SOUND DESIGN

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6P

Introduzione a Reaper

LABA Libera Accademia Belle Arti - Trentino
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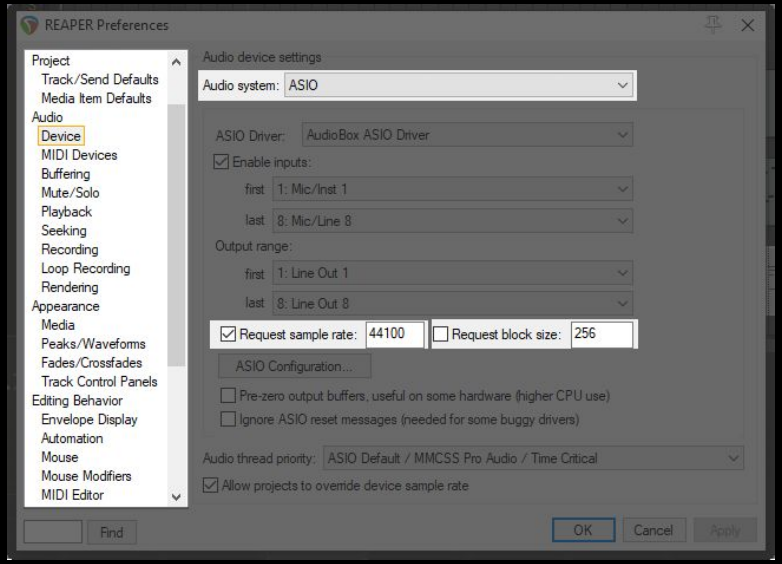
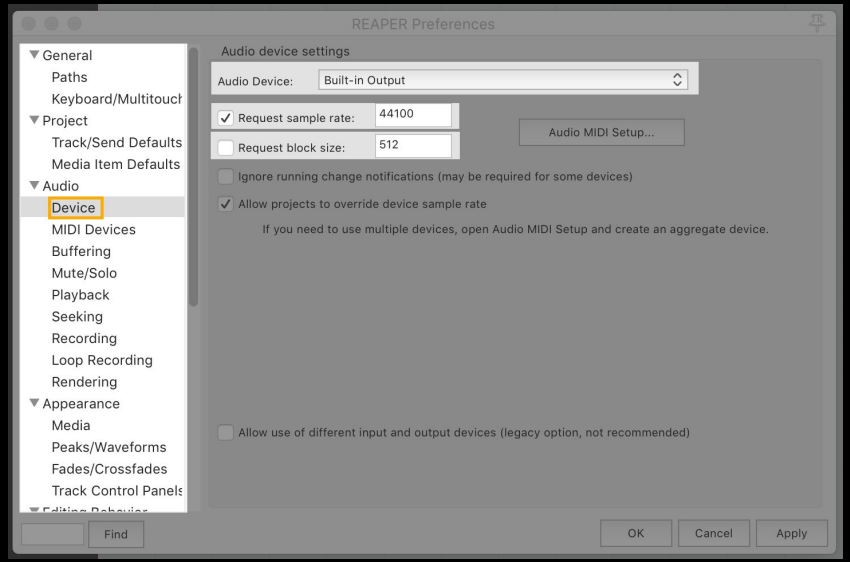
- Audio Device
  - The Sound Card that The Digital Workstation will use.
- Sample-rate
  - Digital Samples per Second (Hz).
  - The more samples per seconds the more audio quality.
  - The usual sample rate in music is 44100 Hz.
  - The usual sample-rate in sound on movies is 48000 Hz.
- Buffer size (block size)
  - Processed samples at once.
  - Important in real-time projects
  - The bigger the buffer-size the longer the process
  - The smaller the buffer-size, the heavier computational work
  - Usually the buffer size is a power of two (..., 256, 512, 1024, 2048, ...)

In REAPER: from the main **Menu** choose **Options> Preferences..** then under **Audio** select **Device**

WINDOWS



OS X



Click **Apply** to apply your REAPER preferences' settings

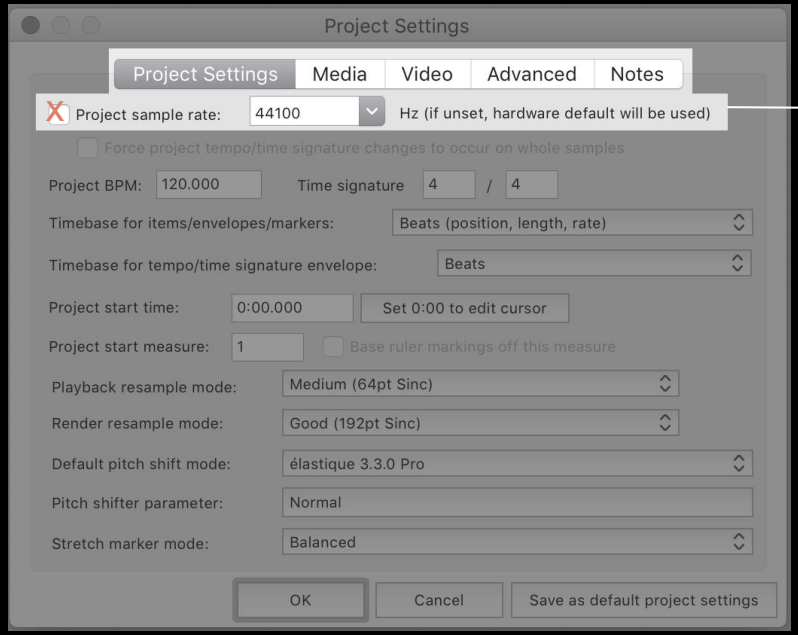
To organize the project in the right way, create a folder which will contain all the files of the project.

 **projectName**

Inside this folder create two other folders

 **sounds** (will contain all the sounds you will import in the project)
 **audio** (will contain all the files produced by the software - like recorded tracks)

In REAPER: from the main menu choose **File>Project settings...**



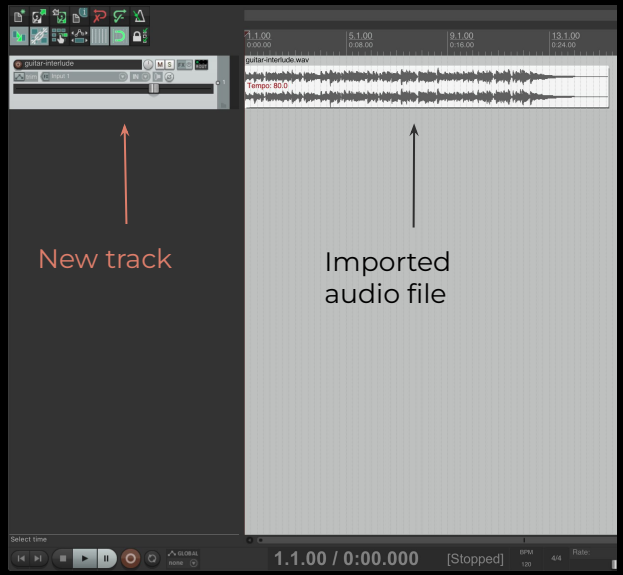
Project sample rate

Select the **Project sample rate** toggle to avoid any unexpected changes caused by the sound card

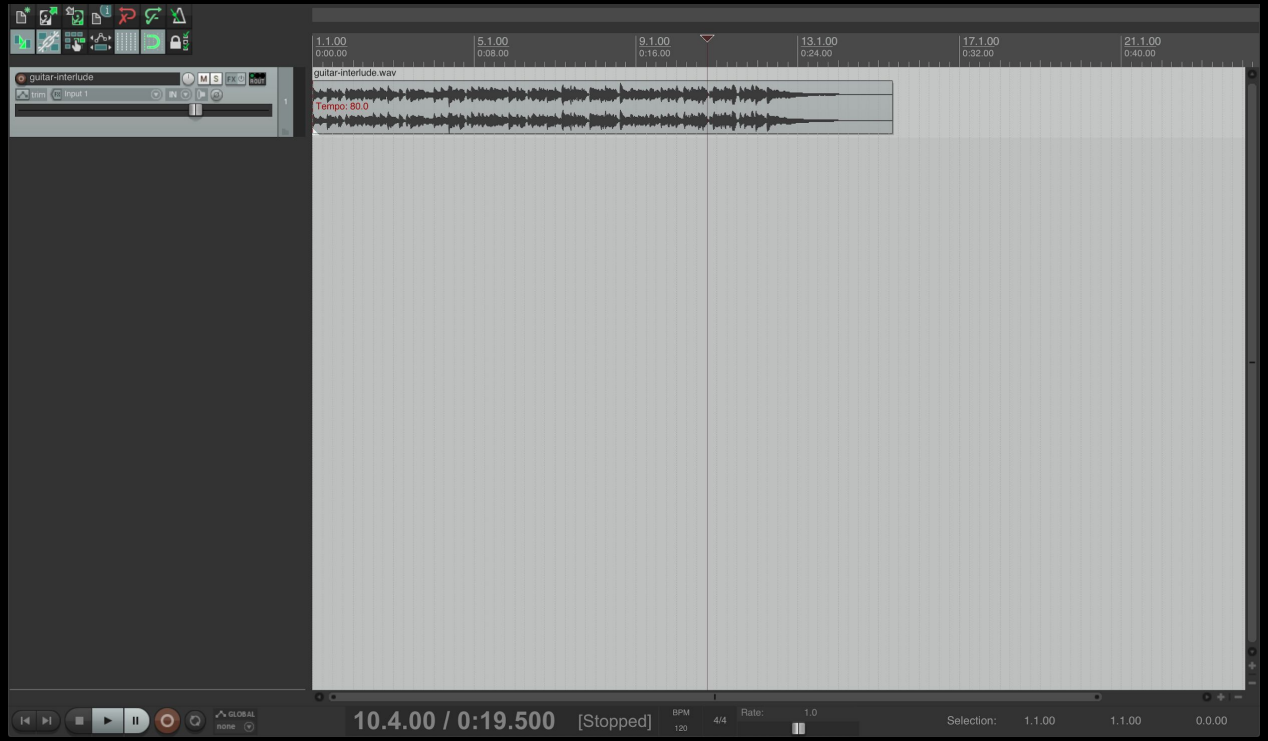
Copy an audio file (eg *.wav*) inside the 📁**sounds** folder created before.

In REAPER:

- **Create a new Track**: in the main **Menu** choose **Track>Insert new track**
- **Import Media File**: in the main **Menu** choose **Insert>Media File...**
- **Choose the audio file**: navigate in the 📁 **sounds** folder and **Open** your audio file.



- **Play the audio File**: press the **spacebar** key
- **Stop the playback**: during the playback press the **spacebar** key
- **Pause the playback**: during the playback press the **Enter** key



EDIT VIEW

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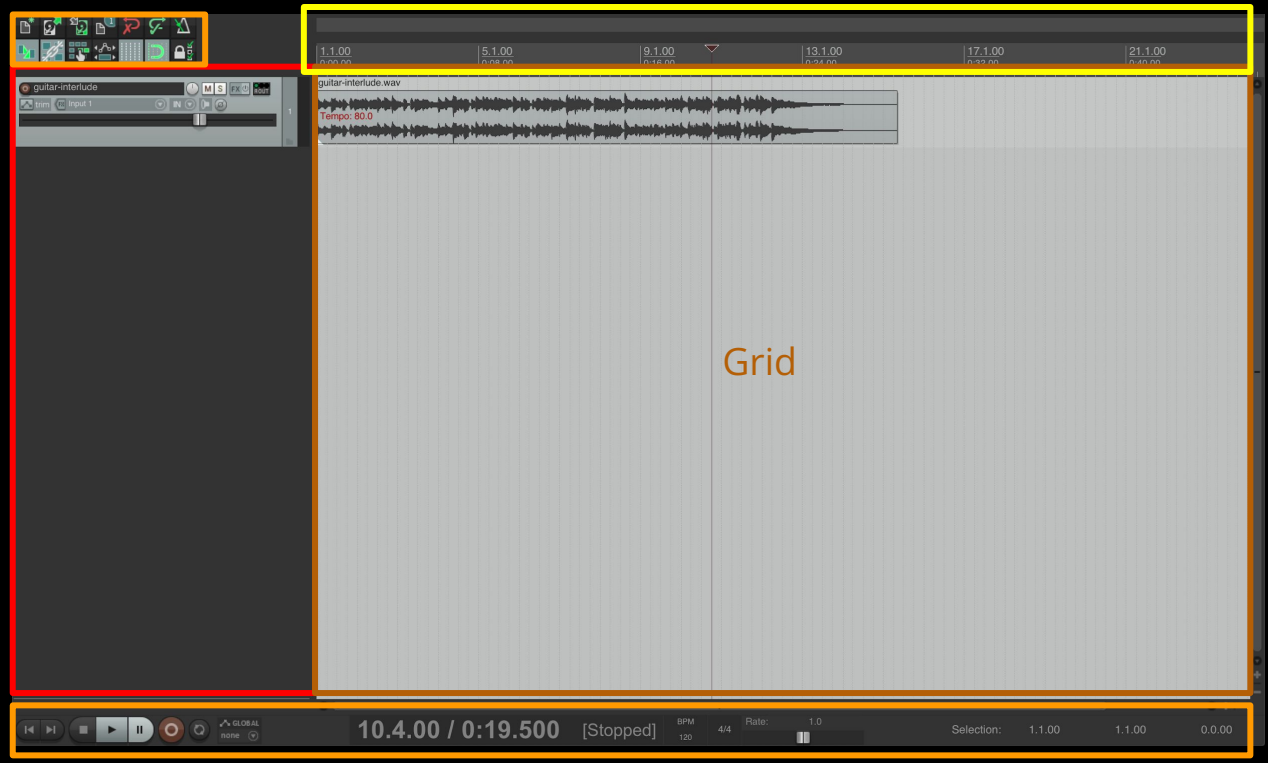
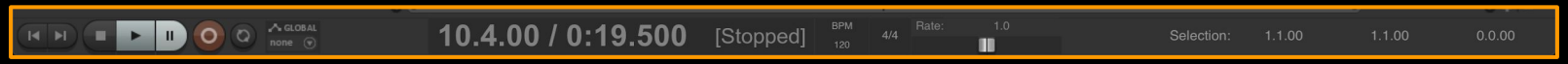

Options
Timeline
Tracks view
Grid
Transport bar
guitar-interlude
guitar-interlude.wav
Tempo: 80.0
1.1.00
5.1.00
9.1.00
13.1.00
17.1.00
21.1.00
10.4.00 / 0:19.500
[Stopped]
Selection:

The same buttons on a CD-player or DVD-player.



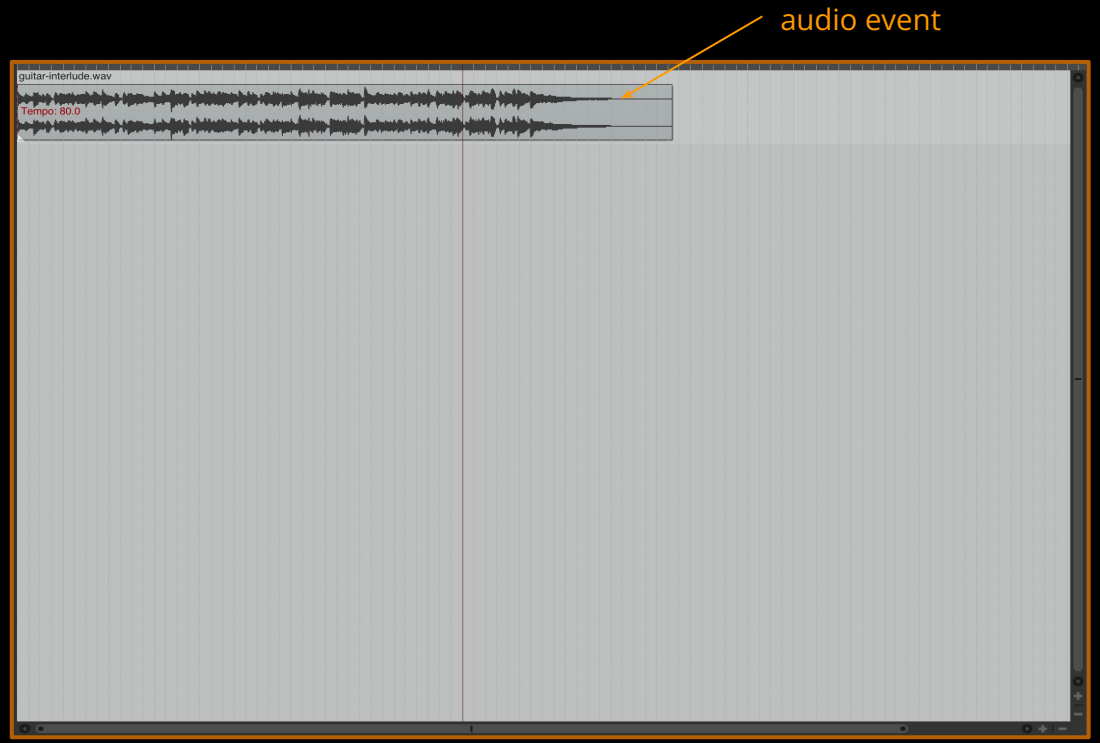
In order (from left to right)

- Go to the start: move the playback to the start of the project timeline
- Go to the end: move the playback to the end of the project timeline
- Stop: Stop the playback
- Play: Start the playback
- Pause: pause the playback
- Record: record the ‘armed’ tracks
- Loop: Start the cyclic playback

The other commands are for musical usage (BPM, time signature, ...)

The Timeline is the time reference. It is the reference for all the sound events

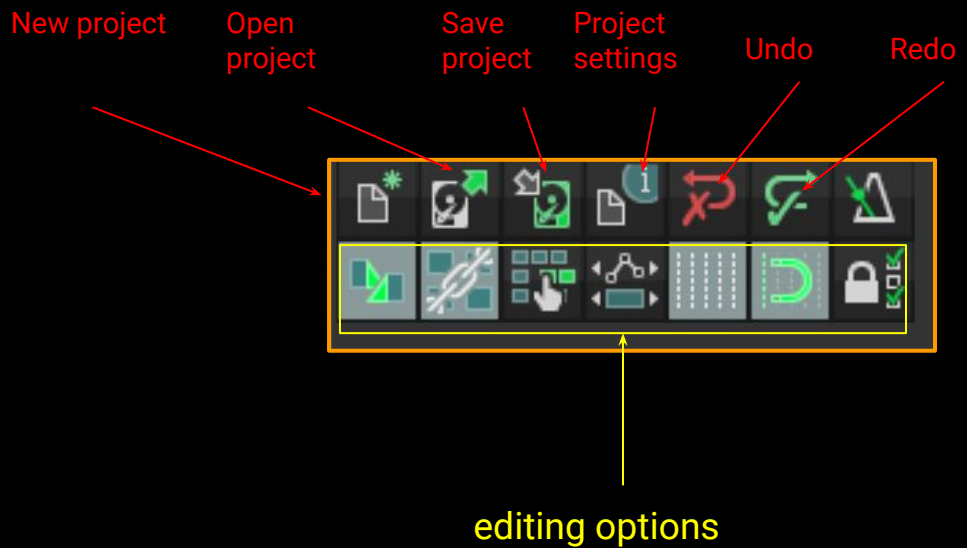
The playback pointer shows where the playback currently is in the timeline

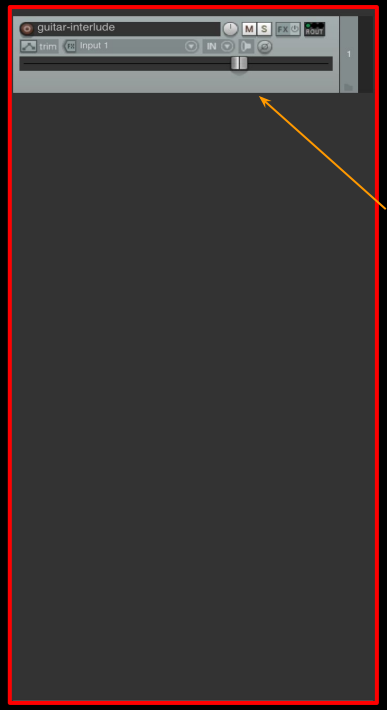


The grid is the area where all audio events are organized.

It is the principal workspace

Buttons for project management and editing options





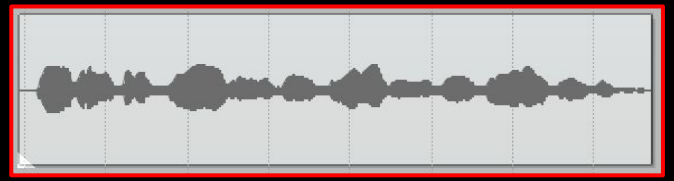
Tracks visualization

Tracks arranged vertically, one above the other

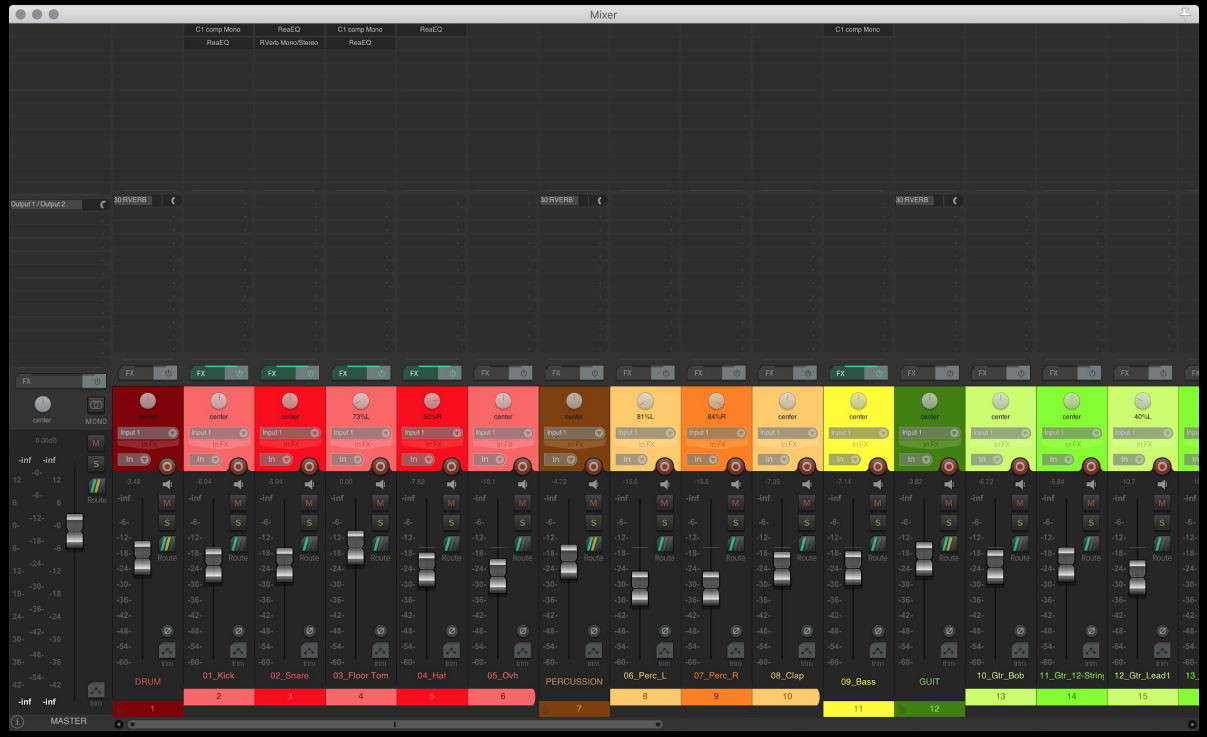
In a DAW the TRACK is only a container.
In a DAW the TRACK has not a digital sound inscribed in itself.
The TRACK contains more sound events that can play only through the track (it is more like an Audio Channel).

In a DAW the CLIPS are the sound events.
The CLIPS are graphically represented by **rectangles** in which are represented the **waveform** of the sound event.

Therefore, the tracks are arranged vertically and the clips inside the tracks horizontally.
We can move clips horizontally inside the same tracks and vertically through different tracks.



The **audio editing** is based exactly in the CLIPS disposition in the two dimensions, vertically and horizontally. The horizontally part is defined by the timeline and the vertically part is defined by the tracks.



MIXER VIEW

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MIXER VIEW - Components

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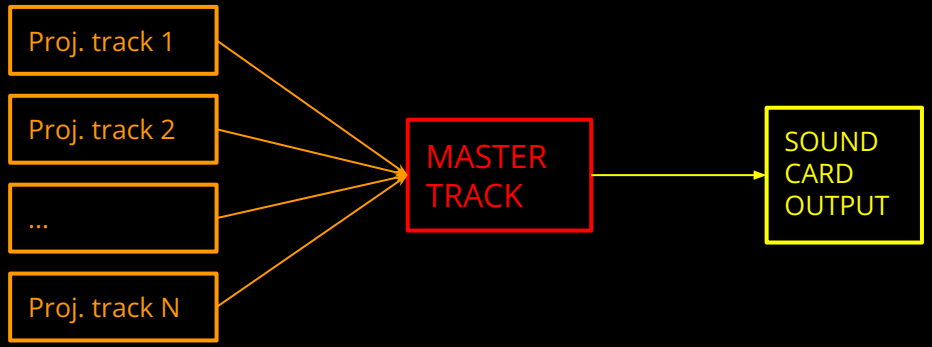
The **master track** is not shown in the **edit view** (by default).

All the project tracks send their audio stream to the master track (by default).

The master track is the last control track of your audio project. All the audio in the project goes by this track before we can listen to it by the sound card output. By changing the volume and the pan, or by adding an audio effect in the master track, all the audio in the project will change and will be affected by the audio effect.



N: (by default) means that is the typical usage in a DAW. We can also change the path of any audio track stream, and for example bypass the Master, or we can show the Master track in the edit view.

FX slots

Send slots

Basic command

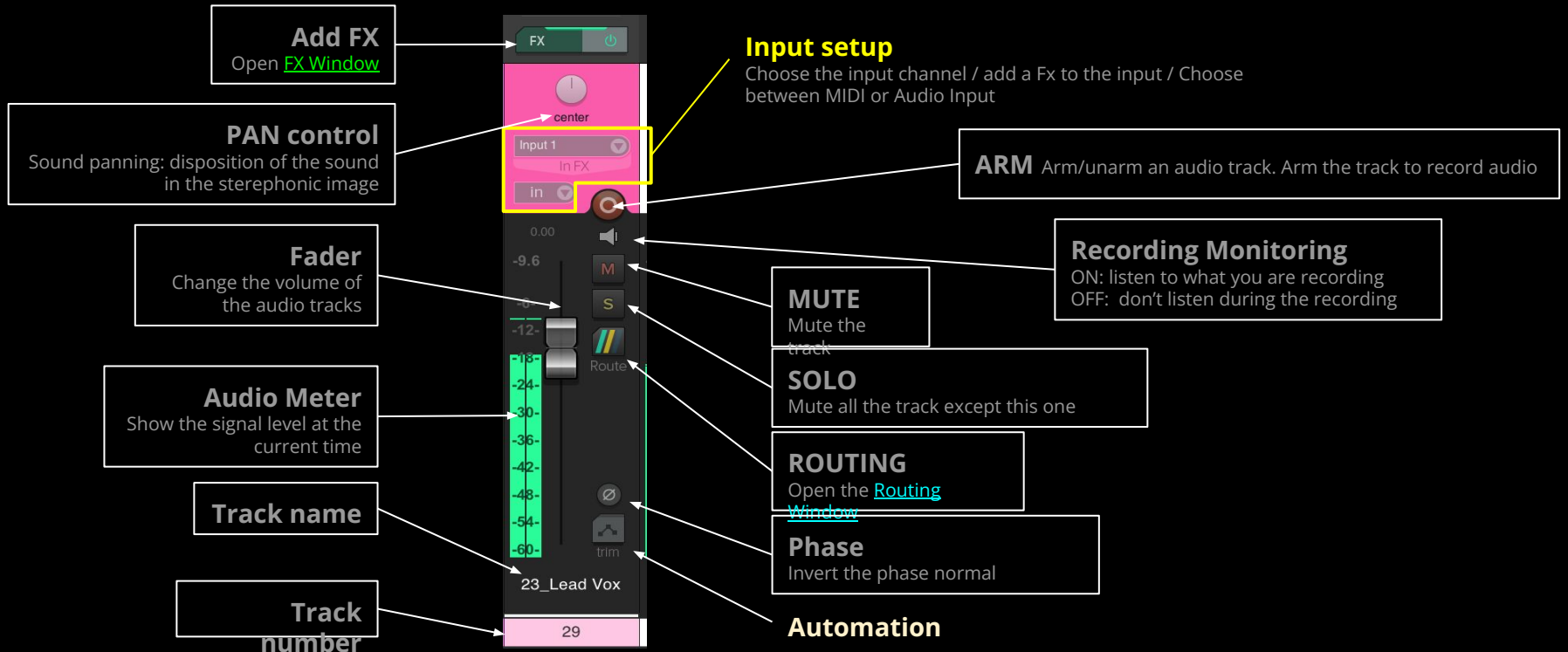
All the tracks in the **edit view** are shown on the **mixer view**

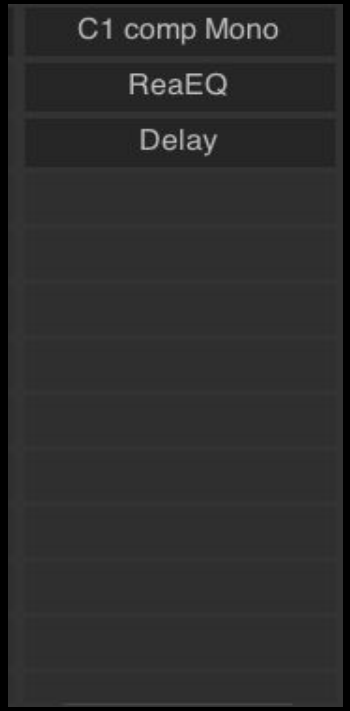
Almost all the basic command for every track can be reached also in the **edit view**

With the FX slots we can add different Effects and Audio Processors in chain

With the Send slots we can send the audio stream in different other audio tracks

Visualization of the same track in the edit view


Add FX
Open FX Window
PAN control
Sound panning: disposition of the sound in the sterephonic image
Fader
Change the volume of the audio tracks
Audio Meter
Show the signal level at the current time
Track name
Track number
FX
center
Input 1
In FX
in
0.00
-9.6
M
S
Route
-12-
-18-
-24-
-30-
-36-
-42-
-48-
-54-
-60-
trim
23_Lead Vox
29
Input setup
Choose the input channel / add a Fx to the input / Choose between MIDI or Audio Input
ARM Arm/unarm an audio track. Arm the track to record audio
Recording Monitoring
ON: listen to what you are recording
OFF: don't listen during the recording
MUTE
Mute the track
SOLO
Mute all the track except this one
ROUTING
Open the Routing Window
Phase
Invert the phase normal
Automation

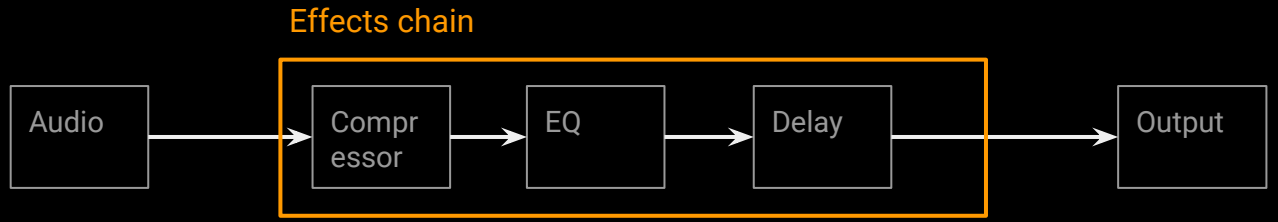


In the FX slots we can add FXs (Audio Effects and Processors)

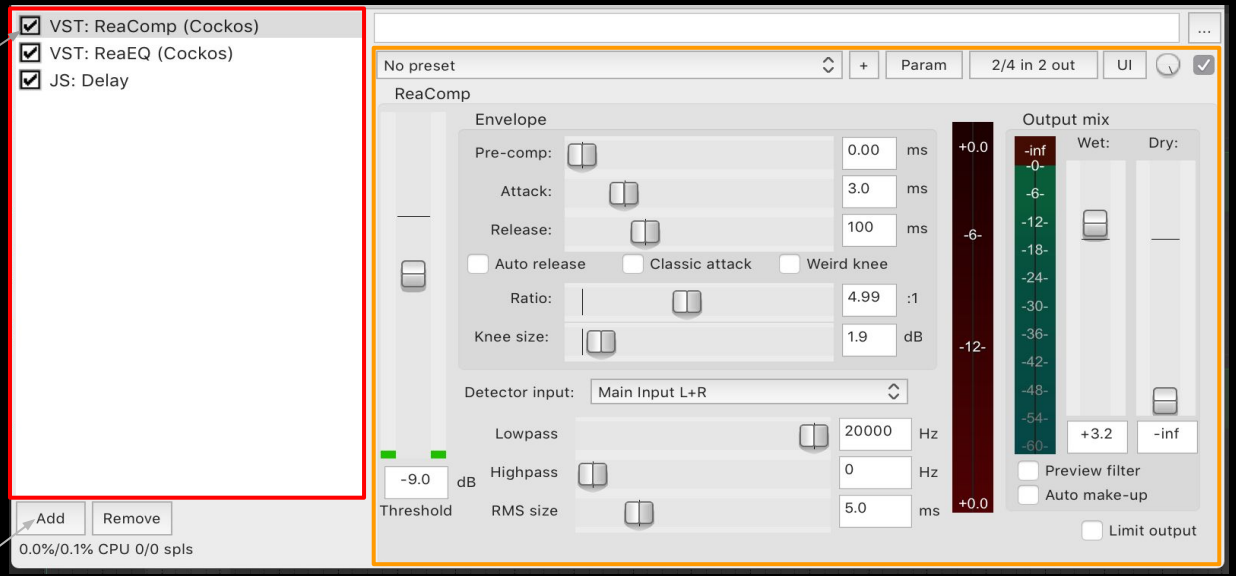
To add an FX you have to open the FX window by double click in one empty slot or by using the command **Add FX** in the Basic Commands part of the track

Once the FX is added you can reach its own main window by double click in its slot (eg by double click in the 'C1 comp Mono' the main window of this effect will be shown)

The **effects chain** go from the top downwards. In the case of the figure the audio tracks will be processed as follow:



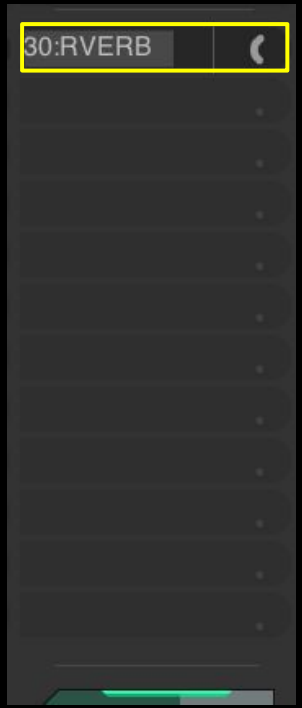
FX chain

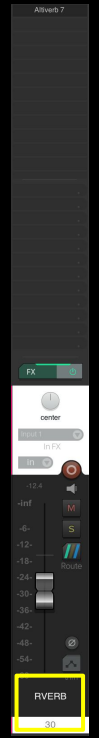


Bypass FX toggle
Disable the effect, the effect chain will skip this FX

Add/Remove FX

Specific FX window
The ReaCompressor Main window with all its parameters





In the Send slots we can add “Send”

With a Send we can send audio from one audio track to another.

A typical use is to send the audio to a reverb track.

By clicking in the empty slot we can reach the Routing Window.

We can reach the *Single Send controls window* by click in the send slot

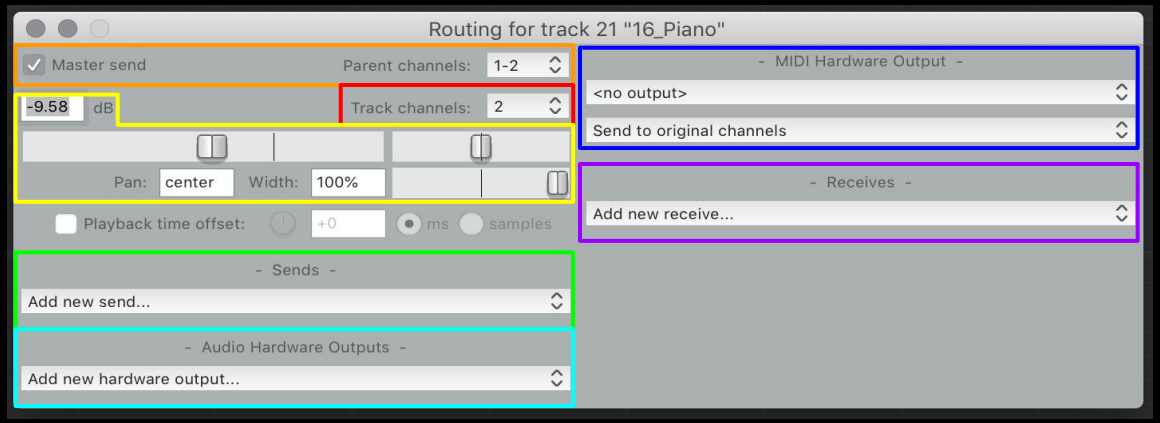
The Routing Window provide the audio stream control for each track: How many channels the track has and where each of this channel goes.

How many channel our track has.

We can choose to send or not the audio stream to the master track

Basic control for the Master send

Send the audio to another track

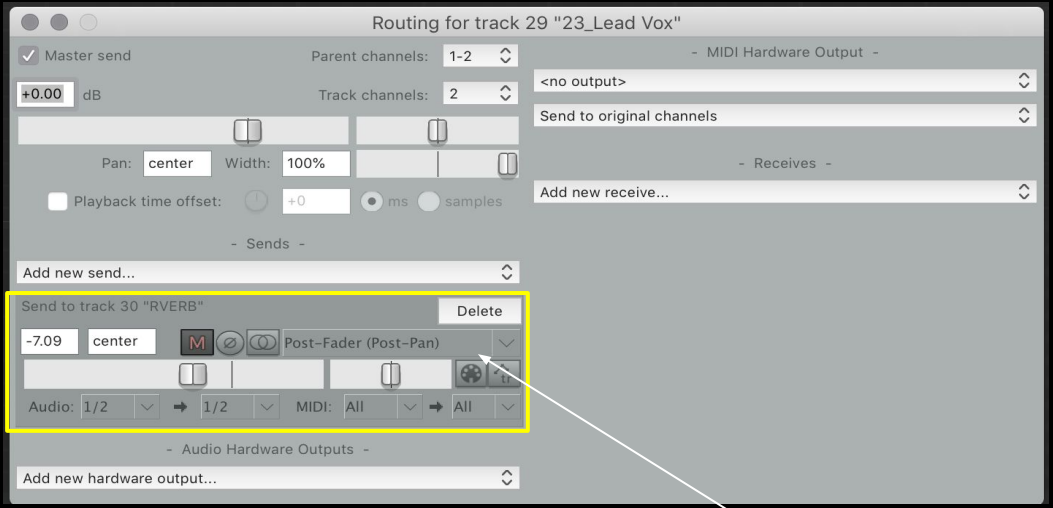


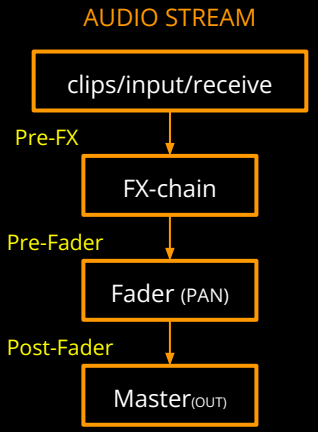
MIDI

Receive the audio from another track

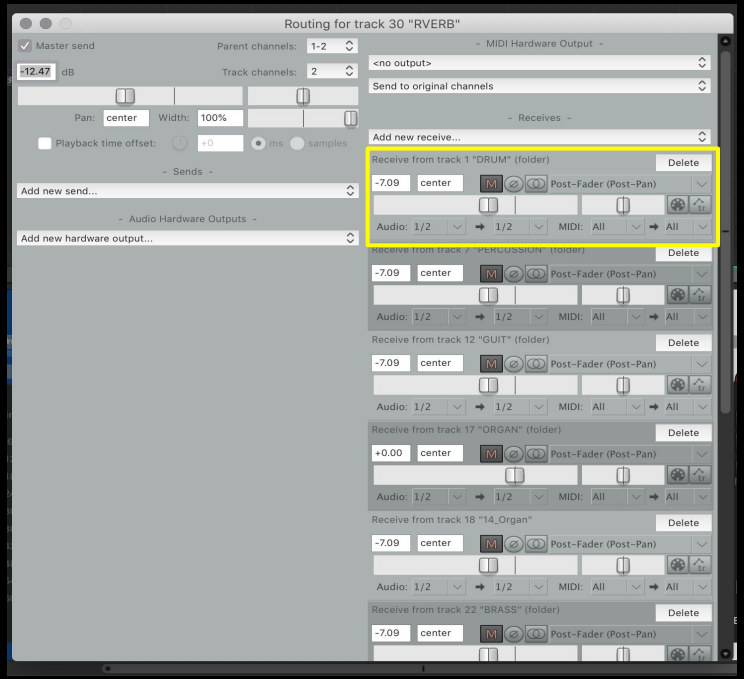
Audio Hardware Output: send the audio to an output of the sound card. In this case you can bypass the Master.

Every send track provides some commands to handle the send, such as the volume and the pan.





We can choose where the audio stream start to be sended. **Post-Fader** (At the end of the audio track stream); **Pre-Fader** (Before the fader and after the FX-chain); **Pre-FX** (before the FX chian)



Every receive track provides some commands to handle the receive, such as the volume and the pan.

The receiver shows which project tracks send the audio stream to this specific audio track.

The picture show the Routing Window of a Reverb to which many tracks send their audio stream.