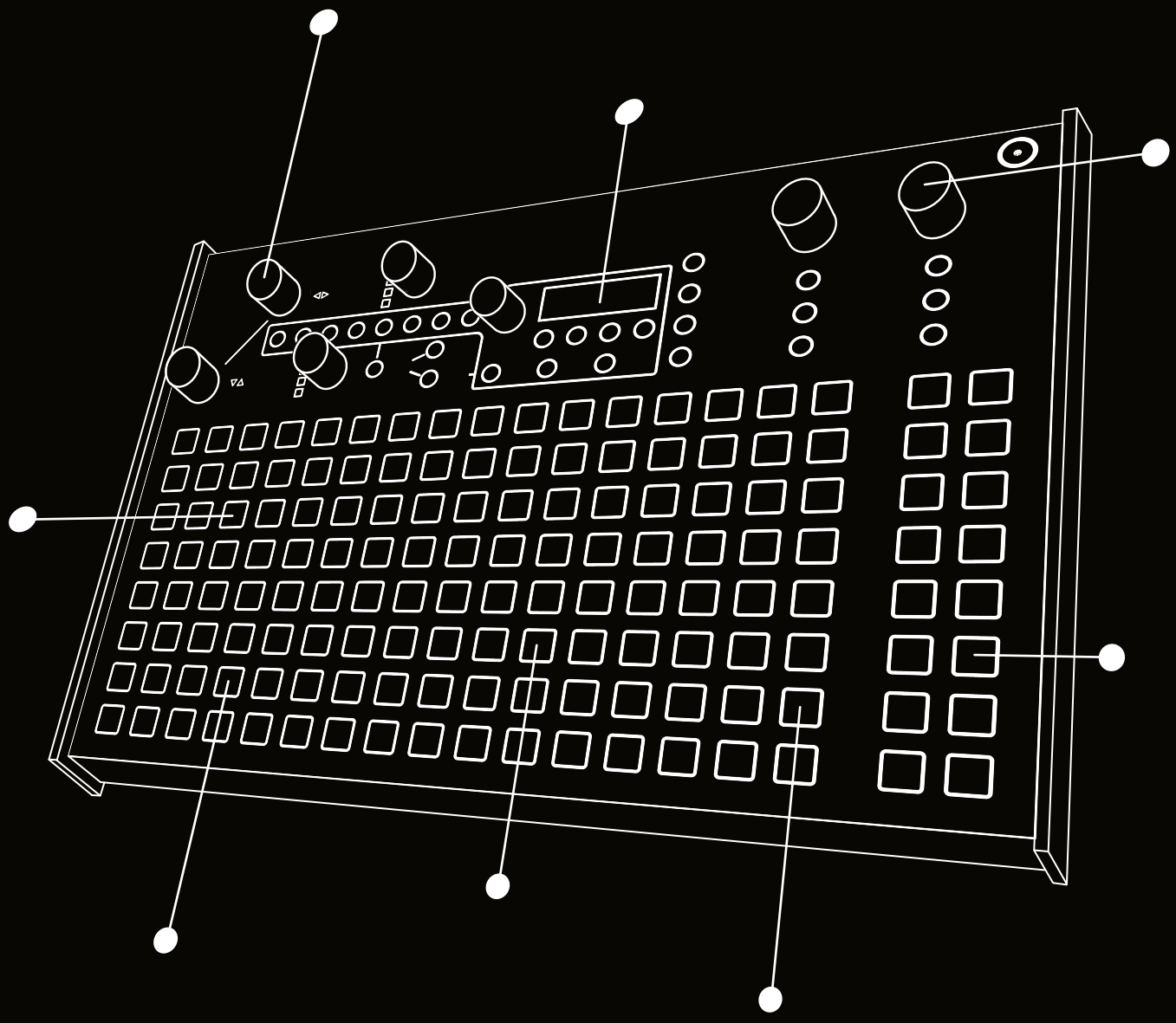
deluge

The Official Guidebook



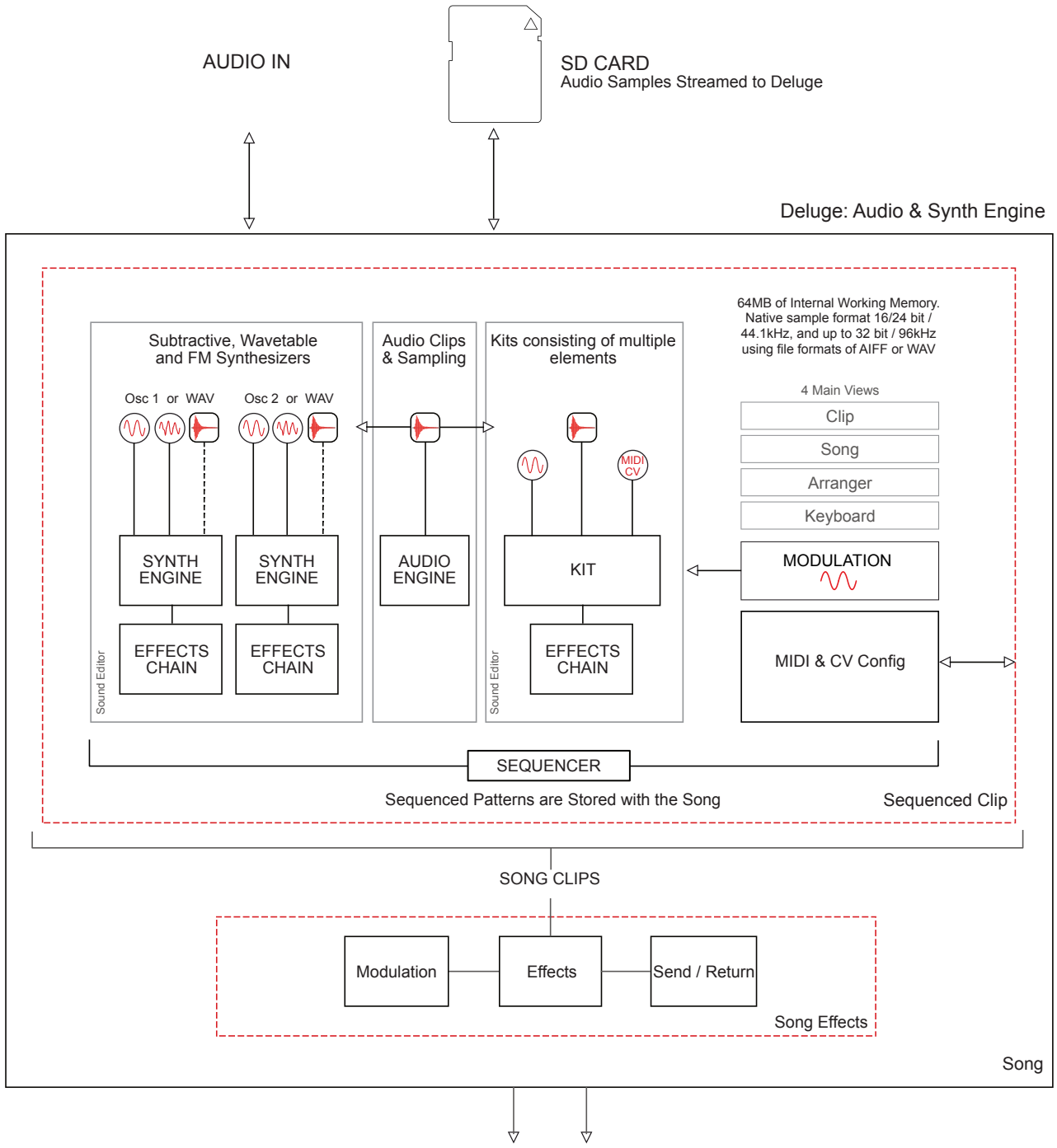
OS
4.0

SYNTHSTROM AUDIBLE

MORE THAN JUST A MANUAL
Guidebook - Reference - Notebook

1.4 System Architecture

Deluge high level overview of the system configuration.



This is an illustration of the general architecture and functions of the Deluge and is not intended as a detailed schematic diagram

NOTES

CREATING A PRESET FOLDER

1. Press [CLIP] to select clip view. This is indicated by the clip button illuminated blue.
2. Press [SYNTH] or [KIT] button to select.
3. Press [SAVE] + [SYNTH] or [KIT] to open the save menu.
4. The alphanumeric keyboard will appear. Type a name of the folder to create.
5. Press and hold [SAVE] until ‘CrEA’ - Create appears.
6. Press [SAVE] to create the folder. This folder will be visible when loading and also will be available to save presets.
7. If required, type in the preset name or number to save or press [BACK/UNDO] to exit.

2.7 Transferring Presets Between Deluge Devices

NOTES

Presets can be transferred between devices when the preset has been packaged in the correct format for Deluge to import. This needs to be setup manually as there is no automated preset export function. Part of this function would be performed on a PC or Mac on the SD card folders.

TRANSFERRING PRESETS (SD CARD TO SD CARD)

1. Insert the source SD card into the PC/Mac card reader.
2. The preset XML file to export should be identified on the SD card. This can be copied to a folder on the PC / Mac. For example a kit preset found in the KITS folder and filename breakbeat.xml.
3. Identify any audio files that are associated with the preset. These should be also copied to the PC/Mac within a sub-folder with the same name as the XML file. For example name the sub-folder ‘breakbeat’.
4. Eject the source SD card from the PC/Mac card reader and insert the destination SD Card.
5. Copy the XML file from the PC/Mac folder into the appropriate folder on the destination SD. For example into the KITS folder.
6. Copy the folder named after the XML and which contains the audio from the PC/Mac to the SD Card. Copy this folder to the same location, next to the XML file.
7. Insert the SD card into Deluge.
8. Deluge will identify the audio files when loading the ‘imported’ the preset. The imported preset can be then saved.

Any imported presets will be retained in their original audio folder location and are not transferred elsewhere when saving the preset or a song containing it. This means the original folder should always be retained and not changed for the preset to be functional.

Parameter Affect Group Reference : Clip View

NOTES

Button + Upper / Lower	Primary Parameter Function	Secondary & Other Parameter Functions Press [UPPER] [LOWER] Control
B1 Upper	Volume Sound Level adjustment	
B1 Lower	Pan Panning of the sound	
B2 Upper	Cutoff / FM Cutoff frequency of the selected filter. In FM Mode Modulator 1 amount	Selects which filter is affected by the control LPF is default, HPF or EQ for Bass/Treble amount
B2 Lower	Res / FM. Filter Resonance In FM Mode Modulator 2 amount	Selects the filter slope for the LPF between 12dB / Octave, 24dB/Octave or Analog modelled DRIVE Filter (24dB/Oct +Saturation).
B3 Upper	Attack Env 1 Envelope Attack Time	
B3 Lower	Release Env 1 Envelope Release Time	
B4 Upper	Delay Time Effect delay time	Selects Ping-Pong style delay On (Ping) or Off (norn)
B4 Lower	Amount: amount of delay applied to the sound.	Selects Analog (AnA) or Digital (diGi) delay simulation. Analog is high in CPU Usage and will lower the voice count if necessary.
B5 Upper	Sidechain	Selects the synchronisation for fast speed with 32nd notes or slow speed with 8th notes.
B5 Lower	Reverb	Selects the song applicable reverb preset between ‘Small’ (SnAL), ‘Medium’ (nEdi) and ‘Large’ (LArG)
B6 Upper	Mod Rate Modulation rate	Only used when in ‘Affect Entire’ mode for songs and kit clips where Mod rate and depth are controlling a modulation effect i.e. chorus, flanger or phaser. This selects the next in the list
B6 Lower	Depth Modulation depth	Only used when in ‘Affect Entire’ mode for songs and kit clips where mod rate and depth are controlling a modulation effect i.e. chorus, flanger or phaser. This selects the control between depth, feedback and offset depending upon the active effect.
B7 Upper	Stutter:	Enacts the stutter effect when pressed and stops when released. Length and speed are controlled by turning the control. Speed stutter loop up by pressing and turning the control.
B7 Lower	Custom 1	Configurable. Typical synth presets set to portamento and pitch for sample based sounds
B8 Upper	Custom 2	Configurable. Typical kit presets set to decimation When Osc1 is set as a wavetable synth, Custom 2 is set to control the wave position
B8 Lower	Custom 3	Configurable. Typical kit presets set to bitcrush When Osc1 is set as a wavetable synth, Custom 3 is LFO2 modulation depth of wave position. When Osc2 is set as a wavetable synth, Custom 3 is set to control the wave position.

NOTES

SETTING THE SEQUENCER PLAY DIRECTION

1. Press [CLIP] to select clip view. This is indicated by the clip button illuminated blue. For a KIT clip*, select the row, press [*AUDITION*].

2. Press [SHIFT] + [DIRECTION] to open the setup menu options. The button will flash and the display will indicate the current play direction. The default is FORWard.

3. Turn (SELECT) to choose the desired direction from the three available options.

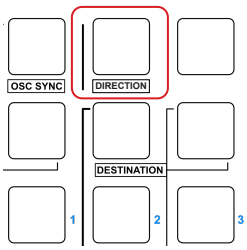
    - FORWard. Will play the sequencer from the start - left to right. This is the normally expected playback behaviour.

    - REVErse. Will play the sequencer in reverse where the start will be the end of the sequence - right to left.

    - PINGpong. Will play the sequencer firstly from the start - left to right, then at the end will reverse back right to left.

    - NONE. Only available for KIT rows* when AFFECT ENTIRE is OFF. This sets the current row direction to operate based on the global kit clip direction setting.

4. Once the direction is selected, press [PLAY] to start playback. Button is lit green. Press [PLAY] again to stop the sequence. Button is off.

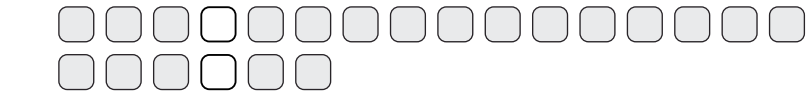


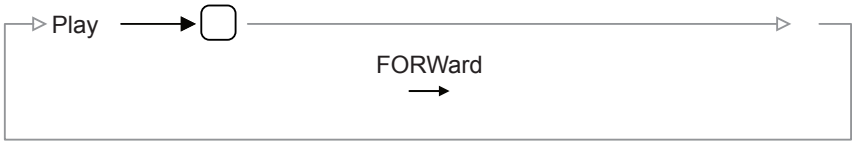
Note: The ‘direction’ shortcut button label may not be printed on faceplates.

*Note: Kit rows can be set to have independent direction control settings. Independent direction for rows are set in a KIT and when [AFFECT ENTIRE] is set to OFF. To set the global direction for all rows in a kit clip, set the direction setting while the [AFFECT ENTIRE] option is set to ON. This will therefore apply the direction to all rows.

NOTES

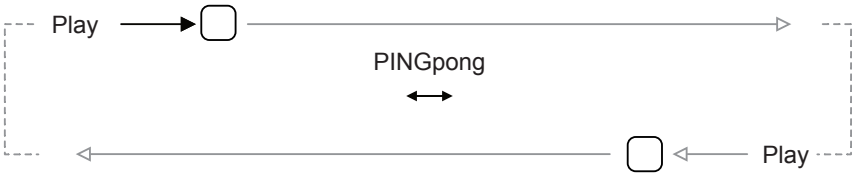
Play direction.





Plays from the start to end of length and then loops back to the start

Plays from the end to the start i.e. in reverse and then loops back to the end



Plays from the start to the end, then back to the start and loops in this pattern

3.13 Euclidean Sequencing

NOTES

Euclidean sequencing is based on greek mathematical principles and specifically around the division of two numbers. This process is applied to generate the placement of steps in a musical sequence across a defined length. Euclidean sequencing is great for more generative sequencing which creates evolving melodies and especially rhythmic patterns. Deluge applies euclidean patterns per row and the three elements to setup are:-

- Number of events. Basically sets how many steps will be applied in the row. Process is similar to note repeat.
- Length of the sequence row, similar to clip length.
- Position of notes. The shifting of notes in the pattern.

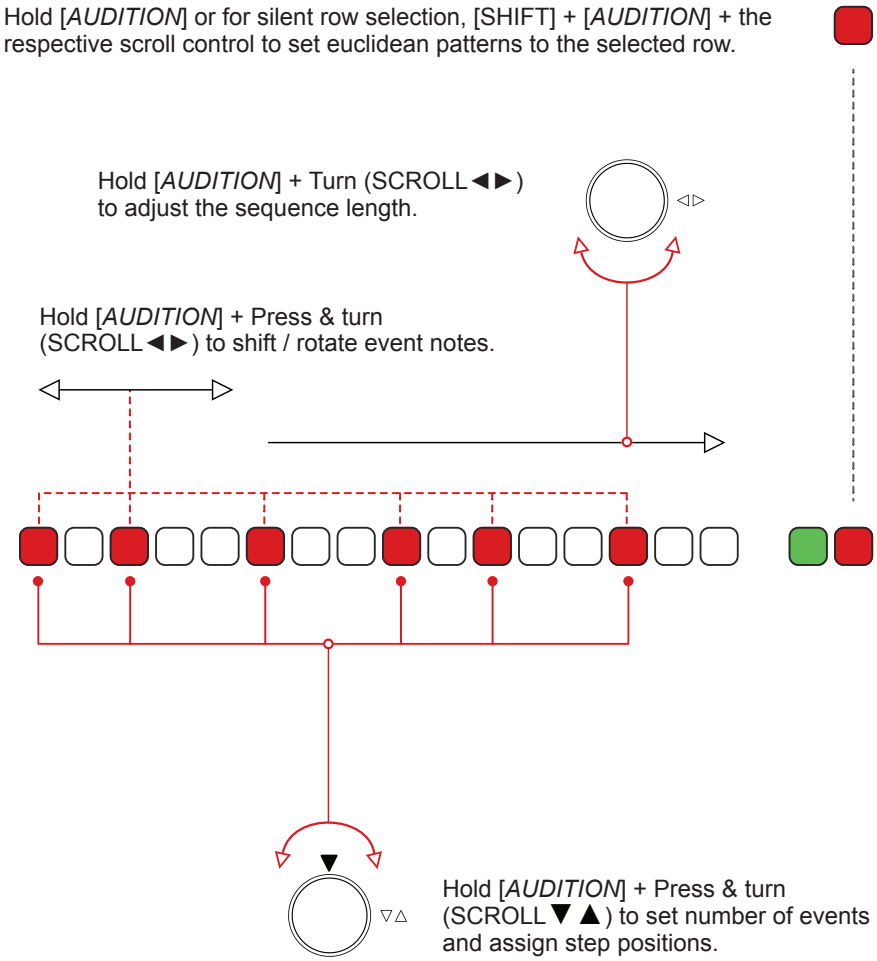
CREATING A EUCLIDEAN PATTERN

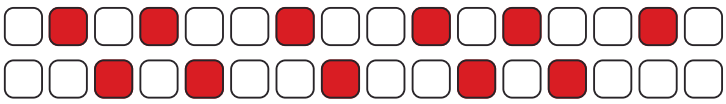
1. Set to [CLIP] view.
2. Identify the note and hence the row on which to apply the sequence. Holding the [*AUDITION*] button for the row will apply the sequence. Press [SHIFT] + [*AUDITION*] in the steps below to apply the sequence silently.
3. Press and hold [*AUDITION*] + turn (SCROLL◄►) to set the row length.
4. Press and hold [*AUDITION*] + press and turn (SCROLL▼▲) to set the number of events and an assigned position on the selected row.
5. Press and hold [*AUDITION*] + press and turn (SCROLL◄►) to adjust the note placement by shifting / rotating through the grid.
6. Repeat these steps for other notes / rows to build layered euclidean sequences and melodies.

NOTES

Example: Euclidean Patterns

Applying euclidean patterns is performed row by row and is an iterative process for each row in a pattern where a euclidean generates pattern is required. The creativity in euclidean sequencing comes from the layering of rows with different lengths and a variety of events to build complex patterns and melodies.



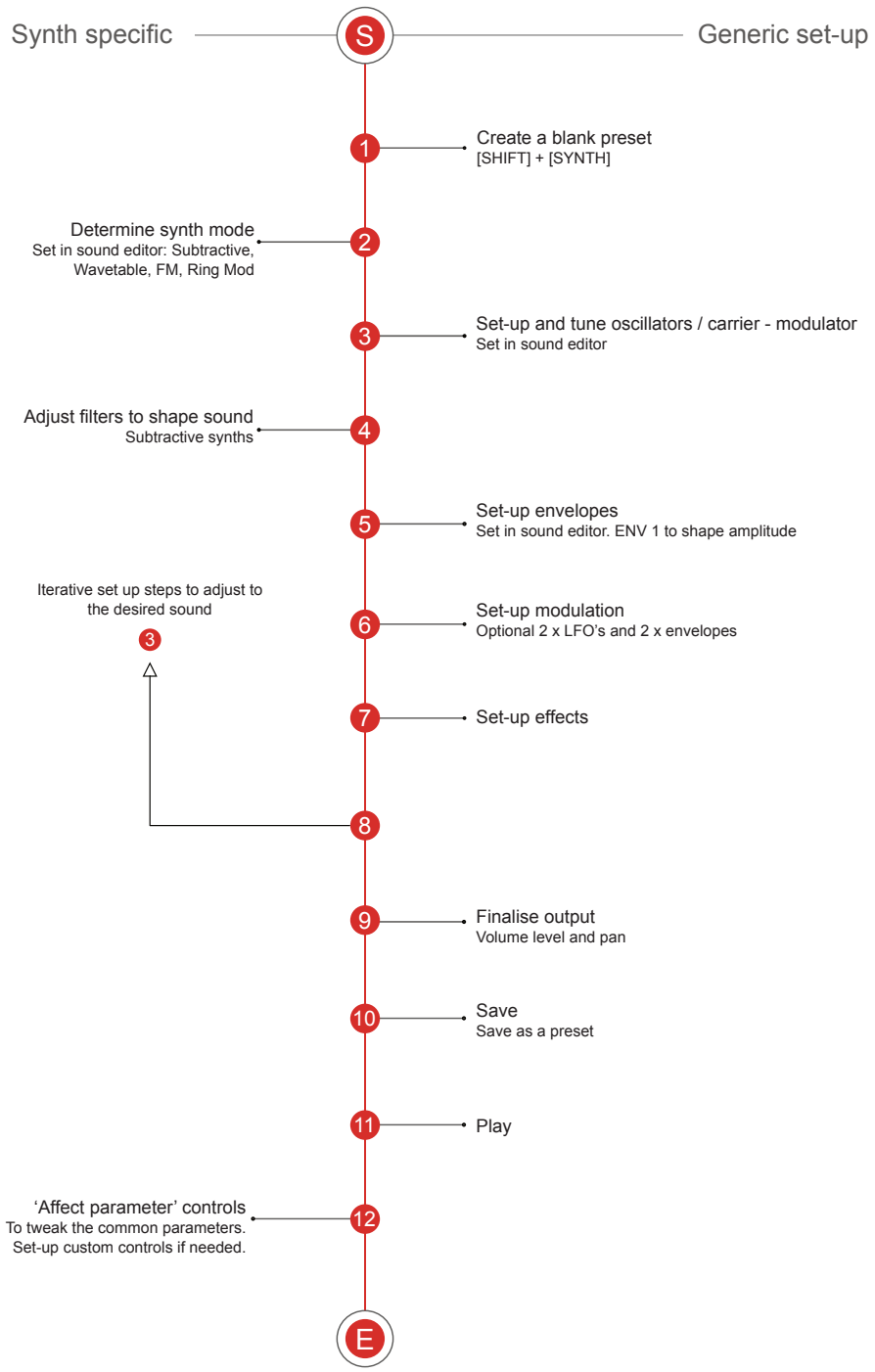


Multiple euclidean sequenced rows with varying lengths adds interest and the perception of generative patterns. Try with kit rows to build interesting percussive beats.

4.5 Synthesizer Creation Workflow

NOTES

An example high level workflow on setting up the Deluge synths gives a starting point for sound design and preset creation.



4.6 Synthesizer Clip Parameters

Deluge has the some synth parameters in the affect group. However the full list of parameters is accessible from the sound editor or in part from shortcut options on the grid.

Function	Sub Category Parameter	Shortcut Button Access	Options & Description
OSC 1 CAR 1 - FM	TYPE*	TYPE*	Waveform Options. Digital: Sine, SAW, SQUare, TRIangle. Analog Modelled: ASAW, ASQUare. Audio: WAVEtable, SAMPle, IN (Expandable to INL, INR, INLR)
	VOLUme	LEVEL	Oscillator 1 or Carrier 1 (Car 1) for FM level
	REC	RECORD	Access to sound recorder to sample audio to use as oscillator 1. Not available in FM synth.
	TRANspose	TRANSPOSE	Semitones + cents for adjustment
	PULSe Width	PW	Oscillator 1 pulse width. No PW available in FM Mode
	FEEDback	FEEDBACK	FM synth option only
	RETRigger Phase	RETRIG PHASE	Phase in degrees that the oscillator will be reset on note-on. Also can be switched off.
OSC 1 CAR 1 - FM Only when TYPE* is SAMPle or WAVEtable	WAVEtable	WAVETABLE	Wavetable Only. Navigation setting to select the cycle position in the wavetable file as the oscillator sound source. Shortcut button only once a wavetable type is set.
	FILE	BROWSE	Only available when TYPE is SAMPle or WAVEtable: Access to file browser to select audio or wavetable file as oscillator 1
	STARt	WAVEFORM then ‘green’ pad	Only when TYPE is SAMPle: Start time of sample in seconds with millisecond adjustments
	END	WAVEFORM then ‘red’ pad	Only when TYPE is SAMPle: End time of sample
	SPEEd	SPEED	Only when TYPE is SAMPle: Manually time stretches sample to play faster or slower without changing pitch. Not available if MODE is set to STREtch in which case speed is controlled by note length and tempo
	REVErse	REVERSE	Only when TYPE is SAMPle and a sample is loaded, reverses the sample
	MODE	MODE	Only when TYPE is SAMPle and a sample is loaded: Options are; ONCE - Sample plays once all the way through, CUT - Sample aims to play all the way through but will cut at the triggering note end, LOOP - Sample loops continuously until the trigger note ends, STREtch - Sample is time stretched to the trigger note length.
	PISP	PITCH/SPEED	Only when TYPE is SAMPle and a sample is loaded: Pitch / Speed controls the relationship between pitch and speed. LINKed - pitch change affects length, INDEpendent - pitch changes do not affect length
	INTErpolation	INTERPOLATION	Only when TYPE is SAMPle and a sample is loaded: Sample interpolation method used for pitch adjustment. Options are; SINC - high quality 16-point windowed sinc, LINEar - Low quality linear interpolation

Function	Sub Category Parameter	Shortcut Button Access	Options & Description
OSC 2 CAR 2 - FM	TYPE*	TYPE*	Waveform Options. Digital: SIN, SAW, SQUare, TRIangle. Analog Modelled: ASAW, ASQUare. Audio: WAVEtable, SAMPle, IN (Expandable to INL, INR, INLR)
	VOLUme	LEVEL	Oscillator 2 or carrier 2 (Car 2) for FM level.
	REC	RECORD	Access to sound recorder to sample audio to use as oscillator 2. Not available in FM mode.
	TRANspose	TRANSPOSE	Semitones + cents for adjustment
	PULSe Width	PW	Oscillator 2. No PW available in FM Mode
	FEEDback	FEEDBACK	FM Synth option only
	SYNC	OSC SYNC	Switches on the synchronisation for OSC 2 which resets to trigger phase whenever oscillator 1 does.
	RETRigger Phase	RETRIG PHASE	Phase in degrees that the oscillator will be reset on note-on. Also can be switched off.
OSC 2 CAR 2 - FM Only when TYPE is SAMPle or WAVEtable	WAVEtable	WAVETABLE	Wavetable Only. Navigation setting to select the cycle position in the wavetable file as the oscillator sound source. Shortcut button available only when a wavetable type is set.
	FILE	BROWSE	Only when TYPE is SAMPle: Access to file browser to select audio file as oscillator 2
	STARt		Only when TYPE is SAMPle: Start time of sample in seconds with millisecond adjustments
	END		Only when TYPE is SAMPle: End time of sample
	SPEEd	SPEED	Only when TYPE is SAMPle: Manually time stretches sample to play faster or slower without changing pitch. Not available if MODE is set to STREtch in which case speed is controlled by note length and tempo
	REVErse	REVERSE	Only when TYPE is SAMPle and a sample is loaded, reverses the sample
	MODE	MODE	Only when TYPE is SAMPle and a sample is loaded: Options are; ONCE - Sample plays once all the way through, CUT - Sample aims to play all the way through but will cut at the triggering note end, LOOP - Sample loops continuously until the trigger note ends, STREtch - Sample is time stretched to the trigger note length.
	PISP	PITCH/SPEED	Only when TYPE is SAMPle and a sample is loaded: Pitch / Speed controls the relationship between pitch and speed. LINKed - pitch change affects length, INDEpendent - pitch changes do not affect length
	INTErpolation	INTERPOLATION	Only when TYPE is SAMPle and a sample is loaded: Sample interpolation method used for pitch adjustment. Options are; SINC - high quality 16-point windowed sinc, LINEar - Low quality linear interpolation
MOD 1 FM Only	TRANspose	TRANSPOSE	Semitones + cents for adjustment
	AMOUnt	LEVEL	Amount which the modulator 1 modulates the frequency of both CAR 1 and CAR 2 Carriers.
	FEEDback	FEEDBACK	Sets the amount of feedback from / to the FM modulator 1
	RETRigger Phase	RETRIG PHASE	Phase in degrees that the oscillator will be reset on note-on. Also can be switched off.

4 Synthesizer

Function	Sub Category Parameter	Quick Button Access	Options & Description
SIDEchain Sidechain Compressor	VOLUme	VOL DUCK	Amount the sidechain compressor affects the sound volume creating ducking. Also configurable to patch / connect as modulation.
	SYNC	SYNC	Time interval to sync the sidechain compressor or OFF. Options 4 bar, 2 bar, 1 bar, 2nd, 4th, 8th, 16th, 32nd, 64th
	ATTAck	ATTACK	Attack - ramp up time of the compressor
	RELEase	RELEASE	Release - ramp down time of the compressor release
	SHAPe	SHAPE	Adjust the shape of the compressor to add more punch or reduce the transient effect for a more gentle subtle sound
	SEND	SEND	Kit sounds only. Level this current sound triggers all of the other sidechain compressors in other sounds.
bEnd Bend range	NORM		Normal pitch bend range in semitones for the Synth or CV clip. Typically this is the pitch bend wheel of a controller.
	MPE		MPE pitch bend range in semitones for the Synth or CV clip. Typically this using two finger MPE expression. Default 48.
VOLUme Output Level Setting		LEVEL (Master)	Level of the clip
PAN Output Balance		PAN	Left / right balance of the sound. 32L - 0 - 32R
dirE Direction		DIRECTION (may not be labelled)	Playback direction of sequencer. Forward, Reverse or PingPong.

NOTES

CREATING A WAVETABLE SYNTHESIZER

1. Press [CLIP] to select clip view. This is indicated by the clip button illuminated blue.

2. Create synth by pressing [SHIFT] + [SYNTH]. The synth button illuminates red.

3. Press [SHIFT] + [BROWSE] for SAMPLE 1. The button flashes white. Sample 1 will apply to Oscillator 1. Both Oscillators can be setup as a wavetable synth.

4. The display indicates ‘bot-toP’ to suggest that an audio file loaded will be applied across the entire note range, bottom to top. Wavetables can be assigned to user selected note ranges, but these cannot be mixed with samples and waveforms together across multiple note ranges.

5. Press (SELECT) to select the entire note range and open the browser.

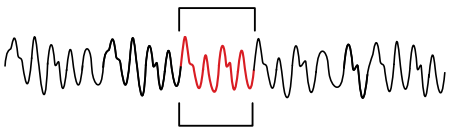
6. Navigate the SD card files to select the wavetable to load. Press (SELECT) to load the desired wavetable file.

7. Ideally an audio file formatted to a wavetable standard should be used. Deluge will recognise wavetable formatted files and will therefore assign TYPE as WAVEtable to the Oscillator 1 automatically.

8. If a file is loaded that is not in a wavetable format it will still load and Deluge will make assumptions on the format, cycle size etc. As such this may not behave or sound like a typical wavetable but nevertheless still delivers interesting results.

9. The main wavetable specific parameter to control and set up is the wave navigation and is called WAVETABLE accessed from within the oscillator menu, the wavetable shortcut pads or CUSTOM 2 for Osc1 and CUSTOM 3 for Osc 2. This sets the wave position and interpolation for the cycle used by the oscillator. Modulating this parameter can give interesting results, especially for both oscillators.

Wavetable
A file with a series of wave cycles. The ‘wavetable’ parameter navigates and selects the cycle used in the Oscillator

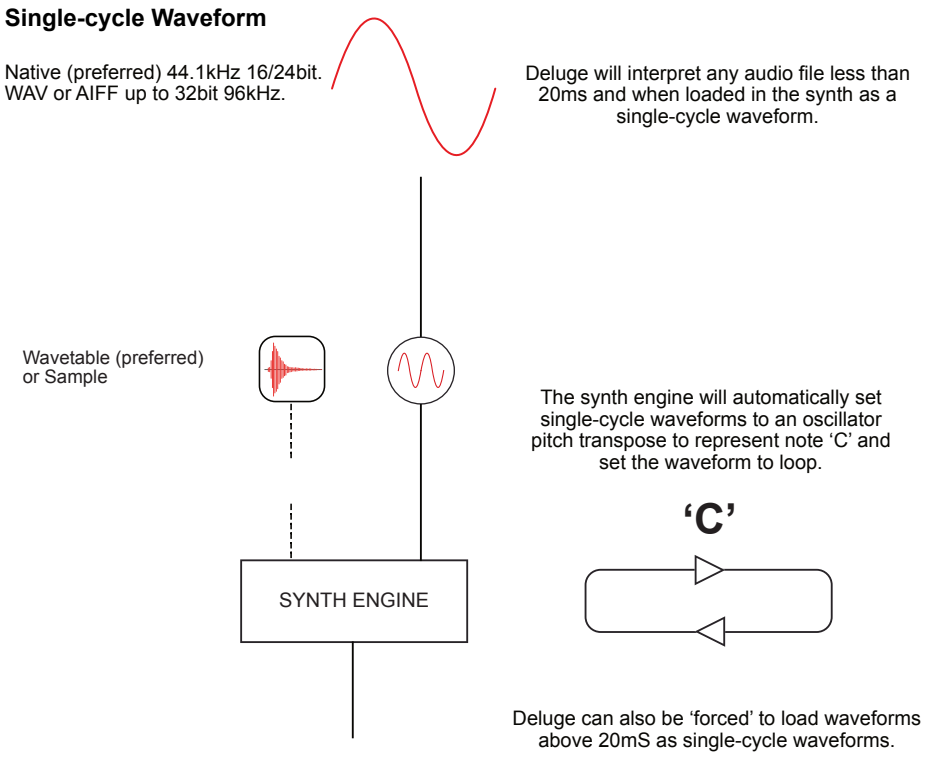


Wavetable Position
As well as from the shortcut pad, the wave position is adjusted using CUSTOM 2 when Oscillator 1 is set to a wavetable synth and CUSTOM 3 for Oscillator 2. If Only Osc 1 is a wavetable synth, CUSTOM 3 controls LFO2 depth modulating the Osc 1 wave position.

4.13 Single-cycle Waveforms

NOTES

Deluge provides several oscillator types but also can take an audio input or audio wave file as its ‘oscillator’. Single-cycle waveforms are best used in a wavetable synth which are then processed in Deluge to create unique and creative oscillator sound source. Single-cycles can be used as a sample but the wavetable synth carries better performance when processing single cycles. If samples are not compatible with the wavetable engine (i.e. stereo) it will load as a sample. The wavetable navigation parameter is not available for single cycles.



NOTES

LOADING A SINGLE CYCLE WAVE AS AN OSCILLATOR

1. Ensure the SD card has short single-cycle waveforms. These should be 20ms or shorter. Longer ones can be forced to load.

2. Press [CLIP] to select clip view. This is indicated by the clip button illuminated blue.

3. Select synth by pressing [SYNTH] if not already selected. The synth button illuminates red.

4. Press the [SHIFT] + [*TYPE*] as quick access to shortcut for OSC1. Alternatively use the nested menu options by pressing (SELECT) and navigating to ‘TYPe’.

5. Press (SELECT) to Select TYPE and turn (SELECT) to navigate to select ‘WAVE’.

6. Use [BACK / UNDO] to exit and back out.

7. Pressing (SELECT) choose Osc1 (or Osc 2) and press (SELECT) again.

8. Turn (SELECT) to navigate to ‘FiLE’..

9. Pressing (SELECT) while ‘FiLE’ is in-focus will open the option to browse and select a sample, ‘bot-toP’ will scroll on the display to indicate the bottom-to-top note range for the sample.

10. Press (SELECT) again to enter the sample browser.

11. Navigate samples and folders by turning (SELECT) and select the folder containing the single-cycles. Highlight the wave to select in focus. The sample will audition and an illustration of the sample will be mapped across the grid.

12. To force loading a longer (>20mS) sample as a single-cycle press & hold (SELECT) to bring the synth context menu options up:-

    - SINGle : forces single-cycle load.
    - MULTisamples : all folder samples.
    - BASIc : basic mode where no pitch analysis or or single cycle setting.

12. Press (SELECT) to load the sample as the oscillator wave.

NOTES

RE-ORDERING KIT ROWS IN THE SEQUENCER

1. Press [KIT]. The button illuminates red.
2. For the row to re-order. Firstly, press & hold [*AUDITION*] then press & hold [*MUTE*].
3. While still holding both of the [*AUDITION*] and [*MUTE*] buttons, turn (SCROLL▼▲).
4. The row will be relocated to the new location and other rows repositioned to match the change.

ADJUSTING AFFECT PARAMETERS FOR KITS

1. Press [KIT]. The button illuminates red.
2. Press [*AUDITION*] to select the row sound.
3. The sound will play out and the audition pad will illuminate dim to indicate that the row and hence the sound is selected. [SHIFT] + [*AUDITION*] for silent selection.
4. Selecting the desired parameter, for example: [LEVEL / PAN].
5. Turn the (UPPER) - level or the (LOWER) - pan, control to change the selected parameter for the row sound selected.
6. To change all kit sounds in the clip, press [AFFECT ALL]. Change parameters as per steps 5-6 above. The selected parameter for ALL clip sounds are adjusted collectively.

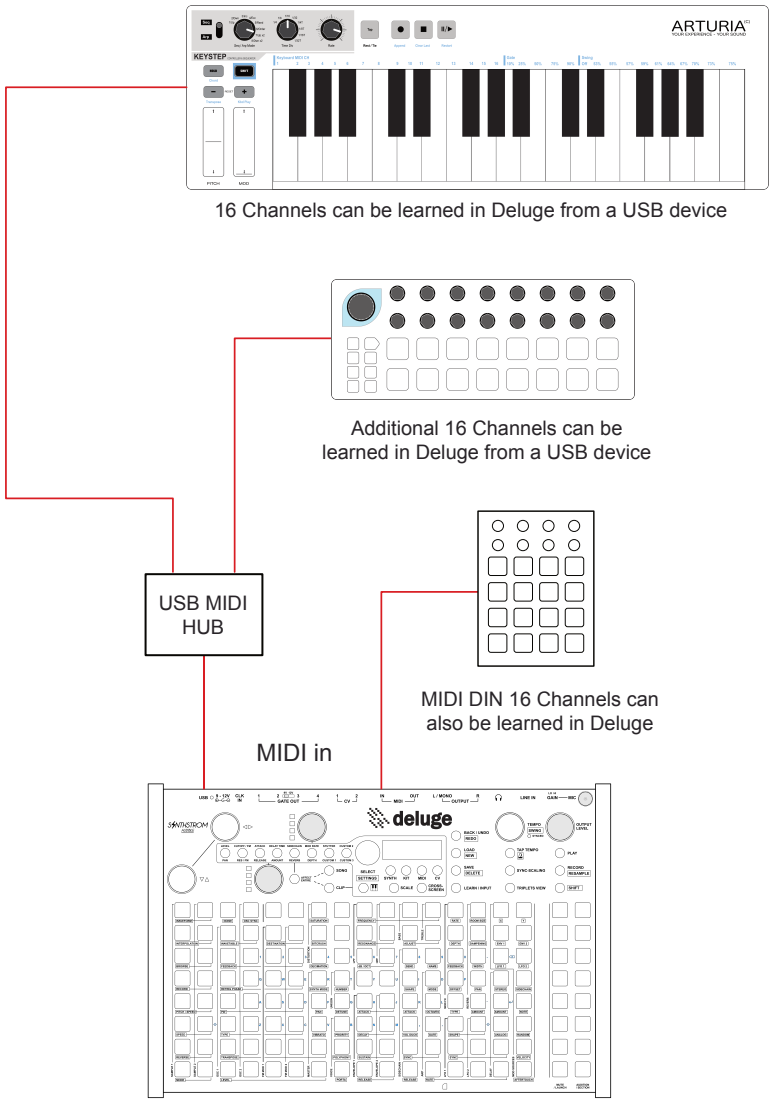
Just a few of the sound editor settings have the ability to be edited in bulk for all sounds within a kit. These are POLYphony, sample MODE, REVErse, SPEEd, and PISP (pitch / speed). When editing any of these, you may hold down the affect-entire button while turning the select knob in order to have your edit applied to all sounds within your kit.

			MODULATION SOURCES										
			Global to Sound		Per Voice								
			Sidechain	LFO 1	LFO 2	ENV 1	ENV 2	Velocity	Note	Random	After Touch	X	Y
PARAMETERS	Global to Sound	Delay Amount / Rate	✓	✓	No Modulation is Allowed								
		Mod FX Depth / Rate	✓	✓									
		Arpeggiator Rate	✓	✓									
		Reverb Amount	✓	✓									
		LFO 1 Rate	✓	✓									
	Both	Overall Volume	✓	✓	✓	Hard Connect		✓	✓	✓	✓	✓	✓
	Per Voice	LFO 2 Rate	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
		Oscillator Volume	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
		Noise Volume	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
		Pitch / Transpose: Overall	✓	✓	✓	✓	✓	✓	✓	✓	✓	Hard Connect	✓
		Pitch / Transpose: Oscillator / FM Modulator	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
		FM Modulator Level	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
		FM Feedback	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
		Pulse Width	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
		LPF / HPF Frequency / Resonance	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
		ENV 1/2 ADSR	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
		Pan	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
		Wavetable Position	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓

NOTES

Differentiating MIDI Input devices

MIDI devices have 16 available MIDI channels all of which can be used to communicate with Deluge by USB or the MIDI DIN port. Multiple devices can also be connected to Deluge with the use of a USB hub and also through the MIDI port which would mean more than 16 channels are present simultaneously in the network, providing input to Deluge. These channels can be set to control different functions, for example synths. Deluge can be set to differentiate between the incoming MIDI from different devices. These need to have been ‘learned’ in Deluge to assign the input controls to the correct function.



NOTES

SETTING MIDI DIFFERENTIATION ON

1. Press [SHIFT] + press (SELECT) to access the configuration menu.
2. Turn (SELECT) and scroll to ‘midi’ - MIDI. Press (SELECT).
3. Turn (SELECT) and scroll to ‘diFF’ - differentiation. This enables Deluge to differentiate from different connected devices across multiple channels.
4. Press (SELECT) and then turn (SELECT) to set to ON. This allows multiple devices to be differentiated in Deluge.
5. Press (SELECT) and then turn (SELECT) to set to OFF. This turns differentiation off to revert to the more traditional setup.

MIDI Differentiation operates for standard MIDI and also MPE MIDI. It is advised to have differentiation on when using MPE devices.

NOTES

MIDI Settings

[SHIFT] + press (SELECT)

Function	Sub Category	Setting Options
TCLO Trigger Clock	INput	PPQN - sync pulses. Pulses per quarter note. 24 default.
		AUTO start on/off. Whether the presence of a trigger clock signal should start or stop playback automatically.
	OUTput	PPQN - sync pulses. Pulses per quarter note. 24 default.
MIDI MIDI Settings	CLOCk	IN - MIDI beat clock input ON or OFF.
		OUT - MIDI beat clock output ON or OFF.
		MAGN - tempo magnitude matching ON or OFF.
	THRU	MIDI thru, ON or OFF.
	CMD Global MIDI Command	PLAY
		RESTart - restart playback if already playing.
		RECord
		TAP tempo
		UNDO
		REDO
		LOOP
		LAYEr - same as loop but with overdubs.
	diFF	Sets MIDI differentiation ON or OFF.
	dEVI	MIDI Device setting options are available depending on the connected USB and MIDI devices e.g. din, computer etc:- - MPE. Sets MPE Zone configuration. - VELo. Default velocity sensitivity per MIDI device.

NOTES

RECORDING AUTOMATION USING AN EXTERNAL CONTROLLER

1. Set up an external MIDI controller, whether a keyboard or pad or rotary / slider controls and map the incoming MIDI to the parameters desired.
2. Press [RECORD] to arm recording.
3. Press [PLAY] to start recording.
4. Any incoming MIDI that is relevant to the clip being recorded will be recorded in including automation of parameters and velocity. Example, changing a control mapped to frequency cutoff will record in as automation. Assignment of gold affect controls is irrelevant.
5. Parameters containing automation will display their name with a full stop / period / dot next to them when assigning a parameter knob's MIDI parameter. This indicates automation is present.
6. Press [PLAY] to stop.
7. To delete MIDI in recorded automation, re-start recording and press [SHIFT] and adjust the mapped external controller.
8. Parameters containing automation will display their name with a dot next to them when assigning a parameter knob's MIDI parameter - so it will be easy to see where automation exists.
9. Assigning a new MIDI parameter to a parameter knob does not move the knob's automation over to the new MIDI parameter. Automation can be manually copied and pasted using the normal manual process.

Any recorded data for pitch bend and aftertouch (channel pressure) MIDI inputs is captured in MIDI, Synth or CV clips and is retained with the clip even when changing presents or clip types. Also note-off velocity, if delivered by an external controller will be recorded.

12.10 Overview of MIDI MPE and Polyphonic Aftertouch

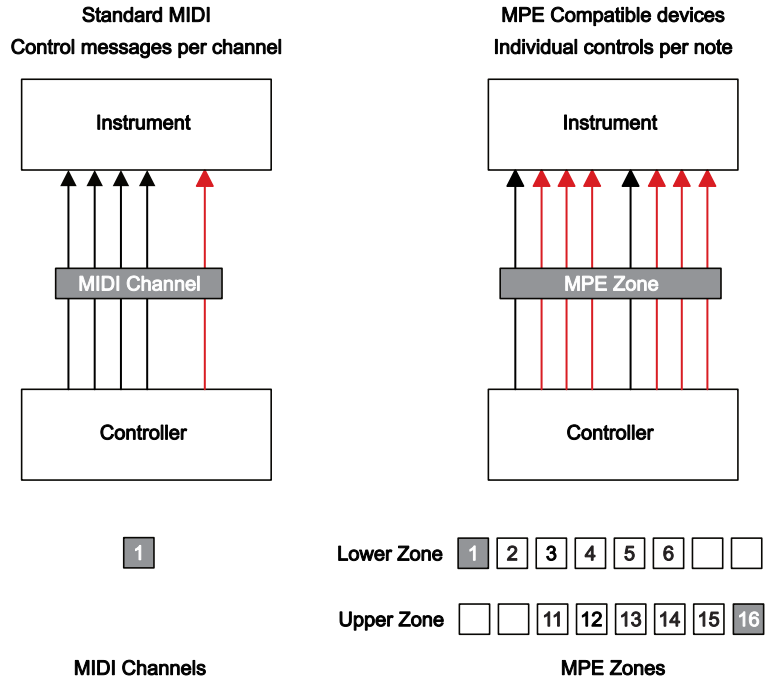
NOTES

MIDI Polyphonic expression or MPE as its often called, is an enhanced part of the official MIDI standard and refers to the ability to control note in more expressive manner than the standard MIDI messages. Until the introduction of MPE, polyphonic aftertouch was the only MIDI message considered to have independent expressive control. This is still supported even with MPE.

In traditional MIDI a note message would be sent on the MIDI channel, along with any other note. In addition any controls such as pitch bend would also be applied on the same channel, meaning the pitch would affect all notes on the same channel.

With MPE a series of channels are set up, known as zones, to communicate not only multiple notes but also MIDI information for each individual note. For example a pitch changes could be applied to only one note in a chord.

The two zones that cluster the channels are defined in the official MIDI protocol as lower zone (most common default) and the upper zone. Each zone has a master channel which communicates all messages. The master channels are fixed as 1 for lower and at 16 for upper zones. Any subsequent member channels in the zone increment up or down from the master channel in consecutive order. Generally these can be set by a device MPE Configuration message, where the host device sends the MPE setup automatically at power on or start up. However not all devices adhere to this exact standard and manual configuration is usually possible for the devices.



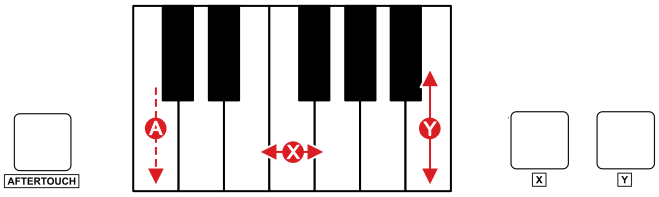
NOTES

12.11 MPE Application for MIDI Input in Deluge

MIDI MPE is all about better control of expression which is applied through three dimensions which are typically recognised from how a note is played on a MPE compatible MIDI controller.

For the synthesizer engines.

- Dimension ‘X’ is typically horizontal movement across a note key. This is by default patched to pitch bend in Deluge. In addition to the hard coded patching, the ‘X’ dimension can be patched elsewhere using the Deluge ‘X’ parameter. Setting the pitch bend range to zero will negate the hard coded patching if required.
- Dimension ‘Y’ is typically vertical movement up and down a notes key. This may be patched within existing synths, for example to LPF cutoff frequency. The ‘Y’ dimension can be patched elsewhere using the Deluge ‘X’ parameter.
- Aftertouch is the pressure applied to a notes key after it is initially pressed (illustrated as Dimension ‘A’). This may be patched within existing synths, for example to Master level. This is patched in Deluge using the ‘Aftertouch’ parameter and can be patched elsewhere.



For kit rows.

- MPE can be set for kits by learning the controller note to the kit row.
- All three MPE dimensions are applicable per row including bend ranges per row.
- Non-MPE MIDI input can also allow pitch bend and aftertouch to be recorded to the row.
- Kits cannot output MPE MIDI and default, however aftertouch that has been recorded to the row will be output as polyphonic aftertouch for the rows note.

12.13 Setting Up MIDI MPE

NOTES

The MPE MIDI devices can be connected to Deluge with the USB or MIDI DIN connections for inputs or outputs. Any MPE MIDI Controller would need to be ‘learnt’ by Deluge. Some MPE devices send MCM messages to ensure configuration is aligned between the controller and destination. This can be set manually also in Deluge.

MANUAL SET UP OF AN EXTERNAL MPE MIDI CONTROLLER

1. Connect the MPE compatible MIDI controller to Deluge using the MIDI DIN input or ideally the USB connection.
2. Select [SYNTH]
3. Press [SHIFT] + Press (SELECT) to open the settings menu.
4. Turn (SELECT) to navigate the menu and highlight MIDI, then press (SELECT).
5. In the MIDI sub menu, turn (SELECT) to highlight ‘dEVIces’. Press (SELECT) to select.
6. The options will depend on the connected devices and may be represent the device by name or a generic name:-
    - DIN - MIDI DIN connected devices
    - COMPUTER - Deluge is a peripheral to a USB connected device.
7. Highlight the device to configure and press (SELECT) to open the device sub menu.
8. Highlight the ‘MPE’ option and press (SELECT).
9. Select the ‘in’ or ‘out’ option, typically for MIDI inputs select ‘in’ and press (SELECT) to choose. Controlling external gear from Deluge would use ‘out’.
10. The option is presented for the ‘LOWER’ or the ‘UPPER’ Zone. It is good practice to start with the lower zone set up. Press (SELECT) to choose.
11. The number of member channels is presented. Channel 1 - Lower and Channel 16 - Upper are reserved as master channels. Set this to match the connected MPE controllers equivalent zones.
12. Optionally a VELo, Velocity setting allows a default velocity for MIDI devices to compensate for variable the MPE controller sensitivity.

NOTES

Settings Options for MPE MIDI Zones

SETTINGS > MIDI > DEVICES ….. Select the connected MPE device.

Sub Menu	Sub Menu	Sub Category	Setting Options
MPE	IN	LOWER	Member Channels OFF, 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11,12, 13, 14, 15 (Master Channel is Channel 1)
		UPPER	Member Channels OFF, 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11,12, 13, 14, 15 (Master Channel is Channel 16)
	OUT	LOWER	Member Channels OFF, 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11,12, 13, 14, 15 (Master Channel is Channel 1)
		UPPER	Member Channels OFF, 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11,12, 13, 14, 15 (Master Channel is Channel 16)

MPE Zone data is stored automatically as an MIDIDevices.xml file on the SD Card.

AUTOMATIC SET UP OF AN EXTERNAL MPE MIDI CONTROLLER

1. Connect the MPE compatible MIDI controller to Deluge using the MIDI DIN input or ideally the USB connection.
2. Select [SYNTH]
3. Press and hold [LEARN] + hold [*AUDITION*] + Play several notes (ideally 5 but more if possible) on the connected MPE controller. Keys will need to be simultaneous triggered. The actual number of notes pressed will aim to reflect the MPE channels in the zone set for the controller.
4. The MPE Zones and channels should now be learnt to match the connected controller.

Notes on Kits

When an MPE controller is set up as an input devices, the MPE dimensions can be recorded into individual rows of a kit. The controller note / key will need to be learnt to the kit row.

NOTES

MOVING MPE NOTES

1. To change a note position, Hold Note [*PAD*] + Turn (SCROLL◄►).
2. The note will be relocated and the attached MPE data will move to the new location with the note.

ADJUSTING MPE NOTES VALUES

1. Ensure the MPE MIDI controller is connected and set up correctly.
2. Press and hold Note [*PAD*] for the note to adjust on Deluge.
3. While holding the Deluge note, apply the expression change on the same note on the connected MPE MIDI controller. For example apply more aftertouch key pressure.
4. Release the the Deluge and MIDI controller notes. The new MPE expression value will be recorded into the note.

NOTES

12.13 MIDI MPE Output

Connecting MIDI with USB or MIDI DIN Output connections allows Deluge to control MIDI devices such as MPE compatible synths. The MPE MIDI outputs are set up in the same way as inputs within the configuration menu.

MIDI Clips that have recorded MPE MIDI from an external controller retain the expression values and therefore can play these back to the external MPE synth from the Deluge MIDI out.

Remember that MPE devices should be configured to match using the ‘Upper’ and ‘Lower’ Zones. Deluge sends MCM messages when changing the output zone or when powering up to a MPE compatible connected device. Standard MIDI channels will not be used when in this configuration.

14 System & General

Quick Reference Commands

Context	Action	Command
All Views		
System	Adjust brightness	[SHIFT] + [LEARN / INPUT] + turn (SCROLL▼▲)
System	Settings menu	[SHIFT] + (SELECT)
System	Undo	[BACK / UNDO]
System	Redo	[SHIFT] + [BACK / UNDO]
System	Tempo change	Turn (TEMPO)
System	Tempo change 1BPM inc	Push & turn (TEMPO)
System	Swing adjustment	[SHIFT] + turn (TEMPO)
System	Metronome on/off	[SHIFT] + [TAP TEMPO]
Navigation	Check current zoom level	Push (SCROLL◄►)
Navigation	Change current zoom level	Push & turn (SCROLL◄►)
Navigation	Scroll left or right	Turn (SCROLL◄►)
Navigation	Scroll up or down	Turn (SCROLL▼▲)
Song	Load song (saved tempo)	[LOAD] + turn (SELECT), then [LOAD]
Song	Load song (current tempo)	[LOAD] + turn (SELECT), then push (TEMPO) + [LOAD]
Song	Delete song	[SHIFT] + [SAVE]
Song	New song	[SHIFT] + [LOAD], then [LOAD]
Song	Delay load	[LOAD], Then turn (SELECT)
Sampling	Loop resample	[RECORD] + [PLAY] then [RECORD] + [PLAY]
Sampling	Resample	[SHIFT] + [RECORD]
Sequencer	Nudge clock	Push (SCROLL◄►) + turn (TEMPO)
Parameter Control - Rotary Push Controls - Toggle Options		
FX	LP, HP, EQ option	[CUTOFF / RES] = on, press (UPPER)
FX	LPF slope type	[CUTOFF / RES] = on, press (LOWER)
FX	Ping-Pong on/off	[DELAY TIME / AMOUNT] = on, press (UPPER)
FX	Delay style digital / analog	[DELAY TIME / AMOUNT] = on, press (LOWER)
FX	Compressor sync 8th - 32nd	[SIDECHAIN / REVERB] = on, press (UPPER)
FX	Reverb room size preset	[SIDECHAIN / REVERB] = on, press (LOWER)
FX	Effect song or kit: chorus, flanger, phaser	[MOD RATE / DEPTH] & affect entire = on, press (UPPER)
FX	Effect song or kit: depth, offset, feedback	[MOD RATE / DEPTH] & affect entire = on, press (LOWER)
FX	Stutter	[STUTTER / CUSTOM 1] = on, press (UPPER)
FX	Stutter - ramp speed	[STUTTER / CUSTOM 1] = on, press & turn (UPPER)

Quick Reference Commands (Cont.)

Context	Action	Command
Song View		
Song	Clip parameter adjustment	Hold [*PAD*] on the grid + turn (UPPER) or (LOWER)
Song	Change section assignment / Colour	[SHIFT] + [*SECTION*]
Song	Section repeats / share status	Press [*SECTION*] + turn (SELECT)
Song	Move row	Hold [*PAD*] of row to move + turn (SCROLL▼▲)
Song	Clone clip	Hold [*PAD*] of master clone clip + press [*PAD*] of another row
Song	Solo section	Tap [*SECTION*] pad
Song	Solo clip (arm)	Hold (SCROLL◄►) + press clip's [*LAUNCH*] pad
Song	Solo clip (Immediate)	Hold (SCROLL◄►) + [SHIFT] + press clip's [*LAUNCH*] pad
Song	Un-solo	Press clip's [*MUTE*] pad
Song	Instant mute / launch	[SHIFT] + [*MUTE*] pad
Song	Delete clip	Hold [*PAD*] of clip to delete + press [SAVE / DELETE]
Song	Drag clip instance to arranger	Hold [*PAD*] + press [SONG] + turn (SCROLL◄►) then release pad
Song	Record to arranger	Hold [RECORD] + press [SONG]
Looping	Create audio clip	Hold [*PAD*] of empty clip + press (SELECT)
Looping	Set input source for audio clip	Hold [LEARN/INPUT] + Press [*PAD*] of clip
Looping	Loop record	In record mode, press [PLAY] with armed, empty audio clip(s) present
Looping	Close loop recording	Press [*LAUNCH*] pad of clip
Looping	Close loop + immediate solo	Hold (SCROLL◄►) + press [*LAUNCH*] Pad to close loop.
Looping	Loop record during playback	In record mode, unmute armed, empty (audio) clip
Looping	Overdub	Hold [RECORD] + press [*PAD*] of clip row underneath
Looping	Continuous overdub layering	Hold [RECORD] + press [*AUDITION*] Pad of row underneath
Looping	'Loop pedal' record	Record loop while no other clip is playing / unmuted and metronome is off
Looping	Grab tempo from audio clip	Hold (TEMPO) + press [*PAD*] for clip row (song view) or any pad in clip view
Looping	Select MIDI switch LOOP target	Enter audio clip or hold clip row in song view + press switch
Looping	Auto extending instrument clip record	In record mode, unmute armed empty clip during playback

Quick Reference Commands (Cont.)

Context	Action	Command
Arranger View		
Clip	Place clip instance	[*PAD*]
Clip	Delete clip instance	[*PAD*] Leftmost start pad of an instance
Clip	Clip instance length	Hold [*PAD*] start + press [*PAD]* end on the same row
Clip	Move clip instance horizontally	Hold [*PAD*] + turn (SCROLL◄►)
Clip	Change instance clip	Hold [*PAD*] + turn (SELECT)
Clip	Make clip instance unique	[SHIFT] + [*PAD*] creates a 'white' clip instance
Clip	Adjust clip instance parameters	Hold [*PAD*] + turn (UPPER) or (LOWER) for the selected parameter
Clip	Enter clip view for a clip	[*PAD*] of any clip instance pad other than the first / leftmost
Clip	Drag 'unique' clip instance to song view	Hold [*PAD*] + [SONG] + turn (SCROLL▼▲) then release pad
Row	Move track	Hold [*AUDITION*] pad + turn (SCROLL▼▲)
Instrument	Mute / unmute track	[*MUTE*] pad for row
Instrument	Solo track	Press & hold (SCROLL◄►) + [*MUTE*] for instrument
Instrument	Change or Add new instrument	Hold [*AUDITION*] pad + turn (SELECT) or press [INSTRUMENT] type
Instrument	Delete track row	Hold [*AUDITION*] pad + [SAVE / DELETE]
Instrument	Audition instrument	[*AUDITION*] - Songs root note or snare drum in kit mode
Arrangement	Clear arrangement	Press & hold (SCROLL◄►) + [BACK / UNDO]
Audio	Create new audio track	Empty lane [*AUDITION*] + press (SELECT)
Audio	Set input source for audio track	[LEARN / INPUT] + [*AUDITION*] pad of audio track
Audio	Record audio from current position	[PLAY] while in [RECORD], with armed audio present
Clip View		
Clip	Change clip colour	[SHIFT] + turn (SCROLL▼▲)
Clip	Change clip preset, MIDI Ch, CV out	Turn (SELECT)
Clip	Adjust clip length	[SHIFT] + turn (SCROLL◄►)
Clip	Duplicate / multiply and append clip content	[SHIFT] + press (SCROLL◄►)
Clip	Horizontal clip shift / nudge L-R	Press & hold (SCROLL▼▲) + turn (SCROLL◄►)
Clip	Playback from current screen	Press & hold (SCROLL◄►) + [PLAY]
Clip	Clear clip	Push (SCROLL◄►) + [BACK / UNDO]
Clip	Change Clip Direction	[SHIFT] + [*DIRECTION*] Direction may not be labelled on the faceplate. Pad is located to the right of the OSC SYNC pad on the FM MOD 1 Column.

Quick Reference Commands (Cont.)

Context	Action	Command
Clip View (Cont)		
Note	Note length	Hold [*PAD*] start + press [*PAD]* end on the same row
Note	Note length - long	Press [*PAD*] start. Navigate grid - turn (SCROLL◄►). Hold (SCROLL◄►) + press [*PAD]* end on the same row
Note	Note velocity	Hold [*PAD*] on the grid + turn (SCROLL◄►)
Note	Note repeat	Hold [*PAD*] on the grid + hold and turn (SCROLL▼▲)
Note	Note play probability %	Hold [*PAD*] of note + turn (SELECT) anticlockwise / left
Note	Set dependance on first note	Hold All [*PAD*]s together + turn (SELECT) anticlockwise / left
Note	Iteration dependance for a note	Hold [*PAD*] of note + turn (SELECT) clockwise / right
Note	Copy notes	Hold [LEARN / INPUT] + press (SCROLL◄►)
Note	Paste notes	Hold [LEARN / INPUT] + [SHIFT] + press (SCROLL◄►)
Note	Nudge individual notes horizontally	Hold [Pad] + press and turn (SCROLL◄►)
Parameter	Automate a parameter	While recording, LED on; turn (UPPER) or (LOWER) of selected parameter
Parameter	Per note parameter change	Hold [*PAD*] of note start + turn (UPPER) or (LOWER) of selected parameter
Parameter	Delete parameter automation	[SHIFT] + press (UPPER) or (LOWER) of selected parameter
Parameter	Copy automation	Hold [LEARN / INPUT] + press (UPPER) or (LOWER) of selected parameter
Parameter	Paste automation	Hold [LEARN / INPUT] + [SHIFT] + press (UPPER) or (LOWER) of selected parameter
Sample	Load sample	[*AUDITION*] + [LOAD]
Sound	Sound Editor	[SHIFT] + [*PAD*] of shortcut as labelled or press (SELECT)
Preset	Preset load interface	[LOAD] + [SYNTH] or [KIT]
Audio	Audio clip trim	Press [*PAD*] of rightmost column at the end of the waveform
Euclidian Seq	Number of events on the row	Hold [*AUDITION*] + press & turn (SCROLL▼▲)
Euclidian Seq	Row length	Hold [*AUDITION*] + turn (SCROLL◄►)
Euclidian Seq	Rotate / Shift events or notes	Hold [*AUDITION*] + press & turn (SCROLL◄►)

Quick Reference Commands (Cont.)

Context	Action	Command
Sound Editor		
Sound Editor	Move cursor	Turn (SCROLL◄►) to navigate
Controls	Parameter knob assignment	Hold [LEARN / INPUT] + turn (UPPER) or (LOWER) parameter control
Controls	MIDI knob assignment	Hold [LEARN / INPUT] + turn (MIDI) Control of external device
Controls	Unassign MIDI control knob	[SHIFT] + [LEARN / INPUT]
Preset	Save preset	[SAVE]
Parameter	Apply a change to entire kit	Press & hold [AFFECT ENTIRE] while changing parameter i.e. Polyphony, mode, reverse, speed, pitch/speed)
Synth, Keyboard, MIDI, CV Clips		
Synth	Synth resample	[RECORD] + [*AUDITION*] or grid [*PAD*]
Synth	Load blank synth	[SHIFT] + [SYNTH]
Synth	Save synth preset	[SAVE / DELETE] + [SYNTH]
Synth		
Scales	Cycle through default scales	[SHIFT] + [SCALE]
Scales	Change root note	[SCALE] + [*AUDITION*] pad row of new note
Scales	Chromatic scale	[SCALE] to turn it OFF, LED unlit
Scales	Create scale	In chromatic mode - scale OFF; Select [*PAD*] notes, then press [SCALE]
Scales	Alter current scale	Hold [*AUDITION*] pad + press & turn (SELECT)
Transpose	Transpose current clip an octave	Press & turn (SCROLL▼▲)
Transpose	Transpose current clip a semitone	In chromatic mode - Scale OFF; [SHIFT] + press & turn (SCROLL▼▲)
Transpose	Transpose ALL clips a semitone	In scale mode - scale ON; [SHIFT] + press & turn (SCROLL ▼▲)
Note	Create full screen ‘drone’ note	Hold [*PAD*] first column + press [*PAD]* last column of grid
MIDI	Assign MIDI CC to parameter knob (MIDI Track)	Press & hold (UPPER) or (LOWER) + turn (SELECT)

Quick Reference Commands (Cont.)

Context	Action	Command
Kit Clips		
Kit	Change colour of specific row	[SHIFT] + [*AUDITION*] + turn (SCROLL▼▲)
Kit	Create new kit	[SHIFT] + [KIT]
Kit	Save kit preset	[SAVE / DELETE] + [KIT]
Kit	Move row	Hold for row [*AUDITION*] + [*MUTE*] + turn (SCROLL▼▲)
Kit	Delete row	[*PAD*] for row to delete + [SAVE / DELETE]
Sample	Slice a sample	[SHIFT] + [KIT], Turn (SELECT) to choose sample, [SHIFT] + Press (SELECT)
Sample	Record sample from input	[*AUDITION*] + [RECORD] to start recording. [RECORD] again to end
CV	Set kit row output to gate	[*AUDITION*] + press [CV]
CV	Set kit row CV gate	[*AUDITION*] + turn (LOWER) - must be set as a CV row
MIDI	Set kit row output to MIDI	[*AUDITION*] + press [MIDI]
MIDI	Set kit row MIDI channel	[*AUDITION*] + turn (LOWER) - must be set as a MIDI row
MIDI	Set kit row MIDI note	[*AUDITION*] + turn (UPPER) - must be set as a MIDI row

SQ13 Reduce Clip Length — Shift + — *Poly Rhythms* — C

SQ14 Shift All Clip Notes
Horizontally Left / Right — + — C

SQ15 Clear Clip — + Back / Undo / Redo — C

SQ16 Change Clip Colour — Shift + — C

SQ17 Change Row Colour
Instrument row in a kit clip — Shift + + — C Kit

SQ18 Re-order Kit Clip Row
Up or Down — + + — C Kit

SQ19 Note Nudge
Individual Notes — + — C

SQ20 Note Repeat — + — C

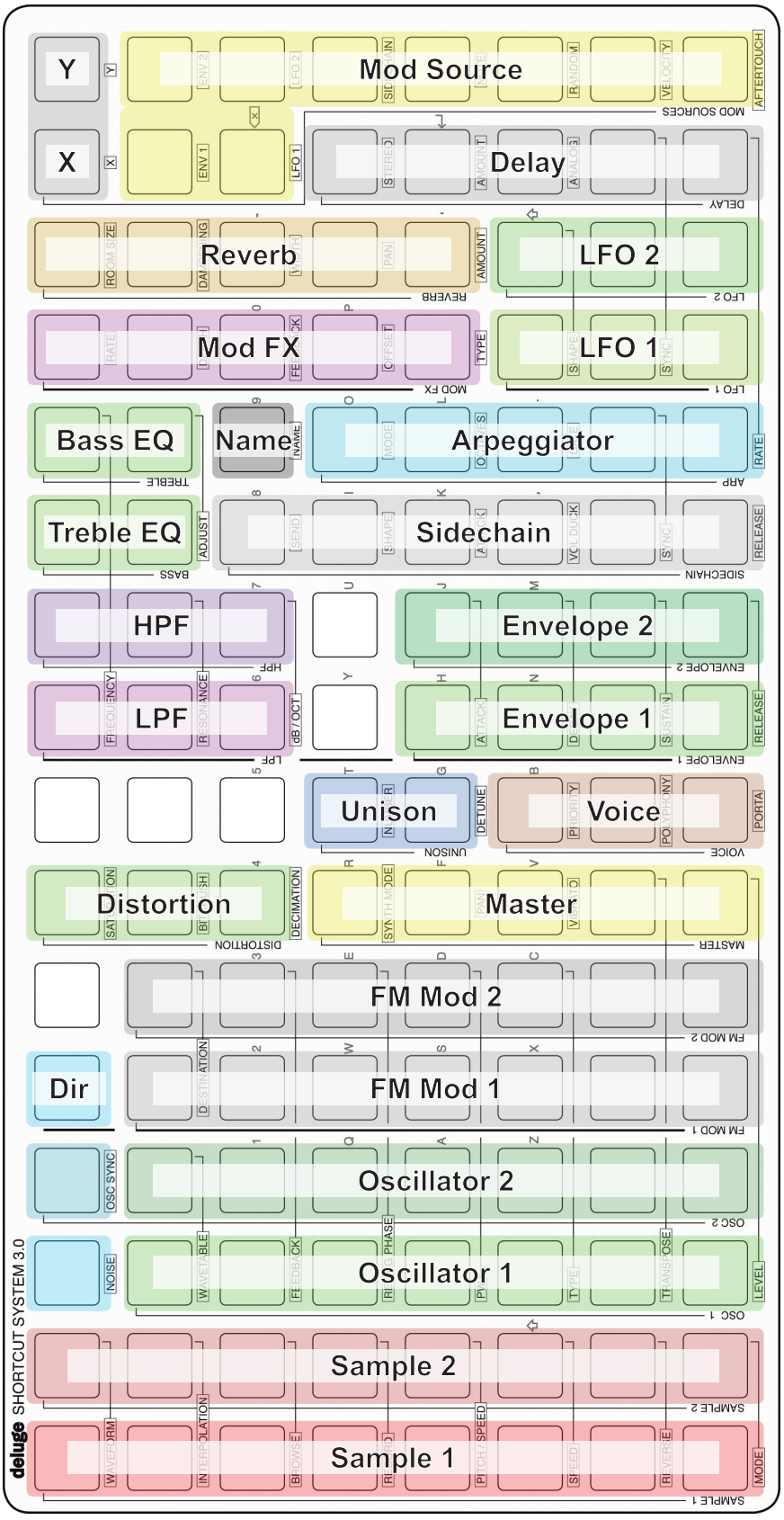
SQ21 Clip Play Direction — Shift + — *Pad may not be labelled on the grid* — C

SQ22 Euclidian Seq Events
Number of Events / Notes — + — C

SQ23 Euclidian Seq Length
Row Length — + — C

SQ24 Euclidian Seq Rotate
Shift / Rotate Events or Notes — + — C

Version 3.0


Y
X
Mod Source
Delay
Reverb
LFO 2
Mod FX
LFO 1
Bass EQ
Name
Arpeggiator
Treble EQ
Sidechain
HPF
Envelope 2
LPF
Envelope 1
Unison
Voice
Distortion
Master
FM Mod 2
Dir
FM Mod 1
Oscillator 2
Oscillator 1
Sample 2
Sample 1
deluge SHORTCUT SYSTEM 3.0

Index

Index

Index

The Deluge Manual

Fourth Edition v4.0 OS

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