Recording V-Drums: Why and how!

There are different ways to record your own performance using V-Drums. Also, the purpose of doing this might be different. Maybe you just want a quick recording of what you just played as a kind of practice tool, to easily listen back to what you just played. Or maybe you want to use your drum recording in a DAW (Digital Audio Workstation) in combination with other instrument tracks you already have in your recording software. What the recording possibilities are, mainly depend on which V-Drums set you are using. And depending on what you want to do with your recording, you also might need a computer with recording software like for example Cubase, Logic, Ableton, Sonar, Audacity… the so called 'DAW'.

We will explain which recording options are possible using the TD-1 module, the TD-17 module, the TD-27 module and the TD-50 module. These sound modules are all part of the current V-Drums and VAD line-up.

Basically, the following recording possibilities exist, all or not, depending on the module:

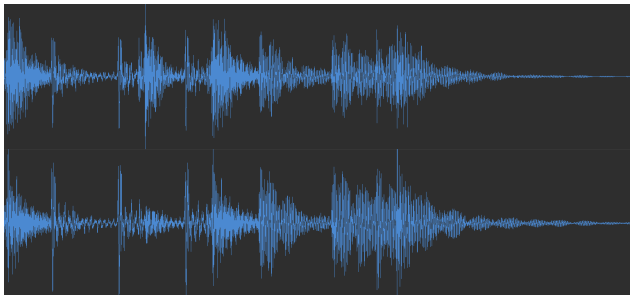
- Recording in the module with/without the possibility to export the recording.
- Recording AUDIO/MIDI on your computer via the 'USB Computer' connection.
- Recording AUDIO/MIDI on your computer using an external audio/midi interface.

Some important terms in this document:

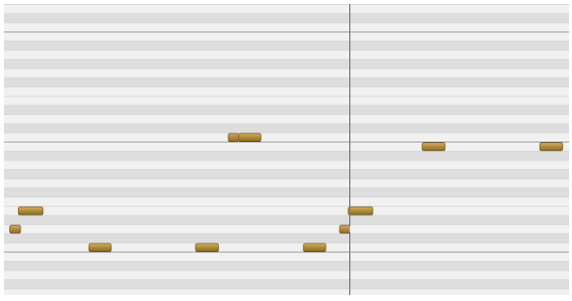
Export the recording means that the recording can be written/saved onto the available module storage media and this for further use. This storage media mostly is an SD card.

Recording on your computer means making the recording in the recording software installed on your computer. As already mentioned, this recording software is called a **DAW**.

AUDIO and **MIDI** are two completely different things. MIDI data is pure 'event' related and does not contain any form of audio-wave data. Recorded MIDI data tells which pad you hit, how hard you hit it etc... This recorded data can be played back to any other sound sources which accept midi so to reproduce your actual performance, but with the sounds selected in that specific sound device. Audio on the other hand is the actual representation of what you heard while recording and is presented as a wave form.



* Representation of recorded AUDIO.



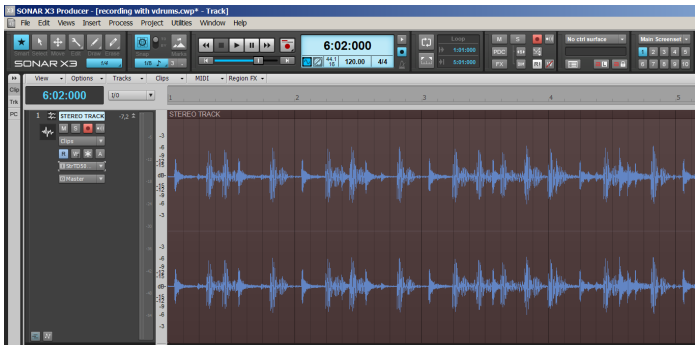
* Representation of recorded MIDI.

USB Computer is the USB connection on the module to connect directly to a computer using a standard USB cable.

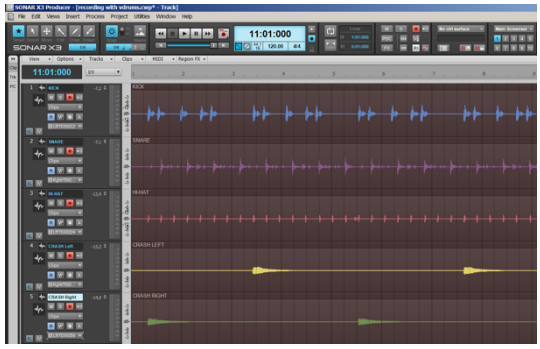
A **backing track** is a song you play along with.

In this description, **Stereo track recording** means that all the instruments of the drum kit are recorded as one stereo Left/Right track.

In this description, **Multi track recording** means that multiple separate instruments of the drum kit are recorded on separate tracks and at the same time. Meaning you can have a separate track for the kick, snare, hh etc … This gives you more flexibility when mixing because you can edit individual instruments of your drumkit.



* Representation of stereo track recording.



* Representation of multitrack recording.

An **Audio/Midi interface** is an external device which 'connects' the module to a computer, allowing audio and/or midi data to be recorded in a DAW. However, with the exception of the TD-1 module, every other current V-Drums module immediately also serves as an audio/midi interface and so making the external interface unneeded.
- *Nevertheless, we will also check how recordings can be done using an audio/midi interface.*

A **driver** is a piece of software that needs to be installed on your computer to make communication possible between your computer and the connected sound module or audio/midi interface. The necessary drivers can be found on the manufacturer's website.

Recording in **Stereo** means that the recorded track contains two channels. A left and a right channel. This is what you hear thru the left/right side of your headphones for example. The audio information of both of these channels is not necessarily exactly the same. This is what gives us the 'stereo' image of what we hear and makes the recording more 'alive' and 'wide'.

Recording in **Mono** means that the recorded track basically contains only one channel. However, you can record a mono signal onto a stereo track, but then both left and right channels will contain exactly the same audio information and the listening experience is considered mono which feels 'narrower'.

** Multiple recorded mono tracks can eventually be combined to one stereo track. This happens in your DAW.*

TD-1
The TD-1 has the following recording options:

- Recording in the module without possibility of exporting the recording.
- Recording MIDI on your computer via the USB-computer connection.
- Recording AUDIO on your computer using an external audio interface.

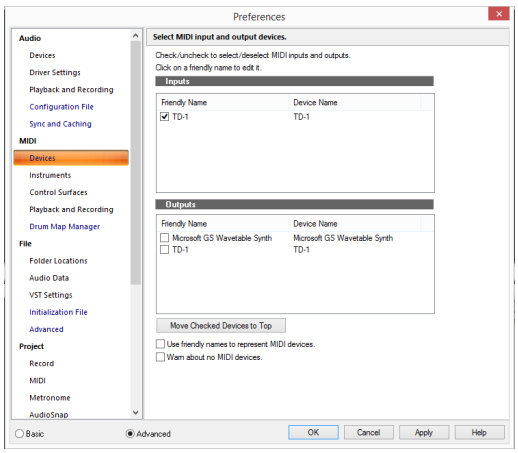
<u>Recording in the module:</u>
This happens in the COACH MODE function of the TD-1.

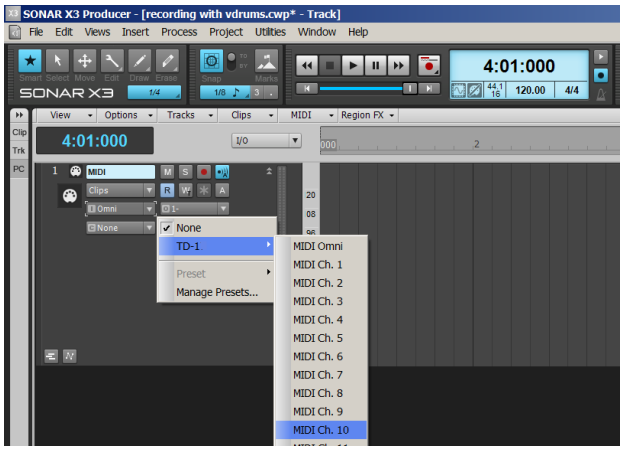
1. **Press the COACH button**
2. **Select exercise 10 (C-10) using the + button**
3. **Press the 'metronome' button and adjust the metronome tempo if needed**
4. **Recording starts when hitting a pad**
5. **To stop the recording press 'metronome' again**
6. **To play back the recording press the + button**

The recording data is volatile, which means that it will not remain in the module after switching off. Also, a next recording will overwrite the previous one. If during the recording you were playing along with a song coming from the 'mix in' input, this song will not be recorded. Only your drums.

<u>Recording MIDI using the USB-Computer connection:</u>
When connecting the module to your computer, the TD-1 will serve as a midi-interface and will be recognized as an external device. In your DAW/Application you are able to assign the TD-1 as your midi device for 'input' and 'output'. This means your DAW will see the incoming midi data according to your performance and record it as such. For this type of communication between the module and the computer, a driver is not required.

In your DAW you can now create a midi track and assign it's input as TD-1. After recording, you can now for example modify these events, add or remove events and/or play back the midi data. You can play it back to the TD-1 module, a virtual instrument in your DAW or an external sound device.





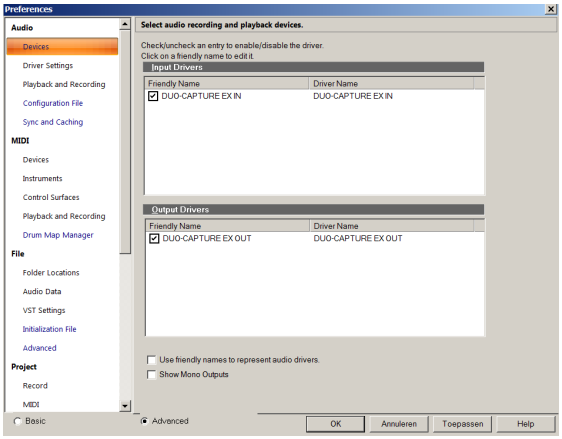
* Midi preferences and midi track settings for DAW Sonar X3 using TD-1.

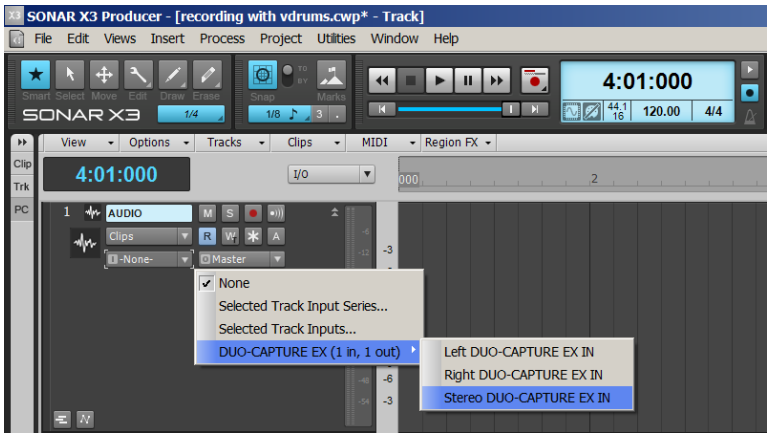
Recording AUDIO using an external audio interface: ***'stereo track recording'***

The TD-1 module can only serve as a midi-interface and not as an audio-interface. When you want to record your performance as audio, you need an audio interface like a *Roland Rubix22* for example. Now you can record the audio coming from the module's output in your DAW.

In this case you connect the audio output of the TD-1 (OUTPUT/PHONES) to the audio inputs of the interface. An audio interface has at least one pair of 'Stereo Left – Right' inputs. For this connection you use a cable that has a stereo mini jack on one end, and 2 x standard ¼ mono jacks on the other end.

In your DAW 'preferences' menu, you need to assign the audio interface as your audio input device. When you now create a track and assign its input to the interface, your performance will be recorded as one audio stereo track. If you were playing along with an internal song or audio coming from the 'mix in' input, this will also be recorded together with your drums to that one stereo track.





* Audio preferences and audio track settings for DAW Sonar X3 using Roland Duo Capture EX interface.

You might notice that for the track input, you can not only select 'STEREO DUO-CAPTURE IN' but also individual settings for left and right. For recording the TD-1 performance, there is no interest in selecting the individual left or right input.

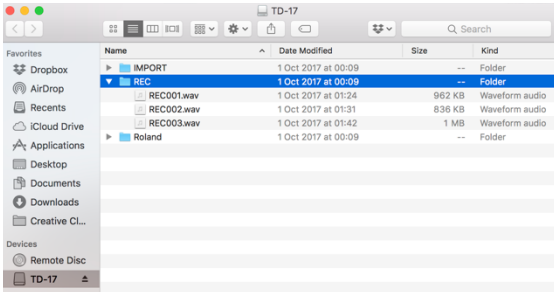
TD-17
The TD-17 has the following recording options:

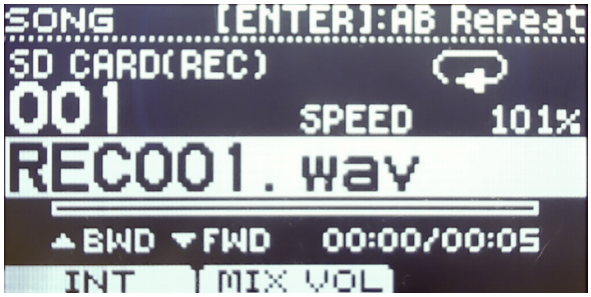
- Recording in the module **with** possibility of exporting the recording.
- Recording AUDIO/MIDI on your computer via the USB-computer connection.
- Recording AUDIO/MIDI on your computer using an external audio interface.

<u>Recording in the module:</u>

1. **Press the REC button ●**
2. **Press the play/stop button ▶/■ to start the recording**
3. **Press the play/stop button ▶/■ to stop the recording**
4. **Press the play/stop button ▶/■ or PREVIEW** (display) **to play back the recording**

If you would like to keep the recording for further use, you can now 'export' it by **pushing the EXPORT button indicated in the display. Then press ENTER.** The recording will now be saved onto the SD card as a wave file. On your computer, this file can be found on the SD card in the "REC" folder. When the SD card is inserted in the module, you will find all recordings via the SONG menu.





When you play along with a backing track coming from the internal songs, SD card, mix in or Bluetooth*, you have the option to also record this backing track together with your drum performance or not. 'Not' meaning you will hear the backing track while playing, but it will not be recorded.

* Bluetooth only on TD-17KV and TD-17KVX!

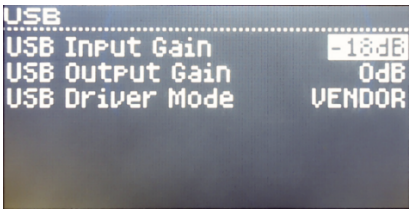
Why having this option?

- *Recording with backing track:* you have downloaded a drum-less backing track for practice/fun, and you want to hear how you played together with this track.
- *Recording without backing track:* your friend sent you a track he made in his DAW and needs drums on it. You play along with this track and record your performance without the backing track. Then you export your recording and sent it to your friend. In his DAW he now can import your drums to match his tracks.

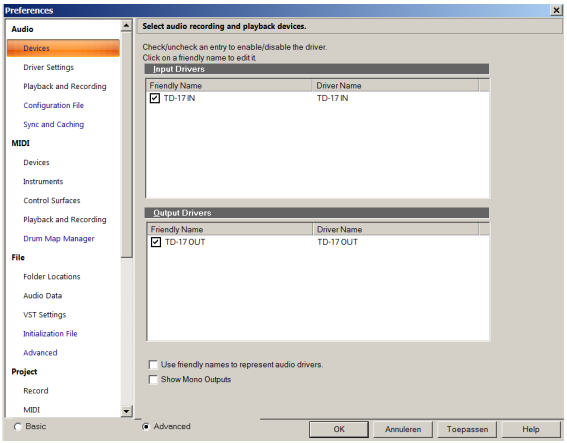
Recording AUDIO/MIDI using the USB-Computer connection: ***'stereo track recording'***

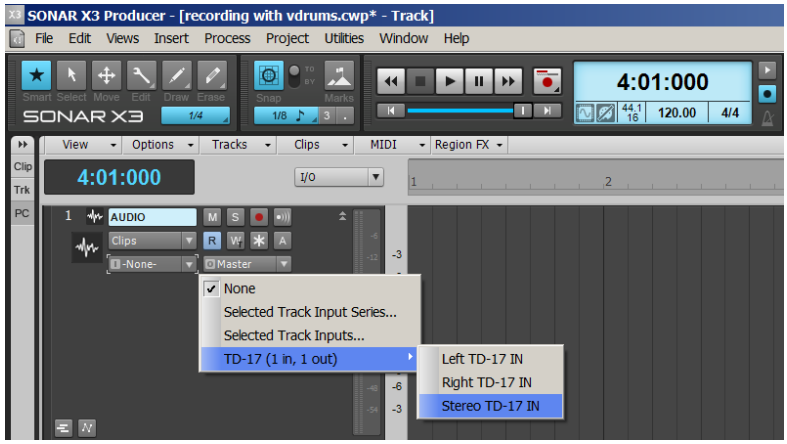
As mentioned earlier, all V-Drums modules except the TD-1, can serve as an audio/midi interface. **But first** make sure that you have installed the correct module 'driver' on your computer, according to your computer's system version (Windows or Mac). If the driver is not installed, the module will not be recognized by your computer. The TD-17 drivers can be found here: https://www.roland.com/global/products/td-17/downloads/

It is also important that the 'USB driver mode' of the TD-17 module is set to VENDOR. This parameter can be found here: **Press SETUP, use the arrow keys to select 'USB' and press ENTER.** Change the driver mode to 'vendor' and re-start the module.



Connect the module's 'USB Computer' to your computer and launch your DAW. In your DAW you can now select the TD-17 as your audio/midi interface for in -and outputs. This can be set in your DAW's **'**preferences**'** menu.





* Audio preferences and audio track settings for DAW Sonar X3 using TD-17.

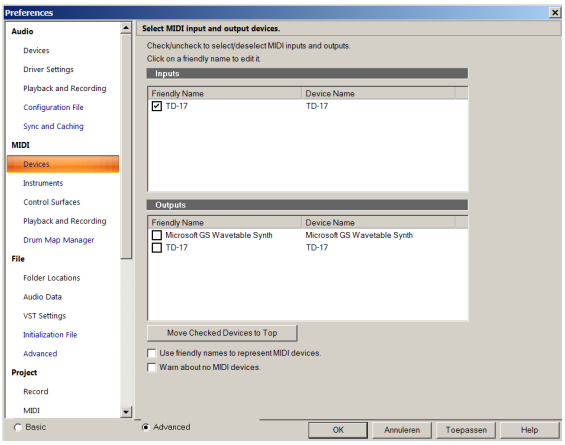
The TD-17's audio information will be sent to your computer as one stereo track. Compare it with the physical 'Master Output L/mono - R' on the module. So now you can create an audio track in your DAW and assign it's input to TD-17. When you put your DAW in recording mode, it will now record your performance as one audio stereo track.

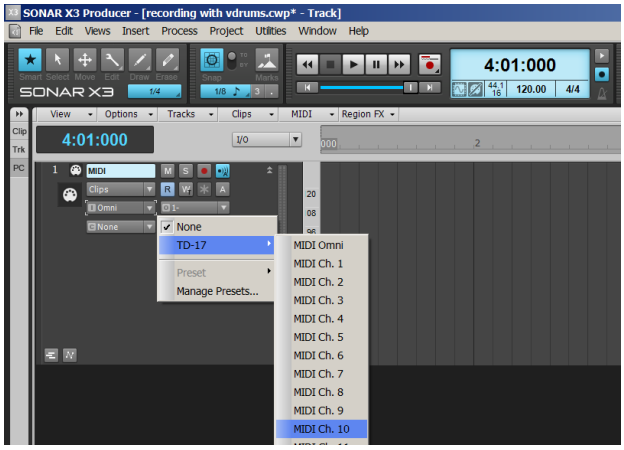
You might notice that for the track input, you can not only select 'STEREO TD-17 IN' but also individual settings for left and right. For recording our TD-17 performance, there is no interest in selecting the individual left or right input.

When during your performance you are playing along with a backing track coming from the internal song menu, SD card, mix-in input or Bluetooth, also this will be recorded within that same audio stereo track.

If needed, you can adjust the volume level of the audio coming from the TD-17 USB connection by changing the 'USB Output Gain'. This parameter can be found here: **Press SETUP, use the arrow keys to select 'USB' and press ENTER.**

When recording midi, assign the TD-17 in your DAW's 'preferences' menu as your midi device. Then create a midi track in your DAW and assign the TD-17 as the midi track's input. When selecting the TD-17 as the midi input, you also need to choose the midi channel on which the midi data is transmitted. Standard wise for drums, this is set to midi channel 10.



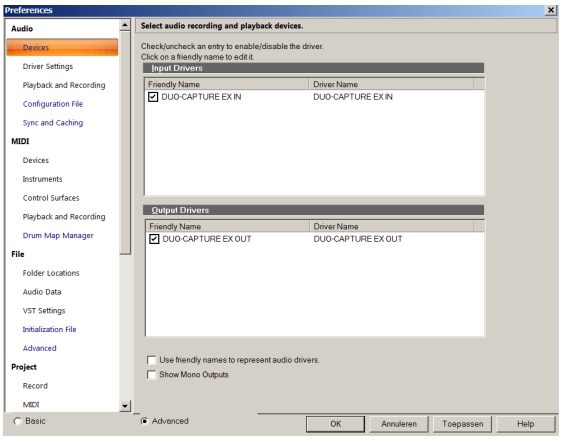


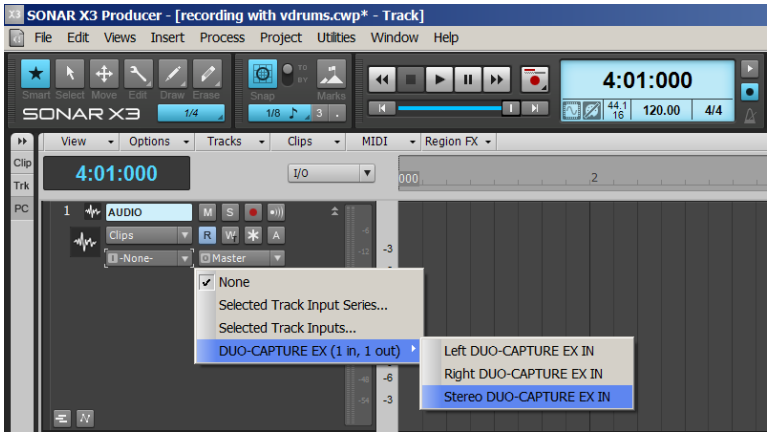
* Midi preferences and midi track settings for DAW Sonar X3 using TD-17.

Audio and midi can be recorded simultaneously.

Recording AUDIO/MIDI using an external audio/mid interface: ***'stereo track recording'***

This is actually identical to using the direct USB Computer connection. The only difference now is that the audio/midi data is not coming directly from the TD-17 module but is passing thru the interface. That means that in your DAW preferences you now have to assign your interface as the audio and midi device and not the TD-17. Equally for the tracks in your DAW, you now select your interface as the input for that specific track.

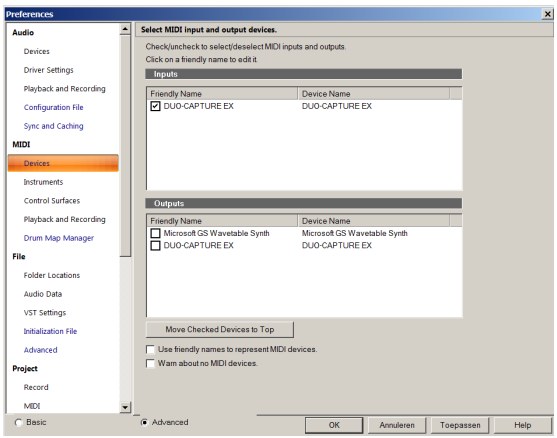


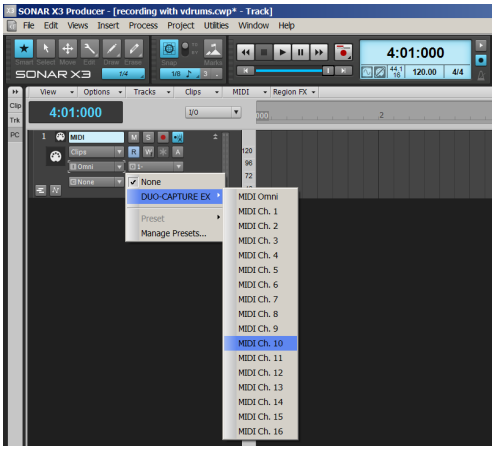


* Audio preferences and audio track settings for DAW Sonar X3 using Roland Duo Capture EX interface.

You now connect the module's master L/R outputs to the interface inputs using standard 1/4 " jack cables.

When recording midi, you need to connect the module's MIDI OUT to the interface MIDI IN using a standard midi cable.





* Midi preferences and midi track settings for DAW Sonar X3 using Roland Duo Capture EX interface.

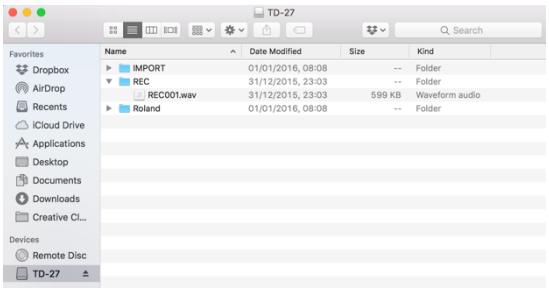
TD-27
The TD-27 has the following recording options:

- Recording in the module **with** the possibility of exporting the recording.
- Recording AUDIO/MIDI on your computer via the USB-computer connection.
- Recording AUDIO/MIDI on your computer using an external audio interface.

Recording in the module:
This basically is identical to the TD-17.

1. **Press the REC button ●**
2. **Press the play/stop button ▶/■ to start the recording**
3. **Press the play/stop button ▶/■ to stop the recording**
4. **Press the play/stop button ▶/■ or PREVIEW** (display) **to play back the recording**

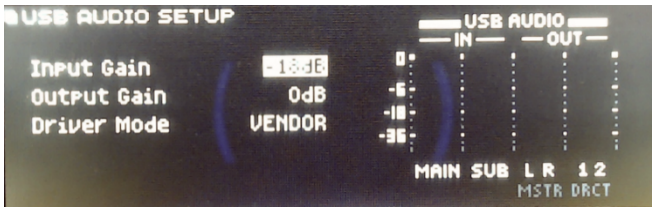
If you would like to keep this recording for further use, you can now 'export' it by **pushing the EXPORT button** indicated in the display. **Then select OK and press ENTER**. The recording will now be saved onto the SD card as a wave file. On your computer, this file can be found on the SD card in the "REC" folder. When the SD card is in the module, you will find all recordings via the SONG menu (REC DATA).



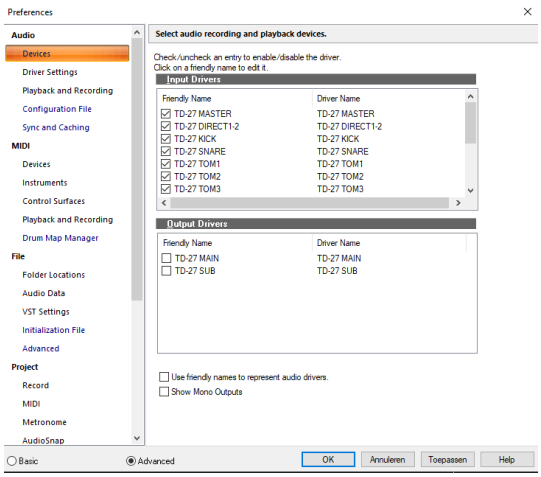
When you play along with a backing track coming from the internal songs, SD card, mix in or Bluetooth, you have the option to also record this backing track together with your drum performance or not. 'Not' meaning you will still hear the backing track when playing, but it will not be recorded.

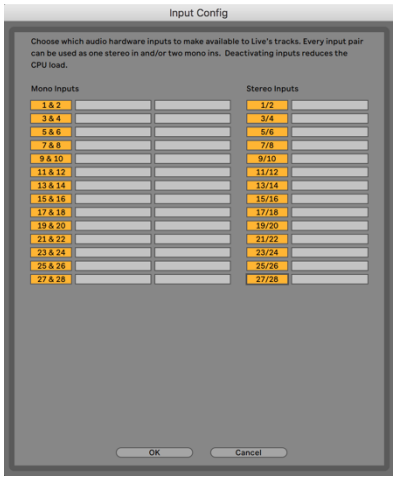
Recording AUDIO/MIDI using the USB-Computer connection: ***'multi track recording'***
Because the TD-27 also serves as an audio/midi interface, you need again to make sure that you have installed the correct module 'driver' on your computer, according to your computers system version (Windows or Mac). If the driver is not installed, the module will not be recognized by your computer. The TD-27 drivers can be found here:
https://www.roland.com/global/products/td-27/downloads/

It is also important that the 'USB driver mode' of the TD-27 module is set to VENDOR. This parameter can be found here: **Press SYSTEM, select 'USB AUDIO' and press ENTER.** Change the driver mode to 'vendor' and re-start the module.



Connect the module's 'USB Computer' to your computer and launch your DAW. In your DAW you can now select the TD-27 as your audio/midi interface for in -and outputs. This can be set in your DAW's 'preferences' menu.





* Audio preferences settings for DAW Sonar X3 and Ableton Live using TD-27.

As you can see, the TD-27 gives you the possibility to record multiple tracks at the same time = multi track recording. This is why you will find many 'input' options in your DAW. The TD-27 module can actually send up to 28 mono channels or 14 stereo channels. The way these channels are assigned in the module is as follows:

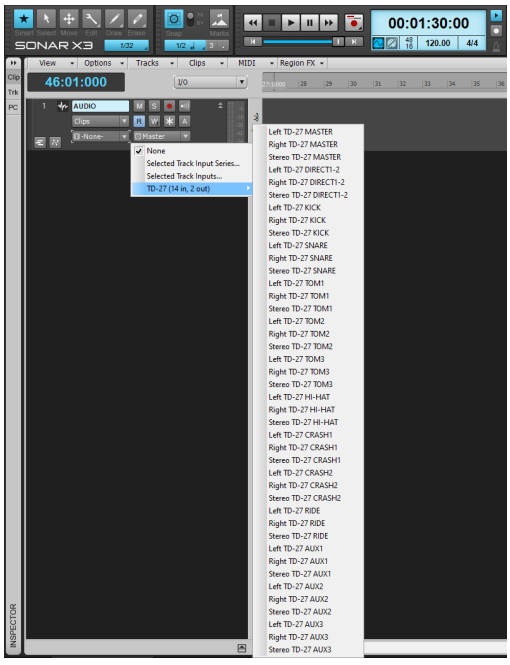
Ch1-2	MASTER OUT
Ch3-4	DIRECT 1-2 OUT
Ch5-6	KICK
Ch7-8	SNARE
Ch9-10	TOM 1
Ch11-12	TOM 2
Ch13-14	TOM 3

Ch15-16	HI-HAT
Ch17-18	CRASH 1
Ch19-20	CRASH 2
Ch21-22	RIDE
Ch23-24	AUX 1
Ch25-26	AUX 2
Ch27-28	AUX 3

Depending on your DAW, these channels are shown in the preferences menu as the instrument names, or as numbers.

This means that when you have created an audio track in your DAW and you assign inputs 5/6 to it, the kick will be recorded in stereo onto this track. When you have created a second audio track, and you have assigned the inputs 7/8 to it, the snare will be recorded onto this track in stereo and so on… All the assignments you see above are fixed and cannot be changed. So assign the inputs in your DAW tracks according to this if the instrument names are not showing.

You can choose if these instruments will be recorded as a stereo track, or as a single mono track (by choosing Left or Right input). Recording instruments onto a stereo track is interesting when you for example want to use stereo-effects on them later when mixing.



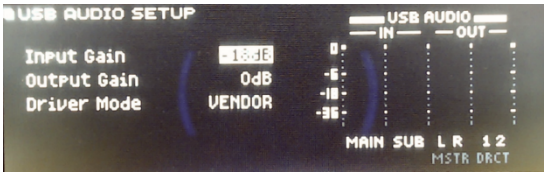
* Audio track settings for DAW Sonar X3 using TD-27.

Although all ‘instrument’ USB outputs are already permanently assigned, the TD-27 channels ‘Ch 1-2 MASTER OUT ‘and ‘Ch 3-4 DIRECT 1-2 OUT’ can send audio from the module which is not necessarily fixed. In the module’s output routing section, you can assign every possible instrument, effects, overhead, click etc… to these channels.

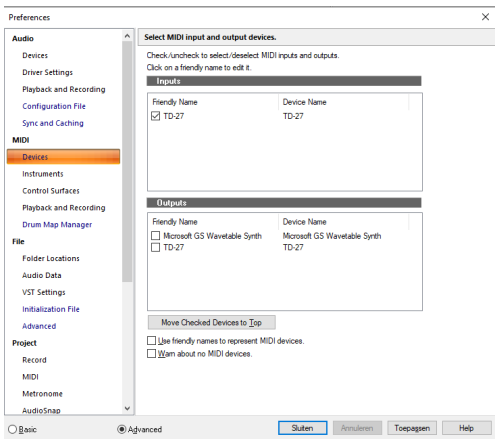
From factory side all instruments, effects, ambiance etc. are routed to the MASTER OUTPUT. This actually means that if you would assign Ch 1-2 MASTER OUT as your track input, you have a stereo track recording of the complete kit. But because we have the option to choose many channels/inputs, it’s better to use these for other things than instruments. After all, the instruments of the drum kit already have a dedicated channel.

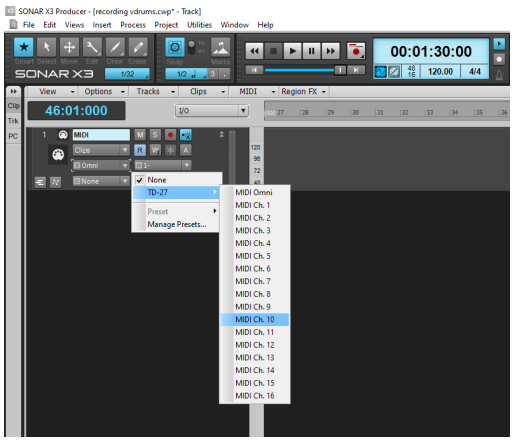
For example: you can route the ‘overhead OV’ and ‘room RM’ effects to master out and the ‘multi effects MFX 1,2,3’ to the direct outputs. This means that in your DAW you now will have separate tracks for all instruments, the ambiance section (= overhead + room) and the multi effects. Even a backing track (song or mix input) can be routed to one of these outputs.

If needed, you can adjust the overall volume level of the audio coming from the TD-27 USB connection by changing the ‘USB Output Gain’. This parameter can be found here: **Press SYSTEM, select ‘USB Audio’ and press ENTER.**



When recording midi, assign the TD-27 in your DAW’s ‘preferences’ menu as your midi device. Then create a midi track in your DAW and assign the TD-27 as the track’s input. During recording, the midi data coming from the TD-27 will be recorded. Recording audio and midi can be done simultaneously.



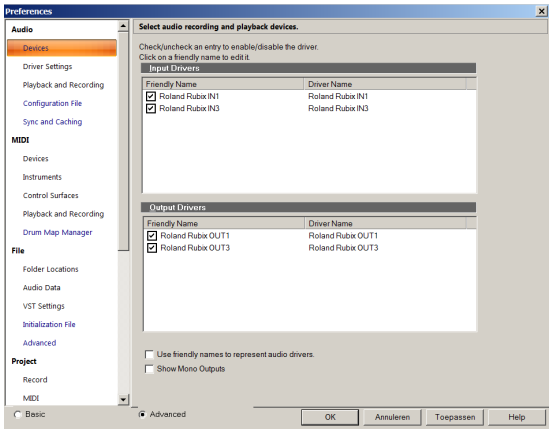


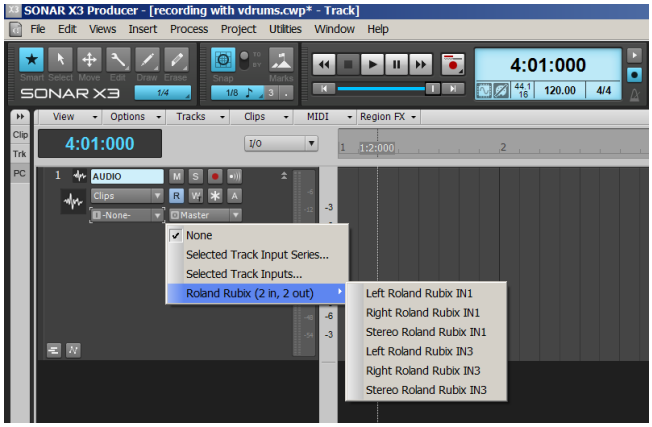
* Midi preferences and midi track settings for DAW Sonar X3 using TD-27.

Recording AUDIO /MIDI using an external audio/midi interface: ‘multi track recording’

Just like with any other module, you can record the TD-27’s master out stereo L-R signal by using an external audio/midi interface. But since the TD-27 module has 2 extra ‘Direct Outputs’, you can also record the audio coming from these outputs, together with the normal stereo master out. You obviously then need an audio interface with multiple inputs.

An interface like this can be for example the *Roland Rubix 44*. This one has a total of 4 inputs. In your DAW’s preference settings, you will find the amount of available inputs, depending on the specifications of your interface.

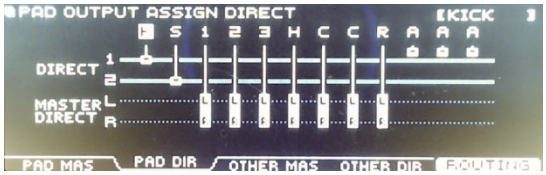


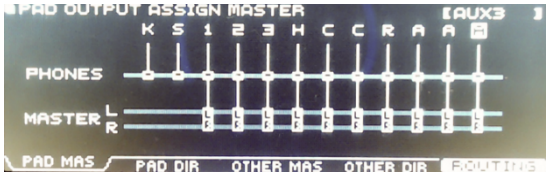


* Audio preferences settings and track settings for DAW Sonar X3 using Roland Rubix 44 interface.

Which signal you send to these direct outputs is free assignable. To assign the ‘direct ouputs’, **press SYSTEM, select ‘OUTPUT’ and press ENTER.** Now **press the button underneath the display which corresponds with “PAD DIR”**. Now you can assign any instrument to one of these outputs, or both if you want to output the signal in stereo.

Example: Assign the kick drum to direct output 1 and the snare drum to direct output 2. Everything else passes thru the master out. Don’t forget to take the instruments which you have routed to a direct output, off of the master out!



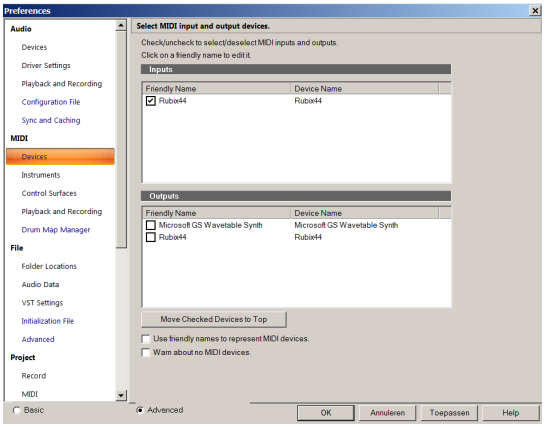


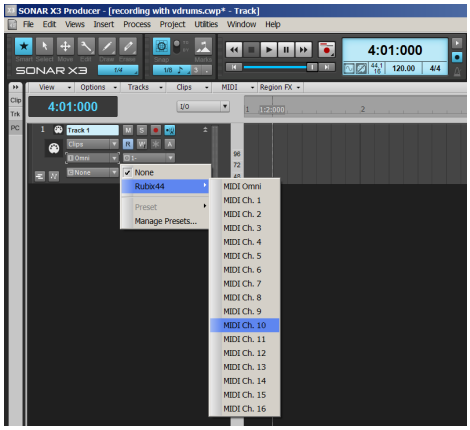
In your DAW you create a stereo track which has input 1-2 assigned as one stereo channel. This is for the master out of the TD-27. Then create a second track which is a mono track and is assigned as input 3. In the *Rubix 44* example, this would be input ‘LEFT ROLAND RUBIX IN3’. Then create another mono track that will have input 4. In the *Rubix 44* example, this would be input ‘RIGHT ROLAND RUBIX IN3’. These last two are the TD-27’s module direct 1 and direct 2 outputs.

After recording you now have:

- one stereo track containing all toms, cymbals and hh (+ effects if assigned to master out).
- one mono track with the kick drum.
- one mono track with the snare drum.

The procedure for recording midi is identical to all previous described midi settings.





* Example showing midi preferences and midi track settings for DAW Sonar X3 using Roland Rubix 44 interface.

TD-50
The TD-50 has the following recording options:

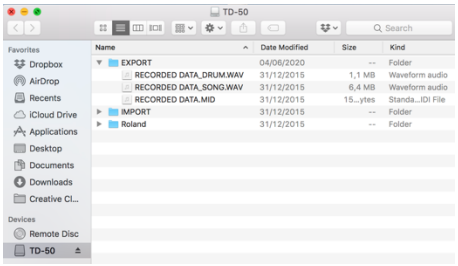
- Recording in the module **with** the possibility of exporting the recording.
- Recording AUDIO/MIDI on your computer via the USB-computer connection.
- Recording AUDIO/MIDI on your computer using an external audio interface.

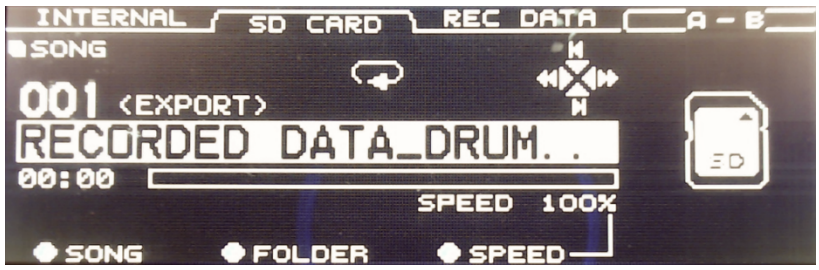
<u>Recording in the module:</u>

1. **Press the REC button ●**
2. **Press the play/stop button ▶/■ to start the recording**
3. **Press the play/stop button ▶/■ to stop the recording**
4. **Press the play/stop button ▶/■ to play back the recording**

If you would like to keep this recording for further use, you can now 'export' it by **pushing the F4 - EXPORT button indicated by the display**. You now also have the option to export the recording as a midi-file and/or wav file with/without the song you played along with. Use the R1 dial to make this choice.

Then **press F5 'execute' and OK**. The desired recording will now be saved onto the SD card. On your computer, this file can be found on the SD card in the "EXPORT" folder. When the SD card is in the module, you will find all recordings via the SONG menu (SD CARD – choose 'EXPORT' folder by using the R2 dial – choose the recording using the R1 dial).





Depending on your choice, all of the following can be exported at once:

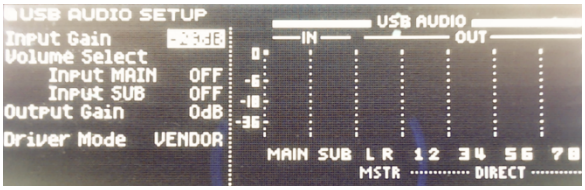
- drums only
- drums + played back song
- SMF (midi file of the drums part)

When you play along with a backing track coming from the internal songs or SD card, you have the option to also record this backing track together with your drum performance or not. 'Not' meaning you will still hear the backing track when playing, but it will not be recorded.

Recording AUDIO/MIDI using the USB-Computer connection: 'multi track recording'

Also the TD-50 can serve as an audio/midi interface. As before, you need again to make sure that you have installed the correct module 'driver' on your computer, according to your computers system version (Windows or Mac). If the driver is not installed, the module will not be recognized by your computer. The TD-50 drivers can be found here:
https://www.roland.com/global/products/td-50/downloads/

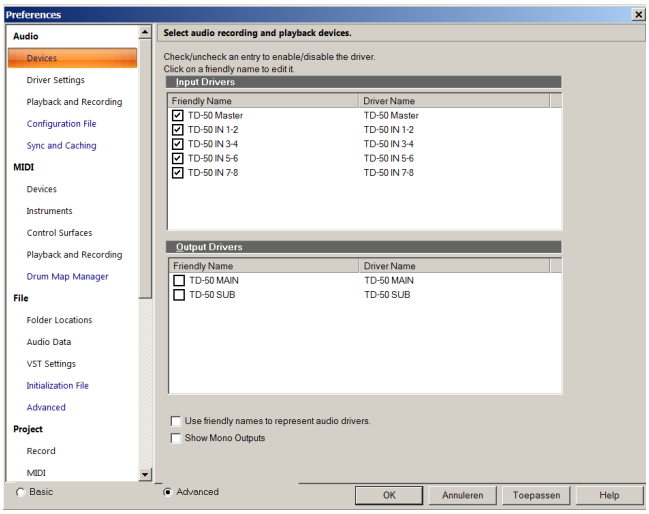
Don't forget to set the the 'USB driver mode' of the TD-50 module to VENDOR. This parameter can be found here: **press SETUP and select 'USB AUDIO'**. Change the driver mode to 'vendor' and re-start the module.

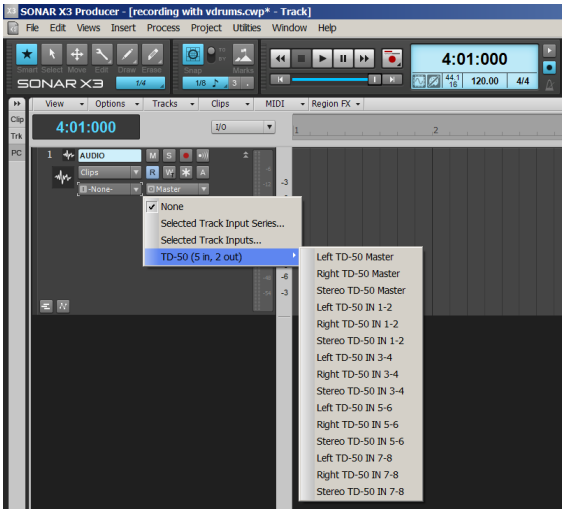


Connect the module's 'USB Computer' to your computer and launch your DAW. In your DAW you can now select the TD-50 as your audio/midi interface for in -and outputs. This can be set in in your DAW's 'preferences' menu.

The TD-50 gives you the possibility to record multiple tracks at the same time = multi track recording. This is why you will find many 'input' options in your DAW. The TD-50 module can actually send up to 10 mono channels or 5 stereo channels.

In your DAW 'preferences – audio devices' settings you might see something like this:





* Audio preferences settings and audio track settings for DAW Sonar X3 using TD-50.

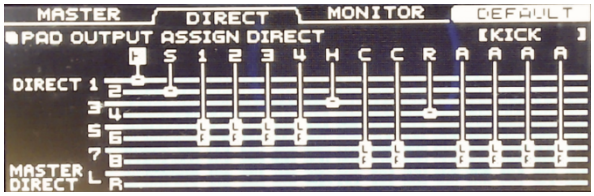
When you check mark all possible 'input drivers', these will all become selectable for your individual tracks. Don't forget that you can split up a stereo input like for example 'TD-50 IN 1-2'. In your individual track inputs, this is shown as 'STEREO TD-50 IN 1-2', 'LEFT TD-50 1-2' and 'RIGHT TD-50 1-2'.

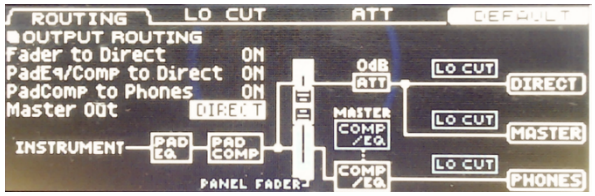
This is how the direct outputs and master output are assigned:

LEFT TD-50 IN 1-2:	direct out 1	-	**LEFT TD-50 IN 5-6:**	direct out 5
RIGHT TD-50 IN 1-2:	direct out 2	-	**RIGHT TD-50 IN 5-6:**	direct out 6
LEFT TD-50 IN 3-4:	direct out 3	-	**LEFT TD-50 IN 7-8:**	direct out 7
RIGHT TD-50 IN 3-4:	direct out 4	-	**RIGHT TD-50 IN 7-8:**	direct out 8

LEFT TD-50 Master:	master out L/Mono	OR	**LEFT TD-50 Master:**	master direct L
RIGHT TD-50 Master:	master out R	OR	**RIGHT TD-50 Master:**	master direct R

Depending on your 'output routing' in the module, that is what will be recorded on the individual tracks in your DAW. The output routing is done here: **Press SETUP and then F1 'OUTPUT'. Use the F1/F2 buttons to choose between 'master out' and 'direct out' settings. Use the 'page up/down' buttons to get access to all possible routings.**



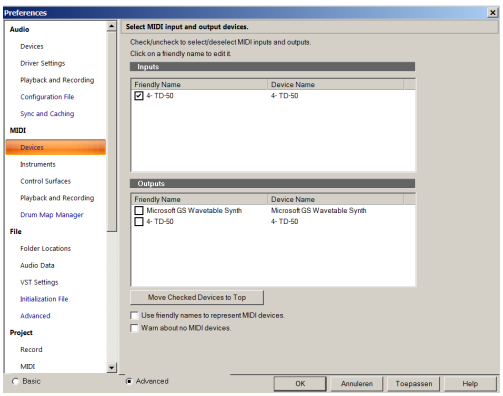


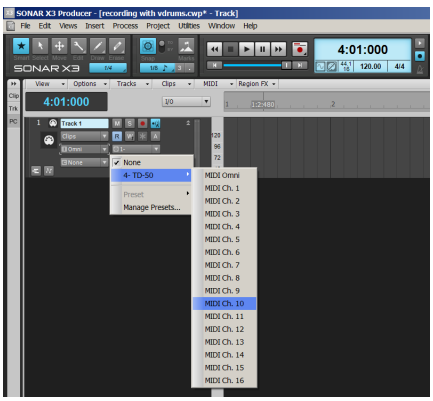
Important to know is that you can assign the TD-50's Master L/R Output as a direct output. This means that the master output now serves as 2 extra direct outputs. In your DAW's separate tracks these are now assignable as, 'LEFT TD-50 MASTER' and 'RIGHT TD-50 MASTER'. If you leave the master output as 'master', this will always be a stereo output. Setting the master output as 'direct' output is done here: **Press SETUP – F1 OUTPUT – F1 MASTER – 2x PAGE DOWN.** Now change the "master out" setting to 'direct.

If needed, you can adjust the overall volume level of the audio coming from the TD-50 USB connection by changing the 'USB Output Gain'. This parameter can be found here: **Press SETUP, F2 USB Audio.**

When recording midi, assign the TD-50 in your DAW's 'preferences' menu as your midi device. Then create a midi track in your DAW and assign the TD-50 as the track's input. During recording, the midi data coming from the TD-50 will be recorded.

Recording audio and midi can be done simultaneously.



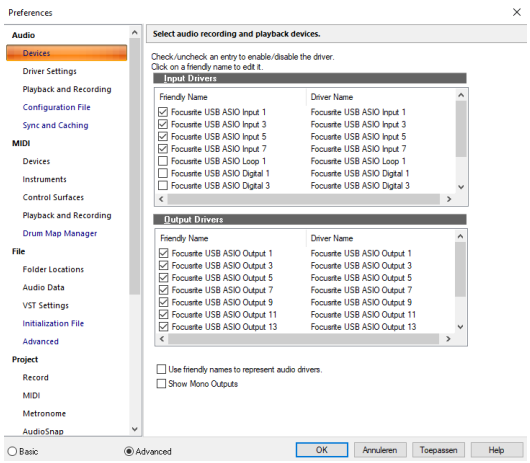


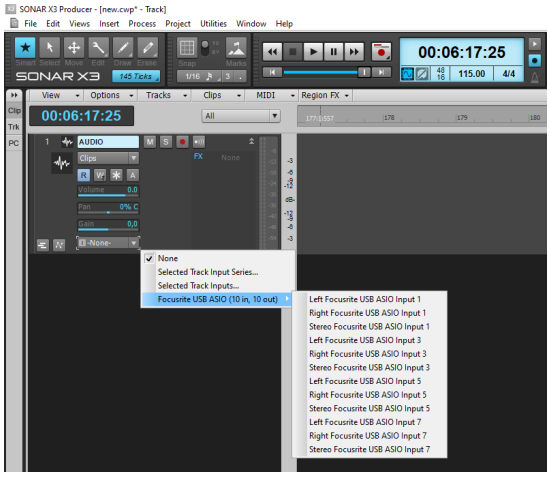
* Midi preferences settings and midi track settings for DAW Sonar X3 using TD-50.

Recording AUDIO /MIDI using an external audio/mid interface: 'multi track recording'

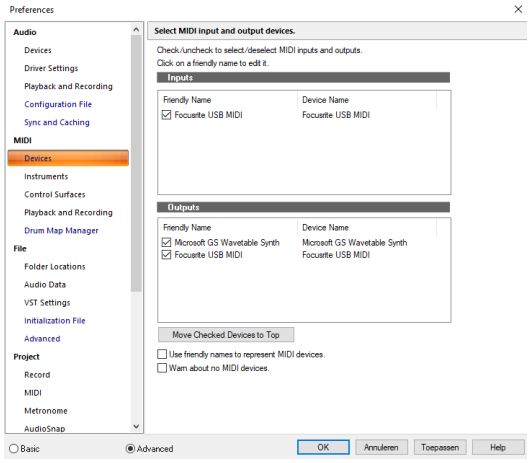
By using an external audio/midi interface you can as well record multiple separate tracks, using the analog output jacks of the module. Since the TD-50 module has 8 direct outputs and 1 master output (assignable as 2 x direct output), all these can be recorded separately if your audio interface has enough inputs.

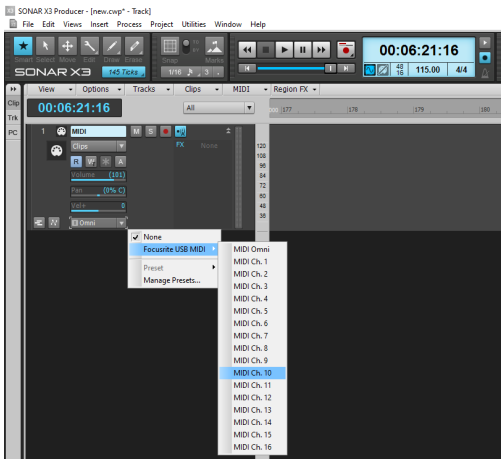
In total you can have 10 individual direct outputs if the master output is assigned as direct out. And as explained earlier, all instruments, efx, mix in etc. can freely be assigned to these outputs.





* Audio preferences settings and audio track settings for DAW Sonar X3 using Focusrite interface.





* Midi preferences settings and midi track settings for DAW Sonar X3 using Focusrite interface