sequencism

User Manual

Version 1.041 (05-2017)

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Preface

Sequencism is a music sketchbook tool that allows the creation of short and simple pieces of music. It is designed to provide a traditional user interface of track and piano roll editors, while taking advantage of the touch-screen capabilities of the iPad. It also includes other helper tools, such as chord helper tracks.

This tool was born out of curiosity and necessity – as a tool that would accompany me (a music illiterate) in a lifelong quest of expressing myself through music. If you are a musician that wants to produce professional tracks, or to take your music to the stage, I recommend you to check other apps. The iOS music ecosystem is incredibly vibrant, with many affordable apps from awesome individuals and established companies that will help you in your own quest. However, if you want to accompany me in my quest, I'll do my best in creating a tool that will inspire you to create your own music.

Sincerely,
Rodrigo Roman Castro

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- All product names and company names are the trademarks or registered trademarks of their respective owners.

Before we begin

Common gestures in sequencism

TAP
Activates a control, creates an element (e.g. bar, note), selects / removes elements

TOUCH & DRAG (Empty Space)
Creates an element (e.g. bars, notes) of variable size

TOUCH & DRAG (w/ element inside)
Draws a box and select elements within the box

DRAG (selected element)
Move an already selected element (e.g. track headers, bars, notes)

LONG PRESS
Shows contextual menu over an existing element, paste selected element

DOUBLE TAP
Performs operation on element (e.g. track header, bar)

Conventions used in this manual

NOTE: This icon signifies a general note

TIP: This icon signifies a tip or suggestion.

WARNING: This icon indicates a warning or caution

Cursive text indicates an element / option of the application. Underlying text highlights an operation that the user can perform.

Scroll bars in sequencism

- How to: Scroll

A) TAP an empty space

B) DRAG the scroll bar

- How to: Zoom

B) LONG PRESS the scroll bar, DRAG it

- How to: Increase Scroll bar size

A) TAP the "plus" area

B) LONG PRESS the scroll bar, DRAG it to the "plus" area

- How to: Reduce Scroll bar size

A) DRAG from the "plus" area to the areas you want to delete

1. Sequencism panels

1.1 Panels: Elements of the screen
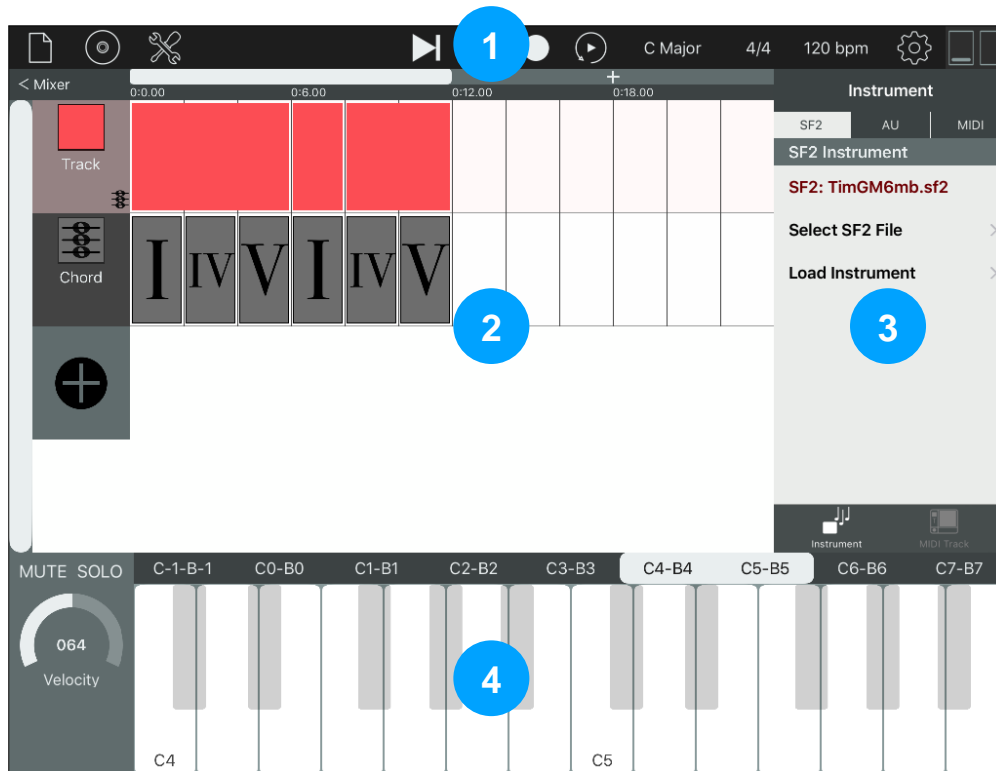
The main panels in sequencism are as follows:

1. **Header toolbar**. This toolbar hosts the file and transport controls, and changes parameters related to the current song and the app. This toolbar is visible at all times (except when the manual is opened).
2. **Main panel**. This panel can contain the *mixer subpanel* (provides the mixer controls), *song subpanel* (show the tracks and the blocks / bars), and *bar subpanel* (allows users to edit the content of a bar, notes in most cases). The song subpanel is shown by default.
3. **Parameters sidebar**. This sidebar shows parameters that are related to the current selected track. If no track is selected, this sidebar will be empty.
4. **Helper panel**. This panel contains various sections, such as the piano section and the chord section, that will appear depending on the track that is selected. If no track is selected, this panel will be empty.

> **TIP**: The size of the main panel can be increased by using the maximize / minimize icons in the header toolbar. This will also decrease the size of the parameters sidebar and the helper panel.

1.2 Main subpanels: Application flow
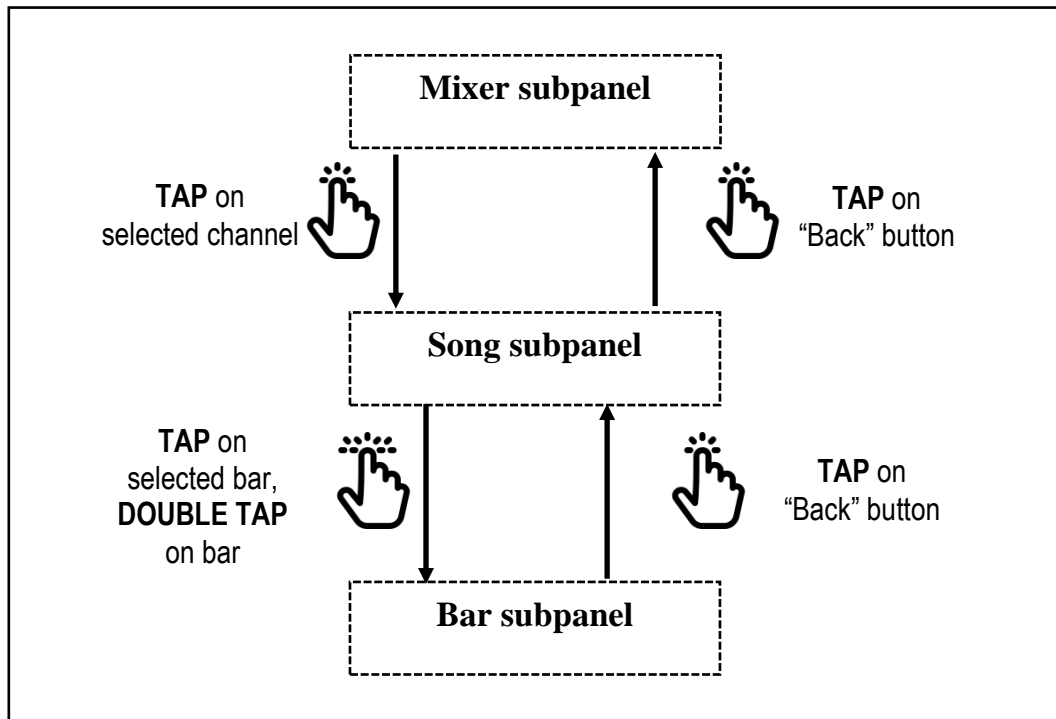
1.2.1 Mixer subpanel
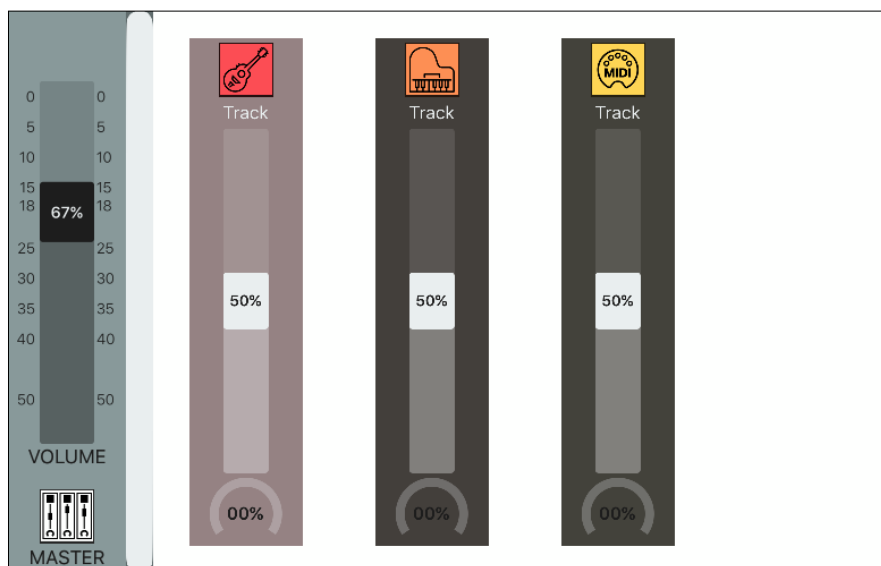
The mixer subpanel allows users to change the master volume of the song, and the volume and pan of every channel. Every channel corresponds to one track in the song. TAPPING on a selected channel will show the song subpanel.

This subpanel will be explained in more detail in Section 3.

1.2.2 Song subpanel
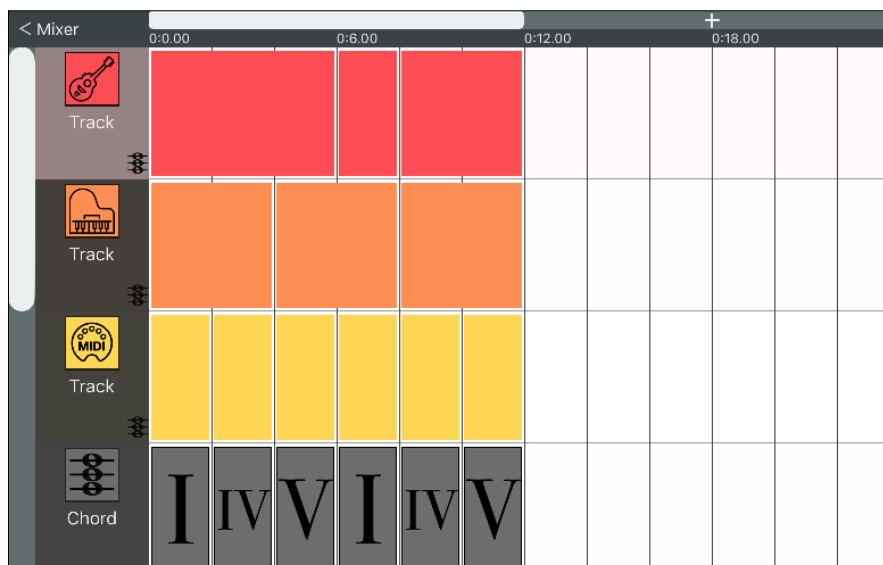
The song subpanel allows users to add, remove, and edit tracks and bars in the song. TAPPING on a selected bar will show the bar subpanel. TAPPING on the "back" button will show the mixer subpanel.
This subpanel will be explained in more detail in Section 4.

1.2.3 Bar subpanel

The bar subpanel allows users to edit the contents of a bar. Currently, sequencism provides the following bar subpanels:
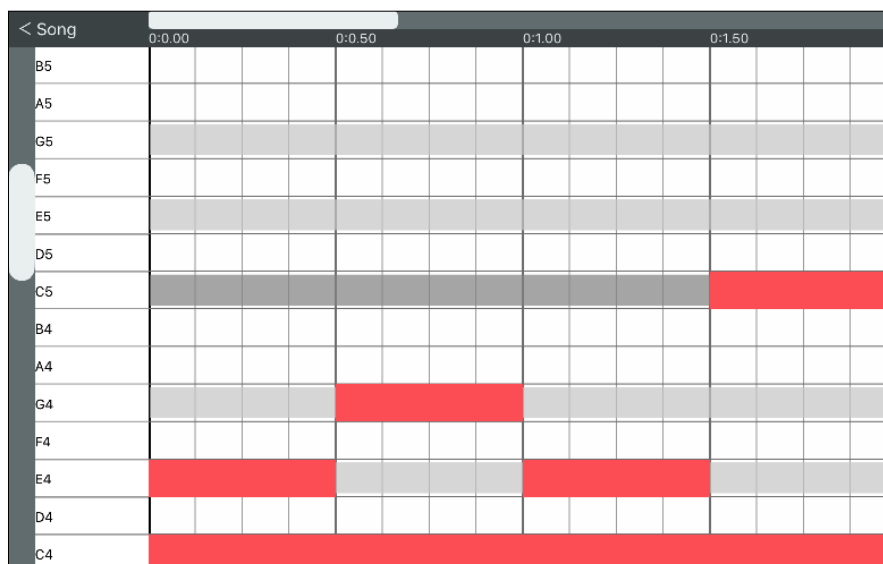
MIDI Note subpanel. Allows users to add, edit, and remove notes in a bar. TAPPING on the "back" button will show the song subpanel. This subpanel will be explained in more detail in Section 5.

1.3 Other subpanels

1.3.1 Instrument subpanel
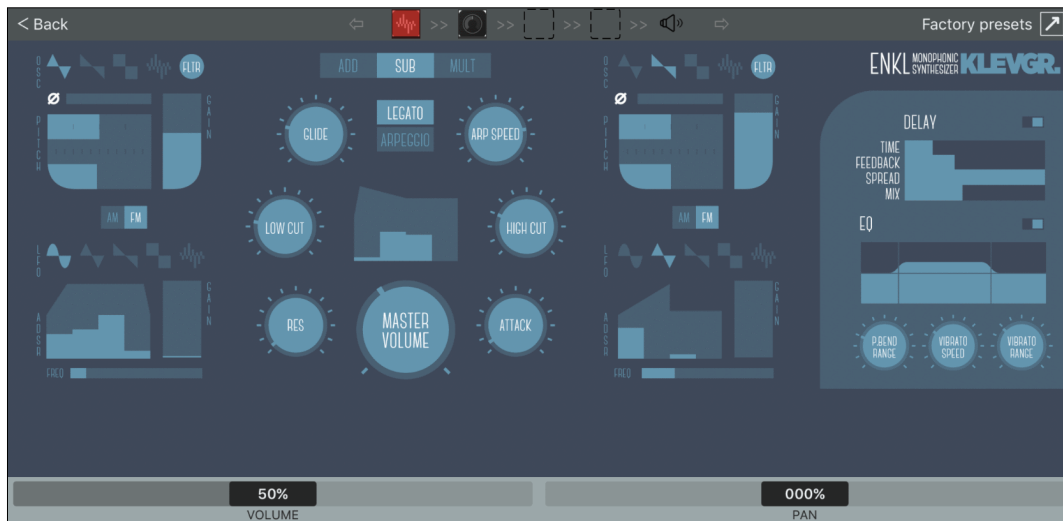
The instrument subpanel allows users to edit the parameters of AUv3 effects and instruments of a certain track. This subpanel can be accessed by double tapping on the image of a loaded instrument / effect, or by tapping the name of the instrument / effect in the instrument subpanel. This subpanel will be explained in more detail in section 6.1.

NOTE: The parameters of SF2 instruments and MIDI ports cannot be edited.

2. Header toolbar

2.1 Elements
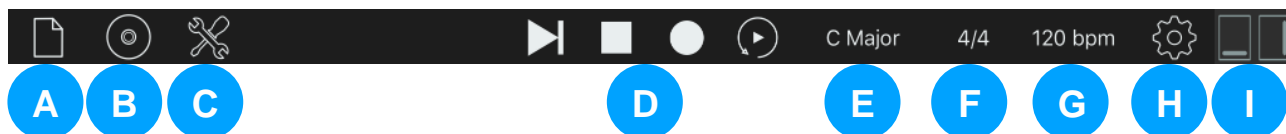
The elements of the header toolbar are as follows:

A. ***File button.*** Opens the *file menu*, where songs can be loaded, saved, imported / exported, etc.
B. ***Save button.*** Saves the current song.
C. ***Tools button.*** Opens the *tools menu.*
D. ***Transport controls.*** Play, stop, record, loop controls.
E. ***Song scale button.*** Opens the *song scale menu.*
F. ***Song signature button.*** Opens the *song signature menu.*
G. ***Song BPM button.*** Opens the *song BPM menu.*
H. ***Configuration button.*** Opens the *app configuration menu.*
I. ***Maximize/Minimize icons.*** Maximize / Minimize the helper views and the options sidebar, respectively.

2.1.A File menu

> **WARNING**: Songs in sequencism are **not automatically saved**. You must use the *save button* or the *"save" option* in the file menu to save the song.

The following operations are available in the file menu:
- *New*: <u>Creates a new, empty song</u>. The current song session will not be saved.
- *Open*: Allows users to <u>open an existing song</u>.
- *Save*: <u>Saves the current song</u>. If the song has not been saved, the user will be prompted to provide a name for the song.
- *Save as*: Allows users to <u>save the song indicating its location and / or its name</u>. This is enabled by TAPPING the 'plus' (+) icon, which will allow users to save the song in the current folder with a new name. Also, TAPPING the 'folder' icon will allow users to <u>create a new folder</u>. Note that TAPPING an existing song name will overwrite it.
- *Import / Export*:
  - o *Import MIDI from local*: Allows users to <u>import a MIDI song</u> to sequencism. MIDI songs that were imported to sequencism will be located in the "Inbox" folder.

- o *Export current song*: Allows users to <u>export the current sequencism song</u> (in the sequencism format '.sqcsm') to other iOS apps.
- o *Export current song as MIDI*: Allows users to <u>export the current sequencism song in MIDI format</u> to other iOS apps.

2.1.B Save button

This button <u>saves the current song</u>. As with the *file menu* operation, If the song has not been saved, the user will be prompted to provide a name for the song.

> **NOTE**: Sequencism stores the state of the song (session) whenever the app is closed. This session will be automatically loaded the next time sequencism is opened. Note that the user needs to save this session manually in order to keep it.

2.1.C Tools menu

The following operations are available in the tools menu:
- *MIDI Panic (all notes off)*: <u>Send an "all notes off" signal to all loaded instruments in all tracks</u>. This signal consist of an "all notes off" channel mode MIDI message for SF2 and AUv3 instruments, plus "note off" MIDI messages for all notes in MIDI instruments.
- *Reset Mute/Solo*: This option <u>turns off the "mute" and "solo" of all channels</u>.

2.1.D Transport controls

> **NOTE**: Sequencism does not provide loop controls: all operations associated to loop controls are performed by selecting bars (see text).

The following transport controls are available:
- *Play button*: <u>Plays the current song</u>. If the song is already being played, <u>pauses the song</u>. There are different modes of operation, depending of the type of input and the existence of selected bars (see Section 4.1.1):
  - o TAP: If no bar is selected, sequencism plays the song from the beginning. If bars are selected, sequencism plays only those bars (from the first selected bar to the last selected bar).
  - o LONG PRESS: If no bar is selected, sequencism plays the song from the beginning of the first bar shown in the screen. If bars are

selected, sequencism plays the song from the first selected bar to the end of the song.

- *Stop button*: <u>Stops and rewinds</u> the current song.
- *Record button*: Allows the user to <u>record notes over **existing** bars</u>. The notes will be recorded in the selected track. Note that if the user presses a piano key over an empty bar, a bar will not be created. The modes of operation are the same as the play button.
- *Loop button*: <u>Turns on / off the looping</u>.

TIP: Pressing the stop button when the song is stopped will send an "all notes off" signal to all loaded instruments in all tracks, same as with the *MIDI Panic option* in the *tools menu*.

2.1.E Song scale menu

This menu allows users to <u>change the scale of the song</u>. Both the tonic and the scale can be chosen using the picker controls. Users can also create their own scale by pressing the notes in the piano. Highlighted notes will be part of the scale, while grayed out notes will be outside of the scale (for example, in this image, D is part of the current scale, while C# is not part of the current scale).
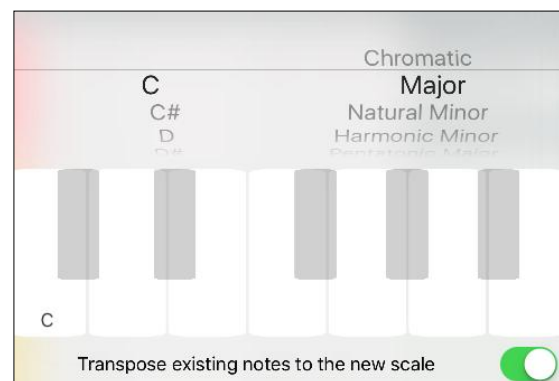
The scale will be changed when the user leaves the menu (i.e. TAPS in another area of the app). Once the scale is changed, the existing notes will be transposed to the new scale - unless the 'Transpose existing notes to the new scale' option is not selected.

WARNING: If i) there are already notes in one track, ii) the new scale has more / less notes than the current scale, and iii) the 'Transpose existing notes to the new scale' option is selected, the scale will not be changed.

TIP: When transposing existing notes to the new scale, existing diatonic chords will also be transposed and adapted to the new scale. However, if the 'Transpose existing notes to the new scale' option is not selected, the chords in the chord tracks will not be changed.

2.1.F Song signature menu

This menu allows users to change the song signature of the song. The song signature can be chosen from the segmented controls, or manually chosen using the picker controls. The song signature will be changed when the user leaves the menu (i.e. TAPS in another area of the app).

2.1.G Song BPM menu

This menu allows users to change the tempo (beats per minute) of the song (from 20 to 999 BPM). BPM can be increased or decreased more quickly by LONG PRESSING the plus (+) and minus (-) icons, respectively. The tempo of the song will be changed when the user leaves the menu (i.e. TAPS in another area of the app).

> **NOTE**: If Ableton Link is active, the *song BPM menu* will have a clear background.

2.1.H Configuration menu

The following operations are available in the configuration menu:

- *Sync / MIDI Settings*:
    - o *Sync - Ableton Link*: This option switches Ableton Link on/off. Link is a technology that keeps devices in time over a local network and in the same iOS device. This way, several apps can share a common tempo. For more information on Ableton Link, visit https://www.ableton.com/en/link/.
    - o *Sync - Send MIDI Clock*: This option switches MIDI Clock on/off. MIDI Clock is a tempo-based synchronisation protocol. If activated, sequencism will send MIDI ticks to all connected MIDI devices - including virtual MIDI ports.
    - o *Input - Bluetooth LE MIDI*: Using this menu, you can connect your Bluetooth MIDI devices (such as a MIDI keyboard controller) to sequencism. Select your Bluetooth device in order to use it.
    - o *Input - MIDI IN Channel*: This option allows the user to select the incoming MIDI channel, where sequencism will listen to incoming MIDI messages.
    - o *Output - Metronome*: This option switches the metronome on/off.
- GUI Settings:
    - o *Ruler - Ruler Display*: This option changes what is shown in the ruler of the song and bar subpanels: either 'Minutes : Seconds' or 'Bar | Beats'.

- o *Blocks - Show notes in tracks*: When this option is active, in the song subpanel <u>a preview of the notes contained in a block will be visible</u>. This preview will show all notes in the chromatic scale.
  - o *Blocks - Zoom to touched regions*: If on, when the user enters the bar subpanel, it will show only the touched region of the bar, and not the whole bar.
  - o *Blocks - Color given by instrument*: If on, the color of a SF2 track is automatically given by the selected instrument.
  - o *Mixer Panel - Default format*: This option <u>changes the format of the mixer panel</u>: either 'Track Collection' (i.e. every channel is shown as a vertical component, similar to real-life mixer panels) or '2D Space' (i.e. every channel is shown as a box within a 2D space). For more information about these configurations, see Sections 3.1 and 3.2.
  - o *Piano - Middle C*: C4: If on, sequencism considers C4 as the Middle C key (frequency 261.63 Hz, MIDI key 60).
- *SF2/AU Settings*:
  - o *File → Import MIDI - Default SF2*: This option allows users to <u>select the SF2 file that will be used when importing MIDI files</u>.
  - o *Management - Remove SF2 Files*: This option allows users to <u>remove SF2 files that were imported to sequencism</u>. Note that if a track is currently using a SF2 instrument from a certain file, that file will not be included in the list.
  - o *AUv3 Effect Support - Enabled in SF2*. If enabled, <u>AUv3 effects can be used with SF2 instruments</u>.
- *Default Settings*: In this menu, it is possible to change the default values that will be used in several parameter sidebars. For example, if the 'Piano Type' is set to 'Flat Keys', all new tracks will have an associated flat key piano in the helper panel.
- *Manual*: Shows this manual.
- *About*: Shows sequencism credits.

WARNING: Certain SF2 files (presets) will not work with AUv3 effects, and in extreme cases they will crash the app. Therefore, AUv3 effects support for SF2 instruments is disabled by default.

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2.1.I 'Maximize / Minimize' icons

Using these icons, it is possible to <u>maximize / minimize the helper panel and the parameters sidebar, respectively</u>. This way, the main panel and the instrument panel will have more space available.

3. Mixer subpanel

The mixer subpanel allow users to change the master volume of the song, and the volume and pan of every channel. In sequencism, there is one channel for every track. This subpanel can be shown in two ways: the 'track collection' mode, where every channel is shown as a vertical component (similar to real-life mixer panels), and the '2D Space' mode, where every channel is shown as a box within a 2D space.

To switch between modes, either change the 'Mixer Panel - Default format' option in the configuration menu (see section 2.1.H), or TAP on the master box.

3.1 Mixer subpanel - Track collection
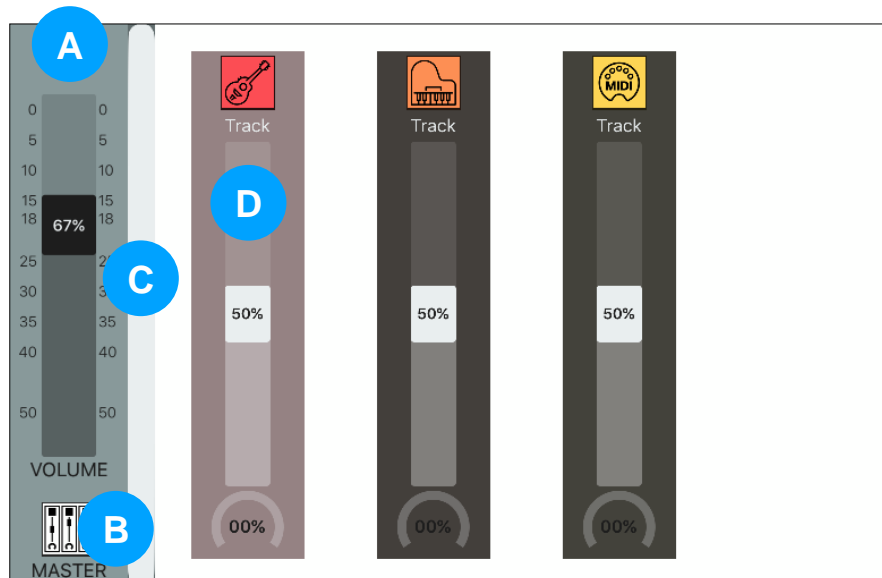
The elements of the mixer subpanel, in the 'track collection' mode, are as follows:

A. *Main strip*. This control allows users to <u>set the volume of the song</u>. If the song is playing, the level meter will display the dBfs (Decibels relative to full scale) of the output audio signal.
B. *Current mode*. This icon shows the current mode. By TAPPING this icon, it is possible to <u>change the mode of the mixer subpanel</u>: from 'Track Collection' to '2D Space', and vice versa.
C. *Scroll bar*. Allows users to <u>select how many channels are shown in the mixer subpanel</u>. It is possible to zoom by LONG PRESSING the bar. Note that all channels will be shown by DOUBLE TAPPING the scroll bar.
D. *Channel strip*. This control allows users to:
   - <u>Access the *song subpanel*</u> by TAPPING a selected channel strip.

- Access the *instrument subpanel* by DOUBLE TAPPING the instrument icon.
- Change the volume of the track using the volume slider.
- Set the pan of the track (position in the stereo field) using the pan knob.

In this mode, a track is selected by TAPPING its channel strip. Selected channel strips have a clearer background.

> **NOTE**: The shape of the channel strip will change depending on the number of tracks that are shown in the mixer subpanel.

3.2 Mixer subpanel - 2D space
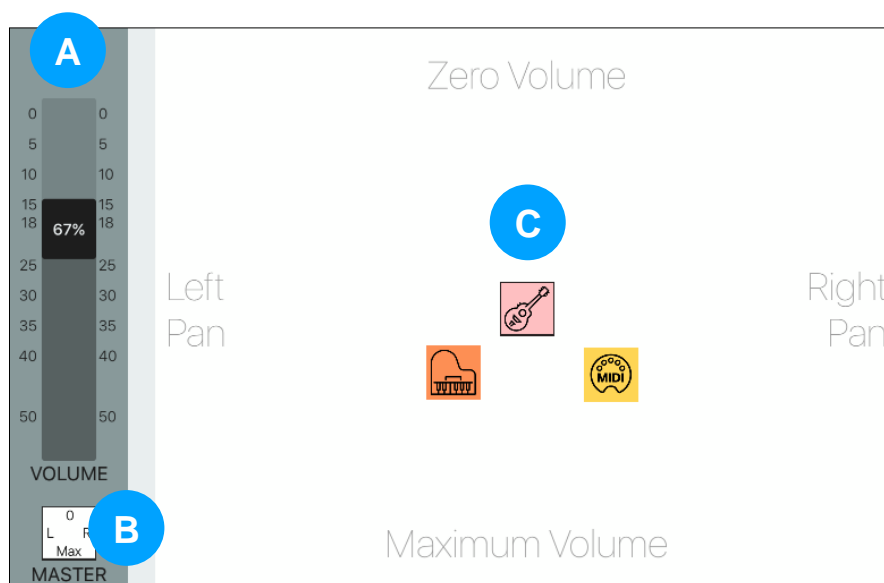
The elements of the mixer subpanel, in the '2D space' mode, are as follows:

A. *Main strip.* Same functionality as in Section 3.1.
B. *Current mode.* Same functionality as in Section 3.1.
C. *Instrument icon.* Shows the volume and pan of a particular track, relative to a 2D flat space: the X coordinate provides the track pan (the center of the screen is the center of the stereo channel), and the Y coordinate provides the track volume. Besides, this control allows users to:
   - Access the *song subpanel* by TAPPING a selected instrument icon.
   - Access the *instrument subpanel* by DOUBLE TAPPING the instrument icon.

In this mode, a track is selected by TAPPING its instrument icon. Selected instrument icons have a clearer background and a border.

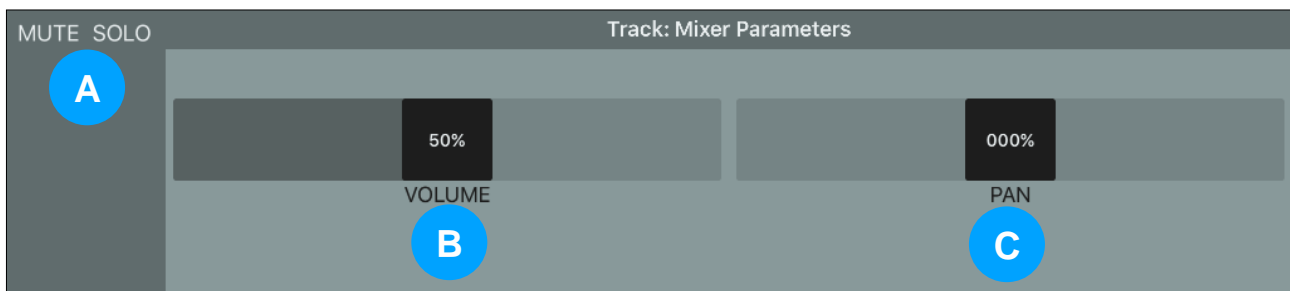NOTE: The 2D Space mode will not be shown if no tracks exist.

3.3 Specific parameters sidebars
There are no specific parameter sidebars associated to this subpanel.

3.4 Specific helper subpanels
There is one associated helper subpanel with the mixer subpanel: The mixer parameters subpanel.

3.4.1 Mixer parameters subpanel

This subpanel allows users to change the volume and pan of a selected track. It is shown when a channel is selected, either by TAPPING a channel strip in 'Track Collection' mode or by TAPPING an instrument icon in '2D Space' mode.
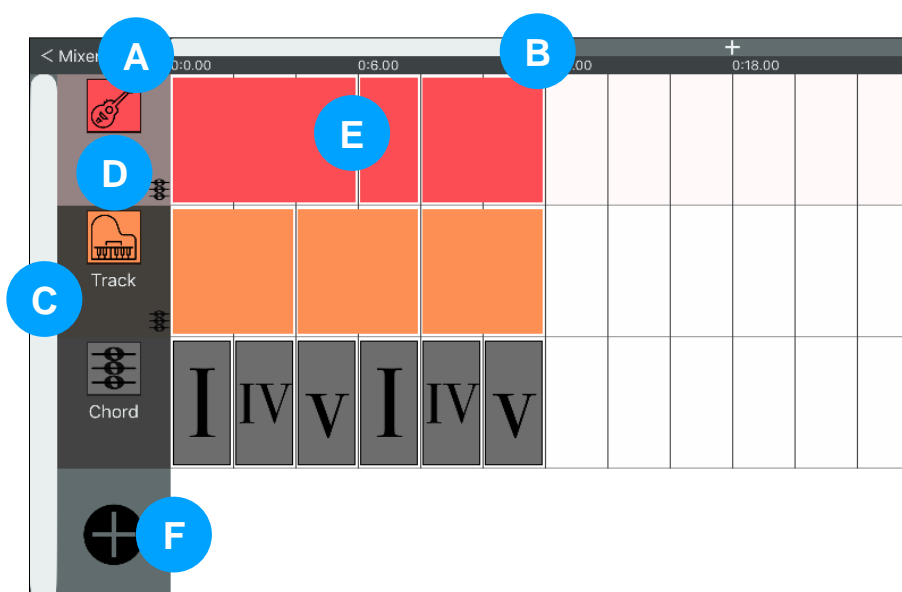
The elements of this subpanel are as follows:

A. *Mute / Solo buttons*: Changes the mute (i.e. mute the sound of the track) / solo (i.e. mutes all channel except 'solo' tracks) status of the track.
B. *Volume Slider*: Changes the volume of the track.
C. *Pan Slider*: Set the pan of the track (position in the stereo field).

4. Song subpanel

The song subpanel allows users to add, remove, and edit tracks and bars in the song. There are currently two types of tracks in sequencism:

1. *MIDI track.* A track that contains MIDI notes, which can be played by SF2 instruments or AUv3 instrument, or sent to a certain MIDI port.
2. *Chord track.* A track that contains chords.

4.1 Song subpanel: Elements

The elements of the song subpanel are as follows:

A. *"Back" Button ('< Mixer'):* Shows the *mixer subpanel*.
B. *Timeline scroll bar:* Changes the position of the song, in terms of seconds / bars. It is possible to change the size of the scroll bar by LONG PRESSING this bar. Note that all the full song will be shown (i.e. the timeline will be completely zoomed out) by DOUBLE TAPPING the scroll bar.
C. *Track scroll bar:* Allows users to select how many tracks are shown in the song subpanel. It is possible to change the number of tracks that will be shown by LONG PRESSING this bar. Note that all tracks will be shown by DOUBLE TAPPING the scroll bar.
D. *Track header:* Shows the actual instrument of this track, and indicates certain features of this track, such as whether the notes are linked to a chord track or not. This element is further explained in section 4.1.1.
E. *Track contents:* Shows the bars contained within this track. This element is further explained in section 4.1.1.

F. *"New Track" button:* TAPPING this button will <u>create a new MIDI track</u>. LONG PRESSING this button will allow users to <u>choose the type of track to be created</u> (MIDI tracks or Chord tracks).

4.1.1 Track elements

Track Header

The track header shows the following elements:

A. *Instrument icon.* <u>Shows the current loaded instrument</u>. DOUBLE TAP on the icon to <u>access the *instrument subpanel*</u>.

B. *Track name.*

C. *Track icons.* These icons show whether there is a chord track influencing this track (![chord icon]), if this track is linked to that particular chord track (![link icon]), and if there is an AU MIDI instrument sending notes to this track (![AU icon]).

<u>A track is selected</u> by TAPPING it. Selected tracks will have a clearer background.

It is possible to <u>change the order of the tracks</u> by DRAGGING an already selected header to a new position. It is also possible to <u>delete a track</u> by DRAGGING it to an empty position or outside the *song subpanel*.

> **NOTE**: Only MIDI Tracks will show this full information. Chord Tracks will simply show a chord icon and the track name.
> If the "Color given by instrument" option is selected in the *configuration menu* (see section 2.1.H), the color of an unloaded instrument will be grey.

> **TIP**: The "new track" button (see section 4.1) will change to a minus '-' when the track is going to be deleted.

Track Contents
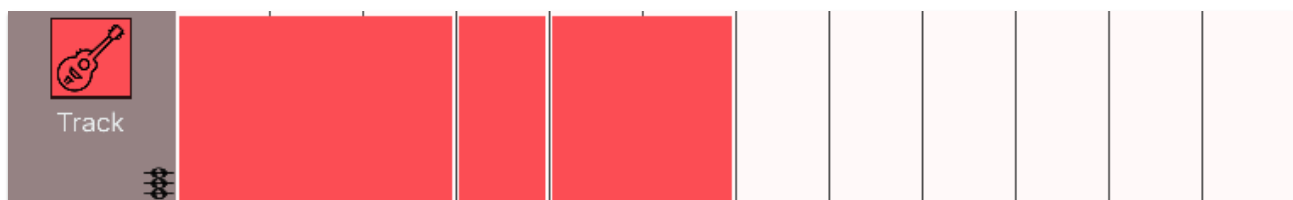
The track contents area show the bars of this particular track. Each element is always multiple of one measure, e.g. it is not possible to insert an element made of 1.5 measures (or 6 beats in a 4/4 time signature).

The operations that can be performed if no bars are selected are the following:

- <u>Create a bar</u>: TAP an empty bar, or TOUCH and DRAG over an empty space.
- <u>Remove a bar</u>: LONG PRESS a bar, and select the 'Delete' option.
- <u>Edit a bar</u>: DOUBLE TAP a bar. This will open the bar subpanel.

In order to <u>select one or more bars</u>, TAP a bar, or TOUCH AND DRAG the lasso over the bars you want to select. Selected bars will have a clearer background.

The operations that can be performed with one or more selected bars are the following:

- <u>Edit bar(s)</u>: TAP one selected bar. This will open the bar subpanel.
- <u>Move bar(s)</u>: TOUCH AND DRAG the selected bars. Note that if the final position of the bars overlaps an existing bar, the operation will be cancelled.
- <u>Paste bars(s)</u>: LONG PRESS an empty space. It is possible to DRAG your finger in order to adjust what will be the final position of the copied bar(s). Note that if the final position of the bars overlaps an existing bar, the operation will be cancelled.
- <u>Copy a bar to various measures</u>: LONG PRESS an empty space, and then DRAG your finger in order to fill the empty spaces with the selected bar. Note that this option only works if one bar is selected. Also, if the final position of the bars overlaps an existing bar, the operation will be cancelled.
- <u>Remove bar(s)</u>: LONG PRESS a bar, and select the 'Delete' option.
- <u>Merge all selected bars</u>: LONG PRESS a bar, and select the 'Merge' option.

In order to <u>deselect any selected bars</u>, TAP an empty space of the song subpanel, or tap the track header.

WARNING: Changing the position of the song to a new page using the timeline scroll bar will deselect all selected bars.

TIP: It is possible to copy a bar from one track to another, even if the tracks are of different types (e.g. Chord to MIDI, and viceversa).

NOTE: AUv3 MIDI instruments will only output MIDI in the positions where bars exist, even if "AutoPlay"-like features are enabled.

4.2 Specific track features

As aforementioned, there are two track types: MIDI tracks and chord tracks. There are certain features that are specific to one type of track.

4.2.1 MIDI track

MIDI tracks are influenced by the first chord track located below it. By default, a *MIDI note subpanel* will highlight the chord notes of the chord track. Moreover, <u>if the track is linked to the chord track</u> ('Link to Chord Helper' option in the 'MIDI Track Parameters', see section 4.3), <u>changing the chord will automatically change the notes</u> of the MIDI track.

4.2.2 Chord track

Chord tracks will influence all MIDI tracks above it, unless another chord track is present.

- EXAMPLE: Given the tracks A (MIDI), B (Chord), C (MIDI), and D (Chord), track D will only influence track C, and track B will only influence track A.
- EXAMPLE 2: In the image below, track C will influence both track B (Piano) and track A (Guitar).

4.3 Specific parameters sidebars

4.3.1 MIDI Track: Instrument tab (not loaded)

This tab allows users to choose a particular instrument to be loaded in this selected MIDI track. MIDI messages will be sent to this particular instrument. The following options are available in the instrument tab:

- *SF2 Instrument*. Manages and loads an instrument contained within an imported SF2 file.
    - *SF2: name*. <u>Shows the name of the SF2 file</u> whose instruments we can load.
    - *Select SF2 File*. <u>Change the SF2 file</u>.
    - *Load Instrument*. <u>Choose and load one SF2 instrument</u> from the SF2 file.
- *AUv3 Instrument*. Loads an Audio Unit (v3) instrument.
    - *Load Instrument*. <u>Choose and load</u> one of the installed AUv3 instruments.
- *MIDI OUT*. Connects the track to a MIDI port.
    - *Channel*. <u>Choose the output MIDI channel</u> where the MIDI messages will be sent.
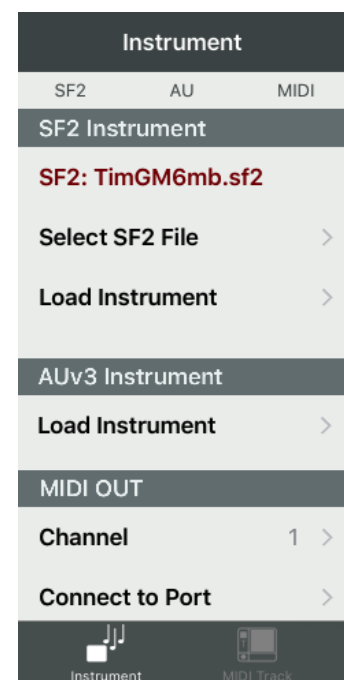
o *Connect to port*. Choose the (virtual) MIDI port where the instrument will be connected.

4.3.2 MIDI Track: AU/SF2/MIDI Instrument tab (loaded)

This tab shows the instrument that is loaded in the selected MIDI track. It also allows to insert up to AUv3 effects in the audio signal path of this instrument. The audio signal path is as follows: Instrument → Effect 1 → Effect 2 → Effect 3 → Track Output.

The following options are available in the instrument tab:

- *AUv3 / SF2 / MIDI OUT*. Shows the current loaded instrument.
    - o *Name of the Instrument*. Opens the instrument subpanel.
- *AUv3 Effects*. Shows the loaded AUV3 effects.
    - o *Name of the effect*. Opens the instrument subpanel, showing this effect.
    - o *Empty effect ('—-')*. Choose and load one of the installed AUv3 effects.

To remove (unload) instruments and effects, TAP on the *Edit* button. Then, you can select the instrument / effect that you want to delete, and delete it.

> **WARNING**: AUv3 effects support for SF2 instruments is disabled by default (see Section 2.1.H).

4.3.2a MIDI Track: AUv3 MIDI instrument tab (loaded)

New on iOS11, AUv3 MIDI instruments do not output sound [1], but send their MIDI output directly to other instruments. In sequencism, this tab is shown whenever an AUv3 MIDI instrument is loaded. In this case, the midi / audio signal is as follows: MIDI Instrument ⇒ Linked Instrument → Linked Instrument Effect Chain → Linked Instrument Track Output.

The following options are available in the instrument tab:

- *Link to Track*. Allow users to select the track that will receive the MIDI output from the AUv3 MIDI instrument. In most cases, no further setup is necessary.

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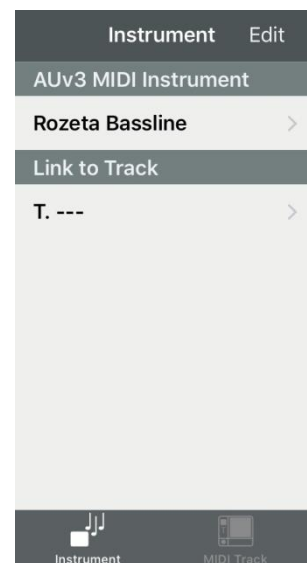
[1] Note that, at present, there are AU MIDI instruments that output sound.

> **NOTE**: We suggest leaving the AU MIDI instruments in "AutoPlay" (not "MIDI triggered") mode, using the host transport – if available.

4.3.3 MIDI Track: MIDI Track Parameters

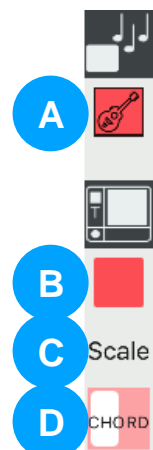This tab shows the parameters associated to the selected MIDI track. The following options are available:

- *Track Information.*
  - o *Name.* Shows the name of the track. TAP on the name to change the name of the track.
  - o *Color.* Shows the color of the track. TAP on the color box to change the color of the track.
- *Visual Information.*
  - o *Track Scale.* Allow users to change the scale of the track. This way, every track can have their own scale, independent of the song scale. Scale notes will be highlighted. TAP on the notes to add/remove them from the track scale. TAP 'Reset to song scale' to remove the track-specific scale. You can also choose a specific scale from a slider.
  - o *Piano type.* Chooses the type of piano in the piano player subpanel. See Section 4.4.1 for a more detailed explanation.
  - o *Vertical Velocity.* Switches on/off the vertical velocity of the pianos in the piano player subpanel.

- *Chord.*
  - o *Link to Chord Helper.* Links this track to its associated chord track (see section 4.2.2). If this option is on, changing the chord will automatically change the notes of this track.
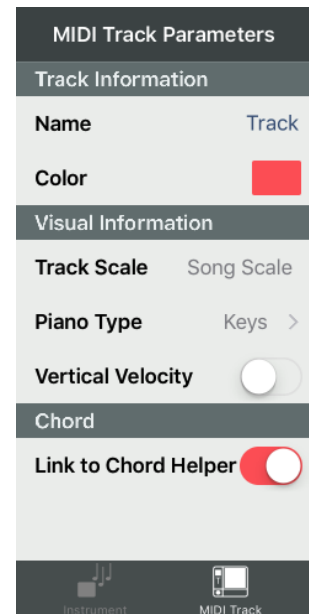
4.3.4 MIDI Track: Minimized sidebar

When the parameters sidebar is minimised and a MIDI track is selected, this sidebar will be shown. Its options are as follows:

A. *Instrument icon.* If an instrument is loaded, opens the instrument subpanel.
B. *Track color.* Shows the color of the track. TAP on the color box to change the color of the track.
C. *'Scale' button.* Allow users to change the scale of the track. Same functionality as 'Track Scale' in section 4.2.2.
D. *'Chord' switch.* Links this track to its associated chord track. Same functionality as 'Link to Chord Helper' in section 4.2.2.

4.3.5 Chord Track: Preview Tracks tab

This tracks shows the MIDI tracks with loaded instruments that are linked to the selected chord track. It also allows users to select which MIDI tracks will sound when one of the chords in the *chord selector subpanel* is played.

4.3.6 Chord Track: Chord Track Parameters tab

This tab shows the parameters associated to the selected chord track. The following options are available:

- *Track Information*.
    - o *Name*. Shows the name of the track. TAP on the name to change the name of the track.
- *Visual Information*.
    - o *Chord Scale*. Same as Section 4.2.2, it allows users to change the scale of the chord track. This way chord tracks can have their own track, independent from the song scale.
    - o *Basic Diatonic*. Changes the chord selector subpanel. If this option is on, the chord selector subpanel will only show the diatonic chords - that is, the chords that naturally occur within the chord track scale. If this option is off, the chord selector subpanel will allow users to select any chord - even non-diatonic chords (chromatic chords).
    - o *Modal Interchange*. Changes the (basic diatonic) chord selector subpanel. If this option is on, users will be able to use borrowed chords (chords borrowed from the parallel keys) in the chord selector subpanel.
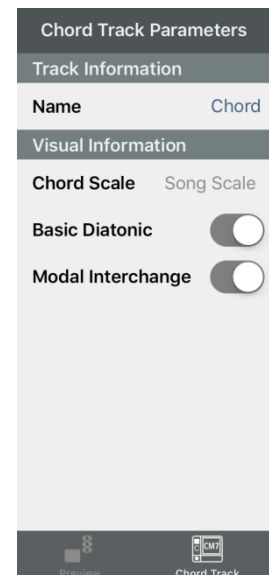
4.3.7 Chord Track: Minimized sidebar

When the parameters sidebar is minimised and a chord track is selected, this sidebar will be shown. Its options are as follows:
A. *'Scale' button*. Allow users to change the scale of the chord track. Same functionality as 'Track Scale' in section 4.3.6.
B. *'Basic (diatonic) switch'*. Changes the *chord selector subpanel*. Same functionality as 'Basic Diatonic' in section 4.3.6.
C. *'Modal Interchange switch'*. Changes the *chord selector subpanel*. Same functionality as '*Modal Interchange*' in section 4.3.6.
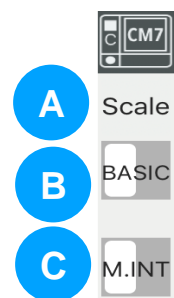
4.4 Specific helper subpanels

4.4.1 Piano player subpanel
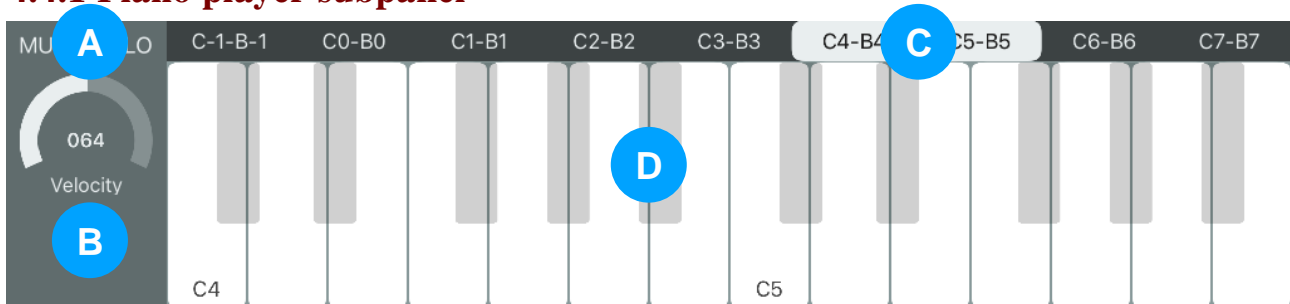
The piano player subpanel shows a virtual piano that will play the instrument of the selected MIDI track. Its elements are as follows:

A. *Mute / Solo buttons*. Changes the mute (i.e. mute the sound of the track) / solo (i.e. mutes all channel except 'solo' tracks) status of the track.
B. *Velocity sliders / knobs*. Change the velocity of the virtual piano notes.
   - If the 'Vertical Velocity' option is active (see section 4.3.3), this control will show the velocity range of the virtual piano.
C. *Octave scroll bar*. Allows users to choose the octaves of the virtual piano. Just as with other scroll bars, LONG PRESS this bar to zoom in / zoom out the virtual piano.
D. *Virtual piano*. Plays notes.

There are four types of virtual pianos: 1) Keys (Show all the notes, even those that do not belong to the track scale), 2) Flat keys (Show only the notes that belong to the track scale), 3) Pads (Show the keys as percussion keys, using the General MIDI Percussion Map), and 4) TR 808 (Show only the percussion keys of the 808 drum machine).

If the 'Vertical velocity' option is active, keys can be played from the lowest to the highest velocity indicated in the 'Velocity sliders / knobs' control.

> **TIP**: If an external MIDI keyboard is connected and a 'flat keys' virtual piano is selected, the white keys of the external keyboard will play the track scale.

4.4.2 Piano player subpanel - minimised

This subpanel is shown whenever the helper panel is minimized. As with the full *piano player subpanel*, it has mute / solo buttons, and the virtual piano.

However, there is no octave scroll bar, only octave buttons at the right side of the subpanel. Therefore, it is possible to change the octaves, but not zoom in / out the virtual piano.

There are only three types of minimised virtual pianos: "Flat", "Pads", and "TR 808". "Keys" pianos are shown as "Flat" pianos.

4.4.3 Chord selector subpanel - Diatonic mode

The chord selector subpanel (in diatonic mode) allows users to update any selected chord bars with diatonic chords. Its elements are as follows:
A. *Chord type*. Select the chord type (3rd or 7th).
B. *Diatonic chord selector*. Chooses an specific diatonic chord. If Modal Interchange is on, users will be able to choose chords from parallel keys.
C. *Chord bar arrows*. If a chord bar is selected in the chord track, these buttons select the next / previous chord bar, respectively.
D. *Chord preview*. Shows the keys of the selected diatonic chord. Also, if any of the keys are pressed, the chord will play in all the MIDI tracks selected in the Preview tracks tab (see Section 4.3.5).

In order to update a chord bar in the selected chord track, first select the bar, and then select one chord using the 'diatonic chord selector'.

> **NOTE**: Pressing the 'next' 'chord bar arrow' will create a new chord bar, if no chord bars are available on the right side of the selected chord bar.

> **TIP**: There are various shortcuts available to external MIDI keyboards: i) Chords will be inferred when pressing the keyboard keys; ii) the pitch and modulation wheels will provide a similar function as the 'chord type' and 'chord bar arrows' buttons, respectively.

4.4.4 Chord selector subpanel - Diatonic mode - minimized

This subpanel is shown whenever the helper panel is minimized. For this subpanel, the controls are the same as the maximised panel, plus a new control (Z) that changes the chord inversion.

4.4.5 Chord selector subpanel - Chromatic mode
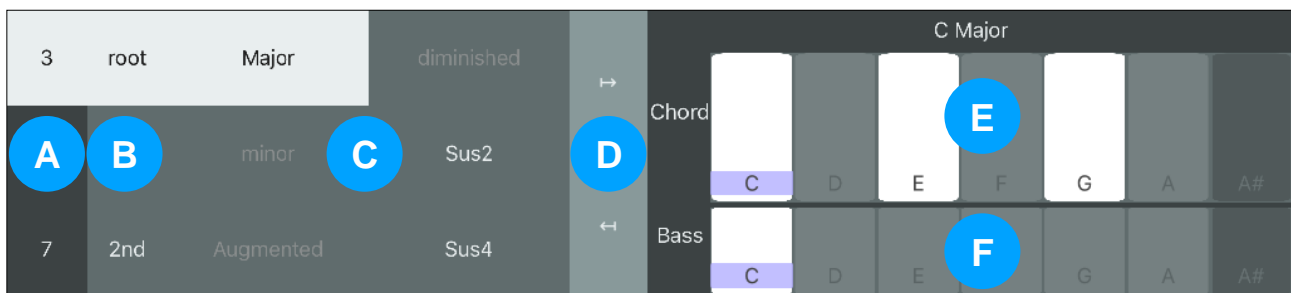
The chord selector subpanel (in non-diatonic mode) allows users to update any selected chord bars with diatonic and chromatic chords. Its elements are as follows:
A. *Chord type*. Select the chord type (3rd or 7th).
B. *Chord inversion*. Select the chord inversion.
C. *Chord quality*. Choose the quality of the chord. Diatonic chords are shown using a brighter label.
D. *Chord bar arrows*. These buttons provide the same functionality as the 'chord bar arrow' buttons in section 4.4.3.
E. *Chord root*. Choose the root of the chord. It will also play a preview of the chord in all the MIDI tracks selected in the Preview tracks tab (see Section 4.3.5).
F. *Chord bass*. Choose the real bass (lowest note) of the chord. If the note belongs to the chord, it will invert the chord. If not, it will create a slash chord. It will also play a preview of the chord in all the MIDI tracks selected in the Preview tracks tab (see Section 4.3.5).

In order to update a chord bar in the selected chord track, first select the bar, and then modify the different chord elements (type, quality, inversion…).

> **TIP**: Some of the external MIDI keyboards shortcuts shown in section 4.4.3 can also be used in this subpanel:
> i) Chords will be inferred when pressing the keyboard keys; ii) the modulation wheel will provide a similar function as the 'chord bar arrows' buttons.

4.4.6 Chord selector subpanel - Chromatic mode - minimized

This subpanel is shown whenever the helper panel is minimized. However, this subpanel works in a slightly different way than the maximized subpanel, as it focuses on providing diatonic chords using the current type, inversion, and root key:

- First, just like the diatonic minimized panel, the Z control changes the chord inversion.
- Second, there is a new control, the X control, which selects the next diatonic chord using the current type, inversion, and root key.

Therefore, if you want to select a chromatic chord for a particular chord bar, you need to use the maximized subpanel.

5A. Bar subpanel: MIDI note subpanel

The MIDI note subpanel, specific to MIDI tracks, is a type of bar subpanel, where you can add, edit, and remove notes in a bar.

5A.1 MIDI note subpanel: Elements
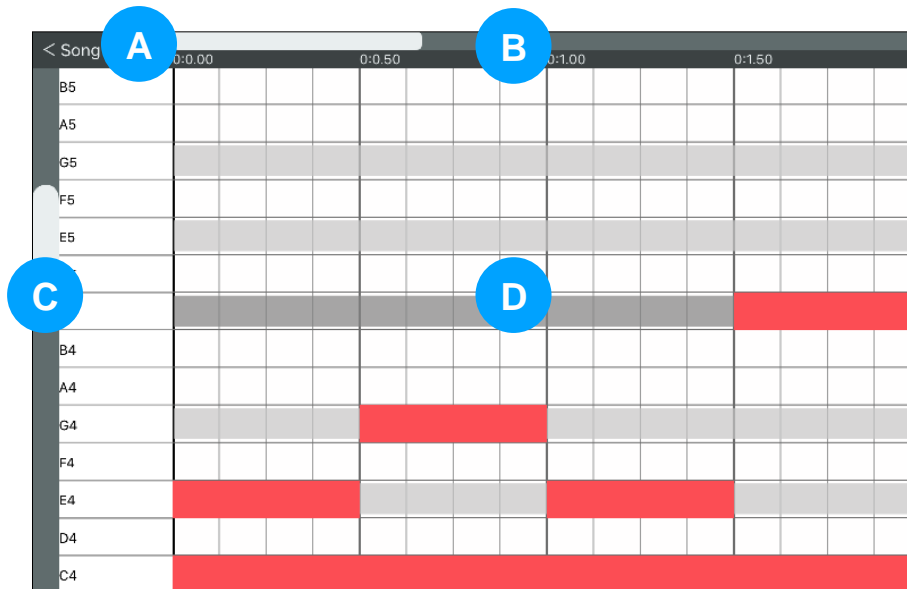
The elements of the MIDI note subpanel are as follows:
A. *"Back" Button ('< Song'):* Shows the *song subpanel*.
B. *Timeline scroll bar:* Changes the current position within the bar. It is possible to change the size of the scroll bar by LONG PRESSING this bar. Note that the full bar will be shown by DOUBLE TAPPING the scroll bar.
C. *Notes scroll bar:* Allows users to select how many octaves are shown in this subpanel. It is possible to change the number of octaves that will be shown by LONG PRESSING this bar. It is also possible to show only the octaves where notes are present by DOUBLE TAPPING the scroll bar.
D. *MIDI notes view:* Shows the notes contained within this bar. If a chord track is influencing this MIDI track, the chord notes will be highlighted, with the chord bass (lowest note) in a darker color. For inverted/slashed chords, the real root of the chord will be shown using striped colors.

The operations that can be performed if no notes are selected are the following:
- Create a note: TAP an empty note, or TOUCH AND DRAG over an empty note.
- Remove a note: TAP an existing note.
- Move a note: TOUCH AND DRAG a note.

In order to <u>select one or more notes</u>, TOUCH (outside a note) AND DRAG the lasso over the notes you want to select. Selected notes will have a clearer background.

The operations that can be performed with one or more selected notes are the following:
- <u>Move note(s)</u>: TOUCH AND DRAG the selected notes.
- <u>Paste note(s)</u>: LONG PRESS an empty space. It is possible to DRAG your finger in order to adjust what will be the final position of the copied note(s). Note that if the final position of the notes overlaps an existing note, the operation will be cancelled.
- <u>Remove note(s)</u>: TOUCH the selected notes.

In order to <u>deselect any selected notes</u>, TAP an empty space of the MIDI note subpanel.

> **NOTE**: Changing the number of octaves shown in the MIDI notes view will also change other controls like the piano player subpanel, and vice versa .

5A.2 Specific parameters sidebars

### 5A.2.1 Piano Roll Parameters

This tab shows the parameters used when editing notes in this MIDI track. The following options are available:
- *Grid Parameters*.
  - *Grid Size*. <u>Changes the grid size</u>. 1/4 equals one quarter note.
  - *Show all tracks*. <u>Show a preview of the notes of all other note tracks</u>.
- *Drawing*.
  - *Snap to Grid*. <u>While drawing / adding notes, snaps them to the grid</u>.
- *Moving*.
  - *Snap to Grid*. <u>While moving notes, snaps them to the grid</u>.
- *Recording*.
  - *Input Quantization*. <u>When recording, snaps the note to the beginning of the grid</u>.
  - *Time Quantization*. <u>When recording, force the note to be a multiple of the grid size</u>.
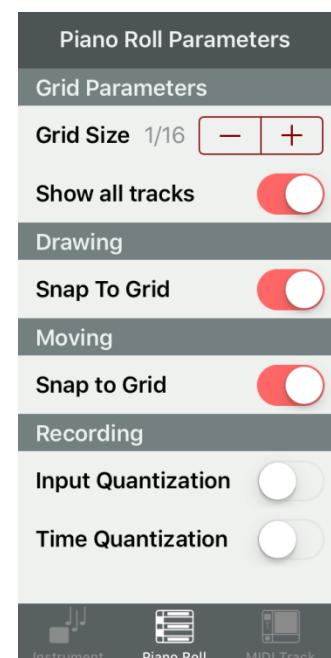
5A.3 Specific helper subpanels

5A.3.1 Basic automation subpanel
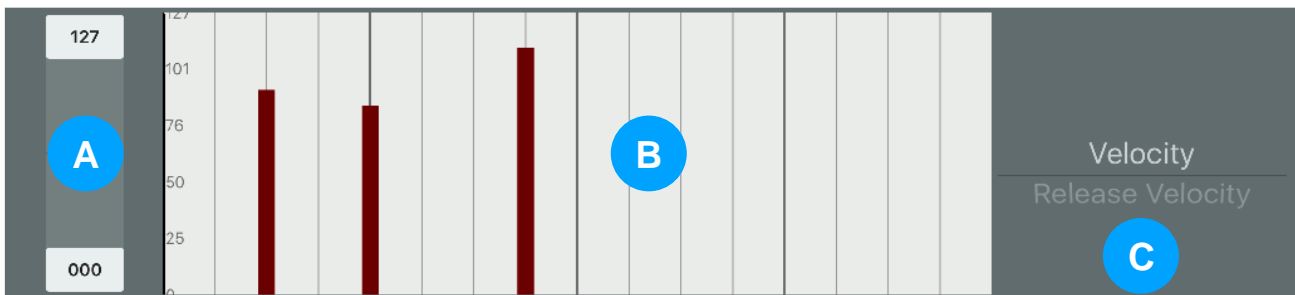
The basic automation subpanel allows users to change (basic) parameters of the MIDI notes. This panel appears when notes are selected in the *MIDI note subpanel.* As of this version, is limited to the velocity and release velocity of the notes. Its elements are as follows:

A. *Automation range.* Allows users to <u>change the range of the automation values</u> (e.g. from 0 to 63 and from 65 to 127).
B. *Automation values.* Allows users to <u>change the automation values</u> by TOUCHING the bars.
C. *Automation parameters.* <u>Shows and changes the current automation parameter</u> that can be edited in the 'automation values' view (B).

TIP: It is possible to change the automation values of various notes by finger swiping over the different bars.

### 5A.3.2 Basic automation subpanel - minimized
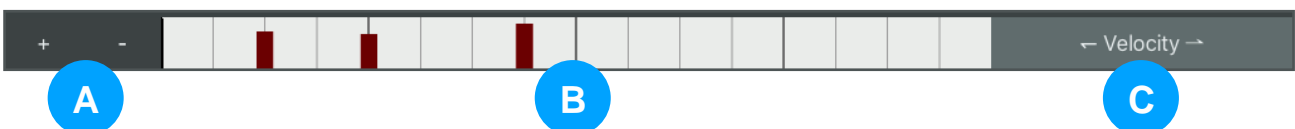
This subpanel is shown whenever the helper panel is minimized. If this subpanel, the controls are as follows:

A. *Automation values stepper.* <u>Increases/Decreases the automation values</u>.
B. *Automation values.* Allows users to <u>change the automation values</u> by TOUCHING the bars.
C. *Automation parameters.* Shows and changes the current automation parameter that can be edited in the 'automation values' view (B). Change the parameter by TAPPING this control.

6. Other subpanels

6.1 Instrument subpanel
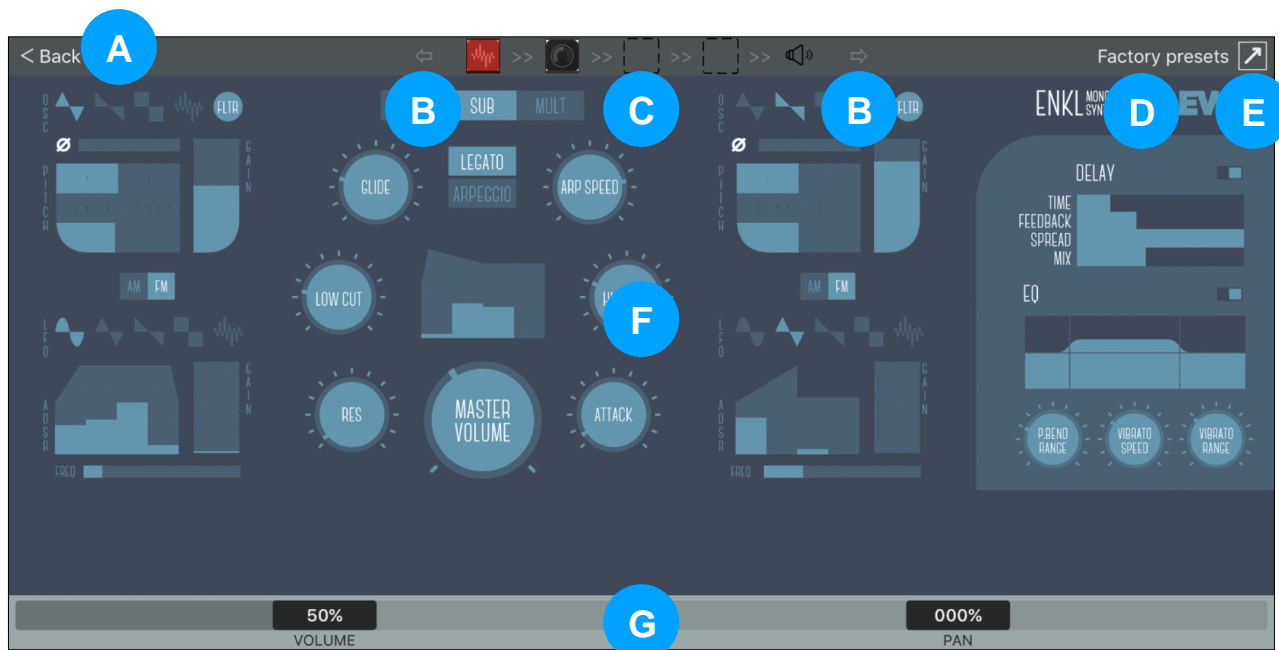
The instrument subpanel allows users to edit the parameters of AUv3 effects and instruments of a certain track. This subpanel can be accessed by double tapping on the image of a loaded instrument / effect, or by tapping the name of the instrument / effect in the instrument subpanel. The elements of this subpanel are the following:

A. *"Back" button ('< Back'):* Shows the previous subpanel.
B. *Previous / Next Track buttons*: Changes the selected track to the previous / next track. This will update the elements shown by this subpanel.
C. *Instrument / Effect buttons*: Show the view associated to the current instrument / effect in the parameters view (E).
D. *Factory Presets button*. If available, allows users to select the factory presets of the current instrument / element.
E. *Maximize/Minimize button*. Changes the size of the instrument subpanel. The maximized view occupies the whole iPad screen.
F. *Parameters view*. Show the view associated to the current instrument / element. This will allow users to change the parameters of the instrument / element.
G. *Minipanel*. This minipanel shows a minimized mixer view or piano view, depending on the current contents of the *helper panel*.

NOTE: On iOS 11+, the instrument subpanel will automatically maximize / minimize depending on the needs of the AU instrument / effect.