

nanobox | tangerine



User Manual V. 1.0

Dec 11, 2023

1010 music

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WELCOME

This user manual will walk you through the full set of features and capabilities of the tangerine. If you want to get up and running quickly, take a look at the 4 page Quick Start Guide available on the [1010music tangerine Learning Material support page](#).

To get started, we will walk you through the simple process of setting up the tangerine and then make sure the version of firmware you are running is the same one covered in this manual. Chances are there is already a newer version of the firmware than what came installed on your unit. Upgrade now to get the latest set of features.

The User Interface Map will give you a road map to explore. Then we will cover basic preset management so you know how to explore the sounds available and save any changes you make. Then we can dive into playing pads, recording samples and multi-samples, looping and further crafting your sound.

If you get stuck at any point, reach out to the community of tangerine users at [forum.1010music.com](#).

SETTING UP THE HARDWARE

1. Insert the microSD (1) card into the microSD card slot (2) if it's not already inserted. The card must be in the slot for the tangerine to boot up. The card is spring-loaded. Push to eject when needed, but leave it in for now.
2. Connect the stereo Line Out (3) to your mixer, speakers or headphones. Be sure to use a TRS cable to hear both channels.
3. Connect an optional MIDI controller to the MIDI IN (4) jack. TRS Type A and B are supported for MIDI In. Type B is supported for MIDI Out. Use the included adapter (5) to connect to controllers that use MIDI 5 Pin DIN.



4. Connect the USB power cable (6) to the USB port (7). The tangerine can be powered by a standard 5V, 500 mA USB power adapter or USB battery. The tangerine will start up as soon as it receives power. There is no power button.
5. Tap on the pads on the Pads Home screen, or play notes on the MIDI controller and you're ready to make some music!

CONNECTING A MIDI CONTROLLER TO THE TANGERINE

Connect your MIDI controller to the tangerine's MIDI IN.



The tangerine MIDI In can be connected to devices that support TRS MIDI Type A or Type B. You can also use the included TRS MIDI Adapter to connect to MIDI 5 Pin DIN controllers.



TRS MIDI Adapter



TRS Cable

Be sure to use a TRS cable (not a TS cable) to connect to your MIDI Devices. TRS Cables have two black bands on the stem, while TS cables only have one.

The MIDI Out uses TRS Type B. You can use the included TRS adapter to connect to MIDI 5 Pin DIN controllers.

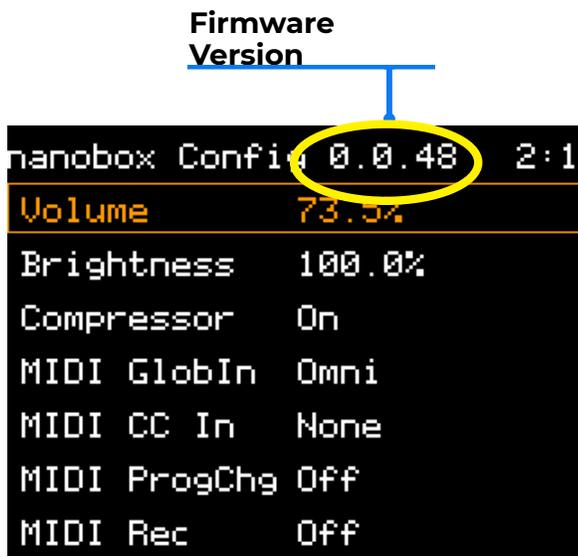
Note:

- The tangerine does not support USB MIDI.

UPDATING TO THE LATEST FIRMWARE

This User Guide is based on Version 1.0 of the tangerine firmware. To see which version is on your product, push the Home button to go to the Pads Home screen, then push the Left Arrow button to go to the nanobox Config screen.

The loaded firmware version is displayed at the top of the screen, just to the left of the clock.



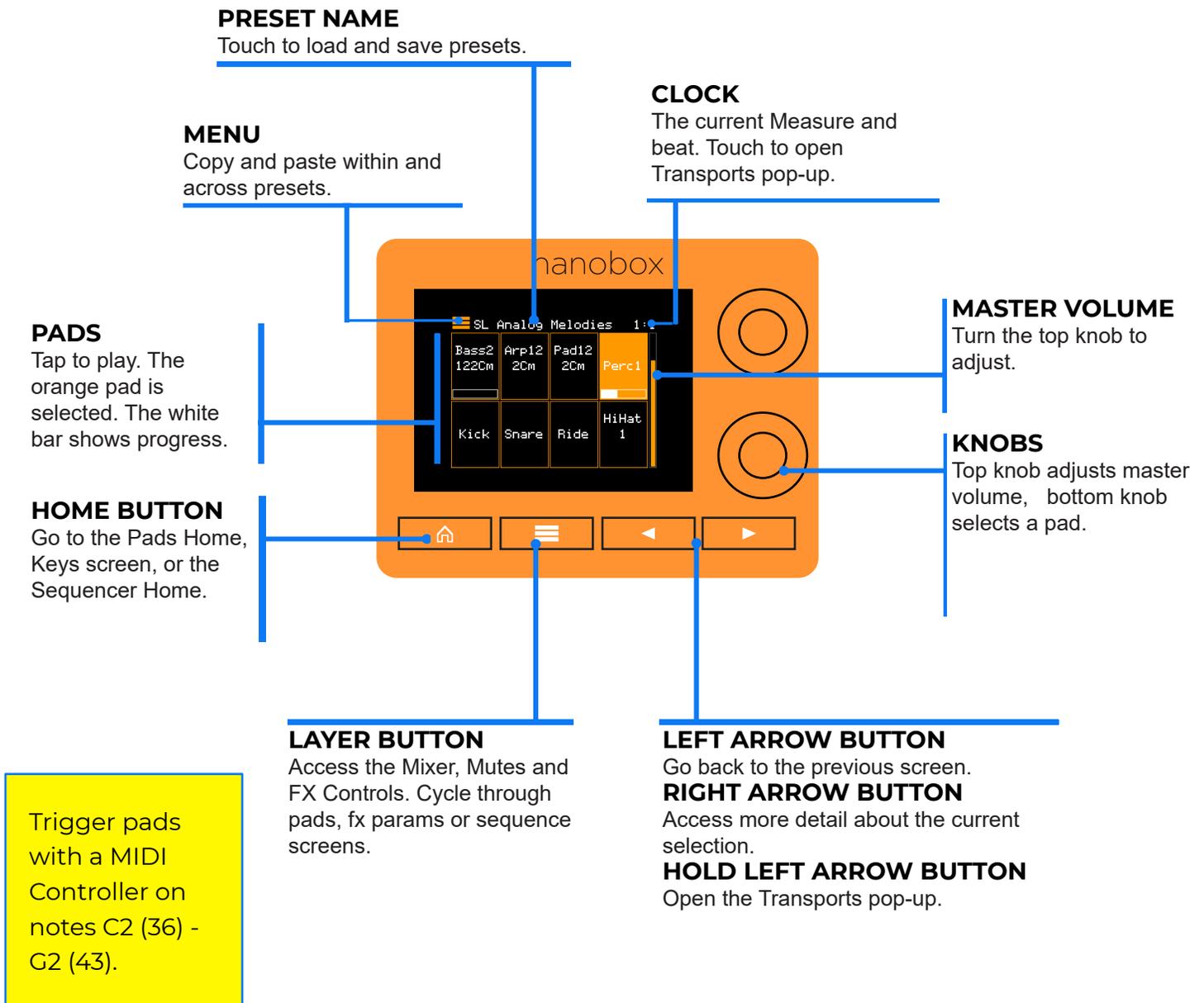
Future updates will be available for download at <https://forum.1010music.com>, after you login to the forum. See "[Updating Tangerine Firmware](#)" on page 137 to learn how to get and install the update.

FINDING YOUR WAY AROUND

Let's get familiar with the basic controls and the maps of available screens.

Basic Controls

When you first power up the tangerine, you will see the Pads Home screen. You can dive right in by tapping the pads and you will hear the pads play. Here is an overview of the hardware controls and the onscreen controls on the Pads Home screen.



The Teleporter

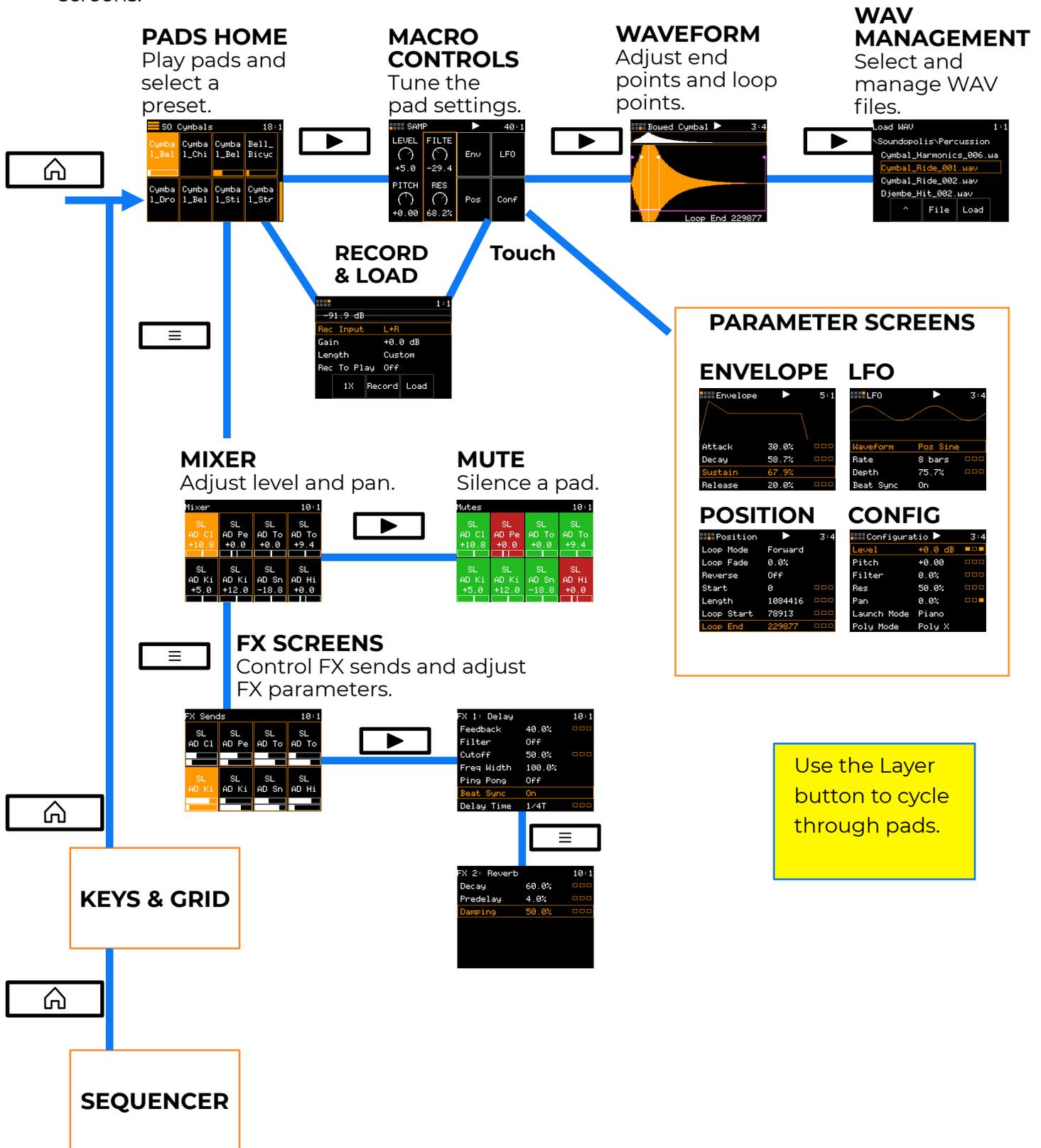
The Teleporter map will guide you around the tangerine's key functions. It is also a quick way to jump directly to any of the primary screens.

Hold down the Home button from anywhere to open the Teleporter. Then touch a box to jump to that screen. Once you've used the Teleporter as a shortcut, you can navigate elsewhere by the usual navigation paths, but you can't get back to the Teleporter using the Left Arrow button.



Pads Screens

Trigger one shots and clips, tweak a pad's sound, and configure playback options on the Pads screens. Push Layer from the Pads Home screen to access the Mixer and the FX screens.



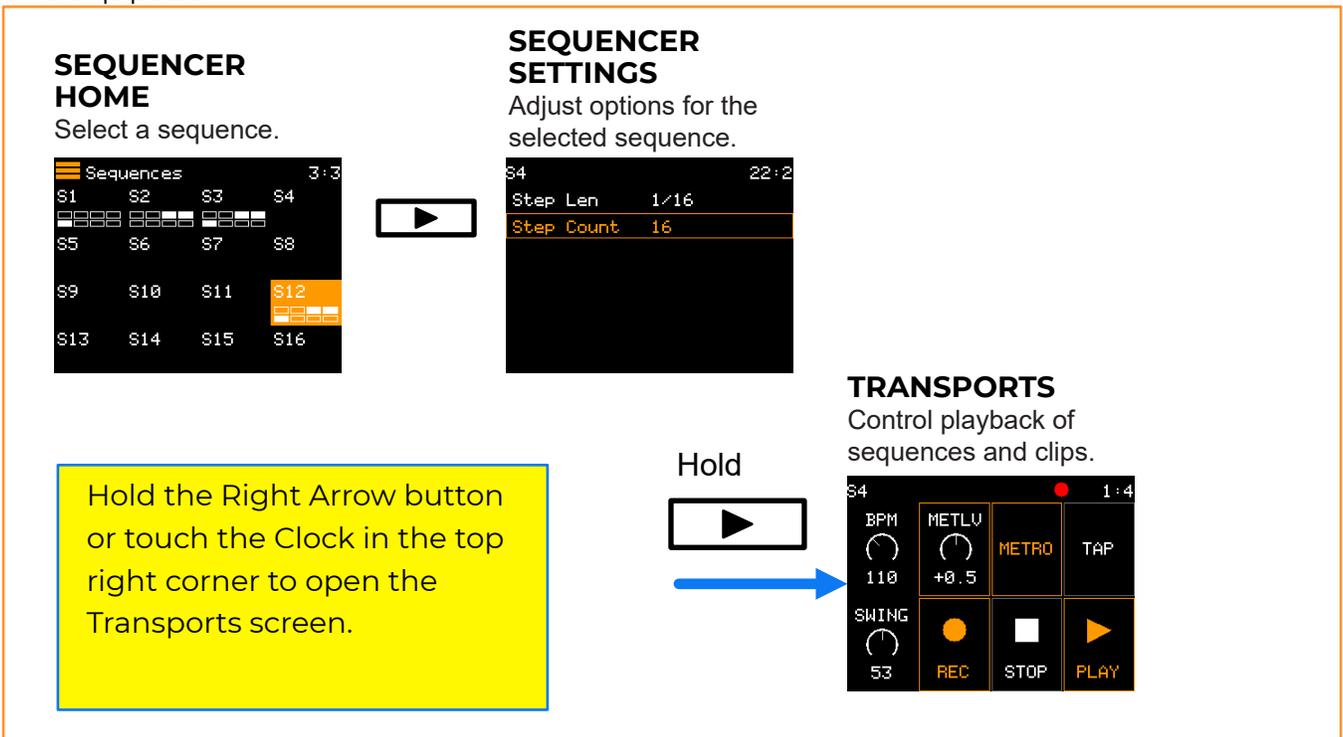
Keys & Grid Screens

Select a pad on the Pads home screen, then use either the Keys screen or Keys Grid screen to play that pad melodically. From the Pads Home screen, push the Home button to access the Keys screen, and then push the Right or Left Arrow button to toggle between the Keys and Grid screens. Use these screens to play single samples or multi-sample patches, like 1010 Grand, when you are away from your MIDI controller.



Sequencer Screens

Play sequences, edit them via the touchscreen, and control their playback options on the sequencer screens. Push the Home button to cycle through to the Sequencer Home screen. Touch the clock in the top right corner or hold down the Right Arrow from anywhere to launch the Transports screen, where you can control playback of sequences and clip pads.



LOADING AND PLAYING PRESETS

In this section, you will learn to load and play presets and to perform related tasks that will help you get started with the nanobox | tangerine:

- Opening the Presets Screen
- Loading a Preset
- Triggering the Pads
- Playing Notes on the Pads
- Playing Pads from the Sequencer

Later in this manual, you will learn about these topics in detail.

ABOUT PRESETS

The sounds and sequences in the tangerine are organized into Presets. Presets hold all of the Pad, Mixer, FX and Sequence settings together in one place. There are 80+ factory Presets loaded on the microSD card. You can customize these and save your changes in place of the original preset or as a new preset. You can also create your own presets. You are limited only by the space available on the microSD card.

Each preset holds:

- Pad settings, including pointers to WAV files on the microSD card
- Mixer settings
- FX sends
- FX parameters
- Sequences and their settings
- Default sequence selection
- Modulation settings

You can edit existing presets or create your own presets, rename them and delete the ones you no longer want. You can choose to Save the current settings into the same preset, or to Save As a new preset.

Presets are only saved when you choose to save them. This means you can load a preset, edit it, and quickly revert to the original settings simply by re-loading it from the microSD card.

Note:

- Presets are not automatically saved. When you switch presets or power down the nanobox, any unsaved changes will be lost.

OPENING THE PRESETS SCREEN

1. Push the Home button until you see the Pads Home screen. The name of the current preset appears at the top of the Pads Home screen.
2. Touch the preset name in the Pads Home screen. The Presets screen opens.

The Presets screen presents a list of the presets on the microSD card, with the currently loaded preset selected. From the Presets screen you can:

- Scroll through the list with either of the tangerine's knobs to select a preset on the microSD card.
- Load the selected preset by touching the Load button.
- Save the current preset by touching the Save button, which is disabled unless you edited the preset after loading it.
- Open the File menu by touching the File button. The File menu lets you create new presets, save copies of presets, and other file management tasks.



Preset Name in the Pads Home Screen



Presets Screen

Note:

- If you modified the current preset after you loaded it, the Save button is enabled. If you load another preset, your changes will be lost unless you first save it or save a copy of it.

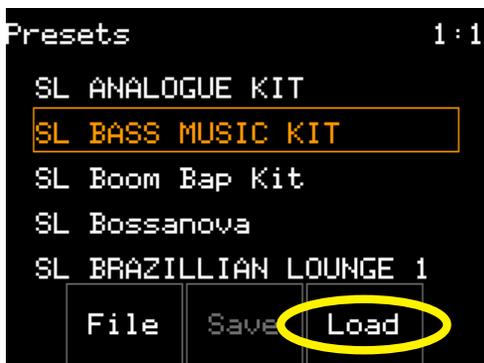
LOADING A PRESET

1. Open the Pads Home screen, then touch the preset name at the top of the Pads Home screen.



The Presets screen opens.

2. Turn either of the tangerine's knobs to select the preset you want to load, then touch the Load button.



A “working” message appears while the tangerine loads the selected preset. The Pads Home screen then opens, with the names of the samples used by each pad.

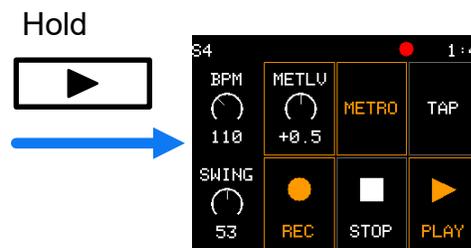


If the tangerine's transport was running before you loaded the preset, you might hear a sequence playing or some pads looping before you play anything. A playback counter in the the top right corner of the screen indicates if the transport is running or not.



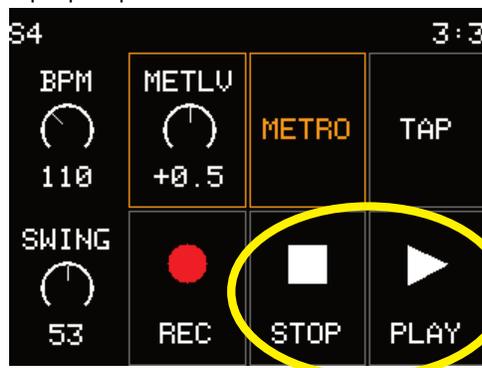
Transport Clock (all screens)

- To start or stop the transport, open the Transports pop-up by either touching the counter in the top right of the screen, or by holding the Right Arrow button.



Opening the Transports Pop-up From Any screen

- Start or stop all sequences and looping pads by touching Start and Stop in the Transports pop-up.



Start and Stop Transport Controls

Touch Stop twice to end playback of any tails and clips.

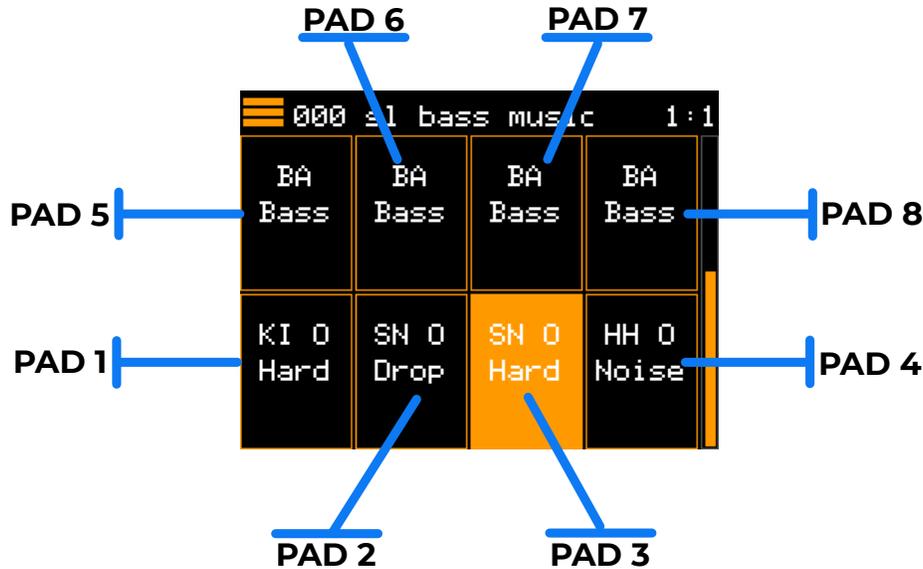
- To exit the Transports pop-up, push the Left Arrow button.

TRIGGERING THE PADS

It's time to make some noise! The Pads Home screen has 8 pads which can be customized to organize the samples you need for your song.

Triggering Pads from the Pads Home Screen

Push the Home button if needed until you see the Pads Home screen.



Pad Numbering in the Pads Home Screen

You can trigger playback of a pad simply by touching it on the touchscreen.

You can adjust the overall volume if needed by turning the top knob while on the Pads Home screen. The gauge along the right side of the screen shows the current level.

Triggering Pads from a MIDI Controller

The tangerine is designed to be played with a MIDI Controller. Many of the presets are set up to support sound dynamics related to MIDI velocity, so you can get more variety in your playback. For details about MIDI connections, see [“Connecting a MIDI Controller to the tangerine”](#) on page 11.

If you are using a MIDI keyboard, the pads map to a default set of MIDI notes as shown here:

E2 MIDI 40	F2 MIDI 41	F#2 MIDI 42	G2 MIDI 43
C2 MIDI 36	C#2 MIDI 37	D2 MIDI 38	D#2 MIDI 39

Default MIDI Note Mapping for the Pads

If you are working with a pad controller, try hitting the pads to see which range maps to the pads on screen. The pads will flash white when triggered. The default note range should map conveniently to the pads of most common pad controllers.

You can select a specific channel if needed on the nanobox Config screen. From the Pads Home screen, push the Left Arrow button to access the nanobox Config screen, and then select a channel for the MIDI GlobIn parameter. Turn the top knob to select a row in a parameter list, and then turn the bottom knob to select a value.

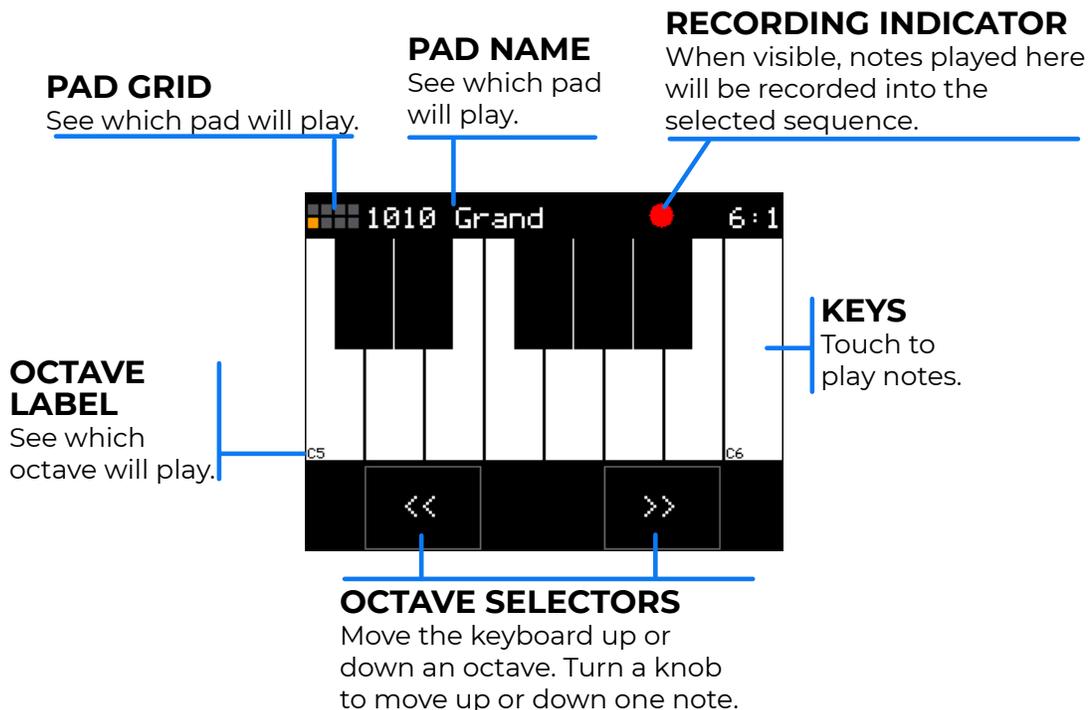
PLAYING NOTES

The Keys screens allow you to play samples pitch shifted chromatically, or to trigger slices in a WAV. When you select a single sample or clip pad to play with Keys, tangerine will play the WAV file for that pad pitch-shifted based on the triggered note. The sample will play at its original pitch when you play the root note, and it will shift up or down the appropriate number of semitones based on the note you play. When you select a slicer pad to play with Keys, tangerine will map the slices in the pad to the notes on the keyboard. When you use a multi-sample pad with Keys, it will play the sample that has the root note closest to the played note and then pitch shift as needed.

There are two Keys input modes: standard black and white keyboard, and the grid. Push the Home button from the Pads Home screen to display a traditional black and white keyboard. Push the Left or Right Arrow button to toggle between this screen and the Grid keyboard. The Grid Keyboard allows you to play notes that are always in key. Each row in the grid corresponds to one octave. You can choose the key (Root Note) and scale.

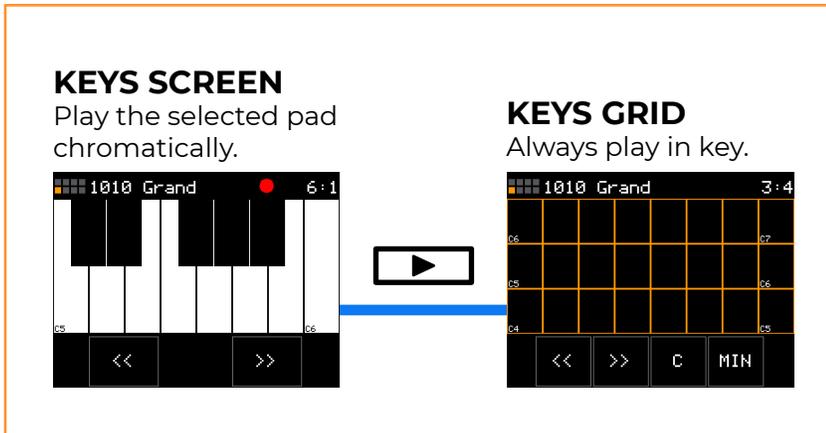
Play with the Keys Screen

Push Home from the Pads Home Screen to open the Keys Screen.

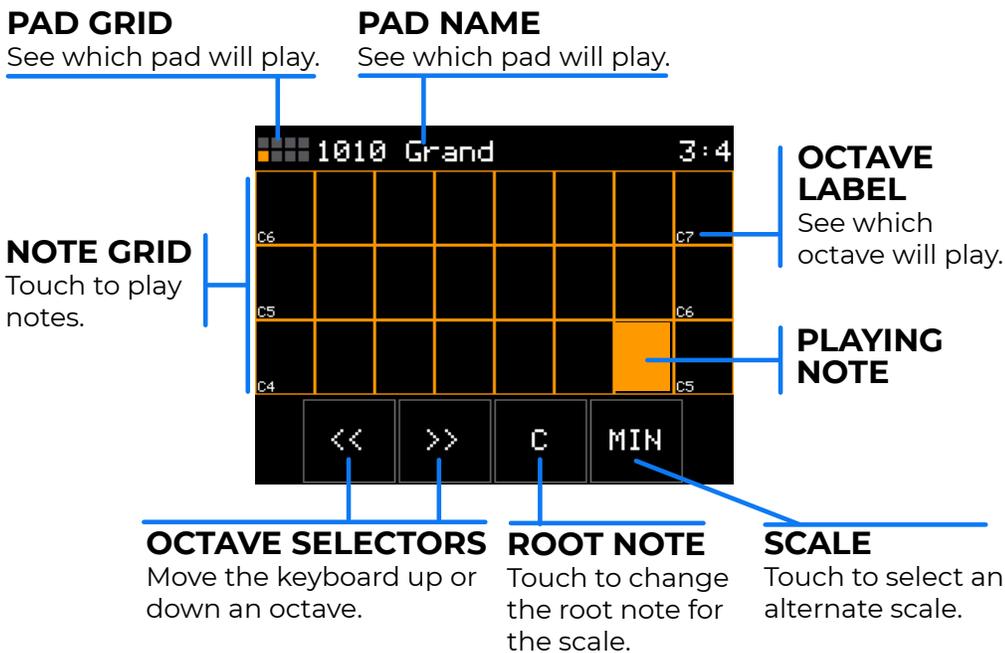


Play with the Grid Screen

Select a pad on the Pads home screen, then use either the Keys screen or Keys Grid screen to play that pad chromatically. Use these screens to play single samples or multi-sample patches, like 1010 Grand, when you are away from your MIDI controller.



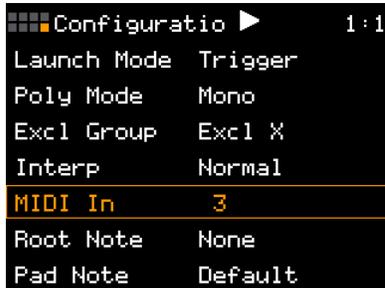
Push Right Arrow from the Keys screen to open the Grid screen.



Play with a MIDI Controller

You can also use a MIDI keyboard or other controller to play an individual pad chromatically. To enable this, map the pad to a MIDI channel that will be sent by the connected controller.

1. On the Pads Home screen, select a pad.
2. Push Right Arrow to open the macro screen, then touch Conf to open the Configuration Parameters screen.

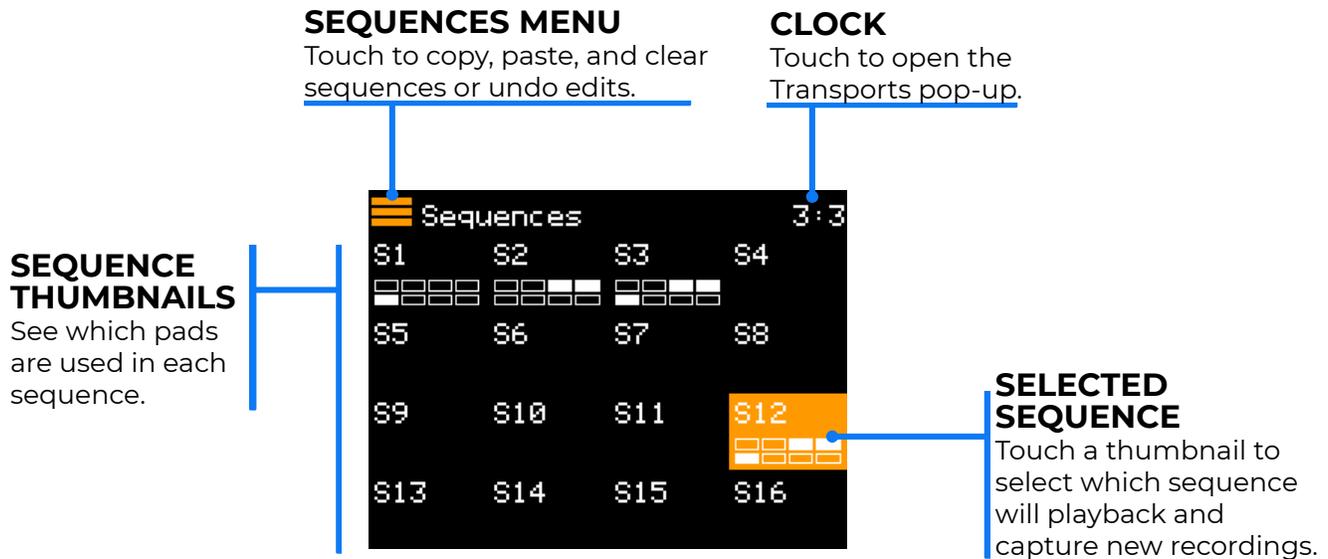


Pad Configuration Screen

3. Use the top knob to select the MIDI In parameter.
4. Use the bottom knob to select the MIDI channel you want to use.
5. Now send notes over the MIDI channel and you will hear the pad play.

PLAYING PADS FROM THE SEQUENCER

To open the Sequencer Home screen, press the Home button until the Sequencer Home screen appears.



Sequencer Home

To start a sequence, touch one of the sequence thumbnails. If the transport clock in the top right corner is already counting, the sequence starts playing immediately.

If the Transport clock is stopped, touch the clock in the top right corner or hold down the Right Arrow to launch the Transports screen, where you can control playback of sequences.



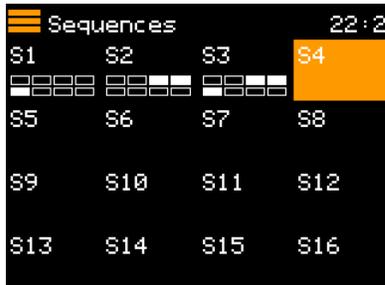
Transports Pop-Up

To stop a sequence immediately, open the Transports pop-up and touch Stop. When the sequence stops playing, you may still hear some notes or Clips as they finish playing. To completely stop any remaining notes, touch Stop again.

RECORDING A SEQUENCE

You can record a sequence that is played directly on the pads, the Keys screen, the Grid Screen, or over MIDI inputs.

1. Push the Home button until the Sequencer Home screen appears.



Sequencer Home

2. Touch an empty sequence to select it. This is the sequence that you will record into.
3. Open the Transports pop-up by touching the clock or holding down the Right Arrow button.



Transports Pop-Up

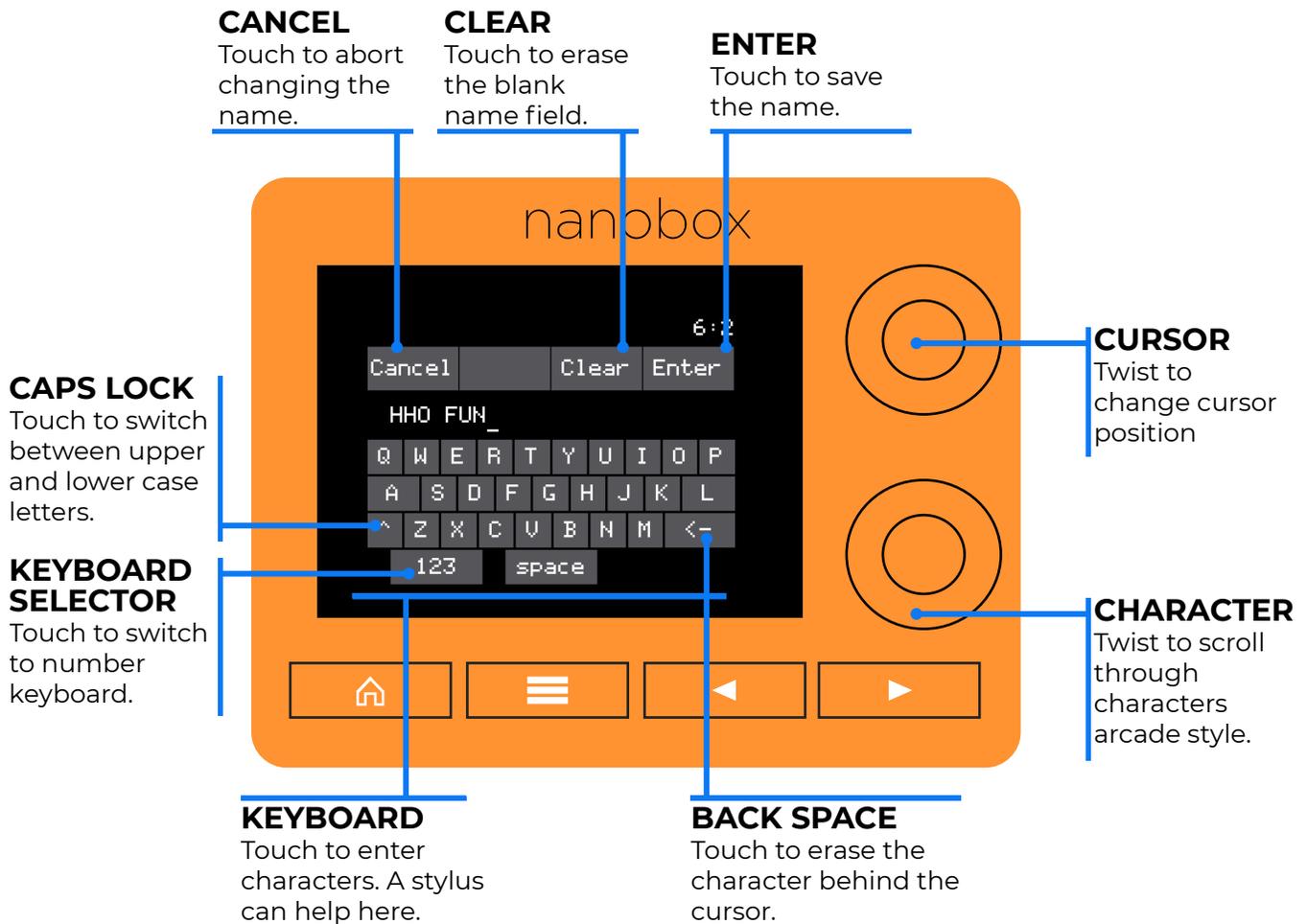
4. Touch the REC button to queue recording, then touch PLAY to begin recording. A red circle appears to indicate you are recording.
5. Navigate to the Pads Home screen, Keys screen or Grid screen.
6. Play the sequence. The sequence will play in a loop when it reaches the end of the sequence length, which is 1 measure by default. You can add additional notes or drum hits by playing along with the loop.
7. You can also play pads using an external MIDI controller and they will be recorded.
8. When done, open the Transports pop-up and touch REC to stop recording while continuing to play the sequence, or touch STOP to end recording and playback.

SAVING YOUR CHANGES AS A NEW PRESET

Presets are not automatically saved, so when you load another preset or power down the nanobox, any unsaved changes will be lost.

Rather than save your changes to the original preset on the microSD card, you may save a copy of the current preset that includes any changes you made to the pads, sequences, and effects.

1. Push the Home button until you see the Pads Home screen.
2. Touch the name of the preset in the header to open the Presets Screen.
3. Touch File to open the File menu.
4. Touch Save As. This will open the File Naming screen, as shown below.



File Naming Screen

5. Enter a name for the preset and touch Enter. You can touch letters in the on screen keyboard to type them. Turn the top knob to move the cursor position. Turn the bottom knob to scroll through characters arcade style. When you touch Enter, all changes are saved to a newly created preset, which is then loaded.

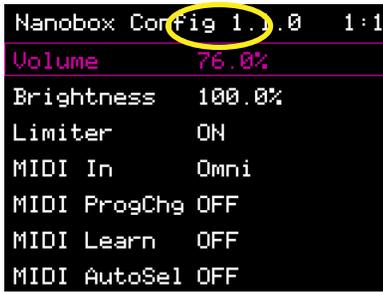
The name of your modified preset now appears in the Presets screen's preset list and at the top of the Pads Home screen.

The original preset is still listed in the Presets screen, so you can load it again if you need it.

GLOBAL NANOBOX CONFIGURATION SETTINGS

The tangerine maintains a set of global parameters that are independent of any preset that you might load. You can access all global parameters from a single place called the nanobox Configuration screen.

To open the Nanobox Configuration Screen, open the Pads Home screen, then press the Left Arrow button.



nanobox Configuration Screen

The number to the left of the clock on the nanobox Configuration screen is the version of firmware that is running. Check the 1010music forum, <https://forum.1010music.com>, to see if there is a newer version available.

To change settings in the nanobox Configuration screen, scroll through the parameters with the top Knob, highlight the parameter you want to edit, then change the setting with the bottom Knob. The tangerine automatically saves the new setting. You do not have to save it manually.

When you are done, exit the nanobox Configuration screen either by pressing the Right Arrow button to return to the Pads Home screen, or by holding the Home button to open the Teleporter pop-up. The following table describes each of the tangerine's global parameters.

Global nanobox Configuration Settings

Parameter	Description
Volume	The volume of the audio output. Range: 0 to 100%
Brightness	The brightness of the touchscreen. Range: 0 to 100%

Global Nanobox Settings (continued)

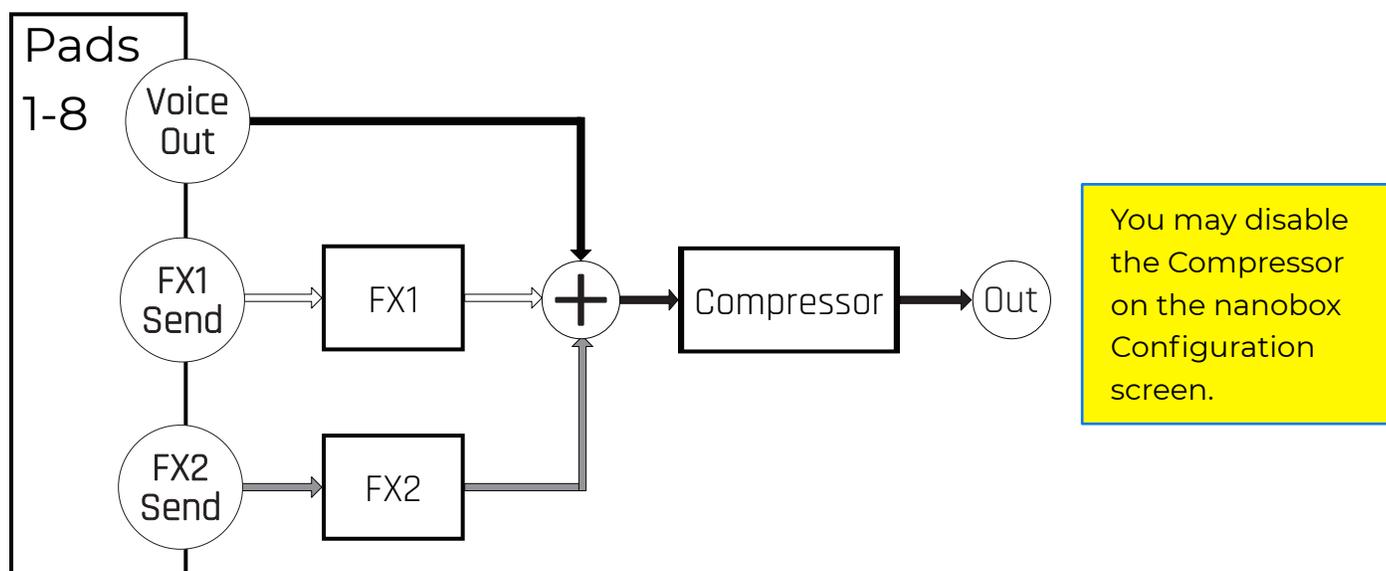
Parameter	Description
Compressor	When On, an audio compressor is applied to limit the Line Out signal to avoid clipping. Options: On, Off
MIDI GlobIn	Specifies the MIDI channel a MIDI controller must use to trigger each pad with a specific key, or to send MIDI data that can be used for modulating the FX1 Delay and FX2 Reverb effects. GlobIn has no impact on playing individual pads over specific MIDI channels. Options: none, 1-16, Omni
MIDI CC In	Specifies the MIDI channel for controlling the parameters of individual Pads. This parameter has no impact on triggering or playing pads over MIDI. Options: none, 1-16, Omni
MIDI ProgChg	When set to ON, the tangerine will respond to MIDI Program change messages on the MIDI In channel by advancing to the corresponding preset. Presets are mapped to MIDI Channels in alphabetical order, as listed on the Presets screen. Options: On, Off
MIDI Thru	When On, the tangerine uses its MIDI Out to re-transmit MIDI messages received at its MIDI In connection. When Off, the tangerine only uses MIDI Out to re-transmit inbound MIDI Clock, Start, Stop, and Continue messages.
MIDI ClkRcv	When enabled, the tangerine accepts MIDI Clock, Start, Stop, and Continue messages received over its MIDI In connection.
Analog ClkIn	If you are synchronizing with an analog clock, the tangerine needs to know how many clock pulses to expect per quarter note. You can set that here. Options: 1, 2, 4, 8, 12 or 24 PPQ.
Rec Config	Specifies if recording settings are global or per-pad.
Rec Mon	Specifies if the tangerine mixes incoming line audio with its line output audio. When On, incoming audio is always audible. When Auto, incoming audio is audible during sample recording operations. When Off, the tangerine does not mix incoming audio with its line output.
Lead In	When On, the tangerine waits 4 beats and plays a count-in before recording starts. It displays the countdown as a negative number in the Transport clock.
SD Mode	Troubleshooting option for handling microSD issues.

MIXING, MUTING, AND APPLYING EFFECTS

The tangerine lets you control the level and panning of each pad from the Pad Macro and Pad Parameter screens. For convenience, you can also adjust the pad levels and panning settings from a central Mixer screen, which has an associated Mutes screen for temporarily muting pads without changing the mixer levels.

The tangerine also has two effects buses for applying delay (FX1) and reverb (FX2) to as many pads as you want. You adjust the FX1 and FX2 send levels for each pad from the FX Sends screen, which has a pair of associated screens, FX1: Delay and FX2: Reverb for adjusting the settings of the delay and reverb effects.

The following diagram shows the tangerine’s pad “voice” and effects architecture.



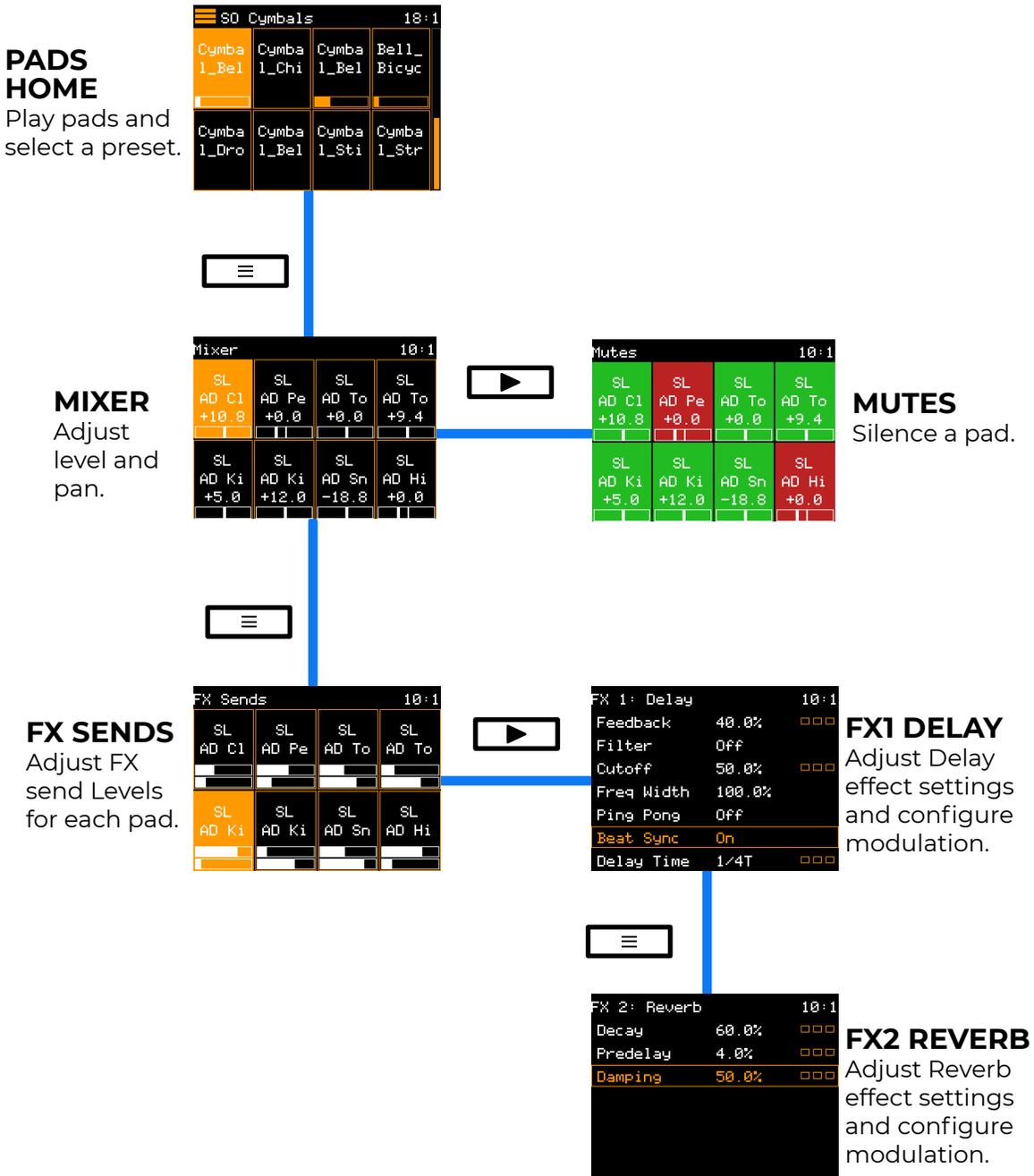
Each pad’s FX1 Send level determines how much of the pad’s stereo voice output is fed into the delay effect and each pad’s FX2 Send level determines how much is fed into the reverb effect. The tangerine combines the eight voice outputs with the delay and reverb effect outputs, and applies a built-in compressor for a final stage of dynamics control.

You can configure the tangerine’s mixer to include an external audio source while recording new samples or to chain multiple devices together. You can specify if and how you want to monitor external audio with the Rec Mon parameter in the nanobox Configuration screen.

NAVIGATE TO THE MIXER, MUTES, AND FX SCREENS

You can navigate to the Mixer and FX screens from the Pads Home screen by pushing the Layer button.

The diagram below shows how you can also navigate to the Mutes and FX1: Delay and FX2: Reverb screens with the Right Arrow button.



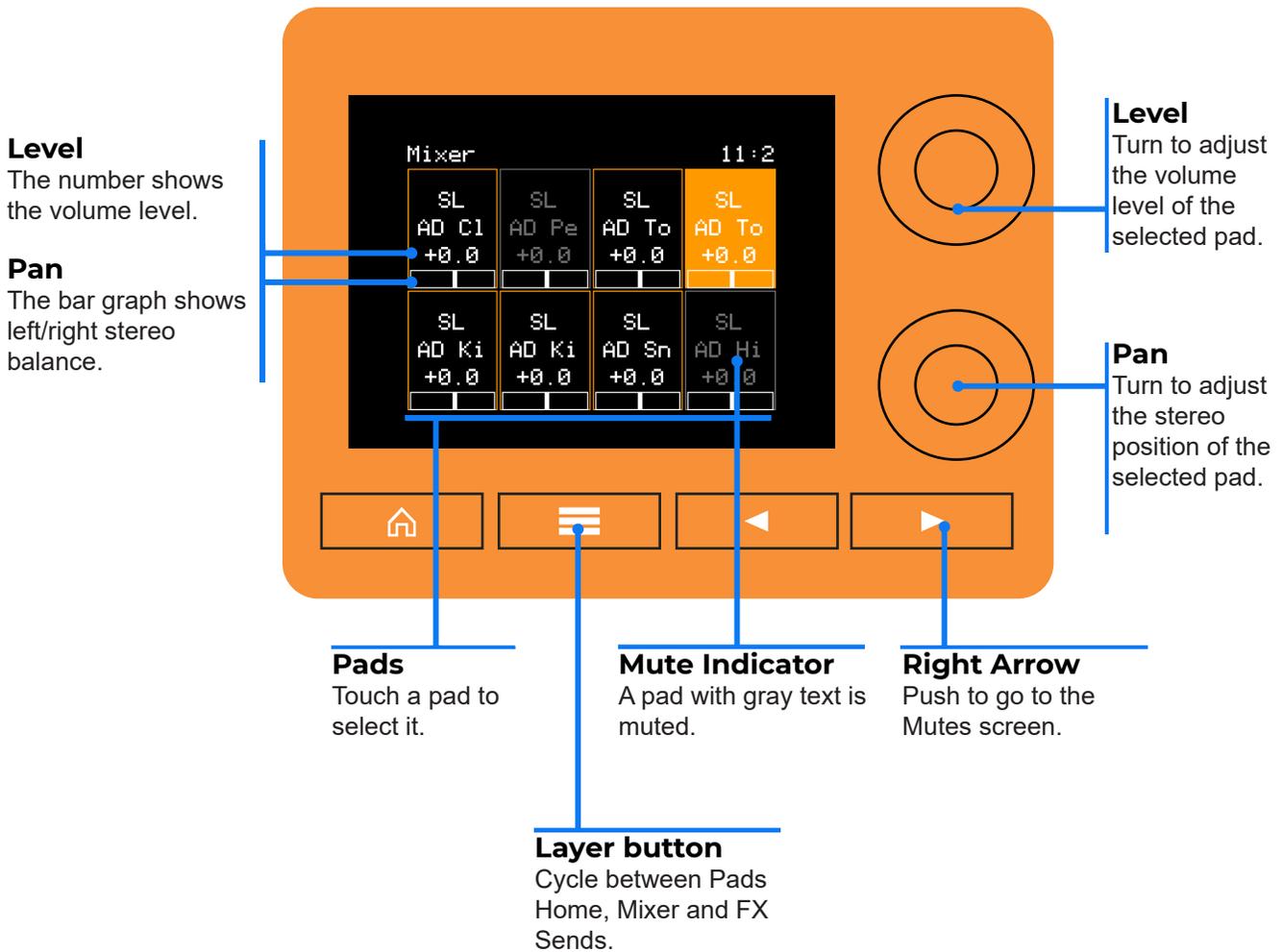
You can also hold down the Home button to bring up the Teleporter and touch the Mix, FX Send, FX1 Delay or FX2 Reverb buttons to reach those screens.

CONTROL THE MIX

The Mixer screen arranges the level and panning controls in a grid, with the controls for Pad 1 in the lower left position and the controls for Pad 8 in the upper right position.

On the Mixer screen, simply select a pad and then turn a knob to control its settings.

The number on the pad represents the dB level of the audio output. The bar at the bottom of the grid cell represents the pan position for the pad. When the pan line is in the middle, the output is balanced equally between left and right.



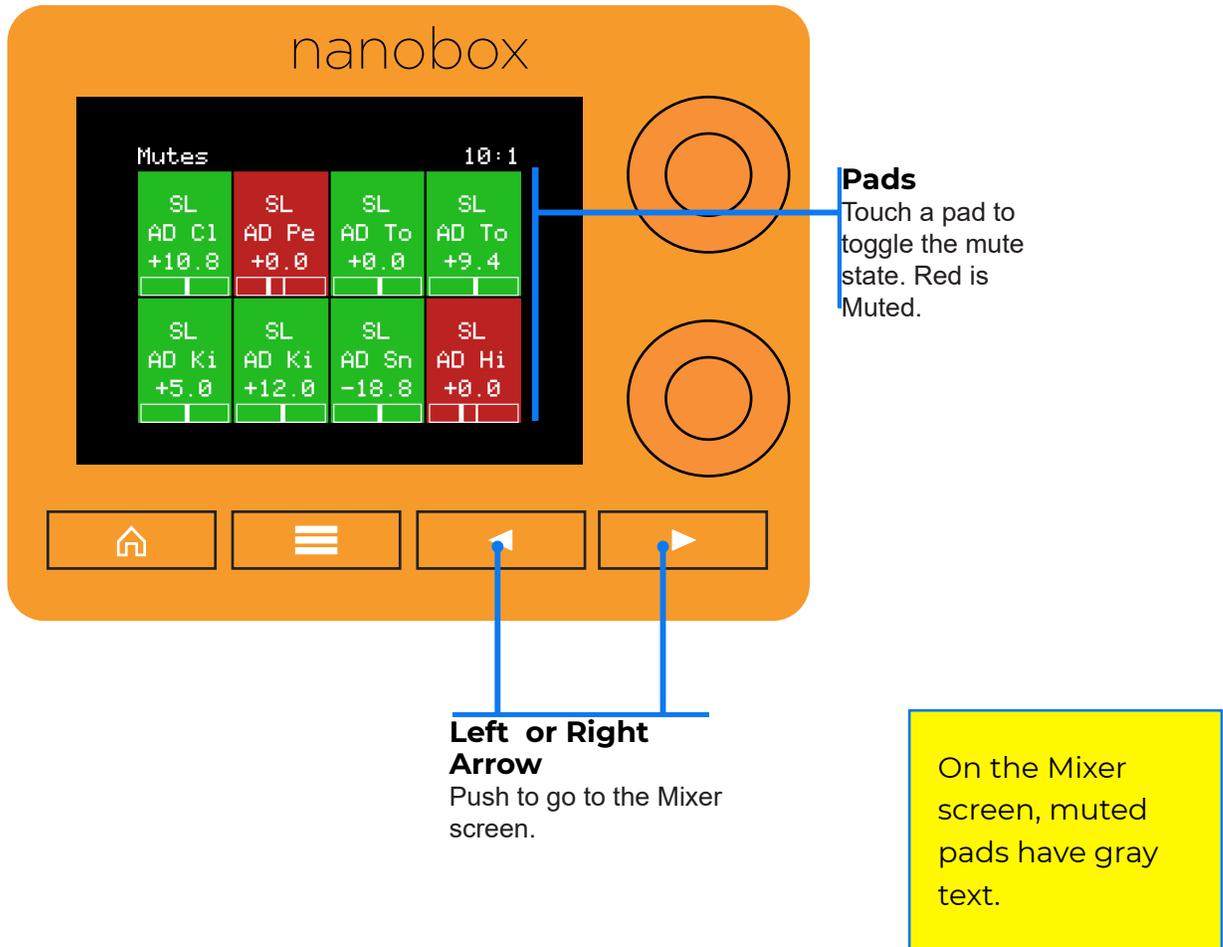
A white border flashes when a pad is playing.

Grey text in a cell indicates the pad is muted.

MUTE A PAD

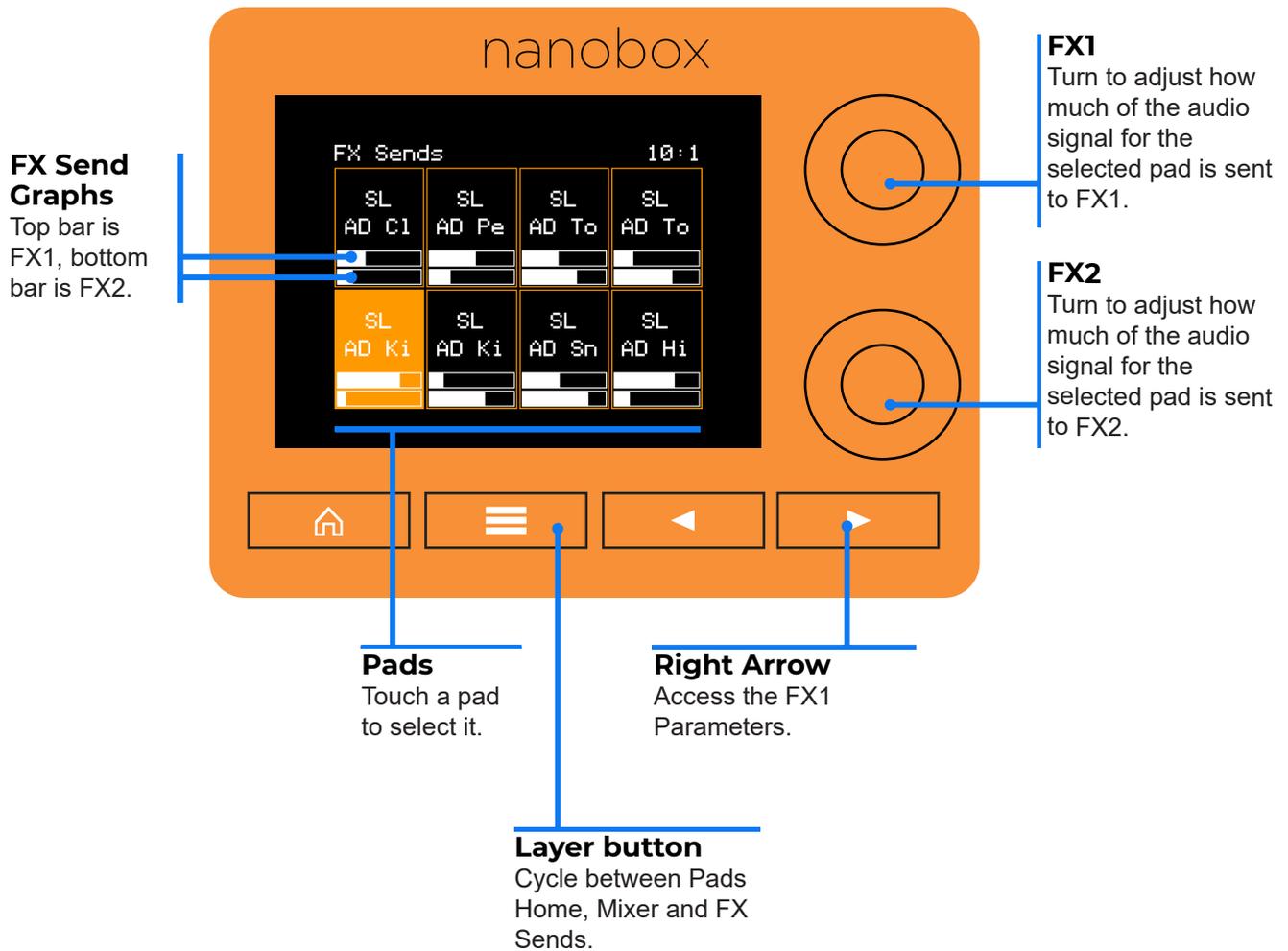
The Mutes screen arranges the mute controls in a grid, with the mute control for Pad 1 in the lower left position and the mute control for Pad 8 in the upper right position.

On the Mutes screen, touch a pad to toggle the mute state of the pad. Red is muted, green is not muted.



ADJUST FX SEND LEVELS

On the FX Sends screen, you choose how much of the audio signal for each pad is sent to FX1 - Delay, and FX2 - Reverb. Select a pad from the grid and turn the knobs to adjust the sends for FX1, shown on the top graph, and FX2, shown on the bottom graph.



The delay can fatten the sound of the WAV or add extra bounciness to it. Add in the delay filter and you can add a different sound to the delayed signal. You can modulate three of the delay parameters to add more variety to the sound.

Effects are not applied to the monitoring signal when recording.

ADJUST FX 1: DELAY SETTINGS

Open the FX 1: Delay screen by navigating to the FX Sends screen and then pressing the Right Arrow button.

FX 1: Delay		10:1
Feedback	40.0%	□□□
Filter	Off	
Cutoff	50.0%	□□□
Freq Width	100.0%	
Ping Pong	Off	
Beat Sync	On	
Delay Time	1/4T	□□□

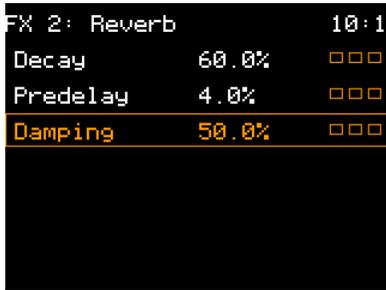
FX 1: Delay

Turn the top knob to choose a parameter, then turn the bottom knob to select a value. The following table describes each parameter.

Setting	Description
Feedback	The amount of regeneration or echo in the delayed signal. Set to 0% to get a single echo. Range: 0.0 to 100.0%. Accepts modulation.
Filter	Turn Filter On and then adjust the Cutoff and Frequency Width parameters to filter the delay. This can add some variety to the sound by making the delayed hits sound different from the original hits.
Cutoff	When Filter is On, this is the center frequency for the band pass filter. Range: 20 Hz to 20.4 kHz. Accepts modulation.
Freq Width	When Filter is On, the width of the range of frequencies included. Range: 0.0 to 100.0%.
Ping Pong	When Ping Pong is on, the echoes will alternate (or ping pong) from side to side. When off, the echoes are the same in the left and right channels.
Beat Sync	When On, the delay is measured in musical time intervals. When Off it is controlled as a percentage. Use Beat Sync to keep the delayed sounds in time with your clock.
Delay Time	Determines the delay length. When Beat Sync is On, delay is specified in musical intervals: Range: 1/64, 1/32, 1/16, 1/8T, 1/16D, 1/8, 1/4T, 1/8D, 1/4, 1/2T, 1/2, 1 bar (T=Triplet, D=Dotted) When Beat Sync is Off, delay is specified as a percentage, where 100% is 4 seconds: Range: 0% to 100%. Accepts modulation.

ADJUST FX 2: REVERB SETTINGS

Press the Layer button while on the FX 1 Delay screen to open the FX 2: Reverb screen. Here you can add some reverb to a pad to lengthen the sound.



FX 2: Reverb

Turn the top knob to choose a parameter, then turn the bottom knob to select a value. The following table describes each parameter.

Setting	Description and Range
Decay	How much the reverberation will ring out. Range: 0 to 100%. Accepts modulation.
Pre-Delay	The amount of time between the original dry sound, and the audible onset of early reflections. Range: 0 to 100%. Accepts modulation.
Damping	How much damping is applied to the reverb. Higher values will make the reverb end sooner. Range: 0 to 100%. Accepts modulation.

Use longer values of Decay to make the sound trail on longer after the initial hit. Increase the Damping to reduce the airiness or hissing at the end of the sound. Use the Pre-delay to add some time between the initial hit and when you hear the echo.

SEQUENCING

Once you find your jam, you can record it as a sequence. The sequencer will record anything you play, and will keep track of which pad you're playing while it records.

Each tangerine preset has 16 sequences that you can record, overdub, undo, and other sequence management operations.

The following sections address the basic operation of the sequencer:

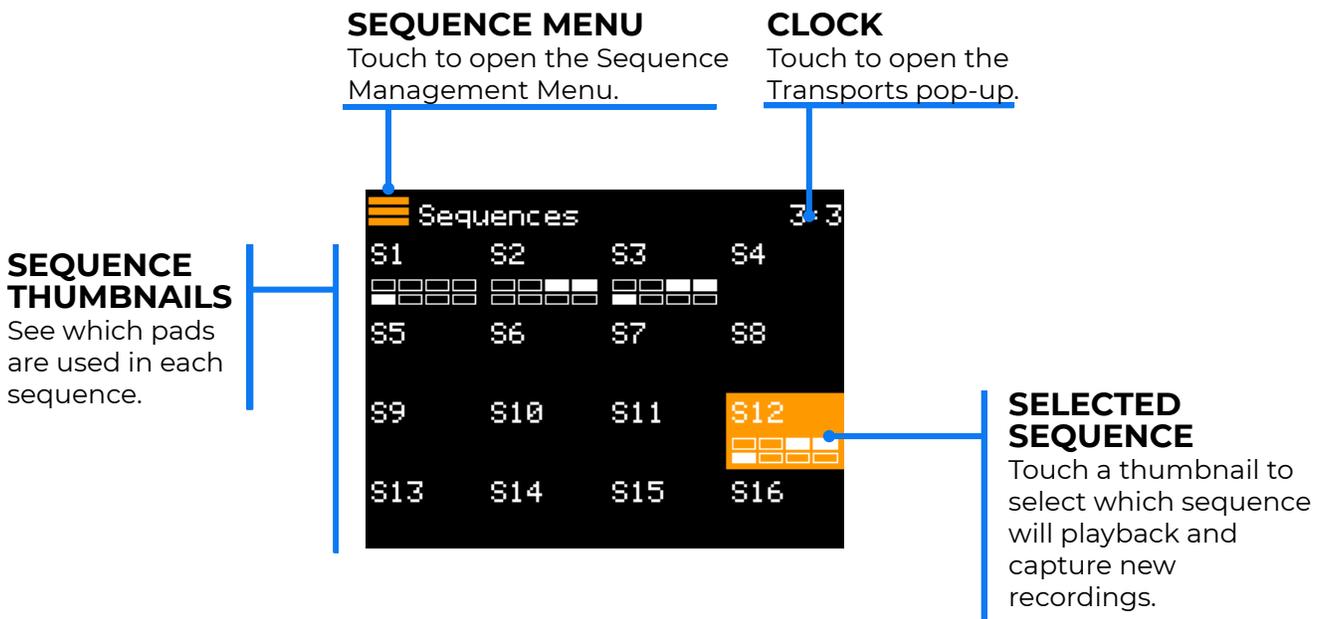
- Selecting Sequences
- Adjusting the Note Resolution and Sequence Length
- Controlling Sequences with the Transports

SELECTING SEQUENCES

You can select sequences for playback or recording on the Sequence Home screen. Here, you can also access sequence management tools for copying, pasting, and clearing sequences and for undoing the most recently recorded notes.

Open the Sequence Home Screen

Push the Home button twice from the Pads Home screen to open the Sequence Home screen.



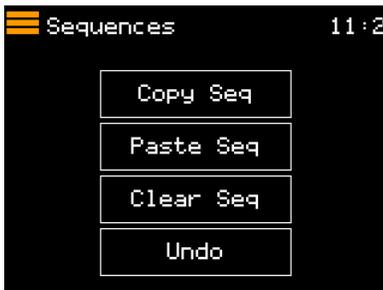
Many of the presets on the tangerine's factory microSD include demo sequences. You can tell if a preset includes sequences by looking for pad grid indicators under the names of the sequences (S1 to S16).

The tangerine plays one sequence at a time.

Copy, Paste, Clear and Undo Sequences

You can get a head start on your next sequence by copying and pasting a sequence in the same preset or another preset. (Remember to save changes before switching presets.) If you want to start fresh, you can clear a sequence.

1. Push Home until you see the Sequence Home screen.
2. Select the sequence you want to use by touching it.
3. Touch the Hamburger Menu in the top left corner of the screen. The Sequence Menu opens.



Sequence Menu

4. Select the option you want from the menu, or push the Left Arrow to cancel.

Menu Option	Description
Copy Seq	Copies the selected sequence onto the clipboard. This includes all event triggers for all pads, the Sequence Setup options, and the Velocity settings.
Paste Seq	If there is a sequence on the clipboard, this will paste that sequence into the currently selected sequence.
Clear Seq	Clears the event triggers and velocity settings for the selected sequence. The Sequence Setup options (Step Length and Step Count) will stay the same.
Undo	Undoes or erases the changes made to the sequence since the last time recording was initiated.

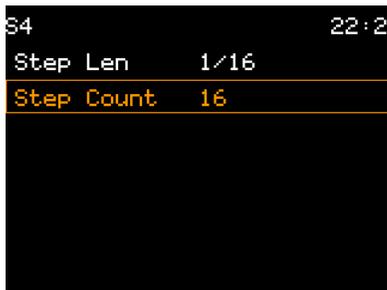
ADJUSTING THE STEP LENGTH AND STEP COUNT

By default, sequences use a step length of 1/16 and are 16 steps long. This will result in a 1 bar sequence. You can adjust the step length or step count in the Sequence Settings screen before or after recording a sequence.

Opening the Sequence Settings Screen

1. Push Home two or three times to open the Sequence Home screen.
2. Touch a sequence to select it.
3. Push the Right Arrow button..

The Sequence Settings screen appears, with the sequence name in the top left corner of the screen.



Sequence Settings

4. To see the settings of other sequences, press the Layers button to step through the other sequences. The sequence name changes in the top left corner of the screen to indicate which sequence's settings are being displayed.

Adjust the Sequence Settings

The following table describes the parameters in Sequence Settings screen.

Setting	Description
Step Len	The length of time between note event triggers for this sequence. Range: 1/64, 1/32T, 1/32, 1/16T, 1/16, 1/8T, 1/8, 1/4T, 1/4, 1/2T, 1/2, 1 bar, 2 bars, 4 bars, 8 bars (T = Triplet)
Step Count	The number of steps, or note event triggers, in the sequence. Range: 1 to 64

If you change the sequence settings before recording:

- The tangerine will quantize the notes you play using the Step Length. For example, if the step length is 1/8 and you play 1/16 notes while recording, some notes will be quantized to the closest 1/8 notes.
- After the sequencer reaches the last step (based on the Step Count value), it continues recording in a loop. For example, if you set the Step Count to 16 and the Step Length to 1/8, the sequence will record in a loop for two bars.

If you change the Step Length after recording:

- The recorded sequence will play back at a different speed, because each recorded step is now longer or shorter. For example, if you record 16 notes at 1/8 resolution and play the sequence back at 1/16 resolution, the sequence will play at double speed and only last one bar.
- If you press Record to add notes to the sequence, the new notes are quantized to the new Step Length.

If you change the Step Count after recording:

- The sequence will either not play some of the recorded notes or it will play all of the notes and then be silent before repeating.

For example if you set Step Length to 1/8 and Step Count to 16, and then change Step Count to 8, only the first half of the sequence will play. If you change the step count to 24, however, the entire sequence will play, followed by 8 silent steps.

Recorded notes are not deleted if you lower the Step Count.

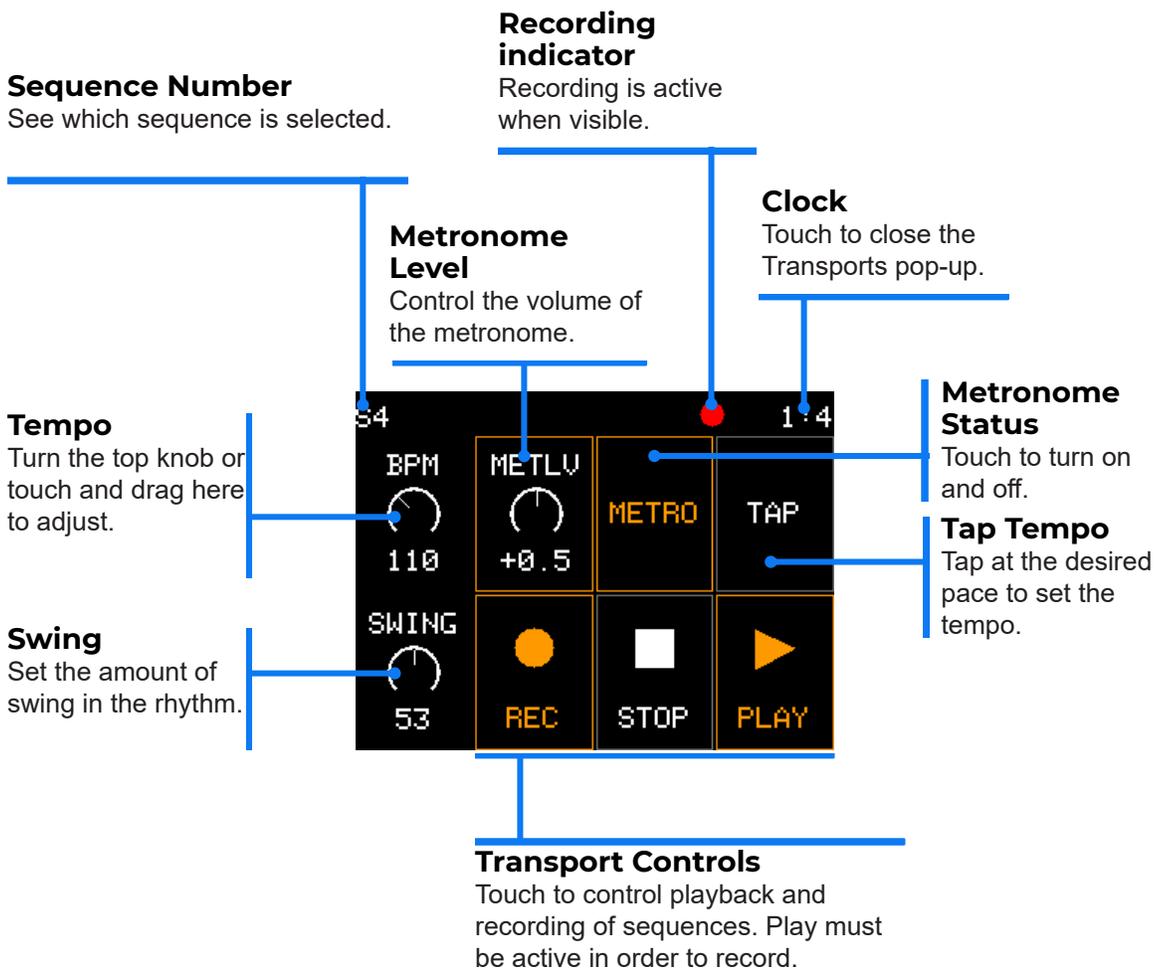
CONTROLLING SEQUENCES WITH THE TRANSPORTS

There are two ways to quickly access the Transports pop-up from anywhere in tangerine:

- Touch the Clock in the top right corner of the screen.
- Hold down the Right Arrow button.

From here, you can start and stop playback and recording of sequences, control playback of clip pads, and set up the metronome. You can also set the tempo and adjust the swing.

The name of the currently selected sequence appears at the top left corner of the screen.



Transport settings are part of the preset and are loaded when you load a preset.

Set the Tempo and Metronome

Sequence playback speed is determined by adjusting the BPM setting in the tangerine's Transports Pop-up. The BPM setting establishes a global tempo that affects all sequences, and is saved with each preset.

The Transports Pop-up gives you two options for setting the global tempo:

- Turn the on-screen BPM control to any number between 40 and 250 or touch BPM and turn the top knob.
- Touch the TAP button a few times at the tempo you want and the tangerine will automatically set the BPM to match the tempo it detects. If you continue tapping, the BPM will track the tempo.

If the metronome is enabled or if a sequence is playing you will hear the global tempo change in real-time.

Adjust the Metronome

You can turn the metronome on and off and adjust how loud it is in the Transports pop-up.

1. To toggle the state of the metronome, touch the METRO button. The button has an orange colored frame and text when active.
2. To adjust the volume of the metronome, touch the METLV knob to make sure the focus ring is around it, then turn the top knob. You can also drag the knob on the touchscreen to adjust it.

Adjust the Swing

The Swing setting makes electronic music sound more like a live performance by controlling the relative timing of even numbered 1/16 notes compared to the notes on either side of them. When set to the default of 50%, the even 1/16 notes occur in their metered place halfway between the notes on either side. When less than 50%, the even 1/16 notes shift closer in time to the previous note. When greater than 50%, the even 1/16 notes shift closer in time to the following note.

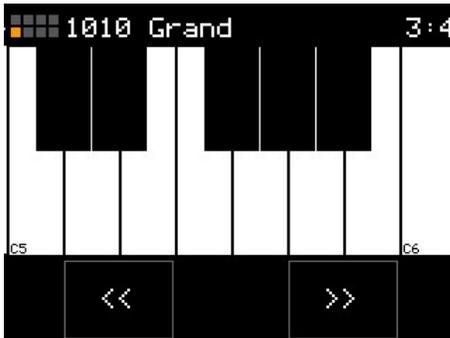
1. Open the Transports pop-up by touching the clock or holding down the Right Arrow button.
2. Touch the Swing knob to make sure the focus ring is around it. Turn the bottom knob to adjust the swing. You can also drag the knob on the touchscreen to adjust it.

If you have a sequence playing, you can hear the swing changes in real time.

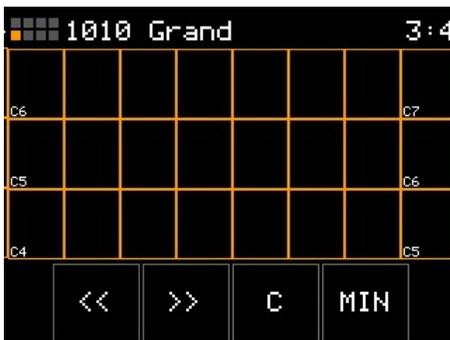
Start Recording

Once you have selected a sequence and adjusted the sequence settings, tempo, and metronome, you can start recording.

1. If you are going to record from a MIDI controller, set the MIDI controller to send notes on the MIDI In channel of the pad you want to record while playing chromatically, or to the GlobIn channel if you want to trigger multiple pads.
2. If you are going to record from the KEYS screen, open it by pressing the Home button until it appears, then select the pad you want to record with the Layers button.



3. If you are going to record from the KEY GRID screen, open it by opening the KEYS screen and then pressing the Right Arrow button. then select the pad you want to record with the Layers button.



Note: The KEY GRID screen can be set up to only play diatonic notes.

4. If you are going to record from the Pads Home screen, push the Home button until you are there.
5. Open the Transports pop-up by touching the clock or holding down the Right Arrow button.
6. Touch the REC button. This arms the sequence for recording, but it doesn't start recording immediately.
7. Touch PLAY. The metronome starts, and a red circle appears at the top of the screen to indicate that recording is in progress.

8. Trigger the pads or play the notes you want to record. The sequence will play in a loop when it reaches the end of the sequence, which is 1 measure long by default. You can continue triggering pads and playing notes to record as the sequence repeats.

The sequencer will record any pads you trigger and notes you play, and will keep track of which pad you're playing while it records, regardless of whether you're playing a MIDI controller, triggering from the Pads Home screen or playing from the KEYS or KEY GRID screens. You can select different pads while recording by opening the KEYS or KEY GRID screens and pressing the Layers button.

9. When done recording, open the Transports pop-up and either:
 - touch REC to stop recording while continuing to play the sequence, or
 - touch STOP to end recording and playback.

The next time you open the Sequence Home screen, you will see a pad grid indicator with solid squares indicating which pads were recorded.

Remember to save your sequences! Sequences are part of the preset, so you have to save the preset to save its sequences.

Playing Sequences with Different Pads

Sequences contain the notes you played during recording as well as the pad you were playing at the time. If you want to hear a sequence with different sounds, you can swap out different sounds for the pads:

- Replace the pads in the current preset by copying and pasting them from other presets using the Pad Management menu, which you can access from the Pads Home screen, or
- Load a different WAV file into a pad and adjust the pad parameters, or
- Copy and paste the sequence to another preset using the Sequence Management menu, which you can access from the Sequence Home screen.

EDITING PADS

In this section, you'll learn to do basic pad editing and to perform related tasks that will help you advance your skills with the nanobox | tangerine:

- Selecting a pad for editing
- Opening the Pad Macro screen.
- Adjusting Levels and Panning
- Adjusting the Filter
- Adjusting the Envelope
- Adjusting the LFO
- Choosing the Pad Mode
- Editing the Pad Configuration Parameters
- Editing the Pad Position Parameters

Note:

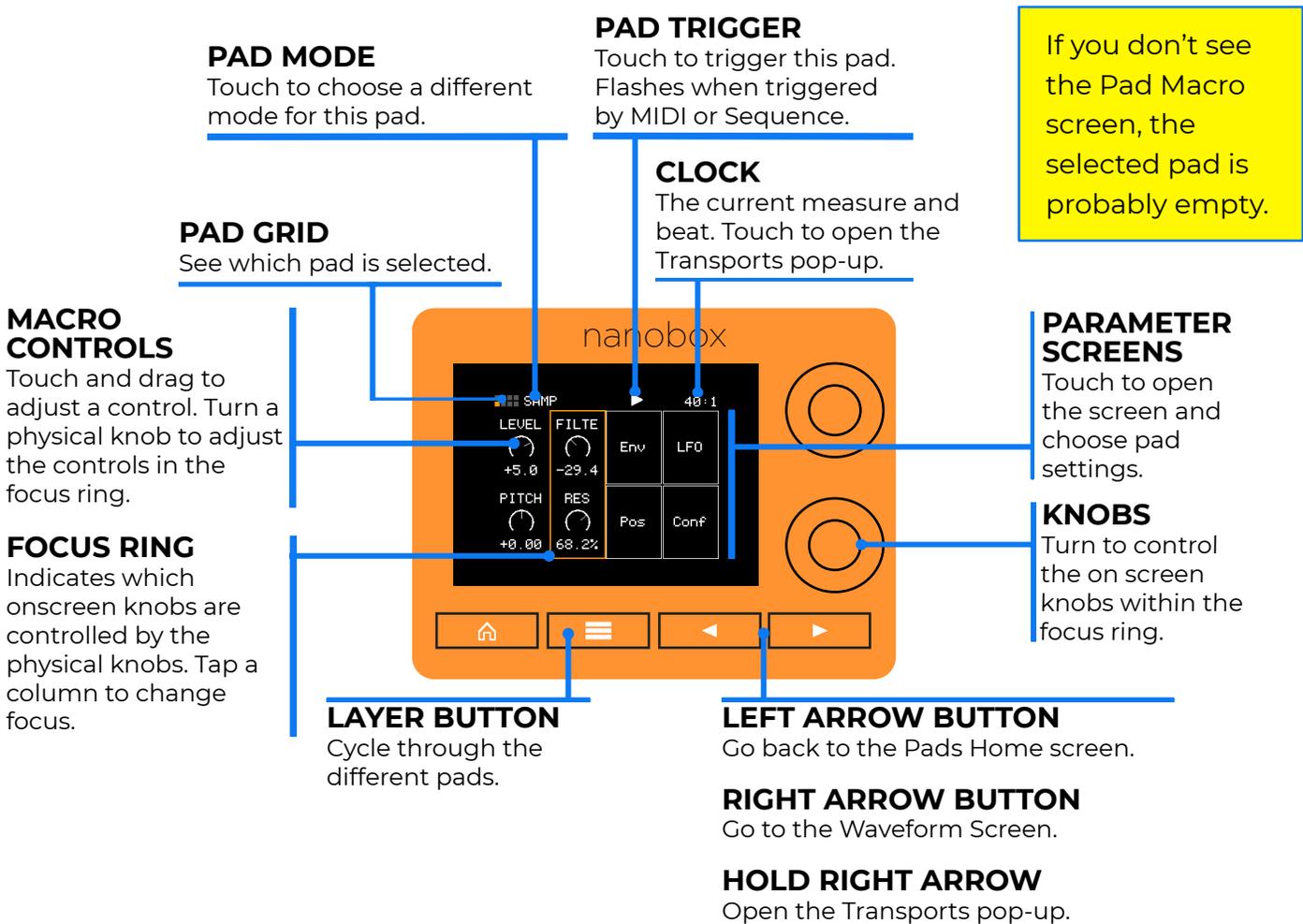
- Presets are **not** automatically saved. When you switch presets or power down the nanobox, any unsaved changes will be lost. Presets are only saved when you choose to save them. This means you can load a preset, edit it, and quickly revert to the original settings simply by re-loading it from the microSD card.

THE PAD MACRO SCREEN/MACRO CONTROLS

Here are the settings you will find on the Macro Controls screen. These same parameters are repeated on the Configuration parameters screen where you may apply modulation to them.

Pad editing starts in the Pad Macro screen for each pad.

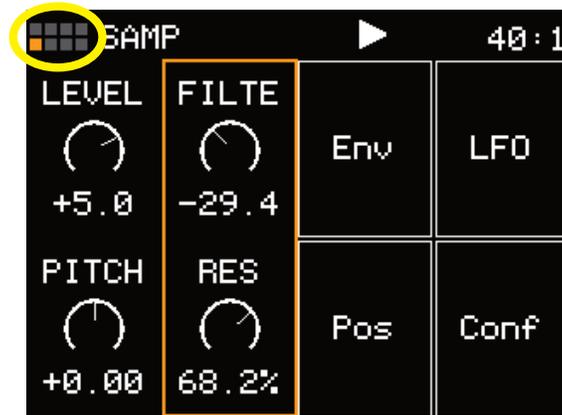
1. Open the Pads Home screen, and tap the pad you want to edit to select it for editing.
2. Press the Right Arrow button. The Pad Macro screen opens.



You can also reach the Pad Macro screen from the Teleporter screen, which you can open from anywhere in the tangerine user interface by holding the Home button, but the Pads Home screen opens after loading presets, so using the Right Arrow button is often a shorter route.

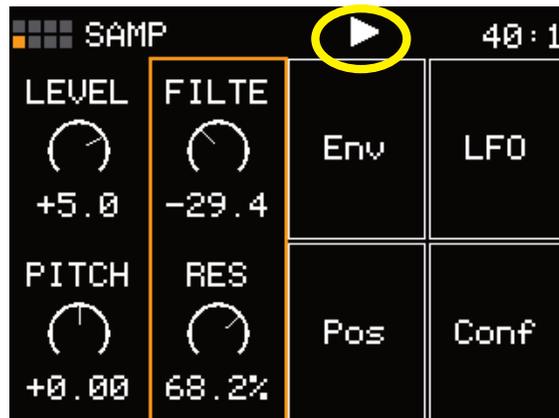
3. Look at the Pad Grid indicator and verify you are looking at the macro controls for the correct pad.

The Pad Grid indicator indicates the selected pad with a solid orange square in the pad's position on the Pads Home screen. Pads are numbered 1 to 8, starting with pad 1 in the lower left pad:



Pad Grid Indicator for Pad 1

4. Press the Layers button a few times and watch as the Pad Grid selection moves to the next pad, and eventually from the eighth pad back to the first pad.
5. Note the changing settings for Level, Pitch, Filte, and Res as you move from pad to pad.
6. Tap the Pad Trigger button at the top of the screen to play the current pad.



The pad plays a sample at its default pitch, just as it would have had you triggered it from the Pads Home screen.

Note: If you play a pad over MIDI, the Pad Macro screen does not switch to the pad that you're playing. Auditioning a pad with the Pad Trigger button is a useful way to make sure you're editing the correct pad.

7. As you tap the Pad Trigger, adjust the four parameters to hear their effect. You can tap and drag any of the onscreen knobs directly, or you can tap to select a pair of them, and then turn the top and lower knobs adjust the top and lower onscreen knobs.

The position of the rectangular orange Focus Ring indicates which pair of parameters is currently selected.

The following table describes each of the four visible parameters.

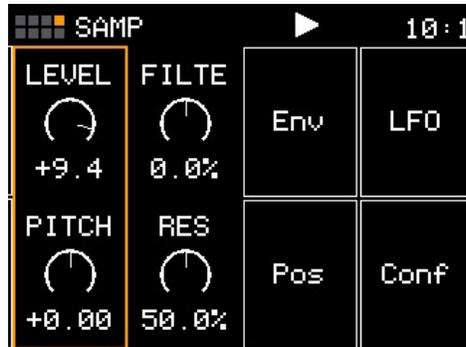
Table: Pad Macro Controls

Knob	Description
LEVEL	Adjust the volume of the current pad. Range: -96dB to +12dB. Also available on the Conf parameter screen, where you can apply internal modulation. There is a MIDI CC mapping for level for each pad.
PITCH	Adjust the pitch in a range of +/- 2 octaves. This is not quantized to semitones. Also available on the Conf parameter screen, where you can apply internal modulation. There is a MIDI CC mapping for pitch for each pad.
FILTE	Apply a high pass (to the right) or low pass (to the left) filter to the pad. There is a MIDI CC mapping for filter for each pad.
RES	The Resonance amount to control the shape of the frequency response near the cutoff frequency.

These parameters also appear in the Configuration Parameters screen along with many other pad-specific parameters. The four on-screen knobs in the Macro screen are convenient for making changes quickly while playing.

ADJUSTING PAD LEVELS AND PITCHES

When you open the Macro screen, you see the Level and Pitch controls. Tap either knob and notice they form a group. You can now adjust the pad’s volume and pitch with tangerine's two encoders.



While adjusting individual pad volumes is key to balancing the pads in the tangerine’s output mix, adjusting the individual pad pitches is critical to ensure that the pads are in tune with each other, whether by shifting their pitches by note intervals or by fine-tuning them.

The tangerine makes the Level and Pitch parameters easy to access in the Pad Macro screen. It also provides two additional ways to adjust them: in the Pad Configuration screen and over MIDI.

Level and Pitch Parameters in the Pad Configuration Screen

In the Pad Configuration screen, the Level and Pitch parameters appear alongside other pad parameters, such as the MIDI channel and Poly Mode (polyphony) parameters.

While the other parameters are equally important for crafting a quality instrument, they are less likely to be adjusted during a performance.



For more details on the Pad Configuration screen, see “Editing Pad Configuration Parameters” on page 66.

Accessing the Level and Pitch Parameters over MIDI

MIDI controllers can send Continuous Controller (CC) messages that change the Level and Pitch parameters directly, with the same results as turning the controls in the Pad Macro screen. The tangerine has a set of CC numbers reserved for eight sets of pad parameters, one set for each pad.

The tangerine lets you send these CC messages over a MIDI channel of your choice. All that the tangerine needs to receive the reserved CCs is the chosen channel number configured in its CC In parameter in the nanobox Configuration screen.

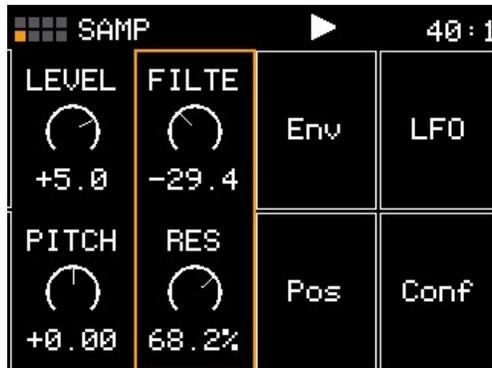
```
nanobox Config 0.0.48 2:1
Volume 73.5%
Brightness 100.0%
Compressor On
MIDI GlobIn Omni
MIDI CC In None
MIDI ProgChg Off
MIDI Rec Off
```

This makes it relatively simple to configure a MIDI controller as a user interface for editing any or all eight tangerine pads.

For more details on adjusting the filter cut-off and resonance over MIDI, see “Controlling The nanobox | tangerine Over MIDI” on page 114.

ADJUSTING PAD FILTERS

When you open the Macro screen, you see two controls to the right of the Level and Pitch knobs: Filte (filter cut-off), Res (resonance). Tap either knob and notice they form a group. You can now adjust the filter cut-off and resonance with tangerine's two knobs.



Adjusting the cut-off frequency and resonance of a filter is among the simplest and most effective ways to change the sonic character of any electronic sound.

The tangerine makes the filter controls easy to access in the Pad Macro screen, but it also provides two additional ways to adjust them: in the Pad Configuration screen and over MIDI.

Filter Parameters in the Pad Configuration Screen

In the Pad Configuration screen, the filter and resonance parameters appear alongside other pad parameters, such as the MIDI channel and Poly Mode (polyphony) parameters.



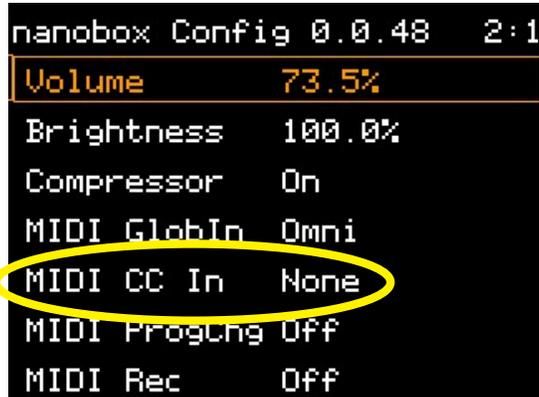
While the other parameters are equally important for crafting a quality instrument, they are less likely to be adjusted temporarily during a performance.

For more details on the Pad Configuration screen, see “Editing Pad Configuration Parameters” on page 64.

Accessing Filter Parameters over MIDI

MIDI controllers can send Continuous Controller (CC) messages that change the filter cut-off and resonance directly, with the same results as turning the controls in the Pad Macro screen. The tangerine has a set of CC numbers reserved for eight sets of pad parameters, one set for each pad.

The tangerine lets you send these CC messages over a MIDI channel of your choice. All that the tangerine needs to receive the reserved CCs is the chosen channel number configured in its CC In parameter in the nanobox Configuration screen.



```
nanobox Config 0.0.48 2:1
Volume 73.5%
Brightness 100.0%
Compressor On
MIDI GlobIn Omni
MIDI CC In None
MIDI ProgChg Off
MIDI Rec Off
```

This makes it relatively simple to configure a MIDI controller as a user interface for editing any or all eight tangerine pads.

For more details on adjusting the filter cut-off and resonance over MIDI, see “Controlling Pad Parameters on the MIDI CC In Channel” on page 124.

ADJUSTING THE ENVELOPE

When you open the Macro screen, you see an on-screen button, labeled Env. Touch Env to open the tangerine’s Envelope screen. The Envelope screen lets you configure an ADSR envelope that performs the same function as the VCA envelopes featured on more or less all electronic musical instruments.

GRAPH
Updates to show parameter changes.

PARAMETERS
Turn the top knob to select a row, and the bottom knob to set the value.

PAD TRIGGER
Touch to trigger this pad. Flashes when triggered by MIDI or Sequence.

MODULATION SLOTS
Push Right Arrow with this row selected to set modulation options.

The screenshot shows the 'Envelope' screen with a graph at the top and a list of parameters below. The parameters are: Attack (30.0%), Decay (18.4%), Sustain (80.4%), and Release (32.2%). Each parameter has three modulation slots to its right. A blue arrow points to the 'PAD TRIGGER' button at the top right of the screen.

Parameter	Description
Attack	The time it takes for the sound to reach its loudest level. 0 to 100%
Decay	How long it takes for the sound to go from the initial peak to the sustain level. 0 to 100%
Sustain	The volume level that the sound maintains when you hold a note. 0 to 100%
Release	The release represents the time each note takes to fade out completely after the note is released. 0 to 100%
Velocity Amount	How much impact MIDI Velocity will have on the level of the overall envelope. -100 to +100%

ADJUSTING THE LFO

When you open the Macro screen, you see an on-screen button, labeled LFO. Touch LFO to open the tangerine’s LFO screen.

GRAPH
Updates to show parameter changes.

PARAMETERS
Turn the top knob to select a row, and the bottom knob to set the value.

PAD TRIGGER
Touch to trigger this pad. Flashes when triggered by MIDI or Sequence.

MODULATION SLOTS
Push Right Arrow with this row selected to set modulation options.

The LFO screen lets you configure a low-frequency oscillator that can serve as a modulation source for other pad parameters. For example, you could apply LFO modulation to the pad pitch to create a vibrato effect.

Parameter	Description
Waveform	The shape of the wave used by the low frequency oscillator. Saw, Rev Saw, Triangle, Pos Tri, Sine, Pos Sine, Square, Pos Square, Random.
Rate	The frequency of the LFO from about 0.1Hz to 12 Hz. 0.0% to 100.0% When Beat Sync is On, the value is specified in beats and measures: 8, 4, 2, 1, 1/2, 1/2 T, 1/4, 1/4 T, 1/8, 1/8 T, 1/16, 1/16 T, 1/32, 1/32 T, 1/64 bars
Depth	The amplitude of the oscillating wave. Set this to 0 to disable the LFO. 0 to 100%
Beat Sync	Controls the operation of the rate parameter. When On, the wave cycle is synchronized with the clock. On/Off
Restart	When active, the LFO will restart each time the pad is triggered. On/Off

MANAGING PADS

As you've seen so far, the tangerine makes it easy to make temporary changes to presets that you have loaded from the microSD card and to discard your changes simply by loading other presets.

You'll now learn how you can make more significant changes to existing presets, and then save those changes to microSD for later use.

In this section you'll learn how to:

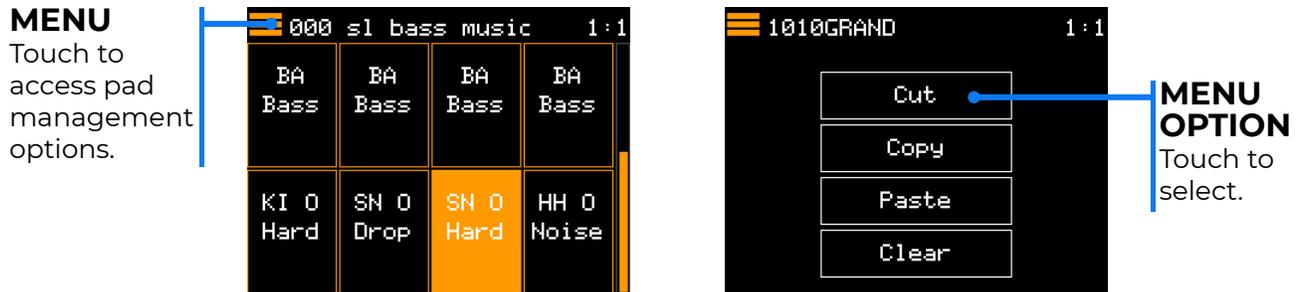
- Clear, Copy, Cut, and Paste pads using the Pad Management Menu
- Change the Pad Mode
- Edit the Position Parameters in each Pad Mode
- Replace the pad's samples

Note:

- Presets are **not** automatically saved. Before using the tangerine's pad-management features, back up the preset or save a copy of the preset.

ACCESSING THE PAD MANAGEMENT MENU

The Hamburger Menu in the top left corner of the Pads Home screen has several options to help you manage your pads.



From here, you can copy and paste pads within and across presets, or clear a pad.

Clear a Pad

1. Select the pad you want to clear on the Pads Home screen.
2. Touch the hamburger menu icon in the top left corner.
3. The Pad Management menu appears.
4. Select Clear from the pop-up menu.
5. To close the pop-up menu without selecting an action, touch the hamburger menu icon in the top left corner.

Cut, Copy and Paste a Pad

You don't have to start from scratch each time you create a pad. You can copy a pad that is close and make adjustments from there. You can also copy a pad from one preset to another for use in a different kit.

1. On the Pads Home screen, select the pad you want to cut or copy.
2. Touch the Hamburger Menu in the top left corner of the Pads Home, Macro Controls, or Pad Dashboard screen.
3. Touch Cut or Copy on the Pads menu. The pad information is now on the clipboard. Cut will also clear the current pad.
4. Select the pad where you want to paste. This can be in the same preset or a different preset.
5. Touch the Hamburger Menu, then touch Paste Pad. All of the source pad's settings, including pointers to WAV files, are copied to the target pad.

Note:

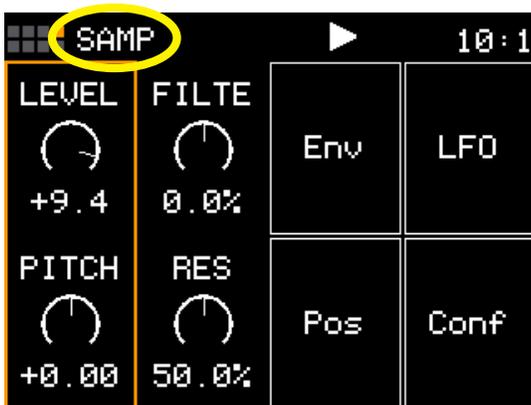
- After copying or cutting a pad, you can paste it into another preset. Simply load the other preset, select the pad that you want to paste into, then choose Paste from the Pad Management menu.
- Be sure to save changes to your preset before opening another preset.

CHANGING THE PAD MODE

A pad mode defines one of several unique ways that tangerine can play samples. Each pad can have a different Pad Mode. You can use the same WAV file in different pads, each in a different Pad Mode.

To change a pad's Pad Mode:

1. Open the Pads Macro screen and touch the Pad Mode text at the top of the screen. The Pad Mode menu opens.



PAD MACRO SCREEN



PAD MODE MENU

2. Touch the name of a pad mode to select it. Push the Left Arrow button to cancel.

Note:

- The tangerine will reset some parameters when you change from one Pad Mode to another.

For example, the default value of the Start and Loop Start parameters is 0, and the default value of the Length and Loop End parameters is the number of samples in the WAV file. If you change any of these parameters, and then change the Pad Mode, your changes will be lost.

The table below can help you pick the correct pad mode:

Pad Mode	Description	Reverse Playback	Beat Sync	Set Loop Points	Play Slices	Polyphony
Sample	Use to play one-shots or drum hits. You can control start and end points for playback and looping. Supports reverse playback, along with forward and bidirectional looping.	✓		✓		16 *
Sample: Multi-Sample Mode	Spread a folder full of WAV files across the keyboard to get more realistic instrument pitch shifting or to map different sounds to each key on the keyboard.	✓				16 *
Clip	Use for synchronized loops and quantized playback, e.g. drum loops and guitar tracks between one and eight measures long.		✓			2
Slicer	Use with a WAV file with different sections that you want to trigger independently.	✓			✓	2
New Recording	Use to start recording a new WAV file or clear a WAV from a pad.					

* tangerine supports 24-voice polyphony for Sample pads, and allocates voices to each Sample pad as needed. For example, a single Sample pad can play with 24-voice polyphony, two Sample pads playing simultaneously can each play with 12-voice polyphony, and three Sample pads can each play with 8-voice polyphony.

Multi-sample pads support Loop Mode if the WAV files have embedded loop points. Slicer pads also support Loop Mode by using the slice points as loop start and end points.

Each pad can have a different Pad Mode. You can use the same WAV file in different pads in different Pad Modes.

EDITING PAD CONFIGURATION PARAMETERS

Open the Pad Configuration Screen

From the Pad Macro screen, touch Config. The pad's Configuration Parameters screen opens.

The first several parameters correspond to the Level, Pitch, Filter Cut-off, Resonance, and Panning, all of which appear in the Pad Macro, and Mixer screens.

Three small squares appear to the right of each parameter to indicate if the parameter is being modulated. For details on modulation, see "Modulating Pad and Effects Parameters" on page 104.

The following table describes the first five Pad Configuration parameters.



MACRO SCREEN



CONFIGURATION SCREEN

Parameter	Description
Level	Volume level of the current pad. Range: -96dB to +12dB. Corresponds to the Level in the Pad Macro and Mixer screens.
Pitch	Pitch shift over a range of +/- 2 octaves, not quantized to semitones. Changing the Pitch affects the sample playback speed. Corresponds to the Level in the Pad Macro screen.
Filter	Sets the filter cut-off frequency and filter type simultaneously. Values from 0 to 100.0% set the cut-off for a high-pass filter. Values from 0 to -100.0% set the cut-off for a low-pass filter. Corresponds to the Filte parameter in the Pad Macro screen.
Res	Emphasizes frequencies at and around the cut-off frequency. As resonance approaches 100%, the filter comes close to oscillating at the cut-off frequency. Corresponds to the Res parameter in the Pad Macro screen.
Pan	Pans the pad audio from the left to right channels by controlling ratio of left channel volume to right channel. At -100.0% the pad is panned fully to the left. At +100.0%, the pad is panned fully to the right. At 0-.0%, the pad is "centered" with equal levels in both channels. Corresponds to the Pan parameter in the Mixer screen.

The remaining configuration parameters determine how you can play the pad and may vary based on the pad's Pad Mode. The following table summarizes the purpose of these parameters.

Parameter	Description
Launch Mode	Specifies how the tangerine behaves when you play a pad. Options include Gate, Trigger, Piano, and Toggle. See "Choose a Launch Mode that Suits the Pad Mode" on the next page for more information.
Poly Mode	Specifies how many voices the tangerine will allocate to the pad. Options include: Mono, Poly 2, Poly 4, Poly 6, Poly 8, and Poly X.
Excl Group	Add a pad to an Exclusion Group to prevent more than one pad in the group from playing at the same time. Any other pad in the same group will stop whenever a pad in the group is triggered. Excl X, Excl A, Excl B, Excl C, Excl D Choose Excl X for no exclusion grouping.
Interp	The interpolation algorithm used when the tangerine pitch-shifts samples during playback. To minimize the impact on the tangerine's processor, choose Normal mode unless a pad produces excessive aliasing.
MIDI In	Lets a MIDI controller play this pad over a specific MIDI channel. Playing a pad over a specific MIDI channel lets you play chords and sustain multiple notes over MIDI, up to the pad's Poly Mode limit.
Root Note	Specifies the note corresponding to the sample when played at its original speed. The tangerine uses this to transpose the sample across a span of notes. Only available in single sample mode.
Pad Note	The MIDI note assigned to the pad for triggering over the MIDI GlobIn channel.

Choose a Launch Mode that Suits the Pad Mode

Each pad has a Launch Mode setting that determines how the tangerine responds when you play the pad.

Pad Mode	Description
Trigger	The tangerine plays the pad's samples from beginning to end. Until the sample playback ends, the pad's envelope remains in its sustain phase and never reaches its Release stage.
Gate	The tangerine sustains its sound until the note is released, regardless of how the note was started (from the touch screen, by the built-in sequencer, or over MIDI). Depending on the Envelope Release time, you may continue to hear the sample after you lift your finger until the Envelope finishes the release phase.
Toggle	Tap once to start playback of the Pad's samples and its envelope. Tap a second time to stop playback.
Piano	A combination of Gate mode for notes below note #92 and Trigger mode for notes #92 and above. This is designed to better replicate the behavior of a piano.

Note: Pressing Stop in the Transports screen twice will stop all clips. Holding the Layer button will turn all notes off.

Be sure to choose a Launch Mode that suits the pad's Pad Mode.

The following table presents some effective combinations of Pad Modes and configuration parameters that the tangerine uses as defaults when you load or record samples into an empty pad.

Parameter	Single-Sample one shot	Single-Sample loop	Multi-Sample	WAV File w/ Slices
Pad Mode	Sample	Clip	Sample	Slicer
Launch Mode	Trigger	Toggle	Gate	Trigger
Poly Mode	Mono	Mono	Poly 4	Mono
Excl Group	Excl X	Excl X	Excl X	Excl X

EDITING PAD POSITION PARAMETERS

Use the parameters on the Position screen to control looping, start and end points, playback direction, Clip synchronization and Slice selection. The tangerine establishes initial values for sample position parameters by reading metadata embedded in each WAV file that it loads, or if metadata does not include all required details, by applying default values.

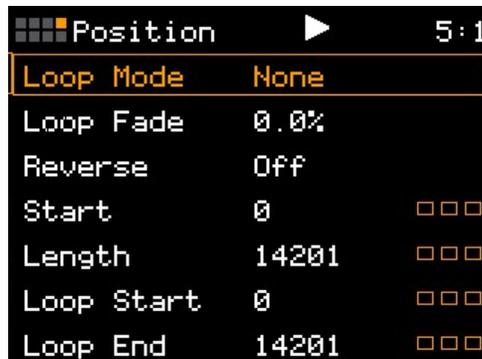
Open the Pad Position Parameters Screen

In the Pad Macro screen, touch Pos.



The Pad Position Parameters screen opens. Not all position parameters are needed for all Pad Modes, so the Pad Position Parameters screen only presents the parameters that apply to the current Pad Mode.

The following screen shows the position parameters that appear when the Pad Mode is Sample.



The following table summarizes the sample position parameters and values supported by each Pad Mode.

Table: Position Parameters Supported by Pad Modes

Parameter	Single-sample values	Multi-Sample values	Slicer values	Clip values
Loop Mode	None, Forward, Bidirect	None, Forward, Bidirect	On, Off	On, Off
Loop Fade	0-100.0%	0-100.0%		
Reverse	On, Off	On, Off		
Start	Sample index			
Length	0-Sample length			
Loop Start	0-Sample length			
Loop End	Loop Start-Sample length			
Playthru			On, Off	
Beat Count			Auto, 1-512	Auto, 1-512
Quant Size			2 bars, 1 bar, 1/2, 1/2T, 1/4, 1/4T 1/8 1/8T 1/16 1/16T 1/32 1/32T 1/64 None	8 bar 4 bar 2 bar 1 bar 1/2 1/4 1/8 1/16 None
Sync			On, Off	Slice 1 bar 1/2 1/4 1/8 1/16 None
Slice			1-98	
Slice Seq			None, Forward, Backwards, Random, Stagger	

The following sections describe how and when to use position parameters for each Pad Mode.

EDITING PAD POSITION PARAMETERS IN SAMPLE MODE

The following table summarizes the pad position parameters that apply to single and multi-samples:

Parameter	Description	Range of Values	Mod Target
Loop Mode	<p>Controls whether the WAV file plays in a loop, and the direction of the loop.</p> <p>When looping is enabled, if you have the Launch Mode set to Trigger, looping will happen for the duration of the Release phase of the note.</p> <p>If you have the Launch Mode set to Gate, looping plays through the gate pulse and the release time.</p> <p>If you have the Launch Mode set to Toggle, looping starts to play when the initial pulse is received and continues until the terminating toggle pulse is received.</p> <p>If Loop Mode is Bidirect, and Rev is ON, playback will start from the end of the sample, and then loop as described, but starting with the Loop End to Loop Start pass.</p>	<p>None: Plays once from the value assigned to the Start parameter through the value assigned to the Length parameter.</p> <p>Forward: Plays from the value assigned to the Start parameter through the value assigned to the Loop End Parameter, then jumps back to the value of the Loop Start parameter. Play continues to loop between Loop Start and Loop End for the duration of the note.</p> <p>Bidirect: Works similarly to forward, but loop playback proceeds from Loop Start to Loop End then backwards to Loop Start. It then repeats the looping back and forth.</p>	No
Loop Fade	<p>The amount of overlap used in the cross fade at the loop points. The cross fade is accomplished by overlapping part of the WAV file from before the loop start point. This number represents how long the overlap content should be. If this is set to 100%, it will use an overlap that is the same length as the loop. If it is 10%, it will use an overlap that is 10% of the length of the loop. In order to truly loop 100%, the length of the WAV file before the loop point must be as long as the loop length. Otherwise, the cross fade will max out at a lower number. Loop fade does not work with Reverse looping.</p>	0 to 100%	No
Reverse	<p>When Reverse is ON, the WAV file will play in reverse.</p>	ON, OFF	No

The following parameters apply only to single samples

Parameter	Description	Range of Values	Mod Target
Start	Point where playback will begin when playing forward or ends when playing in reverse. Expressed as a sample number.	0 to number of samples in the file	Yes
Length	When Loop Mode is None, how long the sample will play past the value of the Start parameter. Expressed in samples.	0 to number of samples in the file	Yes
Loop Start	Point where the looping will begin when playing forward, or looping will end when playing in reverse. Expressed in samples. Must be before or equal to Loop End. Loop Start is read from the WAV file when sample is loaded, and saved to the WAV file when the WAV is saved.	0 to number of samples in the file	Yes
Loop End	Point where the looping will end when playing forwards, or looping will begin when playing in reverse. Expressed in samples. Must be after or equal to Loop Start. Loop End is read form the WAV file when a sample is loaded, and saved to the WAV file when the WAV is saved.	Loop Start to number of samples in the file	Yes

Set Start and End Points in Sample Pad Mode

You can configure the start and end points for single-sample pads in Sample Pad Mode by editing the following Pad Position parameters:

Parameter	Description	Range of Values
Start	Point where playback will begin when playing forward or ends when playing in reverse. Expressed as a sample number.	0 to number of samples in the file
Length	When Loop Mode is None, how long the sample will play past the value of the Start parameter. Expressed in samples.	0 to number of samples in the file

Editing the Sample Start and Length in the Pad Position Parameters Screen

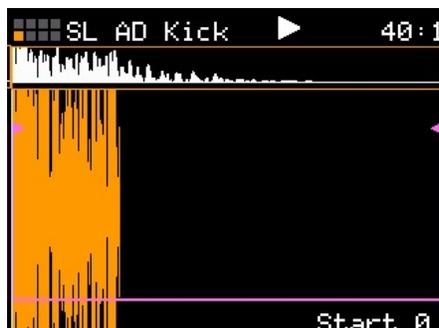
1. From the pad's Macro screen, touch Pos to open the Pad Position Parameters screen.



2. Check the Pads icon in the top left of the screen to verify you are editing the correct pad. If necessary, step through the pads with the Layers button until you reach the correct pad.
3. Edit the sample Start and Length parameters, using the top knob to select each parameter, and the bottom knob to change its value.
4. Listen to how the sample changes while you adjust the sample's start point and length. Play the pad over MIDI or by touching the play button at the top of the screen.

Editing the Sample Start and Length in the Waveform Screen

1. Open the Waveform screen from the pad's Macro screen by pressing Right Arrow.
2. Play the pad over MIDI or by touching the play button at the top of the screen.



3. Check the Pad Grid in the top left of the screen to verify you are editing the correct pad. If necessary, step through the pads with the Layer button until you reach the correct pad.
4. Touch the Play button at the top of the screen to hear the sample. Notice the playback point moves across the waveform when you play it.
5. Rotate the tangerine's top knob until the Length parameter appears in the bottom right part of the screen. If the top knob does not seem to do anything, press Left Arrow to return to the pad's Macro screen and make sure the pad is in Sample Pad Mode.
6. Adjust the sample length with the bottom knob until the sample end point is where you want it.
7. Listen to how the sample changes while you adjust the sample's length.
8. Use traditional swipe, pinch, and spread gestures on the touch screen to zoom in on the part of the waveform where you want to move the sample Start position.
9. Select the Start parameter by turning the top knob until Start appears at the bottom of the screen.
10. Move the Start point with the bottom knob. Note that the sample end point shifts when you move the Start point. Listen to how the sample changes while you adjust the sample's start point and length.

Note:

- The Waveform screen hides the Start and Length parameters if the Pad Mode is Clip or Slicer Pad Mode.

Enable Looping in Sample Pad Mode

To set up sample loops for playback in Sample Pad Mode:

1. Open the Pad Position Parameters screen.
2. Select and change the Loop Mode parameter to either Forward or Bidirect.

This enables looping on this pad and also specifies if the sample should play repeatedly from the the Loop Start point to the Loop End point (Loop Mode = Forward) or it should alternate between playing the sample from Loop Start to Loop End and then playing in reverse from the Loop End to Loop Start (Loop Mode = Bidirect).

3. Play the pad and notice that, by default, the entire sample loops while you play a note.

Set Up Loops in Sample Pad Mode

You can edit the pad's loop points numerically in the Position parameters screen or visually in the Waveform screen.

Edit Loop Points in the Position Parameters Screen

1. Open the Pad Position Parameters screen and make sure you are about to edit the correct pad's loop parameters.

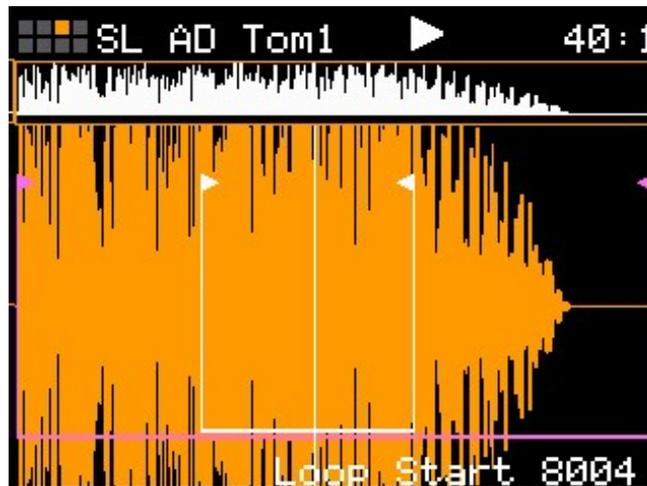


2. Edit the Loop Start and Loop End parameters, using the top knob to select each parameter, and the bottom knob to change its value.
3. Listen to how the pad loop changes while you edit the loop points. Play the pad over MIDI or by touching the play button at the top of the screen.

Note: The Loop End parameter defines the position of the last sample in the loop, not the loop length. So, unlike the Start and Length parameters, if you change the Loop Start after setting the Loop End, you don't have to adjust the Loop End.

Edit Loop Points in the Waveform Screen

When Loop Mode is Forward or Bidirect, the Waveform screen presents loop start and end point markers.



Loop Start and Loop End Points in the Waveform Screen

Note: When a pad's Loop Mode is Off, the Waveform screen hides the loop point controls.

1. Select the Loop Start parameter by turning the top knob until Loop Start appears at the bottom of the screen.
2. Use traditional swipe, pinch, and spread gestures on the touch screen to zoom in on the part of the waveform where you want to move the Loop Start.
3. Move the Loop Start point with the bottom knob. Notice that the Loop End point does not shift when you move the Loop Start point.
4. Select the Loop End parameter by turning the top knob until Loop End appears at the bottom of the screen.
5. Move the Loop End point with the bottom knob.

Applying Loop Fade to Create Smoother Loops

Samples often produce clicks when they play in a loop. Even if loop points have been carefully edited. To create smoother loops, the tangerine offers a Loop Fade option in the Pad Position Parameters screen. Loop Fade specifies a percentage of the loop that the tangerine will fade out while simultaneously fading in audio from just before the start of the loop.

The Loop Fade parameter lets you specify the cross-fade region as a percentage of the loop. Loop Fade is only active when Loop Mode is Forward.

The diagram to the right shows how the loop cross-fading is applied at three different settings for the Loop Fade parameter. The colored bars in the diagram represent different equal length sections of the WAV file. The loop points for this example have been configured so that sections E, F, G and H of the WAV file are looped.

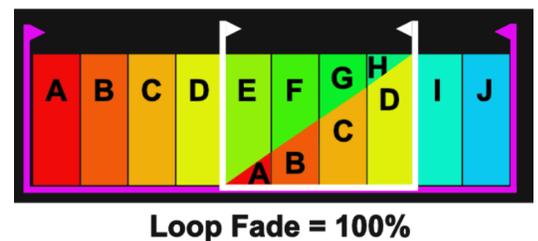
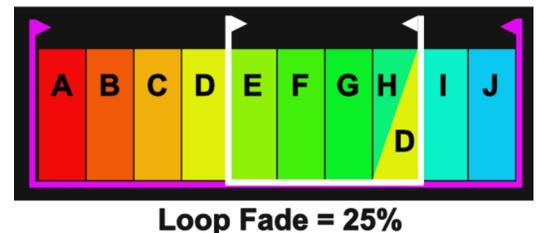
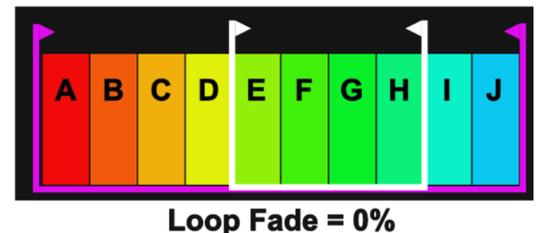
When Loop Fade is zero, the tangerine does not overlay any extra content on top of the looped sections.

When Loop Fade is 25%, section D, which is a section of WAV that is 25% of the length of the loop from immediately before the loop start point, would be gradually faded in over the last 25% of the looped section. So as section H starts, section D fades in and section H is gradually faded out until on D is left as we reach the loop point.

When Loop Fade is 100%, sections A, B, C and D are faded in on top of sections E, F, G and H.

For Loop Fade to work, there must be enough audio signal before the Loop Start point to draw from. For example, if your WAV file is 1000 samples long, and your Loop Start is at 250 samples, you only have 250 samples, or 33% of the loop length, before the Loop Start point to use for Loop Fading. You can set the Loop Fade to a higher number, but it won't be able to add additional improvement because there's no signal available to use.

Note: To minimize the impact of Loop Fading on CPU usage, use the smallest value for Loop Fade that gets the sound quality you need. This will vary based on the sample.

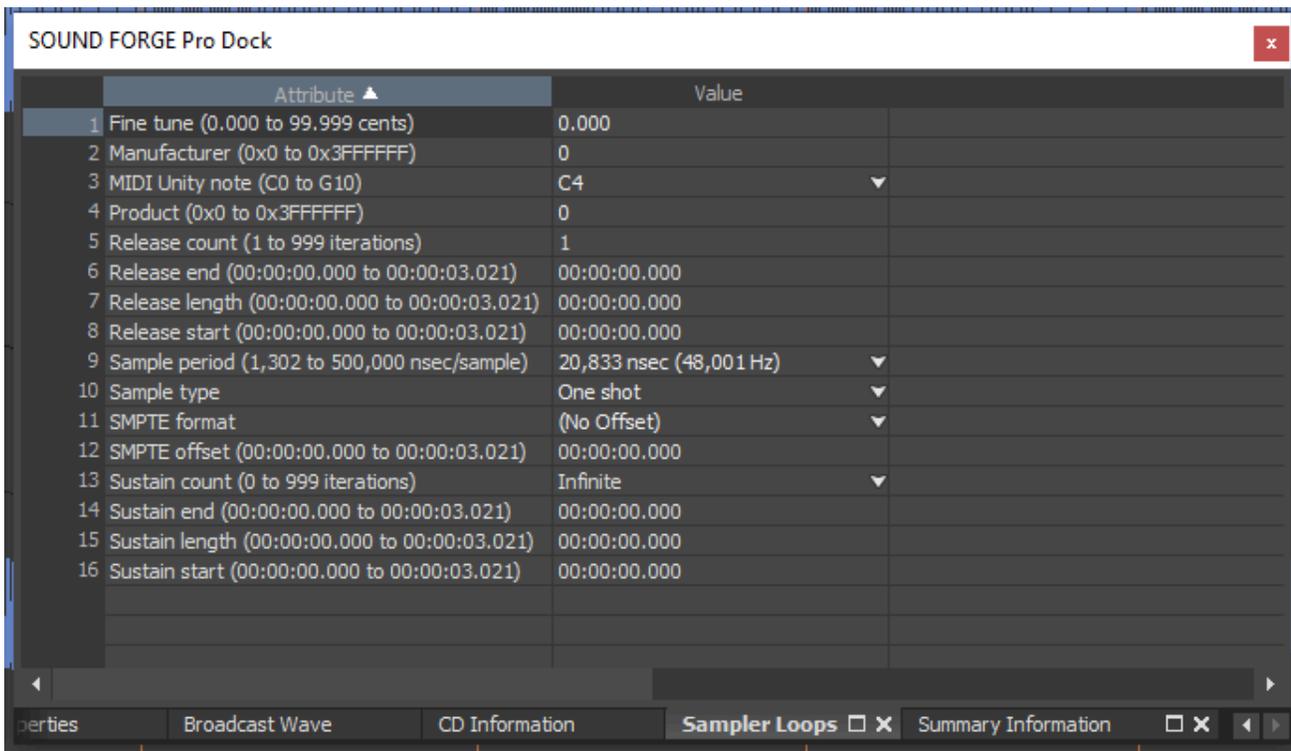


Save Samples with Embedded Position Parameters

If you edit the Sample, Length, Loop Start, or Loop End position parameters for a pad in Sample Pad Mode, you can save those values in the WAV file's metadata.

If you load the updated Wav file into another preset, the tangerine will recognize the markers and automatically set the pad's position parameters for you.

After saving a WAV file with a pad's position parameters, you can see the position parameters if you open the file in an application such as Sound Forge:



EDITING PAD POSITION PARAMETERS IN SLICER MODE

A Slicer is a pad that loads a single sample file that contains a set of markers that define non-overlapping regions, known as slices.

When you load a WAV file with slice markers into a Pad, the tangerine automatically changes the pad's Pad Mode to SLICE and maps the slices to a range of keys starting at C3 (note #36) so you can play the slices as if they were individual samples.

You can choose to always play the same slice for each note played, or you can configure the pad's position parameters to change the slice assignment every time a note gets played.

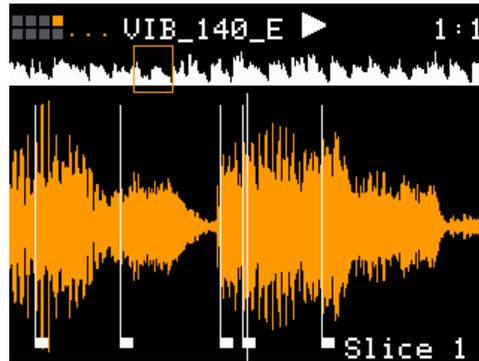
The Slice and SLSeq parameters on the Macro Controls screen, and the PlayThru option on the Setup screen, are important for Slicer pads.

You can define slices or regions with an audio editing application, or you can load a WAV file into a tangerine pad, change the Pad Mode to SLICE, and then add the slice markers from the Waveform screen.

Defining Slices in the Waveform Screen

Load the file you want to slice into an available pad, then open the pad's Macro screen and change the Pad Mode to SLICE.

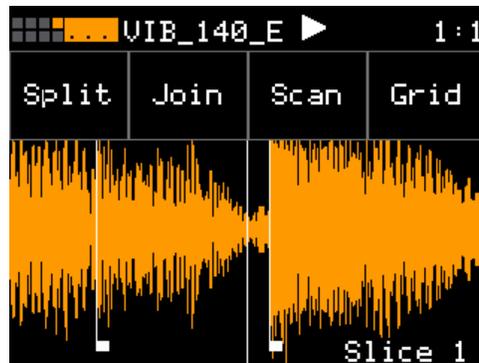
From the Pad Macro screen, press the Right Arrow button to open the Waveform screen.



Waveform for Slicer pad

At the top of the screen, to the right of the pad grid indicator, there are three small dots, forming an ellipsis.

Touch the ellipsis to reveal the Waveform screen's Slice menu.



Waveform with Slicer Menu

There are three ways to add slices to the waveform:

- manually (Split and Join),
- automatically (Scan), and
- slice to grid (Grid).

Manually Create or Remove Slices

When you configure slices manually, you use the Split and Join menu options to add and remove splits. The manual process may also be used to refine the results after you use auto scan or slice to grid.

1. On the Waveform screen for the slicer pad touch the menu item with the three dots "...". This will display the Waveform Slicing menu.
2. Use touch gestures to move the waveform so the fixed cursor position (the vertical white line) is at the position where you want to add another slice point.
3. Touch Split to create a slice point. The slice point is shown as a white horizontal line with a small square near the bottom.
4. To remove a slice, use touch gestures to move the waveform so the fixed cursor position (the vertical white line) is on or near a slice point that you want to remove, then touch Join to remove the slice point. You can have as many or as few slices as you want.

Use Auto Scan to Create Slices:

When you use auto scan, the tangerine uses an internal algorithm to decide where to place the splits. You can control the sensitivity of the algorithm.

1. From the Waveform screen for the slicer pad, touch the menu item with the three dots "...". This will display the Waveform Slicing menu.
2. Touch Scan and then use a control knob to select a Threshold percentage for the sensitivity of the scan. The lower the threshold, the higher the number of slices that will be created.

Touch OK when you are ready to scan. (You can touch anyplace outside of the Threshold field to cancel the scan.) The tangerine will detect and create slice points in the file automatically.

Use Slice to Grid

When you use the slice to grid option, you define a fixed number of slices and the tangerine creates splits that evenly divide the WAV file into the specified number of slices.

1. From the Waveform screen for the slicer pad, touch the menu item with the three dots "...". This will display the Waveform Slicing menu.
2. Touch Grid and then use a control knob to select the number of Slices to create. Touch OK when you are ready to scan. (You can touch anyplace outside of the Slices field to cancel the scan.)
3. The tangerine will automatically divide up the WAV file evenly into the number of slices you specified. The slice points are shown as white vertical lines with a small square near the bottom.

Note: You can adjust the results of the slice to grid or auto scan by manually adding or removing slices to get the slices that match your creative vision.

Use Slices to Synchronize Playback of Clip Pads

You can use slices in a clip pad to synchronize playback of the beats in the clip. When the value of the Sync parameter for a clip pad is set to Slice, tangerine will use the location of the slices in the WAV file as the location of the "beats" for Sync purposes in order to prevent timing drift.

But how do you get slices in a clip pad? First configure the pad in Slice Mode, create the slices, and then change the Pad Mode to Clip. The slices will still be visible on the Waveform screen and can be used for synchronization.

Position Parameters in Slicer Mode

The parameters in the table below and on the next screen apply to Slicer mode.

Parameter	Description	Range of Values	Mod Target
Loop Mode	Controls whether the slice playback is looped. This does not work with Launch Mode of Trigger. Use Launch Mode of Gate or Toggle if you want to loop slices.	ON, OFF	No
PlayThru	Controls whether or not playback continues through the end of the slice.	ON – playback will continue past the end of the slice to the end of the file. OFF – playback will stop at the end of the triggered slice.	No
Beat Count	Enter the number of beats in the clip file to give tangerine more information to work with when synchronizing playback to the current BPM. If set to Auto, tangerine will attempt to detect the beat count automatically. Only used when Sync is set to ON.	Auto, 1 to 512	No
Quant Size	Use Quant Size to quantize when the playback starts and stops. Quantization will cause playback to snap to a musical grid with intervals specified by the Quant Size parameter. When quantization is used, the note trigger will cause playback to start and end on the next quant size boundary. For example, if the Quant Size is set to 1-bar and you press the pad, the playback will begin at the start of the next bar.	None - always start and stop immediately 1/64, 1/32T, 1/32, 1/16T, 1/16, 1/8T, 1/8, 1/4T, 1/4, 1/2T, 1/2, 1 bar, 2 bars. Assumes 4/4 time.	No
Sync	The Sync feature prevents timing drift that can occur when the length and BPM of a clip does not align exactly with the tempo of playback. When Sync is used, tangerine will realign the audio to match the clock at the step size specified here.	OFF – playback will occur at the original rate. Looping will happen as soon as the sample ends. ON – tangerine will synchronize the playback of the slice.	No

Parameter	Description	Range of Values	Mod Target
Slice	Indicates which slice will be played when a note is triggered. You can use modulation to vary this value over time.	1 through the number of slices in the pad.	Yes
Slice Seq	<p>When Slice Seq is set to a value other than None, each new note will advance the selection of the next slice to play.</p> <p>The value of this parameter controls the order in which slice selection is advanced.</p> <p>Send when modulation is used, every time the Modulation Source receives a high signal, the slice sequencer will be advanced to the next step in the sequence.</p>	<p>None: This parameter will not be used to control the order of playback of slices.</p> <p>Forward: A trigger will cause the playback to move to the next slice.</p> <p>Backwards: A trigger will cause the playback to move to the previous slice</p> <p>Random: A trigger will cause the playback to move to a randomly selected slice</p> <p>Stagger: A trigger will cause the playback to move through the slices in a somewhat random way. It will move forward a few slices, then back a couple of slices, and repeat.</p>	Yes

Slicer File Requirements

When the tangerine loads a file into a pad, it will recognize slice markers in the WAV file metadata if the file contains Slice Markers or Cue points.

The tangerine supports sliced files created on the 1010music blackbox.

You can also use applications such as the following to create slice files:

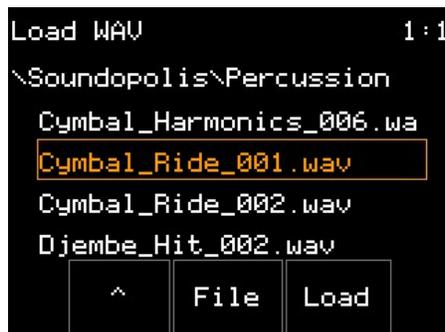
- Reaper for Windows/Mac/Linux - <https://www.reaper.fm/>
- OcenAudio for Windows/Mac/Linux - <https://www.ocenaudio.com/>

Note: WAV files must meet the tangerine's WAV file requirements or the tangerine will not recognize them or load them.

Saving a Sliced WAV File

You can save slices in a sample's WAV file with the tangerine's built-in Wav Management features. After saving a sliced WAV file, you can load it into another preset, and the tangerine will recognize the slices, saving you from having to create the slices again.

In the Waveform screen, touch the filename at the top of the screen to open the Wav Management menu.



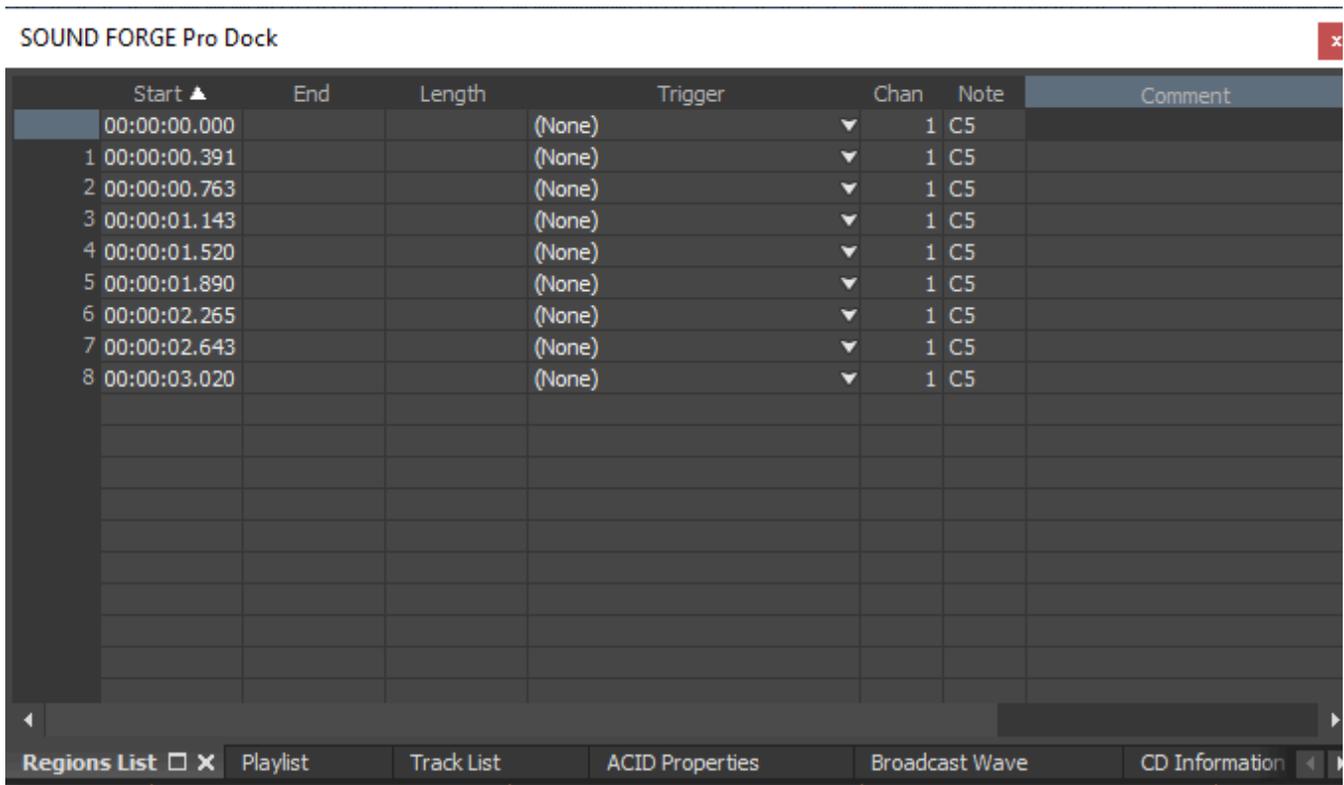
Touch File. The File menu appears.



Touch Save As, then edit the filename so the sliced WAV file does not replace the original file.

You can verify that the file has been saved with the slice data by loading it into another pad and checking for the slice markers in the Waveform screen.

If you transfer the file to a computer you can open it with an application such as Sound Forge and see the slices in the metadata, such as the following Regions List:



SOUND FORGE Pro Dock

	Start ▲	End	Length	Trigger	Chan	Note	Comment
	00:00:00.000			(None)	▼ 1	C5	
1	00:00:00.391			(None)	▼ 1	C5	
2	00:00:00.763			(None)	▼ 1	C5	
3	00:00:01.143			(None)	▼ 1	C5	
4	00:00:01.520			(None)	▼ 1	C5	
5	00:00:01.890			(None)	▼ 1	C5	
6	00:00:02.265			(None)	▼ 1	C5	
7	00:00:02.643			(None)	▼ 1	C5	
8	00:00:03.020			(None)	▼ 1	C5	

Regions List X Playlist Track List ACID Properties Broadcast Wave CD Information

EDITING PAD POSITION PARAMETERS IN CLIP MODE

Clip Mode is best suited to sample files that have been created with time-stretching and pitch-stretching in mind. Some characteristics that make wav files more suitable for Clip Mode:

- First down beat is at start of file, with no empty space before it.
- End of last beat is at end of file, with no empty space after it.
- Contains ACID metadata tag with beat count. ACID metadata tags may include:
 - Loop properties, such as tempo, key, time signature.
 - Key Signature
 - Time Signature
 - Pitch Information

The tangerine uses parameters such as these to optimize the way it synchronizes sample playback with the tempo of the tangerine's sequencer

Clip pads can support looping playback and beat synchronized playback. They are useful to play a track along with your sequence or real time playing.

The Launch Mode parameter on the pad Configuration screen and all of the Position Parameters are particularly important for clips.

Clips can only play when the clock is running because they need to synchronize with it. When you trigger a clip, a white progress bar appears across the bottom of the pad, as shown on the Bass2 122Cm pad in the screenshot on the right. The progress bar does not move and the clip does not play until the transports are playing. Touch the clock and then push Play on the Transports pop-up to start the clip playing.



Armed Clip Pad

Clip File Requirements

To be compatible with the tangerine's Clip model, a WAV must meet the following criteria:

- There should be no extra blank space at the beginning or end of the file.
- The file must be created so that if you play consecutive copies it will sound like a loop.
- The length of the audio should be a full number of bars. Make sure your WAV file starts at the beginning of a measure and ends at end of a measure.
- The tempo of the audio must be within about 10 BPM of the desired playback tempo. If you try to play it back at a much different tempo, you may hear artifacts.
- Adjust the Clip Pad's position parameters to help the tangerine determine the beat count. The tangerine will use the following methods in this order to identify the beat count:
 - Look at the Beat Count parameter when it is not Auto
 - Look for a valid ACID Tag in the WAV file that includes the beat count
 - Try to calculate it using the following assumptions:
 - the time signature is 4:4
 - the beat count is a power of two (2, 4, 8, 16, 32, 64, ...)
 - the clip tempo is close to the current clock tempo (within +/- 10 bpm)

Note: WAV files must meet the tangerine's WAV file requirements or the tangerine will not recognize them or load them.

Position Parameters in Clip Mode

The following parameters apply when the Pad is in Clip mode.

Parameter	Description	Range of Values	Mod Target
Loop Mode	Controls whether the WAV file plays in a loop. The whole WAV file will be played in the loop for clip pads. Only forward looping is supported with clip pads.	On, Off	No
Beat Count	Enter the number of beats in the clip file to give tangerine more information to work with when synchronizing playback to the current clock. If set to Auto, tangerine will attempt to detect the beat count automatically.	Auto, 1 to 512	No
Quant Size	Use Quant Size to quantize when the playback starts and stops. Quantization will cause playback to snap to a musical grid with intervals specified by the Quant Size parameter. When quantization is used, the note trigger will cause playback to start and end on the next quant size boundary. For example, if the Quant Size is set to 1-bar and you press the pad, the playback will begin at the start of the next bar.	None - always start and stop immediately 1/16, 1/8, 1/4, 1/2, 1 bar, 2 bars, 4 bars, 8 bars	No
Sync	<p>Sync is only enabled when quantizing is enabled (the Quant Size parameter is not None.) The Sync feature prevents timing drift that can occur when the length and BPM of a clip does not align exactly with the tempo of playback. When Sync is used, tangerine will realign the audio to match the clock at the step size specified here.</p> <p>Even slight differences between WAV file BPM and clock tempo can cause significant drift over time. Select a value for Sync that will control the size of the musical unit to which the clip will be synchronized. Choose small settings, like 1/16th, for rhythmic or percussion clips. Choose large settings, like 1-bar, for sustained tones or drones</p>	<p>None – playback will occur at the original rate. Looping will happen as soon as the sample ends.</p> <p>1/16, 1/8, 1/4, 1/2, 1 bar, Slice (See To Use Slices to Synchronize Playback of Clip Pads below for more information.)</p>	No

Configuring Loops in Clip Pad Mode

Unless you configure a Clip Pad to loop, it will play only once.

Most often, a Clip Pad will contain rhythmic content that can synchronize with the tangerine's transport clock. At the same time that the tangerine is time-stretching the sample, it also pitch-shifts the sample to keep it's pitch consistent even if the tempo changes.

To time-stretch and pitch-shift samples in a Clip Pad, the tangerine needs to know the number of beats it needs to stretch the sample across. The tangerine assumes that samples contain only the audio that will be looped. It does not support sample start, length, or loop points for Clip Pads.

Ideally, each WAV file already contains enough metadata for the tangerine to play the Clip Pad in sync with its transport clock. If not, you will have to manually enter the details in the Pad Position screen.

Note: The tangerine does not re-trigger a note when a Clip Pad's sample repeats. This means that the envelope remains in its sustain phase while the sample repeats. Unless you want the sample to fade out while it loops, make sure the envelope's sustain level is high enough.

Synchronizing Samples in Clip Pad Mode

Let's talk some more about Quant Size and Sync. When a Quant Size other than None is selected, the playback of the wave file will be delayed until the next selected unit of music as specified in Quant Size. This will ensure that your playback "snaps to the grid" of the beats established by your clock. Sometimes, the WAV file you are playing is longer than one beat.

For example, the WAV file might contain a 2 bar drum riff. For a clip pad, tangerine will make some assumptions about where the beats in your file occur.

In Clip mode, tangerine will play the whole 2 bar riff when the note is triggered. But the beats in the WAV file might not be playing at the same tempo as the clock speed.

If you leave Sync set to None, the WAV file will play in its entirety and will get out of sync with your clock.

If your WAV file tempo is faster than your clock tempo, it will sound like the beats are running ahead of the rest of the music.

If your WAV file tempo is slower than your clock tempo, it will sound like your drums are lagging.

If you want to fix that, then choose the value for Sync that identifies how tightly you want to snap to the clock while the WAV file is playing in response to a single sustained note trigger. While the note is playing, the sync will cause the playback of the WAV file to jump to the next selected sync increment in the file when the corresponding clock time has passed.

So if the WAV was a little faster than your clock, the playback position will jump backwards to move the playback of the WAV to the selected clock increment.

If the WAV is slower than your clock, the playback position will jump ahead to the selected clock increment.

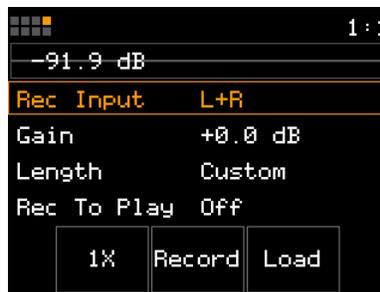
This will work well if the difference between the BPM of your WAV file and the BPM of your clock is small. It will sound like a stutter if the difference is large.

LOADING SAMPLES INTO PADS

With nanobox | tangerine, you can customize the built in presets by adjusting parameters and swapping WAV files. You can also create your own presets and pads from WAV files copied onto the microSD card or by recording your own sounds. Here we will cover how to load, record and configure pads.

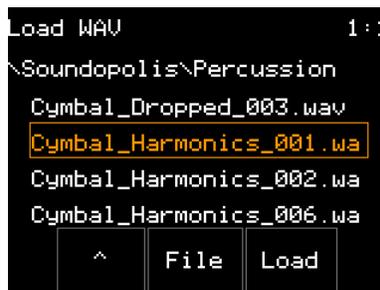
Load a WAV File into an Empty Pad

1. Select an empty pad on the Pads Home screen by tapping it or turning the bottom knob.
2. Push the Right Arrow button and the Record and Load screen is displayed.



Record and Load

3. Touch Load to open the WAV Management screen.



WAV Management

4. Turn either knob to select a file or folder from the list. Touch the ^ and Load buttons to navigate up or down the folder tree. When the file you want is selected, touch Load to add the file to the pad. You will see the Waveform screen load the sample.
5. Touch the trigger button in the header to hear the pad.

Replace the WAV File in a Loaded Pad

In this procedure, you will replace a pad's current sample by loading it from microSD card.

1. Select the pad on the Pads Home screen.



Waveform

2. Push Right Arrow two times to open the Waveform screen.
3. Either touch the WAV file name in the header or push Right Arrow to open the WAV Management screen.
4. Turn either knob to select a file or folder from the list. Touch the ^ and Load buttons to navigate up or down the folder tree. When the file you want is selected, touch Load to add the file to the pad. Any previous WAV file mapping is removed. You will see the Waveform screen load the sample.

Load a Multi-sample Set

Multi-samples are banks of WAV files that are designed to be mapped to individual notes. Some banks may have different samples for different velocities for each note. The nanobox | tangerine comes with many multi-sample banks loaded. There are some smaller sets in the Symplesound folder, but the most robust sets are in the Epic Sets folder.

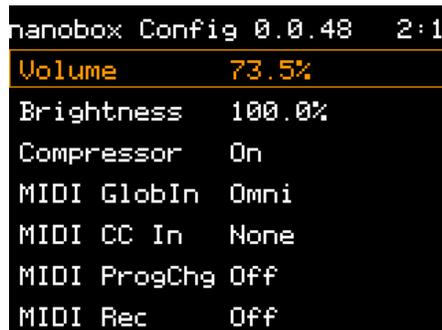
1. Navigate to the WAV management screen for the pad you want to load, as described on the previous screen.
2. Load a folder that contains a multi-sample set.
3. Touch the File button at the bottom of the screen, then touch All in the pop-up menu.
4. The Working message will appear while the files are loading. This should last no more than 20-30 seconds, even when loading large sample sets, like 1010 Grand. You will see the Pads Home screen when the files are done loading.

RECORDING NEW SAMPLES

You can use the Line In jack on the tangerine to record a new WAV file for use in pads in this or in other presets. You can record a single sample or you can record a collection of related samples for a multi-sample Pad.

Setting Up for Recording

1. Connect your recording source to the tangerine's Line Input
2. From the Pads Home screen, push the Left arrow button to open the nanobox Config screen.



nanobox Config

3. Set the Rec Mon parameter to On so you will be able to hear the audio source before and during the recording. The only difference between On and Auto is that Auto only lets you hear the external audio when the Recording screen is open.
4. If you want a 1 bar lead in time before the recording starts, select the Lead In parameter and set it to On.
5. Press the Left Arrow button to return to the Pads Home screen.
6. If you don't want to hear the tangerine's built-in metronome during recording:
 - a. Hold the Right Arrow button until the Transports screen appears.



- b. Touch METRO to disable the metronome.
- c. Press the Right Arrow button to exit the Transports screen..

Opening the Record and Load Screen

Most of the tangerine's recording controls and options are in the Record and Load screen, which you can open in multiple ways:

- To record a sample for an empty Pad, touch an empty pad in the Pads Home screen, then push Right Arrow.
- To record a new sample and replace another sample in a Pad, open the Pad Mode menu from the pad's Macro screen, then touch New Rec.



The tangerine is now set up for recording an individual sample or to record a multi-sample file set.

Record a Single WAV

1. Open the Record and Load screen as described in Opening the Record and Load screen.



Record and Load

2. Use the knobs to set the desired parameters for the recording.
 - Set the Rec Input to match the audio source. For example, if you are recording a monophonic sound source, choose either L or R to record just one channel of audio.
 - Make sure that 1x appears in the button to the left of the Record button. If the button is labeled Mx, touch it to change it to 1x.
 - Leave Rec To Play Off to prevent the tangerine from automatically playing the new sample after recording.
 - Leave Length at the default, Custom unless you know the duration of the sound you want to record, in which case you can choose one of the available values (1/4, 1/2, 2 bars, 4 bars, 8 bars, 16 bars, 32 bars, or 64 bars).
 - Turn Rec Thresh On.
 - Set the Threshold as low as possible, just a few dB above the db level that you see when the audio source is silent. For example, if the level fluctuates around -72 dB, set the Threshold to -68 dB.

For more information about the 1x recording options, see the Single-Sample Recording Parameters table.

3. Adjust the Gain parameter while playing the audio source to make sure the input signal bar graph across the top of the screen fills as much of the bar as possible while not going into the red zone.

If the audio level is too low, the sample will sound too quiet compared to other samples. If the audio level is too high and the meter goes red, the recording could be distorted as a result of clipping.

4. When ready to record, touch the Record button at the bottom of the screen.

5. RecThresh is ON, so recording will not start until the the audio input level exceeds the threshold level.

During recording, you will see the recording progress in Bars: Beats and seconds and at the bottom of the screen, a Stop button.

6. To finish the recording, touch Stop.

The tangerine saves the new recording as a WAV file in the current preset's folder on the microSD card. The tangerine then loads the new file into the current pad and returns you to the WAV screen.

The tangerine names new recordings RCNNNN.wav, where NNNN is a sequential four digit number. The first new recording is saved as:

```
\Presets\presetname\RC000001.wav
```

The tangerine increments the number in the file name for each subsequent new recording you make with the current preset.

The following table summarizes the recording parameters:

Single-Sample Recording Parameters Table

Recording Parameter	Description	Range of Values
Rec Input	Choose which input to record. You can choose a stereo or mono input, or you can choose to resample the signal being played on the tangerine.	L+R, Left, Right, Resam
Gain	The VU meters represent the level of the signal to be recorded. You can adjust the gain to get the desired level and avoid clipping.	-96.0 dB to + 20.0 dB
Length	This parameter allows you to specify a length of time that you want to record, in terms of notes and bars. When Custom is selected, touch the Stop button to stop recording.	Custom, 1/4, 1/2, 1 bar, 2 bars, 4 bars, 8 bars, 16 bars, 32 bars, 64 bars, 128 bars
Rec to Play	When this is On, and Length is not Custom, tangerine will automatically start to play the pad when recording ends.	On, Off
Rec Quant	This parameter lets you quantize the recording to start and stop at the designated musical time interval. This is not available when Threshold recording is enabled (RecThresh=On).	None - always start and stop immediately 1/16 - quantize to the next sixteenth note time 1/8 - eighth note 1/4 - quarter note 1/2 - half note 1 bar - a whole note assuming 4/4 time 2 bars 4 bars 8 bars
Rec Thresh	Use the threshold recording option if you want to start recording when a sound level threshold is reached.	On, Off
Threshold	When threshold recording is enabled, this controls the minimum sound level required to trigger recording to begin.	-96.00 dB to +0.00 dB

RECORDING A MULTI-SAMPLE SET USING MIDI TRIGGERS

The nanobox | tangerine can be set up to automatically trigger over MIDI a range of notes to be recorded for a multi-sample set.

1. Connect a MIDI cable between the MIDI output of the tangerine the instrument to be sampled.
2. Connect the audio output of the instrument to be sampled to the Line In jack of tangerine.
3. Select an empty pad and push Right Arrow to open the Record and Load screen.
4. Push the 1X button at the bottom of the screen to switch to MX, or multi-sample, mode.



Record and Load MX Mode

5. Select the desired recording parameters, and then push Record. See the table below for a description of the MX specific options.

The nanobox | tangerine will now generate a series of MIDI triggers and record an individual WAV file for each trigger event. The files will be stored on the microSD card in a separate folder named \Presets\\<Filename>.

Each Mx filename in the new folder will use the Mx Filename parameter as a prefix and the rest of the file names include the root note as a MIDI note number and the velocity. For example, if the preset is named “testpreset” and the Mx Filename parameter is “msamp9” the WAV files will be stored in \Presets\testpreset\msamp9 with file names such as “msamp9-048-050.wav” and “msamp9-051-100.wav.”

The sample recording parameters of Rec Input, Gain, Rec Thresh and Threshold described on the previous screen also apply to multi-sample recording. The table on the next screen describes the options that are specific to multi-sample recording.

Multi-Sample Recording Parameters Table

Recording Parameter	Description	Range of Values
Filename	<p>The name of the folder that will store the multi-sample bank recordings. It will also be used as a prefix for the individual file names.</p> <p>Push the right arrow button to open the file naming screen. Be sure to select a unique name to avoid mixing files from previous recording sessions.</p>	<p>Must not contain any of the following characters: “ / \ ? * < > : </p> <p>Note: Entire path name of all files must be under 256 characters.</p>
Start Note	The note that will be sent out as a trigger to record the first WAV file.	C#-1 (1) through G9 (127)
End Note	The note that will be sent out to trigger the last WAV file that will be recorded.	C#-1 (1) through G9 (127)
Sample Every	How many semi-tones or notes are between each WAV file recorded. Set to 1 to record a WAV file for each semi-tone. Set to 12 to record one WAV per octave.	1 to 16
Vel Layers	The multi-sampler can record a WAV file for different velocity levels per note. Choose how many different velocity levels will be recorded.	1 to 16
Max Vel	The highest velocity that will be recorded when recording more than one velocity layer per note.	1 to 127
Note Length	In seconds, the length of time that the note gate will be on.	1 to 60
Release Len	In seconds, the length of time that recording will continue after the note length is over. This will record the tail of the note.	1 to 16
MIDI Chan	The channel that will be used to send out the MIDI signal to generate the notes on the external instrument.	1 to 16

Note: If you have the Rec Config parameter set to Global on the nanobox Configuration screen, the Recording page settings (excluding the Filename parameter) will be managed as part of the tangerine’s global parameters and will be retained for use in subsequent recording operations, even if you load a new preset or restart the tangerine. Set Rec Config to Per Pad if you prefer to manage these settings for each individual pad.

ASSEMBLING YOUR OWN SAMPLES INTO MULTI-SAMPLE FILE SETS

When you use the tangerine to record a multi-sample file set, the tangerine names each WAV file in the following manner:

prefix-notenumber-notevelocity.wav

These automatically-generated filenames provide enough information for the tangerine to determine how to map WAV files to an appropriate span of MIDI notes and MIDI velocities.

If you plan to prepare your own multi-sample file sets using your own samples, you need to take steps to make sure that:

- The samples meet tangerine's file requirements,
- The filenames meet tangerine's requirements, and
- The files make their Root Note and velocity details evident enough for the tangerine to find them.

Sample File Requirements

Before copying your own sample files to a microSD card, makes sure the sample files meet the tangerine's criteria:

- Sample format: WAV file format
- Audio Channels: 1 or 2
- Resolution: 16-, 24-, or 32-bit
- Sample Rate: The tangerine supports any sample rate, but to minimize load on the microprocessor, use 48kHz, the tangerine's native sample rate.

Multi-Sample File-Naming Requirements

The tangerine only recognizes sample files that meet the following criteria:

- Fewer than 256 characters, including the path name.
- May include alpha numeric characters (A-Z, 0-9) and some special characters.
- Must not contain any of the following characters:

“/\? * < > : |

NOTE: The tangerine will not recognize or load sample files that do not meet its naming criteria.

Where the tangerine Looks for Note and Velocity Information

When the tangerine loads a multi-sample file set, it looks for each file's Root Note so it can map the file to a MIDI Note, and if multiple files have the same Root Note, the tangerine looks for velocity information so it can map each file to a range of MIDI Note velocities and respond dynamically to the way a performer plays each note.

To find the Root Note and velocity information, the tangerine looks in the following places, in the following order until it finds what it needs :

1. SMPL tags of the WAV files
2. INST tags of the WAV files
3. The file names for the WAVs

When parsing the file names, it looks for the following format:

[Text name] + [- or _] + [note number] + [- or _] + [Vel1] + [- or _] + [Vel2]

The [note number] will be interpreted as a decimal MIDI Note number. If [Vel1] and [Vel2] are both found, it will use them as the lowest and highest velocities where this WAV should be applied. If only [Vel1] is available, it will use that as the center point for the range of velocities when this WAV should be applied.

If tangerine doesn't find the root note information in those three places, it will map the files in alphabetical order, starting at C2 (MIDI Note 36) and map one file per semi-tone, one velocity per note. If the tangerine finds no velocity information, it will use one WAV file for all velocities.

Guidelines for Recording Multiple Velocity Layers

For realistic recreation of a sampled instrument, you can build pads with multi-sample file sets, with individual samples mapped across a minimal number of notes, to avoid the artifacts of transposing samples by more than a couple of semitones.

To make a multi-sample instrument respond in an even more natural manner, multi-sample file sets can include multiple samples for each note, each sample containing the sound of the original instrument being played with different dynamics, divided into a small number of velocity “layers.”

The tangerine has been designed to find an optimal mapping of samples across multiple notes and to interpolate the sample data for the notes between them.

The tangerine does something similar with multiple velocity layers, but it cannot interpolate the sample data for MIDI velocities between the velocity layers. For example, if you record a multi-sample file set with three velocity layers at 33, 66, and 100, and you play a notes at MIDI velocities 60, 66, and 75, the tangerine will play the sample for velocity layer 66 for all three notes.

When creating a Multi-sample pad with multiple velocity layers, we recommend that you disable the volume scaling on the target instrument so that all notes are at the same volume across the entire velocity range while recording. When playing your Multi-sample pad you can restore volume scaling with the Envelope VEL Amount parameter.

MODULATING PAD AND EFFECTS PARAMETERS

Modulation is the technique of using one feature to influence another feature. Here are some common applications of modulation:

- Create a vibrato effect by modulating the pitch of a note with a sine wave LFO signal.
- Sweeping a resonant low-pass filter's cut-off frequency with a triangle wave LFO signal.
- Using a MIDI controller's mod wheel or ribbon to control the amount of filter modulation.

In each of these examples, there are:

- a parameter (such as the pitch) that supports,
- a modulation source (such as the LFO signal), and
- a modulation amount (such as the LFO signal level).

IMPACT OF MODULATION ON PARAMETER VALUES

When you apply modulation to a parameter, each modulation source contributes to the modulation of the parameter's current value. The degree of that modulation depends on:

- the value range of the parameter being modulated,
- the values that the modulation Source produces, and
- the modulation Amount setting for the Source.

Each pad parameter has a value range suitable for its function. Some For example:

- The Filter parameter's value range is -100% to +100%, with 0.0% at the center of its range.
- The Res parameter's value range is 0.0% to 100%, with 50.0% at the center of its range.

Modulation source value ranges also differ significantly. Some modulation sources have uni-polar "throws" and cover a range of positive values, while others are bipolar and cover a range of negative and positive values around a mid-point. For example

- MIDI Continuous Controllers and MIDI Note velocity all provide values in the range of 0-127.
- MIDI Note numbers have a range of 0-127, but when using KEY as a modulation source, 64 (C4) corresponds to a center point (0), notes below 64 (C4) correspond to negative values, and notes above 64 correspond to positive values.
- MIDI Pitch-wheel has a center position that corresponds to an unshifted pitch and lower and higher positions that correspond to negative and positive pitch shifts.
- The tangerine's LFO can produce uni-polar or bipolar values depending on the LFO waveform.

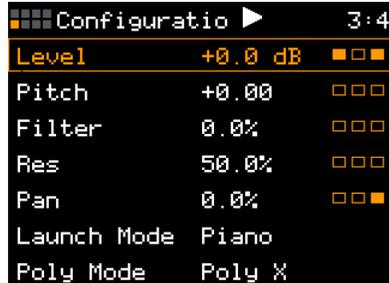
The tangerine maps the value range of these modulation sources to a range of the parameter's values as follows:

- the middle of the modulation source's range maps to the current parameter value,
- the modulation source's lowest value maps to the current parameter value minus the modulation Amount, and
- the modulation source's highest value maps to the current parameter value plus the modulation Amount.

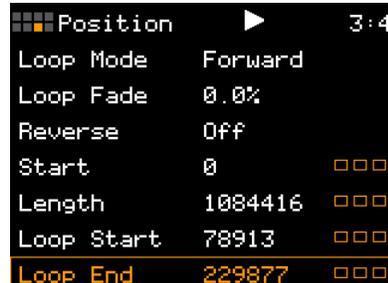
For example, if the Filter parameter is set to 20%, and you use PTCH as the modulation source, and set the Modulation Amount to 15%, then the lowest Pitch Wheel position would map to 5% (20% - 15%), and the highest Pitch Wheel position would map to 35% (20% + 15%).

PARAMETERS THAT SUPPORT MODULATION

Parameters that can be modulated appear in tangerine configuration pages with three small boxes to the right of the parameter value. For example, the modulation indicators appear in the Pad Configuration and Pad Position pages:



Parameter	Value	Modulation Boxes
Level	+0.0 dB	■ □ ■
Pitch	+0.00	□ □ □
Filter	0.0%	□ □ □
Res	50.0%	□ □ □
Pan	0.0%	□ □ ■
Launch Mode	Piano	
Poly Mode	Poly %	



Parameter	Value	Modulation Boxes
Loop Mode	Forward	
Loop Fade	0.0%	
Reverse	Off	
Start	0	□ □ □
Length	1084416	□ □ □
Loop Start	78913	□ □ □
Loop End	229877	□ □ □

Modulation Indicators in Pad Configuration and Pad Position Pages

In this example, the screen indicates that Level, Pitch, Filter (cutoff), Resonance and Pan parameters can be modulated. The boxes appear either empty when a parameter is not being modulated, or they appear full when they are. For example:

- In the cases of the Pitch, Filter, and Res parameters, all three boxes are empty, indicating that modulation is not configured.
- In the case of the Level parameter, the two solid boxes indicate that it is configured to be modulated by two sources.
- In the case of the Pan parameter, the single solid box indicates that it is configured for modulation by one source.

The following table summarizes the pad parameters that can be modulated.

Pad Parameters That Support Modulation

Pad Parameter	Page
Level	Pad Configuration
Pitch	Pad Configuration
Filter	Pad Configuration
Res (Filter resonance)	Pad Configuration
Pan	Pad Configuration
Attack	Pad Envelope
Decay	Pad Envelope
Release	Pad Envelope
LFO Rate	Pad LFO
LFO Depth	Pad LFO
Sample Start	Pad Position (single-sample pads only)
Sample Length	Pad Position (single-sample pads only)
Loop Start	Pad Position (single-sample pads only)
Loop End	Pad Position (single-sample pads only)
Slice	Pad Position (Slicer pads only)
Slice Sequence	Pad Position (Slicer pads only)

Modulation indicators also appear in the global FX1: Delay and FX2: Reverb pages.

The following table describes MIDI continuous controller mappings for FX1: Delay and FX2: Reverb parameters.

Table: Effects Modulation Sources

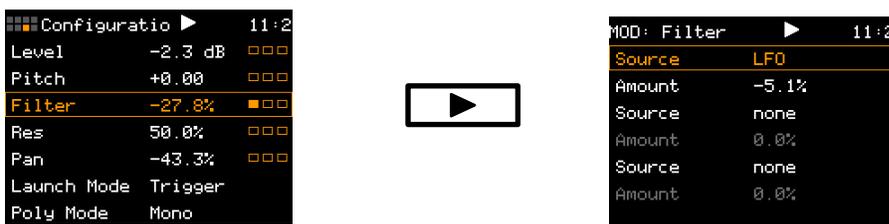
Effect Parameter	Page
Delay Time	FX1: Delay
Feedback	FX1: Delay
Cut-off	FX1: Delay
Decay	FX2: Reverb
Predelay	FX2: Reverb
Damping	FX2: Reverb

For details on the Delay and Reverb effect parameters, see "Adjusting Delay and Reverb Effects."

ACCESSING PARAMETER MODULATION SETTINGS

Each configuration parameter that can be modulated has its own modulation page that contains its modulation settings. To access the modulation parameters for a parameter, select it, then push the Right Arrow button.

For example, to access the filter cutoff modulation page, select the Filter parameter, then press Right Arrow to open the MOD: Filter page.



Opening the Filter MOD Page

Each Modulation page contains parameters for configuring up to three modulation sources, each with a corresponding modulation Amount. If a Source parameter is set to "None" the corresponding Amount parameter is 0% and gray to indicate that it is inactive.

MODULATING PAD PARAMETERS

To add modulation to a parameter:

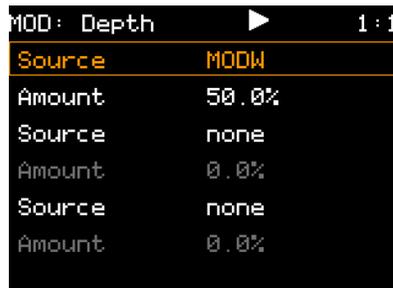
1. Select the pad to which you want to apply modulation.
2. Open the pad page that contains the parameter you want to modulate. For details, see [“Parameters That Support Modulation” on page 106](#).
3. Scroll to the parameter with the top knob. The three modulation box icons to the right of the parameter value indicate if any modulation is already being applied.



Pad Configuration with Modulation Slots

Note: If all three are solid, you will have to replace one of the existing modulation sources with the source you want to use. For example, if you want to modulate Filter Cutoff with Note Velocity, but it already being modulated by MODW, LFO, and Key, you have to decide which modulation source you no longer need and then remove it. See Removing Modulation from Parameters.

4. If any of the modulation box icons are empty, Push the Right Arrow button. The parameter's MOD page opens. It contains 3 Source parameters.



LFO Depth Modulation Page

5. Scroll to any of the Source parameters currently set to None. The Amount parameter below it is gray instead of white, which indicates that it is not active.
6. Change the Source parameter from None to the modulation source you want to apply.

The following table identifies the sources that can serve as a modulation source for pad parameters.

Table: Modulation Sources for Pad Parameters

Source	Description
VEL	MIDI Note On velocity
KEY	MIDI Note On/Off number (bipolar modulation values)
LFO	LFO (bipolar modulation values)
PTCH	MIDI Pitch wheel (bipolar modulation values)
MODW	MIDI Mod Wheel (CC 1)
MVOL	MIDI Volume (CC 7)
MPAN	MIDI Pan (CC10)
None	No modulation

KEY, PTCH, and LFO are treated as sources of bipolar modulation values, which means they have a mid-point value that corresponds to 0%, a maximum value that corresponds to 100%, and a minimum value that corresponds to -100%. For example, for the KEY modulator, the MIDI Note number 64 (C4) corresponds to a 0% modulation value, MIDI Note number 0 corresponds to a -100% modulation value, and MIDI Note number 127 corresponds to a 100% modulation value.

As soon as you change the Source, the Amount parameter turns white, indicating that it is now active.

7. Select the Amount parameter below the Source and adjust the modulation amount with the bottom Knob between -100% and +100%.

Note: To hear the effect of the modulation, touch the play icon at the top of the screen.

8. When done, push the Left Arrow button to exit the MOD page.

Note: Modulation settings are pad-specific, so your MIDI controller must be configured to send these MIDI CCs on the MIDI channel that matches the pad's MIDI In channel (Pad Configuration page).

MODULATING DELAY AND REVERB EFFECTS

There are two main differences between options for modulating pad parameters and for modulating the Delay and Reverb effects:

- Each pad has its own FX1 and FX2 send levels, but the Delay and Reverb effects themselves are configured with a single set of parameters, which are part of the preset. They are not affected by changes you might make to any of the pads, but they are affected if you load another preset after changing them.
- The Delay and Reverb effects only support modulation by MIDI sources (Mod-wheel, Pitch-wheel, Volume, and Pan) sent over the MIDI GlobIn channel.

Configuring MIDI Controllers for Effects Modulation

The Delay and Reverb effects only support modulation by MIDI sources (Mod-wheel, Pitch-wheel, Volume, and Pan) sent over the MIDI GlobIn channel, which is also used for playing the pads from specific MIDI notes.

Before configuring Delay or Reverb modulation, configure your MIDI controller to match the tangerine's MIDI configuration.

1. On the tangerine, check the MIDI In parameters of each pad and note the channels assigned to each pad.
2. Make sure the tangerine's MIDI GlobIn parameter is not the same as any of the pad MIDI In channels:
 - a. Open the Pads Home page, then push the Left Arrow button. The nanobox Configuration page opens.
 - b. Scroll down to the MIDI GlobIn parameter.
 - c. Set the MIDI GlobIn parameter to any MIDI channel that is not assigned to a pad or set it to Omni.

Note: When MIDI GlobIn is set to Omni, the tangerine accepts MIDI messages on any of the 16 channels, excluding any channels that have been assigned to individual pads through their MIDI In parameter. For details, see Global MIDI Parameters.

3. Make sure your controller's MIDI output is physically connected to the tangerine's MIDI In port.
4. Set the MIDI controller's channel to match the channel specified by the tangerine's MIDI GlobIn parameter.

For information about configuring the Delay and Reverb effects, see "Adjust FX 1: Delay Settings" and "Adjust FX Send Levels" on page 37.

Configuring Effects Parameter Modulation

1. Choose the modulation source you want to use for modulating one of the Delay or Reverb parameters. The following table identifies the sources that can serve as a modulation source for pad parameters.

Table: Modulation Sources for Delay and Reverb Parameters

Source	Description
PTCH	MIDI Pitch wheel (bipolar modulation values)
MODW	MIDI Mod Wheel (CC 1)
MVOL	MIDI Volume (CC 7)
MPAN	MIDI Pan (CC10)
None	No modulation

PTCH is treated as sources of bipolar modulation values, which means it has a mid-point value that corresponds to 0%, a maximum value that corresponds to 100%, and a minimum value that corresponds to -100%.

2. Open the effect page that contains the parameter you want to modulate.
3. Scroll to any of the Source parameters currently set to None. The Amount parameter below it is gray instead of white, which indicates that it is not active.
4. Change the Source parameter from None to the modulation source you want to apply.

As soon as you change the Source, the Amount parameter turns white, indicating that it is now active.

5. Select the Amount parameter below the Source, then use the bottom Knob to adjust the modulation amount over the range of -100% to +100%. At the default value of 0%, the modulation source values have no impact on the modulation.

Note: To hear the effect of the modulation, play any pad that has the effect

6. When done, push the Left Arrow button to exit the MOD page.

Note: Effects modulation settings are global, so your MIDI controller must be configured to send MIDI on a channel that matches the tangerine's MIDI GlobIn channel (nanobox Configuration page).

REMOVING MODULATION FROM A PARAMETER

To clear the modulation settings for a specific pad or effects parameter:

1. Open the configuration page that contains the pad, Delay, or Reverb parameter currently being modulated.
2. Scroll to the pad parameter currently being modulated with the top knob. The parameter's MOD page opens.
3. Push the Right Arrow button. The parameter's MOD page opens.
4. Scroll to select the modulation Source you want to clear.
5. Set the Source value to None. The Amount parameter changes to 0%, indicating that the modulation source is inactive.

CONTROLLING THE NANOBX | TANGERINE OVER MIDI

The nanobox | tangerine flourishes when you control it over MIDI. Not only does MIDI let you play one or more Pads at the same time, but it also lets you use your preferred MIDI controllers to change or modulate Pad and effects settings.

The following topics describe the options you have when controlling the tangerine over MIDI:

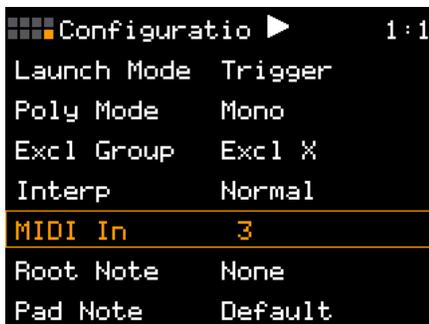
- MIDI Configuration Parameters
- Triggering Pads from Specific Notes on the MIDI GlobIn Channel
- Playing a Pad on a Pad Specific MIDI In Channel
- Modulating Pad Parameters over a Pad Specific MIDI In Channel
- Controlling Pad Parameters on the MIDI CC In Channel
- Modulating FX1 Delay and FX2 Reverb Settings on the MIDI GlobIn Channel
- Tangerine Parameter Value Mappings to CC Values
- Loading Presets over MIDI
- Configuring MIDI Note Details for Multi-Sample Recording
- Synchronizing Over MIDI
- Pin Mapping for Mini TRS Jack to MIDI 5 Pin DIN Connectors

MIDI CONFIGURATION PARAMETERS

The tangerine's MIDI features are configured through a set of pad-specific and global parameters.

Pad-Specific MIDI Settings

Each of the eight Pad Configuration pages include the MIDI In parameter, which lets a MIDI controller play each pad over a specific MIDI channel. Playing each pad over a specific MIDI channel lets you play chords and sustain multiple notes over MIDI, up to the pad's polyphony limit, which is defined by the Poly Mode parameter, which is also in the Pad Configuration page.



For details, see [“Playing a Pad on a Pad Specific MIDI In Channel” on page 121](#).

When a MIDI controller is configured to send on a pad's MIDI In channel, it can also use its pitch-wheel, mod-wheel, volume, and panning controls to modulate pad parameters values.

For details, see [“Modulating Pad Parameters over a Pad Specific MIDI In Channel” on page 123](#).

The tangerine handles direct control of pad parameters over MIDI in a different way than it does modulation of pad parameters. To control pad parameters directly, a MIDI controller sends continuous controllers over the tangerine's MIDI CC In channel, which is independent of the individual MIDI In channels.

For details, see [“Controlling Pad Parameters on the MIDI CC In Channel” on page 124](#).

Each pad's MIDI In setting is loaded and saved with its preset. If a pad's MIDI In parameter is “None” (the default for new pads), you won't be able to play it or control it over a specific MIDI channel. The pad can still be played from the Keys or Key Grid pages.

Global MIDI Settings

The tangerine's nanobox Configuration page includes a set of global parameters that determine the state of MIDI-related features and the MIDI channels that it associates with features that are not preset-specific. The table below explains these settings.

```
nanobox Config 0.0.48 2:1
Volume 73.5%
Brightness 100.0%
Compressor On
MIDI GlobIn Omni
MIDI CC In None
MIDI ProgChg Off
MIDI Rec Off
```

MIDI-Related Global Parameters (nanobox Configuration page)

Pad Parameter	Description	Supported Values
MIDI GlobIn	<p>Specifies the MIDI channel a MIDI controller must use to trigger each pad with a specific key, or to send MIDI data that can be used for modulating the FX1 Delay and FX2 Reverb effects.</p> <p>MIDI GlobIn has no impact on playing individual pads over specific MIDI channels.</p>	<p>None</p> <p>1-16 = Receive MIDI Note and Continuous Controller messages on the specified channel.</p> <p>Omni = Receive MIDI note messages on any MIDI Channel, excluding MIDI channels that are assigned as a Pad's MIDI In channel.</p>
MIDI CC In	<p>Specifies the MIDI channel for controlling the configuration parameters of individual Pads.</p>	<p>None</p> <p>1-16 = Receive MIDI continuous controller messages on the specified channel.</p>
MIDI ProgChg	<p>Specifies if the Tangerine responds to MIDI Program Changes by loading presets.</p> <p>The tangerine does not use preset numbers, so it interprets MIDI program numbers (0-127) as positions in the list of presets, in alphabetical order.</p>	<p>On = Respond to Program change messages</p> <p>Off = Ignore Program Change messages</p>
MIDI Thru	<p>Specifies if the tangerine passes MIDI messages it receives on its MIDI input through to its MIDI output.</p>	<p>On, Off</p>
MIDI ClkRcv	<p>Specifies if the tangerine uses an external MIDI clock instead of its internal clock.</p>	<p>On, Off</p>

For details on features affected by the GlobIn and CC In channels, see [“Triggering Pads From Specific Notes on the MIDI GlobIn Channel” on page 118](#) and [“Controlling Pad Parameters on the MIDI CC In Channel” on page 124](#).

For details on playing a pad on a specific MIDI channel, see [Playing Pads On the MIDI In Channel](#).

TRIGGERING PADS FROM SPECIFIC NOTES ON THE MIDI GLOBIN CHANNEL

You can use a MIDI controller to trigger pads at their default note, just as you might trigger them from the PADS HOME screen. For this purpose, each pad has a specific note assigned to it.

By default, pads 1-8 are assigned to MIDI notes 36-43 (C2-G2) as shown in the following table.

Default Pad Notes in GlobIn

Pad	Default Pad Note	MIDI Note Number
1	C2	36
2	C#2	37
3	D2	38
4	D#2	39
5	E2	40
6	F2	41
7	F#2	42
8	G2	43

You can trigger each pad from its assigned note if your MIDI controller sends MIDI notes on a specific channel called the MIDI GlobIn channel, configured on the tangerine in the nanobox Configuration page. When you play pads this way, their samples are played at the pitches at which they were recorded.

You can override the default note for any pad through the Pad Note parameter in its Pad Configuration page.

Note: MIDI GlobIn is a global parameter. It does not change when you load presets and is independent of the pad-specific MIDI settings stored with presets.

Setting the MIDI GlobIn Channel

1. Navigate to the nanobox Configuration page:
 - a. Push the Left Arrow button. The nanobox Configuration page opens.

```
nanobox Config 0.0.48 2:1
Volume 73.5%
Brightness 100.0%
Compressor On
MIDI GlobIn Omni
MIDI CC In None
MIDI ProgChg Off
MIDI Rec Off
```

2. Use the tangerine's knobs to scroll down to the MIDI GlobIn parameter and set it to Omni.
3. Push the Right Arrow button to return to the PADS HOME page.
4. Verify you can trigger each pad over MIDI by playing the corresponding note on your controller. The following figure shows the default notes mapped to each pad.

Pad 5	Pad 6	Pad 7	Pad 8
E2	F2	F#2	G2
40	41	42	43
Pad 1	Pad 2	Pad 3	Pad 4
C2	C#2	D2	D#2
36	37	38	39

Pads MIDI Mapping

Note: If you are unable to trigger a pad from its default note, check the pad's Pad Note parameter. If the Pad Note parameter is not "Default," its value indicates which note to play instead of the default mapped note.

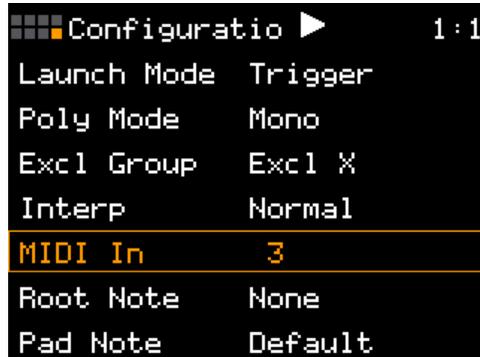
Try This: Change the MIDI Notes That Trigger Pads

1. Make sure your MIDI controller is set to the GlobIn channel.
2. In the Pads Home screen, push the Right Arrow button. The Pad Macro page opens.
3. Touch Config. The Pad Configuration page opens.
4. Scroll down to the last parameter, Pad Note, with the top knob or touch-sensitive screen.
5. Note the Pad Note value is “Default,” then look up the default Pad Note for this pad in the table on the previous page (for example, C2 or note number 36 for Pad 1).
6. Play the Default Pad Note for that note on your MIDI controller to verify that you can trigger the pad.
7. Change the pad’s Pad Note to a note outside of the range of default Pad Notes, less than 36 or higher than 43.
8. Verify that you can trigger the pad over MIDI with the new Pad Note and that the default Pad Note no longer works.

Note: The Pad Note value is part of the pad configuration. If you load another preset, the pads may have different Pad Note settings.

PLAYING A PAD ON A PAD SPECIFIC MIDI IN CHANNEL

Each pad can be configured to be played or controlled from a MIDI controller through the MIDI In parameter (Pad Configuration page).



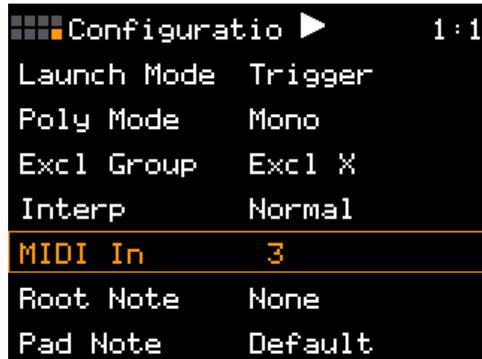
MIDI In Parameter in Pad Configuration Page

If you set each pad's MIDI In parameter to different channels, you can play the tangerine as eight separate instruments and configure them to respond to MIDI channel messages that your controller might send, such as pitch bend, mod wheel, volume, and panning. When pads are played over their MIDI In channels, tangerine transposes their samples chromatically.

Note: The global GlobIn parameter has nothing to do with playing the pads on different channels. The GlobIn parameter only affects the ability to trigger the eight pads from specific keys without transposing the pads' samples.

Try This: Play the 10 Grand Preset over MIDI

1. Load the 10 Grand preset from the tangerine's factory microSD card. When the preset finishes loading, Pad 1 is ready for playing from the Pads Home page.
2. Verify the 10 Grand piano samples loaded by touching Pad 1. You hear a single piano note.
3. Push the Right Arrow button to open the Pad Macro page. Note that the Pad Mode (top of the page) is "Sample."
4. Touch Config to open the Pad Configuration page, then scroll down to the MIDI In parameter.

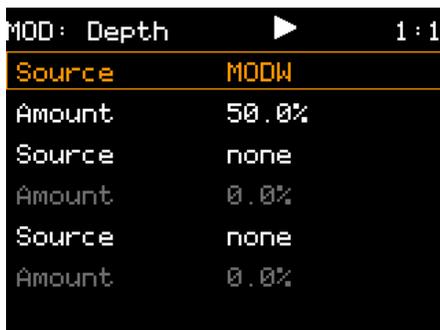


MIDI In Channel Parameter in Pad Configuration Page

5. Change the MIDI In parameter to match the MIDI channel of your MIDI controller.
6. Verify that you can play pad 1 from your MIDI controller.

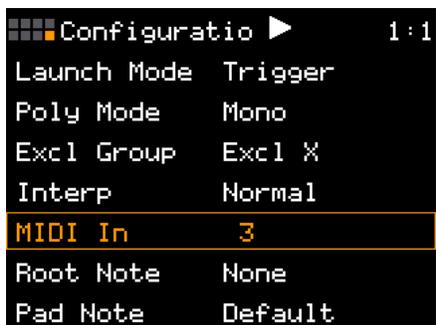
MODULATING PAD PARAMETERS OVER A PAD SPECIFIC MIDI IN CHANNEL

Some tangerine Pad parameters can be modulated by MIDI Channel messages, such as Mod Wheel, Note-On, and Pitch-bend messages.



LFO Depth Modulation Sources

Pad Parameter Modulation settings are Pad-specific, so your MIDI controller must be configured to send these MIDI CCs on the MIDI channel that matches the Pad's MIDI In channel (Pads Configuration page).



MIDI In Channel Parameter in Pad Configuration Page

For details on the parameters that can be modulated by MIDI channel message, see Applying Modulation to Pad and Effect Parameters.

Note: The MIDI In channel only supports the modulation of pad parameters, but not the direct control of pad parameters. To control individual pad parameters, you can configure your MIDI controller to send a set of pre-assigned continuous controllers on the tangerine's global CC In channel. The tangerine will ignore the pre-assigned CCs if your MIDI controller sends them on any other channel. For details, see Controlling Pad Configuration Parameters Over the GlobIn MIDI Channel.

CONTROLLING PAD PARAMETERS ON THE MIDI CC IN CHANNEL

Some Pad parameters can be changed over MIDI in addition to being modulated by MIDI sources. Changing a pad parameter over MIDI has the same effect as changing a pad parameter from the tangerine's touch screen.

The tangerine reserves a set of MIDI continuous controllers (CCs) for controlling pad parameters independently for each pad. For example, each pad has a Filter cut-off parameter, so the tangerine assigns eight different continuous controllers to the Filter cut-off parameters of the eight Pads.

The following table summarizes the mapping of the Pad-specific parameters to MIDI continuous controllers.

Pad-specific Parameter Mapping

Parameter	Pad 1 CC#	Pad 2 CC#	Pad 3 CC#	Pad 4 CC#	Pad 5 CC#	Pad 6 CC#	Pad 7 CC#	Pad 8 CC#
Level	11	21	31	41	51	71	81	91
Pan	12	22	32	42	52	72	82	92
Pitch	13	23	33	43	53	73	83	93
Filter Cut-off	14	24	34	44	54	74	84	94
Resonance	15	25	35	45	55	75	85	95
FX1 Send	16	26	36	46	56	76	86	96
FX2 Send	17	27	37	47	57	77	87	97
Slice *	18	28	38	48	58	78	88	98
Slice Sequence *	19	29	39	49	59	79	89	99

*Affects Slicer Pads only.

Note: To control the Pad parameters with these MIDI CCs make sure the MIDI controller sends them on the same MIDI channel as the CC In parameter (nanobox Configuration page). The tangerine will ignore the pre-assigned CCs if your MIDI controller sends them on any other channel.

MODULATING FX1 DELAY AND FX2 REVERB SETTINGS ON THE MIDI GLOBIN CHANNEL

You can modulate FX1: Delay and FX2: Reverb settings over MIDI by configuring your controller to send on the same MIDI channel as the tangerine's MIDI GlobIn channel. The tangerine supports FX send levels for each pad, but the effects parameters themselves are independent of the Pads so their settings are global.

You can modify the settings for the tangerine's two effects, FX1 Delay and FX2 Reverb, through their respective configuration pages, which you can open directly from the Teleporter page or from the FX Sends page. For details, see "Modulating Pad and Effects Parameters" on page 104.

TANGERINE PARAMETER VALUE MAPPINGS TO CC VALUES

MIDI continuous controllers (CCs) support 128 integer values from 0 to 127, but the tangerine's parameters support a variety of parameter value ranges and resolutions. The following sections describe how the tangerine maps its parameters to the CC values.

For details on controlling and modulating Pad and Effects parameters over MIDI, see the following sections:

- Modulating Pad Parameters Over the MIDI In Channel
- Controlling Pad Parameters Over the CC In MIDI Channel
- Modulating FX1 Delay and FX2 Reverb Settings Over the CC In Channel

-100% to +100% Value Mappings to CC Values

MIDI Continuous Controllers produce uni-polar values in the range of 0-127, but many of the tangerine's parameters use bipolar values in the range of -100% to +100%. For parameters expressed with percentages, the tangerine maps these parameter values to MIDI continuous controller values as follows:

Percentage	CC Values
+100.0	127
0.0	64
-100.0	0

For example, sending the value 34 to CC# 14 (on the tangerine's CC In channel) would set Pad 1's Filter cut-off parameter to -46.9% putting the filter into its low-pass range of cut-off frequencies. Sending the value 107 would set Pad 1's Filter cut-off parameter to +67.2, putting the filter into its high-pass range of cut-off frequencies.

Level Mappings to CC Values

The tangerine maps continuous controller values in the range of 0-127 to the dB Levels in the Mixer and Pad Configuration pages as follows:

Level	CC Values
+12.0	127
-41	64
-96.0	0

Pitch Mappings to CC Values

The tangerine maps the Pitch Values in the Macro and Pad Configuration pages to continuous controller values in the range of 0-127 as follows:

Pitch	CC Values
+24.0	127
0.0	64
-24.0	0

Slice and Slice Sequence Mappings to CC Values

The tangerine maps Slice Seq parameter options to continuous controller values in the range of 0-127 as follows:

Slice Seq	CC Values
None	0 – 12
Forward	13 – 46
Backwards	47 – 79
Random	80 – 111
Stagger	112 – 127

The tangerine maps values for the Slice parameter to continuous controller values in the range of 0-127 according to the number of slices.

For example, if a Pad has 7 slices, the tangerine assigns CC values as follows:

Slice #	CC Values
1	0 – 10
2	11 – 31
3	32 – 53
4	54 – 74
5	75 – 95
6	96-117
7	118-127

LOADING PRESETS OVER MIDI

You can load tangerine presets from the microSD card by sending MIDI Program Change messages from a MIDI controller. The tangerine uses preset names instead of numbers, but it interprets MIDI program numbers (0-127) as positions in its list of presets, in alphabetical order.

Your MIDI controller must be configured to transmit MIDI Program Changes.

The tangerine only responds to MIDI Program Changes on the MIDI channel specified by the GlobIn parameter (nanobox Configuration page).

```
nanobox Config 0.0.48 1:1
MIDI CC In Omni
MIDI ProgChg On
MIDI Rec Off
MIDI Thru Off
MIDI ClkRcv On
Analog ClkIn 4 PPQ
Rec Config Global
```

ProgChg parameter in the Nanobox Configuration Page

Note: The tangerine will not recognize MIDI Program Changes if the GlobIn parameter is set to None.

To load presets from a MIDI controller:

1. Open the nanobox Configuration to determine the tangerine's current GlobIn parameter value. If it is None, the tangerine will not recognize MIDI Program changes.
2. Set the tangerine's MIDI ProgChg parameter to "On."
3. Set the MIDI controller to transmit on the same MIDI channel specified by the tangerine's GlobIn parameter (nanobox Configuration page).

Remember: The tangerine does not save preset changes automatically. Before you load a preset, save the current preset if you haven't done so already.

4. Change programs on your MIDI controller.

If everything is working, you should see a brief "Loading" message on the tangerine's screen, followed by a brief "Working" message. The tangerine's pads show the names of the preset's sample files, abbreviated to fit in the pad.

SYNCHRONIZING OVER MIDI

The tangerine can synchronize with other instruments over MIDI by receiving and sending MIDI System Real-Time messages.

The tangerine supports the following MIDI System Real-Time messages:

MIDI Message	Receive	Transmit
MIDI Clock	Yes	Yes
Start	Yes	Yes
Stop	Yes	Yes
Continue	Yes	Yes

Receiving MIDI Clock from Other Instruments

To enable MIDI Clock In:

1. Enable the MIDI ClkRcv parameter (On/Off) in the nanobox Configuration page.
2. Make sure nothing is connected to the tangerine's analog CLOCK Input.

If you connect both a MIDI Clock source and an analog clock source, the tangerine will select from the available sources based in the following order of priority:

Priority	Clock Source
1	CLOCK Input
2	MIDI Input
3	Internal Clock

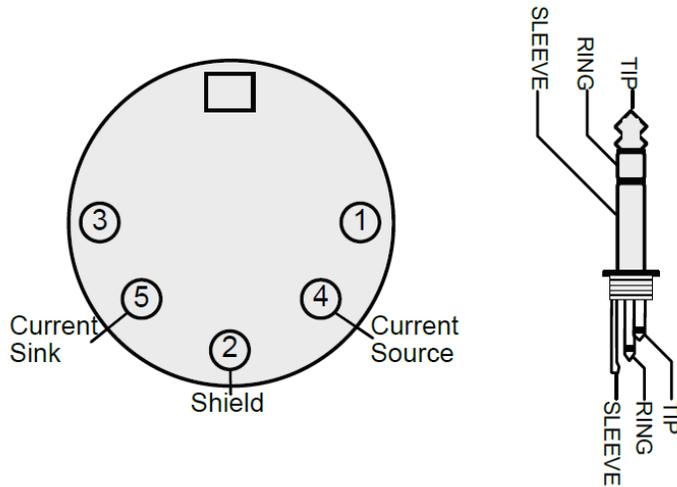
Sending MIDI Clock Messages to External Devices

The tangerine will pass MIDI clock and other MIDI System Real-Time messages received on its MIDI input through to its MIDI output.

The tangerine will not send MIDI System Real-Time messages to its MIDI Out jack when its internal clock is running.

PIN MAPPING FOR MINI TRS JACK TO MIDI 5 PIN DIN CONNECTORS

The musical instrument industry currently uses several different ways of mapping MIDI 5 Pin DIN signals to mini TRS jack connectors. The diagram below shows the numbering of the pins on a MIDI connector and the labels of the connection components of a mini TRS jack.



The following table shows how each of a MIDI DIN connector’s pins connects to a Mini-TRS Type B MIDI connector.

Table: MIDI Connector to Mini TRS Jack Signal Mapping

MIDI Signal	MIDI Connector	Mini TRS Type B
Current Source	Pin 4	Tip
Current Sink	Pin 5	Ring
Shield	Pin 2	Sleeve

The nanobox | tangerine MIDI Input and MIDI Output jacks are compatible with MIDI TRS Type A and B.

Note: 1010music MIDI Adapters do not pass through power.

WORKING WITH THE MICRO SD CARD

The tangerine stores all of its data on the microSD card. The following table lists the files used by the tangerine.

File	File Location	Description
NANOTANG.BIN	\	<p>The tangerine firmware.</p> <p>This file must be in the microSD card's root folder when the tangerine first starts.</p> <p>After the tangerine has loaded its firmware, it loads the most recently accessed preset on the microSD card.</p> <p>From that point on, you can remove the startup microSD card and load presets from other microSD cards, even if those do not include the NANOTANG.BIN file.</p>
Settings.tml	\	<p>This file remembers the last preset you opened and the values of global parameters on the nanobox Configuration screen.</p>
preset.xml	\Presets folder and its sub-folders	<p>Presets are defined by a single preset.xml file, located in a folder whose name meets the criteria for being recognized, displayed, and loaded by the tangerine.</p> <p>Each preset.xml file contains the parameter settings for each pad, the delay and reverb effects, sequences, and the names and locations of the files that need to be loaded from the microSD card.</p>
*.WAV	Any folder	<p>Audio sample files</p> <p>1010music provides a set of WAV files on the microSD card that ships with the tangerine. The factory samples are organized in specific folders so that the tangerine can find them after loading one of the factory presets.</p>

CONNECTING AND FORMATTING MICROSD CARDS

There are different types of adapters available to allow you to use your microSD card with the SD Card slot and USB input on your computer. With any of these adapters, you will need to choose the option to eject the card before you pull the adapter out of the computer in order to avoid corrupting the card.

If you need to format a new microSD card, 1010music recommends the tool provided by the SD Association. You can find it at <https://www.sdcard.org/downloads/formatter/>.

You can use the microSD card on your computer to back up your files, share files with others, update the firmware, or add new WAV files to your tangerine.

SAFELY EJECTING MICROSD CARDS

If you haven't worked with SD or microSD cards before, you should be aware that you cannot just pull the card out of our computer when you are done working with it. If you remove a microSD card from your computer without first using your computer's Eject feature, you run the risk of corrupting the card.

Caution: Always use your computer's "drive eject" feature before removing a microSD card or disconnecting the microSD drive from your computer.

BACKING UP YOUR FILES

We recommend that you make regular backups of the files on your microSD card to avoid losing your musical creations.

Once you have connected your microSD card to your computer, you will use standard file management tools to copy the files onto your computer. See the table above for a list of files used by the tangerine.

CAUTION: Always use your computer's Eject feature before physically removing a microSD card from the drive on your computer.

MANAGING WAV FILES

You can use the microSD card with your computer to manage the WAV files on the card. You can load new WAV files onto the card or backup your existing WAV files for safekeeping.

Organizing WAV Files

You can use a microSD Adapter to insert your microSD card into your computer. Then you may use standard file techniques to rename the WAV files, reorganize them into directories, delete them, copy them onto your computer, or copy them onto other microSD cards.

Be careful with moving and renaming .WAV files, because any presets that use those files will no longer be able to find them.

Packing Preset and WAV Files Together

You can share your presets and pads with others, or move them to another microSD by moving the related files.

When you load a WAV file into a pad, the preset will have a pointer to that WAV file in its source folder. If you move or rename that file, the link to the preset will be lost.

You can organize your preset and WAV files together by using the tangerine's Pack feature, located in the Preset Management page's File menu. Packing your preset and sample files together ensures that the presets can be loaded on any tangerine without error.

Once the files are on the microSD card, the tangerine will be able to use them.

TROUBLESHOOTING MICROSD ISSUES

If you get the message “Please insert microSD” when you insert the microSD card, open the nanobox Configuration page and set the SD Mode parameter to Compatible.

Changing SD Mode to Compatible may also help if your tangerine has trouble writing to high speed microSD cards.

If the tangerine appears to have no microSD issues, leave SD Mode at the default setting, High Speed.

UPDATING TANGERINE FIRMWARE

1010music strongly recommends that you check the 1010music forum, <https://forum.1010music.com>, for the latest firmware release.

New releases may contain bug fixes and new features. Firmware update instructions will be available on the forum in the Learning Content sub-forum for nanobox | tangerine.