Polyend

Polyend
Tracker Mini
Manual

An Official Reference for The Polyend Tracker Mini

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Overview

Polyend Tracker Mini is a handheld version of the desktop Polyend Tracker. This is a modern hardware implementation of a classic software music application that emerged in the late 80s as music-making tools, mainly on gaming machines and later on personal computers. A Tracker is a utility that assembles a linear series of notes that typically triggers samples and associated parameters. Unlike standard digital audio workstations (DAW), Trackers generally run top to bottom when playing tracks. Trackers usually had a niche community of followers and never reached the same height of popularity as other DAWs. Polyend Tracker Mini reignites the interest and presents the composition features of a Tracker in a portable and immediate format. Don't be fooled by this quirky programming style of music making, which may appear unusual but does provide a compelling and creative approach to production. Polyend Tracker Mini presents this vintage application in a modern and stylish handheld box with sixteen sequenced tracks and various effects, MIDI and Audio In / Out, and multiple workflow environments. With a small form factor and rechargeable battery, the Tracker Mini is an ideal portable 'all in one' workstation. The feature set is broad and has some interestingly creative functions. Tracker Mini isn't a complicated instrument to use, but the unusual and less familiar core concept and workflow may mean that getting started is a little confusing and the learning curve is drawn out. This may be a different twist on music production, but hey, that's what makes it fun. This guide aims to help speed up learning and get the very best from the device. As always, the Synthdawg notebook style allows for your notes to be added and makes the guidebook personal for you. The Tracker Mini journey is unusual yet fun, and at the same time, it is a powerful music-making unit that gives some rewarding results. Enjoy.

1 Overview

1.1 How to use this Notebook

Sections are laid out to cover the full workflow with walkthroughs, step by step guides and tips. Some pages carry a wide margin and some are intentionally blank enabling you to make your own notes.

Control conventions.

(Enter)

D-Pad for navigation options are shown with rounded parentheses. These represent the 5 physical direction buttons. These include, (Up), (Down), (Right), (Left) as well as the central (Enter) button.

[+] / [-]

The master [+] & [-] buttons navigate and for some parameters adjust it's values. The outer buttons make changes in larger increments. Also used to adjust the master volume level.

[Function]

Square parentheses contain general functions that are selectable by one of the other 15 physically dedicated buttons - either as a primary or secondary function. Examples are [Rec], [Play], [Shift]. .

When using the [Menu] button, the pop-up menu will open while the button is held. Highlight the specific menu option by navigating with the D-Pad navigation buttons while holding [Menu]. Options with multiple pages are shown by the dots underneath the option text. The currently highlighted option is selected when the [Menu] button is released.

[Function] + [Option]

Functions which require multiple button selections simultaneously are shown with a + symbol between each required button. An example is the [Shift] + [Copy] command.
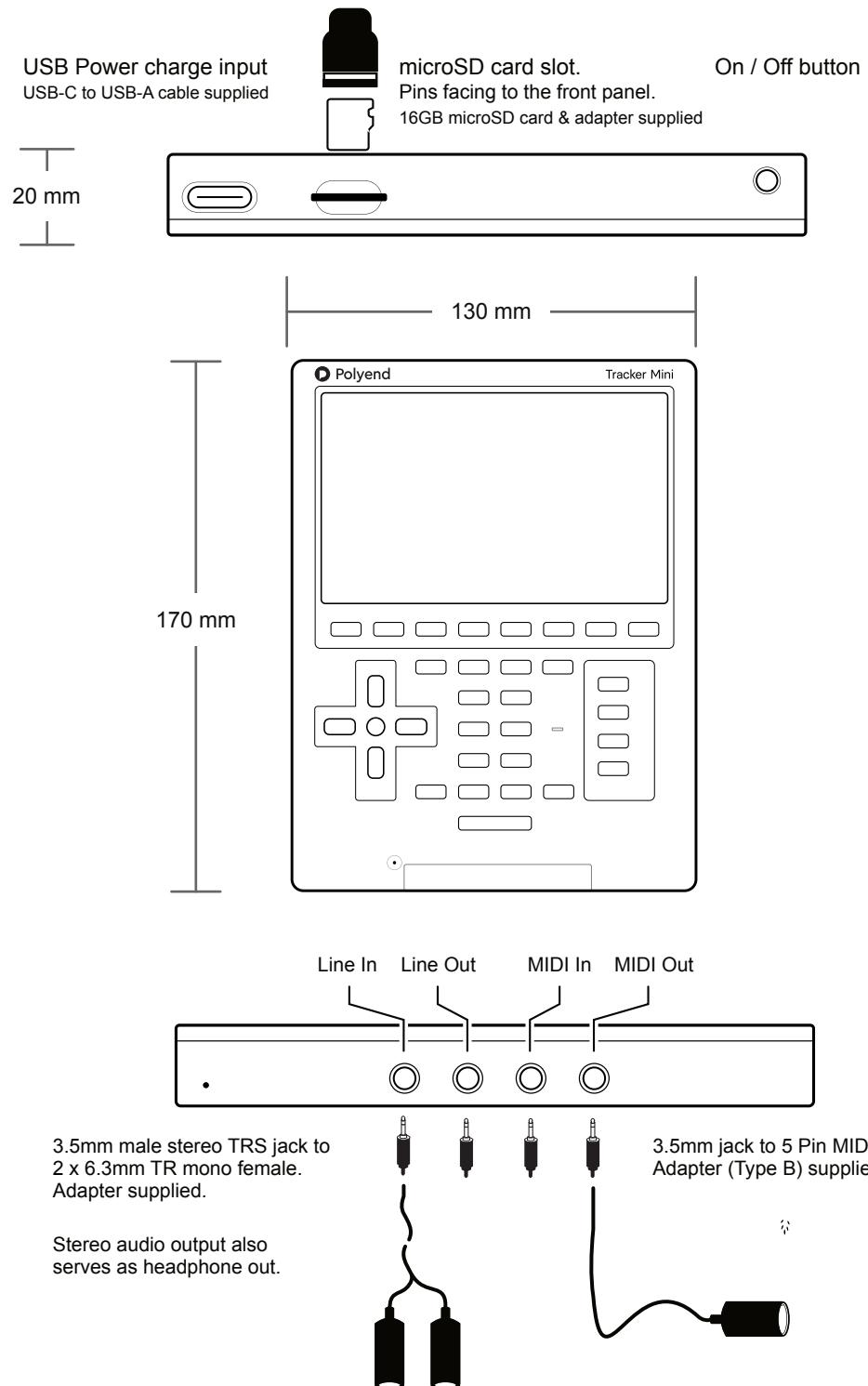
[*Dynamic Screen Key*]

The 8 dynamic screen buttons located directly under the display will be written using *italic* text. The actual function that each button serves will change depending on the current context. The function it serves will be labelled on the screen label above each button on the device. Currently unavailable options will show on the screen as dimmed text. Dynamic screen key examples include [*Create Project*], [*Up*] or [*Down*] options.

Your Notes Can be written here Here
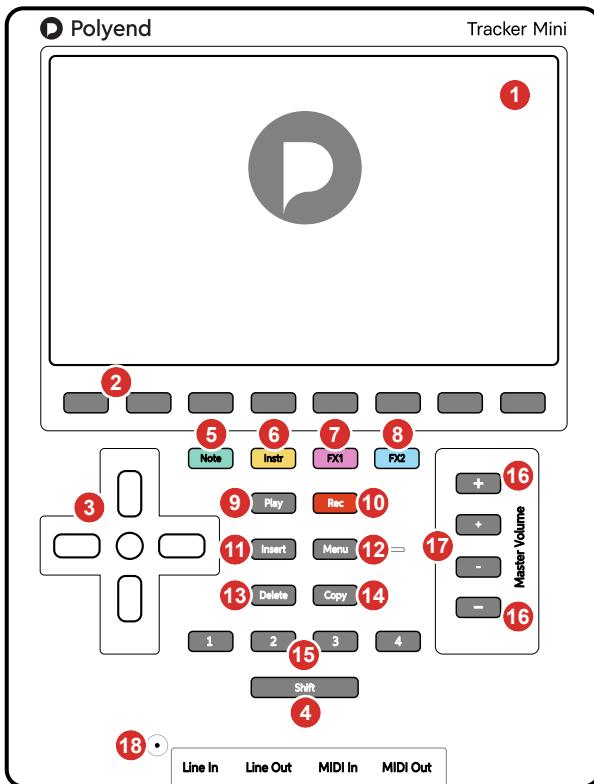
Did you know?

Music Trackers emerged in the late 1980's on gaming computers?

1.2 Hardware Overview

USB Power charge input
USB-C to USB-A cable supplied

microSD card slot.
Pins facing to the front panel.
16GB microSD card & adapter supplied

On / Off button

20 mm

130 mm

Polyend   Tracker Mini

170 mm

Line In   Line Out   MIDI In   MIDI Out

3.5mm male stereo TRS jack to
2 x 6.3mm TR mono female.
Adapter supplied.

Stereo audio output also
serves as headphone out.

3.5mm jack to 5 Pin MIDI.
Adapter (Type B) supplied

1 Overview

1 LCD Display
5 Inch, LCD TFT 800 x 480 Display.

2 Screen Buttons
Dynamic [*Screen buttons*] are dependant on the function displayed above each button.

3 D-Pad Navigator Buttons
Four navigation pad buttons (Up), (Down), (Left), (Right) and one (Enter). Manoeuvre through the grid and options.

4 Shift Button
Pressing [Shift] + Another button will select its secondary function.

5 Dedicated Note Button
Selection of the [Note] element of a step.

6 Dedicated Instrument Button
Selection of the [Instrument] for a step.

7 Dedicated FX1 Button
Effect selection for [FX1] of a step.

8 Dedicated FX2 Button
Effect selection for [FX2] of a step.

9 Play Button
Plays when pressing [Play] the pattern or song. Pressing again stops playback. Play again restarts.

10 Rec Button
Pressing [Rec] will toggle the record mode on or off for editing patterns and perform settings.

11 Insert / Home Button
Pressing [Insert] will insert. Pressing [Shift] + [Insert] will return 'home', to the top of the pattern.

12 Menu Button
Hold to open the menu. Navigate to highlight a selection from the available options. Release to select.

13 Delete Button
Pressing [Delete] will reset or step back.
[Shift] + [Delete] will backspace delete the selected item.

14 Copy Button
Pressing [Copy] will copy the selected item.
Use [Shift] + [Copy] to paste any copied item.

15 Function Buttons
Assignable function buttons. Default: 1 - Pattern, 2 - Inst Automation, 3 - Sample Playback, 4 - Master.

16 Master [+] / [-] Buttons - Course
Adjusts the master volume +/- in large increments. Also navigates and adjusts values within certain menus.

17 Master [+] / [-] Buttons - Fine
Increases the master volume +/- in fine increments.
Also navigates and adjusts values within certain menus.

18 Microphone
Internal microphone.

1.3 Start Up
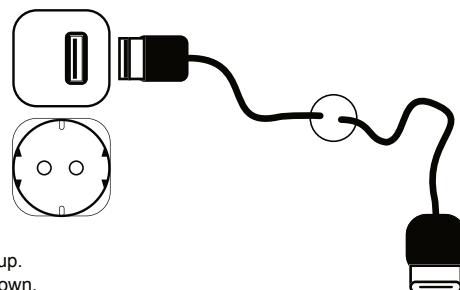
Tracker Mini is powered from the an internal rechargeable battery which is charged using the supplied USB cable and charger. When restarting Tracker Mini the previously open project will be be re-opened.

▌ POWERING ON / OFF TRACKER MINI
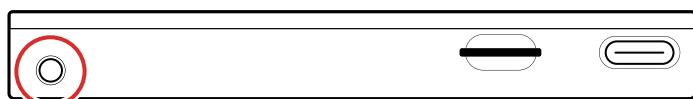
To recharge Tracker Mini, connect the supplied USB-C Mains cable between Tracker Mini and the supplied USB plug to charge the unit. Once charged Tracker Mini will operate without the USB power supply being connected.

1. Ensure the microSD card is installed correctly for Tracker Mini to operate. Pins should face up towards the front panel.

2. To power up, hold the small power on/off button located on the top right (looking from the front) for 1 second. Start up will open the previously opened project.

3. To power off, press and hold the small power button located on the top right (looking from the top) until the timer bar ends. Tracker Mini will then power off.

4. To check battery power charge when the unit is off, press quickly the power button. The battery indicator will display for a short period to indicate the charging state. The battery state is also displayed if the power cable is connected while powered off.

The charging supply is 5V, 2A from the supplied mains to USB adapter.

Press the On/Off button to power up.
Hold the On/Off button to power down.

! **Warning**: Under-powering the Tracker from a hub or computer can result in performance issues or microSD card failure. It is recommended that you only use the supplied cable and power supply to charge Tracker Mini. Any other device used to charge Tracker Mini must adhere to the 5V, 2A maximum power rating. Applying other chargers and power banks is entirely at the user's risk.

1 Overview

1.4 Generic Button & Control Functions

There are a number of button commands that operate generically throughout Tracker Mini. These are applied in a variety of situations.

Main menu browsing

Typically the [Menu] button is held while navigating the main menu. The navigation can be performed by various button combinations.
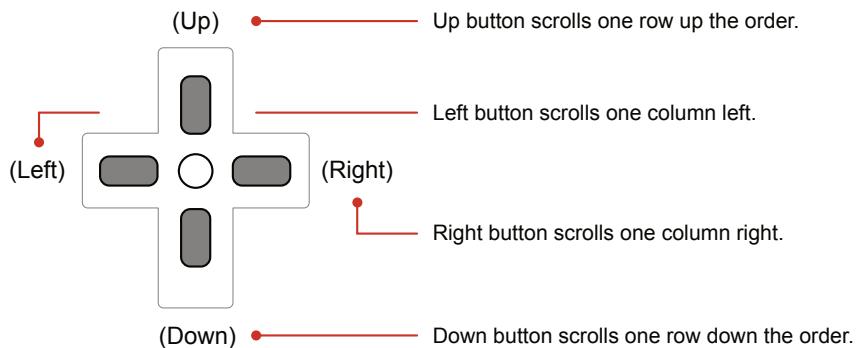
Menu page

Hold **Menu**
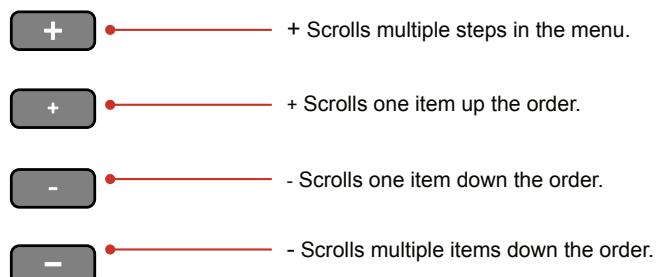
Pattern	Instrument Parameters ○●	Sample Playback	Master ●○○
Song	Sample Loader	File	Config
Perform	Sample Editor	Sample Recorder	Games

Hold [Menu] button throughout the navigation process.

D-Pad menu navigation

(Up) ● Up button scrolls one row up the order.

Left button scrolls one column left.

(Left) (Right)

Right button scrolls one column right.

(Down) ● Down button scrolls one row down the order.

Master +/- buttons

+ ● + Scrolls multiple steps in the menu.

+ ● + Scrolls one item up the order.

- ● - Scrolls one item down the order.

− ● - Scrolls multiple items down the order.

Release **Menu** The menu item is selected when [Menu] button is released.
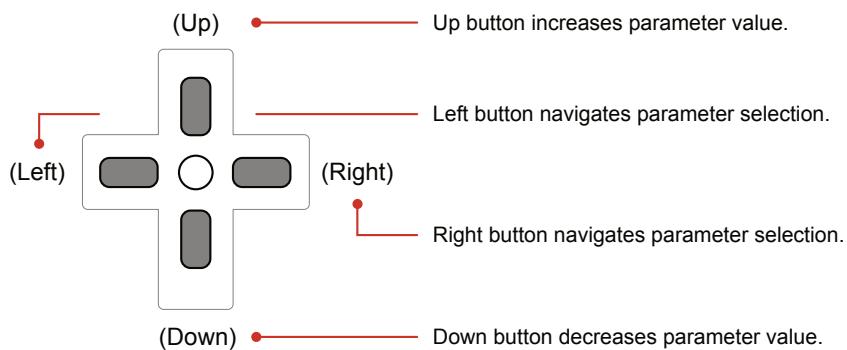
1.5 Generic Parameter Editing

Pages may contain parameters and functions which once selected can be adjusted in value. These are applied in a variety of situations.

Parameter editing
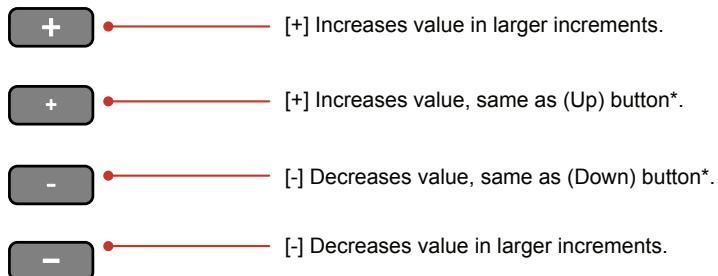
A page will need to be selected which contains the parameters to edit. For example the 'Master' page contains a series of adjustable settings. The highlighted and selected parameter will be indicated with a red bounding box. It is this parameter that will be changed when using the D-Pad navigator and +/- buttons.

D-Pad navigation

(Up) ———————— Up button increases parameter value.

———————— Left button navigates parameter selection.

(Left)   (Right)

———————— Right button navigates parameter selection.

(Down) ———————— Down button decreases parameter value.

○ The central navigation button typically acts as a 'select' or 'enter' button

Master +/- buttons

+ ———————— [+] Increases value in larger increments.

+ ———————— [+] Increases value, same as (Up) button*.

- ———————— [-] Decreases value, same as (Down) button*.

- ———————— [-] Decreases value in larger increments.

Within fixed page menu options, the D-Pad navigation buttons and +/- master buttons will scroll through the available options. The option is also automatically selected when it is highlighted. The respective screen button may also cycle through menu options when pressed repeatedly in pages.

* Inner +/- and D-Pad up / down may operate in similar fashion in some menu and value setting options.

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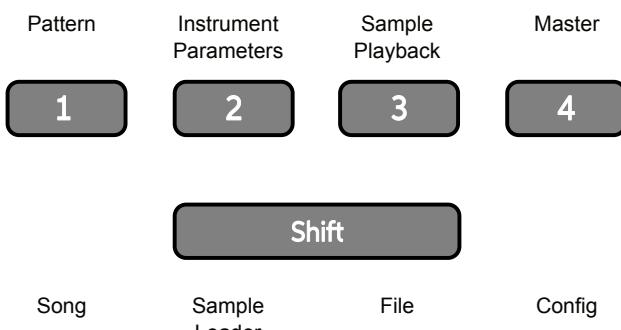
1.6 Functions Buttons.

There are 4 dedicated function buttons which allow quick access to 8 pre-defined pages. These are numbered 1 - 4 for the first 4 functions and also have an additional set of 4 functions by using [Shift]. These function buttons are assignable and can be reconfigured to a range of page options but it is recommended to start with the defaults in order to build your workflow.

Using the assignable function buttons

Tap one of the function buttons or use [Shift] + tap, to immediately access the defined page. The default pages that are assigned are illustrated below.

Press [1] - [4] to select a defined function page

Pattern	Instrument Parameters	Sample Playback	Master
1	2	3	4

Shift

| Song | Sample Loader | File | Config |

Hold [Shift] + [1] - [4] to select a defined function page

The main page is selected when pressing the function buttons. If multiple pages exist, continue to tap the respective function button to cycle through the available pages.

There are 12 available functions which can be assigned to the function buttons with up to 8 slots available, 2 for each button. Other than those assigned by default, the 'Sample Recorder', 'Sample Editor', 'Perform' and 'Games' functions can also be assigned in place of the default settings. The process of binding a page to a button is explained in the configuration settings section.

The processes described in this manual will assume the default function button assignments as stated here. The [Menu] options are an alternate method of selecting a specific function page.

1.7 First Steps with Factory Projects.

At first glance, operation of Tracker Mini appears unusual. However the workflow is quite simple once a few fundamentals are clearly understood. The quick start button commands shown here can be applied with the factory projects to get familiar with the essential processes to help speed up the learning curve. Ensure the microSD Card is installed.

▌ OPENING A PROJECT

1. When powering on, the previous project will be restored. Projects can be changed or new ones created. Tracker Mini will only be able to view up to 100 projects per folder although user folders can be created.

2. Hold [Shift] + function [3] to perform a quick selection of the 'file' function page. This assumes the default 'File' assignment for button 3.

3. Alternatively use the menu navigation to access the file menu.

   • Hold [Menu] + press (Up), (Down), (Left) or (Right) to scroll to highlight the 'File' option. The red bounding box will indicate the highlighted item.

   • Release the [Menu] button. Releasing the button will select and open the highlighted 'File' option.

4. Press [*Open*] screen button from the left. The list of available projects will be displayed on the screen.

5. Press (Up) or (Down) to navigate the list of project options. Alternatively press [*Up*] or [*Down*] screen buttons to scroll the list selection. The highlighted option will show with a bounding box.

6. With the desired project highlighted, Press [*Open*] screen button to open the project.

7. If the currently active project has been edited a prompt, 'Do you want to save the changes to xxxx' will be presented. Press [*Save*] screen button to save or [*Don't Save*] screen button to proceed without saving. The option to cancel is also presented.

8. Although not essential, it is usually good practice to select and display the pattern page at this stage. If required, Function key [1] is assigned by default to display the pattern page or navigate within the [Menu].

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The master volume may be set loud when initially starting up. Care should be taken when playing songs and especially if listening with headphones. It is advised to firstly set the master volume lower before listening into a song

▌ QUICK ADJUSTMENT OF THE MASTER VOLUME.

1. Hold [Shift] + [+] / [-] buttons. The upper and lower +/- buttons change in larger increments and the central +/- in fine increments.

▌ GENERAL ADJUSTMENT OF THE MASTER VOLUME.

1. Hold function [4] + Press [-] to reduce the master volume. Use the outer buttons for larger increments in volume. This assumes the default assignment of button [4] to the master function pages.

2. To reduce in smaller increments:-

   • Hold [4] + press [-] inner button.

   or

   • Hold [4] + press (Down).

3. Hold function [4] + press [+] to increase the master volume. Use the outer [+] button for larger increments in volume. This assumes the default assignment of button [4] to the master function pages.

4. To increase in smaller increments:-

   • Hold [4] + press [+] inner button.

   or

   • Hold [4] + press (Up).

5. The master page can also be selected from the menu options. Hold [Menu] and use the (Left), (Right), (Up) and (Down) D-Pad buttons.

6. The master volume, as displayed on the left side bar indicator and can be adjusted between -51.5dB to +12dB.

▌ PLAYING A PATTERN FROM THE PATTERN OR ANY GENERIC PAGE.

1. Ensure a project with patterns is loaded.

2. Although not essential, it is usually good practice to display the pattern page at this stage. If required, Press function [1] to display the pattern page, this button is assigned as default. Pattern page can also be selected in the [Menu] options.

3. Press [Play] to play the currently active pattern. Note that this process will only play and loop the currently selected pattern and not the entire song, unless the Song page is on display when pressing [Play].

4. Press [Play] to stop playback on the current step.

    •   Pressing [Play] again restarts from the pattern beginning.

    •   Pressing [Shift] + [Play] will restart playback from the current paused position. If a group of steps is selected, [Shift] + [Play] will play the selection on loop.

    •   Press [Shift] + [Insert] when play is stopped to reset the playhead to the start position without commencing play.

▌ PLAYING A SONG FROM SONG PAGE.

1. Select song mode, Hold [Shift] + [1] where this is the default function button assigned. This will be applicable only when a song structure has previously been created. Songs are typically setup in factory projects.

2. Press [Play] to play from the currently active song row. Playback in the Song page is different to the generic pattern play from within other page views. Each row will represent a series of patterns across all the tracks and will play the rows top to bottom.

3. Press [Play] to stop playback on the current row.

    •   Pressing [Play] again restarts playback starting from the beginning of the current row.

    •   Pressing [Shift] + [Play] will toggle loop playback for the current row on or off. If playback is in a stopped state, playback will start at the beginning of the current row.

    •   Press [Shift] + [Insert] when play is stopped to reset the playhead to the start of the song without commencing play.

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1.8 Introduction to Tracks

Tracker Mini has 16 tracks. The first 8 can operate with sample instruments, synths and MIDI and tracks 9-16 are used for MIDI and synths Tracks are structural elements and the track mixer is found in the master section. Some specific track commands are also available in the pattern pages, for example muting tracks. By default 4 tracks are displayed for patterns and the pattern page is assigned to function button [1].

▌ NAVIGATING TRACKS IN THE PATTERN PAGE

1. Press function [1] to open the pattern page. 4 tracks are displayed by default. The pattern page can also be selected in the [Menu].

2. Press (Left) or (Right) to navigate across all tracks. The green or red highlighted step will anchor the navigation point on the track columns.

▌ MUTING TRACKS IN PATTERN PAGE

1. Press [1] to ensure pattern page is selected. 4 tracks are displayed by default. The pattern page can also be selected in the [Menu].

2. To mute / unmute, Press [Shift] + [*Screen*] button for the respective track. Sample tracks are presented by the screen buttons when holding the shift button. Muted tracks are displayed with the screen keys dimmed.

3. Muting will be applied immediately the screen button is pressed. This is different behaviour than in the track mixer, where muting is applied when the mute button is released.

▌ CHANGING TRACK VIEW FOR THE PATTERN PAGE
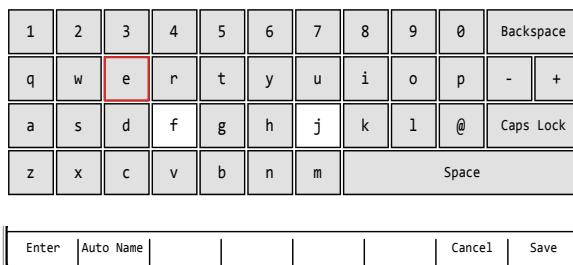
- 8 Tracks with only note parameter: Press [1] + [Note].

- 8 Tracks with instrument parameter: Press [1] + [Instrument].

- 8 Tracks with only FX1 parameter: Press [1] + [FX1].

- 8 Tracks with only FX2 parameter: Press [1] + [FX2].

- 8 Tracks with 2 selected parameters: Press [1] + [P1] + [P2], where 'P1' and 'P2' are 2 from; [Note], [Instrument], [FX1], FX2].

- Revert to 4 track mode, Press [1].

1.9 QWERTY Keyboard.

Some pages will require text editing for naming tracks or projects etc. The same functionality applies whenever the alpha numeric pop-up editor is used. The screen will display the QWERTY keys and the text to edit. The screen buttons are used to enter, cancel or save while the D-Pad navigator buttons perform the editing. Auto naming is also an option.
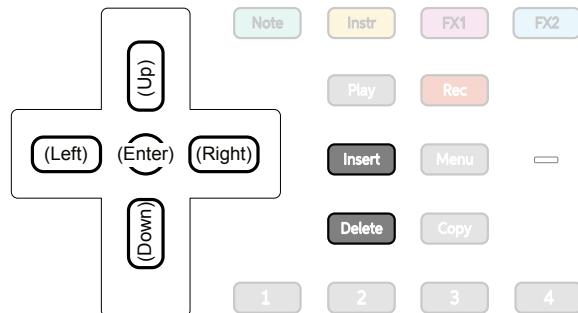
The screen will display the keys laid out in a QWERTY formation.

1	2	3	4	5	6	7	8	9	0	Backspace
q	w	e	r	t	y	u	i	o	p	-	+
a	s	d	f	g	h	j	k	l	@	Caps Lock
z	x	c	v	b	n	m		Space		

| Enter | Auto Name | | | | | Cancel | Save |

The characters and the title can be selected by using (Up), (Down), (Left) or (Right) to navigate and press the centre D-Pad navigator button or press [Insert] or press [*Enter*] screen button to select and add the selected character.

Option to [*Cancel*] screen button is also possible.

Save when complete using [*Save*] screen button to save the name.

The Tracker Mini buttons operate in the naming editor screen when presented:-
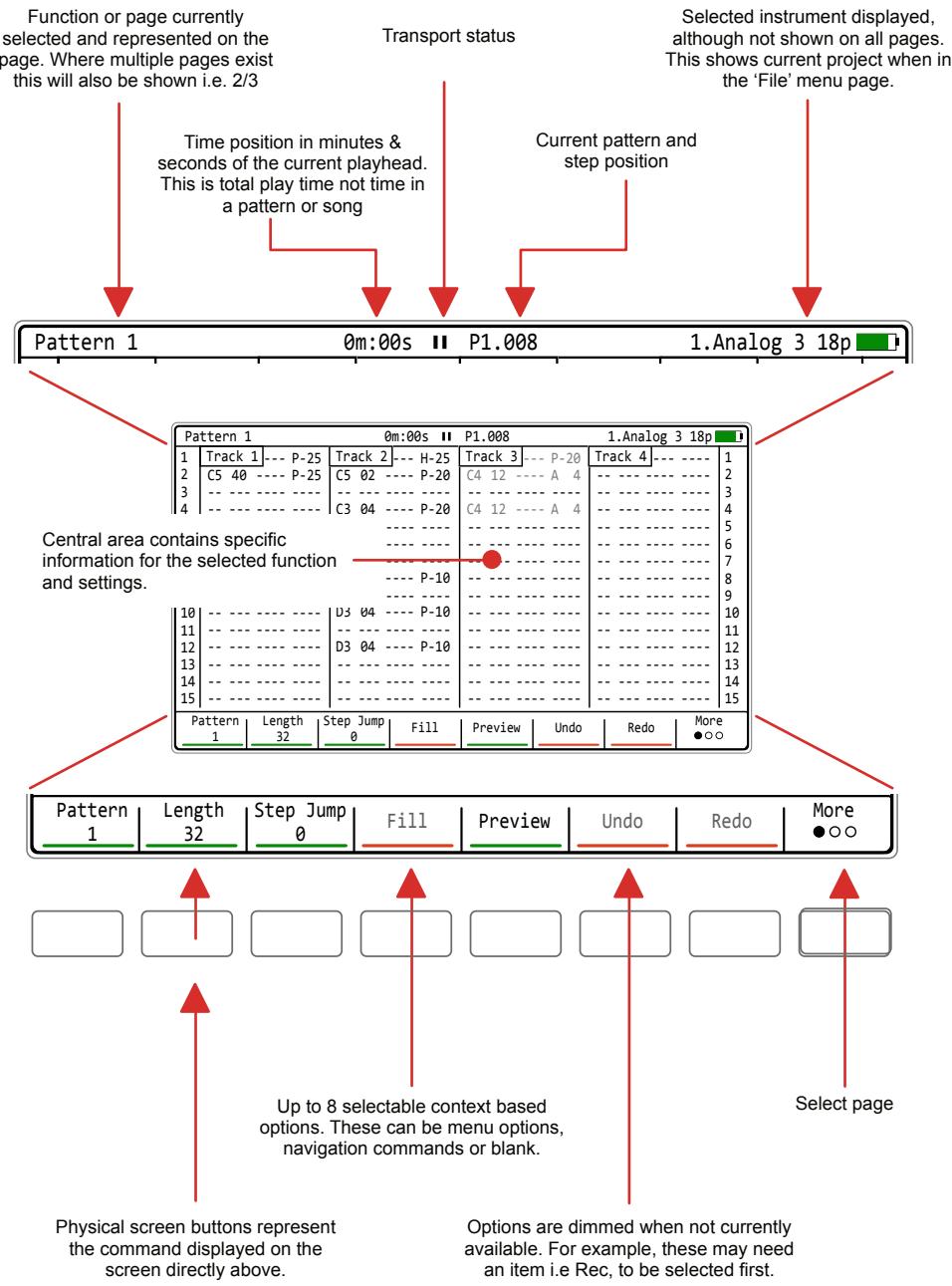
• D-Pad (Up), (Down), (Left), (Right) will navigate the selection across the keyboard. Will also navigate left / right in the text of the name when the name is highlighted.

• D-Pad navigator (Centre) button or [Insert] will insert the currently highlighted character into the name at the cursor position. Also a screen button option.

• [Delete] to delete characters and use with [Shift] to backspace in the name from the text cursor position.

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1.10 Page Layout.
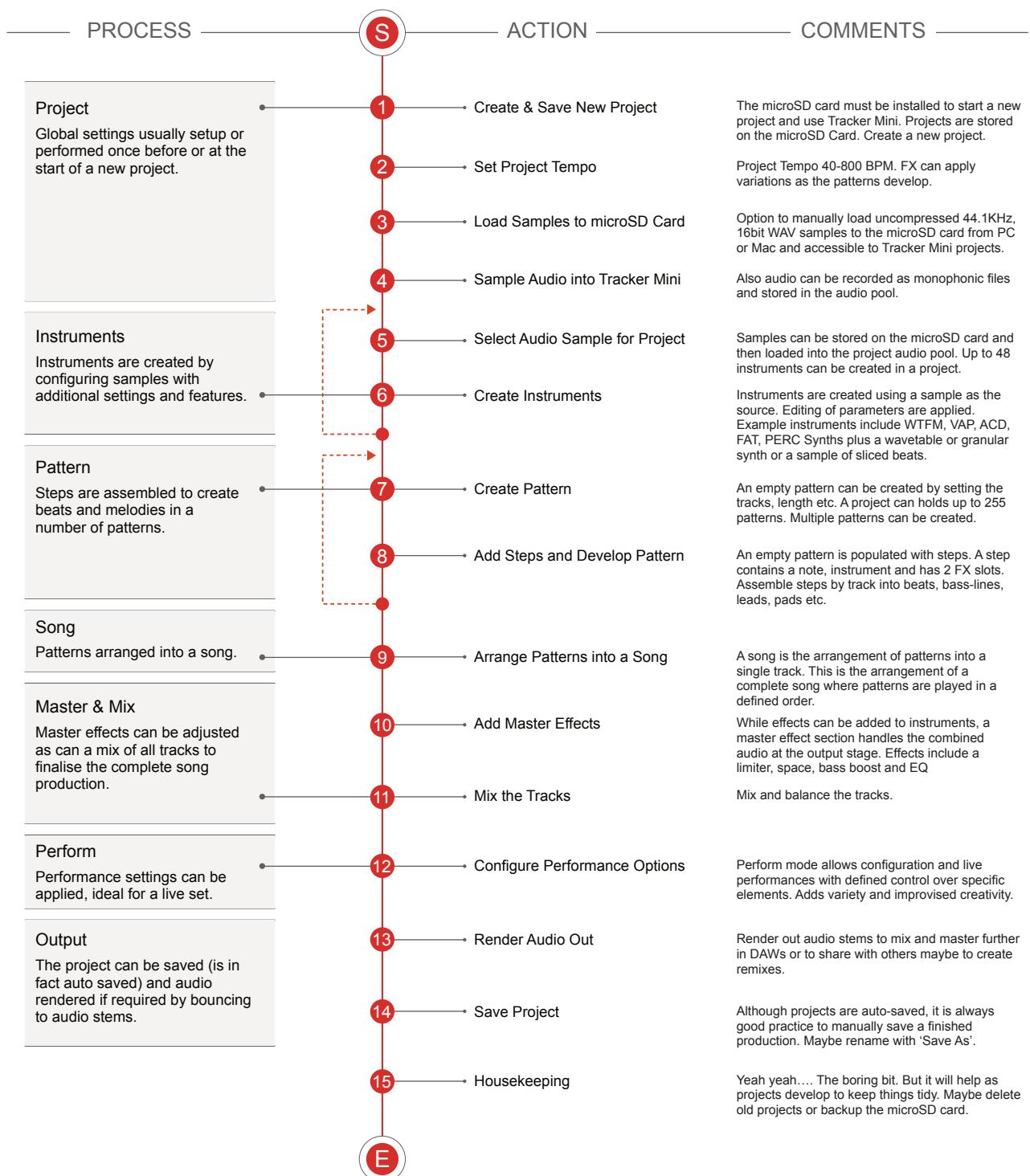
Each page will display the information and control options for the selected function. While this may be unique to the context there are some common features and navigation principles that apply across all (or most) of the generic pages of Tracker Mini.

Function or page currently selected and represented on the page. Where multiple pages exist this will also be shown i.e. 2/3

Transport status

Selected instrument displayed, although not shown on all pages. This shows current project when in the 'File' menu page.

Time position in minutes & seconds of the current playhead. This is total play time not time in a pattern or song

Current pattern and step position

Central area contains specific information for the selected function and settings.

Up to 8 selectable context based options. These can be menu options, navigation commands or blank.

Select page

Physical screen buttons represent the command displayed on the screen directly above.

Options are dimmed when not currently available. For example, these may need an item i.e Rec, to be selected first.

The button underscore colours represent the mode in which the command is available. Options underscored in red are available only in [Rec] mode. Green options are available generically.

1.11 Example Workflow.

The workflow adopted with Tracker Mini will of course develop to fit your personal approach. To get started a typical journey is described below.

PROCESS — S — ACTION — COMMENTS

Project
Global settings usually setup or performed once before or at the start of a new project.

1 Create & Save New Project
The microSD card must be installed to start a new project and use Tracker Mini. Projects are stored on the microSD Card. Create a new project.

2 Set Project Tempo
Project Tempo 40-800 BPM. FX can apply variations as the patterns develop.

3 Load Samples to microSD Card
Option to manually load uncompressed 44.1KHz, 16bit WAV samples to the microSD card from PC or Mac and accessible to Tracker Mini projects.

4 Sample Audio into Tracker Mini
Also audio can be recorded as monophonic files and stored in the audio pool.

Instruments
Instruments are created by configuring samples with additional settings and features.

5 Select Audio Sample for Project
Samples can be stored on the microSD card and then loaded into the project audio pool. Up to 48 instruments can be created in a project.

6 Create Instruments
Instruments are created using a sample as the source. Editing of parameters are applied. Example instruments include WTFM, VAP, ACD, FAT, PERC Synths plus a wavetable or granular synth or a sample of sliced beats.

Pattern
Steps are assembled to create beats and melodies in a number of patterns.

7 Create Pattern
An empty pattern can be created by setting the tracks, length etc. A project can holds up to 255 patterns. Multiple patterns can be created.

8 Add Steps and Develop Pattern
An empty pattern is populated with steps. A step contains a note, instrument and has 2 FX slots. Assemble steps by track into beats, bass-lines, leads, pads etc.

Song
Patterns arranged into a song.

9 Arrange Patterns into a Song
A song is the arrangement of patterns into a single track. This is the arrangement of a complete song where patterns are played in a defined order.

Master & Mix
Master effects can be adjusted as can a mix of all tracks to finalise the complete song production.

10 Add Master Effects
While effects can be added to instruments, a master effect section handles the combined audio at the output stage. Effects include a limiter, space, bass boost and EQ

11 Mix the Tracks
Mix and balance the tracks.

Perform
Performance settings can be applied, ideal for a live set.

12 Configure Performance Options
Perform mode allows configuration and live performances with defined control over specific elements. Adds variety and improvised creativity.

Output
The project can be saved (is in fact auto saved) and audio rendered if required by bouncing to audio stems.

13 Render Audio Out
Render out audio stems to mix and master further in DAWs or to share with others maybe to create remixes.

14 Save Project
Although projects are auto-saved, it is always good practice to manually save a finished production. Maybe rename with 'Save As'.

15 Housekeeping
Yeah yeah…. The boring bit. But it will help as projects develop to keep things tidy. Maybe delete old projects or backup the microSD card.

E

1 Overview

1.12 Quick Reference Commands

Assumes default assignment of function buttons [1] to [4]. D-Pad navigation referenced in rounded () parenthesis. Dynamic screen keys in *italic*.

Function	Action	Tracker Mini Buttons	Description
Master	Master Volume	Hold [Shift] + [+] or [-]	Adjusts the master output. The +/- offer fine and course adjustment options. Also use (Up) or (Down).
General	General Navigation	(Up), (Down), (Right), (Left)	D-Pad, generally navigate, scroll menu selections and options.
General	Copy	[Copy]	Depending on the context, will copy and paste between functions ie copy patterns. Use [Shift] + [Copy] to paste.
General	Delete	[Delete]	Depending on the context, will delete. Will reset any selected parameter to its default state. Also use with shift to backspace.
Pattern	Pattern Mode Page	[1]	Selects the pattern mode page. Button 1 is by default assigned to pattern page in the configurable page settings.
Pattern	Play Pattern	[Play]	Plays the pattern from the start. Stops or pauses the pattern if it is already playing. Restarts play if paused mid pattern.
Pattern	Continue or Loop	[Shift] + [Play]	Restarts play of the pattern from the currently paused position. If a group of steps are selected, plays the loop.
Pattern	8 Track Note View	[1] + [Note]	Display all 8 tracks with only notes instead of default 4 tracks. 2 elements can be displayed i.e. + [FX1], [FX2], [Instrument].
Pattern	8 Track Inst View	[1] + [Instrument]	Display 8 tracks with only instrument instead of 4 tracks. 2 elements can be displayed i.e. + [FX1], [FX2], [Note].
Pattern	8 Track FX View	[1] + [FX1] or [FX2]	Display all 8 tracks with only FX instead of default 4 tracks. 2 elements can be displayed i.e. + [Note], [Instrument].
Pattern	4 Track View	[1]	Restores default 4 tracks when viewing 8 tracks.
Pattern	Note input mode	[Shift] + [Note]	Sets note mode and lays screen keys out with individual notes. Hold [Note] + D-Pad to change the set of notes assigned.
Pattern	Select Pattern	[1] + (Up), (Down) or [+] / [-]	Select pattern by number.
Pattern	Sequential change	[1] + (Left) or (Right)	When playing, selects a new pattern to cue playback to start when the current pattern ends. Pattern blinks red.
Pattern	Sequential change	[*Pattern*] + (Left) or (Right)	When playing, selects a new pattern to cue playback to start when the current pattern ends. Pattern blinks red.
Pattern	Immediate change	[1] + (Up) (Down) or [+] / [-]	When playing, selects a new pattern to trigger and starts playback in sync, immediately.
Pattern	Immediate change	[*Pattern*] + (Up) (Down) or [+] / [-]	When playing, selects a new pattern to trigger a start playback, in sync, immediately.
Pattern	Multiple Step Select	[Shift] + (Up) (Down) (Left) (Right)	Will select a range of multiple steps for editing collectively or to playback on loop.
Pattern	Select Top Row	[Shift] + [Insert]	When stopped, resets the playhead to the top row start.
Pattern	Multiple Step Select	[Shift] + (Up) When on the first step	Will select all steps for the currently selected track.
Pattern	Multiple Step Select	[Shift] + (Up) (Up) When on the first step	Will select all steps for all of the tracks.
Pattern	Mute Tracks	[Shift] + [*Screen*] Button	Screen button 1 - 8 will toggle mute or unmute for tracks 1 - 8 respectively when in pattern mode page.
Pattern	Parameter Selection	Tap Dedicated Param Button	Will lock the selection of the note, instrument, FX1 or FX2 parameter when editing or navigating.
Pattern	Arm / Disarm	[Shift] + [Rec] + [*Screen*] Button	Arms or disarms the track for recording. Disarmed tracks will not allow recording. Screen buttons represent tracks.

1.12 Quick Reference Commands

Assumes default assignment of function buttons [1] to [4]. D-Pad navigation referenced in rounded () parenthesis. Dynamic screen keys in *italic*.

Function	Action	Tracker Mini Buttons	Description
Pattern	Live Rec Start	[Rec] + [Play]	Start Live Recording. Requires an external keyboard to record notes into the pattern.
Pattern	Live Rec > Play	[Rec]	When live recording, pressing [Rec] will continue to play but exit recording mode.
Song Mode	Song	Press [Shift] + [1]	Pressing [Song] switches to song page.
Song Mode	Song	Hold [Shift] + [1] long press	Holding buttons will temporarily display song page from within another page i.e. from Pattern page. Release [1] before [Shift].
Song Mode	Select Row	Press (Up) (Down) or [+] / [-]	Navigate the song row slot / pattern. One row can be selected.
Song Mode	Select Top Row	[Shift] + [Insert]	When stopped, resets playhead to the top row start.
Song Mode	Play Song	[Play]	Plays the song from the start of the selected slot / pattern row.
Song Mode	Stop Song	[Play]	Stops or pauses the song playback. Pressing play again will restart in the song at the start of the current slot / pattern row.
Song Mode	Loop Row	[Shift] + [Play]	Loops playback on the current song slow / pattern row. Essentially plays the selected pattern.
Song Mode	Tempo	Hold [*Tempo*] + (Up) (Down)	Adjust project tempo, 40 - 800 BPM in 1 BPM increments.
Song Mode	Tempo	Hold [*Tempo*] + [+] / [-]	Adjust project tempo, 40 - 800 BPM in 10 BPM increments when using outer +/- and 1 BPM increments with inner +/-.
Perform	Perform	Use Menu to select perform	
Perform	Play	[Play]	Plays current pattern on loop. Also stops playback.
Perform	Play	[Shift] + [Play]	Plays the song on loop. Also toggles pattern / song playback.
Perform	Edit	[Rec]	Edit mode selected. Navigation and slot values in red.
Perform	Navigate Column	(Left) or (Right)	Selects one of the 12 effect slot columns.
Perform	Select	[*Track x*]	Selects tracks to apply any triggered effect. Track labelled red.
Perform	Trigger effect	[+], [+], [-], [-]	Triggers, while held, one of the effect value slots in perform, green mode. In Rec mode this will allow editing of the values.
Perform	In Rec Mode	(Up), (Down)	Change performance effect in the current slot.
Perform	In Rec Mode	[Shift] + (Left) or (Right)	Swap effects between slots.
Perform	In Rec Mode	[+] / [-] + (Up) or (Down)	Edit the effect value offset for the respective effect and row.
Perform	Remix	[*Track x*] + (Up) (Down) or [+] / [-]	Load a new pattern for the selected track(s). Plays immediately. Live remix mode.
Perform	Remix	[*Track x*] + (Left) or (Right)	Arm a new pattern for the selected track(s) once the current pattern completes. Live remix mode.
Perform	Mute / Unmute	[Shift] + [*Track x*]	Mute or unmute the selected track.

2

Architecture

Make no mistake, Tracker Mini is a unique yet comprehensive device. There are so many features that are less obvious to producers more familiar with more traditional sequencers and DAWs. The overall structure of Tracker Mini can seem at first glance, confusing. However spending a little time to understand the overall architecture and its terminology will set a good starting foundation. For this reason there are no apologies for taking time to get intimate with the architecture of the overall device and bringing this summary upfront in this guide. Getting a solid understanding and awareness of the Tracker Mini's structure will help enormously in getting to grips later with the rest of the device. The two basic elements needed is Tracker Mini itself (of course) fully charged and the correctly configured microSD card which is integral to Tracker Mini's operation. While more in depth details for specific topics are covered in the following sections of this notebook, the overall foundation and structure is laid out in this chapter. The hierarchical structure and organisation of data and functions such as projects, patterns and steps are summarised collectively and how they work together. It is therefore worth the investment of time and focus in understanding the architectural hierarchy. Developing a fundamental workflow and efficient process will help get the most out of Tracker Mini's features.

2 Architecture

2.1 Glossary of Terms

While you may think this should be hidden at the back of this book, understanding the terminology associated with these topics and especially the Tracker Mini will help unlock it's power and performance. It makes sense to become familiar early with the essential terms to help embed into your workflow

Beta: Pre-release software versions used for testing purposes. Polyend often release beta versions of Tracker Mini.

Effects: Refers to the master effects used across the overall output audio.

Envelope: An envelope is used to modulate and shape parameters and audio over time. Tracker Mini has envelopes which can be assigned.

FX: A number of assignable effects are provided to steps in the pattern. These are not traditional style effects but more like mini-applications and automation controls.

Instrument: In Tracker Mini, an instrument starts with a sample as its source. Various parameter configurations can be applied including wavetable or granular synth applications to operate as the sound within a step. MIDI instruments to set channel and settings also can be configured.

Instrument List: Also called an instrument pool or audio pool. This is the internal memory. Samples and instruments are loaded here to be accessed by patterns.

LFO: Low frequency oscillator which is not specifically used for sound generation but to modulate parameters for sound design and movement. Tracker Mini has LFO's which can be assigned.

Looping: The process of replaying audio or a pattern continuously in a defined cycle e.g. start to end then start to end.

microSD card: A storage device that is used in Tracker Mini for holding data, samples, project etc. Tracker Mini is supplied with a 16GB microSD.

MIDI: MIDI stands for Musical Instrument Digital Interface and is a standard protocol used for communicating between equipment. MIDI is normally applied using 5 Pin MIDI DIN connections which in some cases (i.e. with Tracker Mini) are interfaced via a MIDI 5 Pin to 3.5mm MIDI dongle.

Mod File. Legacy tracker files such as .mod and .it were used in classic trackers. Not compatible with current Polyend Tracker OS versions.

Mute: Muting offers variations that can be created by silencing the play out of tracks and patterns for sound design purposes and especially when playing live sets.

Note: A musical note assigned to a samples pitch and assigned to track steps to create a melody or percussive beat.

OS: Operating system is the core software that makes Tracker Mini work. It handles how it operates and periodic updates from Polyend bring new features into use.

Parameter: The individual value of a specific function or control element. A parameter can be adjusted to affect a sound or a functions operation.

Pattern: This is the backbone and core of a Tracker Mini sequence and contains all steps in a sequence. Patterns control how steps are played.

Perform: A mode in Tracker Mini that provides an environment with 12 selectable effects which can be triggered live and during improvisations.

Power Bank. A portable rechargeable battery devices used to power or recharge portable equipment.

Project: The overall structural container for patterns, samples, instruments etc. A project should always be loaded to work with Tracker Mini.

RAM Memory: While Tracker Mini operates with the microSD card, on board RAM memory is also used for instruments and samples in the project.

Render: This is like internal sampling. To internally capture patterns, tracks or songs into an exportable audio sample. Sometimes render is also called 'bounce' in the producer community.

Reset: The process of restarting Tracker Mini by loading a random OS firmware.

Sample: The basic audio element recorded or loaded into Tracker Mini and used to create an instrument.

Sampling: The act (and art) of recording and capturing audio to be edited and creatively assembled into a new musical composition.

Synth. A synthesizer is an electronic instrument. In Tracker Mini there are a set of dedicated synth engines used as a sound source. Also some additional synth instruments such as the wavetable synth can be created from samples.

Solo: The ability to select an individual track to play alone and effectively mutes other tracks.

Song: A combination of tracks and patterns combined and structured into a full arrangement.

Step: In Tracker Mini a step is the building block for creating melodies and beats. Each step contains a note, instrument and 2 FX slots per track and is displayed in the track rows.

Track: Tracker Mini contains 8 tracks each which controls a voice. Tracks are used for structuring the sequencing of steps. These can be configured with steps to play a variety of instruments and develop a complete melody and beat across the 8 tracks.

Tracker: Tracker is a digital audio workstation for music production. Trackers use a linear top to bottom sequencing environment where elements are programmed into lines of Tracker code.
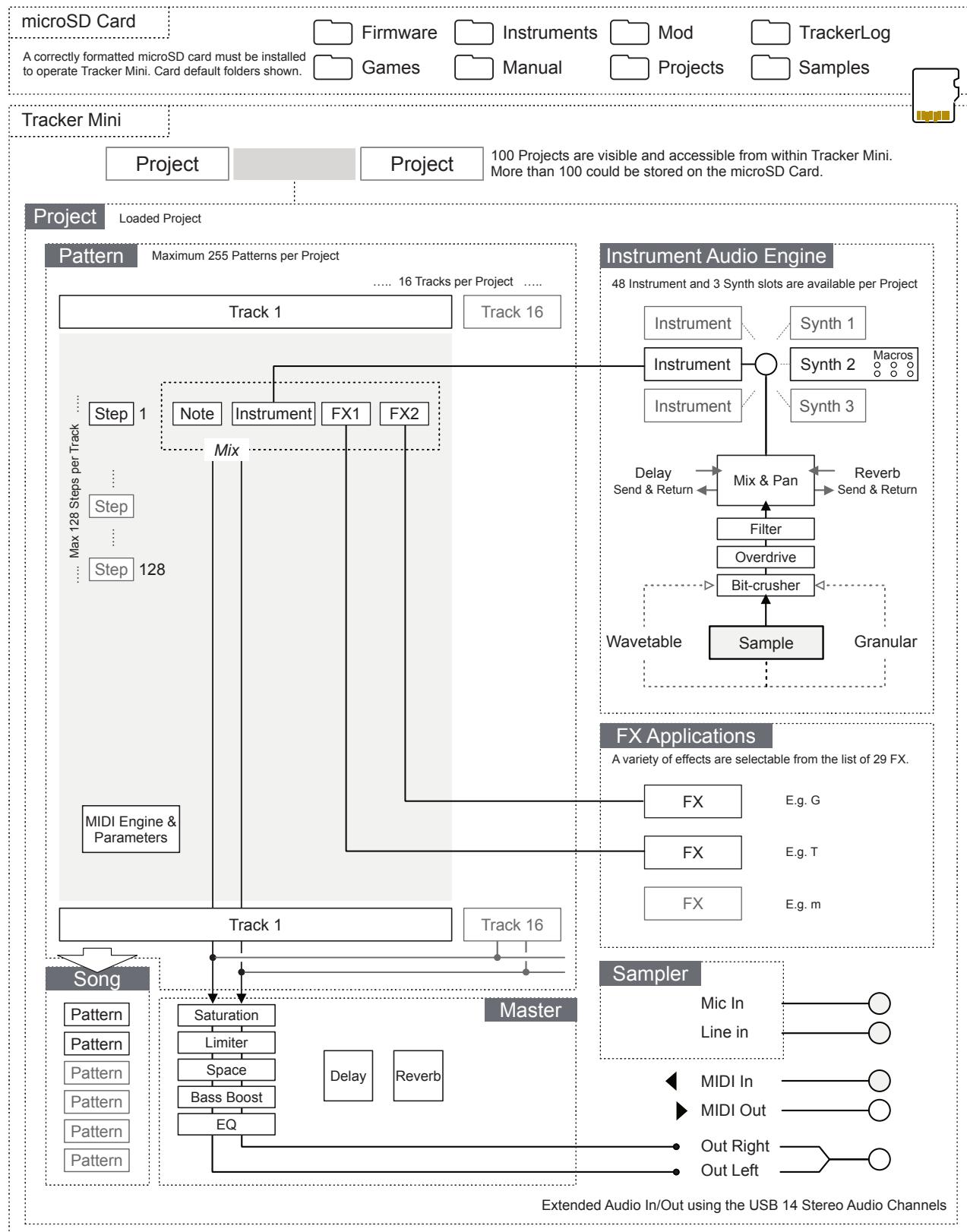
Update: The process of installing the newest firmware. This brings new features and fixes bugs associated with previous versions.

USB Host: A device that initiates, manages and controls communications across the USB network. For example a PC/Mac would act as a host for say USB MIDI interfacing.

USB Device: A USB device responds to any communication initiated by a host. A device can communicate for example with USB MIDI but may need to be managed from a host.

2 Architecture

2.2 Tracker Mini Audio Structure

microSD Card

A correctly formatted microSD card must be installed to operate Tracker Mini. Card default folders shown.

- Firmware
- Instruments
- Mod
- TrackerLog
- Games
- Manual
- Projects
- Samples

Tracker Mini

Project .... Project

100 Projects are visible and accessible from within Tracker Mini. More than 100 could be stored on the microSD Card.

Project — Loaded Project

Pattern — Maximum 255 Patterns per Project

..... 16 Tracks per Project .....

Track 1 .... Track 16

Max 128 Steps per Track

Step 1
Step
Step 128

Note | Instrument | FX1 | FX2
Mix

MIDI Engine & Parameters

Instrument Audio Engine

48 Instrument and 3 Synth slots are available per Project

Instrument — Synth 1
Instrument — Synth 2 — Macros
Instrument — Synth 3

Delay
Send & Return → Mix & Pan ← Reverb
Send & Return

Filter
Overdrive
Bit-crusher

Wavetable — Sample — Granular

FX Applications

A variety of effects are selectable from the list of 29 FX.

FX — E.g. G
FX — E.g. T
FX — E.g. m

Track 1 .... Track 16

Song

Pattern
Pattern
Pattern
Pattern
Pattern
Pattern

Master

Saturation
Limiter
Space
Bass Boost
EQ

Delay | Reverb

Sampler

Mic In
Line in

◀ MIDI In
▶ MIDI Out

Out Right
Out Left

Extended Audio In/Out using the USB 14 Stereo Audio Channels

2.3 Structure of microSD Card

The microSD card is an integral part of Tracker Mini and must be inserted to operate correctly. An alert message is displayed if Tracker Mini is powered up without an microSD card installed. It is important that the correct format is applied to the microSD Card. This should be FAT32 with Master Boot Record (MBR) Partitioning.

The default file structure will expand as different functions are used. For example a snapshots folder is created when capturing screen images, also export and recording folders created once these files are firstly generated.
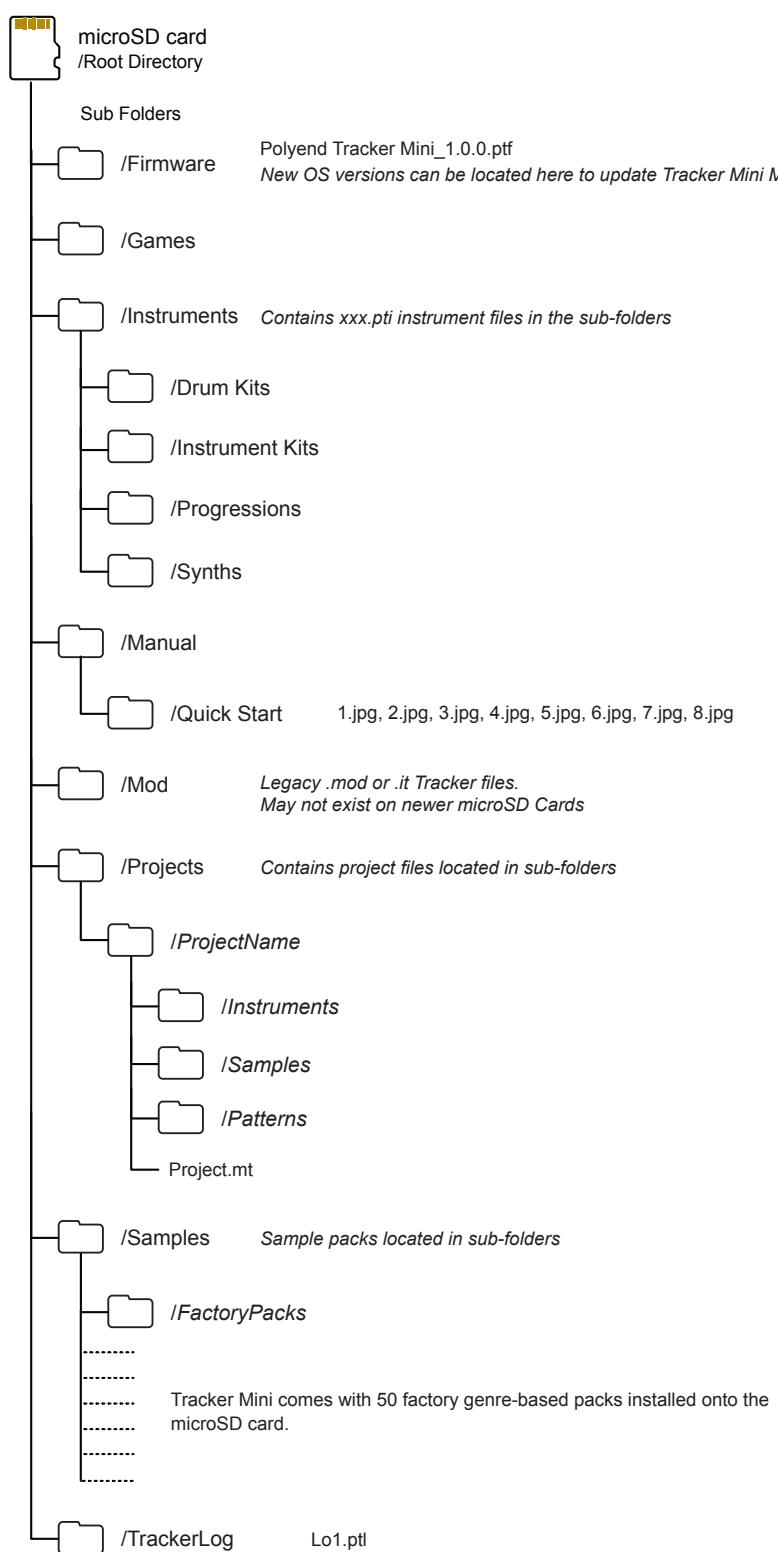
Files and folders can be accessed with a PC or Mac. A USB adapter is supplied with Tracker Mini.

microSD can be connected to a
PC / Mac with the USB adapter.

Root

2 Architecture

Default microSD card structure

microSD card
/Root Directory

Sub Folders

/Firmware   Polyend Tracker Mini_1.0.0.ptf
New OS versions can be located here to update Tracker Mini Mini

/Games

/Instruments   *Contains xxx.pti instrument files in the sub-folders*

/Drum Kits

/Instrument Kits

/Progressions

/Synths

/Manual

/Quick Start   1.jpg, 2.jpg, 3.jpg, 4.jpg, 5.jpg, 6.jpg, 7.jpg, 8.jpg

/Mod   *Legacy .mod or .it Tracker files.*
May not exist on newer microSD Cards

/Projects   *Contains project files located in sub-folders*

/ProjectName

/Instruments

/Samples

/Patterns

Project.mt

/Samples   *Sample packs located in sub-folders*

/FactoryPacks

Tracker Mini comes with 50 factory genre-based packs installed onto the
microSD card.

/TrackerLog   Lo1.ptl

2.4 Manual Help & Tips.

Tracker Mini is supplied with a quick start guide, also available on the microSD card.
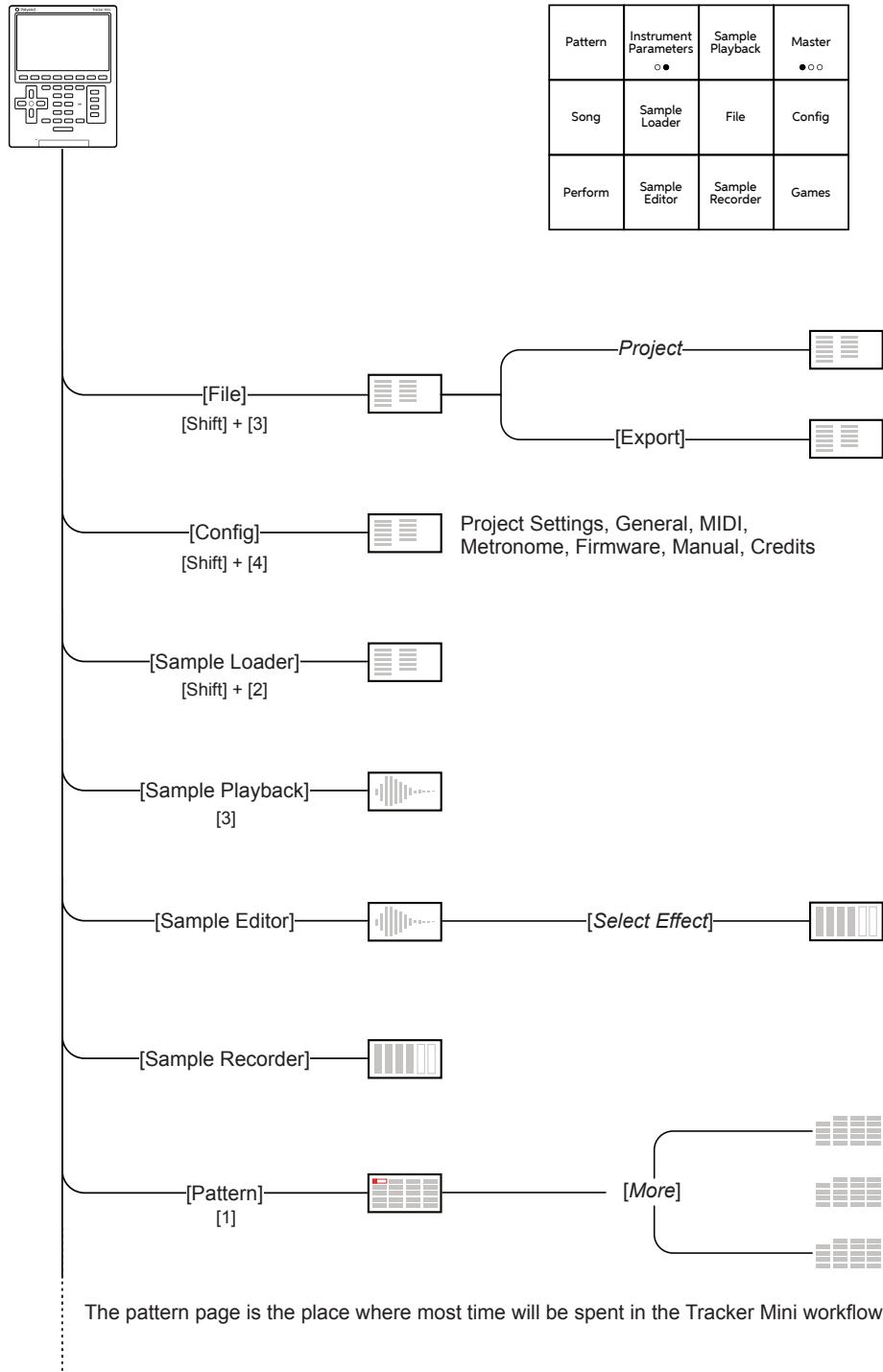
The official complete manual and Q&A are available on the Polyend website. Please register your device to get full support and access to help.

2 Architecture
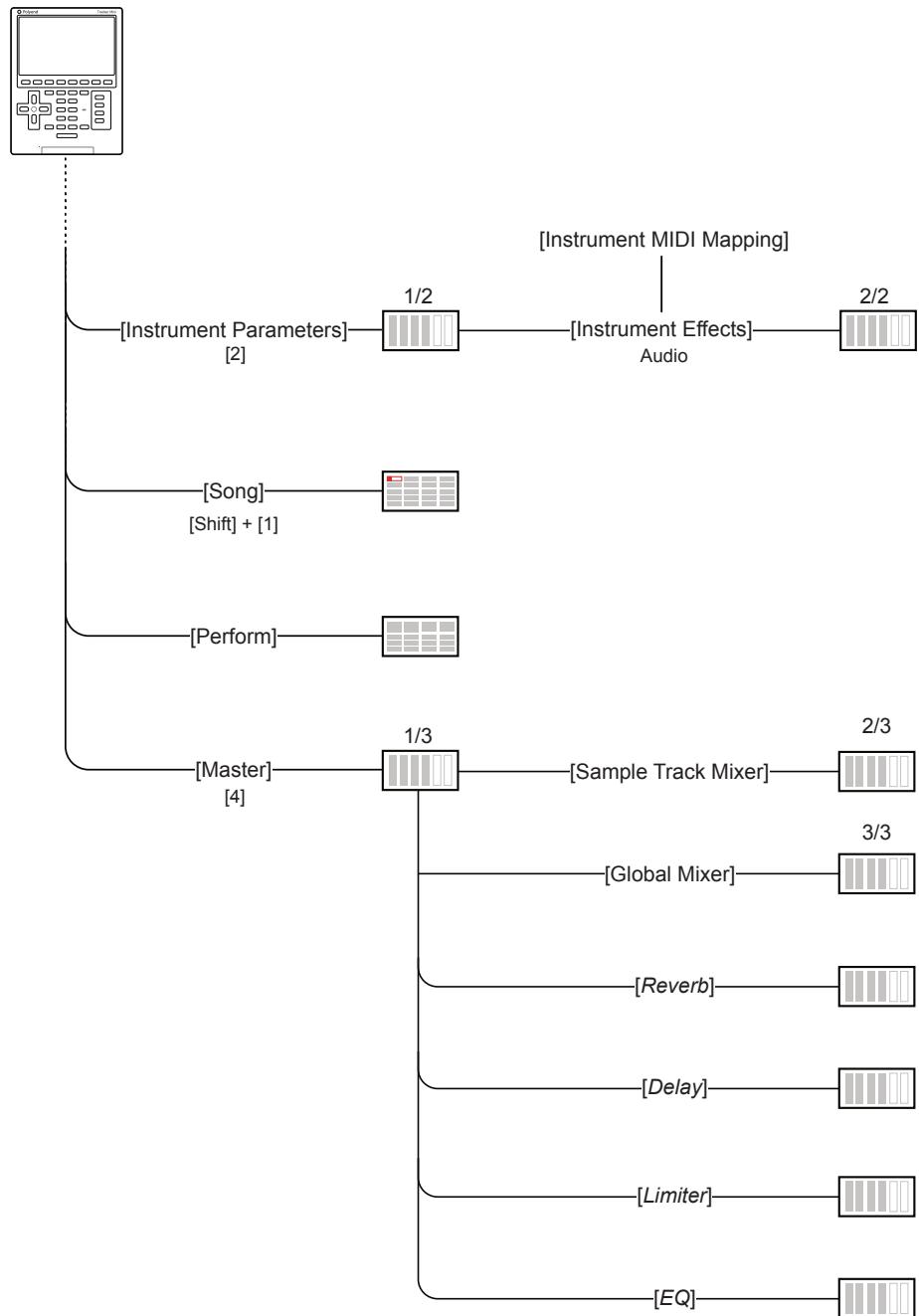
2.5 Menu Page Map

As a quick guide to the page hierarchy in Tracker Mini the following diagram illustrates the main pages accessed under the [Menu] option.

Pattern	Instrument Parameters ○●	Sample Playback	Master ●○○
Song	Sample Loader	File	Config
Perform	Sample Editor	Sample Recorder	Games

[File] — *Project*
[Shift] + [3]

[Export]

[Config] — Project Settings, General, MIDI,
[Shift] + [4]   Metronome, Firmware, Manual, Credits

[Sample Loader]
[Shift] + [2]

[Sample Playback]
[3]

[Sample Editor] — [*Select Effect*]

[Sample Recorder]

[Pattern] — [*More*]
[1]

The pattern page is the place where most time will be spent in the Tracker Mini workflow.

[Instrument MIDI Mapping]

1/2

[Instrument Parameters] — [Instrument Effects]   2/2
[2]   Audio

[Song]
[Shift] + [1]

[Perform]

1/3   2/3

[Master] — [Sample Track Mixer]
[4]

3/3

[Global Mixer]

[*Reverb*]

[*Delay*]

[*Limiter*]

[*EQ*]

Default quick page button 1 - 4 assignments are also shown under the page name.

3

Projects

Projects are the highest order structural element in Tracker Mini. A project contains all the elements of a full track. Think of each project as a fully arranged song for an album or a song for live set. Tracker Mini auto saves projects which are stored on the installed microSD card. Although the card itself can contain more, Tracker Mini will have up to 100 projects visible and accessible. A project should be opened for playback and editing. New projects can also be created from scratch. Each project contains a maximum of 255 patterns across 16 tracks. While patterns are the musical composition functions, some elements, such as the 48 available instruments are managed at project level, and hence accessible to all patterns. Projects are structural and organisational functions more so than part of the creative environment but nevertheless serve an important purpose in the Tracker Mini workflow. Tracker Mini has an extended project memory for audio samples. This holds almost 12 minutes mono, 6 mins stereo of mic recorded audio as standard although this may vary depending on the audio quality and format. Samples are stored on the microSD card but can be also are held in the Tracker Mini on board sample pool where samples effectively become instruments. Projects have an instrument pool populated with samples or instruments to be available when creating steps. This is prerequisite to creating sequences. This section covers the general project management in Tracker Mini and it's microSD card plus some key specific project level functions such as tempo.

3 Projects

3.1 Project Overview

A project is the highest order of Tracker Mini's functions. It allows projects to be managed, saved and loaded and also new projects to be created. Think of a project as container for a complete song for an album or live set. Access to project level features exists in various parts of Tracker Mini's functions and does not have a dedicated single point of access.

Projects - Multiple projects with 100 visible per project folder.
More projects can be available in the microSD Card projects or user folders.

Tracks - 16 per project
Tracks are used to organise parts of a pattern such as bass, drums, etc

Patterns - 255 patterns per project
Patterns are sequenced into tracks to create musical elements.

Steps - 128 steps per pattern
These are the discrete building blocks each with a note, instrument and effects

Song - 255 Slots (slots = rows for the 16 tracks)
A song is an arrangement of patterns to create a complete production

3.2 Opening & Saving a Project

Projects are auto saved but can also be manually saved and renamed. Loading of a saved project is also possible, although on power up the previously active project will be restored. The project management functions are in the [Menu] 'File' function or accessed by default with [Shift] + [3]. Note that projects copied to the microSD card must be in the main project folder. Sub folders are not viewed directly from the 'file' menu.

▌ CREATING A NEW PROJECT

1.   Hold [Shift] + [3] to open the file browser menu or access with [Menu].

2.   Press [*New Project*] screen button. An option to save the current project may be presented.

3.   A blank project named 'New Project' is created.

▌ OPENING AN EXISTING PROJECT

1.   Hold [Shift] + [3] to open the file browser menu or access with [Menu].

2.   Press [*Open*], screen button. The project list is displayed. The microSD card list is in the left window and the recently loaded projects centre. Use (Left) or (Right) to switch between windows and lists.

3.   Press (Up) (Down) or [+] / [-] to navigate the list of projects to load. Also press [*Up*] screen button or [*Down*] screen button to scroll the list. The highlighted option will show with a bounding box.

4.   With the desired project highlighted, Press [*Open*] screen button.

5.   If the currently active project has been edited a prompt 'Do you want to save the change to 'xxxx'' will be presented. Press [*Save*] screen button or Press [*Don't Save*] screen button to save or exit.

6.   If the current pattern is new, a 'Save As' command is activated.

7.   If required, Press [1] to display pattern page.

▌ MANUALLY SAVING THE CURRENT / EXISTING PROJECT
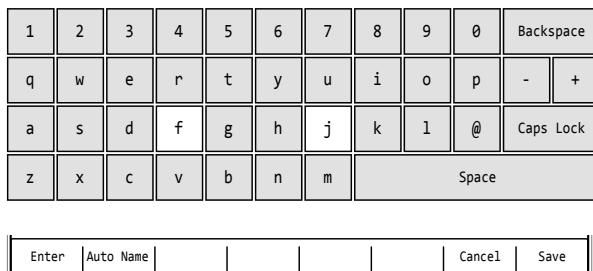
1.   Hold [Shift] + [3] to open the file browser menu or access with [Menu].

2.   Press [*Save*] screen button.

3.   The project will be saved and overwrite the previous version.

3 Projects

▌ SAVING THE CURRENT PROJECT - FIRST TIME

1. Hold [Shift] + [3] to open the file browser menu or access with [Menu].

2. Press [*Save*] screen button from left or Press [*Save As*] screen button from left. If using 'Save' for the first time the 'Save As' function is triggered to request a name.

3. Navigate and select a folder location and then [*Save*] screen button.

4. The naming function will appear to allow a new name to be created. The D-Pad buttons will allow navigation and select within the alpha-numeric keyboard. Project names can be a max of 32 characters.

5. Alternatively, press [*Auto Name*] screen button. This will generate a random name for the project and present it in the editor.

6. With the desired name created, Press [*Save*] screen button.

7. The project is saved and the keyboard editor function is closed.

1	2	3	4	5	6	7	8	9	0	Backspace
q	w	e	r	t	y	u	i	o	p	-	+
a	s	d	f	g	h	j	k	l	@	Caps Lock
z	x	c	v	b	n	m	Space

Enter	Auto Name				Cancel	Save

QWERTY Keyboard is represented by the visual grid. The 'f' and 'j' keys are highlighted and lit on the pads to serve as a reference. The screen buttons offer the main commands in the context of the editor.

The following Tracker Mini buttons also operate in the naming editor when the naming screen is presented:-

- (Up), (Down), (Left), (Right) will navigate the selection across the keyboard. Will navigate left / right in the text of the name when the name is highlighted .

- [Insert] will insert the currently highlighted character into the name at the cursor position.

- [Shift] + [Insert] to delete characters and backspace in the name from the text cursor position.

The option to create a new folder also exists in the file menu under the 'Open' function. This will also require a name to be created.

3.3 Deleting a Project.

The option to delete a project can be performed in the project browser. The currently active project cannot be deleted. Change to another project to delete. Deleting a project will also remove it from the microSD card.

▌ DELETING A PROJECT

1. Hold [Shift] + [3] to open the file browser menu or access with [Menu].

2. Press [*Open*] screen button from left. The list of available (max 100) projects will be displayed on the left of the screen.

3. Press (Up) (Down) or [+] / [-] to navigate the list of projects to load. Also press [*Up*] screen button or [*Down*] screen button to scroll the list. The highlighted option will show with a bounding box.

4. With the desired project highlighted, press [*Delete*] screen button.

5. A prompt 'Do you want to delete project 'xxxx'' ?' will be presented.

6. To confirm, press [*Delete*] screen button to confirm deletion. Alternatively, press [*Cancel*] screen button from left to exit without deleting the project.

7. Project will be deleted from the microSD card and no longer visible in the project list on Tracker Mini *.
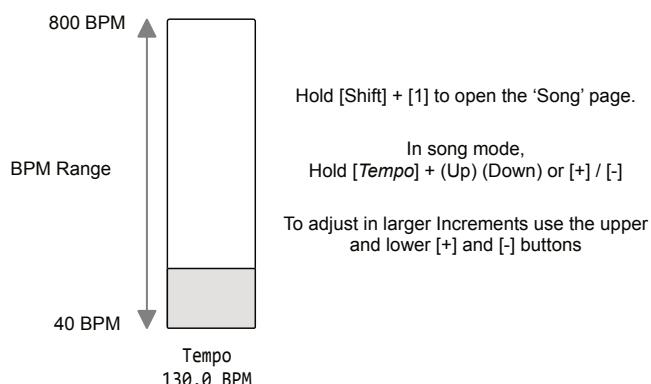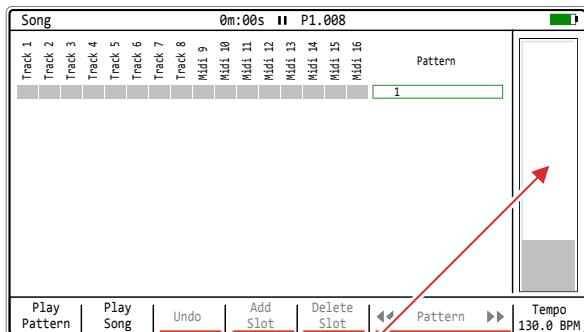
> ** Projects also manually deleted externally from the microSD card using a PC or Mac will no longer be visible in Tracker Mini.*

3 Projects

3.4 Project Tempo

The overall tempo of the project is set in the 'Song' section of Tracker Mini and has a defined range of 40 - 800 BPM. Tempo can also be modulated by using the FX slots in a step with the 'T' tempo effect. Note that the MIDI clock output is based on the project tempo.

Hold [Shift] + [1] to open the 'Song' page.

In song mode,
Hold [*Tempo*] + (Up) (Down) or [+] / [-]

To adjust in larger Increments use the upper and lower [+] and [-] buttons

Tempo
130.0 BPM

Tap tempo can be applied in song mode by tapping the tempo screen key a minimum of 4 times at the BPM desired. Count will be displayed when tapping.

Note: Pressing [*Tempo*] + [*Delete*] in the song page will reset to the default 130 BPM. This is generic behaviour, where the [*Delete*] button will reset any selected parameter to it's default value.

▌ ADJUSTMENT OF THE PROJECT TEMPO

1. Hold [Shift] + [1] to open song mode.

2. Hold [*Tempo*] + (Up) (Down) or [+] / [-] to change the tempo in small iterations. Range is 40 - 800 BPM.

3. Use the upper or lower [+] and [-] buttons for larger increments.

▌ TAP TEMPO ADJUSTMENT

1. Hold [Shift] + [1] to open song mode.

2. Tap [*Tempo*] - screen button, a minimum of four taps. The tap count will be displayed during tapping.

3. The tempo recorded is based on the speed of the taps played.

Note that the FX option 'T' tempo triggers a tempo change between 10% - 400% which can therefore extend the project base tempo range.
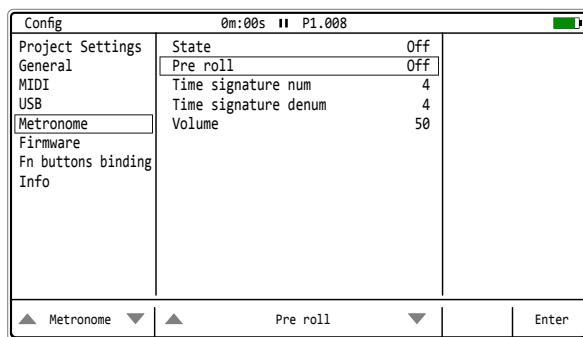
3 Projects

3.5 Metronome

Tracker Mini has a metronome which operates when live recording (not normal playback). This is configurable and selectable on/off within the 'Config' menu under the 'Metronome' options.

Press [Shift] + [4] or navigate in the [Menu] for the 'Config' page

```
┌─────────────────────────────────────────────────────┐
│ Config          0m:00s  ▮▮  P1.008            ▬▬▬█ │
├─────────────────┬─────────────────────────────────────┤
│ Project Settings│ State                    Off      │
│ General         │ Pre roll                 Off      │
│ MIDI            │ Time signature num         4      │
│ USB             │ Time signature denum       4      │
│ Metronome       │ Volume                    50      │
│ Firmware        │                                   │
│ Fn buttons binding                                  │
│ Info            │                                   │
│                 │                                   │
│                 │                                   │
│                 │                                   │
│                 │                                   │
├────────────┬────┴──────────────────┬───────┬────────┤
│ ▲ Metronome ▼│ ▲      Pre roll      ▼│       │ Enter │
└──────────────┴───────────────────────┴───────┴────────┘
```

Press (Left) or (Right) to navigate between the option windows
and use (Up) or (Down) to navigate to the desired option. Also
the screen buttons can be used to navigate.

Metronome Settings.

Option	Parameters	Description
State	On, Off Default Off	Toggles the metronome on or off.
Pre Roll	On, Off Default Off	Sets a count in before the sequencer starts to help timing of punch in recording. Ideal for live recording.
Time signature num	1 - 12 Default 4	Number of beats in a measure / bar. Upper number in the normal time signature value. Example 4/4 set to 4 beats per measure.
Time signature denum	1 - 12 Default 4	Beat value, division of note. Lower number in the normal time signature value. Example 4/4 has a quarter note per beat.
Volume	1 - 100 Default 50	Volume of the metronome's 'tick' sound.

Metronome will also be sent to the USB Audio master output channel.

▌ SETTING THE METRONOME

1. Hold [Shift] + [4] to open the 'Config' Page. Also access in the [Menu].

2. Ensure the left window is highlighted red i.e. in focus. Navigate windows by pressing (Left) or (Right). Menu windows will automatically be selected when pressing the relevant screen keys below the window to navigate [*Up*] or [*Down*].

3. Press (Up) or (Down) to highlight with the bounding box over the 'Metronome' option. Alternatively press the relevant screen keys below the window to navigate [*Up*] or [*Down*].

4. Press the relevant screen keys below the window to navigate [*Up*] or [*Down*] under the central options to highlight with the bounding box over the required Metronome option.

5. To change the selected parameter / setting, Press [*Enter*] screen button. The parameter pop-up window listing the available options will appear.

6. Press (Up) (Down) or [*Up*] [*Down*] screen buttons to highlight the desired option.

7. Press [*Apply*] screen button to confirm selection or [*Cancel*] screen button to exit without changing.

8. The metronome will operate at the chosen time signature and volume when live recording is activated using [Rec] + [Play]. The pre roll will provide a count in of 4 and show the 'Recording in 4. 3. 2. 1.' message before starting to record.

3.6 Project Pool & Instrument List
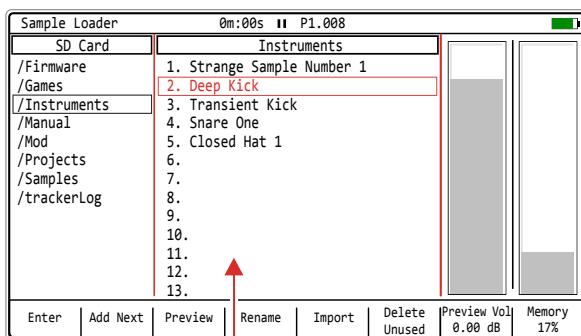
A pre-requisite for creating patterns is to have a series of instruments available to record or program into steps. Instruments are based on the samples loaded into the project pool and parameters applied to create instruments. Instruments can also be loaded from other projects but must exist in the current project instrument list to be accessible to the pattern steps. A maximum of 48 instruments are available per project depending on the sample size and hence memory usage.

An instrument or sample from the microSD card libraries can be added into the active project instrument list. The instrument list is used to configure steps.

Basics of setting up a project instrument list using the sample loader function, accessed by default with [Shift] + [2] is shown here and further details on the sample management is detailed later.

Press [Shift] + [2] or navigate in the [Menu] for the 'Sample Loader' page

Press (Left) or (Right) to navigate between the option windows a red bounding box will indicate the selected window. Press (Up) or (Down) to navigate to the desired listed option.

```
Sample Loader        0m:00s  ❚❚  P1.008          ▬▬
┌─────────────┬─────────────────────────┐ ┌──┐ ┌──┐
│   SD Card   │       Instruments       │ │  │ │  │
│ /Firmware   │ 1. Strange Sample Number 1│ │  │ │  │
│ /Games      │ 2. Deep Kick            │ │  │ │  │
│ /Instruments│ 3. Transient Kick       │ │  │ │  │
│ /Manual     │ 4. Snare One            │ │  │ │  │
│ /Mod        │ 5. Closed Hat 1         │ │  │ │  │
│ /Projects   │ 6.                      │ │  │ │  │
│ /Samples    │ 7.                      │ │  │ │  │
│ /trackerLog │ 8.                      │ │  │ │  │
│             │ 9.                      │ │  │ │  │
│             │ 10.                     │ │  │ │  │
│             │ 11.                     │ │  │ │  │
│             │ 12.                     │ │  │ │  │
│             │ 13.                     │ │  │ └──┘
├───────┬─────┬──────┬──────┬─────┬──────┼────┬────┤
│ Enter │ Add │Preview│Rename│Import│Delete│Preview Vol│Memory│
│       │ Next│       │      │     │Unused│0.00 dB│ 17% │
└───────┴─────┴──────┴──────┴─────┴──────┴────┴────┘
```

Window display shows microSD card and instrument list. Max 48 instruments can be stored in a Tracker Mini project.

Project memory available based on the selected samples / instruments in the instrument list.

The bar will show an additional red element - if memory will increase and green bar - if memory will decrease when browsing a sample / instrument indicating potential memory impact if sample / instrument is added.

Samples can be imported directly to the project and edited for use. Sample import mode can import stereo samples.

▌ CREATING A PROJECT INSTRUMENT LIST

1. Hold [Shift] + [2] to open the 'Sample Loader' Page. This is also accessible within the [Menu].

2. Navigate to the central 'Instruments' window and highlight either an empty slot or an existing instrument. If an existing instrument is highlighted it will be replaced by the newly selected choice.

3. Navigate to the left 'SD Card' window and highlight either instruments or samples. Use the (Up) or (Down) to navigate and press [*Enter*] screen button to select and open the folder and any sub folders. Where samples are selected, hold [Shift] + (Up) (Down) D-Pad navigator to batch select multiple samples / instruments.

4. With a sample or instrument highlighted in the left window, press the [*Add*] screen button. This will add or replace in the selected instrument slot. Using [*Add Next*] screen button will add a sample and will automatically jump the cursor to the next slot.

5. The memory bar chart will indicate the available project memory in Tracker Mini. This will depend on the type and size of samples selected and may limit the amount of instruments available in the instrument list.

6. Additional samples / instruments can be added. The instruments in the list will be available to add to a step.

   Notes:

   • A prompt will be offered if replacing an existing instrument.

   • When navigating, the /.. symbol indicates folders and subfolder with a name. Selecting /.. alone will navigate up a level of the microSD card folder structure.

   • Instruments have a .pti filename.

   • Samples can be previewed in stereo from the microSD card and the preview volume can be adjusted. The sample loader preview audio and metronome are also sent to the USB master output.

   • The memory bar will show an additional red band (increases memory usage) or green band (decreases memory usage) indicating the potential memory impact when highlighting a sample / instrument to add. Should this be added to the instrument pool it will affect the memory usage as indicated by the red/green bar.

3 Projects

▌ DELETING AN INSTRUMENT FROM THE LIST

1. Hold [Shift] + [2] to open the 'Sample Loader' Page. This is also accessible within the [Menu].

2. Navigate to the central 'Instruments' window and highlight an existing instrument. If an existing instrument is highlighted it will be the one deleted in this process. Use [Shift] + (Up) (Down) D-Pad navigator to batch select multiple samples / instruments.

3. Press [Delete].

4. A prompt asking if you want to continue on to delete the highlighted sample / instrument. Press [*No*] screen button to cancel without deleting or confirm deletion by pressing [*Yes*] screen button.

5. The instrument is removed from the Tracker Mini list but is still present on the microSD card.

6. The memory bar chart will indicate the available project memory in Tracker Mini. This will depend on the type and size of samples selected and may limit the amount of instruments available in the instrument list.

7. Additional samples / instruments can be deleted. The instruments in the list will be available to use in the project.

▌ DELETING ALL UNUSED INSTRUMENTS FROM THE LIST

1. Hold [Shift] + [2] to open the 'Sample Loader' Page. This is also accessible within the [Menu].

2. Navigate to the central 'Instruments' window.

3. Press [*Delete Unused*] screen button.

4. A prompt asking if you want to continue on to delete the highlighted sample / instrument. Press [*No*] screen button to cancel without deleting or confirm deletion by pressing [*Yes*] screen button.

5. Any instruments that are in the list but not used in the project are removed from the list. microSD card files remain intact.

6. The memory bar chart will indicate the available project memory in Tracker Mini. This will depend on the type and size of samples selected and may limit the amount of instruments available in the instrument list.

▌ IMPORTING A SAMPLE TO THE PROJECT INSTRUMENT LIST

1. Hold [Shift] + [2] to open the 'Sample Loader' Page. This is also accessible within the [Menu].

2. Navigate to the left 'SD Card' window and navigate to and highlight a sample to import. Use (Up) or (Down) to navigate and Press [*Enter*] screen button to select folder.

3. Navigate to the central 'Instruments' window and highlight either an empty slot or an existing instrument. If an existing instrument is highlighted it will be replaced by the newly selected choice.

4. Press [*Import*] screen button. The sample is displayed for editing. Pressing [*Cancel*] screen button at any time to leave the import menu without importing.

5. The sample can have its start,[*Start*] screen button and end, [*End*] screen button adjusted. Select start or end and use [+] and [-] to adjust. The inner [+] and [-] buttons adjust with a higher resolution. This is a great feature when samples are too long or only a portion is needed.

6. Hold [*Preview*] screen button to listen to the sample.

7. When editing is complete, select an import option to load the sample into the instrument list:-

   • Press [*Import Low Quality*] screen button. This will import a lower quality sample. This will create a smaller file size and save memory. The trade off is audio sound quality reduction.

   • Press [*Import Normal*] screen button. This will import a sample at the normal Tracker Mini quality specification. This will create a larger file size and take up more memory. The trade off is optimum audio sound quality.

> Instruments can also be copied and pasted within the sample loader and instrument list browser to duplicate and instrument. Use the [Copy] dedicated button to copy and [Shift] + [Copy] to paste.
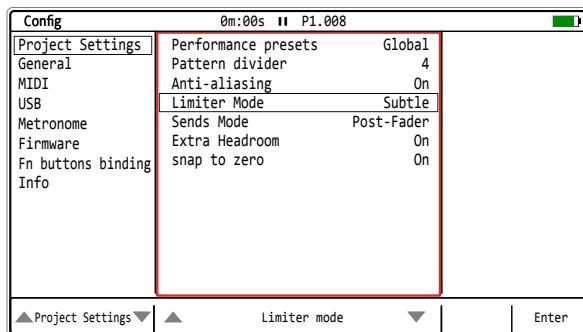
3 Projects

3.7 Summary of Configuration Options

A number of options can be set in the 'Config' menu. These defaults may be good enough to get started but specific changes may suit certain workflows and situations better. The details of these will be covered in relevant sections and only an overview of global settings is provided here.

Press [Shift] + [4] or navigate in the [Menu] for the 'Config' page

```
Config              0m:00s  ||  P1.008
Project Settings    Performance presets      Global
General             Pattern divider              4
MIDI                Anti-aliasing               On
USB                 Limiter Mode             Subtle
Metronome           Sends Mode          Post-Fader
Firmware            Extra Headroom              On
Fn buttons binding  snap to zero                On
Info



 ▲ Project Settings ▼  ▲      Limiter mode    ▼         Enter
```

Press (Left) or (Right) to navigate between the option windows a red bounding box will indicate the selected window. Press (Up) or (Down) to navigate to the desired listed option.

Also the [*Up*] and [*Down*] screen buttons will select the option and automatically select the menu window.

Config Options

Menu	Option	Description	Book Section
Project Settings	Performance Presets	Allows performance presets to be saved either as a global configuration or local to each project.	Performance Mode
Project Settings	Pattern Divider	Sets the highlight level for the selected step offering better pattern visualisation.	Pattern Format
Project Settings	Anti-aliasing	Anti-aliasing set to 'On' gives a cleaner sound for sample playback. Off is more lo-fi vintage feel.	
Project Settings	Limiter Mode	Sets the characteristics of the limiter attack and release between subtle and extreme.	Master Effects
Project Settings	Sends Mode	Sets the sends to pre-fader i.e. independent of volume or post-fader.	Master Effects
Project Settings	Extra Headroom	Avoid clipping by adding extra headroom in the output audio.	
Project Settings	Snap to Zero	Snap audio crossings to zero points, Used as green markers in the sample playback page.	Instruments
General	Display Brightness	Adjusts the brightness level of the 5" display between three settings: High, Medium, Low.	System
General	Display Theme	The colour scheme of the screen. Original has the dark background while monochrome is bright. Also includes the 10th anniversary edition.	System
General	Display Font	Text font option. Original has the classic consolas look while 'new' is smaller, more standard.	System
General	Recording Options	Sets the options for what is recorded i.e. notes, quantization, micro-timing, velocity.	Sequencing Steps
General	Numbering Mode	Sets all numbers to the decimal starting at 0 or 1 or hexadecimal format. Classic look and feel.	System
General	Pattern Arrangement	Sets the pattern display to the traditional and revolving vertical view or horizontal display.	Patterns
General	Pattern Top Info	Allows the top part of the pattern screen to display only the track name, additional info or off.	Patterns
General	Line In Channel	Selects the audio input of the line in between stereo, mono left or mono right.	Audio

3 Projects

Menu	Option	Description	Book Section
MIDI	Clock In	Sets the source of the master clock, Internal (default) or external USB or MIDI In jack.	MIDI
MIDI	Clock Out	Sets the Tracker Mini clock output. Off, USB, MIDI Out jack, USB + MIDI Out jack.	MIDI
MIDI	Transport In	Sets the source of transport control commands, Internal (default) or external USB or MIDI In jack.	MIDI
MIDI	Transport Out	Sets the output of transport control commands, Off, USB, MIDI Out jack or USB+MIDI jack options.	MIDI
MIDI	Notes In	Sets the input routing of external notes in. Set to Off, USB, MIDI In jack or USB+MIDI jack options.	MIDI
MIDI	Notes In Channel	Sets the MIDI channel for incoming notes from external gear. Select All channels or Ch 1-16.	MIDI
MIDI	MIDI Out	Sets the MIDI output routing between, Off, USB, MIDI Out jack or USB+MIDI jack options.	MIDI
MIDI	CC In	Sets CC (control change) input routing to Off, USB, MIDI In jack, USB+MIDI In jack.	MIDI
MIDI	CC In channel	Sets MIDI channel for CC (control change) incoming messages. Select All channels or Ch 1-16.	MIDI
MIDI	Middle C	Sets middle C as C-3, C-4, C-5, C-6. Calibrates range in Tracker Mini with external gear.	MIDI
MIDI	Clock Sync Correction	Latency compensation for incoming sync. -6 to +6. Use with MIDI Jack or USB clock in.	MIDI
USB	Storage	A USB connected PC / Mac will see the Tracker Mini microSD card as an external storage drive. Files can be then be transferred directly to / from the installed microSD when in this mode.	System
USB	Audio	Enables USB audio In, Out or both. Can also disable the USB audio by setting to off.	Audio
Metronome	State	Turns the metronome on or off for live recording.	Projects
Metronome	Pre Roll	Provides a count in of 4 before starting to record.	Projects
Metronome	Time signature num	Upper numerator of the time signature.	Projects

Menu	Option	Description	Book Section
Metronome	Time signature denum	Lower denominator of the time signature.	Project
Metronome	Volume	Volume level of metronome.	Projects
Firmware	Firmware Update	Activates a firmware update based on the OS located on the microSD card in the 'firmware' folder.	System
Firmware	Current version	Displays current version of installed OS. Visual indicator only.	System
Firmware	Build	Firmware build version display.	
Firmware	Reset config	Resets this configuration menu to the default original settings.	System
Fn buttons binding	Fn1	Sets the page associated with function button [1].	System
Fn buttons binding	Fn2	Sets the page associated with function button [2].	System
Fn buttons binding	Fn3	Sets the page associated with function button [3].	System
Fn buttons binding	Fn4	Sets the page associated with function button [4].	System
Fn buttons binding	Fn1+Shift	Sets the page associated with function button combo [Shift] + [1].	System
Fn buttons binding	Fn2+Shift	Sets the page associated with function button combo [Shift] + [2].	System
Fn buttons binding	Fn3+Shift	Sets the page associated with function button combo [Shift] + [3].	System
Fn buttons binding	Fn4+Shift	Sets the page associated with function button combo [Shift] + [4].	System
Info	- -	General information and license details.	

4

Pattern Format

Each project contains a maximum of 255 patterns across 16 tracks. Each pattern can hold up to 128 steps per track. Patterns are at the heart of Tracker Mini and are built in the pattern sequencer. The sequencer is what makes Tracker Mini different from normal digital audio workstations. Steps are the building blocks when creating patterns and by assembling these into audio arrangements it is possible to create beats and melodies. Each step consists of a note, instrument and two FX slots. These are triggered as each row is activated when playback is initiated. This can trigger audio information, effect actions or MIDI messages. Patterns are bite size elements of a full song and can be created as individual modules built using steps. Patterns are then combined and arranged together in song mode for chaining into a full length track. This section will focus on patterns using in audio tracks (although MIDI steps can be created together with audio). This section will provide overall guidance on creating basic patterns as well as their structural elements generally. This is a foundation to patterns and a deeper dive into steps and sequencing comes next. All the basic building blocks and the process needed to get started in creating, editing and using a basic pattern are covered in this section. More advanced and in-depth elements of the components of a step are covered later as well as more advanced sequencing functions.
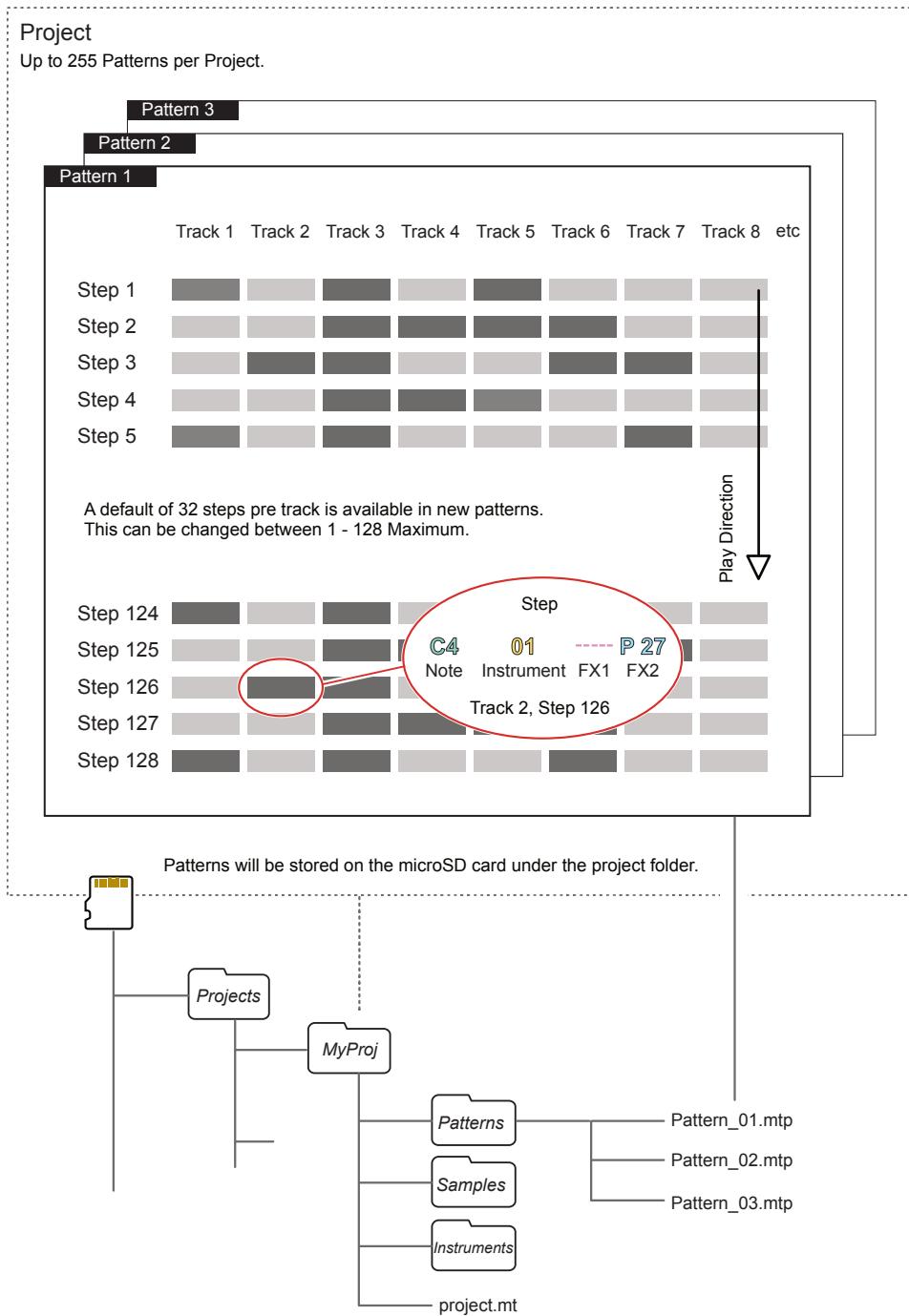
4 Pattern Format

4.1 What's a Pattern?
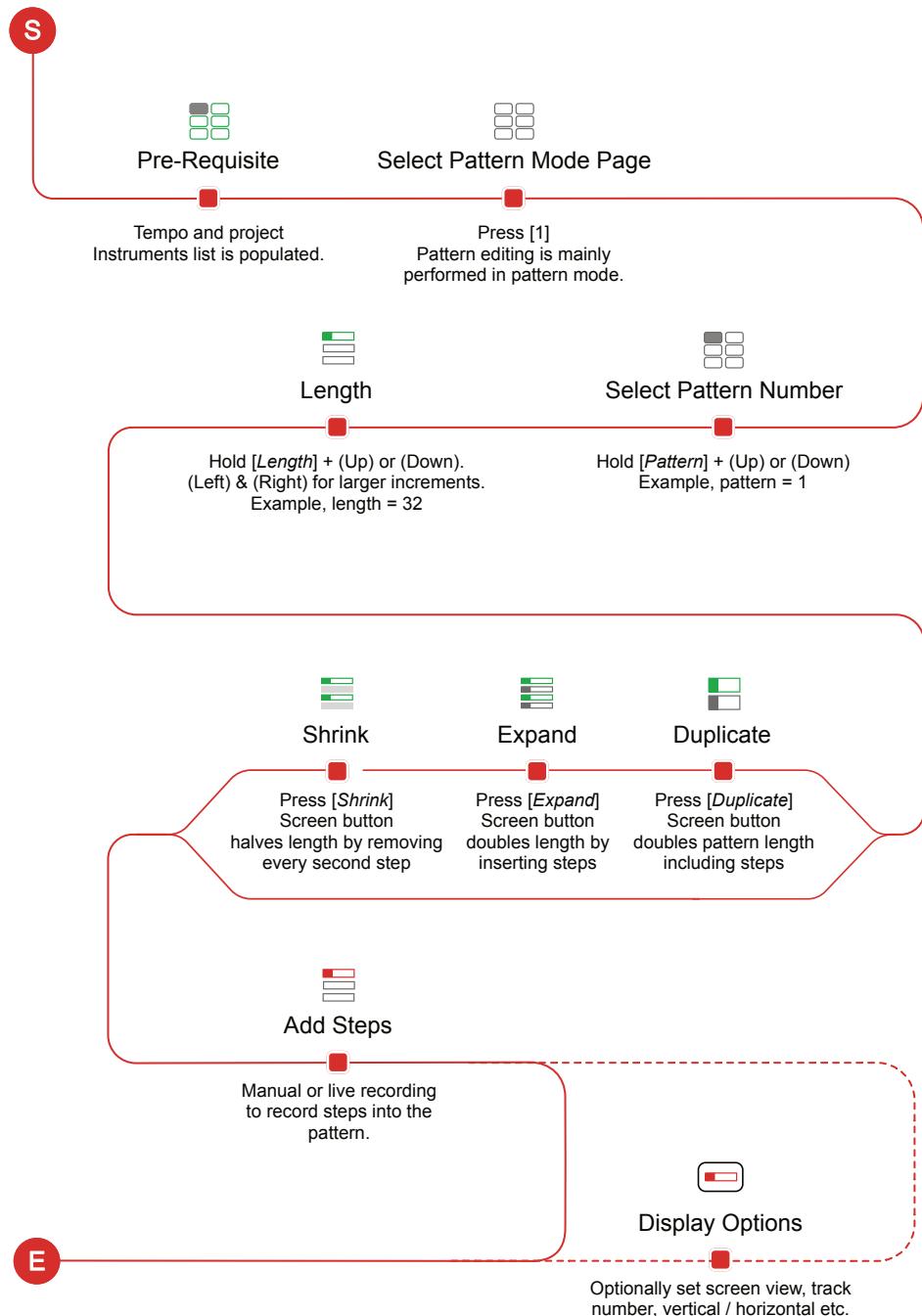
Patterns are a combination of 16 tracks where each has a series of steps mapped out. The steps form into a melody or beat. So for example track 1 could be the drums, track 2 for percussion, track 3 as bass etc. Patterns can be created using steps manually 'programmed' into the Tracker Mini or by recording in real time.

Project
Up to 255 Patterns per Project.

Pattern 3
Pattern 2
Pattern 1

	Track 1	Track 2	Track 3	Track 4	Track 5	Track 6	Track 7	Track 8	etc
Step 1									
Step 2									
Step 3									
Step 4									
Step 5									

A default of 32 steps pre track is available in new patterns.
This can be changed between 1 - 128 Maximum.

Play Direction

Step 124									
Step 125									
Step 126									
Step 127									
Step 128									

Step

C4   01   -----   P 27
Note   Instrument   FX1   FX2

Track 2, Step 126

Patterns will be stored on the microSD card under the project folder.

Projects
MyProj
Patterns ──── Pattern_01.mtp
Pattern_02.mtp
Pattern_03.mtp
Samples
Instruments
project.mt

4.2 Process of Creating a Pattern

Formatting and creating a pattern is a simple process but there are some good practices that will speed up workflow and help to move quickly to making music. A pattern is the container for steps and establishes the step timing and track format. The dynamic screen buttons are used heavily.

S

Pre-Requisite

Tempo and project
Instruments list is populated.

Select Pattern Mode Page

Press [1]
Pattern editing is mainly
performed in pattern mode.

Length

Hold [*Length*] + (Up) or (Down).
(Left) & (Right) for larger increments.
Example, length = 32

Select Pattern Number

Hold [*Pattern*] + (Up) or (Down)
Example, pattern = 1

Shrink

Press [*Shrink*]
Screen button
halves length by removing
every second step

Expand

Press [*Expand*]
Screen button
doubles length by
inserting steps

Duplicate

Press [*Duplicate*]
Screen button
doubles pattern length
including steps

Add Steps

Manual or live recording
to record steps into the
pattern.

Display Options

Optionally set screen view, track
number, vertical / horizontal etc.

E

4 Pattern Format

4.3 Configuring a Pattern.

Pattern and step editing is performed in 'Pattern' mode. The first requirement is to create the pattern itself where steps can later be added to create the melody or beat. Commands for the pattern are available from the dynamic screen buttons located at the bottom of the page. These will change depending on the mode or selection made.

The dynamic screen buttons labelled at the bottom of the page will control options for creating patterns. Underscore colour represents mode i.e. Red means accessible in [Rec] mode only.

Pattern	Length	Step Jump	Fill	Preview	Undo	Redo	More
1	32	0					●○○

| Render Selection | Invert | Duplicate Pattern | Expand Pattern | Shrink Pattern | Copy Pattern | Paste Pattern | More ○●○ |

| Pattern Name | Track Name | | | | | | More ○○● |

Menu Option	Function	Description
Pattern	Pattern Selection	Selects a pattern to edit. This will select a pattern number between 1-255 in the project.
Length	Pattern Length	Adjust the number of step rows in the pattern. Default is 32 but a maximum of 128 rows are available in a pattern.
Step Jump	Programming Aid	Assists in recording steps with the pads. Will automatically jump the selection cursor in defined steps.
Fill	Programming Aid	Assists in programming steps. Will automatically fill steps based on defined selection criteria.
Preview	Instrument Preview	Will play the instrument for the step to allow previewing of the sound.
Undo	Undo Last Command	If available, will reset the previous state prior to the last action, effectively undoing the last (up to 20) commands.
Redo	Redo Last Command	If available, will restore the previous state after to the last action, effectively redoing the last (up to 20) commands.
Render Selection	Bounce Audio	Renders the selection to a new audio sample. Useful to use elsewhere or to reduce track consumption.
Invert	Invert Steps	Inverts all steps in the selection vertically.
Duplicate Pattern	Extends Pattern	Extends the entire pattern and its associated steps, extending the pattern to double the length.
Expand Pattern	Extends Pattern	Extends the pattern by adding blank steps in between existing steps, extending the pattern to double the length.
Shrink Pattern	Contracts Pattern	Contracts the pattern length by deleting every 2nd step, reducing the pattern to half the length.
Copy Pattern	Copy	Copies the entire pattern to the virtual clipboard.
Paste Pattern	Paste	Pastes the copied pattern from the virtual clipboard into the location starting at the current position.
Pattern Name	Name the Pattern	Opens the alpha-numeric keyboard to change the current pattern name.
Track Name	Name the Track	Opens the alpha-numeric keyboard to change the current track name.
More	Change Page	Selects the next page of commands

NOTES

❙ SELECTING THE PATTERN MODE PAGE

1. Press [1] to open the 'Pattern' page. Also accessible within the [Menu].

2. The options for the pattern page will show at the bottom of the page and are represented by the 8 screen buttons.

3. To change the options page, press [*More*] screen button. This toggles between the three pages of pattern options.

❙ SELECTING A PATTERN

1. Press [1] to open the 'Pattern' Page. Also accessible within the [Menu].

2. Ensure the pattern is not playing.

3. Ensure options page 1 is displayed. Press [*More*] to toggle between the two pages of pattern options.

4. Hold [*Pattern*] screen button + (Up) or (Down). A pattern number between 1-255 can be selected. Blank patterns selected have 32 steps as default. The [+] and [-] buttons can also be used.

5. The currently active pattern number is displayed top left in the info bar.

❙ ADJUSTING THE PATTERN LENGTH

1. Press [1] to open the 'Pattern' page. Also accessible within the [Menu].

2. Ensure options page 1 is displayed. Press [*More*] to toggle between the three pages of pattern options.

3. Hold [*Length*] screen button + (Up) or (Down). A pattern length between 1-128 steps can be selected. Default is 32. The arrow buttons (Left) or (Right) will set length in predefined denominations i.e. 1, 2, 4, 8, 16 etc.
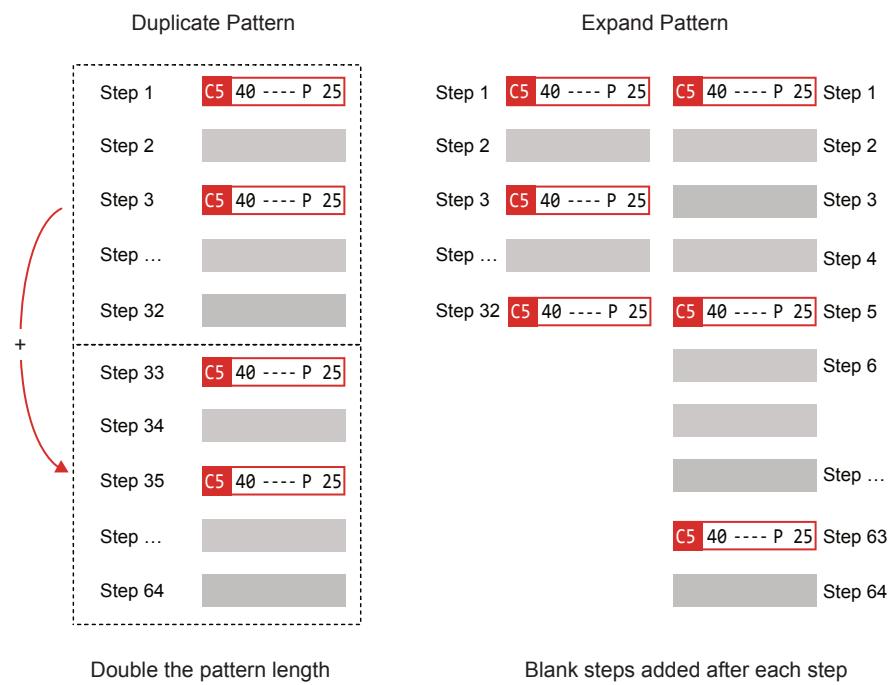
> *Tip: It is good practice to build patterns starting with a small length. For example start with 8 or 16 steps and create the beat or melody. This can then be duplicated / extended along with its steps and then edited to create longer passages.*

4 Pattern Format

▍ EXTENDING PATTERN LENGTH

1. Press [1] to open the 'Pattern' page. Also accessible within the [Menu].

2. Press [*More*] to toggle between the three pages of pattern options.

3. Press [Rec] to select recording mode and allow editing. Screen buttons will be unavailable, shown dim, otherwise.

4. The current pattern can be extended in severals ways. The options available via the 8 screen buttons are:-

   • Press [*Duplicate Pattern*]. The pattern will be extended by duplicating the full pattern along with its steps. Effectively doubles the pattern length. Option is on pattern page 2.

   • Press [*Expand Pattern*]. The pattern will be extended by inserting additional step rows in-between existing steps. Effectively doubles by stretching the pattern length. Option is on pattern page 2.

   • Adjusting [*Length*] will also increase the pattern length. New empty step rows added at the end. Option is on pattern page 1.

5. The [*Undo*] or [*Redo*] screen buttons can be used if required to restore a previous state. These are on page 1 of the page options.

Duplicate Pattern	Expand Pattern

Double the pattern length   Blank steps added after each step

▌ REDUCING PATTERN LENGTH

1. Press [1] to open the 'Pattern' page. Also accessible within the [Menu].

2. Press [*More*] to toggle between the three pages of pattern options.

3. Press [Rec] to select recording mode and allow editing. Screen buttons will be unavailable, shown dim, otherwise.

4. The current pattern can be reduced in severals ways. The options available via the 8 screen buttons are:-

   • Press [*Shrink Pattern*]. The pattern will be reduced by deleting each second step in the pattern. This will delete any step whether empty or filled. Effectively halves the pattern length. Option on page 2.

   • Adjusting [*Length*] will also reduce the pattern length. Any steps will be hidden but will be restored if the pattern length is extended. Option found on page 1.

5. The [*Undo*] or [*Redo*] screen buttons can be used if required to restore a previous state. These are on pattern page 1.

Original Pattern		Affected Pattern		Shrunk Pattern	
Step 1	C6 40 ---- P 25	Step 1	C6 40 ---- P 25	Step 1	C6 40 ---- P 25
Step 2	C5 40 ---- P 25	Step 2	C5 40 ---- P 25	Step 2	
Step 3		Step 3		Step 3	C6 40 ---- P 25
Step 4		Step 4		Step 4	E5 40 ---- P 25
Step 5	C6 40 ---- P 25	Step 5	C6 40 ---- P 25		
Step 6	B5 40 ---- P 25	Step 6	B5 40 ---- P 25		
Step 7	E5 40 ---- P 25	Step 7	E5 40 ---- P 25		
Step 8		Step 8			
		Every 2nd Step Deleted		Resulting, Halved Pattern	

4 Pattern Format

4.4 Copying and Pasting a Pattern.

Patterns can be copied and pasted between different pattern slots. This will copy the entire pattern and its steps as well as the length configuration.

▌ COPYING AND PASTING A PATTERN

1. Press [1] to open the 'Pattern' page. Also accessible within the [Menu].

2. The options on pages 1 & 2 are required during this process. Press [*More*] to toggle between the pages of pattern options.

3. Press [Rec] to select recording mode and allow editing. Screen buttons will be unavailable, shown dim, otherwise.

4. On pattern page 1, select the pattern to copy, Hold [*Pattern*] screen button + (Up) or (Down). Example, select pattern 1.

5. On pattern page 2, Press [*Copy Pattern*] screen button. The pattern is copied to the clipboard.

6. On pattern page 1, select the pattern to paste into, Hold [*Pattern*] screen button, + (Up) or (Down). Example, select pattern 2.

7. On pattern page 2, Press [*Paste Pattern*] screen button. The pattern is pasted into the current pattern and will overwrite any existing data. It is possible to continue to paste the pattern to other pattern slots.

8. The [*Undo*] or [*Redo*] screen buttons can be used if required to restore a previous pattern state.
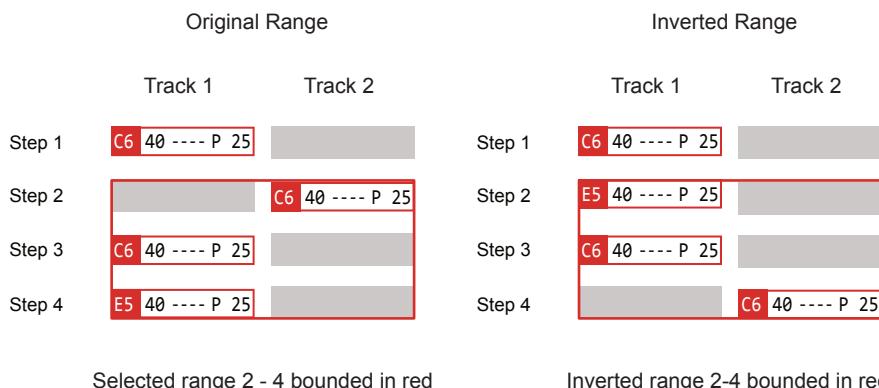
4.5 Inverting a Selection of Steps.

Patterns are created top to bottom and steps assigned in the step rows. Steps once selected in a pattern can be inverted. This will reverse the order in which the steps play. For example the first step in the selection will play last and vice versa.

▌ INVERTING A STEP RANGE IN A PATTERN

1. Press [1] to open the 'Pattern' page. Also accessible within the [Menu].

2. Ensure options page 2 is displayed. Press [*More*] to toggle between the two pages of pattern options.

3. Press [Rec] to select recording mode and allow editing. Screen buttons will be unavailable, shown dim, otherwise.

4. Navigate to the first step. Press [Shift] + (Up) or (Down) to select the sequence of steps and / or Press [Shift] + (Left) + (Right) to select steps across tracks.

5. Press [*Invert*] screen button to reverse the order of the range of steps selected. This reverses the vertical order of the steps. The steps remain in their respective tracks.

6. The [*Undo*] or [*Redo*] screen buttons can be used if required to restore a previous state.

	Original Range			Inverted Range	
	Track 1	Track 2		Track 1	Track 2
Step 1	C6 40 ---- P 25		Step 1	C6 40 ---- P 25	
Step 2		C6 40 ---- P 25	Step 2	E5 40 ---- P 25	
Step 3	C6 40 ---- P 25		Step 3	C6 40 ---- P 25	
Step 4	E5 40 ---- P 25		Step 4		C6 40 ---- P 25

Selected range 2 - 4 bounded in red   Inverted range 2-4 bounded in red

4 Pattern Format

4.6 Pattern Mode Page Layout Options

Pattern and step editing is performed in 'Pattern' mode, selected by pressing the default assigned button [1] or using [Menu]. To edit steps, select [Rec]. The pattern mode view can be changed in the config options.

Press [Shift] + [Insert] to reset the cursor position to the start, step 1.

Change the pattern info for the top bar in the Config settings: General > Pattern top info. Top bar: Off, tracks only or additional Info.

Step row.

Green play or red rec mode.

The 'top down' view can be changed to 'left right' in the Config settings; General > Pattern Arrangement

```
Pattern 1          0m:00s  ▌▌ P1.008        1.Analog 3 18p ▐
1  Trac       P-25  Track 2 --- H-25  Track 3 --- P-20  Track 4 --- ----  1
2     40 ---- P-    C5 02 ---- P-20  C4 12 ---- A  4  -- --- ---- ----  2
3  -- --- ---- ---- -- --- ---- ----  -- --- ---- ----  -- --- ---- ----  3
4  -- --- ---- ---- C3 04 ---- P-20  C4 12 ---- A  4  -- --- ---- ----  4
5  C5 40 ---- P 25  -- --- ---- ----  -- --- ---- ----  -- --- ---- ----  5
6  -- --- ---- ----                                                       6
7  -- --- ---- ----
8  -- --- ---- ----  D3 04 ----
9  -- --- ---- ----  D3 04 ----
10 -- --- ---- ----  D3 04 ----
11 -- --- ---- ----
12 -- --- ---- ----  D3 04 ---- P-10  -- --- ---- ----  -- --- ---- ----  12
13 -- --- ---- ----  -- --- ---- ----  -- --- ---- ----  -- --- ---- ----  13
14 -- --- ---- ----  -- --- ---- ----  -- --- ---- ----  -- --- ---- ----  14
15 -- --- ---- ----  -- --- ---- ----  -- --- ---- ----  -- --- ---- ----  15
  Pattern   Length  Step Jump        Preview    Undo     Redo      More
     1        32        0        11                                ●○○
```

	1	2
Track 1	C5	C5
	-- -- --	-- -- --
Track 2	C5	C5
	-- -- --	-- -- --
Track 3	C5	C5
	-- -- --	-- -- --
Track 4	C5	C5
	-- -- --	-- -- --

C3   C#3   D3   D#3   E3   F3   F#3   G3

Note input mode.
Press [Shift] + [Note]
Use screen keys to play notes.

To select a step

Press (Up) or (Down) to navigate vertically in the Tracker Mini grid. Cursor will wrap past the end to the start when using arrow keys.

```
 40 ---- P-
-- --- ---- ----
-- --- ---- ----
C5 40 ---- P 25
-- --- ---- ----
-- --- ---- ----
-- --- ---- -
```

Press (Left) or (Right) to navigate horizontally in the Tracker Mini grid.

Switch to 8 track view.
Displays a single element across all 8 tracks.

Track 1	Track 2	Track 3	Track 4	Track 5	Track 6	Track 7	Track 8
- - -	C5	- - -	- - -	- - -	- - -	- - -	- - -
- - -	C5	C4	D2	- - -	- - -	- - -	- - -
- - -	- - -	C4	- - -	- - -	- - -	- - -	- - -

[1] + [Note] - Displays all 8 tracks, with only the note parameters.

[1] + [Instrument] - Displays all 8 tracks, with only the instrument parameters.

[1] + [FX1] - Displays all 8 tracks, with only FX1 parameters.

[1] + [FX2] - Displays all 8 tracks, with only FX2 parameters.

Hold [1] + A combo of max 2 parameter buttons: note, instrument, FX1, FX2 to display 2 parameters per track across 8 tracks.

Press [1] to return to 4 tracks, all step parameters.

Note input mode. To change set of 8 notes assigned to screen keys, Hold [Note] + D-Pad .

▌ NAVIGATING THE PATTERN PAGE

1. Press [1] to open the 'Pattern' page. Also accessible within the [Menu].

2. The step cursor will display a green border with the selected step parameter highlighted green in normal playback mode. This indicates the step in focus and current playhead position.

3. To move the position vertically, Press (Up) or (Down). The selection will scroll and will wrap at the end of the pattern back to the top.

4. To move the position horizontally across tracks, Press (Left) or (Right). The selection will scroll across the 1-4 visible tracks and switch across tracks 5-8 at the right of the page. This view is default.

5. Press [Shift] + (Up), (Down), (Left) and (Right) to select rather than just navigate a range of steps.

6. To return the playhead / step selector to the top step 1 of the pattern, Press [Shift] + [Insert] when the sequencer is stopped.

▌ CHANGING FROM 4 TO 8 TRACK VIEW

1. By default the pattern page display 4 tracks. This can be changed to display 8 tracks with a various step options:-

    • 8 Tracks with only note parameter: press [1] + [Note].

    • 8 Tracks with instrument parameter: press [1] + [Instrument].

    • 8 Tracks with only FX1 parameter: press [1] + [FX1].

    • 8 Tracks with only FX2 parameter: press [1] + [FX2].

    • 8 Tracks with 2 selected parameters: Press [1] + [P1] + [P2], where 'P1' and 'P2' are 2 from; [Note], [Instrument], [FX1], FX2].

    • Revert to 4 track mode, press [1].

2. This relies on page [1] being assigned as 'Pattern'. This is set as the default but can be changed in the configuration.

4 Pattern Format

▌ CHANGING BETWEEN VERTICAL AND HORIZONTAL VIEW MODE

1. The default mode is for Tracker Mini to display patterns top to bottom in a vertical arrangement. This is the traditional and expected view for trackers in general. This can be changed to 'Vertical Revolver', scrolls endlessly across all rows or a horizontal left to right view. This is less common but may suit people more accustomed to a DAW style.

2. Hold [Shift] + [4] to open the 'Config' project configuration menu.

3. Ensure the left window is highlighted red i.e. in focus. Navigate windows by pressing (Left) or (Right). Menu windows will automatically be selected when pressing the relevant screen keys below the window to navigate [*Up*] or [*Down*].

4. Press (Up) or (Down) to highlight with the bounding box over the 'General' option. Alternatively press the relevant screen keys below the window to navigate [*Up*] or [*Down*].

5. Highlight red the General options window. Navigate windows by pressing (Left) or (Right). Menu windows will automatically be selected when pressing the relevant screen keys below the window to navigate [*Up*] or [*Down*].

6. Press (Up) or (Down) to highlight with the bounding box over the 'Pattern Arrangement' option. Alternatively press the relevant screen keys below the window to navigate [*Up*] or [*Down*].

7. To change the options between horizontal and vertical views, press [*Enter*]. The parameter pop-up window listing the available options will appear.

8. Press (Up) / (Down) or [*Up*] / [*Down*] screen buttons to highlight the desired option.

    •   Vertical Revolver - Tracks scrolls wrap at the pattern end / start. The page view will also show the pattern wrap.

    •   Vertical Original - Tracks scroll top to bottom and bottom to top. View shows linear pattern.

    •   Horizontal - Track scrolls left to right and view is linear.

9. Press [*Apply*] screen button to confirm selection or [*Cancel*] screen button to exit without changing.

10. The display will reflect the selected option.

▌ CHANGING PATTERN TOP INFO DETAILS

1. The default mode is for Tracker Mini to display an information bar plus the tracks at the top of the pattern display. This can be changed to give more clarity to the Tracker Mini pattern grid.

2. Hold [Shift] + [4] to open the 'Config' project configuration menu.

3. Ensure the left window is highlighted red i.e. in focus. Navigate windows by pressing (Left) or (Right). Menu windows will automatically be selected when pressing the relevant screen keys below the window to navigate [*Up*] or [*Down*].

4. Press (Up) or (Down) to highlight with the bounding box the 'General' option. Alternatively press the relevant screen keys below the window to navigate [*Up*] or [*Down*].

5. Highlight red the general options window. Navigate windows by pressing (Left) or (Right). Menu windows will automatically be selected when pressing the relevant screen keys below the window to navigate [*Up*] or [*Down*].

6. Press (Up) or (Down) to highlight with the bounding box over the 'Pattern Top Info' option. Alternatively press the relevant screen keys below the window to navigate [*Up*] or [*Down*].

7. To change between horizontal and vertical views, Press [*Enter*]. The parameter pop-up window listing the available options will appear.

8. Press (Up) / (Down) or [*Up*] / [*Down*] screen buttons to highlight the desired option.

    • Off - No information is displayed at the top of the page.

    • Track names - Only display the track name information.

    • Additional Info: Display tracks, and upper bar expanded information, such as time, transport, pattern, instrument etc. This is default.

9. Press [*Apply*] screen button to confirm selection or [*Cancel*] screen button to exit without changing.

10. The display will reflect the selected option.

4 Pattern Format

▌ CHANGING THE PATTERN GRID VISUAL DIVIDERS

The pattern grid has a number of graphic guides as a visual aids when sequencing steps into a pattern. This is by default set to divisions of 4 providing a visual on beat guide at rows 1, 5, 9 etc. These can be changed in the 'Config' menu settings.

1. Hold [Shift] + [4] to open the 'Config' project configuration menu.

2. Navigate to 'Project Settings' option. Navigate windows by pressing (Left) or (Right). Menu windows will also be automatically be selected when pressing the relevant screen keys below the menu window to navigate [*Up*] or [*Down*].

3. In the project setting options, central window, highlight 'Pattern Divider'.

4. Press [*Enter*] screen button.

5. Press (Up) / (Down) or [*Up*] or [*Down*] screen buttons to highlight the desired option between 1 - 16.

6. Press [*Apply*] screen button to confirm selection or [*Cancel*] screen button to exit without changing.

7. The display will reflect the new visual indicator divider bars.

Pattern Divider Setting in 'Config' Menu under 'Project Settings'

Visual dividers to aid step positioning.
Default shown = 4.

Pattern divider.
Example = 3.

Pattern divider.
Example = 7.
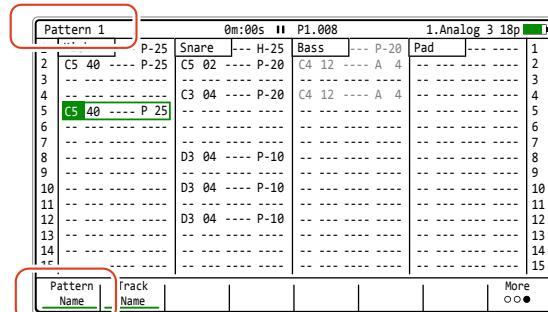
Track and Pattern Names

Track and pattern names can be edited and changed to custom text in the in the pattern function. Track name length is maximum 7 characters. The defaults are track 1, track 2, track 3 etc but can be set to more appropriate names such as drums, perc, bass etc. Track names can also be changed in the master, sample track mixer page.

EDITING PATTERN NAME IN PATTERN PAGE

1. Press [1] to select the pattern mode page. This consists of a set of menu pages and each is cycled in turn by pressing the [*More*] screen button option.

2. Ensure the pattern to edit is selected. This can be changed with [*Pattern*] screen button on the first menu page. The change will affect the current pattern only.

3. Navigate to menu page 3 of 3 using [*More*].

4. The option to change the pattern name is presented. Press [*Pattern Name*] screen button to select the alpha-numeric pop-up editor.

5. The Alpha numeric QWERTY keyboard will be displayed and enable the default 'Pattern 1' name to be changed. Edit as per normal using the QWERTY functions with the pads or navigation arrows and screen button commands. Auto naming is also an option.

6. Press [*Save*] screen button, to confirm and immediately save the new name for the pattern. Press [*Cancel*] to exit without saving.
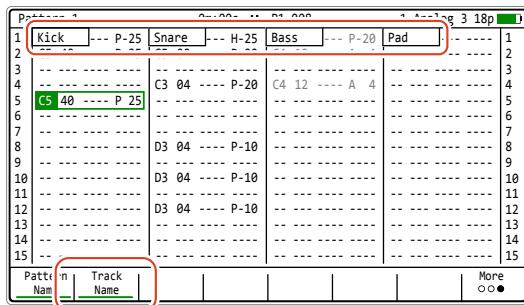
EDITING TRACK NAME IN PATTERN PAGE

1. Press [1] to select the pattern mode page. This consists of a set of menu pages and each is cycled in turn by pressing the [*More*] screen button option.

2. Ensure the pattern to edit is selected. This can be changed with [*Pattern*] screen button on the first menu page.

3. Also navigate to the track column to edit using [Left] or [Right] to move the selection box horizontally. Only the track selected will be edited.

4. Navigate to menu page 3 of 3 using [*More*].

5. The option to change the pattern name is presented. Press [*Track Name*] screen button to select the alpha-numeric pop-up editor.

6. The Alpha numeric QWERTY keyboard will be displayed and enable the default 'Track 1' name to be changed. Edit as per normal using the QWERTY functions with the pads or navigation arrows and screen button commands. Auto naming is also an option but sensible names like percussion, effect etc make sense for a track.

7. Press [*Save*] screen button, to confirm and immediately save the new name for the track. Press [*Cancel*] to exit without saving.
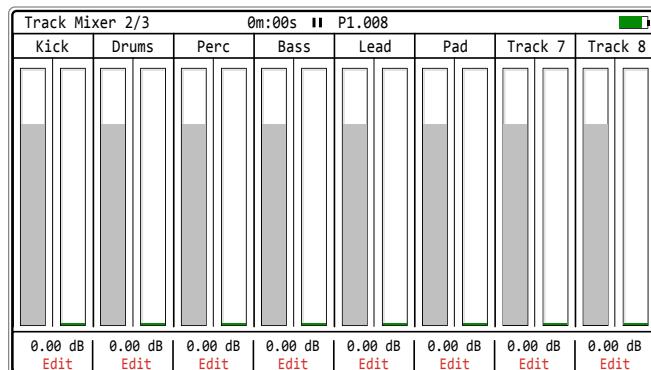

Note that the displaying of track name can changed in the main config options. This is found in the 'General' menu under the 'Pattern top info' option. Track names can be on or off or additional info presented.

Track names can be edited and changed to custom text in the master section as well as in the pattern function. Track name length is a maximum of 7 characters and can be set in the sample track mixer.

▌ EDITING SAMPLE TRACK NAMES FROM THE MIXER PAGE

1. Press [4] to select the master. This consists of multiple pages and each is cycled in turn by pressing button [4]. Page is displayed left top bar.

2. Navigate to page 2/3 - sample track mixer.

3. Press [Rec] and the editing mode will be toggled on or off. Set to on, as indicated by the word 'Edit' in red at the bottom of each track and representing the screen buttons per track.

4. Press the relevant screen button 1 - 8 for the track to edit. For example, press left most screen button for track 1.

5. The alpha numeric QWERTY keyboard will be displayed and enable the default 'Track 1' name to be changed. Edit as per normal using the QWERTY functions with the D-Pad navigation and screen button commands. Maximum 7 characters available for track names.

6. Press [*Save*] screen button, to confirm and immediately save the new name for the track.

7. Repeat step 4 - 6 for other tracks if required.

Track Mixer 2/3		0m:00s ⏸ P1.008					
Kick	Drums	Perc	Bass	Lead	Pad	Track 7	Track 8
0.00 dB	0.00 dB	0.00 dB	0.00 dB	0.00 dB	0.00 dB	0.00 dB	0.00 dB
Edit	Edit	Edit	Edit	Edit	Edit	Edit	Edit

Rec Press [Rec] to toggle the track name editor on or off on the master page 2/3. Press a screen button 1 - 8 to select the specific track to edit.

4 Pattern Format

4.7 Quick Start Step Creation

Patterns are just empty containers and will require steps to be added to create a beat of melody. A step is essentially a note, instrument (based on a sample) and two effect slots. This section gives a quick start on step composition before moving to more in depth coverage in a future section.

▌ ADDING STEPS IN A PATTERN

1. Press [1] to open the 'Pattern' page. Also accessible from the [Menu].

2. To move the cursor position vertically, Press (Up) or (Down). And to move the position horizontally across tracks Press (Left) or (Right). Ranges can be selected using [Shift] + D-Pad navigation buttons.

3. Select recording mode, press [Rec]. The steps selected will appear red as opposed to green when in normal playback mode.

4. To add a step, hold the dedicated step function note, instrument, FX1 or FX2 button and set the step using the D-Pad navigation. Also the [+] / [-] buttons can be used instead of the D-Pad.

   • Hold [Note] + (Up), (Down), (Left), (Right) to navigate note selection. Adds the highlighted note value to the step.

   • Hold [Instrument] + (Up) or (Down). Adds the highlighted instrument from the instrument list. This will require instruments to be available in the instrument list. Default notes are also assigned.

   • Hold [FX1] + (Up) or (Down). Adds the highlighted effect from the effect list to the step.

   • Hold [FX2] + (Up) or (Down). Adds the highlighted effect from the effect list to the step.

5. The centre (Enter) button on the D-Pad navigator can then be used to repeatedly apply the current step and settings in other step slots.

EDITING EXISTING STEPS IN A PATTERN

1. Press [1] to open the 'Pattern' page. Also accessible from the [Menu].

2. To move the position vertically, Press (Up) or (Down). To move the position horizontally across tracks, press (Left) or (Right). Ranges can be selected using [Shift] + D-Pad buttons.

3. Select recording mode, press [Rec]. The steps selected will appear red as opposed to green when normal playback mode is set.

4. To edit a step, press the dedicated step function button i.e. [Note], [Instrument], [FX1], [FX2] and the selection will highlight the parameter in the step selection bounding box.

5. Use the (Up), (Down), (Left), (Right) buttons or [+] and [-] to change the selected step setting for the held option i.e. note, instrument etc.

DELETING STEPS IN A PATTERN

1. Press [1] to open the 'Pattern' page. Also accessible from the [Menu].

2. To move the position vertically, Press (Up) or (Down). To move the position horizontally across tracks, press (Left) or (Right).

3. Ensure a note or instrument parameter is selected. Deleting when the FX1 or FX2 parameter is selected will only delete the FX parameter setting and not the full step. To delete MIDI Instruments the parameter, specifically [Note] or [Instrument] should be deleted.

4. Press [Delete]. The selected step or the selected step range will be deleted from the pattern.

INSERTING STEPS IN A PATTERN

1. Hold [1] to open the 'Pattern' page. Also accessible from the [Menu].

2. To move the position vertically, press (Up) or (Down). To move the position horizontally across tracks, Press (Left) or (Right).

3. Press [Insert]. A new empty step row is added and the selected step and steps below are moved down.

5

Sequencing Steps

The process of sequencing steps is the core process in Tracker Mini pattern design. Steps and patterns go hand in hand. The pattern format section covered earlier explained the general pattern creation, structure and general navigation of patterns. Also the process of adding and editing steps at a fundamental level. This laid out the foundations for patterns. This section goes further into the workflow and process of sequencing steps and takes a deeper dive and more advanced view. The four components of a step; note, instrument, FX1 and FX2 are explained in more detail, giving an insight into what's behind each one. The multiple options in the process of working with steps as well as the detailed explanations such as how to create an instrument or what each effect does are included. Steps can be used for beats or melodies and with multiple tracks used together, can create chords. The focus here will be on the audio elements of steps.

MIDI steps and patterns will be covered specifically in more detail in a later section, although a similar process is applied to creating both audio or MIDI steps. The section has a heavy focus on the process and techniques associated with working with steps in patterns. The included workflow tools and tips will speed up the process of creating patterns and making music and help to become more comfortable in using Tracker Mini.

5 Sequencing Steps

5.1 Dedicated Step Parameter Buttons

A step is a building block which triggers events such as playing a note or beat or activating a MIDI action and is used for creating patterns. Steps are programmed across pattern rows which represent each of the eight available tracks in the pattern sequence.

A step is a combination of 4 main components each of which has a dedicated selection button:-

Note. This sets the pitch of the step and is important for creating melodies or beats based on sample mapped drum hits.
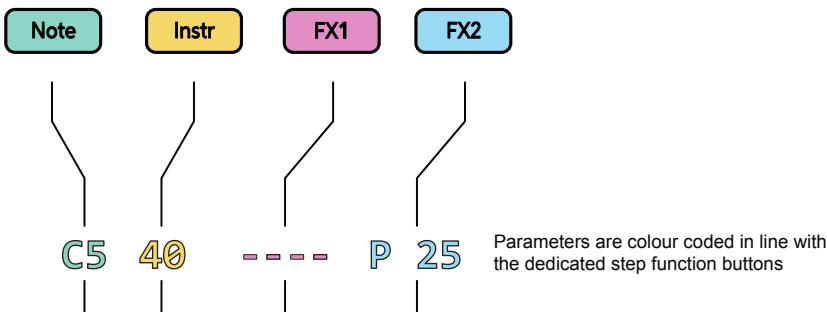
Instrument. This is a combination of a sample and the parameters and settings assigned to it. Also for setting MIDI Channel.

FX1. The first effect slot where the modulation and audio effects can be applied for the step.

FX2. The second effect slot where the modulation and audio effects can be applied for the step.

Step dedicated parameter buttons
Pattern page is selected by pressing [1] or from the [Menu] while the note, instrument, FX1 and FX2 have dedicated buttons for editing the selected step.

Parameters are colour coded in line with the dedicated step function buttons

Note + octave   Instrument number or MIDI   Effect type + value   Effect type + value
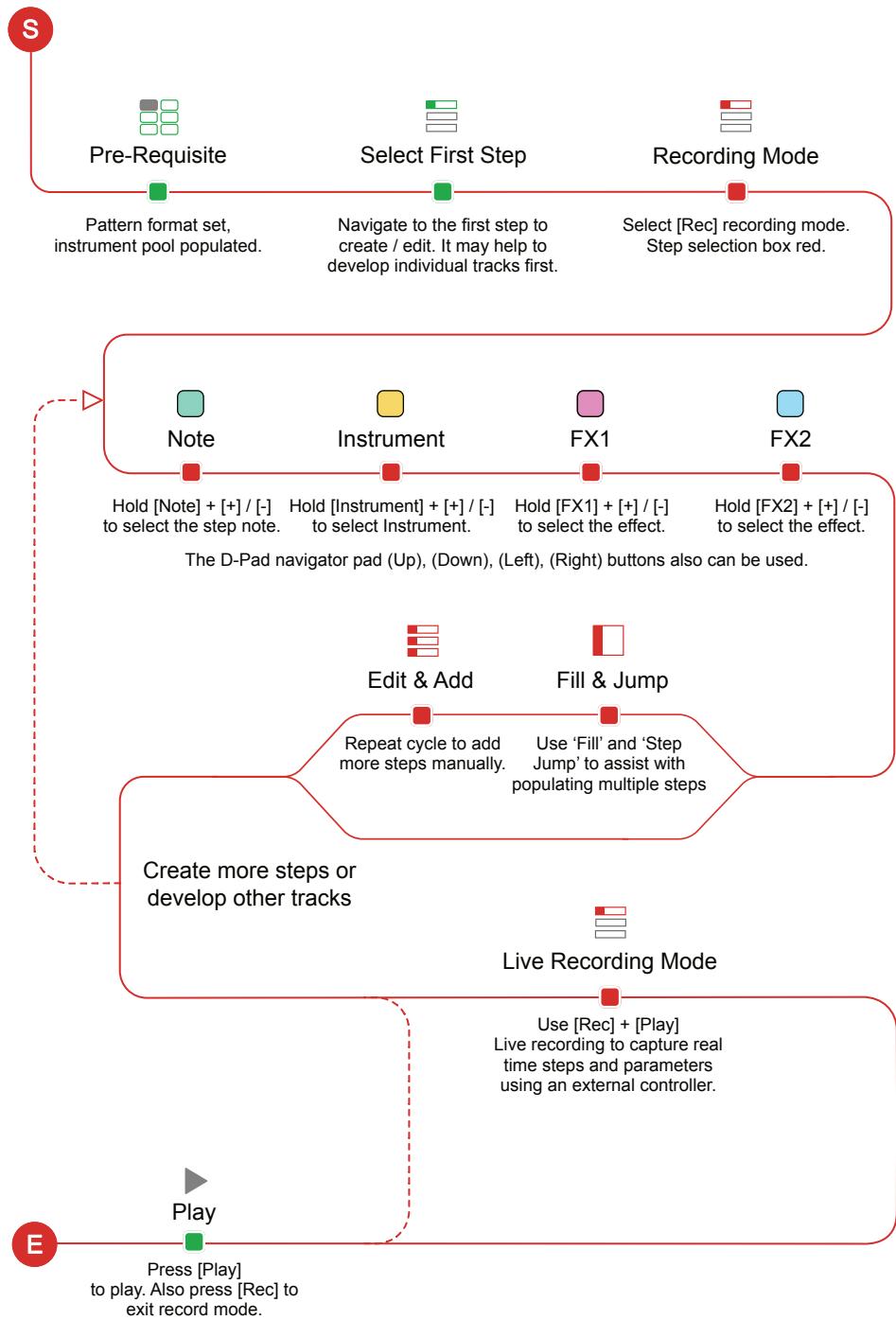
The step selection box will show solid colour on the selected option part.
Example: Note is shown highlighted here.

5.2 Process of Creating a Step

Steps are sequenced in the Tracker Mini each of which contains a note, instrument, and two FX slot options. It is good practice to structure these into tracks of relevance. For example kick drum on track 1, especially at the starting point.

S

Pre-Requisite

Pattern format set, instrument pool populated.

Select First Step

Navigate to the first step to create / edit. It may help to develop individual tracks first.

Recording Mode

Select [Rec] recording mode. Step selection box red.

Note

Hold [Note] + [+] / [-] to select the step note.

Instrument

Hold [Instrument] + [+] / [-] to select Instrument.

FX1

Hold [FX1] + [+] / [-] to select the effect.

FX2

Hold [FX2] + [+] / [-] to select the effect.

The D-Pad navigator pad (Up), (Down), (Left), (Right) buttons also can be used.

Edit & Add

Repeat cycle to add more steps manually.

Fill & Jump

Use 'Fill' and 'Step Jump' to assist with populating multiple steps

Create more steps or develop other tracks

Live Recording Mode

Use [Rec] + [Play] Live recording to capture real time steps and parameters using an external controller.

Play

E

Press [Play] to play. Also press [Rec] to exit record mode.

5 Sequencing Steps

5.3 Recording Mode

Steps are created by recording into the pattern grid. There are two methods of recording steps, firstly by manually programming steps at desired intervals per track, some automated features will help in the workflow. Also real time live recording is possible using an external controller.

The selected step is navigated using the D-Pad navigation. An active step will have at least one of the four; note, instrument, FX1, FX2 elements shown. The currently selected step will have a green bounding box.

The selected step to edit in recording mode will be shown with a red bounding selection box.

Solid green box shows which parameter is selected using the dedicated parameter selection buttons. Cant be edited in normal mode.

Off ——— C5 40 ---- P 25   Green selection box: Normal playback mode.

Rec   Press [Rec] to select recording mode, which allows editing of steps. Pressing again reverts to normal play mode.

On ——— C5 40 ---- P 25   Red selection box: Recording mode, step editor.

Solid red box shows which parameter is selected using dedicated parameter selection buttons and is therefore editable.

Quick Tap Dedicated Parameter Button to select specific parameter

TOGGLING RECORDING MODE ON/OFF

1. The default mode is for Tracker Mini to play patterns and the currently selected step indicated by the green bounding box.

2. Press [Rec] to toggle between playback and recording mode. Recording mode is required to create, edit and configure steps in a pattern. The bounding box is indicated red when in recording mode.

3. The [+] and [-] buttons are essential edit functions in recording mode for placing 'work steps'. Any selected parameter, highlighted with a solid colour, can be changed in recording mode using [+] & [-] buttons. The D-Pad navigation buttons will move the cursor within the pattern.

4. Hold the dedicated parameter button, note, instrument, FX1 or FX2 will temporary select for choosing an option or quick tap to lock selection.

5.4 Manual Recording Steps

Steps can be added manually in pattern mode by navigating to a location and using one of several step entry button options. Pre-requisite is that the project instrument list is pre-populated with sample / instrument options.
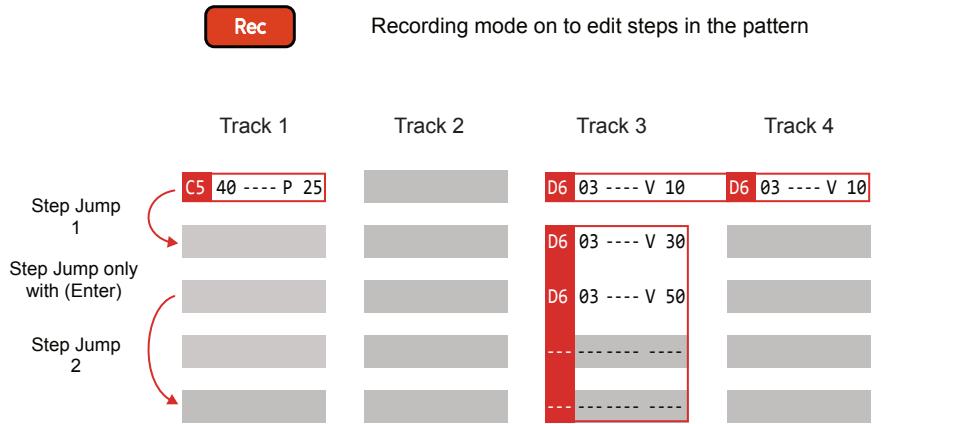
❚ QUICK START TO MANUALLY ENTER AND EDIT STEPS

1. Press [1] to select the pattern mode page.

2. Select the target step to edit. Use the D-Pad navigator (Up), (Down) to scroll top to bottom i.e. step row 1. Press (Left), (Right) to select a track. The step should be highlighted with the green bounding box.

3. Press [Rec] to switch to recording mode. Recording mode is red.

4. Press [*Preview*] screen button to listen to the step audio.

5. For note steps use the most appropriate option to fit your workflow. Ensure the note element is selected, tap [Note] to select.

   • To set the default note, Hold [Note] + [+] / [-] or the D-Pad navigator buttons. The note matrix will appear for the note to be selected.

   • Press centre D-Pad navigator (Enter) button. The default note will be placed in the current step and the cursor will jump to the next 'Step Jump' interval. Holding (Enter) will repeat step placement.

   • Press any [+] button to place a defined 'C5' note into an empty step. The cursor position will remain on the current step. On existing notes, the outer [+] / [-] buttons will change in octave increments and inner [+] / [-] buttons will change the note in semitone intervals.

   • Press the outer [-] button on an empty step to place a defined 'OFF' command into the note step.

   • Press the inner [-] button on an empty step to place a defined 'FAD' command into the step note. Press again to cycle to place 'CUT' and again to select 'OFF'.

6. Hold [Instrument] + [+] / [-] to select from the instrument list. Also with instrument already selected, [+] / [-] can be used to change the instrument. Tap [Instrument] instead of holding to lock the mode.

7. Hold [FX1] + [+] / [-] to select the FX from the effect list. Also with [FX1] already selected, [+] / [-] will change the effect. Same process is applied for [FX2]. Tap [FX1] or [FX2] instead of holding to lock the mode.

5 Sequencing Steps

Manual step entry

Rec Recording mode on to edit steps in the pattern

	Track 1	Track 2	Track 3	Track 4

Step Jump 1

Track 1: C5 40 ---- P 25

Track 3: D6 03 ---- V 10   Track 4: D6 03 ---- V 10

Step Jump only with (Enter)

Track 3: D6 03 ---- V 30

Step Jump 2

Track 3: D6 03 ---- V 50

Track 3: --- ------- ----

Track 3: --- ------- ----

Steps can be added individually.
Example: Hold [Note] + navigate with (Up), (Down), (Left), (Right) to select a note from the note grid.

Subsequent steps are recorded in when pressing the D-Pad navigator (Enter) button. This will record iteratively the selected note parameter into rows defined by the 'Step jump' intervals.

Select multiple step rows with [Shift] + (Up) or (Down). Also across multiple tracks [Shift] + (Left) + (Right).
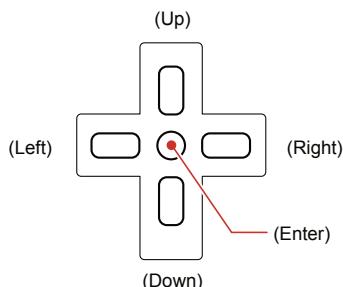
On the top row [Shift] + (Up) will select all steps in the track. Press [Shift] + (Up) + (Up) to select all steps.

Edits to any existing parameters can be made simultaneously, but only If a parameter is already set. These changes will be relative to the original value. Unassigned elements of a step will remain empty.

Pressing the (Enter) button in recording mode will record the note and instrument into subsequent steps. This is applied when the note or instrument which is selected and not applied for FX parameters.

D-Pad navigator for moving around the pattern.

(Up)

(Left)   (Right)

(Enter)

(Down)

Master [+] / [-] for editing of step parameter values.

[+] **+** Empty step: Place a 'C5' note
Existing note: Increment an octave

[+] **+** Empty step: Place a 'C5' note
Existing note: Increment a semitone

[-] **−** Empty step: Place a 'FAD' command
Existing note: Decrement a semitone

[-] **−** Empty step: Place an 'OFF' command
Existing note: Decrement an octave

C5 03 ---- V 50   Note selected, C5.

C5 03 ---- V 50   Instrument selected, instrument #3.

C5 03 ---- V 50   FX1 Selected, effect not applied.

C5 03 ---- V 50   FX2 Selected, volume = 50.

Quick tap dedicated parameter button to lock the selection e.g. [Instrument] for editing.

Steps can also be edited collectively. Select a range within a track and/or across tracks to edit the selected range.

▌ MANUALLY EDITING A RANGE OF STEPS

1. Press [1] to select the pattern mode page.

2. Select the target step to edit. Use (Up), (Down) on the D-Pad navigator or [+] / [-] to scroll top to bottom. Press (Left), (Right) to select a track. The step should be highlighted with the green bounding box.

3. Hold [Shift] + (Left) or (Right) to select a range across tracks and hold [Shift] + (Up) or (Down) to select rows and expand the selected range.

4. To select all steps for an individual track, select the top row step on the track to select, then press [Shift] + (Up).

5. To select all steps in the pattern, select the top row step on any track, then press [Shift] + (Up) & (Up).

6. Press [Rec] to switch to recording mode. The step bounding box will turn red and allow editing of the collective step range.

7. Press [*Preview*] screen button, to play only the selected range.

8. The [+] / [-] buttons will now change all existing parameter values for the selected steps when in recording mode.

9. Select a parameter to edit. Only existing parameters can be changed. Any empty parameter slots will not change and remain open.

    • To change note: Hold [Note] + use the D-Pad navigator to select a note. Tap (Enter), centre button to replace any existing note on all selected steps. If required, Tap [Note] to lock to retain the mode.

    • To change Instrument: Hold [Instrument] + (Up) (Down) or use the [+] / [-] buttons to replace existing instruments to the new instrument. If required, tap [Instrument] to lock to retain the mode.

    • FX1 and FX2 Cannot be changed when a range is selected.

8. Press [+] / [-] to adjust the value of the selected parameter within the step range. The selected parameter will be indicated in solid coloured red. When adjusting values simultaneously they will each change relative to the original value including any FX Values.

5 Sequencing Steps

▍ COPYING AND PASTING STEPS AND STEP RANGES

1. Press [1] to select the pattern mode page.

2. Navigate to select a step. If required press [Shift] + (Left) or (Right) and [Shift] + (Up) or (Down) to select a range of tracks and rows.

3. Press [Rec] to switch to recording mode. The step bounding box will turn red and allow copying of the step or collective step range.

4. Press [Copy] button. The selected step or step range will be copied to the clipboard.

5. Relocate the cursor to the first step in which to paste by using (Up), (Down), (Left) or (Right). The top left step is the anchor for a range.

6. Press [Shift] + [Copy] button to paste. The copied step or step range will be pasted from the clipboard and into the selected step or the relative range. Undo and Redo can be used if needed.

▍ DELETING STEPS AND STEP RANGES

1. Press [1] to select the pattern mode page.

2. Navigate to select a step. If required, press [Shift] + (Left) or (Right) and [Shift] + (Up) or (Down) to select a range of tracks and rows.

3. Press [Rec] to switch to recording mode. The step bounding box will turn red and allow copying of the step or collective step range.

4. Press [Delete] button. The selected step, if note or instrument is selected, will be deleted. If only the FX1 or FX2 is selected then the effect alone is deleted.

5. MIDI channel values are not deleted when deleting a note. This can be deleted by selected the instrument parameter when deleting.

▍ COPY / PASTE AN ENTIRE PATTERN

1. Press [1] to select the pattern mode page.

2. Hold [1] + [Copy] to copy the current pattern to the clipboard.

3. Select a new pattern, press [1] + (Up) or (Down).

4. Hold [1] + [Shift] + [Copy] to paste into the current pattern.

5.5 Step Jump Recording Multiple Steps
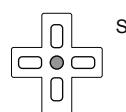
When steps are added using the D-Pad (Enter) button the active step is automatically advanced to the next step when complete. The intervals for this are based on the 'Step Jump' feature. This is useful for creating patterns with defined intervals and speeding up workflow. Step jump does not operate when using the [+] / [-] step entry method.

Step jump examples

Rec   Recording mode on to edit steps in the pattern

	Track 1	Track 2	
Step Jump 0 — 1	= ▶ C5 40 ---- P 25	D5 40 ---- P 25	The selected step will not advance and will remain at the same step position.
[Enter] — 2		D5 40 ---- P 45	

Step Jump 1 — 1	C5 40 ---- P 25	D5 40 ---- P 25	The selected step will advance automatically to select the next step position.
[Enter] — 2	C5 40 ---- P 25	D5 40 ---- P 45	

Step Jump 4 — 1	C5 40 ---- P 25	D5 40 ---- P 25	The selected step will advance four steps forward. In this example selecting the next 'on beat' position.
2		D5 40 ---- P 45	
3			
4			
[Enter] — 5	C5 40 ---- P 25		
6			

The step jump setting is useful when populating specific intervals, for example each on beat step or each off beat step or alternate steps for percussion. This speeds up the workflow and helps with creating interesting sequences.

5 Sequencing Steps

▎ ENTERING STEPS WITH STEP JUMP
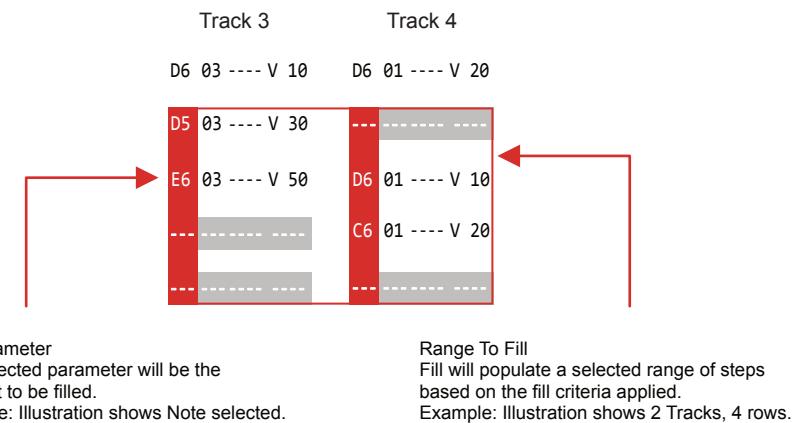
1. Press [1] to select the pattern mode page.

2. Navigate to select a step.

3. Press [Rec] to switch to recording mode. The step bounding box will turn red and allow steps to be added.

4. Hold [*Step Jump*] screen button + press [+] / [-]. Set the value to the step jump interval required. The Inner [+] / [-] buttons change in increments of 1 and the outer buttons in increments of 10.

5. Pressing the (Enter) D-Pad button will enter a step and advance the active step by the value set in the 'Step Jump' setting.

6. Continue to press (Enter) to add more steps and advance by the set interval or edit the current step manually.

5.6 Fill Recording Multiple Steps

The 'Fill' function allows a more elaborate and detailed population of step ranges. This speeds up workflow by helping to create batches of steps with defined criteria automatically applied. Also fill is a very creative tool for generating melodies and beats and experimenting with patterns.

It is possible to fill ranges that are already containing steps, contain empty steps or mix of both. The fill operates in the range and ignores the step jump parameter.

Track 3   Track 4

D6 03 ---- V 10   D6 01 ---- V 20

D5 03 ---- V 30   --- -------- ----

E6 03 ---- V 50   D6 01 ---- V 10

--- -------- ----   C6 01 ---- V 20

--- -------- ----   --- -------- ----

Fill Parameter
The selected parameter will be the element to be filled.
Example: Illustration shows Note selected.

Range To Fill
Fill will populate a selected range of steps based on the fill criteria applied.
Example: Illustration shows 2 Tracks, 4 rows.

▌ ACCESSING THE FILL UTILITY

1. Press [1] to select the pattern mode page.

2. Press [Rec] to switch to recording mode. The step bounding box will turn red and allow editing of steps.

3. Select a range of steps: Hold [Shift] + (Up), (Down), (Left) or (Right)

4. Ensure the step parameter to populate is selected: Press [Note], [Instrument], [FX1] or [FX2]. The parameter will be highlighted solid red.

5. Press [*Fill*] screen button. This will open the fill utility pop-up window and be ready to select the criteria to apply to the selected step range and its selected parameter.

Fill utility window
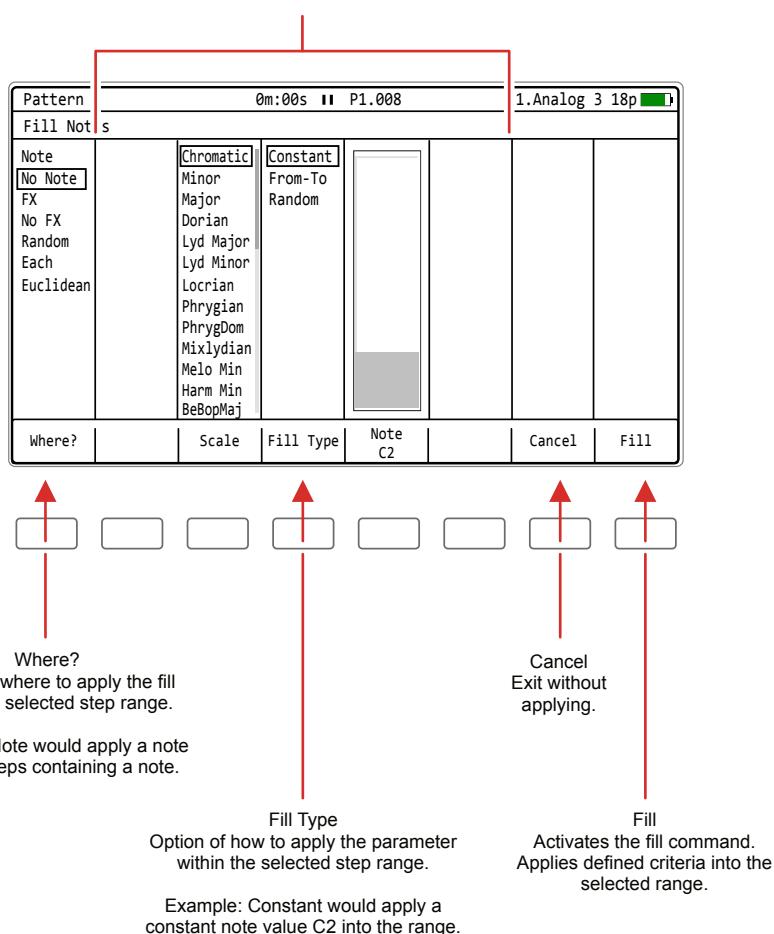
The window layout is similar for the step range and parameters selected. However the content and features for fill will change depending on the context of the selection and the options chosen. A typical fill window is shown below with a summary of common features. The fill utility is mainly controlled using the dynamic screen buttons under the Tracker Mini screen.

To access fill:-

Press [*Fill*] screen button, when in [Rec] mode of the pattern page [1].

Dynamic area of 5 features containing the criteria specifically required for 1) Parameter selected, 2) Step range selected and 3) Options chosen in 'Where' & 'Fill Type'.

Example illustration shows a range of <u>notes</u> selected with the 'note' and 'constant' selections.

Where?
Option of where to apply the fill within the selected step range.

Example: Note would apply a note fill to all steps containing a note.

Cancel
Exit without applying.

Fill Type
Option of how to apply the parameter within the selected step range.

Example: Constant would apply a constant note value C2 into the range.

Fill
Activates the fill command. Applies defined criteria into the selected range.

Ensure a range of steps is selected and the step parameter also selected before opening the fill utility. This range and parameter will be what determines the fill application.
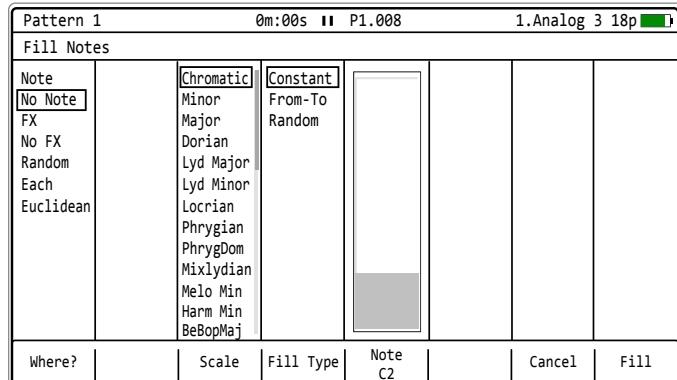
Example of using a basic fill

As a quick start introduction to creating fills and example to populate an empty range with notes followed by filling the FX1 for the series of notes with a pan variation effect. This will play a percussion segment.

CREATING A NOTE FILL
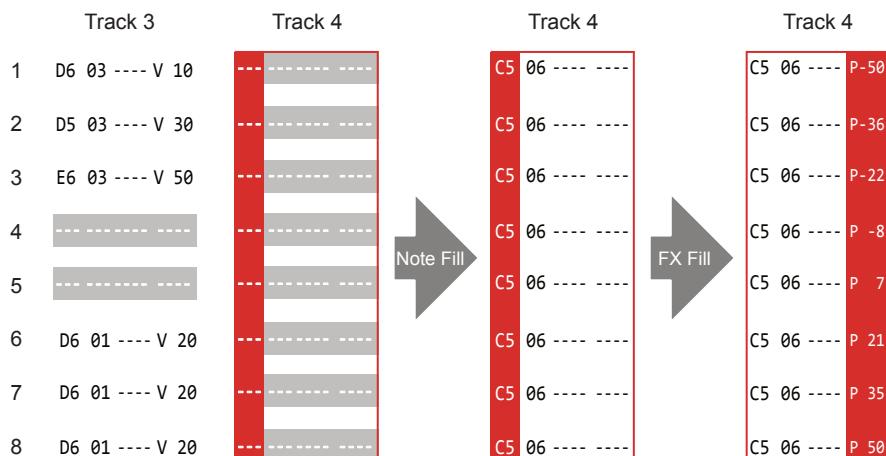
1. Press [1] to select the pattern mode page.

2. Press [Instrument] and select a percussive sound. The '606-ClosedHat' sample, numbered instrument '6', has been loaded into the project instrument list and will be used for this example.

3. Press [Rec] to switch to recording mode. The step bounding box will turn red and allow editing of steps.

4. Select a range of empty steps: Hold [Shift] + (Up), (Down), (Left) or (Right). For this example select 8 step rows on a single track. The option for selecting multiple rows and tracks is possible.

5. Ensure the notes step parameter is selected in the pattern range selected: Press [Note], which will be highlighted solid red.

6. Press [*Fill*] screen button. This will open the fill utility pop-up window.

7. Press [*Where?*] screen button. Repeat presses will cycle through the options. Also, with the 'Where?' section highlighted, (Up), (Down) or [+] / [-] will scroll through and select options.

```
┌──────────────────────────────────────────────────────────┐
│ Pattern 1          0m:00s  ▮▮ P1.008      1.Analog 3 18p▰▱│
│ Fill Notes                                                 │
│ Note         │    │Chromatic│Constant│┌──┐                 │
│ No Note      │    │Minor    │From-To ││  │                 │
│ FX           │    │Major    │Random  ││  │                 │
│ No FX        │    │Dorian   │        ││  │                 │
│ Random       │    │Lyd Major│        ││  │                 │
│ Each         │    │Lyd Minor│        ││  │                 │
│ Euclidean    │    │Locrian  │        ││  │                 │
│              │    │Phrygian │        ││  │                 │
│              │    │PhrygDom │        ││  │                 │
│              │    │Mixlydian│        ││  │                 │
│              │    │Melo Min │        ││  │                 │
│              │    │Harm Min │        ││▒▒│                 │
│              │    │BeBopMaj │        │└──┘                 │
├───────┬────┬───────┬─────────┬──────┬────┬───────┬────────┤
│ Where?│    │ Scale │Fill Type│ Note │    │ Cancel│  Fill  │
│       │    │       │         │  C2  │    │       │        │
└───────┴────┴───────┴─────────┴──────┴────┴───────┴────────┘
```

# 5 Sequencing Steps

NOTES

8. Select in the bounding box 'No Note'. This option will select all steps that <u>do not</u> have a note set. As the selected range is empty all 8 steps will be filled with this option.

9. Press [*Scale*] screen button. Repeat presses will cycle through the options. Also the (Up), (Down) or [+] / [-] will scroll through and select options. Select 'Chromatic'. As this is a percussion instrument the scale is less important.

10. Press [*Fill Type*] screen button. Repeat presses will cycle through the options. Select 'Constant'. As this is a percussion pattern the instrument does not require scale or note ranges so constant will repeat the note.

11. Press [*Note*] screen button. Repeat presses will cycle through the options. Also the (Up), (Down) or [+] / [-] will scroll through and select options. Set to C5, the root note for the sample.

12. Press [Fill] screen button. This will activate the fill command and populate the selected range.

	Track 3	Track 4		Track 4		Track 4
1	D6 03 ---- V 10	--- -------- ----		C5 06 ---- ----		C5 06 ---- P-50
2	D5 03 ---- V 30	--- -------- ----		C5 06 ---- ----		C5 06 ---- P-36
3	E6 03 ---- V 50	--- -------- ----		C5 06 ---- ----		C5 06 ---- P-22
4	-------- -------- ----	--- -------- ----	Note Fill	C5 06 ---- ----	FX Fill	C5 06 ---- P -8
5	-------- -------- ----	--- -------- ----		C5 06 ---- ----		C5 06 ---- P 7
6	D6 01 ---- V 20	--- -------- ----		C5 06 ---- ----		C5 06 ---- P 21
7	D6 01 ---- V 20	--- -------- ----		C5 06 ---- ----		C5 06 ---- P 35
8	D6 01 ---- V 20	--- -------- ----		C5 06 ---- ----		C5 06 ---- P 50
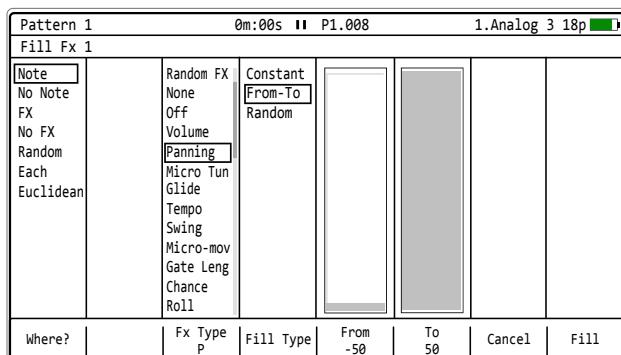
The default note value is C5 which plays a sample at its original pitch value. The first slice of a beat slice sample will be triggered using note C2.

▌ ADDING THE PAN VARIATION USING FILL

1. Following from the previous example; In pattern mode [1] with [Rec] On, ensure the previous step range is still selected.

2. Press [FX2]. This selects the effect column FX2 which is highlighted solid red.

3. Press [*Fill*] screen button. This will open the fill utility pop-up window. The display will now be different as the fill utility is now FX, not note fill.

4. Press [*Where?*] screen button. Repeat presses will cycle through the options. Also the (Up), (Down) or [+] / [-] will scroll through and select options.

5. Select in the bounding box 'Note'. This option will select all steps that have a note set. This is effectively the range of notes recently created.

6. Press [*Fx Type*] screen button. Repeat presses will cycle through the options. Also the (Up), (Down) or [+] / [-] will scroll through and select options. Select 'Panning', as the effect to fill into the selected range.

7. Press [*Fill Type*] screen button. Repeat presses will cycle through the options. Select 'From-To' to allow a range of pan values to be filled.

8. Press [*From*] screen button. Press (Up), (Down) or [+] / [-] to set the value. Set this to -50.

9. Press [*To*] screen button. Press (Up), (Down) or [+] / [-] to set the value. Set this to 50.

10. Press [Fill] screen button. This will activate the fill command and populate the selected range. This will create a percussive pattern which will pan left to right in the stereo image. The values are automatically assigned in equal intervals across the range.
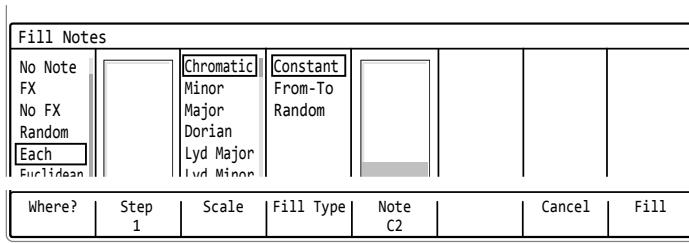
5 Sequencing Steps

Fill utility generic page parameter - Where.

The Fill utility will present options respective to the selected step parameter. If for example an FX parameter is selected in a range, then the fill utility will represent FX Fills. Some elements like 'Where?' and 'Fill Type' are generic.

Where?

The 'Where?' option determines where in the selected step range the fill steps and defined parameters will be placed. This will fill new steps into the steps in the range which are empty, already filled or both depending on the selected option.

Option	Sub-Option	Description
Note	-	Will populate only steps in the selected range where a note already exists, overwriting the original value.
No Note	-	Will populate only steps in the selected range where no note exists, i.e. blank note steps.
FX	-	Will populate only steps in the selected range where an FX parameter already exists, overwriting the original value.
No FX	-	Will populate only steps in the selected range where no FX parameter exists, i.e. blank FX steps.
Random	-	Will populate steps in the selected range randomly for both existing and blank steps. Density is a related option.
Random	Density	Density parameter controls, in percentage how much of the range is filled when the 'Random' option is selected.
Each	-	Populates steps in the range with a defined step interval which ranges from 1-32. Step is a related option.
Each	Step	Step parameter controls the intervals of evenly distributed step fills when the 'Each' option is selected.
Euclidean	-	Generates rhythmic patterns within the range based on the population of 1-32 events. Event is a related option.
Euclidean	Event	Events determine how the steps and intervals are generated with respect to the selected step length.

Euclidean patterns
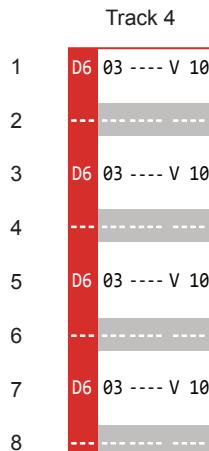
Euclidean patterns are a more creative fill function. While the other options perform a population based on structure, euclidean option aims to be more creative in generating musical sequences. Euclidean patterns are generated based on a mathematical model where the steps and intervals determine a pattern beat. Tracker Mini uses 'events' and the step length to calculate the steps and intervals.

Consider the following formula as rough guide for euclidean filled patterns. Steps will be 'rounded' to the nearest step location to spread as 'evenly' as possible within the event and length constraints.
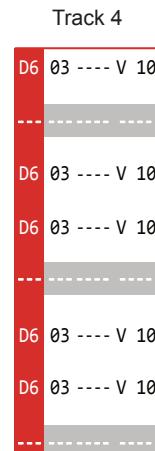
Euclidean Formula = Step Length / Event

Examples:
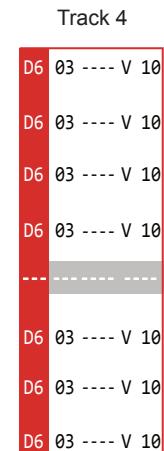
8 Steps in the Length, Event = 4.
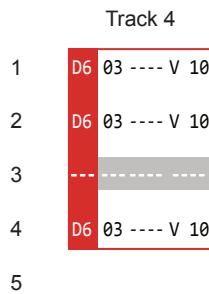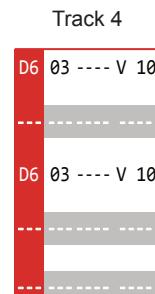
Track 4

	Track 4
1	D6 03 ---- V 10
2	--- ------- ----
3	D6 03 ---- V 10
4	--- ------- ----
5	D6 03 ---- V 10
6	--- ------- ----
7	D6 03 ---- V 10
8	--- ------- ----

8 Steps in the Length, Event = 5.

Track 4

	Track 4
1	D6 03 ---- V 10
2	--- ------- ----
3	D6 03 ---- V 10
4	D6 03 ---- V 10
5	--- ------- ----
6	D6 03 ---- V 10
7	D6 03 ---- V 10
8	--- ------- ----

8 Steps in the Length, Event = 7.

Track 4

	Track 4
1	D6 03 ---- V 10
2	D6 03 ---- V 10
3	D6 03 ---- V 10
4	D6 03 ---- V 10
5	--- ------- ----
6	D6 03 ---- V 10
7	D6 03 ---- V 10
8	D6 03 ---- V 10

4 Steps in the Length, Event = 3.

Track 4

	Track 4
1	D6 03 ---- V 10
2	D6 03 ---- V 10
3	--- ------- ----
4	D6 03 ---- V 10
5	

5 Steps in the Length, Event = 2.

Track 4

	Track 4
1	D6 03 ---- V 10
2	--- ------- ----
3	D6 03 ---- V 10
4	--- ------- ----
5	--- ------- ----
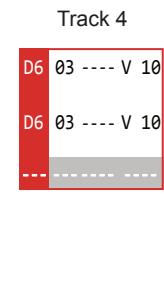
3 Steps in the Length, Event = 2.

Track 4

	Track 4
1	D6 03 ---- V 10
2	D6 03 ---- V 10
3	--- ------- ----
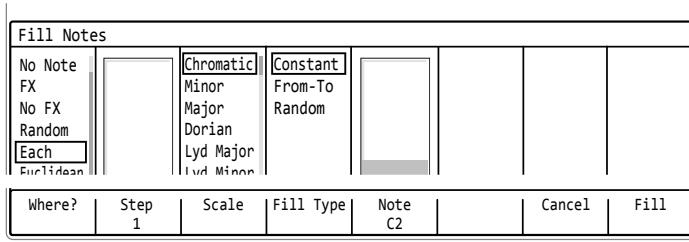
Fill utility generic page parameter - Fill Type.

The 'Fill Type' option is another generic parameter in the fill utility and concentrates on range of fill values.

Fill Type

The 'Fill Type' option operates on the parameter value and determines how the fill parameter is applied into the selected step range. This will fill the parameter as an individual repeated element, will be based on a range of values or will randomise the step parameters.

Option	Sub-Option	Description
Constant	-	Populates the steps applied with a fixed singular parameter value as stated with note, instrument or FX.
Constant	Note, Instrument or FX	Sets the parameter value to be applied when filling steps. This will differ depending on note, instrument, FX.
From-To		Populates the steps applied with multiple parameter values distributed across the defined range.
From-To	From	Starting point for the parameter value range which will be used to fill the steps range.
From-To	To	End point for the parameter value range which will be used to fill the steps range.
Random		Populates the steps applied with multiple random parameter values distributed across the defined range.
Random	From	Starting point for the parameter value range which will be used to randomly fill the steps range.
Random	To	End point for the parameter value range which will be used to randomly fill the steps range.

Fill Notes

Filling a selected range will also be based on the parameter selected. When the step range is selected the fill parameter options will reflect the parameter selected in the range.

Fill Notes

Track 4

When notes are selected the note scale will be available for the notes that will be filled into the range. The notes will be constant, random or between the from-to range.

Scale	Scale Label
Chromatic	Chromatic
Minor	Minor
Major	Major
Dorian	Dorian
Lydian Major	Lyd Maj
Lydian Minor	Lyd Min
Locrian	Random
Phrygian	Phrygian
Phrygian Dominant	PhrygDom
Mixolydian	Mixlydian
Melodic Minor	Melo Min
Harmonic Minor	Harm Min
BeBop Major	BeBopMaj
BeBop Dorian	BeBopDor
BeBop Mixolydian	BeBopMix
Blues Minor	Blues Min
Blues Major	Blues Maj
Pentatonic Minor	Penta Min
Pentatonic Major	Penta Maj
Hungarian Minor	Hung Min

Scale	Scale Label
Ukranian	Ukranian
Marva	Marva
Todi	Todi
Whole Tone	Wholetone
Diminished	Dim
Super Locrian	SLocrian
Hirajoshi	Hirajoshi
In Sen	In Sen
Yo	Yo
Iwato	Iwato
Whole Half	WholeHalf
Kumoi	Kumoi
Overtone	Overtone
Double Harmonic	DoubleHarm
Indian	Indian
Gypsy Minor	GypsyMin
Neapolitan Major	NeapoMaj
Neapolitan Minor	NeapoMin
Enigmatic	*Not used for Fill*
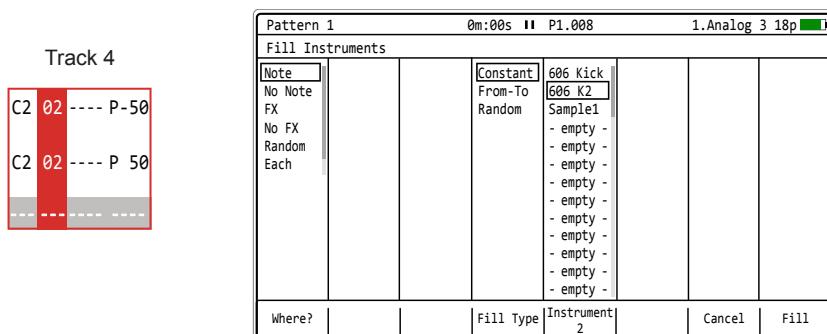
Fill Instruments

When the instrument parameter is selected in the range, the fill will apply instrument fills. This is based on the project instrument pool.

Fill Instruments

Track 4
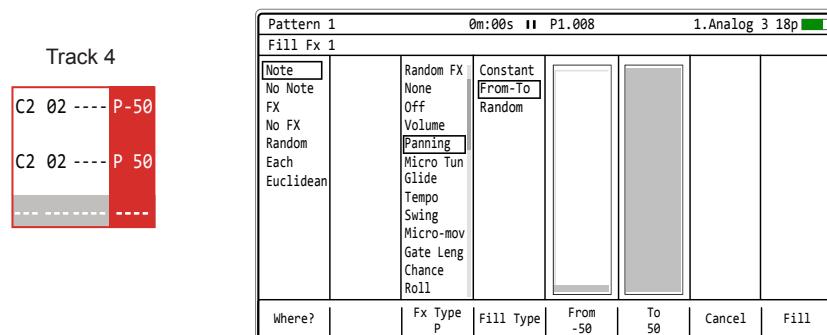
When Instruments are selected the instrument pool for the project is presented. It is also possible with From-To or Random Fill Type to populate the steps with multiple instruments across a variety of steps.

Fill FX

When either of the 2 FX parameters is selected in the range, fill will apply FX fills. This is based on the effects FX list available within Tracker Mini.

Fill Instruments

Track 4

When any of the two FX are selected the Tracker Mini effect list is presented as 'Fx Type'. The selected effect character is shown under the name. It is also possible with From-To or Random 'Fill Type' to populate the range of steps with variations for the FX value setting.

5.7 Live Recording Steps with an External Controller

Live recording offers an alternative to manual recording when programming steps into a sequence and when using an external MIDI Controller. Manual step recording is useful building complex and precise melodies and arrangements. Live recording is good when integrating Tracker Mini into a MIDI system for more natural sequences. As always this will be based on individual taste and a fit to personal workflow preferences.

Live recording allows steps to be placed in real time using an external controller while the sequencer loops to record multiple cycles of steps.

Live recording Considerations:-

- An external MIDI keyboard controller should be connected to Tracker Mini in order to to play and record live.

- It is often useful to set the metronome to on, found in the config menu when live recording to aid the timing.

- Recordings can be edited afterwards using the editing tools and process as described with manual recording. Live recording is useful to grab quick sequences and edit for accuracy afterwards.

- The habit of arming tracks is helpful. Armed tracks can be recorded. By default tracks will shift recording to the next right track step if the active step being recorded coincides with an existing step.

- Quantization settings are in the config menu under 'Recording options'. Micro moves, slightly nudge and offset the note timing and can also be live recorded.

> *Tip: The technique of reducing the project tempo for live recording can be helpful in capturing more precise musical and rhythmic patterns at a slower rate. Turn the tempo back to it's normal setting once the pattern has been recorded.*

5 Sequencing Steps

▌ PREPARING FOR LIVE RECORDING

A number of settings are available when recording live. These are optional depending on circumstances.

- Set the metronome: [Menu] > Config > Metronome: State On.

- Set the pre roll count in: [Menu] > Config > Metronome: Pre roll On.

- Set quantize: [Menu] > Config > General > Recording Options

- Arm or disarm a track to allow recording:-
  Hold [Shift] + [Rec] + screen button to toggle arm/disarm per track. Note that only arming the target track to record to will avoid steps being recorded to adjacent tracks when steps are occupied.

- Ensure the note parameter is highlighted which will allow recording steps. If the Instrument or FX is highlighted by default, then these will be recorded.

- Hold [Instrument] + [+] / [-] to set a default instrument to record.

▌ SETTING QUANTIZE RECORDING OPTIONS

1. Hold [Menu] and with D-Pad navigation buttons, select 'Config' options.

2. In the left window, highlight 'General'. Use the screen, D-Pad navigation or [+] / [-] buttons to scroll menu.

3. Press (Right) to select the 'General' sub menu option window and scroll to select 'Recording Options'. Use the screen, D-Pad navigator or the [+] / [-] buttons to scroll menu. Press [*Enter*] screen button to edit. This will determine the quantize for recording:-

- Only notes: Quantize notes only.

- Microtiming: Will record a nudge or offset as it is played by recording as a 'Micro-move' FX value in the step. Delete these FX to revert to quantized values.

- Velocity: Use an external MIDI Keyboard to record in real time velocity values. Velocity is recorded as an FX value.

- Microtiming + Velocity. Record into both FX the fixed velocity and real time microtiming values.

▌ REAL TIME LIVE RECORDING A PATTERN

1. Press [1] to select the pattern mode page.

2. Hold [Instrument] + (Up), (Down) or [+] / [-] to scroll through and select options. Select the instrument to record. The notes will be live recorded from the incoming MIDI keyboard.

3. Press [Rec] + [Play] to start live recording mode. The sequencer will start immediately or after a count in of 4 if 'Pre roll' is set on.

4. Play the external MIDI keyboard controller. Notes are recorded along with a 'Note Off' value.

5. Steps will be recorded into the current track. Notes will not be overdubbed. Any recording that coincides with an existing note will by default be recorded into the step row on the next track right. This behaviour is dependant on arming of tracks.

6. Press [Rec] to leave recording mode but to continue playing.

7. Press [Play] to stop playback.

5 Sequencing Steps

5.8 Note Steps

One of the four components of a step event is a note. This may be a musically scaled note or a note assigned to a sample or slice. Essentially note controls a single note pitch in the step event for the instrument. The default note value C5 refers to the original sample pitch. C5 is therefore a default note assigned from the 'Note' applied. When using a beat sliced instrument, the first slice played is assigned as C2.

Note summary

Note Note parameter has a dedicated button when working in the pattern.

| C5 | 02 | V 10 | P 25 |

Note is the first parameter in the step event and is highlighted when selected.

Note grid is used to select a note value for the step event. Hold [Note] + D-Pad buttons or [+] / [-] to choose a note. Press [+] / [-] to adjust existing note when the step is selected.

C6	C#6	D6	D#6	E6	F6	F#6	G6	G#6	A6	A#6	B6
C5	C#5	D5	D#5	E5	F5	F#5	G5	G#5	A5	A#5	B5
C4	C#4	D4	D#4	E4	F4	F#4	G4	G#4	A4	A#4	B4
C3	C#3	D3	D#3	E3	F3	F#3	G3	G#3	A3	A#3	B3

Chromatic
Scale shown - default.

C#   A#

Lowest Note ---------- C   B

The notes value are mapped across the note grid. Starting at C3 bottom left, by default and top right, at B6 to C6 top left. This therefore covers four octaves.

The note selected from the note grid can then be placed, repeatedly into steps using the D-Pad navigator (Enter) button.
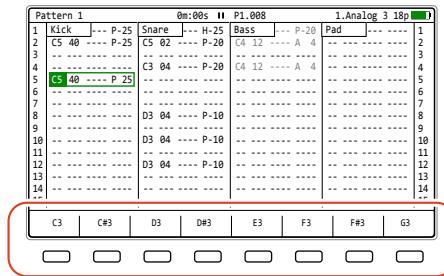
Note Input Mode

Note input mode is an optional workflow setting that sets the 8 screen keys as playable note inputs instead of accessing the pattern options. The screen keys can then be used to play and program notes into a pattern. The available notes can be selected as a set of 8 and are based on the config settings for project scale and root.

Shift + **Note**   Hold [Shift] + [Note] to toggle note input mode on or off.

Note   Hold [Note] when in note input mode to select the set of note to apply.

The set of 8 notes is selectable. Hold [Note] when in note input mode to select the set of notes. The available notes are based on the config settings for the project scale and root.

C6	C#6	D6	D#6	E6	F6	F#6	G6	G#6	A6	A#6	B6
C5	C#5	D5	D#5	E5	F5	F#5	G5	G#5	A5	A#5	B5
C4	C#4	D4	D#4	E4	F4	F#4	G4	G#4	A4	A#4	B4
C3	C#3	D3	D#3	E3	F3	F#3	G3	G#3	A3	A#3	B3

Root Note

5 Sequencing Steps

▌ DETAILED APPLICATION OF A NOTE VALUE TO A STEP EVENT

1. Press [1] to select the pattern mode page.

2. Select a blank or existing step event.

3. Press [Note] to ensure the note parameter is selected in the step event. This is a short press. Holding [Note] will display the note grid.

4. Select recording mode, Press [Rec]. The steps selected will appear red as opposed to green when in normal playback mode.

5. For placement of note steps several methods exist:-

   • To set the default note, Hold [Note] + [+] / [-] or the D-Pad navigator buttons. The note grid will appear for the note to be selected. The highlighted note in the grid will be the chosen default.

   • Press centre D-Pad (Enter) button. The default note will be placed in the current step and the cursor will jump to the next step 'Step Jump' interval. Holding (Enter) will repeat the step placement with the same note until the (Enter) button is released.

   • Press any [+] button to place a defined 'C5' note into an empty step. The default note selected prior does not reflect in this placement method. The cursor position will remain on the current step.

   • Press the outer [-] button on an empty step to place a defined 'OFF' command into the note step.

   • Press the inner [-] button on an empty step to place a defined 'FAD' command into the step note. Press again to cycle to place 'CUT' and again to select 'OFF'.

   • An alternative note entry mode is note input mode. To select this mode, Hold [Shift] + press [Note] to toggle this on or off. The notes are available using the screen buttons. The set of notes can be changed when in note input mode by holding [Note] and using the D-Pad to change the set of notes. The scale and root assigned in the project settings apply.
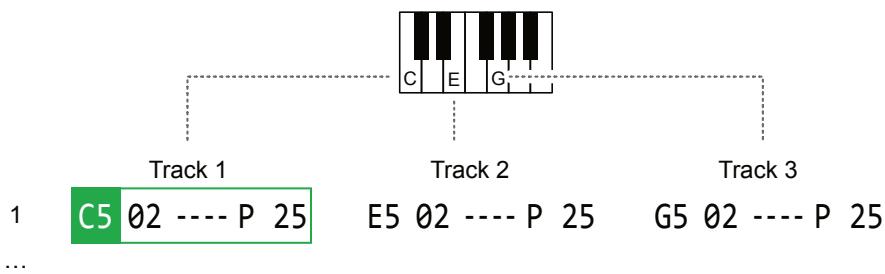
6. For editing notes within existing steps:-

   • Press (Enter) to overwrite an existing note with the previously selected note. Instrument is unaffected.

   • On existing notes, the outer [+] / [-] buttons will change in octave increments and inner [+] / [-] buttons will change the note in semitone intervals.

7. Notes will be added, displayed with teal coloured text. New notes are always added to an empty step along with the currently selected instrument, coloured yellow. On existing steps, the note is changed and existing instrument retained.

Polyphony & Chords

Each track in Tracker Mini can handle one voice which can play multiple notes, but not simultaneously. To create chords, multiple tracks would be used when each track represents a note. A triad would therefore need 3 tracks to play the chord.

	Track 1	Track 2	Track 3
1	C5 02 ---- P 25	E5 02 ---- P 25	G5 02 ---- P 25

...

Tracks can be rendered to a new audio sample and reduce the tracks used. This re-sampling method can also be used to render into an audio file when FX slots are full.

▌ RENDERING TRACKS TO AUDIO CHORDS

1. Press [1] to select the pattern mode page and press [Rec] to select record edit mode.

2. Hold [Shift] + (Up), (Down), (Left), (Right) to select the range to render. For example, select across all the tracks making up the chord and optionally select the pattern duration of 16 steps

3. Press [*More*]. screen button to select more pattern options.

4. Press [*Render Selection*] screen button.

5. The naming page appears. A name can be edited i.e. name of chord or press [*Auto Name*] screen button to automatically apply a name.

6. When the name is entered, press [*Render & Load*] screen button. This option will not only render the audio but also automatically load the sample into the instrument list. The pattern will halt playback if playing.

7. When the file has been 'exported', the instrument list will open ready to preview or select the sample exported.

8. Press [1], to return to the pattern page. Now replace the instrument on a track with the rendered chord sample. Ensure the note is set to the same default for the sample playback, example C5.

9. Remove the other track samples to free them up.

Special Note Commands

Three special note commands can be applied instead of the actual note value. These are not used for applying a note sound, but are used for controlling how a note ends. These include CUT - Immediately silences the audio, FAD - fades out audio gradually and OFF - triggers note off for the envelope and starts the release phase.

To access these options, on an empty step, use the inner and outer [-]. The Inner [-] will place a 'FAD' message and additional presses of [-] will then change to 'CUT' and 'OFF'. The outer [-] will place an 'OFF' message. On an existing step, the note can be edited further if required to create notes or note messages using [+] / [-].

FAD - Fade.
Will gradually reduce the audio sound and fade it out. Also will turn MIDI notes off.

`FAD 02 ---- v 45`

CUT - Cut.
Will immediately stop the audio sound. Also will turn MIDI notes off.

`CUT 02 ---- v 45`

OFF - Off.
Will act as 'Note-Off' and trigger the release phase of the envelope to reduce the sound.

`OFF 02 ---- v 45`
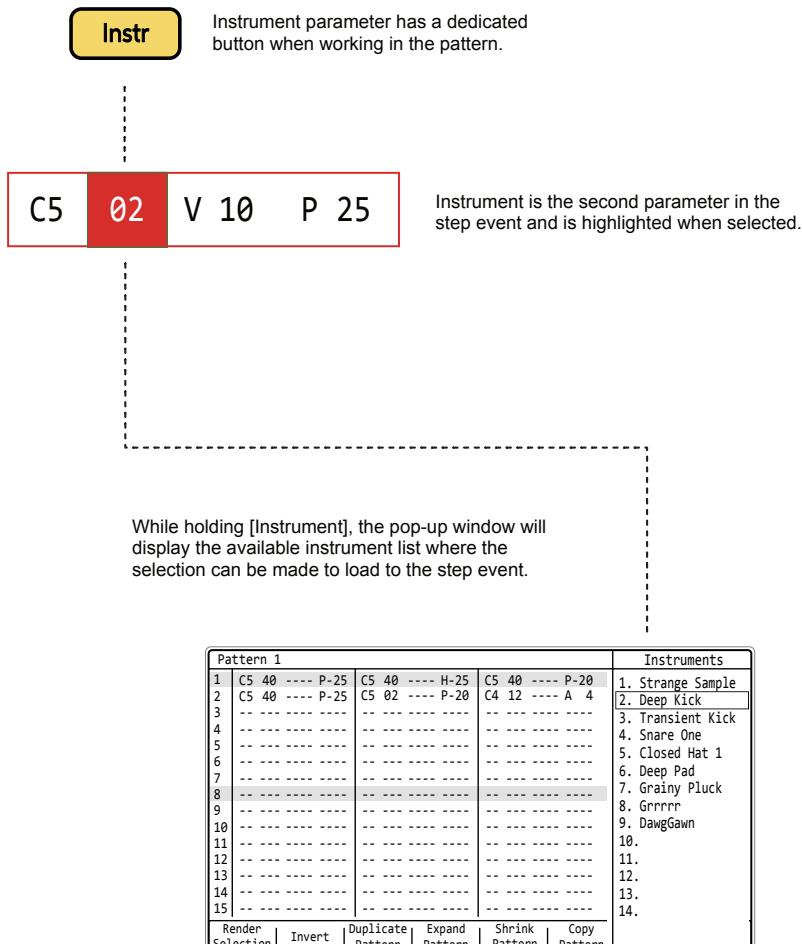
5 Sequencing Steps

5.9 Instrument Step Parameters

Each step event has an instrument which is based on a sample, either raw or edited or formed into a granular or wavetable instrument. Any instrument added to the 48 instrument pool is available to be added to a step.

Instrument Summary

Instr

Instrument parameter has a dedicated button when working in the pattern.

```
C5  02  V 10   P 25
```

Instrument is the second parameter in the step event and is highlighted when selected.

While holding [Instrument], the pop-up window will display the available instrument list where the selection can be made to load to the step event.

```
Pattern 1                                       Instruments
1   C5 40 ---- P-25  C5 40 ---- H-25  C5 40 ---- P-20   1. Strange Sample
2   C5 40 ---- P-25  C5 02 ---- P-20  C4 12 ---- A  4   2. Deep Kick
3   -- --- ---- ----  -- --- ---- ----  -- --- ---- ----  3. Transient Kick
4   -- --- ---- ----  -- --- ---- ----  -- --- ---- ----  4. Snare One
5   -- --- ---- ----  -- --- ---- ----  -- --- ---- ----  5. Closed Hat 1
6   -- --- ---- ----  -- --- ---- ----  -- --- ---- ----  6. Deep Pad
7   -- --- ---- ----  -- --- ---- ----  -- --- ---- ----  7. Grainy Pluck
8   -- --- ---- ----  -- --- ---- ----  -- --- ---- ----  8. Grrrrr
9   -- --- ---- ----  -- --- ---- ----  -- --- ---- ----  9. DawgGawn
10  -- --- ---- ----  -- --- ---- ----  -- --- ---- ----  10.
11  -- --- ---- ----  -- --- ---- ----  -- --- ---- ----  11.
12  -- --- ---- ----  -- --- ---- ----  -- --- ---- ----  12.
13  -- --- ---- ----  -- --- ---- ----  -- --- ---- ----  13.
14  -- --- ---- ----  -- --- ---- ----  -- --- ---- ----  14.
15  -- --- ---- ----  -- --- ---- ----  -- --- ---- ----
Render    Invert  Duplicate  Expand  Shrink  Copy
Selection         Pattern    Pattern Pattern Pattern
```

Hold [Instrument] + D-Pad navigator buttons or [+] / [-] to choose an instrument from the list. Also use [+] / [-] to scroll and select, the outer buttons scrolling in larger increments.

The default note value is C5 which plays a sample at its original pitch value. The first slice of a beat slice sample instrument with be triggered at C2.

▌ DETAILED APPLICATION OF AN INSTRUMENT TO A STEP

1. Press [1] to select the pattern mode page.

2. Select an empty or existing step event.

3. Press [Instrument] to ensure the instrument parameter is selected in the step event. This is a short press. Holding the button will display the instrument list.

4. Select recording mode, press [Rec]. The steps selected will appear red as opposed to green when in normal playback mode.

5. For placement of instruments to empty steps several methods exist:-

    • Press (Enter) to place a note which will also place the current instrument at the same time.

    • Hold [Instrument] till list appears then release. This will place the current instrument into the step.

    • Hold [Instrument] + (Up) or (Down) to select from the instrument list. A default 'C5' note is also added to an empty step.

    • Hold [Instrument] + [+] / [-] to scroll in small or large increments and select an instrument from the list. A default 'C5' note is also added to an empty step.

6. For editing an instrument within an existing step:-

    • Hold [Instrument] until list appears then release. This will place the current instrument into the step.

    • Hold [Instrument] + (Up) or (Down) to select from the instrument list.

    • Hold [Instrument] + [+] / [-] to scroll in small or large increments and select an instrument from the list.

5. The instrument will be added, displayed with yellow coloured text. Instruments are always added with a note. Instruments cannot be added when a note message 'OFF', 'FAD' or 'CUT' exists.
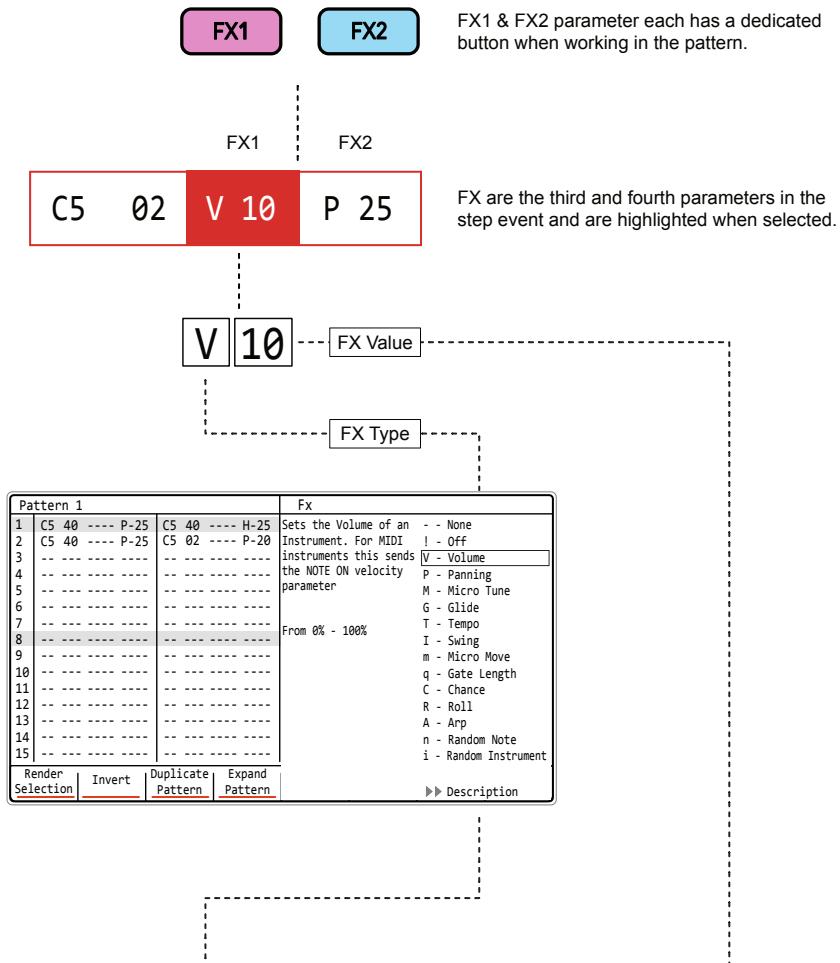
5 Sequencing Steps

5.10 FX Step Parameters

Each step event has two FX slots which can be populated from a library of effects. Each FX has two parts, firstly the effect type, represented by a single character and secondly it's value.

FX Summary

FX1 | FX2

FX1 & FX2 parameter each has a dedicated button when working in the pattern.

FX1 | FX2

| C5 | 02 | V 10 | P 25 |

FX are the third and fourth parameters in the step event and are highlighted when selected.

| V | 10 | ---- FX Value

---- FX Type

```
Pattern 1                          Fx
1  C5 40 ---- P-25  C5 40 ---- H-25  Sets the Volume of an   - - None
2  C5 40 ---- P-25  C5 02 ---- P-20  Instrument. For MIDI    ! - Off
3  -- --- ---- ----  -- --- ---- ----  instruments this sends  V - Volume
4  -- --- ---- ----  -- --- ---- ----  the NOTE ON velocity    P - Panning
5  -- --- ---- ----  -- --- ---- ----  parameter               M - Micro Tune
6  -- --- ---- ----  -- --- ---- ----                          G - Glide
7  -- --- ---- ----  -- --- ---- ----  From 0% - 100%          T - Tempo
8  -- --- ---- ----  -- --- ---- ----                          I - Swing
9  -- --- ---- ----  -- --- ---- ----                          m - Micro Move
10 -- --- ---- ----  -- --- ---- ----                          q - Gate Length
11 -- --- ---- ----  -- --- ---- ----                          C - Chance
12 -- --- ---- ----  -- --- ---- ----                          R - Roll
13 -- --- ---- ----  -- --- ---- ----                          A - Arp
14 -- --- ---- ----  -- --- ---- ----                          n - Random Note
15 -- --- ---- ----  -- --- ---- ----                          i - Random Instrument

Render    Invert  Duplicate Expand
Selection         Pattern   Pattern          ▶▶ Description
```

While holding [FX1] or [FX2], the pop-up window will display the available effects list where the selection can be made to load to the step event.

Tap to select [FX1] or [FX2]. To edit the value, Use [+] / [-] to adjust the value. The outer [+] / [-] buttons change the value in larger increments.

NOTES

▌ DETAILED APPLICATION OF AN EFFECT TO AN EMPTY STEP

1. Press [1] to select the pattern mode page.

2. Select a blank or existing step event.

3. Press [FX1] or [FX2] to ensure the FX parameter is selected in the step event. This is a short press. Holding [FX1] or [FX2] will display the effect list pop-up.

4. Select recording mode, press [Rec]. The steps selected will appear red as opposed to green when in normal playback mode.

5. To assign the FX to an empty step, either:-

   • Hold [FX1] or [FX2] till list appears then release. This will place the current effect into the step. Press [+] / [-] to adjust the FX value. The outer buttons in larger increments.

   • Hold [FX1] or [FX2] + (Up) or (Down) to select the type from the list. Release the [FX1] or [FX2] button, the FX step remains selected. Press [+] / [-] to adjust the FX value. The outer buttons in larger increments.

   • Hold [FX1] or [FX2] + [+] or [-] to select the type from the list. Release the [FX1] or [FX2] button, the FX step remains selected. Press [+] / [-] to adjust the FX value. The Outer buttons in larger increments.

6. To assign or change the FX to an existing step, either:-

   • Hold [FX1] or [FX2] + (Up) or (Down) to select the type from the list. Release the [FX1] or [FX2] button, the FX step remains selected. Press [+] / [-] to adjust the FX value. The outer buttons in larger increments.

   • Hold [FX1] or [FX2] + [+] or [-] to select the type from the list. Release the [FX1] or [FX2] button, the FX step remains selected. Press [+] / [-] to adjust the FX value. The outer buttons in larger increments.

7. Subsequent selection of FX slots allow adjustment of its value with the [+] and [-] buttons when in [Rec] mode.

In the effect list window, press the 7th and 8th screen button to toggle the description of the highlighted effect on or off. This is an aid to using the FX.

---

5 Sequencing Steps

FX Types.

The two FX slots can be populated from a library of FX effects. Each FX has an effect type plus the associated value.

FX Type	Description
-	None. Empty FX1 or FX1 effect. No effect applied.
!	Off. Will toggle off the effect used on the prior effect step.
V	Volume or Velocity (NOTE OFF) for MIDI.
P	Positions the step sound left / right in the stereo plane.
M	Micro Tune. Fine pitch tuning of note and MIDI out.
G	Glide time from previous to current note - based on the note pitch.
T	Tempo change. Changes the pattern tempo.
I	Swing. Applies a swing from any step track for the entire pattern.
m	Micro move nudges forward by a small amount the step position.
q	Gate length. Adjusts the step note gate length.
C	Chance is the probability of a note playing.
R	Roll, beat repeats the note also with options for volume or pitch inc/dec.
A	Arpeggiator, for creating pitch based melodies. (Also needs MIDI chord).
n	Random note. Sets a range of notes for random playback.
i	Random instrument. Sets a range of instruments for random playback.
f	Random FX. Sets a random FX to the step from a selected range.
v	Random Volume. Sets a random velocity variation on each cycle.
r	Reverses sample playback. Played end to start.
p	Sets the playback position for a sample start, wavetable or granular position.
S	Plays the selected slice for the step - sliced samples.
g	Volume LFO rate.
h	Panning LFO rate.
j	Filter LFO rate.
k	Position LFO rate.
l	Finetune LFO rate.

FX Type	Description
D	Overdrive amount for the step.
L	Low pass filter cutoff. Frequency represented by 0-100%.
B	Band pass filter cutoff. Frequency represented by 0-100%.
H	High pass filter cutoff. Frequency represented by 0-100%.
s	Delay. Amount of send effect 0-100%.
t	Reverb. Amount of send effect 0-100%.
E	Bit depth. 4 Bits to 16 Bits.
U	Tuning. -24 semitones to +24 semitones. 4 octave range.
F	Slide up amount. Range is 0-255 with 1/16th semitone increments.
J	Slide down amount. Range is 0-255 with 1/16th semitone increments.
a	MIDI Out (CC, PC, Chan & Poly Aftertouch)*. Also synth macro 1.
b	MIDI Out (CC, PC, Chan & Poly Aftertouch)*. Also synth macro 2.
c	MIDI Out (CC, PC, Chan & Poly Aftertouch)*. Also synth macro 3.
d	MIDI Out (CC, PC, Chan & Poly Aftertouch)*. Also synth macro 4.
e	MIDI Out (CC, PC, Chan & Poly Aftertouch)*. Also synth macro 5.
f	MIDI Out (CC, PC, Chan & Poly Aftertouch)*. Also synth macro 6.
0	MIDI Chord, note output. (Used also with arp).

* Needs a channel & Instrument

6

Instruments

In the language of Tracker Mini, an instrument is the part of a step that generates sound and is essentially based on an audio sample. Instruments are loaded into the instrument pool to be accessible in a project (explained in the project section). A maximum of 48 instruments can be loaded into a project. At its core, an instrument has a sample or part of a sample along with a set of defined settings. The sample parameters set the sample's configuration and the integration within the Tracker Mini instrument feature set. For example, a sample can be sliced to be used as beats in a drum kit. It can form the central audio source for the wavetable and granular engines. These operate like synthesizers. It can also be a pure stand-alone sample. The building of instruments and their application in Tracker Mini is an essential foundation for sound design. MIDI instruments also exist, and these are applied in the MIDI section. There are a variety of things that can be done to create an instrument. Working with instruments has a cross-over between the practical, process-orientated tasks and the creative, inspirational parts. Both are equally important, and it is often worth dedicating time purely to sound design and instrument creation. Building a library of percussion, drums, bass, leads, pads and textures, and so forth is good practice. This can make the track design and full song production workflow smooth and straightforward, helping to switch the focus on the assembly and creation of patterns. Instruments are stored as '.pti' files and can be used across projects, distributed, and shared with others. Tracker Mini provides an all-in-one solution for music-making, and having a collection of instruments readily available makes this music-making process faster and more effective.
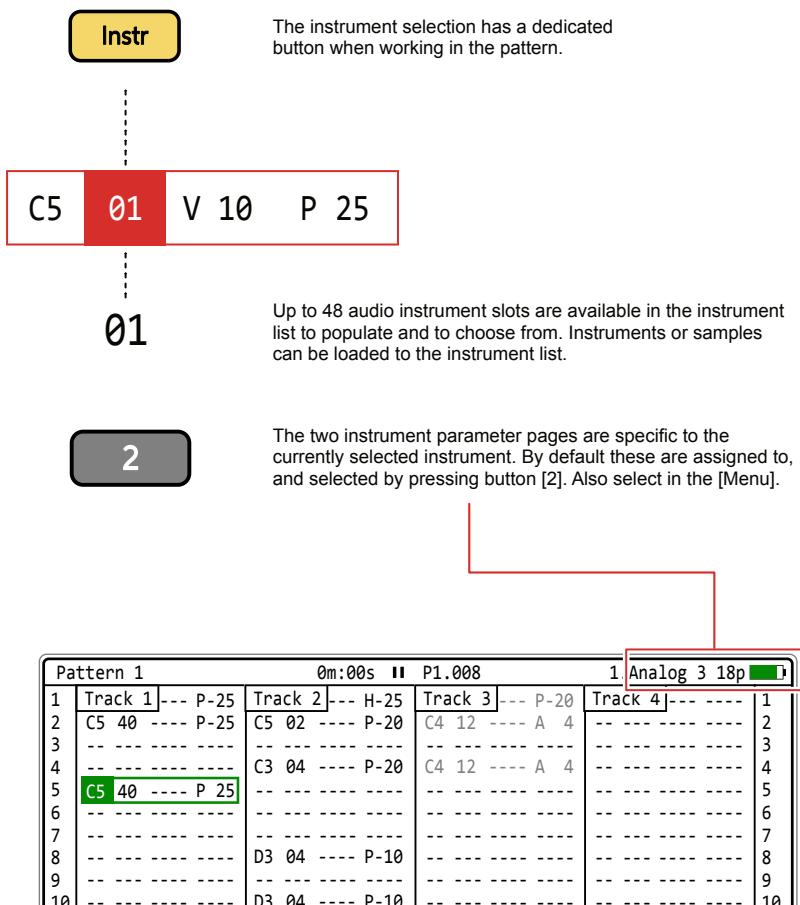
6 Instruments

6.1 Instrument Overview

An audio instrument is the primary sound source in Tracker Mini and is based on an audio sample. The instrument can be purely an audio sample which can then be configured into a more elaborate instrument such as wavetable synth. The Instrument parameters will configure settings. The sound can be affected by effects and modulation but essentially an instrument has a sample at its core and is triggered by the step on which it is applied.

Instr

The instrument selection has a dedicated button when working in the pattern.

C5 **01** V 10   P 25

01

Up to 48 audio instrument slots are available in the instrument list to populate and to choose from. Instruments or samples can be loaded to the instrument list.

2

The two instrument parameter pages are specific to the currently selected instrument. By default these are assigned to, and selected by pressing button [2]. Also select in the [Menu].

```
Pattern 1              0m:00s  ||  P1.008        1 Analog 3 18p ▭
1  Track 1 --- P-25  Track 2 --- H-25  Track 3 --- P-20  Track 4 --- ----  1
2  C5 40 ---- P-25  C5 02 ---- P-20  C4 12 ---- A  4  -- --- ---- ----  2
3  -- --- ---- ----  -- --- ---- ----  -- --- ---- ----  -- --- ---- ----  3
4  -- --- ---- ----  C3 04 ---- P-20  C4 12 ---- A  4  -- --- ---- ----  4
5  C5 40 ---- P 25  -- --- ---- ----  -- --- ---- ----  -- --- ---- ----  5
6  -- --- ---- ----  -- --- ---- ----  -- --- ---- ----  -- --- ---- ----  6
7  -- --- ---- ----  -- --- ---- ----  -- --- ---- ----  -- --- ---- ----  7
8  -- --- ---- ----  D3 04 ---- P-10  -- --- ---- ----  -- --- ---- ----  8
9  -- --- ---- ----  -- --- ---- ----  -- --- ---- ----  -- --- ---- ----  9
10 -- --- ---- ----  D3 04 ---- P-10  -- --- ---- ----  -- --- ---- ----  10
```

.pti

Instruments can be created from samples, edited, sliced and saved as '.pti' files which can then be used in other projects or shared with others.

6.2 Instrument Parameter Pages

A series of instrument parameters are accessible for controlling, shaping and modulating the sound. The two pages are accessible directly from toggling the assigned button [2]. Page 1 is general parameters while page 2 covers parameter automation. Pressing [Delete] on a selected parameter will reset it to it's default state.
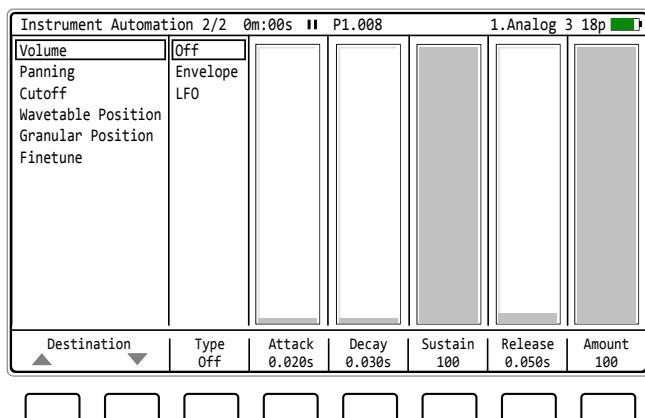
Page 1 of 2: General sample based parameters.

2   Press to select and cycle the instrument parameter pages.

Page 2 of 2: Automation parameters.

Screen buttons select the parameter options or use (Right) (Left) to navigate each option. Press (Up) (Down) or [+] / [-] to adjust the value.
The outer [+] / [-] buttons adjust in larger increments.
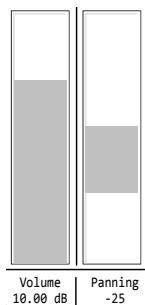
6 Instruments

6.3 General Instrument Parameters - Page 1
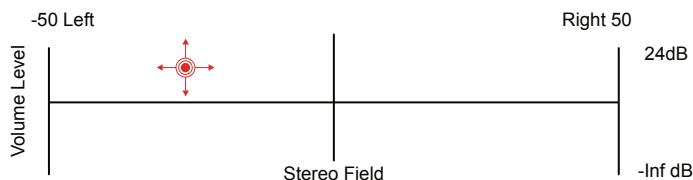
The general settings page covers sample based parameters that affect general audio functions.

Volume / Pan
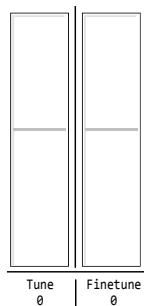
Volume
Adjusts the audio level of the instrument.
Range is -inf dB to 24.00 dB.

Panning
Adjusts the audio position left to right balance in the stereo field.
Range is -50L (fully left) to +50R (fully right).
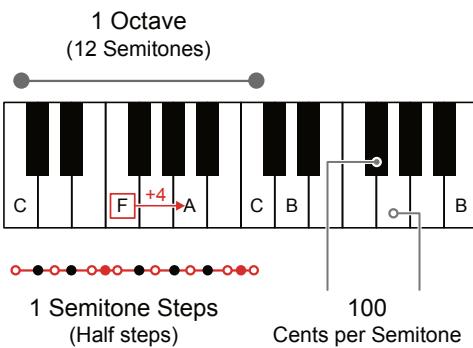

Tuning
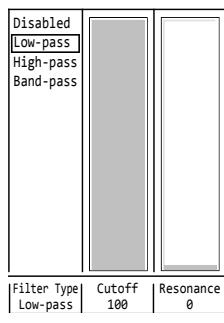
Tune
Adjusts the audio pitch tuning of the sample.
Range is -24 Semitones to +24 Semitones.

Finetune
Adjusts the sample audio pitch fine tuning.
Range is -100 Cents to +100 Cents.

Filter

```
Disabled
Low-pass
High-pass
Band-pass




Filter Type    Cutoff    Resonance
Low-pass        100         0
```

Filter Type ①
Selects the type of filter to apply.
Options; Disabled, low-pass, high-pass, band-pass.

Cutoff ②
Filter cutoff frequency. Point of attenuation.
Range is 0% to 100%.
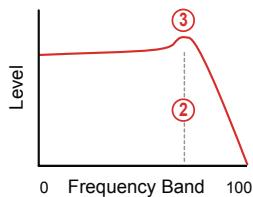
Resonance ③
Boosted frequency point to create resonance.
Range is 0% to 100%.

Filter types & functions
A filter attenuates and cuts areas of the frequency range in an audio signal.
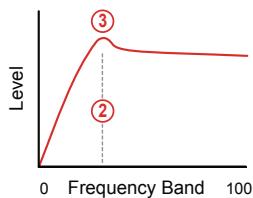
Low Pass Filter ①

Level

0   Frequency Band   100
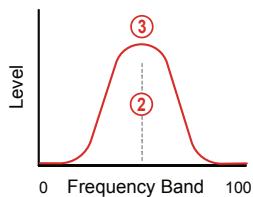
A low pass filter allows the frequencies through which
are below the cutoff frequency and attenuates the
audio signal frequencies above the cutoff. Resonance
boosts the audio at the selected frequency.

High Pass Filter ①

Level

0   Frequency Band   100

A high pass filter allows the frequencies through which
are above the cutoff frequency and attenuates the
audio signal frequencies below the cutoff. Resonance
boosts the audio at the selected frequency.

Band Pass Filter ①

Level

0   Frequency Band   100

A band pass filter allows frequencies through within a
band of the cutoff frequency and attenuates the rest of
the audio signal frequencies. Resonance boosts the
audio at the selected frequency. Band width (Q) is not
adjustable in the Tracker Mini band-pass filter.

6 Instruments

Access to control the general parameters is simple and quick. The process described applies when accessing all instrument parameters and effects.

▌ ADJUSTING INSTRUMENT PARAMETERS

1. Ensure the desired instrument is selected. This will be shown top right of the screen.

2. Press [2] to open the 'Instrument parameter' page. This is also accessible from the [Menu].

3. Pressing [2] again will toggle between the general parameter page and the automation parameters.

4. Within the instrument page 1 of 2 (page number top left), the instrument effects are accessible. Press [*More*] screen button to open the effects page, and press [*Back*] to return to the main page.

5. Press the screen button below the desired option to select. Pressing (Left) or (Right) will navigate the options. The selected parameter will show a red bounding box.

6. Within a selected option, press [+] or [-] to manually adjust the parameter value e.g. volume. The outer [+] / [-] buttons make changes in larger increments.

7. Alternatively, press (Up) or (Down) to incrementally adjust the parameter value. Holding a button will continuously adjust the value.

8. With a parameter selected, press [Delete] to reset it's value to the default setting. For example panning will reset to 0.

9. Parameters are presented in columns. The bar style value is shown in the the upper main page and also the exact value is shown below the parameter name under the screen button labels.

10. To exit the instrument parameters, select another page e.g. [1].

6.4 Instrument Effect Parameters - Page 1
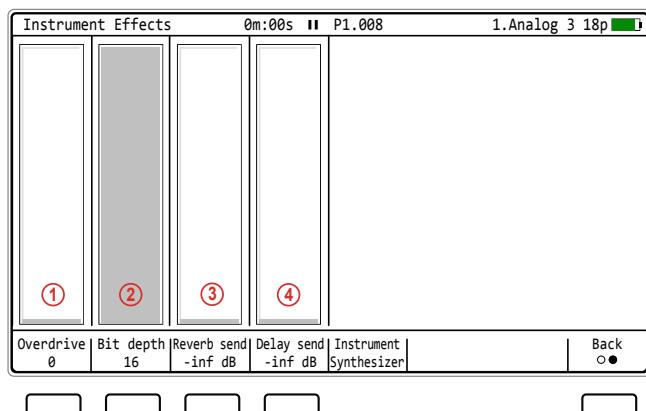
The general settings page 1 also gives access to a series of instrument effect parameters. There are 2 instrument specific effects, overdrive and bit depth and also 2 send controls which use the common delay and reverb.

Page 1 of 2: General sample based parameters.
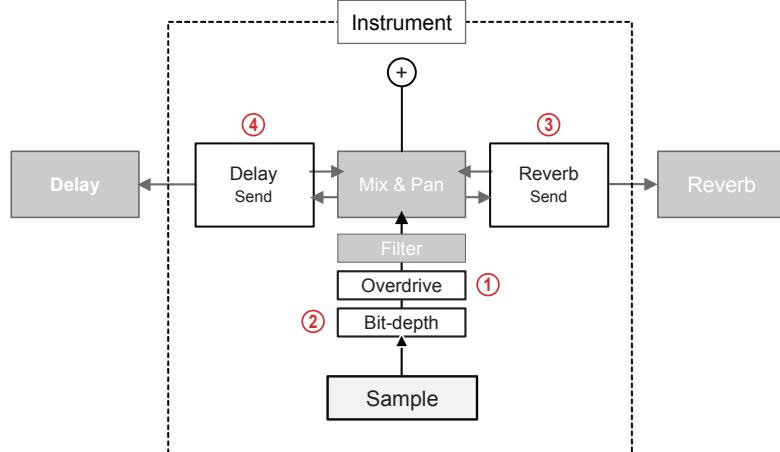
| Volume 10.00 dB | Panning -25 | Tune 0 | Finetune 0 | Filter Type Low-pass | Cutoff 100 | Resonance 0 | More ●○ |

Instrument Parameter Effects

Instrument Effects		0m:00s ❚❚	P1.008			1.Analog 3 18p

| ① | ② | ③ | ④ | | | |

| Overdrive 0 | Bit depth 16 | Reverb send -inf dB | Delay send -inf dB | Instrument Synthesizer | | Back ○● |

Screen buttons select the parameter options or (Right) (Left) to navigate option. Press (Up) or (Down) to adjust / select.

Instrument

Delay — Delay Send ④ — Mix & Pan — Reverb Send ③ — Reverb

Filter

Overdrive ①

② Bit-depth

Sample

6 Instruments

The effect settings page covers sample based parameters that affect the specific instrument. Note that the generic delay and reverb settings are in the master section of Tracker Mini.

Overdrive

Overdrive
0

Overdrive
Overdrive introduces a gritty aggressive tone to the audio sound. Based on traditional practices of pushing the limits of an amplifier and creating distortion in the signal.

Range 0-100%

Bit Depth

Bit depth
16

Bit Depth
Analog signal are smooth evolving shapes. Digital audio samples represent this by sampling and registering the audio information into number of bits. The higher the number the better a signal is represented. Tracker Mini uses 16 Bit audio which is CD standard, but can be reduced to give a more LoFi sound effect.

Range 4-16

Reverb Send

Reverb send
-inf dB

Reverb Send
The reverb send is not a dedicated instrument effect in itself but controls the amount of instrument audio that is sent to the master reverb. This is mixed to the signal and combined with other sends. Reverb adds space and represents room reflections simulating spacial depth, distance or proximity.

Range 0-100%

Delay Send

Delay send
-inf dB

Delay Send
The delay send is not a dedicated instrument effect in itself but controls the amount of instrument audio that is sent to the master delay. This is mixed to the signal and combined with other sends. Delay adds an echo and repetition into a sound and is a creative effect and fills space to keep interest.

Range 0-100%
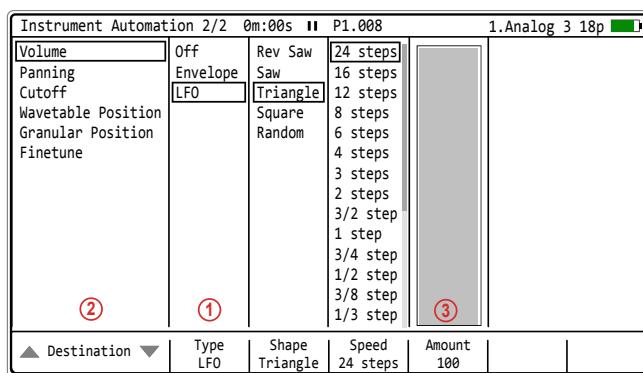
6.5 Instrument Automation Parameters - Page 2
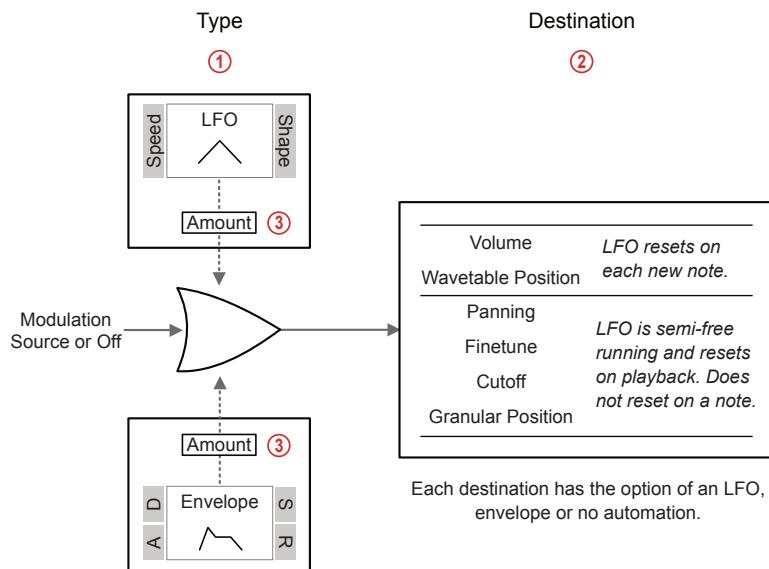
Automation also called modulation, creates movement and interest in an instrument sound. The instrument automation settings page covers the settings which control modulation over the instrument sound audio sample. These parameters are located in the second page of the instrument parameters.

The modulator can be an LFO or an envelope. Both shape audio over a time period for one of the several selectable destinations.

Available parameters will depend on the destination and the automation type selected.

```
Instrument Automation 2/2  0m:00s ॥ P1.008          1.Analog 3 18p ▮▮▯
Volume          Off        Rev Saw   24 steps
Panning         Envelope   Saw       16 steps
Cutoff          LFO        Triangle  12 steps
Wavetable Position         Square    8 steps
Granular Position          Random    6 steps
Finetune                             4 steps
                                     3 steps
                                     2 steps
                                     3/2 step
                                     1 step
                                     3/4 step
                                     1/2 step
                                     3/8 step
          ②          ①              1/3 step    ③

 ▲ Destination ▼   Type     Shape     Speed      Amount
                   LFO      Triangle  24 steps   100
```

Screen buttons select the parameter options or (Right) (Left) to navigate option. Press (Up) or (Down) to adjust / select.

Type ①   Destination ②

	LFO resets on each new note.
Volume	
Wavetable Position	
Panning	LFO is semi-free running and resets on playback. Does not reset on a note.
Finetune	
Cutoff	
Granular Position	

Each destination has the option of an LFO, envelope or no automation.

6 Instruments

Automation can add some highly creative and interesting features to a sound. This is applied by modulating parameters in the instrument sample. This can transition from a simple, static audio sound (when type is off) to add some subtle movement to generative and evolving sound designs. Try combining and experimenting with automation.

LFO - Low Frequency Oscillator
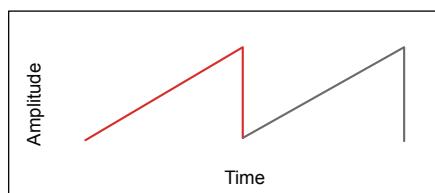
A low frequency oscillator (LFO) operates at a lower frequency than a normal audio oscillator which is typically used as an audio generator. The purpose of an LFO is to act as a modulator for parameters of other devices, to add interest and create movement. A common use of an LFO is to add a vibrato effect to control the pitch of a sound.
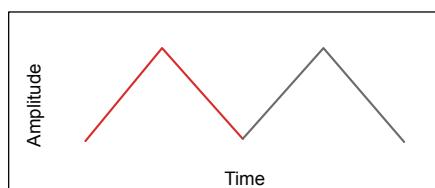
LFO shapes
Examples show 2 Cycles of the LFO shape. Speed influences cycles across pattern.
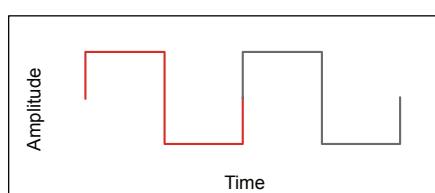
Reverse Saw
Ideal for ramp down sounds.
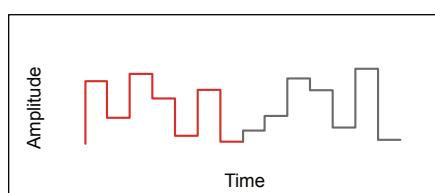
Saw
Ideal for ramp up sounds.

Triangle
Good for vibrato style sounds.

Square
Great for steppy, pulses.

Random
Steppy random sounds.

As well as the shape, the second key parameter is speed. LFO Speeds in Tracker Mini are hard synchronised to the project tempo and are therefore assigned based on the number or intervals of steps. Despite Tracker Mini having a de-clicking audio algorithm, some settings may still cause audio clicks due to the LFO cycle with respect the samples zero crossing points.
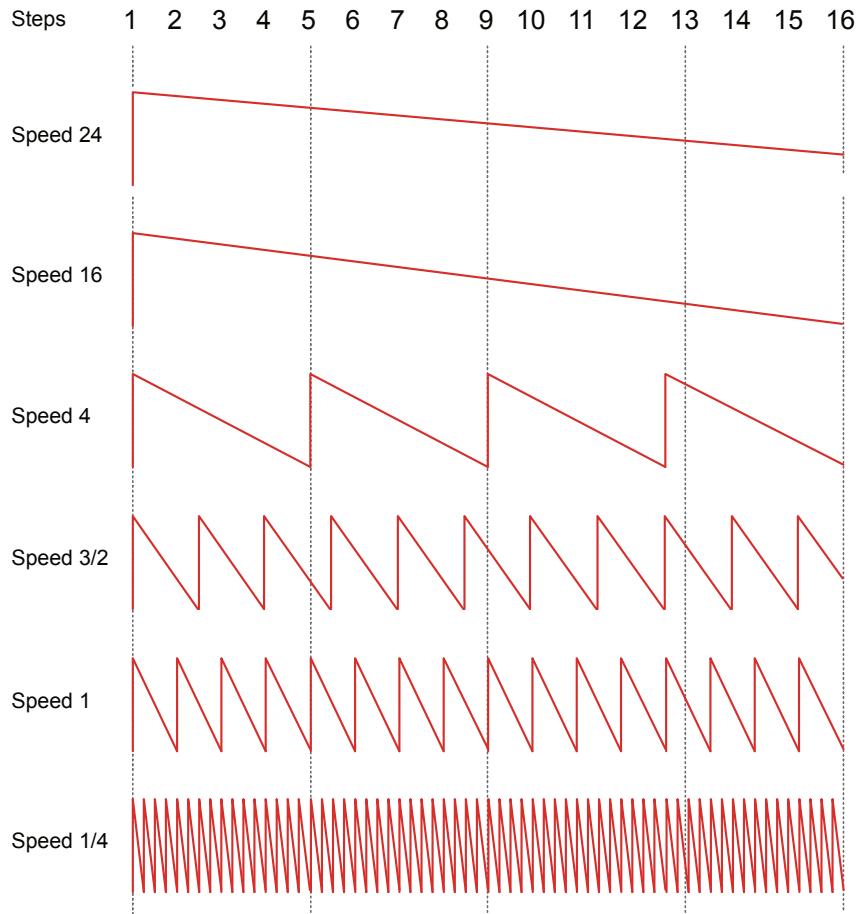
LFO speed
Speed is based on pattern step intervals.

Speed * In Steps	Speed In Steps	Speed In Steps	Speed In Steps	Speed In Steps	Speed In Steps
128	24	4	3/4	3/16	1/24
96	16	3	1/2	1/6	1/32
65	12	2	3/8	1/8	1/48
48	8	3/2	1/3	1/12	1/64
32	6	1	1/4	1/16	

 * 128 to 32 Step speed options are not available with volume as the destination.

Speed setting illustrations
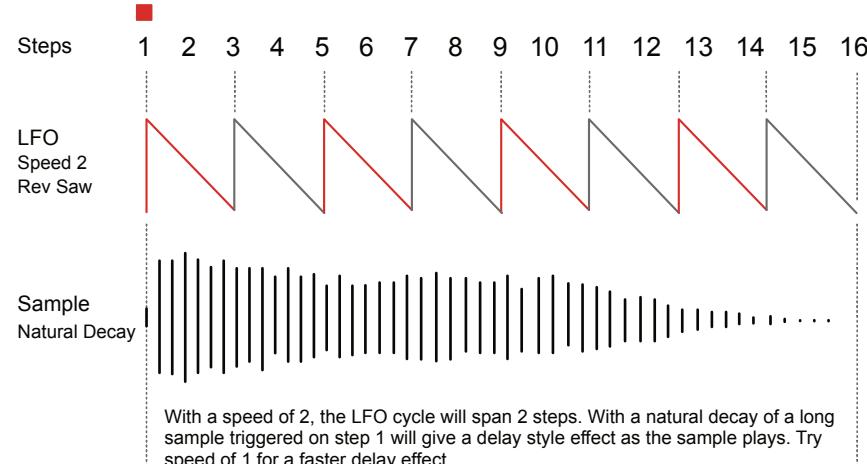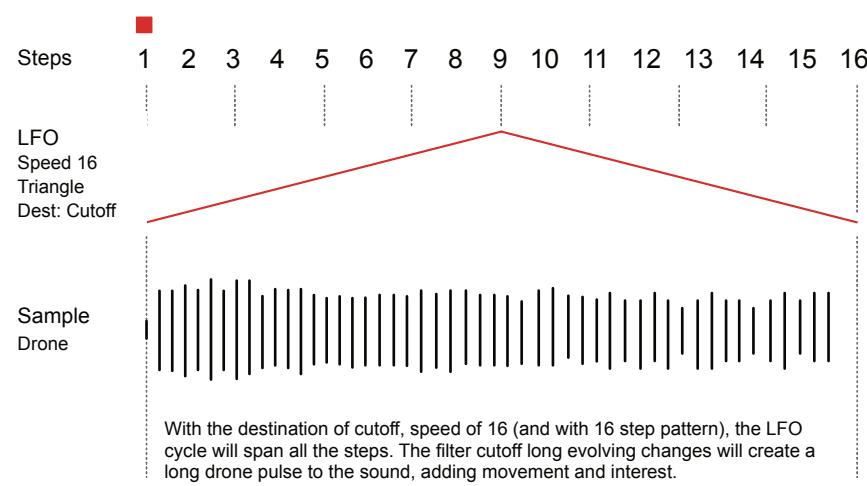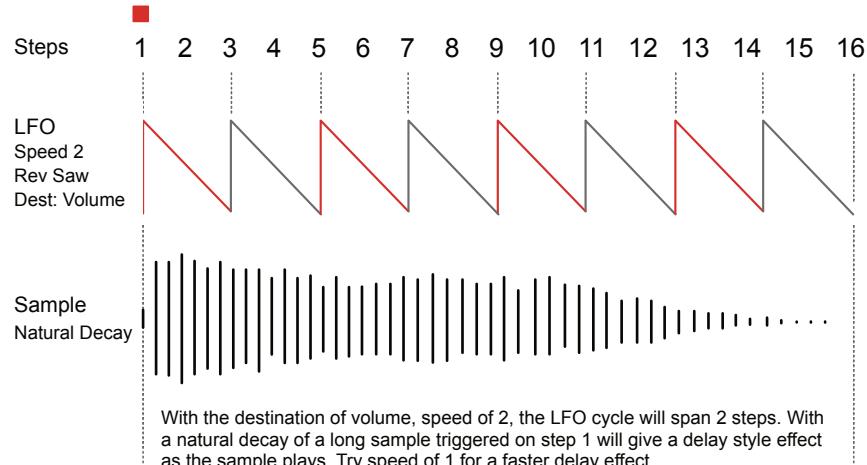
6 Instruments

Example, speed & shape options
With respect to steps.

Steps 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16

LFO
Speed 2
Rev Saw
Dest: Volume

Sample
Natural Decay

With the destination of volume, speed of 2, the LFO cycle will span 2 steps. With a natural decay of a long sample triggered on step 1 will give a delay style effect as the sample plays. Try speed of 1 for a faster delay effect.

Steps 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16

LFO
Speed 16
Triangle
Dest: Cutoff

Sample
Drone

With the destination of cutoff, speed of 16 (and with 16 step pattern), the LFO cycle will span all the steps. The filter cutoff long evolving changes will create a long drone pulse to the sound, adding movement and interest.

Steps 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16

LFO
Speed 2
Rev Saw

Sample
Natural Decay

With a speed of 2, the LFO cycle will span 2 steps. With a natural decay of a long sample triggered on step 1 will give a delay style effect as the sample plays. Try speed of 1 for a faster delay effect.

Envelope

An envelope shapes the audio over time. While an LFO will cycle, an envelope is considered more of a one-shot function and typically operates across a note length. This is normally used to shape the sound of a note and how the sound develops from note on to note off (and beyond). It can also be used as a modulation effect. Tracker Mini uses an ADSR envelope which has 3 time ranges, attack, decay and release plus sustain level.

ADSR Envelope

The OFF command can be triggered on an individual step using the note 'OFF' special command, accessible by the [-] buttons when inputing notes.

6 Instruments

The envelope page covers sample based parameters that affect the shape of the instrument sound over time. The selection of each parameter may not be linear to allow for a better resolution to choose the value in the more relevant range areas. The amount will set how much of the envelope is applied 0-100%.

Attack

Attack
1.000s

Attack Time
Attack is the initial time period of the envelope. This affects the transient of the sample. Shorter times for more percussive 'hits' and longer for more evolving ramps.

Range 0-10 Seconds.
0-1 Sec has a better resolution of control.

Decay
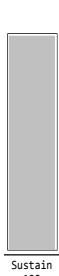
Decay
0.500s

Decay Time
A decay time period which is applied after the attack phase and applying a note. The period before settling the sound level to a steady state.

Range 0-10 Seconds.
0-1 Sec has a better resolution of control.

Sustain
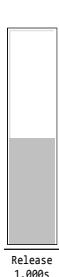
Sustain
100

Sustain Level
This is the nominal level at which the note / sound will sustain after the initial 'note on' request. This will be the level continuously played while holding a note.

Range 0-100%.

Release

Release
1.000s

Release Time
This is the final envelope stage and is activated after the note is released - Tracker Mini 'OFF' special note command. This is the time period where the sound dissipates from the sustain level to silence.

Range 0-10 Seconds.
0-1 Sec has a better resolution of control.
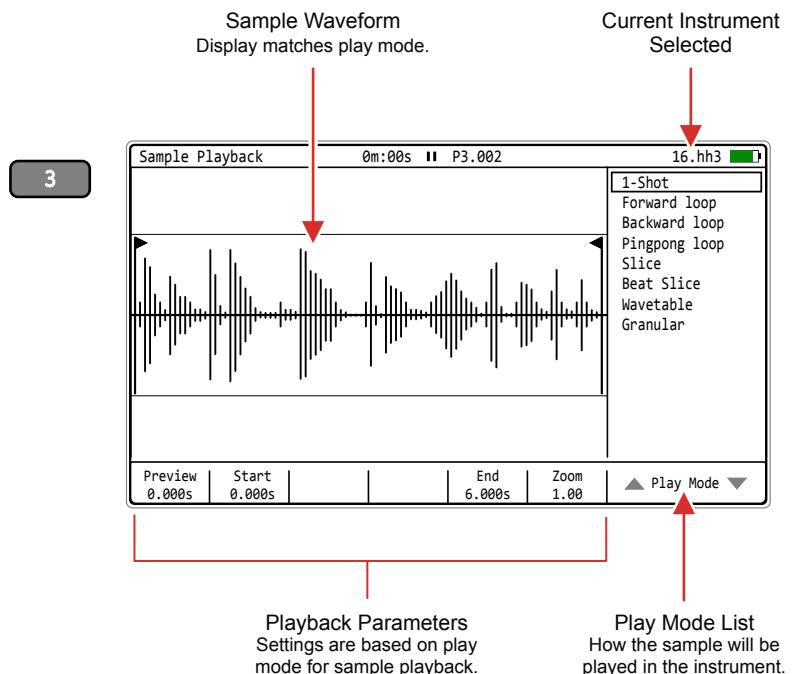
6.6 Sample Playback Overview

An instrument can be a sample, edited or raw. A raw '.wav' sample can be added to the instrument list. When a sample is edited and developed further as an instrument it can be saved as a '.pti' instrument, for example 'drumkit1.pti'. This can be used across all projects or distributed to other Tracker producers.

This section covers the basics of using .pti instruments. The end-to-end capturing, editing and use of audio sampling is covered elsewhere.

How a sample is applied as an instrument is handled in the 'Sample Playback' page, accessed by default to [3] button or from the [Menu].

Sample Waveform
Display matches play mode.

Current Instrument
Selected

Sample Playback	0m:00s	‖ P3.002	16.hh3

1-Shot
Forward loop
Backward loop
Pingpong loop
Slice
Beat Slice
Wavetable
Granular

3

| Preview 0.000s | Start 0.000s | | | End 6.000s | Zoom 1.00 | ▲ Play Mode ▼ |

Playback Parameters
Settings are based on play mode for sample playback.

Play Mode List
How the sample will be played in the instrument.

Note: Playback is not visually animated in the waveform display when playing but the playhead is displayed when previewed.

| Type	Play Mode	Description
Play	1-Shot	Basic sample playback. Plays start to end once.
Loop	Forward Loop	Sample playback. Plays start to end and cycles on loop.
Loop	Backward Loop	Sample playback. Plays end to start and cycles on loop.
Loop	Pingpong Loop	Sample playback. Plays start to end to start on loop.
Slice	Slice	Sample is sliced. Used for pitch base melodies.
Slice	Beat Slice	Sample is sliced. Used for beat based instruments.
Synthesizer	Wavetable	Sample is used as the wavetable, like a synth.
Synthesizer	Granular	Sample grains are used and played, like a granular synth.
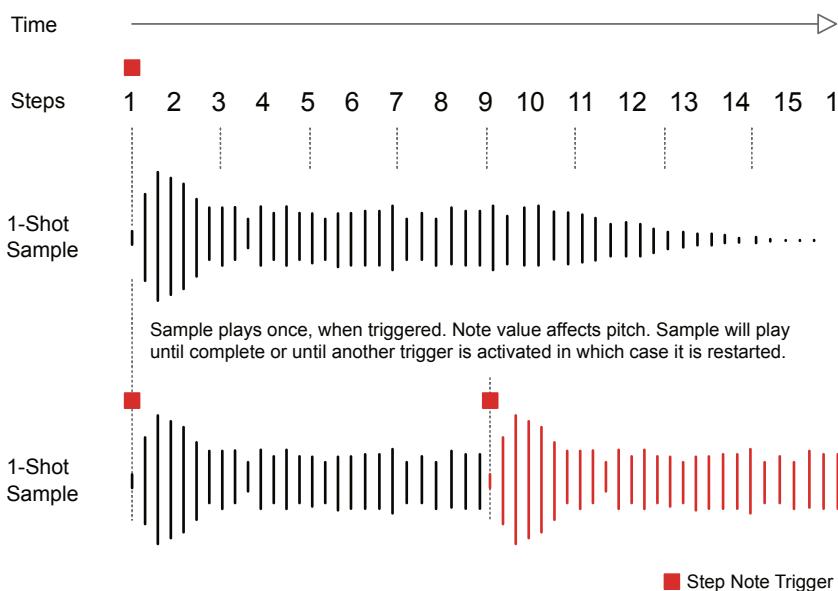
6 Instruments

6.7 1-Shot Play Mode
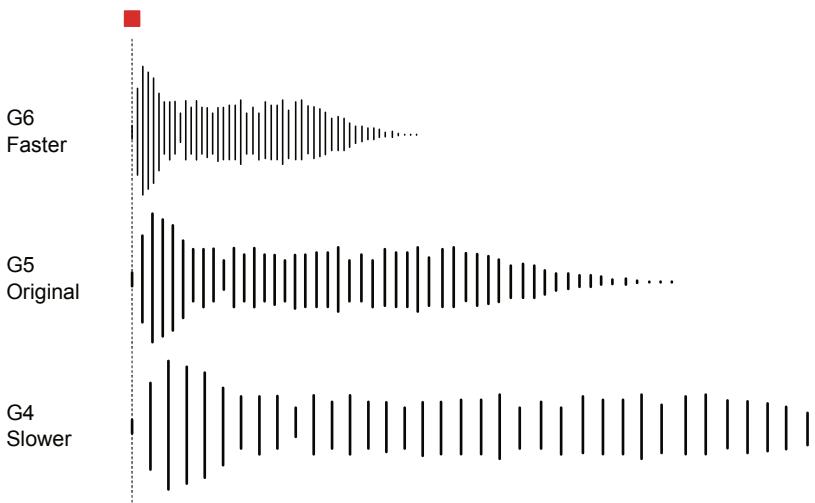
The most basic play mode is 1-shot which simply plays a sample through once, start to end. This is the normal operation when using samples without too audio much editing and where the general duration of the sample is to be retained.

The note value, tempo and pattern length will also affect how the sample plays. A higher note value will play the sample faster. A lower note value will play the sample slower. Triggering the instrument step will trigger the 1-shot sample which will play for its duration or until another trigger is initiated.

Sample plays once, when triggered. Note value affects pitch. Sample will play until complete or until another trigger is activated in which case it is restarted.

■ Step Note Trigger
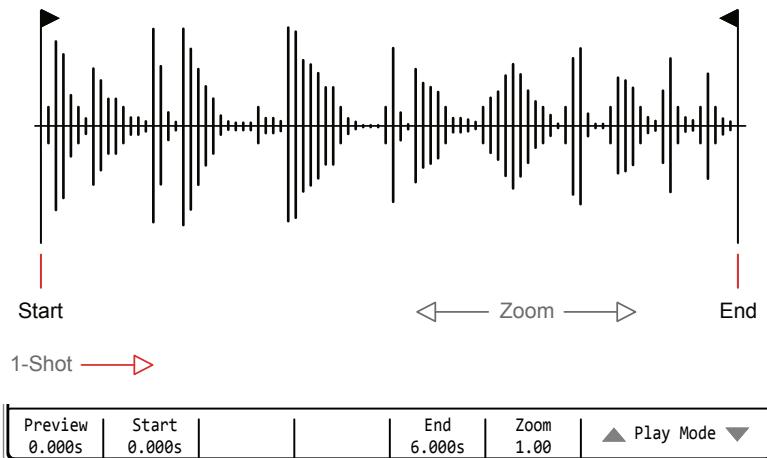
Higher note values will shorten i.e. speed up the sample while lower values will elongate i.e. slow the sample. The sample and pattern length should be considered as well as tempo to achieve desired results. Sample tempo and pitch are not automatically analysed in Tracker Mini and therefore not normally known unless manually noted when sampling and recording the original audio.

1-Shot parameters

The available parameters are simple for the 1-shot option with only two editing parameters and one visual aid. Navigate and select using the screen buttons. Also navigate using the (Left) (Right) buttons to select the parameter and (Up) (Down) or [+] / [-] to adjust the value.

Function	Parameter	Screen Button	Range	Description
Edit	Play Mode	7th & 8th	Modes	Selects the play mode to apply. Includes 1-Shot plus loop modes and wavetable / granular synth.
Aid	Zoom	6th	Variable	Zooms in horizontally to the visual display for more precise editing. Does not affect playback. Zoom reference point is based on the previously adjusted parameter i.e. Start.
Aid	Preview	1st	Variable	Hold to play the sample. The number below the screen button label indicates current play position in seconds. Preview playback will run for approx 1 sec after releasing the preview button.
Edit	Start	2nd	Variable	Adjusts and edits the sample start point. This is the starting position used when a 1-shot sample is triggered in a pattern or when previewed. Marker is red but will change to green if a zero crossing point is detected at the current position.
Edit	End	5th	Variable	Adjusts and edits the sample end point. This is the ending position used when a 1-shot sample is triggered in a pattern or when previewed. Marker is red but will change to green if a zero crossing point is detected at the current position.

Zero crossing option can be set in the Config > Project settings.
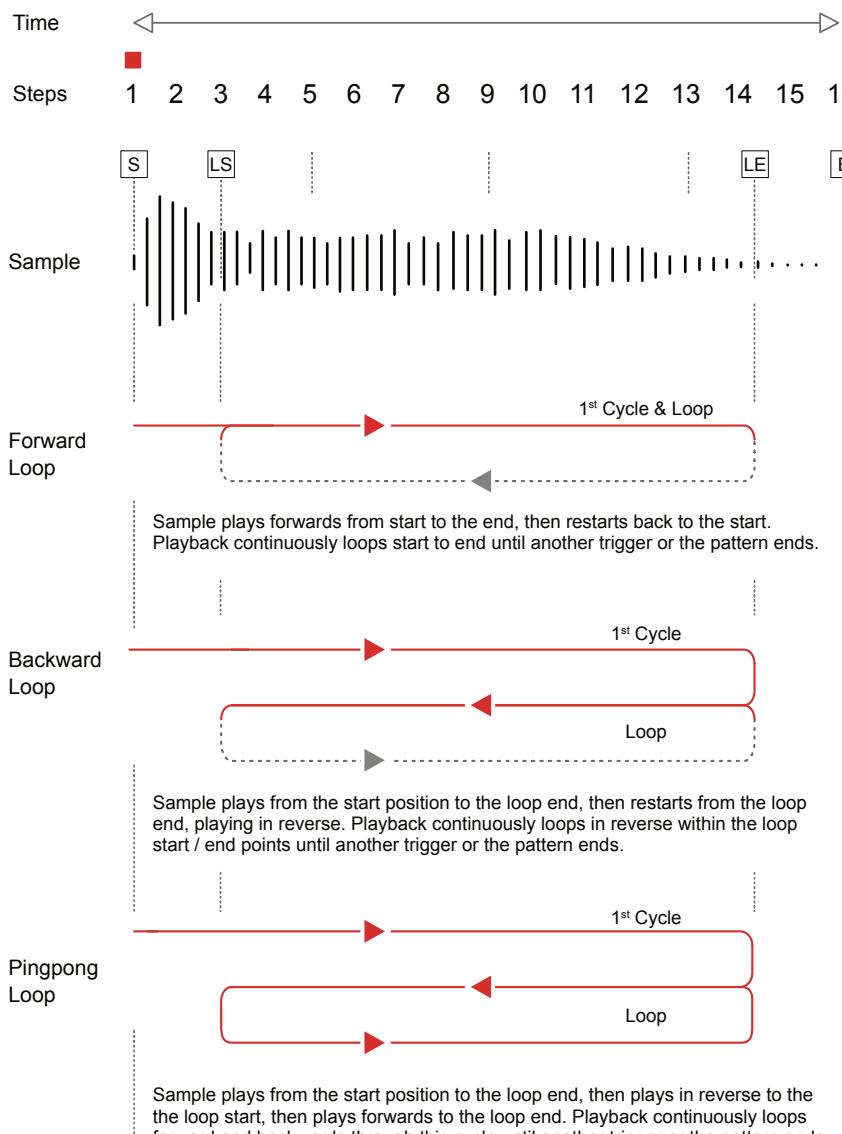
6 Instruments

6.8 Loop Play Modes

Three loop playback modes exist, forward loop, backward loop and pingpong loop. All of these three play modes have similar functions and only differ in their playback direction.

The note value, tempo and pattern length will also affect how the sample plays. A higher note value will play the sample faster. A lower note value will play the sample slower. Triggering the instrument step will trigger the sample once and it will continue to play for its duration in loop until another trigger is initiated or the pattern ends.

Sample plays forwards from start to the end, then restarts back to the start. Playback continuously loops start to end until another trigger or the pattern ends.

Sample plays from the start position to the loop end, then restarts from the loop end, playing in reverse. Playback continuously loops in reverse within the loop start / end points until another trigger or the pattern ends.

Sample plays from the start position to the loop end, then plays in reverse to the the loop start, then plays forwards to the loop end. Playback continuously loops forward and backwards through this cycle until another trigger or the pattern ends.

■ Sample playback is initially triggered and while ever the pattern plays it will continue to loop.

Loop parameters

The parameters for the forward loop, reverse loop and pingpong loop play are identical across these play modes. Options are start / loop start, end / loop end plus the zoom visual aid. Navigate and select using the screen buttons. Also navigate using the (Left) (Right) buttons to select the parameter and (Up) (Down) or [+] / [-] to adjust the value.

Function	Parameter	Screen Button	Range	Description
Edit	Play Mode	7th & 8th	Modes	Selects the play mode to apply. Includes forward loop, backward loop, pingpong loop as well as 1-Shot and wavetable / granular synths.
Aid	Zoom	6th	Variable	Zooms in horizontally to the visual display for more precise editing. Does not affect playback. Zoom reference point is based on the previously adjusted parameter i.e. Start.
Aid	Preview	1st	Variable	Hold to play the sample. The number below the screen button label indicates current play position in seconds. Preview playback will run for approx 1 sec after releasing the preview button.
Edit	Start	2nd	* Lower than End	Adjusts and edits the sample start point. This is the starting position when the sample is first triggered in a pattern or when previewed. Red marker turns green if a zero crossing point is detected.
Edit	Loop Start	3rd	* Higher than Start	Adjusts the sample loop start point. This is the start position used on the 2nd and subsequent playback cycles, playing from loop start to loop end. Value will always be same or higher than start position. Red marker turns green at a zero crossing point.
Edit	Loop End	4th	* Lower than start	Adjusts the sample loop end point. This is the end position used for playing a loop. Value will always be same or lower than end position. Red marker turns green at a zero crossing point.
Edit	End	5th	* Higher than Start	Adjusts and edits the sample end point. The ending position, outside of a loop when a sample is triggered in a pattern or when previewed. Red marker turns green at a zero crossing point.

* Start / End, Loop Start / End positions cannot cross over. Start is always before end.

6 Instruments

6.9 Slice Play Modes

Two similar slice playback modes exist, slice and beat slice.
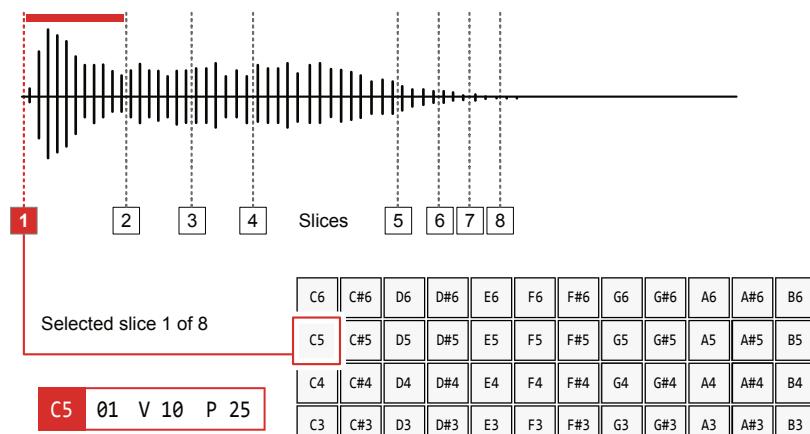
Slice mode is typically used to slice an audio sample in order to create pitch based kits. The pads in slice mode represent current scale.

Beat slice mode is typically used to slice percussive and atonal samples. Notes in beat slice mode represent individual slices, for example hits of a drum kit and are useful for playing and recording live beats.

Individual slices per step can also trigger from the FX, 'S' step function.

Slice
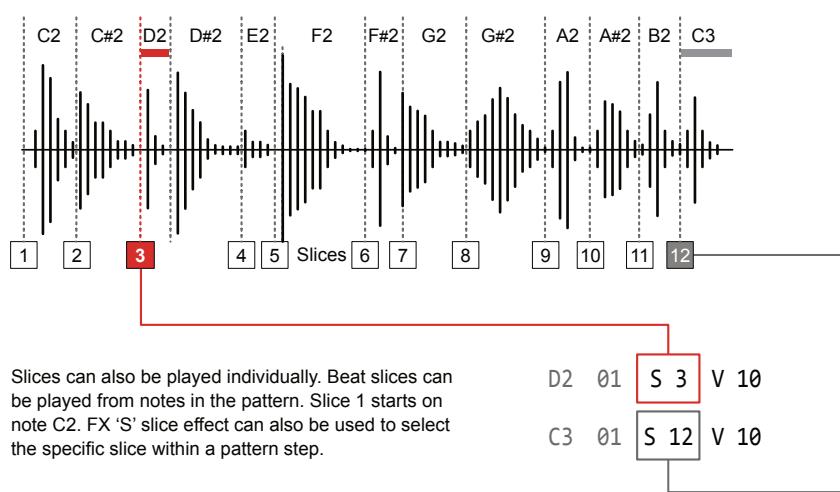
Examples: Synth note, piano, string pad.

Slice selected for the instrument will play at the note pitch, default note for original sample pitch is C5. This will play notes melodically based on the step note and current pitch scale.

Beat slice

Examples: Combo of kick, snare, hat, effects on instrument 1.
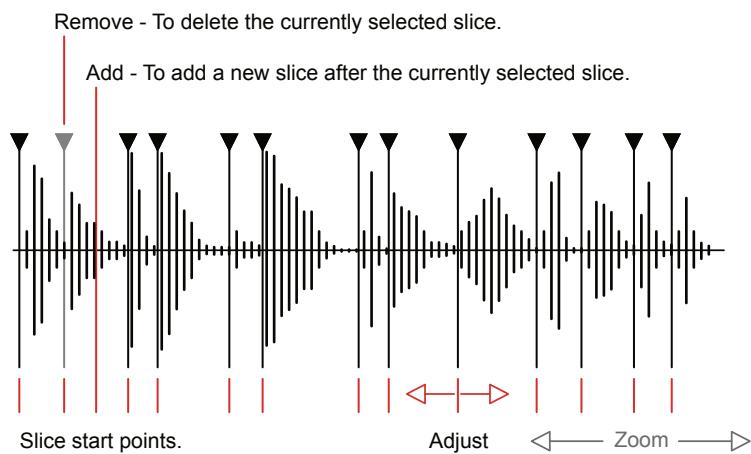
Slices can also be played individually. Beat slices can be played from notes in the pattern. Slice 1 starts on note C2. FX 'S' slice effect can also be used to select the specific slice within a pattern step.

D2 01 S 3 V 10

C3 01 S 12 V 10

Slice parameters

The parameters for slice and beat slice are identical across the play modes but may have different behaviours in use. Navigate and select using the screen buttons. Also navigate using the (Left) (Right) buttons to select the parameter and (Up) (Down) or [+] / [-] to adjust the value.

Remove - To delete the currently selected slice.

Add - To add a new slice after the currently selected slice.

Slice start points.   Adjust   ◁—— Zoom ——▷

| Function	Parameter	Screen Button	Range	Description
Edit	Play Mode	7th & 8th	Modes	Selects the play mode to apply. Includes slice and beat slice as well as 1-Shot and wavetable / granular synths and loop modes.
Aid	Zoom	5th	Variable	Zooms in horizontally to the visual display for more precise editing. Does not affect playback. Zoom reference point is based on the previously adjusted parameter i.e. Slice number.
Edit	Slice	1st	Variable	Selects the slice number for editing from the available number of slices. Also will select the slice to playback in scale when in slice play mode. Use (Enter) to preview playback and also to select the slice in beat slice play mode.
Edit	Adjust	2nd	Variable	Adjusts the start position for the selected slice. Cannot exceed the previous or next slice position. Use zoom to assist with precise editing. Red marker turns green at a zero crossing point.
Edit	Add	3rd		Adds a new slice after the currently selected slice start marker. Slice will be added centrally between the currently selected slice start and next slice start or end position.
Edit	Remove	4th		Removes and deletes the currently selected slice start marker. No prompt - immediate deletion.
Edit	Slice Auto	Page 2, 1st	Automatic	Automatically removes any existing slice markers and adds a series of new markers at each transient point. Prompt to confirm is given.
Edit	No of Slices	Page 2, 3rd	1 - 48	Sets the number of slices to create when using the 'equal' slice option. This applies the number of equally spaced slices across the sample.
Edit	Slice Evenly	Page 2, 2nd		Initiates slicing of the sample into the equal spaced slices, set by 'number'. Prompt to confirm.
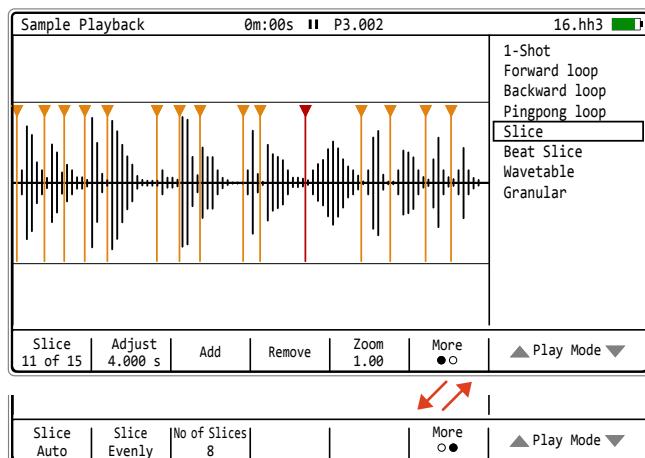
▌ SLICING A SAMPLE

1. Ensure the desired instrument is selected with the sample to edit. This will be shown top right of the screen.

2. Press [3] to open the 'Sample Playback' page. This is also accessible from the [Menu].

3. Press the [*Up*] or [*Down*] screen buttons to navigate to 'Slice' or 'Beat Slice' play mode depending on the function required.

4. To slice the sample, follow one or a combination of the slicing techniques. Up to 48 slices are possible.

   a. Transient slicing. Will automatically slice the sample into a number of slices located at the points where a dynamic amplitude change is detected. The number of slices is based on the number of transients detected. Switch between pages using [*More*], 6th button.

      • On page 2 - press [*Slice Auto*] screen button and acknowledge by [*Confirm*] when prompted. Existing slices are cleared and new ones created.

   b. Equal slicing. This will slice the sample in a set number of equally spaced positions. Switch between pages using [*More*], 6th button.

      • On page 2 - press [*No of Slices*] screen button and Press (Up) or (Down) to set number of slices to create.

      • On page 2 - press [*Slice Evenly*] screen button. Acknowledge [*Confirm*] on prompt. Existing slices are cleared and new equidistant slices are created.

   c. Manual slicing. This will add 1 slice at the central point between the currently selected slice start marker and the following slice start.

      • Select a slice, press [*Slice*], X of Y, Where X is the selected slice and Y the total number of slices available. The [*Slice*] option is on Page 1.

      • Press (Up) or (Down) to select the number of the slice.

      • Press [*Add*] screen button. The new slice is added. If no slices are present, one is added at the sample start position.

      • Any new slice added automatically becomes the currently selected slice.

REMOVING A SLICE

1. Press [3] to open the 'Sample Playback'. Also use the [Menu]. Switch between pages using [*More*] screen button - Select page 1.

2. Press the [*Up*] or [*Down*] screen button to navigate to 'Slice' or 'Beat Slice' play mode depending on the function required.

3. Select a slice, press [*Slice*] screen button. X of Y, Where X is the selected slice and Y the total number of slices available.

4. Press (Up) or (Down) to select the slice number to delete.

5. Press [*Remove*] screen button. The selected slice is deleted immediately and the currently active slice reverts to the previous slice.

Sample Playback	0m:00s ‖ P3.002				16.hh3 ▮

```
                                          1-Shot
                                          Forward loop
                                          Backward loop
                                          Pingpong loop
                                          Slice
                                          Beat Slice
                                          Wavetable
                                          Granular
```

Slice 11 of 15	Adjust 4.000 s	Add	Remove	Zoom 1.00	More ●○	▲ Play Mode ▼

Slice Auto	Slice Evenly	No of Slices 8			More ○●	▲ Play Mode ▼

ADJUSTING A SLICE START POSITION

1. Press [3] to open the 'Sample Playback' page. Also from the [Menu]. Switch between pages using [*More*] screen button - Select Page 1

2. Press the [*Up*] or [*Down*] screen button to navigate to 'Slice' or 'Beat Slice'.

3. Select a slice, Press [*Slice*] screen button. X of Y, Where X is the selected slice and Y the total number of slices available.

4. Press (Up) or (Down) to select the slice number to edit.

5. Press [*Adjust*] screen button. Zoom may help create precise edits.

6. Press (Up) or (Down) to adjust the slice start position.

6.10 Wavetable Play Modes
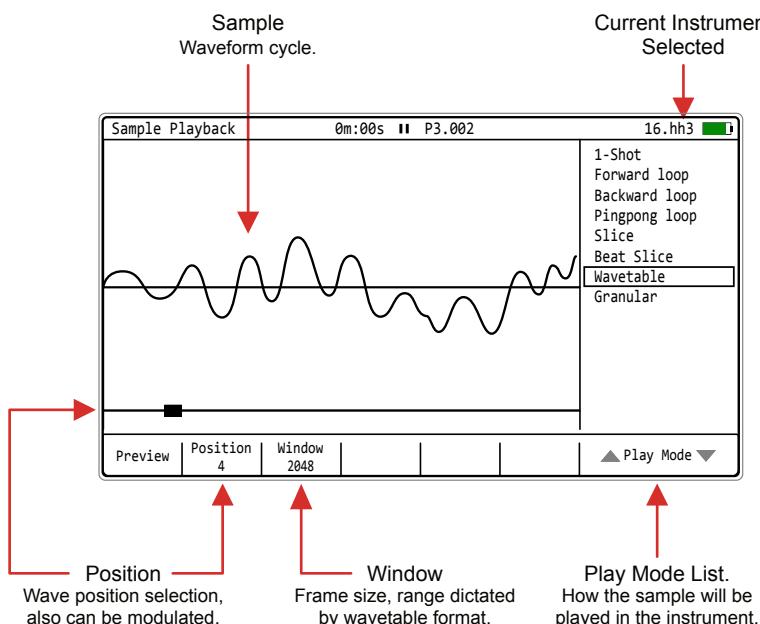
Wavetable instruments can be created in Tracker Mini. This emulates classic wavetable synthesizers by using a sample as the wavetable source. Standard Tracker Mini samples can be used 'out of the box' or samples prepared specifically to suit the application in a wavetable synth and give better performance. The Tracker Mini wavetable synthesis brings a simple yet different creative option into the instrument library.

What is wavetable synthesis?

The most common synth model is subtractive synthesis. This is based on a sound source, typically using one or more oscillators, tuned in various ways. The sound is then shaped and carved by filtering out (subtracting) frequencies, applying envelopes and adding effects. Wavetable synths typically follow these same principles but the 'oscillator' is formed from a series of wave-shapes called wavetables. In reality, a wavetable consists of a set of stacked samples called frames, the standard being 256 frames.
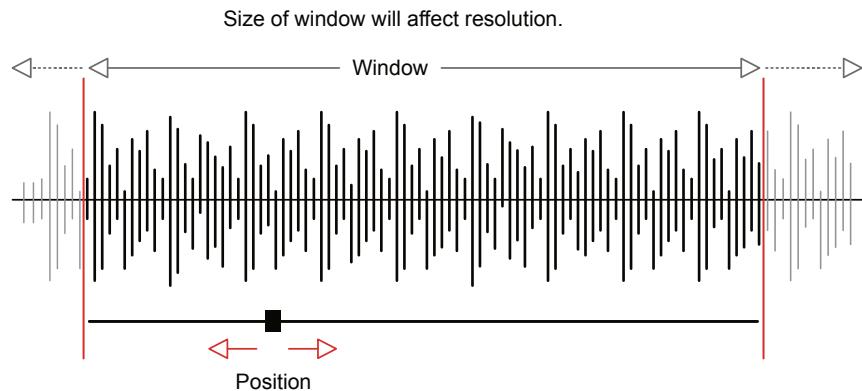
Navigating or modulating through the almost endless wave positions and selecting 'single cycles' in the wavetable is a fundamental element in wavetable sound design. In Tracker Mini the wavetable size (samples per frame) is set by the 'Window' parameter. Think of this as the length of the available table, the default maximum being defined by the original audio sample format. The 'Position' within the wavetable is also selectable and important in the sound design process. Position can also be modulated.

Sample
Waveform cycle.

Current Instrument
Selected

Position
Wave position selection, also can be modulated.

Window
Frame size, range dictated by wavetable format.

Play Mode List.
How the sample will be played in the instrument.

Wavetable parameters

The wavetable play mode is a simplified application of wavetable synthesis and consists of two core parameters. The Window is the wavetable length (samples per frame) and has a maximum value based on the original file. The position parameter is what enables the creative sound design and audio manipulation. This can be manually adjusted to find a sweet spot or modulated with the envelope or LFO.

Size of window will affect resolution.

Window

Position

Function	Parameter	Screen Button	Range	Description
Edit	Play Mode	7th & 8th	Modes	Selects the play mode to apply. Includes wavetable and granular as well as 1-Shot and the three loop modes.
Aid	Preview	1st		Hold to play the wave from the current position selected in the window. Also hold while adjusting position to 'scan' for the desired sound.
Aid	Window	3rd	Variable	The width of the wavetable can be adjusted down from the default maximum. The parameters are normally divisions of 2 down from the maximum (Typically 2048).
Edit	Position	2nd	Variable	Selects the playback position within the wavetable window. This can be manually adjusted to find the desired 'sweet spot' or modulated with an LFO or envelope for movement and interest.
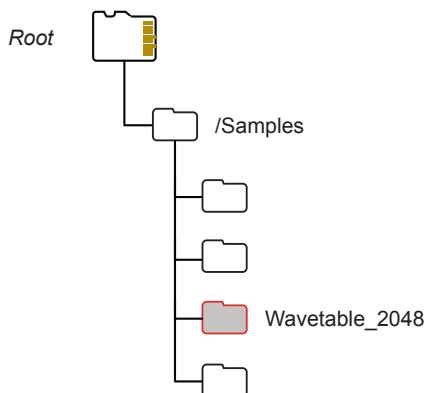
6 Instruments

Optimising wavetables

The best approach to operating with wavetable synthesis is to use WAV files that have been created for wavetable use. This will adhere to the frame and sample conventions stated. Also the audio samples will be created with smooth rather than stepped transitions between waves. There are many pre-prepared wavetables available for download but also check out the online sheets of sound creator and Modbap Modular OsirisEdit to learn more about wave creation.

Tracker Mini's factory wavetable files are located in the samples folders on the microSD card.

Root

/Samples

Wavetable_2048

There are many freely available wavetable samples online. Standard samples can be used but wavetable formatted WAV files provide better and smoother performance. The most common standard is 2048 samples / frame (256 frames). This applies to XFer Serum, U-He Hive, Dune, but others may also exist. Ableton Live Wavetable uses 1024 samples and down samples when a 2048 format is applied.

Standard audio files may sound 'stepped' when navigating the position. Tracker Mini has an on-board optimisation tool, WT Smoother which will process a standard sample and helps to smooth the sound and give better performance. This effectively converts the file to a more suitable format for Tracker Mini's Wavetable synth. Navigating a processed audio wave will sound smoother in the transition across positions.

▌ USING WT SMOOTHER TO OPTIMISE SAMPLES
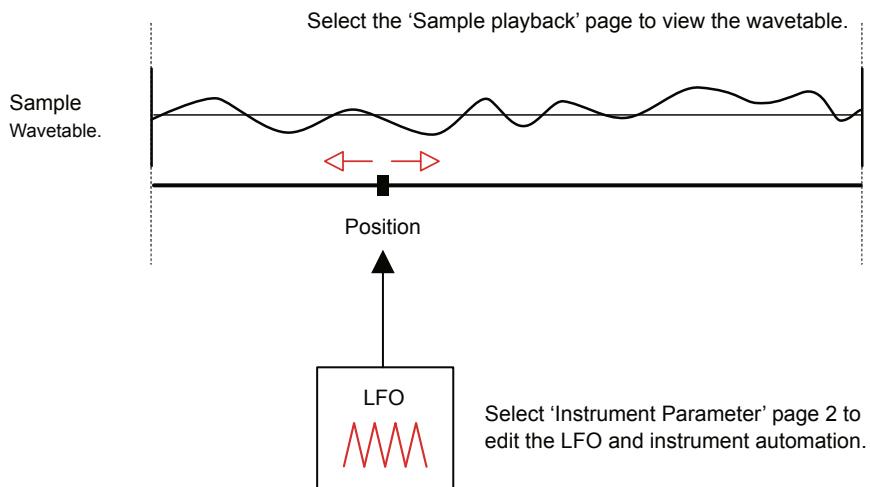
1. Ensure the sample is loaded to the instrument list and selected as currently active. Note that samples in the instrument list are copied into the onboard memory from the microSD card.

2. Press [Menu] and navigate to select 'Sample Editor'. Operations in the 'Sample Editor' are performed destructively to the sample in memory. However the original file is retained intact on the microSD card.

3. Edit the audio file [*Start*] screen button and [*End*] screen button selects the marker. Press (Up) or (Down) or [+] / [-] to adjust the positions to select part of the sample to process.

4. Press the [*Up*] or [*Down*] screen button to navigate to 'WT Smoother'.

5. Press [*Select effect*] screen button to select 'WT Smoother'.

6. Press [*Window Num*] screen button in the WT smoother application. This selects frames. The 256 default is a typical setting to use. Press (Up) or (Down) or [+] / [-] to adjust.

7. Press [*Window Len*] screen button in the WT smoother application. This selects sample length. The 2048 default is a typical setting to use. Press (Up) or (Down) or [+] / [-] to adjust.

8. Press [*Preview*] screen button to audition the audio while editing. This will need to process the audio before playing. Press [*Stop*] screen button again to stop preview.

9. Press [*Apply*] screen button to apply and render the new audio file. This converts to a wavetable which can be used in the wavetable play mode as a smoother more refined option.

10. Save the project to also save the edited instruments in the project folder. Hold [Shift] + [3] then Press [*Save*] screen Button. Saving the project also automatically saves the instruments in the instrument subfolder. These can be accessed from other projects.

6 Instruments

Modulating wavetables

The wavetable position is the key parameter to adjust and edit to search for a desired sound. This parameter can also be modulated from within the instrument automation page using an envelope or LFO. This adds movement and interest.

Select the 'Sample playback' page to view the wavetable.

Sample Wavetable.

Position

LFO

Select 'Instrument Parameter' page 2 to edit the LFO and instrument automation.

Hold [*Preview*] in the wavetable page while the LFO is running will display the animated position dynamically in real time.

Fast LFO Speeds can create glitchy and noisy sound designs. Use slower LFO speed or envelope and reduce the wavetable window for developing sound textures and ambience especially with added effects such as reverb. Try synchronised speeds to tempo / steps to create rhythmic patterns. The LFO amount will also effect how strong the LFO is applied.

Try manually adjusting the window and position while playing and with an LFO to experiment with the sound.
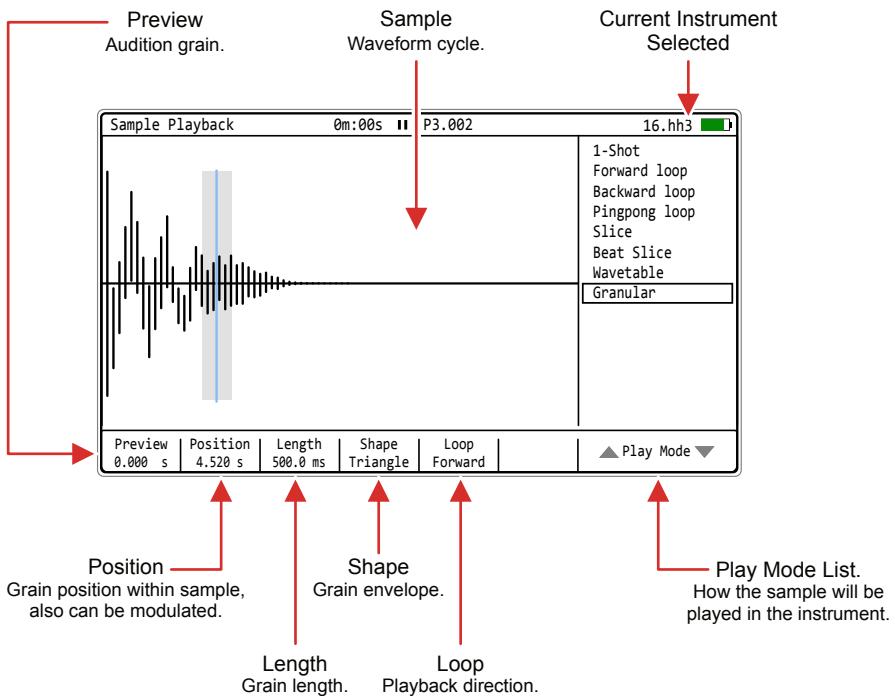
6.11 Granular Play Modes

Granular instruments can be created in Tracker Mini. As with all Tracker Mini instruments, Granular synth uses a sample as its core sound source. Granular synthesis is ideal for glitchy soundscapes and textural sounds.

What is granular synthesis?

Granular synthesis breaks a sample down into tiny slices, lets describe this as microscopic level. These narrow slices are generally less than 1 second but often much shorter in duration and are called grains. Sound is generated in a granular synthesizer by looping playback around a grain. It is common practice to use modulation to bring a granular synth to life especially using grain position. Granular synths can still use the same features as in subtractive synthesis including filter and envelopes.

Modulating grain position is at the heart of the Tracker Mini's implementation of granular synthesis where an LFO or envelope can be used. Parameters exist to set the position and length with a range up to 1000ms. Also shape and loop direction of playback parameters can also be adjusted manually in the Granular synth playback mode.

Preview
Audition grain.

Sample
Waveform cycle.

Current Instrument
Selected

```
Sample Playback        0m:00s ▮▮ P3.002              16.hh3 ▭
                                              1-Shot
                                              Forward loop
                                              Backward loop
                                              Pingpong loop
                                              Slice
                                              Beat Slice
                                              Wavetable
                                              Granular

 Preview │ Position │ Length  │ Shape    │ Loop    │         ▲ Play Mode ▼
 0.000 s │ 4.520 s  │ 500.0 ms│ Triangle │ Forward │
```

Position
Grain position within sample, also can be modulated.

Shape
Grain envelope.

Play Mode List.
How the sample will be played in the instrument.

Length
Grain length.

Loop
Playback direction.

6 Instruments

Granular parameters

The granular play mode is a simplified application of granular synthesis and consists of four core parameters. The grain length is duration of the small slice of audio, while loop defines the direction of playback across the grain. Shape is the envelope shape applied to the grain playback, recognised in the attack phase. The position parameter is what brings out the its sonic character. This can be manually adjusted to find a sweet spot or modulated with the envelope or LFO to introduce movement and interest. Tracker Mini operates with a single grain.
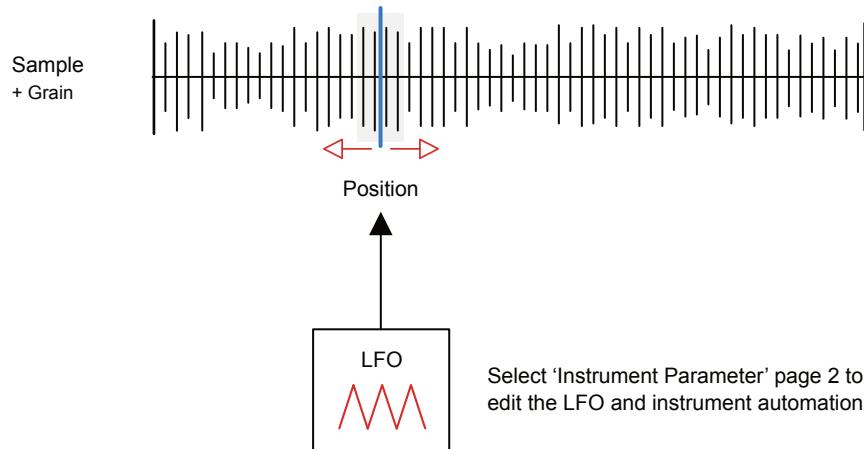

Function	Parameter	Screen Button	Range	Description
Edit	Play Mode	7th & 8th	Modes	Selects the play mode to apply. Includes wavetable and granular as well as 1-Shot and the three loop modes.
Aid	Preview	1st		Hold to play the grain from the current position selected. Also hold while adjusting position to 'scan' for the desired sound.
Edit	Position	2nd	Variable	Selects the grain playback position within the sample. This can be manually adjusted to find the desired 'sweet spot' or modulated with an LFO or envelope for movement and interest.
Edit	Length	3rd	1-1000ms	Sets the width in ms of the grain. This will be the small slice of the sample that is played.
Edit	Shape	4th	Square, Triangle, Gauss	Sets the envelope shape for the grain playback. Particularly pertinent in the attack phase.
Edit	Loop	5th	Forward, Reverse, Pingpong	Selects the grain playback direction.

Modulating granular position

The granular position can be modulated from within the instrument automation page using an envelope or LFO. This adds movement and interest and creates glitchy or textural sounds

Select the 'Sample playback' page to view granular play mode.

Sample
+ Grain

Position

LFO

Select 'Instrument Parameter' page 2 to edit the LFO and instrument automation.

Hold [*Preview*] in the granular page while the LFO is running will display the animated position dynamically in real time.

The LFO Speed and granular parameters can have an affect on the sound developed. Also the LFO amount will determine how much of the sample is navigated with varying the position. Small amounts will be more predictable textures and pad like sounds. Larger amount settings will move the position wider in the sample creating more glitchy, less predictable sounds.
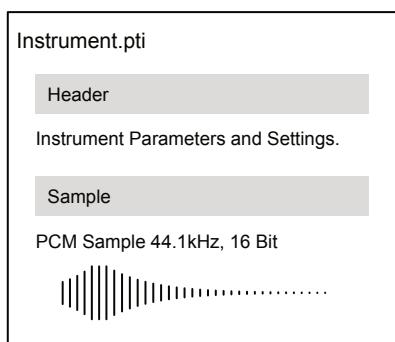
6 Instruments

6.12 Sharing Instruments

Instruments can be shared either with other projects on the same device or by transferring to another Tracker Mini. This is useful when developing new instruments or to create instruments which will be reused, for example to a develop a signature sound across multiple tracks of an album.
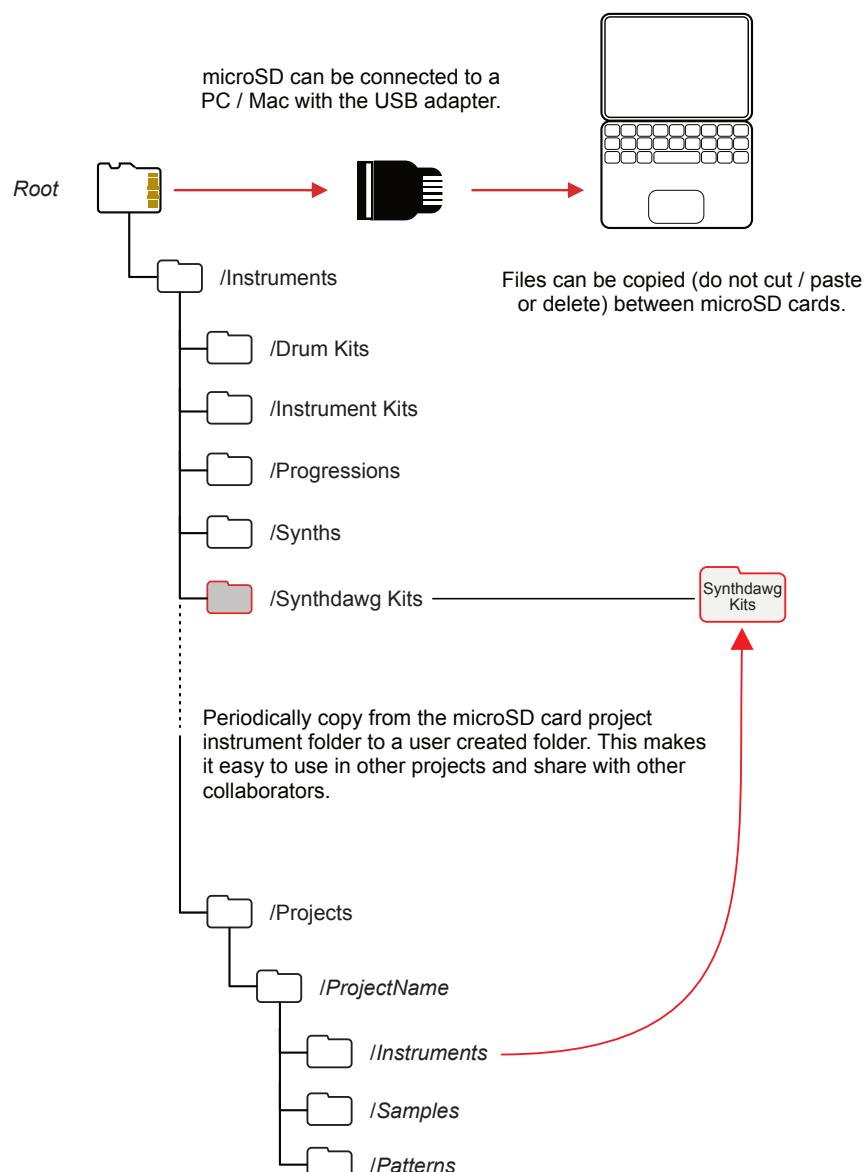
Instruments are saved with a project using a '.pti' file format and are stored in the project 'instruments' subfolder. The project and instrument folders are accessible from all projects. This is ok if you know where to look and what to look for. Remembering all projects and their instruments is not an easy task. A few tips will help manage a library of instruments. Tracker Mini does not have in depth file management functions on board so using a PC or Mac to access the microSD card is required.

```
Instrument.pti

    Header

Instrument Parameters and Settings.

    Sample

PCM Sample 44.1kHz, 16 Bit

    ‖‖‖‖‖‖‖‖‖‖‖‖‖‖‖‖·················
```

A .pti file contains a header ~400 bytes which handles the parameter settings. In addition a sample is included which can vary in size and which is packed into the instrument file.

- Create instruments as normal. Save a project which will also save the instruments into the current project folder. Instruments created or loaded from other projects will be saved with the current project.

- Consider creating a 'user' subfolder within the instruments folder. This can be used to build a library of user instruments.

- A different folder cannot be selected in Tracker Mini when saving Instruments. Periodically instruments can be manually copied using a PC / Mac into the 'user' instrument folder on the microSD card. This would be a housekeeping task, maybe combined with backing up the microSD card fully.

- Do not cut or delete the the original instrument from the project as this is where the project recognises the original file to be stored.

- The user folder can easily be shared with collaborators or between devices by copying between microSD cards with the PC / Mac.

microSD can be connected to a
PC / Mac with the USB adapter.

Root

/Instruments

/Drum Kits

/Instrument Kits

/Progressions

/Synths

/Synthdawg Kits ————————————— Synthdawg Kits

Files can be copied (do not cut / paste
or delete) between microSD cards.

Periodically copy from the microSD card project
instrument folder to a user created folder. This makes
it easy to use in other projects and share with other
collaborators.

/Projects

/ProjectName

/Instruments

/Samples

/Patterns

Consider a naming convention for user instruments. This is less important
when using project contained instruments, but this technique can be helpful
when managing a user library. Instruments can be renamed in the 'sample
loader' page. It is advised to always keep a discipline of naming
instruments in Tracker Mini rather than on the PC/Mac to protect the .pti file
integrity and to make future access easier.

6 Instruments

6.13 Synthesizer Options

Tracker Mini has 3 synthesizer slots each of which can be assigned 1 of 5 synthesizer models. Each synthesizer has six editable, model dependant macros directly available within the knob section and which contribute to the overall synth patch.

ACD

ACD™ ACD transports you back to the golden age of electronic music with its recreation of iconic single-oscillator monophonic analog synths. Paying homage to Japanese legends, ACD not only captures the essence of these classics but also propels you into the future with a lightning-fast synthesis experience. It offers a rich palette of options, ranging from faithful monophonic analog recreations to entirely unique and innovative soundscapes.

FAT

FAT™ FAT is a powerhouse synth engine that epitomizes the lush, vintage warmth of classic analog synthezisers. At its core, FAT hosts three virtual analog oscillators and offers an intuitive drift and detune control, ensuring you can effortlessly sculpt iconic massive sounds. The presets contain two distinct flavors of ladder filters inspired by two unique analog classics. It offers a versatile range of sounds, from deep reese basses to ethereal pads, expressive leads and classic keyboards.

VAP

VAP™ VAP is a virtual analog polysynth, boasting a dual-oscillator architecture and a versatile modulation matrix. Complete with multiple filter flavors and pulse width modulation, VAP allows you to sculpt intricate patterns. This engine shines when it comes to creating mesmerizing, evolving textures, crafting lush pads, and conjuring up one-of-a-kind sound effects.

WTFM

WTFM™ WTFM is a unique 2-operator FM synth engine that utilized wavetable based oscillators driven by a 3x feedback system. The operators are based on sweeping wavetables, ranging from fundamental sine waves to harmonically rich timbres, offering a diverse tonal palette. Whether you're sculpting smooth, enveloping pads or crafting cutting-edge metallic tones, WTFM empowers you to achieve unique textures with precision and authenticity.

PERC

PERC™ PERC is a unique drum machine that is loaded into one synth engine instrument. It uses 1 voice but can play back up to five unique drum sounds at once. Drums include a Kick, Tom, Snare, open and closed Hi-Hats, Cymbal, and Perc. The perc drum has multiple options including snare, clap, cowbell and more. Each drum is individually tweakable with multiple parameters for each hit, for a massive variety of drum tones.
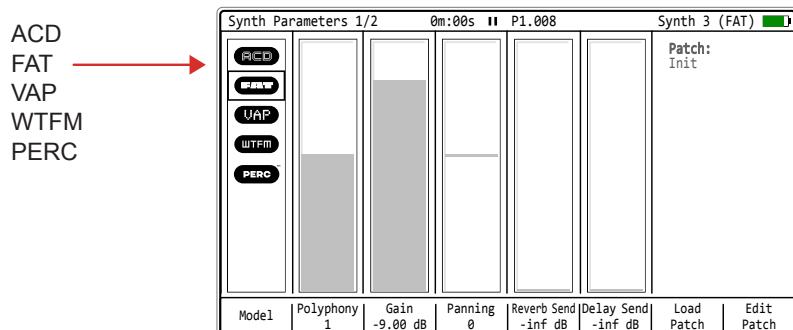
Hold [Instrument] to select a synth for the step. On a synth instrument step to select the synth to assign a model, Press [2] Synth Parameters. Select from the available synth models to assign per slot or load a synth patch.

More new synth models will be added to the Tracker Mini option list in future OS updates.

▌ SELECTING A SYNTH AND MODEL

1. Ensure the project in which to work is open and active and a pattern selected for editing.

2. Press [Rec] to select edit mode.

3. Select a synth for the step instrument. On the desired step, Hold [Instrument] + Press (Up) (Down) to select synth 1, synth 2 or synth 3 instrument slot.

4. The selected synth and its currently assigned model will be applied to the step when the button is released. Synths can be applied on steps for any of the 16 tracks.

5. To edit the synth and change the model for the synth on the selected step, Press [2], synth parameters. Ensure page 1 of 2 is selected.

6. Press [*Model*] screen button to cycle and select the synth model for the selected slot.

7. A synth patch can also be loaded if required by pressing [*Load Patch*] screen button and select from the patch list.
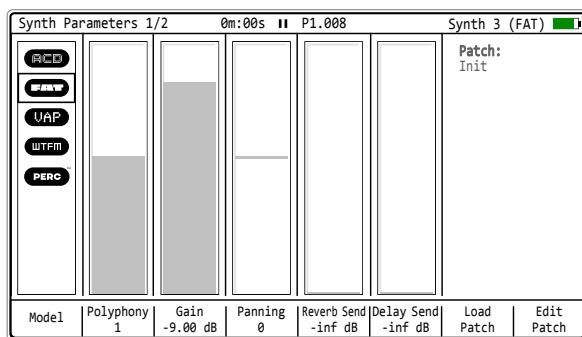
ACD
FAT
VAP
WTFM
PERC

Hold [Instrument] to select a synth for the step. On a synth instrument step to select the synth to assign a model, Press [1], synth parameters. Select from the available synth models to assign per slot or load a synth patch.

6 Instruments

▌ CONFIGURING A SYNTHESIZER

1. Ensure the project in which to work is open and active.

2. Select or create a step with one of the 3 synth slots to edit.

3. To edit the synth and change the model for the synth on the selected step, Press [2], synth parameters. Ensure page 1 of 2 is selected.

4. Press [*Model*] to cycle and select the synth model for the selected slot.

5. To edit the Page 1 parameters, use the screen buttons to select the option to edit:-

   • Model: This selects from the available models to assign to the synth.

   • Polyphony: The number of voices assigned to the synth. Up to 8 voices of polyphony are available in total in Tracker+ across all synths. The 8 voices are divided and allocated per synth, for example Synth 1 = 3, Synth 2 = 3, Synth 3 = 2.

   • Gain. Adjusts the audio gain for the synth.

   • Panning. Adjusts the stereo spread for the synth.

   • The reverb and delay send amount for the effects applied.

6. The synth macro controls can be found on page 2 of the instrument parameters for the selected synth. Press [2] to change page.

Patch defined parameter macro's for the synth are available on page 2 of 2 of the synth parameters accessed using the [2] button is the default assignment is set.
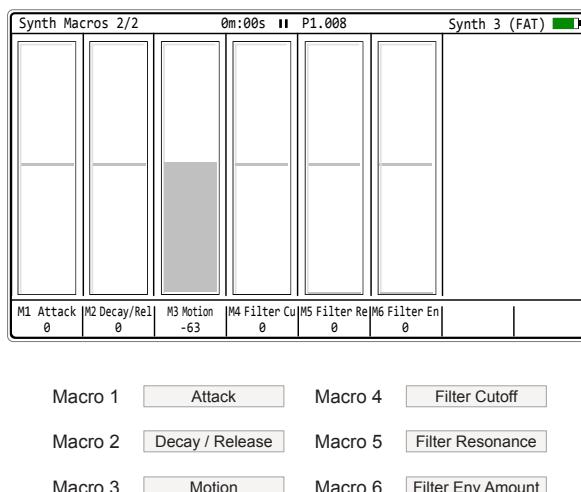
Macros enable a selection of parameters to be elevated to the instrument parameter page for quick and easy access. This will allow on the fly adjustments to help support live performances and sound variations. Tracker Mini has 6 available macro slots in the instrument parameter page. Macros are configured within the actual synth model parameters.

▌ ADJUSTING SYNTH MACRO PARAMETER VALUES

1. Ensure the project in which to work is open and active.

2. Select a step with a synth instrument to edit or select a synth from the instrument list. The assigned model and patch will determine the available macros.

3. To access the synth macro controls, Press [2] Synth Parameters. Ensure page 2 of 2 is selected. The second page hosts macros. Change pages by pressing [2].

4. Synth parameters are assigned to 1-6 macro controls. Press the associated screen button to select the macro value to change. Edit the setting with the [+] [-] buttons or (Up) (Down).

Example macros

The use of macros allows various parameters to be assigned to the 6 parameters and offers more flexibility with patches that when using fixed parameter assignments. The reverb and delay send are also contained on this page.
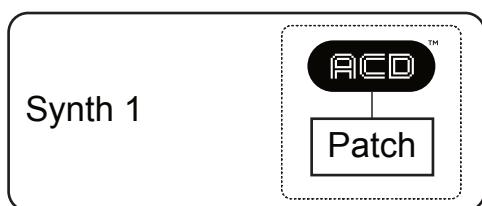
6 Instruments

6.14 Synthesizer Patch Editor Basics
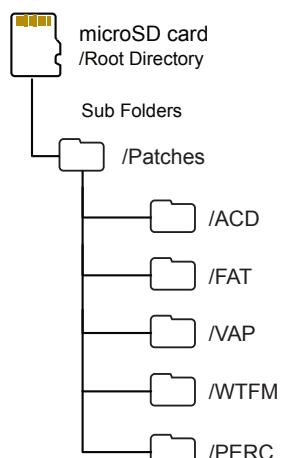
Tracker Mini has 3 synthesizers which operate with patches to define the precise sound. Each patch will be representative of the synth model assigned. Parameters can be controlled directly from the macro knobs. A patch can be created and edited within Tracker Mini patch editor. The macro assignments and parameter settings of the knobs can also be configured for each patch.

3 Synths are available, each can be assigned one of the 6 synth models.

The patch editor is located in [2], synth parameters - page 1 when a synth slot is selected.

Synth 1 — ACD — Patch

Synth 2 — FAT — Patch

Synth 3 — WTFM — Patch

microSD card
/Root Directory

Sub Folders

/Patches

/ACD

/FAT

/VAP

/WTFM

/PERC

Patches for each synth model are saved to the microSD card and are available to be loaded per synth.

▍ OVERVIEW OF SYNTHESIZER BASIC PATCH CONTROLS

1. Ensure the project in which to work is open and active and a pattern selected for editing.

2. To edit the synth and change the model for the synth on the selected step, press [2], Synth Parameters. Ensure page 1 of 2 is selected.

3. A synth patch can also be loaded if required by pressing [*Load Patch*] and select from the patch list. Ensure the project in which to work is open and active.

4. For patch management:-

   • To load a patch. Press [*Load Patch*] screen button to open the patch browser to select a patch preset to load.

   • To edit the currently selected patch. Press [*Edit Patch*] to open the patch editor and access the settings for the patch parameters including macro assignments. Patches can also be saved and initialised in the editor.

6 Instruments

6.15 Editing a Synthesizer Patch

A patch can be initialised as a blank starting point and edited to create new sounds. These can then be saved to the microSD card. Each synth model has a number of parameters specific to the engine loaded. The patch editor is accessed via the instrument parameter page.
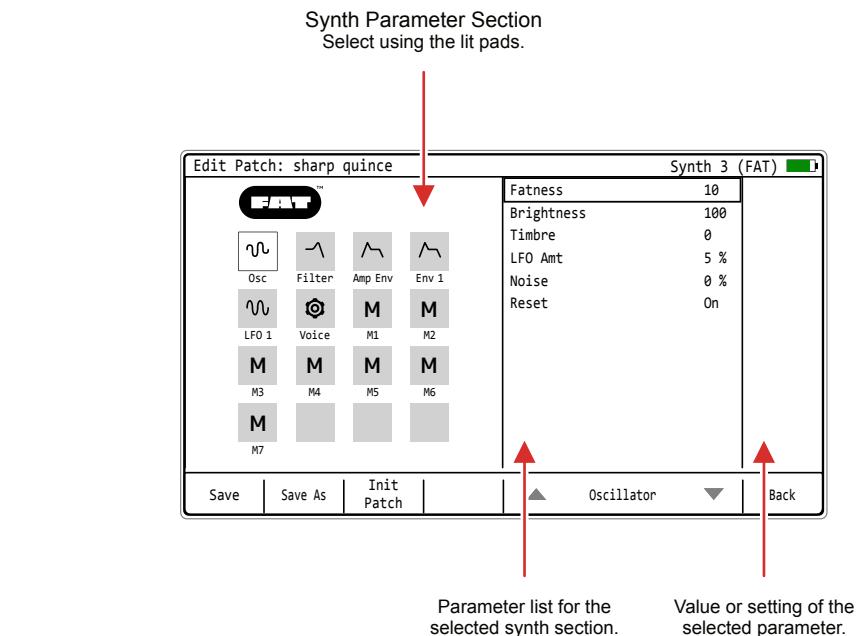
▌ EDITING A PATCH

1. Ensure the project in which to work is open and active and a pattern selected for editing. Ensure a synth step is selected.

2. To edit the synth and change the model for the synth on the selected step, press [2], Synth Parameters. Ensure page 1 of 2 is selected.

3. Select the synth model type, press [*Model*].

4. To edit a patch use the patch editor. Press [*Edit Patch*] to select the patch editor.

   1. Select the synth section to edit, for example the 'Osc' section. Use the D-Pad navigation buttons to highlight the section to select. Parameters for the selected section are presented on the screen.

   2. Navigate to the parameter to edit using the [*Up*] and [*Down*] screen buttons. The value or setting will be separately presented above the screen button 8, right hand column.

   3. Change the value to suit the sound design required. Press [+] or [-] to change the value of the highlighted parameter.

   4. It is recommended to adjust by ear. Press the central D-Pad button to audition the sound.

   5. This may be iterative across multiple parameters to hone in and develop the sound.

5. To store the sound in the patch list on the microSD card, select [*Save*] or [*Save As*] screen buttons. The 'Save As' option will also present the option to change the name.

INITIALISING A PATCH

1. Ensure the project in which to work is open and active and a pattern selected for editing. Ensure a synth step is selected.

2. To edit the synth and change the model for the synth on the selected step, Press [2], Synth Parameters. Ensure page 1 of 2 is selected.

3. Select the synth model type, press [*Model*].

4. To create a blank patch use the patch editor. Press [*Edit Patch*] to select the patch editor.

    1. Press [*Init Patch*] screen button to load the blank patch template.

    2. Press [*Yes*] to confirm loading the initialisation patch or [*No*] to cancel without loading a new patch.

    3. A patch can then be edited to design a sound.

5. To store the sound in the patch list on the microSD card, select [*Save*] or [*Save As*] screen buttons. The 'Save As' option will also present the option to change the name.

Synth Parameter Section
Select using the lit pads.

Parameter list for the selected synth section.

Value or setting of the selected parameter.

6 Instruments

Each synth model, FAT, VAP, WTFM, ACD or PERC has a designated set of parameters whose values define the patch sound.

ACD™

Function	Parameter	Range	Description
Oscillator	Saw Mix	0-100%	Saw wave mix.
Oscillator	Square Mix	0-100%	Square wave mix.
Oscillator	Sub Mix	0-100%	Sub oscillator mix.
Oscillator	Noise Mix	-100% to 100%	Noise generator mix.
Oscillator	PW	0-100%	Pulse width.
Oscillator	Sub Mode	Options	Sub oscillator options for square, pulse and triangle waves -1 or -2 octaves below the main oscillator.
Oscillator	Pitch LFO	-100% to 100%	Amount of the LFO modulation applied to the oscillator pitch.
Oscillator	PW Env	-100% to 100%	Pulse width envelope.
Oscillator	PW LFO	-100% to 100%	Amount of the LFO modulation applied to the oscillator pulse width I.e pulse width modulation.
Filter	Cutoff	20Hz - 20kHz	Filter cutoff frequency.
Filter	Resonance	0-100%	Filter resonance amount.
Filter	Type	Options	Filter types: Low Pass State Variable 12dB; Low Pass State Variable 24dB; Low Pass RD3.
Filter	Env amt	-100% to 100%	Filter envelope amount.
Filter	Note track	-200% to 200%	Amount of modulation applied based on the pitch of the note played.
Filter	LFO amt	-100% to 100%	Low frequency oscillator modulation amount applied to the filter.
Amplifier	Attack	0.00-10 Sec	Amplifier envelope attack time.
Amplifier	Decay	0.00-10 Sec	Amplifier envelope decay time.
Amplifier	Sustain	0.00-100%	Amplifier envelope sustain level.
Amplifier	Release	0.00-10 Sec	Amplifier envelope release time.

ACD™   Continued

Function	Parameter	Range	Description
Modulation	Attack	0.00-10 Sec	Modulation envelope attack time.
Modulation	Decay	0.00-10 Sec	Modulation envelope decay time.
Modulation	Sustain	0.00-100%	Modulation envelope sustain level.
Modulation	Release	0.00-10 Sec	Modulation envelope release time.
Modulation	Frequency	0.1 to 100Hz	Speed of the modulation wave.
Modulation	Waveform	Options	Modulation wave shape: Triangle; Sin; Ramp Up; Ramp Down; Square; Random S&H.
Modulation	Retrigger	Options	Waveform retrigger: Free running will continuously run; One Shot will cycle once when a note is triggered; Note will trigger from the start and continuously run each time a note is triggered.
Voice	Glide Mode	Options	Slide between notes: Always, Overlap, Legato i.e. Envelopes are not triggered, Legato Overlap.
Voice	Glide Time	0.00 - 3 Sec	Time of slide between notes.
Voice	Volume	0-200%	Volume level of oscillator voice.

Macro options are repeated per Modulation slot.

Function	Parameter	Range	Description
Macro	Macro Name	Editable	Select edit to use naming editor.
Macro	Bipolar	On or Off	Selects bipolar on or off for the macro control.
Macro	Parameter 1	Options	Target parameter options from the synth engine to control with the macro.
Macro	Amount 1	-2 to +2	Amount of modulation range applied.
Macro	Parameter 2	Options	Target parameter options from the synth engine to control with the macro.
Macro	Amount 2	-2 to +2	Amount of modulation range applied.
Macro	Parameter 3	Options	Target parameter options from the synth engine to control with the macro.
Macro	Amount 3	-2 to +2	Amount of modulation range applied.
Macro	Parameter 4	Options	Target parameter options from the synth engine to control with the macro.
Macro	Amount 4	-2 to +2	Amount of modulation range applied.
Macro	Parameter 5	Options	Target parameter options from the synth engine to control with the macro.
Macro	Amount 5	-2 to +2	Amount of modulation range applied.

6 Instruments

FAT™

Function	Parameter	Range	Description
Oscillator	Fatness	0-100	Oscillator style.
Oscillator	Brightness	0-100	Oscillator style.
Oscillator	Timbre	0-100	Oscillator style.
Oscillator	LFO Amt	0-100%	Amount of LFO applied.
Oscillator	Noise	0-100%	Amount of noise applied.
Oscillator	Reset	Options	On or Off. On, resets oscillator cycle on each note trigger.
Filter	Cutoff	20Hz - 20kHz	Filter cutoff frequency.
Filter	Resonance	0-100%	Filter resonance amount.
Filter	Type	Options	Low Pass MG 24dB, Low Pass OB 24dB, Low Pass OB 12dB classic filter emulations.
Filter	Env Amt	-100% to 100%	Filter envelope amount.
Filter	LFO Amt	-100% to 100%	Low frequency oscillator modulation amount applied to the filter.
Amplifier Env	Attack	0.00-10 Sec	Amplifier envelope attack time.
Amplifier Env	Decay	0.00-10 Sec	Amplifier envelope decay time.
Amplifier Env	Sustain	0.00-100%	Amplifier envelope sustain level.
Amplifier Env	Release	0.00-10 Sec	Amplifier envelope release time.
Filter Env	Attack	0.00-10 Sec	Filter envelope attack time.
Filter Env	Decay	0.00-10 Sec	Filter envelope decay time.
Filter Env	Sustain	0.00-100%	Filter envelope sustain level.
Filter Env	Release	0.00-10 Sec	Filter envelope release time.
LFO	Frequency	0.1 to 100Hz	Speed of the modulation wave.
LFO	Waveform	Options	Modulation waveshape: Triangle; Sin; Ramp Up; Ramp Down; Square; Random S&H.
LFO	Retrigger	Options	Waveform retrigger: Free running will continuously run; One Shot will cycle once when a note is triggered; Note will trigger from the start and continuously run each time a note is triggered.

FAT™   Continued

Function	Parameter	Range	Description
Voice	Glide Mode	Options	Slide between notes: Always, Overlap, Legato i.e. Envelopes are not triggered, Legato Overlap.
Voice	Glide Time	0.00 - 3 Sec	Time of slide between notes.
Voice	Volume	0-200%	Volume level of oscillator voice.

Macro options are repeated per Modulation slot.

Function	Parameter	Range	Description
Macro	Macro Name	Editable	Select edit to use naming editor.
Macro	Bipolar	On or Off	Selects bipolar on or off for the macro control.
Macro	Parameter 1	Options	Target parameter options from the synth engine to control with the macro.
Macro	Amount 1	-2 to +2	Amount of modulation range applied.
Macro	Parameter 2	Options	Target parameter options from the synth engine to control with the macro.
Macro	Amount 2	-2 to +2	Amount of modulation range applied.
Macro	Parameter 3	Options	Target parameter options from the synth engine to control with the macro.
Macro	Amount 3	-2 to +2	Amount of modulation range applied.
Macro	Parameter 4	Options	Target parameter options from the synth engine to control with the macro.
Macro	Amount 4	-2 to +2	Amount of modulation range applied.
Macro	Parameter 5	Options	Target parameter options from the synth engine to control with the macro.
Macro	Amount 5	-2 to +2	Amount of modulation range applied.

6 Instruments

VAP ™

Function	Parameter	Range	Description
Oscillators	Mix	-100% to 100%	Oscillator mix for VAP.
Oscillators	Shape 1	0-100	Oscillator 1 shape. Setting morphs between triangle, saw and square.
Oscillators	Shape 2	0-100	Oscillator 2 shape. Setting morphs between triangle, saw and square.
Oscillators	PW 1	-50 to 50	Oscillator 1. Pulse Width.
Oscillators	PW 2	-50 to 50	Oscillator 2. Pulse Width.
Oscillators	Tune 1	-36 to 36 st	Oscillator 1. Tuning in semitones.
Oscillators	Tune 2	-36 to 36 st	Oscillator 2. Tuning in semitones.
Oscillators	Finetune	-100 to 100	Finetuning in cents.
Oscillators	Detune	0-100 c	Detuning in cents.
Oscillators	Noise	0-100%	Noise amount.
Oscillators	Sync	Options	When set to On, Oscillator 2 resets on each cycle of Oscillator 1 (Osc 1 controls pitch).
Oscillators	Reset 1	Options	Oscillator 1 wave reset on note on, on or off.
Oscillators	Reset 2	Options	Oscillator 2 wave reset on note on, on or off.
Filter	Cutoff	20Hz - 20kHz	Filter cutoff frequency.
Filter	Resonance	0-100%	Resonance amount.
Filter	Type	Options	Low Pass MG 24dB, Low Pass OB 24dB, Low Pass OB 12dB, Low Pass SVF 24dB, Low Pass SVF 12dB, Hi Pass OB 24dB, Hi Pass OB 12dB, Hi Pass SVF 24dB, Hi Pass SVF 12dB, Band Pass OB 24dB, Band Pass OB 12dB, Band Pass SVF 24dB, Band Pass SVF 12dB, Notch SVF 24dB, Notch SVF 12dB.
Filter	Env Amt	-100% to 100%	Filter envelope amount.
Filter	Note track	-200% to 200%	Amount of modulation applied based on the pitch of the note played.

UAP™

Function	Parameter	Range	Description
Amplifier Env	Attack	0.00-10 Sec	Amplifier envelope attack time.
Amplifier Env	Decay	0.00-10 Sec	Amplifier envelope decay time.
Amplifier Env	Sustain	0.00-100%	Amplifier envelope sustain level.
Amplifier Env	Release	0.00-10 Sec	Amplifier envelope release time.
Envelope 1	Attack	0.00-10 Sec	Amplifier envelope attack time.
Envelope 1	Decay	0.00-10 Sec	Amplifier envelope decay time.
Envelope 1	Sustain	0.00-100%	Amplifier envelope sustain level.
Envelope 1	Release	0.00-10 Sec	Amplifier envelope release time.
Envelope 2	Attack	0.00-10 Sec	Amplifier envelope attack time.
Envelope 2	Decay	0.00-10 Sec	Amplifier envelope decay time.
Envelope 2	Sustain	0.00-100%	Amplifier envelope sustain level.
Envelope 2	Release	0.00-10 Sec	Amplifier envelope release time.
LFO 1	Sync	Options	When set to On, Oscillator 2 resets on each cycle of Oscillator 1 (Osc 1 controls pitch).
LFO 1	Ratio	0-100 Hz	
LFO 1	Waveform	Options	Modulation wave shape: Triangle; Sin; Ramp Up; Ramp Down; Square; Random S&H.
LFO 1	Retrigger	Options	Waveform retrigger: Free running will continuously run; One Shot will cycle once when a note is triggered; Note will trigger from the start and continuously run each time a note is triggered.
LFO 2	Sync	Options	When set to On, Oscillator 2 resets on each cycle of Oscillator 1 (Osc 1 controls pitch).
LFO 2	Ratio	0-100 Hz	
LFO 2	Waveform	Options	Modulation wave shape: Triangle; Sin; Ramp Up; Ramp Down; Square; Random S&H.
LFO 2	Retrigger	Options	Waveform retrigger: Free running will continuously run; One Shot will cycle once when a note is triggered; Note will trigger from the start and continuously run each time a note is triggered.

NOTES

6 Instruments

VAP™ ───────────────────────── Continued

Function	Parameter	Range	Description
Modulation	Src 1	Options	Modulation source options: Amp Env; Env1 (fltr); Env2; LFO1; LFO2.
Modulation	Dest 1	Options	Modulation destination options: Osc1 PWM; Osc2 PWM; Osc Mix; Filter Cutoff; Amp Env Sustain; Filter Env Sustain; Wave Env SustainVolume; Osc1 Pitch; Osc2 Pitch; Filter Env Decay; Noise Volume; Osc1 Shape; Osc2 Shape.
Modulation	Amt 1	-100% to 100%	Modulation amount.
Modulation	Src 2	Options	Modulation source options: Amp Env; Env1 (fltr); Env2; LFO1; LFO2.
Modulation	Dest 2	Options	Modulation destination options: Osc1 PWM; Osc2 PWM; Osc Mix; Filter Cutoff; Amp Env Sustain; Filter Env Sustain; Wave Env SustainVolume; Osc1 Pitch; Osc2 Pitch; Filter Env Decay; Noise Volume; Osc1 Shape; Osc2 Shape
Modulation	Amt 2	-100% to 100%	Modulation amount.
Modulation	Src 3	Options	Modulation source options: Amp Env; Env1 (fltr); Env2; LFO1; LFO2.
Modulation	Dest 3	Options	Modulation destination options: Osc1 PWM; Osc2 PWM; Osc Mix; Filter Cutoff; Amp Env Sustain; Filter Env Sustain; Wave Env SustainVolume; Osc1 Pitch; Osc2 Pitch; Filter Env Decay; Noise Volume; Osc1 Shape; Osc2 Shape.
Modulation	Amt 3	-100% to 100%	Modulation amount.
Modulation	Src 4	Options	Modulation source options: Amp Env; Env1 (fltr); Env2; LFO1; LFO2
Modulation	Dest 4	Options	Modulation destination options: Osc1 PWM; Osc2 PWM; Osc Mix; Filter Cutoff; Amp Env Sustain; Filter Env Sustain; Wave Env SustainVolume; Osc1 Pitch; Osc2 Pitch; Filter Env Decay; Noise Volume; Osc1 Shape; Osc2 Shape.
Modulation	Amt 4	-100% to 100%	Modulation amount.
Modulation	Src 5	Options	Modulation source options: Amp Env; Env1 (fltr); Env2; LFO1; LFO2.
Modulation	Dest 5	Options	Modulation destination options: Osc1 PWM; Osc2 PWM; Osc Mix; Filter Cutoff; Amp Env Sustain; Filter Env Sustain; Wave Env SustainVolume; Osc1 Pitch; Osc2 Pitch; Filter Env Decay; Noise Volume; Osc1 Shape; Osc2 Shape.
Modulation	Amt 5	-100% to 100%	Modulation amount.

VAP™ ——————————————————————————————— Continued

Function	Parameter	Range	Description
Modulation	Src 6	Options	Modulation source options: Amp Env; Env1 (fltr); Env2; LFO1; LFO2.
Modulation	Dest 6	Options	Modulation destination options: Osc1 PWM; Osc2 PWM; Osc Mix; Filter Cutoff; Amp Env Sustain; Filter Env Sustain; Wave Env SustainVolume; Osc1 Pitch; Osc2 Pitch; Filter Env Decay; Noise Volume; Osc1 Shape; Osc2 Shape.
Modulation	Amt 6	-100% to 100%	Modulation amount.
Voice	Glide Mode	Options	Slide between notes: Always, Overlap, Legato i.e. Envelopes are not triggered, Legato Overlap.
Voice	Glide Time	0.00 - 3 Sec	Time of slide between notes.
Voice	Volume	0-200%	Volume level of oscillator voice.

Macro options are repeated per Modulation slot.

Function	Parameter	Range	Description
Macro	Macro Name	Editable	Select edit to use naming editor.
Macro	Bipolar	On or Off	Selects bipolar on or off for the macro control
Macro	Parameter 1	Options	Target parameter options from the synth engine to control with the macro.
Macro	Amount 1	-2 to +2	Amount of modulation range applied.
Macro	Parameter 2	Options	Target parameter options from the synth engine to control with the macro.
Macro	Amount 2	-2 to +2	Amount of modulation range applied.
Macro	Parameter 3	Options	Target parameter options from the synth engine to control with the macro.
Macro	Amount 3	-2 to +2	Amount of modulation range applied.
Macro	Parameter 4	Options	Target parameter options from the synth engine to control with the macro.
Macro	Amount 4	-2 to +2	Amount of modulation range applied.
Macro	Parameter 5	Options	Target parameter options from the synth engine to control with the macro.
Macro	Amount 5	-2 to +2	Amount of modulation range applied.

6 Instruments

WTFM

Function	Parameter	Range	Description
Oscillator	FM	0% to 1000%	Frequency modulation.
Oscillator	Ratio 1	0.25 - 12	Oscillator 1. FM ratio.
Oscillator	Ratio 2	0.25 - 12	Oscillator 2. FM ratio.
Oscillator	Shape 1	0-100	Position in the wavetable of osc 1 shapes.
Oscillator	Shape 2	0-100	Position in the wavetable of osc 2 shapes.
Oscillator	Character 1	Options	Row of wavetable shapes: Smoother; Sharper; Wilder; Add 1; Add 2; Add 3; Add 5; Add 7; Add 11.
Oscillator	Character 2	Options	Row of wavetable shapes: Smoother; Sharper; Wilder; Add 1; Add 2; Add 3; Add 5; Add 7; Add 11.
Oscillator	Feedback 1	0-100%	Operator 1 feedback.
Oscillator	Feedback 2	0-100%	Operator 2 feedback.
Oscillator	Feedback2>1	0-100%	Operator 2 into 1 feedback.
Oscillator	Finetune 1	-100 to 100 c	Finetuning in cents of operator 1.
Oscillator	Finetune 2	-100 to 100 c	Finetuning in cents of operator 2.
Oscillator	Reset 1	Options	Oscillator 1 wave reset on note on, on or off.
Oscillator	Reset 2	Options	Oscillator 2 wave reset on note on, on or off.
Oscillator	Oversampling	Options	Pre-filter x2 oversampling on or off.
Filter	Cutoff	20Hz - 20kHz	Filter cutoff frequency.
Filter	Resonance	0-100%	Resonance.
Filter	Type	Options	Low Pass MG 24dB, Low Pass OB 24dB, Low Pass OB 12dB, Low Pass SVF 24dB, Low Pass SVF 12dB, Hi Pass OB 24dB, Hi Pass OB 12dB, Hi Pass SVF 24dB, Hi Pass SVF 12dB, Band Pass OB 24dB, Band Pass OB 12dB, Band Pass SVF 24dB, Band Pass SVF 12dB, Notch SVF 24dB, Notch SVF 12dB.
Filter	Env Amt	-100% to 100%	Filter envelope amount.
Filter	Note Track	-200% to 200%	Amount of modulation applied based on the pitch of the note played.

WTFM™ ──────────────────────────────────── Continued

Function	Parameter	Range	Description
Amplifier Env	Attack	0.00-10 Sec	Amplifier envelope attack time.
Amplifier Env	Decay	0.00-10 Sec	Amplifier envelope decay time.
Amplifier Env	Sustain	0.00-100%	Amplifier envelope sustain level.
Amplifier Env	Release	0.00-10 Sec	Amplifier envelope release time.
Envelope 1	Attack	0.00-10 Sec	Amplifier envelope attack time.
Envelope 1	Decay	0.00-10 Sec	Amplifier envelope decay time.
Envelope 1	Sustain	0.00-100%	Amplifier envelope sustain level.
Envelope 1	Release	0.00-10 Sec	Amplifier envelope release time.
Envelope 2	Attack	0.00-10 Sec	Amplifier envelope attack time.
Envelope 2	Decay	0.00-10 Sec	Amplifier envelope decay time.
Envelope 2	Sustain	0.00-100%	Amplifier envelope sustain level.
Envelope 2	Release	0.00-10 Sec	Amplifier envelope release time.
LFO 1	Sync	Options	When set to On, Oscillator 2 resets on each cycle of Oscillator 1 (Osc 1 controls pitch).
LFO 1	Ratio	0-100 Hz	
LFO 1	Waveform	Options	Modulation wave shape: Triangle; Sin; Ramp Up; Ramp Down; Square; Random S&H.
LFO 1	Retrigger	Options	Waveform retrigger: Free running will continuously run; One Shot will cycle once when a note is triggered; Note will trigger from the start and continuously run each time a note is triggered.
LFO 2	Sync	Options	When set to On, Oscillator 2 resets on each cycle of Oscillator 1 (Osc 1 controls pitch).
LFO 2	Ratio	0-100 Hz	
LFO 2	Waveform	Options	Modulation wave shape: Triangle; Sin; Ramp Up; Ramp Down; Square; Random S&H.
LFO 2	Retrigger	Options	Waveform retrigger: Free running will continuously run; One Shot will cycle once when a note is triggered; Note will trigger from the start and continuously run each time a note is triggered.

WTFM ———————————————————————— Continued

Function	Parameter	Range	Description
Modulation	Src 1	Options	Modulation source options: Amp Env; Env1 (fltr); Env2; LFO1; LFO2.
Modulation	Dest 1	Options	Modulation destination options: Osc1 Pitch; Osc2 Pitch; Op1 Shape; Op2 Shape; Op1 Feedback; Op2 Feedback; Op21 Feedback; FM; Filter Cutoff; Amp Env Sustain; Filter Env Sustain; Wave Env Sustain; Volume; Filter Env Decay.
Modulation	Amt 1	-100% to 100%	Modulation amount.
Modulation	Src 2	Options	Modulation source options: Amp Env; Env1 (fltr); Env2; LFO1; LFO2.
Modulation	Dest 2	Options	Modulation destination options: Osc1 Pitch; Osc2 Pitch; Op1 Shape; Op2 Shape; Op1 Feedback; Op2 Feedback; Op21 Feedback; FM; Filter Cutoff; Amp Env Sustain; Filter Env Sustain; Wave Env Sustain; Volume; Filter Env Decay.
Modulation	Amt 2	-100% to 100%	Modulation amount.
Modulation	Src 3	Options	Modulation source options: Amp Env; Env1 (fltr); Env2; LFO1; LFO2
Modulation	Dest 3	Options	Modulation destination options: Osc1 Pitch; Osc2 Pitch; Op1 Shape; Op2 Shape; Op1 Feedback; Op2 Feedback; Op21 Feedback; FM; Filter Cutoff; Amp Env Sustain; Filter Env Sustain; Wave Env Sustain; Volume; Filter Env Decay.
Modulation	Amt 3	-100% to 100%	Modulation amount.
Modulation	Src 4	Options	Modulation source options: Amp Env; Env1 (fltr); Env2; LFO1; LFO2
Modulation	Dest 4	Options	Modulation destination options: Osc1 Pitch; Osc2 Pitch; Op1 Shape; Op2 Shape; Op1 Feedback; Op2 Feedback; Op21 Feedback; FM; Filter Cutoff; Amp Env Sustain; Filter Env Sustain; Wave Env Sustain; Volume; Filter Env Decay.
Modulation	Amt 4	-100% to 100%	Modulation amount.
Modulation	Src 5	Options	Modulation source options: Amp Env; Env1 (fltr); Env2; LFO1; LFO2.
Modulation	Dest 5	Options	Modulation destination options: Osc1 Pitch; Osc2 Pitch; Op1 Shape; Op2 Shape; Op1 Feedback; Op2 Feedback; Op21 Feedback; FM; Filter Cutoff; Amp Env Sustain; Filter Env Sustain; Wave Env Sustain; Volume; Filter Env Decay.
Modulation	Amt 5	-100% to 100%	Modulation amount.

WTFM™ ———————————————————————————————— Continued

Function	Parameter	Range	Description
Modulation	Src 6	Options	Modulation source options: Amp Env; Env1 (fltr); Env2; LFO1; LFO2.
Modulation	Dest 6	Options	Modulation destination options: Osc1 Pitch; Osc2 Pitch; Op1 Shape; Op2 Shape; Op1 Feedback; Op2 Feedback; Op21 Feedback; FM; Filter Cutoff; Amp Env Sustain; Filter Env Sustain; Wave Env Sustain; Volume; Filter Env Decay.
Modulation	Amt 6	-100% to 100%	Modulation amount.
Voice	Glide Mode	Options	Slide between notes: Always, Overlap, Legato i.e. Envelopes are not triggered, Legato Overlap.
Voice	Glide Time	0.00 - 3 Sec	Time of slide between notes.
Voice	Volume	0-200%	Volume level of oscillator voice.

Macro options are repeated per Modulation slot.

Function	Parameter	Range	Description
Macro	Macro Name	Editable	Select edit to use naming editor.
Macro	Bipolar	On or Off	Selects bipolar on or off for the macro control.
Macro	Parameter 1	Options	Target parameter options from the synth engine to control with the macro.
Macro	Amount 1	-2 to +2	Amount of modulation range applied.
Macro	Parameter 2	Options	Target parameter options from the synth engine to control with the macro.
Macro	Amount 2	-2 to +2	Amount of modulation range applied.
Macro	Parameter 3	Options	Target parameter options from the synth engine to control with the macro.
Macro	Amount 3	-2 to +2	Amount of modulation range applied.
Macro	Parameter 4	Options	Target parameter options from the synth engine to control with the macro.
Macro	Amount 4	-2 to +2	Amount of modulation range applied.
Macro	Parameter 5	Options	Target parameter options from the synth engine to control with the macro.
Macro	Amount 5	-2 to +2	Amount of modulation range applied.

6 Instruments

PERC™

The <u>kick</u> percussion element is triggered with note C4 in a pattern.

Function	Parameter	Range	Description
Kick	Model	Options	Classic8, Synced8, Classic9.
Kick	Pitch	C0-B8	Pitch of kick based on note values.
Kick	Body Wave	Options	Sat-Sin 0%-100%, Triangle 0%-100%, Square 0%-100%, Square FM 0%-100%, FM1 0%-100%, FM3 0%-100%, FM7 0%-100%, FM 11 0%-100%, tzFM1 0%-100%, txFM3 0%-100%, tzFM7 0%-100%, txFM11 0%-100%, Glitch 1 0%-100%, Glitch 2 0%-100%, Glitch 3 0%-100%, Glitch 4 0%-100%.
Kick	Body Attack	0-10 ms	Attack stage time of kick transient.
Kick	Body Decay	0-10 Sec	Decay stage time of kick transient.
Kick	Mod Decay	0-10 Sec	Modulation decay time.
Kick	Mod Amount	-100 to +100	Modulation amount applied.
Kick	Transient Timbre	-100 to +100	Timbre sound characteristic of transient.
Kick	Transient Level	0-100%	Level setting of transient.

The <u>toms</u> percussion elements are triggered with notes C0-B3, C5+ in a pattern.

Function	Parameter	Range	Description
Toms	Model	Options	Classic, Classic+, Resonant.
Toms	Body Wave	Options	Sat-Sin 0%-100%, Triangle 0%-100%, Square 0%-100%, Square FM 0%-100%, FM1 0%-100%, FM3 0%-100%, FM7 0%-100%, FM 11 0%-100%, tzFM1 0%-100%, txFM3 0%-100%, tzFM7 0%-100%, txFM11 0%-100%, Glitch 1 0%-100%, Glitch 2 0%-100%, Glitch 3 0%-100%, Glitch 4 0%-100%.
Toms	Body Attack	0-10 ms	Attack stage time of kick transient.
Toms	Body Decay	0-10 Sec	Decay stage time of kick transient.
Toms	Mod Decay	0-10 Sec	Modulation decay time.
Toms	Pitch Mod	-1000 to 1000	Pitch modulation.
Toms	Wave Mod	-100 to +100	Modulation amount applied.
Toms	Transient Timbre	0-200	Timbre sound characteristic of transient.
Toms	Transient Level	0-100%	Level setting of transient.

PERC ™

The snare percussion element is triggered with note D4 in a pattern.

Function	Parameter	Range	Description
Snare	Model	Options	Classic8, Classic9, Classic9+, Modern, Modern+.
Snare	Pitch	C0-B8	Pitch of snare based on note values.
Snare	Tone	0-100%	Snare tone.
Snare	Body Wave	Options	Sat-Sin 0%-100%, Triangle 0%-100%, Square 0%-100%, Square FM 0%-100%, FM1 0%-100%, FM3 0%-100%, FM7 0%-100%, FM 11 0%-100%, tzFM1 0%-100%, txFM3 0%-100%, tzFM7 0%-100%, txFM11 0%-100%, Glitch 1 0%-100%, Glitch 2 0%-100%, Glitch 3 0%-100%, Glitch 4 0%-100%.
Snare	Body Decay	0-10 Sec	Decay stage time of snare transient.
Snare	Snap Attack	0-10 ms	Attack stage time of snare snap.
Snare	Snap Decay	0-10 Sec	Snap decay time.
Snare	Snap Timbre	0-100%	Timbre sound characteristic of snap stage.
Snare	Body/Snap Mix	-100 to +100	Balance of snap and body tones.

The hi hat percussion elements are triggered with notes E4-G4 in a pattern.

Function	Parameter	Range	Description
Hi Hat	Model	Options	Classic, FM.
Hi Hat	Timbre	0-24	Timbre sound characteristic.
Hi Hat	Closed Decay	0-10 Sec	Decay stage time of open hi hat.
Hi Hat	Open Decay	0-10 Sec	Decay stage time of closed hi hat.
Hi Hat	Decay Shape	0-100%	Shape of decay curve.
Hi Hat	HPF Cutoff	10Hz - 20kHz	High pass filter cutoff frequency.
Hi Hat	LPF Cutoff	10Hz - 20kHz	Low pass filter cutoff frequency.
Hi Hat	Tone Pitch	100 - 880Hz	Pitch in Hz of the hi hat tone stage.
Hi Hat	Tone/Noise Mix	-100 to +100	Balance of hi hat noise and tone.

6 Instruments

PERC™ ───────────────────────────────────── Continued

The <u>Cymbal</u> percussion element is triggered with note A4 in a pattern.

Function	Parameter	Range	Description
Cymbal	Model	Options	Classic, FM.
Cymbal	Timbre	0-24	Timbre sound characteristic.
Cymbal	Body Filter	500Hz-10kHz	Frequency of body stage.
Cymbal	Impact Filter	500Hz-10kHz	Frequency of impact stage.
Cymbal	Body Decay	0-10 Sec	Decay time of body stage.
Cymbal	Impact Decay	0-10 Sec	Decay time of impact stage.
Cymbal	Tone Pitch	80Hz-880Hz	Tone in Hz.
Cymbal	Tone/Noise Mix	-100 to +100	Balance of cymbal noise and tone.
Cymbal	Impact/Body Mix	-100 to +100	Balance of cymbal impact and body stage.

The other <u>Percussion</u> elements are triggered with notes B4 in a pattern.

Function	Parameter	Range	Description
Percussion	Model	Options	Clap, Clap+, Maracas, Shaker, Cowbell.
Percussion	Variation	0-100	Variation of the percussion sound.
Percussion	Timbre	0-100	Timbre tone character.
Percussion	Decay	0-2 Sec	Decay stage time of the percussion element.

PERC™ ———————————————————————— Continued

Function	Parameter	Range	Description
Mixer	Kick Level	0-200	Volume level.
Mixer	Kick Pan	L100-R100	Stereo panning left to right.
Mixer	Kick Delay	0-100	Delay send.
Mixer	Kick Reverb	0-100	Reverb send.
Mixer	Kick Level	Options	Main, Post Overdrive, Post EQ.
Mixer	Tom Level	0-200	Volume level.
Mixer	Tom Pan	L100-R100	Stereo panning left to right.
Mixer	Tom Delay	0-100	Delay send.
Mixer	Tom Reverb	0-100	Reverb send.
Mixer	Tom Level	Options	Main, Post Overdrive, Post EQ.
Mixer	Snare Level	0-200	Volume level.
Mixer	Snare Pan	L100-R100	Stereo panning left to right.
Mixer	Snare Delay	0-100	Delay send.
Mixer	Snare Reverb	0-100	Reverb send.
Mixer	Snare Level	Options	Main, Post Overdrive, Post EQ.
Mixer	Hi Hat Level	0-200	Volume level.
Mixer	Hi Hat Pan	L100-R100	Stereo panning left to right.
Mixer	Hi Hat Delay	0-100	Delay send.
Mixer	Hi Hat Reverb	0-100	Reverb send.
Mixer	Hi Hat Level	Options	Main, Post Overdrive, Post EQ.

| Function	Parameter	Range	Description
FX	Waveshaper Type	Options	Saturate, Overdrive, Overdrive+, Bitcrush, Bitcrush+.
FX	Waveshaper Level	0-100	Volume level of waveshaper.
FX	EQ Low 80Hz	-18dB to +18dB	Boost or attenuate in dB at 80Hz.
FX	EQ Mid 2.5kHz	-18dB to +18dB	Boost or attenuate in dB at 2.5kHz.
FX	EQ High 12kHz	-18dB to +18dB	Boost or attenuate in dB at 12kHz.

6 Instruments
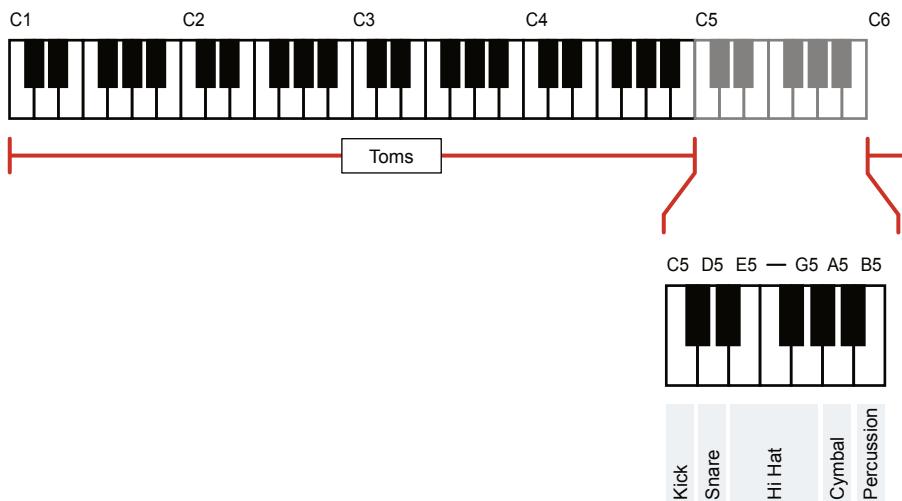
PERC™ ——————————————————— Continued

Macro options are repeated per Modulation slot.

Function	Parameter	Range	Description
Macro	Macro Name	Editable	Select edit to use naming editor.
Macro	Bipolar	On or Off	Selects bipolar on or off for the macro control.
Macro	Parameter 1	Options	Target parameter options from the synth engine to control with the macro.
Macro	Amount 1	-2 to +2	Amount of modulation range applied.
Macro	Parameter 2	Options	Target parameter options from the synth engine to control with the macro.
Macro	Amount 2	-2 to +2	Amount of modulation range applied.
Macro	Parameter 3	Options	Target parameter options from the synth engine to control with the macro.
Macro	Amount 3	-2 to +2	Amount of modulation range applied.
Macro	Parameter 4	Options	Target parameter options from the synth engine to control with the macro.
Macro	Amount 4	-2 to +2	Amount of modulation range applied.
Macro	Parameter 5	Options	Target parameter options from the synth engine to control with the macro.
Macro	Amount 5	-2 to +2	Amount of modulation range applied.

Summary of note assignments

6.16 PERC Synthesizer Notes

PERC is a unique instrument as part of the synth family for Tracker Mini. While this is described as a percussion instrument it is a collection of instruments contained in one function and serves to take inspiration from a series of classic drum instruments. Some additional notes are provided.

Kick

Classic8 vs Synced8 model - Synched8 resets the oscillator for each note, resulting in a predictable transient, but can click when notes overlap. Classic, as in the TR-808, does not reset the oscillator, so the transient can be slightly different each time (especially for short Attack times).

Body Wave - sets the wavetable used and baseline position in the wavetable. All wavetables start from a sine wave (at 0%) but end differently (at 100%).

Mod Amount - the amount of modulation by the Mod envelope. In the Classic9 model - pitch is modulated, in the Classic8/Synced8 wavetable position is modulated.

Transient Timbre - the transient is an impulse (for positive values of the parameter) or a short burst of noise (for negative values) that is then passed to a LP filter. The absolute value of the parameter sets the cutoff of the filter (0 -> 30 Hz, -1/1 -> 4 kHz). Negative values make the transient to be different each time (the noise burst is generated for each trigger).

Tom

Models - Classic is a single oscillator, inspired by the TR-808, and Classic+ adds a noise transient. Resonant is based on 3 detuned oscillators like the TR-909, with the same noise transient.

Body Wave - same as in the kick.

Pitch Mod / Wave Mod - see Mod Amount in the kick, except that both can be set independently of the model.

Transient Timbre - sets the cutoff of a LPF, that filters white noise (constant noise, not a burst as in the kick).

Snare

The models differ in how filters and oscillators are configured (including pitch modulation). It's best to just listen to the differences. The names are also a hint :).

Tone sets the balance between oscillators of the body.

Body Wave - same as Kick/Tom (wave position is not modulated).

Snap Timbre - cutoff frequencies of snap part filters.

Hihat and Cymbal

Model - Classic is based on 6 square oscillators, based on TR-808, FM is an 2-op FM oscillator. Both add white noise.

Timbre - sets either relative tuning of the square oscillators or a preset configuration of the FM algorithm. A value of 12 is a good starting point and is the best match of TR-808.

Perc

Velocity values 0-100 affect volume and values 100-127 have an extra accent effect, depending on the part (e.g. shortening envelope, changing mix of components).

Velocity macro should not be used, it will work the same regardless of the note triggered.

As with all synths and PERC is no different, it is recommended to concentrate on sound design through the act and art of tweaking and adjusting parameters and listening to the sound as it evolves. The underlying parameters and how they work is useful, but the true spirit of the sound design process would always start by ear.
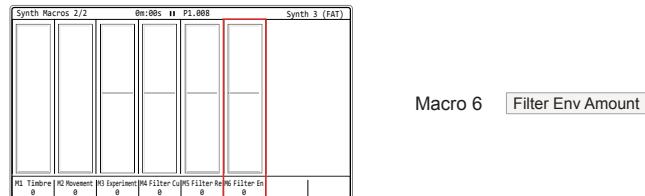
6.17 Synthesizer Macros

Each patch has a number of parameters that are assigned to macros. A macro therefore will control this group of parameters collectively when adjusting a single macro control. Macros are assigned and range mapped as part of the patch accessible from the instrument parameters.

Structure of a macro
Example: Synth parameter page 2 of 2, macro 6 mapping for ACD.

Macro 6   Filter Env Amount

Macro Name	**'Filter env amount'**	*Name which appears on the display*
Bipolar	**On**	*Knob range On -63 to +64, Off 0-127*
Parameter 1	**Env amt**	*Parameter that the knob will affect*
Amount 1	**0.00**	*Starting value multiplier*
Parameter 2	Unassigned	*Parameter that the knob will affect*
Amount 2	0.00	*Starting value multiplier*
Parameter 3	Unassigned	*Parameter that the knob will affect*
Amount 3	0.00	*Starting value multiplier*
Parameter 4	Unassigned	*Parameter that the knob will affect*
Amount 4	0.00	*Starting value multiplier*
Parameter 5	Unassigned	*Parameter that the knob will affect*
Amount 5	0.00	*Starting value multiplier*

A macro is controlled by one parameter function but can change up to 5 parameters. These are mapped in the patch editor. The starting point is the value as assigned in the patch which also contributes to determining the range of the value change. The control knob for each macro operates over a defined range of 0-127 or -63 to 64 if a bipolar range option is set. The amount acts as a 'multiplier' to the patch value.

7

FX Steps

It is essential to get a good understanding of all four elements of a step. This will help you get the most out of step sequencing. This section provides a deeper dive into the two FX slots. FX slots have access to a library of 37 effects applied somewhat differently from the standard expectation. These can be applied to both audio and MIDI applications to modulate and control traditional effects such as delay. These can be applied step by step, giving intimate control over each step and, when built together with other steps, offer a very creative option in Tracker Mini. These are very powerful and, without a doubt, are worth the time and investment to learn about the range and application of the effects available. It is essential to recognize that step effects are different from the general instrument and master effects provided. The usual effect convention is to operate inline or as a send configuration for the audio pathway. The

Tracker Mini FX are polarised to the step itself or to the pattern in which it is operating. This offers an extensive range of creative options at a per-step level. Some step FX are even applied to all tracks, for example, tempo. The FX browser provides a quick reference for each effect. These descriptions are found on the Tracker Mini FX selection page and can be selected for each component. The help guide is useful when working in the box, offering a basic reference. This section aims to take an FX focussed view and gives a more detailed and in-depth reference along with some practical and simple examples of applying FX to a pattern.

7 FX Steps

7.1 Step FX Descriptions

Step FX are a collection of 37 effect types that can be applied into one of two step locations using the dedicated step FX buttons. Creative step patterns can be generated by applying and also combining. FX do not always need a note and instrument in the same step event. For example, filter cutoff can adjust the cutoff value, applied to previous triggered note. The FX list also provides some brief information on each effect.

```
        FX1          FX2

Pattern 1                      Fx
1  C5 40 ---- P-25  C5 40 ---- H-25   Sets the Volume of an    - - None
2  C5 40 ---- P-25  C5 02 ---- P-20   Instrument. For MIDI     ! - Off
3  -- --- ---- ----  -- --- ---- ----  instruments this sends  V - Volume
4  -- --- ---- ----  -- --- ---- ----  the NOTE ON velocity    P - Panning
5  -- --- ---- ----  -- --- ---- ----  parameter               M - Micro Tune
6  -- --- ---- ----  -- --- ---- ----                          G - Glide
7  -- --- ---- ----  -- --- ---- ----                          T - Tempo
8  -- --- ---- ----  -- --- ---- ----  From 0% - 100%          I - Swing
9  -- --- ---- ----  -- --- ---- ----                          m - Micro Move
10 -- --- ---- ----  -- --- ---- ----                          q - Gate Length
11 -- --- ---- ----  -- --- ---- ----                          C - Chance
12 -- --- ---- ----  -- --- ---- ----                          R - Roll
13 -- --- ---- ----  -- --- ---- ----                          A - Arp
14 -- --- ---- ----  -- --- ---- ----                          n - Random Note
15 -- --- ---- ----  -- --- ---- ----                          i - Random Instrument
Render              Duplicate  Expand
Selection   Invert  Pattern    Pattern          ▶▶ Description
```

▌ ACCESSING THE EFFECT DESCRIPTIONS

1. Press [1] to select the 'Pattern' page. Also accessible from the [Menu].

2. Select a blank or existing step event.

3. Hold [FX1] or [FX2] + press (Up) or (Down) to highlight an effect. The [+] / [-] buttons can also be used to navigate in the list.

4. While still Holding [FX1] or [FX2] and the FX browser window open, press screen button 7 or 8. This toggles the description window open or closed and shows the description for the highlighted effect.

5. If in [REC] mode the FX will also be selected for the step when browsing within this menu list. Rec mode will show the step as red.

Use the [+] & [-] buttons in recording mode when editing FX parameter values. When adjusting the value for an FX slot with an instrument loaded to the step, the audio applied through the effect will be automatically previewed.

7.2 Step FX Reference

The effects are contained into a library of 37 FX types which can be selected into the step. The details for each effect varies depending on its function. Also the interaction with other steps or the note or instrument may be relevant for some effects. The descriptions are built into the FX menu, but these are limited in the descriptions. A deeper understanding of the FX is beneficial and brings more clarity to what at first glance can be confusing.

One effect can be loaded into a step FX slot. Each step has 2 FX slots so a total of two FX are possible. While this may seem limiting it is worth remembering that some traditional effects also exist in the audio signal chain. For example delay. The FX should be considered more like mini applications that not only affect the audio but also affect the behaviour of the step and sometimes the pattern itself.

This section and following parts will hopefully demystify their use, especially within pragmatic use case examples.

Affects audio sound.	Affects step behaviour.	Affects structure / timing
V Volume	- None	T Tempo
P Panning	! Off	I Swing
M Micro Tuning	C Chance	m Micro Timing
n Random Note	R Roll	G Glide
i Random Instrument	f Random FX	q Gate Length
v Random Volume	S Slice Playback of Sample	A Arpeggiator
r Reverse Sample		a - f CC A-F / Macro 1-6
P Position in sample / wave		F Slide Up
g Volume LFO Rate		J Slide Down
h Panning LFO Rate		0 MIDI Chord
j Filter LFO Rate		
k Position LFO Rate		
l Finetune LFO Rate		**Affects MIDI / synth**
D Overdrive amount		
L Low Pass Filter		a CC A / Macro 1
B Band Pass Filter		b CC B / Macro 2
H High Pass Filter		c CC C / Macro 3
s Delay Send		d CC D / Macro 4
t Reverb Send		e CC E / Macro 5
E Bit Depth		f CC F / Macro 6
U Tuning		0 MIDI Chord

7 FX Steps

7.3 None

FX Type Tag	Effect
-	None - No FX Applied

FX Description

No effect is applied and hence the sound for the step will purely be based on the instrument and note. This is basically an empty effect.

Value Ranges

N/A

Example

Default state for any step is that the FX1 and FX2 are empty. This effect can be applied to remove an existing FX and reset to the normal empty state.

```
        FX1  FX2
  1   D6 03 ---- ----

  5   D6 03 ---- ----

  9   D6 03 ---- ----

 13   D6 03 ---- ----

 16   D6 03 ---- ----
```

The last two slots are for FX. They will be indicated with dashed lines when empty. This is the default empty state of a step.

Selected step will be bounded green or red in recording edit mode. The part of the step to be edited is solid filled when selected as per illustration where FX1, Step 1 is shown selected.

7.4 Off

FX Type Tag	Effect
!	Off

FX Description
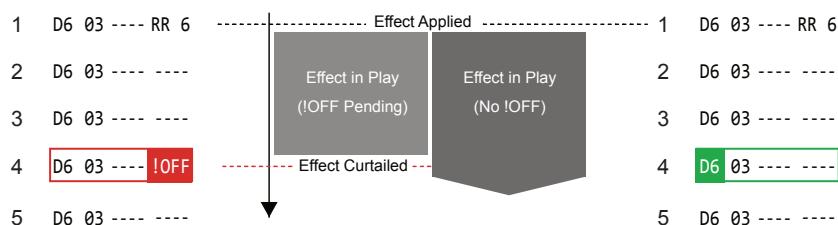
Will deactivate an effect that has been triggered on a prior step.

Value Ranges

On

Example

A roll triggered on step 1 will be audible over the subsequent following steps. Applying an !OFF step command afterwards will curtail the effect for the track.

```
1   D6 03 ---- RR 6   ------------ Effect Applied ----------   1   D6 03 ---- RR 6

2   D6 03 ---- ----                                            2   D6 03 ---- ----
                          Effect in Play    Effect in Play
3   D6 03 ---- ----       (!OFF Pending)    (No !OFF)          3   D6 03 ---- ----

4   D6 03 ---- !OFF   ------- Effect Curtailed ------          4   D6 03 ---- ----

5   D6 03 ---- ----                                            5   D6 03 ---- ----
```

7 FX Steps

7.5 Volume

FX Type Tag	Effect
V	Volume / Velocity

FX Description

Will apply a volume level for this individual instrument step.
For MIDI this will send a NOTE ON Velocity parameter.

Value Ranges

0 - 100%

Example

To illustrate an example, 16 Steps with volume ramped up through the pattern steps. This will be a stepped ramp. To create a smoother ramp try using the fill function to populate all steps using 'From-To' or Live Rec. This will still be triggered per step but will be audibly smoother.
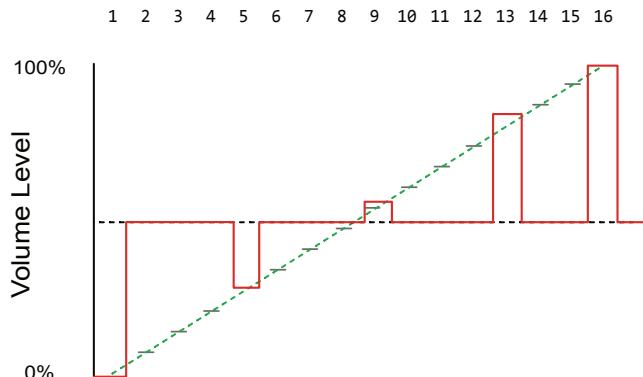
1	D6 03 ---- V 0		1	D6 03 ---- V 0
5	D6 03 ---- V 30		2	D6 03 ---- V 6
9	D6 03 ---- V 55		3	D6 03 ---- V 13
13	D6 03 ---- V 80		15	D6 03 ---- V 94
16	D6 03 ---- V100		16	D6 03 ---- V100

7.6 Panning

FX Type Tag	Effect	
P	Panning	

FX Description

Positions the audio within the stereo field, panning the signal in the left / right position. This is applied per step.
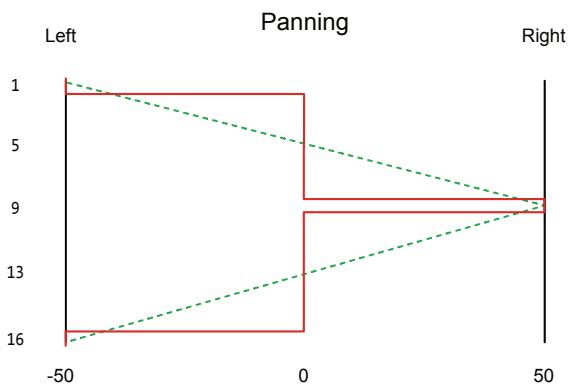
Value Ranges

L -50 - R +50

Example

An example of 16 steps panned left to right and then back to left. Triggered for the stereo position per step. To create a smoother, less stepped transition use fill to populate all steps using 'From-To'.

```
1    D6 03 ---- P-50          1    D6 03 ---- P-50

5    D6 03 ---- P  0          2    D6 03 ---- P-42

9    D6 03 ---- P 50          3    D6 03 ---- P-31

13   D6 03 ---- P  0          15   D6 03 ---- P-38

16   D6 03 ---- P-50          16   D6 03 ---- P-50
```


Panning

7.7 Micro-Tune

FX Type Tag	Effect
M	Micro Tuning

FX Description
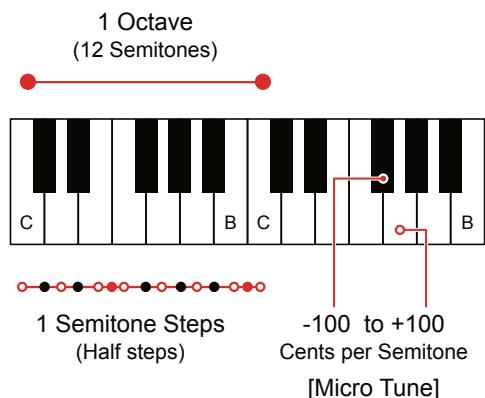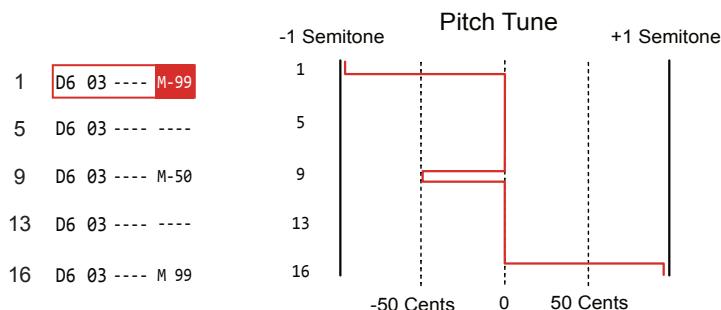
Applies a fine tuning pitch adjustment for the step note or MIDI output. Operates in cents, where 100 cents is one semitone.

Value Ranges

-99 to +99 Cents

Example

A semitone is 100 cents but as the tuning is so fine, the maximum range of micro tuning is almost a full semitone. This can be used to add variation especially with percussive sounds while still maintaining musicality.

```
1    D6 03 ---- M-99
5    D6 03 ---- ----
9    D6 03 ---- M-50
13   D6 03 ---- ----
16   D6 03 ---- M 99
```

Pitch Tune

-1 Semitone   +1 Semitone

-50 Cents   0   50 Cents

1 Octave
(12 Semitones)

C .... B C .... B

1 Semitone Steps
(Half steps)

-100 to +100
Cents per Semitone

[Micro Tune]

7.8 Glide

FX Type Tag	Effect
G	Glide

FX Description

Creates a smooth transition when the step is activated, from the pitch of a previous note value to the current step note value over a time period based on the glide time setting. Glide time is in percentage which represents time.

Value Ranges

0 - 100%

Example

A short or long glide time transition can bring a creative effect using the pitch of a step note. Try experimenting by using glides in combination with other steps.

```
1    D6 03 ---- ----          1    D6 03 ---- ----
2    D6 03 ---- ----          2    D6 03 ---- ----
3    D6 03 ---- ----          3    D6 03 ---- ----
4    D5 03 ---- G 48          4    D5 03 ---- G 74
5    ---- -- ---- ----        5    ---- -- ---- ----
```

Step Trigger   D6   D6   Step Trigger

Glide from prior note D6 to Note D5 across the glide time duration.

Step Trigger ----- D5   D5 ----- Step Trigger

Glide Time ~1sec   Glide Time ~8sec

D6 > D5   D5   D5   D6 > D5

Glide Time Converter (Estimated)

%	0	13	25	36	50	55	60	65	70	75	80	85	90	95	100
Sec	0	0.25	0.5	0.75	1.0	2.4	3.8	5.2	6.6	8.0	9.4	10.8	12.2	13.6	15

7 FX Steps

7.9 Tempo

FX Type Tag	Effect
T	Tempo Change

FX Description

Applies a % tempo change triggered on the step. TSTP Tempo Stop, stops the sequencer running. Given that MIDI is synchronised to the project tempo, this will also affect MIDI Out clock.

Value Ranges

10 - 400%

Example
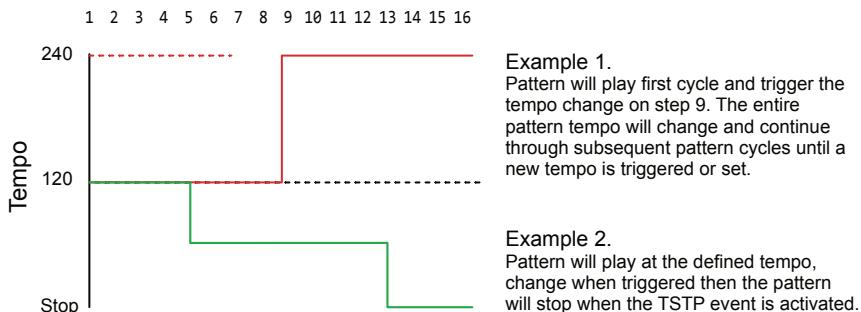
Tempo change is applied to the entire pattern from the step onwards. A TSTP command will add a full stop step which will halt the sequencer. TSTP is an available option when setting the value. Default tempo of 120 for this example.

Example 1.

```
1   D6 03 ---- ----
5   D6 03 ---- ----
9   D6 03 ---- T200
13  D6 03 ---- ----
16  D6 03 ---- ----
```

Example 2.

```
1   D6 03 ---- ----
5   D6 03 ---- T 50
9   D6 03 ---- ----
13  D6 03 ---- TSTP
16  D6 03 ---- ----
```

Example 1.
Pattern will play first cycle and trigger the tempo change on step 9. The entire pattern tempo will change and continue through subsequent pattern cycles until a new tempo is triggered or set.

Example 2.
Pattern will play at the defined tempo, change when triggered then the pattern will stop when the TSTP event is activated.

7.10 Swing

FX Type Tag	Effect
I	Swing

FX Description

Introduces a groove or shuffle into the pattern timing. 50% is no swing. Range is 25% to 75% of pattern swing. Also applied to MIDI Out.
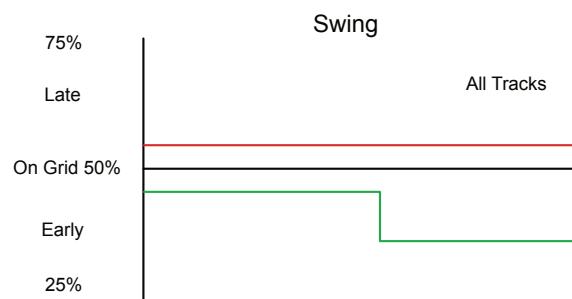
Value Ranges

25 - 75%

Example

Swing on a step track will apply across the pattern. These can create a groove. Maybe experiment with variations. Adjust by ear rather than numbers.

```
1    D6 03 ---- I 55          1    D6 03 ---- I 45

5    D6 03 ---- P  0          5    D6 03 ---- ----

9    D6 03 ---- P 50          9    D6 03 ---- I 35

13   D6 03 ---- P  0          13   D6 03 ---- ----

16   D6 03 ---- P-50          16   D6 03 ---- ----
```

Swing

75%

Late

All Tracks

On Grid 50%

Early

25%

7 FX Steps

7.11 Micro Move

FX Type Tag	Effect
m	Micro Move

FX Description
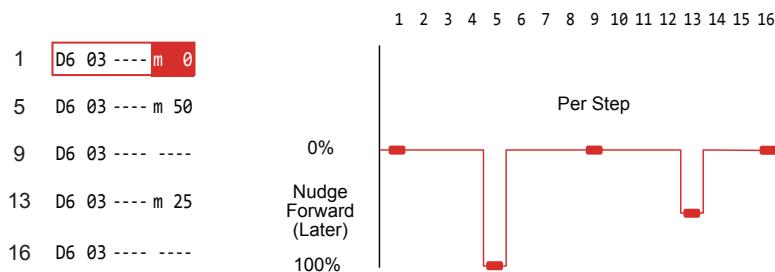
Will apply a small offset to the note step. This will move the note forward by an amount based on the setting.

Value Ranges

0 - 100%

Example

Can be used to offset one part of a track step or provide minor step variations. Think of this similar to swing, but applied to a step rather than pattern.

1	D6 03 ---- m 0	
5	D6 03 ---- m 50	
9	D6 03 ---- ----	
13	D6 03 ---- m 25	
16	D6 03 ---- ----	

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16

Per Step

0%

Nudge
Forward
(Later)

100%

While the range is 0-100%, the actual shift of notes is only in small amounts. The 0% setting is 'On Grid' while any nudge is forward in the pattern.

7.12 Gate Length

FX Type Tag	Effect
q	Gate Length

FX Description

Adjusts the length of the note gate and helps shape the sound. Operates in conjunction with the instruments Envelope settings which are found in the 'Instrument's Parameters'.

Value Ranges

0 - 100%

Example

Increases or reduces the gate for the note. This works with the envelope and will determine length of note helping to shape the sound over time.
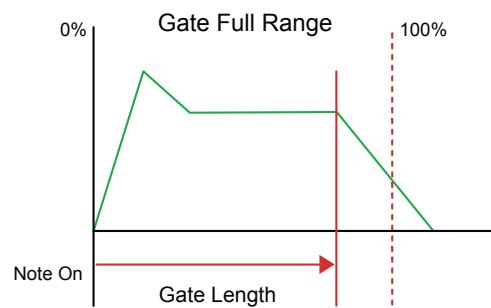
```
 1    D6 03 ---- q 80
 5    D6 03 ---- ----
 9    D6 03 ---- ----
13    D6 03 ---- ----
16    D6 03 ---- ----
```

Gate Full Range

0%   100%

Note On

Gate Length

Envelope
The gate operates in conjunction with the ADSR instrument envelope.

7 FX Steps

7.13 Chance

FX Type Tag	Effect
C	Chance

FX Description

Sets the chance condition for the step. This will apply a probability of whether the step will play or not. Higher percentages means a higher chance of playing. 100% will always play, 0% will never play.
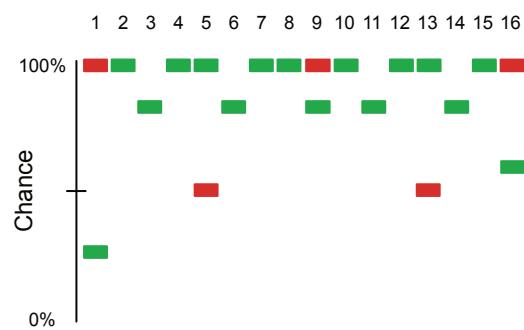
Value Ranges

0 - 100%

Example

Can add variation to a pattern. For example a percussive note sequence could have some steps with a chance setting to dictate whether it will sound or not. This can create interest and variety in melodies or beats.

```
 1    D6 03 ---- V  0          1    D6 03 ---- C 25
 5    D6 03 C 50 V 30          2    D6 03 ---- ----
 9    D6 03 ---- V 55          3    D6 03 ---- C 85
13    D6 03 C 50 V 80         15    D6 03 ---- ----
16    D6 03 ---- V100         16    D6 03 ---- C 55
```

7.14 Roll

FX Type Tag	Effect		
R	Roll		

FX Description
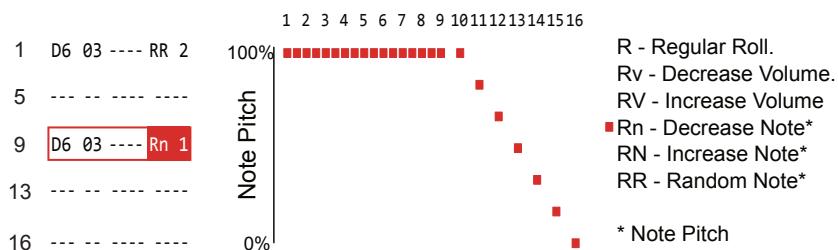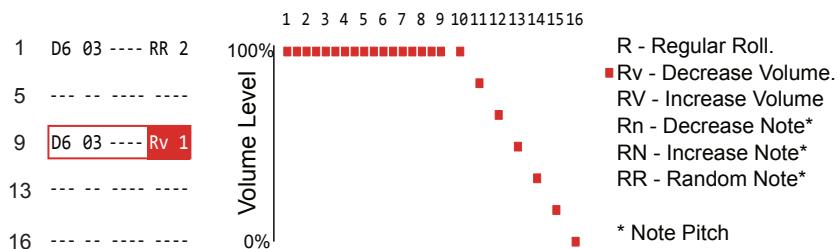
Repeat of the note applied using a step division. This can be straight repeats or evolving repeats depending on the roll type selected. The option for types are R, Rv, RV, Rn, RN, RR with a step divider range of 0 - 16.

Value Ranges

0 - 16 per Type

Example

Rolls are extremely versatile and can be applied as volume or note pitch ramp up / down or just to randomise notes.

```
1    D6 03 ---- RR 2
5    --- -- ---- ----
9    D6 03 ---- Rv 1
13   --- -- ---- ----
16   --- -- ---- ----
```

R - Regular Roll.
Rv - Decrease Volume.
RV - Increase Volume
Rn - Decrease Note*
RN - Increase Note*
RR - Random Note*

* Note Pitch

```
1    D6 03 ---- RR 2
5    --- -- ---- ----
9    D6 03 ---- Rn 1
13   --- -- ---- ----
16   --- -- ---- ----
```

R - Regular Roll.
Rv - Decrease Volume.
RV - Increase Volume
Rn - Decrease Note*
RN - Increase Note*
RR - Random Note*

* Note Pitch

7.15 Arpeggiator

FX Type Tag	Effect
A	**Arp**

FX Description
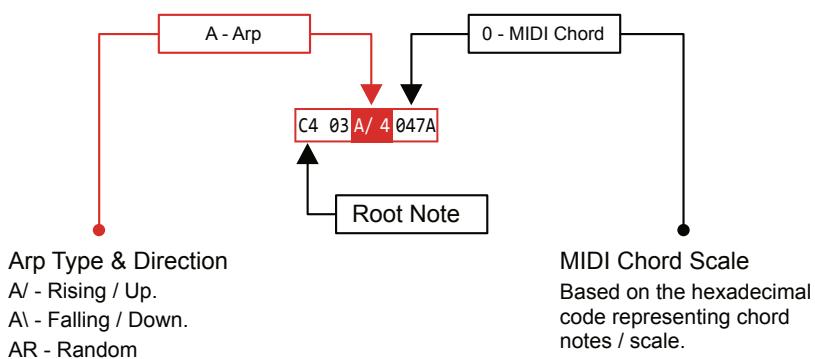
Arpeggiator. This needs a note value and works in conjunction with the MIDI chord which must also be assigned to the other FX slot

Value Range

See Below

Set the FX1 slot to the arp type. This can operate with a note melody:
Up / Rising '/' or Down / Falling '\' or Random 'R'. The value is based on the tempo divider as a number e.g. 6 or multiplier e.g. .6 (dot 6).

Set the FX2 slot to MIDI Chord. This is an effect used with MIDI but also provides scale details for the arpeggiator.

Arp Type & Direction
A/ - Rising / Up.
A\ - Falling / Down.
AR - Random

MIDI Chord Scale

Based on the hexadecimal code representing chord notes / scale.

Example Tracker Mini Chords
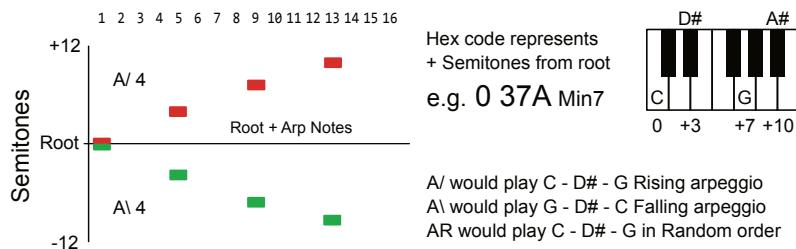
MIDI Chord Hex Code	Scale	A/ Rising Chord Example Root C	A\ Falling Chord Example Root C	AR Random Chord Example Root C
0 27	Sus2	C - D - G	G - D - C	Random order
0 57	Sus4	C - F - G	G - F - C	Random order
0 37	Min	C - D# - G	G - D# - C	Random order
0 47	Maj	C - E - G	G - E - C	Random order
0 5C	Open4	C - F - C	C - F - C	Random order
0 7C	Open5	C - G - C	C - G - C	Random order
0379	Min6	C - D# - G - A	A - G - D# - C	Random order
037A	Min7	C - D# - G - A#	A# - G - D# - C	Random order
0479	Maj6	C - E - G - A	A - G - E - C	Random order
047B	Maj7	C - E - G - B	B - G - E- C	Random order
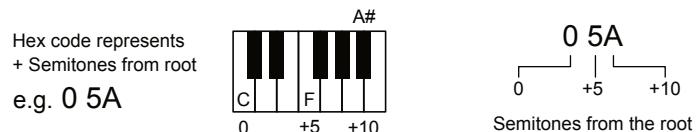
Example

The arpeggiator uses the note as the root and the arp effect sets the direction and timing. This needs a MIDI Chord also in the other FX slot to create the chord which will be arpeggiated. Setting the MIDI Chord to a value at '0' will play notes through a chromatic scale and is useful when setting up the arp to get the direction and timing right before applying a specific scale.

Arp direction plus intervals can range through the dividers of 1, 2, 3, 4, 6, 8 and also the .1, .2, .3, .4, .6, .8 where a dot value indicates a multiplier.

Hex code represents + Semitones from root

e.g. 0 37A Min7

A/ would play C - D# - G Rising arpeggio
A\ would play G - D# - C Falling arpeggio
AR would play C - D# - G in Random order
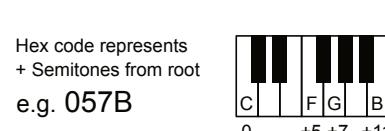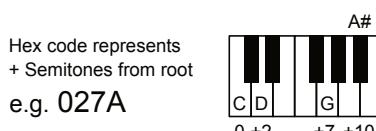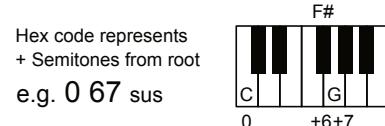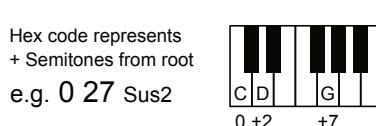
Tracker Mini gives a series of scales in the MIDI Chord description. While these are useful examples they do not fully cover all chords. Other chords are also available, represented by the hexadecimal number in the MIDI Chord FX. Translating a chord to the hexadecimal code for the MIDI Chord assignment will allow a wider range to be used. Alternatively, and a more practical approach is trial and error and listening by ear of what sounds 'right' when selecting scales.

Hex code represents + Semitones from root

e.g. 0 5A

0 5A

Semitones from the root

Hexadecimal to Decimal Converter

Hex	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F
Dec	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15

Other Examples

Hex code represents + Semitones from root

e.g. 0 27 Sus2

Hex code represents + Semitones from root

e.g. 0 67 sus

Hex code represents + Semitones from root

e.g. 027A

Hex code represents + Semitones from root

e.g. 057B

7 FX Steps

7.16 Random Note

FX Type Tag	Effect
n	Random Note

FX Description

Sets a range of notes from which a random selection will be made, for each play cycle of the pattern. Interval are based on the selected scale for the pads.
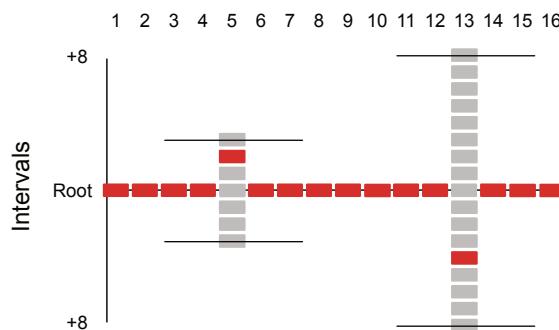
Value Ranges

0 to +/-100

Example

The randomisation is applied within a range set by the value. By default this is a +/- semitone range across a chromatic scale. However this is based on the config settings and can therefore be changed to another scale. Start with a small range setting to keep things musical and then apply a different setting to experiment with variations.

```
 1    D6 03 ---- ----

 5    D6 03 ---- n  3     Range is -3 to +3 deviation from root.

 9    D6 03 ---- ----

13    D6 03 ---- n  8     Range is -8 to +8 deviation from root.

16    D6 03 ---- ----
```


Notes 'n' will play randomly, through each pattern cycle. The selected range is set by the +/- value in the FX. This is applied with reference to the root note (Example D6) and determines the +/- offset from which the random note is selected.

7.17 Random Instrument

FX Type Tag	Effect
i	Random Instrument

FX Description

Sets a range of instruments from which a random selection will be made, for each play cycle of the pattern. Intervals are based on the selected instrument and the range before and after in the project instrument list.
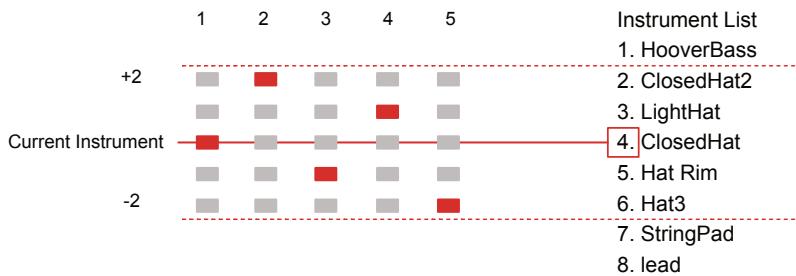
Value Ranges

0 to +/-47

Example

Try loading a cluster of samples into the instrument list. This will form the range to select from. The step instrument being the central instrument for the randomisation range. For example a variation of percussive hats or vocal stabs. The random pick will select from these.

1	D6 04 ---- i 2	Range is -2 to +2 deviation from current instrument.
2	D6 04 ---- i 2	Range is -2 to +2 deviation from current instrument.
3	D6 04 ---- i 2	Range is -2 to +2 deviation from current instrument.
4	D6 04 ---- i 2	Range is -2 to +2 deviation from current instrument.
5	D6 04 ---- i 2	Range is -2 to +2 deviation from current instrument.

Instrument 'i' will play randomly, through each pattern cycle. The selected range is set by the +/- value in the FX. This is applied with reference to the current instrument (Example 4) and determines the +/- offset from which the random note is selected. +2 is the Hat3 and -2 is ClosedHat2. LightHat and Hat Rim are included in this range.

7 FX Steps

7.18 Random FX

FX Type Tag	Effect
f	Random FX Value

FX Description

Selects a random FX value (not type) for the FX located in the other slot, same step. Plays a random selection each pattern cycle based on the set range.
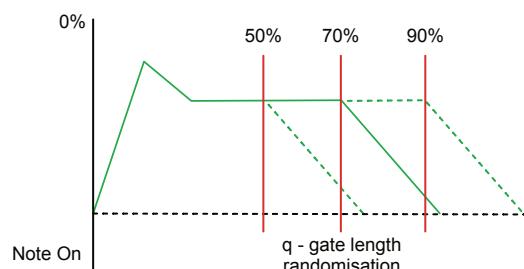
Value Ranges

0 to +/-255

Example

This feature can add a variation to a pattern. For example FX1 Random 20 applies to FX2 gate length, which will be the value randomised. Gate length full range is 0-100%. FX2 functions other than gate length can also be used.

```
1    D6 03 ---- V  0

5    D6 03 f 20 q 70      FX1 randomises the value for FX2 (q - gate length).

9    D6 03 ---- V 55        f 20  ▶  q 70

13   D6 03 C 50 V 80

16   D6 03 ---- V100
```


Gate Length
Gate length value is randomised by +/-20 applied by FX1 to the default of 70 in FX2. Therefore gate length value variation will be a value selected between 50 - 90 over each pattern cycle.

7.19 Random Volume

FX Type Tag	Effect
v	Random Volume

FX Description

Creates a volume variation in each cycle of the pattern through randomisation of velocity. This is a value which is randomly selected from within a +/- range from the default volume level.

Value Ranges

0 to +/-100

Example

This is useful for creating accents and audible variations in volume level.
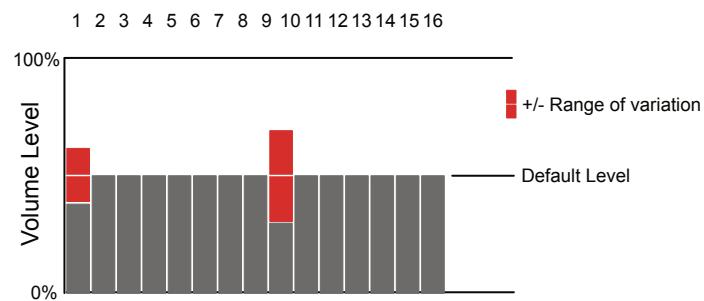
1	`D6 03 ---- v 10`	Range is -10 to +10 deviation from current default.
5	`--- -- ---- ----`	
9	`D6 03 ---- v 20`	Range is -20 to +20 deviation from current default.
13	`--- -- ---- ----`	
16	`--- -- ---- ----`	

Playback will be at the default volume until a random volume step is triggered. A value somewhere in the range will then be applied.

7.20 Reverse Sample

FX Type Tag	Effect
r	Reverses Sample Playback

FX Description
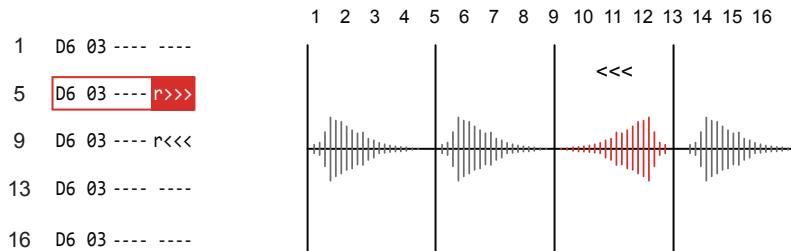
Reverses the sample playback. Simply plays the sample forwards as normal or reverses its playback.

Value Ranges
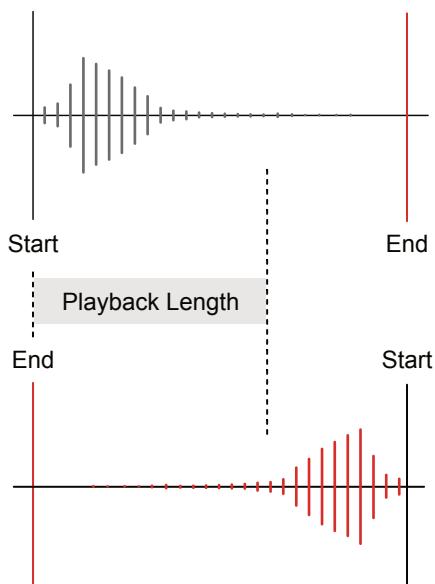
<<< Or >>>

Example

Reversing the sample playback is a simple application. The reverse will take place only on the step activated. It is also important in practical applications to know the sample length. If the 'tail' of a sample is long then reversing it may mean no sound is heard. Adjusting the 'end' parameter of the sample playback may also need to be changed.

```
1    D6 03 ---- ----

5    D6 03 ---- r>>>

9    D6 03 ---- r<<<

13   D6 03 ---- ----

16   D6 03 ---- ----
```

Normal Sample Direction.
Playback from 'Start' to 'End' parameters as set in the sample playback settings.

Start   End

Playback Length

End   Start

Reversed Sample Direction.
Playback from 'End' to 'Start' parameters as set in the sample playback settings. End may need to be adjusted to hear audio within the step duration.

7.21 Position

FX Type Tag	Effect	
p	Position	

FX Description

Sample start position for playback is set. This is based on the playback type selected and better applied with one-shot samples, wavetables and granular. When using sliced samples the 'slice' FX is an alternative option.
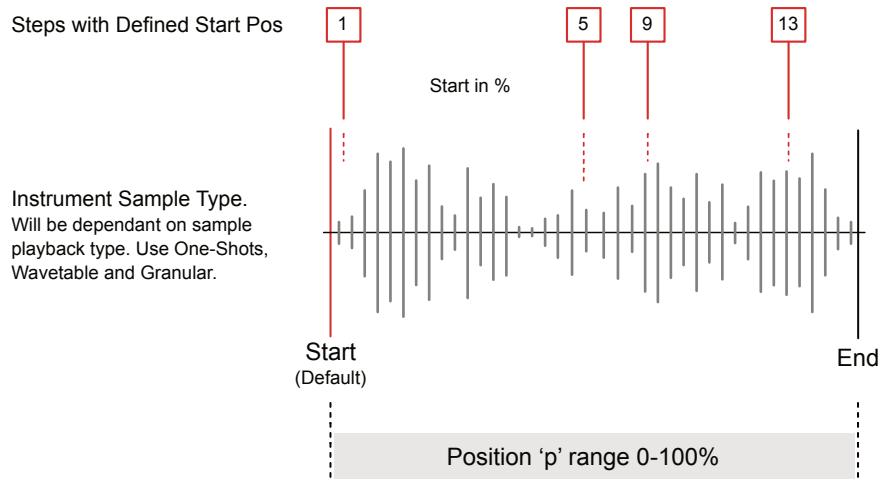
Value Ranges

0 - 100%

Example

Try experimenting with different samples and start points. Use full samples (one-shots), wavetables and granular types for the full more pronounced effect. Happy accidents to find a 'sweet spot' in a sample are possible. Automate the variation using individual steps to create movement and interest.

1	F5 22 ---- p 5	Start position for sample used in instrument 22 only for this step.
5	F5 22 ---- p 47	Start position for sample used in instrument 22 only for this step.
9	F5 22 ---- p 65	Start position for sample used in instrument 22 only for this step.
13	F5 22 ---- p 85	Start position for sample used in instrument 22 only for this step.
16	F5 22 ---- ----	Position for steps in-between 'p' will operate at the normal start.

Steps with Defined Start Pos

Start in %

Instrument Sample Type.
Will be dependant on sample playback type. Use One-Shots, Wavetable and Granular.

Start
(Default)

End

Position 'p' range 0-100%

7 FX Steps

7.22 Slice

FX Type Tag	Effect		
S	Slice Playback		

FX Description

Plays a selected slice on the triggered step. While the FX range of steps is 1-48 it is typical to apply slices smaller groups e.g. 16 steps. If so the selected step will wrap in the range.
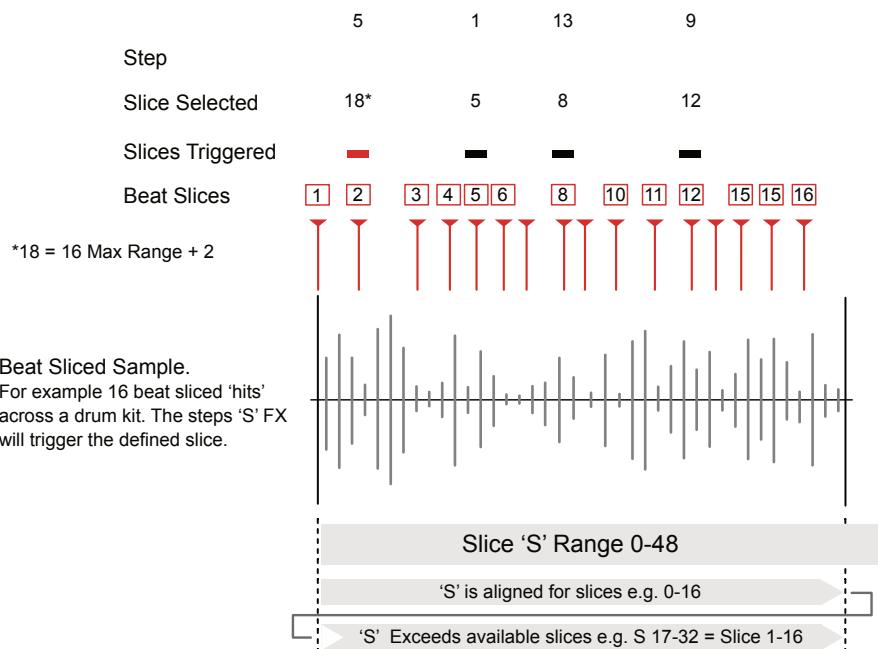
Value Ranges

0 - 48

Example

The LFO is triggered by each step either using the rate from the step LFO pan or the default instrument parameter speed of no LFO FX is set. The LFO cycle is reset each trigger..

1	F5 16 ---- S 5	Slice 5 from beat sliced instrument 16 only for this step.
5	F5 16 ---- S 18	Slice 2 (wrapped 16+2) from beat sliced instrument 16.
9	F5 16 ---- S 12	Slice 12 from beat sliced instrument 16 only for this step.
13	F5 16 ---- S 8	Slice 8 from beat sliced instrument 16 only for this step.
16	F5 16 ---- ----	The last slice eg 16 is default if a slice selection is not defined.

Step	5	1	13	9
Slice Selected	18*	5	8	12
Slices Triggered				
Beat Slices	1 2	3 4 5 6	8 10	11 12 15 15 16

*18 = 16 Max Range + 2

Beat Sliced Sample.
For example 16 beat sliced 'hits' across a drum kit. The steps 'S' FX will trigger the defined slice.

Slice 'S' Range 0-48

'S' is aligned for slices e.g. 0-16

'S' Exceeds available slices e.g. S 17-32 = Slice 1-16

7.23 Volume LFO

FX Type Tag	Effect
g	Volume LFO Rate

FX Description

Selects the rate for the instrument volume LFO. This setting is in increments with respect to project tempo. LFO is found in the instrument parameters P2/2.

Value Ranges
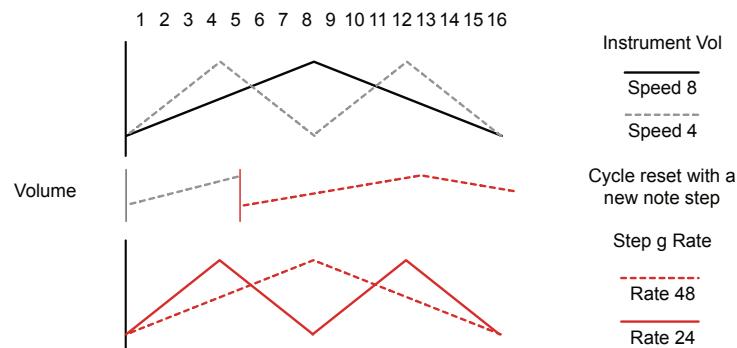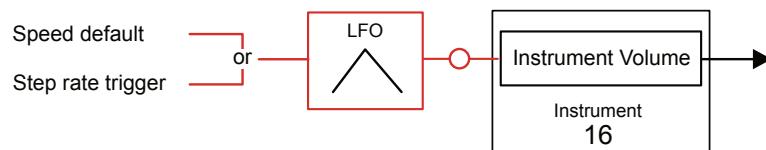
Various

Example

The LFO is triggered by each step either using the rate from the step volume LFO or the default instrument parameter speed if no LFO FX is set. The LFO cycle is reset each trigger.

g Rates	128	96	64	48	32	24	16	12	8	6	4	3
	2	3/2	1	3/4	1/2	3/8	1/3	1/4	316 (3/16)	1/6	1/8	/12 (1/12)

1	F5 16 ---- ----	Speed set in the Instrument Parameter Volume LFO will apply.
5	F5 16 ---- g 48	Step will trigger the LFO Rate change.
9	--- -- ---- ----	Previous Step LFO Rate continues.
13	--- -- ---- ----	

7.24 Panning LFO

| FX Type Tag	Effect
h	Panning LFO Rate

FX Description

Selects the rate for the instrument panning LFO. This setting is in increments with respect to project tempo. LFO is found in the instrument parameters P2/2.

Value Ranges

Various

Example

The LFO is triggered by each step either using the rate from the step pan LFO or the default instrument parameter speed if no LFO FX is set. The LFO cycle is reset each trigger.

h Rates
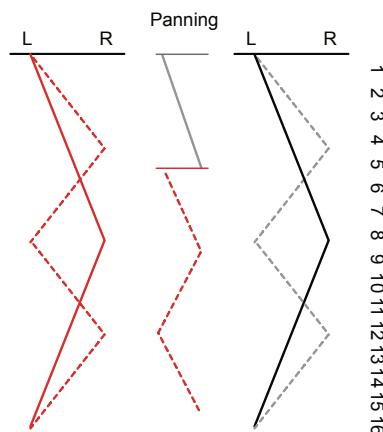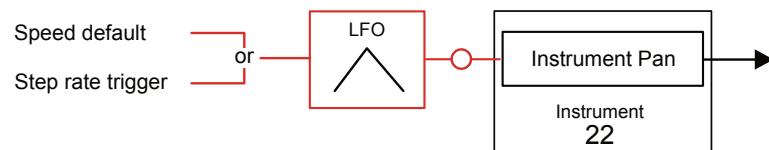
128	96	64	48	32	24	16	12	8	6	4	3	2	3/2	1
3/4	1/2	3/8	1/3	1/4	316 (3/16)	1/6	1/8	/12 (1/12)	/16 (1/16)	/24 (1/24)	/32 (1/32)	/48 (1/48)	/64 (1/64)	

1	F5 22 ---- ----	Speed set in the instrument parameter panning LFO will apply.
5	F5 22 ---- h 16	Step will trigger the LFO rate change.
9	--- -- ---- ----	Previous step LFO rate continues.
13	--- -- ---- ----	

Speed default
Step rate trigger
or
LFO
Instrument Pan
Instrument 22

Panning

L R   L R
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16

Instrument Pan
Speed 16
Speed 8
Cycle reset with a new note step
Step h Rate
Rate 16
Rate 8

7.25 Filter LFO

| FX Type Tag	Effect		
j	Filter Cutoff LFO Rate		

FX Description

Selects the rate for the instrument filter cutoff LFO. This setting in increments with respect to project tempo. LFO is found in the instrument parameters P2/2. A filter type will need to be set which will effect the behaviour of the LFO.

Value Ranges

Various

Example

The LFO is triggered by each step either using the rate for the filter step LFO or the default instrument parameter speed of no LFO FX is set. The LFO cycle is reset each trigger. Higher rates 128-32 good for sweeps and mid range 4-1/3 good for dubstep style wobble.

j Rates
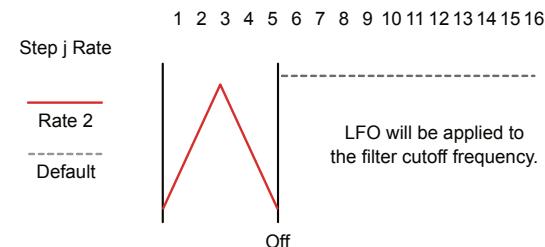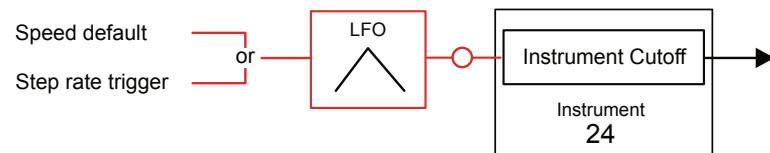
128	96	64	48	32	24	16	12	8	6	4	3	2	3/2	1
3/4	1/2	3/8	1/3	1/4	316 (3/16)	1/6	1/8	/12 (1/12)	/16 (1/16)	/24 (1/24)	/32 (1/32)	/48 (1/48)	/64 (1/64)	

1   `F5 24 ---- j 2`   Speed set in the Instrument Parameter LFO will apply

5   `F5 24 ---- !0FF`   OFF may be used to avoid filter state cutting out all audio

9   `F5 24 ---- ----`   Plays at default filter setting

13   `--- -- ---- ----`

Speed default — or — LFO — Instrument Cutoff
Step rate trigger
Instrument 24

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16

Step j Rate

Rate 2

Default

Off

LFO will be applied to the filter cutoff frequency.

The impact of the LFO will depend on the type of filter selected and the settings in the filter LFO and settings in the instrument parameters.

7.26 Position LFO

FX Type Tag	Effect		
k	Position LFO Rate		

FX Description

Selects the rate for the instrument wavetable / granular sample position LFO. This setting is in increments with respect to project tempo. LFO is found in the instrument parameters P2/2.

Value Ranges

Various

Example

The LFO will adjust the position in the wavetable or granular sample. One of these play modes must be set to apply a position modulation from the LFO. The step then can vary the speed of the LFO per step.

h Rates
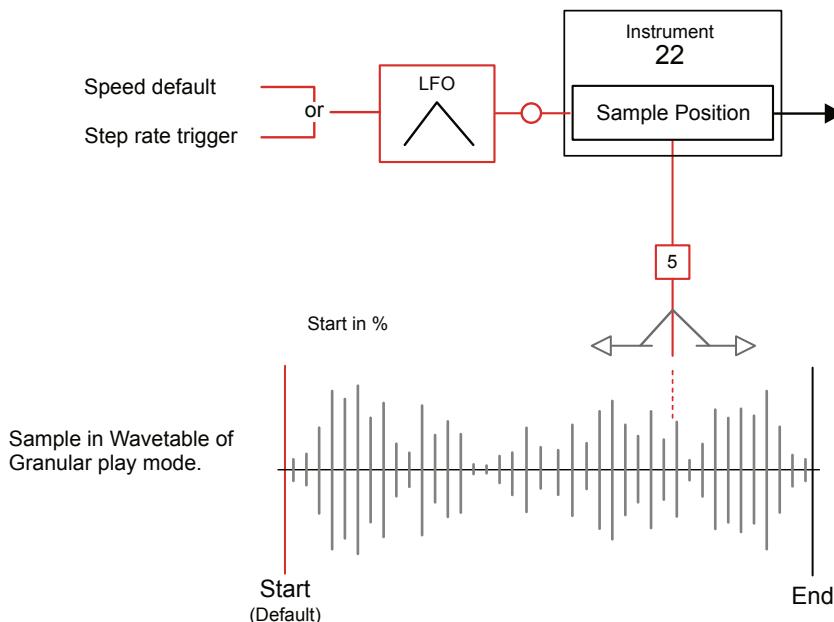
128	96	64	48	32	24	16	12	8	6	4	3	2	3/2	1
3/4	1/2	3/8	1/3	1/4	316 (3/16)	1/6	1/8	/12 (1/12)	/16 (1/16)	/24 (1/24)	/32 (1/32)	/48 (1/48)	/64 (1/64)	

1	F5 22 ---- ----	Speed set in the instrument parameter panning LFO will apply.
5	F5 22 ---- k 12	Step will trigger the LFO rate change.
9	--- -- ---- ----	Previous step LFO rate continues.
13	--- -- ---- ----	

Speed default

Step rate trigger

or

LFO

Instrument 22

Sample Position

5

Start in %

Sample in Wavetable of Granular play mode.

Start (Default)

End

7.27 Finetune LFO

FX Type Tag	Effect
1	Finetune LFO Rate

FX Description

Selects the rate for the instrument finetuning LFO. This setting in increments with respect to project tempo. LFO is found in the instrument parameters P2/2.

Value Ranges

Various

Example

The LFO is triggered by each step applied. Slower rates are good to introduce an evolving slight pitch variation.

1 Rates
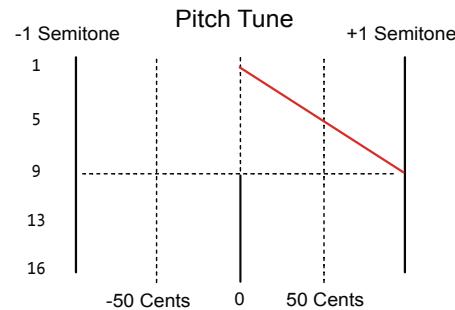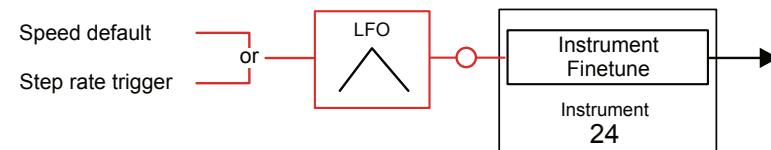
128	96	64	48	32	24	16	12	8	6	4	3	2	3/2	1
3/4	1/2	3/8	1/3	1/4	316 (3/16)	1/6	1/8	/12 (1/12)	/16 (1/16)	/24 (1/24)	/32 (1/32)	/48 (1/48)	/64 (1/64)	

1　F5 24 ---- 1 48　　　Speed of LFO for the step.

5　--- -- ---- ----

9　F5 24 ---- ----　　　Triggers note at correct pitch

13　--- -- ---- ----

Speed default

or

Step rate trigger

LFO

Instrument Finetune

Instrument 24

Pitch Tune

-1 Semitone

+1 Semitone

1
5
9
13
16

-50 Cents　　0　　50 Cents

7.28 Overdrive

FX Type Tag	Effect
D	Overdrive amount

FX Description

Selects the amount of overdrive applied for the duration of the specific step. Overdrive is found in the instrument parameters P1/2 - effects.
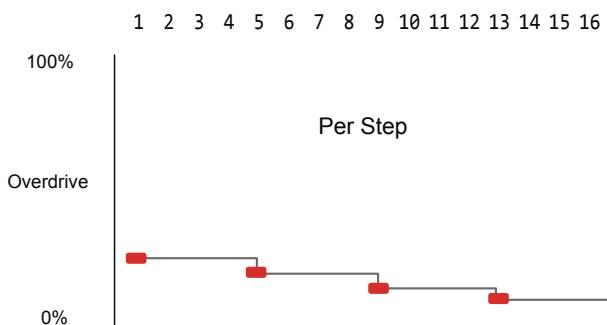
Value Ranges

0-100%

Example

Can be used simply to add overdrive for the specific instrument and create variety across a pattern.

```
1    F5  16 ---- D 20

5    F5  16 ---- D 17      Variation of overdrive instrument effect.

9    F5  16 ---- D 10

13   F5  16 ---- D  5

16   F5  16 ---- ----
```

```
     1  2  3  4  5  6  7  8  9  10 11 12 13 14 15 16

100%

                    Per Step

Overdrive


0%
```

Take care when working with overdrive, especially with headphones. This can become loud. Start with smaller settings and expand as required.

7.29 Low Pass Cutoff

FX Type Tag	Effect
L	Low Pass Filter

FX Description

Adjust the instrument cutoff frequency of the low pass filter. The instrument filter is found in the instrument parameters P2/2 but can be disabled and this effect will still operate.

Value Ranges

0-100%
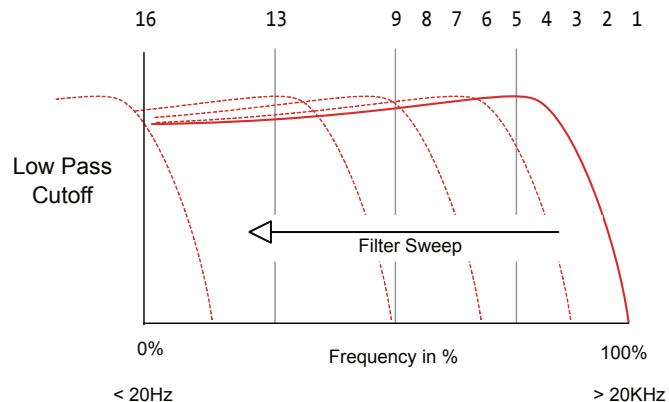
Example

The cutoff frequency can be triggered by each step applied. This allows sweeps using only FX steps with multiple steps ramping the value or glitchy sequenced filter effects. 100% plays the sound as normal, all frequencies present, while 0% will totally cutoff all frequencies.

1	F5 16 ---- ----	Note and Instrument triggered with no filtering.
5	--- -- ---- L 80	
9	--- -- ---- L 60	
13	--- -- ---- L 40	
16	--- -- ---- L 0	Sample triggered at step 1 will be fully filtered.

Low Pass Cutoff

Filter Sweep

0%   Frequency in %   100%

< 20Hz   > 20KHz

7 FX Steps

7.30 Band Pass Cutoff

FX Type Tag	Effect
B	Band Pass Filter

FX Description

Adjust the instrument cutoff frequency of the band pass filter. The instrument filter is found in the instrument parameters P2/2 but can be disabled and this effect will still operate.
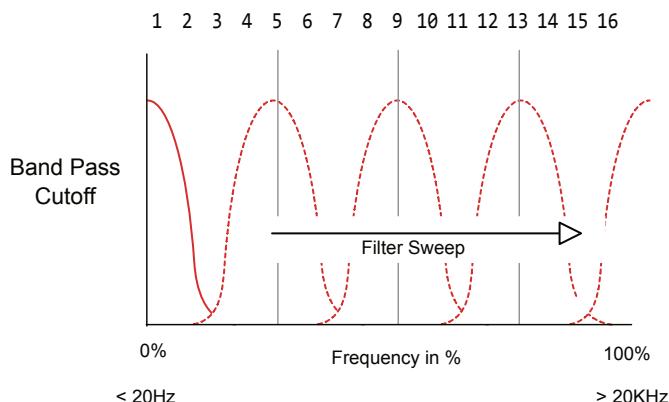
Value Ranges

0-100%

Example

The cutoff frequency can be triggered by each step applied. This allows sweeps using only FX steps with multiple steps ramping the value or glitchy sequenced filter effects.

```
1    F5 16 ---- B  0      Note and Instrument triggered

5    --- -- ---- B 25

9    --- -- ---- B 50

13   --- -- ---- B 75      Band sweeps through the frequencies

16   --- -- ---- B100
```

7.31 High Pass Cutoff

FX Type Tag	Effect
H	High Pass Filter

FX Description

Adjust the instrument cutoff frequency of the high pass filter. The instrument filter is found in the instrument parameters P2/2 but can be disabled and this effect will still operate.

Value Ranges

0-100%
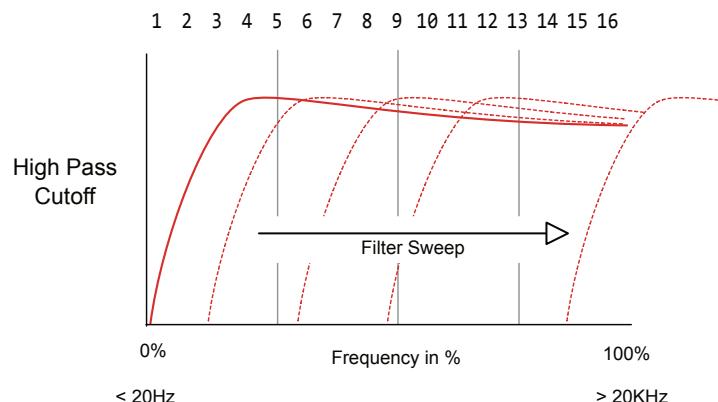
Example

The cutoff frequency can be triggered by each step applied. This allows sweeps using only FX steps with multiple steps ramping the value or glitchy sequenced filter effects. 0% plays the sound as normal, all frequencies present, while 100% will almost cutoff all frequencies.

1	F5 16 ---- ----	Note and instrument triggered with no filtering.
5	--- -- ---- H 25	
9	--- -- ---- H 50	
13	--- -- ---- H 75	
16	--- -- ---- H100	Sample triggered at step 1 will be fully filtered.

7 FX Steps

7.32 Delay

FX Type Tag	Effect
s	Delay Effect Send

FX Description

Sets the amount of the audio signal to send to the delay effect. The delay effect settings are found in the Master section. Type of delay, feedback etc are adjusted generically, for the project in master settings.
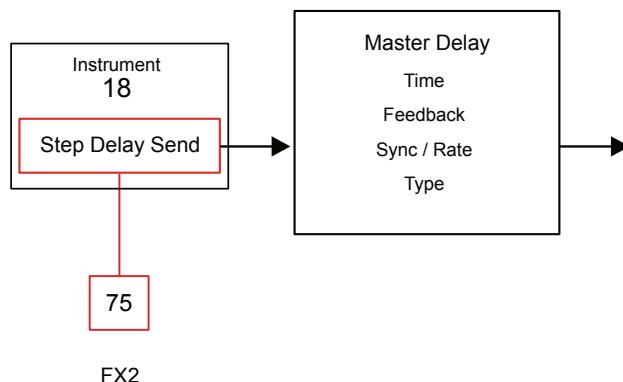
Value Ranges

0-100%

Example

The effect is applied on the step triggered and the delay will be heard and extended through the pattern. The sound will depend on the master effect settings too. This step effect only controls the audio amount sent to the delay.

```
 1    F5 18 ---- B  0

 5    F5 18 ---- s 75      Delay send amount initiated with the note.

 9    --- -- ---- ----

13    F5 18 ---- ----

16    --- -- ---- ----      Delay will have an audio tail beyond its step.
```

```
┌─────────────────┐          ┌─────────────────────┐
│   Instrument    │          │    Master Delay     │
│       18        │          │        Time         │
│ ┌─────────────┐ │          │      Feedback       │──▶
│ │Step Delay Send│├────────▶ │     Sync / Rate     │
│ └─────────────┘ │          │        Type         │
└─────────────────┘          └─────────────────────┘
        │
      ┌───┐
      │75 │
      └───┘

       FX2
```

7.33 Reverb

FX Type Tag	Effect
t	Reverb Effect Send

FX Description

Sets the amount of the audio signal to send to the reverb effect. The reverb effect settings are found in the Master section. Reverb size, damping, pre-delay etc are adjusted generically, for the project in the master settings.

Value Ranges

0-100%
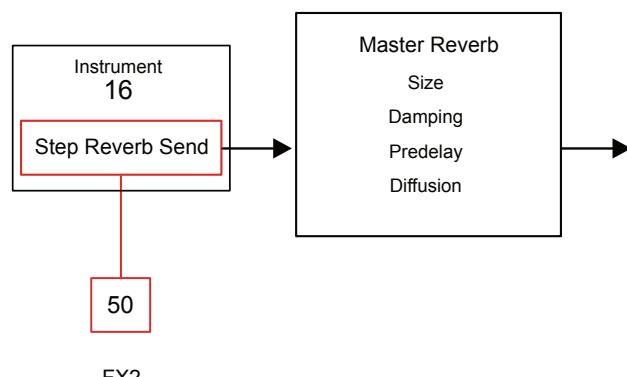
Example

The effect is applied on the step triggered and the reverb will be heard and extended through the pattern. The sound will depend on the master effect settings too. This step effect only controls the audio amount sent to the reverb.

```
1    F5  16 ---- ----
5    F5  16 ---- t 50      Reverb send amount initiated with the note.
9    --- -- ---- ----
13   F5  16 ---- ----
16   --- -- ---- ----      Reverb will have an audio tail beyond its step.
```

Instrument 16 — Step Reverb Send → Master Reverb (Size, Damping, Predelay, Diffusion)

50

FX2

7 FX Steps

7.34 Bit Depth

FX Type Tag	Effect
E	Bit Depth

FX Description

Sets the bit depth for the step. This can range from 4 Bits to 16 Bits Normal maximum setting). Lower rates create a more LoFi grainy sound texture.

Value Ranges

4-16 Bits

Example

The effect is applied on the step triggered and will apply a LoFi sound. This is great to create chip tune and classic video game like sounds and LoFi and glitchy emulations.

1	F5 18 ---- E 4	Set to 4 bit reduction to create a noisy texture.
5	F5 18 ---- ----	
9	--- -- ---- ----	
13	F5 18 ---- E 12	
16	--- -- ---- ----	

7.35 Tune

FX Type Tag	Effect
U	Tuning Adjustments

FX Description

Adjusts the step tuning across a 4 octave range. Introduce a variation from the step note between -24 semitones to +24 semitones.

Value Ranges

-24 to +24
Semitones

Example

The tuning parameter transposes the current step from it's actual 'note' setting.
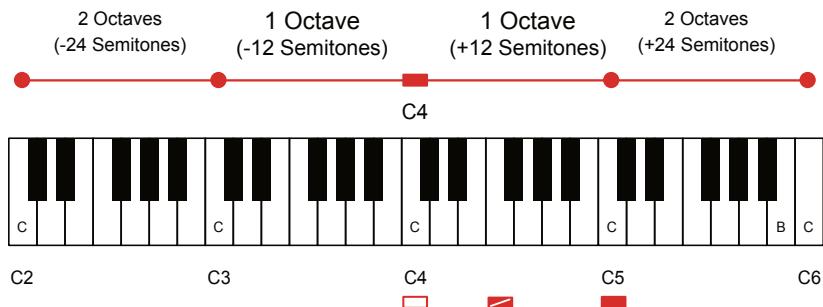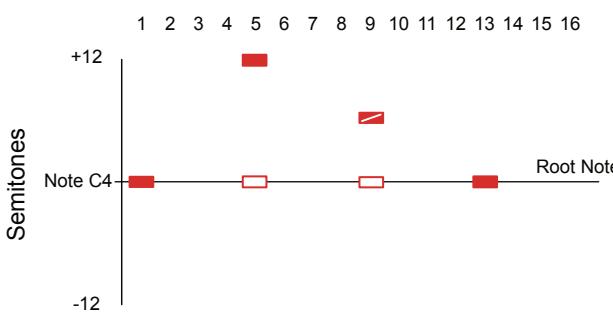
1	C4 09 ---- ----	Note C4 played with no transposition.
5	C4 09 ---- U 12	Note C4 Transposed up 12 semitones.
9	C4 09 ---- U 5	Note C4 Transposed up 5 semitones.
13	C4 09 ---- U 0	Note C4 played with no transposition.
16	--- -- ---- ----	

Semitones

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16

+12

Note C4 — Root Note

-12

2 Octaves (-24 Semitones)	1 Octave (-12 Semitones)	1 Octave (+12 Semitones)	2 Octaves (+24 Semitones)

C4

C2   C3   C4   C5   C6

7 FX Steps

7.36 Slide Up

FX Type Tag	Effect
F	Slide Up - Pitch

FX Description

Creates a pitch slide up from the current note as the starting reference. The intervals are in 1/16th semitone mapped across the 0-255 range.

Value Ranges

0-255

Example

While the glide effect operates on a time based pitch change and is referenced from the previous step, the slide function operates using semitone increments to control pitch from the current step note value. Values in denominations of 16 represent semitones.

```
1    C5  18 ---- ----        Triggers a C5 note.

5    C6  18 ---- F 16        Triggers a C6 note which slides up 1 semitone i.e. 16/16.

9    --- -- ---- ----

13   C6  18 ---- F 32        Triggers a C6 note which slides up 2 semitones i.e. 32/16.

16   --- -- ---- ----
```

Step 1 Trigger   C5

Step 5 Trigger   C6   C#6   Value 16 = 1 semitone.

Step 13 Trigger   C6   D6   Value 32 = 2 semitones.

Slides the pitch from the current note up in 1/16th of a semitone iterations. A value of 16 will slide 1 semitone.

Slide Range Converter (Estimated)

Value	0	16	32	64	80	112	128	192	224	255
Semitones	0	1	2	4	5	7	8	12	14	16

7.37 Slide Down

FX Type Tag	Effect
J	Slide Down - Pitch

FX Description

Creates a pitch slide down from the current note as the starting reference. The intervals are in 1/16th semitone mapped across the 0-255 range.

Value Ranges

0-255

Example

While the glide effect operates on a time based pitch change and is referenced from the previous step, the slide function operates using semitone increments to control pitch from the current step note value. Values in denominations of 16 represent semitones.

1	C5 18 ---- ----	Triggers a C5 note.
5	C6 18 ---- J 80	Triggers a C6 note which slides down 5 semitones i.e. 80/16.
9	--- -- ---- ----	
13	C6 18 ---- F112	Triggers a C6 note which slides down 7 semitones i.e. 112/16.
16	--- -- ---- ----	

Step 1 Trigger   C5

Step 5 Trigger ------ C6 ⟍ G5   Value 80 = 5 semitones.

Step 13 Trigger ------ C6 ⟍ F5   Value 112 = 7 semitones.

Slides the pitch from the current note up in 1/16th of a semitone iterations. A value of 16 will slide 1 semitone.

Slide Range Converter (Estimated)

Value	0	16	32	64	80	112	128	192	224	255
Semitones	0	1	2	4	5	7	8	12	14	16

7.38 MIDI Messages and Synth Macros

FX Type Tag	Effect
a - f	MIDI CC A-F messages or synth macros

FX Description

For MIDI this issues a message out. This is typically CC but is selectable in the Instrument Parameters. Requires a MIDI instrument set with the channel. If a synth is the instrument, this will set its selected macro 1-6 parameter value.

Value Ranges	Pad Range
0-127	Pad 1 = 0, Pad 13 = 32, Pad 25 = 64, Pad 48 = 127. Use navigator for more precise edits.

Example

While the glide effect operates on a time based pitch change and is referenced from the previous step, the slide function operates using semitone increments to control pitch from the current step note value. Values in denominations of 16 represent semitones.

```
1    C5  18 ---- ----

5    C6 M01 ----  a 24      Sends a CC value of 24 to MIDI channel 1.
                            Parameter to control is set in 'Instrument Parameters'
9    --- -- ---- ----

13   C6  18 ---- F 32

16   --- -- ---- ----
```
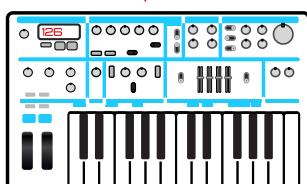
FX1 or FX2 + value

a 24   CC value to send

Range 0 - 127

Mod Wheel.
The destination parameter is defined in the instrument parameter settings when a MIDI instrument is used.

Instrument

M01   MIDI channel 1

Max 16 MIDI Instruments, each can host up to 6 CC values

```
0  Bank
1  ModWh
2  Brth
3
4  Foot
5  Glide
6  Data
7  ChVol
8  Balnc
9
10 Pan
11 Exp
12
13

   CC A
    1
```

MIDI Message to control external device.

7.39 MIDI Chords

FX Type Tag	Effect	
0	MIDI Chords Out	

FX Description

Sends MIDI chords out which are a combination of notes based on the numerical (Hex) value of the step FX. MIDI chord is also used in conjunction with arpeggiator step FX.
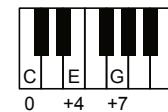
Value Ranges

Various

Example

The chord is derived from the hexadecimal value applied in the MIDI chord step and selected from a defined library of chords. The first '0' represents the MIDI chord effect other digits the chord notes, offset from the root note.

1	C5 18 ---- 0 47	Triggers a major chord: C5 + 4 semitones + 7 semitones.
5	C6 18 ---- ----	Triggers a C6 note.
9	--- -- ---- ----	
13	C6 18 ---- F112	
16	--- -- ---- ----	

Hex code represents + semitones from root

e.g. 0 47 Maj

C   E   G
0   +4   +7

Hexadecimal to Decimal Converter

Hex	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F
Dec	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15

Tracker Mini Chords (Root C Examples)

MIDI Chord Hex Code	Scale	Chord Example from Root C	MIDI Chord Hex Code	Scale	Chord Example from Root C
0 27	Sus2	C - D - G	0368	Dim7	C - D# - F# - G#
0 28	Sus2 #5	C - D - G#	036A	Half Dim	C - D# - F# - A#
0 36	DimTriad	C - D# - F#	0378	Min b6	C - D# - G - G#
0 37	Min	C - D# - G	0379	Min6	C - D# - G - A
0 47	Maj	C - E - G	037A	Min7	C - D# - G - A#
0 48	AugTriad	C - E - G#	037B	MinMaj7	C - D# - G - B
0 57	Sus4	C - F - G	0479	Maj6	C - E - G - A
0 5A	Stack4	C - F - A#	047A	Dom7	C - E - G - A#
0 5C	Open4	C - F - C	047B	Maj7	C - E - G - B
0 67	Sus #4	C - F# - G	0489	Aug Add6	C - E - G# - A
0 7C	Open5	C - G - C	048A	Aug b7	C - E - G# - A#
0 7E	Stack5	C - G - D	048B	Aug Maj7	C - E - G# - B
0279	Sus2Add6	C - D - G - A	057A	Sus b7	C - F - G - A#
027A	Sus2 b7	C - D - G - A#	057B	Su4Maj7	C - F - G - B
027B	Sus2Maj7	C - E - G - B			

8

Audio

Audio is the central element in Tracker Mini and at the heart of almost everything. The end-to-end sampling, editing, and performing process carries many sub-topics involving audio. Patterns are made with instruments and notes that trigger sounds. The process starts with the procurement, capturing, or recording of audio. Multiple audio sources are available from which to sample. It is possible to connect external line-level gear or the internal microphone. In addition, the ability to render internal audio is also a helpful feature. Tracker Mini works with PCM WAV files and converts automatically to use 44.1kHz, 16bit. Samples in the pool are interpolated. The anti-aliasing option is available in the 'Config' menu. Many options exist to render and export either part of a pattern, full songs, or track stems. Be aware rendering may take some time as it sequentially renders to audio almost in real-time. A toolkit of destructive editing features
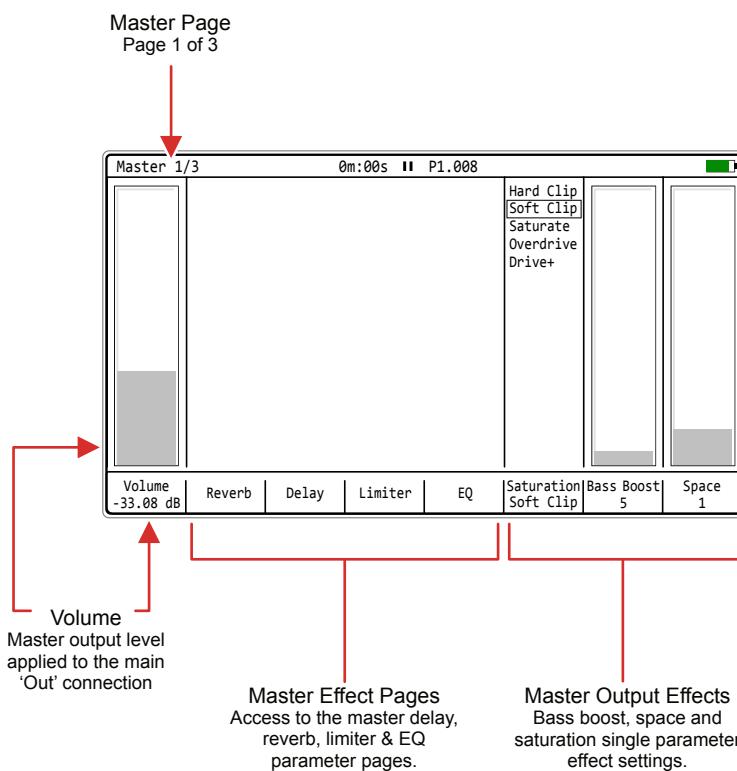
helps to prepare audio for use in instruments and patterns and for further integration with other features such as the play modes and routing through effects. Each Project can hold approx 12 minutes of mono or almost 6 minutes of stereo audio samples, although the available memory may be reduced by using higher-quality audio formats. Tracker Mini already is supplied out of the box with a number of samples and instruments pre-loaded to the provided microSD card. These are great to get things started, and additional user samples or third-party sample packs can be added and imported. It is important to state that adherence to copyright laws and original material ownership should be respected when recording and sampling audio. Take care to operate within any relevant laws, especially if considering commercially releasing a track.

8 Audio

8.1 Master Pages - Audio Control

Audio is controlled in the master pages of which 3 are available and selected by default with button [4]. This is where the Tracker Mini mixer is found to control the audio levels and also the master effects. This section will concentrate on the audio level and routing controls. The master effects are covered in another section.

Master - Page 1

The master mix is the first page in the master pages and contains the main output level as well as a series of effects and gives access to the master reverb and delay effects. Rendered audio exports of the 'master' i.e. all tracks, uses the volume level and functions in master page 1.

Master Page
Page 1 of 3

Master 1/3   0m:00s ⏸ P1.008

| Hard Clip |
| Soft Clip |
| Saturate |
| Overdrive |
| Drive+ |

| Volume
-33.08 dB | Reverb | Delay | Limiter | EQ | Saturation
Soft Clip | Bass Boost
5 | Space
1 |

Volume
Master output level applied to the main 'Out' connection

Master Effect Pages
Access to the master delay, reverb, limiter & EQ parameter pages.

Master Output Effects
Bass boost, space and saturation single parameter effect settings.

Function	Command
Navigate Options	Press (Left) or (Right).
Edit Parameter	With option selected, press (Up) or (Down) or [+] / [-].
Select Effect Page	Press the screen buttons 2 [*Reverb*], 3 [*Delay*], 4 [*Limiter*] or 5 [*EQ*].
Quick Level Adjust	Hold [4] + [+] or [-]. Button [4] is by default, assigned to master page.

Sample Track Mixer - Page 2

This page controls the sample track volume levels. Press [4] to cycle through each page. Each of the 8 tracks is displayed with a real time bar meter with the current setting in the bar and the specific value shown in the track label. Tracks rendered as individual stems will use the levels set for tracks. Note that track names can be edited in this page by pressing [Rec].

Sample Track Mixer
Page 2 of 3

Tracks & Track
Names

Muted tracks are dimmed

Sample Track Mixer 2/3	0m:00s ⏸ P1.008						
Track 1	Track 2	Track 3	Track 4	Track 5	Track 6	Track 7	Track 8

0.00 dB	0.00 dB	0.00 dB	0.00 dB	0.00 dB	0.00 dB	0.00 dB	0.00 dB
Mute	Mute	Unmute	Mute	Mute	Unmute	Unmute	Mute

Level Adjustment
Adjustable level setting for track. Bar graph and value displayed. Also controllable by MIDI CC71-CC82

Actual Level
Actual audio level for track. High levels indicate red, medium yellow, lower levels green.

Mute State
Screen button sets mute / unmute state. Also sets solo / un-soloed with shift.

Function	Command
Adjust Track Level	Hold track screen button 1-8 + press (Up) or (Down) or [+] / [-].
Mute Track	Press track screen button 1-8 to toggle mute / unmute.
Unmute Track	Press track screen button 1-8 to toggle mute / unmute.
Solo Track	Hold [Shift] + press track screen button 1-8 to toggle solo on/off.
Edit Track Names	Press [Rec], edit mode. Press track screen button 1-8 for track to rename.

Mute button behaviour.
In the master section mute is applied when the button is released after being pressed. This is different to muting in the pattern section where mutes are applied immediately when the button is pressed.

Global Mixer - Page 3

The global mixer is the third page in the master pages and contains the overall master delay, reverb level and dry / wet mix. The line input level is also included. These can all be muted and all soloed, with the exception of the line delay and reverb which can only be muted / unmuted. The 3 synth slot levels can be monitored and mixed from within this page. Press button [4] to cycle through the mixer pages.

Global Mixer
Page 3 of 3

Actual Stereo Level
Centre + right bars.

Global Mixer 3/3		0m:00s ⏸ P1.008					
Delay	Reverb	Dry Mix	Line In	Synth 1	Synth 2	Synth 3	
-4.50 dB	0.00 dB	1.80 dB	0.00 dB	-9.00 dB	-9.00 dB	-9.00 dB	
Mute	Mute	Mute	Unmute				

Level
Left bar is the level setting also displayed in the label area. Also controllable by MIDI CC79-82.

Line Input Passthrough
Line In level amount.

Synths
Left bar is the level setting and right is the actual.

Function	Command
Delay	Displays and adjusts amount of master (all tracks) delay amount.
Reverb	Displays and adjusts amount of master (all tracks) reverb amount.
Dry / Wet	Displays, adjusts mix level of the delay, reverb and the unaffected dry signal.
Synth 1,2,3	Displays and adjusts amount of each synth slot audio.
Adjust Level	Hold option screen button 1-6 + press (Up) or (Down) or [+] / [-].
Mute Option	Press option screen button 1-6 to toggle mute / unmute.
Unmute Track	Press option screen button 1-6 to toggle mute / unmute.
Solo Option	Hold [Shift] + press option screen button 1-4 to toggle solo on/off.
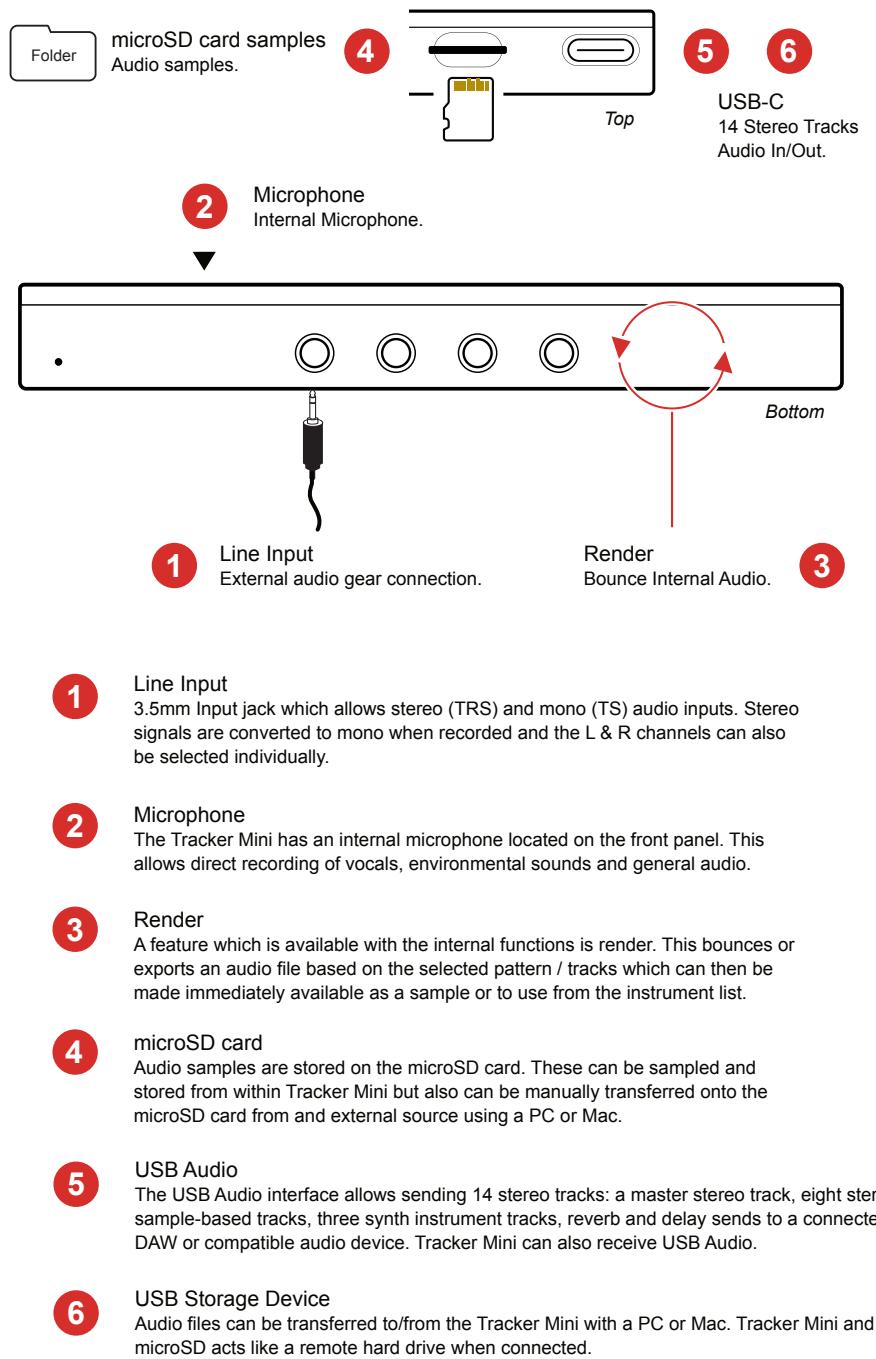
Mute button behaviour.
In the master section mute is applied when the button is released after being pressed. This is different to muting in the pattern section where mutes are applied immediately when the button is pressed.

8.2 Audio Sources

There are a number of sources where Tracker Mini can access audio. Some of which are 'live' sources and can easily be sampled. Others are manually managed or rendered within the device.

Folder

microSD card samples
Audio samples.

4

5 **6**

Top

USB-C
14 Stereo Tracks
Audio In/Out.

2 Microphone
Internal Microphone.

Bottom

1 Line Input
External audio gear connection.

Render
Bounce Internal Audio. **3**

1 Line Input
3.5mm Input jack which allows stereo (TRS) and mono (TS) audio inputs. Stereo signals are converted to mono when recorded and the L & R channels can also be selected individually.

2 Microphone
The Tracker Mini has an internal microphone located on the front panel. This allows direct recording of vocals, environmental sounds and general audio.

3 Render
A feature which is available with the internal functions is render. This bounces or exports an audio file based on the selected pattern / tracks which can then be made immediately available as a sample or to use from the instrument list.

4 microSD card
Audio samples are stored on the microSD card. These can be sampled and stored from within Tracker Mini but also can be manually transferred onto the microSD card from and external source using a PC or Mac.

5 USB Audio
The USB Audio interface allows sending 14 stereo tracks: a master stereo track, eight stereo sample-based tracks, three synth instrument tracks, reverb and delay sends to a connected DAW or compatible audio device. Tracker Mini can also receive USB Audio.

6 USB Storage Device
Audio files can be transferred to/from the Tracker Mini with a PC or Mac. Tracker Mini and the microSD acts like a remote hard drive when connected.

Tracker Mini is supplied with a 3.5mm stereo male jack to 2 x 6.3mm mono female socket adapter to allow interfacing with external gear and using the more common 6.3mm mono cables.

8 Audio
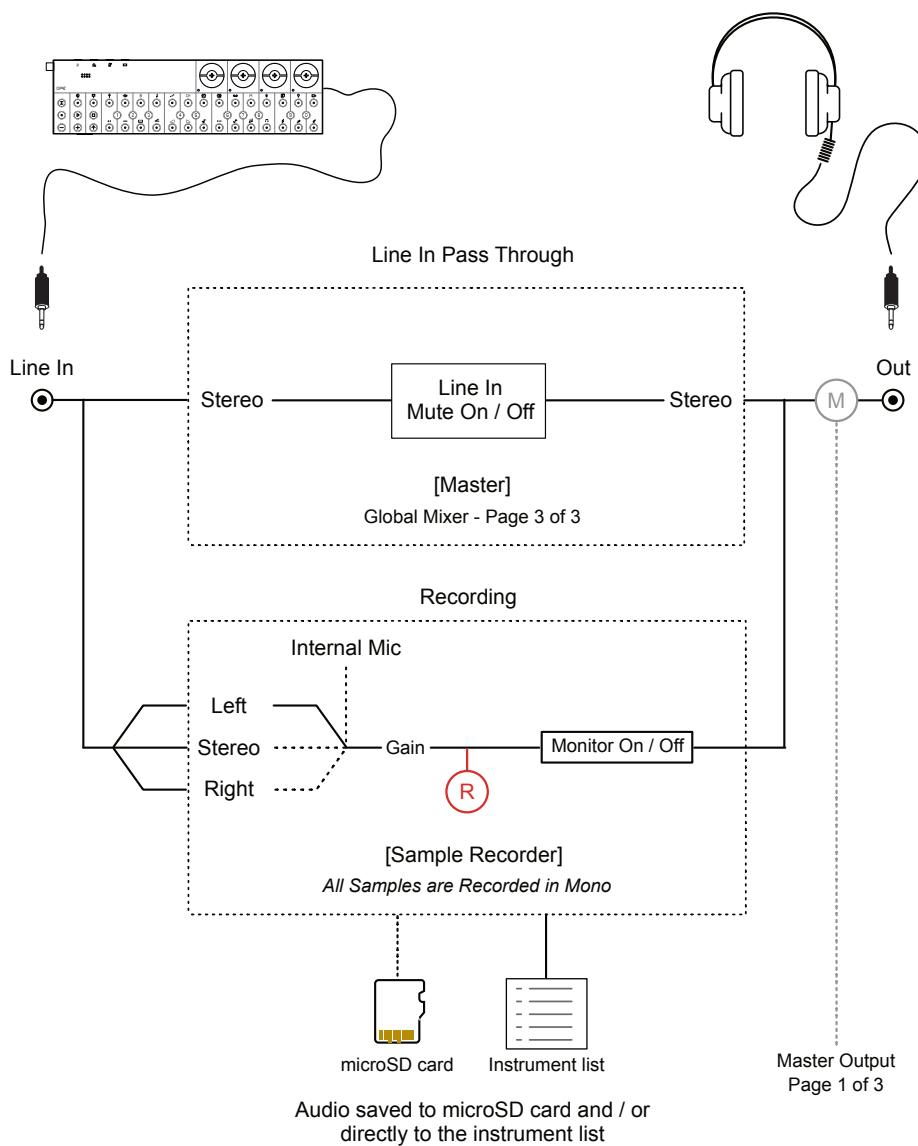
8.3 Audio Inputs

Tracker Mini has two audio inputs that provide a source to sampling and recording from external sources. Internal microphone is on the front plate. The physical audio inputs are located on the bottom of the device and provide access for line in either using TRS stereo or TS mono jacks by using the supplied 3.5mm to 2 x 6.3mm adapter.

Line Input

The input can be selected between left, right or stereo. While these are selectable options Tracker Mini records in mono. Tracker Mini can record audio or play a pattern audio but not both at the same time. Patterns when playing will output MIDI but not audio if sample recording is in progress.

Line In Pass Through

Line In   Stereo   Line In Mute On / Off   Stereo   Out

M

[Master]
Global Mixer - Page 3 of 3

Recording

Internal Mic

Left
Stereo   Gain   Monitor On / Off
Right

R

[Sample Recorder]
All Samples are Recorded in Mono

microSD card   Instrument list   Master Output
                                                Page 1 of 3

Audio saved to microSD card and / or
directly to the instrument list

The sample recorder page can select sampling input, but the general input is defined in the 'Config' parameter settings. The mixer passthrough audio operates in stereo.

SETTING THE SAMPLER LINE IN STEREO / MONO OPTION

1. Press [Shift] + [4] or use [Menu] to open the configuration settings.

2. Navigate with the left side [*Up*] and [*Down*] screen buttons to select the 'General' option.

3. In the central window pane, press the [*Up*] and [*Down*] screen buttons to navigate to 'Line in channel'.

4. Press [*Enter*] screen button to select the option pop-up window.

5. In the central pane, press the [*Up*] and [*Down*] screen buttons to navigate to select 'Stereo', 'Mono Left' or 'Mono Right'.

6. Press [*Apply*] or [*Cancel*] screen button to exit without changing.

SETTING THE MIXER LINE IN PASS THROUGH PARAMETERS

1. Open the master pages, Press [4]. Navigate to the global mixer, page 3 of 3. Press [4] to cycle through pages.

2. Line in by default is muted. Press [*Unmute*] screen button for the line in channel to mute or unmute. If unmuted this will state [*Mute*].

3. Line in can be soloed. Press [Shift] + [*Solo*] screen button for the line in channel to toggle solo on or off.

4. Hold [*Mute*] screen button + press [+] / [-] or (Up) or (Down) to adjust the level. This will adjust the 'Line In' setting.

5. The mixer bar graphs will show the audio in real time for the level, dimmed if muted and bright if audible / unmuted. The level and send amount settings are also shown on the bar and in the label.

8 Audio

Microphone

Tracker Mini has an internal microphone which allows capturing of live vocals or sounds directly into the device. The mic is located on the lower front panel of Tracker Mini and is a stereo input. A microphone can also be connected via the audio input and the 3.5mm jack but this performance will depend on the microphone, pre-amp and associated signal path. A few things should be considered when using a mic.

- Tracker Mini does not supply 48V phantom power normally used for condenser microphones. Dynamic mics are therefore advised.

- The mic selection input in the sample recorder refers to the internal microphone audio.

- A microphone can be connected on the line input, however recording from a microphone will always be in mono. The actual audio chain and performance will depend on the external configuration (pre-amp, mic type etc)

- Recording with a microphone follows similar principles to line-in. The gain may need more pre-adjustment before recording due to the nature or microphones and recording.

8.4 Sample Formats

The general principle when using Tracker Mini is to use short samples. Creativity often is inspired by limitations. While microSD card size is large and can hold a lot of high quality samples, the internal memory in Tracker Mini is at a premium. The balance between quality and file size is an important consideration.

Project Sample Time
Up to 12 minutes per project (mono) or almost 6 minutes per project (stereo) at standard quality audio imports.

Individual Sample Recording Time
Maximum sample length is approx 350 seconds per stereo sample and approx 700 seconds for mono samples.

Sample Format
The internal sampler engine operates at 44.1kHz, 16, 24, float 32 Bit, mono or stereo, WAV audio files.

Instrument List
Samples can be loaded from the microSD card and into Tracker Mini memory. A sample loaded to the internal list becomes an instrument.

Browser Import Format
Uncompressed Wav files. Imported audio operates at 44.1kHz, 16, 24 float 32 bit, mono or stereo, WAV audio files.

Browser Import File Size
Large files can be trimmed to import. Low quality import mode also possible to reduce the file size.
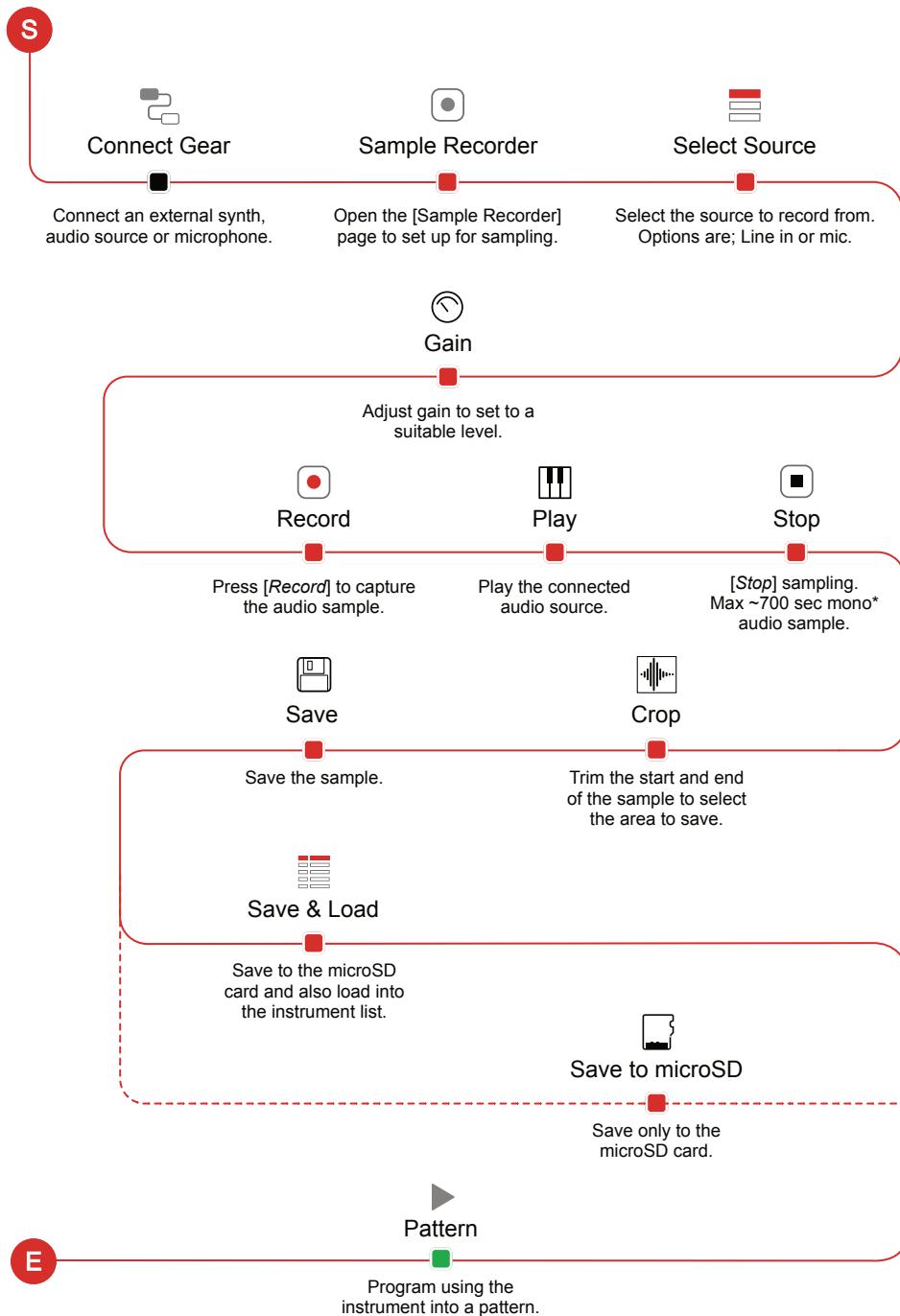
Rendered Output Files
Stems created are PCM Wav files. The exported audio file is 44.1kHz, 16 bit.

8 Audio

8.5 Recording Audio Workflow

Sampling in Tracker Mini takes place in the 'Sample Recorder' page. This is the first step in the process and is followed by editing the audio captured. Sampling in this page can be from the line in or mic audio sources.

S

Connect Gear
Connect an external synth, audio source or microphone.

Sample Recorder
Open the [Sample Recorder] page to set up for sampling.

Select Source
Select the source to record from. Options are; Line in or mic.

Gain
Adjust gain to set to a suitable level.

Record
Press [*Record*] to capture the audio sample.

Play
Play the connected audio source.

Stop
[*Stop*] sampling. Max ~700 sec mono* audio sample.

Save
Save the sample.

Crop
Trim the start and end of the sample to select the area to save.

Save & Load
Save to the microSD card and also load into the instrument list.

Save to microSD
Save only to the microSD card.

Pattern
Program using the instrument into a pattern.

E

* Sample time, max ~700 sec mono or ~350 sec stereo

8.6 Sampling

Everyone will develop a personal workflow for sampling and the process may differ due to the source to be recorded. Polyend Tracker Mini allows approx 45 seconds of recorded audio time per sample and each project has a total of over 700 seconds, almost 12 mins of mono sample time or 6 mins of stereo sampling time. The internal sampler engine operates at 44.1kHz, 16, 24, float 32 Bit, mono or stereo, WAV audio files

The main page used at the sampling stage is the 'Sample Recorder' accessed via the [Menu]. Here the parameter settings can be adjusted pre sampling. The selected source will determine the available options. Controlling the start and stop recording process is triggered from this page.

Recording
Starts recording [*Record*].
Also button becomes [*Stop*] while recording is in progress.

Source
Select the input to record in the sampler.

Level
Visual indicator of source volume level.

Gain
Boosts the signal level.

Monitor.
Will allow the audio source to be previewed at the output.

When sampling from USB source, ensure Tracker Mini is connected to a USB host and the USB Audio option is set correctly for audio input.
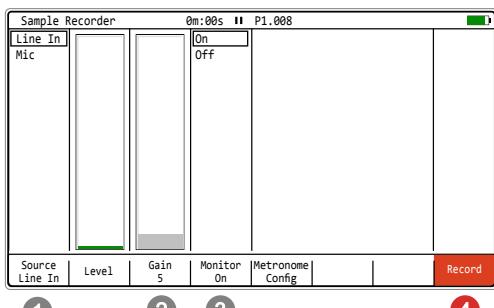
Metronome config
The metronome config screen button gives direct access to the metronome settings. This page can also be accessed from the [Menu] option > Config > Metronome.

8 Audio

Sampling process
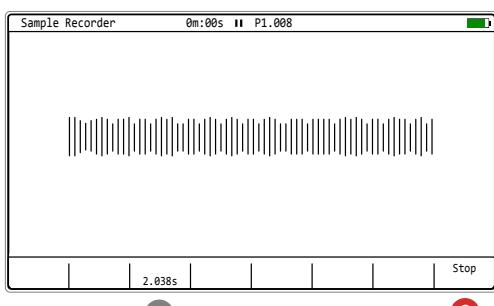
Starting by selecting the 'Sample Recorder' page within the [Menu].

```
┌─────────────────────────────────────────────────┐
│ Sample Recorder      0m:00s ▌▌ P1.008      ▬▬▬▬│ │
│ ┌─────┐ ┌──┐ ┌──┐ ┌─────┐                        │
│ │Line In│ │  │ │  │ │On    │                       │
│ │Mic    │ │  │ │  │ │Off   │                       │
│ │       │ │  │ │  │ │      │                       │
│ │       │ │  │ │  │ │      │                       │
│ │       │ │  │ │  │ │      │                       │
│ ├────────────────────────────────────────────┤  │
│ │Source │Level│Gain│Monitor│Metronome│ │ │Record│ │
│ │Line In│     │ 5  │ On    │Config   │ │ │      │ │
│ └────────────────────────────────────────────┘  │
└─────────────────────────────────────────────────┘
   ①        ②    ③                      ④
```

① As pre-recording optional actions, select the audio [*Source*], set [*Monitor*] to on and adjust
② the [*Gain*] to establish a suitable recording level. External devices should be auditioned
③ while adjusting the gain to hear the impact.
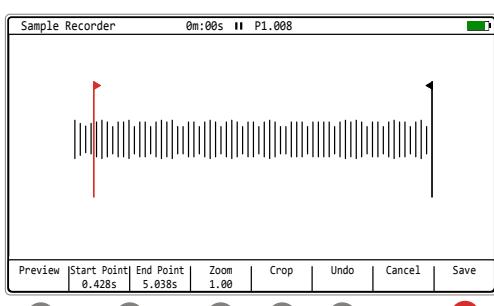
**④** Press [*Record*]. 8th screen button, to start sampling the incoming audio.

Play the external device.

```
┌─────────────────────────────────────────────────┐
│ Sample Recorder      0m:00s ▌▌ P1.008      ▬▬▬▬│ │
│                                                   │
│                                                   │
│              ||||||||||||||||||||||||             │
│                                                   │
│ ├────────────────────────────────────────────┤  │
│ │       │2.038s│    │       │         │ │ │ Stop │ │
│ └────────────────────────────────────────────┘  │
└─────────────────────────────────────────────────┘
         ⑤                              ⑥
```

⑤ The sampler will capture the audio into the Tracker Mini memory buffer and display the recording time. Recording will automatically stop if the memory is full at ~700 sec mono, ~350 seconds stereo.

⑥ Press [*Stop*]. 8th screen button, to manually stop the sampling process.

```
┌─────────────────────────────────────────────────┐
│ Sample Recorder      0m:00s ▌▌ P1.008      ▬▬▬▬│ │
│            ▌                          ▌           │
│            ▌                          ▌           │
│          ||||||||||||||||||||||||||   ▌           │
│            ▌                          ▌           │
│ ├────────────────────────────────────────────┤  │
│ │Preview│Start Point│End Point│Zoom│Crop│Undo│Cancel│Save│ │
│ │       │ 0.428s    │ 5.038s  │1.00│    │    │      │    │ │
│ └────────────────────────────────────────────┘  │
└─────────────────────────────────────────────────┘
    ⑧       ⑦          ⑧      ⑨   ⑩          ⑪
```
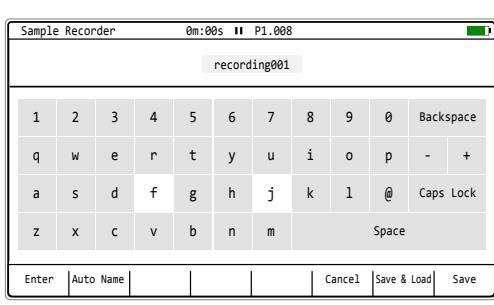
⑦ Trim the [*Start*] and [*End*] points of the recorded sample while previewing the audio
⑧ to get the positions correct. Also [*Zoom*] in or out as a visual aid for precise editing.

⑨ If required use [*Crop*] to edit to the start and end points selected.

⑩ The [*Undo*] option can reset previous state.

⑪ Press [*Save*] when editing is complete. Alternatively press [*Cancel*] to exit without saving. Confirm cancel with [*Yes*].

```
┌─────────────────────────────────────────────────┐
│ Sample Recorder      0m:00s ▌▌ P1.008      ▬▬▬▬│ │
│                  ┌──────────────┐                 │
│                  │ recording001 │                 │
│  1  2  3  4  5  6  7  8  9  0   Backspace         │
│  q  w  e  r  t  y  u  i  o  p   -  +              │
│  a  s  d  f  g  h  j  k  l  @   Caps Lock         │
│  z  x  c  v  b  n  m           Space              │
│ ├────────────────────────────────────────────┤  │
│ │Enter│Auto Name│ │ │Cancel│Save & Load│Save│    │
│ └────────────────────────────────────────────┘  │
└─────────────────────────────────────────────────┘
    ⑫                      ⑭          ⑬
```

⑫ Type in a name for the sample or use [*Auto Name*] to generate a system name. Pads act as the qwerty keyboard, [*Enter*] will enter a highlighted character.

⑬ Press [*Save*], 8th screen button, to save the file into the microSD card 'Recordings' folder.

⑭ Press [*Save & Load*], 7th screen button, to save the file into the microSD card 'Recordings' folder and also load the sample into the instrument list. The instrument list will open with this option.

NOTES

▋ SAMPLING IN THE SAMPLE RECORDER

1. Press [Menu] then select 'Sample Recorder' to open the sampler page.

2. Setup the input and levels.

    •   Ensure the correct input to record is selected, press [*Source*] screen button to toggle selections.

    •   Select monitoring ON, press [*Monitor*] screen button to toggle.

    •   It may be useful to play the device to make it audible to record before starting to record to allow the setting up of the level.

    •   Adjust gain to suit input level. Press [*Gain*] and press (Up), (Down) or [+] / [-] buttons. The level meter should not be lit red but green / amber, approx 70%.

3. Press [*Record*] screen button to start sampling. The recording time that has lapsed will be displayed.

4. Press [*Stop*] screen button to stop sampling. It may be useful to also stop playing the recorded device. If stop is not initiated, sampling will continue until the memory is full.

5. The sample can be cropped before saving. This allows removal of any gaps or unwanted audio at the start end. The function to zoom using the [*Zoom*] screen button + [+] / [-] may help to get close up to areas to trim.

6. Press [*Start*] screen button, then press [+] / [-] to set the start point. Press [*End*] screen button, then press [+] / [-] to set the end point. It may be an iterative process to set both as desired.

7. Press [*Crop*] screen button to trim the sample to the selected start and end points. The sample is cropped.

8. Save the sample, press [Save] screen button.

9. The sample can be manually named in the text editor window. Alternatively, press [*Auto Name*] screen button to set a system generated name.

10. Press [*Save & Load*] screen button. This saves to the microSD card 'recordings' folder, selects the instrument and opens the instrument list.

11. Alternatively, press [*Save*] screen button. This saves directly to the microSD card 'recordings' folder only.

8 Audio

8.7 Rendering and Exporting Internal Audio

Sampling is the process of recording and capturing audio, typically from external sources in the 'Sample Recording' page. Sampling of internal audio is performed through a different process where the audio is rendered.

Rendering is available in two levels:-

*   Pattern level. The render function is available from within the 'Pattern' pages and is performed on selected parts of a pattern. This is useful to lock in FX1 / FX2 and send effects into an audio sample or to combine multiple note tracks, rendered together as a chord sample.

*   Project level. The export function is accessible in the 'File' pages. This will allow rendering of complete patterns, individual tracks, samples or entire songs, saving directly to an microSD card. This is useful to create full stems and to later mix / remix in a DAW or for use in another package or to simply distribute to others.

Quick rendering a pattern selection

	Track 1	Track 2	Track 3	Track 4
1	D6 03 ---- ----	E6 03 ---- ----	D6 03 ---- ----	D6 03 ---- ----
2	D6 03 ---- ----	E6 02 ---- F 4	D4 04 ---- ----	D6 03 ---- T 50
3	D6 03 ---- V80	F6 02 ---- ----	D4 04 ---- C 50	D6 03 ---- ----
4	D6 03 ---- ----	F6 02 ---- F 4	D4 04 ---- ----	D6 03 ---- TSTP
5	D6 03 ---- ----	E6 02 ---- m 5	D4 05 ---- C 75	D6 03 ---- ----
6	D6 03 ---- ----	E6 02 ---- ----	D4 05 ---- ----	D6 03 ---- ----
7	D6 03 ---- ----	F6 02 ---- m -5	D4 05 ---- C 75	D6 03 ---- T 50
8	D6 03 ---- V 60	F6 02 ---- ----	D4 04 ---- C 50	D6 03 ---- ----
9	D6 03 ---- ----	D6 02 ---- TSTP	D4 04 ---- ----	D6 03 ---- TSTP
10	D6 03 ---- ----	D6 03 ---- ----	D6 03 ---- ----	D6 03 ---- ----

Step selection
A number of steps in a pattern, across various tracks can be rendered into one single sample. The pattern page is used with [Rec] mode on.
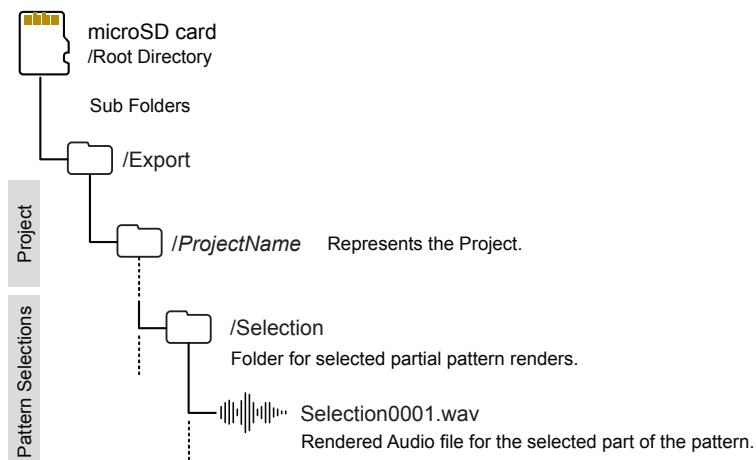
Folder location when using the render option in the pattern page.
/Export/ *ProjectName*/ Selection will save to current project name

█ RENDERING SELECTION IN A PATTERN

1. Press [1] to select the pattern mode page.

2. Press [Rec] to select record edit mode.

3. Hold [Shift] + (Up), (Down), (Left), (Right) to select the range to render. For example, select across 3 tracks, 8 steps, of a percussion sequence.

4. Press [*More*] screen button to select more pattern options.

5. Press [*Render Selection*] screen button. This will be dimmed and unavailable if [Rec] is off.

6. The naming page appears. A name can be edited or press [*Auto Name*] screen button to automatically apply a name. Manually editing the name offers an opportunity to make the name relevant, although a longer process. Auto name may be less relevant in terms of the name, but is a faster process.

7. When the name is entered, press [*Render & Load*] screen button. This option will not only render the audio but also automatically load the sample into the instrument list. The pattern will halt playback if playing. When the file has been 'exported', the instrument list will open ready to preview and the sample selected.

8. Alternatively, press [*Render Selection*] screen button. This option will render the audio. The pattern will halt playback if playing. This will render and save onto the microSD card.

9. The microSD card save location is in the 'Export/ *ProjectName*/ Selection' folder for both render options. Rendered files are 44.1kHz, 16 bit. Files are accessible from sample loader.

microSD card
/Root Directory

Sub Folders

/Export

Project

/*ProjectName*   Represents the Project.

Pattern Selections

/Selection
Folder for selected partial pattern renders.

Selection0001.wav
Rendered Audio file for the selected part of the pattern.
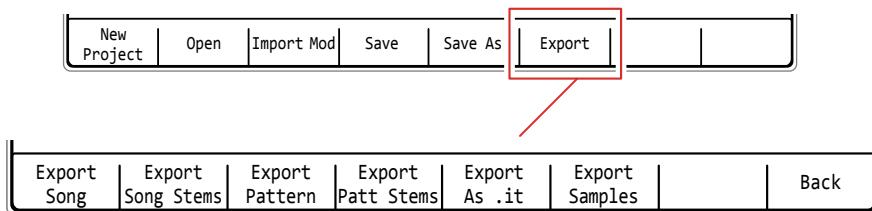
8 Audio

Rendering and exporting stems

The function to render and export full stems for tracks or full songs and patterns is found in the 'File' options. MIDI Clock in must be set to Internal in the config settings in order to render stems.

Hold [Shift] + [3] or access 'File' in the [Menu]

| New Project | Open | Import Mod | Save | Save As | Export | | |

| Export Song | Export Song Stems | Export Pattern | Export Patt Stems | Export As .it | Export Samples | | Back |

Folder location when using the render option in the file page.

/Export/ *ProjectName*/ Selection - Exports to the folder named for the current project

Function	Screen Button	Description
Export Song	1st	Renders an individual audio files for the selected song. Muted tracks are not rendered. The stem will cover the entire song length and are 44.1kHz, 16 Bit PCM Wav files.
Export Song Stems	2nd	Renders individual audio files for each of the 8 unmuted tracks and 2 effects, delay and reverb, all in stereo. Muted tracks are not rendered. In addition a stereo mix of the complete song is created as an audio file. The stems will cover the entire song length and are 44.1kHz, 16 bit PCM Wav files.
Export Pattern	3rd	Renders an individual audio file for the selected project pattern. Muted tracks are not rendered. The stem will cover the entire pattern length and are 44.1kHz, 16 Bit PCM Wav files. A unique folder is created to represent the render.
Export Patt Stems	4th	Renders individual and complete audio files for the project patterns. Muted tracks are not rendered. The stems will cover the entire pattern length and are 44.1kHz, 16 Bit PCM Wav files. This will render 11 stems (tracks, delay, reverb and master). A unique folder is created to represent the render.
Export .it files [Beta Feature]	5th	Exports the project as a file aimed to be compatible with other classic Trackers. This includes Renoise, Schism Tracker or Milky Tracker. The .it format can be imported by Tracker. The compatibility of the export is not guaranteed due to the variables across the Tracker model range. The LFO will be exported as an envelope.
Export Samples	6th	Exports the project .pti instrument files as .wav files. This captures instruments to audio. Exported to the microSD card within the folder, Projects/*ProjectName*/samples, named by the instrument name.

The rendering process is almost real-time based on the project duration (in fact song stems render approx 20% faster than the time duration of the playback) and operates by rendering stems one by one. This means when exporting stems the render time can be 2-3 times, maybe even longer than the original song duration. The render progress is displayed when in operation.

RENDER AND EXPORT A FULL PATTERN

1. Press [Shift] + [3] or press [Menu] to select the file options page.

2. Press [*Export*] screen button to select the export specific options.

3. Press [*Export Pattern*] screen button to render and export.

4. The currently active pattern will be rendered and exported. Any muted tracks are not rendered and will remain silent in the exported audio file.

5. A folder is created on the microSD card that represents the render. This is located in the /Export sub folder. The file itself will be called 'master. wav'. Each time the pattern is exported a new folder is created. The folder naming convention is:-

   *Project name*_P *Pattern number_Sequential render number*

RENDER AND EXPORT ALL PATTERN STEMS

1. Press [Shift] + [3] or press [Menu] to select the file options page.

2. Press [*Export*] screen button to select the export specific options.

3. Press [*Export Patt Stems*] screen button to render and export.

4. All tracks plus the delay and reverb audio will be rendered in mono and exported. Also a stereo master file is rendered of all tracks. Any muted tracks are not rendered and will remain silent in the exported audio file.

5. A folder is created on the microSD card that represents the render. This is located in the /Export sub folder. The 11 files will be called 'track 1.wav' etc, 'delay.wav', 'reverb.wav' and 'master.wav'. Each time the pattern is exported a new folder is created. The folder naming convention is:-

   *Project name*_P *Pattern number*_S f*or Stems + Sequential number*
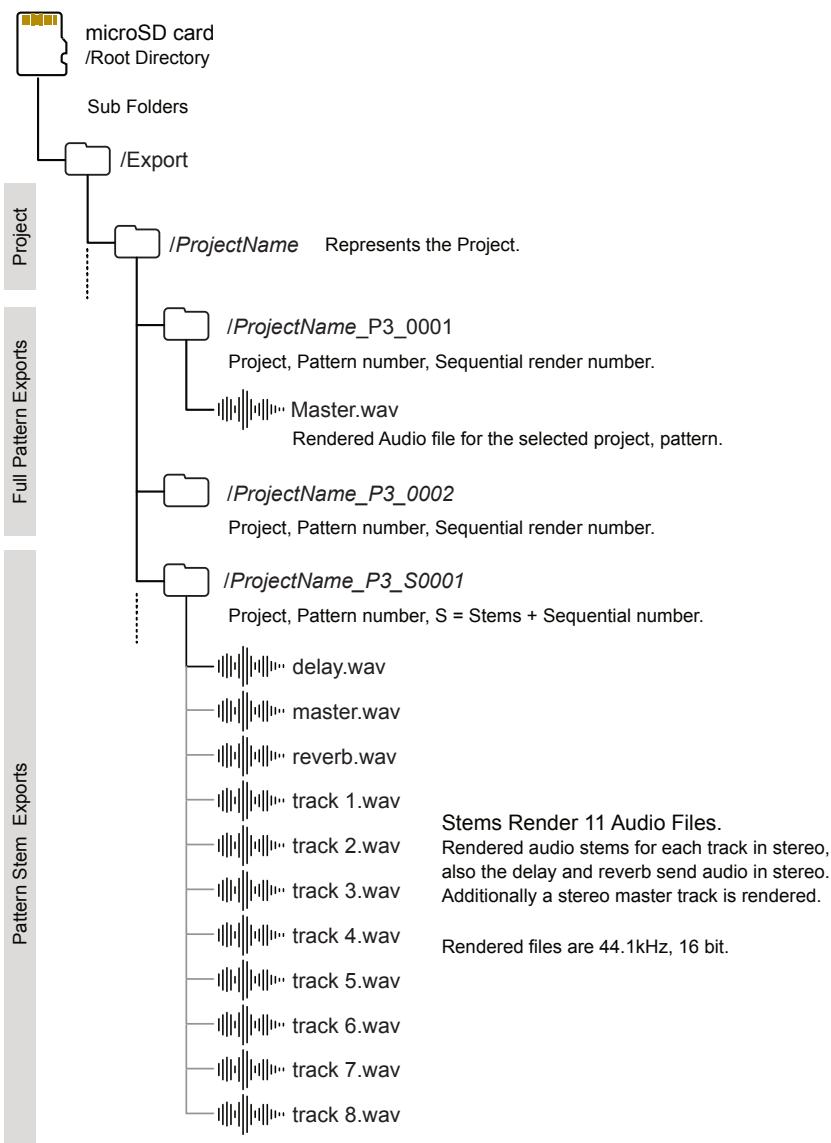
> The option to import and export classic tracker mod .it files is possible. However this is a beta feature and may not be fully functional.

8 Audio

Rendered pattern locations

Rendered files are exported to the /export folder and new sub-folders are created for patterns and pattern stems. These are accessible from the sample loader function pages.

microSD card
/Root Directory

Sub Folders

Project

/Export

/*ProjectName*   Represents the Project.

Full Pattern Exports

/*ProjectName*_P3_0001

Project, Pattern number, Sequential render number.

Master.wav
Rendered Audio file for the selected project, pattern.

/*ProjectName_P3_0002*

Project, Pattern number, Sequential render number.

/*ProjectName_P3_S0001*

Project, Pattern number, S = Stems + Sequential number.

Pattern Stem Exports

delay.wav

master.wav

reverb.wav

track 1.wav

track 2.wav   Stems Render 11 Audio Files.
                     Rendered audio stems for each track in stereo,
                     also the delay and reverb send audio in stereo.
track 3.wav   Additionally a stereo master track is rendered.

track 4.wav   Rendered files are 44.1kHz, 16 bit.

track 5.wav

track 6.wav

track 7.wav

track 8.wav

RENDER AND EXPORT A FULL SONG

1. Press [Shift] + [3] or press [Menu] to select the file options page.

2. Press [*Export*] screen button to select the export specific options.

3. Press [*Export Song*] screen button to render and export.

4. The current song will be rendered and exported. Any muted tracks are not rendered and therefore remain silent in the exported audio file.

5. A folder is created on the microSD card that represents the render. This is located in the /Export sub folder. The file itself will be called 'master. wav'. Each time the song is exported a new folder is created. The folder naming convention is:-

    *Project name*_Song_*Sequential render number*

RENDER AND EXPORT ALL SONG STEMS

1. Press [Shift] + [3] or press [Menu] to select the file options page.

2. Press [*Export*] screen button to select the export specific options.

3. Press [*Export Song Stems*] screen button to render and export.

4. All tracks plus the delay and reverb audio will be rendered in stereo and exported. Also a stereo master file is rendered of all tracks. Any muted tracks are not rendered and will remain silent in the exported audio file.

5. A folder is created on the microSD card that represents the render. This is located in the /Export sub folder. The 11 files will be called 'track 1.wav' etc, 'delay.wav', 'reverb.wav' and 'master.wav'. Each time the pattern is exported a new folder is created. The folder naming convention is:-
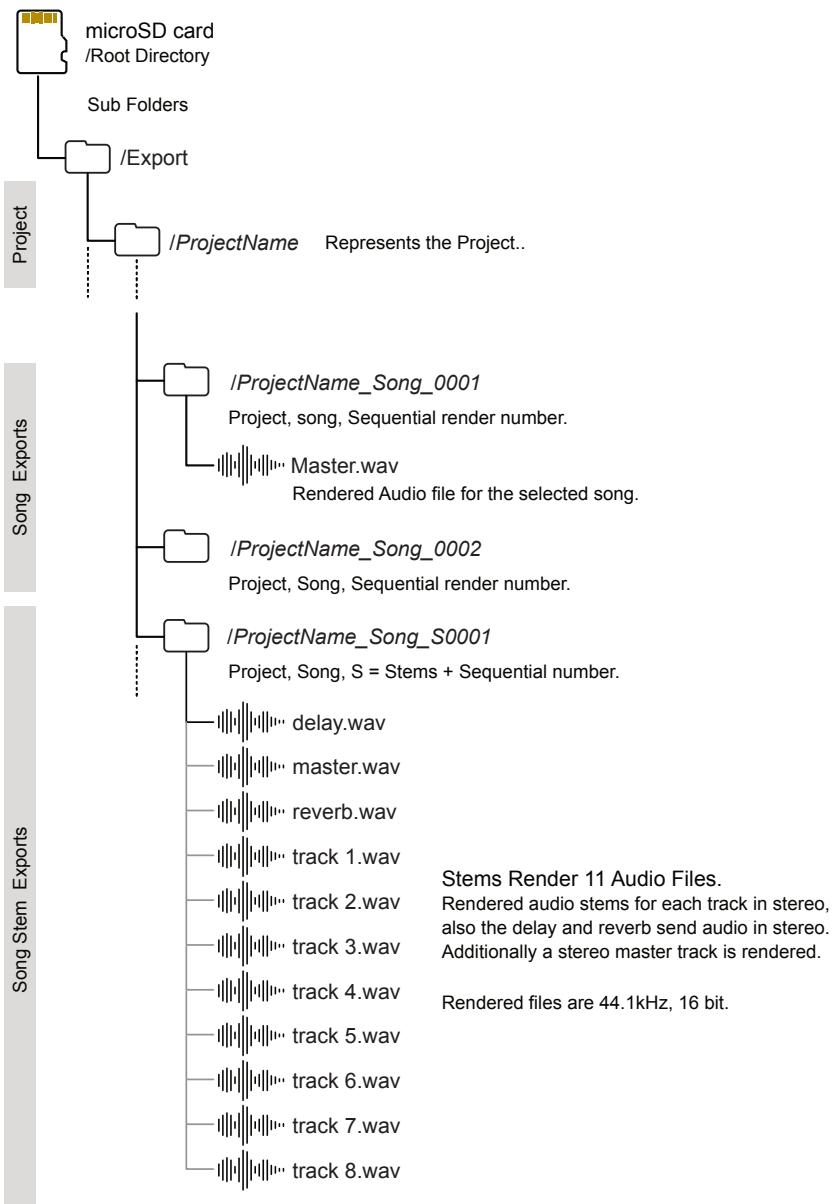
    *Project name*_Song_S *for Stems + Sequential number*

8 Audio

Rendered song locations
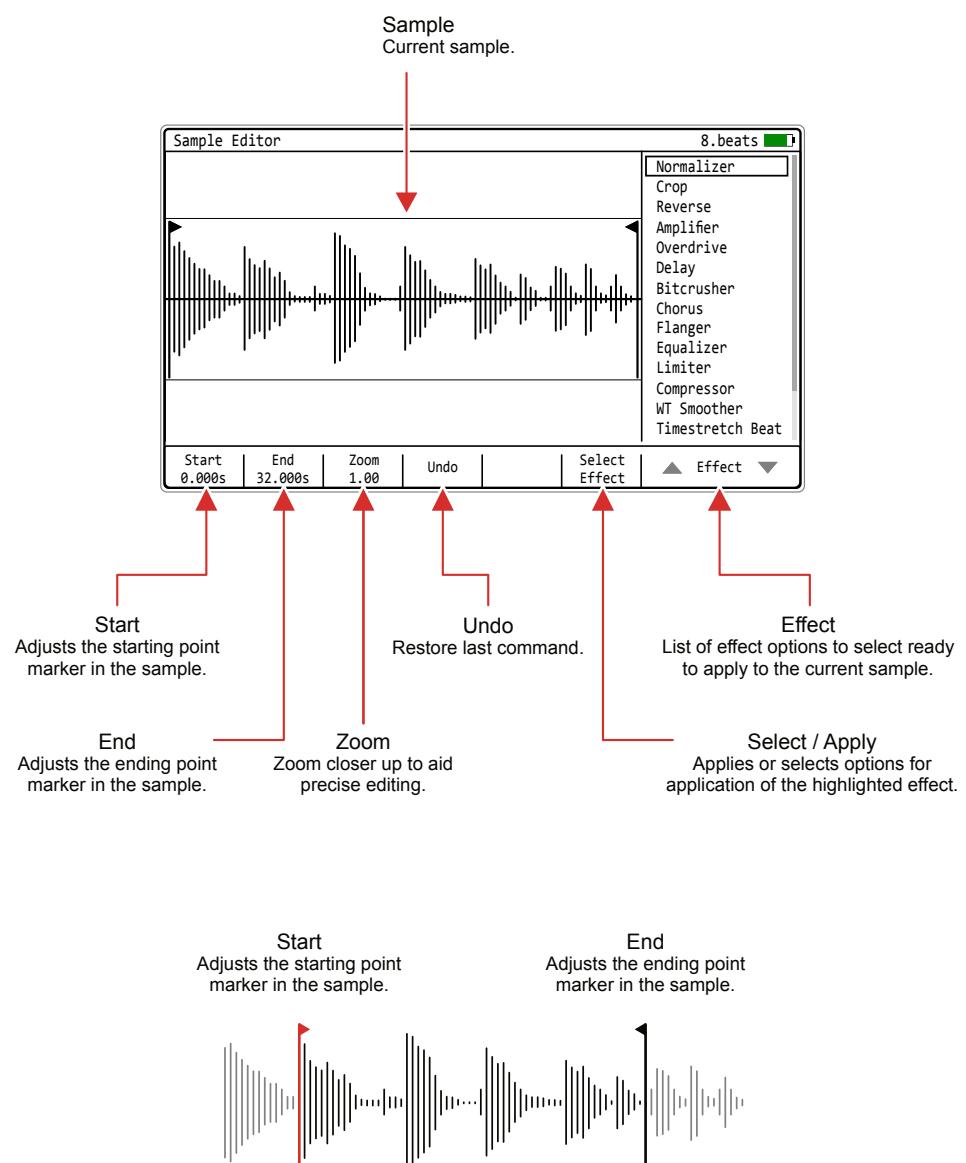
Rendered files are exported to the /export folder and new sub-folders are created for songs and song stems. These are accessible from the sample loader function pages.

microSD card
/Root Directory

Sub Folders

/Export

Project

/*ProjectName*   Represents the Project..

Song Exports

/*ProjectName_Song_0001*

Project, song, Sequential render number.

Master.wav
Rendered Audio file for the selected song.

/*ProjectName_Song_0002*

Project, Song, Sequential render number.

Song Stem Exports

/*ProjectName_Song_S0001*

Project, Song, S = Stems + Sequential number.

delay.wav

master.wav

reverb.wav

track 1.wav

track 2.wav   Stems Render 11 Audio Files.
                      Rendered audio stems for each track in stereo,
track 3.wav   also the delay and reverb send audio in stereo.
                      Additionally a stereo master track is rendered.
track 4.wav

track 5.wav   Rendered files are 44.1kHz, 16 bit.

track 6.wav

track 7.wav

track 8.wav

8.8 Advanced Audio Editing

Sampling captures audio using the 'Sample Recorder' and provides basic editing features for quick and easy use of the sample in the project. An instrument can be selected from within the sample editor by holding [Instrument] to open the browser. A more advanced set of editing features exists in the 'Sample Editor' which focuses on the currently selected sample. Press the D-Pad (Enter) button to preview the audio.

Sample
Current sample.

Sample Editor	8.beats

Normalizer
Crop
Reverse
Amplifier
Overdrive
Delay
Bitcrusher
Chorus
Flanger
Equalizer
Limiter
Compressor
WT Smoother
Timestretch Beat

Start 0.000s	End 32.000s	Zoom 1.00	Undo	Select Effect	▲ Effect ▼

Start
Adjusts the starting point marker in the sample.

End
Adjusts the ending point marker in the sample.

Zoom
Zoom closer up to aid precise editing.

Undo
Restore last command.

Effect
List of effect options to select ready to apply to the current sample.

Select / Apply
Applies or selects options for application of the highlighted effect.

Start
Adjusts the starting point marker in the sample.

End
Adjusts the ending point marker in the sample.

The start and end points determine the region of the sample which will be affected by the applied effect. The sample can be cropped to the desired positions and save memory by discarding unwanted audio.

8 Audio

Audio effects overview
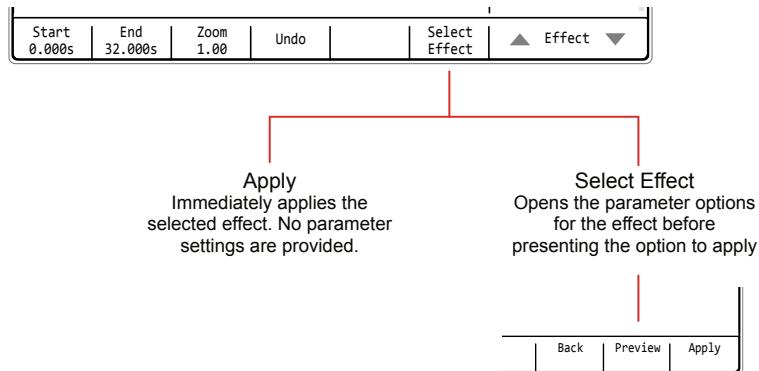
These effects are applied destructively and baked into the selected audio sample in project memory. The undo command can restore a prior state unless saved. The original microSD file remains intact and is unaffected.

Effect	Description
Normalizer	Adjusts the gain on the selected sample or part of the sample between the start / end point. Gain will be based on the normalizer 0-100% level and will boost or attenuate the selected audio consistently across the selection.
Crop	Trims the audio at the start and end points and discards any audio outside of these settings. Useful to manage sample size and create samples with precise duration.
Reverse	Reverses the audio between the selected start and end point settings.
Amplifier	Amplifies the audio within the start and end points by the selected 'amplifier' level 0-5 in the effect. Effectively multiples the sample or selection.
Overdrive	Adds distortion into the audio sample for the selected audio between start and end. Three model types 0,1,2 are selectable as well as a gain adjustment.
Delay	Introduces delay into the audio sample or selected audio between start and end. Feedback and time parameters are adjustable before applying.
Bitcrusher	Bitcrushes the audio sample or selected audio between start and end. The number of bits can be adjusted between 1-16. Also sample rate can be adjusted.
Chorus	Chorus effect giving a classic multi layered instrument sound can be applied to the audio sample or selection. Number of chorus voices 1-8 and length between 2-92ms can be adjusted before applying the effect into the audio.
Flanger	Flanger effect giving a classic out of phase layered sound can be applied to the audio sample or selection. Several parameter settings can be adjusted before applying the effect into the audio. These include length, offset, depth and rate.
Equalizer	Equalizer also called EQ affects the frequency bands in an audio signal by boosting or attenuating. The 3-Band EQ can be adjusted before applying into the sample or selected part of the sample.
Limiter	A limiter is used to control or tame dynamic peaks by reducing or limiting the transients. Normally used as a corrective or control function and associated with loudness rather than a creative effect. Includes threshold, attack and release parameters.
Compressor	A compressor is used to manage and reduce dynamic range. In this application it is used as a control function. The typical parameters of threshold, ratio, attack and release are adjustable before applying to the audio sample or selection.
WT Smoother	This is a tool used to optimise and convert audio into a sample more compatible with the wavetable play mode function. The wavetable window settings are adjustable before applying to the audio sample or selection.
Timestretch Beat	Creative manipulation tool to stretch the sample time which in turn affects the sound. Used more for beat based material. The tempo, steps, micro-step and granule are adjustable before applying to the audio sample or selection.
Timestretch Note	Creative manipulation tool to stretch the sample time which in turn affects the sound. Used more for melody based material. The length and granule are adjustable before applying to the audio sample or selection.
Fade In	Quick and easy application of a fade in to the audio sample or a selected part. This operates at a fixed setting across the start / end selected part of the sample.
Fade Out	Quick and easy application of a fade out to the audio sample or a selected part. This operates at a fixed setting across the start / end selected part of the sample.

8.9 Sample Editor Effects

The sample editor pages have more advanced destructive editing options. A comprehensive range of effects can also be applied to affect the audio either to correct or adjust or to create new sounds. Some effects are applied directly, while others have parameters and settings

| Start 0.000s | End 32.000s | Zoom 1.00 | Undo | | Select Effect | ▲ Effect ▼ |

Apply
Immediately applies the selected effect. No parameter settings are provided.

Select Effect
Opens the parameter options for the effect before presenting the option to apply

| Back | Preview | Apply |

The preview option found in the selected effect sub-page will render the effect and audition the sample with the effect applied. In the main 'Sample Editor' page, Pressing the D-Pad (Enter) button will preview the audio.

The effect is applied to the audio sample or the audio selected between the start and end points.

APPLYING AN AUDIO EFFECT

1. Press [Menu] and select 'Sample Editor' options page.

2. Press [*Start*] or [*End*] and Press [+] / [-] or (Up) (Down) to adjust the sample selection area or simply leave the start and end points at the edges to cover the complete sample.

3. Press [*Effect*] screen button to navigate to the effect to apply.

4. With the desired effect highlighted, ie bounding box selection, press [*Select Effect*] or [*Apply*] screen button.

5. The effect will either be immediately applied by pressing 'Apply' or will open the effect page options if pressing 'Select Effect'.

6. If an effect page and its parameters are available, adjust as desired using the screen and [+] / [-] buttons. Press [*Back*] to return to page.

   • Press [*Preview*] screen button to hear the newly affected audio

   • Press [*Apply*] screen button, to confirm and render.
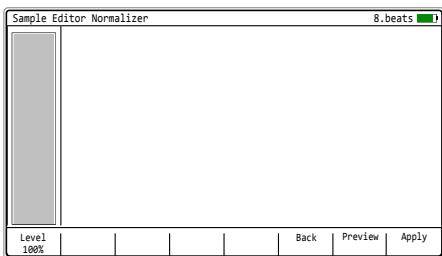
8 Audio
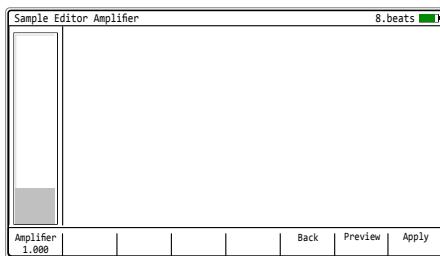
Normalizer and amplifier

Both the normalizer and amplifier apply similar effects in that they adjust the gain across the audio sample or region. Normalizer gain will be based on the level setting where 100% will maximize the audio level across an entire sample by using the highest peak point as reference. This is a typical normalised application. Think of the amplifier as a multiplier of the audio gain where 1 would be the current state and numbers below 1 will attenuate and above 1 will boost. Amplified audio can exceed the normal range

Normalizer
Gain adjustment based on the 0-100% Level.

```
Sample Editor Normalizer              8.beats  ▮

        ┌──┐
        │  │
        │  │
        │  │
        │  │
        │  │
        │  │
        │  │

Level           │    │    │   Back  Preview  Apply
100%
```

Amplifier
Gain is based on the 0.01 - 5 amplification range.

```
Sample Editor Amplifier               8.beats  ▮

        ┌──┐
        │  │
        │  │
        │  │
        │  │
        │  │
        │▓▓│

Amplifier       │    │    │   Back  Preview  Apply
1.000
```
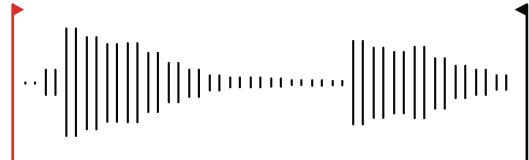
Crop and reverse

Both the crop and reverse functions apply an immediate edit to the selected or the entire audio sample. Reverse simply reverses the audio playback direction while crop will trim and discard the audio outside of the start / end markers. Zoom may help focus on more precise marker setting locations.

Original audio sample and start / end selection.

Original audio sample cropped to start / end selection and auto zoomed to view in the full window.

Original audio sample reversed based on the approximate start / end selection and aligned for smooth transition.
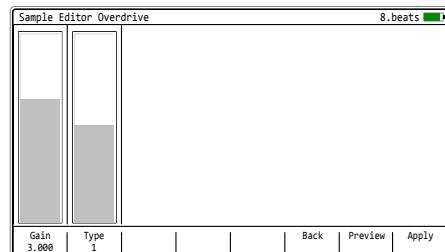
Overdrive and bitcrusher

Overdrive is a classic distortion effect based on driving the analog audio signal into an amplifier hard. This gives a grungy, edge to the sound or full on distortion. Given the aggressive nature of overdrive the gain adjustment is a welcome feature. Bit crushing is a process which also gives a distortion like effect and is based on lowering the digital quality down from a standard 16bit, 44.1kHz and introduces a LoFi style sound.
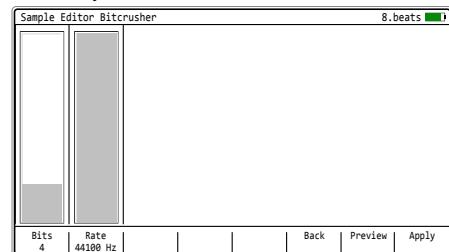
Overdrive
Three overdrive types are available.
Gain control from 0.01 to 5.000.

Sample Editor Overdrive				8.beats
Gain 3.000	Type 1		Back	Preview	Apply

Bitcrusher
Bit reduction from 16 bit down to 1, sample rate also can be adjusted from 44100 Hz down to 500 Hz.

Sample Editor Bitcrusher				8.beats
Bits 4	Rate 44100 Hz		Back	Preview	Apply
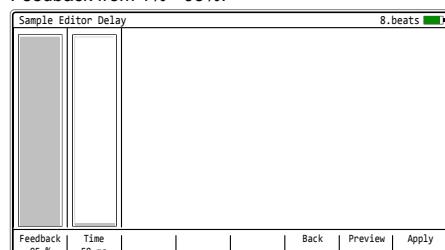
Delay and chorus

The classic time based effects include delay and chorus. Delay creates an echo by delaying the audio signal and feeding back into the input. Chorus is similar to delay in that instead of feeding back it layers slightly delayed versions of the signal creating a thicker, wider sound.
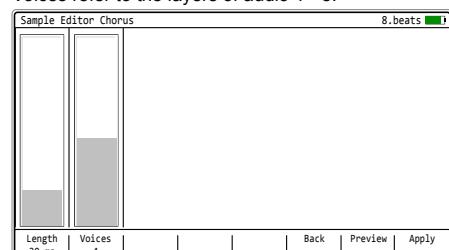
Delay
Delay time 50ms to 5000 ms.
Feedback from 1% - 95%.

Sample Editor Delay				8.beats
Feedback 95 %	Time 50 ms		Back	Preview	Apply

Chorus
Length has a range of 2 ms - 92 ms.
Voices refer to the layers of audio 1 - 8.

Sample Editor Chorus				8.beats
Length 20 ms	Voices 4		Back	Preview	Apply
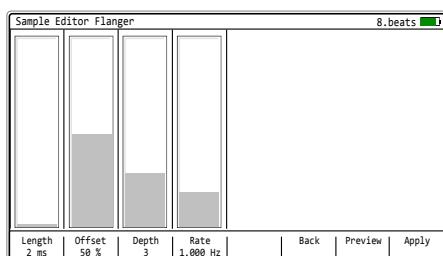
Flanger

Flanger follows similar principles to delay by doubling the audio and introducing a slight phase shift and delay between the audio signals when playing back. Flangers offer an evolving sweeping sound.

```
Sample Editor Flanger                    8.beats ▇
┌─────────────────────────────────────────────┐
│  ┌──┐  ┌──┐  ┌──┐  ┌──┐  ┌──┐                │
│  │  │  │  │  │  │  │  │  │  │                │
│  │  │  │▓▓│  │  │  │  │  │  │                │
│  │  │  │▓▓│  │▓▓│  │  │  │  │                │
│  │  │  │▓▓│  │▓▓│  │▓▓│  │  │                │
│  └──┘  └──┘  └──┘  └──┘  └──┘                │
│ Length  Offset  Depth  Rate   Back Preview Apply│
│ 2 ms    50 %    3      1.000 Hz              │
└─────────────────────────────────────────────┘
```

Depth
Amount of flanger effect applied.

Rate
Speed of effect modulation.

Length
Length of delay line between signals.

Offset
Offset percentage of delay in signal.
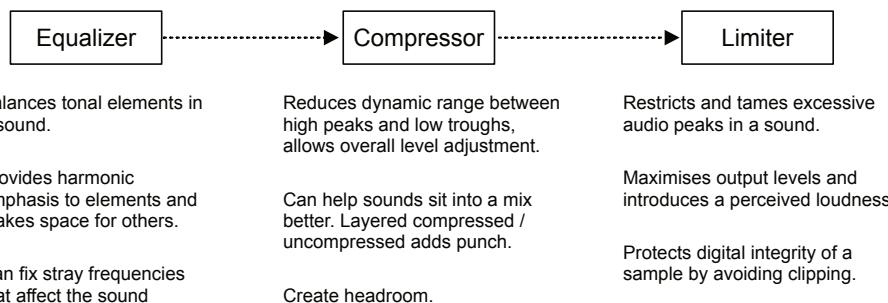
Tweak by ear
While the flanger and perhaps other effects have labelled functions, it is much more useful to tune these parameters by ear rather than by numerical positioning. The application of each parameter will give a different output depending on the source audio material. Sounds ranging from subtle tremolo to glitchy rhythms can be found by tweaking the flanger parameters by ear. The same applies to all of the creative audio effects.

Equalizer, compressor and limiter.

The three effects, equalizer, compressor and limiter are used for mixing and finalising a sample rather than creative variations. In music production they often find themselves towards the end of a signal chain and are used to polish and finish off a track, gluing tracks together, developing a combined tonal balance, managing loudness and mastering a final release.

In the context of Tracker Mini sample editing, the process operates at an individual sample level. However the same principles can be applied as those in general music production, to finish off and generate a final output sample. While these effects are applied individually they can also optionally be performed sequentially in order depending on what the objective is. An example shown below.

Example of effect chain / order

```
┌──────────┐        ┌────────────┐        ┌─────────┐
│Equalizer │------->│ Compressor │------->│ Limiter │
└──────────┘        └────────────┘        └─────────┘
```

Balances tonal elements in a sound.

Reduces dynamic range between high peaks and low troughs, allows overall level adjustment.

Restricts and tames excessive audio peaks in a sound.

Provides harmonic emphasis to elements and makes space for others.

Can help sounds sit into a mix better. Layered compressed / uncompressed adds punch.

Maximises output levels and introduces a perceived loudness.

Can fix stray frequencies that affect the sound

Create headroom.

Protects digital integrity of a sample by avoiding clipping.

Tweaking and trying different settings is encouraged on creative audio effects. While this is also possible on the process orientated tools, it is also recommended to get to know these parameters functions and purposes and have a basic understanding of their operation.
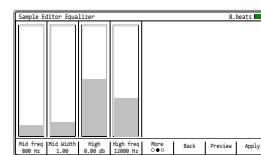
Equalizer

The purpose of an equalizer, also called EQ, is to boost or attenuate frequencies in an audio signal to either adjust the tonal characteristics or to fix unwanted frequency elements. Equalizers are typically used to shape a sounds character but also to allow a sound to sit comfortably alongside another. The sample editor EQ effect has 3 frequency bands. More coverage of general EQ functions is provided in the master effects section.
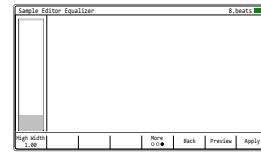
Page 1 of 3

Page 2 of 3
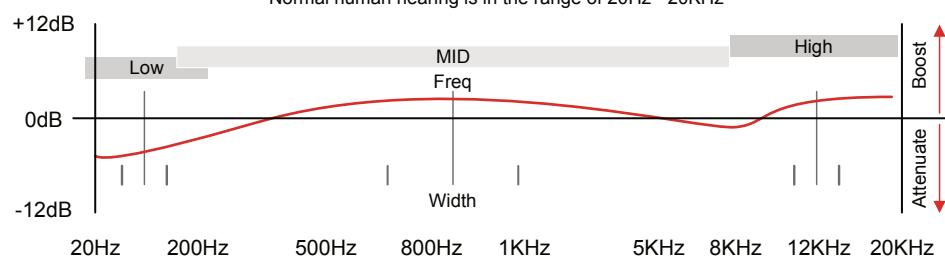
Page 3 of 3

EQ Function	Description
Low	Low attenuation or boost amount, -12 dB to + 12dB.
Low Freq	Low frequency range, 10Hz - 200Hz.
Low Width	Width of EQ, also called Q. Range 0.5 to 5.
Mid	Mid attenuation or boost amount, -12 dB to + 12dB.
Mid Freq	Low frequency range, 100Hz - 8KHz.
Mid Width	Width of EQ, also called Q. Range 0.5 to 5.
High	High attenuation or boost amount, -12 dB to + 12dB.
High Freq	High frequency range, 8KHz -20KHz.
High Width	Width of EQ, also called Q. Range 0.5 to 5.

Frequency bands 1,2 (adjustable) & 3 (fixed) positioned across the spectrum.
Normal human hearing is in the range of 20Hz - 20KHz
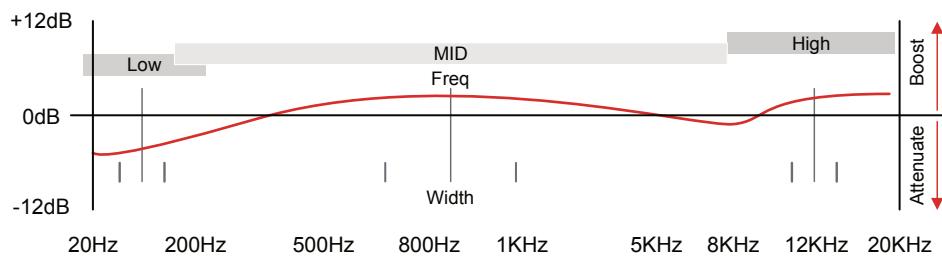
8 Audio

Equalizer frequency ranges

An equalizer can boost or attenuate frequencies across a range. The range of normal human hearing considered in music production is 20Hz to 20kHz. The character and tonal shape of a sound can be affected by the adjustment either boosting or attenuating at points on the frequency range. This is possible within Tracker Mini using the EQ function.

Frequency bands 1,2 (adjustable) & 3 (fixed) positioned across the spectrum.
Normal human hearing is in the range of 20Hz - 20KHz

SUB BASS

High levels of energy, often a low cut removes some 'unheard' energy and helps create headroom.Typically frequencies would be cut in this area to create clarity. Emphasis for sub bass, bass and kick drums. Sub bass is considered the low frequencies up to 80Hz.

BASS

Typically an area which contains melodic and rhythmic elements. The mix can be changed to be fat or thin by adjustments around this area. Muddiness occurs around 300Hz so a small cut can help clarity of the mix. The mix can be warmed up around 120Hz.

MIDS

Low mids can be overloaded with frequencies as many instruments cover this range and muddiness is a common outcome. Honkyness can creep in around 500-1K and tinniness 1-2K. Cuts can help. Vocal frequencies appear in the high mid range around normal words. 3K boost on vocals can help push through the mix. Ensure the balance between instruments and vocals is correct.

HIGH
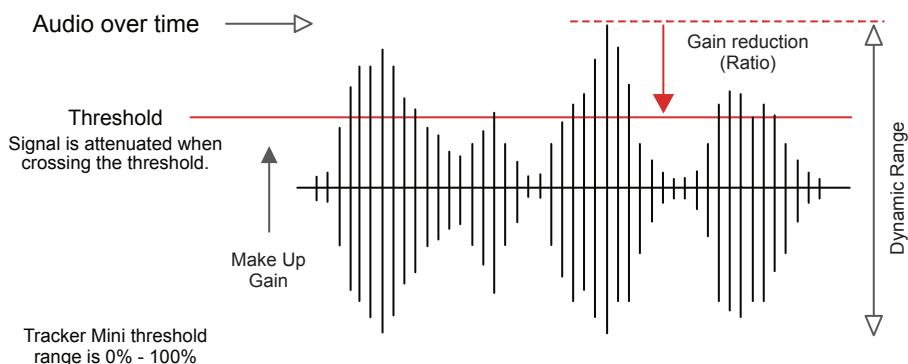
Sibilance occurs between 5-10K and letters such as S, T can stand out. De-essing can help. Typically a high shelf can add air and presence to the mix around 6K+. EQ'ing around 4-6K will affect the definition and bring the sound closer or push them further back.
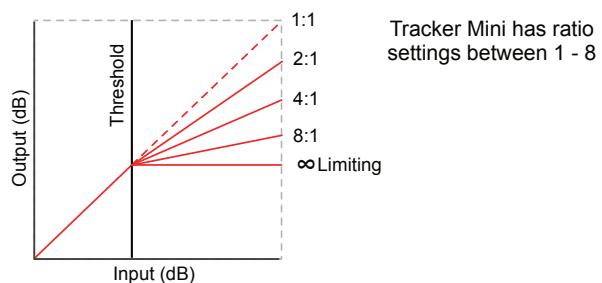
Compressor

A compressor essentially works on a signals dynamic range (difference between audio peaks and lows). Often a compressor is used to reduce the dynamic range and then allow an increase of the overall signal gain to give more punch and impact. It can also sound dull if overdone as the nuances of the dynamics are reduced. Compression techniques can extend further when layering a compressed sound (to give the impact) with an uncompressed sound (to give the dynamic subtly). This technique is sometimes called parallel or New York style compression. In Tracker Mini this can be created with two tracks one with compressed and other uncompressed then rendering to a single stem or sample.

How does a compressor work?

Audio over time →

Gain reduction (Ratio)

Threshold
Signal is attenuated when crossing the threshold.

Dynamic Range

Make Up Gain

Tracker Mini threshold range is 0% - 100%
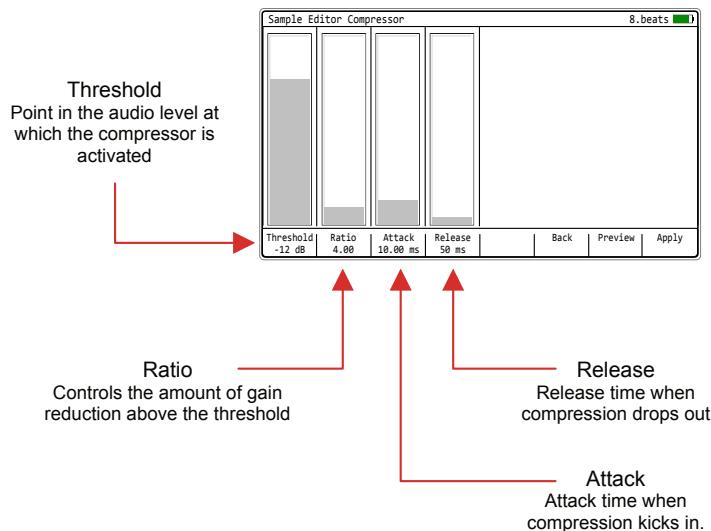
In basic terms a compressor reduces the level of any audio that exceeds a threshold. Think of this as an automatic volume control. The amount of gain reduction is determined by the ratio parameter. A ratio of 1:1 has no gain reduction while a gentle 2:1 will reduce by 1dB for every 2dB above the threshold. Higher ratios are more aggressive. The speed and reaction of the compressor is also governed by an envelope, in Tracker Mini this is an attack and release envelope.

1:1

2:1

Tracker Mini has ratio settings between 1 - 8

4:1

8:1

Output (dB)

Threshold

∞ Limiting

Input (dB)
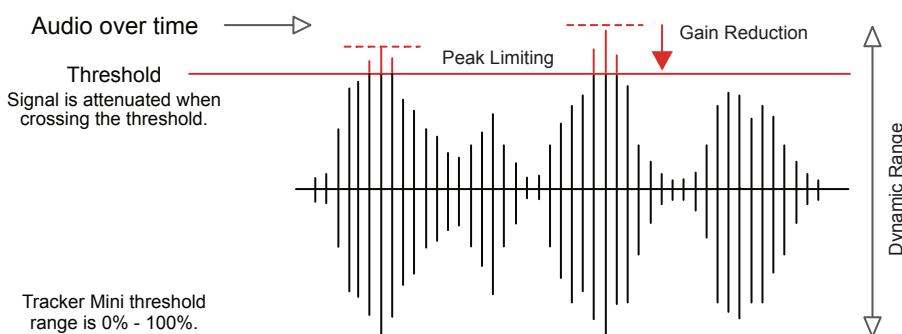
8 Audio

While compression is normally seen as a master effect on many devices and in DAW's, Tracker Mini does not have a compressor in the master chain and relies on the master limiter. A compressor does however exist in the audio effects which can be rendered into the sample.

Threshold
Point in the audio level at which the compressor is activated

Ratio
Controls the amount of gain reduction above the threshold

Release
Release time when compression drops out

Attack
Attack time when compression kicks in.
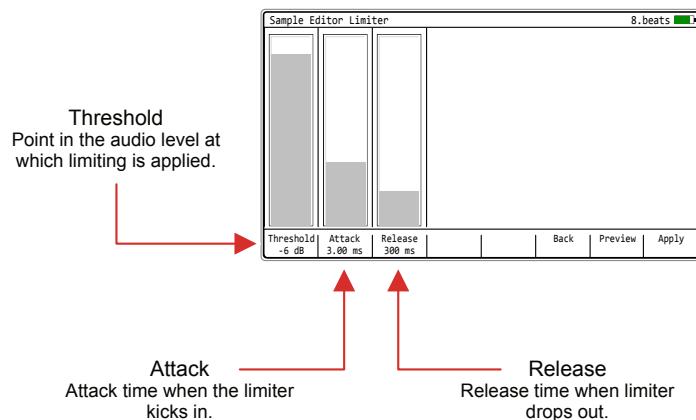
Limiter

A limiter is a similar utility to a compressor. In fact when high ratios are used in a compressor, say 20:1, it is considered to be limiting. A limiter essentially protects audio integrity and avoids excessive peaks by attenuating any peaks above a defined threshold.

How does a limiter work?

Audio over time

Gain Reduction

Peak Limiting

Threshold
Signal is attenuated when crossing the threshold.

Dynamic Range

Tracker Mini threshold range is 0% - 100%.

Tracker Mini's limiter has the basic features of threshold which is where limiting will kick in and also an attack / release envelope which shapes the behaviour of the limiter function.

Threshold
Point in the audio level at which limiting is applied.

Attack
Attack time when the limiter kicks in.

Release
Release time when limiter drops out.

WT Smoother

The WT Smoother is a utility for converting normal audio samples into a format more compatible with the wavetable play mode synth. Essentially this optimises the interpolation between waves in a sample giving a smoother transition across the sample. More details of the wavetable synth is provided in the instrument section.
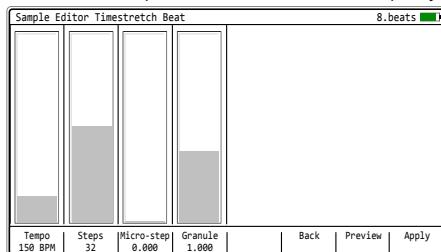
Timestretch Beat and Note.

Two timestretch functions are available in the sample editor toolkit. Timestretch is a feature that adjusts the time of an audio sample, extending or reducing its duration without affecting pitch. Timestretch beat has parameters that are better applied to rhythmic material such as drums and percussion. Timestretch note is more aligned with melodic material.
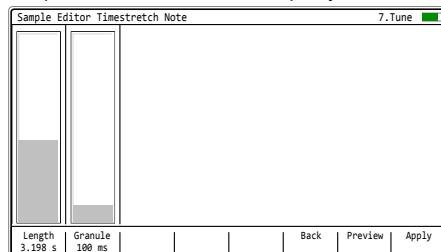
Timestretch Beat
Tempo and steps are used to define the duration of the affected sample. Granule will affect audio quality.

| Tempo 150 BPM | Steps 32 | Micro-step 0.000 | Granule 1.000 | | Back | Preview | Apply |

Sample Editor Timestretch Beat — 8.beats
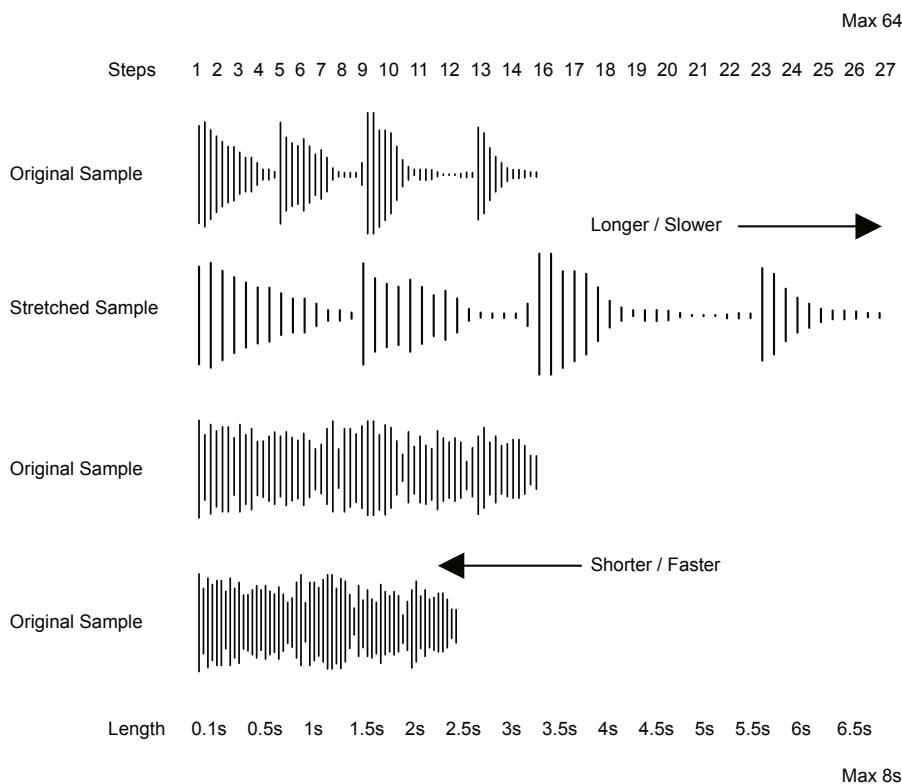
Timestretch Note
Length is used to define the duration of the affected sample. Granule will affect audio quality.

| Length 3.198 s | Granule 100 ms | | | | Back | Preview | Apply |

Sample Editor Timestretch Note — 7.Tune

Examples

Max 64

Steps 1 2 3 4 5 6 7 8 9 10 11 12 13 14 16 17 18 19 20 21 22 23 24 25 26 27

Original Sample

Longer / Slower ⟶

Stretched Sample

Original Sample

⟵ Shorter / Faster

Original Sample

Length   0.1s   0.5s   1s   1.5s   2s   2.5s   3s   3.5s   4s   4.5s   5s   5.5s   6s   6.5s
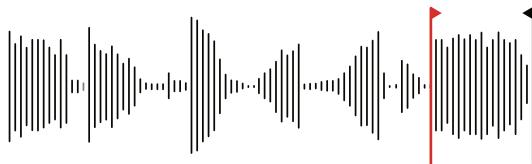
Max 8s
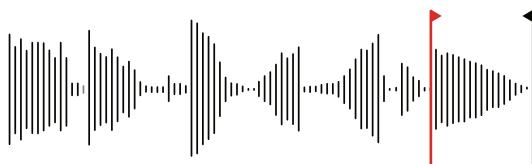
Fade in and fade out

The fade in and fade out utilities create a ramp up of audio level or a ramp down of audio level. The effect is applied to the audio selected between the start and end markers. Typically this would be applied at the start or end of an audio sample but equally can be applied anywhere based on the selected part of the audio sample. The effect is applied immediately with no adjustable parameters.

Examples
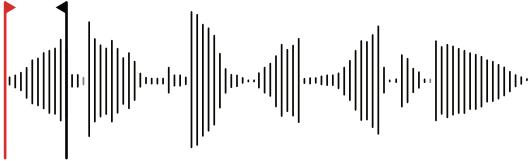
Original audio sample.

Fade out applied at the end of the audio to create a smooth volume transition to conclude.

Fade in applied at the start of the audio to create a smooth volume transition to begin.

Fades can be applied at any part of a sample that the start and end marker is covering eg fade out.

8 Audio

8.10 Audio Output Over USB

The Tracker Mini can send audio out over a connected USB connection. This will send 14 stereo or 28 mono channels out to the connected device. The configuration is set in the Config > USB > Audio options where the Tracker Mini can be set for USB audio inputs, Outputs or both. Received USB audio cannot be sampled.

USB Audio is designed for recording completed songs. Composing, and sound design over USB can cause audio playback issues. Scrolling synth patches during audio playback via USB is not recommended. Loading projects while USB audio is engaged can also cause connection issues.

Channel	Outputs	Command
1	1 & 2	Master output.
2	3 & 4	Track 1 stereo audio output.
3	5 & 6	Track 2 stereo audio output.
4	7 & 8	Track 3 stereo audio output.
5	9 & 10	Track 4 stereo audio output.
6	11 & 12	Track 5 stereo audio output.
7	13 & 14	Track 6 stereo audio output.
8	15 & 16	Track 7 stereo audio output.
9	17 & 18	Track 8 stereo audio output.
10	19 & 20	Reverb stereo audio output.
11	21 & 22	Delay stereo audio output.
12	23 & 24	Synth 1 audio output.
13	25 & 26	Synth 2 audio output.
14	27 & 28	Synth 3 audio output.

Master output preview & metronome

Note that previewing samples from the microSD card in the sample loader will also send the audio to the USB master output. Metronome is also sent to the USB master output channel.

Aggregate device

To ensure compatibility with the USB audio features of Tracker Mini it is highly recommended to use a Mac or PC set up with an aggregate device. An aggregate device is a virtual interface created on the PC or Mac to integrate several audio in and out elements together. This overcomes any issues with multiple / separate devices used for inputs and outputs to a PC or Mac and allows audio software such as a DAW to connect seamlessly.

The process of setting up an aggregate device may differ depending on the OS of the PC or Mac and also the connected devices. A general guide is provided here as reference only.

CREATING AN AGGREGATE DEVICE - MAC

1. Ensure Tracker Mini is connected to the Mac via the USB connection.

2. Select and open the 'Finder' function on the Mac.

3. With the finder page open and selected, choose from the main header menu 'Go' > 'Utilities'.

4. Double click on the 'Audio MIDI Setup' icon from within the presented utility options page.

5. The audio device page will open. This should show all connected devices in the left window pane and will include the Tracker Mini as well as the Mac's integrated speakers and microphone.

6. Click '+' in the lower left corner and choose 'create aggregate device'.

7. A new device is created and the selection boxes will be presented. Check the boxes of the devices to add to the aggregated device. For example Tracker Mini and speakers.

8. Click the name in the left window to rename the device if required.

9. Once the device has been created this will appear in a DAW's audio interface options, for example 'Audio input' and 'Audio output' options in Ableton Live audio settings.

10. This aggregated device should be the chosen option to interface the Tracker Mini to the Mac audio. This will handle all the available inputs from Tracker Mini as well as the audio outputs on the Mac for example output audio to the internal speakers.
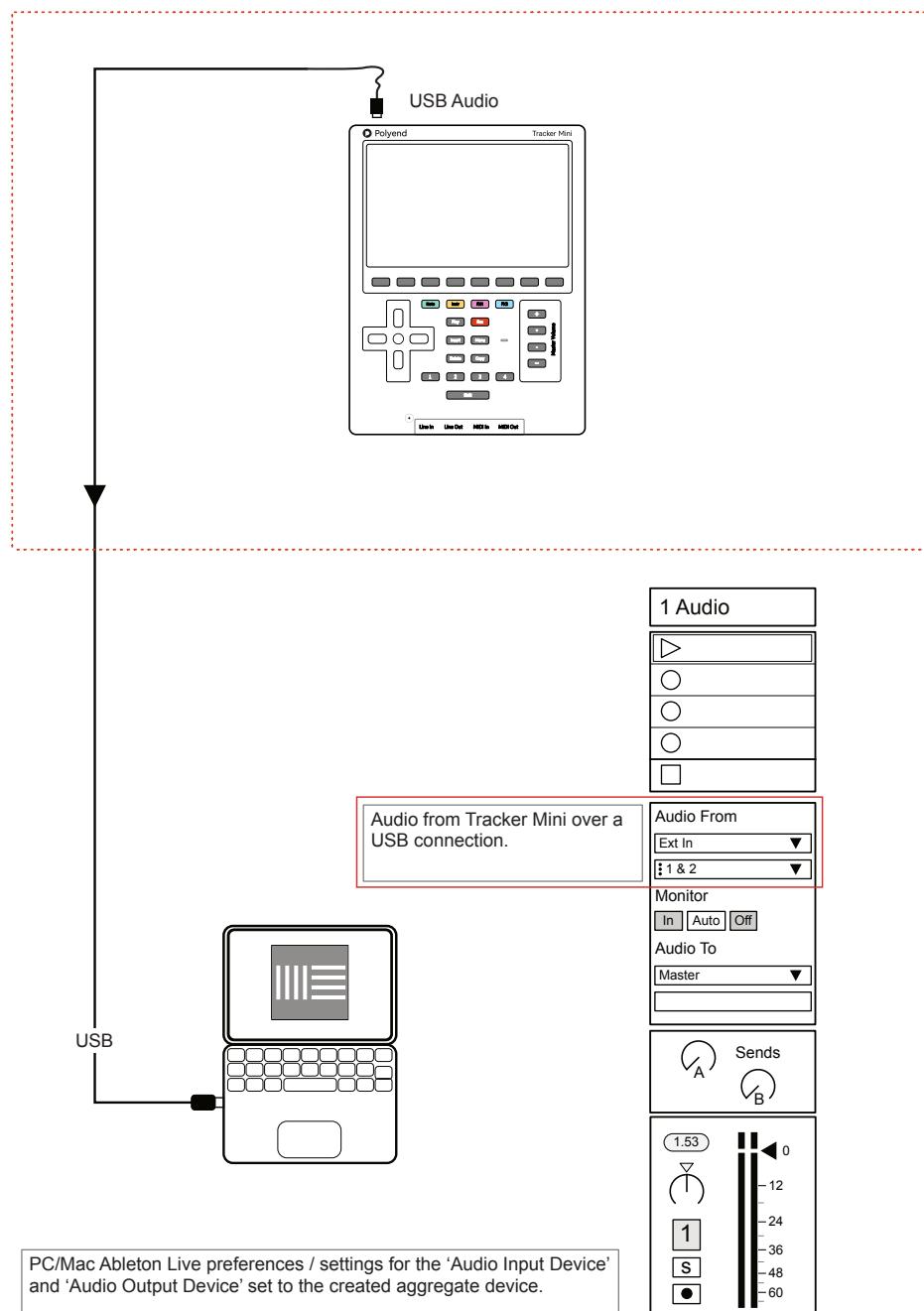
8 Audio

▌ CREATING AN AGGREGATE DEVICE - PC

1. A PC has no native options to aggregate devices. It is recommended to use an up to date audio compatible driver on the PC. The ASIO4ALL driver is a commonly used 3rd party option with PC's for audio applications. The guide below assumes using ASIO4ALL.

2. Ensure Tracker Mini is connected to the PC via the USB connection.

3. Ensure the ASIO4ALL driver is selected in your chosen DAW as the audio interface and open the driver to set up the options.

4. In the ASIO4ALL window the left window pane should show all the available input and output devices.

5. Check the devices to integrate together. There may also be options to aggregate only specific inputs rather than an entire device. This is usually available when ASIO4ALL is not in 'simple view' mode.

6. Once the devices have been selected the associated inputs will appear in a DAW's audio interface options, for example 'Audio input' and 'Audio output' options in Ableton Live audio settings. Remember that the ASIO4ALL must be the driver selected.

7. This aggregated device should be the chosen option to interface the Tracker Mini to the Mac audio. This will handle all the available inputs from Tracker Mini as well as the aggregated audio I/O functions.

The ability to connect audio via USB is possible. An example is when using a PC or Mac via USB which hosts a compatible application, for example Ableton Live DAW. It is recommended to connected directly between devices and not through a USB hub for best results.

Example configuration: Tracker Mini out to Ableton Live.

USB Audio

USB

1 Audio

Audio from Tracker Mini over a USB connection.

Audio From
Ext In
1 & 2

Monitor
In Auto Off

Audio To
Master

Sends
A
B

1.53
0
12
24
36
48
60

1
S

PC/Mac Ableton Live preferences / settings for the 'Audio Input Device' and 'Audio Output Device' set to the created aggregate device.

9

Song Mode

Steps are the most rudimental part of Tracker Mini, bringing together an instrument, effects, and a note. Steps are combined with others to create beats and melodies within a pattern. Patterns are the snippets that form a small tune or riff. A song is the highest level of structure in Tracker Mini and allows the combination of patterns to play a full 'song' and all of its components. Each project can have 1 song, which can hold a maximum of 255 pattern slots. Song mode is the environment in which patterns are arranged to form the end-to-end song, as well as arranging and re-arranging tracks. It allows, for example, the positioning of patterns to create an introduction, build-ups, breaks, drops, bridge, and outro, and also to introduce new elements through an ambient track. Song mode can be selected from within the [Menu] or by pressing [Shift] + [1], which is the default function button configuration. Song mode is the last part of arranging a full track. In summary, song mode operates in partnership with patterns to create a full song. It also operates in conjunction with Perform mode for live improvisation. The song stems can also be fully rendered out as audio to be used in another application to finalize a mix or for mastering, or to be used to create remixes. This can be used to develop a sample library. The entire song and all tracks can also be rendered out as the final version. These can also be finalized or developed further in other applications. As a reminder, as well as having the features for building song arrangements, song mode is also where the master tempo of the entire track is located.

9 Song Mode
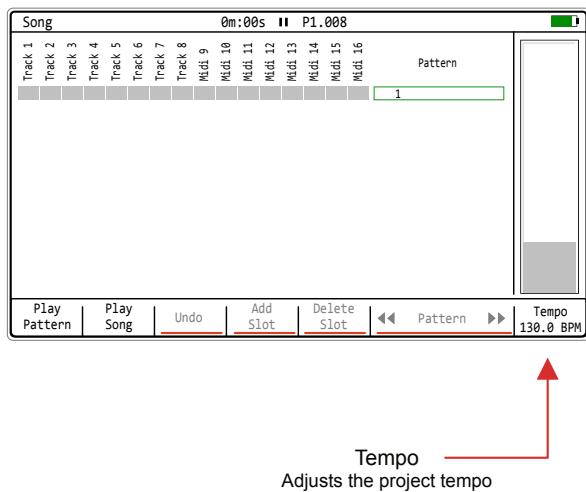
9.1 Tempo

While tempo has been covered earlier, it is a good reminder that the tempo setting also resides in the song mode pages.

▌ SETTING THE TEMPO

1. Hold [Shift] + press [1].

2. Hold [*Tempo*] + press [+] / [-].

3. The Inner [+] / [-] buttons adjust the tempo in small increments, also applied with (Up) (Down). The outer [+] / [-] adjust in larger steps.

4. Note that tempo changes can be applied also at step level using the step effects.

Tempo
Adjusts the project tempo
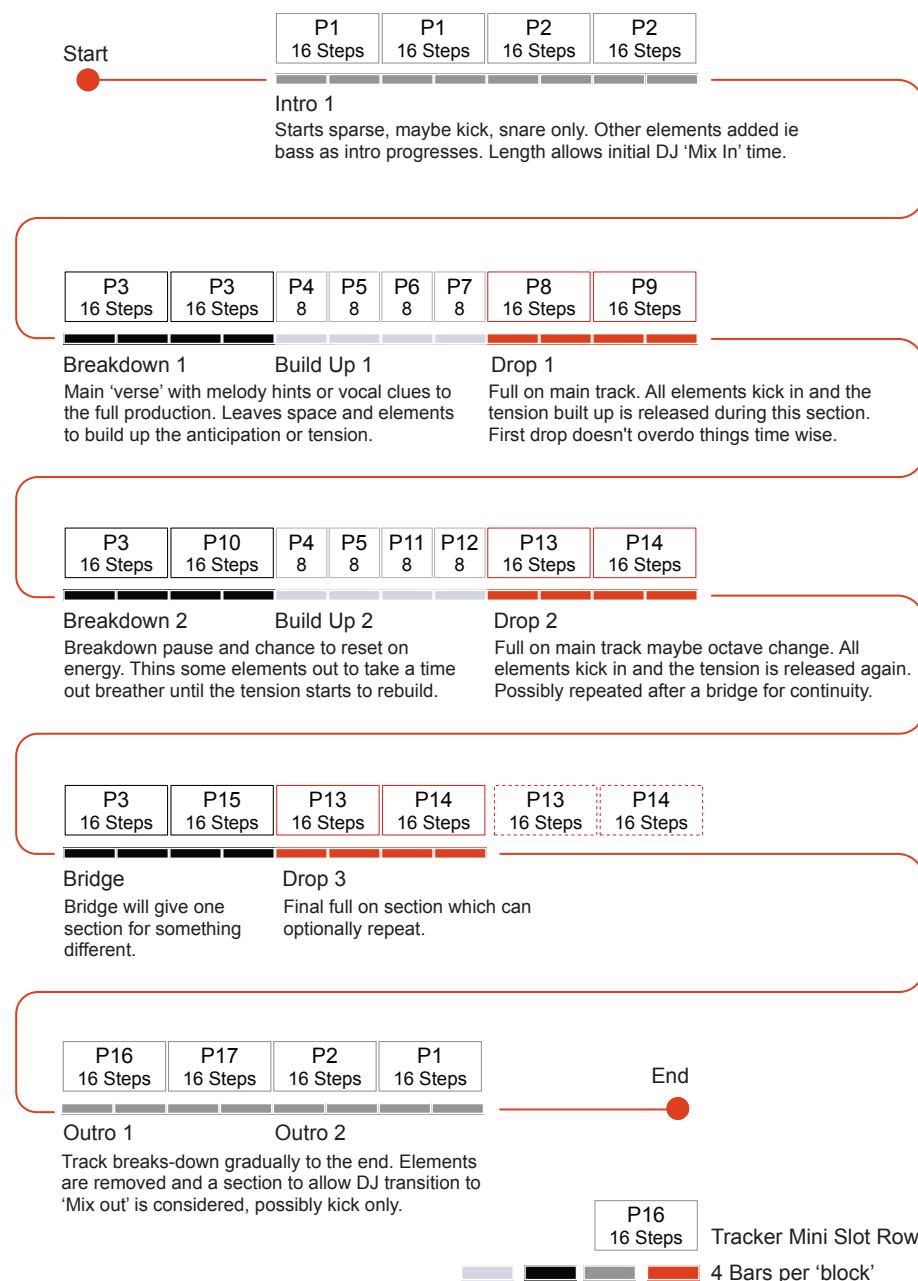
9.2 Arrangement Overview

An entire song track consists of a number of variations that maintain the listeners interest and define its style and even its genre. Patterns are where the variation in sound, tone, key etc are made and the song mode is where variations in the structure are created. There is no fixed model and creativity comes from how songs are arranged as much as the instruments and melody applied. The example is used for illustration purposes.

Example: A typical EDM song structure + example patterns

Start

| P1 16 Steps | P1 16 Steps | P2 16 Steps | P2 16 Steps |

Intro 1
Starts sparse, maybe kick, snare only. Other elements added ie bass as intro progresses. Length allows initial DJ 'Mix In' time.

| P3 16 Steps | P3 16 Steps | P4 8 | P5 8 | P6 8 | P7 8 | P8 16 Steps | P9 16 Steps |

Breakdown 1   **Build Up 1**   **Drop 1**
Main 'verse' with melody hints or vocal clues to the full production. Leaves space and elements to build up the anticipation or tension.
Full on main track. All elements kick in and the tension built up is released during this section. First drop doesn't overdo things time wise.

| P3 16 Steps | P10 16 Steps | P4 8 | P5 8 | P11 8 | P12 8 | P13 16 Steps | P14 16 Steps |

Breakdown 2   **Build Up 2**   **Drop 2**
Breakdown pause and chance to reset on energy. Thins some elements out to take a time out breather until the tension starts to rebuild.
Full on main track maybe octave change. All elements kick in and the tension is released again. Possibly repeated after a bridge for continuity.

| P3 16 Steps | P15 16 Steps | P13 16 Steps | P14 16 Steps | P13 16 Steps | P14 16 Steps |

Bridge   **Drop 3**
Bridge will give one section for something different.
Final full on section which can optionally repeat.

| P16 16 Steps | P17 16 Steps | P2 16 Steps | P1 16 Steps |

End

Outro 1   **Outro 2**
Track breaks-down gradually to the end. Elements are removed and a section to allow DJ transition to 'Mix out' is considered, possibly kick only.

| P16 16 Steps | Tracker Mini Slot Row |

4 Bars per 'block'

9 Song Mode

The song mode utility will help construct the patterns into a full song arrangement, recognising muted and empty tracks.

In order to use song mode a collection of patterns will be required to select from. Typically this may be newly created patterns or patterns edited as a variation from a base pattern. For example the same pattern can be copied then transposed and parts muted then saved as an alternative version.

Patterns cannot be named in Tracker Mini and are managed in the pattern page as pattern 1, pattern 2 etc, loaded into the song utility as 1,2 etc and stored on the microSD as pattern_01.mtp, pattern_02.mtp etc. It is advised to adopt some form of noting each pattern and it's function and features.

Song slots represented by the rows, with the pattern assigned to the slot.
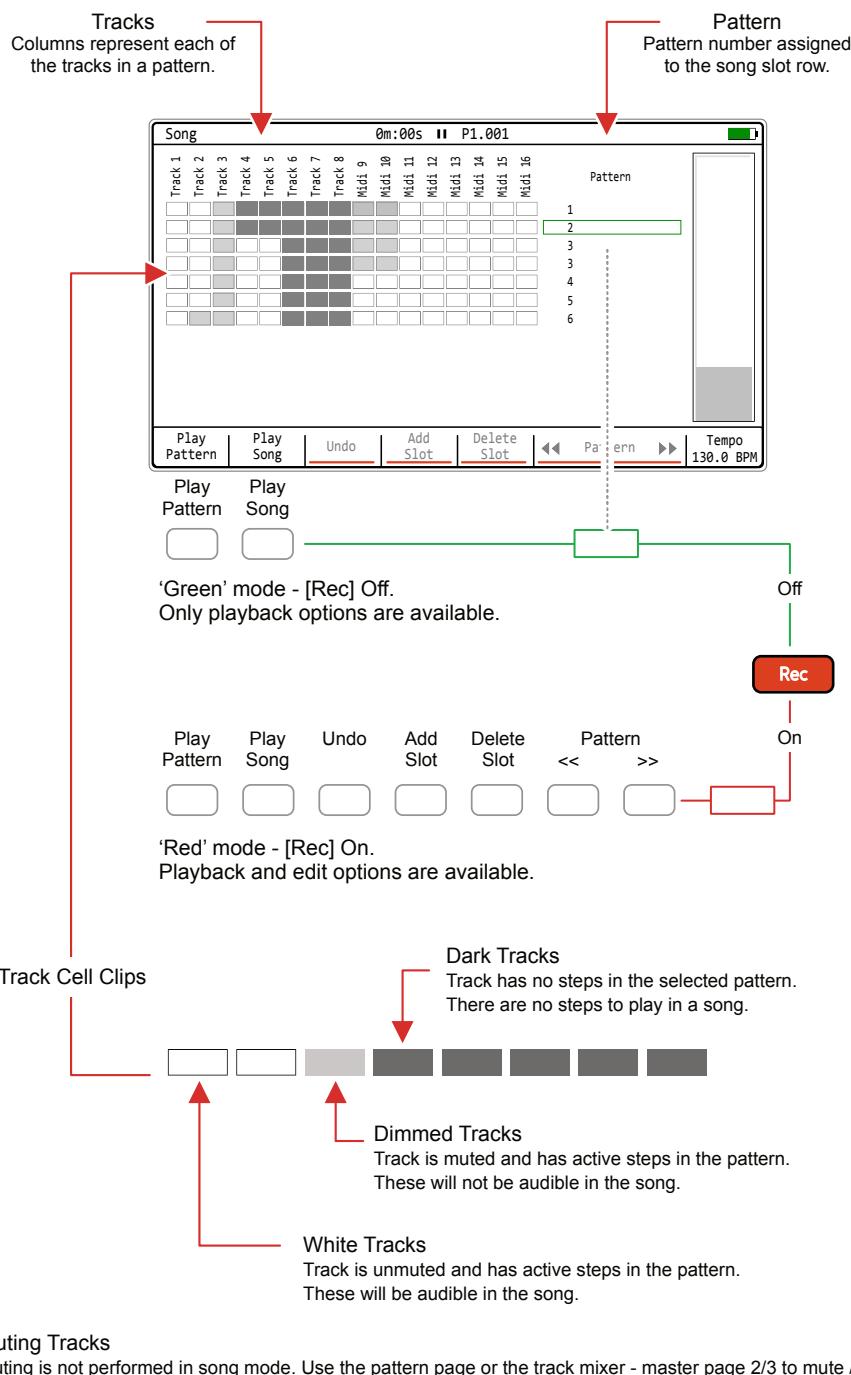
Each project can have 1 song, which can contain a maximum of 255 slots.

9.3 Song Mode Interface

Select the song page by pressing [Shift] + [1] or hold [Shift] + [1] to temporarily display the page from within another page, reverting back to when buttons are released. The interface for song mode is by default empty other than a single slot 1 with pattern 1. Up to 255 Song slots are available. Pressing [Play] in song mode will play the song not just individual pattern. Tracks in a pattern for the slot are represented as cell clips.

Tracks
Columns represent each of the tracks in a pattern.

Pattern
Pattern number assigned to the song slot row.

Play Pattern   Play Song

'Green' mode - [Rec] Off.
Only playback options are available.

Off

Rec

On

Play Pattern   Play Song   Undo   Add Slot   Delete Slot   Pattern <<   >>

'Red' mode - [Rec] On.
Playback and edit options are available.

Track Cell Clips

Dark Tracks
Track has no steps in the selected pattern.
There are no steps to play in a song.

Dimmed Tracks
Track is muted and has active steps in the pattern.
These will not be audible in the song.

White Tracks
Track is unmuted and has active steps in the pattern.
These will be audible in the song.

Muting Tracks
Muting is not performed in song mode. Use the pattern page or the track mixer - master page 2/3 to mute / unmute.

9 Song Mode

9.4 Song v Pattern Relationship

Patterns can be arranged into a song in the song mode utility. Patterns selected in a song will also be available in the pattern mode and will appear in song mode as muted / unmuted inline with the status in pattern mode.
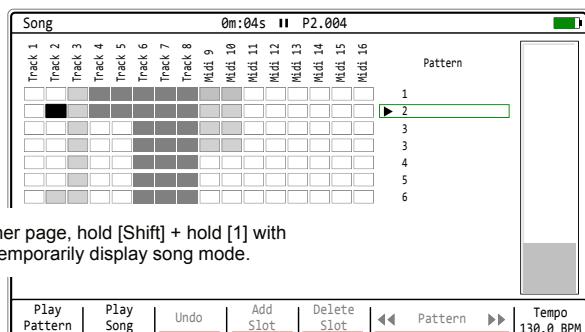
Editing tracks in song mode will reflect in pattern mode. Tracks and patterns can be copied and pasted within song mode which will also edit or copy / paste the pattern.

Patterns are muted in pattern or master pages and are reflected in the song mode clip shade as are empty clips. Tracks edited in song mode will in turn edit and reflect in the actual pattern.

When pressing [Play] in pattern mode, switching to song mode will only show the selected pattern being played.

Song mode and pattern mode can be in the same or different 'Red' - Edit On or 'Green' - Edit Off states.

Pattern - press [1]
Song - hold [Shift] + press [1].
Also available from the [Menu].

While in the another page, hold [Shift] + hold [1] with a long press will temporarily display song mode.

Patterns in song mode will reflect the track condition from the pattern view including mute states, step position etc. This is shown by the shade of the track slot and the header position.

Tracks can be re-ordered by copy / paste in song mode. This in turn will edit the actual pattern and as such also be reflected in the pattern view.

When pressing [Play] in song mode, switching to pattern mode will show each pattern as it is being played in the song structure.

9.5 Creating and Editing a Song

The pre-requisite to creating a song is to have a series of patterns available, although technically blank patterns can also be added to a song slot. Editing and creating a song is performed in 'Red' recording mode i.e. when the [Rec] mode is selected as on. Otherwise the song mode page just presents the playback of patterns and the song as options. Track muting is not applied in song mode, but is set in the pattern or track mixer pages.

▐ CREATING A BASIC SONG FROM SCRATCH

1. Hold [Shift] + press [1] or access the [Menu] to select song mode. The step / pattern cursor will be displayed by a green bounding box. Also only the first two screen buttons to control play are available in 'green' mode, i.e. [Rec] off.

2. Press [Rec] to toggle editing on, 'red' mode. The step / pattern cursor will be displayed by a red bounding box. Also all of the screen button options are shown as available in recording, 'red' mode - [Rec] on.

3. Navigate to the location desired:-

   • The location selected is shown with the green or red bounding box over the slot & pattern number.

   • Press (Up) and (Down) or [+] / [-] to navigate slots.

   • Press (Left) and (Right) to select tracks.

   • Press [Shift] + [Insert] to jump to the top slot row.

4. To add a new song slot row, press [*Add Slot*] screen button. Song slots represent a pattern and are displayed as a row on the song mode page.

5. When adding a new slot row, it will;

   • Be added directly below the currently selected row.

   • The newly added slot replicates the previously selected row.

   • The new slot row is also automatically selected.

6. To change the pattern on the selected row, press the (*Left*) screen button or (*Right*) screen button. All 255 patterns that are available in a project will be selectable in a song, even if no steps or data has been created in the chosen pattern.

7. More slots can be added to develop the song further and expand its length and duration.
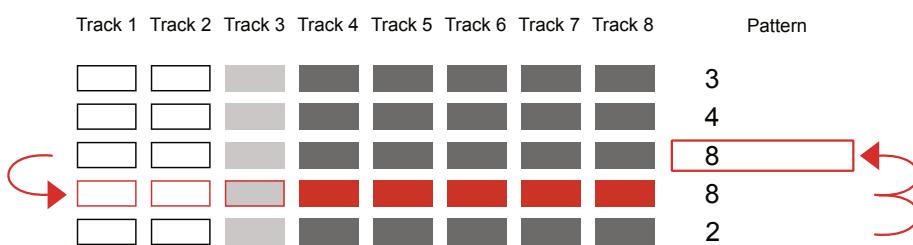
9 Song Mode

Creating a basic song is a starting point, but a number of additional editing features are also available within song mode. Individual tracks can also be re-positioned. Be careful when editing patterns as the song structure and patterns are directly linked and edits can affect each other.

▎ BASIC EDITING OF AN EXISTING SONG

1. Press [Shift] + [1] or [Menu] to select song mode. The slot and pattern selection bounding box may be green. Only the first two screen buttons are available in 'green' mode i.e. [Rec] off to control play.

2. Press [Rec] to toggle to editing 'red' mode. The slot and pattern bounding box will be displayed red. Also all of the screen button options are shown as available in 'red' mode - [Rec] on.

3. Navigate to the slot location desired using the (Up), (Down) or [+] / [-] buttons. The location selected is shown with the red bounding box over the slot number and pattern number when editing.

4. To delete the currently selected song slot, press [*Delete Slot*] screen button. The selected song slot is deleted and the other slots will move up the order.

5. Press [*Add Slot*] screen button to add a new song slot row.

6. The undo command does not restore deleted slots so be careful when editing songs.
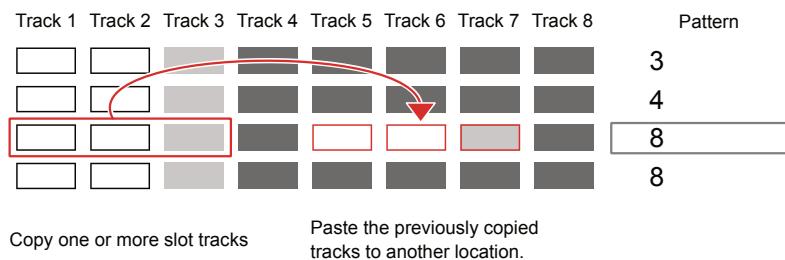
Adding a slot replicates the current slot on a row below. Also selects the new slot.

Deleting a slot removes the current slot and moves the below slots up in the order.

▌ EDITING TRACK CLIPS IN A SONG

1. Press [Shift] + [1] or [Menu] to select song mode. The step and pattern cursor will be displayed by a green bounding box. Also, only the first two screen buttons to control play are available in 'green' mode - [Rec] off.

2. Press [Rec] to toggle editing to 'red' mode. The step and pattern cursor will be displayed by a red bounding box. Also, all of the screen button options are shown as available in 'red' mode - [Rec] on.

3. Navigate to the desired track clip. Navigate to the track by pressing (Left) or (Right). The selection is shown with the red bounding box over the pattern for the track.

4. To select multiple track clips, Hold [Shift] + (Left), (Right), (Up) or (Down). A red bounding box will show the selected range of tracks

5. To delete selected track clip(s), press [Delete].

6. Press [Copy] to copy the highlighted and selected track(s). To navigate to the target track clip location, press (Up) (Down) or [+] / [-]. Navigate to the track by pressing (Left) or (Right). The selection is shown with the red bounding box over the pattern for the track.

7. Press [Shift] + [Copy] to paste the previously copied selection into the location selected. When pasting multiple tracks the highlighted track location will anchor at the top left corner of the copied selection of tracks and as such will paste into the adjacent track locations.

8. The copy / paste edits in song mode will also be performed automatically in the pattern itself and reflected back into the same pattern in other slots. Switching to pattern mode will view any edits made. Care must be taken to remember that the song mode and pattern mode are directly linked. Previous edits can be restored by pressing [*Undo*] screen button.

Copy one or more slot tracks

Paste the previously copied tracks to another location.
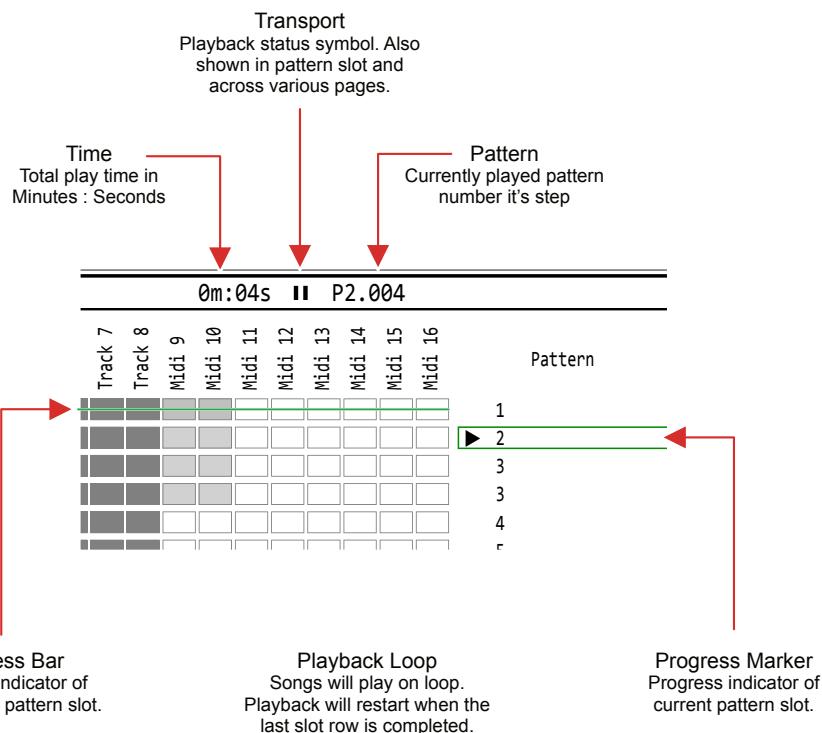
9 Song Mode

9.6 Playing Songs and Patterns

Playing songs within song mode performs differently to playing patterns in the pattern view. It is however also possible to play only patterns from within song mode. The dedicated, physical [Play] button will play a song in song mode and will play the pattern only when in pattern mode.

Transport
Playback status symbol. Also shown in pattern slot and across various pages.

Time
Total play time in Minutes : Seconds

Pattern
Currently played pattern number it's step

Progress Bar
Progress indicator of steps within pattern slot.

Playback Loop
Songs will play on loop. Playback will restart when the last slot row is completed.

Progress Marker
Progress indicator of current pattern slot.

Song mode playback options

Mode	Symbol	Screen Button	State	Button	Description
Song	▶	[*Play Song*]	Play Song	Play	Will play the song. Changing to pattern mode will play and display patterns in sync with song. Same as pressing [Play].
Song	❚❚	[*Stop*]	Pause		When playing, button will toggle pause. Press again to commence from the start of the paused pattern. Same as pressing [Play].
Song to Pattern	↻	[*Play Pattern*]	Play Pattern	Shift + Play	Play the currently selected pattern in a loop. Same as pressing [Shift] + [Play].
Pattern to Song	▶	[*Continue Song*]	Play Song		Switches from playing pattern to play song from current position. Same as pressing [Shift] + [Play].
Song to Pattern	↻	[*Loop Pattern*]	Loop Pattern		Switches from playing song to play and loop pattern from current position. Same as pressing [Shift] + [Play].

Playback Behaviour.

Playing a song in song mode can be performed from the dedicated play button or the screen buttons. Songs will play in loop meaning the song will continue to play from the start after the last slot row is completed. Patterns can also be played and looped from song mode. Switching between pattern and song playback is possible using the screen buttons, which change function to reflect the current status.

[Play] [Stop]	PLAY SONG [Play Song] [Play]
[Continue Song]	PLAY PATTERN [Loop Pattern]
	[Play Pattern]

—— Screen buttons

—— Dedicated buttons
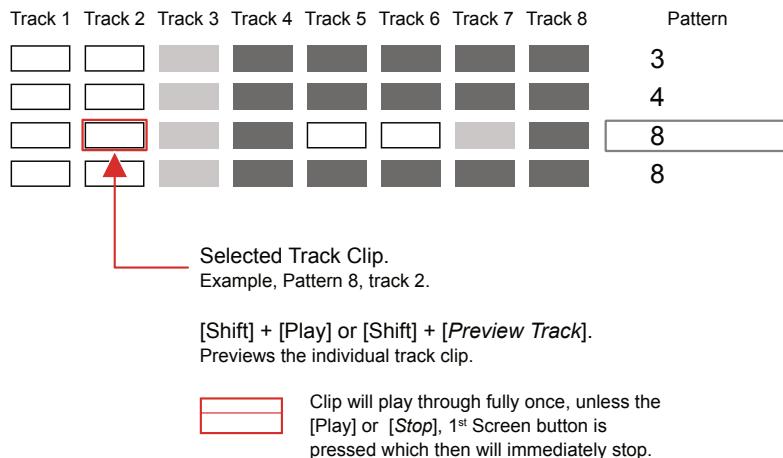
9 Song Mode

Previewing tracks in song mode

While songs and patterns can be played from within song mode, the ability to preview only individual track clips is possible. This can only be performed in 'Red' [Rec] mode and with an individual track clip selected.

Track 1 Track 2 Track 3 Track 4 Track 5 Track 6 Track 7 Track 8   Pattern

3

4

8

8

Selected Track Clip.
Example, Pattern 8, track 2.

[Shift] + [Play] or [Shift] + [*Preview Track*].
Previews the individual track clip.

Clip will play through fully once, unless the [Play] or [*Stop*], 1st Screen button is pressed which then will immediately stop.

▌ PREVIEWING A SONG TRACK CLIP
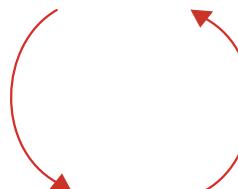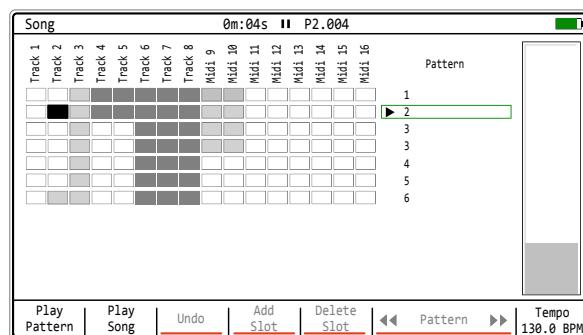
1. Press [Shift] + [1] or use [Menu] to select song mode.

2. Press [Rec] to toggle to editing in 'red' mode. The slot and pattern bounding box will be displayed red. Also all of the screen button options are shown as available in 'red' mode - [Rec] on.

3. Navigate to the track clip location desired, press (Left), (Right), (Up) and (Down) to also navigate through the slots. Select a single track clip. Multiple selections cannot be previewed.

4. With the track clip selected and highlighted red, press [Shift] + [Play]. The clip will play once fully.

5. Alternatively, with the track clip selected and highlighted red, press [Shift] + [*Preview Track*], 1st screen button. The clip will play once fully.

6. To stop playback immediately while playing from either option, press [Play] or Press [*Stop*], 1st screen button to stop playback.
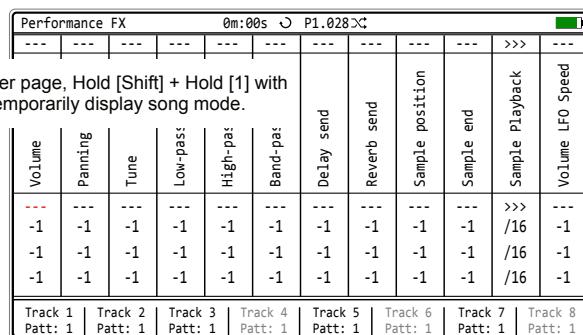
9.7 Link between Song and Performance Mode

Songs and patterns are integrated and linked to work together. In addition songs work in conjunction with 'Perform' - performance mode which allows live punch in effects and improvisations. Perform is covered in detail in a later section of the notebook.

Songs can be played in song mode which will play through all slots and the patterns assigned. When switching to performance mode the song will continue playing.

Song - hold [Shift] + press [1]
Perform - hold [Menu] + 'Perform'

While in the another page, Hold [Shift] + Hold [1] with a long press will temporarily display song mode.

Press [Play] in performance mode to play the current pattern as set in the pattern page or set in song mode, whichever is the most recent pattern played. Press [Shift] + [Play] in performance mode to play the full song.

The 'Random' symbol in the header of a page will demonstrate that tracks from various patterns can be selected for mixing in performance mode.

10

Master Effects

A number of effects are available in Tracker Mini. Some can be set in the FX1 and FX2 slots and some used in Performance Mode. Also the instrument parameters give access to instrument level effects. This section covers the Master Effects. These common effects are available in the main audio chain and located in the master pages. Effects in the primary audio chain are called insert effects. Effects are not available on an individual track basis so all tracks are routed through the master section. The track mixer is also a page in the master section. An example of an insert effect is the EQ effect which operates in series to the main audio. Send effects allow variable amounts of audio to be channeled in parallel to the main audio, and then the affected audio is mixed back into the main output. Essentially these are the reverb and delay effects. The main reverb and delay effect settings are accessible from the master page, and the send amounts are in the global mixer. The three pages, including the main mix page, track mixer page, and global mixer functions, are available by pressing the button [4], by default assigned to master pages, and also accessible via the [Menu]. Sub-pages are also included within these pages. Parameters are also available in the sub-pages or directly from the master page, depending on the effect. The pages can be cycled through using [4]. The master effects have a number of parameters and defined functions. It is always worth remembering that adjustment by ear is usually a more appropriate method when adjusting effect settings. While theoretical numbers and applications are good starting points, there is no better method than to hear how the sound is affected by the changes made as they are applied.
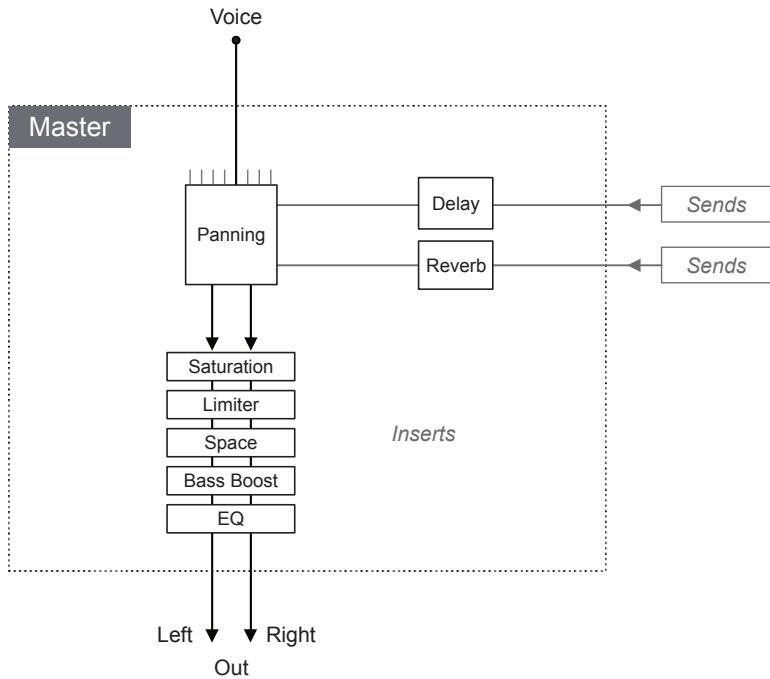
10 Master Effects

10.1 Effects Overview

Tracker Mini has 8 voices. Each voice is represented by each of the 8 tracks when playing. The common processing of the voices comes together at the master stage where the voices are mixed and the master effects applied. Also any delay and reverb 'send' audio is mixed into the main out.

The diagram shown is for illustration purposes and does not constitute an exact or official schematic of Polyend's Tracker Mini circuitry. It does however serve to give an insight into the signal path and identify the seven master effects covered in this section.

The reverb and delay send effects can be sent pre-fader or post-fader in the global mixer. This is set in the 'Config' settings accessed with the [Menu]. This means the effect audio is sent before being adjusted by the the volume fader or after the volume fader adjustment.

10.2 Master Pages

The 7 master effects are located in the master section of Tracker Mini. This is accessible with the assigned button [4] which opens to 3 mixer / master pages. The [Menu] can also be used to access the Master section. The main effects settings are contained within this pages.
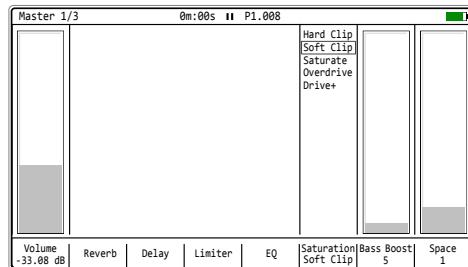
4

Press [4] to select the master section.
Each press of [Master] will cycle through 3 master pages:
Page 1 is master; Page 2 is track mixer and Page 3 is global mixer.
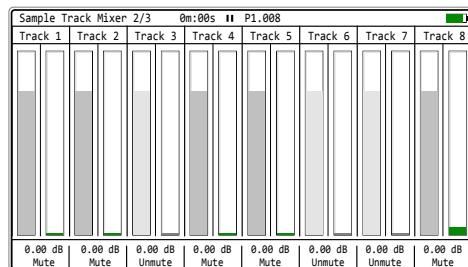
Master - Page 1/3

Direct access to the master output volume level, saturation, bass boost and space effects. Each of which is directly adjustable when selected using the [+] / [-] or the (Up) or (Down) buttons.
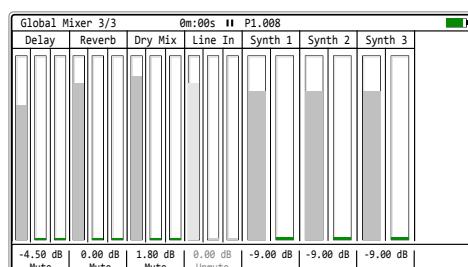
The delay and reverb send effect, limiter and EQ parameter pages are accessible when using the respective screen buttons.

Sample Track Mixer - Page 2/3

Access to all of the individual sample track levels to allow mixing of the entire song. Hold one or more screen buttons and us [+] / [-] or (Up) (Down) buttons to adjust the setting.

Mute and solo can be set here. Editing the track names when [Rec] is active is also possible.

Global Mixer - Page 3/3

The main output delay and reverb levels are visible and can be adjusted. The main dry and wet mix between the main audio and effect audio is also provided.

Control for pass through of line inputs. The three synth audio levels are also accessible. All settings accessible with the screen buttons.

To adjust the effect parameters, select the page then use the screen buttons or use (Left) or (Right) to select the parameter. Screen buttons select some pages such as delay, reverb etc. Press [+] / [-] or (Up), (Down) to change the selected parameter value. Multiple track mixer levels can be adjusted when holding the screen buttons simultaneously.
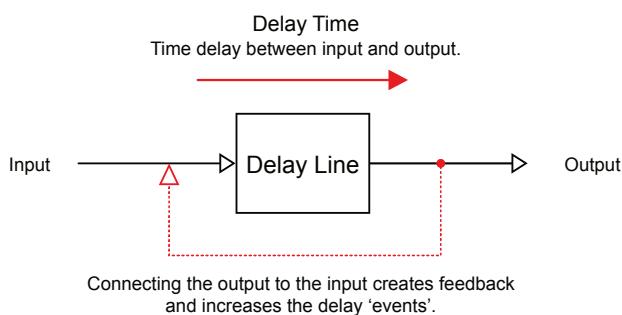
10 Master Effects

10.3 Master Delay

Delay is one of the two send effects. A send effect basically routes an adjustable amount of audio in parallel to its main signal path and is sent to a common audio effect. In this case delay. This delay affected audio is then returned back to the main audio path. The effect itself is a common function, managing several send / return signals. Any common delay parameter adjustments will therefore also affect other send signals. The 'Send / Return' configuration is a common application for delay effects.

What is a delay effect?

A delay is a common production effect used to delay an incoming signal to the output. While this is a simple principle there are many effects that use delay as a foundation. Some examples are echo (creating defined repeats) and chorus (short delay taps to give a thicker rather than echo style feel) as well as specific delay types such as ping-pong delay, spreading the delay points across the stereo field left to right and slap-back delay emulating old tape delays which are used successfully to thicken vocals.

Delay is a time based effect and synchronisation (or not) with the track tempo should also be considered depending on the output required.
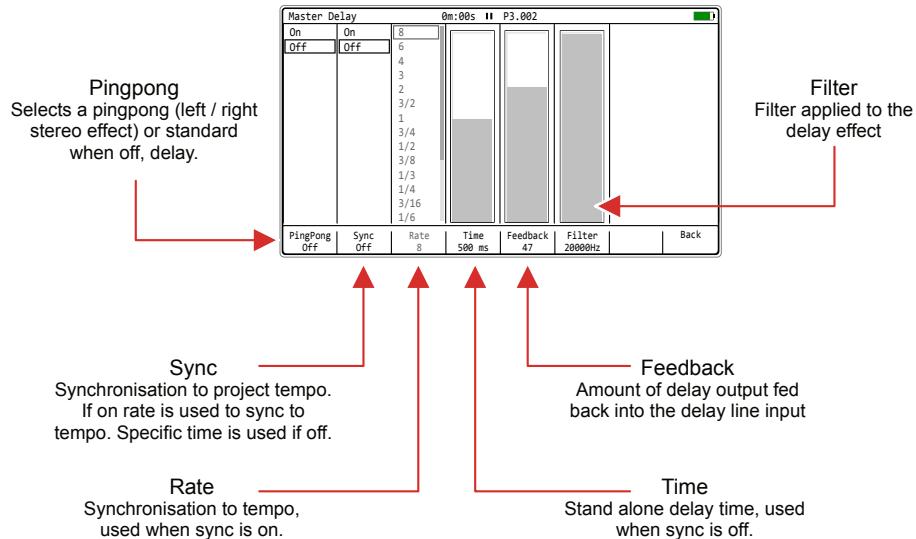
▌ ACCESSING MASTER DELAY PARAMETERS

1. Press [4] or use [Menu] to select master section. Press again if needed, until the 'Master' page 1/3 is displayed.

2. Press [*Delay*] screen button.

3. The six delay parameters are presented on the master delay page.

4. Press [*Back*] screen button to return to the master page.

Master delay page

Accessed via the master page 1/3 and selected from the screen buttons.

Pingpong
Selects a pingpong (left / right stereo effect) or standard when off, delay.

Filter
Filter applied to the delay effect

Sync
Synchronisation to project tempo. If on rate is used to sync to tempo. Specific time is used if off.

Feedback
Amount of delay output fed back into the delay line input

Rate
Synchronisation to tempo, used when sync is on.

Time
Stand alone delay time, used when sync is off.

Master Delay Settings.

Option	Range	Description
Pingpong	On, Off	Toggles the pingpong mode on or off. This will set the delays to be generated across the stereo field left to right.
Sync	On, Off	Toggles synchronisation to the project tempo on or off. When on, the rate with respect to tempo is used for the delay. When off, the time parameter is used.
Rate	See Rate Table	The rate divider / multiplier, synchronised to project tempo, used for the delay time. Available when sync is set to on.
Time	1 - 3500ms	The time used for the delay. Only available when sync is set to off.
Feedback	0-99	Amount of delay output signal that is fed back into the delay input. This parameter is what increases the number of delays in the audio.
Filter	100Hz - 20000Hz	Applies a filter to the delay and helps shape the sound tone more appropriately.

Rate Options

8	6	4	3	2	3/2	1	3/4	1/2	3/8
1/3	1/4	3/16	1/6	1/8	1/12	1/16	1/24	1/32	
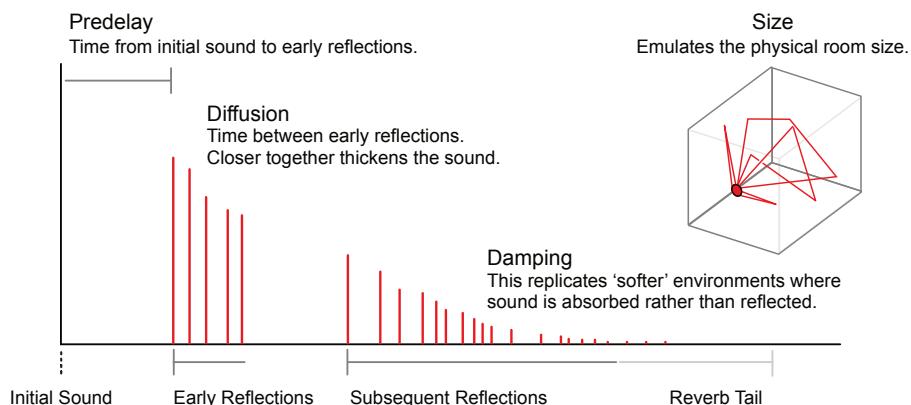
10 Master Effects

10.4 Master Reverb

Reverb is the second of the send effects. As stated a send effect routes an adjustable amount of audio in parallel to its main signal path and is sent to a common audio effect. In this case reverb. This reverb affected audio is then returned back to the main audio path. The effect itself is a common function, managing several send / return signals. Any common reverb parameter adjustments will therefore also affect other send signals. The 'Send / Return' configuration is a common application for reverb effects.

What is a reverb effect?

Predelay
Time from initial sound to early reflections.

Size
Emulates the physical room size.

Diffusion
Time between early reflections.
Closer together thickens the sound.

Damping
This replicates 'softer' environments where sound is absorbed rather than reflected.

Initial Sound   Early Reflections   Subsequent Reflections   Reverb Tail

A reverb is a common production effect used to replicate the audio behaviour of spaces. A normal space such as a small or large room will reflect audio differently. Think of how the sound reflects in a large cathedral compared to a small bathroom. The sound will bounce and reflect between the walls and other elements in the room. These reflections arrive at the human ear at different times and different levels. Reverb is an effect that replicates this behaviour.

Reverb parameters mainly focuses on the space / room characteristics.

▌ ACCESSING MASTER REVERB PARAMETERS
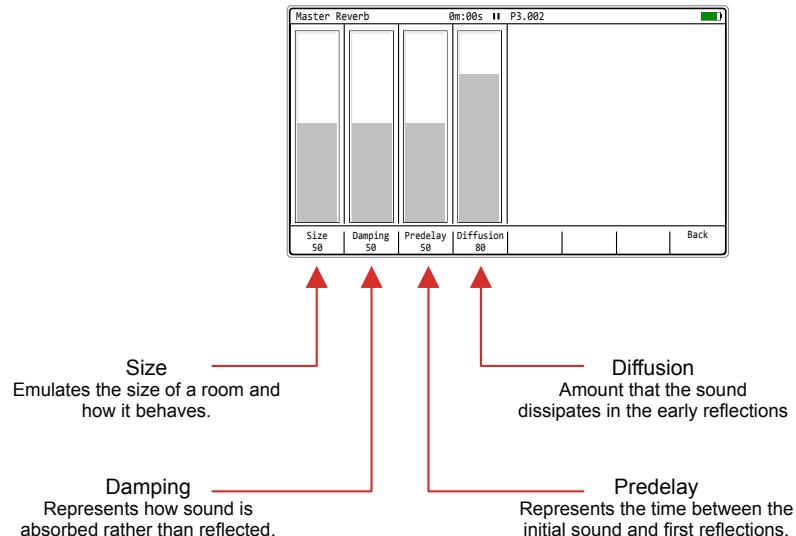
1. Press [4] or use [Menu] to select master section. Press again if needed until the 'Master' page 1/3 is displayed.

2. Press [*Reverb*] screen button.

3. The four reverb parameters are presented on the master reverb page.

4. Press [*Back*] screen button to return to the master page.

Master reverb page

Accessed via the master page 1/3 and selected from the screen buttons.

Size
Emulates the size of a room and
how it behaves.

Diffusion
Amount that the sound
dissipates in the early reflections

Damping
Represents how sound is
absorbed rather than reflected.

Predelay
Represents the time between the
initial sound and first reflections.

Master reverb settings.

Option	Range	Description
Size	0-100	Replicates a physical room size.
Damping	0-100	Sound is reflected with walls, furniture and fittings etc. However it is also absorbed into walls and materials. This emulates the absorbent part of sound in a space.
Predelay	0-100	The time from the initial original sound being triggered to the first reflections being heard.
Diffusion	0-100	Diffusion emulates how much sound is dissipated. Essentially this is based on the time period between the early reflections. The wider, the thinner the reverb effect.
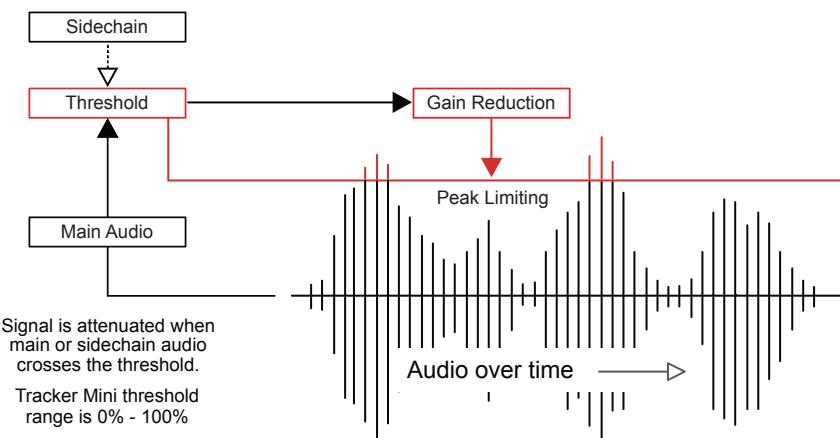
10 Master Effects

10.5 Limiter

Tracker Mini's limiter operates as the second insert effect in the master effect chain. This is not a typical configuration as most applications have a limiter as the last effect in a chain. Insert effects in Tracker Mini route the entire, main audio signal prior to the output.

What is a limiter?

A limiter is normally used at the end of an audio chain and is used to protect the digital integrity by taming signals beyond a threshold, keeping levels within a defined limit and usually avoid digital clipping. Limiters are useful to develop a sounds level and increase the perceived loudness.

Tracker Mini's limiter also has a sidechain function. The Limiter threshold is based on the main audio (sidechain off). Sidechain options will route an alternative audio signal to trigger the gain reduction instead of the main audio. This can be used creatively and triggered by a track or an external audio signal
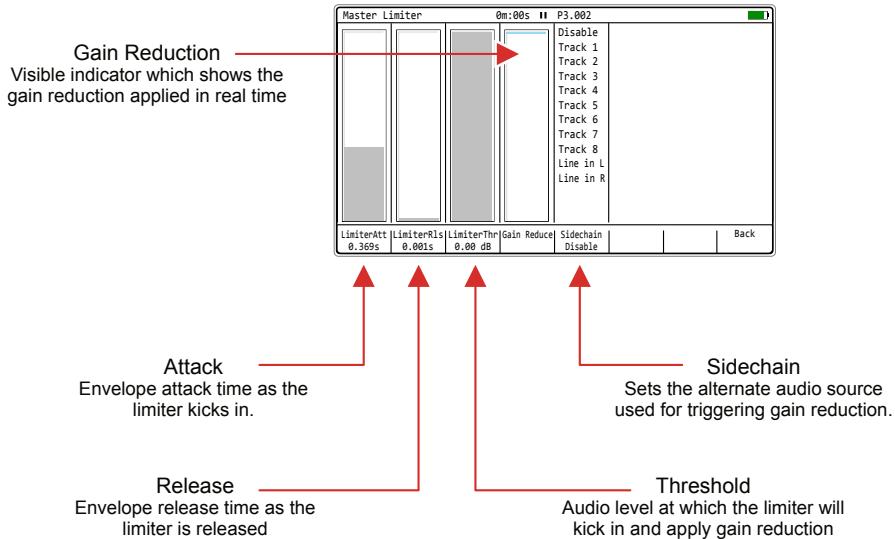
▍ ACCESSING MASTER LIMITER PARAMETERS

1. Press [Master] to select master section. Press again if needed until the 'Master' page 1/3 is displayed.

2. Press [*Limiter*] screen button.

3. The five limiter parameters are presented on the master limiter page.

4. Press [*Back*] screen button to return to the master page.

Master limiter page

Accessed via the master page 1/3 and selected from the screen buttons.
The behaviour of the limiter as extreme or subtle can be set in the 'Config'
[Menu] options.

Gain Reduction
Visible indicator which shows the
gain reduction applied in real time

Attack
Envelope attack time as the
limiter kicks in.

Sidechain
Sets the alternate audio source
used for triggering gain reduction.

Release
Envelope release time as the
limiter is released

Threshold
Audio level at which the limiter will
kick in and apply gain reduction

Master limiter settings.

Option	Range	Description
Limiter Att	0.001 - 1.000s	Envelope attack time which controls the limiter behaviour as the limiter kicks in.
Limiter Rls	0.001 - 1.000s	Envelope release time which controls the limiter behaviour as the limiter drops out.
Limiter Thr	-Inf dB to 0dB	The threshold level at which gain reduction and hence limiting is applied. Source is based on the audio source - main or sidechain.
Gain Reduce		Visual, real time indicator of gain reduction being applied. Does not offer any parameter settings - indication only.
Sidechain	Disable, Track 1-8, Line In L R	Selects the alternate audio signal used as the trigger. The normal state is disabled and uses the main audio. Alternatively individual tracks or line in L or R can be selected.
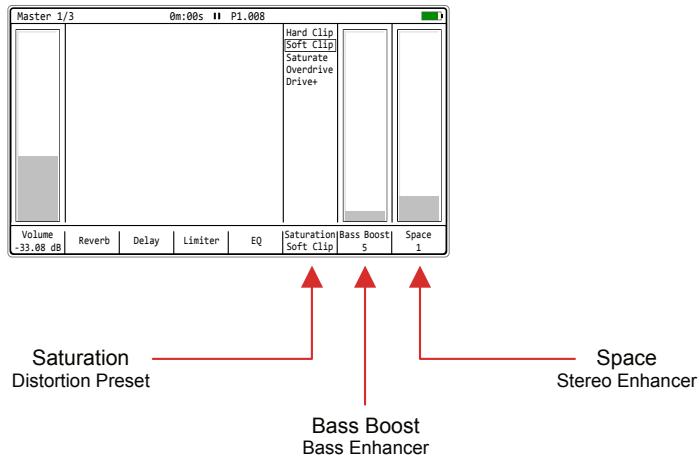
Setting a limiter is an iterative process. Set up the source and fast attack
and release then make small incremental adjustments while playing the
song, starting with threshold. Once an appropriate gain reduction is
reached tweak the attack and gain to further shape the sound.

10 Master Effects

10.6 Saturation, Space & Bass Boost

Saturation, space and bass boost are simple effects each carrying one parameter that adjusts the amount of effect applied into the main audio out or in the case of saturation, sets the defined preset.

Saturation is the first effect in the entire master chain. This is selects from 5 preset options for subtle distortion. The space option, ranges 0-8 and is a widener enhancing the stereo image. Bass boost has a 0-100% range with represents approx 0-5 dB. This enhances the bass frequencies around 80 Hz, which can be subtle on some material. Both will be applied based on taste so try tweaking and adjusting on different songs to find the sweet spot for the material and track.

▌ ADJUSTING SATURATION, BASS BOOST & SPACE VALUES
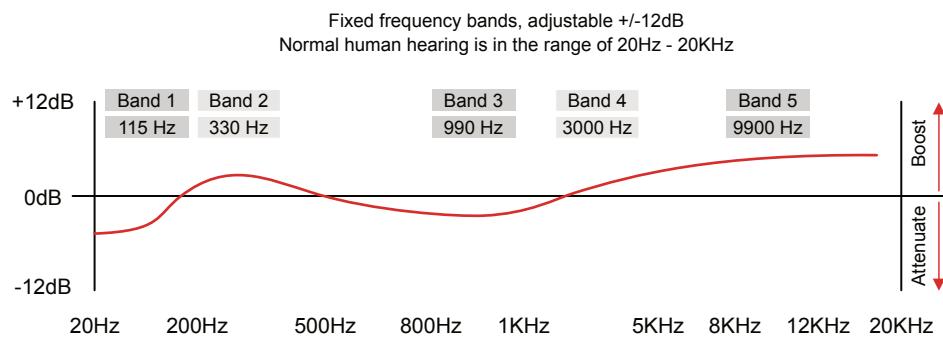
1. Press [4] or use [Menu] to select master section. Press again if needed until the 'Master' page 1/3 is displayed.

2. To select the effect:-

   • Press [Saturation] screen button.

   • Press [*Bass Boost*] screen button.

   • Press [*Space*] screen button.

   • The (Left) or (Right) buttons also navigate and select.

3. Press [+] / [+] or (Up), (Down) to adjust the setting value.

10.7 EQ

Equalization, also called EQ, is an effect which allows the adjustment of specific frequency bands to shape the sound spectrum. This can adjust the tone and have an audible creative effect for sound design.

What is a EQ?

Fixed frequency bands, adjustable +/-12dB
Normal human hearing is in the range of 20Hz - 20KHz

An EQ is set up with a number of frequency bands. Many models have adjustable frequency, width of band and the ability to boost or attenuate at the given frequency. Tracker Mini's EQ is the last master effect in the chain and has 5 fixed frequency bands.

The adjustment is based on a dB boost or attenuation with a range of -12dB to +12dB. A setting of 0.00dB across the range mans no EQ is applied and the audio will be unaffected.

A normal human hearing range is 20Hz to 20kHz. This is the range an EQ therefore operates with specific ranges affecting sound elements. Some examples are:-
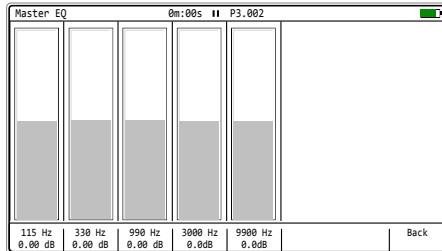
- Vocal sibilance occurs around 3-7kHz. Try cutting at 3kHz or 9.9kHz to de-ess and remove any stand out 'S' elements.

- Mic rumble can be removed around 70-150Hz.

- Boost around 9kHz to give a sound more 'air' and brilliance.

- A cut at 1kHz can help vocals by removing 'honkiness'

- Cut at 300Hz to remove muddiness.

- Boost at 115Hz to add warmth.

10 Master Effects

▌ ACCESSING MASTER EQ PARAMETERS

1. Press [4] or use [Menu] to select master section. Press [4] again until the 'Master' page 1/3 is displayed.

2. Press [*EQ*] screen button.

3. The five EQ parameters are presented on the master EQ page.

4. Press [*Back*] screen button to return to the master page.

10.8 Effect Config Options

Several options can be set in the 'Config' [Menu] for master effects. The behaviour of the limiter can be changed between extreme and subtle. Also the master mix reverb and delay can be configured to send before / pre the volume level fader of after / post fader.

▍ SETTING THE CONFIG OPTIONS FOR MASTER EFFECTS

1. Press [Menu] the select 'Config' to open the configuration menu.

2. In the first column, select 'Project Settings'. Use the 1st and 2nd screen button to navigate. Alternatively use (Left) or (Right) to navigate menus and Press (Up) or (Down) to select a function.

3. In the 'Project Settings' sub menu the 'Limiter mode' and the 'Sends mode' can be adjusted. Select the option from the central sub-menu with the [*Up*] [*Down*] screen buttons.

4. The limiter options are:

    •   Subtle: Will affect how aggressive the envelope attack and release operates. Subtle will give a gentle, transparent style and will be slow in catching fast transients.

    •   Extreme: Will provide a more aggressive model. Will catch all of the transients but will also affect the sound adding colour.

5. The send effects:

    •   Pre-fader: Will send the audio to the effect irrespective of the instrument volume. The effected signal may be louder as it is independent of the volume control.

    •   Post-fader: Will send the audio after it has been adjusted by the instrument volume and therefore ensures the effect is more proportionally consistent with the level, especially when modulated

6. Press [*Enter*] screen button to change the option.

7. Navigate with the central [*Up*] [*Down*] screen buttons and press [*Apply*] screen button to accept the option.

11

MIDI

While working with audio has been covered extensively, Tracker Mini also has a set of comprehensive MIDI features. MIDI is the protocol that allows devices to communicate together; for example, one device controls sequencing to send to another synth. A lot of the processes and instructions for audio also apply to MIDI; for example, steps in a pattern can be set to send MIDI rather than trigger an audio sample instrument. MIDI configuration of steps is handled just like an instrument. Tracker Mini, therefore, can control external gear from its sequencer. In addition external gear can also be set up to control Tracker Mini. A few fundamental things should be considered when working with MIDI. The clock in a multi gear setup will control timing between devices. As such, it is recommended that only one main clock is set as the primary lead. Also, the transport control of which device will stop and start the sequencing should be considered. These, of course, are design choices taken when organizing a collection of equipment to work together with MIDI and should be considered at the outset. MIDI into Tracker Mini can be set up through the USB connection or the MIDI interface, which uses an adapter cable to convert the 3.5mm connection to standard 5-Pin DIN style MIDI connections. Audio, controlled by Tracker Mini from external devices, can also be sampled back into Tracker Mini, making it a perfect fit for the centre piece of a setup. MIDI expands the landscape of sound design when using Tracker Mini in a multi device setup and enables a collection of instruments to operate together in sync.

11 MIDI

11.1 MIDI Definitions

To clarify some of the terminology and technology around MIDI with respect to Tracker Mini a summary of key definitions is provided. Tracker Mini uses a TRS to Type B MIDI Adapter. Also MIDI over USB is possible.

5 PIN MIDI   5 PIN to TRS MIDI

MIDI DIN 24

This is often found for MIDI Out and Thru and enables syncing of classic devices. This uses 0v & 5v messages as sync signals at 24 pulses per quarter note (PPQN). Tracker Mini uses 192 PPQN Internally and can also transmit and receive via USB.

MIDI DIN 48

This is often found for MIDI Out and Thru and enables syncing of classic devices. This uses 0v & 5v messages as sync signals at 48 pulses per quarter note (PPQN). Tracker Mini uses 192 PPQN Internally and can also transmit and receive via USB.

MIDI

Musical Instrument Digital Interface. A protocol for communicating between electronic musical gear. Never connect MIDI gear to incompatible DIN signals. Tracker Mini has USB MIDI but also an interface for 5 Pin DIN In and out.

MIDI CC

MIDI Control and Note change messages are used to communicate messages across MIDI with values of 0-127. Control Changes (CC) affect parameter values while note data triggers notes. Tracker Mini has some defined CC Assignments.

MSB & LSB

Most Significant Byte and Least Significant Byte. MSB provides the 128 data resolution which is ok for most MIDI applications. More advanced devices use MSB and LSB values increasing resolution to 16,384 steps.

MIDI STANDARDS

While there are MIDI standards defined, many synth developers interpret this in slightly different ways. Its always worth reviewing the documentation with each to fully understand each device level implementation.

NRPN

Non-Registered Parameter Number is part of the MIDI standard. CC and NRPN are technically very similar but NRPN is less well defined in the standards. NRPN uses more data and can give better control.

SYSEX

System Exclusive. This is an expansion of the normal MIDI communications set up and is typically used for transferring data such as back ups, patches, presets and firmware updates to and from devices.

SDS

Sample Dump Standard. This is an older transfer protocol used for transferring data to and from devices. This is rarely seen nowadays.

The term 'primary lead' will refer, in this guide to a device that has the main control responsibility. For example controls the clock and transport and is the central lead. A device which will be controlled by, and follow the primary lead device and which will be subservient by responding to the main control messages will be called a 'secondary follower'.

11.2 MIDI Configuration

A pre-requisite when working with MIDI is to ensure that the configuration settings in the 'Config' options accessed by [Menu] are applied for the desired MIDI gear setup. These will dictate if Tracker Mini leads on functions like clock and transport or if it acts as a secondary follower, responding to control and synchronisation from another primary device control. Also note and CC behaviour can be set.

Menu	Option	Description
MIDI	Clock In	Sets the Tracker Mini clock between the internal generated clock (default) or an external clock received through the USB or MIDI In jack.
MIDI	Clock Out	Sends the Tracker Mini clock output to other devices. Off, USB, MIDI Out jack or USB+MIDI jack options.
MIDI	Transport In	Sets the source of transport control commands, Internal (default), or control from an external device received through the USB or MIDI In jack.
MIDI	Transport Out	Sends Tracker Mini transport control commands to other devices. Set to Off, USB, MIDI Out jack or USB+MIDI jack options.
MIDI	Notes In	Sets the input of how notes are received from an external device. Set to Off, USB, MIDI In jack or USB+MIDI jack options.
MIDI	Notes Input Channel	Sets the MIDI channel for external note inputs. Select all channels or Ch 1-16.
MIDI	MIDI Out	Sets the output routing of MIDI to communicate to other devices. Set to Off, USB, MIDI Out jack or USB+MIDI jack options.
MIDI	CC In	Defines how the CC (control change) input from external devices is handled. Set to Off, USB, MIDI In jack, USB+MIDI In jack.
MIDI	CC In channel	Sets the MIDI channel that is used to receive CC (control change) messages. Select all channels or Ch 1-16.
MIDI	Middle C	Sets Tracker Mini's middle C as C-3, C-4, C-5, C-6. This will calibrate the note ranges to external gear if this does not naturally match.
MIDI	Clock Sync Delay	Latency compensation for incoming clock synchronisation. Options range from -50 to +50 with each unit = 1/250 of pattern step. Leave at the default 0.0 unless there are synchronisation errors.

Velocity can be recorded from an external MIDI controller, but this must be set in the recording options.

Menu	Option	Description
Project	Recording Options	This option sets the recording options for the project. To record velocity from an external controller one of the velocity inclusive options should be selected.

11 MIDI

The settings in the config menu will depend on:-

- How the devices are connected together? Are the devices connected by USB? Which will transmit and receive MIDI with the MIDI 5 Pin connection using the MIDI jack adapter?

- Which device will be a primary leader (main controller e.g. main clock) or a secondary follower (will respond to other gear as the lead control e.g. synchronised to another clock)?

- Will MIDI note data (melodies, chords, etc) be communicated?

- Will MIDI CC continuous control change data be communicated (to change parameters like delay level or trigger performance effects)?

ACCESSING THE MIDI CONFIG OPTIONS
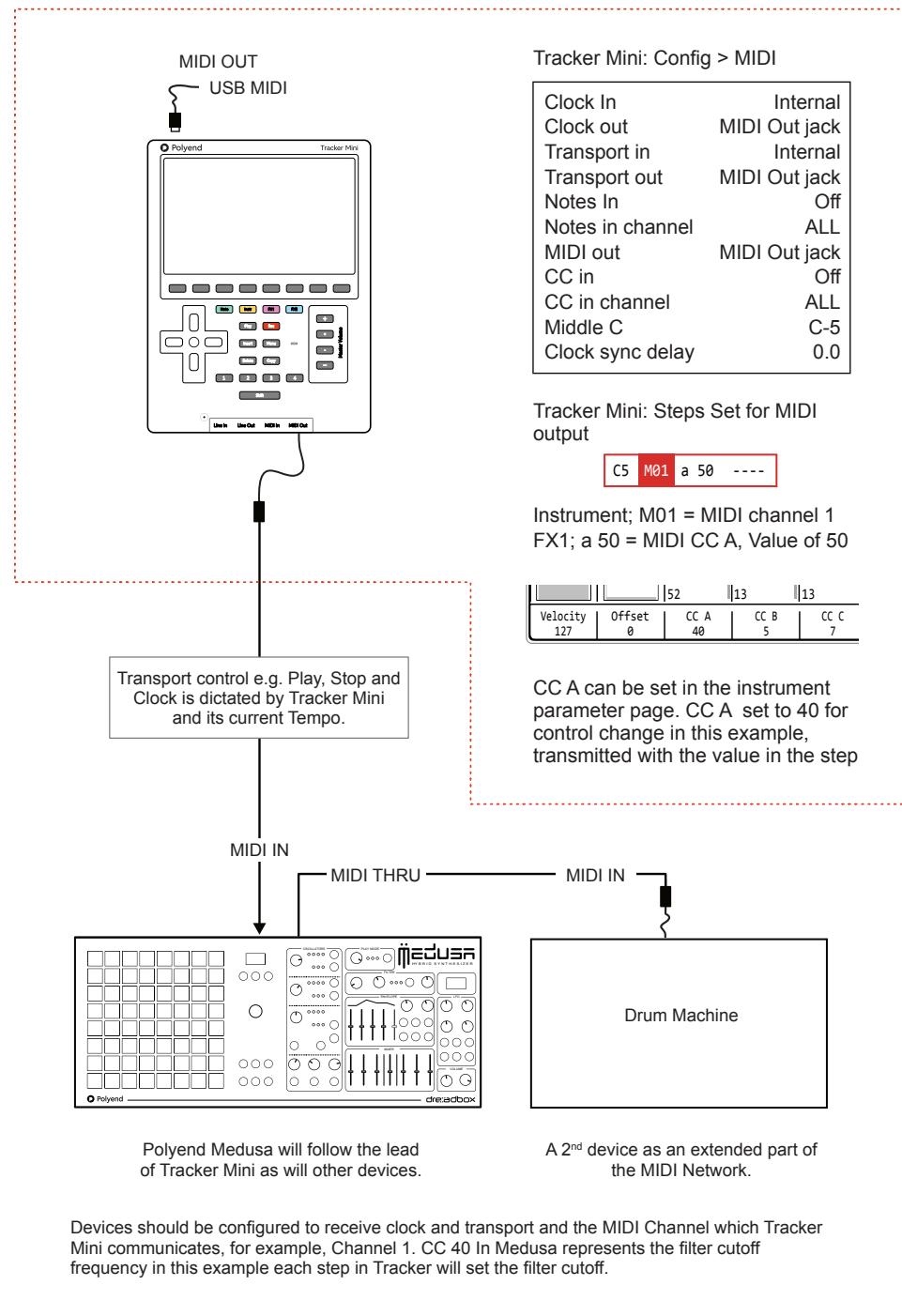
1. Press [Shift] + [4] or [Menu] to select 'Config' configuration menu.

2. In the first column, select 'MIDI'. Use the left side [*Up*] [*Down*] screen button to navigate. Alternatively use (Left) or (Right) to navigate across menus and press [+] / [-] or (Up), (Down) to select a function.

3. The 'MIDI' options will be available in the central menu window. Use the [*Up*] [*Down*] screen buttons to navigate. Alternatively use (Left) or (Right) to navigate across menus and press [+] / [-] or (Up), (Down) to select a function.

4. Press [*Enter*] screen button to edit the option that is highlighted.

5. Use the central [*Up*] [*Down*] screen buttons to navigate to the desired parameter setting. Alternatively use (Left) or (Right) to navigate across menus and press [+] / [-] or (Up), (Down) to choose a setting.

6. Press [*Apply*] screen button to confirm the option that is highlighted.

11.3 Typical MIDI Configurations

There are many configurations that can be set up with MIDI gear. Some are complex and involve multiple devices while a simple set up can have two devices communicating. Some typical examples are shown.
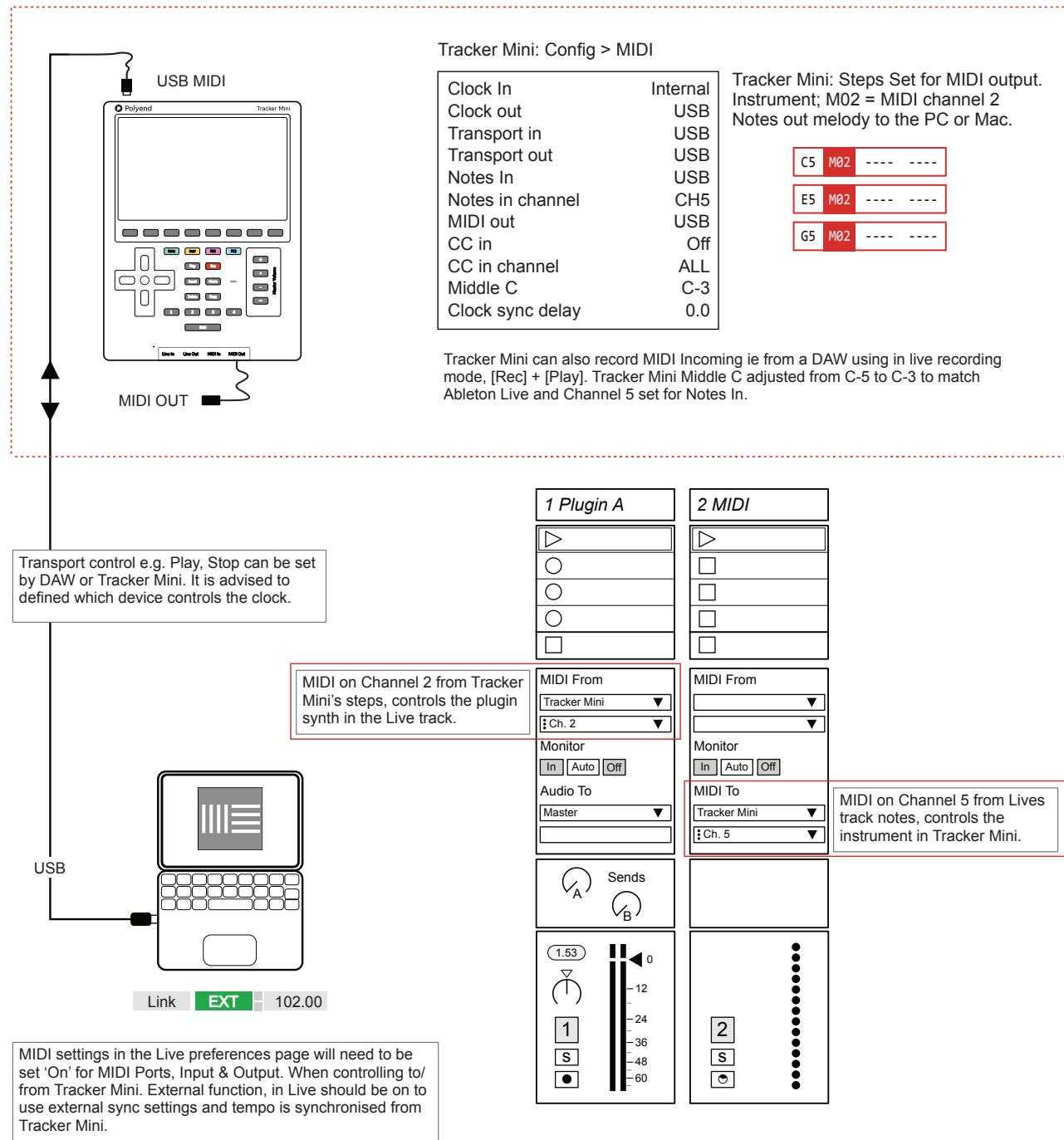
Example configuration 1: Tracker Mini as the primary lead.

MIDI OUT
USB MIDI

Tracker Mini: Config > MIDI

Clock In	Internal
Clock out	MIDI Out jack
Transport in	Internal
Transport out	MIDI Out jack
Notes In	Off
Notes in channel	ALL
MIDI out	MIDI Out jack
CC in	Off
CC in channel	ALL
Middle C	C-5
Clock sync delay	0.0

Tracker Mini: Steps Set for MIDI output

C5 M01 a 50 ----

Instrument; M01 = MIDI channel 1
FX1; a 50 = MIDI CC A, Value of 50

| Velocity 127 | Offset 0 | CC A 40 | CC B 5 | CC C 7 |

CC A can be set in the instrument parameter page. CC A set to 40 for control change in this example, transmitted with the value in the step

Transport control e.g. Play, Stop and Clock is dictated by Tracker Mini and its current Tempo.

MIDI IN

MIDI THRU — MIDI IN

Drum Machine

Polyend Medusa will follow the lead of Tracker Mini as will other devices.

A 2nd device as an extended part of the MIDI Network.

Devices should be configured to receive clock and transport and the MIDI Channel which Tracker Mini communicates, for example, Channel 1. CC 40 In Medusa represents the filter cutoff frequency in this example each step in Tracker will set the filter cutoff.

The ability to connect to a PC or Mac via a MIDI connection is possible, which can allow software synths and plug-ins to be controlled by Tracker Mini. Tracker Mini will need a hub or will need to be powered by the PC / Mac as the USB connection is the source of power for Tracker Mini.

Example configuration 2: Tracker Mini in / out with Ableton Live.

USB MIDI

MIDI OUT

Tracker Mini: Config > MIDI

Clock In	Internal
Clock out	USB
Transport in	USB
Transport out	USB
Notes In	USB
Notes in channel	CH5
MIDI out	USB
CC in	Off
CC in channel	ALL
Middle C	C-3
Clock sync delay	0.0

Tracker Mini can also record MIDI Incoming ie from a DAW using in live recording mode, [Rec] + [Play]. Tracker Mini Middle C adjusted from C-5 to C-3 to match Ableton Live and Channel 5 set for Notes In.

Tracker Mini: Steps Set for MIDI output. Instrument; M02 = MIDI channel 2 Notes out melody to the PC or Mac.

C5	M02	---- ----
E5	M02	---- ----
G5	M02	---- ----

Transport control e.g. Play, Stop can be set by DAW or Tracker Mini. It is advised to defined which device controls the clock.

USB

Link EXT 102.00

MIDI settings in the Live preferences page will need to be set 'On' for MIDI Ports, Input & Output. When controlling to/from Tracker Mini. External function, in Live should be on to use external sync settings and tempo is synchronised from Tracker Mini.

1 Plugin A

2 MIDI

MIDI on Channel 2 from Tracker Mini's steps, controls the plugin synth in the Live track.

MIDI From
Tracker Mini ▼
Ch. 2 ▼

Monitor
In Auto Off

Audio To
Master ▼

MIDI From
▼
▼

Monitor
In Auto Off

MIDI To
Tracker Mini ▼
Ch. 5 ▼

MIDI on Channel 5 from Lives track notes, controls the instrument in Tracker Mini.

Sends
A
B

1.53

1
S
●

◄ 0
12
24
36
48
60

2
S
○

An external device, keyboard or drum pads can be connected to control Tracker Mini by MIDI either by USB or via the 5 Pin MIDI dongle. Notes can be played or recorded and CC messages controlling assigned parameters.

Example configuration 1: Tracker Mini as the secondary follower.

USB MIDI

Tracker Mini: Config > MIDI

Clock In	MIDI In jack
Clock out	Off
Transport in	MIDI In jack
Transport out	Off
Notes In	MIDI In jack
Notes in channel	CH1
MIDI out	Off
CC in	MIDI In jack
CC in channel	CH2
Middle C	C-5
Clock sync delay	0.0

The keyboard will control the current instrument in channel 1.

A#3	16	----	----

OFF -- ---- ----

Notes can be recorded in live recording mode. The note and note off messages are captured in the steps.

Control change (CC) assignments

Function	CC #
Performance Mode Tracks	CC41 - CC48
Performance Mode Effects	CC51 - CC62
Master Mixer Levels	CC71 - CC78
Delay & Reverb Mix	CC79 & CC80
Dry Mix	CC81
Line In Level	CC82

MIDI IN

Transport control e.g. Play, Stop and Clock is dictated by an external devices as is current Tempo.

MIDI OUT

MIDI OUT

Keyboard or Pad controller used for MIDI note information on channel 1. To record variable velocity into Tracker Mini make sure the [Menu] >Config > General > 'Recording Options' have a Velocity option enabled. Otherwise velocity is recorded at fixed value.

Optional controller used for control change (CC) messages on channel 2

11.4 MIDI Instrument Overview

Tracker Mini has a series of MIDI Instruments that can be assigned to steps in a pattern. MIDI is defined per step, not per track, so MIDI and Audio instruments can reside on the same track in the same pattern. A MIDI instrument essentially defines the MIDI channel on which to transmit data out and also gives access to the instruments MIDI parameters.

Instr

The instrument selection has a dedicated button when working in the pattern.

C5 | M02 | - - - - | - - - -

M02

Instruments 51-66 constitute the preset MIDI Instruments. Each of these represents a MIDI channel 1-16. A MIDI instrument is tagged with an 'M' in the step configuration.

2

The MIDI instrument parameters are accessible in the menu under instrument parameters and are specific to the currently selected instrument and it's MIDI channel.

CC Outputs
Configure the 6 CC outputs A-F,
used from a step FX1 or FX2.

The default velocity to send out can be applied as well as MIDI latency compensation in the offset parameter.

This illustration shows several MIDI instruments set for MIDI channel 2. The notes values will be sent on the defined channel to a connected device such as another synth or DAW. MIDI Out would need to be set correctly in the Config > MIDI parameters to transmit the note values over MIDI.

The MIDI transmitted will be based on the project tempo. Also remember that tempo FX can be applied to steps which would also affect the MIDI output timing.

The Instrument parameters will reflect the MIDI output options available when selecting a step with a MIDI instrument configured. The note is set in the step and will be sent on the channel defined in the MIDI instrument. The default velocity can also be set for MIDI out.

The same general process is followed when working with MIDI steps as with audio steps. More details are covered in a prior section.

▌ CREATING A MIDI NOTE OUTPUT STEP

1. Press [1] to select the pattern mode page.

2. Select the target step to edit. Use (Up), (Down) to scroll top to bottom. Press (Left), (Right) to select a track. Example row 1 of track 1. The step should be highlighted with the green bounding box.

3. Press [Rec] to switch to recording mode. The step bounding box will turn red and allow editing of the step.

4. Note: Hold [Note] + [+] / [-] to set a note for the step.
    Also with the note already selected, use [+] / [-] to change it's value.

5. Instrument: Hold [Instrument] + [+] / [-] or (Up) (Down) to change to an instrument from the 51 to 61 list. Each one will represent a MIDI channel where the step messages will be transmitted. The Instrument will be indicated with an 'M' in the instrument slot for the step.

Instrument #	Name	Step Tag	MIDI Channel
51	MIDI Channel 1	M01	1
52	MIDI Channel 2	M02	2
53	MIDI Channel 3	M03	3
54	MIDI Channel 4	M04	4
55	MIDI Channel 5	M05	5
56	MIDI Channel 6	M06	6
57	MIDI Channel 7	M07	7
58	MIDI Channel 8	M08	8
59	MIDI Channel 9	M09	9
60	MIDI Channel 10	M10	10
61	MIDI Channel 11	M11	11
62	MIDI Channel 12	M12	12
63	MIDI Channel 13	M13	13
64	MIDI Channel 14	M14	14
65	MIDI Channel 15	M15	15
66	MIDI Channel 16	M16	16

11 MIDI

11.5 Handling MIDI Velocity

The velocity of notes triggered by steps is set by default in the MIDI instrument parameter page. This ranges from 0-127. An FX1 or FX2, 'V' step effect can also be applied which will define the velocity specifically for the step. External gear will receive the note message with the defined velocity transmitted.
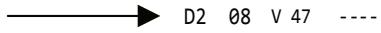
```
C5  M02  ----  ----
```
→ Sends note C5 across MIDI channel 2 at the default velocity in the MIDI instrument parameters.

```
C5  M02  V 23  ----
```
→ Sends note C5 across MIDI channel 2 at the velocity value of 23.

The FX value in Tracker Mini is based on a range of 0-100, however most devices and DAWs use a velocity range of 0-127. Bear this in mind when applying and recording FX velocity

Recording of note data can be performed from external gear into Tracker Mini in live recording mode using [Rec] + [Play]. To be able to record velocity, the Config > General > 'Recording Options' would need a velocity option to be set i.e. 3 or 4 from the lost below. The options are:-

1. Only notes: Records only quantized notes into a pattern.

2. Microtiming: Records notes with microtiming into a pattern.

3. Velocity: Records quantized notes and velocity into a pattern.

4. Microtiming + Velocity: Records notes with microtiming and velocity into a pattern.
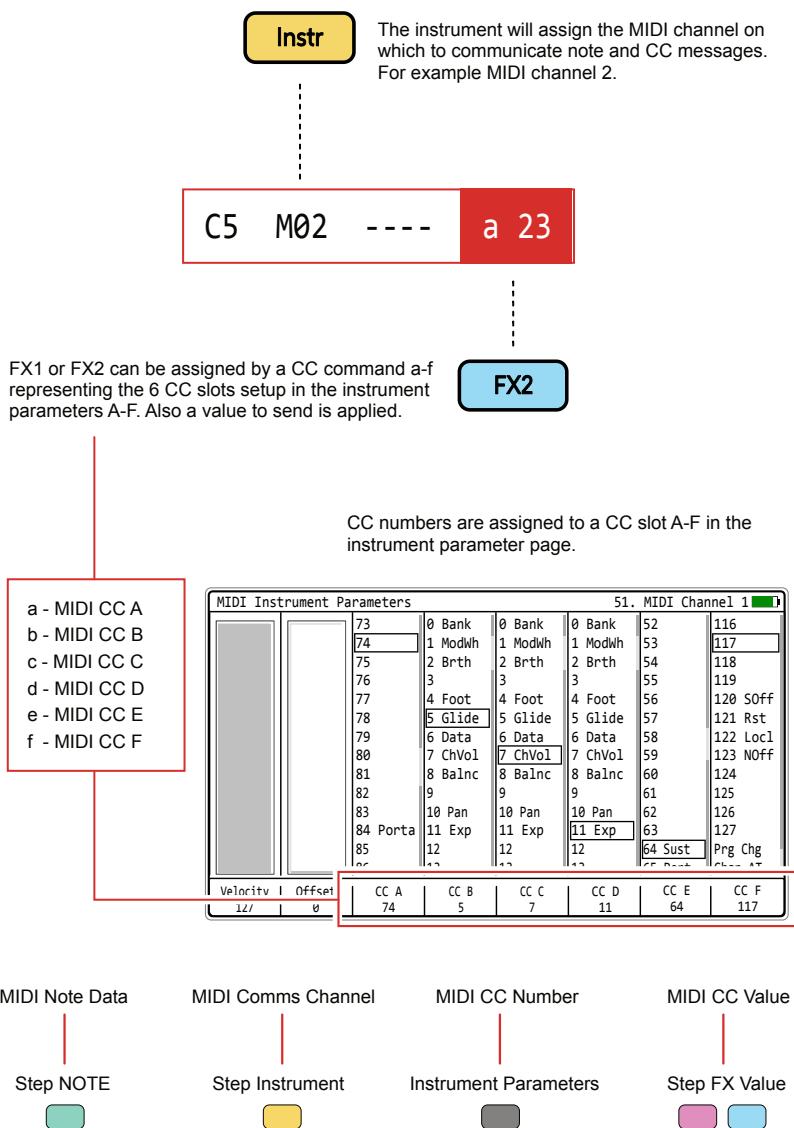
Note D2 recorded for instrument 8 at a recorded velocity of 47. Note step FX Velocity range is 0-100. Recording options set to 'Velocity' →
```
D2  08  V 47  ----
```

Note E1 recorded for instrument 8 at a recorded velocity of 100. Note step FX Velocity range is 0-100. Recording options set to 'Velocity' →
```
E1  08  V100  ----
```

11.6 MIDI CC Out

Continuous control change messages, also called CC, can be sent from Tracker Mini on a step by step basis. While note message will trigger the notes on other gear, CC initiates a parameter change, for example to adjust pan or filter cutoff on another device. These would need to be matched at Tracker Mini end to align to the parameter on the external device. Six CC parameter slots A-F exist in Tracker Mini that can be allocated a CC and then used in FX1 or FX2 of a step. These are also combined with synth macros functionality.

Instr

The instrument will assign the MIDI channel on which to communicate note and CC messages. For example MIDI channel 2.

C5 M02 ---- a 23

FX2

FX1 or FX2 can be assigned by a CC command a-f representing the 6 CC slots setup in the instrument parameters A-F. Also a value to send is applied.

CC numbers are assigned to a CC slot A-F in the instrument parameter page.

a - MIDI CC A
b - MIDI CC B
c - MIDI CC C
d - MIDI CC D
e - MIDI CC E
f - MIDI CC F

MIDI Instrument Parameters   51. MIDI Channel 1

| Velocity | Offset |
| 127 | 0 |

| CC A | CC B | CC C | CC D | CC E | CC F |
| 74 | 5 | 7 | 11 | 64 | 117 |

MIDI Note Data — Step NOTE

MIDI Comms Channel — Step Instrument

MIDI CC Number — Instrument Parameters

MIDI CC Value — Step FX Value

This illustration shows that control change 74 is assigned to CC A, which in turn is assigned as FX2 with a value of 23. If, for example, Elektron Digitakt is the receiving device, this step will send a message to control the filter cutoff.

11 MIDI

The MIDI CC outputs in the instrument parameters list follows MIDI standards. Many of the CC's are undefined. Check the MIDI configuration for any connected devices to know what CC will affect which parameter. This list is available for each of the 6 CC assignments A - F. Also the program change 128, channel aftertouch 129 and polyphonic aftertouch 130 can also be configured here.

CC #	Function	CC #	Function	CC #	Function	CC #	Function
0	Bank (MSB)	32	Bank (LSB)	64	Sustain	96	Data Increment +
1	Mod Wheel (MSB)	33	Mod Wheel (LSB)	65	Portamento	97	Data decrement -
2	Breath Control (MSB)	34	Breath Control (LSB)	66	Sostenuto	98	NRPN LSB
3		35		67	Soft Pedal	99	NRPN MSB
4	Foot Pedal (MSB)	36	Foot Pedal (LSB)	68	Legato	100	RPN LSB
5	Glide (MSB) Portamento Rate	37	Glide (LSB) Portamento Rate	69	Hold 2	101	RPN MSB
6	Data Entry (MSB)	38	Data Entry (LSB)	70		102	
7	Channel Volume (MSB)	39	Channel Volume (LSB)	71		103	
8	L/R Balance (MSB)	40	L/R Balance (LSB)	72		104	
9		41		73		105	
10	Pan (MSB)	42	Pan (LSB)	74		106	
11	Expression Pedal (MSB)	43	Expression Pedal (LSB)	75		107	
12		44		76		108	
13		45		77		109	
14		46		78		110	
15		47		79		111	
16		48		80		112	
17		49		81		113	
18		50		82		114	
19		51		83		115	
20		52		84	Portamento Amount	116	
21		53		85		117	
22		54		86		118	
23		55		87		119	
24		56		88	High Definition Velocity	120	All sound off
25		57		89		121	Reset all
26		58		90		122	Local On / Off
27		59		91		123	All notes off
28		60		92		124	
29		61		93		125	
30		62		94		126	
31		63		95		127	

▌ CREATING A MIDI CC OUTPUT STEP

1. Ensure the Config > MIDI settings are set to send MIDI. Use [Shift] + [4] or [Menu] to select the configuration options.

2. Press [1] or select from [Menu] the pattern mode page.

3. Select the target step to edit. Use (Up), (Down) to scroll top to bottom. Press (Left), (Right) to select a track. Example row 1 of track 1. The step should be highlighted with the green bounding box.

4. Press [Rec] to switch to recording mode. The step bounding box will turn red and allow editing of the step.

5. Hold [Instrument] + Press [+] / [-] or (Up) (Down) to select a MIDI instrument from listed options 51 to 66. Each will represent a MIDI channel to transmit the step messages. The Instrument will be indicated with an 'M' in the instrument slot for the step. Example M01.

6. Hold [FX1] or [FX2] + Press [+] / [-] or (Up) (Down) to set a CC for the step. This will be one of the 6 options a-f. The selected option will show as a lower case letter in the step FX slot. Example: 'a' is MIDI CC A.

7. With the FX selected, Press [+] / [-] to set it's CC value. A series of steps could for example be filled with a ramp up of values. This can be changed later. Example: Set to 50.

8. Press [2] to select the 'Instrument Parameter' page. MIDI message options are presented given the instrument is a MIDI channel.

9. Press a screen button to select a CC Slot that matches the FX selection. Example, Press [CC A], screen button to match the MIDI CC A selected in step 6 above.

10. Press [+] / [-] or (Up) (Down) to scroll the CC parameter lists. Highlight with the bounding box the CC number to assign. This would typically be based on the MIDI CC configuration on a receiving device. Example: CC 74 is filter cutoff on Elektron's Digitakt.

11. In this example, CC Number 74 (set in step 10 above) will transmit a CC value of 50 (set in step 7 above) over MIDI channel 1 (set in step 5 above) when the selected step is triggered.

11 MIDI

11.7 MIDI CC In

Control change messages can be received by Tracker Mini. The CC In would need to be set in the [Menu] > Config > MIDI menu along with the CC In channel for the MIDI channel. The MIDI CC mapping within Tracker Mini has a set of pre-defined destinations for CC messages.

CC #	Function	CC #	Function
41	Performance Effect Track 1 Pattern Select	71	Master - Track Mixer Track 1 Volume Level
42	Performance Effect Track 2 Pattern Select	72	Master - Track Mixer Track 2 Volume Level
43	Performance Effect Track 3 Pattern Select	73	Master - Track Mixer Track 3 Volume Level
44	Performance Effect Track 4 Pattern Select	74	Master - Track Mixer Track 4 Volume Level
45	Performance Effect Track 5 Pattern Select	75	Master - Track Mixer Track 5 Volume Level
46	Performance Effect Track 6 Pattern Select	76	Master - Track Mixer Track 6 Volume Level
47	Performance Effect Track 7 Pattern Select	77	Master - Track Mixer Track 7 Volume Level
48	Performance Effect Track 8 Pattern Select	78	Master - Track Mixer Track 8 Volume Level
51	Performance Effect Slot 1 Value - Top Row	79	Master - Global Mixer Delay Mix
52	Performance Effect Slot 2 Value - Top Row	80	Master - Global Mixer Reverb Mix
53	Performance Effect Slot 3 Value - Top Row	81	Master - Global Mixer Dry Mix
54	Performance Effect Slot 4 Value - Top Row	82	Master - Global Mixer Line Input
55	Performance Effect Slot 5 Value - Top Row		
56	Performance Effect Slot 6 Value - Top Row		
57	Performance Effect Slot 7 Value - Top Row		
58	Performance Effect Slot 8 Value - Top Row		
59	Performance Effect Slot 9 - Top Row		
60	Performance Effect Slot 10 Value - Top Row		
61	Performance Effect Slot 11 Value - Top Row		
62	Performance Effect Slot 12 Value - Top Row		

11.8 Program Change

Tracker Mini has the ability to send program change messages. These are MIDI standard messages which trigger a change to the current 'program' of an external device by switching presets or configurations. This of course will be dependant on the program / bank / preset structure and operation of the receiving device. Often synths use banks and presets so the behaviour of the device from a program change may vary.

Program change is configured as a CC parameter using number 129.

Example

Pattern 1

Track 3   Track 4

D6 03 ---- ----   D6 03 ---- ----

D4 04 ---- ----   D6 M01---- a 01 - - - - - - - - -   MIDI Channel 1, with a program change, 129 assigned to CC A. The value will trigger the program selection, in this example 01.

D4 04 ---- C 50   D6 03 ---- ----

D4 04 ---- ----   D6 03 ---- V 65

D6 03 ---- ----   D6 03 ---- ----

D4 04 ---- ----   -- M01---- a 02 - - - - - - - - -   MIDI Channel 1, with a program change, 129 assigned to CC A. The value will trigger the program selection, in this example 02.

D4 04 ---- C 50   D6 03 ---- ----

D4 04 ---- ----   -- M01 m 50 a 03   A program change is activated slightly ahead of the note. However it may be better to trigger the program change on a step prior to the note step or at the end of a previous pattern sequence and use micro move 'm' to adjust the timing.

Pattern 2
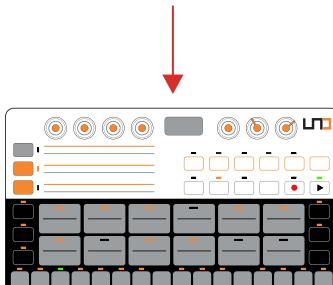
Track 3   Track 4

D6 03 ---- ----   D6 M01---- ----

D4 04 ---- ----   E6 03 ---- V 50

D4 04 ---- C 50   G6 M01---- ----

D4 04 ---- ----   D6 03 ---- V 65
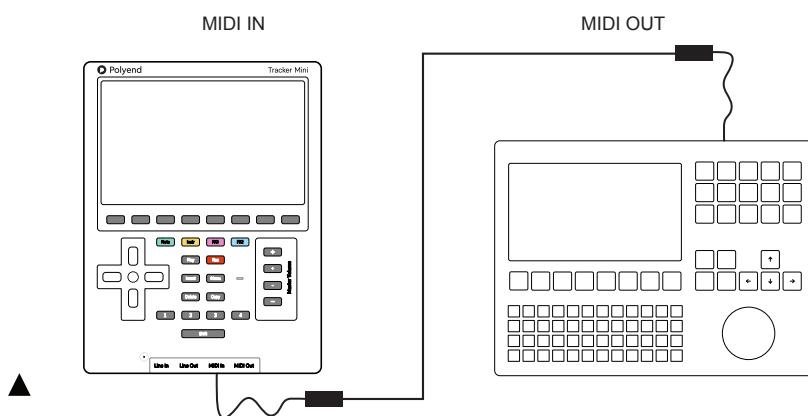
The receiving device may have a configuration that is not an exact match. For example a program may start at 1 rather than 0. The offset may need to be taken into account in the Tracker Mini step program change message.

11 MIDI

11.9 MIDI Synthesizer

The MIDI synthesizer mode is a feature that allows integration when controlling Tracker Mini from an external MIDI device and by controlling up to 8 voices across MIDI. Tracker Mini will operate as a secondary follower to an external controller which will be able to play and control Tracker Mini's instruments. This also brings a tight integration between Tracker, Tracker Mini and Polyend Play, where the MIDI CC is pre-mapped.

Tracker Mini:
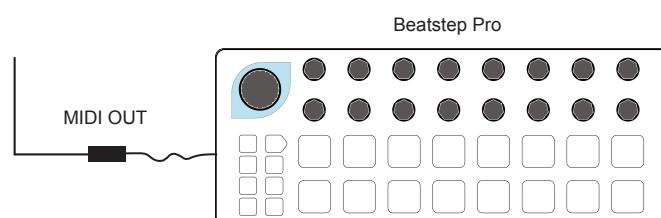
[Menu] > Config > MIDI

Clock In	MIDI In jack
Clock out	Off
Transport in	MIDI In jack
Transport out	Off
Notes In	MIDI In jack
Notes in channel	CH1
MIDI out	Off
CC in	MIDI In jack
CC in channel	CH1
Middle C	C-5
Clock sync delay	0.0

Play:

Menu > MIDI > CC Mapping > Jack Channel 1

Choose: Set Values for Polyend Tracker Mini

The rotary controls in play will be automatically mapped to have full integrated over MIDI CC with Tracker Mini's selected instruments. Play can control Tracker Mini with the pads.

Other MIDI Devices can be used with Tracker Mini's MIDI Synthesizer mode to control the instruments.
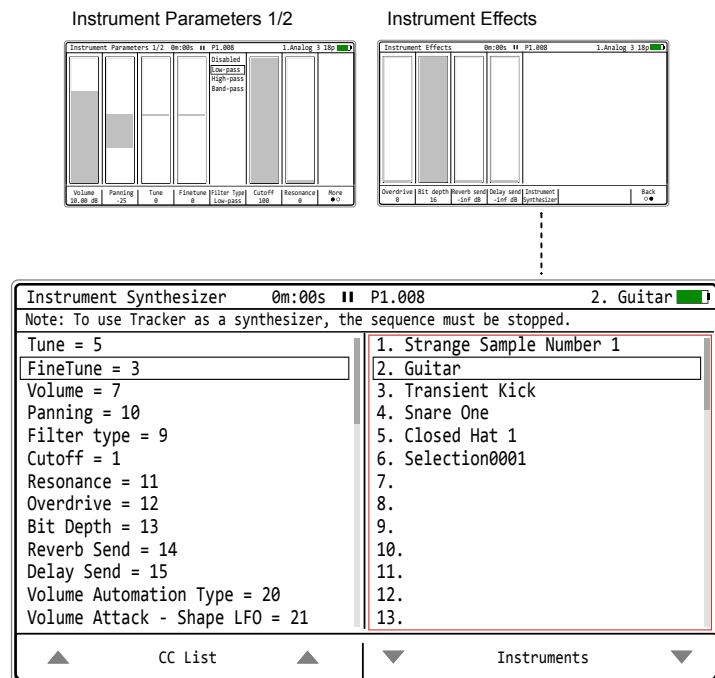
While integration with Polyend Play is a build in feature for mapping Play's controls, other MIDI controllers can also be used with an Instrument Synthesiser accessed through the instrument parameter page.

Instrument synthesizer mode

2 Select the instrument parameter page using [2] or from the [Menu]. The instrument synthesizer, accessed with [*More*] then [*Instrument Synthesizer*].

Instrument Parameters 1/2   Instrument Effects


```
Instrument Synthesizer     0m:00s  ‖  P1.008              2. Guitar
Note: To use Tracker as a synthesizer, the sequence must be stopped.
Tune = 5                          1. Strange Sample Number 1
FineTune = 3                      2. Guitar
Volume = 7                        3. Transient Kick
Panning = 10                      4. Snare One
Filter type = 9                   5. Closed Hat 1
Cutoff = 1                        6. Selection0001
Resonance = 11                    7.
Overdrive = 12                    8.
Bit Depth = 13                    9.
Reverb Send = 14                  10.
Delay Send = 15                   11.
Volume Automation Type = 20       12.
Volume Attack - Shape LFO = 21    13.
  ▲      CC List      ▲       ▼       Instruments      ▼
```

The left window will display, as a reference, the Tracker Mini parameter MIDI CC numbers.

The right window will allow selection of the instrument to control. The instrument selected will be shown in the top bar.

Notes on using MIDI synthesiser mode:-

- The external device must be configured to match the MIDI synthesizer CC controls and general Tracker Mini MIDI configuration, i.e. channel etc.

- Tracker Mini's sequencer must be stopped to use as a MIDI synthesizer.

- The instrument synthesizer mode page does not have to be displayed to operate. The last selected instrument will be the one used for the synthesizer control from an external controller.

11 MIDI

▌ SETTING UP A MIDI SYNTHESIZER

1. Ensure the external device is configured to set MIDI CC as per the Tracker Mini CC assignments in the MIDI synthesizer page. Also that the MIDI configuration is matched, for example same MIDI channel.

2. Connect the external controller to Tracker Mini, for example using the MIDI In connection and a MIDI cable between devices. Tracker Mini uses a MIDI dongle to convert between MIDI 5 Pin DIN and mini jack.

3. To get the reference of CC configurations set up as default for Tracker Mini, Press [2] for the instrument parameter page 1 or use the [Menu].

4. Press [*More*] screen button to display the Instrument effects page.

5. Press [*Instrument Synthesizer*] screen button.

6. The CC's are displayed in the left window as a reference. There is no selection in this page window as this is shown only as a guide.

7. To select an instrument as the destination target from the MIDI controller and as the synthesizer instrument, scroll the right window to select the desired instrument. This is also displayed in the top row.

8. The lists can be scrolled with the screen buttons. If the window is selected, highlighted red, the (Up) and (Down) or the [+] / [-] buttons.

9. The instrument parameters will adjust when controlled by the external MIDI controller. The changes are animated real time on the instrument parameter displays.

Synthesizer mode - MIDI CC configurations

CC #	Function	CC #	Function
5	Tune	83	Cutoff Automation Type
3	Finetune	84	Cutoff - Attack - Shape LFO
7	Volume	85	Cutoff - Decay - Speed LFO
9	Filter Type	86	Cutoff Sustain
1	Cutoff	87	Cutoff Release
11	Resonance	88	Cutoff Amount
12	Overdrive	102	Wavetable Position Automation Type
13	Bit Depth	103	Wavetable Position - Attack - Shape LFO
14	Reverb Send	104	Wavetable Position - Decay - Speed LFO
15	Delay Send	105	Wavetable Position Sustain
16	Wavetable / Granular Position	106	Wavetable Position Release
17	Wavetable Window / Granular Length	107	Wavetable Position Amount
20	Volume Automation Type	108	Granular Position Automation Type
21	Volume - Attack - Shape LFO	109	Granular Position - Attack - Shape LFO
22	Volume - Decay - Speed LFO	110	Granular Position - Decay - Speed LFO
23	Volume Sustain	111	Granular Position Sustain
24	Volume Release	112	Granular Position Release
25	Volume Amount	113	Granular Position Amount
26	Panning Automation Type	114	Finetune Automation Type
27	Panning - Attack - Shape LFO	115	Finetune - Attack - Shape LFO
28	Panning - Decay - Speed LFO	116	Finetune - Decay - Speed LFO
29	Panning Sustain	117	Finetune Sustain
30	Panning Release	118	Finetune Release
31	Panning Amount		

12

Performance Mode

Performance mode is a special Tracker Mini feature that creates an environment aimed at live and real-time performances. It is ideal when playing a live gig or improvising and showing off skills of live remixing, performing, and on-the-fly creativity. These variations and punch-in effects bring fun and challenge in a live performance environment and expand the creativity in using Tracker Mini. Perform mode can be accessed from the [Menu] options. The perform page has 12 effect slots. Think of the performance effects as presets where a defined offset from the default parameter value can be applied either momentarily or as a fixed change. Up to 21 effects are available for loading into the 12 available slots. The effect slot is selected with (Right) (Left) buttons to select from the 12 effects, giving 4 value options per effect. The four effect values are then triggered by using the four [+] / [-] buttons. These can be applied when playing patterns or a complete song. Muting can also be managed for tracks in perform mode. Track patterns can be remixed and combined with the performance effects and instrument adjustments. This can create a comprehensive basis for live performance. A dedicated 'top row' of values can also be controlled externally using MIDI. This MIDI option can also be used to control the effect values and the track pattern selection. The performance template by default is saved globally. However, this can be set in the 'Config' menu to be saved on a per-project basis. Perform brings a different dimension to Tracker Mini, taking the handheld 'programming' of songs or patterns into a more live performance and improvisation environment.

12 Performance Mode
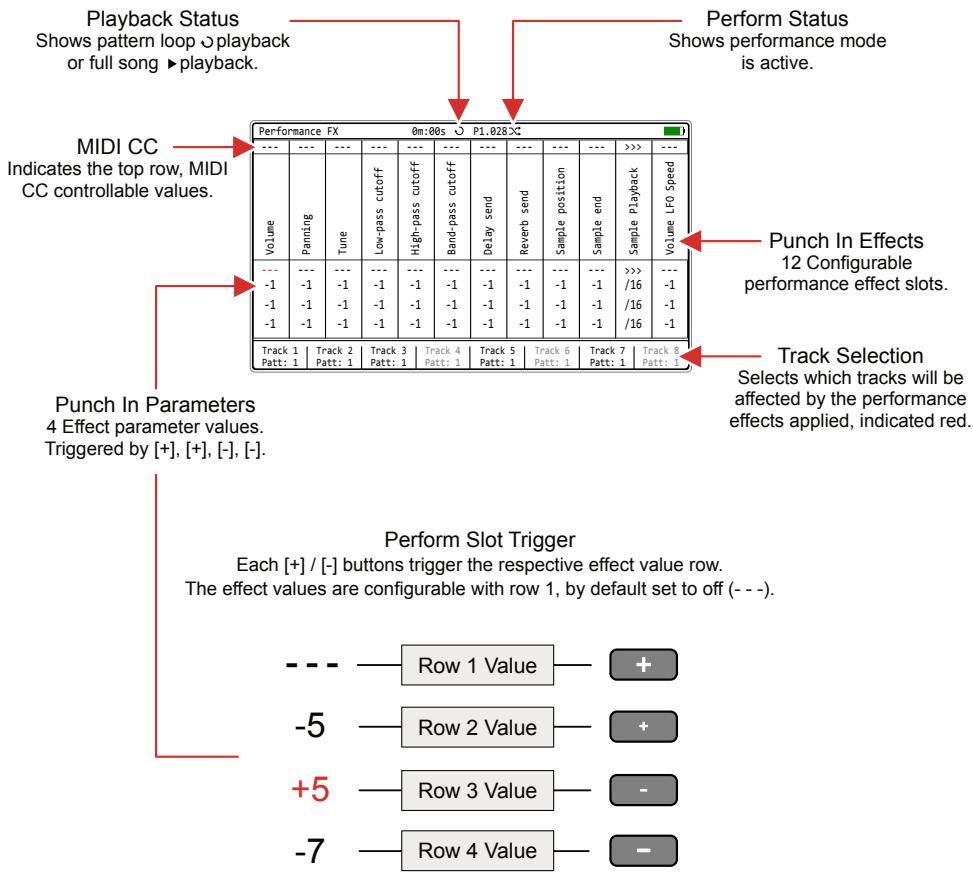
12.1 Performance Mode Overview

Performance mode allows real time improvisation control over tracks, patterns and songs adding variation and interest when playing live. This is normally handled in the [Menu] 'Perform' page although MIDI Input can also be set to control the performance parameters.

Performance mode
Press [Menu] to access and navigate the options. Select the 'Perform' option and display the performance mode screen. Editing parameters and configuring the effects is handled in [Rec] record mode]. It is possible to cycle between pattern and song pages while performance mode is active.

Playback Status
Shows pattern loop ↻ playback
or full song ▶ playback.

Perform Status
Shows performance mode
is active.

MIDI CC
Indicates the top row, MIDI
CC controllable values.

Punch In Effects
12 Configurable
performance effect slots.

Punch In Parameters
4 Effect parameter values.
Triggered by [+], [+], [-], [-].

Track Selection
Selects which tracks will be
affected by the performance
effects applied, indicated red.

Perform Slot Trigger
Each [+] / [-] buttons trigger the respective effect value row.
The effect values are configurable with row 1, by default set to off (- - -).

- - -	— Row 1 Value —	+
-5	— Row 2 Value —	+
+5	— Row 3 Value —	-
-7	— Row 4 Value —	-

Selected effects are indicated green or red (if editing) on the Tracker Mini screen.

Rec

REC Mode
Press [Rec] to edit the perform configuration. The selections will be indicated red as will the effect selection bounding box. Effects can be configured and the values edited when in rec mode of perform.

12.2 Perform - Quick Start

Assuming the effects are set up, values in place then real-time improvisations can be performed. Think of performance effects as applying parameter value variations as an offset from the current setting.

▌ WORKING LIVE WITH THE PERFORM

1. Press [Menu] and open the 'Perform' Page for performance mode.

2. Press [*Track 1*] - [*Track 8*], screen buttons to select the tracks for applying effects On (red) or Off. Only the selected, red lit tracks will be affected by the triggered performance effects.

3. Press [Play] to play a pattern or [Shift] + [Play] to play a song, also toggles between song and pattern play. The display header will show the pattern or song playback symbol and the perform mode symbol.

    | Pattern Play | 0m:00s ↻ P1.028 ⤭ |
    | Song Play | 0m:00s ▶ P1.028 ⤭ |

4. To punch in an effect:-

    •   Select an effect slot to punch in, press (Left] (Right) to navigate to the target effect column.

    •   Press one of the four [+] [+] [-] [-] buttons to apply the effect value change. The buttons represent top to bottom, the effect row values. The top [+] represents top row 1 and the lower [-] represents bottom row 4.

    •   Multiple effect values can be applied at the same time by selecting the column slot and and value for triggering using [+] / [-].

5. The effect is retained once pressed. To clear the effect, press the upper [+] button for the effect, row 1. Top row 1 is reserved for restoring the default, i.e. effect off. The top row value cannot be changed.

6. To temporarily play and adjust a value on the fly ensure [Rec] mode is off. Hold [+] / [-] for any of the 4 values to change then (Up) or (Down). The value is reset to its original state when the buttons are released.

7. The effect will apply an offset to the current value of the parameter affected. The value to apply will be as stated in the parameter row. For example, set pitch offsets for lead or bass tracks.

8. Hold [Shift] + Press [*Track x*], screen buttons to Mute / Unmute.

12.3 Selecting Tracks
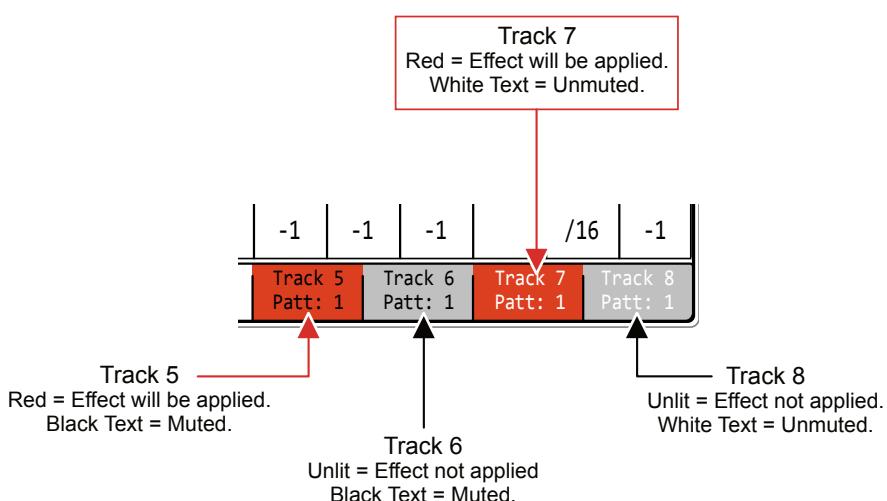
Effects triggered in performance mode will only affect selected tracks. These are selected using the screen buttons and will be indicated in red. Tracks can also be muted from within the perform page.

▌ SELECTING TRACKS TO APPLY PERFORMANCE EFFECTS

1. Press [Menu] and open the 'Perform' Page for performance mode.

2. Press [*Track 1*] to [*Track 8*], these are buttons that are represented by the 8 screen buttons. This will toggle selection on or off.

3. A selected track will be lit red in the screen button label. Any performance effect triggered will apply to only the selected tracks. Tracks showing unlit will be audible but the effect will not be applied.

▌ MUTING TRACKS IN THE PERFORM PAGE
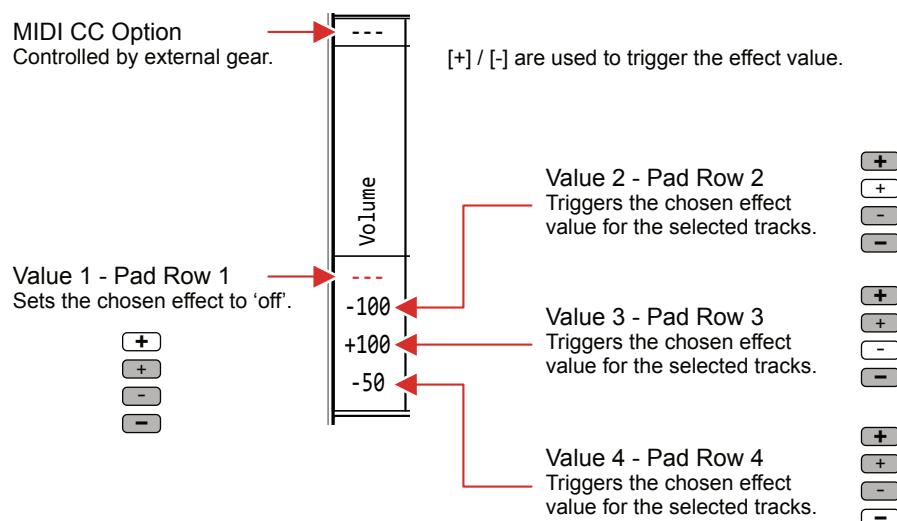
1. Press [Menu] and open the 'Perform' Page for performance mode.

2. Press [Shift] + [*Track 1*] to [*Track 8*], represented by the 8 screen buttons. This will toggle mute on or off.

3. A muted track will be labelled to reflect the state when pressing [Shift]. In the normal display a muted track screen button text label is shown in black, while text for an unmuted, audible track is displayed in white.

Track 7
Red = Effect will be applied.
White Text = Unmuted.

-1	-1	-1		/16	-1
Track 5 Patt: 1	Track 6 Patt: 1	Track 7 Patt: 1			Track 8 Patt: 1

Track 5
Red = Effect will be applied.
Black Text = Muted.

Track 6
Unlit = Effect not applied
Black Text = Muted.

Track 8
Unlit = Effect not applied.
White Text = Unmuted.

12.4 Perform Effect Values

Each of the configured effects has four slots which hold the value for the effect. These are triggered by the four [+] / [-] buttons. The top row is reserved as a default 'off' and the other three values are set relative to the current effect parameter value. In addition a 'top row' of values are available to be controlled by MIDI CC inputs from external gear if desired.

MIDI CC Option
Controlled by external gear.

[+] / [-] are used to trigger the effect value.

Value 2 - Pad Row 2
Triggers the chosen effect value for the selected tracks.

Value 1 - Pad Row 1
Sets the chosen effect to 'off'.

Value 3 - Pad Row 3
Triggers the chosen effect value for the selected tracks.

Value 4 - Pad Row 4
Triggers the chosen effect value for the selected tracks.

Volume

```
---
-100
+100
-50
```
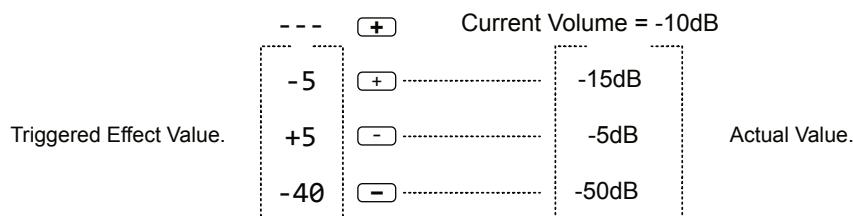
To temporarily edit and play an effect

With [Rec] mode OFF, hold [+] / [-] for the desired row and press (UP) or (Down). The value will change and effect applied temporarily. The value is reset to its original value when the buttons are released.

Value
Value is referenced as an offset applied to the current setting for the effect. The first row, value offset is off by default to allow a quick revert to the default state.

For example, with volume set at -10dB, the values are offset by each value, when triggered.

Current Volume = -10dB

```
---
-5        -15dB
+5        -5dB
-40       -50dB
```

Triggered Effect Value.

Actual Value.

12 Performance Mode
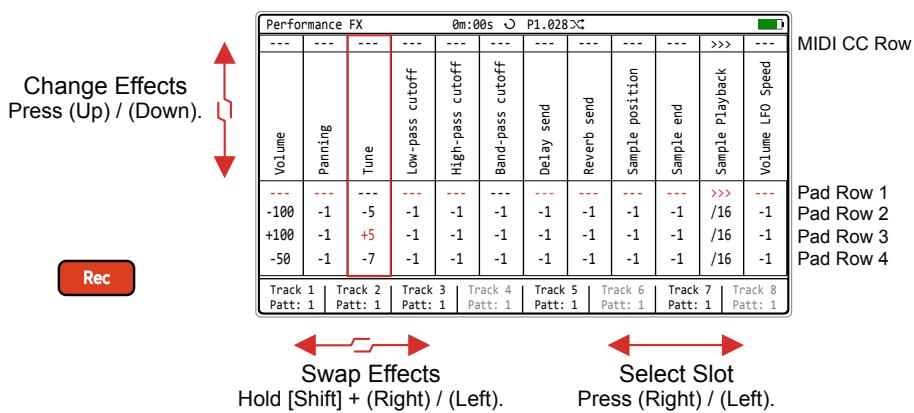
12.5 Configuring Effects

Effects can be setup in record mode with up to 12 effects being configured from a library of 21 performance effects. By default the performance preset is saved on a global basis, but can be changed to be saved 'per-project' in the 'Config' settings.

▌ CREATING AN EFFECT TEMPLATE

1. Press [Menu] and open the 'Perform' page for performance mode.

2. Press [Rec] to select record mode. Values and bounding box are red.

3. Navigate between effect slots, press (Left) or (Right).

4. To cycle the effect selected for the chosen column slot, press (Up) or (Down) while in rec mode. A total of 21 effect options available.

5. To swap effects, hold [Shift] + (Right) or (Left). This will swap the currently selected effect along with the values with the slot chosen. This can be used as a creative option.

6. Hold [+] / [-] for one of the 4 slot rows to edit then press (Up) or (Down) incrementally change the value of the selected effect row. Press [+] / [-] + Hold (Up) (Down) to continuously increase or decrease. Top row 1 is reserved to reset the default value and cannot be permanently changed for many effects.

7. Repeat steps 3 - 5 for other effect slots. 12 slots are available.

8. Press [Rec] to turn record mode off.

Change Effects
Press (Up) / (Down).

Rec

Swap Effects
Hold [Shift] + (Right) / (Left).

Select Slot
Press (Right) / (Left).

SETTING A TRACK PATTERN

1. Playback stopped.

2. Press [Menu] and open the 'Perform' Page for performance mode.

3. Hold [*Track 1*] to [*Track 8*] screen button + press (Up) or (Down). This selects the pattern assigned to the chosen track. These can also be changed during playback as a real-time performance and remix technique.

CHANGING PERFORM TEMPLATE SAVE BEHAVIOUR

1. Hold [Shift] + [4] or use [Menu] to select the 'Config' menu.

2. Ensure the left window is highlighted red i.e. in focus. Navigate windows by pressing (Left) or (Right). Menu windows will automatically be selected when pressing the relevant screen keys below the window to navigate (*Up*) or (*Down*).

3. Press (Up) (Down) highlight with the bounding box over the 'Project Settings' option. Alternatively press the relevant screen keys below the left window to navigate (*Up*) or (*Down*).

4. Press (Up) (Down) in the central section to highlight with the bounding box over the 'Performance presets' option in the central window. Alternatively press the relevant screen keys below the central window to navigate (*Up*) or (*Down*).

5. To change the selected parameter / setting, press [*Enter*]. The parameter pop-up window listing the available options will appear.

6. Press (Up) / (Down) or (*Up*) / (*Down*) screen buttons to highlight the desired option. The 'Global' setting will save the perform template for all projects while 'Per Project' will save on an individual project basis. Global is default.

7. Press [*Apply*] screen button to confirm selection or [*Cancel*] screen button to exit without changing.

12 Performance Mode

12.6 Perform Effects List

Tracker Mini has 21 performance effects that can be selected and loaded into each of the 12 effect slots. The same effect can be applied to multiple slots. While these are called effects, they in fact control parameters that apply variations to the parameter values.

Effect #	Name	Range / Comments
1	Volume	-100 to +100 Volume level adjustment.
2	Panning	-100 to +100 Stereo position.
3	Tune	-48 to +48 Semitones. Also applies to MIDI.
4	Low-Pass Cutoff	-100 to +100 Filter frequency adjustment.
5	High-Pass Cutoff	-100 to +100 Filter frequency adjustment.
6	Band-Pass Cutoff	-100 to +100 Filter frequency adjustment.
7	Reverb Send	-100 to +100 FX send level.
8	Delay Send	-100 to +100 FX send level.
9	Sample Position	-100 to +100 Audio sample start position.
10	Sample End	-100 to +100 Audio sample end position.
11	Sample Playback	<<< >>> Backward, forward direction.
12	Volume LFO Speed	-28 to +28 LFO speed.
13	Panning LFO Speed	-28 to +28 LFO speed.
14	Finetune LFO Speed	-28 to +28 LFO speed.
15	Filter LFO Speed	-28 to +28. LFO speed.
16	Grain/WT LFO Speed	-28 to +28. LFO speed.
17	Step Repeater	Off, 16, 12, 8, 6, 4, 3, 2, 1, 1/2, 1/3, 1/4, 1/6, 1/8, 1/12, 1/16.
18	Pattern Play Mode	Fwd, Back, Rnd, C1-C20 Fixed or predefined algorithm 'C' play modes.
19	Pattern Length	1-128 Total length (all tracks - selected or not).
20	Bit Depth	-12 to +12 Bit depth adjustment.
21	Overdrive	-100 to +100 Overdrive adjustment.

12.7 Remixing

Tracker Mini can remix tracks on the fly. There are two techniques worth noting when applying track mixing. Firstly the 'Pattern Play Mode' effect has 20 custom algorithms C1-C20 that allow pattern mixing based on predefined shuffling of existing patterns. This is called 'Custom Play Mode'. Secondly tracks can manually be remixed live when playing a song. Both techniques operate in performance mode.

Custom play mode

▌ USING A CUSTOM PATTERN PLAY EFFECT

1. Press [Menu] and open the 'Perform' Page for performance mode.

2. Press [Rec] to select record mode. Current value rows and bounding box are displayed red.

3. Navigate between effect slots, press (Left) or (Right).

4. To load the effect for the selected slot, press (Up) or (Down). Select the 'Pattern Play Mode' effect.

5. Hold [+] / [-] for the row to edit then press (Up) or (Down) to change the value of the specific effect row. Fwd = Forward, Rev = Reverse and Rnd = Random options as well as 'C' options. Set the following example as a starting point. Any C1-C20 value can be selected:-

    •   Pad row 2 is the 2nd row of effect values set to C18.

    •   Pad row 3, is 3rd row of effect parameters. set to C19.

    •   Pad row 4, is the 4th row of effect parameters. set to C20.

6. It is possible to set up, other 'Pattern Play Mode' effects into other slots to cover more of the other C1-C17 custom presets.

7. Press [Rec] to turn record mode off.

8. Trigger the rows is now possible for the selected tracks using [+] / [-] to activate the 'C' Algorithms set in perform slot. Also it is possible to make dynamic and temporary changes by holding [+] / [-] for selecting the Row 1 and pressing (Up) (Down) when NOT in rec mode. This will clear when releasing the [+] / [-] button.
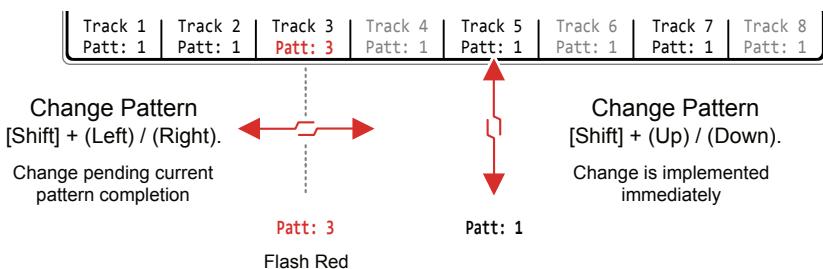
12 Performance Mode

Manual play mode

▌ MANUALLY REMIXING PATTERNS ON THE FLY
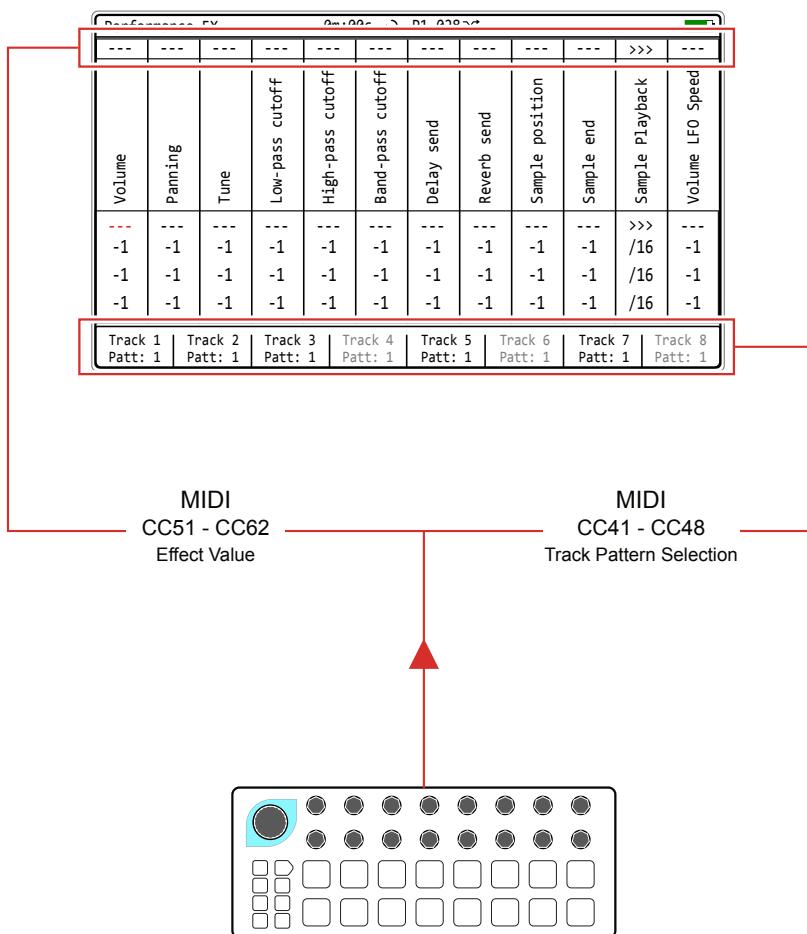
1. Press [Menu] and open the 'Perform' Page for performance mode.

2. Ensure [Rec] mode is off.

3. Press [Shift] + [Play] to play the song. The patterns can be remixed across tracks while a song is playing so ensure that multiple patterns are available in the song. The perform icon indicates remix is possible.

4. Remix track playback:-

   • Hold [*Track x*], screen button + press (Left) or (Right). This will play the newly selected pattern when the current one completes. The pattern will flash red to show this is cued ready for the change.

   • Hold [*Track x*], screen button + press (Up) or (Down). This will play the newly selected pattern immediately upon selection.

   • It is possible to hold one or more [*Track x*], screen buttons at the same time to select patterns for multiple tracks simultaneously.

4. The patterns will play, led by the longest ones which loop play while shorter ones are cut.

5. Exit the performance mode. The changes made in performance mode are disabled upon exit.

| Track 1 | Track 2 | Track 3 | Track 4 | Track 5 | Track 6 | Track 7 | Track 8 |
| Patt: 1 | Patt: 1 | Patt: 3 | Patt: 1 | Patt: 1 | Patt: 1 | Patt: 1 | Patt: 1 |

Change Pattern
[Shift] + (Left) / (Right).

Change pending current
pattern completion

Change Pattern
[Shift] + (Up) / (Down).

Change is implemented
immediately

Patt: 3

Flash Red

Patt: 1

12.8 Controlling Performances with MIDI

An external MIDI controller can easily be assigned to control performance effects in perform mode. The MIDI Incoming CC's are predefined for the 12 effect slots and the 8 track selections. The top row of the performance effects are representative of the MIDI incoming values.

MIDI
CC51 - CC62
Effect Value

MIDI
CC41 - CC48
Track Pattern Selection

Example: Beatstep
Configured with rotaries to control the CC51-CC62 which sets the effect value. These can also have preset CC values triggered from the pads.   The CC range on the controller is 0-127 which will be reflected across the range of the effect, which may be different. For example -100 to +100 Panning range will be controlled by a 0 to 127 CC Value.

Rotaries can also be set to select a track and a pattern using CC41-CC48. The value will represent the pattern which can also be assigned to a pad so that this triggers a specific pattern.

Ensure the MIDI settings for communication and the defined connection type are set correctly in the config settings to ensure incoming MIDI control, clock, channel, transport etc are received correctly especially for the incoming CC data.

12 Performance Mode

12.9 Advanced Pattern Playback

The simple option is to press [Play] to start and stop pattern playback. During playback a number of 'on-the-fly' pattern changes can be performed. This is more useful when improvising and performing.

▌ PLAYING PATTERNS - REFRESHER

1. Press [1] or use the [Menu] to select the pattern page.

2. Press [Play] to play the current pattern.

3. Press [Play] to pause / stop a currently playing pattern.

4. Press [Shift] + [1] then [Play] to play a song.

5. Hold [Shift] + [Track x] screen button to mute or unmute a track when in pattern page view.

▌ PLAYING A PATTERN LOOP

1. Press [1] or use the [Menu] to select the pattern page.

2. Press [Shift] + (Up) or (Down) to select a range of steps in the pattern.

3. Press [Shift] + [Play] to play the selected step range on loop.

4. Press [Play] to stop playback and deselect the loop range.

▌ PLAYING PATTERNS - ADVANCED PLAYBACK

1. Press [1] to select the pattern page.

2. Press [Play] to play the current pattern.

3. To sequentially change the pattern on the fly:

    •   Hold [*Pattern*] screen button + (Left) or (Right) buttons to select a new pattern. This will initiate a sequential pattern change which awaits the end of the current pattern before switching to the new pattern selection. Pattern text for the screen button flashes red when cued.

    •   Hold [1] default assigned pattern + (Left) or (Right) buttons to select a new pattern. This will initiate a sequential pattern change which awaits the end of the current pattern before switching to the new pattern selection. Pattern text for the screen button flashes red when cued.

4. To immediately change the pattern on the fly:

    •   Press [1] + (Up) or (Down) buttons to select a new pattern. This will initiate a pattern change immediately.

    •   Press [*Pattern*], 1st screen button + (Up) or (Down) buttons to select a new pattern. This will initiate a pattern change immediately.

    •   Press [*Pattern*], 1st screen button + [+] or [-], for the new pattern. This will initiate a pattern change immediately.

13

System

While at face value, this section may appear to be boring (I guess in many ways that could be true), don't overlook the content. While things like firmware updates are considered infrequent or one-off activities, there are also some elements that at least are useful to be aware of. There are some helpful tips and advice that may guide you if you are in a sticky situation. Also, there are some topics that might be useful around housekeeping and good disciplines in working with Tracker Mini. However, there are also some tips that may be helpful beyond the administrative duties. For example, capturing screen images is an often overlooked feature and can aid in storing settings that you might want to refer to later or share with others. The visual style and fonts for the screen and pad brightness can be adjusted and options on how these can be changed based on personal taste are provided. Of course, the general firmware update options are also covered in this section, although it is recommended to always follow Polyend's guidelines and instructions with each firmware release, as it is possible these may change per update. The current firmware version can be checked on the startup screen and on the firmware config page. Registration of the device is required to access downloadable content and firmware updates. Registration is performed at Polyend.com. This section not only covers system-wide features but also is a catch-all for topics not covered elsewhere.

13 System

13.1 Device Registration

In order for Polyend to provide device support and to give access to future firmware updates, your Tracker Mini must be registered on the Polyend website.

▌ REGISTRATION / SUPPORT CHECKLIST

• Create an account at Polyend.com.

• Register your device, ie Tracker Mini in the relevant account section.

• Access firmware downloads in your account.

• Licence information is available at polyend.com/licenses/
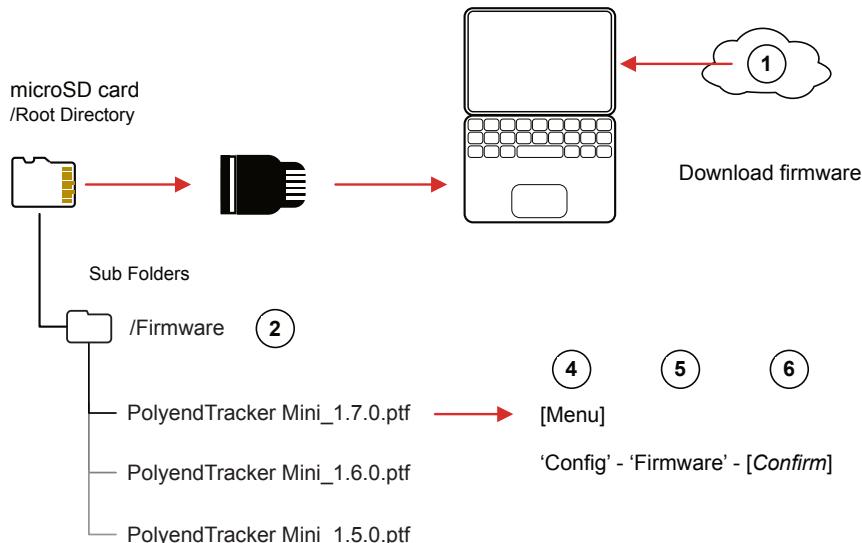
13.2 Generic Firmware Update

Firmware updates may be provided by Polyend from time to time, to fix bugs or add new features. The process of updating can be performed in several ways. When performing updates it is strongly advised to follow the Polyend instructions supplied with each update. The instructions here are a generic guide.

▌ FIRMWARE UPDATE

1. Download the latest firmware. Access firmware updates for your device from your registered account at Polyend.

2. Copy the downloaded .ptf firmware file into the /Firmware folder. This can be found in the root directory of the microSD card.

3. Insert the microSD card into Tracker Mini and power up

4. Hold [Shift] + [4] or use [Menu] to select the 'Config' Menu.

5. Navigate to the 'Firmware' menu. In the central window, select the firmware option to install.

6. Press [*Confirm*], screen button.

7. The firmware will install and the on screen prompts provided will guide. The install process is typically less than 1 minute.

8. Tracker Mini should restart, but press On/Off if a manual start is required after 100% of the update is completed.

microSD card
/Root Directory

Download firmware

Sub Folders

/Firmware ②

PolyendTracker Mini_1.7.0.ptf ⟶ [Menu]

④ ⑤ ⑥

'Config' - 'Firmware' - [*Confirm*]

PolyendTracker Mini_1.6.0.ptf

PolyendTracker Mini_1.5.0.ptf
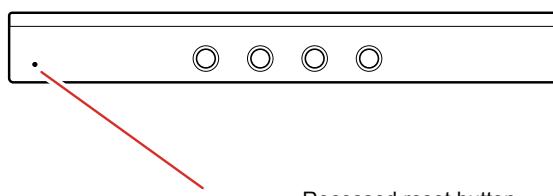
13.3 Emergency Firmware Update

Firmware updates are available from the Polyend portal for your registered device. A reset button is provided, recessed behind the rear panel for emergency situations. A reset can be performed if there are issues with the update method or to clear Tracker Mini issues but should not be used as a regular process for updates.

▍ TRACKER MIDI & FIRMWARE RESET

1. Ensure Tracker Mini is powered off.

2. Download the latest firmware. Access firmware updates for your device from your registered account at Polyend.

3. Copy the downloaded .ptf firmware file into the /Firmware folder. This can be found in the root directory of the microSD card. Also ensure any previous update files remain in the firmware folder.

4. Insert the microSD card into Tracker Mini.

5. Use a pin or thin object to press the internal reset button. This is located on the bottom of the device to the left of the input and output jacks. While pressing the reset, power up the Tracker Mini.

6. Tracker Mini will reset and search the firmware folder on the microSD card. A random firmware will be selected and installed in order to recover Tracker Mini to a working state. The install process is typically less than 1 minute duration.

Bottom edge with input & output jacks

Recessed reset button.
Use a pin or thin object to trigger a reset.

The reset option is useful if any lock ups or freezing occurs on Tracker Mini. It is not necessary in these situations to download a new OS. It is advised to keep a series official, known good, firmware releases in the /firmware folder. For example 1.5.0, 1.6.0, 1.4.0. That way steps 4-5 can be performed in case of issues and a random update will be performed from a known state. A manual update in the 'config' menu to select the latest version can then follow.

13.4 Resetting the Configuration

There may be occasions when the changes in configurations have caused problems and tracking back is not possible. An example may be that MIDI settings applied may need to be reset. The whole configuration settings can be reset to the defaults. This is performed in the config menu.

▐ RESETTING CONFIG

1. Hold [Shift] + [4] or use [Menu] to select the 'Config' Menu.

2. In the main menu list select the 'Firmware' option using the screen navigation buttons.

3. In the firmware sub menu select 'Reset Config'.

4. Press [*Apply*] screen button and follow the prompts. Any previously changed settings will be restored back to default values.

13 System

13.5 User Interface Style

The ability to change the display and pad style is available in the configuration setting. This may be useful when working in different environments and essentially is based on personal taste.

▌ CHANGING USER INTERFACE STYLE
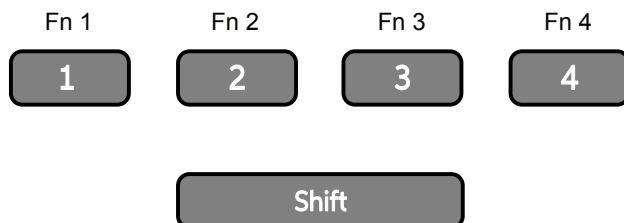
1. Hold [Shift] + [4] or use [Menu] to select the 'Config' menu.

2. Navigate using the screen buttons to the 'General' menu option.

3. In the central sub menu, three user interface elements exist:-

   • Display brightness. Options are high (default), medium and low.

   • Display theme. Options are original (default), monochrome or 10th anniversary theme.

   • Display font. Font for text. Options are original (default) or new.

4. To change the setting highlight the desired sub menu option using the screen buttons or arrow keys.

5. Press [*Enter*] screen button option. The available options as listed above are presented. Use the screen navigation or arrows to select the desired option.

6. Press [*Apply*] screen button option to confirm the selection.

7. The desired setting will be visible on the screen.

13.6 Assignable Function Buttons

Tracker Mini has 4 assignable buttons that are used to quickly access operating modes and their pages. Each of physical buttons can have two pages assigned, accessed directly and also using shift. The assignments are found in the 'Config' menu options under 'Fn buttons binding'

Default button assignments

Fn 1	Fn 2	Fn 3	Fn 4
1	2	3	4

Shift

Button Combo	Function	Button Combo	Function
Fn 1	Pattern	Shift + Fn 1	Song
Fn 2	Instrument Parameters	Shift + Fn 2	Sample Loader
Fn 3	Sample Playback	Shift + Fn 3	File
Fn 4	Master	Shift + Fn 4	Config
Unassigned	Perform	Unassigned	Sample Editor
Unassigned	Games	Unassigned	Sample Recorder

▌ EDITING THE FUNCTION KEY ASSIGNMENTS

1. Hold [Shift] + [4] or use [Menu] to select the 'Config' Menu.

2. Navigate using the screen buttons to the 'Fn buttons binding' option.

3. In the central sub menu, the 8 assignments are displayed. To change the highlighted option within the desired sub menu press the (*Up*) and (*Down*) screen buttons or D-Pad navigation buttons.

4. Press [*Enter*] screen button option. The available page options are presented. Use the screen navigation or D-Pad navigation buttons to select the desired option.

5. Press [*Apply*] screen button option to confirm the selection. Optionally the [*Cancel*] option can be used if required.

6. The desired selection will be assigned to the function button selected. This will be available when using the 4 physical buttons directly or with the [Shift] button.

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13.7 Screen Capturing

The ability to capture screen images from the currently displayed page is a built in feature of Tracker Mini.

▌ SCREEN GRAB OF CURRENT IMAGE

1. Select the page to capture.

2. Press [Shift] + On/Off Button. This is the power on button located on the top edge of the unit. This action is not accompanied by any visual or audible acknowledgement of capture being completed.

3. The screen will be captured and saved onto the microSD card as a .BMP image file in the snapshots folder. A slight delay with a control response may exist while a screen capture is in progress.

microSD card
/Root Directory

Sub Folders

/Snapshots

Snapshot_001.bmp

Snapshot_002.bmp

Snapshot_003.bmp   Screen captured files

                         RGB 800 x 480 Windows BMP Format

Snapshot_004.bmp

Snapshot_005.bmp

Snapshot_006.bmp
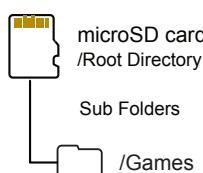
13.8 Games

Tracker Mini can run NES ROM games, and a collection are supplied readily available and stored in the microSD card games folder and accessed through the 'File' options. NES ROM files can be found online but there may be compatibility and performance issues with some. Some communities online have tested various games for using with Tracker Mini. Load any other NES ROM files into the games folder on the microSD.

▌ ACCESSING THE GAMES

1. Press [Menu] and navigate to select 'Games'.

2. This will present the list of available games that are located in the microSD card /Games folder.

3. Scroll and navigate the list using the screen buttons, [*Up*] or [*Down*] buttons or use (Up) and (Down) D-Pad.

4. Press [*Start Game*] screen button to start the highlighted game.

5. Sound can be turned on or off with [*Game Sound*] screen button.

6. Controls will vary depending on which game is playing. The typical key commands for control are:-

   • The [Up], [Down], [Right], [Left] arrow keys are used for navigation.

   • The [+] for 'A' and [-] for 'B'.

   • [Play] to start.

   • [Rec] to select.

6. To exit a game, press […] screen button to quit.

microSD card
/Root Directory

Sub Folders

/Games

Additional, compatible .nes files can be downloaded from the web and when located in the /Games folder, will be accessible to Tracker.

Default Games List (.nes)

Alter_Ego

Chase

Lan

LawnMower

Utaco

ZoomingSecretary

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13.9 Card Compatibility & Backing Up

It is always good practice to backup or even better have a spare microSD card loaded and ready for use with Tracker Mini. The following information on microSD compatibility is important:-
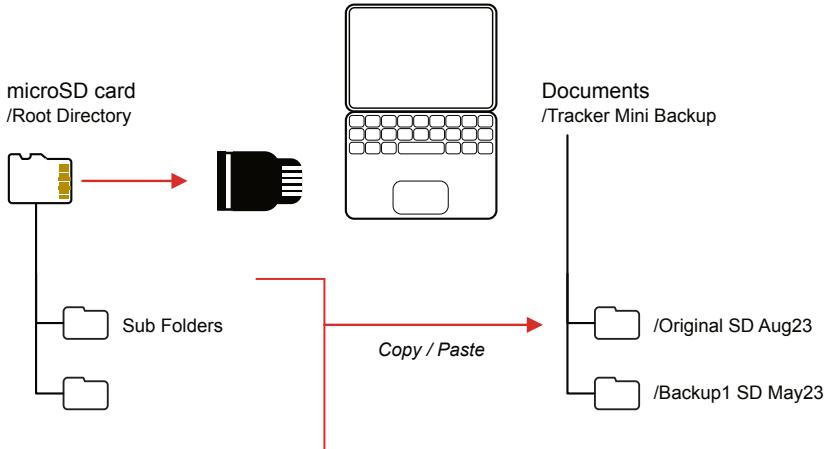
- A 16GB microSD card is supplied with Tracker Mini. Larger size microSD cards can also be used. Supplied microSD Card is: Sandisk Ultra, microSD, 16GB, HC1 A1.

- The format of the card must be FAT32 MBR (Master Boot Record). Other formats will not be recognised.

- Some folders and sub folders are created by Tracker Mini based on the process carried out. Sample folders for example will be split when reaching 100 files.

- Tracker Mini uses the microSD card in real time and will not function without the microSD card being installed. A 'bad' folder / file structure on the microSD card may also cause Tracker Mini problems.

- Some hidden folders exist for example the 'workspace' folder. It is good practice to create a duplicate copy of the microSD card for backup purposes. Also if Tracker Mini does not boot up and crashes, restoring the full original folder / files structure or using the backup mocroSD card is advised.

- Tracker Mini is supplied with a microSD card USB reader for use with most Mac / PC's which helps transfer files.

- Polyend typically provide pre-release firmware as open beta. While this is great to get early insights into new features, by definition beta releases will have inherent problems. Only use beta versions to help test for bugs and features and do not use in a live gig or critical production environment.

Tip: microSD cards can be notorious in there levels of performance with various gear. This is mainly due to the wide variety of speeds and specifications available. Gear producers do not and in fact cannot test every single microSD specification or each of the manufacturers products. It is therefore recommended to stick as close as possible to the same microSD Card type that the gear producer supplies with its gear. At least it is known that this microSD card type will then have been tested thoroughly with the device itself by the device manufacturer as well as the user community.

BACKING UP THE MEMORY CARD FOLDERS & FILES

1. This is recommended as a first task when first operating Tracker Mini to have the original structure saved. Also periodic backups is important to save the projects and files which will be created over time.

2. Use a compatible microSD card reader or the supplied USB microSD adapter to connect the microSD card to a PC or Mac.

3. Use the file manager (depends on the PC/Mac Operating System) to create a 'Tracker Mini Backup' Folder in your documents folder and create a sub folder for each backup i.e. 'Original SD Aug23', 'Backup1 SD May23'. It is good practice to name backup folders by date.

4. Select all of the folders in the microSD card root directory and copy them to the PC/Mac clipboard.

5. Paste, the copied folders into the 'Tracker Mini Backup' sub-folder for the specific backup.

6. Return the microSD card to Tracker Mini for normal operation.

microSD card
/Root Directory

Documents
/Tracker Mini Backup

Sub Folders

Copy / Paste

/Original SD Aug23

/Backup1 SD May23

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13.10 USB Storage
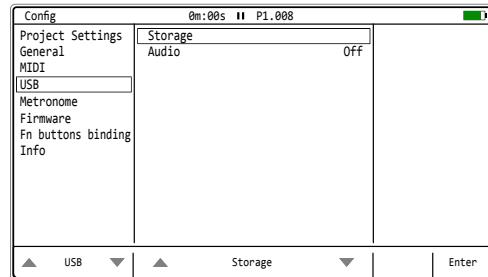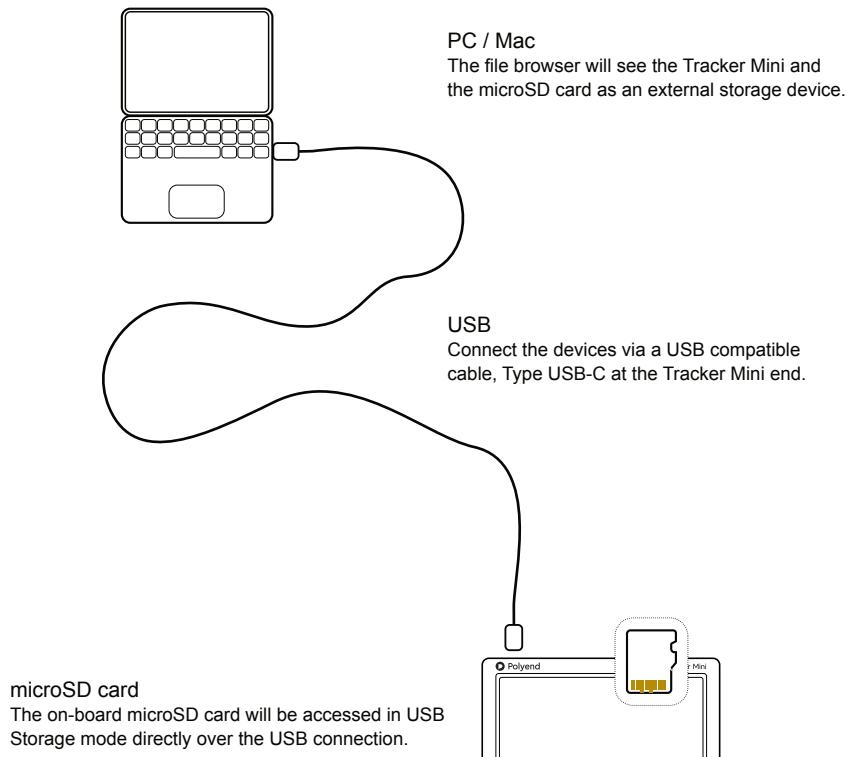
The microSD card can be extracted and used in a Mac or PC for file transfers. In addition, Tracker Mini allows direct access to the microSD card while inserted on board the Tracker Mini Device using a USB connection. This is set in the config menu options.

▌ ACCESSING THE CARD STORAGE OVER USB.

1. Ensure the PC / Mac is connected to the Tracker Mini with a USB data cable. Ensure the cable is data compatible and not just a power supply USB cable. It is recommended to connect directly between the Tracker Mini and the PC / Mac so ensure the Tracker Mini can also be power from the PC / Mac.

2. Ensure the microSD card is inserted and the device is powered on.

3. Hold [Shift] + [4] for the 'Config' options and settings.

4. Press [*Up*] or [*Down*] left screen buttons to navigate to the 'USB' menu. The D-Pad (Up) (Down) can also used when navigating in the left menu.

5. In the central window pane, Press [*Up*] or [*Down*] screen buttons to navigate to the 'Storage' option. The arrow keys can be used to navigate to the central pane and scroll the options.

6. Press [*Enter*] screen button. The Tracker Mini will switch to 'USB Storage Mode' and a warning presented to ensure power is retained in this mode and during data transfer.

7. The PC or Mac file browsers will see the Tracker Mini as an external device. This allows files or samples to be transferred and data to be backed up to / from the microSD Card.

8. To exit this mode, Press [*Exit*] screen button. The Tracker Mini will switch back to normal operating mode.

USB Storage

PC / Mac
The file browser will see the Tracker Mini and
the microSD card as an external storage device.

USB
Connect the devices via a USB compatible
cable, Type USB-C at the Tracker Mini end.

microSD card
The on-board microSD card will be accessed in USB
Storage mode directly over the USB connection.

Config	0m:00s ‖ P1.008	
Project Settings	Storage	
General	Audio	Off
MIDI		
USB		
Metronome		
Firmware		
Fn buttons binding		
Info		

| ▲ USB ▼ | ▲ Storage ▼ | | Enter |

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13.11 Hexadecimal Option

The classic Tracker's typically used hexadecimal number format. This can be a little daunting if unfamiliar and especially in the more modern age and therefore a decimal number format is used as default. However, maybe for the more nostalgic users, numbering in hex mode is also an option.

▌ CHANGING BETWEEN DECIMAL & HEXADECIMAL VIEW.

1. Hold [Shift] + [4] or use [Menu] to select the 'Config' menu.

2. Press left side (*Up*) or (*Down*) screen buttons to navigate to the 'General' menu. The (Up) (Down) buttons also can be used.

3. In the central window pane, Press (*Up*) or (*Down*) screen buttons to navigate to the 'Numbering mode' option. The arrow keys can be used to navigate in the central pane.

4. Press [*Enter*] screen button. The options to change will appear.

5. Press (Up) or (Down) to select between 'Decimal, Steps from 0' to use standard decimal numbers starting at step 0, 'Decimal, Steps from 1' where the decimal system is used and steps start at 1, and the 'Hexadecimal' option for a classic tracker view.

6. Press [*Apply*] screen button or [*Cancel*] to exit.

Hexadecimal to Decimal Converter

Hex	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F
Dec	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15

13.12 Official Specifications

Audio Input:

- Unbalanced Stereo, TS (Tip-Sleeve)

- Line Input:

    - Audio Input Impedance: 29 kOhm Impedance.

    - Input level: 8.2 dBu peak

    - Signal to Noise Ratio: 90 dB.

- Microphone Input:

    - Microphone Input Impedance: 2.9 kOhm Impedance

    - input level: 8.2 dBu peak.

- USB for Sampling

Audio Output

- Line Output:

    - Output level 9 dBu peak (when 10k Ohm Load).

    - Signal to Noise Ratio: 97 dB.

- Headphone Output:

    - Output level: 17.6 dB (when 16k Ohm Load)

    - Signal to Noise Ratio: 98 dB.

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13.13 Changelog

OS & Manual	Feature Update	Manual Update
2.1.0 c		Changelog added (this table) for OS and content updates. Page 332.
		Various style edits including adding microSD terms.
2.1.0 d	Beta	Additional information added: Power supply, page 15. USB audio, Page 250-251.
2.1.0 e	Release Ver	Page 331 - USB Sampling.
2.1.0 f		Page 27 - Live record typo. Fixed to Rec + Play.
2.2.0 a	2.2.0 OS Release - Option to loop a selected step range - 10th Anniversary Theme added	Pages 21, 26, 314 - Added loop playback instructions. Pages 53, 322 - Added new config theme option. Page 121 - Added behavior of LFOs for destinations.

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Polyend