# Windows WAVE Driver

The AudioScience Microsoft Windows™ WAVE drivers enable multi-stream recording, reproduction and mixing of MPEG and PCM digital audio on a PC platform. The Microsoft multimedia wave and mixer APIs are supported under Windows 2000 and XP. The drivers utilize large adapter buffers to provide high performance, glitch-free audio under all operating conditions.

FEATURES

- All adapter streams are presented as independent waveOut or waveIn devices.
- Simultaneous record while play supported.
- All devices have independent sample rates and compression formats.
- Peak meter controls available in the mixer for monitoring audio.
- Volume controls available in the mixer.
- Level controls available in the mixer to adjust level/trim on analog inputs and outputs.
- Demo mixer application documents the mixer structure of every AudioScience adapter.
- Up to four Audio Science adapters per system.
- Fully compliant with Microsoft wave and mixer APIs.
- All card functionality is surfaced to the API level.
- Drivers are freely available from the download section of the AudioScience website.

BLOCK DIAGRAM
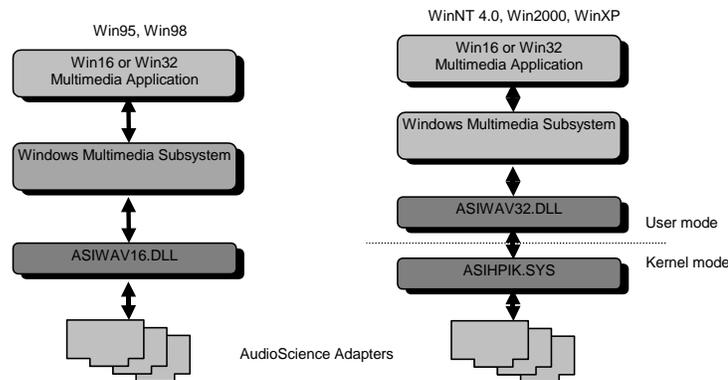
APIs SUPPORTED

WaveOut	WaveIn	Mixer
waveOutClose()	waveInOpen()	mixerClose()
waveOutGetNumDevs()	waveInClose()	mixerGetControlDetails()
waveOutGetPos()	waveInGetDevCap()	mixerGetDevCaps()
waveOutOpen()	waveInGetNumDevs()	mixerGetID()
waveOutPause()	waveInGetPos()	mixerGetLineControls()
waveOutReset()	waveInReset()	mixerGetLineInfo()
waveOutRestart()	waveInStart()	mixerGetNumDevs()
waveOutSetVolume()	waveInStop()	mixerOpen()
waveOutWrite()	waveInAddBuffer()	mixerSetControlDetails()
waveOutGetDevCaps()		

MIXER CONTROLS SUPPORRTED

MIXERCONTROL_CONTROLTYPE_PEAKMETER

This is a Windows standard peak level meter. If the line containing the peak meter is stereo, both left and right channels can be read at once. The left peak reading is at index 0 and the right at index 1.AudioScience peak meters return levels between 0 and 32767.

MIXERCONTROL_CONTROLTYPE_VOLUME

This is a Windows standard volume control. Settings are in the range of 0 to 65535, where 0 completely mutes the output and 65535 is the maximum volume.

ASI_MIXERCONTROL_CONTROLTYPE_AUTOFADE

This control allows a timed fade of a volume control from one setting to another

MIXERCONTROL_CONTROLTYPE_SLIDER

This is used to adjust the input and output analog level/trim settings. Units are in dBu. Although the range is returned as -10 to +26 dBu by the Winodws driver, not all adapters support the complete range.

MIXERCONTROL_CONTROLTYPE_MUX

This is a Windows standard Multiplexer. This control is used to select one of many options. AudioScience uses the multiplexer to select which of the possible input source selections is connected to this destination line.

SERIAL NUMBER as MIXERCONTROL_CONTROLTYPE_UNSIGNED

This is the adapter serial number.

GPIO as MIXERCONTROL_CONTROLTYPE_BOOLEAN

The General Purpose Input/Output is implemented as an array of Boolean.

ASI_MIXERCONTROL_CONTROLTYPE_NVMEM

This control allows reading and writing of the adapters non-volatile memory.

ASI_MIXERCONTROL_CONTROLTYPE_DIGITAL_IN

This control allows the application to monitor parameters of the AES/EBU output stream such as Channel Status and User bits.

ASI_MIXERCONTROL_CONTROLTYPE_DIGITAL_OUT

This control allows the application to adjust parameters of the AES/EBU output stream such as Channel Status and User bits.

VOX as MIXERCONTROL_CONTROLTYPE_FADER

Vox is a trigger level that controls the start of recording
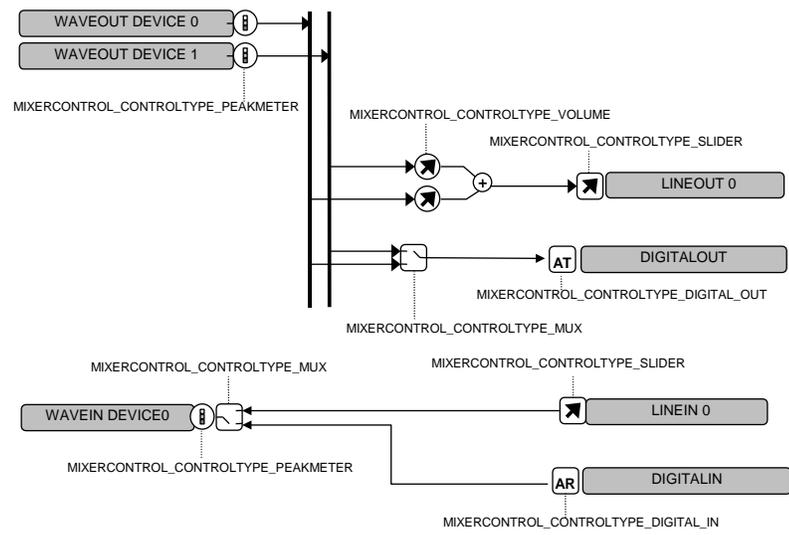
ERROR LOGGING

Errors that occur during operation are logged to asiwav.log. This file should be inspected from time to time if errors are occurring on a system.

One specific error that is often recorded looks like

03.22.2012 10:10:17.489=DRV Err(sn61887): (OStreamWrite detected buffer DRAINED (stream 1))

The "buffer drained" messages are best described using medical terminology. If actual audio breakup is considered to be cancer, the "buffer drained" messages are like the results of a cancer screening test where sometimes things called "false positives" occur. This means that in all cases where there is audio breakup there will be "buffer drained" messages. However, in some cases "buffer drained" messages can occur without audio breakup. Whenever "buffer drained" messages occur they alert the user that there may be audio breakup in that system and they should do additional testing (ie listening).