

ZED DICE CONTROL PANEL

A description of the Control Panel for the ZED DICE driver v3.3.2.

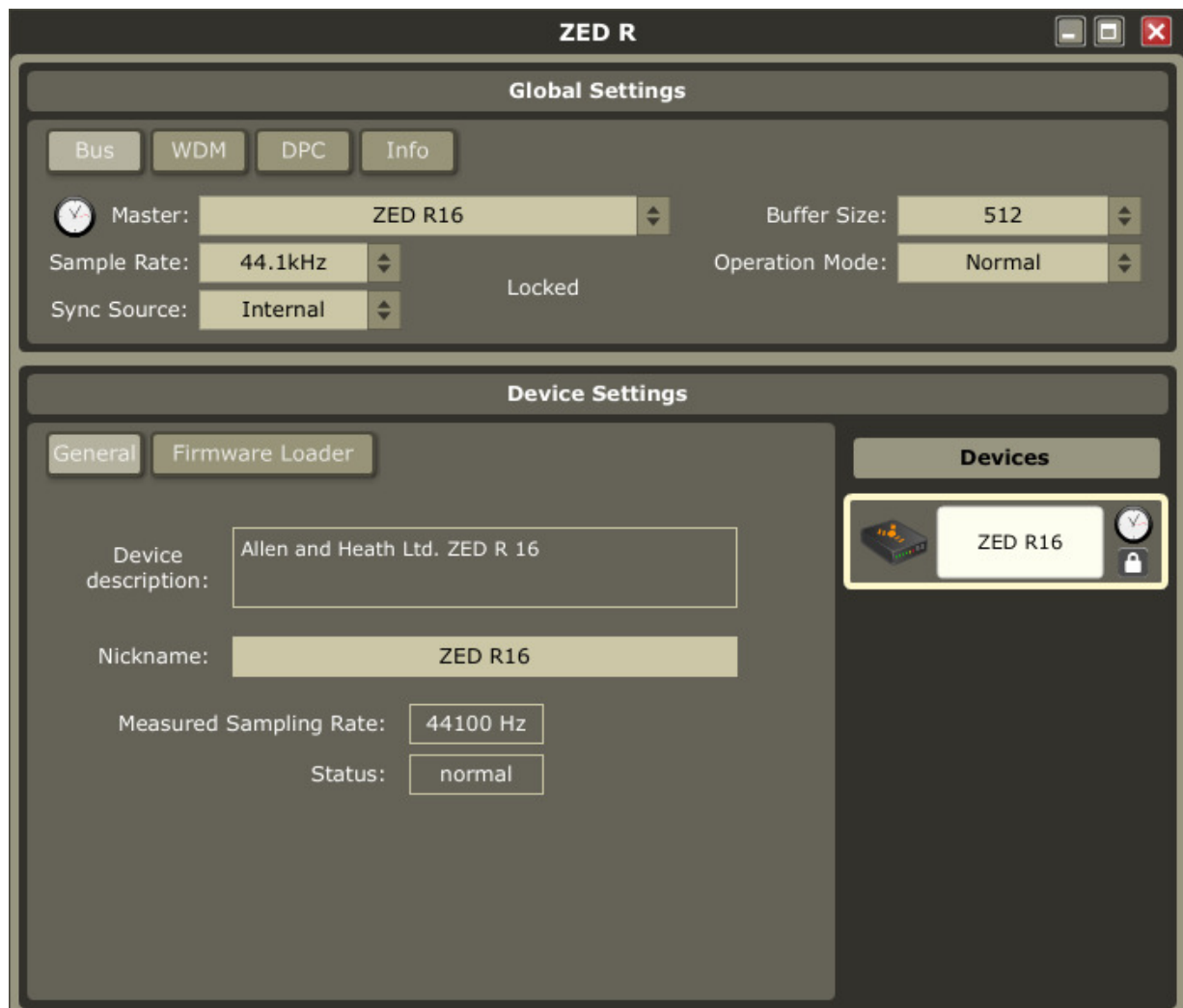
Both the Windows & Mac versions are covered by this guide, the differences are highlighted where relevant.

The Windows or Mac installer program will install the driver software for the ZED DICE audio streaming device onto your computer, and a control panel application which can be used to check and set up certain parameters such as sample rate and synchronisation source.

The following is an overview of the control panel with an outline of its features and functions:

Screenshot of the Windows (XP & Vista) control panel.

The Mac version does not have the buffer size option box, the WDM tab or the DPC tab.



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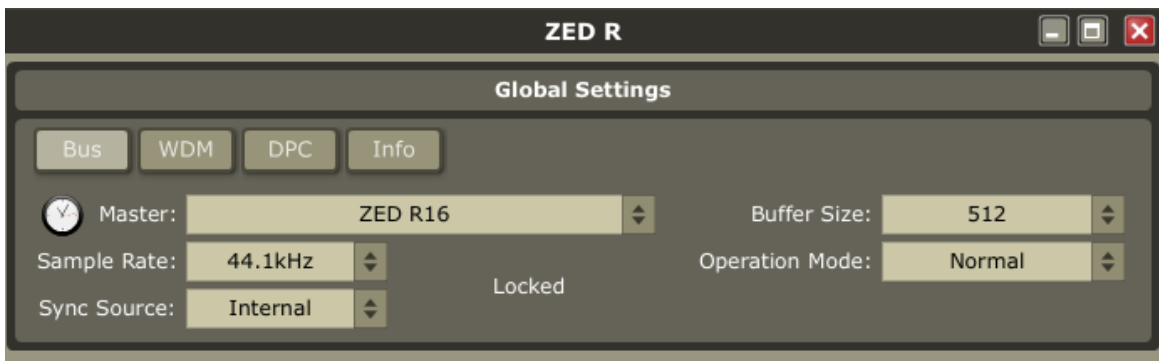
The control panel is divided into two main sections, Global Settings and Device Settings.

Global Settings

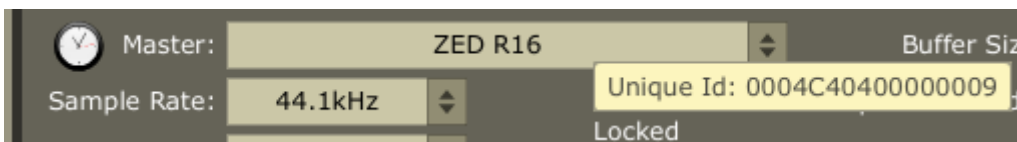
All system related settings are here, grouped into four Tabs for Windows, two for the Mac version.

Bus Tab:

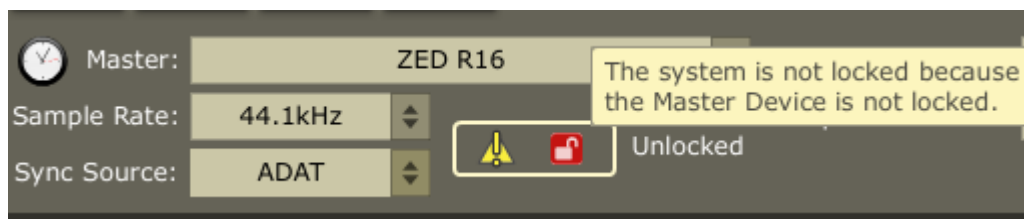
Contains controls for choosing the system clock master device, sample rate, synchronisation source, buffer size, and operation mode.



When the mouse pointer hovers over the Master combo box, a ToolTip will display the IEEE1394 unique ID of the device.

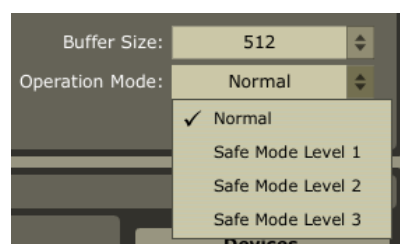
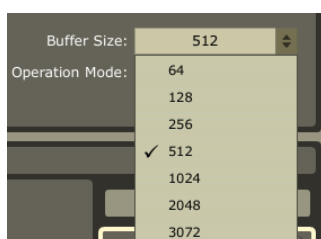


The sample rate and sync source always refer to the selected clock master. It is possible to connect two ZED-R16s together, in which case one of them will be the clock master and the other the slave. When only one ZED-R16 is connected, it will always be the clock master. When the device is not locked (synchronised and working at the selected sample rate), a warning icon will appear under the Master display box. Hovering the mouse pointer over the text will display a message stating whether the master device is locked or not. Here (below), the ZED-R16 device (clock Master) is set to synchronise from the ADAT input stream which is not plugged in, therefore the ZED-R16 device is not locked.

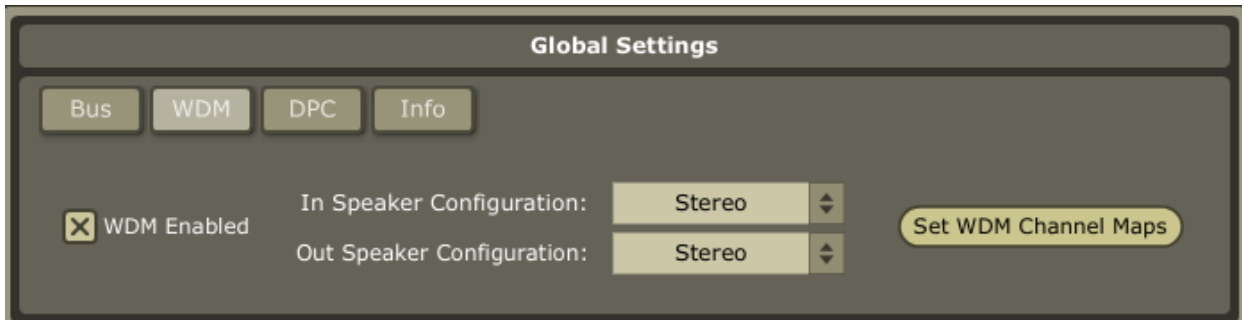


The Buffer Size (Windows only) option box contains a number of predefined sizes in its drop-down menu, or you may type in a value. Depending on the setting, the driver may round the value and the current Operation Mode will enforce limits on the buffer size, so the resulting value may not always be the same as what is entered.

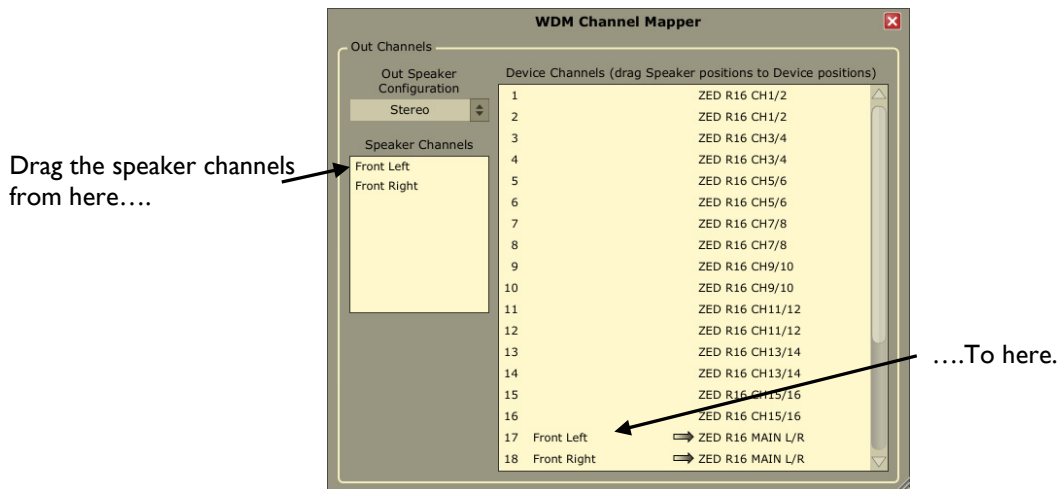
The Operation Mode enforces buffer levels which help prevent performance-related dropouts when using audio on computers. The higher the Mode number, the less chance of audio artefacts, with the sacrifice of increased system latency. Dropouts are caused by the configuration of the computer, and also by what other applications are running at the time, and lastly by the worst-case DPC latency caused by other drivers. Network drivers, for example, are a notorious source of latency on an otherwise high-performance computer.



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The WDM tab (Windows only) can be used for enabling or disabling the Windows Driver Model audio channels, configuring them as mono, stereo or surround, depending on your computer's capability, and mapping the WDM channels to the required channels on your ZED-R16. For example you can map the stereo WDM channels to the master L-R channels (17-18) on your mixer so that your computer CD player and general audio will be played to the Master L-R channels for monitoring.

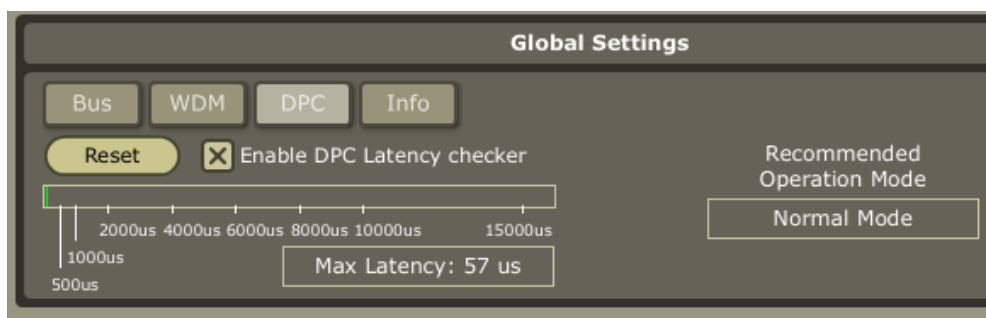


The DPC tab (Windows only) allows a utility to check your computer for excessive Deferred Procedure Call latencies. Basically it checks the capability of your computer to handle real time audio streams by looking at how quickly your computer can get around to processing the audio data streamed into the buffers and if there are any hold-ups caused by other drivers or processor interrupts. The result of a high DPC latency measurement (this is not the overall FireWire latency), would be clicks in the audio or dropouts in communication with the computer or audio application.

When enabled, the DPC Latency checker will continuously display a graph of latency measurement, as well as the maximum value measured since starting the test. The test continues to run even with the control panel minimized, until the Enabled box is unchecked. The Recommended Operation Mode is based on the DPC latency measurement and is a good starting point for setting the Operation Mode.

The measurement may be affected by other applications running on the computer, especially if they use a lot of processor power.

If high latency measurements are reported, the recommended operation mode may be one of the safe modes to prevent dropouts, at the expense of FireWire bus latency timings.



The Info tab displays the Driver version number of the driver and the PAL number of the version compiled for the application.

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Device Settings

This area of the control panel shows information for the ZED-R16 if connected to the FireWire bus. The device (mixer) is shown in the Devices list on the right, the clock symbol is displayed if it is the clock master and a padlock symbol shows if the device is locked or unlocked (synchronised or not).



On the left of the Device Settings area are two Tabs, General and Firmware Loader.

The General tab displays the device description which should be set to Allen & Heath Ltd. ZED R 16 if connected, and the Nickname box allows the user to give a particular name to the mixer connected which is useful if different mixers are being used, or if two are connected together (this is possible but is not described in this control panel guide). Underneath the device Nickname, the actual measured sample rate is displayed along with the device status.

An alert icon will appear on the device list item to show that certain events have been logged which apply to the device shown such as the device being locked or unlocked temporarily. The icon will fade, but if the mouse is hovered over the icon before it fades the reported events will appear as a ToolTip. When the icon has faded, shift+clicking over the device box in the Devices list will show the most recent 40 events logged.



The Firmware Loader tab allows the user to upload new Firmware to the ZED-R16. The procedure for doing this is not described in this control panel guide.

Parameter Locking:

When an audio application is running on the computer, certain functions are locked by the control panel for example the sample rate setting. A ToolTip will appear to inform the user of this if the mouse pointer is hovered over the relevant parameter box.

To access these parameter settings, the audio application should be closed and re-opened after the settings are made.

