

Using the Zodiac DAC with WASAPI for Windows 7/ VISTA and XP

How to playback *Bit-Perfect Audio* to your Zodiac DAC.

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WASAPI & your Zodiac DAC

How To Playback Bit-Perfect Audio (ie. that every bit arriving at an audio input remains unchanged until received by the audio application, and every bit sent out by an audio application reaches your Zodiac DAC exactly as it was sent).

1. For Windows XP – Sample Rate Settings

Windows XP does not have the option to adjust the sample rate in the operating system. But sophisticated PC soundcards provide specific drivers, which enable you to select different sample rates.

You can get a driver program for XP called ASIO: Audio Stream Input/Output (a third party driver which needs to be installed separately), which enables you to bypass the computer operating system's default audio engine and output the native sample rate to your Zodiac DAC.

2. For Windows 7 and Vista

There is already a more sophisticated 'Exclusive Mode' that media players use together with WASAPI.

WASAPI (Windows Audio Session Application Programming Interface) is Microsoft's own ASIO, it talks straight to the soundcard if set to exclusive mode. In shared mode it still uses the Windows audio engine. In Exclusive Mode, WASAPI allows you to play all audio at its native sample rate (if your audio device supports this sample rate). In exclusive mode it bypasses the Windows audio engine entirely, no mixing and no signal processing will take place. As a consequence, only 1 audio stream is playing.

Another consequence is that what the media player is sending to the soundcard must exactly match the capabilities of the sound card. You must configure your media player to use WASAPI in exclusive mode.

It is crucial that you match the bit depth, 16 or 24, depending on the capabilities of the DAC. If you play 16 bits audio (CD) on a 24 DAC using WASAPI, the media player will append 8 zero's to get the required number of bits. This won't affect sound quality. In fact, there is a benefit; you can probably use digital volume control without any noticeable impact on sound quality.

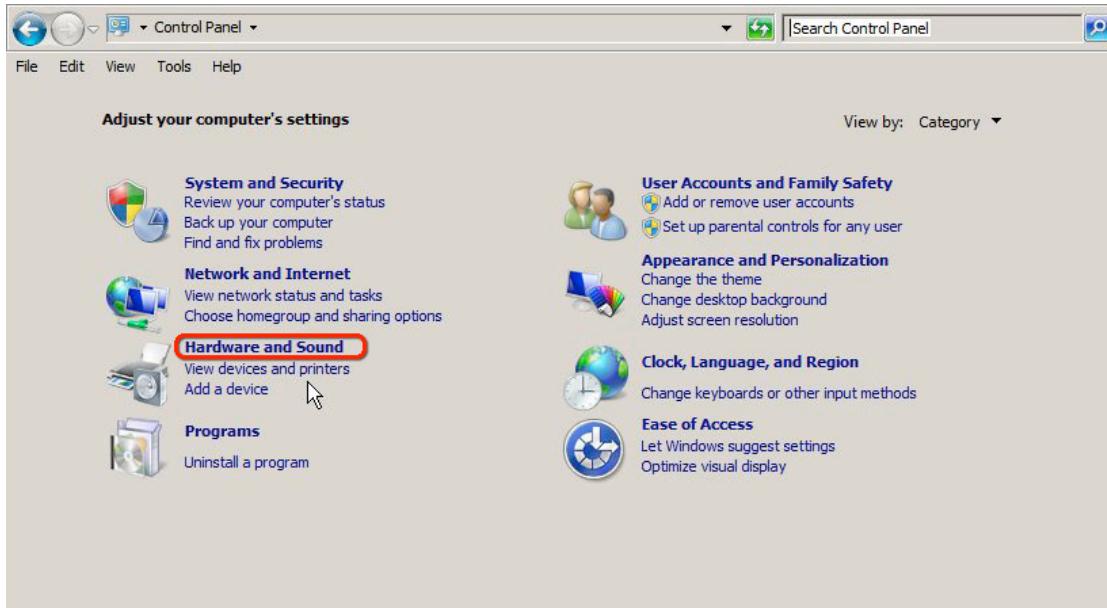
Media player applications such as J.River Media Centre and Foobar 2000 can select between Normal Mode and Exclusive Mode.

a.) Setting 'Exclusive Mode':

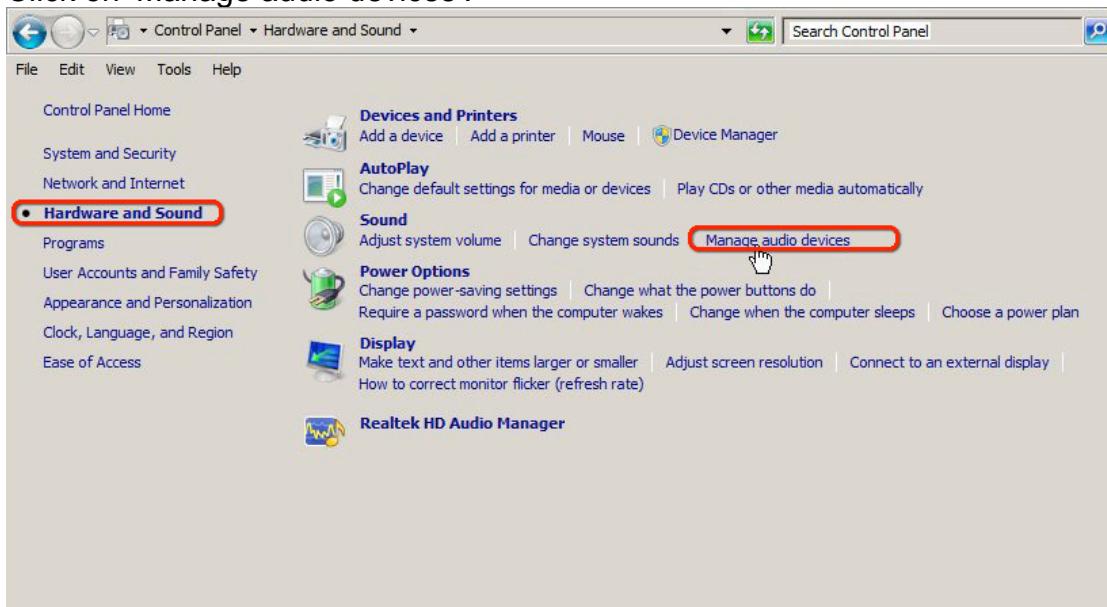
This enables playback at the native sample rate (as default) thus achieving the desired Bit-Perfect audio for playback through your Zodiac DAC.

1. Click on the 'Start Menu' and select 'Control Panel'.

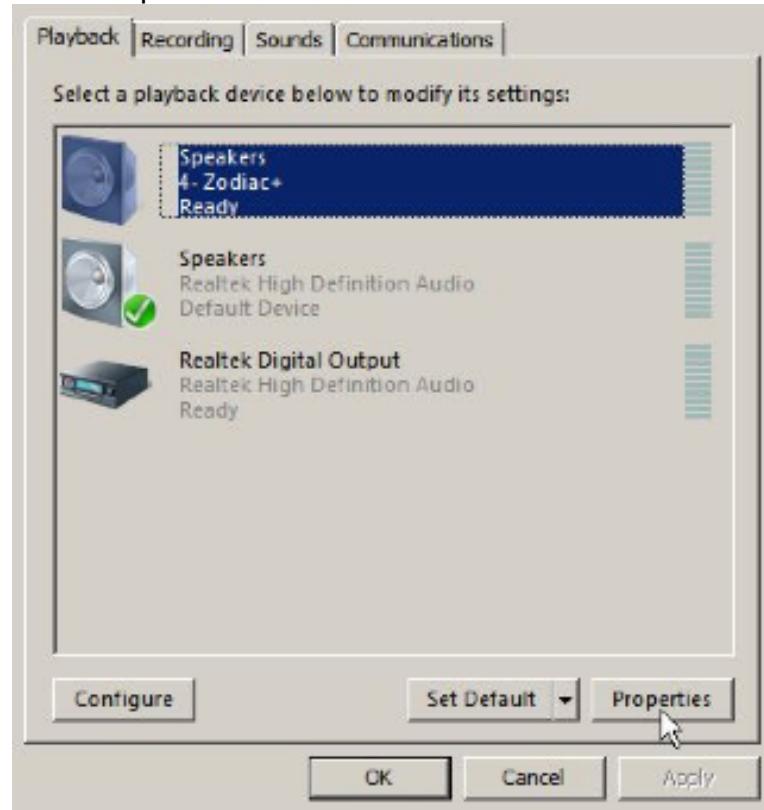
2. In Control Panel select 'Hardware and Sound'.



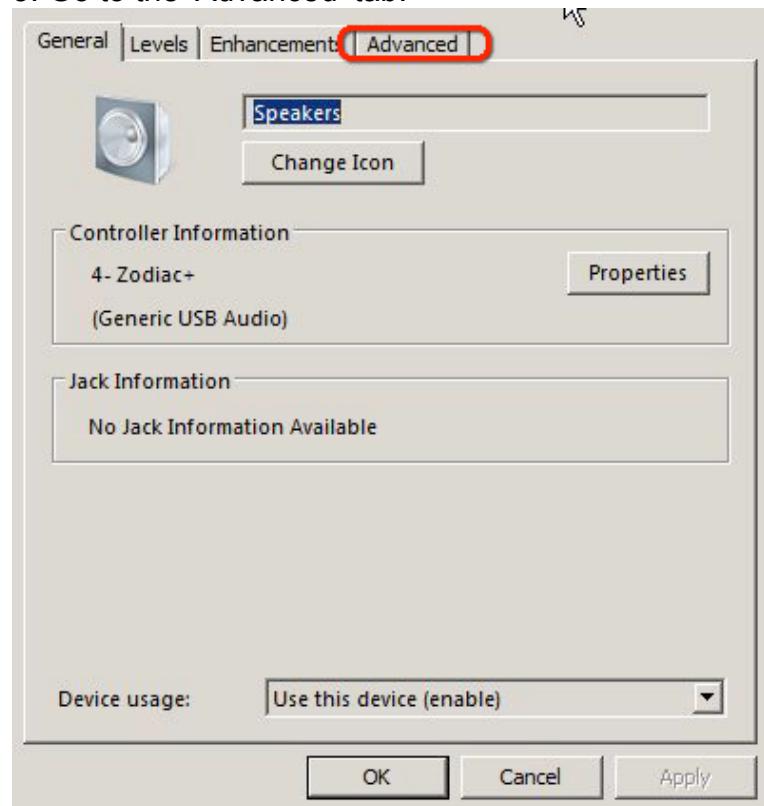
3. Click on 'Manage audio devices'.



4. In the Playback tab, select the 'Zodiac' from the list of available devices and click 'Properties'.

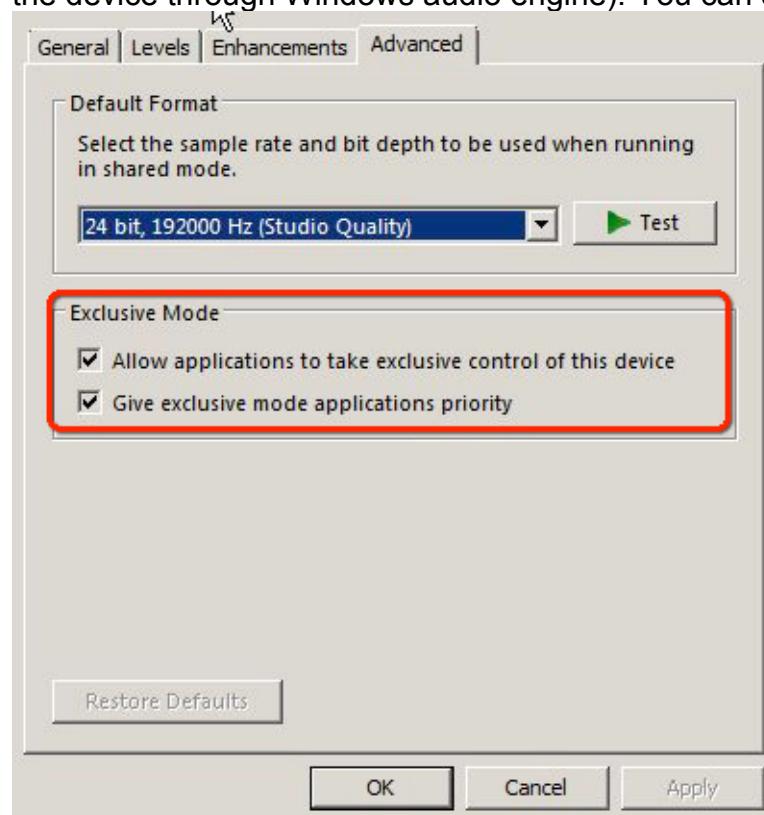


5. Go to the 'Advanced' tab.



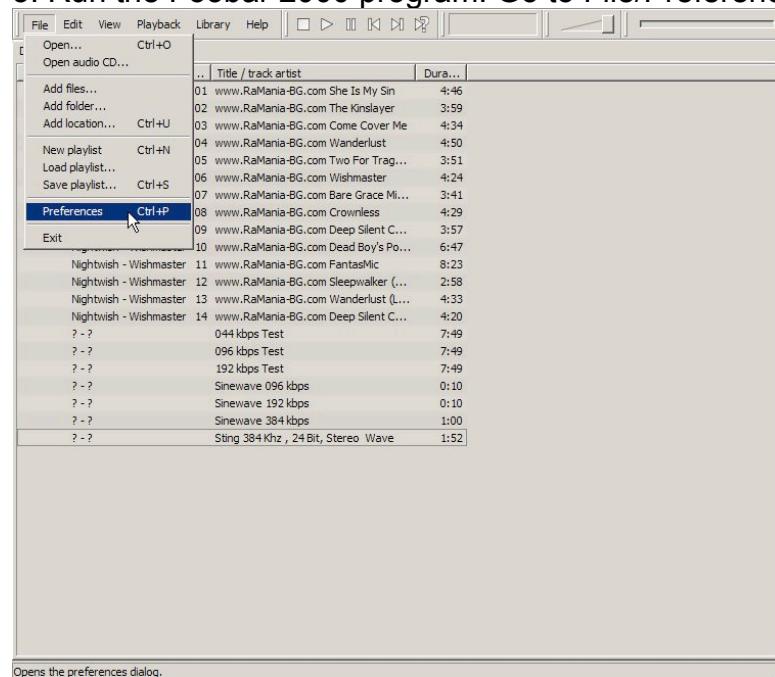
6. Inside the 'Exclusive Mode' area check that the two tick boxes are selected: 'Allow application to take exclusive control of this device' and 'Give exclusive mode application priority'. Click 'OK' to save settings.

NOTE: The bit depth and sample rate shown inside the Default format area, concern applications that do not take exclusive control over the device (use the device through Windows audio engine). You can set here what you prefer.

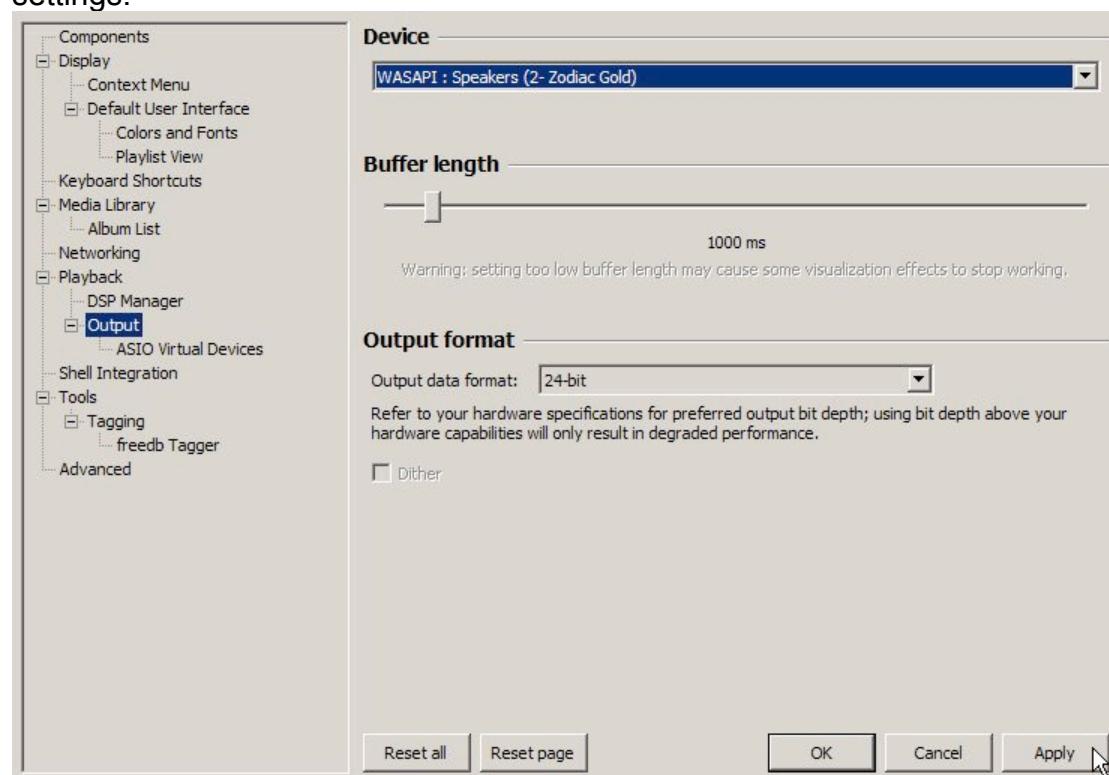


b.) Using WASAPI and Foobar 2000 Audio Player:

1. Go to the Foobar 2000 web site and download the “WASAPI output support” from the Components section of their website.
2. Install the “WASAPI output support” component within Foobar 2000 on your PC running Windows 7 or Vista (see instructions on the Foobar 2000 site for *How to install a component?*).
3. Run the Foobar 2000 program. Go to File/Preferences/Output.

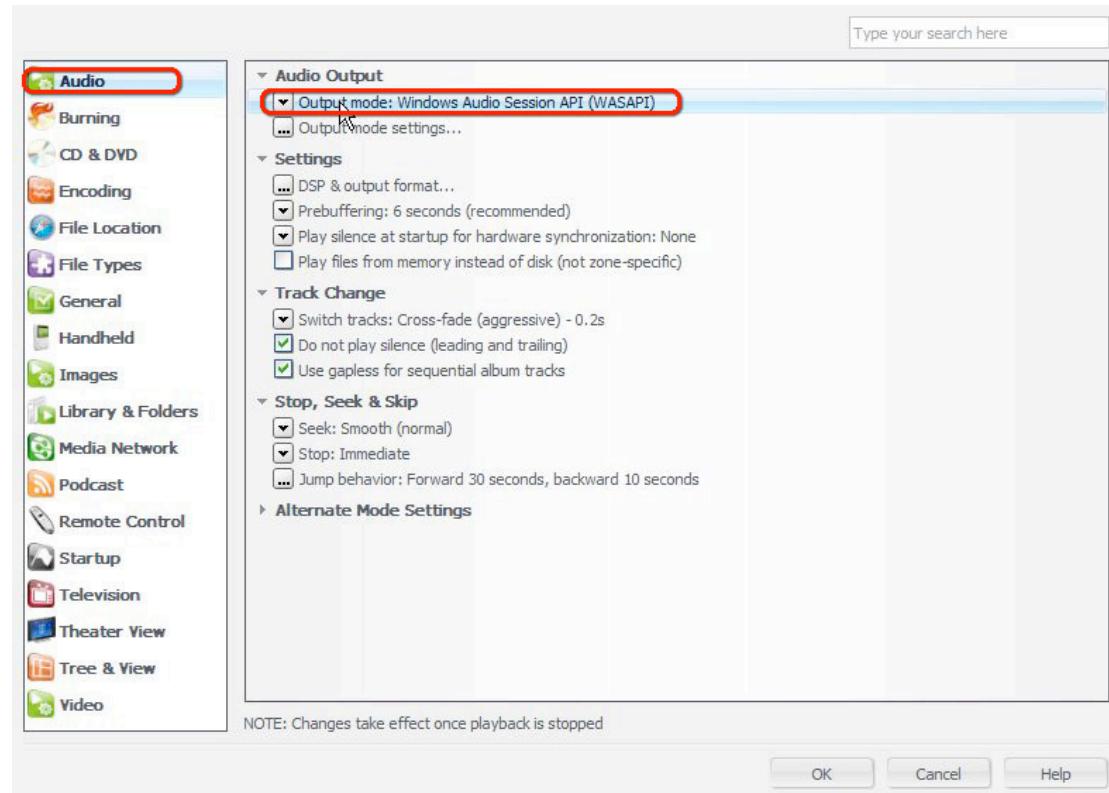


4. Select the ‘Zodiac’ as a WASAPI device, and ‘24-bit’ for the ‘Output data format’. Click ‘Apply’ to confirm the settings, then click ‘OK’ to save the settings.

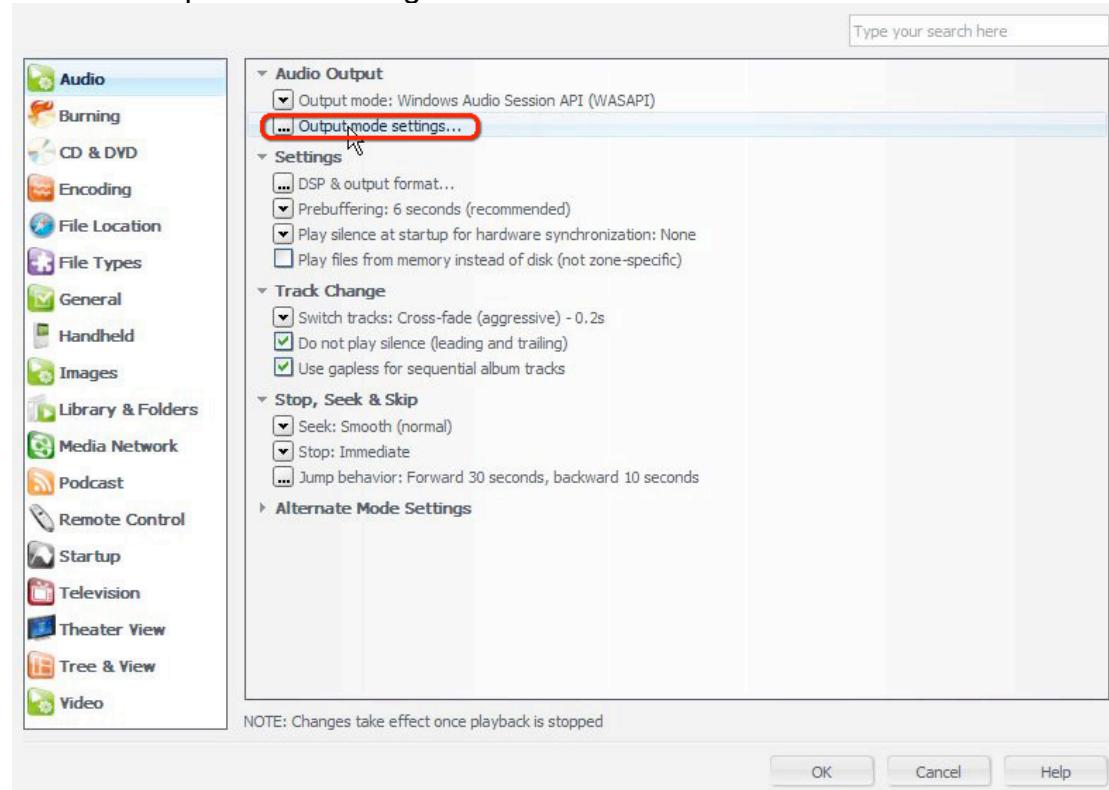


c). Using WASAPI and J.River Media Center Audio Player Application

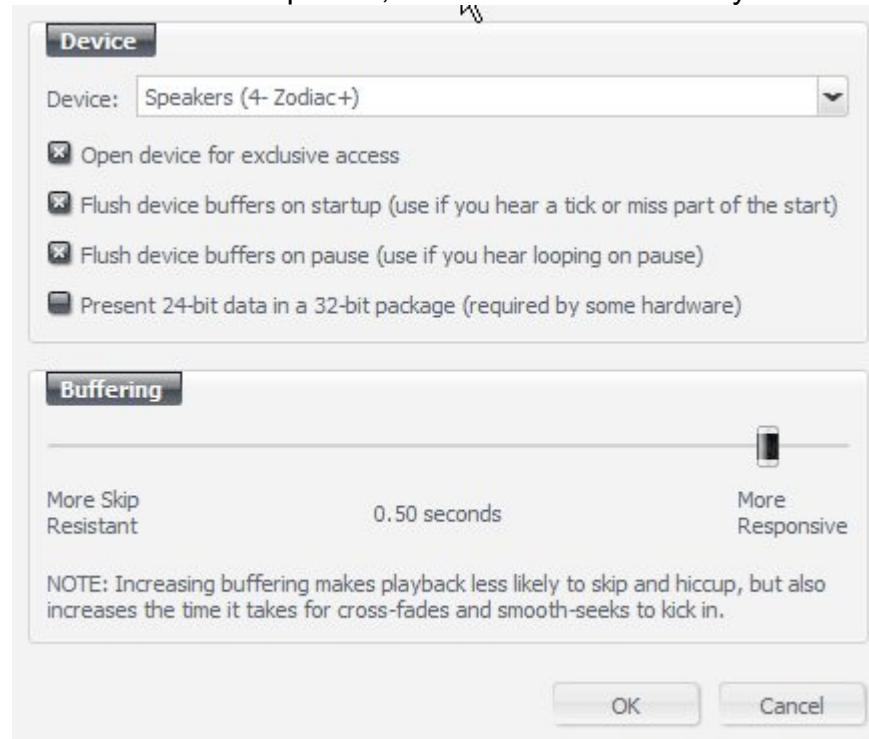
1. Go to Tools> Options> Audio> In Audio Output Click 'Output mode', then choose 'WASAPI'



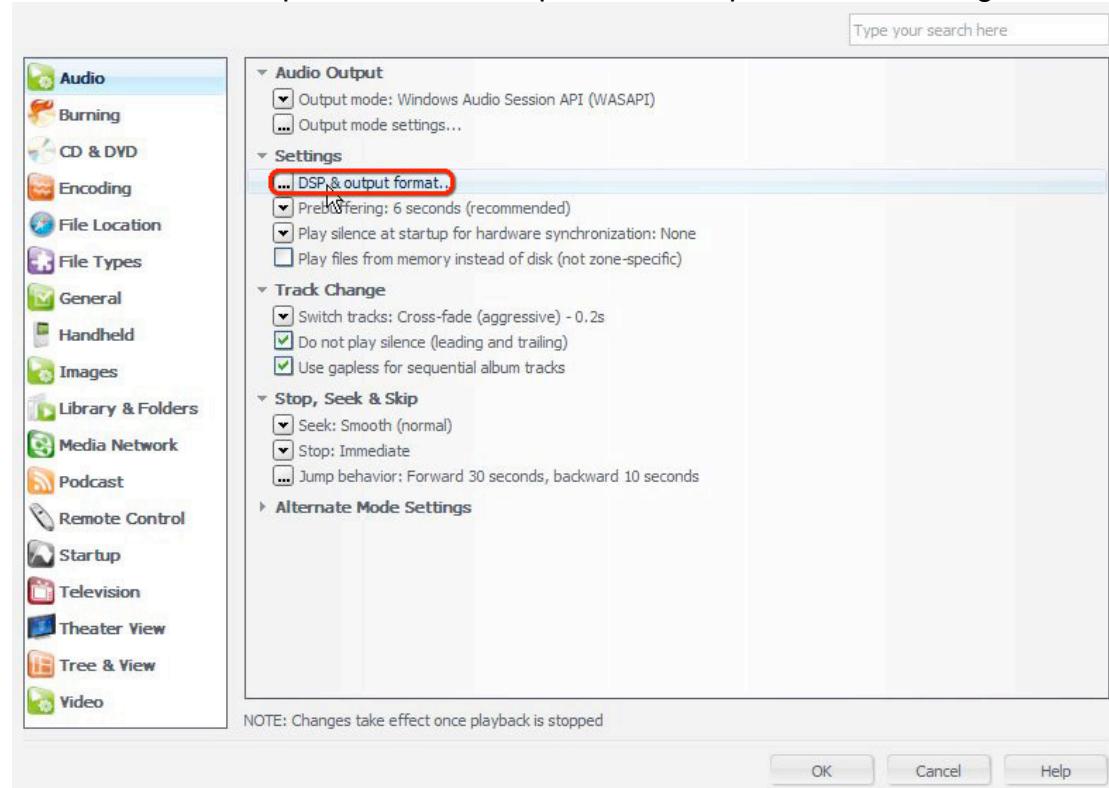
2. Click 'Output mode settings'



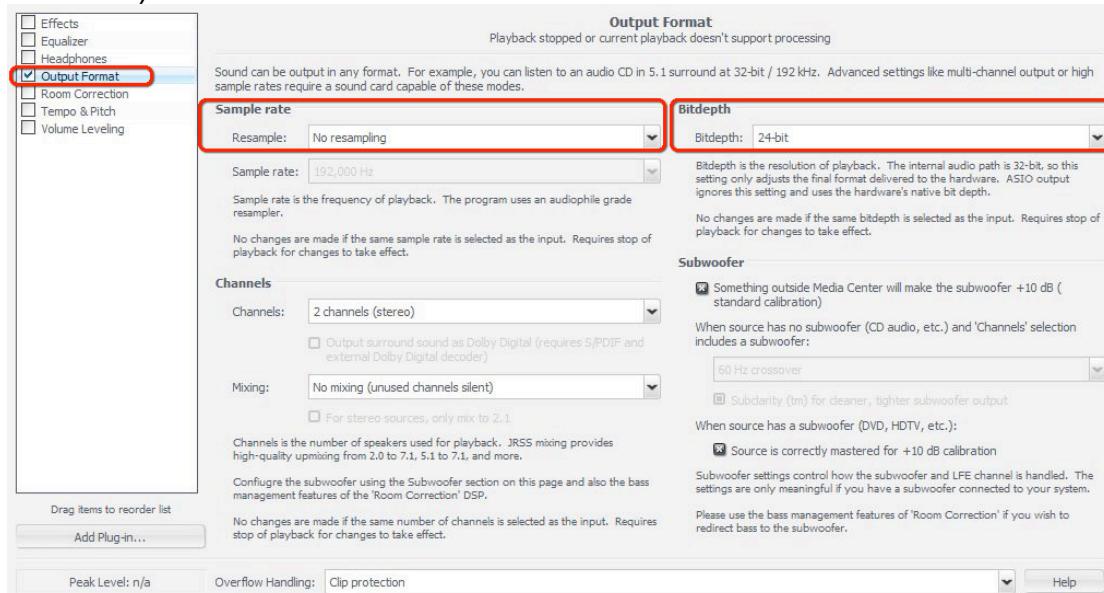
3. In the drop-down list box entitled 'Device:' choose 'Zodiac' as your favored audio device.
4. Choose 'exclusive access'. If you don't do this, you are still using the Windows audio engine and therefore the mixer.
5. For every case you can choose 'Flush device buffers on startup' and 'Flush device buffer on pause', but this is not mandatory.



6. Click 'DSP & output format'. This opens the 'Output Format' settings.



7. Under 'Sample rate', in the list box labelled 'Resample' select: 'No resampling'. Now Zodiac will use the original sample rate encoded inside your files.
8. In the list box labelled 'bitdepth', select 24-bit (as the Zodiac is a 24 bit device).



Enjoy using your Zodiac DAC.
 Antelope Audio
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