UltraSound Quick Installation Guide

In your UltraSound package you should have:

- Quick Installation Guide (this guide)
- UltraSound card in static protection bag
- Envelope with software disks inside
- UltraSound User's Guide
- Bundled Software User's Guide
- Registration Card (Send it in to receive future upgrade information.)

This guide will help you install UltraSound and all the great software included.

About the UltraSound "README" File

The README contains the latest information about your UltraSound card and its installation. We recommend that you read this information before you install your UltraSound card and software.

To view the README file:

- **Insert the UltraSound disk 1 into drive A: (or B:).**
  Type: A:(or B:)\GV <enter>

  After a small delay, the first screen of the README file will be displayed. The supplied Gravis Viewer (GV.EXE) provides a fast, easy method to view the README file.

Note! | **Please read the complete Hardware Installation section before proceeding.**

1. HARDWARE INSTALLATION

Installing the UltraSound board

Each brand of computer is slightly different. These instructions are intended as a supplement to the expansion card instructions in your computer's operation manual. You should refer to your computer's manual for more detailed information on safely installing an expansion card into your computer.

Your UltraSound card is designed to fit into any full-sized 16-bit ISA (Industry Standard Architecture) expansion slot in an IBM or compatible 386 or greater computer.

Note! | **Static electricity can seriously damage your computer's components and your UltraSound card. Turn off your computer (do not unplug it; just turn it off.) Then touch the computer's case to discharge any static electricity before removing the UltraSound card from its protective anti-static package or starting the installation.**

- **Remove the computer cover's retaining screws and slide or lift the cover off your computer** *(fig. 1)*. **Refer to your computer's documentation if additional information is required on removing the cover from your computer.**
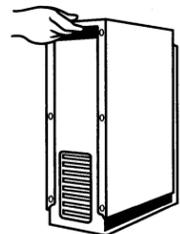
- **Unscrew and remove the bracket/slot cover from an empty expansion slot** *(fig. 2)*. **Try to use an expansion slot as far away as possible from your video card.**

Note! | **Some video boards and disk controllers may emit interference and affect the sound quality of your sound card.**

Fig. 1 – Sliding off computer's cover.

- **Grasp the UltraSound card by its top edge and press it firmly into the expansion slot** *(fig. 3)*. **Use a gentle front to back rocking motion to seat the card properly in the slot.**
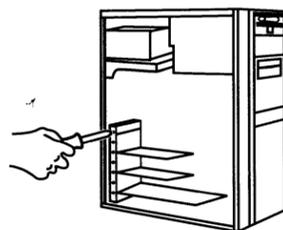
- **Secure the UltraSound card's bracket with the expansion slot cover screw.**

- **Replace and secure the computer's cover. (If possible, leave the cover off until the software is installed; the software will test your hardware, so if you have any difficulties you won't have to remove the cover twice! Use caution when the cover is off your computer.)**

- **Reattach all cables that may have been removed during the installation process.**

Fig. 2 – Removing slot cover

Fig. 3 – Inserting the UltraSound

Ports and Jumpers

All DMA and IRQ Channels are software selectable. The I/O Port Address is selected by a jumper. You probably won't have to change the I/O Port Address, but if you do, please refer to Appendix A in the UltraSound User's Guide for more information.
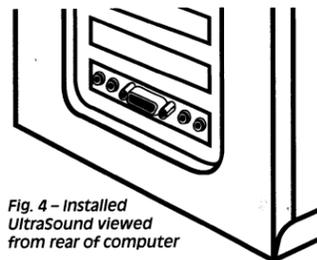
Cables and Connections

Your UltraSound card is installed and now it's time to connect it to the outside world. Here is a description of the connectors on the UltraSound card's mounting plate *(fig. 5)* and the type of devices that can be connected to them. We recommend that you connect speakers or headphones prior to installing the software, as the setup software uses sound during the installation.
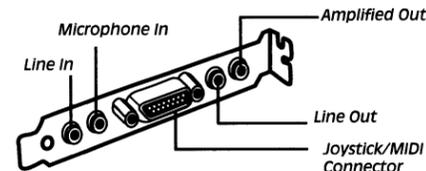
Fig. 4 – Installed UltraSound viewed from rear of computer

Fig. 5 – UltraSound Mounting Plate

(a) Amplified Out

Note! | **Use a stereo mini plug only! A mono plug may damage the built-in amplifier.**

A 1/8-inch (3.5mm) stereo mini plug is the only acceptable plug to use in the UltraSound's Amplified Out connector. All stereo mini plugs have 2 plastic (usually black) bands on the metal shaft; mono mini plugs have 1 band. An inexpensive adapter is available from stereo and electronics shops to convert 1/4-inch phone plugs to mini plugs for use with the UltraSound.

The Amplified Out connector provides 4 watts of amplified audio output per channel, suitable for small headphones or desktop speakers. These low power devices can be connected with a stereo mini phone plug *(fig. 6)*.

Fig. 6 – Connecting to headphones

Note! | **Be careful about volume levels when using headphones. If the volume is too high, you could damage your ears or your headphones. We strongly recommend headphones with a built-in volume control.**

Unamplified speakers should be connected to Amplified Out *(fig. 7)*. Speakers with built-in amplifiers usually are connected to Line Out *(fig. 8)*, but they can be connected to Amplified Out if they are not loud enough when connected to Line Out.
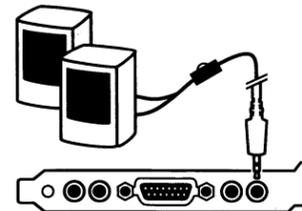
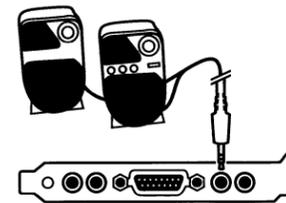Fig. 7 – Connecting to unamplified speakers

Fig. 8 – Connecting to speakers with built-in amplifiers

Speakers requiring more than 4 watts should use an external amplifier connected to the Line Out connector of the UltraSound.

(b) Line Out

A standard stereo amplifier can be connected to Line Out with a stereo mini to phono plug cable *(fig. 9)*. Your home stereo system can be used to obtain the best quality sound.

Line Out is also the place you would normally connect speakers with built-in amplifiers (fig. 8). If you don't get enough volume, check your cables or try the Amplified Out.
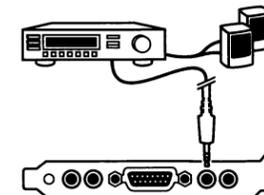
Fig.9 – Connecting to a stereo

(c) Joystick/MIDI Connector (D-15 MIDI)

The D-15 connector in the middle of the mounting plate serves two purposes. You can connect a joystick (such as a Gravis Analog®, Analog Pro®) or Gravis PC GamePad™ directly to the connector *(fig. 10 and 11)*. You can also attach a standard MIDI device with an UltraSound MIDI Adaptor available directly from Advanced Gravis *(fig. 12)*.
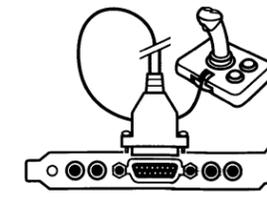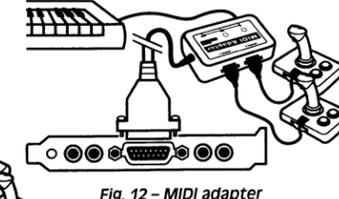
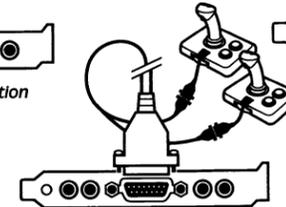Fig. 10 – Joystick connection

Fig. 12 – MIDI adapter connection

Fig. 11 – Connecting 2 joysticks with a Y-cable connection

(d) Microphone In

A stereo mini plug connection is provided for connecting dynamic or condenser (with built-in battery) microphones *(fig. 13)*. You can use a stereo or mono microphone. To use two mono microphones for stereo, you will need a special Y-adapter. These are available at low cost from electronics and stereo stores.
Advanced Gravis has tested and recommends the following Radio Shack microphones or their equivalent:

- Stereo Condenser Mic. #33-1065.
- Mono Dynamic Cardioid Mic. #33-992.
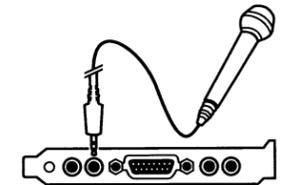
Fig. 13 – Microphone connection

(e) Line In

The Line In allows you to connect the Line Out of a CD player, cassette deck or similar sound source through a stereo mini plug connector *(fig. 14)*.

Fig. 14 – Connecting to a stereo component

Caution! | **Line level input only. DO NOT OVERLOAD by plugging an amplified signal into this jack!**

(f) CD Audio Connector (on card)

The CD Audio Connector allows you to connect to an internal CD ROM audio output *(fig. 15)*. Two connectors are provided. The assignment of pins is shown on the card *(fig. 16)*.

Fig. 15 – Connecting to an internal CD ROM

Fig. 16 – UltraSound pin connectors (CD IN 1 & CD IN 2)

2. SOFTWARE INSTALLATION

Before you begin...

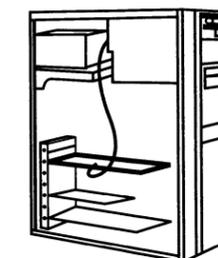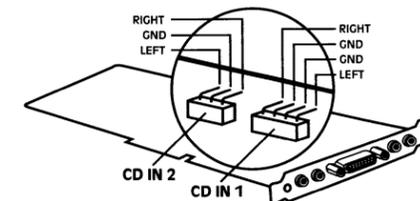Please note that installation for both DOS and Windows software is done in DOS, NOT windows. For more information about the DOS and Windows software that came with your UltraSound, please see Chapters 2 and 3 in your UltraSound User's Guide.

We recommend you make a working copy of your original disks. Use the working copy to install your software, and keep the originals in a safe place.

The software on the installation disks is compressed; during installation, it will be decompressed to over 15 Mb of disk space on your hard drive.

It's a good idea to disable any TSR (Terminate and Stay Resident) programs before installing software.

The install program will help you configure your UltraSound's system software. During installation, the UltraSound files will be copied into C:\ULTRASND by default or into any directory you designate. We recommend that you use the default directory names and don't move files to other directories. The required configuration information will be automatically added to your system's configuration and startup files.

Much of the UltraSound installation has been automated. All you have to do is insert the disks and follow the on-screen instructions.

Getting Started

To install, please perform the following:

♦ **Insert UltraSound Disk 1 into your 3.5" disk drive A: or B:.**
♦ **From DOS:**
  Type: `A:\INSTALL (OR B:\INSTALL)` **<enter>**

Please follow the instructions on screen to install your UltraSound software. Simply press <enter> to install all software onto your hard drive.

UltraSound Setup Program

The setup program is a utility to help you choose the correct configuration settings for your UltraSound card. Its purpose is to make it as easy as possible for you to get DMA and IRQ settings that work in your computer.

Current Default Setup Parameters

This window displays the default setup parameters for the UltraSound card. If no other cards in your system use these default settings, select Accept; otherwise, select Customize or Advanced to change the settings. Selecting Accept will start a test to make sure everything is OK.

```
┌─────────────────────────────────────┐
│      UltraSound Default Settings      │
│                                       │
│  I/O Port Address:            220     │
│  Playback DMA Channel:        1       │
│  Record DMA Channel:          1       │
│  Sound Blaster DMA Channel:   1*      │
│  UltraSound GF1 IRQ:          11      │
│  Sound Blaster/MIDI IRQ:      5       │
│                                       │
│  *Like the real Sound Blaster, this   │
│  DMA channel is set in hardware       │
│  and cannot be changed. Other         │
│  cards in your system using DMA       │
│  channel 1 must be changed to         │
│  another DMA channel.                 │
└─────────────────────────────────────┘
```

Customize

♦ **Select Customize only if you want to change the following settings:**
  • I/O Address
  • DMA Channels
  • UltraSound IRQ
  • Sound Blaster/MIDI IRQ

♦ Select Use Defaults to restore the values to the default settings.
♦ Select Test to confirm that the UltraSound card responds to these settings.
♦ Select Finish to return to the main set up screen.

Advanced

Advanced Setup will allow for settings that may not work with the software shipped with your UltraSound. Other cards in your system using the settings you select may not be detected, or may indicate a conflict during the diagnostic tests.

♦ **Select Advanced only if you want to change the following settings:**
  • I/O Port Address
  • Playback DMA Channel.
  • Record DMA Channel.
  • UltraSound IRQ.
  • Sound Blaster/MIDI IRQ.

♦ **Select Test to confirm that the UltraSound card responds to these settings.**
If the test fails in Advanced mode, then select Diagnostics (available only in Advanced mode) to run these tests:

Check I/O Address. Checks that the address jumpers on your card physically match the selected settings and that the card is detected by the system.

Check SBOS Mode. Checks to see that the UltraSound card responds in Sound Blaster mode.

Check DMA Channel. Checks to see that the UltraSound card responds to the selected DMA channel.

Check DRAM. Checks to see that the DRAM on the UltraSound card is functioning.

Check SB/MIDI IRQ. Checks to see that the UltraSound card responds to the selected Sound Blaster/MIDI IRQ.

♦ **Select Finish to exit the configuration set up and automatically update your system files (see the following section).**

Modifications to Your System Files

Changes to your AUTOEXEC.BAT file are necessary to run the UltraSound card.

Five lines are added to AUTOEXEC.BAT (some numbers may differ, depending on the setup parameters you have chosen):

SET ULTRASND=220,1,1,11,5
This line sets the environment variable that all UltraSound applications should look at to get the configuration of your UltraSound card. The parameter values are listed in this order: I/O port address, playback DMA channel, record DMA channel, GF1 IRQ, Sound Blaster/MIDI IRQ.

C:\ULTRASND\ULTRINIT.EXE
This line performs a reset of the card and configures the IRQs and DMAs selected in the environment variable set above.

SET ULTRADIR=C:\ULTRASND
This line tells applications where the UltraSound root directory is. For example, an application can use this to determine where the patches and other Gravis UltraSound software is. For example, the patches are found in the MIDI subdirectory (C:\ULTRASND\MIDI).

SET BLASTER=A220 I5 D1 T1
Some applications look at this environment variable to determine the Sound Blaster parameters to use. The parameters are: I/O port address, IRQ, DMA channel, and card type.

The path statement is updated to include C:\ULTRASND.

At the end of the installation, your system should re-boot. After that, you are ready to play, create, and experiment with your UltraSound.

Set Up Record

Once your system is configured, you should record the setup information for reference when installing additional expansion cards. Use pencil to allow for future expansions. You may accept the default settings, circle Custom or Advanced settings, or write in your own settings in the column provided.

	Default	Customize	Advanced	Your Settings
Base I/O Address:	220	220, 240	210,220,230, 240,250,260	_____
Playback DMA Channel:	1	1, 3, 5, 6, 7	1,3,5,6,7	_____
Record DMA Channel:	1	N/A	1,3,5,6,7	_____
Sound Blaster DMA	1*	1*	1* 1*	__1__
UltraSound IRQ:	11	2, 3, 5, 7	2,3,5,7,11,12,15	_____
Sound Blaster/MIDI IRQ:	7	2, 3, 5, 7	2,3,5,7,11,12,15	_____

* Sound Blaster DMA is set in hardware and cannot be changed.

UltraSound Serial Number: _____

WINDOWS® SOFTWARE

Your Windows software was automatically installed for you during the UltraSound Software Installation. Program groups and icons for your Windows software will be installed the next time you run Windows.

The UltraSound Windows drivers are installed into your Windows system directory. However, if you want to manually install the UltraSound Windows 3.1 Drivers or the UltraSound Mixer, refer to Appendix F in your UltraSound User's Guide to learn how.

Advanced
GRAVIS