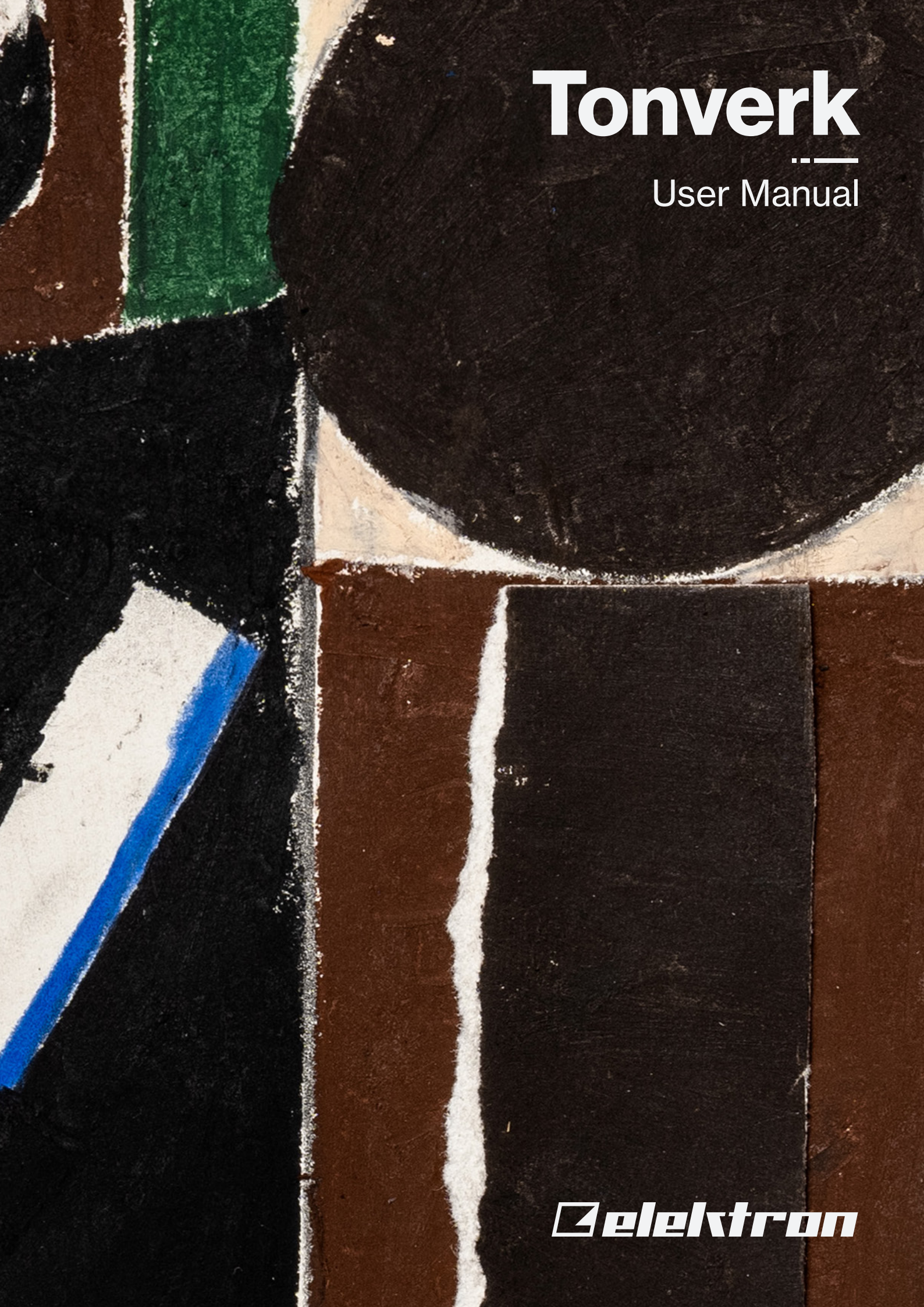


Tonverk

User Manual

elektron

FCC compliance statement

This device complies with part 15 of the FCC rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

NOTE: This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

This equipment complies with FCC radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated with minimum distance of 20 cm between the radiator and your body.

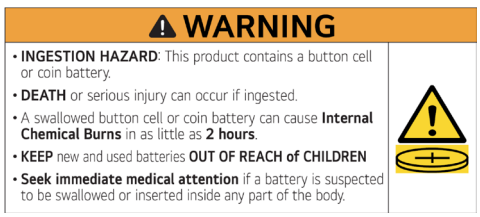
Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

This product contains a button cell battery. If the button cell battery is swallowed, it can cause severe internal burns in just 2 hours and can lead to death. Keep new and used batteries away from children. If you think batteries might have been swallowed or placed inside any part of the body, seek immediate medical attention.

WARNING: Cancer and Reproductive Harm – www.P65Warnings.ca.gov

AVERTISSEMENT: Cancer et effet nocif sur la reproduction – www.P65Warnings.ca.gov

ADVERTENCIA: Cáncer y Daño Reproductivo – www.P65Warnings.ca.gov



- The product contains non-replaceable batteries.
- Remove and immediately recycle or dispose of used batteries according to local regulations and keep away from children. Do NOT dispose of batteries in household trash or incinerate. Even used batteries may cause severe injury or death.
- Call a local poison control center for treatment information.
- This product contains a CR2032 battery with a nominal voltage of 3V.
- Non-rechargeable batteries are not to be recharged.
- Do not force discharge, recharge, disassemble, heat above (manufacturer's specified temperature rating) or incinerate. Doing so may result in injury due to venting, leakage or explosion resulting in chemical burns.

Canada

This apparatus complies with CAN ICES (B) / NMB (B).
Cet appareil est conforme aux normes ICES (B) / NMB (B) du Canada.

This device contains licence-exempt transmitter(s)/receiver(s) that comply with Innovation, Science and Economic Development Canada's licence-exempt RSS(s). Operation is subject to the following two conditions: (1) This device may not cause interference. (2) This device must accept any interference, including interference that may cause undesired operation of the device.
L'émetteur/récepteur exempt de licence contenu dans cet appareil est conforme aux CNR d'ISDE Canada applicables aux appareils radio exempts de licence. L'exploitation est autorisée aux deux conditions suivantes: (1) l'appareil ne doit pas produire de brouillage, et (2) l'appareil doit accepter tout brouillage radioélectrique subi, même si le brouillage est susceptible d'en compromettre le fonctionnement.

This equipment complies with IC radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated with minimum distance of 20 cm between the radiator & your body.
Cet équipement est conforme aux limites d'exposition aux rayonnements ISED établies pour un environnement non contrôlé. Cet équipement doit être installé et utilisé à plus de 20 cm entre le radiateur et votre corps.

This product contains a button cell battery. If the button cell battery is swallowed, it can cause severe internal burns in just 2 hours and can lead to death. Keep new and used batteries away from children. If you think batteries might have been swallowed or placed inside any part of the body, seek immediate medical attention.
Ce produit contient une pile bouton. Si la pile bouton est avalée, elle peut provoquer de graves brûlures internes en seulement 2 heures et entraîner la mort. Gardez les piles neuves et usagées hors de portée des enfants. Si vous pensez que des piles ont pu être avalées ou placées à l'intérieur d'une partie du corps, consultez immédiatement un médecin.

European Union regulation compliance statement

This product has been tested to comply with the Low Voltage Directive 2014/35/EU and the Electromagnetic Compatibility Directive 2014/30/EU. The product meets the requirements of RoHS 2 Directive 2011/65/EU and (EU) 2015/863.



This symbol indicates that your product must be disposed of properly according to local laws and regulations.

Legal disclaimer

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The use of this product is subject to the Elektron End User Licence Agreement: elektron.se/eula

Tonverk uses 3rd party library:
Signalsmith Stretch
Copyright (c) 2022 Geraint Luff / Signalsmith Audio Ltd.
Used under MIT License.

IMPORTANT SAFETY AND MAINTENANCE INSTRUCTIONS

Please read these instructions carefully and adhere to the operating advice.

1. Do not use this unit near water.
2. Never use aggressive cleaners on the casing or on the screen. Remove dust, dirt and fingerprints with a soft, dry and non-abrasive cloth. More persistent dirt can be removed with a slightly damp cloth using only water. Disconnect all cables while doing this. Only reconnect them when the product is safely dry.
3. Install in accordance with the manufacturer's instructions. Make sure you place the unit on a stable surface before use. If you mount the unit in a rack, be sure to tighten all four screws in the rack mount holes.
4. Connect the unit to an easily accessible electrical outlet close to the unit.
5. When transporting the unit, use accessories recommended by the manufacturer or the original box and padding.
6. Do not install near any heat sources such as radiators, heat registers, stoves, or any other equipment (including amplifiers) producing heat.
7. Do not cover the unit while the unit is powered on.
8. This product, by itself or in combination with amplifiers, headphones or speakers, is capable of producing sound levels that may cause permanent hearing loss. Do not operate at a high volume level or at a level that is uncomfortable.
9. Protect the power cord from being walked on or pinched particularly at plugs, convenience receptacles, and the point where they exit from the unit.
10. Only use attachments/accessories specified by the manufacturer.
11. Unplug this unit during lightning storms or when it is not used for long periods of time.
12. Refer all servicing to qualified service technicians. Servicing is required when the unit has been damaged in any way, liquid has been spilled or objects have fallen into the unit, the unit has been exposed to rain or moisture, does not operate normally, or has been dropped.

WARNING

To reduce the risk of fire, electrical shock or product damage:

- Do not expose the unit to rain, moisture, dripping or splashing and also avoid placing objects filled with liquid, such as vases, on the unit.
- Do not expose the unit to direct sunlight, nor use it in ambient temperatures exceeding 40°C or below 0°C as this can lead to malfunction.
- Do not open the casing. There are no user repairable or adjustable parts inside. Leave service and repairs to trained service technicians only.
- Do not exceed the limitations specified in the Electrical specifications.

SAFETY INSTRUCTIONS FOR THE POWER ADAPTER

- The adapter is not safety grounded and may only be used indoors.
- To ensure good ventilation for the adapter, do not place it in tight spaces. To prevent risk of electric shock and fire because of overheating, ensure that curtains and other objects do not prevent adapter ventilation.
- Do not expose the power adapter to direct sunlight, nor use it in ambient temperatures exceeding 40°C or below 0°C as this can lead to malfunction.
- Connect the adapter to an easily accessible electrical outlet close to the unit.
- The adapter is in standby mode when the power cord is connected. The primary circuit is always active when the cord is connected to the power outlet. Pull out the cord to completely disconnect the adapter.
- In the EU, only use CE approved power cords.

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1. INTRODUCTION

To get the most out of your Tonverk, we recommend that you read this manual in its entirety.

1.1 CONVENTIONS IN THIS MANUAL

We have used the following conventions throughout the manual:

- Key names are written in upper case, bold style and within brackets. For instance, the key labeled “FUNC” on the main panel is written as **[FUNC]**.
- Knobs are written in upper case, bold, italic letters. For instance, the knob “Level/Data” is written as ***LEVEL/DATA***.
- Menu names are written in upper case letters. The SETTINGS menu is an example of that.
- Parameter names and certain menu options where settings can be made or actions performed are written in bold, upper case letters. For example, **NOTE**.
- Upper case letters are used for parameter setting alternatives. For example, OFF.
- Messages visible on the screen are written in upper case letters with quotation marks. For example, “QUANTIZED RECORDING”.
- LED indicators like the keyboard octave LEDs are written like this: <KEYBOARD OCTAVE>.

The following symbols are used throughout the manual:



Important information that you should pay attention to.



A tip that will make it easier for you to interact with Tonverk.

2. THE TONVERK

We're thrilled to introduce you to Tonverk. In many ways, Tonverk is an instrument synonymous with the journey, with adventure. Its own arrival is the result of plenty of exciting twists and turns. From launch, it opens up countless sonic journeys in different directions, and in many respects, its own path is only just beginning.

As we dreamt up this machine, we knew it would be more than just a new instrument. It would signal the first steps on the latest Elektron platform, injecting new possibilities into our portfolio. With broader answers possible, we considered how we sample, and how we sculpt sound. Where could Tonverk take us, and what more could we do along the way?

The result is a powerful workstation. A versatile, playful, creative one. It adapts to whatever you want to do with it. A labyrinth full of routes, a pathfinder full of revelations. Sixteen varied tracks – eight of them audio with multiple machines, polyphonic stereo sampling, a kaleidoscope of effects and modulation, multisampled instruments, subtracks within tracks, and routing itself pushed until it becomes a playground. Whether you're multisampling your favorite synth, building unique drum kits, or routing sounds out and back in again for further alchemy, Tonverk is ready to take you there.

Its journey – and yours with it – has only just begun.

Sincerely,

The Elektron Team

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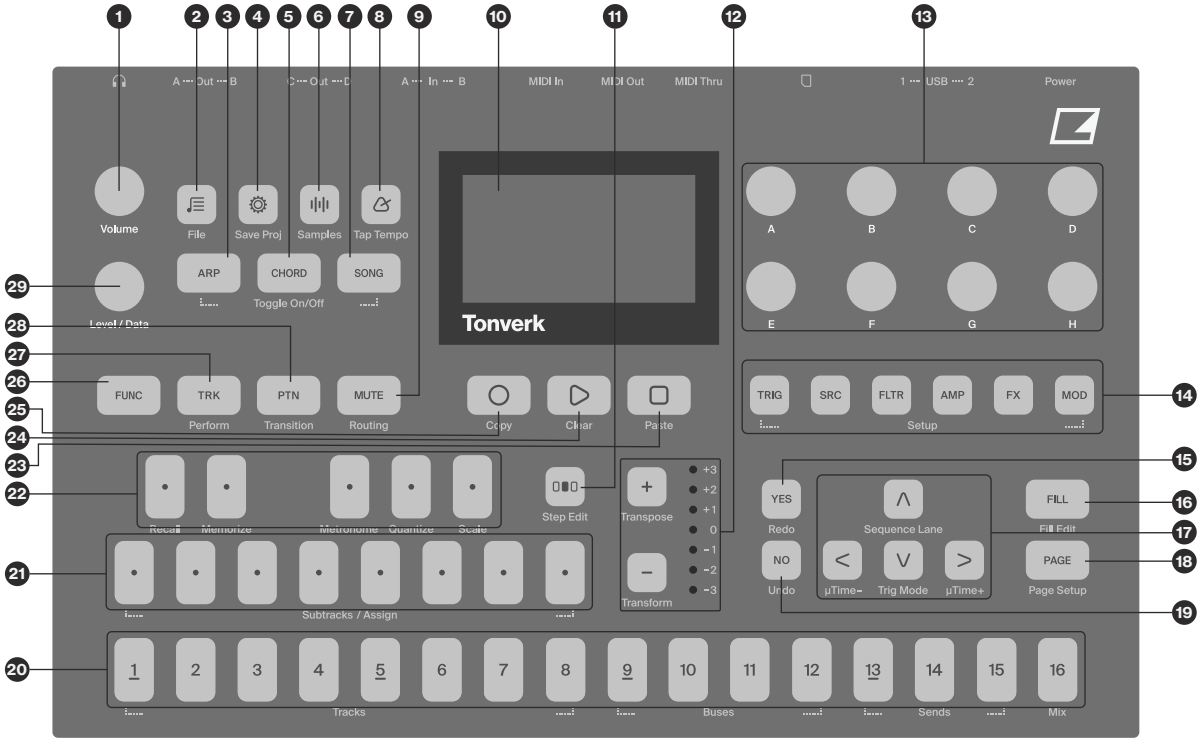
3. PANEL LAYOUT

3.1 FRONT PANEL

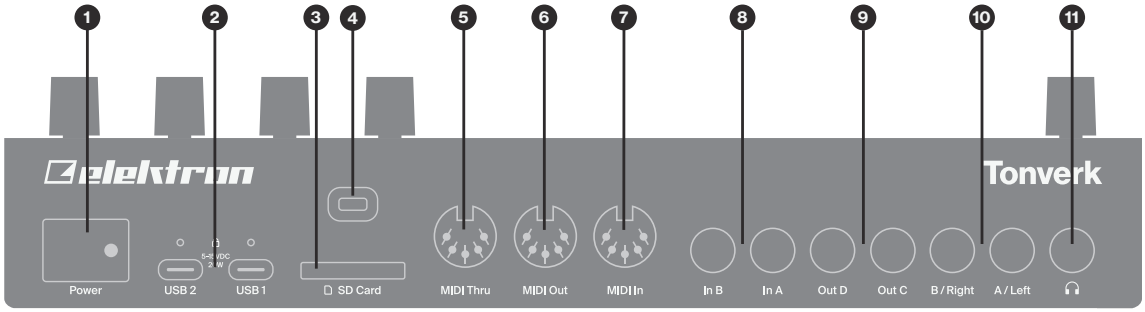


1. ***MAIN VOLUME*** sets the volume for the A/B outputs and the Headphones outputs.
2. **[PRESET]** opens the LOAD PRESET section of the FILE menu. The secondary function opens the FILE menu.
3. **[ARP]** opens the ARPEGGIATOR menu. The secondary function toggles the arpeggiator on/off.
4. **[SETTINGS]** opens the SETTINGS menu, which holds items such as project management, MIDI configuration, and system settings. The secondary function saves the active project.
5. **[CHORD]** opens the CHORD/SCALE SETUP menu. The secondary function toggles the CHORD mode on/off.
6. **[SAMPLING]** opens the SAMPLING menu, which contains tools for recording audio. The secondary function opens the Sample browser.
7. **[SONG]** opens the Song selection screen. The secondary function toggles the SONG mode on/off.
8. **[TEMPO]** opens the TEMPO menu, where you can adjust the tempo and swing. Here, you also set parameters related to the metronome. The secondary function enables tapping the tempo.
9. **[MUTE]** accesses the track mute functionality. The secondary function accesses the ROUTING menu.
10. Screen.
11. **[STEP EDIT]** accesses the Step Edit functionality.
12. **[+]/[-]** are used for transposing the **[KEYBOARD]**. The <KEYBOARD OCTAVE> LEDs show the currently selected octave. The secondary functions access the sequencer track transpose and open the TRANSFORM menu, respectively.
13. ***DATA ENTRY*** knobs ***A-H***. Used for setting parameter values. Press and turn the knobs to change values in larger increments.
14. **[PARAMETER PAGE]** keys access the PARAMETER pages of the active track. The secondary functions access different sections of the TRACK SETUP menu.
    • **[TRIG PARAMETERS]** accesses parameters such as **NOTE**, **VELOCITY**, and other trig-related parameters. The secondary page accesses a number of track and keyboard-related settings in the TRACK SETUP.

• **[SRC]** accesses the SRC pages. Here you can find parameters related to the SRC machines. For MIDI tracks, this page has parameters such as **CHANNEL**, **PROGRAM**, and **AFTERTOUCH**. The secondary page accesses the SRC machine selection in the TRACK SETUP menu.
• **[FLTR]** accesses the FILTER pages. Here are the parameters for the Base-width and Multimode filters. On MIDI tracks, you find the CC value and select settings for the first eight assignable CC commands. The secondary function accesses filter-related settings in the TRACK SETUP menu.
• **[AMP]** takes you to the AMP page, where you find parameters for the amplitude envelope. On MIDI tracks, you find the CC value and select settings for eight additional assignable CC commands. The secondary function accesses amp-related settings in the TRACK SETUP menu.
• **[FX]** takes you to the FX pages, where you can find parameters for the selected FX machines, the effect send levels, and the track routing. The secondary page accesses the FX machine selection in the TRACK SETUP menu.
• **[MOD]** accesses the LFO and Mod Envelope parameters for the active track.

15. **[YES]** key. Used for entering sub-menus, selecting, and confirming. The secondary function is a Redo action of a previously performed Undo action.
16. **[FILL]** Activates FILL mode. The secondary function accesses the FILL EDIT menu.
17. The **[ARROW]** keys. Used for navigation and for setting parameter values. They are separately referred to as **[UP]**, **[DOWN]**, **[LEFT]**, and **[RIGHT]**. The secondary function for **[UP]** accesses the SEQUENCE LANE menu. The secondary function for **[DOWN]** accesses the TRIG MODE menu.
18. **[PAGE]** selects the active pattern page if the pattern has more than 16 steps. The secondary function accesses the PAGE SETUP menu.
19. **[NO]** key. Used for exiting an active menu, backing up one step, and negating. The secondary function performs an Undo action.
20. **[TRIG]** keys are used for entering or removing sequencer trigs, and parameter locks, in combination with the ***DATA ENTRY*** knobs. They are also used to select a track, bank, pattern, and song in combination with the **[TRK]**, **[PTN]**, and **[SONG]** keys.
The **[TRIG]** key lights indicate trigs on the sequencer by lit red keys, while flashing red or yellow keys indicate parameter locks, in GRID RECORDING. When a pattern is playing, or when LIVE RECORDING is enabled, a light moves along the 16 steps of the sequencer across all (up to sixteen) pages at the set tempo.
21. **[KEYBOARD]** (bottom row) / **[SUBTRACKS]** are used to select subtracks when the Subtracks machine is selected, and their secondary function is to select samples for the subtracks. These keys, together with the top row **[KEYBOARD]** keys, are used for playing presets and assigning note values to note trigs. The specific keys are called **[KEYBOARD C1–C2]** from left to right.
22. **[KEYBOARD]** (top row) These **[KEYBOARD]** keys, together with the bottom row **[KEYBOARD]** keys, are used for playing presets and assigning note values to note trigs. The specific keys are called **[KEYBOARD C#1–A#1]** from left to right. The keys' secondary functions are: **[KEYBOARD C#1]** performs a recall from the previously memorized state of the active pattern. **[KEYBOARD D#1]** memorizes the state of the active pattern. **[KEYBOARD F#1]** toggles the metronome on/off. **[KEYBOARD G#1]** opens the QUANTIZE menu. **[KEYBOARD A#1]** toggles the keyboard scale's GUIDE setting between OFF and SNAP
23. **[STOP]** stops playback. The secondary function is a paste operation.
24. **[PLAY]** starts the sequencer playback. Pressing **[PLAY]** a second time pauses playback. The secondary function is a clear operation.
25. **[RECORD]** key. Activates/deactivates GRID RECORDING mode. Press **[RECORD] + [PLAY]** to activate LIVE RECORDING mode. The secondary function is a copy operation.
26. **[FUNC]** key. Press and hold **[FUNC]**, and then press another key to access the secondary function of that key. The mint green text on the Tonverk front panel shows the keys' secondary functions.
27. **[TRK]** key. Press **[TRK]** + one of the **[TRIG]** keys to select a track for editing. The secondary function accesses the PERFORM mode.
28. **[PTN]** selects the bank and pattern in combination with the **[KEYBOARD]** (bottom row) and **[TRIG 1–16]** keys.
29. ***LEVEL/DATA*** sets the overall volume level of the active track. It is also used for setting parameters and scrolling through lists.

3.2 REAR PANEL



1. **POWER** Switch is used to turn the device on and off. To turn the device off, press POWER and then press **[YES]** or press POWER twice. Ensure the device is fully powered off (all the LEDs and backlight are turned off) before you remove the USB power cable.
2. **USB 1 and 2** Both of these ports can be used to power Tonverk. Connect the included PSU-5 power adapter to a power outlet, and make sure to use the fastening screw to secure the USB cable to the device. These ports can also be used to connect Tonverk to a computer for transferring audio, MIDI, and other files. The Tonverk can work both as a USB MIDI host and as a USB MIDI device. Use the included USB-C to USB-C cable when connecting to a computer host. The USB ports can deliver up to 0.5 A.
3. **SD card reader.** The recommended minimum card size is 2 GB, and it must be formatted to exFAT. The write-protect switch on the SD card must be set to OFF if you want to write to the card.
4. **Kensington Security Slot.** For connecting a Kensington lock and cable.
5. **MIDI THRU** Forwards data from MIDI IN. Use a standard MIDI cable to connect another MIDI device.
6. **MIDI OUT** MIDI data output. Use a standard MIDI cable to connect to the MIDI In of an external MIDI device.
7. **MIDI IN,** MIDI data input. Use a standard MIDI cable to connect to the MIDI Out of an external MIDI device.
8. **IN A/B,** These audio inputs are used for processing audio from external sources and for sampling external audio. Use either 1/4" (Tip/Ring/Sleeve) phone plugs (balanced connection) or 1/4" mono phone plugs (unbalanced connection).
9. **OUT C/D,** Audio outputs. Use either a 1/4" (Tip/Ring/Sleeve) phone plug (balanced connection) or a 1/4" mono phone plug (unbalanced connection).
10. **OUT A/B,** Main audio outputs. Use either a 1/4" (Tip/Ring/Sleeve) phone plug (balanced connection) or a 1/4" mono phone plug (unbalanced connection).
11. **OUT E/F (HEADPHONES),** Audio output for stereo headphones and other audio equipment. Use a 1/4" Tip/Ring/Sleeve phone plug for headphones. You can also use a splitter cable with a 1/4" Tip/Ring/Sleeve phone plug to two 1/4" mono phone plugs.

If the device becomes unresponsive, you can force it to turn off by pressing and holding the POWER button until the device turns off. Please note that unsaved work might be lost.

3.3 SETTING UP AND STARTING TONVERK

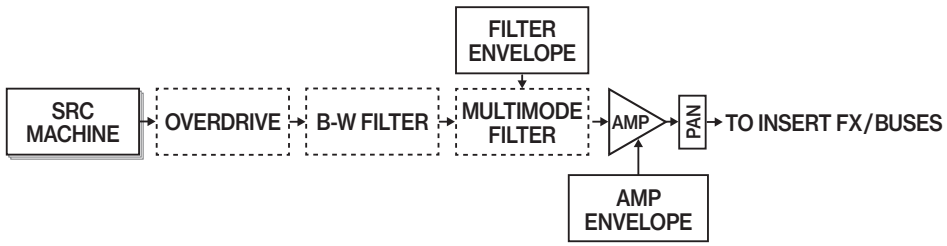
Place Tonverk on a stable support, such as a sturdy table, with sufficient space for the cables. Make sure to switch off all devices before you connect Tonverk to other devices.

1. Plug the supplied DC adapter into a power outlet, then connect the adapter's USB cable to one of Tonverk's USB ports.
2. Connect OUT A/B to your mixer or amplifier, or connect headphones to OUT E/F.
3. To control Tonverk from a computer, connect a USB cable between the computer and one of Tonverk's USB ports.
4. To use MIDI to control Tonverk, connect the MIDI OUT port of the device you wish to send data from to the MIDI IN port of Tonverk. If you want to use Tonverk to control other devices, connect the MIDI OUT port of Tonverk to the MIDI IN port of the device you want to control. You can also use the USB ports to send and receive MIDI data.
5. To process audio from external sources, connect the audio source to IN A/B, or over USB from a USB host such as a computer.
6. Switch on all units. Press the POWER switch located at the back of Tonverk to switch it on.

4. TONVERK SOUND ARCHITECTURE

The illustrations below show the Tonverk internal sound architecture.

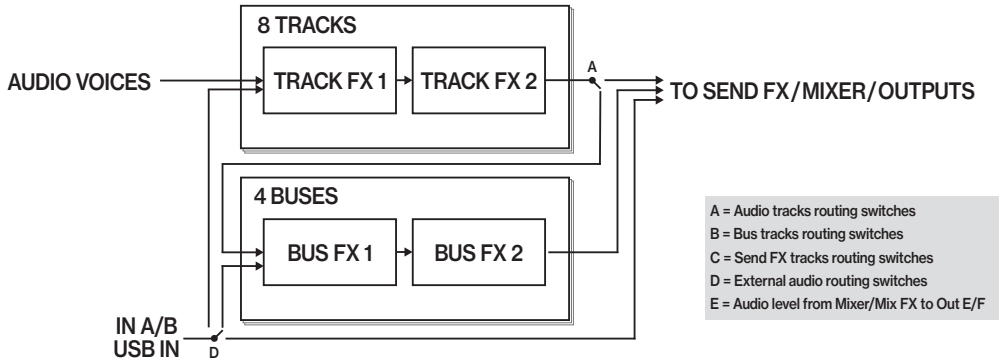
4.1 AUDIO VOICES



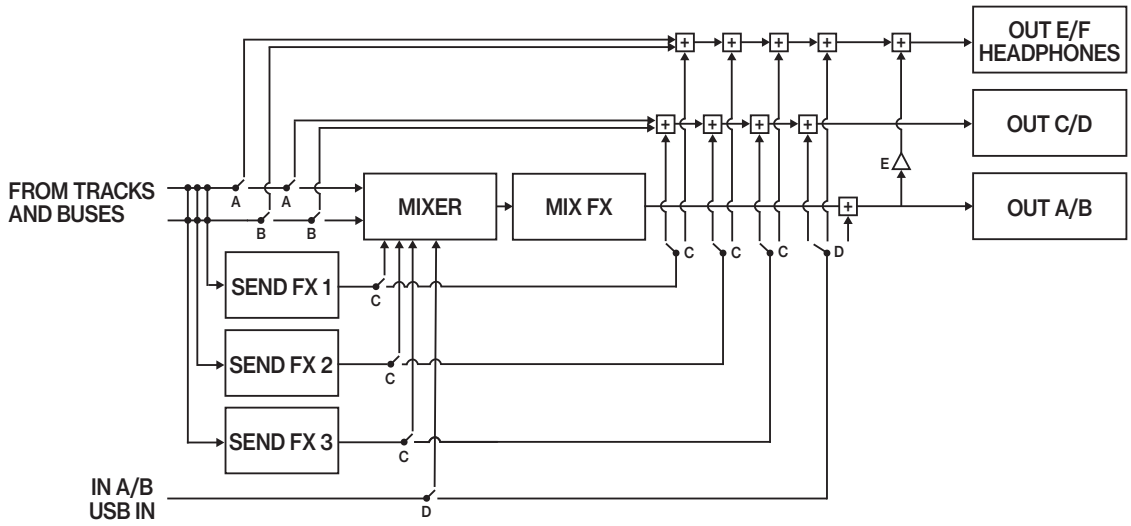
The Overdrive, Base-width filter, and the Multimode filter can all be routed in any order you choose. For more information, please see “11.3.1 ROUTING” on page 56.

4.2 INSERT FX / BUSES

Each Audio track and Bus track has its own two selectable insert FXs and routing destination.

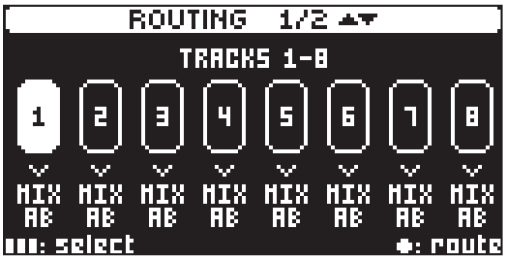


4.3 SEND FX / MIXER / OUTPUTS



4.4 THE ROUTING MENU

Tonverk features a flexible routing setup that allows you to direct sound from multiple sources (audio tracks, buses, send FXs, and external inputs) to various destinations (device outputs, buses, and tracks). Every audio track, bus, and send FX has its own routing. Routing is primarily performed in the Routing menu. You can also route the active audio track, bus, or send FX using the ROUT parameter on FX PAGE 1. You can The audio from the external inputs are routed on the Mix track’s SRC page and in the AUDIO ROUTING menu.



4.4.1 ROUTING TRACKS

1. Press **[FUNC] + [MUTE]** to open the ROUTING menu.
2. Use **[UP]/[DOWN]** to select the track group you want to view (tracks, buses/send FX).
3. Use the **[TRIG]** keys to select the track you want to route, and then use ***LEVEL/DATA*** or a ***DATA ENTRY*** knob to select a routing destination.
4. Press **[NO]** to exit and close the ROUTING menu.

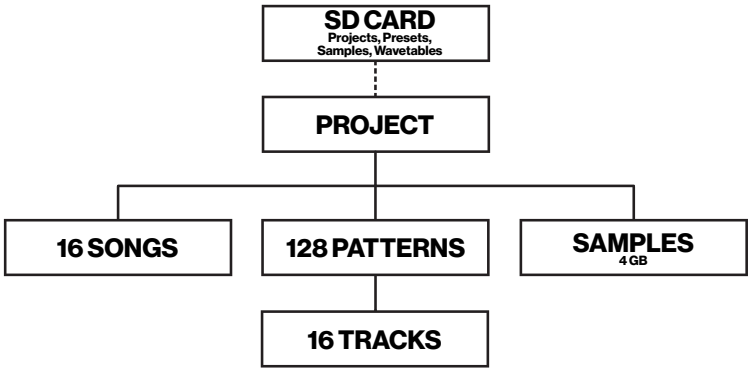
The possible routing destinations vary depending on the track type/source.

- Audio track sound destinations: MIX AB, OUT CD, OUT EF, BUS 1–4
  Routing switches are shown with “A” in the sound architecture illustrations above.
- Bus track sound destinations: MIX AB, OUT CD, OUT EF
  Routing switches are shown with “B” in the sound architecture illustrations above.
- Send FX track sound destinations: MIX AB, OUT CD, OUT EF
  Routing switches are shown with “C” in the sound architecture illustrations above.

- **The MIX AB destination is always routed (through the main FX) to outputs A/B. It is also, by default, routed to outputs E/F (Headphones). The level of the signal to E/F (Headphones) can be set on the MIX track’s FLTR page using the HP.MON parameter. This level control is indicated by the letter “E” in the sound architecture illustrations above.**
- **You can also use a key combination to route the track to different destinations in the ROUTING menu. Press and hold the [TRIG] key(s) for the track(s) you want to route, then press the [TRIG] key representing the routing destination. The OUT CD and OUT EF destinations are selected with [KEYBOARD A] and [KEYBOARD B] respectively.**
- **The external audio inputs can also be routed to several destinations: MIX AB, OUT AB, OUT CD, OUT EF, BUS 1–4, TRK 1–8. However, these settings cannot be made in the ROUTING MENU. Instead, they are made using the ROUT parameter on the Mix track’s SRC page, and in the AUDIO ROUTING menu. Routing switches for the external inputs are indicated by the letter “D” in the sound architecture illustrations above.**
- **When selecting a track as a destination for the external inputs, the audio is routed directly to the insert effects and not through the track’s overdrive, filters, or amp.**
- **You can route the two external audio sources, USB audio and the audio from the IN A/B inputs, to different destinations in the AUDIO ROUTING menu. You can either route the audio according to the setting on the Mix track’s SRC page, or send it directly to one of the outputs: OUT AB, OUT CD, or OUT EF. For more information, please see “17.3 AUDIO ROUTING” on page 81.**
- **If the track uses a Subtracks SRC machine, it is possible to set the send levels to the Send FX for each separate subtrack, and set its routing to the Track FX. For more information, please see “A.2.3 SUBTRACKS” on page 92.**
- **Settings made in the AUDIO ROUTING menu are on a project level and override the settings made with the Mix track’s ROUT parameter. For more information, please see “17.3 AUDIO ROUTING” on page 81.**

5. OVERVIEW OF THE TONVERK STRUCTURE

The illustration below outlines the Tonverk structure.



5.1 SD CARD

The SD card contains Tonverk data, where Projects, Presets, Instruments, Samples, and global settings are stored. The amount of data you can store on the SD card depends on the size of the SD card. Tonverk comes with a 64 GB SD card. The recommended minimum card size is 2 GB, and it must be formatted to exFAT. For more information, please see “6.13 SAMPLE BROWSER” on page 25.

5.2 DATA STRUCTURE

5.2.1 PROJECT

A project contains 128 patterns. The project also stores general settings and states. The currently loaded project becomes the active working state of Tonverk. From here, it is possible to edit the patterns and presets of the project. Every time Tonverk is switched on, it boots to the active working state, the active project. Projects are saved, loaded, and managed in the FILE menu. For more information, please see “9.1 THE FILE MENU” on page 33.

5.2.2 SONGS

A song is an arrangement of patterns set up to play in sequence. Each row in the SONG mode arrangement can have separate settings for pattern, row repeat, row length, and tempo. A song can be up to 256 rows in length, and each project can contain up to 16 songs. For more information, please see “10.11 SONG MODE” on page 50.

5.2.3 PATTERNS

The patterns are the primary data container for Tonverk. Sixteen patterns are available for each of the eight banks, resulting in 128 patterns for each project. A pattern holds the presets of the tracks, plus sequencer data such as trigs and parameter locks. It also includes the settings on the TRIG page, as well as BPM, length, swing, and time signature settings. For more information, please see “10. THE SEQUENCER” on page 41.

5.2.4 SAMPLES

Tonverk can load and play WAV and AIFF audio files (samples) with 16/24/32-bit depth (floating and fixed point) as well as M4A (ALAC), CAF and FLAC files. The preferred sample rate for loaded files is 48 kHz (mono and stereo interleaved). Files with other sample rates (44.1 kHz/ 88.2 kHz/96 kHz) can also be loaded, but they will gracefully degrade in quality when played back. You can load a sample of up to 45 minutes on a track. The minimum sample size is 96 samples. Samples are stored on the SD card, and the size and number of those samples are limited only by the available free space on the SD card. For more information, please see “9. PATTERNS, PRESETS, AND INSTRUMENTS” on page 33.



All samples that are played on a track in Tonverk are played back with an attenuation (lowering of volume) of -22 dB to maintain headroom in the device. The sample files themselves are unaffected.

5.2.5 WAVETABLES

A wavetable is an audio file that contains a number of single-cycle waveforms. Tonverk supports up to 64 waves per wavetable and interpolates smoothly between them. Each wave in the wavetable must have a power-of-two size (in samples): 32, 64, 128, 256, 512, 1024, 2048, or 4096. If no wave size is specified in

the filename, Tonverk assumes a wave size of 2048 samples. If you use a different wave size, it must be included in the filename by appending _wt<number>. For example: my-cool-wavetable_wt1024.wav (wave size 1024), or my-halfdecent-wavetable_wt128.wav (wave size 128). You can also load a wavetable without interpolation for waves with 32–512 samples. Just add an "r" at the end of the filename. For example: strings_wt128r.wav

If the audio files contains more than 64 waves, Tonverk selects evenly spaced waves. This means that wavetables created by several other tools can be used without modification, or even regular samples, although the sonic results may vary. Wavetables can use the same audio file formats as regular samples.

5.2.6 THE SAMPLE AND WAVETABLE POOLS

Samples and wavetables are loaded into a pattern/project's RAM from the SD card, either through the Sample Browser or directly from within the SRC machines. The samples are loaded to the project's sample pool and the wavetables to the project's wavetable pool. The sample pool holds 1023 samples, while the wavetable pool holds 127 wavetables. Once samples and wavetables are loaded into their respective pools, you can parameter lock them and change them per step in the sequencer.

5.3 MACHINES AND TRACKS

The Tonverk sequencer has 16 tracks: 8 Audio/MIDI tracks, 4 Bus and MIDI tracks, 3 Send FX and MIDI tracks, and one Mix track.

5.3.1 MACHINES

A machine is a module within Tonverk that has specific functionality. A machine can be replaced with another machine of the same category. For example, different audio sample playback engines (SRC machines) or a selection of effects (FX machines). Every machine has a specific set of parameters tailored to give you the most useful sound-shaping possibilities for that particular machine. For more information, please see "APPENDIX A: MACHINES" on page 90.

5.3.2 AUDIO TRACKS (TRACK 1–8)

Tracks 1–8 can be used as audio tracks. This is the default setting for these tracks. Each audio track contains a preset. The preset contains the settings in the PARAMETER pages (SRC, FLTR, AMP, FX, and MOD), the settings in the PRESET SETUP menu, and the ARPEGGIATOR menu. Tracks 1–8 can also be used with a MIDI SRC machine, which then converts the audio track into a MIDI track. Each audio track has two insert effect slots, separate sends to the three send effects, two voice LFOs, a modulation envelope, and two FX LFOs dedicated as modulation sources for the track's selected FX machines.

5.3.3 BUS TRACKS (TRACK 9–12)

A bus lets you route multiple tracks into one channel to process them simultaneously – you can use one signal chain to affect an entire group of tracks, adding effects, and adjusting the level for the whole group. Tonverk has four separate buses, each with its own sequencer track. Each bus has two insert effect slots, separate sends to the three send effects, and two LFOs. The Bus tracks can also simultaneously function as MIDI tracks, using the parameters on the SRC, FLTR, and AMP pages.

5.3.4 SEND FX TRACKS (TRACK 13–15)

Tonverk has three Send FX tracks. For each track, you can select an FX machine that will be one of the pattern's Send FXs. You also have two LFOs on each track, dedicated as modulation sources for the track's selected FX machine. The Send FX tracks can also simultaneously function as MIDI tracks, using the parameters on the SRC, FLTR, and AMP pages.

5.3.5 MIX TRACK (TRACK 16)

Tonverk also has a Mix track. This track allows you to control the Mixer parameters, including track levels and audio input settings. Here, you can select an FX machine to be the pattern's main FX. You also have two LFOs on the track dedicated as modulation sources for the selected FX machine.

5.3.6 MIDI TRACKS (TRACK 1–15)

The MIDI tracks function almost identically to the audio tracks. Parameter locks, LFO modulation, and copy/paste commands are available. Each MIDI track also features micro timing, individual track length, and time signature settings. The primary difference is that the MIDI tracks do not generate sound; instead, the sequencer data is transmitted through the MIDI OUT or USB ports.

Any of the tracks 1–15 can be used as a MIDI track. They are used to control external, MIDI-equipped gear. Each MIDI track can trigger up to 16 notes per step with adjustable parameters, including velocity and length, as well as control pitch bend and aftertouch. Additionally, 16 freely assignable MIDI control change parameters (MIDI CCs) are available. For more information, please see "A.2.9 MIDI" on page 105. Any MIDI channel can be assigned to a MIDI track, and several tracks can share the same channel.

If several tracks are assigned to the same MIDI channel, the track with the lowest number has priority in the event of parameter conflicts.

To use one of tracks 1–15 as a MIDI track, you must first assign a MIDI machine to it.

1. Press **[FUNC] + [SRC]** to open the MACHINE menu.
2. Use **[UP]/[DOWN]** to select the MIDI machine, and then press **[YES]** to assign it to the track.



Audio, Bus, and Send FX tracks retain their selected FX machines even if you assign a MIDI SRC machine to the track.

5.3.7 SELECTING TRACKS

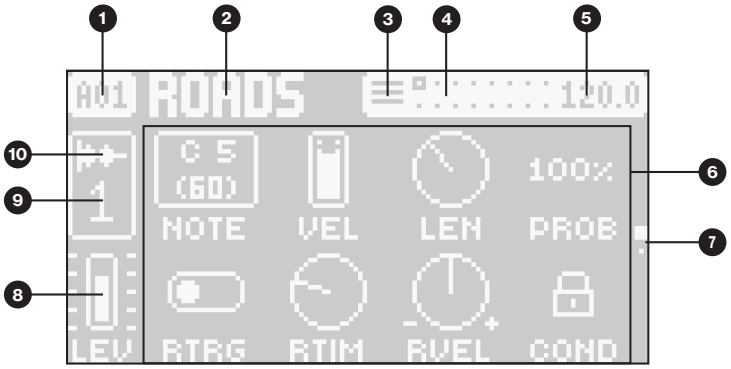
Press **[TRK]** + **[TRIG 1–16]** to select a track without triggering the track's preset (if it is an audio track). When not in any recording mode, press **[TRIG 1–16]** to select a track and trigger its preset (if it is an audio track). If you select track 9–16 and your previously selected track was an audio track, the **[KEYBOARD]** still plays the previously selected audio track.



The complete track preset, with all its parameter settings, may be copied to another track if the target track is of the same type (Audio/MIDI tracks, Bus tracks, Send FX tracks). Press [TRK] + [TRIG 1–16] + [RECORD], and then press [TRK] + [TRIG 1–16] + [STOP] to paste the preset to the selected track.

6. INTERACTING WITH TONVERK

The screen shows all the information needed for real-time interaction and editing on Tonverk. The eight ***DATA ENTRY*** knob parameters shown will vary depending on the given situation.



1. Bank and pattern.
2. Pattern name.
3. Trig mode.
4. Sequencer page indicator. Squares show the number of used pages (max 16 pages). An unfilled square shows the currently active page.
5. The tempo. When Tonverk's tempo is synced to external MIDI, a lock icon appears next to the tempo.
6. Track parameters. They show what the eight ***DATA ENTRY*** knobs control and their current parameter values.
7. Parameter page indicator. Indicates the number of pages for the selected parameter section and which page is currently selected.
8. The main level setting of the active track. Use the ***LEVEL/DATA*** knob to change the level setting.
9. Active track.
10. Track/Machine type.

Tonverk has a screen saver that dims the screen after 5 minutes without activity, and turns the screen off after a set time. For more information, please see"17.4.3 SCREEN SAVER" on page 82. Press any key or move any controller to wake the screen. You can also start the screen saver yourself by pressing [SETTINGS] + [NO].

6.1 SETTING THE VOLUME

MAIN VOLUME sets the volume for the A/B outputs and the E/F (Headphones) outputs.

6.2 SCREEN NAVIGATION

Use the **[ARROW]** keys **[UP]**, **[DOWN]**, **[LEFT]** or **[RIGHT]** to navigate menus or sub-menus.

[YES] is used to confirm, select, enter sub-menus/folders and tick/untick boxes.

[NO] is used to cancel, deselect or go back one or more steps in menu and folder structures.

6.3 PARAMETER EDITING

The **[PARAMETER PAGE]** keys open the corresponding parameter page group, where you can edit the tracks.

The ***DATA ENTRY*** knobs are used to change the values of the track parameters. The positions of the parameters on the screen correspond to the physical locations of the knobs on the front panel. Use the **[UP]/[DOWN]** keys to cycle through the parameter group's pages. You can also press a **[PARAMETER PAGE]** key repeatedly to cycle through the parameter pages in that group. For more information, please see "12. AUDIO TRACK PARAMETERS" on page 58, and "APPENDIX A: MACHINES" on page 90.

- The parameters change in larger steps if you press the ***DATA ENTRY*** knob down while you turn it. This makes it quicker to sweep through the whole parameter range.
- Press ***DATA ENTRY*** knob + **[NO]** to reset the parameter to the default value.
- Press a **[PARAMETER PAGE]** key + **[RECORD]** to copy the parameter settings on that page.
- Press a **[PARAMETER PAGE]** key + **[STOP]** to paste the copied parameter settings.

- Press a **[PARAMETER PAGE]** key + **[PLAY]** to reset all the parameters in the selected parameter page to default values.
- Press a **[PARAMETER PAGE]** key + **[YES]** to randomize the parameters on that page
- Press a **[PARAMETER PAGE]** key + **[NO]** to recall the parameters from their last saved state.
- Press and hold a **[PARAMETER PAGE]** key to see the values for all parameters on that page.

6.3.1 PARAMETER SNAP VALUES

Pressing **[FUNC]** while editing specific parameters will cause the parameter values to snap to suitable musical and performance-related values. The NOTE parameter, for example, snaps to octave steps, and the PAN parameter snaps to full left, center, and full right.

6.4 [FUNC] KEY PRESS COMBINATIONS

The standard way to use the **[FUNC]** key in combination with other keys is to press and hold **[FUNC]** and then press the second key in the combination.

6.5 QUICK SCROLLING

Quick scrolling is possible on many menus. Press **[FUNC]** + the **[UP/DOWN]** keys to move the cursor one menu page.

6.6 COPY, CLEAR, AND PASTE

Copy, clear, and paste commands are available in many contexts. Press **[FUNC]** + **[RECORD]** to copy. Press **[FUNC]** + **[STOP]** to paste. Press **[FUNC]** + **[PLAY]** to clear. Please refer to the various sections in the manual for more information on when these commands are available. For more information, please see “19. KEY COMBINATIONS” on page 85.

6.7 THE NAMING SCREEN

The naming method is identical for the various naming situations.



The **[LEFT]** and **[RIGHT]** arrow keys are used to navigate between the characters. Turning the ***LEVEL/DATA*** knob or pressing the **[UP]** or **[DOWN]** arrow keys selects the characters. **[FUNC]** + **[NO]** erases characters. **[FUNC]** + **[YES]** inserts a space. Press **[SETTINGS]** to create a random name. Press and hold **[FUNC]** to access the Pop-up Naming menu.

6.7.1 POP-UP NAMING

A convenient way of naming is to open a pop-up menu that shows all available letters, symbols, and digits. Press and hold the **[FUNC]** key when you are on the NAMING screen to access the Pop-up naming screen.



Keep **[FUNC]** pressed and use the **[ARROW]** keys to highlight the character you want to insert. Once there, release **[FUNC]** to add the character. While holding **[FUNC]**, press **[TRIG 1]** / **[TRIG 2]** to switch between character layouts.



Copy, paste, and clear commands are available on the NAMING screen.

6.8 OVERBRIDGE

The Overbridge software enables a tight integration between the Tonverk and a computer DAW.

Note that Overbridge support for Tonverk is limited to multitrack audio only. It uses the USB audio drivers and shows up in the Overbridge engine, but does not have any plugins.

Read more about Overbridge use and availability on the Elektron website: https://www.elektron.se/overbridge/

6.9 THE OUTBOX 8

The Outbox 8 is a versatile eight-channel audio/CV breakout box and USB host/device. Designed for seamless integration, it opens up new possibilities by adding analog outputs for Elektron's Overbridge-enabled devices, while also being able to convert MIDI into CV signals such as pitch, gate, trig, linear, and clock to control your modular rig and other CV-controllable devices.

Thanks to its flexible design, the Outbox 8 can also act as an analog output expansion for many USB audio class-compliant devices, work as a USB audio interface for your computer, or function as a USB MIDI-to-CV interface for external MIDI controllers.

Outbox 8 is compatible with Elektron Overbridge-enabled units, USB class-compliant MIDI devices, as well as many USB class-compliant audio devices.

Read more about Outbox 8 on the Elektron website: https://www.elektron.se



Tonverk currently works with Outbox 8, but with some limitations: high audio streaming latency and no in-device setup. You might also experience host/device connectivity issues, which means you need to reconnect to Tonverk several times to ensure it connects as a device (Outbox 8 LED goes white). This can also be mitigated by using a USB-C male to USB-A female adapter, and then a USB-A male to USB-C male cable. All of this is being worked on for upcoming Tonverk OSes.

6.10 CLASS COMPLIANT DEVICE

Tonverk is a class-compliant device (also known as plug-and-play). It means it does not require any additional drivers to connect to your computer or other USB class-compliant hosts.

Tonverk can, therefore, stream audio and MIDI directly over USB to and from supported computers, phones, and tablets. It opens up several exciting possibilities of what you can do with your device, for example, record audio from your device directly over USB in your DAW.

6.11 BACKING UP TONVERK

It is always recommended to make regular backups of all your Tonverk data. To create backups and transfer files between your Elektron device and a computer, you should use the USB DISK MODE.

6.11.1 BACKING UP TONVERK DATA TO A COMPUTER

1. Connect a USB cable between the computer and one of Tonverk's USB ports.
2. On the device, navigate to SETTINGS > USB DISK MODE, and then press **[YES]**.
3. On the pop-up window, press **[YES]**, but be aware that device playback will stop.
4. Tonverk's SD card should now show up in your computer as a USB device. Click the Tonverk USB device on the computer to access the SD card's contents.
5. Copy the files and folders you want to back up from Tonverk's SD card to the computer.
6. Once all data is copied, safely eject the Tonverk USB device from the computer. Please refer to your computer's documentation on how to perform this procedure.
7. On your device, press **[NO]** to exit USB disk mode.

6.11.2 TRANSFERRING BACKED-UP DATA TO TONVERK

1. Connect a USB cable between the computer and one of Tonverk's USB ports.
2. On the device, navigate to SETTINGS > USB DISK MODE, and then press **[YES]**.
3. In the popup window, press **[YES]**, but be aware that device playback will stop.

4. Tonverk's SD card should now show up in your computer as a USB device. Click the Tonverk USB device on the computer/device to access the SD card's contents.
5. Delete the backed-up files and folders from the SD card. (You don't have to delete the files, but you can instead replace the files and folders; however, your computer will then ask you whether you want to keep or replace every file).

DO NOT delete files and folders from the SD card unless you have a previously made backup of the Tonverk data available.

6. Copy the all the previously backed-up files from the computer to Tonverk's SD card to restore all Tonverk data.
7. Once all files are copied, safely eject the Tonverk USB device from the computer. Please refer to your computer's documentation on how to perform this procedure.
8. On Tonverk, press **[NO]** to exit USB disk mode.

- **If you only want to back up the data you have created (projects, presets, instruments, and recordings), as well as the samples you have added, you only need to back up the USER folder (unless you have manually selected to store user data outside this folder)**
- **You can also use a smartphone or tablet to store and retrieve Tonverk data.**

6.12 OS UPGRADE

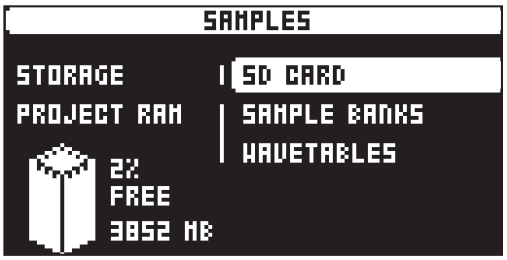
If a new version of the Tonverk operating system is available, it is highly recommended that you download and install the OS to keep your device up to date with the latest functionality and fixes. You can download the OS file from the Elektron website's Support section.

6.12.1 UPGRADING THE OS

1. Download the OS file from the Elektron website to your computer.
2. Connect Tonverk to a computer using a USB cable attached to one of Tonverk's USB ports.
3. On the device, navigate to SETTINGS > USB DISK MODE, and then press **[YES]**.
4. On the popup window, press **[YES]**, but be aware that device playback will stop.
5. Tonverk's SD card should now show up in your computer as a USB device. Click the Tonverk USB device on your computer to access the contents of the SD card.
6. Copy the downloaded OS file to Tonverk's SD card and place the file at the root of the SD card's file structure (not inside any folder).
7. Safely eject the Tonverk USB device from the computer. Please refer to your computer's documentation on how to perform this procedure.
8. On your device, press **[NO]** to exit USB disk mode.
9. Navigate to SETTINGS > SYSTEM > OS UPGRADE, and then press **[YES]**. Tonverk will search through the SD card for the new OS file. Once the new OS file is detected, press **[YES]** to start the upgrade process. Tonverk will reboot once the upgrade is finished. Press **[NO]** if you wish to abort the upgrade and return to the SETTINGS menu.

You can also use a smartphone or tablet to upload a new OS file to Tonverk's SD card.

6.13 SAMPLE BROWSER



The Sample browser lets you view and access samples, wavetables and other content, stored on the SD card. Here you can also see how much sample memory is being used in the current project, shown both in megabytes and as a percentage of the available RAM. You can load up to 4 GB of samples into the project's RAM, with a maximum of 1,023 samples available.

Press **[FUNC]** + **[SAMPLING]** to open the Sample browser.

6.13.1 SD CARD

This option lets you browse the contents on the SD card. Use **[UP]**/**[DOWN]** or ***LEVEL/DATA*** to scroll through the items. Press **[YES]** or **[FUNC]** + **[RIGHT]** to enter the highlighted directory. To exit a directory and go back one step up in the directory structure, press **[NO]** or **[FUNC]** + **[LEFT]**. Press and hold **[NO]** to exit a directory and return to the top of the directory structure. Press **[FUNC]** + **[NO]** to exit the Sample browser.

Press **[RIGHT]** to access the OPERATIONS menu. The available operations will affect the highlighted file or folder, depending on the type of the highlighted item. Press **[YES]** to apply the commands to the selected sample. Press **[NO]** or the **[LEFT]** arrow key to exit the menu.



CREATE DIRECTORY creates a new directory/folder at the same level in the file structure. Use the NAMING screen to name the new directory. For more information, please see "6.7 THE NAMING SCREEN" on page 23.

MOVE DIRECTORY moves the highlighted directory to a different location in the file structure. Press **[YES]** to select the highlighted item that you want to move, then press **[YES]** again to access the folder structure. Open the target folder where you want to move the item, and then select MOVE HERE and press **[YES]**.

DELETE DIRECTORY deletes the selected directory and all its contents.

SELECT ALL selects all files (but not the folders or files inside any folders in the current directory) in the current directory.

RENAME opens a NAMING screen where you can rename the selected item.

MOVE FILE moves the highlighted file to a different location within the file structure. Press **[YES]** to select the highlighted file, then press **[YES]** again to access the folder structure. Open the target folder where you want to move the item, and then select MOVE HERE and press **[YES]**.

MOVE SELECTED moves the selected file(s) to a different location within the file structure.

DESELECT ALL deselects any selected file(s).

LOAD SAMPLES loads the selected sample(s) to the sample pool of the active project.

LOAD WAVETABLES loads the selected wavetable(s) to the wavetable pool of the active project.

You can load up to 1023 samples and up to 127 wavetables to each project.

- **We recommend that you save and add content only to the USER folder on the SD card. This folder also contains the default destinations for saving projects, presets, samples, and instruments.**
- **If you delete or move samples (or a folder containing samples) on the SD card, it will affect all projects that use the deleted or moved samples, and the samples will be missing from these projects.**
- **The write-protect switch on the SD card must be set to OFF if you want to write to the card.**

6.13.2 SAMPLE BANKS

This option opens the Sample Pool of the active project. Here, you can interact with the samples already loaded into the project's RAM. Unused samples are shown with a diamond between the sample's name and the size of the sample. Press **[YES]** to select the sample(s) you want to interact with. For more information, please see "5.2.6 THE SAMPLE AND WAVETABLE POOLS" on page 20.

Press **[RIGHT]** to access the OPERATIONS menu. The available operations will affect the highlighted samples. Press **[YES]** to apply the commands to the selected sample(s). Press **[NO]** or **[LEFT]** to exit the menu.

REPLACE lets you replace a sample currently loaded in the project's RAM. When you select this option, the browser opens so you can navigate the SD card and locate the sample you want to use instead. Press **[YES]** to replace the current sample with the selected one.

SELECT ALL selects all the samples in the Sample Pool.

SELECT UNUSED selects all the samples in the Sample Pool that are not used in any of the project's patterns.

DESELECT ALL deselects all the selected samples in the Sample Pool

UNLOAD removes the selected samples from the Sample Pool. If no samples are selected, this command will remove the highlighted sample. The samples will not be removed from the SD card.

6.13.3 WAVETABLES

This option opens the Wavetable Pool of the active project. Here, you can interact with the wavetables already loaded into the project's RAM. Press **[YES]** to select the wavetable(s) you want to interact with. For more information please, see "5.2.6 THE SAMPLE AND WAVETABLE POOLS" on page 20.

Press **[RIGHT]** to access the OPERATIONS menu. The available operations will affect the highlighted wavetables. Press **[YES]** to apply the commands to the selected wavetables. Press **[NO]** or **[LEFT]** to exit the menu.

REPLACE lets you replace a wavetable currently loaded in the project's RAM. When you select this option, the browser opens so you can navigate the SD card and locate the wavetable you want to use instead. Press **[YES]** to replace the current wavetable with the selected one.

SELECT ALL selects all the wavetables in the Wavetable Pool.

SELECT UNUSED selects all the wavetables in the Wavetable Pool that are not used in any of the project's patterns.

DESELECT ALL deselects all the selected wavetables in the Wavetable Pool

UNLOAD removes all selected wavetables from the Wavetable Pool. If no wavetables are selected, this command will remove the highlighted wavetable. The wavetables will not be removed from the SD card.

7. QUICK START

This quick start will guide you through some of the basic operations to start using Tonverk right away. First, connect it as described in section “3.3 SETTING UP AND STARTING TONVERK” on page 16.

7.1 SELECTING AND PLAYING THE PRESETS

There are a large number of presets in Tonverk that you can use in your music-making or as starting points for your own sound design.

1. Press **[PRESET]** to open the LOAD PRESET menu.
2. Use **[UP]/[DOWN]** or ***LEVEL/DATA*** to highlight a preset.
3. Press **[YES]** to load the preset to the active track.

7.2 PLAYING THE FACTORY PRESET PATTERNS

You can find a number of factory patterns in Tonverk. Follow the instructions below to get started exploring your new instrument.

1. Press **[PTN]** and then use the **[KEYBOARD C1]** key to select bank A. Then press **[TRIG 1]** to select pattern A01.
2. Press **[PLAY]** to listen to pattern A01.
3. Press **[PTN]**, and then press **[TRIG 2]** to cue pattern A02. It will start once pattern A01 has reached its end. Select pattern A03 by pressing **[PTN]**, and then **[TRIG 3]**, and so on.
4. Press **[STOP]** to stop playback.

7.3 USING THE [KEYBOARD] KEYS

You can use the **[KEYBOARD]** keys to play an audio track chromatically.

1. Select the track to play chromatically by pressing **[TRK]** + one of the **[TRIG 1–8]** keys.
2. Play the **[KEYBOARD]** keys. The preset will be pitched differently for each of the keys. Press **[+]/[-]** to transpose the virtual keyboard up or down.

For more information, please see “8.5 THE [KEYBOARD]” on page 30.



Using the [KEYBOARD] is an effective way to add musical variety to your tracks. The timbre, tonality and impact of playing a preset chromatically depends on the character of the source preset.

7.4 USING MUTE MODE

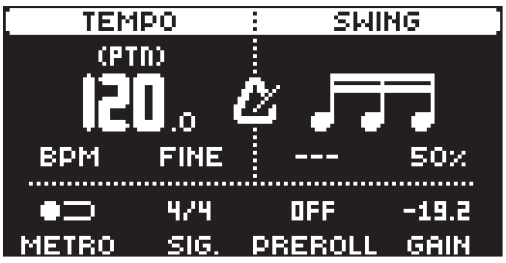
You can mute any of the sequencer tracks in this mode and access all tracks simultaneously.

1. Make sure a pattern is playing.
2. Press **[MUTE]** to enter MUTE mode.
3. Press any of the **[TRIG]** or **[SUBTRACKS]** keys to mute the corresponding track. Press again to unmute. The light of the **[TRIG]/[SUBTRACKS]** keys indicates the mute status. Unlit keys are muted tracks. Green lit keys are active tracks.

For more information, please see “8.6 MUTE MODE” on page 31.

7.5 TEMPO AND METRONOME

7.5.1 TEMPO



Press **[TEMPO]** to open the TEMPO menu, where you can adjust the BPM and SWING settings. Use ***DATA ENTRY*** knob ***A*** or ***LEVEL/DATA*** to change the tempo. Pressing the knob while turning it changes the tempo eight BPM at a time. Use **[UP]**/**[DOWN]** or ***DATA ENTRY*** knob ***B*** to change the tempo in decimal steps. To tap a tempo setting, hold **[FUNC]** and tap the **[TEMPO]** key in a steady rhythm. After four consecutive taps the average tempo of the taps will be calculated. If you keep tapping, the average tempo keeps updating. On the main interface screen, you can also press and hold the **[ARROW]** keys **[LEFT]** or **[RIGHT]** to temporarily nudge the tempo up or down by 10%. Release the key to revert to the original tempo.



- **Nudging the tempo is very handy when manually syncing Tonverk to a turntable or an external sound source. Note that you do not need to be in the TEMPO menu to nudge the tempo.**
- **If Tonverk is set to receive MIDI clock from an external source, the display will show "MIDI" above the BPM on the screen. The BPM can't then be changed on the Tonverk.**

Use ***DATA ENTRY*** knob ***D*** to adjust the **SWING** setting of the pattern, to employ a propulsive, rhythmic groove. The swing ratio can be set to 50-80%. The default setting is equal spacing, 50%.

Press **[NO]** to close the menu.

7.5.2 METRONOME

The metronome settings control the internal metronome of Tonverk. Press **[TEMPO]** to open the TEMPO menu. Use the ***DATA ENTRY*** knobs ***E-H*** to change the settings.

Press **[NO]** to close the menu.

METRO activates/deactivates the metronome. You can also press **[FUNC]** + **[KEYBOARD F#1]** to toggle the metronome on/off even if you are not in the METRONOME menu.

SIG. sets the note and beat measure of the metronome time signature.

PREROLL sets the number of bars the metronome will sound before the sequencer starts playing. This setting is only relevant when you are in LIVE RECORDING mode.

GAIN sets the volume of the metronome's click.

7.6 EDITING PARAMETERS

Each track makes use of up to six parameter page groups, each containing a number of pages. Press **[PARAMETER PAGE]** keys TRIG, SRC, FLTR, AMP, FX, and MOD to access the different PARAMETER page groups. These parameters affect the sound and signal in various ways.

1. Make sure a pattern is playing.
2. Press **[TRK]** + **[TRIG 1–16]** to select a track. Select track 1–8 to get more audible results from the parameter editing.
3. To change, for example, the cutoff of the filter, press the **[FLTR]** key to open the FILTER page. The parameter labeled **FREQ** changes the cutoff of the filter. Turn ***DATA ENTRY*** knob ***E*** to change the parameter value, and hear how the sound is affected.

Try out the remaining PARAMETER page parameters to explore a range of sound-shaping possibilities.

8. TONVERK CONTROLS

8.1 TRIG KEYS

The **[TRIG]** keys have several uses, including, for example, triggering an audio/MIDI track from the active pattern. They can also be used for placing trigs in the RECORDING modes. When pressed in combination with the **[PTN]** and **[SONG]** keys, they select patterns and songs. The **[TRIG]** keys light up to indicate the position of placed trigs and to indicate the chosen bank and track.

8.2 ROTARY ENCODERS

The ***MAIN VOLUME, LEVEL/DATA*** and ***DATA ENTRY*** knobs are relative encoders which may be spun any number of turns. Pressing and turning the ***DATA ENTRY*** knobs changes their associated values at a greater speed.

8.3 KEY BEHAVIOR

As a group, the track selection keys (the **[TRIG]** keys) have radio button functionality, i.e. when a new track is set to be active, the previous one is simultaneously deactivated. Only one track can be selected at a time. Likewise, the group consisting of the six **[PARAMETER PAGE]** keys also has radio button functionality.

8.4 MIDI NOTES AND MESSAGES

Some functions can be triggered by sending MIDI note values from an external MIDI device (a MIDI keyboard or a computer, for example) connected to Tonverk via a MIDI or USB cable.

The 128 notes in the standard MIDI range (0-127) all trigger the preset of the active track in its chromatic variations (as if played by the **[KEYBOARD]** keys; see section below), from lowest to highest pitch.

The subtracks are triggered over MIDI using these note values: 60, 62, 64, 65, 67, 69, 71, and 72.

MIDI program change messages 0–127 will select pattern 1–128 (A01–H16) on Tonverk. Additionally, MIDI CC and NRPN messages can be sent to control various aspects of Tonverk. For more information, please see “APPENDIX D: MIDI” on page 131.

8.5 THE [KEYBOARD]

You can use the **[KEYBOARD]** keys to play the preset of the active audio track (or send MIDI notes with a MIDI SRC machine selected). Press **[TRK]** + **[TRIG 1–12]** keys to select the track you want to play.

Press the lit trig keys to play different notes. The whole note range you can trigger spans 11 octaves. You can transpose the keyboard up or down 5 octaves from the middle octave. Press **[+]/[–]** to transpose the virtual keyboard up or down in octave steps. Press **[+]** + **[–]** to reset the transpose to 0.

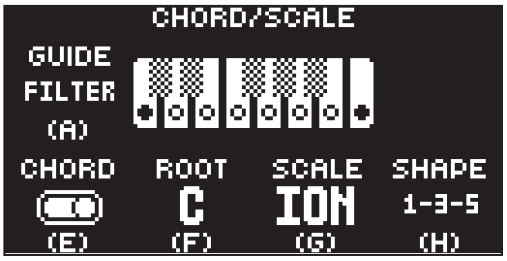
Notes triggered can be recorded on the sequencer in LIVE RECORDING mode. Find out how this is done in section “10.4 LIVE RECORDING MODE” on page 44.



- **The [KEYBOARD] keys do not play the preset chromatically if a Subtracks SRC machine is selected for the active track. Instead, the [KEYBOARD C1, D1, E1, F1, G1, A1, B1, and C2] keys trigger the eight separate subtracks.**
- **If you press [TRIG 9–16] to select a Bus/SendFX/Mix track without first pressing and holding [TRK], you can still use the [KEYBOARD] to play the previously selected audio track. Selecting the same Bus/SendFX/Mix track again toggles editing back to the audio track.**

8.5.1 CHORD/SCALE SETUP MENU

Press **[CHORD]** to open the CHORD/SCALE SETUP menu. Here you get a graphical view of which notes the **[TRIG]** keys play. These settings then affect how you add notes/chords using the **[TRIG]** keys to the sequencer in the LIVE RECORDING mode. Press **[+]/[–]** to transpose the keyboard up or down an octave. Press **[+]** + **[–]** to reset the transpose to 0. In this menu, you can also set different musical scales, select the root note of the scale, and select the chord mode. Use the DATA ENTRY knobs to change the settings. Press **[CHORD]** or **[NO]** to exit the CHORD/SCALE SETUP menu. The settings are stored in the active pattern.



GUIDE (with CHORD set to OFF) decides which notes will play when you press the **[KEYBOARD]** keys.

OFF In this mode, all the **[KEYBOARD]** keys play all notes chromatically and ignore the selected scale.

LIGHT In this mode, all the **[KEYBOARD]** keys play all notes chromatically and ignore the selected scale, but the **[KEYBOARD]** keys within the selected SCALE will light up.

SNAP In this mode, all the **[KEYBOARD]** keys play notes within the selected scale. The **[KEYBOARD]** keys that are not within the scale will play the note that is closest within the scale.

FILTER In this mode, only the **[KEYBOARD]** keys within the selected scale will play notes.

GUIDE (with CHORD set to ON) decides which notes will play when you press the **[KEYBOARD]** keys.

OFF In this mode, the **[KEYBOARD]** key you play will always sound, whether it is within the selected scale or not. However, the notes added by the chord mode always play within the chosen scale and are based on the ROOT, SCALE, and SHAPE settings. If the key played is not within the scale, the added notes will derive from the nearest lower note within the scale.

LIGHT In this mode, the **[KEYBOARD]** key you play will always play a sound, whether it is within the selected scale or not. However, the notes added by the chord mode always play within the chosen scale and are based on the ROOT, SCALE, and SHAPE settings. If the key played is not within the scale, the added notes will derive from the nearest lower note within the scale. The **[KEYBOARD]** keys within the chosen SCALE will light up.

SNAP In this mode all the **[KEYBOARD]** keys play notes within the selected scale. If you play a key that is not within the scale, it will play the note that is closest within the scale. The notes added based on the **ROOT**, **SCALE**, and **SHAPE** settings will also play within the selected scale.

FILTER In this mode, only the **[KEYBOARD]** keys within the selected scale will play notes and trigger chords within the scale.

CHORD switches CHORD MODE on/off. The keyboard now plays multiple notes with each key press. The notes added are based on the **ROOT**, **SCALE**, and **SHAPE** settings.

- **You can also press [FUNC] + [CHORD] to toggle the CHORD MODE on/off.**
- **If CHORD mode is set to ON, the [CHORD] key will light up cyan.**

ROOT sets the root note for the chosen scale.

SCALE sets the scale. This setting governs which notes are playable on Tonverk's **[KEYBOARD]** keys to allow only notes in the set scale (with **GUIDE** set to FILTER) and which notes will sound when **CHORD** is set to ON. For a list of all selectable keyboard scales, please see "APPENDIX C: KEYBOARD SCALES" on page 130.

TYPE/SHAPE With **SCALE** set to CHROMATIC, you have here a selection of different types of chords (for example, MAJ, MIN, MIN7, MAJ7, DIM) to choose from. With **SCALE** set to anything but CHROMATIC, diatonic chords in the scale are created, and **SHAPE** sets which notes in the chord are used.

For example, with **ROOT** set to C and **SCALE** to ION (white key notes only), and **SHAPE** set to 1-3-5:

Playing a C note, this creates the notes C, E, G (C major)

Playing a D note, this creates the notes D, F, A (D minor)

Playing a C note on 1-3-5-7 creates the notes C, E, G, B (C major 7th), etc.

8.6 MUTE MODE

You can use MUTE mode to mute sequencer tracks 1–16. In MUTE mode, you can mute all tracks. However, if you want to mute the subtracks on a track that uses the Subtracks SRC machine, this track needs to be active when you enter MUTE mode. Muting the parent track using the **[TRIG]** key mutes all subtracks.

Press **[MUTE]** to enter MUTE mode and then press **[TRIG]/[SUBTRACKS]** to mute the corresponding track. Press again to unmute. The light of the **[TRIG]/[SUBTRACKS]** keys indicates the mute status. Unlit keys are muted tracks. Lit keys are active tracks. Press **[MUTE]** to exit MUTE mode.

There are two different versions of MUTE mode. Press **[MUTE]** + **[UP/DOWN]** to switch between modes.

- **GLOBAL MUTE MODE** In GLOBAL MUTE mode, the muted tracks are muted in all patterns. In this mode, the **[TRIG]/[SUBTRACKS]** keys are lit green. If you are not in MUTE mode, but have muted one or several tracks/subtracks in GLOBAL MUTE mode, the **[MUTE]** key will be lit dimly green.
  In GLOBAL MUTE mode, on a track that uses a Subtracks machine, if you mute a subtrack, the track's **[TRIG]** key will be lit dimly green.
  Press **[MUTE] + [UP]** to enter GLOBAL MUTE mode.

- **PATTERN MUTE MODE** In PATTERN MUTE mode, the muted tracks are muted only in the active pattern. In this mode, the **[TRIG]/[SUBTRACKS]** keys are lit magenta. If you are not in MUTE mode, but have muted one or several tracks/subtracks in PATTERN MUTE mode, the **[MUTE]** key will be lit dimly magenta. In PATTERN MUTE mode, on a track that uses a Subtracks machine, if you mute a subtrack, the track's **[TRIG]** key will be lit dimly magenta.
  Press **[MUTE] + [DOWN]** to enter PATTERN MUTE mode.

If you are not in MUTE mode, but have muted one or several tracks/subtracks, the **[MUTE]** key will be lit dimly green/magenta. In MUTE mode, on a track that uses a Subtracks machine, if you mute a subtrack, the track's **[TRIG]** key will be lit dimly green/magenta.

You can also prepare tracks for muting/unmuting before the mute action takes effect. While in any MUTE mode, press and hold **[FUNC]** and then press the **[TRIG]** keys corresponding to the tracks you want to mute/unmute. The selected tracks will then be muted/unmuted when you release **[FUNC]**.

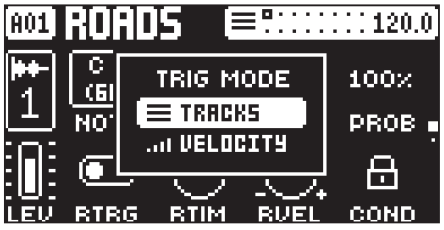
The GLOBAL MUTE mode settings are saved together with the project. The PATTERN MUTE mode settings are saved together with the pattern.



You can also quick mute tracks by pressing [MUTE] + [TRIG]/[SUBTRACKS].

8.7 TRIG MODES

The various TRIG modes affect the functionality of the **[TRIG 1–16]** keys. Press **[FUNC]** + **[DOWN]** to access the TRIG MODE menu and then use **[UP]/[DOWN]** to select which TRIG mode should be active. The selected TRIG mode is active for all the tracks. All actions performed using the trig modes can be recorded in LIVE RECORDING mode.



TRACKS

This is the default TRIG mode. In this mode, the **[TRIG 1–16]** keys trigger/select the corresponding tracks.

VELOCITY

In this TRIG mode, the **[TRIG 1–16]** keys trigger the active track with different amounts of velocity from low to high.

9. PATTERNS, PRESETS, AND INSTRUMENTS

The patterns are the primary data container for Tonverk. Sixteen patterns are available for each of the eight banks, resulting in 128 patterns for each project. A pattern contains up to 12 presets (one for each track), as well as sequencer data such as trigs and parameter locks. It also includes the default settings on the TRIG page, as well as BPM, length, swing, and time signature settings.

A preset that has been imported from the SD card to a pattern becomes part of the active pattern. Any changes made to a preset will therefore not affect the stored preset. They only affect the preset in the active pattern. You can save a preset from the active pattern to the SD card. For more information, please see “9.1 THE FILE MENU” on page 33.

A preset imported to a pattern becomes an independent copy of the preset on the SD card. It is not linked to the original preset on the SD card, and instead becomes a part of the pattern.

A pattern contains:

- All the presets used on the pattern’s tracks.
- Routing settings.
- Sequencer data, such as trigs and parameter locks, for the 16 tracks.
- The settings on the TRIG page, BPM, length, swing, and time signature settings.

A preset contains:

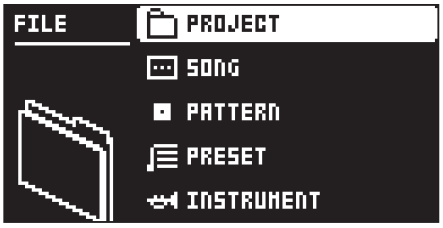
A preset is a sample (for the Single Player machine), eight separate samples collected in an Instrument (for the Subtracks machine) or a multi-sample Instrument (for the Multi Player machine) plus all the track settings in the SRC, FLTR, AMP, FX (only the settings for the two insert effects), and MOD parameter pages. If you have selected the MIDI machine as a SRC machine, the preset will not contain any samples. For more information, please see “A.2 SRC MACHINES” on page 90.

An instrument is:

An instrument contains the samples and the sample mapping used to create a multi-sample that the Subtracks and Multi Player machines play. The instrument also includes information such as Sample level, Loop length, Tune, and Play Mode.

9.1 THE FILE MENU

Press **[FUNC]** + **[PRESET]** to open the FILE menu. Here you manage projects, songs, patterns, and presets. Use the **[ARROW]** keys and ***LEVEL/DATA*** to navigate the menu. Press **[YES]** to select a menu item. Press **[NO]** to exit the menu.



9.1.1 PROJECT

This is where you can load, create, and save projects.

LOAD

Use **[UP]**/**[DOWN]** to select the project you want to load, and then press **[YES]**.

If you load a new project, it will replace the active project. Be sure to save your active project before you load another project.

PROJECT ACTIONS

Use **[UP]**/**[DOWN]** to select the project you want to interact with. Then press **[RIGHT]** to bring up a list of commands. Press **[NO]** or **[LEFT]** to exit the list.

LOAD Loads the selected project. This option is only available if the selected slot is not the same as the current project’s slot.

RELOAD Reloads the current project from its last saved state. This option is only available if the selected slot is the same as the current project's slot.

SAVE Saves the current project to the selected project slot. This option is only available if the selected slot is the same as the current project's slot. You can also press **[FUNC]** + **[SETTINGS]** to directly save the current project to its own slot.

SAVE TO Saves the current project to the selected project slot. When selecting this option, you are asked if you want to overwrite the selected project or not. This option is only available if the selected slot is not the same as the current project's slot.

RENAME Opens a NAMING screen where you can rename the project file.

DELETE Deletes the selected project.

SAVE

Saves the current project. You can also press **[FUNC]** + **[SETTINGS]** to directly save the current project to its own slot.

SAVE AS

This option lets you save the current project under a new name and to a new slot.



Projects are saved on Tonverk's SD card in the USER/PROJECTS folder.

NEW

Select this option to create a new project. If you have not saved the project you are currently working on, you will be prompted to save it.



If you create a new project, it will replace the active project. Be sure to save your active project before you load another project.

9.1.2 SONG

Here you can rename and clear the currently selected song. These options are only available if you are in SONG mode and have selected a song.

RENAME Opens a NAMING screen where you can rename the song.

CLEAR Clears the song.

9.1.3 PATTERN

Here you can rename and clear the currently selected pattern.

RENAME Opens a NAMING screen where you can rename the pattern.

CLEAR Clears the pattern.

WHOLE PATTERN Clears the active pattern's sequencer data and kit data. A prompt appears when you select this option. Press **[YES]** to clear, or **[NO]** to cancel the operation. Note that no pattern information will be permanently lost until the pattern is saved to the same pattern slot from which it was loaded.

KIT DATA Clears the active pattern's kit. This option clears all preset data for all tracks. All sequencer data will remain unchanged. A prompt appears when you select this option. Press **[YES]** to clear, or **[NO]** to cancel the operation. Note that no kit information is permanently lost until the pattern is saved to the same pattern slot from which it was loaded.

SEQUENCE DATA Clears the active pattern's sequence data. All presets will remain unchanged. A prompt appears when you select this option. Press **[YES]** to clear, or **[NO]** to cancel the operation. Note that no sequencer information is permanently lost until the pattern is saved to the same pattern slot from which it was loaded.

9.1.4 PRESET

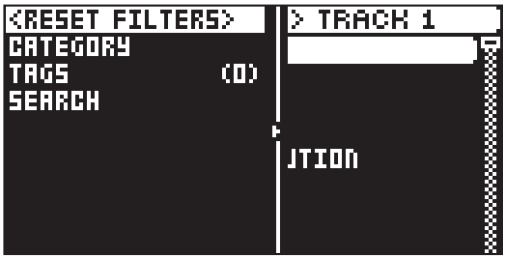
Here you can load, save and manage presets.

LOAD

Use this option to load a preset to the active track. You can also press **[PRESET]** to access this menu item directly.

1. Press **[TRK]** + **[TRIG 1–8]** to select the track you want to load the preset to.
2. Use **[LEFT/RIGHT]** to highlight a preset category, and then use **[UP/DOWN]** or ***LEVEL/DATA*** to select a preset.
3. Press **[YES]** to load the preset to the active track.

Press **[LEFT]** to open the SORTING menu, where you can filter and view presets by category, tags, or text search. These different filters can be combined. Press **[YES]** to execute the commands. Press **[NO]** or the **[RIGHT]** arrow key to exit the menu.



<RESET FILTERS> clears all filter settings and shows all presets.

CATEGORY lets you filter and view presets based on the two main categories DRUMS and KEYS.

TAGS lets you filter and view presets based on their tags. Press **[YES]** to select or deselect a tag. You can select multiple tags. Press **[NO]** to exit the tag list.

SEARCH performs a text search and lists all presets whose names match or include the text you enter. Press **[FUNC] + [NO]** to clear the search. For more information, please see “6.7 THE NAMING SCREEN” on page 23.

SAVE

Use this option to save a previously loaded preset. Press **[YES]** to save the preset.



If you use the SAVE option and attempt to save a preset that you have not previously saved, you will be prompted to provide a name for the preset and add tags before saving it.

SAVE AS

Use this option to save the active track’s sound as a preset and give it a name.

1. Press **[YES]** to initiate the saving process and open a NAMING screen.
2. On the NAMING screen, name your preset and then press **[YES]**. For more information, please see “6.7 THE NAMING SCREEN” on page 23.
3. On the TAG screen, you can add tags to the preset. The DRUMS and KEYS tags are main categories and are used in the LOAD PRESET menu. Press **[YES]** to apply or remove tags. Highlight <SAVE> and press **[YES]** to save.



Presets are saved on Tonverk’s SD card in the USER/PRESETS folder.

MANAGE

Opens the Preset manager menu. Here presets can be saved, loaded, renamed, tagged, and so on. Opening this menu will show a list of all presets found on the SD card.

The available operations will affect the highlighted preset. Use **[UP]/[DOWN]** keys or ***LEVEL/DATA*** to select a preset. Press **[RIGHT]** to access the PRESET OPERATIONS menu. Use **[UP]/[DOWN]** to navigate the menu. Press **[YES]** to apply the commands to the selected preset. Press **[NO]** to exit the menu.

RENAME Opens a NAMING screen where you can rename the preset.

EDIT TAGS opens a menu where presets can be tagged. Presets can have any number of tags. Press **[YES]** to apply or remove tags. Highlight <SAVE> and press **[YES]** to save.

DELETE deletes the preset or selected presets.

Press **[LEFT]** to open the SORTING menu, where you can filter and view presets by category, tags, or text search. These different filters can be combined. Press **[YES]** to execute the commands. Press **[NO]** or the **[RIGHT]** arrow key to exit the menu.



<RESET FILTERS> clears all filter settings and shows all presets.

CATEGORY lets you filter and view presets based on the two main categories DRUMS and KEYS.

TAGS lets you filter and view presets based on their tags. Press **[YES]** to select or deselect a tag. You can select multiple tags. Press **[NO]** to exit the tag list.

SEARCH performs a text search and lists all presets whose names match or include the text you enter. Press **[FUNC] + [NO]** to clear the search. For more information, please see "6.7 THE NAMING SCREEN" on page 23.

9.1.5 INSTRUMENT

Here you can rename, save, export and clear the currently selected instrument. These options are only available if the current track has a SRC machine that uses instruments (Multi Player or Subtracks).

RENAME

Opens a NAMING screen where you can rename the instrument for the current project.

SAVE AS

This option lets you save the current instrument under a new name and to a new slot.

EXPORT

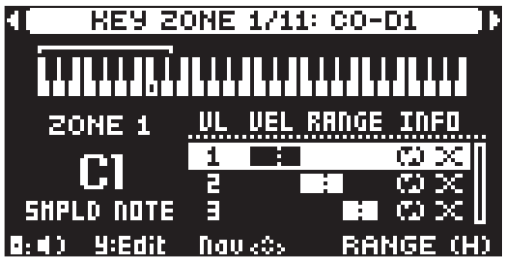
Exports the instrument along with all the samples it contains to the SD card.

INSTR SETTINGS

This option is only available if the selected track has a Multi Player SRC machine assigned to it. For more information, see "A.2.2 MULTI PLAYER" on page 92.

TRIM/LOOP EDITOR

You can use the Trim/Loop Editor to edit a Multi Player instrument that was created using either Tonverk's Auto Sampler or a third-party software. Here you can edit the key zones and trim the playback and loops of the samples. You can also edit the velocity layers and set a round-robin behavior that decides which sample in the layer plays.



1. Use **[RIGHT]**/**[LEFT]** to select a key zone and **[UP]**/**[DOWN]** to select a velocity layer. The top of the screen shows the details for the selected key zone. The dot on the keyboard on screen shows which key in the key zone the sample file is assigned to.
2. If the instrument contains more than one velocity layer, use ***DATA ENTRY*** knob ***H*** to set the velocity range for when to trigger that layer's sample.

3. If the instrument has more than one sample per velocity layer, shown by RR under INFO, press **[YES]** to edit the round-robin behavior. Use **[UP]/[DOWN]** to select a sample in the layer. You can scroll through all the samples in all layers here. Use ***DATA ENTRY*** knob ***E*** to select the round robin mode, which decides which sample in the layer plays. The modes are:

   FORWARD (FWD) plays the samples in order, from the first to the last, and then starts over.

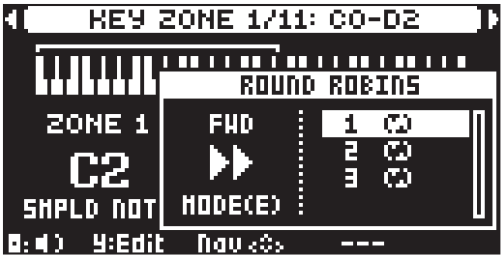
   PING-PONG (P-P) plays the samples in order, then in reverse order, back and forth.

   REVERSE (REV) plays the samples in reverse order, last to first, and then starts over.

   RANDOM (RND) plays the samples in random order.

   RANDOM NO REPEAT (RNR) plays the samples in random order, but not the same twice in a row.

4. Use **[UP]/[DOWN]** to select a sample in the round robin popup, then press **[YES]** to edit the loop details for that sample. If the instrument has only one sample per velocity layer, pressing **[YES]** after step 2 also takes you to this editor. **[FUNC]** + ***DATA ENTRY*** knob ***E–H*** snaps to zero crossings. The **[KEYBOARD]** keys preview the sample unpitched. If you press **[FUNC]** + **[YES]** and tick FOLLOW KEY, the **[KEYBOARD]** keys preview the whole instrument with all its samples.



   CUR
   The cursor sets the position in the sample that ZOOM centers on.

   LOOP
   Sets whether the sample loops or not.

   XFADE
   Crossfade sets how much the audio crossfades at the sample's loop points. It crossfades the audio before the **L.STR** loop point with the audio before the **L.END** loop point.

   ZOOM
   Zooms in on the area of the sample around the cursor.

   STRT
   Start sets where the sample starts playing. **STRT** and **END** together set which part of the sample can play.

   L.STR
   Loop Start sets the position in the sample that playback returns to when it reaches the **L.END** position. The sample then loops between **L.STR** and **L.END**.

   L.END
   Loop End sets where the loop ends, and from there playback returns to the **L.STR** position.

   END
   End Position sets where the sample stops playing. **STRT** and **END** set which part of the sample can play when **LOOP** is set to OFF.

5. Make the settings you want for the sample, then use **[UP]/[DOWN]** to select another sample to edit.

6. Press **[NO]** twice or a **PARAMETER PAGE** key to exit the Trim/Loop editor.



- **Please note that the Auto Sampler cannot create velocity layers that hold several samples for round robin playback.**
- **Any edits you make to the instrument are not saved automatically, and they only affect the instrument on the active track.**

LOOP ON RELEASE

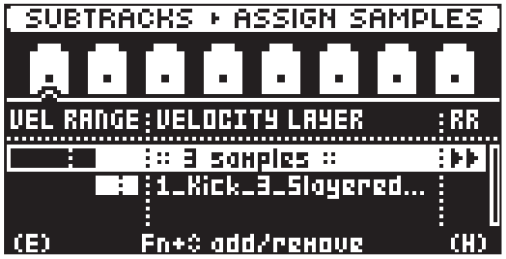
When you select this, each separate sample in the Multi Player loops through both the sustain and the release phase of the envelope.

EDIT SUBTRACK

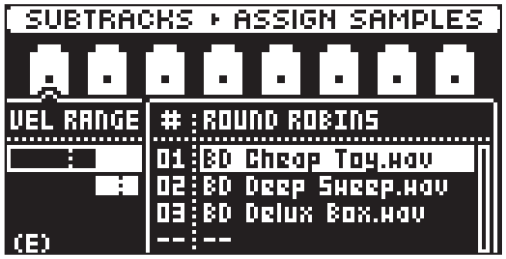
Opens the Subtracks Instrument Editor. This option is only available if the selected track has a Subtracks SRC machine assigned to it. For more information, see “A.2.3 SUBTRACKS” on page 92.

THE SUBTRACKS INSTRUMENT EDITOR

You can use the Subtracks Instrument Editor to edit the selected Subtracks instrument. You can change the sample for each subtrack and add velocity layers. You can also add several samples to a velocity layer and set a round-robin behavior that decides which sample in the layer plays.



1. Press a **[SUBTRACKS]** key to select the subtrack you want to edit.
2. Press **[FUNC]** + **[DOWN]** if you want to add another velocity layer. **[FUNC]** + **[UP]** removes the selected layer. Use ***DATA ENTRY*** knob ***E*** to set the velocity center value for the selected layer. The layer whose velocity center value is closest to the velocity you play is the one that plays.
3. Press **[YES]** to open the selected velocity layer. Here you can replace and add samples to the layer. Highlight a sample and press **[YES]** to open the File Browser, where you select a sample. Press **[FUNC]** + **[DOWN]**, or select –– and press **[YES]**, to add more samples to the layer. Use the File Browser to select a sample. Press **[NO]** when you are done editing the layer.



4. If the selected layer contains more than one sample, you can use ***DATA ENTRY*** knob ***H*** to select the round robin mode, which decides which sample in the layer plays. The modes are:

   FORWARD plays the samples in order, from the first to the last, and then starts over.

   PING-PONG plays the samples in order, then in reverse order, back and forth.

   REVERSE plays the samples in reverse order, from the last to the first, and then starts over.

   RANDOM plays the samples in random order.

   RANDOM NO REPEAT plays the samples in random order, but never the same twice in a row.

5. Press **[NO]** to exit.



Any edits you make to the instrument are not saved automatically, and they only affect the instrument on the active track.

9.2 PLAYING A PRESET

Press the **[TRIG 1–8]** keys to play the presets of the tracks in the active pattern. The **[TRIG]** keys will briefly light up when pressed.

9.2.1 PLAYING A PRESET WITH AN EXTERNAL MIDI DEVICE

The presets can also be played chromatically using an external MIDI device connected to Tonverk. The MIDI channels dedicated to each of the tracks are the same as the track’s number.

9.3 EDITING A PRESET

Select a track for editing by pressing **[TRK]** + one of the **[TRIG 1–8]** keys. When editing the track settings, any changes made will be stored as part of the active pattern.

Adjust the overall track level of the active audio track with the ***LEVEL/DATA*** knob. The **TRACK LEVEL** setting is saved as part of the pattern.

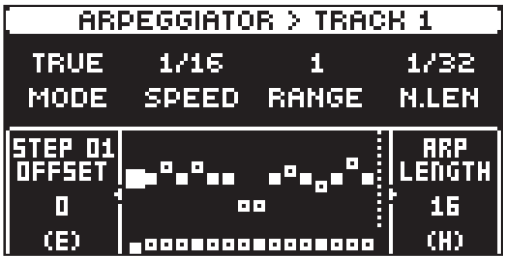
Edit a preset by adjusting the parameters found on the PARAMETER pages. Access these pages by pressing a **[PARAMETER PAGE]** key. Use the ***DATA ENTRY*** knobs ***A-H*** to change the parameters. For more information, please see “12. AUDIO TRACK PARAMETERS” on page 58.



The complete track preset, with all its parameter settings, may be copied to another track if the target track is in the same type (Audio/MIDI tracks, Bus tracks, Send FX tracks). Press [TRK] + [TRIG 1–16] + [RECORD], and then press [TRK] + [TRIG 1–16] + [STOP] to paste the preset to the selected track.

9.4 ARPEGGIATOR MENU

The ARPEGGIATOR menu contains the settings for the preset’s arpeggiator. These settings are part of the preset and are saved together with it. Press **[ARP]** to open the ARPEGGIATOR menu. Press **[TRK]** + **[TRIG 1–16]** to select the track whose arpeggiator you want to edit. Press **[FUNC]** + **[ARP]** to toggle the ARPEGGIATOR on and off. The **[ARP]** key will be illuminated cyan when the arpeggiator is active for the selected track, while not in the ARPEGGIATOR menu. Press **[ARP]** or **[NO]** to exit the ARPEGGIATOR menu.



9.4.1 MODE

Activates the arpeggiator and controls how the arpeggiated notes are sorted.

OFF deactivates the arpeggiator.

TRUE plays the notes in the same order as they are inserted.

UP plays the notes in ascending order, from the lowest note to the highest, on a per-octave basis.

DOWN plays the notes in descending order, from the highest note to the lowest, on a per-octave basis.

CYCLE plays the notes first in ascending order, then in descending order.

RAND randomizes the playback of the notes.

9.4.2 SPEED

Speed sets the speed of the arpeggiator. It is synchronized to the BPM of the project.

9.4.3 RANGE

Range sets the octave range of the arpeggiator. After each completed arpeggiator cycle, the arpeggiated notes are transposed one octave up. When the notes have reached the octave offset specified by the RANGE setting, the notes are reset to their initial values. From there, the octave transpose is started all over again.

9.4.4 N.LEN

Note Length controls the length of the arpeggiated notes.

9.4.5 OFFSET

Offset selects the offset (note) value of the chosen arpeggiator step in semitones. The offset is from the original note trig.

1. Press **[LEFT]** or **[RIGHT]** to select which arpeggiator step to offset.
2. Use ***DATA ENTRY*** knob ***E*** to set the offset. You can also press and hold the **[TRIG]** keys while turning ***DATA ENTRY*** knob ***E*** to offset multiple arpeggiator steps at once.

3. Press **[DOWN]** to mute an arpeggiator step. Press **[UP]** to unmute an arpeggiator step that has been muted. You can also use the **[TRIG]** keys to mute or unmute individual arpeggiator steps. A green-lit key means the step will play, while an unlit key means the step is muted.

9.4.6 ARP LENGTH

Turn ***DATA ENTRY*** knob ***H*** to select the length of the arpeggio. The max length is 16 sequencer steps.



- **You can use [FUNC] + [LEFT]/[RIGHT] to rotate the arpeggiator sequence.**
- **The arpeggiator's parameter settings can be live recorded and parameter locked.**



There are a number of shortcuts you can use to randomize the arpeggiator settings when in the ARPEGGIATOR menu.

- **[ARP] + [YES] enables the arpeggiator and randomizes all parameters.**
- **[E] (press) + [YES] randomizes offset.**
- **[E] (press) + [PLAY] resets offset.**
- **[ARP] + [PLAY] disables the arpeggiator and resets all parameters to default.**

10. THE SEQUENCER

Tonverk's sequencer stores its information in patterns. A pattern controls the playback of the tracks and various pattern-specific aspects of the tracks. Patterns are stored in projects. A project contains eight banks (A to H), each with 16 patterns, resulting in 128 patterns available for each project.

A pattern contains:

- General trig settings on the TRIG page (default note pitch, velocity, etc.).
- The settings on the PARAMETER pages.
- The settings in the SETUP menu.
- Quantization settings.
- Note trigs and Lock trigs for all tracks.
- Parameter locks.
- Length and time signature for the tracks.

10.1 PATTERN OPERATIONS

Tonverk can seamlessly switch between patterns. Together with the ability to chain patterns, this is a handy feature when improvising live. For more information, please see "10.1.3 CHAINS" on page 41.

10.1.1 SELECTING BANK AND PATTERN

Press **[PTN]** and then use the **[SUBTRACKS]** keys to select a bank (if you want to choose a pattern from a bank other than the current one). Then press **[TRIG 1–16]** to select a pattern.

If you just want to choose a pattern within the current bank, press **[PTN]** + **[TRIG 1–16]**.

Press **[PTN]** or **[NO]** to exit bank/pattern selection.

White **[TRIG]** keys indicate pattern positions that contain data. A red **[TRIG]** key indicates the currently active pattern. Empty patterns are unlit.

When a pattern is playing, and a new pattern is selected, the new pattern number will be shown flashing in the upper left corner of the screen. Once the last step of the pattern has played, the new pattern will begin, and the pattern number will stop flashing.



- **Patterns can be changed while the sequencer is running.**
- **Patterns can be changed and queued by sending program change messages.**
- **It is possible to copy a pattern, and then paste it to one or several locations without leaving the current pattern. You can also clear one or several non-active patterns.**
  - To copy, first press [PTN]. Then press [TRIG] + [RECORD] to select the pattern you wish to copy and copy it. Then press [TRIG] + [STOP] to select where you want to paste the pattern and paste it.
  - To clear, first press [PTN]. Then press [TRIG] + [PLAY] to select the pattern you wish to clear and clear it.

10.1.2 PATTERN CONTROL

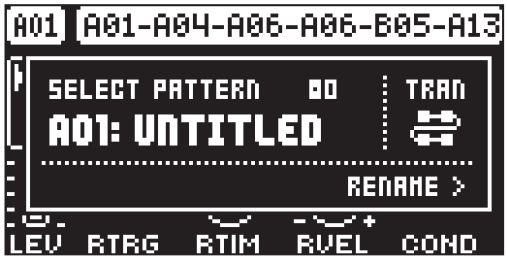
Press **[PLAY]** to start the playback of a pattern. Press **[STOP]** to stop the playback of all tracks. The sound will be cut off, but effects like Delay will continue to be audible until the delay repeats have faded out. Quickly press **[STOP]** + **[STOP]** to stop playback of all tracks and get just a short fade-out.

When a pattern is playing, press **[PLAY]** to pause the playback. Press **[PLAY]** to resume the playback. Press **[STOP]** + **[PLAY]** to restart playback.

If a pattern contains more than 16 sequencer steps, the small square boxes at the top of the screen will indicate this. When a pattern is playing, the active pattern page is shown with a blinking unfilled square.

10.1.3 CHAINS

Chains are sequences that consist of more than one pattern. You can use chains to preselect and automate the order in which you want your patterns to play.



You can create one chain and use any pattern in banks A–H. The chain can consist of up to 64 patterns.

1. Ensure you are in the SEQUENTIAL TRANSITION mode. You can only create chains in this mode. For more information, please see “10.1.4 TRANSITION MODE” on page 42.
2. Press **[PTN]** to enter the pattern selection.
3. Press and hold **[TRIG 1–16]** to select the first pattern in the chain.
4. Press **[TRIG 1–16]** keys in the same order as you want the chained patterns to play. Keep the previously selected **[TRIG]** key pressed while you press the next one, the one after that, and so on. You can press the same **[TRIG]** key again if you wish to add the pattern multiple times in a row. If you want to add a pattern from another bank, use the **[SUBTRACKS]** keys to select bank and then press **[TRIG 1–16]** to select a pattern.
5. Press **[PLAY]** to start the sequencer and play the chain. The chain will loop when the final pattern of the chain has been played.

To exit chain mode, select a pattern or song using the normal selection process.

Please note that the chain will be lost when you create a new chain, select a new pattern, or a song. You cannot save chains, and they will be lost when you switch Tonverk off.

- **Chains can be created while the sequencer is running.**
- **TRANSITION mode must be set to SEQUENTIAL if you wish to create chains.**

10.1.4 TRANSITION MODE

When changing patterns, the different TRANSITION modes affect the way the active pattern changes to the next pattern. Press **[FUNC]** + **[PTN]** to open the TRANSITION mode select menu. Either keep holding **[FUNC]** while pressing **[PTN]** to cycle through the modes, or use **[UP]**/**[DOWN]** and then press **[YES]** to select a mode.



There are four TRANSITION modes.

SEQUENTIAL changes patterns after the currently playing pattern reaches its end. This mode is the default mode.

DIRECT JUMP immediately changes patterns. The new pattern will start playing from the position where the previous pattern left off.

DIRECT START immediately changes patterns. The new pattern will start playing from the beginning.

TEMP JUMP immediately changes patterns and the new pattern starts playing from the position where the previous pattern left off. It plays the new pattern once to the end and then returns to the pattern that was playing before the change.

You can also use TEMP JUMP mode when you are in CHAIN mode, but then the pattern you change to instead replaces the current pattern in the chain. For example, say that you have a chain set up like this: A01 > A03 > A04 > A02. When the chain is playing, and you are in TEMP JUMP mode, change pattern to A16 while pattern A03 is playing. The pattern will immediately change to A16, and once A16 has ended, then the chain continues to play from pattern A04.

10.2 EDITING A PATTERN

Tonverk offers several input modes when creating or editing a pattern. The modes are GRID RECORDING mode, LIVE RECORDING mode, and STEP EDIT mode. In these modes, you can enter two types of trigs: Note trigs and Lock trigs.

10.2.1 TRIG TYPES

A trig is a sequencer event that you can place when you want the sequencer to perform an action on Tonverk. There are two types of trigs that you can use: note trigs and lock trigs

- **NOTE TRIGS** trigger preset notes or MIDI notes.
- **LOCK TRIGS** trigger parameter locks (but do not trigger notes). For more information, please see “10.10.1 PARAMETER LOCKS” on page 47.

Red **[TRIG]** keys indicate note trigs, and yellow **[TRIG]** keys indicate lock trigs. Unlit **[TRIG]** keys indicate steps that do not contain any trigs. Read more about parameter locks in section “10.10.1 PARAMETER LOCKS” on page 47. The method of adding trigs to the sequencer depends on the active record mode – GRID RECORDING or LIVE RECORDING. Note trigs can also be added using STEP EDIT.

10.3 GRID RECORDING MODE

GRID RECORDING is a method of composing where you use the **[TRIG]** keys to add trigs.

1. Press **[RECORD]** to enter GRID RECORDING mode. The **[RECORD]** key lights up red to indicate that GRID RECORDING mode is active.
2. Select the track to which you want to add trigs by pressing and holding **[TRK]** and then one of the **[TRIG]** keys. A white **[TRIG]** key indicates the active track.
3. Place note trigs on the sequencer using the sixteen **[TRIG]** keys. To add a lock trig, press **[FUNC]** + **[TRIG]**. Quickly pressing the **[TRIG]** key of any of the trigs entered will remove the trig. Pressing and holding a **[TRIG]** key prepares the trig for editing, rather than removing it.
4. Select another track, and add note trigs. Repeat the procedure for all the tracks you want to use.
5. Press **[PLAY]** to listen to the sequence.

Add micro timing to a note trig by pressing and holding the **[TRIG]** key, and then pressing **[LEFT]/[RIGHT]**. For more information, please see “10.5 MICRO TIMING” on page 45.

Set the retrig speed by pressing and holding the **[TRIG]** key, and then make the desired retrig settings. For more information, please see “10.7 RETRIGS” on page 46, and “11.1 TRIG” on page 53.

If the pattern contains more than 16 steps, select the pattern page you want to edit by pressing the **[PAGE]** key. A fully lit <PATTERN PAGE> LED shows the active pattern page.

Press **[RECORD]** to exit the GRID RECORDING mode.



- **If your pattern has more than one page, you can easily select which page you want to edit. In GRID RECORDING mode, press and hold [PAGE], and then press [UP] and choose SELECT PAGE. While still holding [PAGE], press [TRIG 1–16] to select the active page for editing. You can also cycle through the pages with the [LEFT] and [RIGHT] keys while holding [PAGE].**
- **You also have the possibility to select which pages of your pattern you want the sequencer to play and loop. The selected pages are then looped on playback.**
  In GRID RECORDING mode, press and hold [PAGE], and then press [DOWN] and choose LOOP PAGES. While still holding [PAGE], press [TRIG 1–16] to select which pattern pages you want to play and loop. Green [TRIG] keys show the selected pages. The [TRIG 1–16] keys corresponds to pattern pages 1–16. Press [PAGE] + [NO] to resume normal playback of all pages in the pattern.
- **If you use an external MIDI controller to record to Tonverk’s MIDI tracks, the sequencer receives data on the Auto MIDI channel and records on the active track. For more information, please see “17.2.3 CHANNELS” on page 80.**
- **All trigs placed on a track or subtrack can be shifted forward or backward on the sequencer. While in GRID RECORDING mode, press [FUNC] + [LEFT]/[RIGHT] to move the trigs backward or forward.**
- **In GRID RECORDING mode, press [TRIG] + [YES] to preview a specific trig. The preview includes any parameter locks you have placed on that trig.**
- **When in STEP EDIT, press [KEYBOARD] + [YES] to preview a specific note. The preview includes any parameter locks you have placed on that note or the step.**
- **With CHORD mode enabled, adding a trig in GRID RECORDING mode or using STEP EDIT adds all notes in the selected chord.**

10.3.1 STEP EDIT

STEP EDIT is part of the GRID RECORDING mode and gives you a practical way to add and remove notes/trigs on specific sequencer steps using the **[KEYBOARD]**.

1. In normal playback mode, press **[STEP EDIT]**.
2. Press the **[TRIG]** key for the step where you want to add/remove notes. The **[TRIG]** key turns green.
3. Use the **[KEYBOARD]** to add/remove notes to the selected trig.
4. Press **[STEP EDIT]** again to exit STEP EDIT.



- **You can also access STEP EDIT when you are in GRID RECORDING mode. The procedure is the same, but you need to press and hold the selected [TRIG] key while you are adding/removing notes. Also, notes added this way replace any previously added notes on that trig.**
- **You can also use an external MIDI keyboard to add notes using STEP EDIT.**

10.3.2 SEQUENCE LANE

To make it easier to edit a pattern, you can use the Sequence lane functionality to select which sequencer events you want to view and interact with using the **[TRIG]** keys. This is especially useful when you have recorded a sequence and want to edit it with more precision. In GRID RECORDING mode, the chosen sequence lane is displayed at the top of the screen, next to the sequencer pages.



1. Press **[FUNC]** + **[UP]** to open the SEQUENCE LANE menu.
2. Use the **[UP]**/**[DOWN]** keys to select which sequence lane you want to view and interact with.
   - **NOTES** lets you view and interact with Note trigs only. Trigs that contain Note trigs are shown with red **[TRIG]** keys. Trigs that contain Lock trigs are shown with faint yellow **[TRIG]** keys. Pressing an empty **[TRIG]** key (or a **[TRIG]** key that contains a Lock trig) adds a Note trig. Pressing a **[TRIG]** key that contains a Note trig removes it. Pressing a **[TRIG]** key that contains both a Note trig and a Lock trig only removes the Note trig.
   - **P-LOCKS** lets you view and interact only with Lock trigs (with or without parameter locks). Trigs that contain Lock trigs are shown with blinking yellow **[TRIG]** keys. Trigs that contain Note trigs are shown with faint red **[TRIG]** keys. Trigs that contain both Note trigs and Lock trigs are shown with blinking red **[TRIG]** keys. Pressing an empty **[TRIG]** key adds a Lock trig. Pressing a **[TRIG]** key that contains a Lock trig removes it. Pressing a **[TRIG]** key that contains both a Lock trig and a Note trig only removes the Lock trig.
   - **NOTES + P-LOCKS** This is the default option, and it lets you view and interact with both Note trigs and Lock trigs (with or without parameter locks). Trigs that contain Note trigs are shown with red **[TRIG]** keys. Trigs that contain Lock trigs are shown with yellow **[TRIG]** keys. Trigs that contain both Note trigs and Lock trigs are shown with blinking red **[TRIG]** keys. Pressing an empty **[TRIG]** key adds a Note trig. **[FUNC]** + **[TRIG]** adds a Lock trig. Pressing **[FUNC]** + **[TRIG]** key that contains a Note trig converts it to a Lock trig. Pressing a **[TRIG]** key that contains a Note trig removes it. Pressing a **[TRIG]** key that contains a Lock trig converts it to a Note trig. Pressing a **[TRIG]** key that contains both a Lock trig and a Note trig removes both the Note trig and the Lock trig.
3. Press **[NO]** to exit the SEQUENCE LANE menu.

For more information, please see “10.2.1 TRIG TYPES” on page 43.

10.4 LIVE RECORDING MODE

LIVE RECORDING mode is the second method of adding trigs to the tracks. In this recording mode, the **[TRIG]** keys are played in real-time to input trigs to the tracks. You can also use KEYBOARD mode to add note trigs chromatically. It is also possible to enter parameter locks in real-time. Trigs input in LIVE RECORDING mode can be automatically quantized or not. Non-quantized trigs can be quantized after they are

recorded by using the QUANTIZE menu that is accessed by pressing **[FUNC]** + **KEYBOARD G#1]**. For more information, please see “10.8 QUANTIZE MENU” on page 46.

1. Press and hold **[RECORD]**, then press **[PLAY]** to enter LIVE RECORDING mode. (Press **[PLAY]** twice while keeping the **[RECORD]** key pressed to activate/deactivate automatic quantization.) The sequencer starts to play, and the **[RECORD]** key starts to flash red.
2. Press the **[TRIG]** keys to add trigs in real-time. You can also use the **[KEYBOARD]** to play the active track chromatically. If the active track has a Subtracks SRC machine assigned, you can play all eight Subtracks by pressing the **[SUBTRACKS]** keys. Changes to the PARAMETER page’s settings made using the ***DATA ENTRY*** knobs are recorded as parameter locks and add lock trigs where needed.
3. Press **[PLAY]** to exit LIVE RECORDING mode while keeping the sequencer playing. If LIVE RECORDING mode is active and **[RECORD]** is pressed, GRID RECORDING mode will be activated.
4. Press **[STOP]** to stop both recording and playback of the sequencer.



You can use an external MIDI controller such as a keyboard to input NOTE, TRIG VELOCITY, and TRIG LENGTH data in LIVE RECORDING mode. Just play the notes on the external keyboard, and the sequencer will record them. The first note sets the TRIG VELOCITY value for all notes on the trig. The last note that is released sets the TRIG LENGTH for all notes on the trig.

10.5 MICRO TIMING



Here you can add micro timing to a note trig, moving it ahead or behind the beat. Micro timing can be customized on any of the sequencer steps on both audio and MIDI tracks. In GRID RECORDING mode, press and hold one or several **[TRIG]** keys and then press **[LEFT]/[RIGHT]** to access the pop-up MICRO TIMING menu that shows the time offset for the chosen sequencer step(s) on the active track. Press **[LEFT]/[RIGHT]** to adjust the time offset in large increments. Press **[UP]/[DOWN]** to adjust the time offset in small increments. To exit the MICRO TIMING menu, release the **[TRIG]** key(s). The micro timing settings are stored in the active pattern.

10.6 TRANSFORM MENU

Here you can affect certain aspects of the trigs already placed on a track. The Transform actions affect all the trigs on the selected track. Press **[FUNC]** + **[-]** to access the TRANSFORM menu.



VELOCITY UNLOCK removes all parameter locks for the VEL parameter.

VELOCITY RANDOMIZE randomizes the velocity of the trigs by placing parameter locks on the VEL parameter.

VELOCITY RAMP UP sets the velocity of the trigs from low to high by placing parameter locks on the VEL parameter.

VELOCITY RAMP DOWN sets the velocity of the trigs from high to low by placing parameter locks on the VEL parameter.

PLACEMENT RANDOMIZE randomizes the placement of the trigs on the track.

PLACEMENT REVERSE reverses the placement of the trigs on the track.

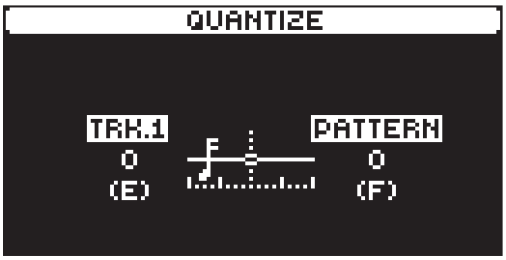
10.7 RETRIGS

Retrigs can be customized on any of the sequencer steps on the audio tracks. In GRID RECORDING mode, press **[TRIG PARAMETERS]** to access the retrig parameters. Hold one or several **[TRIG]** keys and then set the desired retrig options for the trig(s).

For more information about the parameters on this page, please see “12.2 TRIG PAGE 1” on page 58.

10.8 QUANTIZE MENU

The quantization affects all micro-timed and off-grid trigs on the sequencer’s tracks. Press **[FUNC]** + **[KEYBOARD G#1]** to access this menu. Change settings with ***DATA ENTRY*** knobs ***E*** and ***F***. Keep in mind that quantization snaps a trig to the nearest step on the sequencer. If you’ve applied micro timing to a trig, that nearest step might not be the step it originally sat on. However, you still control and edit the trig using the **[TRIG]** key for the step it was placed on.



TRK affects all the trigs of the active track in real-time. The higher the quantize value, the more the trigs will be quantized. Press **[TRIG 1–16]** to select the track to quantize.

PATTERN affects all the trigs of all tracks in the pattern in real-time. The higher the quantize value, the more the trigs will be quantized.

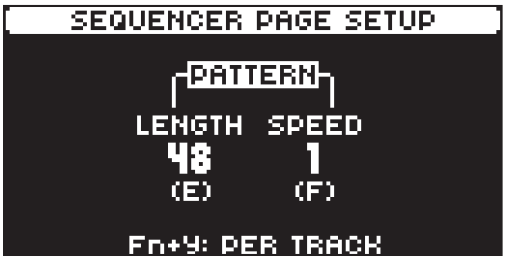
Press **[NO]** to exit the menu.

10.9 PAGE SETUP MENU

You can set the length and timing of the pattern and the tracks in this menu. The sequencer has up to 256 steps, spread across 16 sequencer pages with 16 steps per page. The PAGE SETUP menu has two modes. In PER PATTERN mode, all tracks share the same length. In PER TRACK mode, each track can have different lengths. Press **[FUNC]** + **[PAGE]** to access the PAGE SETUP menu. Press **[FUNC]** + **[YES]** to toggle between the two modes. Use the ***DATA ENTRY*** knobs to adjust the settings.

10.9.1 PER PATTERN MODE

In this mode, all tracks of the pattern share the same length and time signature.



LENGTH sets the total number of steps on the pattern pages. The leftmost number displays the number of steps. If you use 17 steps or more in a pattern and GRID RECORDING mode is active, the **[PAGE]** key is used to toggle between the different pattern pages. Press **[FUNC]** and then turn ***DATA ENTRY*** knob ***E*** to change length in even steps of 16. **[UP]**/**[DOWN]** change the length by 1 step. **[FUNC]** + **[UP]**/**[DOWN]** change the length by 4 steps.

SPEED controls the speed of track playback in multiples of the current tempo. A setting of 1/8 plays back the track at one-eighth of the set tempo. 3/4 plays the track back at three-quarters of the tempo; 3/2 plays back the track twice as fast as the 3/4 setting. 2 makes the track play at twice the speed of the BPM.

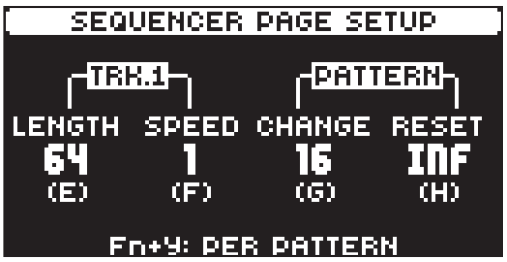
When you extend the length of a pattern, its trigs can be copied over to the new steps. If a pattern consists of, for example, two pages and the pattern length is increased to four pages, the two additional pattern pages are then copies of the first two pattern pages. For more information, please see “17.4.5

PAGE AUTOCOPY" on page 82.

Press the **[PAGE]** key to change the total length of the pattern quickly. Press the **[TRIG]** keys to change the number of steps of the pattern quickly.

10.9.2 PER TRACK MODE

In this mode, you can assign individual length and scale to the tracks of the pattern. Press **[FUNC] + [YES]** to switch between the two scale modes.



The TRACK column sets the step length (number of sequencer steps) and scale (speed) of the track playback. The settings only affect the active track.

The PATTERN column sets the master change length and the master reset length of the pattern, both measured in sequencer steps.

LENGTH sets the number of steps on the current pattern page. The leftmost number displays the number of steps on the active pattern page. If you use 17 steps or more in a pattern and GRID RECORDING mode is active, the **[PAGE]** key is used to toggle between the different pattern pages. Press **[FUNC]** and then turn ***DATA ENTRY*** knob ***E*** to change length in even steps of 16.

SPEED controls the speed of track playback in multiples of the current tempo. A setting of 1/8 plays back the track at one-eighth of the set tempo. 3/4 plays the track back at three-quarters of the tempo; 3/2 plays back the track twice as fast as the 3/4 setting. 2 makes the track play at twice the speed of the BPM.



- **The SPEED setting also affects the speed of all LFOs, the delay time settings, the arpeggiator speed, and the retrig speed.**
- **A SPEED setting of 2 helps increase the base resolution of the step sequencer to 32nd notes. A SPEED setting of 3/4 is practical when Tonverk is playing alongside other instruments set to the same BPM, and you want Tonverk to play triplets.**

CHANGE (Pattern Change) controls how long the active pattern plays before it changes to a cued or chained pattern. Press and turn ***DATA ENTRY*** knob ***G*** to change in steps of 10.

RESET (Pattern Reset) controls the number of steps the pattern plays before all tracks reset and restart from the first step on the first page. An INF setting makes the tracks of the pattern loop infinitely, without ever being restarted. Note that this setting also affects how long the active pattern plays before a chained pattern starts playing. The **CHANGE** parameter overrides this if its parameter value is less than the **RESET** value. Press and turn ***DATA ENTRY*** knob ***H*** to change in steps of 10.

10.10 SEQUENCER FEATURES

10.10.1 PARAMETER LOCKS

Parameter locks make it possible to set every trig to have its own unique parameter values. The note trigs of an audio track can, for example, have different pitch, amp, or filter settings. It is possible to parameter lock the parameters found on the PARAMETER pages, and you can apply parameter locks to all types of tracks. For a complete overview of all parameters on the PARAMETER pages, please see "12. AUDIO TRACK PARAMETERS" on page 58 and "APPENDIX A: MACHINES" on page 90.

Adding parameter locks in GRID RECORDING mode

1. Press **[RECORD]** to enter GRID RECORDING mode.
2. Press a **[TRIG]** key to add a Note trig, or **[FUNC]** + **[TRIG]** key to add a Lock trig, to where you want to perform a parameter lock.
3. Press and hold the **[TRIG]** key of a previously placed trig (note trig or a lock trig).
4. Turn the ***DATA ENTRY*** knobs that control the parameter you want to lock, and set it to the desired value. The graphics become inverted for the locked parameter, and the locked parameter value is

displayed. The **[TRIG]** key of the locked trig blinks red (for note trigs) or yellow (for lock trigs) to indicate the trig now contains a parameter lock.

Remove a single parameter lock by holding **[TRIG]** + pressing the ***DATA ENTRY*** knob of the locked parameter. You can erase all parameter locks from a trig if you remove the note trig and then enter it again.

Adding parameter locks in LIVE RECORDING mode.

1. Press and hold **[RECORD]**, then press **[PLAY]** to enter LIVE RECORDING mode.
2. Turn a ***DATA ENTRY*** knob, or play the **[TRIG]** keys in KEYBOARD mode, to add parameter locks to the active track. Note trigs are placed and parameter-locked accordingly, and lock trigs are placed that contain the parameter locks on the sequencer steps that do not already have any trigs.



In GRID RECORDING mode, pressing and holding a [TRIG] key with parameter locks causes the [PARAMETER PAGE] key(s) containing the locked parameter to blink.

10.10.2 TRIG CONDITIONS AND CONDITIONAL LOCKS

Trig conditions are a set of rules you can apply to any trig using special parameter locks called conditional locks. Each rule determines whether a trig on a sequencer track will play or not — if the condition is met, the trig plays; if not, it doesn't. This is a great way to create variations in your sequence, going beyond simply letting the sequencer play the same trigs every time.

ADDING A CONDITIONAL LOCK

1. In GRID RECORDING mode, place a note trig or lock trig on the sequencer step where you want to apply a conditional lock.
2. Press and hold the trig to access the **COND** (Trig Condition) parameter on TRIG PAGE 1. For more information, please see "12.2 TRIG PAGE 1" on page 58.
3. Turn ***DATA ENTRY*** knob ***H*** to select one of the following trig conditions:

FILL The trig plays when FILL mode is active.

$\overline{\text{FILL}}$ The trig plays when FILL mode is not active.

PRE The trig plays only when the previously evaluated trig on the same track has been played. (PRE and $\overline{\text{PRE}}$ conditions are not evaluated and are ignored. The sequencer instead evaluates the last non-PRE or $\overline{\text{PRE}}$ trig.)

$\overline{\text{PRE}}$ Trig doesn't play if the previously evaluated trig has been played. (PRE and $\overline{\text{PRE}}$ conditions are not evaluated and are ignored. The sequencer instead evaluates the last non-PRE or $\overline{\text{PRE}}$ trig.)

For example:

Trig 1 Probability = 50% (Trig 1 plays)

Trig 2 Condition = PRE (Trig 2 plays)

Trig 3 Condition = PRE (Trig 3 plays)

Trig 4 Condition = $\overline{\text{PRE}}$ (Trig 4 does not play)

NEI The trig plays if the most recently evaluated trig condition on the neighbor track was met. (PRE and $\overline{\text{PRE}}$ conditions are not evaluated and are ignored. The sequencer instead evaluates the last non-PRE or $\overline{\text{PRE}}$ trig.) The neighbor track is the track before the active track. For example, track 3 is the neighbor track of track 4. NEI and $\overline{\text{NEI}}$ conditional trigs on track 4 therefore evaluate the conditional trigs placed on track 3. If no conditional trigs exist on the neighbor track, the NEI condition is not met and will never play the trig.

$\overline{\text{NEI}}$ The trig plays if the most recently evaluated trig condition on the neighbor track was not met. (PRE and $\overline{\text{PRE}}$ conditions are not evaluated and are ignored. The sequencer instead evaluates the last non-PRE or $\overline{\text{PRE}}$ trig.)

1ST The trig only plays on the first loop of the pattern.

$\overline{\text{1ST}}$ The trig does not play on the first loop of the pattern but on all subsequent loops.

A:B A sets how many times the pattern (or track, if the track length is shorter than the pattern length) plays before the trig condition is met. **B** sets how many times it plays before the count resets and starts over. This cycle repeats until you stop the sequencer.

For example:
With the setting 1:2, the trig plays the first time the pattern is played and then the third, the fifth, and so on.
With the setting 2:2, the trig plays the second time the pattern is played and then the fourth, the sixth, and so on.

With the setting 2:4, the trig plays the second time the pattern is played and then the sixth, the tenth, and so on.
With the setting 4:7, the trig plays the fourth time the pattern is played and then the eleventh, the eighteenth, and so on.

A:B The trig with this condition plays when the set A:B condition of pattern plays is not met.

For example:
With the setting **2:4**, the trig does not play the second time the pattern plays and then not on the sixth, the tenth, and so on.



Conditional parameter locks are a great way to add variety to a pattern. Setting up a grid of mutually exclusive or conclusive note trigs across any of the tracks, adding some probability locks in there as well (perhaps, in turn, also sporting an array of logically conditioned trigs), is a neat way to make the most minimal of compositions come alive with randomness.



- **The sequencer must be in FILL mode to activate the FILL and FILL conditional locks. For more information, please see "10.10.3 FILL MODE" on page 49.**
- **FILL trig conditions may also be used, for example, to have two different melodic or percussive sequences on the same track, one of which is activated only when FILL mode is active.**

10.10.3 FILL MODE

FILL mode can be used to create a temporary variation, such as a drum fill, in your pattern by activating the trigs that have a FILL conditional lock. For more information, please see "10.10.2 TRIG CONDITIONS AND CONDITIONAL LOCKS" on page 48. You set the FILL mode behavior in the FILL EDIT menu.

Press **[FUNC]** + **[FILL]** to open the FILL EDIT menu. Use **[UP]/[DOWN]** to select the FILL mode option you want. Press **[YES]** to close the FILL EDIT menu. The two options are:

MOMENTARY FILL mode is active for as long as you press and hold **[FILL]**.

LATCHING Press **[FILL]** to toggle FILL mode on/off.

10.10.4 COPY, PASTE, AND CLEAR OPERATIONS

Patterns, tracks, track pages, parameter pages, and trigs can be copied, pasted, and cleared.

The active pattern can be copied to another location in the same bank or another bank. To perform a pattern copy operation, GRID RECORDING mode must be deactivated. Copy the pattern by pressing **[FUNC]** + **[RECORD]**. Select another pattern, and then press **[FUNC]** + **[STOP]** to paste the copied pattern to this location. Press **[FUNC]** + **[PLAY]** and then **[YES]** in the confirmation pop-up window to clear all the trigs in the current pattern.

Individual sequencer tracks can be copied, pasted, and cleared in the same way as patterns. To do so, GRID RECORDING mode must be active. Press **[FUNC]** + **[RECORD]** to copy the track's trigs. Select another track and then press **[FUNC]** + **[STOP]** to paste the copied trigs to this location. Press **[FUNC]** + **[PLAY]** to clear all the track's trigs in the current pattern.

It's also possible to copy, paste, or clear all trigs across all eight subtracks (and the supertrack) on a track that uses a Subtracks machine. In STEP EDIT mode: Press **[FUNC]** + **[RECORD]** to copy all trigs from the eight subtracks and the supertrack. Select another track that also uses a Subtracks machine, then press **[FUNC]** + **[STOP]** to paste the copied trigs there. Press **[FUNC]** + **[PLAY]** to clear all trigs from the eight subtracks and the supertrack in the current pattern.

A single track page's trigs can also be copied, pasted, and cleared. It is similar to copying, pasting, or clearing a track, but will only affect the active track page. In GRID RECORDING mode, press the **[PAGE]** key to select the track page you wish to copy. Press **[PAGE]** + **[RECORD]** to copy. Select a new track page and press **[PAGE]** + **[STOP]** to paste. Press **[PAGE]** + **[PLAY]** to clear the active track page.

You can also copy, paste, and clear a track's preset (the settings on the **[PARAMETER PAGES]**). Press **[TRK]** + **[RECORD]** to copy. Select a new track and press **[TRK]** + **[STOP]** to paste the preset. Press **[TRK]** + **[PLAY]** to reset the preset's parameters.

A single parameter page with all its settings may also be copied, pasted, and cleared. Select the parameter page you wish to copy by pressing a **[PARAMETER PAGE]** key. Copy by pressing **[PARAMETER PAGE]** + **[RECORD]**. Select a new track and then press the same **[PARAMETER PAGE]** key + **[STOP]** to paste. Press **[PARAMETER PAGE]** + **[PLAY]** to clear the parameter page and reset the parameters to their default settings.

Trigs, complete with all parameter lock settings, can be copied, pasted, and cleared as well. GRID RECORDING mode needs to be active to access this functionality. Press and hold a trig and press **[RECORD]** to perform the copy operation. Paste by holding another **[TRIG]** key and pressing **[STOP]**. It is also possible to copy more than one trig. Press and hold the trigs you wish to copy, and then press **[RECORD]**. Press and hold the **[TRIG]** key of the step where you want to paste, and then press **[STOP]** to paste the copied sequence of trigs. When pasting, the copied trigs are placed in the same relation to each other as they had when they were copied. The destination trig acts as the starting point for the sequence of copied trigs. Press and hold one or more trigs, and then press **[PLAY]** to clear trig locks.

10.10.5 UNDO/REDO

It is possible to undo and redo the Paste/Clear operations for patterns, track sequences, sequencer pages, parameter pages, and track presets. If you have pasted or cleared a pattern, track sequence, sequencer page, parameter page, or track sound, you can press **[FUNC]** + **[NO]** to undo this operation. If you change your mind after performing undo, you can press **[FUNC]** + **[YES]** to redo the operation.

10.10.6 TEMPORARY MEMORIZE AND RECALL PATTERN

Every pattern can be instantly memorized in a temporary memory snapshot, and later recalled from that snapshot.

- Press **[FUNC]** + **[KEYBOARD D#1]** to temporarily memorize the active pattern. This is useful for creating a restore point when you are live tweaking, but without permanently saving your changes.
- Press **[FUNC]** + **[KEYBOARD C#1]** to recall a pattern that was previously temporarily memorized. It will recall the pattern from when you last used the temporary memorize command.



- **The TEMPORARY MEMORIZE PATTERN and TEMPORARY RECALL PATTERN commands are great when improvising live. Any changes made to the active pattern can immediately be undone. And at the same time, the memorizations and recalls will not affect the pattern permanently. Every pattern can have its own memorized snapshot.**
- **You can also press [PARAMETER PAGE] + [NO] to recall (reload) the parameter page's settings to their last (memorized) saved state.**



The TEMPORARY MEMORIZE PATTERN command does not save the pattern permanently, and you lose any changes if you load another project. The snapshots are not saved with the project. However, the snapshots in the active project are still there after you restart the device.

10.10.7 TRACK TRANSPOSE

You can use this functionality to transpose all the note trigs on the active track.

1. Press **[FUNC]** + **[+]** to initiate track transpose.
2. Press the **[KEYBOARD]** keys to transpose the track's note trigs. Use the **[+]/[–]** keys to access other octaves on the **[KEYBOARD]**. **Pressing the [KEYBOARD] key used to select the transposition again resets the transposition to 0.**
3. Press **[NO]** to exit track transpose.

You can also press **[TRK]** + **[+]/[-]** to transpose the active track up/down in semitones.

10.10.8 PATTERN TRANSPOSE

1. Press and hold **[PTN]** and then press **[+]/[–]** to initiate transpose of all note trigs on the Audio, Bus, and Send FX tracks in the pattern up or down in semitones.
2. Release **[PTN]** for the transpose to take effect.



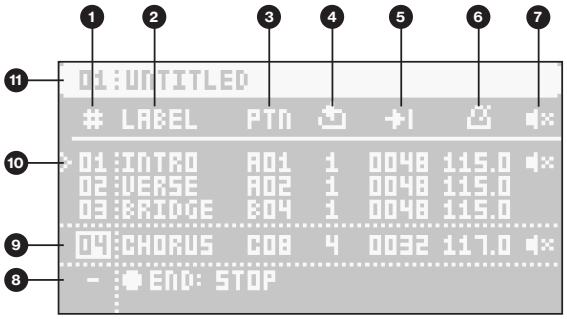
These transpositions are non-destructive and do not change the trigs' NOTE values.

10.11 SONG MODE

A song is an arrangement of patterns set up to play in sequence. Each row in the SONG mode arrangement can have separate settings for pattern, row repeat, row length, and tempo. A song can be up to 256 rows in length, and each project can contain up to 16 songs.

10.11.1 THE SONG EDIT SCREEN

Press **[SONG]** and then press **[TRIG 1–16]** to select a song and enter SONG mode. Press **[SONG]** again and then press **[RIGHT]** to open the SONG EDIT screen. Use the **[ARROW]** keys to navigate the song rows and columns, highlighting the parameter you wish to edit, and then use ***LEVEL/DATA*** or any ***DATA ENTRY*** knob to edit the selected function.



1. **SONG ROW** (Range 01–256)
2. **LABEL** lets you select a keyword for the row. The keyword is related to song structure, such as Verse, Chorus, and Bridge. It can also be the name of the pattern.
3. **PTN** allows you to select the pattern to be played on a row. Press **[FUNC]** while turning the knob to quickly change banks.
4. **ROW PLAY COUNT** The number of times the row plays before the song advances to the next row.
5. **ROW LENGTH** (measured in sequencer steps). This setting determines the number of steps the sequencer plays from the selected pattern. The default value is the same as the pattern's **CHANGE** setting in the PAGE SETUP menu. (Range: 2–8192)
6. **ROW TEMPO** Here, you set the row's BPM. By default, the row inherits the song's BPM set in the TEMPO menu. Selecting a tempo on any row overrides the previously set song tempo.
7. **ROW MUTE** lets you mute the tracks of the pattern on the selected row. Highlight and press **[YES]** to edit. A mute icon is displayed in the rows that have tracks that are muted. Use the **[TRIG]/[SUB-TRACKS]** keys to mute and unmute the tracks. When selecting a pattern for the row, the row's mute state initially reflects the pattern's mute state.
8. **END** row. This row is always added at the end of a song and determines what happens when the last song row has played. By default, it's set to LOOP, which restarts the song from the beginning, but it can also be set to STOP the song.
9. The currently selected row is highlighted between dotted lines. Use **[UP]** and **[DOWN]** to select a row.
10. **PLAYHEAD** position shows the row currently playing (or set to play if the sequencer is stopped).
11. **SONG SLOT**.

10.11.2 CREATING AND EDITING A SONG

1. Press **[SONG]** and then press **[TRIG 1–16]** to select a song and enter SONG mode.
2. Press **[SONG]**, and then press **[RIGHT]** to open the SONG EDIT screen.
3. If you selected an empty song slot, you are presented with a screen where you can choose:

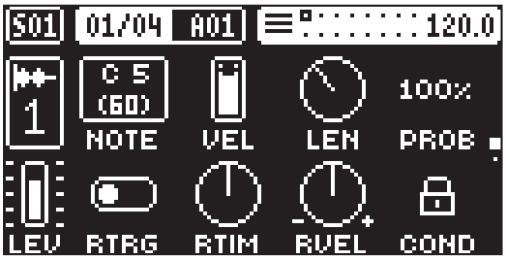
   INSERT ROW Inserts the first row in the song. Press **[FUNC]** + **[DOWN]** to insert a row.

   CREATE ROWS FROM CHAIN Creates a song based on a chain. Press **[YES]** and then select to create rows from a previously created chain or to create a new chain by selecting patterns using the **[TRIG 1–16]** keys. Use **[LEFT]/[RIGHT]** to change bank. Then press **[YES]** to create a song based on the chain and open the SONG EDIT screen.
4. Press **[FUNC]** + **[DOWN]** if you want to add a new row to the song arrangement. The new row is added below the currently selected row and is a copy of the selected row. Press **[FUNC]** + **[UP]** to remove the selected row from the song arrangement.
5. Use the **[ARROW]** keys to navigate the song rows and columns, highlighting the item you wish to edit. For more information about editing the functions in SONG mode, please see "10.11.1 THE SONG EDIT SCREEN" on page 51.
6. Press **[NO]** to exit the SONG EDIT screen.

- **[FUNC] + [RECORD] copies the selected row.**
  [FUNC] + [STOP] pastes a previously copied row to the selected row.
  [FUNC] + [PLAY] resets the selected row to the songs BPM, length, and mute states.
  [FUNC] + [UP] deletes the selected row.
  [SONG] + [LEFT] will cue the selected row and enable row-loop.
  [FUNC] + [SONG] toggles the SONG mode on/off.
- **The TEMPO page shows the song's BPM, unless the currently playing or cued row has its own tempo value set, in which case that value is shown instead.**
- **Please note that there is always a row called END at the song's end. This row can be set to either STOP the song or LOOP it from the beginning and play it again.**
- **On the SONG EDIT screen, you can select a song row number and press [YES] to move the playhead to that row.**

10.11.3 PLAYING A SONG

1. Press **[SONG]** and then press **[TRIG 1–16]** to select a song and enter SONG mode. The song selected will be the one that was last played or edited.
2. Press **[PLAY]** to play the selected song. At the top of the screen, you see the song number, the row currently playing, the total number of rows in the song, and finally the pattern's bank/number. There is also a progress bar to indicate how far the song pointer has progressed in the row.



3. Press **[STOP]** to stop the playback. You can then press **[PLAY]** to continue to play the song from the current playhead position. Press **[STOP]** twice to move the playhead to the song's beginning.
4. To exit song mode, press **[PTN]** + **[TRIG 1–16]** to return to pattern mode.

- **Press [SONG] + [LEFT] (when in SONG mode) to loop the currently playing row. Press [SONG] + [LEFT] again (when in SONG mode) to stop looping the row and return to normal song playback.**
- **Press [UP]/[DOWN] (when in SONG mode) to select a specific song row. Press [YES] to cue it to play next.**
- **Press [PTN] and the [TRIG 1–16] keys to select a pattern to exit SONG mode and return to regular pattern play.**

The songs are automatically saved as they are created and edited. However, you must save the project if you wish to keep the songs before switching to another project.

10.12 PERFORM MODE

In PERFORM mode, any changes made to the preset parameters in the pattern are kept in a temporary memory location. It means you can keep your parameter tweaks as long as you are in PERFORM mode, but when you exit PERFORM mode, the pattern reloads to its previously saved state. You can only be in PERFORM mode on one pattern at a time. If you are in PERFORM mode on one pattern and switch to another, the PERFORM mode will remain active on the first pattern when you return to it. However, if you enter PERFORM mode on the second pattern, you lose the PERFORM mode tweaks made to the first pattern.

Press **[FUNC] + [TRK]** to toggle PERFORM mode on/off. The **[TRK]** key is lit green when PERFORM mode is active.

Actions done in PERFORM mode are not saved and will not remain when switching the device off. Saving the pattern will not save any changes done in PERFORM mode.

11. THE TRACK SETUP MENU

The TRACK SETUP menu contains several setup pages related to the active track, its behavior, and setup. You can access specific TRACK SETUP menu pages (or page groups) by using **[FUNC]** + **[PARAMETER PAGE]** keys. Depending on the selected track, its machine, and which PARAMETER key you press, you open the setup pages for the main function of that parameter key. You can also navigate between the different pages within the TRACK SETUP menu using the **[PARAMETER PAGE]** keys. If a page group has more than one page, you use the group's **[PARAMETER PAGE]** key to cycle through the pages. Use **[UP]** and **[DOWN]** to move between the options. Use **[LEFT]** and **[RIGHT]** to select settings or press **[YES]** to open sub-menus. Press **[NO]** to exit the menu.

11.1 TRIG

Here you can set several note and trig-related parameters. Press **[FUNC]** + **[TRIG]** to directly access this page. These settings are only available for audio tracks (Tracks 1–8).



11.1.1 PLAY MODE

Here, you can set whether a preset is polyphonic or monophonic and whether the LFOs for each voice are synced or not. This setting is not available for the Subtracks and Stretcher machines.

POLY The sound is polyphonic, and the LFOs for each voice are running independently of each other. This mode is not available for the Grainer machine.

POLY M.LFO In POLYPHONIC WITH MONO LFO mode, the preset is polyphonic, and the LFOs for each voice are synced together with the first voice LFO. The LFO of the first voice played determines the cycle of the LFOs, and the subsequently played voices' LFOs are synced to this cycle. This makes the LFO behave like a single or monophonic LFO. This is useful, for example, if you want to use the LFO for a tremolo effect.

MONO The preset is monophonic, and the envelope is always triggered by each note on, or key press.

MONO LEG. In this mode, the preset is monophonic; however, the envelopes are not triggered by a subsequent note or key press if the first note is still held.

11.1.2 MONO NOTE PRIO

Here, you can set the note priority, i.e., which note is played if more than one note is played simultaneously. This setting is only available if **PLAY MODE** is set to MONO or MONO LEG. This setting is not available for the Subtracks, Stretcher, and MIDI machines.

LAST gives priority to the last note played.

LOW gives priority to the lowest note played.

HIGH gives priority to the highest note played.

11.1.3 REUSE VOICES

Sets if the same note played twice should reuse the same voice, or cycle to use another free voice. This setting is not available for the Stretcher machine.

ON Reuses the same voice. Useful for staccato effects and drums.

OFF Cycles to use another voice. Suitable for piano-like sounds and pads.

11.1.4 CHOKE GROUPS

Here you can assign a Subtracks machine's individual subtracks to one of two choke groups.

Choking is a sound design technique where one track cuts off the sound of one or more other tracks within the same choke group. First you assign which tracks should be in the choke group. Then, when a track within the group is triggered, all the other tracks in the same choke group receive a note-off message and are silenced immediately – their normal envelope release is skipped and replaced with a very short release. This setting is only available for the Subtracks machine.

ASSIGNING SUBTRACKS TO A CHOKE GROUP

1. Assign a Subtracks machine to the active track.
2. Press **[FUNC] + [TRIG]** to open the TRACK SETUP menu, and then select CHOKE GROUPS and press **[YES]**.
3. Press a **[SUBTRACKS]** key to assign that subtrack to choke group A (the key turns blue). Press it again to assign it to choke group B (the key turns red). Press it a third time to remove it from any choke group.
4. Repeat this for each subtrack you want to include in a choke group.
5. Press **[NO]** to exit the menu.

Press **[YES]** and then use the **[SUBTRACKS]** keys to play the subtracks' sounds. Press **[YES]** again to return to assigning the subtracks to choke groups.

11.1.5 PORTAMENTO

Sets the behavior of the portamento when enabled for the track. This setting is not available for the Subtracks and Stretcher machines and only affects the sound if **PLAY MODE** is set to MONO or MONO LEG. For more information, please see "12.3 TRIG PAGE 2" on page 59.

MONO Portamento affects all notes played.

MONO LEG. Portamento only affects notes played legato.

11.1.6 LOOP MODE

Sets the behavior of the Single Player machine's loop mode when **PLAY MODE** is set to FORWARD LOOP or REVERSE LOOP. This setting is only available for the Single Player machine.

SUST. Sustain makes the sample loop for as long as the envelope is in the sustain phase. Once in the release phase, the sample plays to the end and then stops.

CONT. Continuous makes the sample loop through both the envelope's sustain and release phases.

11.1.7 OSC PHASE

Sets whether the oscillator's waveform jumps back to a fixed starting point every time you trig a new note. This setting is only available for the Wavefinder machine.

RESET The oscillator waveform goes back to the starting point every time you trig a note.

RAND The oscillator keeps running freely. When you play a new note, the oscillator gets a random phase value for the waveform, so it is more or less random from note to note.

11.1.8 OCTAVE

Sets the base octave of the preset. It minimizes the need to transpose the sequencer notes to make two or more presets work together. This setting is not available for the Subtracks and Stretcher machines.

11.1.9 VOICES

Sets the number of voices that play for each note. Any setting other than 1 turns on the unison mode. This setting is only available for the Single Player, Multi Player, Wavefinder and Waveswarmer machines.

11.1.10 DETUNE

Sets how much the unison voices are detuned. This setting is only available for the Single Player, Multi Player, Wavefinder and Waveswarmer machines.

11.1.11 SPREAD

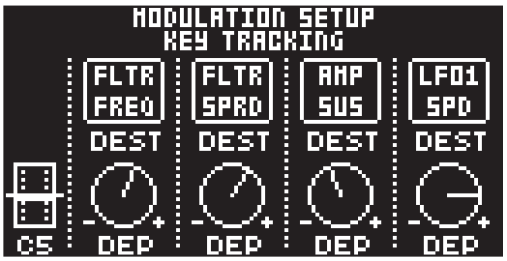
Spreads the unison voices out across the stereo field. This setting is only available for the Single Player, Multi Player, Wavefinder and Waveswarmer machines.

11.1.12 PITCH BEND DEPTH

Sets the number of semitones in either direction that MIDI pitch bend can apply to the current track.

11.1.13 KEY TRACKING

Opens a menu where you can assign up to four parameters to the key tracking. Press **[YES]** to open the menu. Turn the ***DATA ENTRY*** knobs ***A***–***D*** to select the track parameters that you wish to assign. Press **[YES]** to confirm the selection. Then use ***DATA ENTRY*** knobs ***E***–**H** to set the modulation depth of the four track parameters. The depth is an offset of the original track parameter value. Turn ***LEVEL/DATA*** to test your settings. Key Tracking is not available for the Subtracks machine.



For key tracking, all modulation is centered around middle C (C5). A positive modulation value increases the parameter value when you play above C5, and decreases it when you play below C5. A negative modulation value flips this behavior.

11.1.14 VELOCITY MOD

Opens a menu where you can assign up to four parameters to the velocity parameter. Both the **VEL** parameter on the TRIG PARAMETERS page and the velocity of incoming MIDI notes sent to the Tonverk from external devices affect the assigned parameters. Press **[YES]** to open the menu. Selecting parameters and setting modulation depth work in the same way as for **KEY TRACKING**.

11.1.15 PITCH BEND

Opens a menu where you can assign up to four parameters to the MIDI pitch bend command. Press **[YES]** to open the menu. Selecting parameters and setting modulation depth work in the same way as for **KEY TRACKING**.

11.1.16 AFTERTOUCH

Opens a menu where you can assign up to four parameters to the MIDI aftertouch command. Press **[YES]** to open the menu. Selecting parameters and setting modulation depth work in the same way as for **KEY TRACKING**.

11.1.17 MODULATION WHEEL

Opens a menu where you can assign up to four parameters to the MIDI mod wheel command (CC #1). Press **[YES]** to open the menu. Selecting parameters and setting modulation depth work in the same way as for **KEY TRACKING**.

11.1.18 BREATH CONTROLLER

Opens a menu where you can assign up to four parameters to the MIDI breath controller command (CC #2). Press **[YES]** to open the menu. Selecting parameters and setting modulation depth work in the same way as for **KEY TRACKING**.

Press [FUNC] + [PLAY] to clear a modulation macro page's settings.

11.2 SRC

Here you can select the SRC machine. Use **[UP]/[DOWN]** to select a machine, and then press **[YES]** to assign the selected machine to the track. From this page, you can also access and choose the two insert FX machines for the track. Use **[LEFT]/[RIGHT]** to navigate to the desired machine category. For more information, please see "A.2 SRC MACHINES" on page 90. Press **[FUNC]** + **[SRC]** to directly access this page. There are no SRC machines available for SEND FX and MIX tracks.



11.3 FLTR

Here, you can select the order in which the filters and overdrive are routed in the signal path. Use **[LEFT]**/**[RIGHT]** to select the order you want. For more information, please see “4. TONVERK SOUND ARCHITECTURE” on page 17. Press **[FUNC]** + **[FLTR]** to directly access this page.



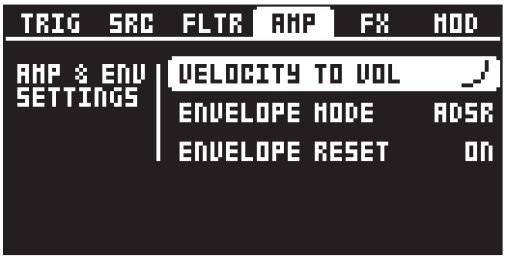
11.3.1 ROUTING

Lets you select the order in which the Overdrive, Base-width filter, and Multimode filter should be arranged in the sound architecture. This setting is only available for audio tracks. For more information, please see “4.1 AUDIO VOICES” on page 17.

11.4 AMP

On this page, you find several settings related to the amplifier.

Press **[FUNC]** + **[AMP]** to access this page.



11.4.1 VELOCITY TO VOL

Selects how MIDI velocity affects volume when playing the preset from a MIDI keyboard.

OFF means that velocity does not affect the volume of the sound.

LOG applies a logarithmic velocity curve. The volume difference is greater between softer keyboard presses than between harder ones.

LIN applies a linear velocity curve. The volume difference between keyboard presses corresponds linearly to the force applied.

EXP applies an exponential velocity curve. The volume difference is greater between harder keyboard presses than between softer ones.

11.4.2 ENVELOPE MODE

Envelope type sets if the amplitude envelope should be an AHD or ADSR envelope.

11.4.3 ENVELOPE RESET

Envelope reset sets the amplitude envelope behavior:

ON resets the envelope for each consecutive trig.

OFF does not reset the envelope for each consecutive trig.

11.5 FX

Here, you can select the two insert FX machines, set the level of the audio routed to the track’s effect(s), and set the post FX pan. This parameter group has three subpages. Use the **[FX]** key to cycle through the two subpages for the effects and the level setup page. Use **[UP]**/**[DOWN]** to select the machine, and then press **[YES]** to assign the selected machine to the track. Use **[LEFT]**/**[RIGHT]** to set the input levels and Post FX pan amount on FX page 3. For more information, please see “A.3 FX MACHINES” on page 107. Press **[FUNC]** + **[FX]** to directly access this page.



11.5.1 FX 1 IN LEV

Sets the gain of the audio from the SRC machine that is sent to insert effect 1.

11.5.2 FX 2 IN LEV

Sets the gain of the audio from the SRC machine that is sent to insert effect 2. This parameter is not available for the Send FX and Mix tracks.

11.5.3 POST FX PAN

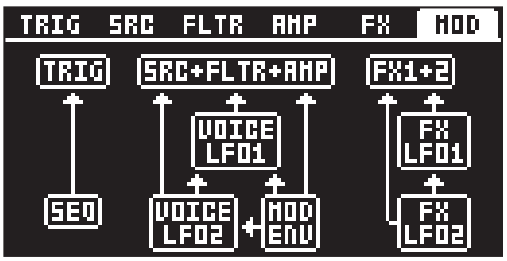
Pans the track's sound after the effects stage, affecting the entire output of the track. This parameter is not available for the Mix track.

11.5.4 SWAP FX1/FX2

Highlight this option, and then press **[YES]** to swap the order of the two FX slots and their selected FX machines. This parameter is not available for the Send FX and Mix tracks.

11.6 MOD

This page provides an overview of which PARAMETER page parameters the different modulation sources can affect. The settings and routings are performed on the track's MODULATION pages. Press **[FUNC]** + **[MOD]** to directly access this page.



12. AUDIO TRACK PARAMETERS

The following is a description of all the parameters available on the audio tracks' PARAMETER pages. An audio track is any of the tracks 1–8 that uses a non-MIDI SRC machine. The parameters on the TRIG pages are not saved together with the preset; instead, they are saved with the pattern. The track parameters can be locked to other settings at any step of the pattern by first pressing and holding the **[TRIG]** key, then adjusting the parameters' settings with the ***DATA ENTRY*** knobs. For more information, please see "10.10.1 PARAMETER LOCKS" on page 47.

Please note that tracks with a MIDI machine have a different set of parameters on the TRIG, SRC, FLTR, and AMP pages. For more information, please see "A.2 SRC MACHINES" on page 90.

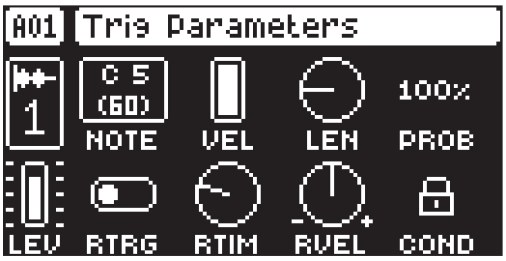
12.1 EDITING THE TRACK PARAMETERS

Press **[TRK]** + **[TRIG 1–8]** to select the audio track you want to edit. Press **[TRIG]**, **[SRC]**, **[FLTR]**, **[AMP]**, **[FX]**, and **[MOD]** keys to access the track's PARAMETER page groups. Use the **[UP]/[DOWN]** keys to access the parameter group's pages. You can also press a **[PARAMETER PAGE]** key repeatedly to cycle through the parameter pages in that group. Press and hold a **[PARAMETER PAGE]** key to see the values for all parameters on that page.

- **You can also randomize the parameter settings on a specific PARAMETER page on an audio track. Press [PARAMETER PAGE] key + [YES] to randomize the relevant parameters on that page. Every time you press this key combination, the parameters randomize in a new way.**
- **Press [PARAMETER PAGE] key + [PLAY] to reset the parameter page's parameters to their default parameter values.**
- **Press [PARAMETER PAGE] + [NO] to recall (reload) the parameter page's settings to their last memorized (temp saved) state. For more info, please see "10.10.6 TEMPORARY MEMORIZE AND RECALL PATTERN" on page 50.**

12.2 TRIG PAGE 1

Here you set the options for notes that are trigged. This is also where you select trig conditions. Press the **[TRIG PARAMETERS]** key to access the menu. Change settings using the ***DATA ENTRY*** knobs. These general settings affect note trigs placed on the sequencer.



NOTE

Trig Note sets the pitch of the note when trigged. When in LIVE RECORDING mode and using the **[KEYBOARD]** to enter notes, the pitch of the **[TRIG]** keys played will override this setting. The NOTE parameter is not available for tracks that have the Subtracks SRC machine assigned.

VEL

Trig Velocity sets the velocity of the sequencer's note trigs.

LEN

Trig Length sets the length of the note trig. In LIVE RECORDING mode, the duration of pressing the **[TRIG]** keys overrides this general setting.

PROB

Trig Probability sets the probability that the trigs on the track play or not. The probability outcome is re-evaluated every time a trig is set to play. The default setting is 100%, meaning that all the trigs on the track will play every time. This parameter can be parameter locked, which lets you assign separate trigs their own probability.

RTRG
Retrig enables multiple trig repeats on placed trigs. Use ***DATA ENTRY*** knob ***E*** to turn retrig on/off.
For more information, please see “10.7 RETRIGS” on page 46.

RTIM
Repeat Time sets the retrig rate. 1/16 is the nominal retrig rate, one trig per step. 1/32 corresponds to two trigs per step and so on. To do triplets, for example, set the retrig rate to 1/12 (or 1/24).

RVEL
Repeat velocity sets the velocity curve fade-out and fade-in of the retrig. -127 corresponds to a complete fade-out during the set length, -63 fades out to half the velocity during the set length, 0 equals a flat velocity curve with no fade, 63 fades into half velocity during the set length, and 127 fades in completely to full velocity during the set length. Please note that the effects of the **RVEL** setting are also dependent on the **VEL** setting on TRIG PAGE 1.

COND
(Trig Condition) when you add a conditional lock, **COND** sets the Trig Condition with which a set of conditional rules can be applied to any trig, using a conditional parameter lock. For more information, please see “10.10.2 TRIG CONDITIONS AND CONDITIONAL LOCKS” on page 48.

12.3 TRIG PAGE 2

On this page, you access the portamento and set the portamento time. For more information, please see “11.1.5 PORTAMENTO” on page 54.

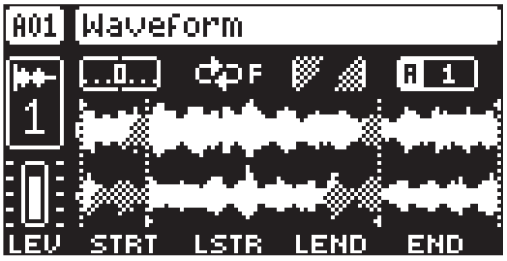
PTIM
Portamento Time sets the time for the portamento.

PORT
Portamento turns the portamento on/off.

12.4 SRC PAGE

The parameters on the SOURCE page control the playback of the samples, and these parameters vary depending on what machine is selected. The SRC machines are sound engines that use a particular subset of the functionality of the sample playback engine. In this section, you also find the MIDI machine that lets you control external, MIDI-equipped gear. You can assign any SRC machine to any of the eight audio tracks. Press **[FUNC]** + **[SRC]** to select a SRC machine. For more information, please see “A.2 SRC MACHINES” on page 90.

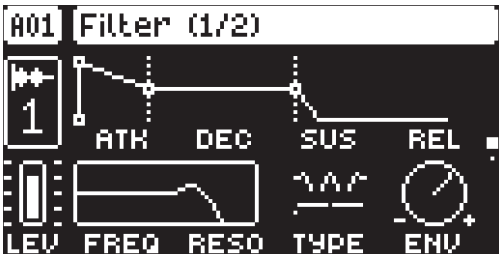
The screenshot shows the Single Player machine.



12.5 FLTR PAGE 1

On FILTER page 1, you will find all parameters that control the Multimode filter and its associated envelope. The Multimode filter lets you morph from a low-pass to band-pass to high-pass filter.

The parameters described here are for the Single Player, Multi Player, and the Subtracks SRC machines. The Grainer, Stretcher, and Shape machines have their own set of filter parameters on FLTR PAGE 1. For more information, please see “A.2.4 GRAINER” on page 94, “A.2.5 STRETCHER” on page 97, and “A.2.8 SHAPE” on page 104.



ATK
Attack Time sets the length of the attack phase of the filter envelope.

DEC
Decay Time sets the length of the decay phase of the filter envelope.

SUS
Sustain Level sets the sustain level of the filter envelope.

REL
Release Time sets the length of the release phase of the filter envelope.

FREQ
Frequency sets the cutoff frequency of the Multimode filter and the center frequency of the EQ.

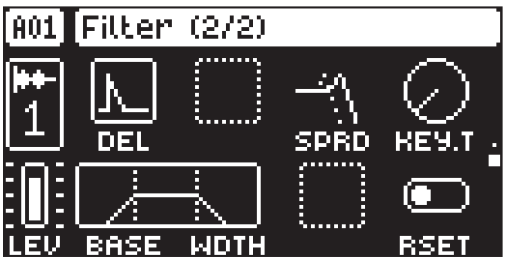
RESO
Resonance sets the resonance behavior of the filter. Resonance introduces a peak in the spectrum at the cutoff frequency.

TYPE
Type morphs the Multimode filter from low-pass to band-pass to high-pass.

ENV
Env. Depth determines the amount of modulation the filter envelope applies to the cutoff frequency. The knob is bipolar, offering both negative and positive modulation depths.

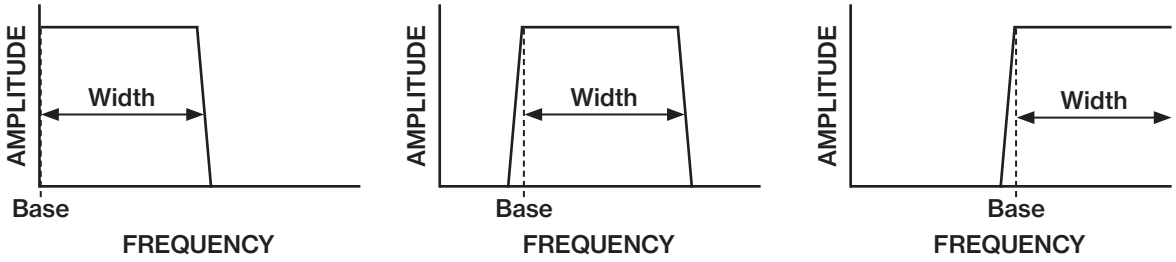
12.6 FLTR PAGE 2

On FLTR page 2, you will find the parameters that control the Base-width filter and several parameters that affect the Multimode filter on FLTR page 1. The parameters described here are for the Single Player, Multi Player, Subtracks, Wavefinder, and Waveswarmer SRC machines. The Grainer, Stretcher and Shape machines do not have any FLTR PAGE 2.



The Base-width filter is a high-pass filter and a low-pass filter connected in series. The filter's **BASE** and **WDTH** parameters define the Base-width filter's frequency range.

Examples of how the **BASE** and **WDTH** parameters affect the filter frequency range:



- **With BASE set to 0, the filter functions as a low-pass filter with WDTH adjusting the frequency range.**
- **With WDTH set to 127, the filter functions as a high-pass filter with BASE adjusting the frequency range.**
- **With WDTH set to 0, the filter functions as a band-pass filter with BASE adjusting the frequency.**
- **With BASE set to 0 and WDTH set to 127, the filter does not affect the sound.**

DEL

Envelope delay sets the time before the attack phase of the filter envelope starts. This parameter is part of the filter envelope that controls the FLTR machine. You can also press and hold **[FUNC]** and then turn ***DATA ENTRY*** knob A to access this parameter from FLTR page 1 quickly. This parameter only affects the Multimode filter on FLTR page 1.

SPRD

Frequency Spread offsets the filter cutoff frequency in the left and right channels. This parameter is not available for the Wavefinder and Waveswarmer machines.

KEY.T

Keytrack sets how much the filter cutoff frequency is affected by what note is playing. The higher the KEY.T setting, the more the filter opens up at higher notes. This parameter is not available for the Subtracks machine.

BASE

Sets the base frequency of the filter.

WDTH

Sets the frequency width above the base frequency.

RSET

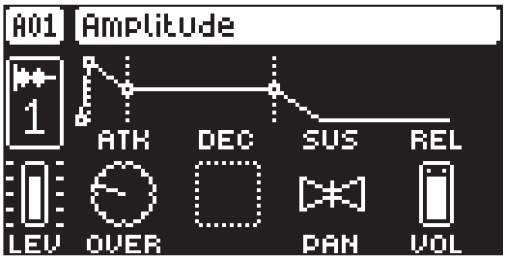
Envelope Reset sets the filter envelope behavior. This parameter only affects the Multimode filter on FLTR page 1.

ON resets the envelope for each consecutive trig. The envelope's attack phase is reset to zero.

OFF does not reset the envelope for each consecutive trig. The envelope's attack phase continues from where it left off.

12.7 AMP PAGE

The AMP page controls parameters for the amplitude envelope, panning, and volume.



ATK
Attack Time sets the length of the attack phase of the amp envelope.

HOLD
Hold Time sets the length of the hold phase of the amp envelope. Fixed Hold time values (0–126) specify the length of the hold phase, and the envelope ignores Note Off events such as Trig Length, releasing a **[TRIG]** key, or a key on an external controller. Setting **HOLD** to NOTE means the hold phase will be determined by Note On and Note Off events. This parameter is only available if **ENVELOPE MODE** in the TRACK SETUP menu is set to AHD.



If you set HOLD to NOTE and use an external keyboard to trigger the envelope, the sound will be sustained (if DEC is set to a value less than 127) for as long as you press a key on the keyboard.

DEC
Decay Time sets the length of the decay phase of the amp envelope. When **ENVELOPE MODE** is set to AHD, DECAY works as the REL parameter, defining the time from the end of **HOLD** to 0.

SUS
Sustain Level sets the sustain level of the amp envelope. This parameter is only available if **ENVELOPE MODE** in the TRACK SETUP menu is set to ADSR.

REL
Release Time sets the length of the release phase of the amp envelope. This parameter is only available if **ENVELOPE MODE** in the TRACK SETUP menu is set to ADSR.

OVER
Overdrive sets the amount of overdrive and clipping distortion of the signal.

PAN
Pan positions the audio of each voice in the stereo field. The knob function is bipolar, with CEN being the balanced midpoint, 64L sends all sound to the left channel and 63R sends all sound to the right.

VOL
Volume sets the volume amount of the amplifier. Unlike the track level (**LEV**), this parameter can be parameter locked and is saved with the preset. For the Subtracks machine, this parameter sets the amp level for every separate subtrack.



Press [FUNC] + [AMP] to access the TRACK SETUP menu and use the ENVELOPE MODE setting to select if you want the AMP envelope to be in ADSR or AHD mode.

12.8 FX PAGE 1 (INSERT FX 1/2)

The parameters on the FX page 1 control the audio track's selected first insert FX machine. Press **[FUNC]** + **[FX]** to select a FX machine. The parameters vary depending on which FX machine is assigned. For more information, please see "A.3 FX MACHINES" on page 107.

12.9 FX PAGE 2 (INSERT FX 2/2)

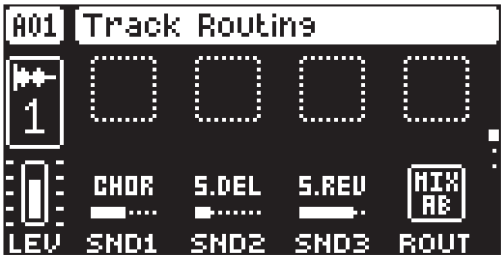
The parameters on the FX page 2 control the audio track's selected second insert FX machine. Press **[FUNC]** + **[FX]** to select a FX machine. The parameters vary depending on which FX machine is assigned. For more information, please see "A.3 FX MACHINES" on page 107.



All the voices generated by the track's SRC machine share the same insert effects.

12.10 FX PAGE 3 (TRACK ROUTING)

The FX parameter page 3 contains parameters that set the routing of the track and the send levels from the track to the Send FX.



SND1–3

Send 1–3 sets the amount of sound sent through to Send FX 1–3. For more information, please see “14. SEND FX TRACK PARAMETERS” on page 70.

ROUT

Routing selects where to route the audio of the selected track. This parameter mirrors the setting in the ROUTING menu. The routing switches for this parameter are shown with “A” in the sound architecture illustrations. For more information, please see “4. TONVERK SOUND ARCHITECTURE” on page 17, and “4.4 THE ROUTING MENU” on page 17.

MIX AB is the default setting and routes the audio to the MIXER and then through the Main FX to the A/B outputs and the headphones.

OUT CD routes the audio directly to the C/D outputs.

OUT EF routes the audio directly to the E/F (HEADPHONES) outputs.

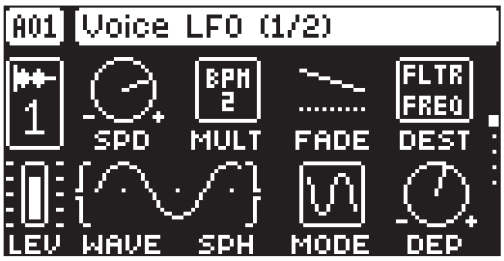
BUS 1–4 routes the audio to Bus 1–4.

12.11 THE MODULATION PAGES

The MOD pages contain several modulators with their settings: two LFOs for the track parameters, an envelope for the track parameters, and two LFOs for the track’s insert FX parameters.

12.12 MOD PAGE 1 (VOICE LFO 1)

The Voice Low-Frequency Oscillator 1 can be used to modulate the track parameters. Customize the low-frequency oscillator behavior, orientation, speed, and depth on this page. This page controls the behavior of VOICE LFO 1.



SPD

Speed sets the speed of the LFO. Try settings of 8, 16 or 32 to sync the LFO to straight beats. The knob is bipolar. The LFO cycle can be played backward by using negative values.

MULT

Multiplier multiplies the SPD parameter by the set factor, either by adjusting the current tempo (BPM settings) or by applying a fixed tempo of 120 BPM.

FADE

Fade In/Out allows for fading in and out of the LFO modulation. The knob is bipolar. Positive values produce a fade-out, while negative values produce a fade-in. 0 gives no fade-in/fade-out. (-64–64)

DEST

Destination selects the modulation destination for the LFO. Preview how the LFO modulation will affect the sound by highlighting a destination. Press **[YES]** to confirm the selection. Press **[NO]** to cancel and revert to the previous selection. For more information, please see “APPENDIX B: LFO/MOD ENVELOPE MODULATION DESTINATIONS” on page 126.

WAVE
Waveform sets the LFO waveform. The Triangle, Sine, Square, Sawtooth, and Random waveforms are bipolar. The Exponential and Ramp are unipolar.

SPH
Start Phase sets the point within the wave cycle where the LFO will start when it is trigged. 0 makes the LFO start at the beginning of a complete wave cycle, 64 makes it start at the center. A small square at the start of the waveform shows that the wave cycle begins at a zero-crossing. If **WAVE** is set to RND then the **SPH** parameter changes to **SLEW** and adds slew to the transitions in the waveform.

MODE
Trig Mode determines how the LFO behaves when a note is triggered.

FREE makes the LFO run continuously, never restarting or stopping even if notes are trigged.

TRIG makes the LFO restart when a note is trigged.

HOLD makes the LFO run free in the background, but when a note is trigged, the LFO output level is latched and held still until the next note is trigged.

ONE The LFO starts when a note is trigged, then runs to the end of the waveform and then stops. This makes the LFO function similar to an envelope.

HALF The LFO starts when a note is trigged, then runs to the middle of the waveform and then stops.

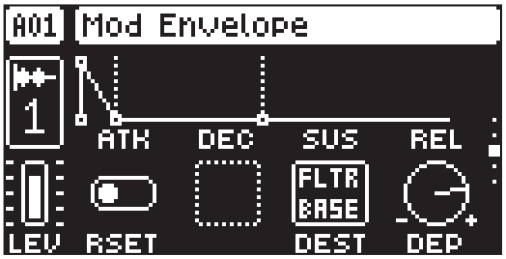
DEP
Depth sets the depth and polarity of the LFO modulation. Both negative and positive modulation depths are possible. A center setting, 0.00, equals no modulation depth.

12.13 MOD PAGE 2 (VOICE LFO 2)

MOD page 2 contains the same parameters as VOICE LFO page 1, but controls VOICE LFO 2.

12.14 MOD PAGE 3 (MOD ENVELOPE)

The Mod Envelope can be used to modulate track parameters. It is similar to the envelopes on the AMP and FLTR pages but lets you route to a destination of your choice.



ATK
Attack Time sets the length of the attack phase of the mod envelope. **[FUNC]** + ***DATA ENTRY*** knob ***A*** sets the amount of envelope delay, which is the time before the attack phase starts.

DEC
Decay Time sets the length of the decay phase of the mod envelope.

SUS
Sustain Level sets the sustain level of the mod envelope.

REL
Release Time sets the length of the release phase of the mod envelope.

RSET
Mod Envelope Reset sets the Mod envelope behavior:

ON resets the envelope for each consecutive trig. The envelope's attack phase is reset to zero.

OFF does not reset the envelope for each consecutive trig (default). The envelope's attack phase continues from where it left off.

DEST

Destination selects the modulation destination for the Mod Envelope. Preview how the modulation will affect the sound by highlighting a destination. Press **[YES]** to confirm the selection. Press **[NO]** to cancel and revert to the previous selection. For more information, please see “APPENDIX B: LFO/MOD ENVELOPE MODULATION DESTINATIONS” on page 126.

DEP

Depth sets the depth and polarity of the Mod Envelope modulation. Both negative and positive modulation depth is possible. A center setting, 0.00, equals no modulation depth.

12.15 MOD PAGE 4 (FX LFO 1)

The FX Low-Frequency Oscillators can be used to modulate the parameters of the selected Insert FX 1 and 2. This page controls the behavior of FX LFO 1.

SPD

Speed sets the speed of the LFO. Try settings of 8, 16 or 32 to sync the LFO to straight beats. The knob is bipolar. The LFO cycle can be played backward by using negative values.

MULT

Multiplier multiplies the SPD parameter by the set factor, either by adjusting the current tempo (BPM settings) or by applying a fixed tempo of 120 BPM.

FADE

Fade In/Out allows for fading in and out of the LFO modulation. The knob is bipolar. Positive values produce a fade-out, while negative values produce a fade-in. 0 gives no fade-in/fade-out.

DEST

Destination selects the modulation destination for the LFO. Preview how the LFO modulation will affect the sound by highlighting a destination. Press **[YES]** to confirm the selection. Press **[NO]** to cancel and revert to the previous selection. For more information, please see “APPENDIX B: LFO/MOD ENVELOPE MODULATION DESTINATIONS” on page 126.

WAVE

Waveform sets the LFO waveform. The Triangle, Sine, Square, Sawtooth, and Random waveforms are bipolar. The Exponential and Ramp are unipolar.

SPH

Start Phase sets the point within the wave cycle where the LFO will start when it is trigged. 0 makes the LFO start at the beginning of a complete wave cycle, 64 makes it start at the center. A small square at the start of the waveform shows that the wave cycle begins at a zero-crossing. If **WAVE** is set to RND then the **SPH** parameter changes to **SLEW** and adds slew to the transitions in the waveform.

MODE

Trig Mode determines how the LFO behaves when a note is triggered.

FREE is the default free-running mode. It makes the LFO run continuously, never restarting or stopping even if notes are trigged.

TRIG makes the LFO restart when a note is trigged.

HOLD makes the LFO run free in the background, but when a note is trigged, the LFO output level is latched and held still until the next note is trigged.

ONE The LFO starts when a note is trigged, then runs to the end of the waveform and then stops. This makes the LFO function similar to an envelope.

HALF The LFO starts when a note is trigged, then runs to the middle of the waveform and then stops.

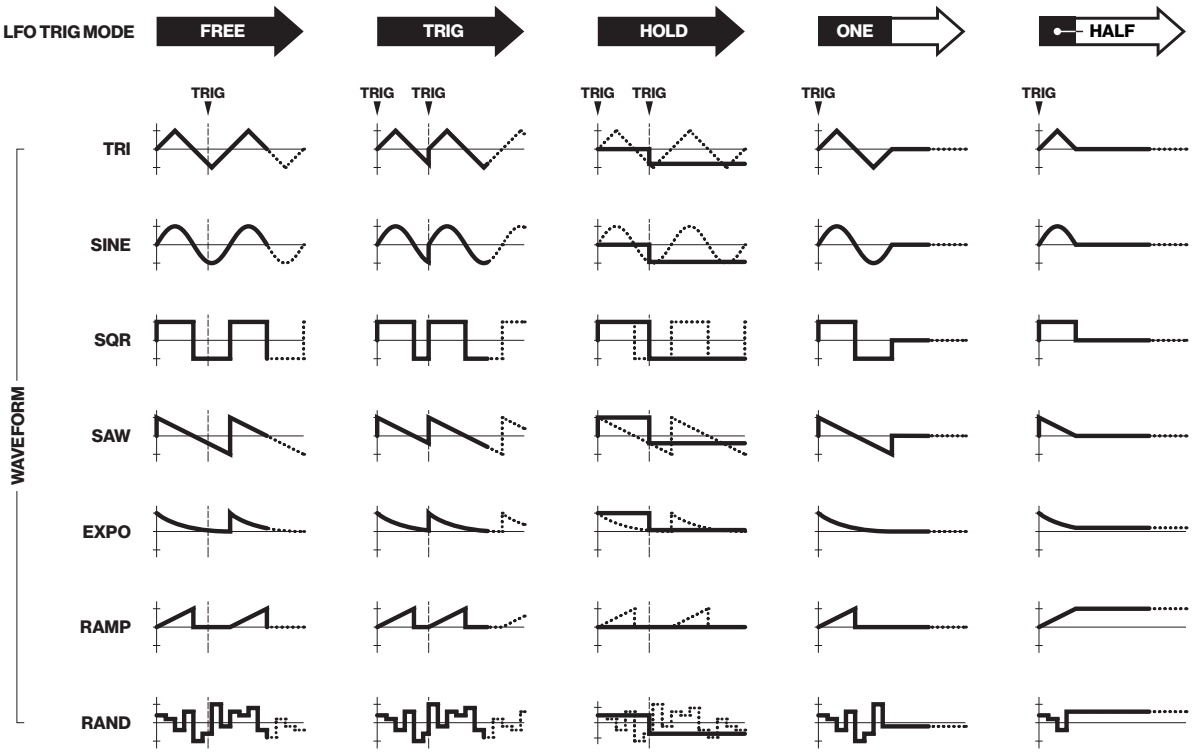
DEP

Depth sets the depth and polarity of the LFO modulation. Both negative and positive modulation depths are possible. A center setting, 0.00, equals no modulation depth.

12.16 MOD PAGE 5 (FX LFO 2)

The FX LFO 2 page contains the same parameters as FX LFO page 1, but controls the behavior of FX LFO 2.

LFO WAVEFORMS AND TRIG MODES



LFO SPEED SETTINGS

The table below shows the LFO speed measured in sequencer steps using different combinations of SPD and MULT (set to a BPM value) settings. For example, a value of 8 in the table means that the LFO will do one complete cycle in the time it takes the sequencer to advance eight steps.

		MULT											
		1	2	4	8	16	32	64	128	256	512	1K	2K
SPD	1	2048	1024	512	256	128	64	32	16	8	4	2	1
	2	1024	512	256	128	64	32	16	8	4	2	1	1/2
	4	512	256	128	64	32	16	8	4	2	1	1/2	1/4
	8	256	128	64	32	16	8	4	2	1	1/2	1/4	1/8
	16	128	64	32	16	8	4	2	1	1/2	1/4	1/8	1/16
	32	64	32	16	8	4	2	1	1/2	1/4	1/8	1/16	1/32
	64	32	16	8	4	2	1	1/2	1/4	1/8	1/16	1/32	1/64

13. BUS TRACK PARAMETERS

The parameters that are available on the Bus tracks are explained in this chapter. For more information about Bus tracks, please see ”5.3.3 BUS TRACKS (TRACK 9–12)” on page 20. On the SRC, FLTR, and AMP PARAMETER pages, you will find parameters for when using the Bus track to control external MIDI-controlled devices (if you have assigned a MIDI SRC machine for the track). For more information about these parameters, please see “A.2.9 MIDI” on page 105. On the FX parameter pages, you have parameters for selecting and editing the Bus track’s FX machines, setting the send levels from the track to the send FX, and also setting the track routing. On the MOD pages, you have two LFOs dedicated as modulation sources for the track’s selected FX machines.

13.1 EDITING THE BUS TRACK PARAMETERS

Press **[TRK]** + **[TRIG 9–12]** to select the Bus track you want to edit. There are six PARAMETER pages for the Bus tracks. Press **[TRIG]**, **[SRC]**, **[FLTR]**, **[AMP]**, **[FX]**, and **[MOD]** to access the track’s PARAMETER page groups. Use the **[UP]/[DOWN]** keys to access the parameter group’s pages. You can also press a **[PARAMETER PAGE]** key repeatedly to cycle through that group’s parameter pages. Press and hold a **[PARAMETER PAGE]** key to see the values for all parameters on that page.

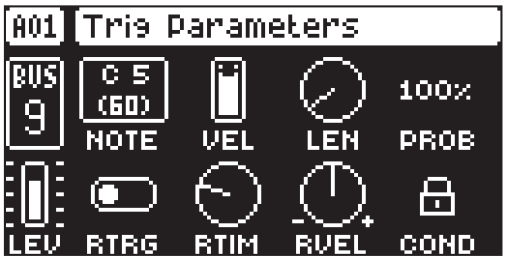
The track parameters can be locked to other settings at any step of the pattern by first pressing and holding the **[TRIG]** key, then adjusting the parameter settings with the ***DATA ENTRY*** knobs. For more information, please see “10.10.1 PARAMETER LOCKS” on page 47.



If you press [TRIG 9–12] to select a Bus track without first pressing and holding [TRK], you can still use the [KEYBOARD] to play the previously selected audio track. Selecting the same Bus track again toggles editing back to the audio track.

13.2 TRIG PAGE

Here you set the options for notes that are trigged. This is also where you select trig conditions. Press the **[TRIG PARAMETERS]** key to access the menu. Change settings using the ***DATA ENTRY*** knobs. These general settings affect note trigs placed on the sequencer.



NOTE

Trig Note sets the pitch of the note when trigged. When in LIVE RECORDING mode and using the **[KEYBOARD]** to enter notes, the pitch of the **[TRIG]** keys played will override this setting. The NOTE parameter is not available for tracks that have the Subtracks SRC machine assigned.

VEL

Trig Velocity sets the velocity of the sequencer’s note trigs.

LEN

Trig Length sets the length of the note trig. In LIVE RECORDING mode, the duration of pressing the **[TRIG]** keys overrides this general setting.

PROB

Trig Probability sets the probability that the trigs on the track play or not. The probability outcome is re-evaluated every time a trig is set to play. The default setting is 100%, meaning that all the trigs on the track play every time. This parameter can be parameter locked, which lets you give separate trigs their own probability.

RTRG

Retrig enables multiple trig repeats on placed trigs. Use ***DATA ENTRY*** knob ***E*** to turn retrig on/off. For information on how to set retrig locks on specific trigs in the sequencer, please see “10.7 RETRIGS” on page 46.

RTIM

Repeat Time sets the retrig rate. 1/16 is the nominal retrig rate, one trig per step. 1/32 corresponds to two trigs per step and so on. To do triplets, for example, set the retrig rate to 1/12 (or 1/24).

RVEL

Repeat velocity sets the velocity curve fade-out and fade-in of the retrig. -127 corresponds to a complete fade-out during the set length, -63 fades out to half the velocity during the set length, 0 equals a flat velocity curve with no fade, 63 fades into half velocity during the set length, and 127 fades in completely to full velocity during the set length. Please note that the effects of the **RVEL** setting are also dependent on the **VEL** setting on TRIG PAGE 1.

COND

(Trig Condition) when you add a conditional lock, **COND** sets the Trig Condition with which a set of conditional rules can be applied to any trig, using a conditional parameter lock. For more information, please see “10.10.2 TRIG CONDITIONS AND CONDITIONAL LOCKS” on page 48.

13.3 SRC, FLTR, AMP PAGES

These pages show the parameters specific to the MIDI and Shape machines, depending on which one you have selected. The SRC page is empty for the Shape machine. For more information about these parameters, please see “A.2.9 MIDI” on page 105, and “A.2.8 SHAPE” on page 104.

13.4 FX PAGE 1 (INSERT FX 1/2)

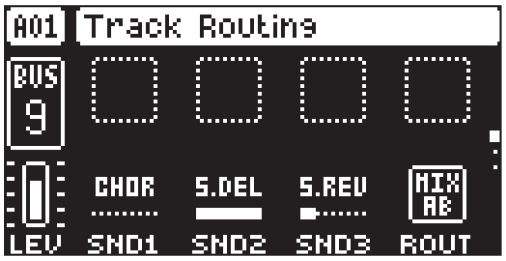
The parameters on the FX page 1 control the bus track’s selected first insert FX machine. Press **[FUNC]** + **[FX]** to select a FX machine. The parameters vary depending on which insert FX machine is selected. For more information, please see “A.3 FX MACHINES” on page 107.

13.5 FX PAGE 2 (INSERT FX 2/2)

The parameters on the FX page 2 control the bus track’s selected second insert FX machine. Press **[FUNC]** + **[FX]** to select a FX machine. The parameters vary depending on which insert FX machine is selected. For more information, please see “A.3 FX MACHINES” on page 107.

13.6 FX PAGE 3 (TRACK ROUTING)

The FX parameter page 3 contains parameters that set the routing of the track and the send levels from the track to the Send FX.



SND1–3

Send 1–3 sets the amount of sound sent through to Send FX 1–3. For more information, please see “14. SEND FX TRACK PARAMETERS” on page 70.

ROUT

Routing selects where to route the audio from the selected track’s Bus. This parameter mirrors the setting in the ROUTING menu. The routing switches for this parameter are shown with “B” in the sound architecture illustrations. For more information, please see “4. TONVERK SOUND ARCHITECTURE” on page 17 and “4.4 THE ROUTING MENU” on page 17.

MIX AB is the default setting and routes the audio to the MIXER and then through the Main FX to the A/B outputs and the Headphones.

OUT CD routes the audio directly to the C/D outputs.

OUT EF routes the audio directly to the E/F (HEADPHONES) outputs.

13.7 MOD PAGE 1 (LFO 1)

The Low-Frequency Oscillator 1 is used to modulate the track's parameters. Customize the LFO behavior, orientation, speed, and depth on this page. This page controls the behavior of LFO 1. The parameters on this page are the same as on the Audio track's MOD PAGE 1. For more information, please see "12.12 MOD PAGE 1 (VOICE LFO 1)" on page 63.

13.8 MOD PAGE 2 (LFO 2)

The Low-Frequency Oscillator 2 is used to modulate the track's parameters. Customize the LFO behavior, orientation, speed, and depth on this page. This page controls the behavior of LFO 2. The parameters on this page are the same as on the Audio track's MOD PAGE 1. For more information, please see "12.12 MOD PAGE 1 (VOICE LFO 1)" on page 63.

14. SEND FX TRACK PARAMETERS

The parameters that are available on the Send FX tracks are explained in this chapter. For more information about Send FX tracks, please see ”5.3.4 SEND FX TRACKS (TRACK 13–15)” on page 20. On the SRC, FLTR, and AMP PARAMETER pages, you will find parameters for when using the Send FX track to control external MIDI-controlled devices (if you have assigned a MIDI SRC machine to the track). For more information about these parameters, please see “A.2.9 MIDI” on page 105. On the FX parameter pages, you have parameters for selecting and editing the Send FX track’s FX machines. On the MOD pages, you have two LFOs dedicated as modulation sources for the track’s parameters.

14.1 EDITING THE SEND FX TRACK PARAMETERS

Press **[TRK]** + **[TRIG 13–15]** to select the Send FX track you want to edit. Press **[TRIG]**, **[SRC]**, **[FLTR]**, **[AMP**, **[FX]**, and **[MOD]** to access the tracks PARAMETER page groups. Use the **[UP]/[DOWN]** keys to access the parameter group’s pages. You can also press a **[PARAMETER PAGE]** key repeatedly to cycle through that group’s parameter pages. Press and hold a **[PARAMETER PAGE]** key to see the values for all parameters on that page.

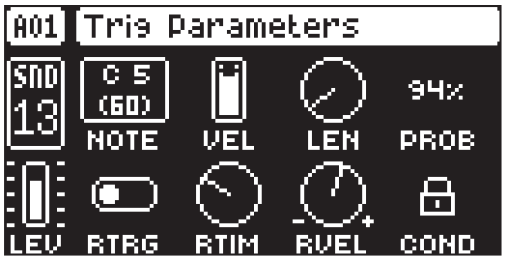
The track parameters can be locked to other settings at any step of the pattern by first pressing and holding the **[TRIG]** key, then adjusting the parameter settings with the ***DATA ENTRY*** knobs. For more information, please see “10.10.1 PARAMETER LOCKS” on page 47.



If you press [TRIG 13–15] to select a Send FX track without first pressing and holding [TRK], you can still use the [KEYBOARD] to play the previously selected audio track.

14.2 TRIG PAGE

Here you set the options for notes that are trigged. This is also where you select trig conditions. Press the **[TRIG PARAMETERS]** key to access the menu. Change settings using the ***DATA ENTRY*** knobs. These general settings affect note trigs placed on the sequencer.



NOTE

Trig Note sets the pitch of the note when trigged. When in LIVE RECORDING mode and using the **[KEYBOARD]** to enter notes, the pitch of the **[TRIG]** keys played will override this setting. The NOTE parameter is not available for tracks that have the Subtracks SRC machine assigned.

VEL

Trig Velocity sets the velocity of the sequencer’s note trigs.

LEN

Trig Length sets the length of the note trig. In LIVE RECORDING mode, the duration of pressing the **[TRIG]** keys overrides this general setting.

PROB

Trig Probability sets the probability that the trigs on the track play or not. The probability outcome is re-evaluated every time a trig is set to play. The default setting is 100%, meaning that all the trigs on the track play every time. This parameter can be parameter locked, which lets you give separate trigs their own probability.

RTRG

Retrig enables multiple trig repeats on placed trigs. Use ***DATA ENTRY*** knob ***E*** to turn retrig on or off. For information on setting retrig locks on specific trigs in the sequencer, please see “10.7 RETRIGS” on page 46.

RTIM

Repeat Time sets the retrig rate. 1/16 is the nominal retrig rate, one trig per step. 1/32 corresponds to two trigs per step and so on. To do triplets, for example, set the retrig rate to 1/12 (or 1/24).

RVEL

Repeat velocity sets the velocity curve fade-out and fade-in of the retrig. -127 corresponds to a complete fade-out during the set length, -63 fades out to half the velocity during the set length, 0 equals a flat velocity curve with no fade, 63 fades into half velocity during the set length, and 127 fades in completely to full velocity during the set length. Please note that the effects of the **RVEL** setting are also dependent on the **VEL** setting on TRIG PAGE 1.

COND

Lets you add a trig condition, a set of rules you can apply to any trig using a conditional parameter lock. For more information, please see “10.10.2 TRIG CONDITIONS AND CONDITIONAL LOCKS” on page 48.

14.3 SRC, FLTR, AMP PAGES

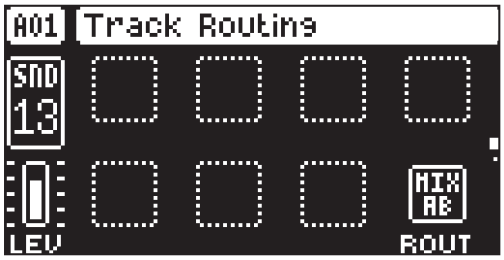
These pages show the parameters specific to the Shape machine. The SRC page is empty for the Shape machine. For more information about these parameters, please see “A.2.8 SHAPE” on page 104.

14.4 FX PAGE 1 (SEND FX)

The parameters on the FX page 1 control the track’s selected send FX machine. The FX machines selected on tracks 13–15 are the ones you send sound to from the Audio and Bus tracks using the **SND1–3** parameters. Press **[FUNC]** + **[FX]** to select the FX machine. The parameters vary depending on the selected send FX machine. For more information, please see “A.3 FX MACHINES” on page 107.

14.5 FX PAGE 2 (TRACK ROUTING)

The FX parameter page 2 contains parameters that set the routing of the track.



ROUT

Routing selects where to route the audio from the selected Send FX track. This parameter mirrors the setting in the ROUTING menu. The routing switches for this parameter are indicated by the letter “C” in the sound architecture illustrations. For more information, please see “4. TONVERK SOUND ARCHITECTURE” on page 17, and “4.4 THE ROUTING MENU” on page 17.

MIX AB is the default setting and routes the audio to the MIXER and then through the Main FX to the A/B outputs and the Headphones.

OUT CD routes the audio directly to the C/D outputs.

OUT EF routes the audio directly to the E/F (HEADPHONES) outputs.

14.6 MOD PAGE 1 (LFO 1)

The Low-Frequency Oscillator 1 is used to modulate the track’s parameters. Customize the LFO behavior, orientation, speed, and depth on this page. This page controls the behavior of LFO 1. Please note that the LFO does not retrigger on overlapping (legato) notes. The parameters on this page are the same as on the Audio track’s MOD PAGE 1. For more information, see “12.12 MOD PAGE 1 (VOICE LFO 1)” on page 63.

14.7 MOD PAGE 2 (LFO 2)

The Low-Frequency Oscillator 2 is used to modulate the track’s parameters. Customize the LFO behavior, orientation, speed, and depth on this page. This page controls the behavior of LFO 2. Please note that the LFO does not retrigger on overlapping (legato) notes. The parameters on this page are the same as on the Audio track’s MOD PAGE 1. For more information, see “12.12 MOD PAGE 1 (VOICE LFO 1)” on page 63.

15. MIX TRACK PARAMETERS

The parameters that are available on the Mix track are explained in this chapter. For more information about the Mix track, please see “5.3.5 MIX TRACK (TRACK 16)” on page 20. On the Mix track, you have several different settings related to external audio, track mixing, and the main effect. You also have two LFOs as dedicated modulation sources for a number of the track’s parameters.

15.1 EDITING THE MIX TRACK PARAMETERS

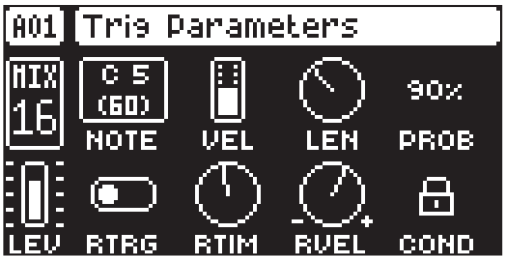
Press **[TRK]** + **[TRIG 16]** to select the Mix track. There are six PARAMETER pages for the Mix track. Press **[TRIG]**, **[SRC]**, **[FLTR]**, **[AMP]**, **[FX]**, and **[MOD]** to access the tracks PARAMETER page groups. Use the **[UP]/[DOWN]** keys to access the parameter group’s pages. You can also press a **[PARAMETER PAGE]** key repeatedly to cycle through that group’s parameter pages. Press and hold a **[PARAMETER PAGE]** key to see the values for all parameters on that page.

The track parameters can be locked to other settings at any step of the pattern by first pressing and holding the **[TRIG]** key, then adjusting the parameter settings with the ***DATA ENTRY*** knobs. For more information, please see “10.10.1 PARAMETER LOCKS” on page 47.

If you press [TRIG 16] to select the Mix track without first pressing and holding [TRK], you can still use the [KEYBOARD] to play the previously selected audio track.

15.2 TRIG PAGE

Here you set the options for notes that are trigged. This is also where you select trig conditions. Press the **[TRIG PARAMETERS]** key to access the menu. Change settings using the ***DATA ENTRY*** knobs. These general settings affect note trigs placed on the sequencer.



NOTE

Trig Note sets the pitch of the note when trigged. When in LIVE RECORDING mode and using the **[KEYBOARD]** to enter notes, the pitch of the **[TRIG]** keys played will override this setting. The NOTE parameter is not available for tracks that have the Subtracks SRC machine assigned.

VEL

Trig Velocity sets the velocity of the sequencer’s note trigs.

LEN

Trig Length sets the length of the note trig. In LIVE RECORDING mode, the duration of pressing the **[TRIG]** keys overrides this general setting.

PROB

Trig Probability sets the probability that the trigs on the track play or not. The probability outcome is re-evaluated every time a trig is set to play. The default setting is 100%, meaning that all the trigs on the track play every time. This parameter can be parameter locked, which lets you give separate trigs their own probability.

RTRG

Retrig enables multiple trig repeats on placed trigs. Use ***DATA ENTRY*** knob ***E*** to turn retrig on/off. For information on setting retrig locks on specific trigs in the sequencer, please see “10.7 RETRIGS” on page 46.

RTIM

Repeat Time sets the retrig rate. 1/16 is the nominal retrig rate, one trig per step. 1/32 corresponds to two trigs per step and so on. To do triplets, for example, set the retrig rate to 1/12 (or 1/24).

RVEL

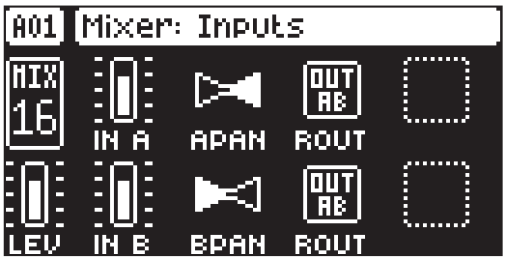
Repeat velocity sets the velocity curve fade-out and fade-in of the retrig. -127 corresponds to a complete fade-out during the set length, -63 fades out to half the velocity during the set length, 0 equals a flat velocity curve with no fade, 63 fades into half velocity during the set length, and 127 fades in completely to full velocity during the set length. Please note that the effects of the **RVEL** setting are also dependent on the **VEL** setting on TRIG PAGE 1.

COND

(Trig Condition) When you add a conditional lock, **COND** sets the Trig Condition with which a set of conditional rules can be applied to any trig, using a conditional parameter lock. For more information, please see “10.10.2 TRIG CONDITIONS AND CONDITIONAL LOCKS” on page 48.

15.3 SRC PAGE

On this page, you control aspects related to the incoming audio from external sources (USB and IN A/B).



IN A/IN B

The level parameters set the level of the incoming audio from the USB and IN A/B inputs.

APAN/BPAN

The pan parameters position the audio from USB and IN A/B in the stereo field. The knob function is bipolar with CEN being the balanced midpoint, L64 sends all sound to the left channel and R64 sends all sound to the right.

ROUT/ROUT

The routing parameters select where to route the audio from USB and IN A/B. This parameter’s routing switches are shown with “D” in the sound architecture illustrations. For more information, please see “4. TONVERK SOUND ARCHITECTURE” on page 17 and “4.4 THE ROUTING MENU” on page 17.

MIX AB is the default setting and routes the audio through the Main FX to the A/B outputs and the Headphones.

OUT AB routes the audio to the AB outputs and the Headphones without going through the Mixer and Main FX.

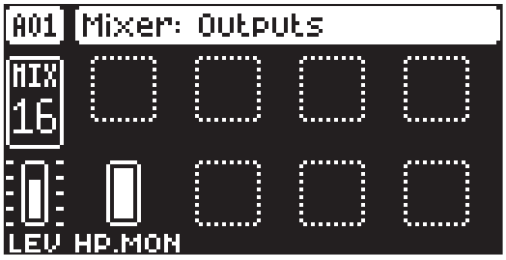
OUT CD routes the audio directly to the C/D outputs.

OUT EF routes the audio directly to the E/F (HEADPHONES) outputs.

BUS 1–4 routes the audio to Bus 1–4)

TRK 1–8 routes the audio to Track 1–8)

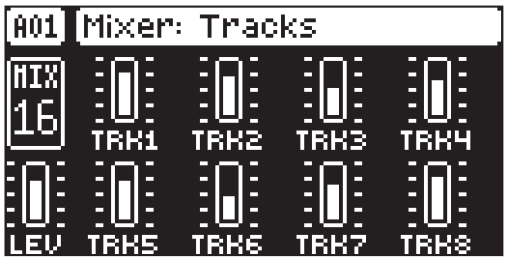
15.4 FLTR PAGE



HP.MON

Here you set the level of the audio sent from the mixer to the headphones (Output EF). You can find this parameter’s position in the signal flow, shown with an “E”, in the sound architecture illustrations. For more information, please see “4. TONVERK SOUND ARCHITECTURE” on page 17.

15.5 AMP PAGE



TRK1–8
Sets the **TRACK LEVEL** parameter of tracks 1–8.

15.6 FX PAGE

The parameters on the FX page control the track's selected FX machine. Press **[FUNC]** + **[FX]** to select a FX machine. The parameters vary depending on which FX machine is selected. For more information, please see "A.3 FX MACHINES" on page 107.

15.7 MOD PAGE 1 (LFO 1)

The Low-Frequency Oscillator 1 is used to modulate the track's parameters. Customize the LFO behavior, orientation, speed, and depth on this page. This page controls the behavior of LFO 1. The parameters on this page are the same as on the Audio track's MOD PAGE 1. For more information, please see "12.12 MOD PAGE 1 (VOICE LFO 1)" on page 63.

15.8 MOD PAGE 2 (LFO 2)

The Low-Frequency Oscillator 2 is used to modulate the track's parameters. Customize the LFO behavior, orientation, speed, and depth on this page. This page controls the behavior of LFO 2. The parameters on this page are the same as on the Audio track's MOD PAGE 1. For more information, please see "12.12 MOD PAGE 1 (VOICE LFO 1)" on page 63.

16. SAMPLING

Tonverk is a very competent and accessible sampler. It can sample audio from external sources via the external inputs, and it can also sample audio internally from Tonverk itself. There are two different sampling methods: you can use either the Recorder or the Auto Sampler.

16.1 THE SAMPLING MENU

The SAMPLING menu within the Recorder provides settings that control various aspects of sampling. The maximum sampling time when using the SAMPLING menu is 6.06.06 minutes and this is always available even if a project's RAM is fully utilized.

Press **[SAMPLING]** to enter the SAMPLING SELECT screen, and then use **[UP]/[DOWN]** to select RECORDER, and then press **[YES]** to access the SAMPLING menu.



16.1.1 REC NOW!

Press **[YES]** to start sampling. Press **[YES]** to stop sampling.

16.1.2 SRC

Source selects between different incoming audio sources to sample from.

EXT IN A sets the input source to INPUT A.

EXT IN B sets the input source to INPUT B.

EXT IN sets the input source to INPUT A+B.

MAIN sets the input source to Tonverk's internal Mix track. The audio is sampled after the main FX.

TRK.1–8 sets the input source to one of Tonverk's internal tracks 1–8.

BUS.1–4 sets the input source to one of Tonverk's buses 1–4.

USB IN L sets the input source to USB in L.

USB IN R sets the input source to USB in R.

USB IN sets the input source to USB L+R.

SND.1–3 sets the input source to one of Tonverk's Send FX tracks 1–3.

16.1.3 THRES

If you have armed the sampler, recording starts when the incoming audio exceeds this set threshold. Set it high enough to ignore background noise, but low enough to capture the full signal.

16.1.4 MON

Lets you monitor and set the level of the incoming audio through Tonverk.

16.1.5 R.LEN

Record Length sets the length of the sampling. With a setting of 1/16–16/1, the sampling length is decided by the time it takes the sequencer to advance a set number of steps at the current BPM. For example, the settings 1/16, 1/8, 1/2, 1/1, and 16/1 correspond to sampling durations of 1 sequencer step, 2 steps, 8 steps, 16 steps, and 256 steps, respectively. With the MAX setting, sampling continues until the maximum sampling time is reached or until you press **[YES]** to stop sampling.

16.1.6 R.STRT

Record Start lets you set if the recorder will start sampling when you press **[PLAY]** or when the level of the audio source exceeds the threshold level set by **THRES** and with **ARM** set to ON.

16.1.7 ARM

Set to ON to arm the sampler. The sampler is now in arm mode, and it will start sampling when the incoming audio exceeds the threshold level. Press **[SAMPLING]** + **[NO]** to cancel.

16.2 SAMPLING AUDIO USING THE RECORDER

1. If you use an external audio source, connect it to Tonverk.
2. Press **[SAMPLING]** to enter the SAMPLING SELECT screen, and then use **[UP]/[DOWN]** to select RECORDER, and then press **[YES]**. If you have already used the Auto Sampler in this session, press **[LEFT**] to enter the SAMPLING SELECT screen.
3. Use ***DATA ENTRY*** knob ***A*** to set **SOURCE** to your preferred audio input source.
4. Keep an eye on the audio input meter and play the audio source, ensuring the volume is as strong as possible without clipping or distortion. The notches at the right end of the meter indicate 0 dB. Turn up **MON** to monitor the incoming audio through Tonverk.
5. Again, with an eye on the audio input meter, use ***DATA ENTRY*** knob ***D*** to set **THRES** just above the indicated background noise of the audio source (when it is not playing).
6. Use **R.LEN** to set the sampling length.
7. Press **[YES]** to arm the sampler and then play the sound source. When the incoming audio signal exceeds the set threshold level, sampling will start.
8. Press **[YES]** when you want to stop sampling, or with an **R.LEN** setting, the sampling will stop automatically. The sampling also stops if it reaches the maximum sampling time.
9. Use the ***DATA ENTRY*** knobs ***A*** and ***B*** to set the parameters **START** and **END** to trim the sample to the desired length. **[FUNC]** + ***DATA ENTRY*** knobs ***A*** and ***B*** snaps to zero crossings. You can use the ***DATA ENTRY*** knob ***D*** to zoom in and out, making it easier to see where to trim the sample. Use ***DATA ENTRY*** knob ***C*** to pan left and right if the sample is zoomed in. Press **[FUNC]** + **[YES]** to preview the sample. (The preview is played back by the voice of the active track. Make sure to select track 1–8 as the active track). Press **[FUNC]** + **[NO]** to discard the sample. **LOOP** makes the previewed sample loop (when enabled). Press **[LEFT]** to toggle **LOOP** on/off. Press **[UP]** if you wish to normalize the sample to 0 dB.



10. When you are happy with your settings, press **[YES]** to save the trimmed sample. You can press **[NO]** to change the trimming if you are not satisfied with the result. You now get the option to save the audio as a sample, or to generate a wavetable with the recorded audio as the reference. Make your choice, then press **[YES]**. If you choose to save the sampled audio as a wavetable, the wavetable generator analyzes the audio and then generates a wavetable that resembles the recorded sound. You can then save it and assign it to either the Wavefinder or Waveswarmer SRC machine.
11. On the NAMING page, name the sample/wavetable and press **[YES]** again to confirm the save. The sample is saved on the Tonverk SD card in the folder USER/RECORDINGS. The wavetables are saved in the folder USER/WAVETABLES.
12. Press **[TRIG 1–8]** to select a track to assign the sample to. Press **[NO]** if you don't want to assign the sample to a track.

Press **[NO]** to exit the Recorder.



- **You can only assign the sample to a track with the Single Player, Grainer, or Stretcher SRC machine selected. You can only assign the wavetable to a track with the Wavefinder or Waveswarmer SRC machine selected. Only those tracks' LEDs will light up and be selectable.**
- **When you create a wavetable, the audio is mixed to mono and saved as a 32-bit float WAV file. The trimmed audio cannot be longer than 10 seconds and needs to have a stable pitch. Single cycles are cut at positive zero crossings about one period apart. Up to 64 cycles are picked evenly across the recording, so the table follows how the timbre changes over time. Cycles without a stable pitch, such as transients and silent parts, are skipped. Each cycle is resampled to 2048 samples, centered, loop-point corrected and normalized to full scale.**

16.3 THE AUTO SAMPLER

You can also use the Auto Sampler functionality to perform sampling and create instruments. The Auto Sampler helps you sample from other MIDI-equipped devices, such as synthesizers, by setting up a sample session where you can define the note range, the number of notes within the range, velocity layers, note duration, and release time.

16.3.1 SAMPLING AUDIO USING THE AUTO SAMPLER

1. Connect a MIDI cable from Tonverk's MIDI Out to the MIDI input of the device you want to sample from.
2. Connect audio cables from the device you want to sample to Tonverk's IN A/B inputs, or connect a USB-C cable from the sample source to one of Tonverk's USB ports.
3. On the external device, select the sound you want to sample.
4. On Tonverk, press **[SAMPLING]** to enter the SAMPLING SELECT screen, and then use **[UP]**/**[DOWN]** to select AUTO SAMPLER, and then press **[YES]**. If you have previously used the Recorder in this session, press **[LEFT]** to enter the SAMPLING SELECT screen.
5. Select the sampling source **(SRC)** and then select the MIDI channel to which the external device is listening (**MIDI CHAN**).
6. Press **[YES]** to play a test note. The Auto Sampler will measure the latency and correct for it. It will also measure the release time of the sound you want to sample and set a release time that accounts for the full release of the sound. Press **[NO]** if you want to cancel the timing test.
7. Use **LTNCY** to manually adjust the latency if you want to adjust the latency compensation set by the test note in step 6.
8. Use **REL** to manually set a release time if you want to adjust the release time set by the test note in step 6.
9. Press **[RIGHT]** to navigate to the next setting page and then set the following parameters:

   START, **END** set the note range you want to sample.

   SAMPLE EVERY sets the interval between the actual notes to be sampled within the selected note range. For example, if the note range is one octave and **STEP** is set to 1, every semitone within the range is sampled. With **STEP** set to 3, every third semitone within the range will be sampled. The first note sampled is always the lowest note selected by the **START** parameter.

   VEL LAYERS sets how many separate velocities each note is sampled with.
10. Press **[RIGHT]** and then use **LENGTH** to set the time for which each sampled note should be held.
11. Press **[YES]** to name the sample and initiate the sampling process. You can edit the suggested name for the multi-sample. For more information, please see "6.7 THE NAMING SCREEN" on page 23. Press **[YES]** again to start sampling.
12. Press **[FUNC]** + **[NO]** if you want to cancel an ongoing auto-sampling session.

Press **[NO]** to exit the Auto Sampler.

When the auto-sampling process is complete, the instrument/sample is saved to the folder USER/MULTI-SAMPLED INSTRUMENTS on the SD card. The auto-sampling process generates a number of files: one instrument (.elmulti) for use in the Multi Player machine and one single sample (.wav) containing all the sampled notes, one after another, for use in the Single Player machine.



- **When sampling with multiple velocity layers, set the VELOCITY TO VOL parameter to LOG or LIN for best results. For more information, please see "11.4.1 VELOCITY TO VOL" on page 56.**
- **You can use the Trim/Loop editor to edit a multisampled instrument created with the Auto Sampler. For more information, see "9.1.5 INSTRUMENT" on page 36.**

16.4 TRANSFERRING SAMPLES FROM A COMPUTER TO TONVERK

Tonverk can load and play WAV, AIFF, FLAC, M4A (ALAC), and CAF audio files of any bit depth and sample rate. It will play them back at a maximum of 32-bit float, 48 kHz. Samples are stored on the SD card, and the size and number of those samples are limited only by the available free space on the SD card.

1. Connect Tonverk to a computer using a USB cable attached to one of Tonverk's USB ports.
2. On Tonverk, navigate to SETTINGS > USB DISK MODE, and then press **[YES]**.
3. In the popup window, press **[YES]**, but note that device playback will stop.

4. Tonverk's SD card should now show up in your computer as a USB device. Click the Tonverk USB device on your computer to access the contents of the SD card.
5. On the SD card, navigate to the USER/SAMPLES folder and copy your sample files there. You can also create subfolders within the SAMPLES folder and copy the files there.
6. Once all files are copied, safely eject the Tonverk USB device from the computer. Please refer to your computer's documentation on how to perform this procedure.
7. On your device, press **[NO]** to exit USB disk mode.



- **We recommend that you save and add content only to the USER folder on the SD card. This folder also contains the default destinations for saving projects, presets, samples, and instruments.**
- **If you delete or move samples (or a folder containing samples) on the SD card, it will affect all projects that use the deleted or moved samples, and the samples will be missing from these projects.**
- **The write-protect switch on the SD card must be set to OFF if you want to write to the card.**



You can also use a smartphone or tablet to upload samples to Tonverk's SD card.

17. SETTINGS MENU

The SETTINGS menu offers settings that affect Tonverk and can also be used to manage Projects.

Press **[SETTINGS]** to access the SETTINGS menu. Scroll the list by using **[UP]**/**[DOWN]** or the ***LEVEL/ DATA*** knob. Open a highlighted menu by pressing **[YES]**.



17.1 USB DISK MODE

This option allows you to access Tonverk's SD card from a computer, enabling the transfer of files between the device and the computer. This is useful for transferring samples and OS updates.

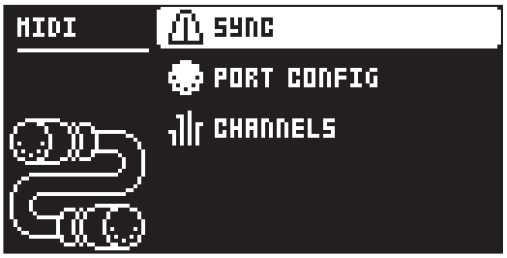
17.1.1 USING USB DISK MODE

1. Connect Tonverk to a computer/phone/tablet using a USB cable attached to one of Tonverk's USB ports.
2. Select **USB DISK MODE** and then press **[YES]**.
3. In the pop-up window, press **[YES]**, but note that device playback will stop.
4. Tonverk should now show up on your computer as a USB device. Click the Tonverk USB device on your computer to access the contents of the SD card.
5. To exit the USB disk mode, you must first safely eject the Tonverk USB device. Please refer to your computer's documentation on how to perform this procedure.
6. On your device. Press **[NO]** to exit USB disk mode.

If you delete or move samples (or a folder containing samples) on the SD card, it will affect all projects that use the deleted or moved samples, and the samples will be missing from these projects.

17.2 MIDI CONFIG

In this menu, various sub-menus dealing with the MIDI functionality of Tonverk are found.



17.2.1 SYNC

Controls how Tonverk receives and sends MIDI clock and transport commands. Change settings by using the **[LEFT]**/**[RIGHT]** arrow keys or the **[YES]** key.



CLOCK RECEIVE determines whether Tonverk responds to MIDI clock sent from external devices or not.

CLOCK SEND determines whether Tonverk transmits MIDI clock or not.

TRANSPORT RECEIVE determines whether Tonverk responds to MIDI transport messages sent from external devices or not.

TRANSPORT SEND determines whether Tonverk transmits MIDI transport messages or not.

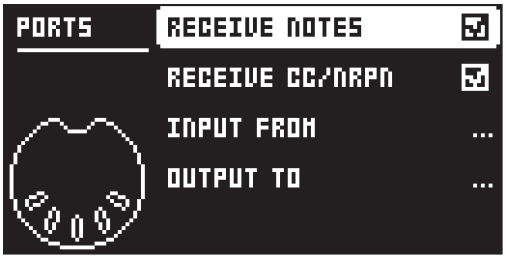
PROG CH RECEIVE will, when active, make Tonverk respond to incoming program change messages, which is useful when wanting to select patterns externally. The MIDI channel that will listen to incoming program change messages is set in the MIDI CHANNELS menu. For more information, please see "17.2.3 CHANNELS" on page 80.

PROG CH SEND will, when active, send program change messages when patterns are changed. The MIDI channel that will send program change messages is set in the MIDI CHANNELS menu. For more information, please see "17.2.3 CHANNELS" on page 80.

- **OFF** sends no program change messages.
- **ON TIME** sends a program change message exactly when the device changes pattern.
- **AHEAD** sends a program change message just before the pattern changes. Use this option when you want to sync pattern changes with other Elektron devices that are not a Tonverk.

17.2.2 PORT CONFIG

Here you find the MIDI port-related settings. Change settings by using the **[LEFT]/[RIGHT]** arrow keys.



RECEIVE NOTES will, when active, enable playing Tonverk using an external MIDI keyboard. Use **[LEFT]/[RIGHT]** to change setting.

RECEIVE CC/NRPN will, when active, make it possible to control Tonverk's parameters from an external MIDI device sending CC and NRPN data. Use **[LEFT]/[RIGHT]** to change setting.

INPUT FROM selects the port the Tonverk receives MIDI data from. You can select more than one port.

DIN MIDI sets the Tonverk to listen to MIDI data sent to the MIDI IN port.

USB 1 sets the Tonverk to listen to MIDI data sent to the USB 1 port.

USB 2 sets the Tonverk to listen to MIDI data sent to the USB 2 port.

OUTPUT TO selects the port the Tonverk sends MIDI data to. You can select more than one port.

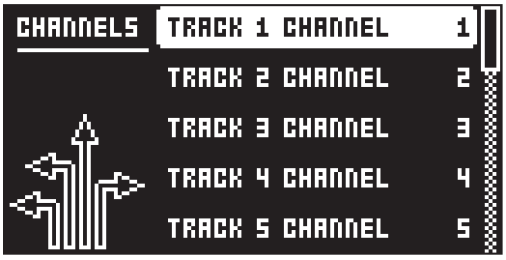
DIN MIDI sets the Tonverk to send MIDI data to the MIDI OUT port.

USB 1 sets the Tonverk to send MIDI data to the USB 1 port.

USB 2 sets the Tonverk to send MIDI data to the USB 2 port.

17.2.3 CHANNELS

This menu handles the MIDI channel configuration.



TRACK/BUS/SEND/MIX CHANNEL selects the dedicated MIDI channel that is used to receive or send

(by turning the knobs) parameter data to or from a specific track. If configured as OFF, parameter data are neither received nor sent via MIDI.

AUTO CHANNEL selects the MIDI channel that will give access to the currently active track. If an external MIDI keyboard connected to Tonverk sends MIDI data on this channel, the keyboard will control the active track. This is particularly useful, for example, when quickly switching between active audio tracks to play different presets. Tonverk also utilizes the AUTO channel to record MIDI tracks from external MIDI controllers.

PROGRAM CHG IN CH selects the MIDI channel that will listen for incoming program change messages. An AUTO setting will use the AUTO channel. Enable Tonverk to respond to program change messages in the MIDI SYNC menu. For more information, please see “17.2.1 SYNC” on page 79.

PROGRAM CHG OUT CH selects the MIDI channel that will send program change messages when changing patterns. An AUTO setting will use the AUTO channel. Enable send program change messages in the MIDI SYNC menu. For more information, please see “17.2.1 SYNC” on page 79.

- **The sequencer data is always sent on the MIDI channel specified by the CHAN parameter on the SRC PARAMETER page for the MIDI SRC machine.**
- **The selected MIDI channel for the Auto channel is only used for the Auto channel, and the track that uses the same channel does not listen to any MIDI data.**

17.3 AUDIO ROUTING

In this menu, you’ll find additional audio routing options for the **external audio from** the IN A/B inputs and for audio over USB. The settings made here affect all the patterns in the project.



17.3.1 EXT INPUT GAIN

Sets the gain of the incoming audio from the IN A/B inputs.

17.3.2 EXT AUDIO IN

This parameter lets you select where to route the audio from the IN A/B inputs.

OFF The audio from the IN A/B inputs is turned off.

PATTERN The audio routing set by the **ROUT** parameter on the Mix track’s SRC page in the pattern decides the audio routing.

OUT AB The audio is routed to the A/B outputs.

OUT CD The audio is routed to the C/D outputs.

OUT EF The audio is routed to the E/F outputs.

17.3.3 USB AUDIO IN

This parameter lets you select where to route the external audio over USB.

OFF The audio in over USB is turned off.

PATTERN The audio routing set by the **ROUT** parameter on the Mix track’s SRC page in the pattern decides the audio routing.

OUT AB The audio is routed to the A/B outputs.

OUT CD The audio is routed to the C/D outputs.

OUT EF The audio is routed to the E/F outputs.

The settings you make using the EXT AUDIO IN and USB AUDIO IN parameters apply at the project level and override any settings made with the ROUT parameter on the Mix track’s SRC page. For more information, please see “4.4.1 ROUTING TRACKS” on page 18. and **“15.3 SRC PAGE” on page 73.**

17.3.4 INT TO MAIN

Sets if the Tonverk sends internal audio from the Mixer (and the Main FX) to the A/B, C/D, and E/F outputs or not when used with Overbridge or as a class-compliant audio device. Note that any audio routed directly from a track to these outputs will still be heard regardless of this setting.

OFF No sound is sent from the Mixer to the outputs.

ON Audio is always sent to the outputs.

17.3.5 PRE/POST FADER

Sets if audio over USB should be pre- or post-fader (before or after the track level setting)

17.4 PERSONALIZE

Here you can customize a number of settings to fit your personal preferences.



17.4.1 LED BACKLIGHT

Switches the key LEDs' backlight on and off.

17.4.2 LED INTENSITY

Sets the brightness of the key LEDs and screen. Use **[LEFT]/[RIGHT]** to change the setting.



Press and hold [SETTINGS] for a second and then press [TRIG 1–3] to set the intensity of the key LEDs and screen. Press and hold [SETTINGS] for a second and then press [TRIG 16] to toggle the key LEDs' backlight on/off.

17.4.3 SCREEN SAVER

Here you set how long the device has to be inactive before the screen saver starts. The options are: 5, 10, 30, or 60 minutes.

17.4.4 REMEMBER SUBPAGE

Will, when selected, remember which PARAMETER page's subpage you last used and access this page again the next time you press the same **[PARAMETER]** key. Use **[YES]** to toggle this setting. (ON, OFF).

17.4.5 PAGE AUTOCOPY

Will, when selected, automatically copy already placed trigs when extending the length of a pattern. If a pattern consists of, for example, two pages and the pattern length is increased to four pages, the two additional pattern pages are then copies of the first two pattern pages.

17.5 SYSTEM

The System menu contains a number of system-related settings.



17.5.1 USB CONFIG

Here you find settings related to USB audio and MIDI. Selecting one mode disables the other mode.

OVERBRIDGE enables Overbridge functionality. For more information, please see “6.8 OVERBRIDGE” on page 24.

USB AUDIO/MIDI sets the Tonverk to send and receive audio and MIDI over USB. Select this option if you want to use the Tonverk together with a class-compliant USB audio host.

17.5.2 OS UPGRADE

Use this menu option to upgrade the Tonverk OS. If there is a new version of the Tonverk operating system, we highly recommend that you download and install the OS to keep your device up to date with the latest functionality and fixes. You can download the OS file from the Elektron website’s Support section. For more information about how to upgrade the Tonverk OS, please see “6.12 OS UPGRADE” on page 25.

17.5.3 SAVE DIAGNOSTICS

This option creates a diagnostics file of the machine state. The file can be used in case the device is not functioning correctly to gather information that helps to pinpoint the problem. The file is saved in the DIAGNOSTICS folder of the SD card and is called “system-xxxxxxxxxx.log”.

17.5.4 ABOUT

DEVICE INFO

Here you can see the device’s serial number, current OS version, and current UI firmware version.

EULA

Contains a QR code that links to the End User License Agreement.

18. RESCUE MODE

In this menu, you find tools that can help you recover your device to a working state if you have problems with your Tonverk. To access this menu, hold down the **[FUNC]** key while powering up Tonverk. To choose the different alternatives, press the corresponding **[TRIG]** key.

18.1 RESET ACTIVE PROJ.

This option makes a backup of the active project and loads a new empty project.

To reset the active project, press **[TRIG 1]**.

18.2 OS UPGRADE

This option lets you load a previously prepared recovery OS and replace the currently loaded OS. You can use any Tonverk OS version as the recovery OS.

1. Download or locate a previously downloaded OS file you want to use as a recovery OS and name the file OS.swu.
2. Connect an external SD card reader to a computer and insert the Tonverk SD card in the card reader.
3. Copy the recovery OS file to Tonverk's SD card and place the file at the root of the SD card's file structure (not inside any folder).
4. Safely eject the SD card reader from the computer. Please refer to your computer's documentation on how to perform this procedure.
5. Insert the Tonverk SD card back in the Tonverk and power it up while pressing the **[FUNC]** key.
6. In the RESCUE MODE menu, press **[TRIG 2]** to load the recovery OS.
7. When the recovery OS is loaded, press **[YES]** to return to the RESCUE MODE menu.
8. Press **[TRIG 5]** to exit the RESCUE MODE menu and reboot the device using the recovery OS.

Use the **OS UPGRADE** option in the SETTINGS > SYSTEM menu if you wish to upgrade the device to a standard OS.

18.3 SAVE DIAGNOSTICS

This option creates a diagnostics file of the machine state. The file can be used in case the device is not functioning correctly to gather information that helps to pinpoint the problem. The file is saved in the DIAGNOSTICS folder of the SD card and is called "systemlog-rescue.log".

To create and save a diagnostics file, press **[TRIG 3]**. After the diagnostics script has run, press **[YES]** to return to the RESCUE MODE menu.

18.4 REPAIR INT. STORAGE

This option lets you repair the internal storage if it gets damaged or corrupted. The internal storage holds things like the OS and other device data that is not stored on the SD card. It is very important that you do not turn the device off while the repair is running, since that can damage the internal file system. The process may take a long time, and the screen does not change during the repair. When it is finished, you get a report of the repair.

Press **[TRIG 4]** to repair the storage file system. Press **[YES]** to confirm the action.

18.5 EXIT (REBOOT)

Press **[TRIG 5]** to exit the RESCUE MODE menu and reboot the device.

19. KEY COMBINATIONS

Use the key combinations below to perform specific tasks quickly.

COPY/PASTE/CLEAR

TRACK SEQUENCE (ALL TRIGS ON THE TRACK)

When in GRID RECORDING mode.

[FUNC] + **[RECORD]** to copy the active track's sequence.

[FUNC] + **[STOP]** to paste the copied track's sequence to the active track.

[FUNC] + **[PLAY]** to clear the active track's sequence.

TRIG

When in GRID RECORDING mode.

[TRIG] + **[RECORD]** to copy the trig with its parameter locks.

[TRIG] + **[STOP]** to paste the copied trig.

[TRIG] + **[PLAY]** to clear all parameter locks on the trig.

PATTERN

[FUNC] + [RECORD] to copy the active pattern.

[FUNC] + [STOP] to paste the copied pattern to the active pattern.

[FUNC] + [PLAY] to clear the active pattern.

PRESET

[TRK] + **[RECORD]** to copy the selected track's preset.

[TRK] + **[STOP]** to paste the copied preset to the selected track.

[TRK] + **[PLAY]** to clear the selected track's preset.

SEQUENCER PAGE

When in GRID RECORDING mode

[PAGE] + [RECORD] to copy the active page.

[PAGE] + [STOP] to paste the copied page to the active page.

[PAGE] + [PLAY] to clear the active page.

SUBTRACKS + SUPERTRACK SEQUENCE (ALL TRIGS ON ALL THESE TRACKS FOR A SUBTRACKS MACHINE)

When in STEP EDIT mode.

[FUNC] + **[RECORD]** to copy all trigs from the eight subtracks and the supertrack.

[FUNC] + **[STOP]** to paste the copied subtracks' and supertrack's trigs to the active track.

[FUNC] + **[PLAY]** to clear all trigs from the eight subtracks and the supertrack.

PARAMETER PAGE

[PARAMETER PAGE] + **[RECORD]** to copy the parameters on that page.

[PARAMETER PAGE] + **[STOP]** to paste the copied parameters to the page.

[PARAMETER PAGE] + **[PLAY]** to clear the parameters on that page.

UNDO/REDO

[FUNC] + **[NO]** to undo a number of operations of track sequences and patterns.

[FUNC] + **[YES]** to redo a previously performed Undo operation.

TRACK/SUBTRACK/PATTERN/BANK SELECT

[TRK] + **[TRIG 1–16]** keys to select a track.

[TRK] + [SUBTRACKS] or just **[SUBTRACKS]** to select a subtrack (on a track with a Subtracks SRC machine assigned to it).

[PTN] and **[KEYBOARD]** (bottom row), and **[TRIG 1–16]** keys to select a bank/pattern.

NAMING

[FUNC] + **[ARROW]** (on the NAMING screen) to choose a letter.

[FUNC] + **[NO]** (on the NAMING screen) to erase a letter.

[FUNC] + **[YES]** (on the NAMING screen) to add a blank space.

SAVING AND RELOADING

[FUNC] + **[SETTINGS]** saves the active project.

[FUNC] + [KEYBOARD C#1] to recall (reload) the active pattern from its temporarily saved state.

[FUNC] + [KEYBOARD D#1] to temporarily memorize (save) the active pattern.

[PARAMETER PAGE] + [NO] to recall (reload) the parameter page's settings to their last (memorized) saved state.

MENU ACCESS

[FUNC] + **[TRIG PARAMETERS]** opens the trig-related section of the SETUP menu.

[FUNC] + **[SRC]** opens the SRC machine selection section of the SETUP menu.

[FUNC] + **[FLTR]** opens the filter-related section of the SETUP menu.

[FUNC] + **[AMP]** opens the amp-related section of the SETUP menu.

[FUNC] + **[FX]** opens the FX machine selection and FX settings section of the SETUP menu.

[FUNC] + **[MOD]** opens the mod destination settings section of the SETUP menu.

[FUNC] + **[PAGE]** opens the pattern/track PAGE SETUP menu.

[ARP] opens the ARPEGGIATOR SETUP menu.

[CHORD] opens the CHORD/SCALE SETUP menu.

[SONG] opens the SONG SELECT screen.

[FUNC] + **[-]** opens the TRANSFORM menu.

SEQUENCER SETTINGS

[FUNC] + **[TEMPO]** to tap tempo.

[LEFT/RIGHT] to nudge tempo (when the sequencer is playing).

[FUNC] + **[LEFT/RIGHT]** moves all trigs a whole step, left or right (when in GRID RECORDING mode).

[TRIG] key (hold) + **[LEFT/RIGHT]** opens the MICRO TIMING menu and sets the micro timing for the trig. (when in GRID RECORDING mode).

[FUNC] + **[KEYBOARD F#1]** to toggle the metronome on/off.

SEQUENCER RECORDING

[RECORD] + **[PLAY]** starts LIVE RECORDING.

[RECORD] + double-press **[PLAY]** activates/deactivates QUANTIZE LIVE RECORDING.

[STEP EDIT] (when in normal playback mode) enters STEP EDIT mode.

Hold **[PAGE]** and press **[LEFT]/[RIGHT]** to change sequencer page, or hold **[PAGE]** and press one of the lit **[TRIG]** keys to jump to that page (when in GRID RECORDING mode).

[STOP] + **[PLAY]** restarts playback.

MUTES

[MUTE] + **[TRIG]** keys mute/unmute one or several tracks.

[MUTE] enters MUTE mode.

PARAMETER EDITING

[PARAMETER PAGE] key + **[PLAY]** to reset all the parameters in the selected parameter page to default values.

[PARAMETER PAGE] key + **[YES]** randomizes parameters on that parameter page.

PREVIEW

[FUNC] + **[YES]** (in the Sample Browser) previews the selected sample.

[TRIG] + **[YES]** (when in GRID RECORDING mode) to preview a specific trig.

[KEYBOARD] + **[YES]** (when in STEP EDIT mode) to preview a specific note.

SONG MODE

[FUNC] + **[SONG]** to toggle SONG mode on/off.

[SONG] + **[TRIG 1–16]** to select a song and enter SONG mode.

[SONG] + **[LEFT]** (when in SONG mode) to loop the currently playing row. Press **[SONG] + [LEFT]** again to stop looping the row and return to normal song playback.

[FUNC] + **[RECORD]** (when in the SONG EDIT screen) copies the selected row.

[FUNC] + **[STOP]** (when in the SONG EDIT screen) pastes a previously copied row to the selected row.

[FUNC] + **[PLAY]** (when in the SONG EDIT screen) resets the selected row's settings.

[FUNC] + **[DOWN]** (when in the SONG EDIT screen) adds a new row.

[FUNC] + **[UP]** (when in the SONG EDIT screen) deletes the selected row.

TRANSPOSE

[+]/[-] to transpose the **[KEYBOARD]** up/down in octaves.

[+] + **[–]** to reset the transpose to 0.

[FUNC] + **[+]** and then use the **[KEYBOARD]** keys to transpose the current track up/down to the selected key's value.

[TRK] + **[+]/[-]** to transpose the current track up/down in semitones. Not available on tracks with a Sub-tracks machine.

[PTN] + **[+]/[-]** to transpose all note trigs on all audio tracks in the pattern up or down in semitones.

ARPEGGIATOR

[FUNC] + **[ARP]** to toggle the current track's arpeggiator on/off.

SCREEN SAVER

[SETTINGS] + [NO] to activate the screen saver.

20. TECHNICAL INFORMATION

ELECTRICAL SPECIFICATIONS

Impedance-balanced audio outputs
Main outputs level: +20.8 dBu peak
Output impedance: 650 Ω unbalanced

Headphones output
Headphones out level: +20.3 dBu peak
Output impedance: 40 Ω

Balanced audio inputs
Input level: +20.3 dBu peak
Audio input impedance: 28 kΩ

Power
Unit power consumption: 20 W typical
Unit power consumption in off mode: ≤0.3 W
Recommended power supply: Elektron PSU-5
USB-C PD, 15 V, 3.0 A, 45 W

HARDWARE

128 × 64 pixel OLED screen
MIDI In/Out/Thru
4 × 1/4” impedance-balanced audio out jacks
2 × 1/4” balanced audio in jacks
1 × 1/4” stereo headphone jack
48 kHz, 24-bit D/A and A/D converters
2 × High-speed USB 2.0, Type-C ports, dual data role, dual power role

PHYSICAL SPECIFICATIONS

Sturdy steel casing
Dimensions: W 285 × D 181 × H 63 mm
(11.2” × 7.1” × 2.5”) (including knobs and feet)
Weight: approximately 1.9 kg (4.2 lbs)
100 × 100 mm VESA mounting holes. Use M4 screws with a max length of 7 mm.
Maximum recommended ambient operating temperature: +40 ˚C (+104 ˚F)

21. CREDITS AND CONTACT INFORMATION

CREDITS

ELEKTRON CREW

Lennart Ahlstedt
Johannes Algelind
Magnus Almberg
Christian Alsing
Hans Alvarsson
Nikolaj Andersson
Madeleine Antonsson
Anyere Bendrien
Andreas Brykt
Chloe Corley
Johan Damerau
Oscar Dragén
Isak Folenius
Magnus Forsell
Jennifer Giöbel
Birgitta Hedström
Alexander Hellström
Mario Adriane Hernandez
Tomas Hjalmarsson
Thomas Jansson
Patrik Johansson
Christian Karlsson
George Kaplan
Åsa Larsson
Erik Liakhovets
Christer Lindström
Nathalie Linhem
Edvard Lisander
Joel Lundberg
Johannes Mai
Enrique Martinez
Jimmy Myhrman
Viktor Nilsson
Salvador Orona
Jean Michel Pepin
Mattias Rickardsson
Patrik Rinvall
Viktor Sandström
Matthias Tellen
David Smallbone Tizard
Che Thomas
Jake Widgeon
Vladislav Zhukov
Erik Ångman

FACTORY LIBRARY CONTENT

Aho Ssan
BlankForms
Dialect
Dissonant Witchcraft
Eli Gejer
Elin Piel
Goldbaby
Jogging House
Johann Niegl
Keinseier
KMRU
Legowelt
Samples From Mars
Sound-Dust
The Phono Loop
The Elektron Crew

BETA TESTING

To our amazing beta testers – you know who you are; this product is better because of you!

CONTACT INFORMATION

ELEKTRON WEBSITE

https://www.elektron.se

OFFICE ADDRESS

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Banehagsliden 5
SE-414 51 Gothenburg
Sweden

APPENDIX A: MACHINES

A machine is a module within Tonverk that has specific functionality. A machine can be replaced with another machine of the same category. For example. different synthesis engines or effects. Every machine has a particular set of parameters tailored to give you the most relevant and useful sound-shaping possibilities for that particular machine. For more information, please see “5.3.2 AUDIO TRACKS (TRACK 1–8)” on page 20.

Use the **[UP]/[DOWN]** keys to select the parameter group's pages. You can also press a **[PARAMETER PAGE]** key repeatedly to cycle through the parameter pages in that group. Press and hold a **[PARAMETER PAGE]** key to see the values for all parameters on that page.

A.1 ASSIGNING MACHINES TO THE ACTIVE TRACK

1. Press **[TRK]** + **[TRIG 1–16]** to select the active track.
2. Press **[FUNC]** + **[SRC]** or **[FUNC]** + **[FX]** to open the MACHINE setup menus with the relevant machine category selected.
3. Use **[UP]/[DOWN]** to select the machine, and then press **[YES]** to assign the selected machine to the track.

The rest of this appendix lists the machine-specific parameters on the SRC and FX pages. The selected machine determines the parameters available.

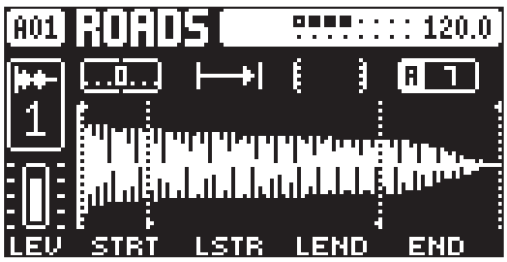
A.2 SRC MACHINES

The SRC machines are sound engines that use a particular subset of the functionality of the sample playback engine. In this section, you also find the MIDI machine that lets you control external, MIDI-equipped gear and the Shape machine that can shape the sound on Bus and Send FX tracks. You can assign any SRC machine (apart from the Shape machine that can only be assigned to Bus and Send FX tracks) to any of the Audio/MIDI tracks (tracks 1–8). Additionally, you can also assign MIDI machines to the Bus tracks (tracks 9–12). Press **[SRC]** to access these parameter pages.



A.2.1 SINGLE PLAYER

The Single Player machine plays a selected sample (mono or stereo) linearly (forward, reversed, or looped). This machine is eight-voice polyphonic. When you select this machine, you are prompted to use the **SAMPLE SLOT** parameter to assign a sample to the machine. Press **[SRC]** to access this parameter page.



TUNE

Tune (***DATA ENTRY*** knob ***A***) sets the pitch of the sample. The knob works in a bipolar fashion, and a value of 0 leaves the pitch unchanged. The range is +/- 5 octaves. Press and hold **[FUNC]**, and then turn the ***DATA ENTRY*** knob to snap parameter values to full octaves. Press and turn the ***DATA ENTRY*** knob to snap parameter values to semitones.

PLAY MODE

Play Mode (***DATA ENTRY*** knob ***B***) sets the play mode of the sample. It controls how the sample will be played back when it is trigged.
The different modes are:

REVERSE The sample will be played back in reverse once every time it is trigged.

REVERSE LOOP The sample will loop continuously in reverse between Loop Position and Length. The duration for which it will loop is set with the **LEN** parameter on the TRIG page. This time is also constrained by the AMP page envelope's **HLD** and **DEC** parameters.

FORWARD LOOP The sample starts at the **STRT** position and loops continuously between the Loop Position and Length. The duration for which it will loop is set with the **LEN** parameter on the TRIG page. This time is also constrained by the AMP page envelope's **HLD** and **DEC** parameters.

FORWARD The sample will be played back once every time it is triggered.

LOOP CROSSFADE

Loop Crossfade (***DATA ENTRY*** knob ***C***) sets the amount of the crossfade of the audio at the sample's loop points. It crossfades the audio before the **LSTR** loop point with the audio before the **LEND** loop point. This parameter is only relevant if you set **PLAY** to REVERSE LOOP or FORWARD LOOP.

SAMPLE SLOT

Sample Slot (***DATA ENTRY*** knob ***D***) allows you to browse and assign samples to the Single Player machine. You can load up to 1023 samples for each project. The first position in Bank A, "OFF", plays no sample. You must first load a sample from the SD card to the project before assigning it to a track.

1. Turn ***DATA ENTRY*** knob ***D*** and then select an empty slot where you want to load the sample.
2. Press **[YES]** to open the Sample browser and view the SD card's contents.
3. Use the **[ARROW]** keys to navigate to the sample you want to load. **[UP]/[DOWN]** scrolls the list of folders and files. **[YES]** or **[FUNC]** + **[RIGHT]** opens the highlighted folder. **[NO]** or **[FUNC]** + **[LEFT]** navigates one level back up in the folder structure.
4. Press **[YES]** to load the selected sample to the track.

To load a previously added sample, turn ***DATA ENTRY*** knob ***D*** or use **[UP]/[DOWN]** to navigate to the sample you want to select, and then press **[YES]**.

You can also use the Sample browser to load samples to the project. For more information, please see "6.13 SAMPLE BROWSER" on page 25.

You can apply parameter locks to the **SAMPLE SLOT** parameter and change the sample on any step of the sequencer, so-called Sample locks. For more information, please see "10.10.1 PARAMETER LOCKS" on page 47.

STRT

Start Position sets the starting position for playing the sample. In REVERSE and REVERSE LOOP modes, it sets the end position. **STRT** and **END** together define the portion of the sample that is played.

LSTR

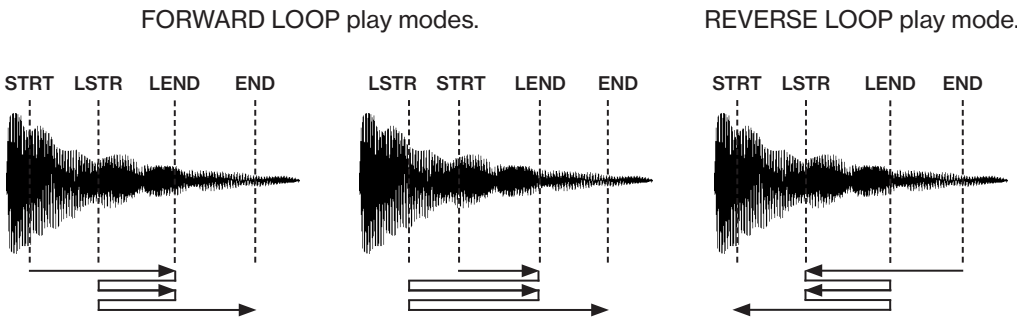
Loop Start sets the position in the sample to where playback returns after reaching the **LEND** position of the sample if **PLAY MODE** is set to FORWARD LOOP. The sample is then looped between **LSTR** and **LEND.** If **PLAY MODE** is set to REVERSE LOOP, the sample loop will start at **LEND**, then move backwards to **LSTR**, and then loop between **LEND** and **LSTR**.

LEND

Loop End sets the loop's end position, from where playback returns to the LSTR position.

END

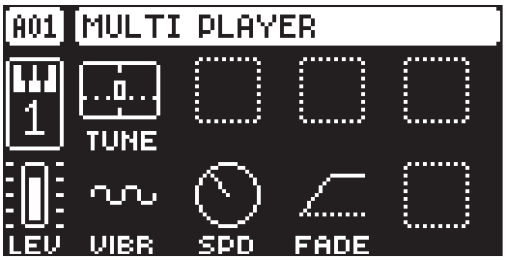
End Position sets the end position of the sample playback. In REVERSE and REVERSE LOOP modes, it sets the start position. **STRT** and **END** effectively define the portion of the sample that is played.



A.2.2 MULTI PLAYER

The Multi Player machine plays polyphonic multi-sampled instruments using mono or stereo samples. This machine is eight-voice polyphonic.

When you select this machine you are prompted to select an instrument. Use the Sample Browser to browse the instruments and then press **[YES]** to load the highlighted item. You can use the **[KEYBOARD]** to preview the highlighted instrument before loading it. If you want to change the instrument later, press **[FUNC]** + **[SRC]**, select the Multi Player machine again, and then select another instrument from the list.



TUNE

Tune sets the pitch of the sample. The knob works in a bipolar fashion, and a value of 0 leaves the pitch unchanged. The range is +/- 5 octaves. Press and hold **[FUNC]**, and then turn the ***DATA ENTRY*** knob to snap parameter values to full octaves. Press and turn the ***DATA ENTRY*** knob to snap parameter values to semitones.

VIBR

Vibrato depth sets the amount of vibrato applied to the instrument.

SPD

Vibrato Speed sets the speed of the vibrato.

FADE

Vibrato Fade sets the time it takes for the vibrato to fade in or fade out.



You can use the Trim/Loop Editor to edit a Multi Player instrument that was created using Tonverk's Auto Sampler. Here you can edit the key zones and trim the playback and loops of the samples. You can also edit the velocity layers and set a round-robin behavior that decides which sample in the layer plays. For more information, please see "9.1.5 INSTRUMENT" on page 36.

A.2.3 SUBTRACKS

The Subtracks machine allows you to load eight samples (mono or stereo) into a pre-prepared instrument. Every sample is then loaded onto a separate subtrack on the sequencer and can be sequenced separately, with its own settings on the SRC, FLTR, AMP, and MOD pages. Use the eight **[SUBTRACKS]** keys to select a subtrack and to play the sample. Use **[TRK] + [SUBTRACKS]** to select a subtrack without triggering the sample. This machine is eight-voice polyphonic, one voice per subtrack.

The subtracks mostly have their own set of parameters they control, but there are some parameters that impact the sound of all subtracks. For this reason, the Subtracks machine has an additional sequencer

track called the supertrack that is used to mainly handle parameter locks for these shared parameters. The supertrack controls the parameters on the FX pages, (except for FX Page 1) and the two FX LFOs on the MOD pages. In addition, the supertrack has its own TRIG PARAMETERS page. This page is used to control the trig-sensitive parameters on the supertrack's FX and MOD pages, such as the **MODE** parameter for the Track FX LFO.

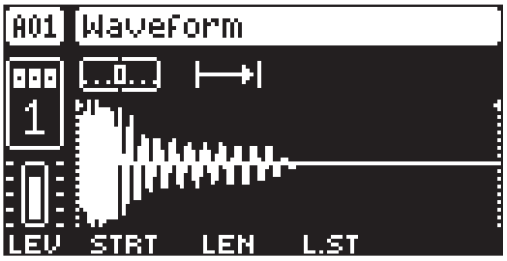
Press **[TRK] + [TRIG 1–8]** twice to access the supertrack. Once to select the track that contains the Subtracks machine and then again to select the supertrack for that machine. When the supertrack is selected, this is shown on the screen with three white rectangles above the track number. Press **[TRK] + [SUBTRACKS]** to exit the supertrack and select a subtrack.

When you select this machine, you are prompted to choose an instrument. Use the Sample Browser to browse the instruments and then press **[YES]** to load the highlighted item. You can use the **[KEYBOARD]** to preview the highlighted instrument before loading it. If you want to change the instrument later, press **[FUNC]** + **[SRC]**, select the Subtracks machine again, and then select another instrument from the list.



To select and load a sample for a specific subtrack, press [FUNC] + [SUBTRACKS] to open the Subtracks Instrument Editor. The editor lets you add and change the sample for each subtrack and add velocity layers. You can also add several samples to a velocity layer and set a round-robin behavior that decides which sample in the layer plays. For more information, please see "9.1.5 INSTRUMENT" on page 36.

SRC PAGE 1



TUNE

Tune (***DATA ENTRY*** knob ***A***) sets the pitch of the sample. The knob works in a bipolar fashion, and a value of 0 leaves the pitch unchanged. The range is +/- 5 octaves. Press and hold **[FUNC]**, and then turn the ***DATA ENTRY*** knob to snap parameter values to full octaves. Press and turn the ***DATA ENTRY*** knob to snap parameter values to semitones.

PLAY MODE

Play Mode (***DATA ENTRY*** knob ***B***) sets the play mode of the sample. It controls how the sample will be played back when it is trigged.

REVERSE The sample will be played back in reverse once every time it is trigged.

REVERSE LOOP The sample will loop continuously in reverse between Loop Position and Length. The duration for which it will loop is set with the **LEN** parameter on the TRIG page. This time is also constrained by the AMP page envelope's **HLD** and **DEC** parameters.

FORWARD LOOP The sample starts at the **STRT** position and will loop continuously between Loop Position and Length. How long it will loop for is set with the LEN parameter on the TRIG page. This time is also constrained by the AMP page envelope's **HLD** and **DEC** parameters.

FORWARD The sample will be played back once every time it is triggered.

STRT

Start Position sets the starting position for playing the sample.

LEN

Length sets the duration of the sample playback. Start + Length effectively defines the end point of the portion of the sample that is played.

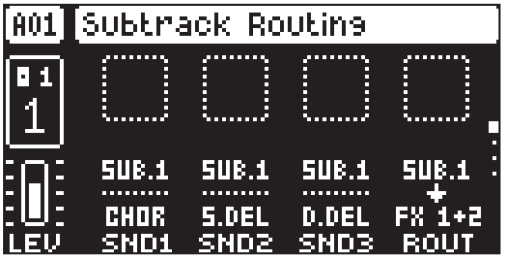
L.ST

Loop Start sets the position in the sample to where playback returns after reaching the Length Position (defined by **STRT** + **LEN**) of the sample if **PLAY MODE** is set to FORWARD LOOP (FWD.L). The sample is then looped between the end of **LEN** and **L.ST.** If **PLAY MODE** is set to REVERSE

LOOP (REV.L), the sample will start at **LEN**, then move backwards to **L.ST**, and then loop between **LEN** and **L.ST**. Loop Start can also be set to OFF.

FX PAGE 1

The Subtracks machine has an extra FX parameter page. Here you can set the send levels to the Send FX for each separate subtrack, and set its routing to the Track FX.



SND1–3

Send 1–3 sets the amount of sound from the selected subtrack sent through to Send FX 1–3. For more information, please see “14. SEND FX TRACK PARAMETERS” on page 70.

ROUT

Routing selects where to route the audio of the selected subtrack.

FX 1+2 routes the subtrack’s audio through both Track FX 1 and Track FX 2.

FX2 routes the subtrack’s audio to bypass Track FX 1 and send it only through Track FX 2.

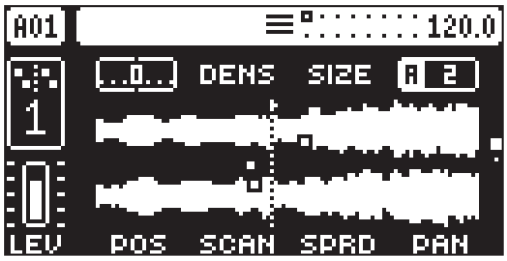
NO FX the subtrack’s audio bypasses both Track FX 1 and Track FX 2.

OFF no audio is routed from the subtrack, apart from any audio sent to the Send FX.

A.2.4 GRAINER

The Grainer machine cuts a sample into tiny pieces (grains) and then plays the grains back in different ways. You can set how long the grains are, where they start, how many play at once, and how random they are. Grainer is polyphonic, with up to eight voices. Each voice can play up to eight grains at once. Grainer also has a different set of parameters on the filter page.

SRC PAGE 1



TUNE

Tune sets the pitch of the sample. The knob works in a bipolar fashion, and a value of 0 leaves the pitch unchanged. The range is +/- 2 octaves. Press and hold **[FUNC]**, and then turn the ***DATA ENTRY*** knob to snap parameter values to full octaves. Press and turn the ***DATA ENTRY*** knob to snap parameter values to semitones.

DENS

Density controls how often grains are played and how closely they’re spaced. The behavior of this parameter varies depending on the selected **PLAY MODE**.

RANDOM Sets the likelihood that a grain will play. A higher density means that more grains are triggered.

SYNC Controls how often the grains are played. Playback is synced to the project’s BPM.

OSC In OSC mode, grains are triggered so that they overlap with each other.
The density parameter controls how much they overlap:

At 0, all grains overlap completely.
At 64, about 50% of each grain overlaps.
At 127, there's no overlap between grains and the grains will be triggered one after another.

When you increase grain amount, the overall perceived size depends on the size, grain amount and the density.

SIZE

Grain Size determines the length of the sample contained in each grain. The minimum size is 10 ms and maximum is 2 seconds.

SAMPLE SLOT

Sample Slot (***DATA ENTRY*** knob ***D***) allows you to browse and assign samples to the Grainer machine. You can load up to 1023 samples for each project. The first position in Bank A, "OFF", plays no sample. You must first load a sample from the SD card to the project before assigning it to a track.

1. Turn ***DATA ENTRY*** knob ***D*** and then select the slot to where you want to load the sample.
2. Press **[YES]** to open the Sample browser and view the SD card's contents.
3. Use the **[ARROW]** keys to navigate to the sample you want to load. **[UP]/[DOWN]** scrolls the list of folders and files. **[YES]** or **[FUNC]** + **[RIGHT]** opens the highlighted folder. **[NO]** or **[FUNC]** + **[LEFT]** navigates one level back up in the folder structure.
4. Press **[YES]** to load the selected sample to the track.

To load a previously added sample, turn ***DATA ENTRY*** knob ***D*** or use **[UP]/[DOWN]** to navigate to the sample you want to select, and then press **[YES]**.

You can also use the Sample browser to load samples to the project. For more information, please see "6.13 SAMPLE BROWSER" on page 25.

You can apply parameter locks to the **SAMPLE SLOT** parameter and change the sample on any step of the sequencer, so-called Sample locks. For more information, please see "10.10.1 PARAMETER LOCKS" on page 47.

POS

Position is where in the sample the grains start to play back from.

SCAN

Scan controls the speed and direction of playback from the start position. A positive value moves the playhead forward, while a negative value moves it backward. When the playhead reaches the end of the sample, it loops back to the beginning.

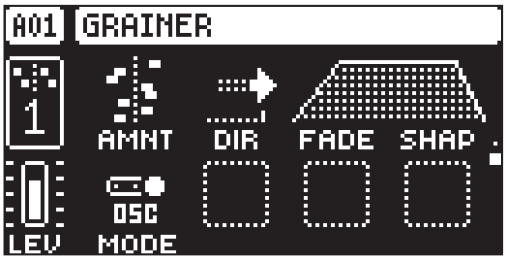
SPRD

Spread adds randomness to the **POS** parameter, changing where in the sample each grain starts playing from. When **SPRD** is set to 0, all grains start playback from the same **POS** position. When **SPRD** is set to 127, each grain starts from a random position anywhere within the sample.

PAN

Pan Spread adjusts how much each grain is randomly panned in the stereo field.

SRC PAGE 2



AMNT

Grain Amount sets the number of grains playing. Each voice can play up to eight grains.

DIR

Direction sets if each grain should be played forward or in reverse.

FADE
Window Fade controls how much of the grain the window (basically a simple envelope that works on a grain level) applies. With **FADE** set to 0, no window is applied, resulting in a more clicky sound. At 63, half of the grain will have the window applied. At 127, the entire grain will have the window applied, resulting in a more smooth sound. This control works together with **SHAP**.

SHAP
Window Shape adjusts the balance between the attack and release phases of each grain's window. With **FADE** set to 127 and **SHAP** at 0, the grain has a short attack and long release, giving a plucky, percussive feel. With **FADE** at 127 and **SHAP** at 64, the window becomes triangle-shaped for a more balanced sound. With **FADE** set to 127 and **SHAP** at 127, the grain has a long attack and short release, creating a reverse-like playback effect.

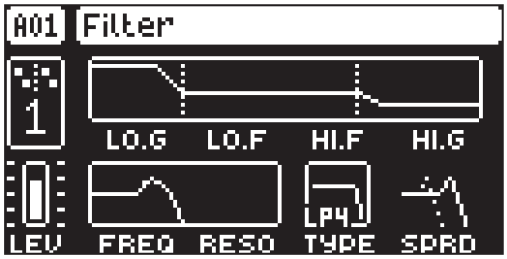
MODE
Play mode sets when and how grains are triggered, and it also changes how some parameters work.

RAND The grains are played at random around a set position of the sample. This mode is useful for creating evolving pads and noise beds.

SYNC The playback timing of the grains is tempo-synced. **DENSITY** becomes a tempo division of the set BPM. This mode is useful when you want the sound to be played back in sync and create rhythmic variations.

OSC Grains are triggered with varying amounts of overlap to create a smooth, continuous sound. The **DENS** parameter controls how much they overlap.

FLTR PAGE



LO.G
Low-Shelf Gain controls the level of frequencies below the shelving frequency set by the **LO.F** parameter. A positive value boosts the low frequencies, while a negative value reduces them. The set parameter value determines how much the low end is increased or decreased in the overall sound.

LO.F
Low Frequency sets the Low-Shelf frequency.

HI.F
High Frequency sets the High-Shelf frequency.

HI.G
High-Shelf Gain controls the level of frequencies above the shelving frequency set by the **HI.F** parameter. A positive value boosts the high frequencies, while a negative value reduces them. The set parameter value determines how much the high end is increased or decreased in the overall sound.

FREQ
Frequency sets the cutoff frequency of the Multimode filter and the center frequency of the EQ.

RESO
Resonance sets the resonance behavior of the filter. Resonance introduces a peak in the spectrum at the cutoff frequency.

TYPE
Type sets the Multimode filter's type. Low-pass 4, Low-pass 2, Band-pass 2, High-pass 2, Low-pass notch, Notch 1, Notch 2, Off.

SPRD
Frequency Spread offsets the filter cutoff frequency in the left and right channels.



Here are some example settings you can use as starting points for creating sounds with the Grainer machine:

Evolving Pad (PLAY MODE: RAND)

- **Choose a sample with an evolving synth note or chord**
- **Set AMNT to 8**
- **Set the grain window FADE=127, SHAP=63**
- **Set DIR to 50% FWD**
- **Set DENSITY between 64 and 127**
- **Set SPREAD to around 20**
- **Set PAN to around 30**
- **Set SCAN to 0.25**
- **Dial in SIZE to taste (start somewhere between 64 and 96)**
- **Set a long amp envelope release (+90)**
- **Play some notes (octaves or 5ths)**

Clocked stutters (PLAY MODE: SYNC)

- **Set AMNT between 1 and 4**
- **Set the grain window FADE=127, SHAP=5**
- **Set DIR to 100% FWD**
- **Set DENSITY to around 16**
- **Set SIZE around 16**
- **Set SPREAD to around 20**
- **Set PAN to around 20**
- **Dial in SCAN to taste**
- **Set a short amp envelope release (15–20)**
- **Play some notes (octaves or 5ths)**

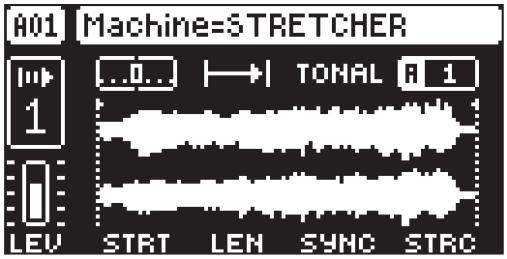
Stretch out a vocal sample (PLAY MODE: OSC)

- **Set AMNT to 8**
- **Set the grain window FADE=127, SHAP=64**
- **Set DIR to 100% FWD**
- **Set DENSITY to 64**
- **Set SIZE around 16**
- **Set SPREAD to around 0**
- **Set PAN to around 0**
- **Dial in SCAN to taste; low values stretch out the sound**
- **Set the amp envelope release to INF**
- **Play some notes**

A.2.5 STRETCHER

The Stretcher machine is monophonic and plays a single stereo sample that you can time-stretch, pitch-shift, loop and play back in sync with the tempo. The **[KEYBOARD]** plays ±2 octaves around C4.

SRC PAGE 1



TUNE

Tune (***DATA ENTRY*** knob ***A***) changes the pitch without affecting the playback speed. The knob works in a bipolar fashion, and a value of 0 leaves the pitch unchanged. The range is +/- 2 octaves. Press and hold **[FUNC]**, and then turn the ***DATA ENTRY*** knob to snap parameter values to full octaves. Press and turn the ***DATA ENTRY*** knob to snap parameter values to semitones.

PLAY MODE

Play Mode (***DATA ENTRY*** knob ***B***) sets the play mode of the sample. It controls how the sample will be played back when it is trigged.

REVERSE The sample plays in reverse once from the **LEN** position to the position set by **START**.

REVERSE LOOP The sample starts at the **LEN** position and loops in reverse between there and the position set by **STRT**. If the **STRT** and **LEN** parameter values add up to more than 100, playback wraps around to the end of the sample. This means the loop is always as long as **LEN** sets it to be, and the length of the sample does not limit it. How long it loops is also set by the **LEN** parameter on the TRIG page. The **HLD** and **DEC** parameters of the AMP page envelope may also limit this time.

FORWARD LOOP The sample starts at the **STRT** position and loops between there and the position set by **LEN**. If the **STRT** and **LEN** parameter values add up to more than 100, playback wraps around to the beginning of the sample. This means the loop is always as long as **LEN** sets it to be, and the length of the sample does not limit it. How long it loops is also set by the **LEN** parameter on the TRIG page. The **HLD** and **DEC** parameters of the AMP page envelope may also limit this time.

FORWARD The sample plays once from the **STRT** position to the position set by **LEN**, or to the end of the sample, whichever comes first.

ALGO

Algorithm lets you choose different ways the time-stretch works on different kinds of material.

RPTCH Here the stretching works by repitching. Pitch and time are locked together, so the machine follows the **SYNC** and **STRC** settings, and the pitch follows those. You cannot change **TUNE**, and keyboard notes are ignored. This algorithm stays true to the source material, with no artifacts beyond the repitching. Use it when a pitch change from a tempo change is fine, for example on drum loops. It is less useful on tonal material, since the tuning changes with the tempo.

BEAT This stretch algorithm works best on rhythmic sample material, such as drum loops and other transient-rich content.

TONAL This stretch algorithm works best on tonal material, such as notes and chords. It focuses on tracking the frequencies in the sound as well as possible.

SAMPLE SLOT

Sample Slot (***DATA ENTRY*** knob ***D***) allows you to browse and assign samples to the Stretcher machine. You can load up to 1023 samples for each project. The first position in Bank A, “OFF”, plays no sample. You must first load a sample from the SD card to the project before assigning it to a track.

1. Turn ***DATA ENTRY*** knob ***D*** and then select the slot to where you want to load the sample.
2. Press **[YES]** to open the Sample browser and view the SD card’s contents.
3. Use the **[ARROW]** keys to navigate to the sample you want to load. **[UP]**/**[DOWN]** scrolls the list of folders and files. **[YES]** or **[FUNC]** + **[RIGHT]** opens the highlighted folder. **[NO]** or **[FUNC]** + **[LEFT]** navigates one level back up in the folder structure.
4. Press **[YES]** to load the selected sample to the track.

To load a previously added sample, turn ***DATA ENTRY*** knob ***D*** or use **[UP]/[DOWN]** to navigate to the sample you want to select, and then press **[YES]**.

You can also use the Sample browser to load samples to the project. For more information, please see “6.13 SAMPLE BROWSER” on page 25.

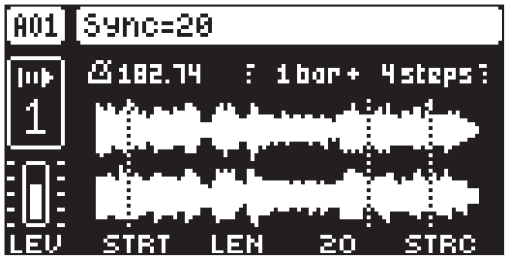
You can apply parameter locks to the **SAMPLE SLOT** parameter and change the sample on any step of the sequencer, so-called Sample locks. For more information, please see “10.10.1 PARAMETER LOCKS” on page 47.

STRT

Start Position sets the starting position for playing the sample.

LEN

Length sets how long the sample plays. Start and Length together set the end point of the part of the sample that plays. If **SYNC** is active and you set the length, the screen shows information about BPM and steps, which tells you the time between **STRT** and **LEN** in 1/16 steps of a bar.



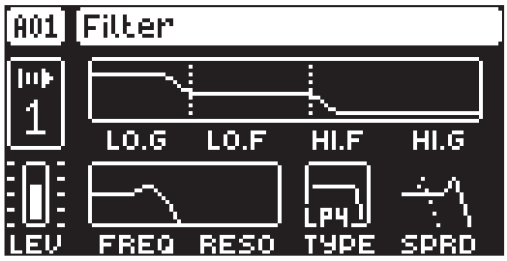
SYNC

Sync sets if and how the amount of stretch is synced to the device’s BPM. With **SYNC** set to OFF, you can stretch your material freely and unquantized with the **STRC** parameter. Changing the tempo then has no effect on playback. When **SYNC** is active, you set a number of sequencer steps, and the device fits the selected sample region into that many steps and bars at the current tempo. For example, with **SYNC** set to 20, the sample region plays over one bar plus 4 steps, which makes 20 steps in total.

STRC

Stretch adjusts the stretch factor freely from 1/32 speed to double speed when **SYNC** is set to OFF. When **SYNC** is set to ON, it steps in rhythmically useful divisions of the **SYNC** setting.

FLTR PAGE



LO.G

Low-Shelf Gain controls the level of frequencies below the shelving frequency set by the **LO.F** parameter. A positive value boosts the low frequencies, while a negative value reduces them. The set parameter value determines how much the low end is increased or decreased in the overall sound.

LO.F

Low Frequency sets the Low-Shelf frequency.

HI.F

High Frequency sets the High-Shelf frequency.

HI.G

High-Shelf Gain controls the level of frequencies above the shelving frequency set by the **HI.F** parameter. A positive value boosts the high frequencies, while a negative value reduces them. The set parameter value determines how much the high end is increased or decreased in the overall sound.

FREQ

Frequency sets the cutoff frequency of the Multimode filter and the center frequency of the EQ.

RESO

Resonance sets the resonance behavior of the filter. Resonance introduces a peak in the spectrum at the cutoff frequency.

TYPE

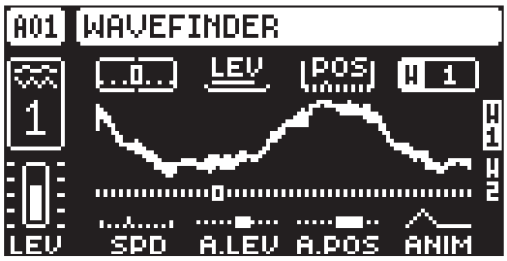
Type sets the Multimode filter's type. Low-pass 4, Low-pass 2, Band-pass 2, High-pass 2, Low-pass notch, Notch 1, Notch 2, Off.

SPRD

Frequency Spread offsets the filter cutoff frequency in the left and right channels.

A.2.6 WAVEFINDER

The Wavefinder machine provides two independent wavetable oscillators that can be blended together and modulated individually. The position within a wavetable determines which waveform is played, and by animating this position over time, you can shape and evolve the timbre – bringing the wavetable synthesis concept to life. SRC Page 1 controls oscillator 1, and Page 2 controls oscillator 2. Press **[SRC]** to access these parameter pages.



SRC PAGE 1

TUNE

Tune sets the pitch of oscillator 1. The knob works in a bipolar fashion, and a value of 0 leaves the pitch unchanged.

LEV

Level sets the level of oscillator 1.

POS

Position sets what wavetable wave is being played. Transitioning between waves with the position control is interpolated, so moving through the wavetable waves is blended from one wave to the next.

SLOT

Osc 1/2 Wavetable slot is where you can browse and assign wavetables to the oscillator. You can load up to 127 wavetables for each project. You must first load a wavetable from the SD card to the project before assigning it to a track.

1. Turn ***DATA ENTRY*** knob ***D*** and then select an empty slot where you want to load the wavetable.
2. Press **[YES]** to open a wavetable browser and view the SD card's contents.
3. Use the **[ARROW]** keys to navigate to the wavetable you want to load. **[UP]/[DOWN]** scrolls the list of folders and files. **[RIGHT]** opens the highlighted folder. **[LEFT]** navigates one level back up in the folder structure. Once you've located the wavetable/sample files, highlight the file you want to load and press **[RIGHT]** to select it. Press **[RIGHT]** again to deselect the file.



- **You can use the [KEYBOARD] to preview the highlighted wavetable, and the DATA ENTRY knobs to adjust parameters while selecting a wavetable.**
- **You can press and hold [SRC] to temporarily hide the browser.**

4. Press **[YES]** to load the selected wavetable(s) to the slot(s).

To load a previously added wavetable, turn ***DATA ENTRY*** knob ***D*** or use **[UP]**/**[DOWN]** to navigate to the wavetable you want to select, and then press **[YES]**. Press **[FUNC]** + **[YES]** while a wavetable is highlighted to open the browser at the location where the file is stored.

You can also use the Sample browser to load wavetables to the project. For more information, please see "6.13 SAMPLE BROWSER" on page 25.

You can apply parameter locks to the **SLOT** parameter and change the wavetable on any step of the sequencer. For more information, please see "10.10.1 PARAMETER LOCKS" on page 47.

SPD

Speed sets how long it takes for the waveform selected by **ANIM** to complete one full cycle. Looping shapes are synced to the tempo, and **SPD** snaps to divisions of a beat for these shapes.

A.LEV

Animate Level sets the internal modulator's modulation depth of the **LEV** parameter.

A.POS

Animate Position sets the internal modulator's modulation depth of the **POS** parameter. At a value of 0, no modulation is applied and the oscillator plays only the wave selected by **POS**. With positive values, the modulation is added to the POS control. With negative values, the modulation is subtracted from the POS control.

ANIM

Shape lets you choose an internal modulator that affects the position (**POS**) and level (**LEV**) of the oscillator. Different shapes give you different types of movement and character in the modulation. You can think of them as a collection of envelope and LFO-style shapes to choose from.

EXP DOWN (one shot)

RAMP DOWN (one shot)

TRI (one shot)

RAMP UP (one shot)

EXP UP (one shot)

RAMP DOWN (looping)

TRI (looping)

SQUARE (looping)

RAMP UP (looping)

RANDOM

SAMPLE AND HOLD

WAVETABLE 2 (looping)

SRC PAGE 2

The parameters on this page are the same as on Page 1 (except for **DTUN**) but controls oscillator 2.

DETUNE

Detune sets how much Oscillator 2 is detuned relative to Oscillator 1.

LEV

See the corresponding parameter on Page 1.

POS

See the corresponding parameter on Page 1.

SLOT

See the corresponding parameter on Page 1.

SPD

See the corresponding parameter on Page 1.

A.LEV

See the corresponding parameter on Page 1.

A.POS

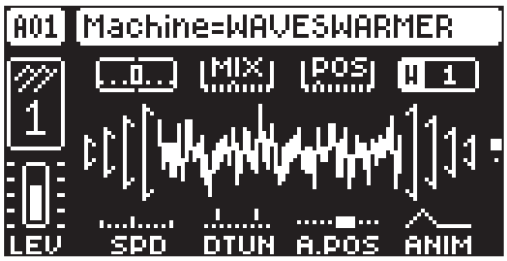
See the corresponding parameter on Page 1.

ANIM

See the corresponding parameter on Page 1.

A.2.7 WAVESWARMER

The Waveswarmer machine uses one main wavetable oscillator and then adds a swarm of six more detuned copies of it to create a rich sound. The machine also has an internal modulator that lets you modulate several of its parameters, so the sound keeps evolving. Press **[SRC]** to access the parameter pages.



SRC PAGE 1

TUNE

Tune sets the pitch of the oscillator. The knob works in a bipolar fashion, and a value of 0 leaves the pitch unchanged.

MIX

Sets the balance between the main oscillator and the detuned swarm oscillators. A parameter value of 0 means you only hear the main oscillator, and 127 means they are mixed about equally.

POS

Position sets which wave in the wavetable plays. The change from one wave to the next is smooth, so moving through the wavetable blends the waves into each other.

SLOT

Wavetable slot is where you can browse and assign a wavetable to the oscillator. You can load up to 127 wavetables for each project. You must first load a wavetable from the SD card to the project before assigning it to a track.

1. Turn ***DATA ENTRY*** knob ***D*** and then select an empty slot where you want to load the wavetable.
2. Press **[YES]** to open a wavetable browser and view the SD card's contents.
3. Use the **[ARROW]** keys to navigate to the wavetable you want to load. **[UP]**/**[DOWN]** scrolls the list of folders and files. **[RIGHT]** opens the highlighted folder. **[LEFT]** navigates one level back up in the folder structure. Once you've located the wavetable/sample files, highlight the file you want to load and press **[RIGHT]** to select it. Press **[RIGHT]** again to deselect the file.

   - **You can use the [KEYBOARD] to preview the highlighted wavetable, and the DATA ENTRY knobs to adjust parameters while selecting a wavetable.**
   - **You can press and hold [SRC] to temporarily hide the browser.**
4. Press **[YES]** to load the selected wavetable(s) to the slot(s).

To load a previously added wavetable, turn ***DATA ENTRY*** knob ***D*** or use **[UP]**/**[DOWN]** to navigate to the wavetable you want to select, and then press **[YES]**. Press **[FUNC]** + **[YES]** while a wavetable is highlighted to open the browser at the location where the file is stored.

You can also use the Sample browser to load wavetables to the project. For more information, please see "6.13 SAMPLE BROWSER" on page 25.

You can apply parameter locks to the **SLOT** parameter and change the wavetable on any step of the sequencer. For more information, please see "10.10.1 PARAMETER LOCKS" on page 47.

SPD
Speed sets how long the waveform you chose with **ANIM** takes to complete one full cycle. Looping shapes follow the tempo, and for these shapes **SPD** snaps to beat divisions.

DTUN
Detune sets how much the swarm oscillators are detuned.

A.POS
Animate Position sets how deeply the internal modulator modulates the **POS** parameter. At 0, there is no modulation, and the oscillator plays only the wave you selected with **POS**. Positive values add the modulation to the **POS** setting. Negative values subtract it.

ANIM
Animate lets you choose the shape of the internal modulator that animates several of the machine's parameters. Think of them as a collection of envelope and LFO-style shapes to pick from.

EXP DOWN (one shot)

RAMP DOWN (one shot)

TRI (one shot)

RAMP UP (one shot)

EXP UP (one shot)

RAMP DOWN (looping)

TRI (looping)

SQUARE (looping)

RAMP UP (looping)

RANDOM

SAMPLE AND HOLD

WAVETABLE (looping)

SRC PAGE 2

M.OCT
Main Octave lets you tune the main oscillator down one or two octaves. The pitch of the swarm oscillators is unaffected.

RTRG
Retrig lets you choose which oscillator phases reset when you play or trig a note.

OFF No oscillators reset.

MAIN The main oscillator resets.

SWARM The swarm oscillators reset.

ON Both the main oscillator and the swarm oscillators reset.

A.MIX
Animation Mix sets how deeply the internal modulator modulates the **MIX** parameter.

A.DTN
Animation Detune sets how deeply the internal modulator modulates the **DTUN** parameter.

NLEV
Noise Level lets you set the amount of white noise added to the sound.

NCOL
Uses a high-pass/low-pass filter to shape the noise frequencies.

PHAS
Adds smooth phase modulation of the swarm oscillators.

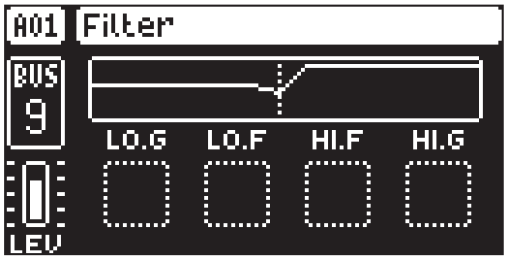
NMOD
Noise Modulation sets how much noise modulates the detuned swarm oscillators.

A.2.8 SHAPE

The Shape machine does not produce any sound, but instead helps to shape the sound on the Bus and Send FX tracks. The Shape machine has a different set of parameters on the filter and amp pages than the other SRC machines.

The Shape machine is only available on Bus and Send FX tracks.

FLTR PAGE



LO.G

Low-Shelf Gain controls the level of frequencies below the shelving frequency set by the **LO.F** parameter. A positive value boosts the low frequencies, while a negative value reduces them. The set parameter value determines how much the low end is increased or decreased in the overall sound.

LO.F

Low Frequency sets the Low-Shelf frequency.

HI.F

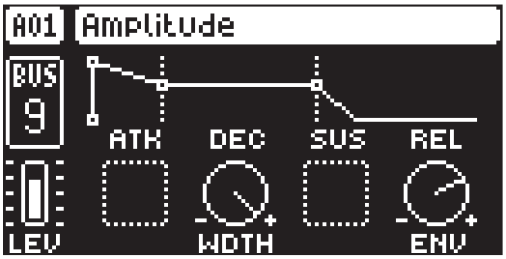
High Frequency sets the High-Shelf frequency.

HI.G

High-Shelf Gain controls the level of frequencies above the shelving frequency set by the **HI.F** parameter. A positive value boosts the high frequencies, while a negative value reduces them. The set parameter value determines how much the high end is increased or decreased in the overall sound.

AMP PAGE

The AMP page controls parameters for the amplitude envelope and stereo width.



ATK

Attack Time sets the length of the attack phase of the amp envelope.

HLD

Hold Time sets the length of the hold phase of the amp envelope. Fixed Hold time values (0–126) specify the length of the hold phase, and the envelope ignores Note Off events such as Trig Length, releasing a **[TRIG]** key, or a key on an external controller. Setting **HLD** to NOTE means the hold phase will be determined by Note On and Note Off events. This parameter is only available if **ENVELOPE MODE** in the TRACK SETUP menu is set to AHD.

If you set HLD to NOTE and use an external keyboard to trigger the envelope, the sound will be sustained (if DEC is set to a value less than 127) for as long as you press a key on the keyboard.

DEC
Decay Time sets the length of the decay phase of the amp envelope. When ENVELOPE MODE is set to AHD, DECAY works as the REL parameter, defining the time from the end of HOLD to 0.

SUS
Sustain Level sets the sustain level of the amp envelope. This parameter is only available if **ENVELOPE MODE** in the TRACK SETUP menu is set to ADSR.

REL
Release Time sets the length of the release phase of the amp envelope. This parameter is only available if **ENVELOPE MODE** in the TRACK SETUP menu is set to ADSR.

WDTH
Stereo Width mixes the left and right channels down to mono. A parameter value of 0 is full mono, 63 is normal stereo, -64 is stereo with the left and right channels switched.

ENV
Envelope Depth determines the amount of modulation the amp envelope applies to the amplitude level. The knob is bipolar, offering both negative and positive modulation depths.

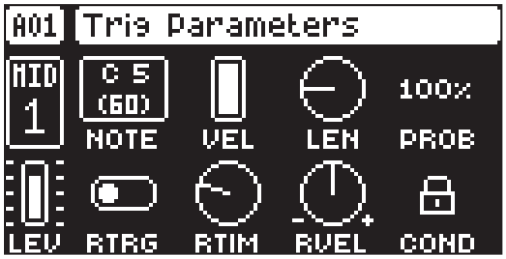
A.2.9 MIDI

The parameters for the MIDI machine are divided across the **TRIG**, **SRC, FLTR**, and **AMP PARAMETER** pages. The **MOD** pages are the same as for audio tracks, but there are two LFOs available for MIDI tracks.



The tracks with a MIDI machine selected still have a TRACK LEVEL parameter, as you can route audio to any track, regardless of the machine selected for that track.

TRIG PAGE 1
Set the actions for when a note is trigged. Change settings using the ***DATA ENTRY*** knobs. These general settings affect note trigs placed in the sequencer.



NOTE
Trig Note sets the pitch of the note when trigged. When in LIVE RECORDING mode and using the **[KEYBOARD]** to enter notes, the pitch of the **[TRIG]** keys played will override this setting. The NOTE parameter is not available for tracks that have the Subtracks SRC machine assigned.

VEL
Trig Velocity sets the velocity of the sequencer's note trigs.

LEN
Trig Length sets the length of the note trig. In LIVE RECORDING mode, the duration of pressing the **[TRIG]** keys overrides this general setting.

PROB
Trig Probability sets the probability that the trigs on the track play or not. The probability outcome is re-evaluated every time a trig is set to play. The default setting is 100%, meaning that all the trigs on the track will play every time. This parameter can be parameter locked, which lets you assign separate trigs their own probability.

RTRG
Retrig enables multiple trig repeats on placed trigs. Use ***DATA ENTRY*** knob ***A*** to turn retrig on/off. For more information, please see "10.7 RETRIGS" on page 46.

RTIM

Repeat Time sets the retrig rate. 1/16 is the nominal retrig rate, one trig per step. 1/32 corresponds to two trigs per step and so on. To do triplets, for example, set the retrig rate to 1/12 (or 1/24).

RVEL

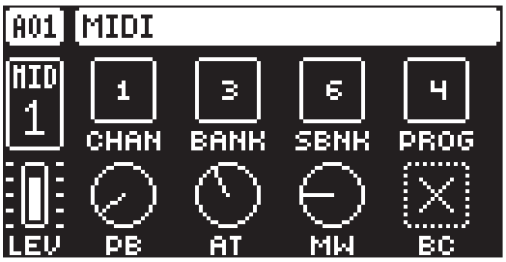
Repeat velocity sets the velocity curve fade-out and fade-in of the retrig. -127 corresponds to a complete fade-out during the set length, -63 fades out to half the velocity during the set length, 0 equals a flat velocity curve with no fade, 63 fades into half velocity during the set length, and 127 fades in completely to full velocity during the set length. Please note that the effects of the **RVEL** setting are also dependent on the **VEL** setting on TRIG PAGE 1.

COND

(Trig Condition) when you add a conditional lock, **COND** sets the Trig Condition with which a set of conditional rules can be applied to any trig, using a conditional parameter lock. For more information, please see “10.10.2 TRIG CONDITIONS AND CONDITIONAL LOCKS” on page 48.

SRC PAGE

Here you can set the MIDI channel that the MIDI machine should use to send data. Bank and program change values are also set here, together with a few standard CC parameters. The default value of the parameters on this page is OFF, meaning they are disabled and do not send out any data. Press and hold **[FUNC]** and then press the ***DATA ENTRY*** knobs to enable them. You can then use the ***DATA ENTRY*** knobs to set the parameter values as usual. Disable the parameters again by repeating the activation procedure.



CHAN (Channel) sets the MIDI channel to which the track sends MIDI data. If you set this parameter to OFF, the MIDI track is turned off. This parameter cannot be parameter locked. (OFF, 1–16)

BANK (Bank) sends a bank change message on CC 0 MSB.

SBNK (Sub Bank) sends a bank change message on CC 32 LSB.

PROG (Program Change) sends a Program Change message.

PB (Pitch Bend) controls the pitch bend data sent on the MIDI track.

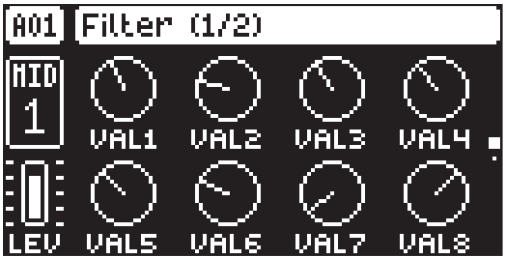
AT (Aftertouch) controls the aftertouch data sent on the MIDI track.

MW (Mod Wheel) controls the modulation wheel data sent on the MIDI track.

BC (Breath Controller) controls the breath control data sent on the MIDI track.

FLTR PAGE 1

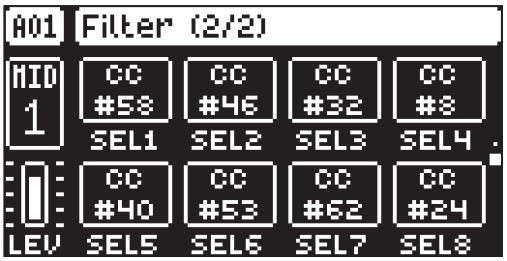
Here you can set the values of the first eight assignable CC commands. The default value of the parameters on this page is OFF, meaning they are disabled and do not send out any data. Press and hold **[FUNC]** and then press the ***DATA ENTRY*** knobs to enable them. You can then use the ***DATA ENTRY*** knobs to set the parameter values as usual. Disable the parameters again by repeating the enabling procedure.



VAL1-VAL8 (CC 1–8 Value) controls the values that the CC commands send. You specify the CC commands themselves on FLTR page 2. The default value of these parameters is OFF. Press **[FUNC]** + ***DATA ENTRY*** knobs to activate the parameters and then turn the ***DATA ENTRY*** knobs to set a value.

FLTR PAGE 2

Here you select the first eight CC commands whose values you set with the parameters on FLTR page 1. Press the corresponding knob or **[YES]** to activate the CC command change.



SEL1-SEL8 (CC 1–8 Select) specifies the CC commands whose values you control by the parameters on the FLTR PAGE 1 (CC VALUE) page. The selectable commands are the standard MIDI Control Change Messages.

AMP PAGE 1

Here you can set the values for eight additional assignable CC commands.

VAL9-VAL16 (CC 9–16 Value) controls the values that the CC commands send. You specify the CC commands themselves on AMP page 2. The default value of these parameters is OFF. Press **[FUNC]** + ***DATA ENTRY*** knobs to activate the parameters and then turn the ***DATA ENTRY*** knobs to set a value.

AMP PAGE 2

Here you select the eight additional CC commands whose values you set with the parameters on AMP page 1. Press the corresponding knob or **[YES]** to activate the parameter change.

SEL9-SEL16 (CC 9–16 Select) specifies the CC commands whose values you control by the parameters on the AMP page 1 (CC VALUE) page. The selectable commands are the standard MIDI Control Change Messages.

A.3 FX MACHINES

The FX machines can be added at several locations in the signal path. However, not all FX machines can be used in every location. The following is a description of the machines that can be added to each track type.

TRACK EFFECTS (Two insert FX slots per audio track. Tracks 1–8)

- **Bypass** (“A.3.1 BYPASS” on page 109)
- **Channel EQ** (“A.3.2 CHANNEL EQ” on page 109)
- **Chrono Pitch** (“A.3.3 CHRONO PITCH” on page 110)
- **Comb ± Filter** (“A.3.4 COMB ± FILTER” on page 110)
- **Compressor** (“A.3.5 COMPRESSOR” on page 111)
- **Daisy Delay** (“A.3.6 DAISY DELAY” on page 112)
- **Degrader** (“A.3.7 DEGRADER” on page 113)
- **Dirtshaper** (“A.3.8 DIRTSHAPER” on page 113)
- **Filter Folder** (“A.3.9 FILTER FOLDER” on page 114)
- **Filterbank** (“A.3.10 FILTERBANK” on page 115)
- **Frequency Warper** (“A.3.11 FREQUENCY WARPER” on page 115)
- **Infinite Flanger** (“A.3.12 INFINITE FLANGER” on page 116)
- **Low-pass Filter** (“A.3.13 LOW-PASS FILTER” on page 117)
- **Panoramic Chorus** (“A.3.15 PANORAMIC CHORUS” on page 118)
- **Parametric EQ** (“A.3.16 PARAMETRIC EQ” on page 118)

- **Phase 98** (“A.3.17 PHASE 98” on page 119)
- **Pulse Gate** (“A.3.18 PULSE GATE” on page 120)
- **Saturator Delay** (“A.3.20 SATURATOR DELAY” on page 121)
- **Transient Ctrl** (“A.3.23 TRANSIENT CTRL” on page 124)

BUS EFFECTS (Two insert FX slots per bus track. Tracks 9–12)

- **Bypass** (“A.3.1 BYPASS” on page 109)
- **Channel EQ** (“A.3.2 CHANNEL EQ” on page 109)
- **Chrono Pitch** (“A.3.3 CHRONO PITCH” on page 110)
- **Comb ± Filter** (“A.3.4 COMB ± FILTER” on page 110)
- **Compressor** (“A.3.5 COMPRESSOR” on page 111)
- **Daisy Delay** (“A.3.6 DAISY DELAY” on page 112)
- **Degrader** (“A.3.7 DEGRADER” on page 113)
- **Dirtshaper** (“A.3.8 DIRTSHAPER” on page 113)
- **Filter Folder** (“A.3.9 FILTER FOLDER” on page 114)
- **Filterbank** (“A.3.10 FILTERBANK” on page 115)
- **Frequency Warper** (“A.3.11 FREQUENCY WARPER” on page 115)
- **Infinite Flanger** (“A.3.12 INFINITE FLANGER” on page 116)
- **Low-pass Filter** (“A.3.13 LOW-PASS FILTER” on page 117)
- **Panoramic Chorus** (“A.3.15 PANORAMIC CHORUS” on page 118)
- **Parametric EQ** (“A.3.16 PARAMETRIC EQ” on page 118)
- **Phase 98** (“A.3.17 PHASE 98” on page 119)
- **Pulse Gate** (“A.3.18 PULSE GATE” on page 120)
- **Saturator Delay** (“A.3.20 SATURATOR DELAY” on page 121)
- **Steel Box Reverb** (“A.3.21 STEEL BOX REVERB” on page 122)
- **Supervoid Reverb** (“A.3.22 SUPERVOID REVERB” on page 123)
- **Warble** (“A.3.24 WARBLE” on page 124)
- **Transient Ctrl** (“A.3.23 TRANSIENT CTRL” on page 124)

SEND EFFECTS (One FX slot per Send FX track. Tracks 13–15)

- **Bypass** (“A.3.1 BYPASS” on page 109)
- **Compressor** (“A.3.5 COMPRESSOR” on page 111)
- **Daisy Delay** (“A.3.6 DAISY DELAY” on page 112)
- **Filter Folder** (“A.3.9 FILTER FOLDER” on page 114)
- **Panoramic Chorus** (“A.3.15 PANORAMIC CHORUS” on page 118)
- **Pulse Gate** (“A.3.18 PULSE GATE” on page 120)
- **Rumsklang Reverb** (“A.3.19 RUMSKLANG REVERB” on page 121)
- **Saturator Delay** (“A.3.20 SATURATOR DELAY” on page 121)
- **Steel Box Reverb** (“A.3.21 STEEL BOX REVERB” on page 122)
- **Supervoid Reverb** (“A.3.22 SUPERVOID REVERB” on page 123)
- **Transient Ctrl** (“A.3.23 TRANSIENT CTRL” on page 124)

MIX EFFECTS (One FX slot for the Mix track. Track 16)

- **Bypass** (“A.3.1 BYPASS” on page 109)
- **Channel EQ** (“A.3.2 CHANNEL EQ” on page 109)

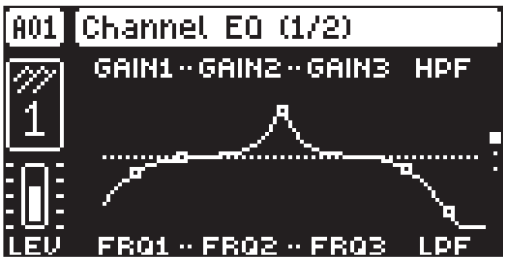
- **Chrono Pitch** (“A.3.3 CHRONO PITCH” on page 110)
- **Comb ± Filter** (“A.3.4 COMB ± FILTER” on page 110)
- **Compressor** (“A.3.5 COMPRESSOR” on page 111)
- **Daisy Delay** (“A.3.6 DAISY DELAY” on page 112)
- **Degrader** (“A.3.7 DEGRADER” on page 113)
- **Dirtshaper** (“A.3.8 DIRTSHAPER” on page 113)
- **Filter Folder** (“A.3.9 FILTER FOLDER” on page 114)
- **Filterbank** (“A.3.10 FILTERBANK” on page 115)
- **Frequency Warper** (“A.3.11 FREQUENCY WARPER” on page 115)
- **Infinite Flanger** (“A.3.12 INFINITE FLANGER” on page 116)
- **Low-pass Filter** (“A.3.13 LOW-PASS FILTER” on page 117)
- **Multimode Filter** (“A.3.14 MULTIMODE FILTER” on page 117)
- **Panoramic Chorus** (“A.3.15 PANORAMIC CHORUS” on page 118)
- **Parametric EQ** (“A.3.16 PARAMETRIC EQ” on page 118)
- **Phase 98** (“A.3.17 PHASE 98” on page 119)
- **Pulse Gate** (“A.3.18 PULSE GATE” on page 120)
- **Saturator Delay** (“A.3.20 SATURATOR DELAY” on page 121)
- **Steel Box Reverb** (“A.3.21 STEEL BOX REVERB” on page 122)
- **Supervoid Reverb** (“A.3.22 SUPERVOID REVERB” on page 123)
- **Transient Ctrl** (“A.3.23 TRANSIENT CTRL” on page 124)
- **Warble** (“A.3.24 WARBLE” on page 124)

A.3.1 BYPASS

This machine lets the signal bypass the selected machine slot.

A.3.2 CHANNEL EQ

The Channel EQ lets you shape the frequencies of the sound. The EQ architecture is: HPF > Low shelf > Mid band > High shelf > LPF.



GAIN1

Low Shelf Gain sets how much gain you apply at the low shelf frequency you set with **FRQ1**.

GAIN2

Mid Gain sets how much gain you apply at the mid band frequency you set with **FRQ2**.

GAIN3

High Shelf Gain sets how much gain you apply at the high shelf frequency you set with **FRQ3.**

HPF

High-pass Frequency sets the frequency of the High-pass filter.

FRQ1

Low Shelf Frequency sets the frequency of the low shelf.

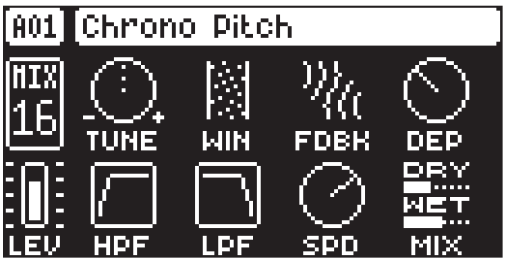
FRQ2
Mid Frequency sets the frequency of the mid band.

FRQ3
High Shelf Frequency sets the frequency of the high shelf.

LPF
Low-pass Frequency sets the frequency of the Low-pass filter.

A.3.3 CHRONO PITCH

A granular pitch shifter with modulation and feedback.



TUNE
Adjusts the pitch (measured in semitones).

WIN
Window controls the window (grain) size.

FDBK
Feedback introduces feedback.

DEP
LFO Depth controls the amount of pitch modulation applied from the built-in LFO.

HPF
High-Pass Filter applies a high-pass filter to the wet signal.

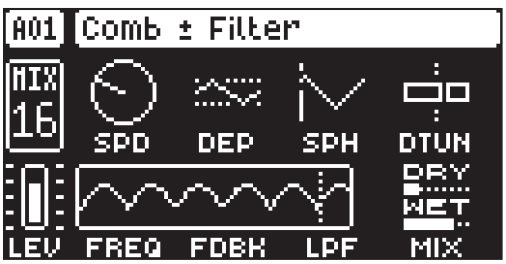
LPF
Low-Pass Filter applies a low-pass filter to the wet signal.

SPD
LFO Speed changes the speed of the built-in LFO.

MIX
Dry/Wet sets the mix between the dry signal and the affected signal.

A.3.4 COMB ± FILTER

This stereo comb filter with built-in modulation introduces metallic-sounding, pitch-tuned, resonant overtones.



SPD
Modulation Speed controls the frequency of a built-in triangle LFO. It is tempo-synced, and the values are measured in sequencer steps.

DEP
Modulation Depth controls the amount of frequency modulation applied from the LFO to the comb filter.

SPH
LFO Start Phase controls the triggering behavior of the LFO. The parameter value OFF indicates that it will run free. Other values will cause the LFO to retrigger from that phase position every time a note is played on the track.

DTUN
Detune offsets the frequency of the comb filter in the left and right channels.

FREQ
Frequency sets the resonant frequencies of the comb filter. It can be set to both positive and negative values.

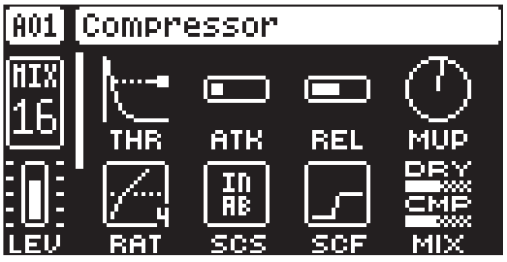
FDBK
Feedback sets the gain of the feedback signal. Positive parameter values result in positive feedback and produces a string-like sound. Negative values result in negative feedback and produces a more hollow, tube-like sound. Please be aware that setting **FDBK** to extreme values can create a very loud sound.

LPF
Low-pass Filter sets the cutoff frequency of the low-pass filter in the feedback signal.

MIX
Dry/Wet sets the mix between the dry signal and the affected signal.

A.3.5 COMPRESSOR

The compressor effect compresses the dynamic range of the signal by reducing the volume of loud sounds relative to the quiet sounds. The gain reduction amount is shown with a bar next to the **THR** and **RAT** parameters.



THR
Threshold sets the threshold of the compressor. A lower threshold means a larger portion of the signal is subject to compression.

ATK
Attack Time sets the time of the compressor attack phase, i.e., how quickly the compressor responds to loud peaks.

REL
Release Time sets the duration of the compressor's release phase, i.e., how long it takes for the compression to recover during quieter moments.

MUP
Makeup Gain sets the makeup gain of the compressor output to compensate for the reduced signal levels caused by compression. The Makeup Gain parameter value is displayed in dB.

RAT

Compression Ratio. There are eight different compression ratios: 1.5, 2, 3, 4, 6, 8, 16, and 20. Higher ratios result in greater signal compression.

SCS

Sidechain Source decides what audio source the compressor analyzes when it performs sidechaining. Sidechaining is the process when the compressor uses the output of an audio source to control the overall action of the compressor. For example, if you set **SCS** to TRK1 where you have a kick drum, every time the kick drum plays, the compressor lowers the overall sound of the mix. This parameter is only available when the compressor is used on the Bus or Mix tracks.

MIX sets the sidechain source to be the audio sent to the Main (L/R) outputs. (Only available on the Mix track.)

TRK1–8 sets the sidechain source to be the audio sent from one of the separate audio tracks.

BUS1–4 sets the sidechain source to be the audio sent from one of the Bus tracks.

IN A sets the sidechain source to be the audio coming from INPUT A.

IN B sets the sidechain source to be the audio coming from INPUT B.

IN AB sets the sidechain source to be the audio coming from INPUT A and B.

SCF

Sidechain Filter filters the signal from the sidechain source before the compressor analyzes it. The parameter ranges from a low-pass filter to a high-pass filter. Negative parameter values set a low-pass filter. Positive parameter values set a high-pass filter.

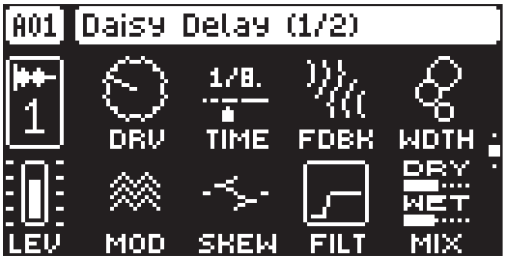
When set as a low-pass filter, the compressor reacts mostly to bass frequencies. Use this setting for a characteristic pumping compressor sound. When set as a high-pass filter, the compressor reacts less to bass frequencies. Use this setting to avoid pumping.

MIX

Mix sets the mix of the uncompressed signal and the compressor output signal. A setting of 0 results in a completely uncompressed signal. A setting of 127 lets only the compressed signal pass through. All values in between mix the uncompressed signal with the compressed signal, which is known as parallel compression.

A.3.6 DAISY DELAY

A delay effect with more control over the stereo image and evolution over time.



DRV

Drive controls the amount of saturation applied to the delay's input.

TIME

Delay Time Division controls the base repeat time.

FDBK

Feedback adjusts the amount of delay output fed back into its input.

WDTH

Width adjusts the panning of the input and feedback signals before being mixed.

MOD

Modulation applies an internal modulator to the delay time.

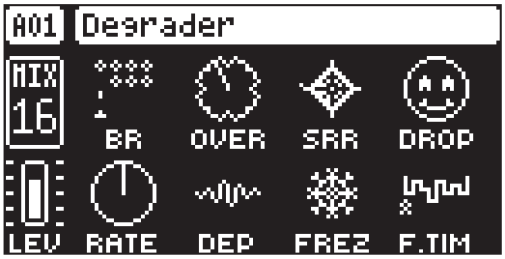
SKEW
Skew scales the relative delay times in the left and right channels so that they interact rhythmically.

FILT
Applies a tilt filter to the delayed signal. To the left, it low-passes the signal, and to the right, it high-passes.

MIX
Dry/Wet sets the mix between the dry and affected signals. This parameter is not available if the effect is used on a Send FX track.

A.3.7 DEGRADER

A collection of lo-fi effects.



BR
Bit Reduction sets the bit depth. The parameter range is from 16 bits to 1 bit.

OVER
Overdrive sets the gain amount into an overdrive.

SRR
Sample Rate Redux sets the amount of sample rate reduction.

DROP
Drop-outs introduce randomly placed drop-outs into the audio signal. Higher values increase the frequency and the duration of the drop-outs.

RATE
Modulation Rate sets the frequency of a modulation sine oscillator.

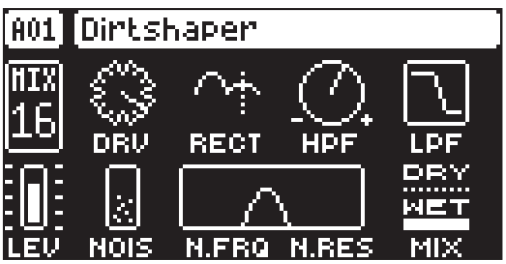
DEP
Modulation Depth introduces ring modulation with the modulator oscillator, increasing in intensity.

FREZ
Freeze introduces randomly placed stutters into the signal.

F.TIM
Freeze Time sets the length of the stutters introduced by the **FREZ** parameter. The value RAND causes a random length to be picked each time. The other values are shown in note values and decimals.

A.3.8 DIRTSHAPER

Adds distortion and grit.



DRV
Drive adds overdrive distortion.

RECT
Rectify blends between the driven signal and a full-wave rectified version of it.

HPF
High-pass filter is a bipolar control that controls two different high-pass filters. To the left, the input is high-pass filtered before the distortion. To the right, it is high-pass filtered after the rectifier.

LPF
Low-pass filter applies a low-pass filter to the output.

NOIS
Noise introduces a noise signal ring-modulated with the distorted input.

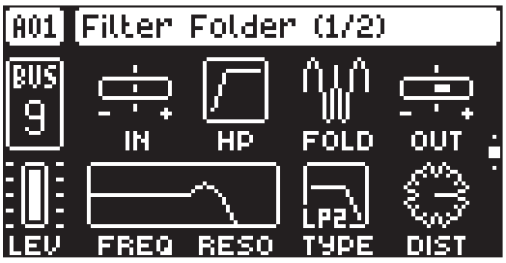
N.FRQ
Noise Frequency applies a low-pass filter to the noise signal.

N.RES
Noise Resonance adjusts the resonance of the noise filter.

MIX
Dry/Wet sets the mix between the dry signal and the affected signal.

A.3.9 FILTER FOLDER

The Filter Folder is an effect that pairs a wavefolder with two added filters to help shape the sound. Wavefolding increases the wave's complexity, creating a more overtone-rich sound. The signal flow in the effect is as follows: Input level > High-pass filter > Wavefolder > Multimode filter > Dist > Output level.



IN
Input Level boosts or attenuates the level at the FX input.

HP
High-Pass filters the sound before the wavefolder.

FOLD
Folder sets the amount of wavefolding of the sound.

OUT
Output Level boosts or attenuates the level out from the FX.

FREQ
Frequency sets the cutoff frequency of the Multimode filter.

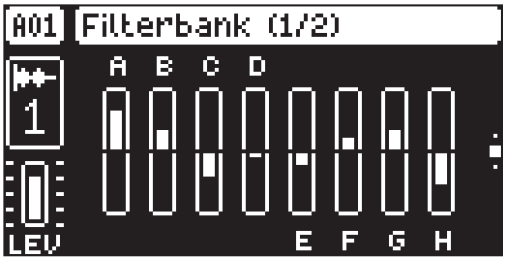
RESO
Resonance sets the Multimode filter's resonance behavior. Resonance introduces a peak in the spectrum at the cutoff frequency.

TYPE
Filter Type sets the Multimode filter's type. Low-pass 4, Low-pass 2, Band-pass 2, High-pass 2, Low-pass notch, Notch 1, Notch 2, Off.

DIST
Post Dist sets the amount of distortion/overdrive applied to the sound after the Multimode filter.

A.3.10 FILTERBANK

An eight-band fixed filter bank.



A
Gain A sets the gain of a low-pass filter at 90 Hz.

B
Gain B sets the gain of a band-pass filter at 121.9 Hz.

C
Gain C sets the gain of a band-pass filter at 224.8 Hz.

D
Gain D sets the gain of a band-pass filter at 418.0 Hz.

E
Gain E sets the gain of a band-pass filter at 777.4 Hz.

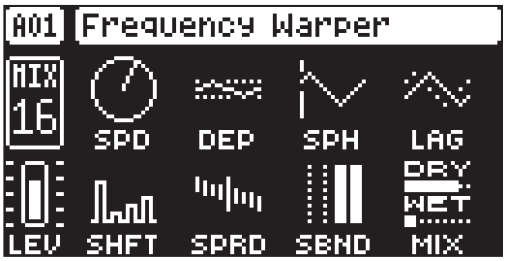
F
Gain F sets the gain of a band-pass filter at 1445.8 Hz.

G
Gain G sets the gain of a band-pass filter at 2688.6 Hz.

H
Gain H sets the gain of a high-pass filter at 4 kHz.

A.3.11 FREQUENCY WARPER

A frequency-shifting effect in the style of vintage analog effects.



SPD
LFO Speed sets the speed of the built-in LFO.

DEP
LFO Depth controls the amount of frequency modulation applied from the LFO to the shifter.

SPH
LFO Start Phase controls the triggering behavior of the LFO. The value “OFF” indicates that it will run free. Other values will cause the LFO to retrigger from that phase position every time a note is played on the track.

LAG
LFO Phase Offset offsets the LFO’s phase position in the left and right channels.

SHFT
Shift Amount controls the shift distance.

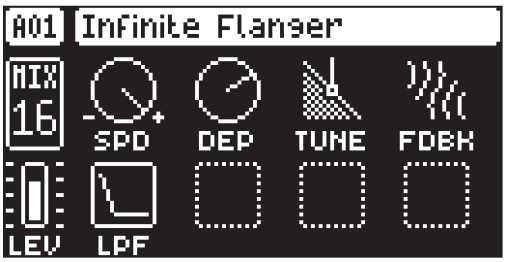
SPRD
Stereo Spread offsets the shift distance in the left and right channels.

SBND
Sideband blends between the frequency shifter’s output and an alternate output signal with different characteristics.

MIX
Dry/Wet sets the mix between the dry signal and the affected signal.

A.3.12 INFINITE FLANGER

This is a flanger with barber-pole motion, meaning it sounds like it rises or falls continuously without ever reversing.



SPD
Speed sets the speed of the pitch motion. A parameter value of 0 gives a constant pitch, negative values result in increasingly quick downward motions, and positive values result in increasingly quick upward motions.

DEP
Depth sets the intensity of the flanging effect.

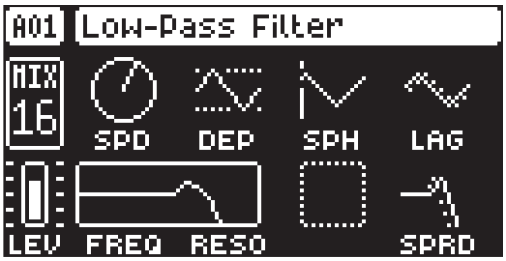
TUNE
Downtune adjusts the tuning of the delay line progressively downward, from true flanging to sounds that resemble comb filtering, and finally to audible delay.

FDBK
Feedback sets the amount of output signal fed back into the delay line.

LPF
Feedback Filter Cutoff sets the cutoff frequency of a low-pass filter placed in the feedback loop.

A.3.13 LOW-PASS FILTER

This is a 4-pole, 24 dB/octave slope low-pass filter with internal modulation and stereo width controls.



SPD
LFO Speed sets the speed of the built-in LFO. It is tempo-synced, and the values are measured in sequencer steps.

DEP
LFO Depth sets the amount of frequency modulation applied from the LFO to the filter.

SPH
LFO Start Phase sets the triggering behavior of the LFO. The parameter value OFF indicates that it will run free. Other values will cause the LFO to retrigger from that phase position every time a note is played on the track.

LAG
LFO Phase Offset offsets the LFO's phase in the right and left channels.

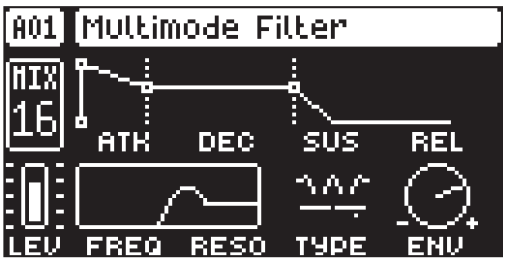
FREQ
Cutoff Frequency sets the cutoff frequency of the filter.

RESO
Resonance sets the resonance behavior of the filter. Resonance introduces a peak in the spectrum at the cutoff frequency.

SPRD
Stereo Spread offsets the filter cutoff frequency in the left and right channels.

A.3.14 MULTIMODE FILTER

This filter lets you morph from a Low-pass to a Band-pass to a High-pass filter.



ATK
Attack Time sets the length of the attack phase of the filter envelope.

DEC
Decay Time sets the length of the decay phase of the filter envelope.

SUS
Sustain Level sets the sustain level of the filter envelope.

REL
Release Time sets the length of the release phase of the filter envelope.

FREQ
Frequency sets the cutoff frequency of the Multimode filter.

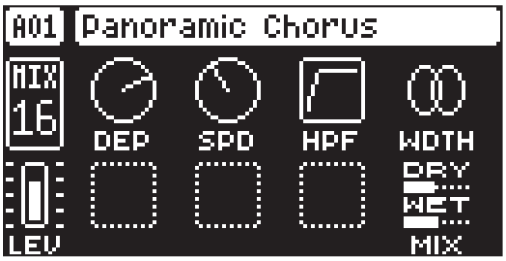
RESO
Resonance sets the resonance behavior of the filter. Resonance introduces a peak in the spectrum at the cutoff frequency.

TYPE
Type morphs the Multimode filter from low-pass to band-pass to high-pass.

ENV
Env. Depth sets the amount of cutoff frequency modulation from the filter envelope. The parameter is bipolar, both negative and positive modulation depths are available.

A.3.15 PANORAMIC CHORUS

The chorus is used to widen the sound, enhance the stereo image, or add subtle movement to sounds.



DEP
Depth sets the depth of the LFO modulation of the chorus.

SPD
Speed sets the speed of the LFO modulation of the chorus.

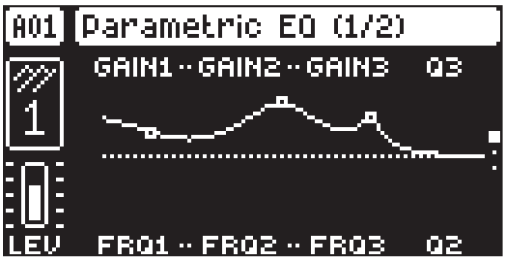
HPF
High-pass sets the high-pass filtering of the input signal.

WDTH
Width sets the stereo width of the chorus.

MIX
Dry/Wet sets the mix between the dry signal and the affected signal. This parameter is not available if the effect is used on a Send FX track.

A.3.16 PARAMETRIC EQ

The Parametric EQ lets you shape the frequencies of the sound. It has a low shelf plus two parametric bands with variable Q, so you can shape the frequencies more precisely.



GAIN1
Low Shelf Gain sets how much gain you apply at the low shelf frequency you set with **FRQ1**.

GAIN2
Mid Gain sets how much gain you apply at the mid band frequency you set with **FRQ2**.

GAIN3
High Gain sets how much gain you apply at the high band frequency you set with **FRQ3.**

Q3
Hi Q sets how wide or narrow the EQ band is around the **FRQ3** center frequency.

FRQ1
Low Shelf Frequency sets the frequency of the low shelf.

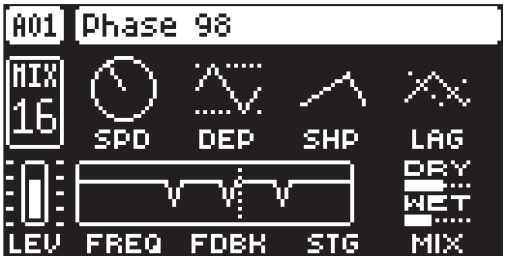
FRQ2
Mid Frequency sets the frequency of the mid band.

FRQ3
High Frequency sets the frequency of the high band.

Q2
Mid Q sets how wide or narrow the EQ band is around the **FRQ2** center frequency.

A.3.17 PHASE 98

A phaser that can blend between four- and six-stage versions.



SPD
LFO Speed sets the speed of the built-in LFO.

DEP
LFO Depth sets the amount of frequency modulation applied from the LFO to the phaser.

SHP
LFO Shape sets the wave shape of the LFO. It smoothly transitions from a descending ramp to a triangle and then to an ascending ramp.

LAG
LFO Phase Offset adjusts the phase of the built-in LFO in the right and left channels.

FREQ
Cutoff Frequency sets the center frequency of the phaser.

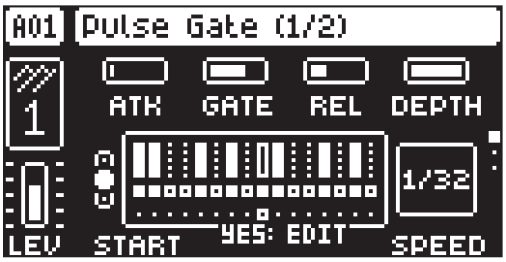
FDBK
Phaser Feedback sets the feedback (resonance) of the phaser.

STG
Stage Mix blends between the four-stage and six-stage phaser outputs.

MIX
Dry/Wet sets the mix between the dry signal and the affected signal.

A.3.18 PULSE GATE

This effect is a sequenced envelope effect, similar to a classic trance gate. The Pulse Gate chops up the audio in a rhythmic gate pattern you choose, with extra controls for attack, release and start modes, among other things. This effect is easiest to hear on sustained notes and pads.



ATK
Attack sets the length of the attack phase of the gates.

GATE
Gate sets the length of the gates.

REL
Release sets the length of the release phase of the gates.

DEPTH
Depth sets how much the effect affects the sound, much like a dry/wet mix.

START
Start selects a start mode that sets what restarts the gate pattern.

NOTE The gate pattern restarts every time you or the sequencer plays a note.

SEQ+NOTE The gate pattern restarts when the sequencer starts playing, and when you or the sequencer plays a note.

SEQ+FREE The gate pattern restarts only when the sequencer starts playing.

EDIT
Here you can set up the gate pattern. The pattern has up to 16 steps and follows the BPM, together with the **SPEED** parameter setting.

Press **[YES]** to start editing the pattern, then use **[TRIG 1–16]** to choose which steps produce a gate.

Use **[LEFT]**/**[RIGHT]** to move between the steps, then use **[UP]**/**[DOWN]** or ***DATA ENTRY*** knob ***E*** to set the strength of the gate on the selected step. You can also press and hold the **[TRIG]** keys and then use ***DATA ENTRY*** knob ***E*** to set the level

[FUNC] + **[LEFT]**/**[RIGHT]** rotates the gate pattern.

LENGTH sets how many steps the gate pattern has.

Press **[YES]** to open a menu that lets you select between a number of gate pattern templates.

RANDOMIZE randomizes which steps are active and how strong the gate is on those steps.

INIT resets the pattern to the default pattern.

RAMP UP makes the active steps in the pattern get stronger as the pattern plays.

RAMP DOWN makes the active steps in the pattern get weaker as the pattern plays.

CLEAR creates an empty pattern and removes any steps you placed before.

FILL creates a pattern where all steps are active and at full strength.

Press **[NO]** to leave the gate pattern editing.



Two or more open gates next to each other merge into one longer gate. The gate strength can change, but the gate envelope does not retrigger.

SPEED
Sets the speed of the Pulse Gate in relation to the device BPM.

A.3.19 RUMSKLANG REVERB

The Rumsklang Reverb effect controls the persistence and ambient characteristics of the sound reverberations. It focuses mainly on simulating large spaces.



PRE
Pre-delay sets the pre-delay time of the reverb.

EARLY
Early Reflections sets the amount of early room reflections in the reverb.

DAMP
Damping determines how quickly the high-end frequencies of the reverb tail fade out, influencing the overall brightness or darkness of the reverb sound.

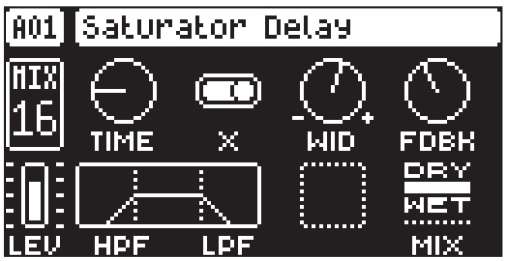
SIZE
Size sets the length of the decay phase of the reverberated signal, essentially setting the size of the simulated acoustic space.

LOWC
Lowcut sets the cutoff frequency of the reverb's high-pass filter.

HIGHC
Highcut sets the cutoff frequency of the reverb's low-pass filter.

A.3.20 SATURATOR DELAY

The Saturator Delay effect takes the input signal, delays it in time and then blends it with the original signal.



TIME
Delay Time sets the delay time. It is relative to the current BPM and is measured in 128th notes.

TIME setting	Divide ratio
1	1/128
2	1/64
2.67	1/48 (1/32T)
3	1/64.
4	1/32

TIME setting	Divide ratio
5.33	1/24 (1/16T)
6	1/32.
8	1/16
10.67	1/12 (1/8T)
12	1/16.
16	1/8
21.33	1/6 (1/4T)
24	1/8.
32	1/4
42.67	1/3 (1/2T)
48	1/4.
64	1/2
96	1/2.
128	1

X

Ping Pong sets the delay signal to alternate across the stereo field. There are two settings:

OFF lets you manually set the position of the delay signal in the stereo field. Use the WID parameter to change the stereo field position.

ON makes the delay signal alternate between left and right pan positions. The WID parameter controls the amount of panning.

WID

Stereo Width sets the delay signal pan width across the stereo field. The knob is bipolar.

FDBK

Feedback Gain sets the amount of delay output signal to feed back into the input of the delay. With higher parameter settings, infinite and/or swelling delays are possible. Please be aware that high feedback can lead to a very loud signal.

HPF

High-pass Filter sets the cutoff frequency of the delay high-pass filter.

LPF

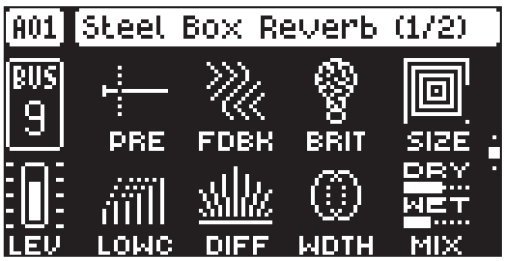
Low-pass Filter sets the cutoff frequency of the delay low-pass filter.

MIX

Dry/Wet sets the mix between the dry and affected signals. This parameter is not available if the effect is used on a Send FX track.

A.3.21 STEEL BOX REVERB

The Steel Box reverb is a character reverb inspired by early digital reverbs and ’90s plate reverbs. It has wide parameter ranges by design to achieve sonically wide results.



PRE
Pre-delay sets the pre-delay time of the reverb.

FDBK
Feedback sets the amount of feedback inside the delay tank. High numbers cause a longer decay, but it also depends on the brightness and low cut settings.

BRIT
Brightness controls the damping as well as filtering in the feedback path.

SIZE
Sets the size of the steel box reverbator.

LOWC
Low Cut sets the amount of low-cut filtering inside the feedback path of the reverb tank.

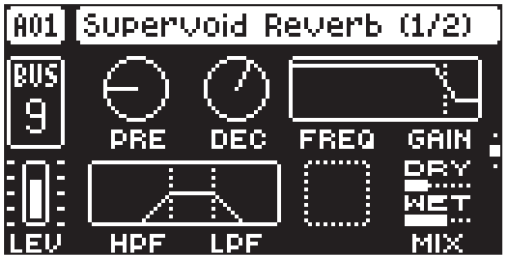
DIFF
Diffuse sets the amount of diffusion applied to the input sound before it enters the reverb tank.

WDTH
Width controls the stereo width of the tapped output audio.

MIX
Dry/Wet sets the mix between the dry and affected signals. This parameter is not available if the effect is used on a Send FX track.

A.3.22 SUPERVOID REVERB

The Supervoid Reverb effect controls the persistence and ambient characteristics, of the sound reverberations. It can simulate many different sonic locations, from huge spaces to small rooms.



PRE
Pre-delay sets the pre-delay time of the reverb.

DEC
Decay Time sets the length of the decay phase of the reverberated signal, essentially setting the size of the simulated acoustic space.

FREQ
FB Shelving Freq sets the shelving filter frequency. Together with the **GAIN** parameter, it can be used to dampen the reverberated signal above a chosen frequency, making the reverberation sound more prominent or more muffled.

GAIN
FB Shelving Gain affects the damping of the reverberated signal above the shelving frequency set by the **FREQ** parameter. At the maximum value, the treble is included in the reverberations; lowering the value gradually dampens it.

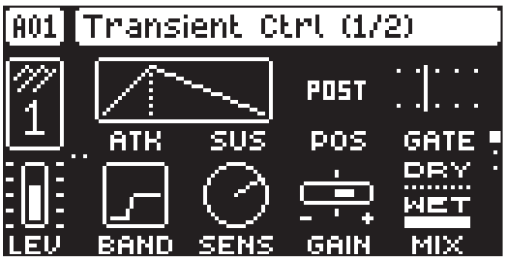
HPF
HPF sets the cutoff frequency of the reverb high-pass filter that affects the audio going into the reverb.

LPF
LPF sets the cutoff frequency of the reverb low-pass filter that affects the audio going into the reverb.

MIX
Dry/Wet sets the mix between the dry signal and the affected signal. This parameter is only available if the effect is used on a Bus track or the Mix track.

A.3.23 TRANSIENT CTRL

The Transient Control effect lets you shape and control the transients of a sound.



ATK
Attack sets how much gain you apply at the start of a sound, so you can add or take away punch from the sound.

SUS
Sustain sets how much gain you apply after the attack phase, so you can add or take away body from the sound.

POS
Sets where the gate sits in the effect's audio path. PRE places the noise gate before the transient shaping, so the dry/wet mix affects it. POST moves it after the dry/wet mix, on the output.

GATE
Sets the level the sound has to reach before the noise gate lets it through.

BAND
Detection Band uses a high-pass and low-pass filter that lets you choose which frequencies the transient detection reacts to. Negative parameter values set a low-pass filter, and positive values set a high-pass filter. With a low-pass filter, the transient detection reacts mostly to low frequencies. With a high-pass filter, it reacts mostly to high frequencies.

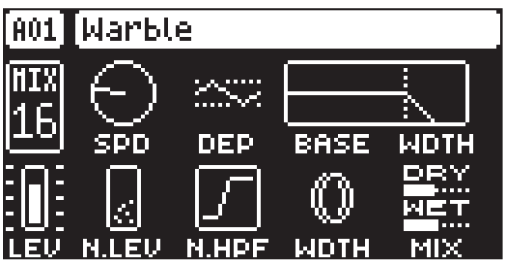
SENS
Sensitivity lets you fine-tune how strongly the effect reacts.

GAIN
Sets the gain of the processed (wet) signal. The range is ±12 dB.

MIX
Dry/Wet sets the mix between the dry signal and the affected signal. This parameter is not available if the effect is used on a Send FX track.

A.3.24 WARBLE

The Warble effect helps you recreate a sound similar to that of an old tape recorder by adding a pitch warble effect, along with audio and noise filtering.



SPD
Speed sets the speed of the warble effect. A setting of 0 makes the speed random.

DEP
Depth sets the depth of the warble effect.

BASE
Sets the base frequency of the filter.

WDTH
Sets the frequency width above the base frequency.

N.LEV
Noise Level sets the amount of noise that is added to the effect. Please note that the noise level is not affected by the MIX setting.

N.HPF
High-pass filter sets the frequency for the high-pass filtering of the noise.

WDTH
Stereo Width sets the amount of the warble effect in the stereo field.

MIX
Dry/Wet sets the mix between the dry signal and the affected signal.

APPENDIX B: LFO/MOD ENVELOPE MODULATION DESTINATIONS

The following are the modulation destinations for Tonverk's LFOs and Modulation envelope. The Voice LFOs and Modulation envelope modulate parameters on all parameter pages except the FX pages. The FX LFOs only modulate parameters on the track's FX parameter pages.

AUDIO TRACKS

META: None

SRC page 1: Data entry knob A (machine dependent)
SRC page 1: Data entry knob B (machine dependent)
SRC page 1: Data entry knob C (machine dependent)
SRC page 1: Data entry knob D (machine dependent)
SRC page 1: Data entry knob E (machine dependent)
SRC page 1: Data entry knob F (machine dependent)
SRC page 1: Data entry knob G (machine dependent)
SRC page 1: Data entry knob H (machine dependent)

SRC page 2: Data entry knob A (machine dependent.)
SRC page 2: Data entry knob B (machine dependent)
SRC page 2: Data entry knob C (machine dependent)
SRC page 2: Data entry knob D (machine dependent)
SRC page 2: Data entry knob E (machine dependent)
SRC page 2: Data entry knob F (machine dependent)
SRC page 2: Data entry knob G (machine dependent)
SRC page 2: Data entry knob H (machine dependent)

FILTER page 1: Data entry knob A (machine dependent.)
FILTER page 1: Data entry knob B (machine dependent.)
FILTER page 1: Data entry knob C (machine dependent.)
FILTER page 1: Data entry knob D (machine dependent.)
FILTER page 1: Data entry knob E (machine dependent.)
FILTER page 1: Data entry knob F (machine dependent.)
FILTER page 1: Data entry knob G (machine dependent.)
FILTER page 1: Data entry knob H (machine dependent.)
FILTER page 2: Data entry knob A (Not available on Grainer SRC machine's filter)
FILTER page 2: Data entry knob C (Not available on Grainer SRC machine's filter)
FILTER page 2: Data entry knob D (Not available on Grainer SRC machine's filter)
FILTER page 2: Data entry knob E (Not available on Grainer SRC machine's filter)
FILTER page 2: Data entry knob F (Not available on Grainer SRC machine's filter)
FILTER page 2: Data entry knob H (Not available on Grainer SRC machine's filter)

AMP: Attack Time
AMP: Hold Time
AMP: Decay Time
AMP: Sustain Level
AMP: Release Time
AMP: Overdrive
AMP: Pan
AMP: Volume

LFO1: Speed (available for LFO2/Mod Env)
LFO1: Multiplier (available for LFO2/Mod Env)
LFO1: Fade In/Out (available for LFO2/Mod Env)
LFO1: Waveform (available for LFO2/Mod Env)
LFO1: Start Phase (available for LFO2/Mod Env)
LFO1: Trig Mode (available for LFO2/Mod Env)
LFO1: Depth (available for LFO2/Mod Env)
LFO2: Speed (available for Mod Env)
LFO2: Multiplier (available for Mod Env)
LFO2: Fade In/Out (available for Mod Env)
LFO2: Waveform (available for Mod Env)
LFO2: Start Phase (available for Mod Env)
LFO2: Trig Mode (available for Mod Env)
LFO2: Depth (available for Mod Env)

FX LFO1: Speed (available for FX LFO2)
FX LFO1: Multiplier (available for FX LFO2)
FX LFO1: Fade In/Out (available for FX LFO2)
FX LFO1: Waveform (available for FX LFO2)
FX LFO1: Start Phase (available for FX LFO2)
FX LFO1: Trig Mode (available for FX LFO2)
FX LFO1: Depth (available for FX LFO2)
FX1: Data entry knob A (machine dependent, available for FX LFO 1/2)
FX1: Data entry knob B (machine dependent, available for FX LFO 1/2)
FX1: Data entry knob C (machine dependent, available for FX LFO 1/2)
FX1: Data entry knob D (machine dependent, available for FX LFO 1/2)
FX1: Data entry knob E (machine dependent, available for FX LFO 1/2)
FX1: Data entry knob F (machine dependent, available for FX LFO 1/2)
FX1: Data entry knob G (machine dependent, available for FX LFO 1/2)
FX1: Data entry knob H (machine dependent, available for FX LFO 1/2)
FX2: Data entry knob A (machine dependent, available for FX LFO 1/2)
FX2: Data entry knob B (machine dependent, available for FX LFO 1/2)
FX2: Data entry knob C (machine dependent, available for FX LFO 1/2)
FX2: Data entry knob D (machine dependent, available for FX LFO 1/2)
FX2: Data entry knob E (machine dependent, available for FX LFO 1/2)
FX2: Data entry knob F (machine dependent, available for FX LFO 1/2)
FX2: Data entry knob G (machine dependent, available for FX LFO 1/2)
FX2: Data entry knob H (machine dependent, available for FX LFO 1/2)

Routing: Output (available for FX LFO 1/2)
Routing: Send 1 Amount (available for FX LFO 1/2)
Routing: Send 2 Amount (available for FX LFO 1/2)
Routing: Send 3 Amount (available for FX LFO 1/2)

MIDI TRACKS

META: None

Routing: Output
Routing: Send 1 Amount
Routing: Send 2 Amount
Routing: Send 3 Amount

SRC: Pitch Bend
SRC: Aftertouch
SRC: Mod Wheel
SRC: Breath Controller

FX LFO1: Speed (available for FX LFO2)
FX LFO1: Multiplier (available for FX LFO2)
FX LFO1: Fade In/Out (available for FX LFO2)
FX LFO1: Waveform (available for FX LFO2)
FX LFO1: Start Phase (available for FX LFO2)
FX LFO1: Trig Mode (available for FX LFO2)
FX LFO1: Depth (available for FX LFO2)

FLTR/AMP: CC1–16 Values

BUS TRACKS

META: None

LFO1: Speed (available for LFO2)
LFO1: Multiplier (available for LFO2)
LFO1: Fade In/Out (available for LFO2)
LFO1: Waveform (available for LFO2)
LFO1: Start Phase (available for LFO2)
LFO1: Trig Mode (available for LFO2)
LFO1: Depth (available for LFO2)
FX1: Data entry knob A (machine dependent, available for LFO 1/2)
FX1: Data entry knob B (machine dependent, available for LFO 1/2)
FX1: Data entry knob C (machine dependent, available for LFO 1/2)
FX1: Data entry knob D (machine dependent, available for LFO 1/2)
FX1: Data entry knob E (machine dependent, available for LFO 1/2)
FX1: Data entry knob F (machine dependent, available for LFO 1/2)
FX1: Data entry knob G (machine dependent, available for LFO 1/2)
FX1: Data entry knob H (machine dependent, available for LFO 1/2)
FX2: Data entry knob A (machine dependent, available for LFO 1/2)
FX2: Data entry knob B (machine dependent, available for LFO 1/2)
FX2: Data entry knob C (machine dependent, available for LFO 1/2)
FX2: Data entry knob D (machine dependent, available for LFO 1/2)
FX2: Data entry knob E (machine dependent, available for LFO 1/2)
FX2: Data entry knob F (machine dependent, available for LFO 1/2)
FX2: Data entry knob G (machine dependent, available for LFO 1/2)
FX2: Data entry knob H (machine dependent, available for LFO 1/2)

Routing: Output (available for LFO 1/2)
Routing: Send 1 Amount (available for LFO 1/2)

Routing: Send 2 Amount (available for LFO 1/2)
Routing: Send 3 Amount (available for LFO 1/2)

SEND FX TRACKS

META: None

LFO1: Speed (available for LFO2)
LFO1: Multiplier (available for LFO2)
LFO1: Fade In/Out (available for LFO2)
LFO1: Waveform (available for LFO2)
LFO1: Start Phase (available for LFO2)
LFO1: Trig Mode (available for LFO2)
LFO1: Depth (available for LFO2)
FX1: Data entry knob A (machine dependent, available for LFO 1/2)
FX1: Data entry knob B (machine dependent, available for LFO 1/2)
FX1: Data entry knob C (machine dependent, available for LFO 1/2)
FX1: Data entry knob D (machine dependent, available for LFO 1/2)
FX1: Data entry knob E (machine dependent, available for LFO 1/2)
FX1: Data entry knob F (machine dependent, available for LFO 1/2)
FX1: Data entry knob G (machine dependent, available for LFO 1/2)
FX1: Data entry knob H (machine dependent, available for LFO 1/2)

Routing: Output (available for LFO 1/2)
Routing: Send 1 Amount (available for LFO 1/2)
Routing: Send 2 Amount (available for LFO 1/2)
Routing: Send 3 Amount (available for LFO 1/2)

MIX TRACK

META: None

LFO1: Speed (available for LFO2)
LFO1: Multiplier (available for LFO2)
LFO1: Fade In/Out (available for LFO2)
LFO1: Waveform (available for LFO2)
LFO1: Start Phase (available for LFO2)
LFO1: Trig Mode (available for LFO2)
LFO1: Depth (available for LFO2)

FX: Channel
FX: Data entry knob A (machine dependent, available for LFO 1/2)
FX: Data entry knob B (machine dependent, available for LFO 1/2)
FX: Data entry knob C (machine dependent, available for LFO 1/2)
FX: Data entry knob D (machine dependent, available for LFO 1/2)
FX: Data entry knob E (machine dependent, available for LFO 1/2)
FX: Data entry knob F (machine dependent, available for LFO 1/2)
FX: Data entry knob G (machine dependent, available for LFO 1/2)
FX: Data entry knob H (machine dependent, available for LFO 1/2)

Routing: Output (available for LFO 1/2)

APPENDIX C: KEYBOARD SCALES

The following are the selectable scales for the KEYBOARD mode. For more information, please see “8.5 THE [KEYBOARD]” on page 30,

- CHROMATIC
- IONIAN (MAJOR)
- DORIAN
- PHRYGIAN
- LYDIAN
- MIXOLYDIAN
- AEOLIAN (MINOR)
- LOCRIAN
- PENTATONIC MINOR
- PENTATONIC MAJOR
- MELODIC MINOR
- HARMONIC MINOR
- WHOLE TONE
- BLUES
- COMBO MINOR
- PERSIAN
- IWATO
- IN-SEN
- HIRAJOSHI
- PELOG
- PHRYGIAN DOMINANT
- WHOLE-HALF DIMINISHED
- HALF-WHOLE DIMINISHED
- SPANISH
- MAJOR LOCRIAN
- SUPER LOCRIAN
- DORIAN *b*2
- LYDIAN AUGMENTED
- LYDIAN DOMINANT
- DOUBLE HARMONIC MAJOR
- LYDIAN #2 #6
- ULTRAPHRYGIAN
- HUNGARIAN MINOR
- ORIENTAL
- IONIAN #2 #5
- LOCRIAN *bb*3 *bb*7

APPENDIX D: MIDI

This appendix lists the CC and NRPN specification for Tonverk.
* = Several of the Subtracks SRC machines' parameters are controlled using NRPN values.

D.1 CC VALUES AND PARAMETERS

CC MSB				
CC	**Audio tracks***	**Bus tracks**	**Send FX tracks**	**Mix track**
3	TRIG note	TRIG note	TRIG note	TRIG note
4	TRIG velocity	TRIG velocity	TRIG velocity	TRIG velocity
5	TRIG note length	TRIG note length	TRIG note length	TRIG note length
9	Portamento time			
10	AMP pan			
16	SRC 1 Data entry knob A (machine dependent)			In A level
17	SRC 1 Data entry knob B (machine dependent)			In A Pan
18	SRC 1 Data entry knob C (machine dependent)			In A routing destination
19	SRC 1 Data entry knob D (machine dependent)			
20	SRC 1 Data entry knob E (machine dependent)			In B level
21	SRC 1 Data entry knob F (machine dependent)			In B Pan
22	SRC 1 Data entry knob G (machine dependent)			In B routing destination
23	SRC 1 Data entry knob H (machine dependent)			
24	SRC 2 Data entry knob A (machine dependent)			
25	SRC 2 Data entry knob B (machine dependent)			
26	SRC 2 Data entry knob C (machine dependent)			
27	SRC 2 Data entry knob D (machine dependent)			
28	SRC 2 Data entry knob E (machine dependent)			
29	SRC 2 Data entry knob F (machine dependent)			
30	SRC 2 Data entry knob G (machine dependent)			
31	SRC 2 Data entry knob H (machine dependent)			
44	FX send amount 1	FX send amount 1		
45	FX send amount 2	FX send amount 2		
46	FX send amount 3	FX send amount 3		
47	FX routing destination	FX routing destination	FX routing destination	
48	FX 1 Data entry knob A (machine dependent)	FX 1 Data entry knob A (machine dependent)	FX 1 Data entry knob A (machine dependent)	FX 1 Data entry knob A (machine dependent)
49	FX 1 Data entry knob B (machine dependent)	FX 1 Data entry knob B (machine dependent)	FX 1 Data entry knob B (machine dependent)	FX 1 Data entry knob B (machine dependent)
50	FX 1 Data entry knob C (machine dependent)	FX 1 Data entry knob C (machine dependent)	FX 1 Data entry knob C (machine dependent)	FX 1 Data entry knob C (machine dependent)

CC MSB				
CC	**Audio tracks***	**Bus tracks**	**Send FX tracks**	**Mix track**
51	FX 1 Data entry knob D (machine dependent)	FX 1 Data entry knob D (machine dependent)	FX 1 Data entry knob D (machine dependent)	FX 1 Data entry knob D (machine dependent)
52	FX 1 Data entry knob E (machine dependent)	FX 1 Data entry knob E (machine dependent)	FX 1 Data entry knob E (machine dependent)	FX 1 Data entry knob E (machine dependent)
53	FX 1 Data entry knob F (machine dependent)	FX 1 Data entry knob F (machine dependent)	FX 1 Data entry knob F (machine dependent)	FX 1 Data entry knob F (machine dependent)
54	FX 1 Data entry knob G (machine dependent)	FX 1 Data entry knob G (machine dependent)	FX 1 Data entry knob G (machine dependent)	FX 1 Data entry knob G (machine dependent)
55	FX 1 Data entry knob H (machine dependent)	FX 1 Data entry knob H (machine dependent)	FX 1 Data entry knob H (machine dependent)	FX 1 Data entry knob H (machine dependent)
56	FX 2 Data entry knob A (machine dependent)	FX 2 Data entry knob A (machine dependent)		
57	FX 2 Data entry knob B (machine dependent)	FX 2 Data entry knob B (machine dependent)		
58	FX 2 Data entry knob C (machine dependent)	FX 2 Data entry knob C (machine dependent)		
59	FX 2 Data entry knob D (machine dependent)	FX 2 Data entry knob D (machine dependent)		
60	FX 2 Data entry knob E (machine dependent)	FX 2 Data entry knob E (machine dependent)		
61	FX 2 Data entry knob F (machine dependent)	FX 2 Data entry knob F (machine dependent)		
62	FX 2 Data entry knob G (machine dependent)	FX 2 Data entry knob G (machine dependent)		
63	FX 2 Data entry knob H (machine dependent)	FX 2 Data entry knob H (machine dependent)		
65	Portamento on/off			
70	FLTR Data entry knob A (SRC machine dependent)	FLTR low gain (Shape machine)	FLTR low gain (Shape machine)	
71	FLTR Data entry knob B (SRC machine dependent)	FLTR low frequency (Shape machine)	FLTR low frequency (Shape machine)	
72	FLTR Data entry knob C (SRC machine dependent)	FLTR high frequency (Shape machine)	FLTR high frequency (Shape machine)	
73	FLTR Data entry knob D (SRC machine dependent)	FLTR high gain (Shape machine)	FLTR high gain (Shape machine)	
74	FLTR Data entry knob E (SRC machine dependent)			
75	FLTR Data entry knob F (SRC machine dependent)			
76	FLTR Data entry knob G (SRC machine dependent)			
77	FLTR Data entry knob H (SRC machine dependent)			
78	FLTR base			
79	FLTR width			
80	FLTR stereo spread			
83	AMP attack	AMP attack (Shape machine)	AMP attack (Shape machine)	
84	AMP hold	AMP hold (Shape machine)	AMP hold (Shape machine)	
85	AMP decay	AMP decay (Shape machine)	AMP decay (Shape machine)	
86	AMP sustain	AMP sustain (Shape machine)	AMP sustain (Shape machine)	
87	AMP release	AMP release (Shape machine)	AMP release (Shape machine)	

CC MSB				
CC	**Audio tracks***	**Bus tracks**	**Send FX tracks**	**Mix track**
88	AMP overdrive			
89	AMP volume	AMP env depth (Shape machine)	AMP env depth (Shape machine)	
90		AMP stereo width (Shape machine)	AMP stereo width (Shape machine)	
94	Global mute	Global mute	Global mute	Global mute
95	Track level	Track level	Track level	Track level
102	VOICE LFO1 speed			
103	VOICE LFO1 multiplier			
104	VOICE LFO1 depth			
105	VOICE LFO2 speed			
106	VOICE LFO2 multiplier			
107	VOICE LFO2 depth			
110	MOD ENV depth			
111	FX LFO1 speed	FX LFO1 speed	FX LFO1 speed	FX LFO1 speed
112	FX LFO1 multiplier	FX LFO1 multiplier	FX LFO1 multiplier	FX LFO1 multiplier
113	FX LFO1 depth	FX LFO1 depth	FX LFO1 depth	FX LFO1 depth
114	FX LFO2 speed	FX LFO2 speed	FX LFO2 speed	FX LFO2 speed
115	FX LFO2 multiplier	FX LFO2 multiplier	FX LFO2 multiplier	FX LFO2 multiplier
116	FX LFO2 depth	FX LFO2 depth	FX LFO2 depth	FX LFO2 depth

D.2 NRPN VALUES AND PARAMETERS FOR AUDIO TRACKS

NRPN		
NRPN MSB	**NRPN LSB**	**Audio tracks***
0	1	VOICE LFO1 speed
0	2	VOICE LFO1 multiplier
0	3	VOICE LFO1 fade
0	5	VOICE LFO1 waveform
0	6	VOICE LFO1 start phase / VOICE LFO1 slew
0	7	VOICE LFO1 trig mode
0	8	VOICE LFO1 depth
0	9	VOICE LFO2 speed
0	10	VOICE LFO2 multiplier
0	11	VOICE LFO2 fade
0	13	VOICE LFO2 waveform
0	14	VOICE LFO2 start phase / VOICE LFO2 slew
0	15	VOICE LFO2 trig mode
0	16	VOICE LFO2 depth
0	17	MOD ENV attack
0	18	MOD ENV decay
0	19	MOD ENV sustain
0	20	MOD ENV release
0	21	MOD ENV reset
0	22	MOD ENV delay
0	24	MOD ENV depth
0	26	FX LFO1 speed

NRPN		
NRPN MSB	**NRPN LSB**	**Audio tracks***
0	27	FX LFO1 multiplier
0	28	FX LFO1 fade
0	30	FX LFO1 waveform
0	31	FX LFO1 start phase FX LFO1 slew
0	32	FX LFO1 trig mode
0	33	FX LFO1 depth
0	34	FX LFO2 speed
0	35	FX LFO2 multiplier
0	36	FX LFO2 fade
0	38	FX LFO2 waveform
0	39	FX LFO2 start phase / FX LFO2 slew
0	40	FX LFO2 trig mode
0	41	FX LFO2 depth
0	42	Retrig on/off
0	43	Retrig time
0	44	Retrig velocity
0	45	FLTR env reset
0	46	FLTR env delay
0	47	FLTR key tracking
0	48	AMP mode
0	49	AMP reset

D.3 NRPN VALUES AND PARAMETERS FOR THE SUBTRACKS SRC MACHINE

NRPN MSB 1–8 = values control parameters for the eight separate subtracks (1–8).

NRPN		
NRPN MSB	**NRPN LSB**	**Audio tracks using the Subtracks SRC machine**
1–8	16	SRC tune
1–8	17	SRC play mode
1–8	20	SRC start
1–8	21	SRC length
1–8	22	SRC loop point
1–8	45	FLTR env reset
1–8	46	FLTR env delay
1–8	48	AMP mode
1–8	49	AMP env reset
1–8	70	FLTR attack
1–8	71	FLTR decay
1–8	72	FLTR sustain
1–8	73	FLTR release
1–8	74	FLTR frequency
1–8	75	FLTR resonance
1–8	76	FLTR type
1–8	77	FLTR env depth

NRPN		
NRPN MSB	**NRPN LSB**	**Audio tracks using the Subtracks SRC machine**
1–8	78	FLTR base
1–8	79	FLTR width
1–8	80	FLTR frequency spread
1–8	83	AMP attack
1–8	84	AMP hold
1–8	85	AMP decay
1–8	86	AMP sustain
1–8	87	AMP release
1–8	88	AMP overdrive
1–8	10	AMP pan
1–8	89	AMP volume
1–8	102	VOICE LFO1 speed
1–8	103	VOICE LFO1 multiplier
1–8	104	VOICE LFO1 fade
1–8	106	VOICE LFO1 waveform
1–8	107	VOICE LFO1 start phase / VOICE LFO1 slew
1–8	108	VOICE LFO1 trig mode
1–8	109	VOICE LFO1 depth
1–8	110	VOICE LFO2 speed
1–8	111	VOICE LFO2 multiplier
1–8	112	VOICE LFO2 fade
1–8	114	VOICE LFO2 waveform
1–8	115	VOICE LFO2 start phase VOICE LFO2 slew
1–8	116	VOICE LFO2 trig mode
1–8	117	VOICE LFO2 depth
1–8	118	MOD ENV attack
1–8	119	MOD ENV decay
1–8	120	MOD ENV sustain
1–8	121	MOD ENV release
1–8	122	MOD ENV reset
1–8	123	MOD ENV delay
1–8	125	MOD ENV depth

APPENDIX E: SFZ SUPPORT

The primary and best-supported method of specifying multi-sampled instruments for the Multi Player machine and the sample sets for the Subtracks machine on Tonverk is the native mapping format, which is found in the .eldrum and .elmulti files included in the factory library.

However, a subset of the SFZ format can be loaded by Tonverk. This appendix describes the capabilities and limitations of that subset.

E.1 HEADERS

Tonverk supports the following headers. Note that all headers besides **<region>** are optional.

- **<control>**
- **<global>**
- **<master>**
- **<group>**
- **<region>**

All of the above, aside from **<control>**, support the same opcodes but have different scope and override semantics (see https://sfzformat.com/headers for more information on headers).

E.1.1 OTHER HEADERS

- **<curve>** headers are allowed to be present, but are ignored.
- **<effect>**, **<midi>**, and **<sample>** headers are not supported, and files containing them will fail to load.

E.2 CONTROL OPCODES

Under the **<control>** header, the following opcodes are supported:

- **default_path** sets the path where files are loaded relative to. Please note that the behavior of some players, which allows file-name prefixes in addition to distinct path elements, is not supported.
- **note_offset** transposes all regions by a number of semitones.
- **octave_offset** transposes all regions by a number of octaves.

For more information about opcodes, please see https://sfzformat.com/opcodes/

E.2.1 IGNORED CONTROL OPCODES

For convenience, the following opcodes are ignored and will not cause an error if they are present:

- **hint_load_method**
- **label_cc_***
- **set_cc_***

Any other opcodes provided under the **<control>** header will result in an error.

E.3 REGION OPCODES

Headers **<global>**, **<master>**, **<group>**, and **<region>** all support the same set of opcodes.

Pitch values can be specified as numeric MIDI key values or in IPN, where MIDI note 0 is called “C-1” (and consequently, middle C is C4).

E.3.1 REQUIRED OPCODES

A region (or a group, master, or global header preceding it) must minimally specify a sample (**sample=...**) and a pitch (via either **key=...** or **pitch_keycenter=...**). Regions that fail to meet this criterion will be ignored.

The **sample** opcode is a file path, relative to the location of the SFZ file. Use UNIX-style paths (with forward slashes) for best results.

Special rules for file names.

- Space (blank) characters are allowed.
- Equals (=) and balanced angle brackets (e.g. **My<Sample>.wav**) are not allowed.
- Comment-opening tokens (**//** or **/***) are forbidden.
- Any trailing blank characters are ignored.

The “root note” of the sample can be specified via **pitch_keycenter** (note that the special value **pitch_keycenter=sample** is not supported). If it is not provided, then the **key** opcode is required.

All other opcodes are optional.

E.3.2 ZONES

- **lokey** and **hikey** are processed and checked for overlap, but are not used internally. Instead, incoming notes are played using the key zone with the nearest root note.
- **lovel** and **hivel** define velocity layers. Up to 128 velocity layers are supported in each key zone.
- **lorand** and **hirand** enable random selection of samples within a velocity layer.

  Special considerations:

  - All regions within the same velocity layer must either specify **lorand** and **hirand**, or not.
  - All regions within the same velocity layer must specify equal-sized and non-overlapping ranges of the random space. For example, a velocity layer with 4 samples can be specified like this:

    <region> lorand=0.00 hirand=0.25 sample=MySample1.wav
    <region> lorand=0.25 hirand=0.50 sample=MySample2.wav
    <region> lorand=0.50 hirand=0.75 sample=MySample3.wav
    <region> lorand=0.75 hirand=1.00 sample=MySample4.wav
  - Random distribution is mutually exclusive with ordered round-robin.
- **seq_length** and **seq_position** enable ordered round-robin within a velocity layer.

  Special considerations:

  - All regions within the same velocity layer must either specify **seq_length** and **seq_position**, or not.
  - All regions within the same velocity layer must specify the same **seq_length**.
  - All regions within the same velocity layer must specify unique **seq_position** values in ascending order.
  - Ordered round-robin is mutually exclusive with random distribution.

E.3.3 PLAYBACK

Sample playback can be modified with the following opcodes:

- **offset** and **end** set the playback start and end points, respectively. They are integers measured in audio samples.
- **loop_start** and **loop_end** define the loop region, if any.

  Special considerations:

  - These opcodes can be spelled either with or without an underscore. If both are present, with-underscore overrides without-underscore.
  - Both are integers measured in audio samples.
  - If not present in the SFZ file, loop points can be read from the **SMPL** chunk of compatible WAV files.
  - The presence of one or both of these opcodes, or a loop region in the WAV file’s metadata, implies **loop_mode=loop_sustain** (but this can be overridden if **loop_mode=no_loop** also being present.)
- **loop_mode** controls both the state and behavior of looping.

  Special considerations:

  - This opcode can be spelled with or without an underscore. If both are present, with-underscore overrides without-underscore.
  - **loop_mode=one_shot** behaves identically to **loop_mode=no_loop**.
- **loop_crossfade** controls the duration of the crossfade at the end of each loop period. It is a floating-point number measured in seconds. Note that it cannot exceed the time between **offset** and **loop_start**, which both default to 0 if unset.

E.3.4 OTHER OPCODES

All other opcodes (including those relating to sound processing) are unsupported and will be ignored.

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