

JimAudio

Groove Rider GR-16



PROFESSIONAL QUALITY
GROOVE BOX AND
SYNTHESIZER

Groove Rider GR-16

User Manual v2.0.0

This manual reflects the latest software version 2.1.2
Latest version of this manual can be downloaded from page
<http://www.jimaudio.pro/grooverider>

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1. Basic Structure of Groove Rider GR-16

1.1 Pattern

A **Pattern** is an elementary musical block of the GR-16. There are currently five pattern banks in GR-16: **Bank A** (factory preset patterns), **Bank B** (Techno Sessions patterns, available as optional In-App purchase), **Bank C** (Vinyl House Grooves, In-App purchase), **Bank D** (Hip Hop Beats, In-App purchase) and a **User Bank**. User Bank can store up to 256 user Patterns.

Pattern can be up to 8 Bars in length.

Each Pattern consists of 16 Parts.

Each Pattern can have one MFX (Master Effect) assigned.

Each Pattern can have one Send Effect assigned.

Each Pattern has its own set of Pattern Parameters, which are accessible from the Main Menu > Pattern Parameters Menu. Only one Pattern can be loaded for playback / editing at one time. The name of currently loaded Pattern is shown on the Display. Prefix «U» in the pattern name stands for User Bank patterns, prefix «A» stands for Factory Preset Bank A patterns, prefix «B» for the Bank B and so on. To play loaded Pattern, you just tap the Play button.

1.2 Part

A **Part** represents one particular sound (like a one track in a sequencer). There are 16 Parts in each Pattern, numbered from 1 to 16. Every Part has its own Notes (Steps) track and Automation track (up to 128 Steps, 16 Steps per Bar), as well as unique set of Part Parameters, which determine Part's sound and its specific playback options.

Each Part can play back a sound of 3 types: synthesized oscillator sound, wavetable synthesis sound, or a PCM sample.

Each Part has its own Filter with unique settings.

Each Part has its own Modulator, which can be assigned to one of the six Part Parameters.

Each Part can have one IFX (Insert Effect) assigned.

A Part sound signal is always Mono. It becomes Stereo at later stage, when you add a Pan parameter motion to it, or pass it through the MFX or Send FX. You can also add a stereo to a Part by adjusting its Stereo Delay parameter.

1.3 Selected Part

Only one Part can be selected at a time, and it is called Selected Part. You can select a specific Part by tapping < **PART** and **PART** > buttons. The red led indicator in the bottom section above the Pads displays, which Part is currently selected. The bottom line of the Display Screen shows you also, which Part is currently selected. In the Trigger Pad Mode, pressing a Pad will automatically select the Part, which corresponds to the pressed Pad, lighting it up with the red led indicator.

Tip: to select a Part directly without using part select buttons, hold one of the Pad Mode buttons and tap a Pad. For example, hold TRIGGER button and tap Pad 1 to immediately select Part 1.

You can adjust the Parameters of Selected Part in the Parameters Panel of GR-16, by turning knobs and buttons. Some of the Part Parameters are inaccessible directly from the Panel. You will need to open the Main Menu > Part parameters to access them.

1.4 Step

A **Step** is an elementary block of Part's musical data track. It is used in most classic step sequencer devices. A Step can also be considered as a Note. Each Part has its own track of 128 Steps (16 Steps per one Bar). Each Step consists of:

- Up to 4 Voices. It means one Step can play back up to 4 notes simultaneously;

- Velocity, which equals a volume of a Step;
- Time Shift value, to shift the Step along the time axis forward or backward;
- Length value (the same as note length);
- Stroke, allows to fire up to 4 Notes in place of just one written Note (this also known as Ratchet on the other groove boxes);
- Chance (probability) value, can be used for randomization of corresponding Step's playback.

1.5 Pad

A **Pad** is one of 16 buttons (Pads) in the bottom section of GR-16. Depending on the current Pad Mode, each Pad can represent either a Part with corresponding Part number, or a specific Note, Chord or Slice. The red led indicator over a Pad shows you currently Selected Part's number, 1 - 16. The blue LED over a Pad shows you current playback cursor, or an event indicator (when in MUTE or ERASE Pad Mode). Pads can be assigned to have different colors, corresponding to the Part they are representing. It can be done in the Part Parameters menu.



2. Layout of Groove Rider GR-16

Top Panel area of GR-16 can display two pages: Main Page (with Display and Parameters Panel), and the Mixer page. You can switch between these two pages by tapping the **MIXER** button in the top right corner of the screen.

2.1 Main Page

Main Page consists of Display area, and Parameters Panel. Parameters Panel represents the Parameters of one currently Selected Part as set of knobs and buttons.

2.2 Display area



Display area is located at the left of the Top Panel. It has a Display, four buttons (**ENTER**, **EXIT**, **UP**, **DOWN**) to navigate through the menus, a **SONG** button, and a Value Jog knob, which can be used to change menu values, selected with a cursor.

Display can show different pages. In the pattern name display mode (as shown on the figure), it shows you the name of currently loaded Pattern, output sound animation (its type can be selected from Settings), some parameters of Selected Part (Filter type, Modulator type, IFX type), currently selected Master Effect and Send Effect types. When on this page, you can load another Pattern by tapping **UP** or **DOWN** buttons, or by turning the **Value Jog** knob. You can also tap the Pattern name on the Display to reveal a Pattern Selector, where you can select Pattern Banks and Patterns.

SONG button is intended to switch between the **Pattern Mode** (default) and the **Song Mode**. In short, in Pattern Mode you can create and design your Patterns. Use Song Mode to combine created Patterns to build your Songs. Song Mode in detail is described below in the *Section 7*.

Top bar of the Display shows you the *CPU* load meter, the *POLY* meter (polyphony load meter), and a current Pattern Tempo in BPM.

Bottom bar of Display shows you currently Selected Part. There is also a Part mute indicator in the right corner of the bottom screen bar. You can tap it to mute/unmute the current Part.

Depending on the mode, Display can show you either Main Menu or lists of different selectable parameter values. It also can display a Sample View of Selected Part, as well as the notes and Step Editor.

Tip: Tap the BPM indicator in the top of the Display to immediately access Pattern Tempo setting (a Pattern parameters menu will open).

2.3 Parameters Panel



On the Parameters Panel, you can see a set of knobs and buttons. Each of them represents certain Selected Part's parameter. Let's discuss them one by one.

Tip: you can double tap a knob or a fader to reset its Parameter to default value.

Tip 2: triple tap will activate the Midi Learn mode, in which you can assign incoming midi controllers to specific knobs. Don't forget to tap WRITE button to save your changes made in the Midi Learn mode.

2.3.1 Oscillator section:

WAVE button: tap to choose a wave source for the Selected Part. A list will appear on the Display, where you can choose between many synth oscillator types (**Osc** folder), wavetable sounds (**Wave** folder), or PCM samples (**Kicks, Snares, Claps** etc. folders), built-in PCM Instruments (**Instrum** folder) and user imported samples (**Samples** folder at the top of the folders list) for the Selected Part. You can also switch to the **Part Sound Presets** list from here, tapping on the "**Preset >**" button in the right upper corner of the Wave selection table. Or switch back to the Wave selection table by tapping the "**< Wave**" button in the left upper corner when in Part Sound Presets table.

PITCH knob: this parameter controls the pitch of Selected Part's sound

EDIT 1 knob. This knob located right under the PITCH knob, and can control various parameters, depending on the Wave type selected, and the Part's «Osc Controls» Parameter. For oscillator sound parts, this knob controls oscillator's *EDIT 1* parameter, which depends on selected oscillator type. For PCM sounds and Instruments, this knob controls the *DECIMATE* effect for the Part. And, if you set current Part's «Osc Controls» Parameter to a «Sample» value (from the Part Parameters menu), this knob will control the *Sample Start* parameter for this Part. For the wavetable type parts, this knob controls the wavetable position parameter.

EDIT 2 knob. This knob, located under EDIT 1 knob, can control several parameters, depending on the Wave type selected, and the Part's «Osc Controls» Parameter. For oscillator sound parts, this knob controls oscillator's *EDIT 2* parameter, which depends on selected oscillator type. For PCM sounds and Instruments, this knob controls the *BOOST* effect for the Part (by default). And, if you set current Part's «Osc Controls» Parameter to a «Sample» value (from the menu), this knob will control the *Sample End* parameter for this Part. For the wavetable type parts, this knob controls the wavetable pulse width parameter.

2.3.2 Filter section:

TYPE button: tap it to choose Part's Filter type. A list will appear on the Display, where you can select different Filter types for the Selected Part.

CUTOFF knob: controls Filter's cutoff frequency.

RESO knob: controls Filter's resonance;

ENV knob: applies ADSR envelope from the Envelope section to a Filter cutoff parameter.

2.3.3 Modulator section:

TYPE button: tap it to choose Part's Modulator type. A list will appear on the Display with available Modulator waveforms, their sources and destinations;

DEPTH knob: controls Modulator's depth

SPEED knob: controls selected Modulator's LFO frequency, or the speed of Modulator's EG

GLIDE knob: a parameter, which is not directly belong to a Modulator. It just controls the *Portamento* amount of the Selected Part.

2.3.4 Effects section:

TYPE button: tap it to choose IFX type for the Selected Part from a given list, which will appear on the Display;

IFX EDIT knob: controls the selected Insert Effect parameter (depends on the selected IFX type);

IFX ON button: turns ON or OFF the Insert Effect, currently assigned to a Part;

MFX ON button: determines, if this Part's output will be passed through the MFX (when ON) or will bypass it (when OFF). You can choose, which Parts you want to be passed through the MFX, and which not.

SEND FX knob: controls the amount of Part's sound, that will be sent to the Send Effect processing bus.

2.3.5 Envelope section:

AMP EG button: when ON, Selected Part's voice is being played back with the applied ADSR volume envelope.

ATTACK, **DECAY**, **SUSTAIN** and **RELEASE** knobs: use these to adjust ADSR envelope for the Selected Part.

2.3.6 Level/Pan section:

POLY button: when ON, Selected Part will play in polyphonic mode (several simultaneous voices can sound at a time); when OFF, Selected Part is monophonic, meaning that a new note will mute the previous one.

LEVEL knob: controls the volume of Selected Part in a mix;

PAN knob: controls the stereo pan position of the Selected Part in overall mix;

2.4 Mixer Page



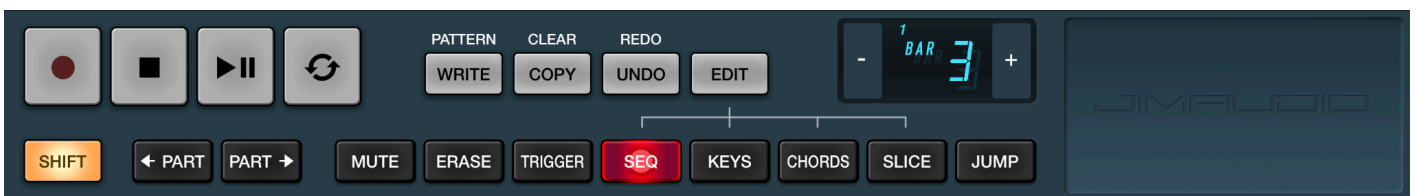
On the Mixer Page, you can see all 16 Parts at one time as mixer channels. In this view, you have an instant access to every Part's Level fader, Pan knob, Send FX knob, as well as Part's Mute and Solo buttons. This helps to instantly adjust the mix of the Pattern by controlling all the Parts at one time on one page. At the right, you can see a Master Volume fader, which has its unique value, stored for each Pattern.

LIMITER button over the Master Volume fader allows you to switch On / Off the internal Limiter, which prevents sound output from clipping. A peaking red led indicator over the LIMITER button shows you, when the clipping of the input signal occurs. The output signal in this case will start to «duck». This won't let the output to clip, but the sound will become "squashed". To avoid it, try to adjust your mix with the minimal amount of peaking led flashes.

2.4.1 Moving / Displacing the Parts. You can move and change the order of Parts in your Pattern from the Mixer Page. To do so, tap the Part's label in the bottom of Mixer's channel and hold it for a while. The channel will popup. Drag it left or right to a new place and drop. After such rearranging Parts numbers will change, corresponding to a new Part's order.

2.4.2 Multi-Soloing the Parts. Hold down **SHIFT** button while tapping **Solo** buttons on the mixer page to make multi-soloing of the Parts. You can also just tap one **Solo** button and swipe it to the left or right to solo or mute several parts in a row!

2.5 Middle Panel



In the Middle Panel, you can see a set of buttons, which perform different functions, described below.

2.5.1 Transport buttons

These are **Record**, **Stop**, **Play/Pause** and **Loop** buttons. **Record** mode allows you to record Part notes in real-time, as well as Automation for the currently Selected Part. You can also record a movement of MFX Parameter using a TouchPad area.

Loop button allows you to loop one bar in a Pattern. Use **Loop** button when your Pattern has more than one bar. Tap it during playback, and it will loop the currently played bar. You can also loop more than one bar, by tapping and holding the Loop button during the starting bar is played back and then releasing it during the ending bar being played.

Loop button can be assigned to display a **Tap** button instead of itself. It is adjustable from the Settings menu.

Use **Tap** button to change the playback Tempo of the Pattern. You can also set the desired Tempo from the Pattern Parameters menu, described below.

2.5.2 Part Select buttons (< PART, PART >)

Located under the Transport buttons. Use these buttons to choose a Selected Part by going to the previous or the next Part. Selected Part is marked with the red led cursor in the Pads area, and also seen in the bottom line of the Display.

2.5.3 Editor buttons (WRITE, COPY, UNDO and EDIT)

These four buttons intended for making changes and editing your Pattern.

WRITE button immediately saves all the changes made in current Pattern to internal disk memory. Pressing this button while holding **SHIFT** button invokes a **Pattern Menu** with the following options available:

- **Rename Pattern.** Don't forget to hit WRITE after pattern renamed to save changes;
- **Init Pattern.** Clears current Pattern to Init state;
- **Save to New.** Saves current Pattern to the first empty user pattern slot next to current Pattern;
- **Revert to saved.** Discards changes made to current Pattern and reloads a saved version of it;

COPY button invokes Copy/Paste command. It can be used to copy Patterns, Parts, Steps / Bars or Mixer levels. When you press it for the first time, it copies current Pattern and Part's state (including the Current Bar and Selected Part's Steps data) into an internal clipboard buffer. The button will light up, indicating that the Copy operation is just has been made. Then you need to go to a place, where you need it to Paste. It can be either a specific Pattern, Part or a Bar inside a Part. Press this button for a second time, and the Paste dialog will appear, asking you what do you want to Paste here:

- **Paste Part Notes: one bar** - use it to paste one Bar of the copied Part to the Current Bar of currently Selected Part.
- **Paste Part Notes: all bars** - use it to paste all 8 Bars (128 steps) from the copied Part into currently Selected Part. It is usually used when you want to copy one Part's notes to another Part, without affecting Part's sound settings.
- **Paste Part Sound** - use it to copy some Part's sound settings to another Part, not affecting Part's notes data.
- **Paste Entire Part** - usually used to copy one entire Part to another Part (including both Part's sound parameters and notes/automation data).
- **Paste Whole Bar** - use it to copy the whole bar within the Pattern to another bar. It will copy all 16 Part's notes and automation data (including MFX automation) from the source bar to the destination bar with overwriting previously existing material. It will not copy any Part Sound data.
- **Paste Pattern** - use it to paste the whole copied Pattern. This will overwrite currently selected Pattern with the copied one.
- **Paste Mixer** - use it to paste only Mixer state from one Pattern to another. It will paste Part Level, Pan and Send FX parameters of every Part, from the source to the destination Pattern. Also, it will paste the Master Pattern volume.

Pressing the **COPY** button while holding **SHIFT** button invokes a **CLEAR** command. It will show you a dialog, asking what you want to clear:

- **Clear Part: Current bar** - clears only one Current Bar in Selected Part
- **Clear Part: All bars** - clears all 8 Bars of the Selected Part
- **Clear Part Automation** - clears all parameter's automation of Selected Part, while leaving its Notes data unmodified.
- **Init Part** - resets both, Sound Parameters and Note data of Selected Part, including Part automation.
- **Init Part sound** - resets only sound parameters of Selected Part to defaults, not touching its Notes data.

UNDO button allows you to cancel one last recent change of some parameter in a Pattern. Useful when

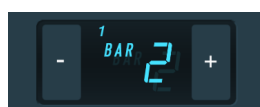
making a lot of edits. Pressing **UNDO** button while holding **SHIFT** button invokes a **REDO** command. When you save changes to your part using **WRITE** button, the undo history is cleared.

EDIT button allows to enter a special *Step Editor Mode*, which allows you to edit Part's note data and automation in a visual representation on a Display.

SHIFT button. When held, this button can be used to invoke alternate functions of the Editor buttons, described above. Also, if you hold **SHIFT** button while turning a knob or a fader, it will switch between coarse/fine adjustments of that knob's parameter value.

SHIFT Lock mode. Sometimes it is not convenient to hold the Shift button, while making knob adjustments with another hand or finger. For this reason, you can use a Shift Lock feature. You can hold the **SHIFT** button and slide a finger up (or down) for some distance to activate Shift Lock mode. In this mode you can use only one finger for knob adjustments. Shift Lock mode is deactivated when you tap anything on the screen, which is not a knob.

2.5.4. Bar / Octave Selector

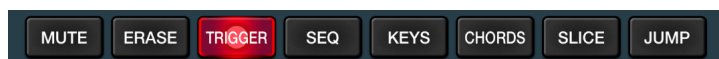


Bar / Octave Selector allows you to switch between the Bars, and also to select a keyboard Octave, depending on the current Pad Mode:

- When in **SEQ** or **JUMP** Pad Mode, the bar buttons (+ and -) select the current **Bar**, from 1 to 8. In this case, a big digit shows the currently selected Bar number.
- When in **KEYS**, **CHORDS** or **SLICE** Pad Mode, the bar buttons (+ and -) select the keyboard **Octave**. There are 8 octaves available, numbered from -1 to 6. In this case, a big digit shows the octave number.

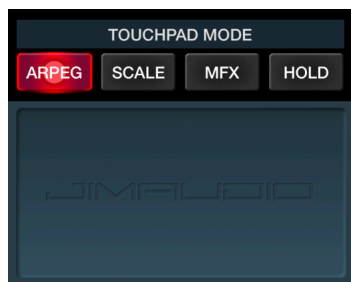
A small number inside this window shows you a playback position, which Bar is currently being played.

2.5.5 Pad Mode buttons



These are eight black buttons in the Middle Panel, from MUTE to JUMP. They select the Pad Mode you currently using, and will be described in detail below in the section 3 of this manual.

2.6 TouchPad area



A TouchPad is a rectangle area with the *JimAudio* logo in it. It can be used to control MFX parameters, as well as to play Arpeggiator and Scale features with a touch of your finger. Red background color of the TouchPad indicates, that the MFX is currently being turned ON (held) and processes the sound. Four buttons above the TouchPad are used to switch between different modes of the TouchPad:

ARPEG button. When this button is lit, and the **SCALE** button is not (so called "**Arpeg**" mode, as seen on the figure above), then the TouchPad currently controls the Arpeggiator. You can hold down your finger on the TouchPad, while simultaneously press some Pads when in **KEYS**, **CHORDS**, **SLICE** or **TRIGGER** Pad Mode to play these Pads through Arpeggiator. The X axis in this case controls the time divider of the Arpeggiator, while the Y axis controls a note gate (note length) of played notes.

Tip: Tap the ARPEG button for a second time, and it will bring you directly to the Arpeggiator settings menu, where you can adjust Arpeggiator parameters.

Tip 2: While touching the TouchPad, if you tap it with the second finger, not releasing the first one, Arpeggiator will enter a latch mode. It will hold on current held pads without using your fingers, unless you tap the TouchPad again.

SCALE button. When this button is lit, and the **ARPEG** button is not (so called "**Scale**" mode), then the TouchPad is currently used to play notes from a selected scale.

Tip: Tap the SCALE button for a second time, and it will bring you directly to the Scale selection menu, allowing to select a desired scale.

Arpeg + Scale mode. This is a special mode, when both **ARPEG** and **SCALE** buttons are lit. In this mode, you play the notes from a selected scale through the Arpeggiator. X axis selects a note from the scale, while Y axis controls note's gate (note length).

MFX button. When this button is lit, then a TouchPad controls the parameters of currently selected MFX (depend on MFX type you select).

Tip: If you tap the MFX button for a second time, it will bring you directly to the MFX type selection dialog on the Display.

HOLD button. When this button is ON (lit), it allows you to leave the MFX being ON even when you put away your finger off the TouchPad. When this button is OFF, then the MFX works only while you hold the finger on the TouchPad, and releases when you put it away.

3. Pad Modes explained



There are eight different Pad Modes, which determine Pads behavior. You select between them by using the eight Pad Mode buttons, located in the Middle Panel. A corresponding Pad Mode button will light up when you tap it. Each Pad Mode is described below:

MUTE mode. When it this mode, Pads are acting as a Mute button for each Part. A Pad is lit, when the corresponding Part is not muted (playing), and is dark, when that Part is being muted (not playing). Also, a blue led indicators over the Pads in the MUTE mode show you the note events, which occur on their corresponding Parts.

If you press a Pad while holding the MUTE button, you will activate the **SOLO** mode. A MUTE button becomes blinking, indicating that you are in the SOLO mode. In SOLO mode, you can listen to one Part, which is currently soloed. To solo multiple Parts, tap several Pads while holding down MUTE button. You can also do multi solo / unsolo by holding SHIFT button and pressing Pads while in MUTE+SOLO mode. To **Unsolo**, you can tap the blinking MUTE button.

Mute Sync mode. By default, Mutes in this mode work immediately, when user hits a corresponding Pad. You can enable so called “Mute Sync” mode, to make mutes work in sync with the Beat, Bar or Pattern. This is extremely useful during live performances. Enable it from the Settings menu -> “Mute Mode” parameter.

ERASE mode. Use this mode to erase some already recorded notes in your Parts. To do so, enter ERASE mode. Each Pad in this mode represents the corresponding Part. Press Play, and while the Pattern is being played, tap a Pad at some moment of time, when you want to erase the existing note. It lets you to quickly erase specific notes without getting deep into the Step Edit mode. If you hold down the Pad while the whole pattern loop is played one cycle, it will erase all the notes in the corresponding Part.

Tip: You can also erase several Part's notes by holding several Pads simultaneously while playback.

TRIGGER mode. This is standard drum machine layout, where you can play all the 16 Parts from the one screen. In this mode, each Pad represents one of the 16 Parts. If you hit the Pad, it will immediately play the corresponding Part's note (its pitch depends on currently selected Key Pattern Parameter). When you hit a Pad in the TRIGGER mode, a corresponding Part will automatically be selected.

Tip: If you want to select a Part silently WITHOUT its sound being played, then tap a Pad while the TRIGGER button is being held down.

SEQ mode. In this mode, you can quickly edit Part's Steps (notes) data, the same way as on most popular drum machines. When in this mode, each Pad represents one of 16 steps of currently Selected Part. So, you are able to see only one Bar in this mode. The Bar Selector display shows you, which Bar is currently visible. Pressing a Pad in this mode places/removes a note into a corresponding Step. When you place a note here, its octave and pitch will correspond to the currently selected Octave and the Key Pattern Parameter.

KEYS mode. This mode turns the Pad buttons into a virtual keyboard, so you can play notes, according to the currently selected Key and Scale. Bar Selector in this case represent currently selected Octave, and allows you to change the current Octave if you tap the “+” and “-“ buttons. Tap **KEYS** button for a second time to execute a shortcut to the *Pattern Key* selection menu.

CHORDS mode. This mode allows you to play scale chords, according to the current Key, Scale and Chord Set Pattern Parameters. Tap **CHORDS** button for a second time to execute a shortcut to the *Chord Set* selection menu.

Tip: to quickly change current Chord Set without going deep into the menus, hold down the SHIFT button and press the CHORDS button. You may want to do it several times to find desired Chord Set.

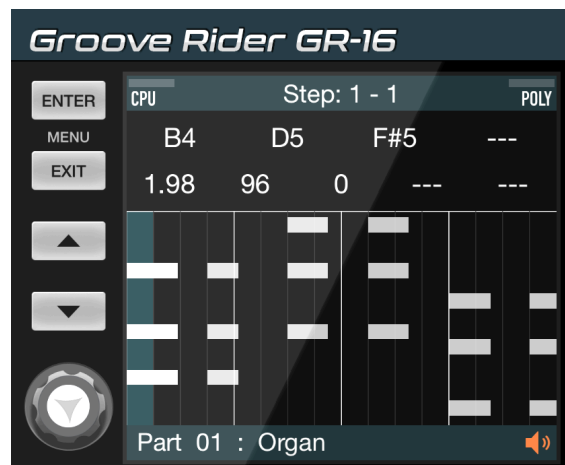
Tip 2: don't forget to turn ON the POLY button on the Part which you want to play chords. Otherwise you will hear only one note instead of chord.

SLICE mode. This mode allows you to play back your imported sample like it is being split into 16 slices. It works only with imported samples, not with the built-in PCM or Instrument sounds. When in this mode, each Pad represents one slice (from 1 to 16) of the currently Selected Part. By default, when you import a sample into GR-16, it will be mapped to 16 equal slices. In case you need to edit or fine tune them, you can use **Slice Edit mode** by tapping the **SLICE** button until it start to blink. When in this mode, you will see 3 oscillator section knobs become pink color. Use them to adjust every slice's *Pitch*, *Slice Start* and *Slice End* parameters accordingly.

JUMP mode. Allows to immediately change the playback order of pattern steps. Use it to create interesting fills and breaks during live performance. In this mode, every Pad represents a one Step. When pressed, a playback cursor will immediately jump to the corresponding Step. You can hold down Pads to achieve the 16th notes repeating effect. You can also hold several Pads simultaneously, to achieve more complex and interesting conditions.

Note, that after you have made a jump, the JUMP button will start to flash. It means, that the Pattern is currently not in sync with its original beat timeline. To get the Pattern back to the original beat sync, just press the flashing JUMP button again and release all the Pads you have been holding.

4. Using Step Editor



Step Editor mode allows you to perform detailed edits of your Part's notes and automation data. To enter it, press the **EDIT** button. Editor window will appear on the Display, and the EDIT button will start to flash. You can view and edit only one Selected Part's data in this mode. To view/edit another Part's data, simply select another Part with the part select buttons. To exit Step Editor, either tap **EDIT** button again, or tap **EXIT** button.

In Step Editor you can see notes on a Display. Default-colored notes represent normal (not sliced) notes, while *Pink* colored notes represent notes with a slice number assigned to them. *Green* notes represent notes with step trigger condition assigned to them (refer section 4.5).

There are 4 sub modes of the Step Editor mode, depending on what button flashes in sync with the EDIT button: **SEQ**, **KEYS**, **CHORDS** or **SLICE** button.

4.1 Step Edit mode (EDIT+SEQ flashing)

This mode is activated by default when you tap the **EDIT** button. In this mode, pressing a Pad will move the edit cursor to the corresponding Step position, from 1 to 16. You can also move the edit cursor by tapping steps on the Display, or pressing the **UP** or **DOWN** menu buttons, when the **ENTER** button is not lit. Just like in the *SEQ Pad Mode*, Pads in this mode represent corresponding Steps in currently Selected Part. Those Pads, which have notes recorded on their corresponding Steps, will glow.

You can use Bar Selector buttons to switch between the Bars while in this mode.



When you move edit cursor to a Step position with some note stored in it, a corresponding note on the Display will become white and start to blink (as seen on the figure above). It is now the currently selected note, and you can edit its properties by tapping the numeric values above the notes display and turning the **Value Jog** knob. There are 9 values you can edit for a single Step:

Voice 1 - Voice 4 values (in the top row): set the note pitch, played at this Step. So, there are maximum 4 notes you can store simultaneously at one Step, accordingly. Turn the Value Jog to change the pitch by semitones, when Voice 1 - Voice 4 value is selected with cursor. If you hold down the **SHIFT** button while turning it, note values will change by octaves.

Length value: sets the note length in Steps, floating point value. Use **SHIFT** while turning the Value Jog knob for smaller fine-tuning values.

Velocity value: sets the note velocity, from 1 (min) to 127 (max).

Time Shift value: sets the shift of the note along the time axis, from -100 (one step earlier) to +100 (one step later). Again, you can use **SHIFT** button for smaller value changes.

Stroke value: sets the special stroke for the note. Allows to play up to 4 notes at a time of one note (also known as a *Ratchet* feature in the drum machines world) with a velocity variation for each note, allowing you to create drum fills and rolls effects. Stroke also lets you to turn on the *Sample Reverse* effect for any specific note in your Part. There are two types of Sample Reverse: one is full reverse () - the whole sample is played in reverse, and second is half-reverse () - played from the middle of a sample. Half-reverse can be handy for one-shot samples, to skip their low-volume tail.

Condition value: sets the *step trigger condition* value for the note. It allows you to make interesting variations in the Pattern, by allowing given note play only at certain moments of time, when you need it. *Step trigger conditions* values are described in detail in the **4.5** section below.

Tip: you can directly add or delete certain Steps while in this mode, just like in regular SEQ Pad Mode. The only difference is that you need to hold the SHIFT button while pressing the Pad.

Tip 2: You can select several Steps at one time by holding down SHIFT button while tapping and dragging the notes area (Step range selection). In this case, you will be able to tweak several selected notes' properties simultaneously

4.1.1 Automation Editing



You can edit Part's automation data when in *EDIT+SEQ* mode. To do so, hold down the Pad, which corresponds to a Step you want to edit automation for, and turn the Part's Parameter knob in the Parameters Panel to a desired value. A yellow automation curve will appear over the note editor display, allowing you to view the whole automation track for the chosen Parameter in the Selected Part.

4.2 Input Keyboard mode (EDIT+KEYS flashing)

This mode allows you to simplify editing of the Voices of currently selected Step. To enter it, just tap the **KEYS** button while in *EDIT+SEQ* mode, so both **EDIT** and **KEYS** buttons must become flashing. Then, select a Step you want to edit by tapping it on the Display. If selected Step already contains a note or notes, the corresponding Pad(s) will light up (depends on the currently selected *Octave*).

Use Bar Selector buttons to change current Bar, or hold down SHIFT while tapping Bar buttons to change keyboard *Octave* when in this mode.

Tap Pads to add or remove note Voices into a selected Step.

4.2.1 Step Record mode

You can successfully use the Input Keyboard mode for the *Stepped Recording* of notes on a track. To do so:

- 1) Select a Part you want to edit.
- 2) Enter the **Step Edit** mode by tapping **EDIT** button. **EDIT** and **SEQ** buttons should start to flash.
- 3) Tap **KEYS** button to enter *Input Keyboard* mode. **EDIT** and **KEYS** buttons should start to flash.
- 4) Press a Pad with a note you want to record in. A short note will be recorded into selected Step.
- 5) Press the **DOWN** arrow button to go to the next Step.

Repeat steps (4) and (5) until you fill the Bar with the notes you want.

4.3 Input Chords mode (EDIT+CHORDS flashing)

Similar to the *EDIT+KEYS* mode, this mode allows you to quickly put in the chord to the selected Step, or delete it from there. To enter this mode, just tap the **CHORDS** button while in **EDIT** mode, so both **EDIT** and **CHORDS** buttons should become flashing. Select a Step you want to edit by tapping it on the Display. Tap a Pad to directly record the chord into selected Step position. Tap a Pad for a second time to remove a chord from a Step.

Use Bar Selector buttons to change current Bar, or hold down SHIFT while tapping Bar buttons to change keyboard *Octave* when in this mode.

4.4 Input Slice mode (EDIT+SLICE flashing)

This mode is intended to work with notes on a Part where slices are used. To enter it, tap SLICE button while in EDIT mode, so both EDIT and SLICE buttons should become flashing. Select a Step you want to edit by tapping it on the Display. Tapping a Pad when in this mode will insert a note with the corresponding slice into current cursor position. If there already was a note, then it will be replaced with the new one, and assigned slice number will change according to a pressed Pad.

4.5 Step trigger conditions explained

There may be some cases, when you would want a note in your pattern to be triggered only at certain moment of time. A most common example for this is the Crash Cymbal, that you would want to be played only at the beginning of the pattern, and then never again while this pattern loops. Or one time on each 8 pattern playback cycles. Or even randomly, with a given probability value. You would also want some notes in a pattern to be played only when you activate a special "Fill" mode. Trigger conditions can help you to program a 4-bar pattern to sound like an 8-bar pattern, with drum fills or some extra notes, that will appear only on the second pattern's playback cycle. All these aspects can be covered using *step trigger conditions*.

In the Step Editor (EDIT button flashing), no matter what of its sub-mode is chosen, you can edit a step trigger condition of every note. This is how it's done:

1. In EDIT mode, select a note you want to edit by tapping the corresponding step on the editor display, so the desired note must start blinking.
2. In the upper part of Display you will see selected note's properties. Tap the most right cell in the bottom row of these properties, so the title of Display should change to "**Edit Step: Condition**".
3. Drag the Value Jog to change the value. If you drag the value forward, you will see different trigger condition options, described below. If you drag the value backward, you will see a probability options for a given note. Holding down the SHIFT button changes the units of value adjustment.

Trigger condition types and their descriptions:

--- means that no trigger condition is assigned to the current step; A note will be played normally, every time it is triggered by a sequencer.

XX% percentage value indicates, that a probability of playback is assigned to the current step. A note will be triggered randomly, with a given probability, from 1% (very rare) to 99% (very often).

Prev this value indicates, that current step will be triggered in accordance with the most recent evaluated step condition in the current Part. It copies the condition of the *previous* step in the Part. Use it to group several notes, that intended to be played using exactly the same trigger condition, which precedes them.

!Prev the same as "**Prev**", but uses the opposite (inverted) value of the most recent evaluated step condition in the current Part. A note will be played, if the previous step condition was not triggered, and vice versa.

NPar this value indicates, that current step will be triggered in accordance with the most recent evaluated step condition in the Neighboring Part. Neighboring Part is the part with previous index number. This value is mostly used if you need to interconnect several conditional notes, which belong to different (neighboring) Parts.

!NPar the same as "**NPar**", but uses the opposite (inverted) value of the most recent evaluated step condition in the Neighboring Part. A note will be played, if the previous step condition on the Neighboring Part was not, and vice versa.

1st means, that current step will be triggered only once, during the first playback cycle of the Pattern.

!1st the same, as "**1st**", but inverted. I.e. current step will be triggered every time, except during the first playback cycle of the pattern.

Fill this value indicates, that current step will be triggered only when the *Fill mode* is activated. To activate the *Fill mode*, just hold down the SHIFT button during pattern playback. A Fill mode is deactivated when you release the SHIFT button.

!Fill the opposite of previous condition: current step will be triggered when *Fill mode* is not activated, and will be silent while *Fill mode* is active.

A:B this type of trigger condition is used, when you want a note to be triggered once during the given number of pattern playback cycles. Examples:

1:4 a note will be triggered during the 1st playback cycle of each 4 repeating cycles (during 1st, then during 5th, then 9th and so on);

2:3 a note will be triggered during the 2nd playback cycle of each 3 repeating cycles (during 2nd, then during the 5th, then 8th and so on);

1:2 a note will be triggered during each first playback cycle of a given two repeating cycles;

2:2 a note will be triggered during each second playback cycle of a given two repeating cycles;

4:4 a note will be triggered during each fourth playback cycle (4th, 8th, 12th, 16th and so on).

!A:B the opposite of "**A:B**". Condition value is inverted. It means, a note should be triggered every time, except for those cases, that match the "**A:B**" condition described above. Examples:

!1:4 a note will NOT be triggered during the 1st playback cycle of each 4 repeating cycles, but will play normally within the rest 3 playback cycles;

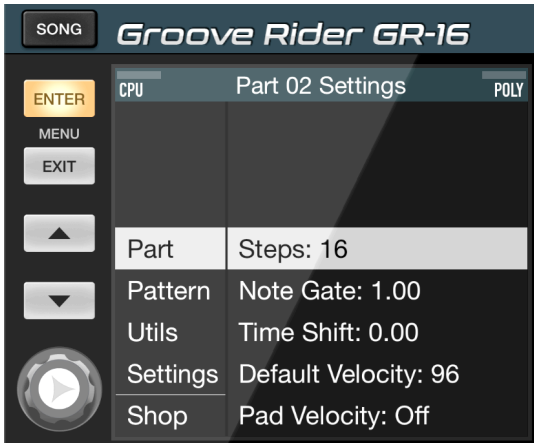
!2:3 a note will NOT be triggered during the 2nd playback cycle of each 3 repeating cycles (during 2nd, then during the 5th, then 8th and so on);

!1:2 a note will NOT be triggered during each first playback cycle of a given two repeating cycles;

!2:2 a note will NOT be triggered during each second playback cycle of a given two repeating cycles;

!4:4 a note will NOT be triggered during each fourth playback cycle (4th, 8th, 12th, 16th and so on).

5. Main Menu



To enter Main Menu, tap the **ENTER** button when GR's Display is on the *pattern name display screen*. If GR is currently in the Step Editor or other mode, you will need to tap **EXIT** button one or several times before doing so, and only then tap **ENTER** button to enter the Main Menu. You can navigate through the menu items by using **UP** and **DOWN** buttons, or by touching the menu screen directly. To modify certain Parameter in the menu, first select a parameter with the cursor, and then use the **Value Jog** knob to modify its value. Use **SHIFT** button together with the Value Jog knob to fine tune the value with smaller amounts. Some items in the menu have a list of possible values for them. To enter such list, you just tap the Parameter, or press the **ENTER** button, and a list of values will appear in the square window on the Display.

Main Menu is subdivided into four main categories, which can be seen in the left column: **Part**, **Pattern**, **Utils** and **Settings** (see figure above).

Part Parameters menu (*Part NN Settings*) displays Parameters of only one currently Selected Part. These parameters are unique for each of the 16 Parts in a Pattern.

Pattern Parameters menu (*Pattern Settings*) contain global settings for the whole Pattern. They are stored within each Pattern you create.

Utils menu contains some handy utilities and functions, which you can perform by selecting one in a list and hitting the **ENTER** button.

Settings menu (*Global Settings*) contain settings and parameters, which are global for the entire Groove Rider app. These settings are stored globally, meaning that they are not stored inside any of the Patterns.

Every parameter of these menus is described in the following sections.

5.1 Part Parameters List

Part Parameter	Description
Steps	This value determines, how many Steps does the Part contain for each Bar. Default value is 16. You can use smaller values to achieve different cross part step shifting rhythmical effects.
Note Gate	A multiplier to all the notes' length values in the given Part. Equals 1 by default. If you set this value to 0.5, for example, all the notes in this part will become shorter by a half.
Time Shift	A shift value, in Steps, by which all this Part's notes are shifted along the time axis. 0 by default.
Default Velocity	A default velocity value for the Part notes. 96 by default.
Pad Velocity	Activates a velocity pads simulation for a given Part. There are 3 values: Off , Vertical and Radial . In Vertical mode, the higher point you tap on a Pad, the louder note will be. In Radial mode, the close to the Pad's center you tap, the louder note will be.
Automation	Type of automation curve in current Part. Can be either Smooth (default) or Stepped .
Stereo Delay	Use it to turn on the Stereo Delay effect for the Part. Value is given in milliseconds, and reflects the delay time between channels. Value can be either positive, or negative. Set it to zero to turn the effect Off (default).
Mute Group	With this parameter, you can make several Parts to be muted/unmuted in the MUTE Pad Mode just by muting/unmuting only one of them. It is like grouping the Parts together.
Exclusive Group	Standard drum machine feature, allows you to make an exclusive group of Closed and Open Hi Hat, for example.
Tuning	Selects a microtonal scale for current Part from over 100 available scales.
Base Midi Key	If a non-standard microtonal scale selected, it selects a base midi key, from which the scale starts.
Base Pitch	If a non-standard microtonal scale selected, it selects a pitch of a first note in the selected microtonal scale.
Osc Controls	This parameter determines the behavior of the Oscillator section's EDIT 1 and EDIT 2 knobs (for the PCM samples only). If set to « Distortion », then these two knobs will control the Decimate and Boost parameters, accordingly. If set to « Sample », then these two knobs will control the Sample Start and Sample End parameters. Note, that only one of these two modes can be selected for a given Part. Two modes cannot be used simultaneously.
Sample Mode	Determines sample playback mode: Off, Loop and One-Shot. Set it to Loop to enable current Part's sample loop. Set it to One-Shot to make sample to play all the way to the end, ignoring note lengths (only when AMP EG is off).
Sample Size	Used for sample loops. Set it exactly to match your sample's number of beats. This value is used in conjunction with the <i>Sample Re-Pitch</i> parameter.
Sample Re-Pitch	Used for sample loops. If set to ON, then the pitch of the sample will be automatically corrected to match the loop with the current BPM. Also, when ON, the <i>Pitch</i> parameter of the Part has no effect.
Sample Reverse	Turns on or off the sample reverse for the current Part
Groove	Selects a groove template, which will be applied to the notes of current Part
Groove > Time	Groove to Time amount. Determines, how much the selected Groove will affect Part notes' start positions.
Groove > Vel	Groove to Velocity amount. Determines, how much the selected Groove will affect Part notes' velocities.
Random > Vel	Can be used to add a randomization to the velocity values in the Part.
Color	Sets the Pads color for each specific Part

Label	Allows you to name Parts in a Pattern. Part label can consist of maximum 8 characters, and can be seen on a Mixer Page, and in the bottom bar of the Display.
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5.2 Pattern Parameters List

Pattern Parameters list can be accessed from the *Main Menu > Pattern* folder. Each parameter is described in the table below.

Pattern Parameter	Description
Length	Sets the Pattern length in Bars.
Name	Select it to rename current pattern
Tempo	Sets the Pattern tempo BPM, from 20 to 999.
Rhythm Base	Choose between 16, 32, 16T (16th Triplets) and 32T (32th Triplets) rhythmical bases. Affects the whole Pattern.
Swing	Swing amount value. Applies global swing to all Part's notes of the current Pattern.
Master Gain	Pattern sound output volume. Controls the same parameter as the Master Fader on the Mixer page.
Chain To	Set this parameter to automatically jump to specific Pattern after the current Pattern is played until its end. Be sure to enable the global setting «Chain Mode» to make it work.
Chain Repeat	Determines, how many times a current Pattern should be played back, until it jumps to a Pattern, specified in the <i>Chain To</i> parameter.
Key	Sets the note key for the currently selected scale. Default value is C.
Scale	Sets the scale type to be used in the scale playback for the <i>KEYS</i> and <i>CHORDS</i> Pad Modes.
Chord Set	Choose one of 5 different chord sets for the currently selected scale, which is used to play chords in the <i>CHORDS</i> Pad Mode.
Arpeggiator Pattern	Select the rhythmical pattern for the Arpeggiator from 50 available.
Arpeggiator Mode	Choose one from six Arpeggiator playback modes: Up , Down , Up/Down , Up/Down 2 , Random and Trigger (to play chords).
Arpeggiator Octaves	Sets how many octaves the Arpeggiator should play. Try to experiment with different values.
Arpeggiator Repeat	Sets Arpeggiator to repeat its each note N times in a continuous playback
Send FX	Selects <i>Send Effect</i> type for the current Pattern
Send FX Edit	Adjust selected <i>Send Effect's</i> parameter (depends on selected Send Effect type)
Send FX Level	Adjust the output level of selected <i>Send Effect</i> . The same as the master <i>Send FX</i> knob under LIMITER button on the Mixer page.
MFX	Select <i>Master Effect</i> type for the current Pattern

5.3 Utilities List

A list of Utilities can be found in the *Main Menu > Utils* folder. All of them described in the table below.

Utility name	Description
Quantize Part	Use this function to quantize Selected Part's notes. A dialog will appear, asking you what do you want to quantize. You can choose from « Quantize note Start », « Quantize note Length » and « Quantize note Start & Length » options.
Clone Part Bar	Clones (distributes) currently selected Bar in selected Part to all other bars of this Part. When done, all bars inside selected Part will be identical.
Clone Pattern Bar	Clones (distributes) currently selected Bar in all 16 Parts to all other bars of the Pattern. When done, all bars inside the Pattern will be identical.
Reset Part Velocities	Use it to reset all notes' velocities to the default value for the Selected Part
Clear Part Automation	Clears all parameter's automation for the Selected Part
Clear MFX Automation	Clears all automation of the Master Effect in the current Pattern
Empty Current Pattern	Clears all notes and automation data in the current Pattern, but leaves all Part's sound settings unchanged. Very useful to create blank template from any existing factory or user pattern.
Delete All User Patterns	Resets all 256 user Patterns to Init's. Use with care, it cannot be undone.
Transpose Part Up	Transposes Selected Part's notes up by one semitone
Transpose Part Down	Transposes Selected Part's notes down by one semitone
Transpose Part's Bar Up	Transposes Selected Part's notes up by one semitone in the current bar
Transpose Part's Bar Dn	Transposes Selected Part's notes down by one semitone in the current bar
Shift Part Steps Right	Rotates Selected Part's notes and automation data right one step
Shift Part Steps Left	Rotates Selected Part's notes and automation data left one step
Share Pattern	Exports current Pattern to a .pattern.gr16 file and displays a share sheet, allowing you to send exported pattern file to AirDrop or other available iOS services. A pattern file contains current Pattern's data, including samples used in it. You can then import this file back from other services into GR-16 using standard iOS share sheet.
Export All Patterns & Songs	Exports all 256 user Patterns (incl. all samples used) and all currently existing Songs into one .bank.gr16 file, and displays a share sheet, allowing you to send exported bank file to AirDrop or other available iOS services. You can then import this file back from other services into GR-16 using standard iOS share sheet.
Render Pattern Audio	Renders one entire pattern loop to a stereo wav file and prompts you with the options, where you want to export it.
Render Pattern Stems	Renders all sounding and unmuted parts of current pattern as separate wave files into one zip archive.
Render Chain Audio	Renders a full pattern chain, starting from current pattern, to a stereo wav file and prompts you with the options, where you want to export it. Be sure to turn on the " Chain Mode " setting to enable this function.
Render Chain Stems	Renders a full pattern chain, starting from current pattern, as separate (track by track) wav files into one zip archive. Be sure to turn on the " Chain Mode " setting to enable this function.
Render Quality	Selects audio render format from 3 available: 16-bit, 24-bit and 32-bit wav.
Ableton Live Set Export	Exports all Part stems of current pattern in form of ready to use Ableton Live Set project, packed into one zip archive file.

5.4 Global Settings List

A list of Global Settings parameters, which can be accessed from the *Main Menu > Settings* folder. They are described in the table below.

Global setting name	Description
Sample Rate	Current sound engine's playback sample rate. In case if you try to select another sample rate, but it changes back to the original value, it means that the selected sample rate is not supported by your device.
Buffer Size	Select the audio buffer size. The lesser this value, the less the latency of playback (when you play notes live with your fingers), but the more CPU power will it require on your device.
Ableton Link	Tap ENTER button to reveal the Ableton Link settings dialog. <i>Ableton Link</i> is an interface, used to synchronize playback of Groove Rider app with other apps and devices, which also have a support of Ableton Link.
IAA Host Sync	Allows or disables using of the Inter-App Audio host synchronization. You may want to turn it to Disabled , if, for example, you are connected to the IAA host, but want to use Ableton Link sync instead of the Host Sync (the Host Sync, if enabled, always has the priority over the Ableton Link sync).
Midi Clock In	Enables slave synchronization to Midi Clock, received on the Midi In port
Clock Latency	Adjust the incoming Midi Clock latency to match the clock master device
Master Limiter	Turn On/Off the build-in Master Limiter effect. Acts the same as LIMITER button on the Mixer Page.
Background Mode	Turn it ON if you want to use Groove Rider's audio while it is in the background.
Background Timer	A timer, used to automatically switch off the Groove Rider's audio engine, when it does not play any sounds but is still working in the background. In case if you have forgot to close the app from the background, not to drain the battery on your device.
Mute Mode	Select mode for part Mutes. In Default mode, part Mutes affect parts immediately, as you tap them. In other modes (Beat Sync , Bar Sync , Pattern Sync) part Mutes will automatically sync for a next Beat, Bar or Pattern start, after you tap them, to take effect. Sync modes can be very useful in live performance.
Chain Mode	Turn it ON if you want to use Chain Patterns mode. Note, that while GR-16 is in the Song Mode, the Chain Mode will be disabled.
User Sub-Banks	Choose to sub divide existing 256 user patterns into several groups (User banks) of 128, 64, 32 or 16 patterns, for simplicity of navigating.
Midi Thru	Turn it ON if you want all midi messages, that arrive to GR-16 midi input port, to be sent (copied) to GR-16 midi output port
Midi In	Selects Midi Input source port for receiving midi data
Midi In Mode	In Omni mode, all incoming midi events are redirected to one currently Selected Part. So, the user can play and control only one Part, which is currently selected in the interface. In Poly mode, every Part receives data by its separate midi channel from 16 available, with corresponding number.
Midi In Channel	Select channel filter for receiving midi data when in Omni midi mode.
Virtual Midi In	Enables / disables Groove Rider's Virtual Midi In port
Bluetooth Midi Devices	Opens the dialog to configure connected Bluetooth Midi Devices
Velocity Curve	Selects midi input's notes velocity response curve.
Midi Learn...	Activates Midi Learn mode. You can also activate Midi Learn mode by tapping any knob control quickly 3 times, until it starts to blink.

Reset Midi Learn	Resets midi controllers mapping to the factory default
Midi Knob Mode	Determines how GR-16 reacts to incoming midi control change events: Catch or Jump (default). In Catch mode, controlled parameter will start to change only after incoming midi controller's value will match the internal parameter's value. In Jump mode, parameter will change immediately, which often can lead to an audible value jump.
Mute Buttons	Sets the midi control (button) type you are using to control Part Mute buttons via midi: either Momentary or Toggle .
Other Buttons	Sets the midi control (button) type you are using to control all the other GR-16 buttons via midi: either Momentary or Toggle .
Midi Out	Selects Midi Output destination port for sending midi notes data to other apps
Virtual Midi Out	Enables / disables Groove Rider's Virtual Midi Output port
Send Midi CC	Enable it, if you want the knob's values (movements and automation) to be sent to the Midi Out as midi controllers. This option is disabled by default.
Metronome	Metronome settings: Off , Rec 0 (clicks only during Record), Rec 1 (clicks during Record and makes a pre-count of 1 Bar), Rec 2 (clicks during Record and makes a pre-count of 2 Bars), Always On (metronome plays constantly, even during regular playback).
Metronome Gain	Use to adjust metronome click's volume
Rec Quantize	Automatic note quantize during Record. Has three settings: Off (no quantize during Record), Note Start (only note's start times are being quantized during Record), Start + End (note's start times AND their lengths are being quantized during Record)
Scale Range	Selects scale range for the TouchPad scale playback mode, in octaves
Tempo Lock	Set to ON to prevent current BPM Tempo change, when switching between different Patterns with different BPM's.
Pattern Lock	Turn it to ON to prevent any Pattern switching. You can use it when you are in a process of creating some important Pattern and don't want to lose changes you've made by occasionally jumping to another Pattern.
Skin	Change interface skin. Swipe left to edit selected skin and reveal additional skin parameters (or select "Custom..." skin)
Show Pad Labels	Turn On / Off the Pad labels. You can assign a label to a specific Part in the Part Parameters menu. Labels are only visible when in MUTE, ERASE and TRIGGER pad mode.
Mixer Order	Determines channel order on the Mixer page (iPad only)
Level Meters	Sets the behavior of level meters on the Mixer page and on the right side of part parameters page. Values are Peak , RMS or RMS+Peak .
Animation	Choose animation type for the main GR-16 display screen (when not inside the menus). It can be Oscillogram , Channels , Channels + Oscillogram and Off .
Bar Selector	Selects a type of a Bar Selector between 4-bar (the old type four button selector, available in Groove Rider from version 1.0, which could operate with only 4 bars maximum), and 8-bar (new selector, which allows to operate with more than 4 bars).
Follow Cursor	Set it to ON if you want Note Editor to automatically follow the playback cursor, showing you the bar that is currently being played.
4th Button	Choose a role of the fourth transport button on the main screen: Loop or Tap. Loop is default.
Push Notifications	Use this to turn on (if not already) GR-16's push notifications service, to stay informed about new released pattern banks, as well as other new apps and special offers from JimAudio.
Restore Purchased	Select it to restore your previously purchased pattern banks on this device (e.g. when you install/reinstall GR-16 onto your new device).
Version Info	Select it to check current app's version.

6. Importing User Samples

6.1 Understanding File Structure of GR-16

A few words about how GR-16 works with files. Unlike most DAW's, Groove Rider uses 3 data locations:

1. First location is application's **Documents** folder, which you can access using *iTunes File Sharing*, *Files.app*, or you can use GR's internal import functions to import your sample files and even folders in here. This location is open to the user, and can be accessed from the main **standalone** app. You can put your wav or aiff user samples in there in any way you want, and GR will access them, allowing you to load these samples into your patterns. Think of it as a temporary media (just like a USB stick), where you put files to be able to load them into your patterns inside GR.
2. Second location is only to be used with GR **audio unit (AUv3)**. This location is hidden and directly inaccessible for the user from outside. However, you can use GR's internal import functions to import your samples and folders here. Also, you can copy existing sample files from the standalone **Documents** folder manually by going to the standalone app and swiping left over a sample file in a list.
3. Third location is GR's **Internal sample cache**. It is hidden from the user and controlled automatically. When you load some user sample from Documents folder into one of your patterns, this sample is automatically being copied to the internal sample cache and no longer connected with the original sample file in the Documents folder. All currently loaded patterns inside GR are also located in the internal cache. You cannot access them directly. However, you can import and export these patterns inside/outside of GR by using build-in Utility functions.

This approach gives following benefits:

First, you can safely delete/move/reorganize contents of the Documents (or AUv3) folder without risk to your patterns. You can even entirely delete all the contents of the Documents folder, and your patterns that are loaded in GR will still be played back with all the user samples on their right places! This is because all the data is stored in the well-organized internal cache.

Second, the Internal cache holds only those samples, which are being used by your patterns. So, it is quite easy just to call *Export Patterns Bank* utility, and all of your 256 user patterns, currently loaded in GR, will be immediately exported to a single **.bank.gr16** file including all the samples used in them! Without any extra unused data. And later you can restore it all just by importing this single file back into GR. No need to mess with samples and project folders.

Third, if you decide to replace a sample in one of your patterns with another one, all the other your patterns which could share the same sample will remain unchanged.

Groove Rider GR-16 is capable of importing user samples in .wav, .flac or .aiff format of length up to 16 seconds each. GR-16 supports mono samples only. When you import a stereo file in GR, it will be automatically converted to mono internally.

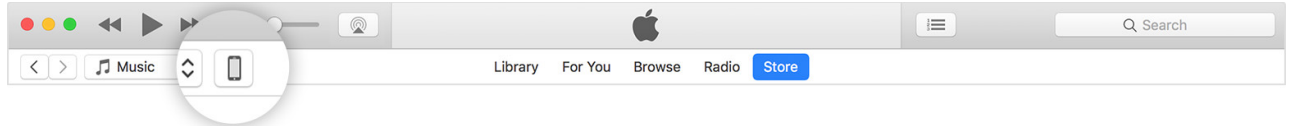
There are several ways of importing your user samples into Groove Rider, described in the following sections below. Choose one which is more suitable for you.

6.2 Importing samples and folders using Documents Picker (new)

This is the easiest and fastest way to do it, and is available starting from the 2.0 version of Groove Rider. Tap **WAVE** button and select **Samples** folder, then scroll all the way down. You will see two options: **Import Samples** and **Import Folder**. Select the desired one, and the *Files.app* dialog will appear on top of the GR interface, allowing you to select sample(s) to import from any accessible location on your device.

6.3 Importing samples from computer using iTunes File Sharing (obsolete)

- 1) Connect your iPhone or iPad to a computer and open iTunes.
- 2) Click the iPhone icon as seen in the figure below:



- 3) Click the File Sharing in the left sidebar:



You will see a list of apps on your device, which support iTunes File Sharing, including Groove Rider app. Click it, and you will see the contents of Groove Rider's Documents folder at the left.

- 4) Drag your samples into this window. You can also drag-in entire folders with samples, but remember: GR does not support nested folders (i.e. folders inside folders), only one level folders can be copied here.
- 5) Now it's time to use those imported samples. Open GR-16 app, press the **WAVE** button on a free Part you want to use. A wave select list will appear on Display with folders list at the left. Select "**Samples**" folder to access samples you've just imported.

6.4 Importing samples using Files.app (on iOS 11+)

You can copy samples easily between different apps inside your device using *Files.app*, if you have iOS version 11 on your device. The process is straightforward. Open *Files.app*, select “**On My iPad / iPhone**” from a *Locations list* and you will see a list of app folders, which support *Files.app*. Open desired app’s folder to see a list of document files it contains. Select one or several files and copy them to Groove Rider’s folder, using standard interface functions.

6.5 Importing a sample from other apps using Share Sheet

Most of musical apps support sharing their samples with other apps by providing corresponding share button. Normally, after tapping such share button, a share sheet will appear with the list of apps and services, which can receive given file. In this list, you will be able to find a Groove Rider app icon. Tap it, and the sample file will be copied right into Groove Rider’s Documents folder (without need of using iTunes File Sharing or Files.app). As always, copied sample can then be found in the **Samples** folder inside the Wave selector table.

6.6 Opening a sample into a Part directly from Files / AudioShare

You can open a sample to a Part directly from the Documents Picker dialog or *AudioShare* app, without the need of saving it in any intermediate folder. To do so, press **Wave** button, select **Open** tab at the left table. You will see two options in the right table: “**Open Sample...**” and “**Import from AudioShare...**”.

- Select “**Open Sample...**” to reveal Documents Picker dialog, where you can browse and select a sample from any accessible location or your device.
- Select “**Import from AudioShare...**” to import from the AudioShare app. *AudioShare* app will open. Select a desired sample from there and tap “**Import into app grooverider**” button to finish the process.

What happens when you do such kind of sample import: selected sample will be loaded directly into selected Part of current Pattern, using GR’s internal sample cache, without saving it to the Documents (or AUv3) folder. So, it will not take any additional storage space.

6.7 Importing several samples at once in a zip file

To import several samples into GR at once, you must first archive them into one .zip file. Then, send this .zip file to GR using standard iOS share sheet, or service like AirDrop, DropBox, email etc. GR will show up a dialog, asking you to type in a folder name, where you want all the zipped samples to be extracted inside Groove Rider’s *Documents* folder. You can type any folder name you want (14 characters max), including the “User” folder, and your samples will be extracted to that location.

Note, that given .zip file must *not* contain subfolders in it, otherwise all the sample files from this zip will be merged into one folder with overwriting without asking. Also, if you specify a folder name, which already exists in the Documents folder, then zip file will be extracted (added) to this folder with overwriting files of the same name in it (if they exist).

6.8 Deleting imported user samples from GR-16

You can delete user samples, previously imported into GR's user samples folder, right from the app's interface. To do so, open Wave selector, then open **Samples** section and *swipe left* with your finger over a sample (or even a folder) you wish to delete. A red "**Menu**" button will appear with two options. Choose "**Delete**" to confirm the deletion. You can also choose "**Copy to Audio Units**" to copy selected file to the GR audio unit storage to be accessed later from AUv3.

Note, that even if you delete a sample file, which is currently being used in one or several of your patterns, those patterns will still remain unchanged since all samples used by a pattern are already stored in the *internal sample cache*.

6.9 Importing your own WaveTable files

You can import your own wavetables to use inside GR-16 in its new wavetable synthesis sound engine. Serum format .wav files are currently supported. There are two ways of importing them:

- 1) Use Share sheet (Open In...) dialogs from the other apps, or even Air Drop if you are transferring a file from Mac or other device, to open it in Groove Rider. Groove Rider will automatically detect, that given .wav file is not a sample, but a wavetable, and will store it in the appropriate place inside the app.
- 2) You can just place your wavetable files manually into the Groove Rider's Documents/**Wave** folder (no subfolders in it currently supported), by using Files.app, for example.

When imported, you can access your wavetables by tapping the WAVE button in the Oscillator section, and selecting the "Wave" folder from the left list of folders, which is located at the top of the list next to the "Osc" folder.

7. Song Mode

7.1 Song Mode in general

Song Mode is used to create a sequence of user patterns (a Song) to be played back from the first pattern to the last one. It is very similar to the introduced earlier pattern Chain mode, but has much more possibilities. You can create unlimited number of songs from the existing 256 user patterns.

Here are some advantages of a Song Mode in comparison to a Chain Mode:

- You can use the same Pattern several times inside a Song. In Chain Mode, every pattern can only be used once.
- You can assign a specific combination of **Part Mutes** for every pattern in a Song. For example, imagine a Song, created from only one user Pattern, by varying only Part Mutes of this Pattern.
- You can set **bar start** and **bar end** number for each Pattern used in a Song.
- You can easily **rearrange** Pattern order in a Song, which is nearly impossible to do in a Chain mode.
- You can record **Song Automation** over the existing Pattern Automation when in Song Mode.
- Export the whole Song to a wav file. Or export its stems.
- Finally, you can export your Song to a single ***.song.gr16** file, which will contain all the necessary data of a Song, including all used Patterns and samples in it. This can help, for example, if you want to create a backup of a whole Song, to be restored back in the future. As well as to transfer a whole Song to another iOS device with GR-16 installed.

To enter Song Mode, you just tap the **SONG** button, located in the left top corner. It will lit red, indicating that GR-16 is now in the Song Mode. To go back to the normal pattern mode, tap the **SONG** button again.

After entering Song Mode, some of GR-16 controls and the whole workflow will start behaving a bit differently. For example, in Song Mode, you can still edit all the parameters of the patterns on the screen by turning knobs and buttons, however these changes will not be saved. Because in Song Mode you can modify and save only Song parameters and settings, such as the order of patterns in a song, song automation, and specific song parameters. If you want to edit the original patterns, you should go back to the pattern mode and do it there.

Song Automation is a special kind of parameter automation in GR-16. You can record your Song Automation after pressing the **REC** button in real-time. Unlike Pattern Automation, Song Automation recording can be done for the whole Song in one record take. Note, that you can record only one knob movement at a time.

Song Automation has a higher priority over the existing Pattern Automation. Recording of Song Automation does not affect the original Pattern Automation, instead, it simply overrides it. Song Automation cannot be edited. However, you can use the **UNDO** button to cancel your last recording automation session.

Note: **Recording in the Song Mode** is only intended to record the **Song Automation** (the movement of knobs and the MFX). You won't be able to record any other events in Song Mode.

7.2 Song Menu

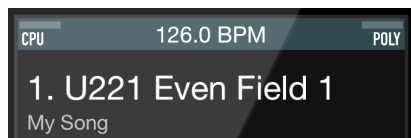
After entering Song Mode, the main menu of GR-16 will change. To enter main menu, tap ENTER button. In Song Mode, you will not see a Part, Pattern and Utils menus anymore. Instead, you will see a new, «**Song**» menu, which is used to set or modify the parameters of currently selected Song, as well as to perform some operations with songs. You can also call Song Menu directly by pressing SHIFT+WRITE.

Song menu functions are described in a table below:

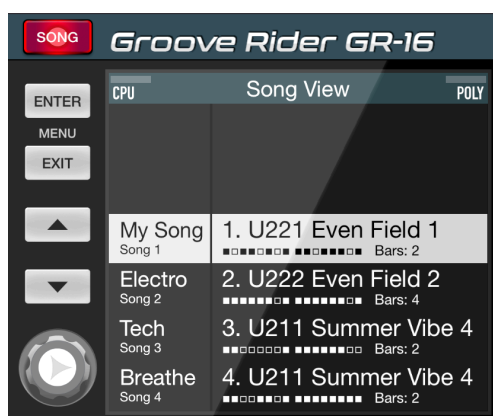
Song Menu item	Description
Name	Select to enter a title of currently selected Song
Global Tempo	When it is OFF , every pattern in a Song will follow its original tempo. In this case, you will be able to have different tempos inside one Song. However, if you want to use only one constant (global) tempo in your Song, you can turn this setting to ON , and then specify the desired tempo value in the next menu parameter called Song BPM . In this case, doesn't matter, what tempo did the pattern originally have, it will be reset to the specified Song BPM tempo value.
Song BPM	Specify the global tempo of a whole Song. Works only when Global Tempo is ON.
New Song...	Select to create new empty Song.
Clone Song	Select to create a clone (duplicate) of currently selected Song.
Delete Song	Select to permanently delete currently selected Song.
Clear Song Automation	Clears all recorded song automation in all patterns of a currently selected Song. Note, that the original pattern automation will not be affected.
Share Song...	Select it to export currently selected Song to a single .song.gr16 file.
Render Song Audio	Select to export currently selected Song's audio to a single wav file
Render Song Stems	Exports the stems (separate tracks in wav format) of currently selected Song
Render Quality	Select the bit depth for the wav export

7.3 Song View

In Song Mode, on the main GR-16 display you can see two title lines, as opposed to one title line in the Pattern mode. These two titles are the **current Pattern** (bigger one) and the **current Song** (small title under the current Pattern title). You can always see, what Song is currently selected, and which its Pattern is currently being played. Also, the *current Pattern* text line shows you a number, which corresponds to the index number of this Pattern within the current Song:



If you tap on either of these two text lines, GR-16 will show a Song View:



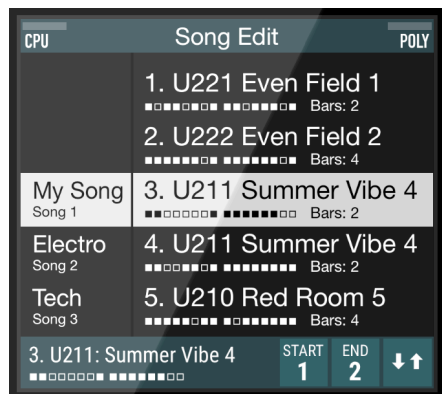
On the left panel, there is a Song list, where you can see all the songs you've created. If you tap on any Song, you will see its contents - a Pattern list on the right panel. To switch from one Song to another, you should tap the desired Song in the left list AND also select any its Pattern in the right list.

In the Song View you can do the following:

- switch between your Songs
- navigate through Pattern list within your Songs, jump to selected Patterns
- tap on “**Add...**” label to add a Pattern to an empty Song
- **swipe left** on any Pattern in a list to access Song's **Pattern Menu**. This menu is described in detail in the following topic.
- **Copy / Paste** Patterns in a list by tapping the **COPY** button. Tap COPY button again to paste previously copied Pattern into selected position in your Song.

7.4 Song Edit

To edit currently selected Song, tap the **EDIT** button to enter Song Edit mode. EDIT button will start to flash, and you will see a Song Edit view on a display. Song Edit looks almost the same, as the Song View described in the previous section, plus it has the bottom edit bar, that shows you the currently selected Pattern and some of its parameters, like current Part mutes state, starting bar (**START** button), ending bar (**END** button), and a button with down/up arrows, which enables you to move patterns in a list.



There are several things you can do when GR-16 is in the **Song Edit** mode:

- **Add patterns** to your Song. To do so, tap the “Add...” label in the end of the patterns list. You will see a list of user patterns appear. Select one from this list and tap on it.
- **Rearrange the order** of patterns in a Song (or *move patterns*). To do so, select (tap) the Pattern you want to move, and then tap the small down/up arrow button in the bottom edit bar, and then use the Value Jog knob (as well as Up/Down buttons) to move currently selected Pattern up or down in the list. Tap EXIT button when done.
- **Change the starting bar** of a Pattern. It can be useful, if you want a certain Pattern in a Song to start playing, from any its bar other than Bar 1. To do so, select (tap) desired Pattern from a list and then tap the START button in the bottom edit bar, and then use Value Jog (or Up/Down buttons) to adjust the desired starting bar value for the selected Pattern in a list.
- **Change the ending bar** of a Pattern. By doing so, you can set a specific Pattern to play more than one time (repeat) for given number of bars. To do so, select (tap) desired Pattern from a list and then tap the END button in the bottom edit bar, and then use Value Jog (or Up/Down buttons) to adjust the value for the selected Pattern. Note, that by default, this value will change by the multiple of the Pattern’s length number, for convenience. To make it change by smaller values (bars), hold SHIFT button while adjusting the value.
- **Swipe left for Menu** on a Pattern, to perform some specific operations with a certain Pattern. A menu dialog will appear with the following options:
 - **Insert New Pattern:** choose it to insert new user pattern at selected position without replacing any existing patterns;
 - **Duplicate Pattern:** duplicates selected Pattern in a list;
 - **Replace Pattern:** choose another user Pattern to be placed instead of the selected one;
 - **Clear Pattern Automation:** clears recorded Song Automation (if any) in the selected Pattern (original Pattern Automation will not be affected);
 - **Delete Pattern:** removes selected Pattern from the Song. Note, that the original user Pattern will not be deleted or affected.

You can also call Pattern Menu by pressing SHIFT + COPY.

- **Edit Pattern’s Part Mutes.** Select desired Pattern from a list (tap it), then tap the MUTE pad mode button to see current Part mutes state. Tap the Pads to mute/unmute certain Parts in current Pattern. These changes will be immediately assigned to current Pattern in a Song, only when you

are in the Song Edit mode. If you change the mutes when not in Song Edit mode, then these changes will have temporary effect.

- **Copy / Paste** Patterns inside your Song. Tap the **COPY** button to copy selected Pattern. Select new position in the Patterns list and tap **COPY** button again to paste previously copied Pattern into new selected position in your Song. A paste dialog will appear with two options: **Paste** and **Insert & Paste**. The first one will paste new Pattern by overwriting the old one, while the second one will insert a new pattern.

To store any changes in your Song, don't forget to tap **WRITE** button. Otherwise, your changes will be lost after you switch to another Song, or when you exit the Song mode.

8. Midi Specification

8.1 Midi Input

There are two midi input modes in GR-16: Omni and Poly. As described above, in **Omni** mode, all incoming midi events are redirected to one currently Selected Part (you can also set up a receive channel filter for this from the Settings menu). So, the user can play and control only one Part, which is currently selected in the interface. In **Poly** mode, every Part receives data by its separate midi channel from 16 available, with corresponding number.

GR-16 supports Midi Control Change messages (midi mapping is listed in the table below), as well as Program Change and Pitch Bend events.

Program change message switches User Patterns from 0 to 127 (midi bank 0). To be able to select User Patterns numbered 128-255 (midi bank 1), you must first select midi bank 1 (send Bank Select LSB = 1 and Bank Select MSB = 0 messages) before sending Program change message.

Midi CC#	Controlled parameter	Midi CC#	Controlled parameter
0	Bank select MSB	80, Pitch Bend	Oscillator Pitch
1, 85	Modulator Depth	82	Oscillator Edit 1 / Decimate / Start
7	Part Level	84	Oscillator Edit 2 / Boost / End
10	Part Pan	86	Modulator Speed
32	Bank select LSB	87	IFX Edit
71	Filter Resonance	88	Send FX Amount
74	Filter Cutoff	102	MFX X-value
83	Filter Env	103	MFX Y-value
73	ADSR Attack	104	IFX On/Off
75	ADSR Decay	105	MFX On/Off
72	ADSR Release	106	MFX: TouchPad On/Off
76	ADSR Sustain	120	All Sounds Off
81	Glide (Portamento)	121, 123	All Notes Off

8.2 Midi Output

GR-16 supports Midi Output feature. To use it, you must enable it in the Settings menu. When enabled, GR-16 sends all played notes by midi from all the 16 Parts to one midi output port in real-time. Each Part's notes data is sent on its respective midi channel. So, Part 1 data is sent on midi channel 1, Part 2 on midi channel 2 etc. You can also turn on sending the knobs values as midi controllers from the Settings menu -> "Send Midi CC", which is OFF by default.

8.3 Midi Thru

In case you want all incoming midi data to be sent to GR-16 Midi Output port, you can enable **Midi Thru** function from the Settings menu -> "Midi Thru", which is OFF by default.

8.4 Synchronization to Midi Clock

GR-16 supports slave synchronization to the incoming Midi Clock. It is disabled by default. To enable it, open Settings menu and set **Midi Clock In** to “Allowed”. To ensure that Midi Clock will not interfere with another available synchronization sources, disable **Ableton Link** and **IAA Host Sync** from the Settings menu.

8.5 Using external Midi notes to trigger Pads and Slices

You can use your midi controller or keyboard to play all 16 Pads from one midi channel, using **Omni** Midi Mode and **Trigger** pad mode. This reflects the way you trigger Pads on the GR-16 screen, when it is in Trigger pad mode. In this case, every Pad will be mapped to the corresponding midi note on a keyboard. To do so:

1. Set **Midi Mode** (from Settings menu) to **Omni**
2. Select **TRIGGER** Pad Mode (press TRIGGER button)
3. Play midi notes to GR-16 from your midi controller. In this mode, every two octaves (24 notes) on midi keyboard are mapped to Pads (1-16) with 8 unused notes left in each second octave. So, Pad 1 is mapped to midi notes C1, C3, C5 etc., Pad 2 is mapped to midi notes C#1, C#3, C#5 etc., Pad 3 is mapped to D1, D3, D5 etc. and so on to the Pad 16, which is mapped to midi notes D#2, D#4, D#6... These two octaves are repeated across the keyboard for convenience. For more detailed info, see the table below:

Pad 1	C-1, C1, C3, C5, C7	Pad 9	G#-1, G#1, G#3, G#5, G#7
Pad 2	C#-1, C#1, C#3, C#5, C#7	Pad 10	A-1, A1, A3, A5, A7
Pad 3	D-1, D1, D3, D5, D7	Pad 11	A#-1, A#1, A#3, A#5, A#7
Pad 4	D#-1, D#1, D#3, D#5, D#7	Pad 12	B-1, B1, B3, B5, B7
Pad 5	E-1, E1, E3, E5, E7	Pad 13	C-2, C0, C2, C4, C6, C8
Pad 6	F-1, F1, F3, F5, F7	Pad 14	C#-2, C#0, C#2, C#4, C#6, C#8
Pad 7	F#-1, F#1, F#3, F#5, F#7	Pad 15	D-2, D0, D2, D4, D6, D8
Pad 8	G-1, G1, G3, G5, G7	Pad 16	D#-2, D#0, D#2, D#4, D#6, D#8

*Tip: You can also play selected Part's **slices** by sending midi notes in similar way. The only difference is that you need to select **SLICE** pad mode, and make sure, that the Part you want to play is currently selected.*

*Tip 2: You can use your midi keyboard to input/edit notes and slices in the Step Editor. This is very convenient way of writing and editing notes in GR-16 by using midi keyboard. Just make sure Midi Mode is set to Omni, and one of the **SEQ+NOTES** or **SEQ+SLICE** modes are selected.*

8.6 Using Midi Learn

You can assign various knobs, faders and some of the buttons of GR-16 to be controlled via Midi from your external Midi Controller using Midi Learn feature.

To enter Midi Learn mode, tap very quick 3 times onto any GR-16 **knob**, until it starts to flash. When control is flashing, you can examine the Midi CC# number, assigned to this control, on the main display (or “N/A” if not assigned yet). When in this mode, you can tap and select any control you want (knobs, faders, and some buttons). If they start to flash, it means they are available for assignment.

Next, to make an assignment, after you’ve selected the desired control and it is flashing, start moving (or switching) your midi control on your external controller. You’ll notice a Midi CC number will be displayed on main display, and selected control will start to move.

To save changes, you must tap **WRITE** button. If you will not, your changes will be cancelled and discarded.

You can assign several controls during one Midi Learn session this way. Just don’t forget to tap WRITE button to save changes in the end. Also remember: if you tap somewhere outside of any control, or you tap a control, that cannot be assigned, Midi Learn mode will be cancelled and your changes will be discarded.

Note about Momentary and Toggle buttons on your external Midi controller. Some of the buttons are **Momentary** (they send 127 value while held down, and 0 value when released), and some are **Toggle** (every time you push it, it toggles between OFF and ON, and sends one value, 0 or 127, accordingly). Usually, any Midi controller device has its own onboard configuration system (or menu), which allows you to configure its buttons, and set the desired mode for any of them. GR-16 supports both of these modes, but you need to select, which one you are going to use, from GR-16 *Settings menu* -> *Mute Buttons* and *Settings menu* -> *Other Buttons*. **Mute Buttons** setting determines, which type of buttons you are going to use to control GR-16 channel Mute buttons (on the Mixer page), while **Other Buttons** setting determines, which type of buttons you are going use for all the rest of GR-16 onscreen interface buttons.

9. Using GR-16 as AUv3 Audio Unit

9.1 General notes about using GR-16 as AUv3

Starting from version 2.0 Groove Rider can be used as AUv3 Audio Unit inside any AUv3 host app, such as *AUM*, *AudioBus*, *Cubasis*, *GarageBand* and others. In general, most of the standalone GR-16 functions are also available in the AUv3 version, however, there are some differences, described below:

- There are two GR-16 AUv3 plugins available in the bundle. The second one, named “**GR-16 Multi-output**” is intended for use with hosts, which support *multi-output* audio units. This feature can be used to route audio outputs of certain GR-16 Parts to different output busses for further separate processing. GR-16 supports maximum of 8 output busses, one of which is a *Master Output* bus. Outputs busses can be assigned on the *Mixer* page.
- AUv3 version currently does not support neither **Song Mode** nor **Chain Mode**. However, you can use *Program Change* midi messages in your host app or DAW to switch patterns of GR-16
- There are no any *Export* or *Render* audio functions available in AUv3. You can use standalone app for these purposes.
- Certain specific global settings are unavailable in AUv3. For example, you cannot control pattern *Tempo* in AUv3 mode, because it is under control of the host app.
- There's one new pattern slot per each audio unit, called **AUv3** -> **AU**, which is opened by default when you first load the audio unit. This slot is *unique* for each audio unit. You can store one pattern into this slot, and it will be saved and stored only within this instance. In contrast to this, any User Pattern slots are shared between all GR-16 audio unit instances and also the standalone app. It means, if you modify any User Pattern, it will potentially affect all other audio units, which use the same pattern. And the “**AU**” pattern is unique for each audio unit, so you can freely modify it without affecting any other audio units.
- Sample storage. As described in the previous sections, AUv3 units have their own place to store audio samples, which is hidden and cannot be accessed from outside. For more info about this, please refer this [section](#).
- In-App purchases. You cannot do an In-App Purchase or Purchases Restore from the AUv3. Please open the main standalone app for these operations.