Addendum to the Digidesign Audiomedia III™ Installation Guide

Contains Information for

PC-compatible Systems Only

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Digidesign's Update and Support Policy

Digidesign will provide telephone support to registered users for a period of one year from the date of original purchase. As a new Audiomedia III card owner, the first action you should take is to send in your registration card. You must be a registered owner if you want to receive telephone support, program updates, or new product information. Once you are a registered owner, program updates will be made available to you for a minimal charge.

Digidesign is serious about customer support, and is strongly committed to a continuing relationship with you after your purchase. As a registered Audiomedia III card owner, you can contact Digidesign directly with any questions or problems. A Digidesign Technical Support person will be standing by to help you during business hours.

For the best service, please have the following information ready before calling:
1. Computer System software version
2. Relevant Digidesign software version
3. Digidesign hardware configuration
4. Hard disk mechanism model number and firmware revision

Telephone Technical Support is available from the following locations listed below (please, do not call any other Digidesign numbers with technical problems):

Digidesign US
Phone: 415-842-6699
Fax: 415-856-4275
Hours: Monday through Thursday, 8:00am - 6:00pm PST;
Friday, 7:00am-3:00pm PST.

Digidesign Germany
Phone: +49.811.5520.588
Fax: +49.811.5520.599
Hours: Monday through Friday, 9:30am - 6:00pm CET

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Online Service:

Digidesign Web Page:
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Addendum to the Digidesign Audiomedia III™ Installation Guide

Introduction

This addendum describes three optional, *PC-compatible* software items that have been made available for use with the Audiomedia III card since the printing of your *Digidesign Audiomedia III Installation Guide*:

1. Digidesign Wave Driver
The Digidesign Wave Driver allows audio programs other than Digidesign Session Software to utilize the Audiomedia III card for input and output. Most software packages written for use with standard Microsoft Wave drivers, such as Cakewalk Pro Audio™, Sound Forge™, Cubase Audio™, WaveLab™, Microsoft Media Player™ and Microsoft Sound Recorder™, should be able to play back and record through the Audiomedia III card.

2. Microsoft Audio Compression Mapper (ACM)
The Microsoft Audio Compression Mapper (ACM) allows file formats other than 16-bit, 48kHz, 44.1kHz, 22.050kHz or 11025kHz, to be recorded and played back through the Audiomedia III card. *This software has been included only for customers who are using the Windows™ 3.1 or 3.11 operating system.*

3. Digidesign Binary Speed Test (BST)
The Digidesign Binary Speed Test (BST) measures the approximate speed, capability and throughput of the computer system on which it is run. Use of this program will assist in determining how appropriate this system is for running software such as Digidesign Session software or any audio applications built upon the Digidesign Audio Engine (DAE). *This program requires both Windows 95™ and 32-bit driver support for the hard drive to be tested, and it must be run on a Pentium™ computer.*

Please use this addendum as a supplement to your Installation Guide.

If you are Installing the Audiomedia III card for the first time

Start by installing the Audiomedia III card as described in your *Digidesign Audiomedia III Installation Guide*. After the Audiomedia III card is installed, you can begin installing your Digidesign or third-party audio application and the items discussed in this addendum for use with the card.

If you are updating software for your Audiomedia III card

We strongly recommend that *all* users read this addendum to learn about installing and using the Digidesign Wave Driver, Microsoft Audio Compression Mapper (ACM), and Digidesign Binary Speed Test (BST). Additionally, in order to learn about any late-breaking developments regarding these items, please consult the Read Me files on the enclosed *Digidesign AMIII Wave Driver* and *AMIII Additional Files* disks.

The Digidesign Wave Driver

The Digidesign Wave Driver is optional software that allows other audio programs to utilize the Audiomedia III card for input and output. Most software packages written for use with standard Microsoft Wave drivers, such as Cakewalk Pro Audio, Sound Forge, Cubase Audio, WaveLab, Microsoft Media Player and Microsoft Sound Recorder, should be able to play back and record through the Audiomedia III card.

The Digidesign Wave Driver is a *half-duplex* wave driver, which means you cannot monitor any pre-recorded audio during record. However, the Digidesign Wave Driver will allow the audio input to loop back during record so that you can monitor the record input.

NOTE: When using the Digidesign Wave Driver, only a single audio application (for example, Digidesign's Session software or a third-party application) can use the Audiomedia III card at one time.

Installing/Deinstalling the Digidesign Wave Driver

If you wish to install or deinstall the Digidesign Wave Driver software on your computer system, please use the following instructions. The installation and deinstallation procedures for Windows 3.1/3.11 and Windows 95 differ and are listed separately.

IMPORTANT

⚠ If you wish to use the Digidesign Wave Driver for Windows 3.1 or 3.11, you must also install the Microsoft Audio Compression Mapper (ACM) software, which will allow file formats other than 16-bit, 48kHz, 44.1kHz, 22.050kHz or 11025kHz, to be recorded and played back through the Audiomedia III card. The installation and deinstallation instructions for the Microsoft ACM are described later in this addendum.

To install the Digidesign Wave Driver in Windows 3.1 or 3.11:

- Start up Windows.

- If you are installing the Digidesign Wave Driver over an older version (from a previous installation of Session or Session 8), or reinstalling the Digidesign Wave driver, we recommend first deinstalling the current Digidesign Wave driver. (The Digidesign Wave driver deinstallation instructions are covered next.)

- Insert the *Digidesign AMIII Wave Driver* disk into your floppy drive.

- From the File menu, choose the *Run* command.

- Type in **A:\Setup** or **B:\Setup**, depending on which drive is designated for floppy disks. (If you only have one floppy drive, this drive will probably be *Drive A*.) Click *OK*.

- A progress bar indicates the InstallShield Wizard is preparing the installation.

- The Digidesign Wave Driver Setup dialog appears. Click *Next*.

- The Digidesign Wave Driver is copied to your system.

- A dialog appears, asking you if you wish to restart Windows. You must restart Windows to activate the Digidesign Wave Driver. Click *OK*.

- Eject the *Digidesign AMIII Wave Driver* disk from your floppy drive.

To deinstall the Digidesign Wave Driver in Windows 3.1 or 3.11:

- Start up Windows.

- Open the Windows Control Panel, located inside the Main program group.

- Double-click the *Drivers* icon.

- Select the *Digidesign Wave Drivers* to be deinstalled.

- Click *Remove*.

- Windows needs to be restarted for the changes to take effect.

If you are running Windows 95, use the following instructions to install and deinstall (or disable) the Digidesign Wave Drivers.

To install the Digidesign Wave Driver in Windows 95:

- Start up Windows.

- Insert the *Digidesign AMIII Wave Driver* disk into your floppy drive.

- From the Start menu, choose the *Run* command.

- Type in **A:\Setup** or **B:\Setup**, depending on which drive is designated for floppy disks. (If you only have one floppy drive, this drive will probably be *Drive A*.) Click *OK.*

- A progress bar indicates the InstallShield Wizard is preparing the installation.

- The Digidesign Wave Driver Setup dialog appears. Click *Next.*

- The next dialog indicates the Hardware Setup Wizard will be launched. Click *OK* to proceed.

- The Add New Hardware Wizard dialog appears. Click *Next* to proceed to the next window.

- When the "Do you want Windows to search for your new hardware?" prompt appears, click *No.*

- Click *Next* to proceed to the next window.

- Select *Sound, video and game controllers* under the Hardware Type field.

- Click *Next* to proceed to the next window.

- Click *Have Disk*.

- In the Install from Disk dialog, type the path for your floppy drive (**A:** or **B:**), and click *OK.*

- In the Select Device dialog that appears, select the *Digidesign Wave Driver* in the Models field, and click *OK.*

- Click *Finish* to install the Digidesign Wave Driver.

- In the Hardware Setup dialog appears, configure the Interface Options as desired (described in the next section), and click *Close.*

- The System Settings Change dialog appears, asking if you wish to restart the computer.

- Eject the *Digidesign AMIII Wave Driver* disk from your floppy drive, and then click *Yes.* The Digidesign Wave Driver will be activated after restarting Windows.

To deinstall or disable the Digidesign Wave Driver in Windows 95:

- Start up Windows.

- Open the Windows control panel.

- Click on the *Multimedia* icon. The Multimedia Properties dialog appears.

- Choose the *Advanced* page.

- Double-click the *Audio Devices* icon to reveal the *Audio for Digidesign Wave Driver* icon.

- Double-click the *Audio for Digidesign Wave Driver* icon. The Audio for Digidesign Wave Driver Properties dialog appears.

- To deinstall the Digidesign Wave Driver, click *Remove* and then follow the series of verification dialogs.

OR:

- To simply disable the Digidesign Wave Driver, click "Do not use audio features on this device." Click *OK* to close this dialog.

- Windows will need to be restarted for the changes to take effect.

Configuring the Digidesign Wave Driver

Once the Digidesign Wave Driver is properly installed on your computer, you must first configure the interface options in the Digidesign Wave Driver's Hardware Setup window before using it with third-party audio applications.

The Digidesign Wave Driver's Hardware Setup widow can be accessed from the Windows Control Panel. This window may also appear during the installation of the Digidesign Wave Driver.
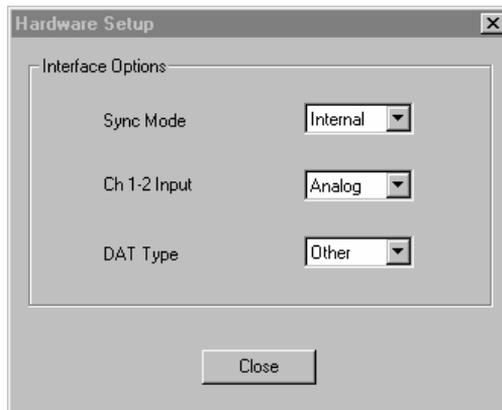
To open the Digidesign Wave Driver Hardware Setup window in Windows 3.1 or 3.11:

- Start up Windows.

- Open the Windows Control Panel, located inside the Main program group.

- Double-click the *Drivers* icon.

- Select the *Digidesign Wave Drivers*.

- Click the *Setup* button. The Digidesign Wave Driver Hardware Setup window appears.

To open the Digidesign Wave Driver Hardware Setup window in Windows 95:

- Start up Windows.

- Open the Windows control panel.

- Click on the *Multimedia* icon. The Multimedia Properties dialog appears.

- Choose the *Advanced* page.

- Double-click the *Audio Devices* icon to reveal the *Audio for Digidesign Wave Driver* icon.

- Double-click the *Audio for Digidesign Wave Driver* icon. The Audio for Digidesign Wave Driver Properties dialog appears.

- Click the *Settings* button. The Digidesign Wave Driver Hardware Setup window appears.

The Digidesign Wave Driver's Hardware Setup window

There are three interface settings in the Hardware Setup window:

Sync Mode
Setting the Sync Mode switch to the *Internal* position causes the Digidesign Wave driver to run from the internally-generated clock signal from the Audiomedia III card. In most cases, this is the appropriate setting. This switch should be set to the *Digital* position only while you are recording from an external digital device powered on and connected to the digital inputs of the Audiomedia III card such as a DAT recorder. In all other cases, this switch should stay in the *Internal* position.

Ch1-2 Input
This switch sets the input format (*Digital* or *Analog*) for channels 1 and 2 of the Audiomedia III card. In the *Digital* position, the digital inputs of the Audiomedia III card are automatically routed to channels 1 and 2. When you set it to the *Analog* position, any analog sound source routed to input channels 1 and 2 can be recorded. Whenever one input format (*Digital* or *Analog*) is configured as channels 1 and 2 inputs, the other input format is automatically configured as channels 3 and 4 inputs. This allows for a total of four simultaneous inputs (in digital and analog pairs) into the Audiomedia III card.

DAT Type
This switch sets the digital I/O type. If you are planning to mixdown to or record from a Tascam DA-30™ recoder, you must first set the DAT Type switch to the *DA-30* position. This allows the Audiomedia III card's S/PDIF data stream to match that of the Tascam DA-30. If the DAT Type switch is not set to the *DA-30* position, a noise burst or click may result when attempting a S/PDIF transfer from the Audiomedia III card to the Tascam DA-30, or vice-versa.

If you are planning to mixdown to or record from a DAT recorder other than a Tascam DA-30 recorder, the DAT Type switch should be set to *Other* (this is the default position).

To close the Digidesign Wave Driver Hardware Setup window:

- After configuring the interface options in the Digidesign Wave Driver Hardware Setup window, click the *Close* button for the changes to take effect.

You can now apply these settings to third-party audio applications written for use with the standard Microsoft Wave drivers, such as Cakewalk Pro Audio, Sound Forge, Microsoft Media Player and Microsoft Sound Recorder, to play back and record through the Audiomedia III card.

Since all these applications differ in their configuration for use with the Digidesign Wave Driver, please consult the third-party audio application's user documentation for complete configuration instructions or call the manufacturer for technical support. You may want to experiment with different parameter settings for best results.

NOTE: To adjust the volume of Windows system sounds, use another audio application that uses the Digidesign Wave Driver to set the volume controls to the desired level.

The Microsoft Audio Compression Mapper (ACM)

The Microsoft Audio Compression Mapper (ACM) allows file formats other than 16-bit, 48kHz, 44.1kHz, 22.050kHz or 11025kHz, to be recorded and played back through the Audiomedia III card. *This application has been included only for customers who are using the Windows 3.1 or 3.11 operating system.*

NOTE: Some applications do not allow ACM to be selected as its wave driver. These applications can only play back and record 16-bit audio files at sample rates of 44.1kHz or 48kHz.

IMPORTANT

The Microsoft ACM is automatically installed during the installation process for the Windows 95 operating software. *If you are running Windows 95, do not install the version of Microsoft ACM included on the AMIII Additional Files disk.* This version is different than the one supplied with Windows 95 and will not work with Windows 95.

To install the Audio Compression Mapper (for Windows 3.1 or 3.11 only):

- Start Windows.

- Insert the *AMIII Additional Files* disk into your floppy drive.

- In File Manager, open the floppy drive (A:\ or B:\) in which the Digidesign Wave Driver installation disk is located .

- Find the *MSACM* folder.

- Double-click the *SETUP.EXE* icon.

- Follow the installation instructions that appear on the screen.

To deinstall the Audio Compression Mapper (for Windows 3.1 or 3.11 only):

- Open the Windows Control Panel located inside the Main program group.

- Double-click the *Drivers* icon.

- Select the driver to be deinstalled (the Audio Compression Mapper is listed as "Microsoft Sound Mapper"), and click *Remove*.

- Windows needs to be restarted for the changes to take effect.

The Digidesign Binary Speed Test (BST)
(Requires running Windows 95 on a Pentium computer)

The Digidesign Binary Speed Test (BST) measures the approximate speed, capability and throughput of the computer system on which it is run. These abilities are measured in relation to the performance which can be expected when running digital audio applications on this system.

The BST program is entirely self-contained, meaning it does not require any other Digidesign audio software or hardware be present in order to run. The use of this program will assist one in determining how appropriate this system is for running software such as Digidesign Session software or any audio applications built upon the Digidesign Audio Engine (DAE).

This test attempts to simulate the behavior of software such as DAE by reading multiple "tracks" of audio from the hard disk drive, each from a separate disk file and then "sending" each such track of audio to an imaginary audio card. The maximum number of tracks that the system can currently support is then indicated.

During the running of this program, temporary files will be created in the root directory of the drive being tested. These files will also be removed at program termination.

NOTE: Should the BST program abnormally terminate, you may need to manually remove the temporary files that it creates, as they will be large. This may be done via File Manager, Explorer, etc. Simply navigate to root directory of the drive being tested, and delete the files whose names follow the form: BST.n, where n is a number between 1 and 8. You may also need to run SCANDISK in this event to reclaim any lost space from these files. However, abnormal termination is quite rare, and so this may never need to be done.

Installing the BST

Installing the BST to your computer is literally as simple as drag-and-drop.

To install the Digidesign Binary Speed Test (BST):

- Start Windows 95.

- Insert the *AMIII Additional Files* disk into your floppy drive.

- Double-click the *My Computer* icon on your computer desktop. The My Computer window opens, showing icons for the floppy or hard drives in your system.

- Double-click the floppy drive (A:\ or B:\) in which the *AMIII Additional Files* disk is located. A window appears showing the contents of the disk.

- Click and hold the mouse button on the *BST folder* icon, and while holding down the mouse button, drag it over the icon for the computer's startup drive (usually designated as *Drive C*) in the My Computer window.

- Release the mouse button, and the BST folder and its contents will be copied to your startup drive.

Preparing Your Computer to Run the BST

IMPORTANT

Make sure no other software (including screen savers) is running at the same time that this test is operating, as other software will rob CPU time from this test and may skew the results. Even such things as moving the mouse around and clicking items uses a surprising amount of CPU time and can therefore affect the test. In general, start the test and leave it alone, after making sure it is the only software running.

The only exception to this may be that a MIDI sequencer may be used and run at the same time as this test to determine how an audio application such as Session would coexist with a MIDI application such as Cakewalk. In this case, load a nominal MIDI sequence into the sequencing program, and begin its playback *before* running the BST program.

IMPORTANT

At least 50 megabytes of free space must be available on the drive to be tested, to be used for the temporary files. If there is insufficient free disk space to run the test, an error message will appear during the test.

Running the BST

To run the Digidesign Binary Speed Test (BST):

- Start Windows 95.

- Open the BST folder you copied onto your startup drive.

- Double-click the *BST* icon. The BST program will start and its main window will appear:
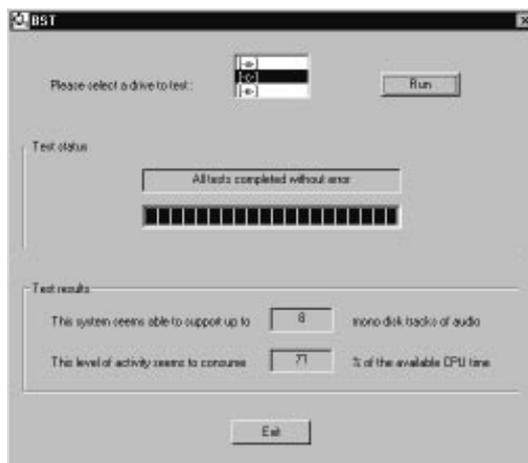
The BST main window

- At the top of the window is a list box showing the available drives in the system. Choose the letter of the drive you wish to test.

- Click the *Run* button at the top, right-hand side of the window to begin the test. When the test begins, the *Run* button will be turn into the *Stop* button. Clicking *Stop* will abort the test.

- In the *Test Status* field, the text field indicates which test is running and the status of the program. The two tests run by the BST are a Sequential Read test and a Random Read test. Each will take approximately one minute to complete.

NOTE: If any error occurred during the run of the test, an error message will be shown in the Test Status field. The most common error is due to insufficient free disk space. At least 50 megabytes of free space must be available on the drive to be tested

- The progress bar in the *Test Status* field shows the progress of the current test.

- In the *Test Results* field, the first line shows the number of disk tracks that the software is currently attempting to run. This number will adjust upwards and downwards at the beginning of the test, as the program attempts to determine the capability of the system. It will then settle into the maximum number of tracks that the system can seemingly reliably sustain.

- The second line in the *Test Results* field shows the percentage of total available CPU processing time being used by this program. This time has been spent reading the drive, sending the data to the imaginary audio card, updating the screen, and so on. This number is very significant for interpreting the test results (discussed next).

- To quit the BST program, click *Exit* at the bottom of the window.

Interpretation of Test Results

When the test concludes, the maximum number of tracks that could be sustained is shown in the *Test Results* field. Even though this is an accurate count, there are other factors that may need to be considered.

The CPU usage indication is one of the most important of these other factors. Its impact upon the number of tracks should be considered, yet this interrelation cannot be easily estimated by the program since there are too many variables. Ultimately, this program is attempting to emulate the operation of complex audio software such as Session, DAE, and the many third-party applications built upon DAE. These programs may also be used in parallel with other MIDI applications such as Cakewalk. It should be easy to see that all of this is difficult to predict, with so much variability. Each such program or combination of programs will have very different requirements and capabilities.

Therefore, the number of tracks reported here should be considered as somewhat of a rough estimate. Generally, it will be close, and may in fact even be a conservative estimate in some cases. But the most true determination may only be done with the software of intended use.

The CPU usage amount should be seen as a confidence factor. Lower amounts of CPU usage indicate that the system is more comfortably able to sustain the shown number of tracks. Very high CPU usage amounts should be seen to indicate that the system is only barely able to sustain the shown number of tracks. In fact, when the actual intended application software is running, this number of tracks may sometimes not be possible. If a very low CPU usage percentage is noted, something should also be suspected as being out of order. The program will attempt to run the maximum number of tracks at all times, and so the CPU usage should likewise be at its maximum. Some possible reasons for a low amount of CPU usage will be discussed shortly.

The difference between the CPU usage shown and 100%, which can be called the free time available, will be what the actual application uses to perform such important activity as display updating (audio meter redrawing, time and position displaying, audio waveform scrolling, etc.). All of this may take large amounts of time. There is no way to predict the amount of time required by each application to perform these things. Generally speaking, if the free CPU time is lower than required, application programs will often reduce the frequency with which they redraw such screen areas. In the case of audio meters for example, this causes a loss of responsiveness to peaks. In general, with lower free time to redraw, the screen looks sluggish. High free time (shown in this test as low CPU usage) is therefore desirable.

However, if CPU usage is much too low, track capability will be reduced. Some of the time spent idling may instead be used to process another track of audio data. Therefore, there is a delicate balance between track capability and screen responsiveness. If you are pushing your system to the absolute maximum number of tracks, it will likely cause the display to slow down.

Additional Precautions

The swap file created by Virtual Memory in Windows 95 should be considered. If you are running the test on the same drive where the swap file resides, you may experience errors, as this program attempts to use most or all of the free disk area on the current drive for its tests. If the swap file attempts to expand, or if the test attempts to allocate more disk area while the swap file is expanding, the two call outs to the disk may collide. The solution to this is to run the test on a drive where the swap file does not reside. The other possibility is to either temporarily turn off virtual memory while running this test, or set the swap file to a fixed size. These adjustments may be done in theVirtual Memory settings in the Control Panel—refer to your Windows 95 Operating System documentation for details.

The level of fragmentation of the drive will also affect this test. The test files are created via the operating system with no regard to where the files actually reside on disk. If the drive is highly fragmented, these files may be highly fragmented as well. This may reduce the number of tracks and/or raise the CPU usage reported by this test. For highest accuracy, run this test on a defragmented and preferably empty drive.

Many hard disk drives have a necessity to realign themselves periodically to compensate for the effects of thermal expansion. When you turn your system on for the first time, everything is at room temperature. As the system remains on, everything heats up and expands. Disk drives operate at very small tolerances, and this expansion, if not accounted for, will throw many alignments beyond their maximum allowable ranges. Thus some disk drives perform automatically a function called "Thermal Recalibration." This happens at various time intervals. It takes but a moment to perform, but audio playback cannot stop and wait while it is being done.

In some drives, data throughput is adversely affected during the thermal recalibration cycle. This may take a second or so to perform. Other drives are more robust, and have a thermal recalibration that may be interrupted for further disk activity. Of course, when audio is being played back from disk, the disk activity will be almost continuous. There is little time for a thermal recalibration to take over the disk system. If the thermal recalibration is not interruptible, a gap in the audio will often be encountered, and the drive in this case cannot maintain the same number of tracks of audio for this short period of time.

If this happens during the run of this test, most likely the test will reduce the number of tracks it is using, the test will cycle go back to its beginning and start over, and the CPU usage will drop. *Thus an uncommonly low CPU usage is a good sign that the drive has an uninterruptible thermal recalibration, and therefore you should be cautious in its use for digital audio purposes.* Some software may still be able to use such a drive, by turning off recalibrations while playing back, or by other methods. However, this of course cannot be guaranteed in every case.

This concludes your *Addendum to the Digidesign Audiomedia III Installation Guide*. Please keep this addendum with your Installation Guide for convenient reference.