Integrating Reaper and Harmony Assistant How-to

Version 1.0

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Document History

Version	Author	Modification	Date (DD/MM/AAAA)
1.0	T. Le Meur	First version (windows only)	02/01/2010

Todo

- Check if there is a way to edit the original item instead of a copy of the MIDI item in Reaper, which would avoid the need to delete the original Take
- Check if it is possible in HA/MA to remember the original path of the edited midi file so that MIDI export would propose to overwrite the original file (by defaulting to the original file path)
- Check with Myriad if supporting ASIO driver would be possible for the HA digital iput to be routed to ReaRoute virtual Asio interface and thus enable to record Digital audio from HA in Reaper (such as sounds form the Gold soundbase and Virtual Singer)
- Check to see if it is possible to get the Stop-Play event in HA/MA transferred to Reaper so that recording stops.

Introduction

[Reaper](#) is a wonderful DAW, developed by Cockos software, available at a very low price, especially for personal or small business use. The philosophy of the development team is to focus on the end-users' need rather than on the marketing aims. While Reaper is a very powerful Audio/Midi sequencer it lacks a good score notation/editor as well as some notation specific MIDI composition tools.

On the other hand, [Melody/Harmony Assistant](#) is a very versatile, low priced score editor very powerful at editing/printing music scores but lacking VST support. The philosophy of the Myriad team is very end-users centered and very similar to the one used by Cockos for Reaper.

Being a happy registered user of these two great softwares, It was natural for me to integrate them both in order to have the best of both softwares at the same time. At his point though I must say that I do not consider myself as an expert in either software, I just compiled here my experience and successful attempts at integrating these tools.

How to integrate the two softwares ? Of course the answer depends on what you intend to do. In my case I wanted to solve 2 issues :

1. Being able to edit MIDI items in Reaper with Harmony/Melody Assistant(HA/MA in the following paragraphs) to be able to use the powerful score editor and composition scripts from this later tool
2. Being able to record inside Reaper a full score designed in Harmony Assistant

Editing Reaper MIDI items with HA or MA

This goal is easily achieved by a simple edition in Reaper's properties.

Open the Options Menu, and select the "Preferences" item.
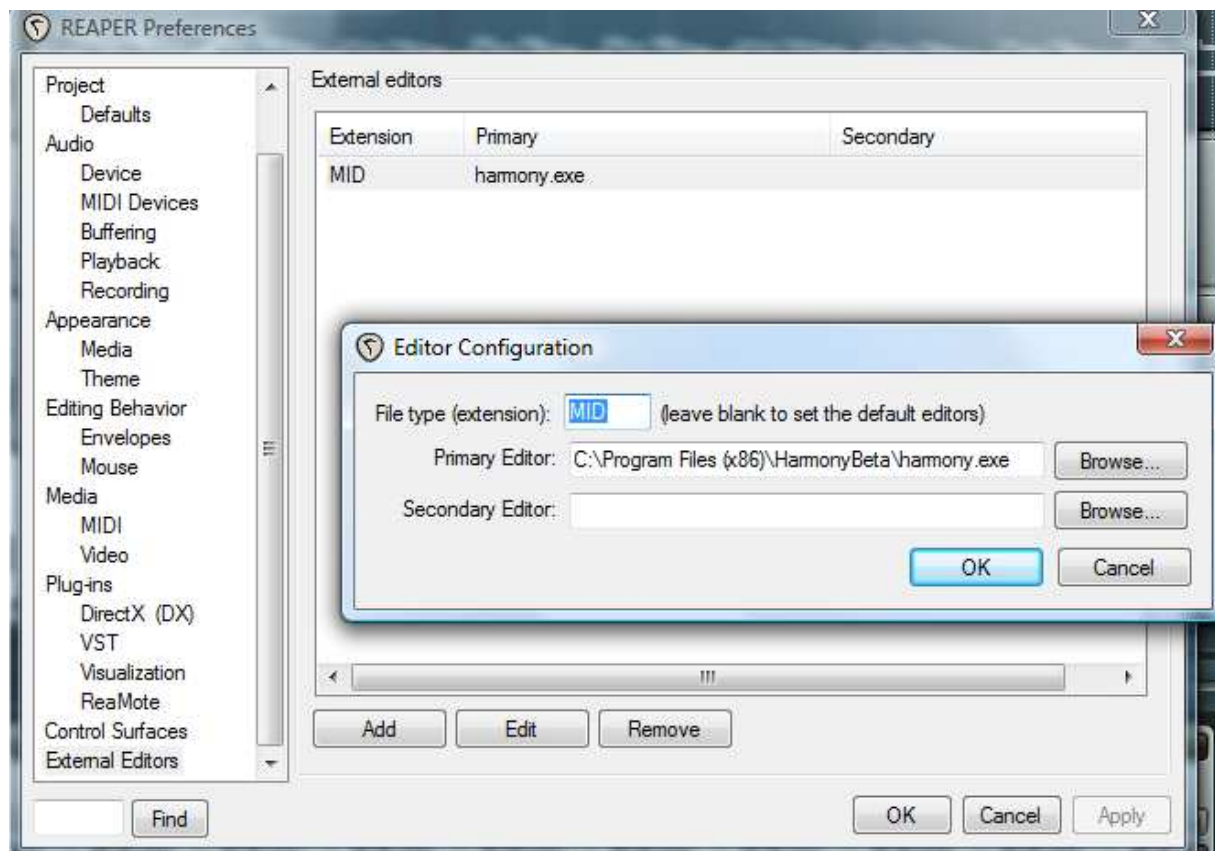
As shown in the previous screenshot, define an external editor for the MID extension, being the HA or MA executable. (Don't use the exact same values as in this screenshot since it depends on your system installation path and HA version, here it's a beta version).
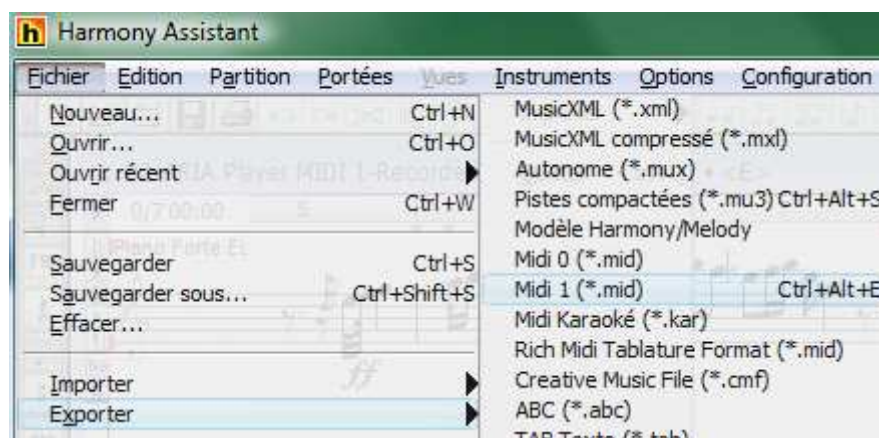
Now you can Right-click any MIDI Item in Reaper and Choose "Open items in editor > Open items copies with 'harmony.exe'
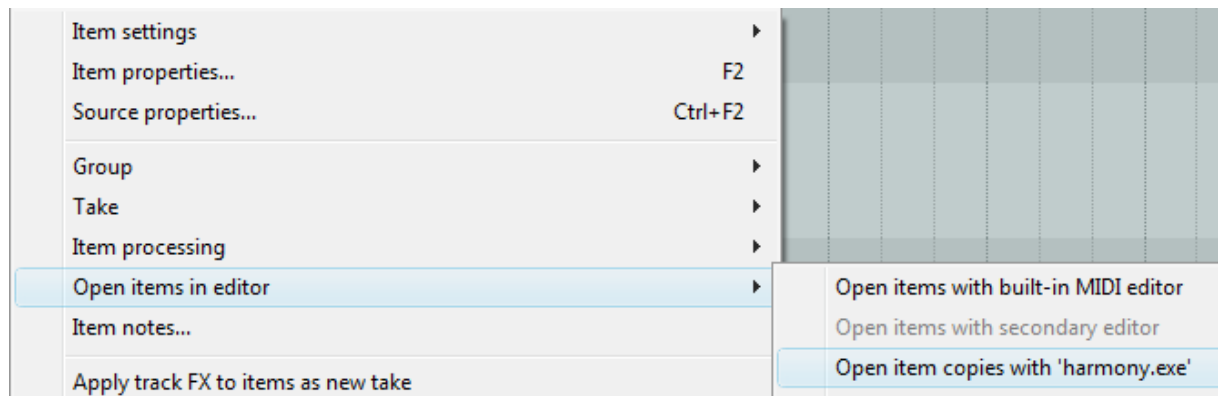
Harmony Assistant is now opened with the MIDI file:
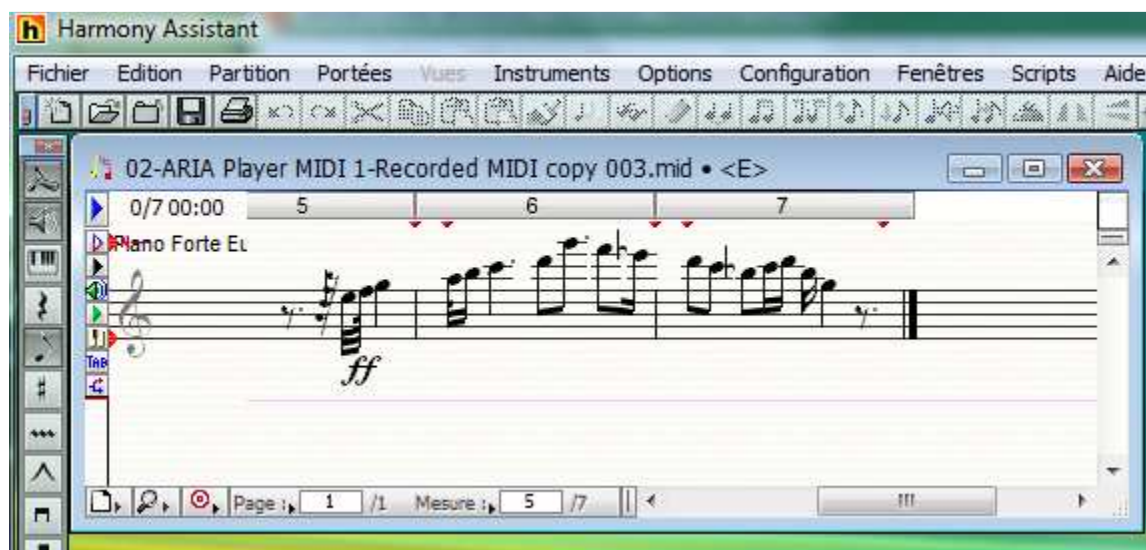
You can now edit the MIDI file and when finished you case save your work by exporting the MIDI file to the original one. You can use the CTRL-ALT-E Shortcut or the following menu Item:

The problem now is to overwrite the original file so that the MIDI track is updated in Reaper. So first get the original MIDI file path in Reaper by right-clicking the MIDI item and choosing the "Source properties…" option:
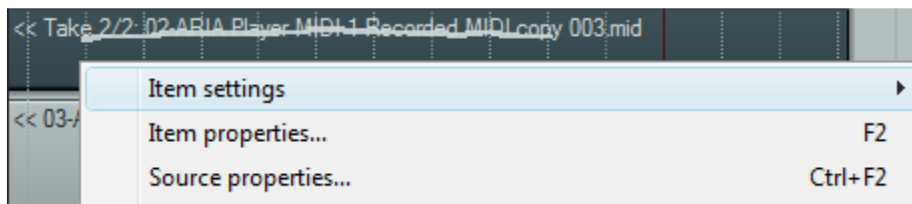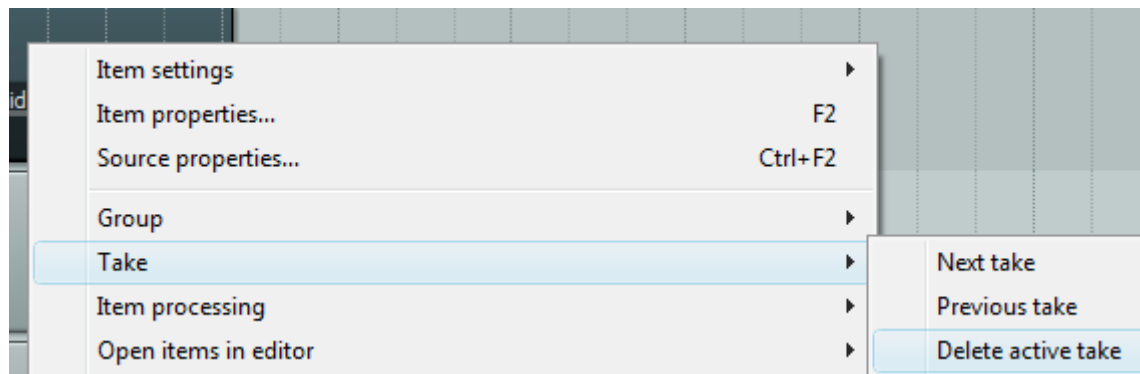

Then just copy the "Filename" path and use it as the target filename in your HA/MA MIDI export.
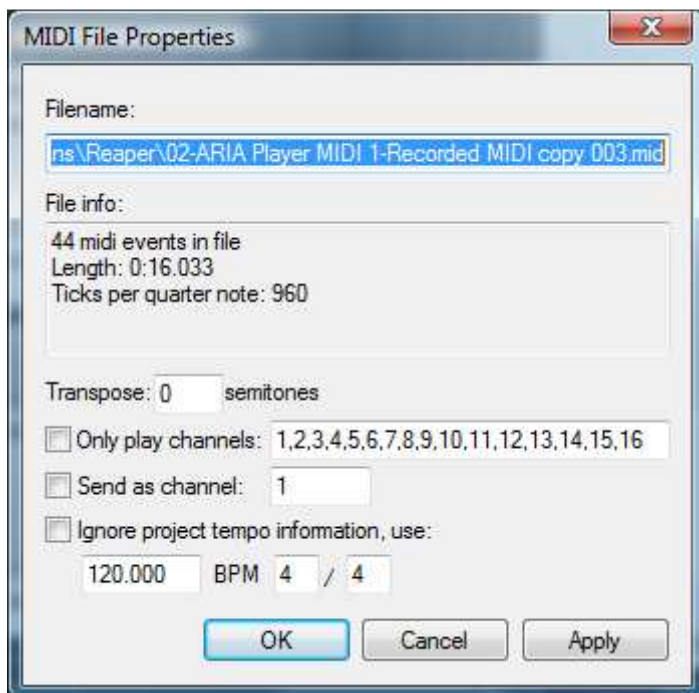
And confirm that you want to replace the original file:

Since you've edited a copy of the original MIDI, you may now have 2 MIDI items, just delete the first Take in Reaper in order to keep only the edited version. First select the Former take, and delete it in Reaper:

Recording a score from Harmony/Melody Assistant in Reaper

This is a little more difficult than the first target because we need to find a way:

1. To send MIDI data from HA/MA to Reaper
2. To synchronize Reaper with HA/MA

Passing MIDI data from HA/MA to Reaper

Install a Virtual MIDI port driver (Midi loopback driver)

We need a set of virtual midi cables. In windows several options are available, use either

- MIDI-Yoke/MIDI-OX (Free, several midi virtual ports, but only works with the 32bits version of Reaper)
- Or Loopbe1 (Free for personal use, but only 1 port so only 16 MIDI channels) or (Loopbe30, low priced multiple ports alternative). This solution works for 64bits versions of Reaper
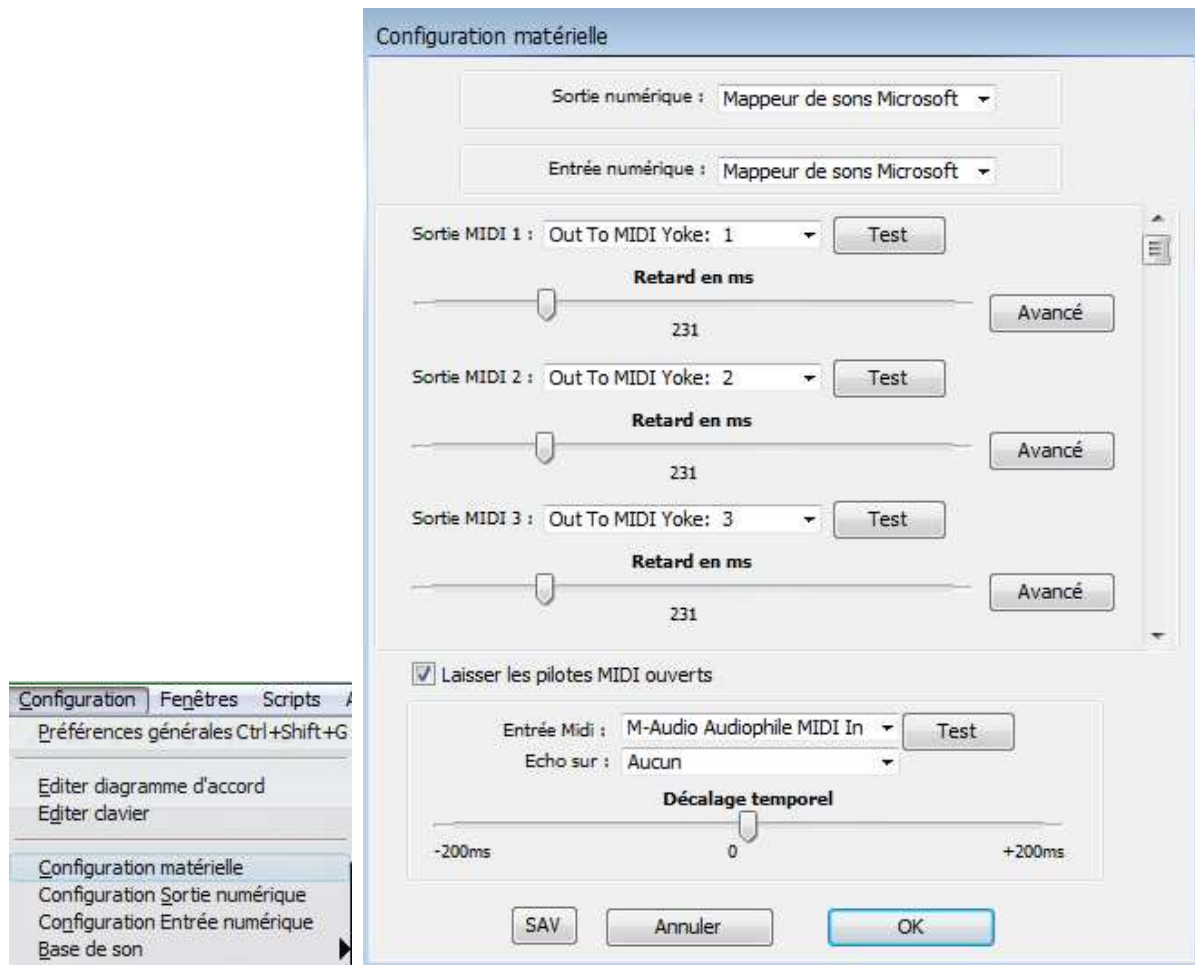
The following examples will be use Midi-Yoke.
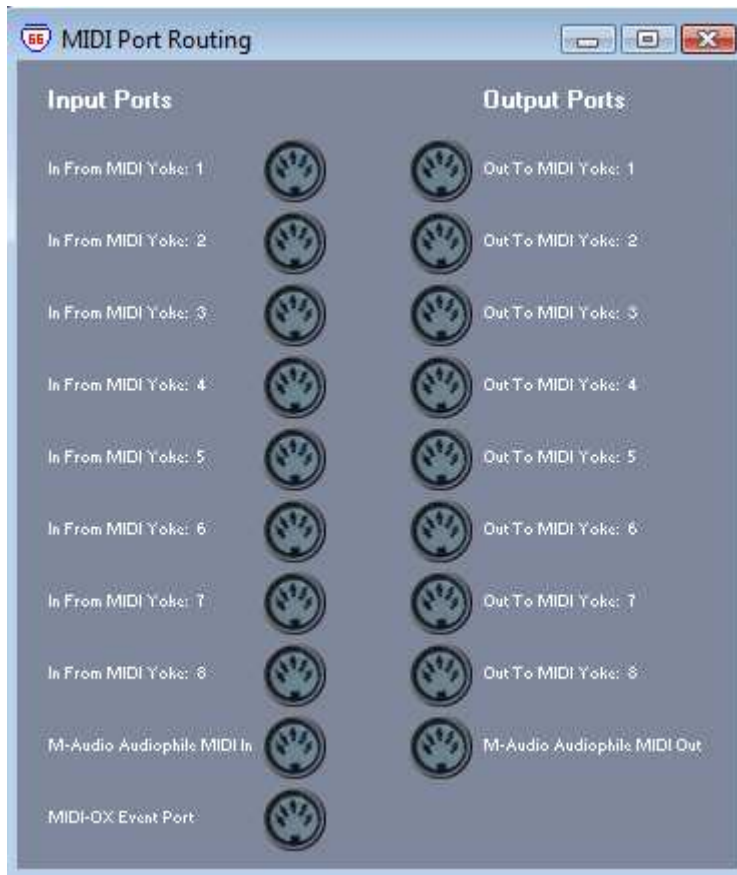
As you can see I now have 8 virtual MIDI ports (labeled Midi YOKE x), and a true MIDI ports corresponding to my Audio interface.

Route output from MA/HA to the MIDI virtual ports
In HA, go to menu "Setup > Hardware Setup"

Set the MIDI outputs 1 to 8 in HA/MA to the MIDI-YOKE outputs. Setup a delay in milliseconds around 231ms.

We then need to send a synchronization signal form HA/MA to Reaper. Let's do this by clicking the Advanced button on each MIDI output (in fact only one is needed), and tick the "Send MIDI Clock" checkbox.
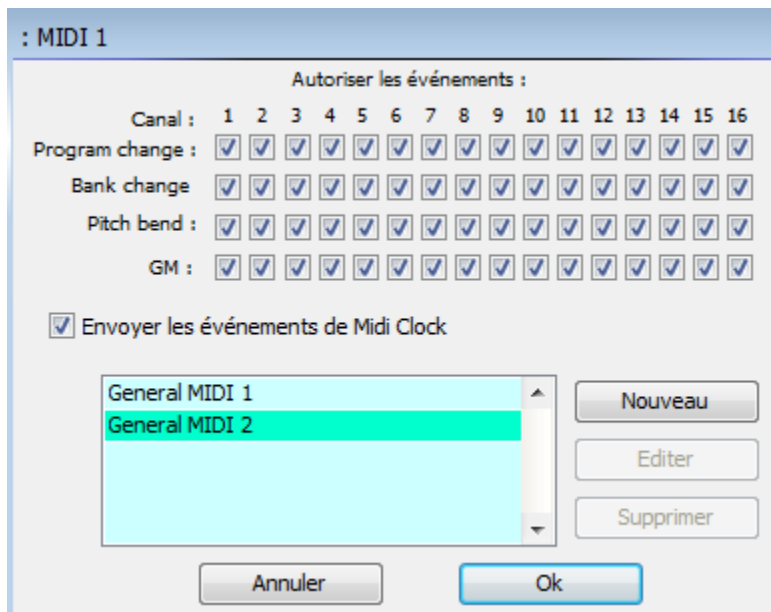
Now that the MIDI output ports are setup in HA/MA, you just have to assign each track to the corresponding HA/MA MIDI output and Channel.

Click on the Keyboard tiny icon on the left of the track, and set the output to MIDI 1 (for MIDI-YOKE 1), and channel 1 for instance:
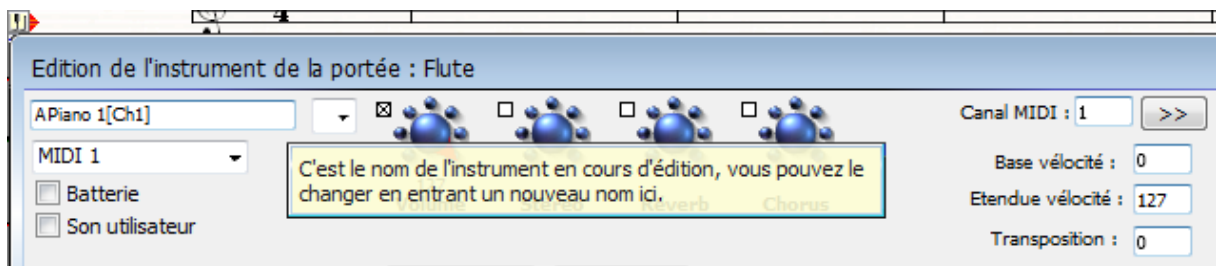

Congratulations, HA/MA is now ready to send MIDI data to Reaper, let's now configure Reaper to receive these MIDI data.

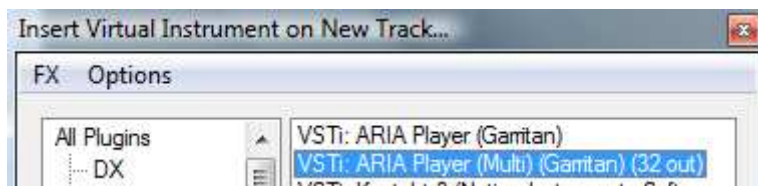## Read MIDI input from HA/MA into Reaper

Create your virtual instrument Audio and MIDI tracks
We first need to define the audio and midi tracks for the virtual instrument which will play the MIDI data.
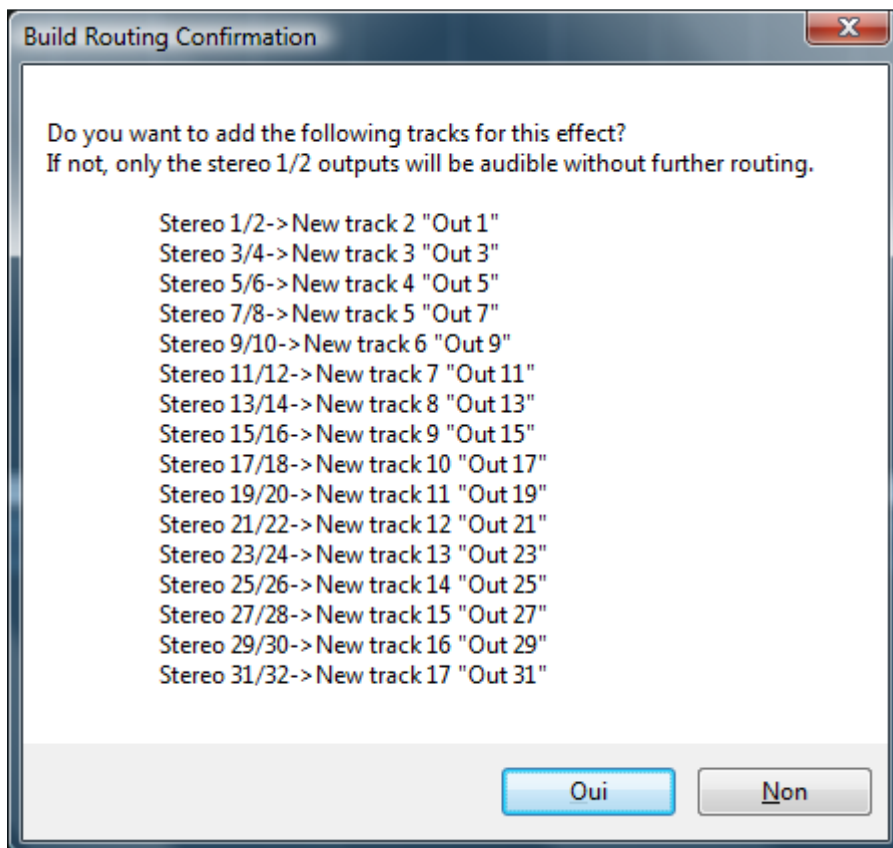
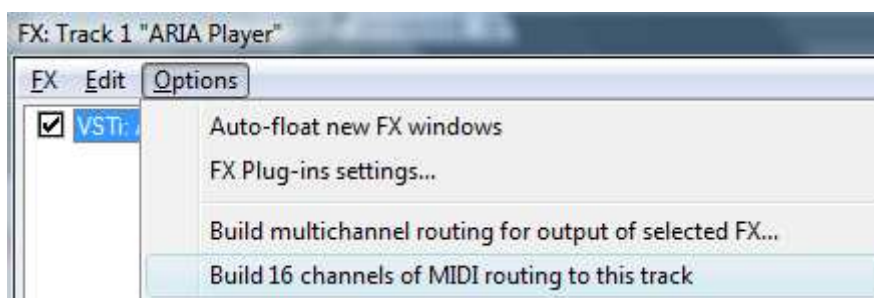In Reaper, add a new Track for a multitrack Virtual instrument
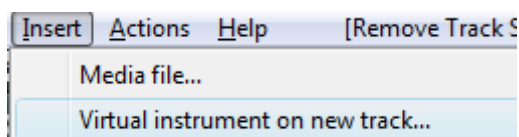
Then load your virtual instrument , in this case I'm going to use the Aria Player from GPO4.

Reaper will propose to automatically add all audio outputs, click Ok to proceed.

In the FX window for the new VSTi instance, select Options > Build 16 channels of MIDI routing for this track.


Now the Track list contains also 16 MIDI tracks correctly routed to the VSTi instance.

We've almost finished, we just need to setup the MIDI input of each MIDI track.

Setup each MIDI track to read from HA/MA

For instance in order to have MIDI track 1 to record from your first MIDI track in HA (which is assigned to MIDI-YOKE 1 channel 1, if you remember), just click the [in] button of the track ans set the MIDI Input port to MIDI-Yoke 1 / Channel 1 only:
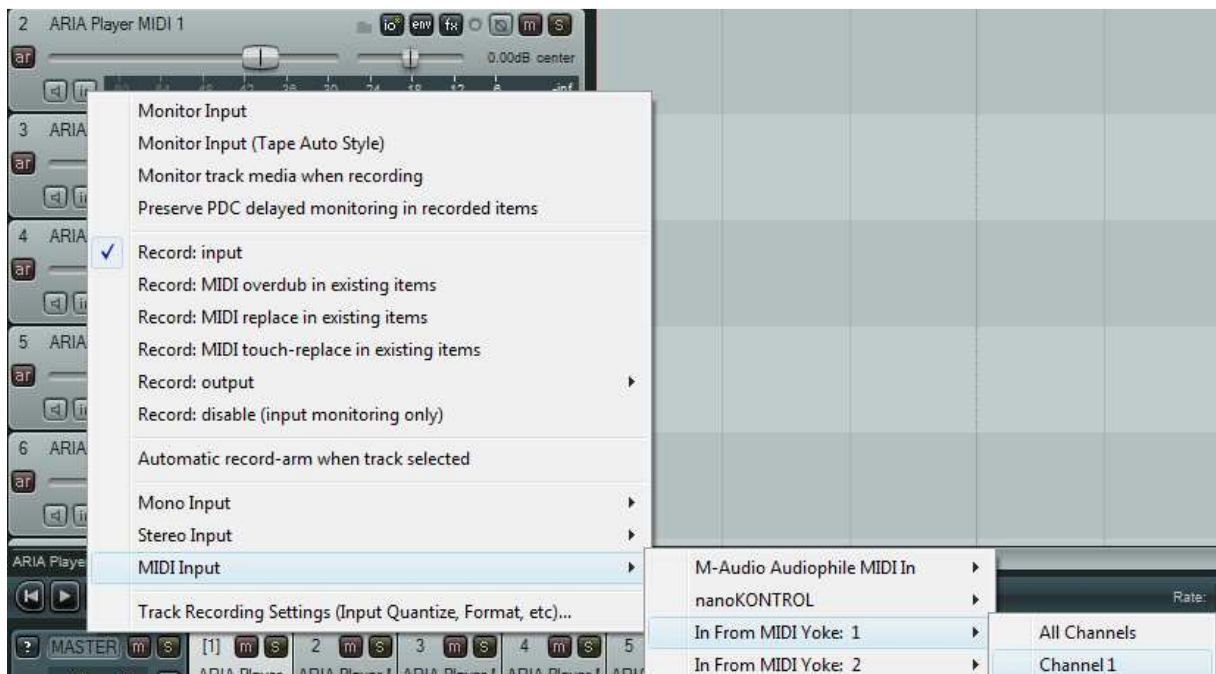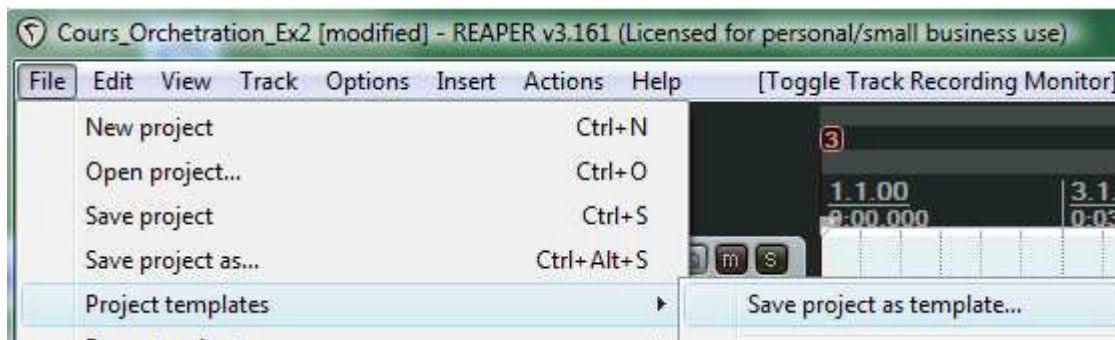

Don't forget to also click the small speaker icon to enable Monitoring for this track (otherwise you would record MIDI, but not send it to the virtual instrument):

You just have to iterate the process for all your MIDI tracks.

You can record this track's settings in a template for future use (thus you won't have to do this next time):


Of course you also have to set your instruments in the Aria player, but this is beyond the scope of this document.
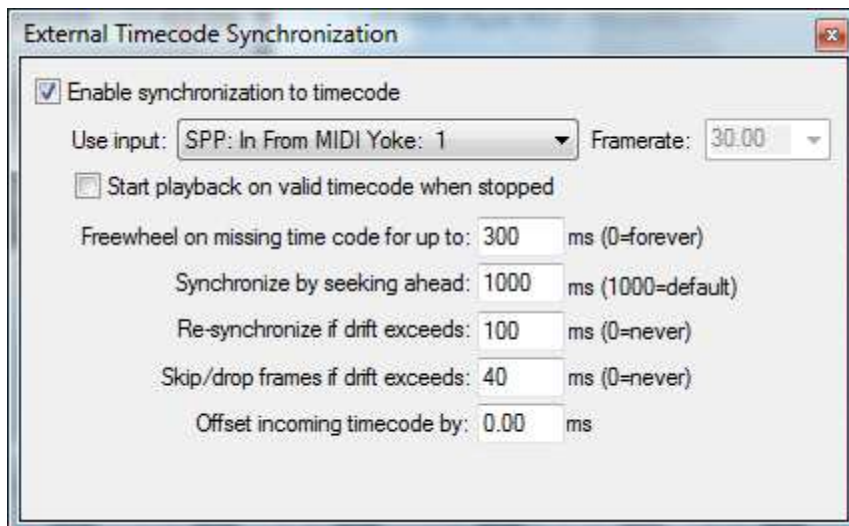
Synchronize Reaper with HA/MA Clock

Last but not least, we need to synch the record function in Reaper with HA/MA MIDI clock.

We simply do so by right clicking the Transport bar in Reaper, and choose "External Timecode Synchronization > Synchronization settings…"
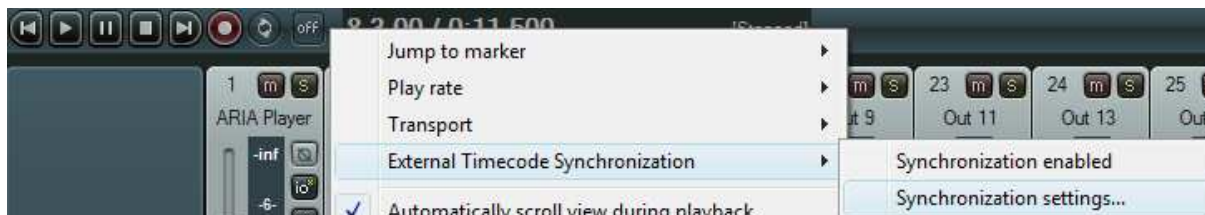
Then select the Enable synchronization to timecode checkbox , and select Use Input: SPP: In From MIDI Yoke: 1

Now test this…

First, check that you've set the same tempo and time signature in both Reaper and HA/MA.

Then, simply arm the Reaper MIDI tracks by clicking the [ar] button (it becomes red):

Then push the record button in Reaper (it will not start since it waits for HA/MA synchronization):

 ..And now start

reading the file in HA/MA by pressing the space bar for instance.