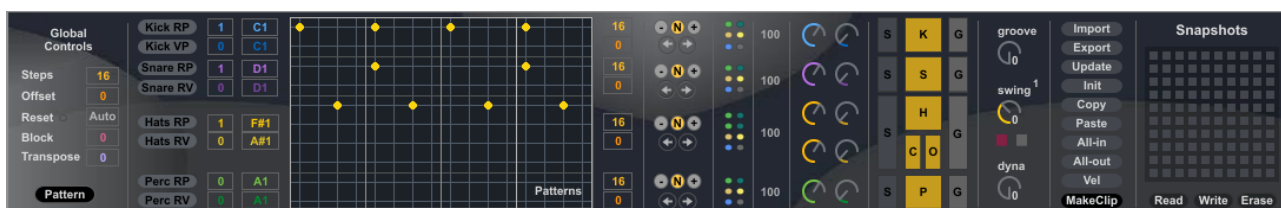# J74 PatDrummer

A tool for creative beat programming in Ableton Live

User Manual

How to Install the J74 PatDrummer device

J74 PatDrummer is a drum beat programming MIDI plugin for Ableton Live. It requires a Max for Live license to run and it will run properly only in Ableton Live 9 or higher (older versions of Live, such as Live 8, are not supported).

Installation of the tool set is extremely easy: just unzip the download pack and copy the files to your computer hard drive, any place you like. To start it up, drop the plug-in device (.amxd) on a MIDI track in the Ableton Live liveset.

The devices in the pack include:

- *"PatDrummer J74.amxd"*: drum beat programming and improvisation plugin.
- *"PatExport J74.amxd"* a simple utility for exporting PatDrummers patterns as MIDI files.

Next, one by one, a detailed explanation of what each control can do.

PatDrummer J74.amxd device

PatDrummer is a drum pattern-based groove-box which combines pattern programming with on-the-fly pattern mixing, with additional features for altering playback in powerful ways (such as poly-rhythm, dynamics and swing).

The device generates MIDI notes and is made with Ableton Live DrumRacks in mind: the generated MIDI notes match the ones the Drum Rack requires. Simply put a DrumRack behind this device and you are in business.
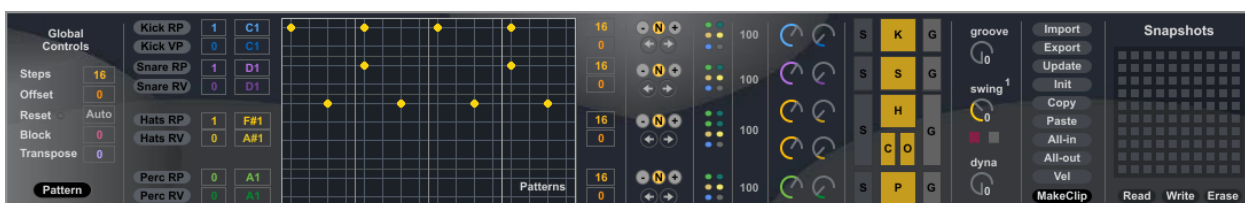

Important: the device has a built in [Help] which shows you exactly where each control is located and a brief explanation of what it does. Please use this [Help] view while reading this user manual for better reading.

The Pattern Roll area (programming patterns)

PatDrummer is, in the first place, an editor and the [Pattern Roll] area is where the editing of patterns takes place. The area presents 10 sequencing rows, each one triggering a different drum part / velocity combination. This grid has 16 columns: each column represents a step (time), as in a sequencer. When you place a yellow dot on a spot, let's say row X / column Y, a drum trigger will be created on part X at step (time) Y.

To activate a drum trigger, at a given spot, just click on the spot in question. You will see a yellow dot appear. To deactivate an existing trigger click on the dot, and the trigger (the yellow dot) will be removed.
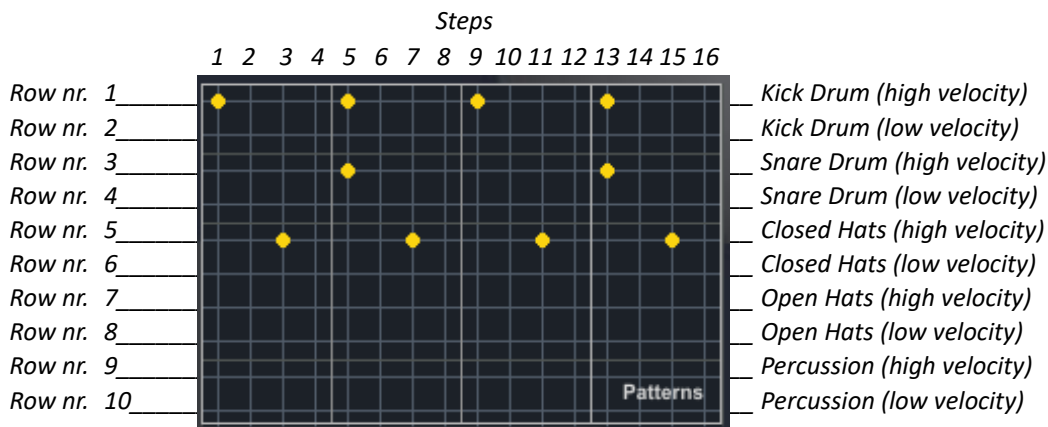
By default the rows correspond to the following parts / velocity combinations (all customizable, if you need to):

- Row 1: Kick Drum (high velocity, by default pitch is C1, velocity 100)
- Row 2: Kick Drum (low velocity, by default pitch is C1, velocity 20)
- Row 3: Snare Drum (high velocity, by default pitch is D1, velocity 100)
- Row 4: Snare Drum (low velocity, by default pitch is D1, velocity 20)
- Row 5: Closed Hats (high velocity, by default pitch is F#1, velocity 100)
- Row 6: Closed Hats (low velocity, by default pitch is F#1, velocity 20)
- Row 7: Open Hats (high velocity, by default pitch is A#1, velocity 100)
- Row 8: Open Hats (low velocity, by default pitch is A#1, velocity 20)
- Row 9: Percussion (high velocity, by default pitch is A1, velocity 100)
- Row 10: Percussion (high velocity by default pitch is A1, velocity 20)

Even rows (2, 4, 6, 8 or 10) trigger by default the same drum part (MIDI note) as the odd row they follow. This is done for having even rows as dynamic hits, on top of the main hits given by the odd rows. For instance take a Snare part into account: all your main hits would be in row 3 (high velocity, hard hits) while rebound-hits will go into row 4 (same Snare sound, but lower velocity and quick touch). This is a typical way of generating dynamics by using velocity.

Based on this logic, we can conceptually group the rows into 5 "*pairs*" of rows, each pair given by triggers of the same drum part (same output MIDI note), at two distinct velocities: 1&2 are the pair for the kick (1 is the high velocity part, 2 the low velocity), 3&4 for the snare, 5&6 for the closed hats, 7&8 for the open hats and 9&10 for the percussion's.

Note: this concept for drum programming (high/low velocity pairs) is not the only one possible. If you wish you can use the distinct lines independently for up to 8 different percussion's (the hats low velocity triggers cannot be changed and high/low velocity always share the same trigger). Combinations are also possible (like two pairs of two rows and the rest used as single rows). For making a row *independent* select a different [MIDI Trigger] for it. Keep in mind, when you do pattern combinations, pairs are stored together.

Patterns for each part: [Part Slot] number boxes
Each part has multiple <u>memory slots for patterns</u>:

- Slots 1 to 11 for the *Kick-pattern*
- Slots 1 to 11 for the *Snare-pattern*
- Slots 1 to 23 for the *Hats-pattern*
- Slots 1 to 11 for the *Perc-pattern*

Note: there is also a special extra slot "0" for each Pattern-pair. This is not editable and is just an empty slot. Anyway this can be handy too! Drum parts which disappear, make also a groovy effect on an ongoing progression.

Each memory slot is identified by a [Part Slot] number. The [Part Slot] of each row can be selected independently from any other row, allowing the patterns to be mixed-matched freely. This allows and extremely large set of possible combinations for the overall drum pattern (composed of all parts together).

Note: The number of combinations is actually huge: 12*12*24*12 = 41,472 unique combinations!

Random Pattern action buttons
Besides manual selection of [Part Slot] numbers (using the number boxes), various action tools are available for their mixing. The Random Part ("RP") action buttons are the most direct ones. These buttons allow you randomly select a slot, with instant effect. There is a button for each Pattern-pair and one for the entire Pattern-combination (all rows).

One-time [Variation Pattern] action buttons

These action buttons (having the "VP" suffix, as V-ariation P-atterns) allow you to randomly trigger a new slot (including the 0 slot) with instant effect, but temporary application (the rest of the bar). The affected pattern changes immediately but only for the remaining part of the measure, automatically reverting to the slot number previously selected once the measure ends. These buttons are useful to create breaks or fills.

[Periodic Variation] number boxes

Besides "action-based" pattern selections (buttons), you can also "plan" periodic pattern changes. This can be particularly useful on parts such as the kick or the snare, to give those parts a bit of unpredictability.

Immediately below each [Part Slot] number you will find another number box: the [Periodic Variation] number boxes. These number boxes are the tool for setting up periodic variations in motion. By selecting a number (greater than 0), you will specify the period (in measures) for the next random pattern variation. When the period completes the currently selected [Part Slot] will be changed to a new randomly selected [Part Slot], for one loop. After that the previously selected [Part Slot] will be set back in play. Note that a value of 0 applies no periodic variation (which is the default behavior).

Note: The count of the first measure is started from the moment you modify the [Periodic Variation] number box.

Tip: A useful approach is have periodic variations applied on different parts each with a different period.

Pattern modifiers: shift, copy, paste, random and erase each pattern, for each part separately

Besides programming the triggers (yellow dots) on the Pattern-Roll area, other features are available for manipulating the patterns in creative ways. Some of these features are packed in the "s/c/r" column (using the tiny colored buttons) on the right of the Pattern-Roll area (s/c/r stands for: shift/copy/random).

These *modifiers* have the following effect:

- Shift a Pattern-pair left: light green button
- Shift a Pattern-pair right: dark green button
- Copy a Pattern-pair in memory: light brown button
- Paste a Pattern-pair from memory into the corresponding row: yellow button
- Generate a random Pattern-Pair: blue button
- Erase a Pattern-Pair: gray button

Tip: an interesting way to create *syncopation* is to shift a single part while leaving the other intact. This is specially true for the Kick or the Snare parts, which most of the times hit on the main beats.

Note: the modifiers apply to each pattern pair individually. The only exceptions are the Copy, Paste, Random and Erase tiny buttons for the hats area, which operate on the all Hats-pattern (rows 5, 6, 7 and 8 together).

[MIDI Trigger] notes

PatDrummer generates by default MIDI notes which exactly match the ones the Drum Rack actually requires. These settings can be adjusted or completely modified if you wish to.

To change the trigger notes use the [MIDI Trigger] note boxes. For each Pattern-row, you will find a dedicated note box which defines the note trigger for each drum part. The odd note boxes define the note triggers for the high-velocity parts, the even note boxes for the low-velocity parts.

> Note: Each number box for the Note Trigger is an independent definition. So it is possible to assign the high-velocity row for a part to a note *and* the low-velocity row for the same part to *another* note. For instance you could assign the kick high-velocity to C1 and the kick low-velocity to C#1. This makes possible the use of the rows as independent lines for up to 8 sounds (trading in the idea of dynamics by velocity), if you wish to.

[Block] Trigger Transpose number box

You can transpose all the notes used for the triggers at once, using the numbered box located on the left of the device. This will trnapose the triggers in blocks of 16 notes. Why blocks of 16? Because there are 16 pads visible in a DrumRack of Ableton Live and the idea is to have the same drum-part-to-sample-type logic repeated on each 16-pads-wide view: pads 1 to 16, then 17-32, 33-48 and so on. This way you can have *multiple Kits loaded in a single DrumRack, one on top of the other (in block of 16 pads)*. So 0 means no shift, and the Kick note will be just C1 (36); a shift number set to 2, instead, will transpose the note number for the kick to to G#3 (36+16*2 = 68 = G#3) and basically pickup the pads from the third Kit.

Changing the [MIDI Velocity] of the triggers

The velocities of the parts can be also set to custom values. There are many ways to do that in other sections of Ableton Live as well (i.e. on the Drum Rack), but a quick way is to change these velocities via MIDI using the 10 encoders on the right side of the device.

As you may have guessed, the first column of encoders applies to the triggers on "high" velocity (respectively rows 1, 3, 5, 7 and 9) while the second column to the triggers on "low" velocity (respectively rows 2, 4, 6, 8 and 10).

Poly-rhythm controls: Number of Steps, Step Offset per part and global

Number of steps and step (starting) offset can be defined both globally (all patterns affected) or per part (affecting a single part, independently).

- The global step number is defined by the [Steps] number box in the Global Controls section (on the left of the device GUI). The global pattern step offset is defined by the [Offset] number box in the same section.
- For each part the [Part Step Number] and [Part Step Offset] are available as individual controls on the right of the Pattern-Roll area using two dedicated number boxes.

The combination of the above can be very effective in creating poly-rhythm. Part have different periodicity and therefore their combination evolves in time. A very effective and creative drumming effect.

[Part Direction] arrows and [Part Tempo] ratios

You can modify the playback direction for each part independently. To do this use the two little arrows are available at the right side of the Pattern-Roll area, for each part independently. By default the playback direction moves rightwards and can be changed anytime to move backwards.

You can also change the tempo of playback for each part of fractions of the tempo using the [-/N/+] controls for (just above the little arrows for playback direction). The [-] slows down the tempo for the part (from 16 to 8t, from 8 to 4t and so on). The [+] increases the part tempo (from 16 to 16t, from 16t to 32 and so on). The [N] button always returns the part tempo to the actual global tempo.

[Step Probability]
Each part has a step probability amount, variable between 100% (default / play all steps) and 0% (mute all steps).

Manipulating Timing: [Swing]
The [Swing] control allows you to add swing to the sequence. Negative % values will increase the time between certain steps (hesitation), while positive % values will decrease it (anticipation). Values of +/-50, +/-33, +/-25 will shift step timing to hit rhythmic "hot spots" (such as triplets or 1/32 notes, depending on the selected [Swing Type]). Small values (typically below 10) will add just a bit of a cadence. Other values will result in some strange syncopation.

The [Swing Type] defines the flavor of swing to be used, with 12 variations being available:
1 mpc classic swing
2 swing variation1
3 swing variation2
4 swing skip-through
5 triplets swing
6 break/remix1
7 break/remix2
8 break/remix3
9 syncopate1
10 syncopate2
11 syncopate3
12 chaos/reverse

Tip: the swing effect is quite flexible and works identically on other J74 devices as well, making possible to jam and swing together (e.g. if you map the same controls to a single MIDI controller knob). Also keep in mind that the nature of swing is to anticipate or delay certain hits in time and that a certain amount of delay or anticipation will move you into triplets or doubling very effectively. These values are typically the integer ratio's 1:4, 1:3 1:2 which correspond to swing values +/-25, +/-33, +/-50. These are "sweet spots" for many of the styles. Of course a given genre (and bpm speed) will respond differently, so you probably like to explore this area yourself. It is quite fun.

Additional controls (aimed ore to performance use) are the [Swing Bypass] and [Swing Quantize] toggles. The [Swing Bypass] (gray) toggle can be used to bypass the effect immediately (...and it suddenly rocks), while the [Swing Quantize] (magenta) toggle postpones changes to the begin of the next bar, for cleaner transitions. Of course you can also use the snapshot feature (presented further down this user manual) for achieving precise transitions quite easily.

Groove and Dynamics humanize functions
The [Groove] feature adds little random fluctuation to the trigger times, independent for each part. This gives a "human" feel to the live generated drum patterns (has it prevents perfectly simultaneous hits of different percussions).

[Dynamics] instead adds little random fluctuation to the velocity of the triggered notes, independently for each part. Each time a new step is played the trigger velocity value is modified by a +/- random value. This value is selected randomly for each part separately, requiring only the maximum velocity offset range in input (dial [dynamics range] with 0 – 32 as possible values, corresponding to -16/+16 offset range).

Additional available controls are the [Groove/Swing/Dynamic Bypass] selectors for each part. These allow to remove any fluctuation or swing from a give part.

Tip: When improvising the use of solo and mute buttons are useful for short-term emphasis on given parts.

The [**Solo] &** [**Mute] mixer controls**
The output stage of the PatDrummer can also be manipulated using [Solo] and [Mute] controls. These controls are the equivalent of a small MIDI mixer's solo and mute buttons, affecting the MIDI output, not the audio output.

Create MIDI Clips from PatDrummer: the [Make Clips] button
Using the [Make Clip] button you can quickly export the patterns, as they appear in PatDrummer's configuration, to a standard MIDI clip in Live. This includes all the ten pattern parts (all five triggers/voices, both with high and low velocities). This tool also allows you to export the subtle variations given by the swing/groove/dynamics settings with the MIDI Clip. The result is a standard MIDI Clip.

Note: poly-rhythm settings are not exported into the clip (that is: all parts are set with Number of Steps = 16, Offset = 0, Direction = forward, Tempo = Global Tempo). If you wish to consolidate the results of Polyrhythm settings record the MIDI output of the track hosting the PatDrummer device on a second MIDI track (using Live I/O MIDI routing functionality).

Snapshots
The device is provided of its own snapshot system. This way you can make a snapshot of all the settings and recall it at any time. How it operates:

- Do a **SHIFT + CLICK** on a slot to create a snapshot (or replace an existing one)
- Do a **CLICK** on a slot to recall a stored snapshot

Note: MIDI program change messages can be used to recall snapshots. This is a powerful way to add automation to snapshot recalling. A useful approach for this is to add the program number directly on a MIDI clip in the same track (see Launch section of MIDI clips) so that if the clip is triggered the selected snapshot is recalled.

Snapshots can be exported and imported back using the [read] and [write] operations.

Important: the file extension MUST be ".maxpresets" in order for the read and write operations to be done correctly.

Export and Import patterns in PatDrummer memory to/from MIDI clips/files: the "PatExport J74" Utility
In addition to the possibility of exporting the *current PatDrummer edit* to a MIDI clip (using the [Make Clip] button), an external utility called "PatExport J74" is available for *exporting all the patterns in PatDrummer's memory to MIDI clips.* This tool also allows you to *import patterns from MIDI files into PatDrummer.*

How to Export all the patterns to MIDI clips/files (.mid)

The utility allows you to export the patterns individually, as standard MIDI files. This applies to both Max for Live AND standalone versions. Once the MIDI files have been created you can can drag them into Live as MIDI clips or load them in any DAW as long as this supports standard MIDI files opening.

Here an example of export done using the standalone PatExport utility.
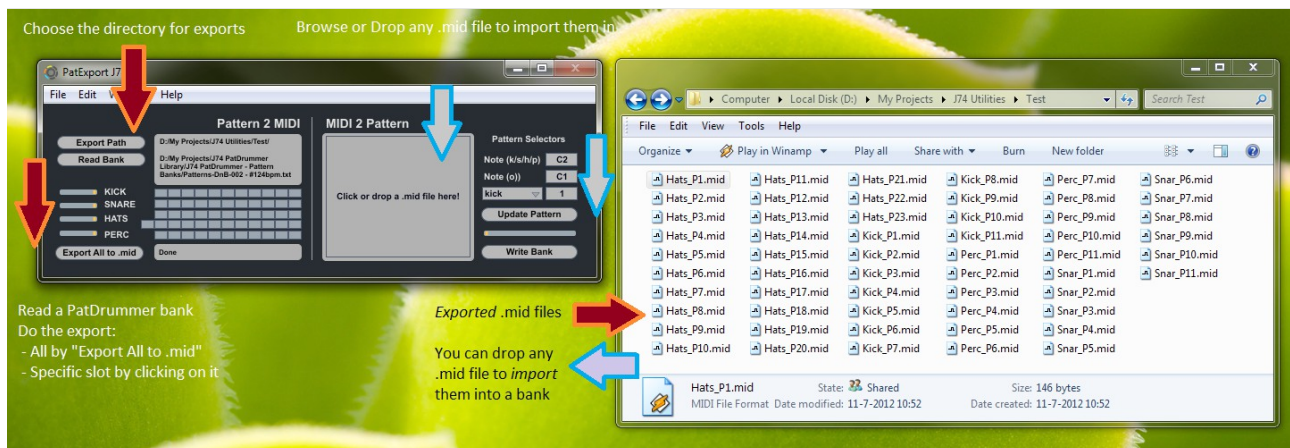
Procedure to follow:

1) Choose the directory for your exports clicking on the "Export Path" button. This must be a directory for which you have write permissions. Here you will find your MIDI files (.mid) after completing the export,

2) Select the PatDrummer bank you wish to export as MIDI files by clicking on the "Read Bank" button and browsing/selecting the bank you need.

3) Do the export. You can either do specific slot exports or export all slots at once.

   1.In the first case you need to click on the slot position which matches the pattern in question. For instance [kick slot 7] will be the seventh slot in the KICK row.

   2.In the second case you just click on the "Export All to .mid" and all the patterns will be exported as separate MIDI files.

4) Once your patterns are exported (the increment bars, left to the rows, are all reporting as completed and the info at the right of the "Export All to .mid" button reports [Done]) you can load them in your DAW

In the case of Ableton Live this is extremely quick and simple. Open your liveset and browse to the export directory where the MIDI files are located. Drag and drop them into Live and there you go!
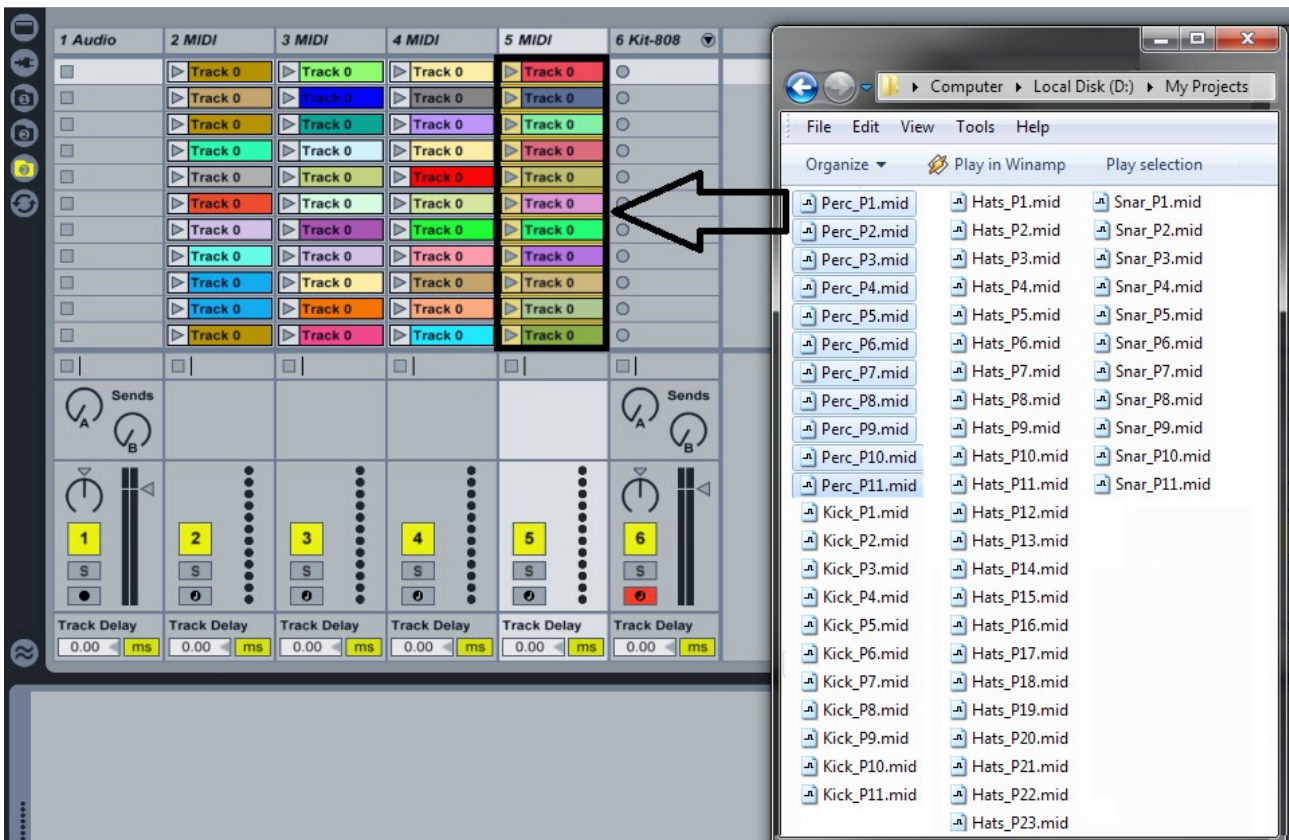
You do not need to drag them one by one! You can do as many you need with a single action. For instance (see below) you can select all the Perc patterns and drag them together to the Live MIDI track you wish to use (in the picture track "5 MIDI"). Drop them there and individual clips slots will be filled in with the clips.

Import from MIDI clips/files (.mid)
On the other hand there may be situations you like to add a MIDI clip/file as a pattern for jamming with it in PatDrummer. The import section allows you to do that, loading (browsing or dropping) a standard MIDI file (.mid) and then uploading it into a pattern bank at a specific slot (you need to choose the trigger note – or notes in case of hats -and the pattern slot to go).

Note: in Live you can export a MIDI clip as MIDI file very easily. Select the MIDI clip, right click on it and from the pop up menu choose "Export MIDI Clip". This clip can be imported in a PatDrummer bank using the PatExport utility.

Working with PatDrummer native Pattern Banks: [Update], [Copy/Paste] and [Export/Import]
Beside import/export to MIDI Clips and MIDI files and the read/write of Shapshots, PatDrummer can also save and recall its entire pattern memory (all the slots, all the patterns) using its "Pattern Bank" format (collection of patterns).

A Pattern Bank is a collection of patterns for all the voices (parts) and for all the slots. It is a file and it contains all the patterns for the kick part (up to 11 slots), the snare part (up to 11 slots), closed hats & open hats (up to 23 slots) and percussion (up to 11 slots).

Here the "rules" to successfully make and recall changes to PatDrummer Pattern Banks:

- *By default the patterns in a bank are read-only* and changes you make while editing in PatDrummer are not saved: if you make changes to a slot and then move to another slot, those changes will be lost. Same result if you reload the Live set, *even if the Liveset was saved*.

- *How to commit changes while editing:* The [Update] button will cause the current configuration to be committed in the volatile memory of your computer (the RAM). This will not save the bank file. In other words, if you make changes *and* press [Update], you can move to another slot and later come back to the same slot (the one you modified and committed) and you will find the changes you committed. The [Update] action alone, though, will *not save the changes in the Live set or the Pattern Bank.*

- *Save a Pattern Bank and save patterns as part of your Live set project*: you can do both *using the [Export] button*. If you export the Pattern Bank as a file (eventually overriding another file or creating a new one) and *then* save the Live set, a future reload of the Live set will recall the saved *Pattern Bank file* (and therefore your changes will be associated with the liveset).

- *You can load a Pattern Bank using the [Import] button.* This will load the patterns in the slots of PatDrummer.

Important: In this logic there is *NO Undo* for changes in the Pattern-Roll *if* committed or saved, not even from the Live's undo system (Live's does not "see" individual changes to the patterns, only to the slot numbers and Pattern Bank file).

Location of editing/export/import commands on the GUI
On the rightmost side of the device you will find the mentioned editing/load/save buttons, in column.

Pattern Banks [Export/Import]

The actual [Import] and [Export] buttons for import/export of Pattern Banks allow you to keep your edits and reuse them anytime in the future:

- To save the Pattern Bank use the [Export] button.
- To load a Pattern Bank use the [Import] button.
- To save pattern edits in your Live set, do a [Export] (eventually overwriting an existing Pattern Bank file)

Pattern Bank File names with BPM embedded
There is a handy little feature associated with Pattern Banks you should also be aware of: if you save a Pattern Bank with a name including the part "- #<bpm_value>bpm" (where bpm_value is an integer between 20 and 480, what the tempo speed of your liveset should be) in the name of the Pattern Bank file, you can save the BPM and return to it automatically when the Pattern Bank is recalled ([Import] button). An example of a valid name with BPM embedded: "Patterns-DnB-003 - #155bpm.txt". Opening this Pattern Bank will set Live's tempo to 155 BPM.

Questions?
If you still have questions or issues, please send an email to: info [at] fabriziopoce.com