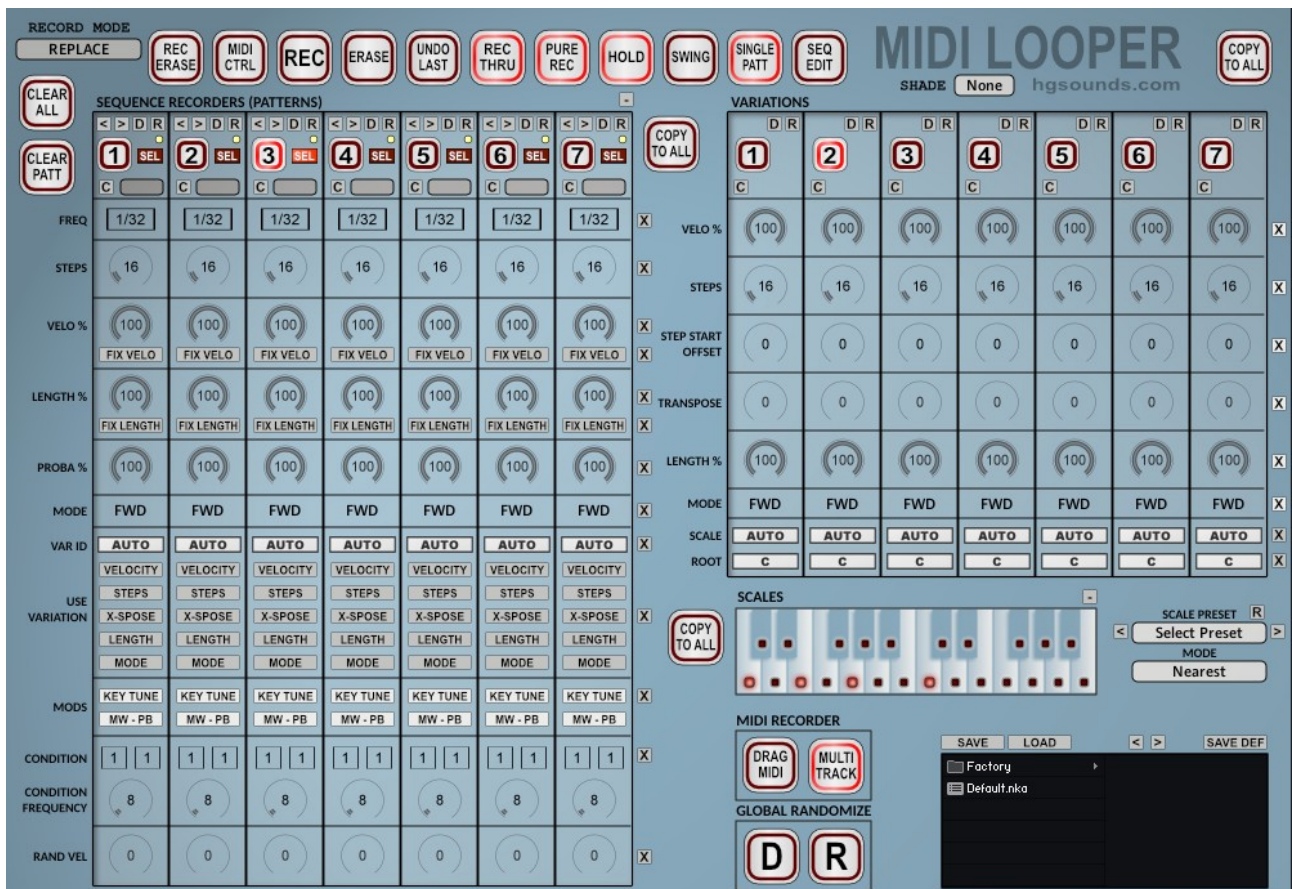


# MIDI LOOPER MANUAL

# Introduction



Midi looper is a versatile real-time Step Sequence Recording Instrument. It attempts to cover a wide range of Recording Modes both traditional and unique. There are 7 Recorders each with their own Tempo and Step Length settings and playback is always locked to the DAW Song Position so that for example when using polyrhythmic step lengths they will have an absolute position throughout the song. In practice the Sequence triggers behave more like Gates as opposed to Triggering sequences in other HGS Instruments.

There are 7 Variation strips and each sequencer can make use of the alternative settings and a custom Scale can be used to rescale the output.

Almost everything supports DAW automation including Record, Erase etc..

## Changelog

### V1.0

- Added Left and Right Sequence Shifts per Note on the Sequence Edit Page.
- Added Pattern Utility Menu with functions to split a Pattern across all patterns by Octave, Note, Position or Randomly. Also Remix all Patterns and individual functions for Randomize existing data or Remix Single Pattern.
- Added Utility Menu for copying current Scale to 'X' Scale Slot.
- Edit Tables could produce out of range Velocity Values.
- Added Temporary Save Area as a way to Backup the Entire Working State so it can be quickly Restored.
- Fixed Recorded Lights not always updating when Recording.
- Clock Displays now Reset on DAW Stop.

### V0.992

- Rewritten Record Engine Method to avoid issues with long Midi Notes. Notes are now added on Note On and the length is updated on Note Off Message.
- Reduced CPU Usage and hopefully fixed CPU build-up some people experienced.
- Added routine to check for Duplicate notes when recording, if found the existing note will be updated with the new Length and Velocity.

### V0.991

- Added Tint Options to add a different Shade to the UI.
- Random Row now works correctly
- Added Single Mode to play 1 Pattern only, Patterns behave like Variations.
- Added Scale Increment/Decrement buttons.

### V0.99

- Fixed lots of bugs
- Added Edit Mode for an overview of the Sequenced data
- New Record Modes - Note Repeat, Fixed Length and Full Length
- Split Modes Recoded and issues fixed
- Added button for Record Erase so it can work regardless of what Mode is selected.
- Midi Recorder with Drag n Drop export, can be single or Multi Channel.
- Midi CTRL Enable/Disable
- Implemented a Midi Buffer system to guarantee no double notes.
- Pure Record Enable/Disable - In Record Mode determines if playback parameters should be disabled.

- Added New Scale Modes.

V0.98

- Initial Beta Release.

## General Use Scenarios

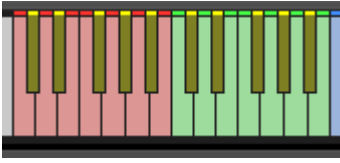
Midi Looper is designed to be as versatile as possible in the way it is used, here are some examples.

- **Use as a Midi Effect Processor.**  
With Midi CTRL off, use an existing Midi Track and use C#1 trigger to enable recording as a performance parameter. If REC THRU is disabled, the played Notes will not be heard until they are sequenced on the next lap. Depending on the selected Record Mode this could be very interesting. You can also automate the Erase and Clear Pattern buttons as part of the performance.
- **Use as a Pattern Player**  
Record into a few record buffers. With HOLD off, and Midi CTRL on, you can now select which Sequences will play using the Red Triggers and repitch the output with the Blue triggers.
- **Use Variations to Remix the output**  
The variations offer different settings to apply to Sequencers. Each setting can be selected per Sequencer using the current selected variation (auto) or using a specific variation. Scales work differently and are enabled per Variation and always depends on the current Variation used.

## Aftertouch/Mod Wheel/Pitch Bend

- Mod Wheel - When a Scale is being used, this will scroll up inversions of the Scale, when a Scale is not used it will go up in Octaves to the mid point and then go down in Octaves.
- Pitch Bend Up - Filters out Low Notes, so only notes above the threshold will play.
- Pitch Bend Down - Filters out High Notes, only Notes Below the Threshold will play.

## Triggers



If MIDI CTRL is enabled the Triggers will be active, when disabled only the Record Trigger (C#) will be active and the Keys will send Midi Notes to the output.

The Red Triggers control the playback of the 7 Sequencers. When Hold is off the Sequencers will only play whilst notes are held. If Hold is on they will be switched on until the note is pressed again when they will be toggled off.

The Green triggers determine which Variation is used, one will always be selected.

The Yellow triggers are as follows:

- **C#1 - Record**  
Switches record Mode on, all keys except this one can be used to Record Notes when Record is enabled, none of the other triggers are available.
- **D#1 - Undo Recorded Note**  
All recorded notes are added to a history buffer up to approximately 30,000 notes. This will remove the last recorded with each press.
- **F#1 - Hold**  
Toggles the Hold Button
- **G#1 - Previous Record Mode**  
Selects the Previous Record Mode from the Record Mode Menu.
- **A#1 - Next Record Mode**  
Selects the Next Record Mode from the Record Mode Menu.
- **C#2 - Previous Sequence**  
Moves Left along the Sequences and makes it the active Record sequencer.
- **D#2 - Next Sequence**  
Moves Right along the Sequences and makes it the active Record sequencer.
- **F#2 - Pause**  
Freezes the Current Step for a Stutter type effect.
- **G#2 - Erase**  
Whilst Held it will erase notes triggered on the active steps as the sequence progresses.
- **A#2 - Clear Pattern**  
This cannot be undone, so use carefully. Clears all data in the current Pattern.

The Blue Keys will transpose the output whilst the note is held, the Yellow Note represents the default Pitch.

# General Controls



- **REC ERASE**  
This will Erase underlying Steps as Notes are Played when recording.
- **MIDI CTRL**  
Decides whether the Keyboard Triggers are used or not.
- **RECORD**  
Enables recording, note that when pressed Hold will be engaged and the Sequencer Activated automatically.
- **ERASE**  
Whilst held, Notes will be erased from the current Sequenced
- **UNDO LAST**  
Removes the last recorded note.
- **REC THRU**  
Decides whether Notes should be played when recording, otherwise they will only be heard on the next cycle after being added and processed through the Mode.
- **PURE REC**  
in Record Mode, disables all playback parameters for the current Track so you hear only the 'real' recorded data.
- **HOLD**  
When engaged Sequences enabled by the Keyboard Triggers will toggle between On/Off with each note On, otherwise Sequences will only be triggered whilst the trigger notes are held.
- **SWING**  
Applies Swing to the Sequencers.
- **SINGLE PATT**  
Forces Patterns to behave the same way as Variations so that only a Single Pattern will play at a Time.
- **SEQ EDIT**  
Opens the Sequence Editor Page.
- **CLEAR ALL**  
Removes all Recorded Data from All Sequences
- **CLEAR PATT**  
Removes the all recorded data from the Currently active sequencer.



# Record Modes

The record modes decide how data is recorded, there is a large variety of techniques used:

- **RECORD ERASE**

When this button is enabled Triggers on Steps whilst the Notes are held will be removed.

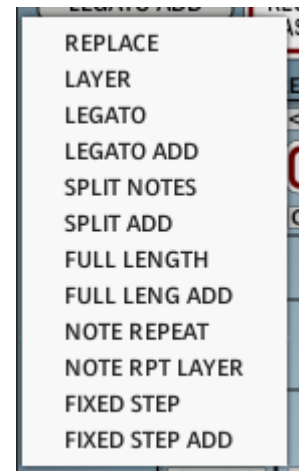


- **REPLACE**

Replaces the Trigger step with new Triggers. Notes can be any Length.

- **LAYER**

This will add notes continuously without overwriting anything. There is a maximum of 8 Notes per step, if this is reached the first recorded note will be overwritten and so on.



- **LEGATO**

Overwrites the existing step and will chop overlapping previous notes to create a Legato type sequence.

- **LEGATO ADD**

This will add notes continuously without overwriting anything. There is a maximum of 8 Notes per step, if this is reached the first recorded note will be overwritten and so on. Overlapping previous notes are Chopped to create a Legato type sequence.

- **SPLIT NOTES**

Like Legato this behaves the same except if the remainder of the note is longer than the new note a note will be added to the next valid step if it is empty. It effectively behaves like an eraser for the newly added time.

- **SPLIT ADD**

The same as Split Notes except it will not overwrite any existing notes.

- **FULL LENGTH**

This mode creates a sequence where there is a continuous note length for the whole Sequence. For example if a note is played it will be the length of the full step size. The next note added will shorten that note to the start point and the new note length will be until the 1<sup>st</sup> note is reached again.

- **FULL LENG ADD**

The same as Full Length but will layer new with existing Notes.

- **NOTE REPEAT**

Adds repeated Notes at the selected Clock rate whilst Notes are held overwriting steps.

- **NOTE RPT LAYER**

Adds repeated Notes at the selected Clock rate whilst Notes are held, adding to the existing Recorded Notes.

- **FIXED STEP**

Always use the current clock based fixed step Length for all recorded notes.




- **FIXED STEP ADD**

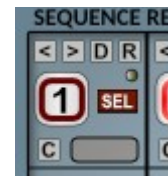
The same as FIXED STEP but adds to the existing recorded notes.

# Sequence Recorder

In total there are 7 Polyphonic Sequence Recorders. The idea is that you record into them and the Sequences will then be stored with the preset. Each sequence can have up to 128 steps and each Step can hold 8 Notes.

Sequencers can be triggered simultaneously and so used for creative layering, or you could use 1 at a time to build pattern based songs. Note that in the case of duplicated notes on multiple sequencers, only 1 will be played. The lowest sequence always takes precedence and so the Length and velocity will come from that note. This is necessary to thin the Midi Data and help prevent doubling unwanted note offs considering Each sequencer can use up to 1024 Notes!

- **D** - Sets the sequencer Row to it's default state referencing the Global Default File. You can overwrite this with the current state by using 'Save Default' on the Presets page.
- **R** - This will Randomize the Sequencer. Only settings enabled for Randomizing will be Randomized. 
- **L/R** - Shifts the sequencer left or Right.
- **Play Enable**  
Determines whether the Sequence is playing or not.
- **Data Indicator**  
Shows whether the sequence has been used.
- **SEL - select**  
This button will select the Sequence for Recording and also determines which Sequencer will be seen on the Sequence Edit Page.
- **C - Copy**  
This will copy the Sequencer Strip to the currently selected Sequencer.
- **Step Counter**  
Shows the active clock when the Sequence is playing.



- **FREQ**

Decides the tempo locked Frequency of the Sequencer. Note that clock steps are absolute on the timeline so that wherever you start from in the DAW it will always be the correct position.

- **STEPS**

Decides how many steps will be used for the recorded Sequence. When recording the sequence will automatically roll out/duplicate the Sequence which is very handy as you could start with 8 steps record, expand to 32 and record more over the longer length. Note that if you shorten the steps however the next record will roll out the selected length again. Use the Variations to play different parts of the recorded sequence.

Because the sequences are absolute to the DAW timeline, if you use Cycle mode in the DAW you must bear in mind that you the step count will play whatever it is at that point in the timeline.

- **VELO %**

This setting allows damping the velocity values, 100% will use the recorded (or fixed) velocities.

- **FIX VELO**

Overrides the recorded velocity with fixed 127 Velocity. Use the Velocity % to dampen to the required level, or automate it.

- **LENGTH %**

Depending on the Record Mode lengths will either be recorded as played or manufactured by the mode. This setting allows shortening those lengths, 100% is as Recorded.

- **FIX LENGTH**

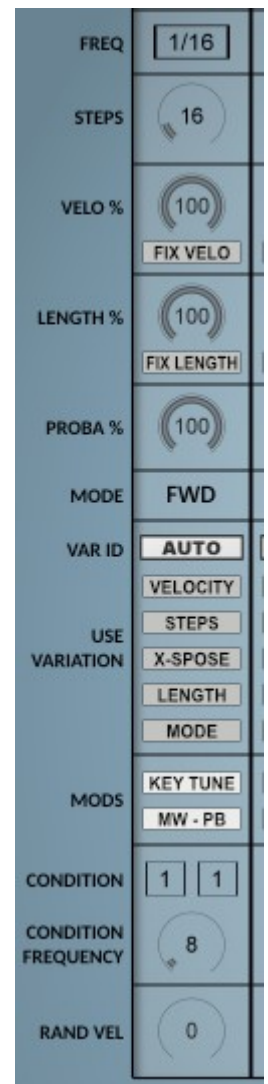
This fixes the length to a single Step, you can use the Length % to shorten it or Automated that parameter.

- **PROBABILITY %**

Determines how likely each note will play. 100% means all notes will always play and lowering the value makes it less likely. This is calculated on a note basis so for polyphonic steps it can add lots of improvised movement to the sequence.

- **PLAY MODE**

Determines how the sequence will playback between Forward, Reverse, Forward then Reverse, Reverse then Forward, Random Step and Random Mode.



- **VARIATION ID**

Decides which Variation the sequence will use for any selected options. Auto is default and means use the currently selected. You can override this and select any of the 7 Variations to use those settings instead.

- **USE VARIATION Options**

Decides which of the Variation parameters will be used by the playback of this Sequence.

- **Velocity** - Uses the Variation Velocity % setting.
- **Steps** - Use the Step Amount and start Offset of the Variation
- **Transpose** - Transposes the Sequence.
- **Length** - Use the Length % of the Variation
- **Mode** - Uses the playback Mode of the Variation.

- **MODS**

Use General Modifiers

- **KEY TUNE** - Should the Blue Keyboard Notes be used to transpose the Sequence.
- **MW - PB** - Should the Mod Wheel and Pitch Bend be used on this Sequence.

- **CONDITIONS**

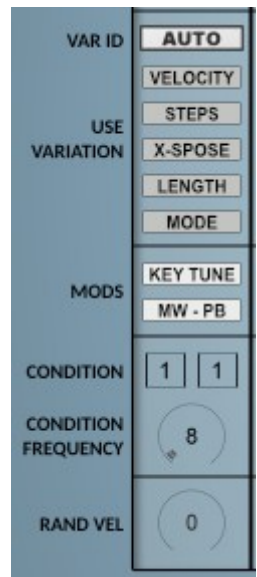
The First value decides which step out of the second value should be played. The Frequency decides the number of beats used by the condition. So for example, 1-4 will mean it will play on the first count out of 4 where each count is the frequency setting.

- **RANDOM VELOCITY**

Adds a Random bi-polar Velocity amount to the Sequenced Notes which can help to add some life to a Sequence.

- **COPY TO ALL**

Copies the Current Sequencer to all Sequencers.

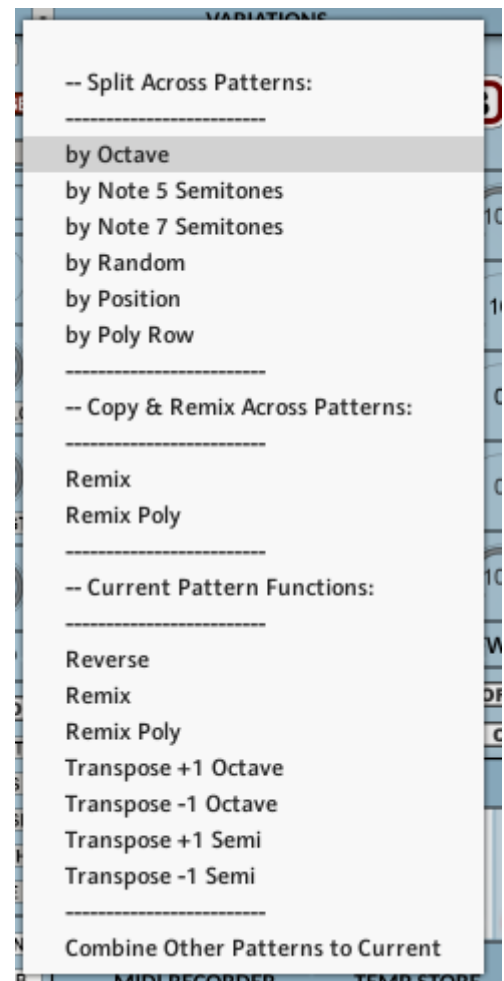


# Pattern Functions Menu

This menu provides various functions that can be applied to the Sequences. It's divided into 3 main categories, the first is 'Split across All Patterns' and these functions will copy the currently selected Pattern to slot 1 and then split the Sequence across the remaining 6 depending on the function. Pattern 1 will always keep the entire Sequence intact. 'Current Pattern Functions' will only work on the currently selected Patterns.

## Split Across Patterns

- **By Octave**  
This will split the Sequence into separate Sequences grouped by Octaves.
- **By Note (5 or 7 Semitones)**  
These will separate different Notes from the sequence and Group them together. Because there are only 6 available Sequences for this, they are grouped by either 5 or 7 Semitone Groups.
- **By Random**  
A random Pattern ID will be chosen for each Note.
- **By Position**  
This will split according to the position in the Sequence, how they are Grouped depends on how many Steps are used in the original Pattern.
- **By Poly Row**  
Splits according to the 8 Poly Note Groups. Because there are only 6 available Patterns for this, the 7 and 8 Groups are combined to Pattern 7, however these are the least used as Notes are always added to the next available Poly Slot when Recording.
- **Remix**  
This will copy the existing Pattern to slot 1 and then provide 6 Randomly Generated remixes of it for the other Patterns.
- **Remix Poly**  
This is the same as remix, however a random slot is selected for each of the Poly Notes as opposed to sequenced steps so Notes will lose their original Grouping.




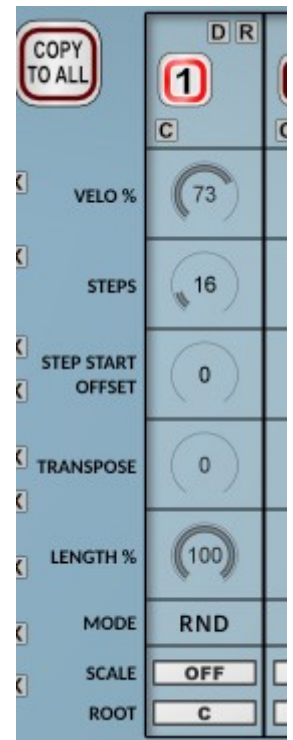
## Current Pattern Functions

- **Reverse**  
reverses the Step Order of the Current Pattern.
- **Remix**  
Remixes the current Pattern only.
- **Remix Poly**  
Remixes the current Pattern randomizing the poly Slot positions as well.
- **Transpose Functions**  
Simply Transposes the Notes by the given amount.
- **Combine Other Patterns to Current**  
This will clear the current Pattern and then merge all other Patterns to this Pattern.  
Note that if a step has more than 8 Poly Notes, the counter will begin overwriting the first slot. All other Patterns are left intact.

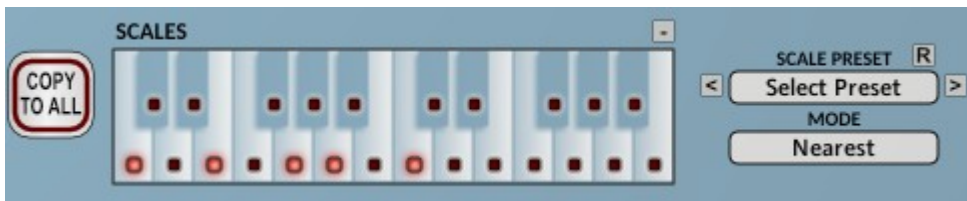
# Variations

In Midi Looper, Each variation is a collection of parameters that can optionally be used to override or affect the Sequencer Playback. The default behaviour is using the Auto setting on the Sequencers which will always use the currently selected variation, however a specific Variation can also be selected which adds much more freedom. The exception to this is the Scale, pattern will always use the current variation Scale settings.

- **DEFAULT**  
Sets the Variation to the Default Settings stored in the Default File.
- **RANDOM**  
Randomizes the Variation, only parameters which are enabled for Randomization will be Randomized. 
- **SELECT**  
Shows the active Variation
- **VELO %**  
The same as the Sequencer Setting, this will override it.
- **STEPS/STEP START OFFSET**  
These 2 setting allow playing a custom section of the Sequence by choosing a length and start position.
- **TRANSPOSE**  
This Transposes the final output of the Sequencer by -36/+36 Semitones.
- **LENGTH %**  
Overrides the Sequence Length Parameter.
- **MODE**  
Overrides the Sequence Play Mode.
- **SCALE**  
There are 7 Scales altogether, this setting associates 1 of them with this Variation. OFF means that no Scale is used. Most of the time it's easier to use AUTO which just assigns a Scale to each of the Variations and is straightforward. You could also assign all Variations to 1 for example so they all share a single Scale.
- **ROOT**  
This will Offset the root note used to calculate the Scale.

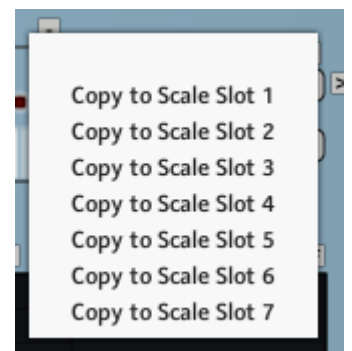


# Scales



The Rescaler takes the incoming Midi and forces notes to fit the selected Scale according to the selected Mode. You can make your own scale by using the buttons of select a preset.

- **COPY TO ALL**  
Copies the Current Scale to all others.
- **SCALE MENU**  
Allows copying the Current Scale to any other Slot.
- **Scale Buttons**  
Decides what the current scale should be, enabled notes are valid. Note that the first C is always selected as this represents the Root note. Also note that although the keyboard is mapped out as C, this is only a relational representation of the semitone spacing. The actual root note is determined by the Root setting and incoming data.
- **SCALE PRESET**  
A collection of predefined Scales. Note that these are one shot presets used purely to update the buttons, the buttons represent the used Scale, and the preset selection is not stored.
- **SCALE PREV/NEXT**  
This will scroll through the Scale presets, note that the stored Scale is the actual Buttons and not the Preset applied to them and so the scale preset itself isn't stored beyond the session.
- **MODE**
  - **Next Up** - chooses the next higher valid Note
  - **Next Down** - Chooses the next valid lower note.
  - **Alternate** - Flip Flops between Next Up and Next Down
  - **Nearest** - Chooses the closest valid note with Up taking the highest priority.
  - **Random** - randomly selects Next Up or Next Down.
- **COPY TO ALL**  
Copies the Current Variation to all Variations.





## Midi Recorder




The Midi Recorder is always active in the background and records the output of the Sequencers. The Buffer is cleared when either play is started in the DAW or when the play position goes to an earlier time such as in DAW cycle mode.

At any time the Midi can be dragged to the DAW or to your hard drive etc.. If Multi Track is enabled, each Track will be recorded as a separate Midi File, otherwise all Midi will be recorded to a single track.

## Global Randomize/Default



Global Default will restore the entire state of the Instrument to the Default File settings. You can save your own by using the save Default button near the file Browser.

The Global randomize will Randomize all Sequencers and Variations with all options which are enabled for Randomizing using these buttons 

## Temp Store

Provides a temporary area to Backup the current Machine State at any time. Save will store the State, and Load will Load the stored State if one has been Saved previously. When loading, the current State will also be swapped to the Buffer so it can act as an undo/compare function. This State is Saved with a DAW Project, however it will not be saved in a Preset.



## Shade

Allows selecting a Colour Overlay to Tint the GUI.



# Sequence Edit



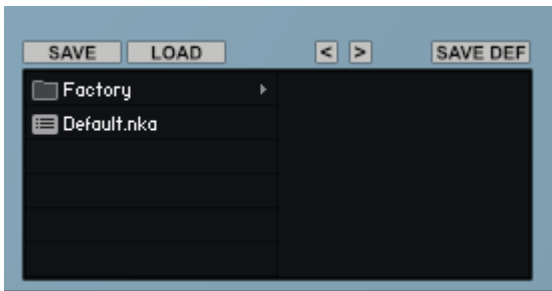
This page is not so much an Editor but a good overview of a Sequencer. Each step has 8 Note Polyphony and this page shows all of those sequencers. It displays The Velocity and Pitches. Lengths are not displayed due to the fact that they can be any length and a table couldn't really represent them.

If you want to edit the notes you can use the SHIFT Key when dragging for fine control.

You can also use this page when Recording to see the Notes being recorded in real-time.

Each Row has a Left/Right Shift for moving a selected Row Left and Right which can be very interesting to explore.

# Preset Browser



Midi Looper uses it's own Preset System and Presets can be loaded or Saved using the Preset Browser. The Preset Folder is called 'Midi Looper Presets'.

Midi Looper does not come with many Presets of it's own, it's all about recording your own Sequences.

- **SAVE PRESET**

When you save a Preset, unfortunately Kontakt always opens the File Browser showing the data folder which stores all the configuration files for the Synth, so you must select the Presets Folder and save your preset there so it will be visible next time you load the synth. You can create sub folders in this directory if you wish, they will be listed on the Left hand side.

- **LOAD PRESET**

This is only needed to load a preset which isn't visible in the File Browser. Useful because Kontakt script provides no way of refreshing the browser except by reloading the Instrument. This provides a way of loading a preset in that situation.

- **SAVE DEFAULT**

All Homegrown Sounds Kontakt Instruments use a Default File for referencing when using any section or Global Default button. This Button will allow you to overwrite the file with the current state of the instrument, which will be used from then onwards.

- **PRESET PREVIOUS AND NEXT**

These Buttons will navigate through the presets. However a Preset must be loaded in the Browser first to create the start point.