



**REASON**

Operation Manual by Synkron:  
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# What's new in Reason 1.0.1?

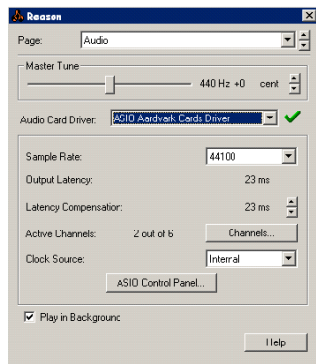
This, the latest release of Reason, contains a number of new and improved functions and features. In this document you will find a list of the most significant new features implemented. For a complete list of minor fixes, including various hardware compatibility issues, please check the Propellerhead Homepage at [www.propellerheads.se](http://www.propellerheads.se).

## Preferences – Audio

The Audio Drivers in Reason have been subject to a radical overhaul, including completely rewritten ASIO implementation. Due to this, the Audio Settings dialog has been redesigned and now includes some new features. Which of the options described below are available in the dialog depends on which audio driver you choose.

### Audio Card Driver – Windows

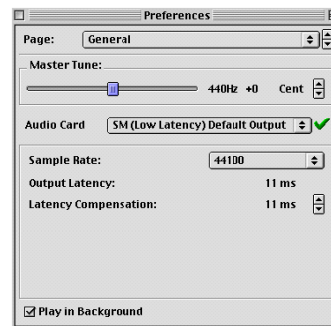
This menu lists all the available Audio Card Drivers on your system, and lets you select which one Reason should use. Which option to select depends on the audio hardware:



- If you are using audio hardware for which there is a specific ASIO driver, you should select this. With an ASIO driver written specifically for the audio hardware you will get lower latency (see below), support for higher sampling frequencies (up to 96 kHz in 24 bit/32 bit float resolution), and possibly better support for additional hardware features such as multiple outputs.
- If there is no specific ASIO driver, you should select the Direct Sound driver for the audio hardware. This makes Reason communicate with the hardware via Direct Sound (a part of the Microsoft DirectX package). For this to be possible, you need to have DirectX installed on your computer, and there must be a Direct Sound driver for the audio hardware.
- If the audio hardware doesn't support Direct Sound (i.e. there is no Direct Sound driver for the audio hardware), select the MME driver for the audio hardware. This makes use of Windows Multimedia Extensions, the part of Windows that handles audio, MIDI, etc. Using MME often results in larger latency values (see below).

### Audio Card Driver – MacOS

This menu lists all the available Audio Card Drivers on your system, and lets you select which one Reason should use. Which option to select depends on the audio hardware:



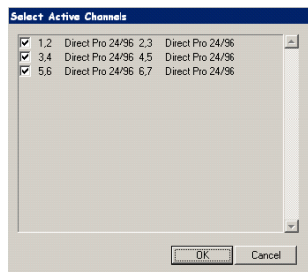
- If you are using audio hardware for which there is a specific ASIO driver, you should select this. With an ASIO driver written specifically for the audio hardware you will get lower latency (see below), support for higher sampling frequencies (up to 96 kHz in 24 bit/32 bit float resolution), and possibly better support for additional hardware features such as multiple outputs.

If you don't have audio hardware for which there is a specific ASIO driver, you will use the Apple Sound Manager. This is the sound driver protocol that comes with the MacOS, and Reason communicates with the audio hardware using this.

- If you plan to use the internal audio outputs on your computer, please select "SM Built-in".
- If you have some additional audio hardware (such as USB-speakers) installed, please select "SM Device Name", where "Device Name" is the name of your audio hardware.

## Active Channels (ASIO Only)

This displays the number of audio channels (outputs) the currently selected audio hardware supports. For a regular stereo card, this number will be "2". If your audio card has multiple outputs and an ASIO driver is selected for it, the "Channels" button will be available. By clicking on it, you will be able to select which channel outputs (stereo pairs) should be active. Active outputs will be indicated in the Reason Hardware Interface.



## Clock Source (ASIO Only)

If you are using an ASIO driver for your audio hardware, you have the possibility of selecting a Clock Source. This is used for determining the source to which audio playback should synchronize its sample rate. If you have an audio card and a driver that supports it, you can choose to synchronize to external sources.

## ASIO Control Panel (ASIO Only)

If you have selected an ASIO driver, this button brings up a control panel window specifically for that audio hardware. This may contain buffer settings, routing options, synchronization alternatives etc.

## Output Latency & Buffer Size

The Output latency is the delay between when audio is "sent" from the program and when you actually hear it. The latency in an audio system depends on the audio hardware, its drivers and their settings.

If the latency is large, you will notice that the sound is delayed when you play a device from a MIDI keyboard. You may also notice that reactions are delayed when adjusting controls on the device panels (for example, if you lower the volume of a device, you will not hear this immediately but after the latency time). Therefore, you want to get as low a latency value as possible.

When you select a driver, its latency value is automatically reported and displayed in the Preferences-Audio dialog. Depending on the audio hardware and the driver, you may be able to adjust this value:

- If you are running Reason under Windows using a Direct Sound or MME driver, you can adjust the latency value by using the Buffer Size slider or the up/down arrow buttons. The highest and lowest possible values depend on the driver.
- If you are using an ASIO driver specifically written for the audio hardware, you can in most cases make settings for the hardware by clicking the Control Panel button. This opens the hardware's ASIO Device Control Panel, which may or may not contain parameters for adjusting the latency. Usually this is done by changing the number and/or size of the audio buffers - the smaller the audio buffers, the lower the latency. Please consult the documentation of your audio hardware and its ASIO drivers for details!
- If you are running Reason on a Mac using the Sound Manager driver protocol, you cannot change the latency.

OK, so why not just set the latency to the lowest possible value? The problem is that selecting too low a latency is likely to result in playback problems (clicks, pops, dropouts, etc.). There are several technical reasons for this, the main one being that with smaller buffers (lower latency), the average strain on the CPU will be higher. This also means that the more CPU-intensive your Reason song (i.e. the more devices you use), the higher the minimum latency required for avoiding playback difficulties.

## Latency Compensation

This control should normally only be adjusted when synchronizing Reason to external MIDI Clock.

Because of the latency problem, you might need to adjust Reason's playback in relation to the MIDI Clock sync master, so that they are in perfect time. The tempo will not differ between the two, but Reason might play ahead or behind the other application. You might need to adjust this. However, this is something you only need to do once. The setting is stored with your other preferences, so you don't need to adjust it again.

Proceed as follows:

1. **Set up the other application so that it generates a solid click, on for example quarter or eighth notes, preferably with a special sound on the downbeat. This click can either come from an internal metronome or from a MIDI source. If you use a MIDI source, make sure you pick one that has solid MIDI timing.**
2. **Set up Reason so that it plays a similar rhythm as the other application. You might for example use the Redrum drum computer for this.**
3. **Start the two applications in sync.**
4. **Make sure you hear both applications at approximately equal level.**
5. **Open the Preferences dialog in Reason and select the Audio page.**
6. **Trim the “Latency compensation” setting until the “clicks” from the both sources sound at exactly the same time.**
7. **Close the Preferences dialog in Reason.**

## Preferences – MIDI

### Sequencer Input & Channel

The Sequencer is the “standard” port for receiving MIDI input. This is what you should be using if you intend to use the Reason sequencer.

Once you have selected your MIDI interface on the Sequencer Port pop-up (and which channel it should receive on), you can direct incoming MIDI to any device by just clicking the “In” column to the left of a track name in the track list.

## Preferences – Advanced MIDI

### External Control Bus Inputs

The External Bus inputs provide up to 64 MIDI input channels divided into four buses, each with 16 channels.

→ **These MIDI inputs are primarily for controlling Reason Devices from an external sequencer.**

This could be an external hardware sequencer or sequencer software that is installed on the same computer as Reason. You should preferably use a multiple port MIDI interface, so you can select separate ports for Reason and the other MIDI devices to use, although this isn't strictly required. See the chapter “Routing MIDI to Reason” in the electronic documentation.

## Remote Control Input

The Remote Control input is used for assigning a MIDI port for receiving MIDI Controller messages. How to use Remote Control is described in the electronic documentation in the chapter “MIDI and Keyboard Remote Control”.

## MIDI Clock Input

Using MIDI Clock, you can slave (synchronize) Reason to hardware devices (tape recorders, drum machines, stand alone sequencers, workstations etc.) and other computer programs running on the same or another computer. MIDI Clock is a very fast “metronome” that can be transmitted in a MIDI Cable. As part of the MIDI Clock concept there are also instructions for Start, Stop and locating to sixteenth note positions.

→ **By first selecting the appropriate MIDI input using the MIDI Clock pop-up and then selecting “MIDI Clock Sync” on the Options menu, Reason is made ready to receive MIDI Clock sync. See the “Synchronization” chapter for more information.**

## Miscellaneous New Features

### MacOS Virtual Memory

Reason will now not run at all if Virtual Memory is activated under MacOS.

### Devices and Connections

It is now possible to hit [Esc] to cancel drag and drop operations of devices and cables.

A folded device will now automatically unfold if you drag a cable to it and keep it over the device for a second or so.

## Remote Control

You can now control the following Transport functions via MIDI Remote Mapping or Keyboard Remote Mapping:

- **Stop**
- **Play**
- **FF**
- **Rewind**
- **Record**
- **Loop On/Off**
- **Automation Override Reset**

How to use Remote Control is described in the electronic documentation in the chapter “MIDI and Keyboard Remote Control”.

## Published Songs

In order to protect any copyrighted material that a Published Song may contain from being copied without permission from the originator(s), it is *not* possible to export Song/Loop as an audio file if you have modified a Published Song in any way. You can, however, export the Song in its original state.

Published Songs (Windows file extension .rps) created with Reason 1.0.1 can *not* be opened in Reason 1.0.

## Dr. Rex

When holding down [Option] (Mac) or [Alt] (Windows) and moving the mouse pointer over the Waveform Display, the pointer takes on the shape of a speaker symbol, indicating that the slices in a loop can be auditioned by clicking on them.

## NN-19

You can audition a loaded sample patch or sample by holding down [Option] (Mac) or [Alt] (Windows) and clicking on a key in the Keyboard display. The mouse will take on the shape of a speaker symbol to indicate this.

## Matrix

To make it easier to find the desired note, an orientation line is now visible in the grid display when clicking and/or dragging.

## Sequencer

### Quantize Notes During Recording

The status of this button (on or off) is now saved in a song document.

## ReFill Packer

The ReFill Packer is now a part of the Reason package. The ReFill Packer is an application that enables you to build your own ReFills. A ReFill is a kind of component package for Reason which can contain patches, samples, Rex files and Song files. On your computer, ReFills appear as large files with the extension ".rfl". Read more about the ReFill Packer in its separate document.