changes are made to your AUTOEXEC.BAT, CONFIG.SYS, WIN.INI and SYSTEM.INI files, backups of your original files are copied to the audio directory and are renamed as AUTOEXEC.###, CONFIG.###, WIN.### and SYSTEM.### respectively.

10. Reboot the system after installation.



**Important:** You must reboot the system. The onboard audio does not work unless you reboot.

### 4.3.2 Removing the Drivers

Follow these steps to remove or uninstall the drivers:

1. Change the directory to where the audio driver files are located and type the following at the DOS prompt:

```
setup c
```

2. Select the **uninstall** option to start the uninstallation process. Follow the screen instructions to complete the process.

### 4.4 Setting Up in NT3.51 / NT4.0

#### 4.4.1 Installing the Audio Drivers

Follow these steps to install the audio drivers:

1. For NT3.51, select **DRIVERS** from control panel.  
For NT4.0, select **MULTIMEDIA** from control panel and click on the Devices tab.
2. Press the **ADD** button. Select **Unlisted or Updated Drivers** and press **OK**.
3. Browse and select X:\Mx6eplus\Sound\Driver\WinNT.  
(X: is your CD-ROM drive.)
4. Press **OK** to continue with the installation.
5. An Audio Setup dialog box will appear. Please select the default configuration resource and press **OK**.
6. Click on the **Restart Now** button.

#### 4.4.2 Install MPU-401/Joystick Driver

Follow these steps to install the MPU401 or joystick drivers:

1. For NT3.51, select **DRIVERS** from control panel.  
For NT4.0, select **MULTIMEDIA** from control panel and click on the Devices tab.
2. Press the **ADD** button. Select **MPU-401 Compatible Driver /Microsoft Sidewinder 3D Pro Joystick** and press **OK**.
3. Place your NT4.0/NT3.51 installation CD and press **OK** (the default path is the i386 directory).
4. The Generic MPU-401/Joystick Setup dialog box will pop up. Select the default configuration resource and press **OK**.
5. Click on the **Restart Now** button.

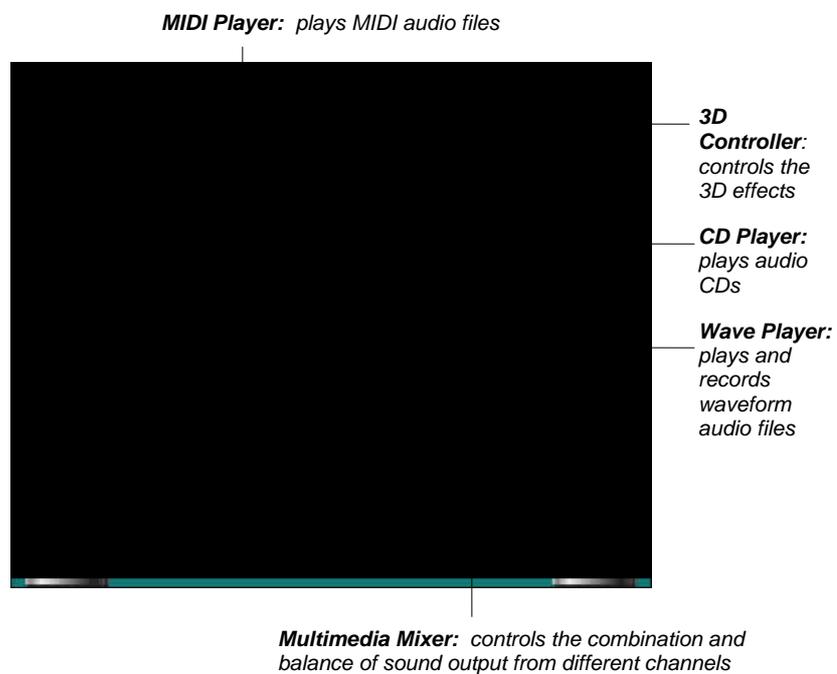
# Audio

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## 4.5 Applications

### 4.5.1 Music Center

To startup this application, please click the Music Center Icon.



For more information, please refer to the online help.

### 4.5.2 MIDI Board

To startup this application software, please click the MIDI Board Icon.

**Tone Button:** Sharp or diminish background music by the 12 tone buttons. **Rhythm & Tempo:** To play several types of background music. **Menu Button:** Turn on/off Menu.



**MIDI Board Notes:** Move cursor over the screen keyboard and click for playing or strick corospondence key on PC keyboard to play specific tone. **Program Tuner:** Drag the yellow point to select specific program for different instrument tune. **HotKey Button:** Show keyboard mapping.

### 4.5.3 MIDI Player

MIDI player is very similar as Media Player that comes with Windows 95, but it is able to dynamic switch MIDI devices from one to another while playing MIDI file, so you can enjoy the sound quality between different MIDI device obviously.