

Echo Digital Audio Corporation
Echo PCI/Cardbus/ExpressCard drivers

Indigo dj	Mia	Gina3G	Indigo IOx
Indigo io	MiaMIDI	Layla3G	Indigo DJx
	Layla24		
	Gina24		
	Mona		

WaveRT version 8.6 for Windows Vista and Windows 7

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Disclaimer

This is a fully supported release. While we have tested these drivers extensively, there may still be bugs lurking. Please be aware that these drivers are used at your own risk; Echo Digital Audio Corporation is not responsible for any damage or loss incurred by the use of these drivers.

Introduction

This driver supports the following versions of Windows:

- Windows Vista
- Windows Vista 64-bit Edition
- Windows 7
- Windows 7 64-bit

Windows Vista and Windows 7

This release provides support for Windows Vista and Windows 7 running in 32-bit and 64-bit mode.

Windows Vista introduced a completely new audio architecture. This new architecture affects any application that uses DirectSound, wave/MME, or the new Vista audio interfaces. Applications that use ASIO are unaffected by this new architecture and should work as before.

This driver has been specifically designed for Windows Vista and Windows 7. If you have used Echo hardware on a previous release of Windows, the driver may behave differently than you expect.

Windows Vista Service Pack 1 contains numerous fixes and improvements for audio hardware. Echo strongly recommends that you use the latest Windows Vista service pack with this driver.

WaveRT

WaveRT is a new driver model that was introduced with Windows Vista. It is not available with Windows XP, or earlier releases of Windows. Essentially, WaveRT lets the driver get out of the way, enabling audio applications to connect more directly to the hardware.

Applications that use standard Windows audio APIs such as DirectSound, wave or the new Core Audio API should enjoy more robust, glitch-free performance with the new driver.

Surround sound playback

This driver supports surround sound playback and will automatically create multichannel audio devices depending on the configuration of your hardware. Unlike the Windows XP driver, no further configuration is required.

ASIO optimizations

The ASIO driver included with this release includes improvements specific to Windows Vista and Windows 7; please refer to the ASIO section of this document for more information.

Features that are no longer supported

The driver no longer supports surround sound delay management. In addition, PureWave mode is no longer available as it has been superseded by Windows Core Audio Exclusive Mode.

Audio application support

Finally, please be aware that not all audio applications have been updated for Windows 7 and may not behave properly. Some may require you to run them with administrator privileges.

We recommend that you use ASIO mode with Cakewalk's SONAR.

Changes

- Fixed a bug with resetting the DMA position for WASAPI playback mode
- Minor Driver Verifier fixes
- Removed support for "sync wave devices"; it's no longer relevant and was causing problems for some audio applications

Known issues

- Importing sessions from the old console is not supported.
- Multiclient mode may work differently than you expect if you have surround sound mode selected.
- If you experience glitching or distortion while recording, try disabling one or more inputs and/or outputs in your audio software.

64-bit Windows

Using Windows in 64-bit mode is very similar to using 32-bit mode. GSIF is not supported in 64-bit Windows.

This release includes support for both 32-bit ASIO applications and 64-bit ASIO applications.

The console

This driver release includes a console that has been specifically developed for Windows Vista and Windows 7. If you are used to the console for previous versions of Windows, this one works similarly. The main difference is that you select the output using the tabs across the top of the window.

The new console provides almost all of the same functionality as the previous one, with the exception of features that are not available with the WaveRT drivers.

You can access the new console from the Start menu in the Echo Digital Audio folder or via the shortcut on your desktop.

Stereo versus surround sound

Use this control to choose if you want your hardware to show up as multiple stereo pairs or as a few multichannel wave devices in the Sound control panel.

Synchronize wave devices

Normally, the driver tries to keep playback and recording synchronized. However, there are few cases where you don't want that. If you are running an application that needs the inputs and outputs to be totally independent, then turn this off. Most of the time, you probably want to leave it enabled.

Sample rate display

This area of the Settings page shows the hardware's current sample rate. This will reflect whatever sample rate has been set by your audio software.

Note that if you set the Core Audio sample rate, the sample rate display will not update until an audio application begins playing or recording.

System tray icon

When you open the console, you will see an icon added to the system tray. Clicking the left mouse button on the tray icon will bring all of the console windows to the foreground.

Clicking the right mouse button on the tray icon will display a pop-up menu that will let you select individual console windows, show or hide all of the console windows, or arrange the console windows in the middle of your monitor.

Core Audio

Core Audio is the name for the new sound system introduced with Windows Vista.

You can set the sample rate and format used by Core Audio in the Sound control panel. If you open the Sound control panel, you should see one or more playback and recording devices for your Echo hardware.

For Echo hardware, each of these playback and recording devices share a common physical audio clock – in other words, if you have your analog outputs set for 48 kHz, your digital or headphone outputs are also running at 48 kHz.

However, Core Audio does not recognize this concept. Therefore, rather than setting the Core Audio sample rate from the Sound control panel, you can set the Core Audio sample rate from the Echo PCI console.

Be aware that setting the Core Audio sample rate or the digital mode (for products with optical S/PDIF and ADAT only) from the console will cause the current playback and recording devices to be removed and new ones created in their place; this ensures that the sample rate is consistent. The downside is that this will stop any applications that are currently playing or recording. We therefore recommend that you only change the Core Audio sample rate or the digital mode when you are not playing or recording.

If you set your audio software to play or record at a different format or sample rate than that specified for the Core Audio sample rate, Windows will automatically perform format conversion.

Note that none of this applies to audio software that uses ASIO. Setting the Core Audio sample rate has no effect on the sample rates available to or used by ASIO.

ASIO support

This driver release includes full ASIO 2.2 support. Just select “ASIO Echo PCI” from within your ASIO-based application.

New features for Windows Vista and Windows 7

The scheduler in Windows Vista and Windows 7 has a new feature called MMCSS, or Multi Media Class Scheduler Service. MMCSS is intended to enable audio software to run at the highest priority to avoid glitching.

The ASIO driver included with this release supports MMCSS. On the ASIO control panel, you will see two new settings.

- *Use multimedia priority boost.* Checking this box tells the ASIO driver to use MMCSS to run at a higher priority.
 - *Lower window manager priority.* Checking this box causes Windows to prioritize audio playback and recording over drawing windows on the screen.

Both settings are checked by default.

Finally, the ASIO driver now stores the ASIO control panel settings separately for each individual user.

I don't see all of my inputs and outputs.

This is probably due to the fact that another program is using them. The most likely culprit is the Microsoft wavetable synthesizer, which is being opened by your audio application as a MIDI output device. Make sure that your audio application does not have “Microsoft GS Wavetable SW Synth” selected as a MIDI output device.

If your outputs still don't show up, you may have some other software that's doing the same thing.

Windows volume controls

Windows volume controls and the console volume controls are now synchronized. This means that if you adjust the playback volume in the console, those changes will be automatically reflected in the Windows volume controls and vice versa.

You can also control the playback volume using Windows' volume controls.

For Mia and Mia MIDI, the Windows volume controls only apply to the analog outputs. To adjust the playback volume for the digital output, you will need to use the console volume controls.

For the Indigo dj, the Windows volume controls only apply to the headphone output. To adjust the playback volume for the line output, you will need to use the console volume controls.

Note that Windows Vista and Windows 7 do not support setting playback mutes per channel; therefore playback mutes in the console will always behave as if they were ganged, regardless of the gang button setting.

Troubleshooting

If your computer spontaneously reboots on you, you probably have experienced what Microsoft calls a “bug check”, but what everyone else calls the Blue Screen of Death (BSOD).

The default setting for the BSOD is not to show the BSOD, but to reboot the computer. This isn't very helpful for tracking down problems. If you are experiencing blue screens, here's how you can help us track it down:

Select Start/Settings/Control Panel/System

Click on “Advanced system settings” in the left column

Click on the “Settings” button under “Startup and Recovery”

Uncheck “Automatically restart”

Set the memory dump to “Small Memory Dump” in the drop down menu under “Write debugging information”

Now, next time you get a blue screen, look at it. See if the crash occurred in echo3g.sys, echo24.sys, echondgo.sys or EchoIndigoX.sys; if it did, it may be something we need to fix.

Restart your computer and find the most recent .dmp file – this is the memory dump. It's located in a folder called “Minidump” under your main Windows folder.

Zip up this .dmp file and send it to techsupport@echoaudio.com along with a description of how it happened.

Version History

8.6

- Fixed a bug with resetting the DMA position for WASAPI playback mode
- Minor Driver Verifier fixes
- Removed support for "sync wave devices"; it's no longer relevant and was causing problems for some audio applications

8.5

- New installer to support Windows 7.
- Fixed problems with the console not opening on Windows 7.

8.4

- Headphone output gain adjustment for Indigo IOx and Indigo DJx

8.3

- First release for Indigo DJx and Indigo IOx
- Fixed console playback volume for devices with virtual outputs

8.2

- Windows volume controls and the console playback volume controls are now synchronized.
- Added a system tray icon for the console
- Added save and load hotkeys to the console: press control-S to save and control-O to load
- You can now click on the numerical readout below each fader on the console and enter a value. Pressing the Tab key lets you step between each fader readout.
- The console will now remember the last folder used to save or load a session.
- Added switch for surround vs. stereo mode
- Added switch for synchronizing wave devices
- Added Vista sample rate display in settings tab of console
- Fixed potential crash while using GigaStudio
- Fixed a problem where digital inputs and outputs could be mislabeled with GigaStudio

8.1

- Added support for playing compressed audio formats (Dolby Digital, DTS, and WMA Pro) over S/PDIF (does not include Indigo cards or original Mia)
- MIDI input and output should now be available (devices with physical MIDI ports only)
- Fixed a problem where audio could glitch after sustained playback.
- Fixed a bug with the pan controls on the console
- Windows volume controls are disabled for devices with virtual outputs (all Indigo cards, Mia, or Mia MIDI); this ensures that the volume controls are saved and restored properly.
- Fixed several bugs with the uninstaller.
- The uninstaller is now digitally signed.

8.0

- Initial release with WaveRT support

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