

How my synchronization works, but maybe yours doesn't

Hello, my name is Denis Skok and I have been struggling with latency and synchronization between my hardware gear and Ableton Live for a while.

I know exactly how you feel, you change a setting and everything else falls apart. Or sometimes nothing changes at all.

It's all about finding your own way.

Well I have found my way, which I would like to share with you here.

The tools:

- Ableton Live 11.3.10
- Midronome with Firmware v2.0
- Midronome Plugin v1.1.0

Hardware used:

- Motu 896mk3 Audio Interface
- Roland VR-760 / RM60 Mixer

The steps:

1. Checking your Sample Rate / Buffer Size
2. Configure preferences
3. Configure Midronome
4. Synchronize Midronome and Ableton
5. MIDI settings in Ableton
6. Adding hardware - while sending MIDI
7. Adding hardware - without sending MIDI
8. Recording the hardware

1. Checking your Sample Rate / Buffer Size

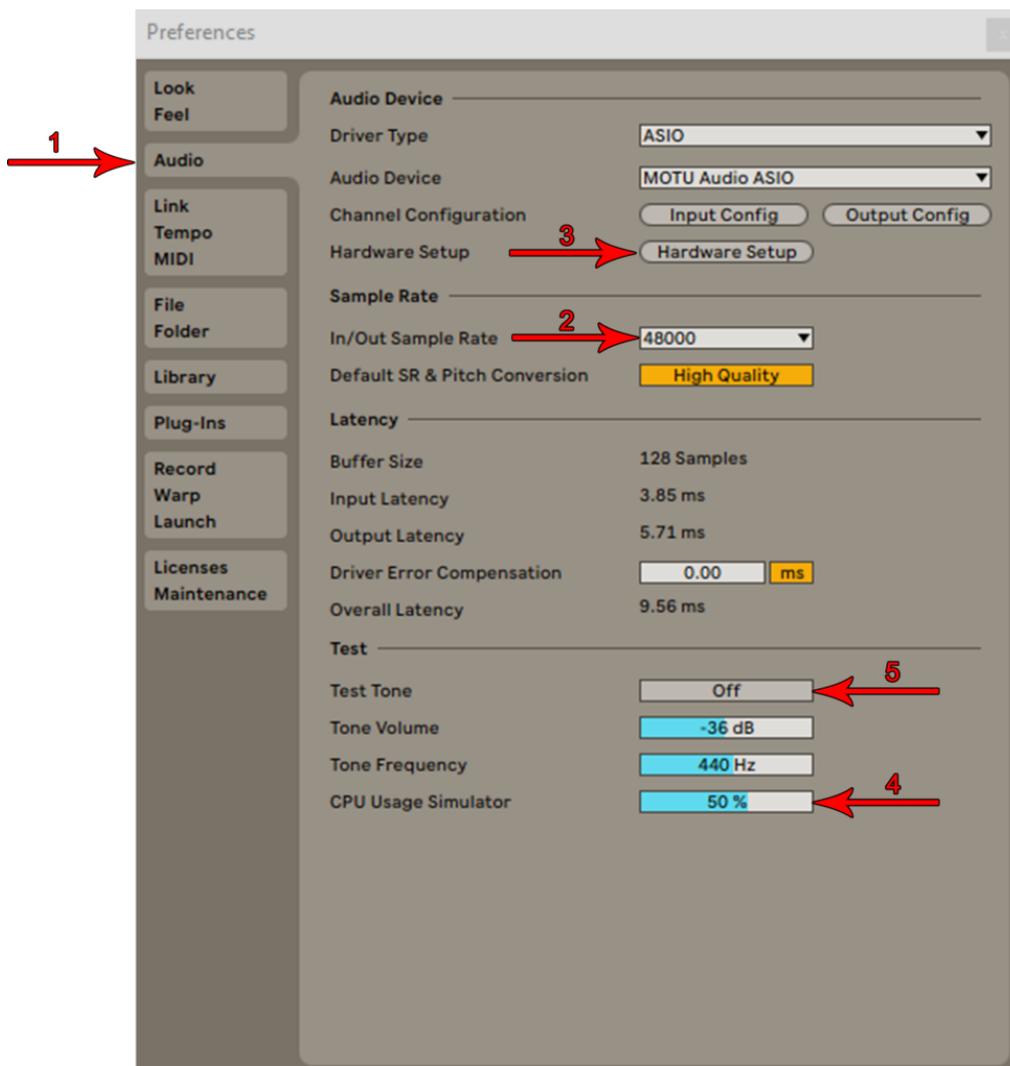
In Ableton, go to (1) the audio settings and set (2) the sample rate to 48000. Now set up the buffer size (samples per buffer) in the settings (3) of your sound card to the lowest value (in my case 64 samples).

In Ableton, set (4) the CPU to 80%, and (5) start the test. Check the sound:

- if you hear clicks, you will need a higher value for the buffer size
- if not, your buffer size is large enough for your CPU

For me that “sweet spot” is 128.

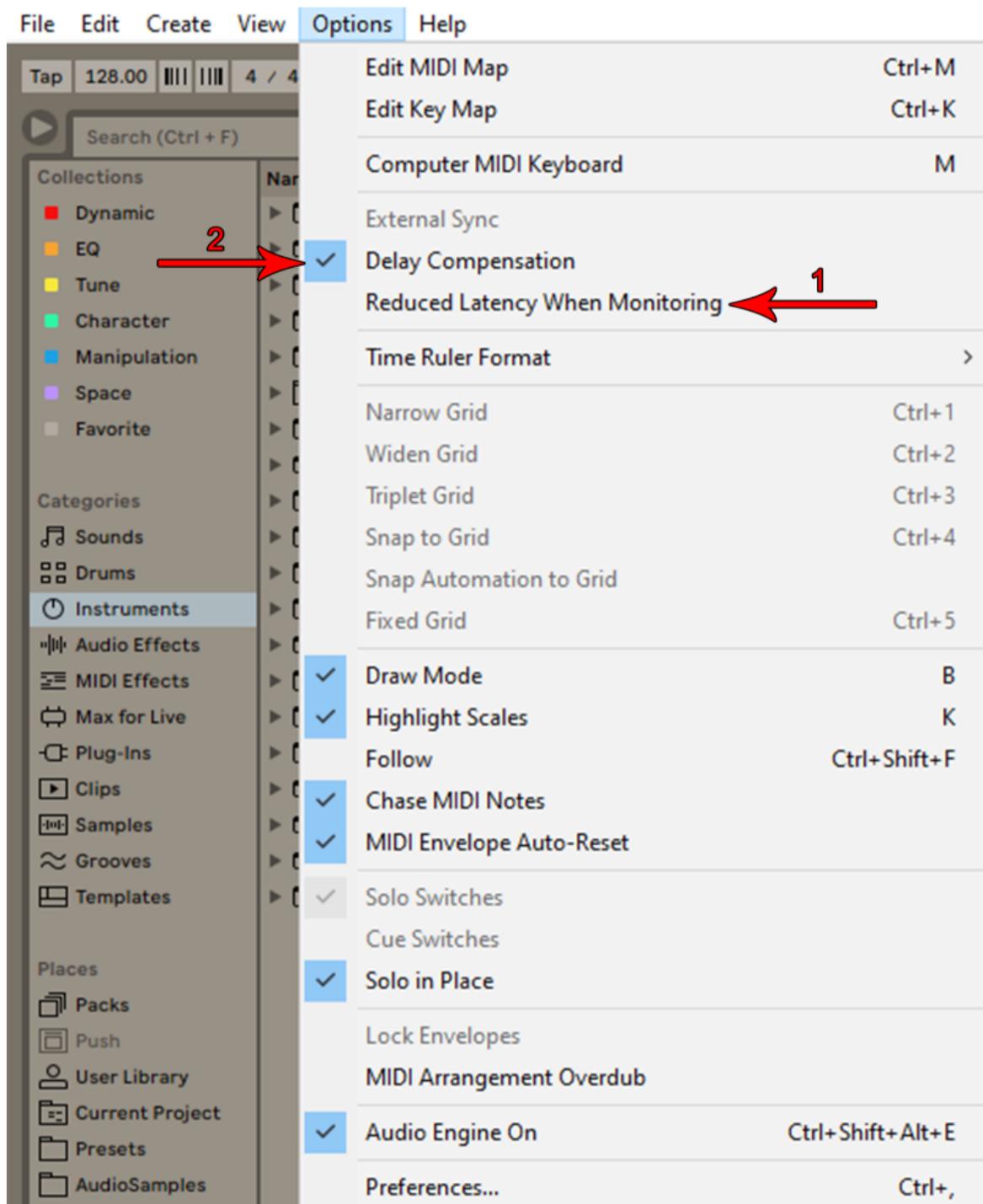
Tip: use this value when recording, but use a much higher value when post-processing with plugins.



2. Configure preferences

Deactivate (1) “Reduced Latency When Monitoring”.

Keep (2) “Delay Compensation” activated.



3. Configure Midronome

In the Midronome settings, set "inP" to "24P". For the "PLA" setting I use "bot".

Now plug a cable:

- from the "INPUT" jack to a free output on your audio interface (A)
- from the "AUDIO" jack to a free input on your audio interface (B)

4. Synchronize Midronome and Ableton

Select the Midronome VST from your plug-in library and drag it into your view to create a new (1) track.

Select (2) the audio interface output where you plugged the cable (A).

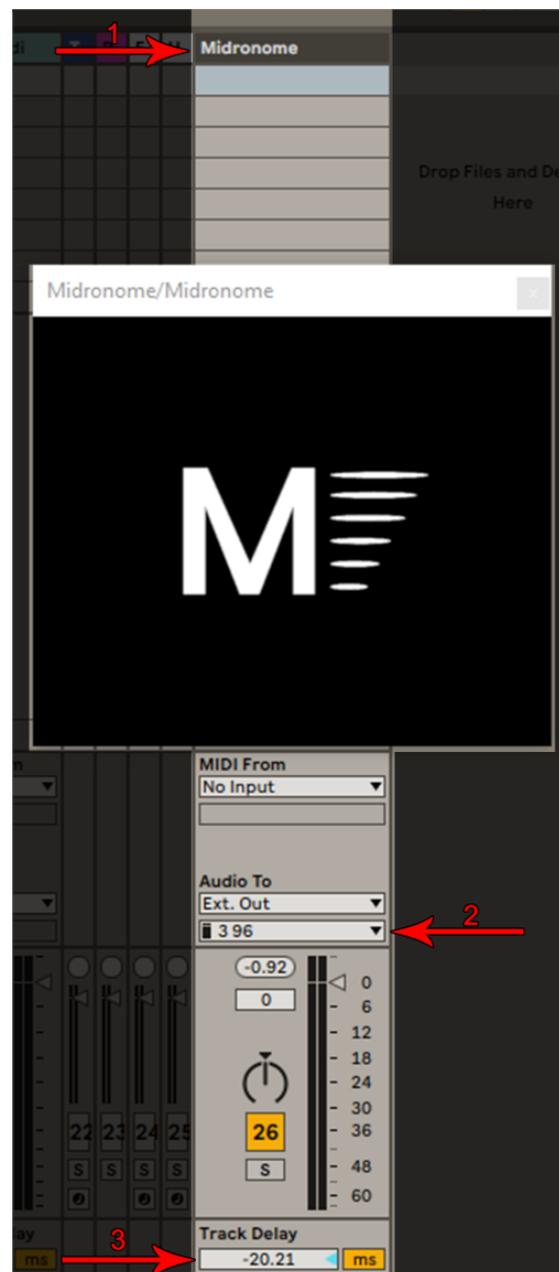
The level will seem too high, but it is normal, leave the fader as it is.

Now create a new audio track and select the audio interface input where you plugged the cable (B).

Set the monitor setting to "Auto" and press the red record button.

Start Ableton and you should hear the Midronome's metronome.

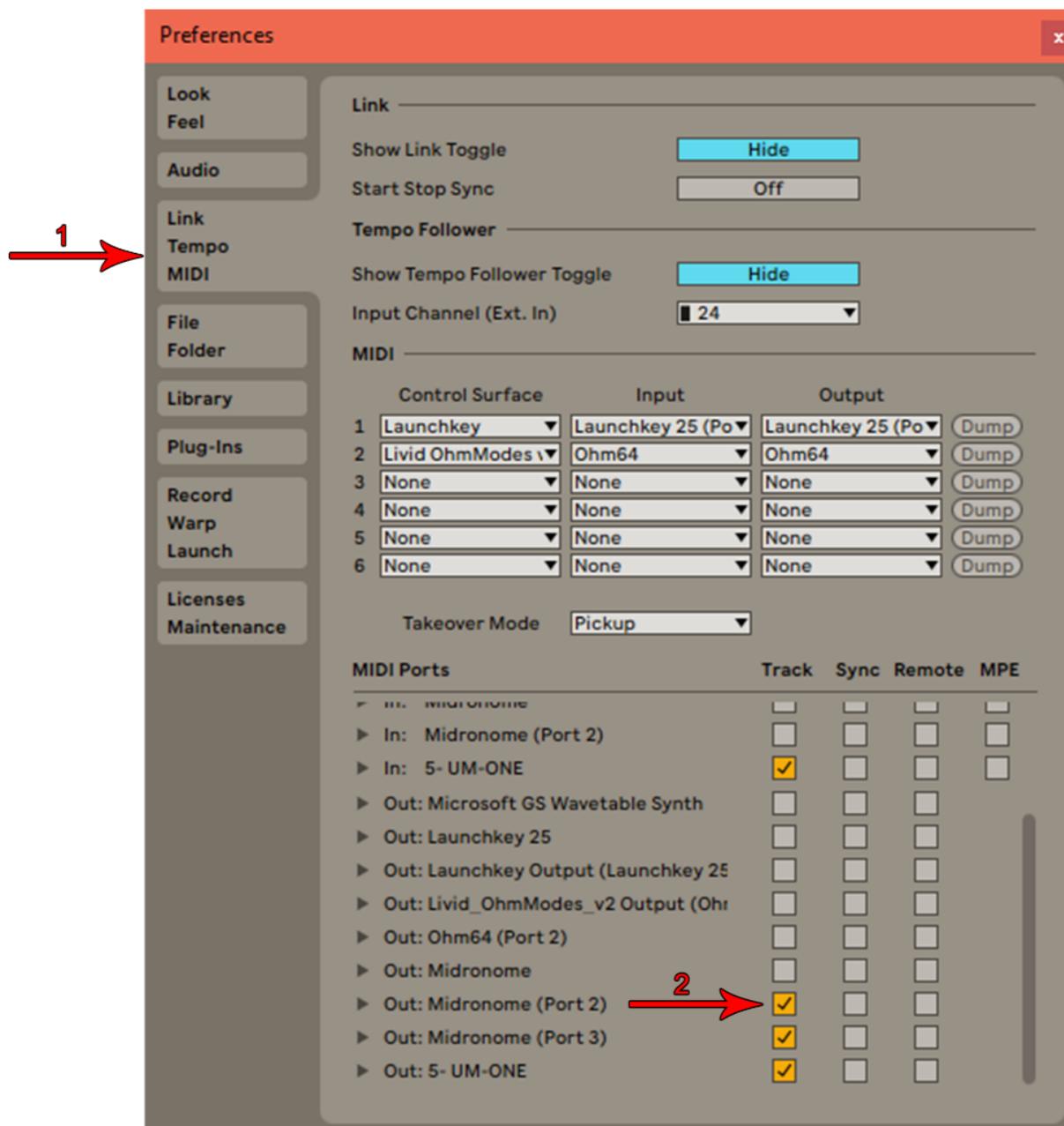
Now enable Ableton's metronome and move the (3) "Track Delay" until both metronomes are timed perfectly.



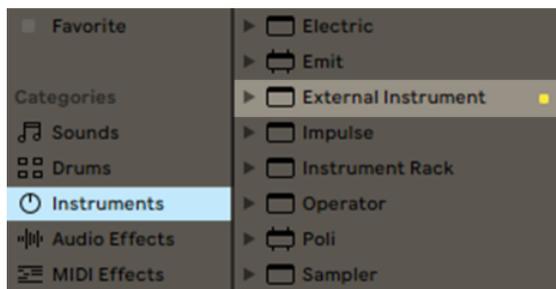
5. MIDI settings in Ableton

Under (1) the MIDI settings, select the output of one or more ports of the Midronome.

We only need the function (2) "Track".



6. Adding hardware - while sending MIDI

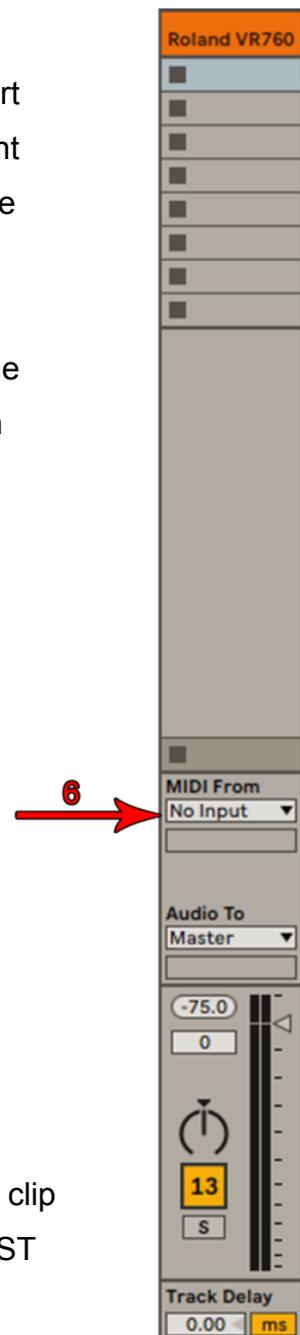


In Ableton's Instruments folder, select **(1)** "External Instrument" and drag it to a new track.

Now in the "External Instrument", select **(2)** the Midronome's port of your choice + which **(3)** MIDI channel the hardware instrument uses. Finally, **(4)** the audio interface's inputs where the hardware is connected to. Now I can get the hardware to play and slowly adjust the **(5)** "Hardware Latency" accordingly.

Since each sound is individual (attack, decay, sustain), this value can vary. Moreover, this value will probably be different for each hardware instrument.

Finally I save the preset in Ableton Live.



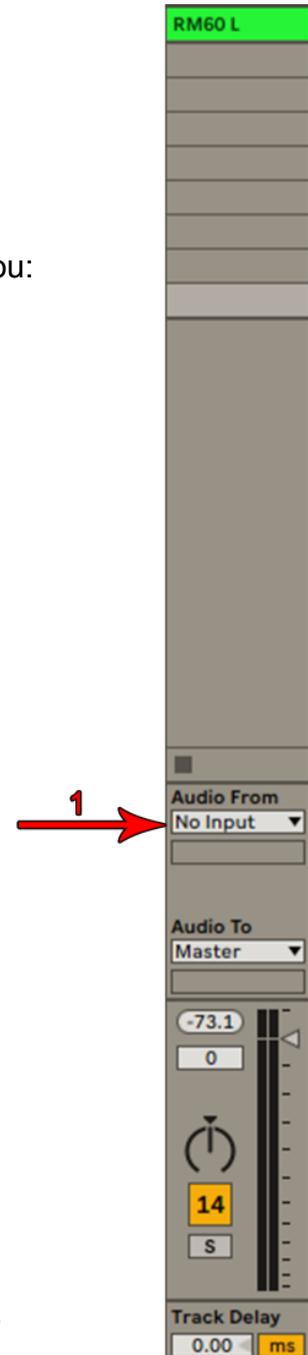
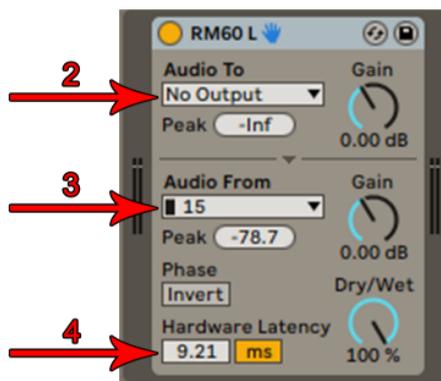
(6) "MIDI From" needs to be adjusted to send MIDI notes:

- set to "No Input" if the notes are written directly in a MIDI clip
- if a MIDI keyboard or similar device is used (such as a VST MIDI generator), it must be set there. In this case:
 - set "Monitor" to "In" or "Auto"
 - Press the red Record button

7. Adding hardware - without sending MIDI

If you are not using a MIDI hardware instrument, but instead want to record a drum machine or a groove box, use an audio track:

- set **(1)** "Audio From" to "No Input"
- Load the "External Audio Effect" from Ableton, where you:
 - set **(2)** the "Audio To" to "No Output"
 - select the audio input in **(3)** "Audio From"
 - And just like in the previous section, adjust **(4)** the "Hardware Latency" until Ableton's metronome is in sync with your hardware.



Tip: use the integrated metronome of your drum machine or groovebox to check if it is in sync with Ableton. In some cases, like with the Octatrack, you can change the "click" and avoid having a tonal click.

