# drumDING

## Manual




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# Table of Contents


Table of Contents 2
Foreword 5
Safety Instructions 6
Overview 8
- Conventions Used in This Manual 8
- The drumDING Workflow and Structure 8
- Scope of Delivery 9
- Getting Started 9

Controls and Connections 10
- The Rear Panel / Connections 10
- The Analog Voice 12
  - The Routing Mixer 12
  - The Oscillator (VCO) 12
  - The Noise Generator (NOISE) 13
  - The Impulse Generator (CLICK) 13
  - The Filter (VCF) 13
  - The VCA 14
  - The Modulator 14
  - AUX IN 14
- The Sequencer Controls 15
  - Buttons 15
  - Display and Endless Encoders 18

Operating Concepts 19
- The drumDING Magic: From Analog to Digital 19
  - Sampling to a Track 19
  - Sampling to a Sample Slot 20
  - Sample Undo 20
- Copy and Paste 21
  - Copy and Paste within a Bank or Bar 21
  - Copy and Paste Across Banks or Bars 21
- Individual Sound Settings for Steps 22
  - Parameter Locks 22
  - ALT-Locks 22

Page Structure and Management Functions 23

General 23
Projects 24
Loading a Project 24
Project Settings 25
Project UTILITY Functions 25
Samples 26
Setting Gain 26
Sample UTILITY Functions 27
Exporting Samples 27
Importing Samples 27
Sample Autoload 28
Deleting Samples 28
Patterns 29
Pattern Settings 29
Pattern UTILITY Functions 30
Pattern CLEAR and Pattern INIT 30
Pattern Transfer 30
Tracks 31
Track Settings 31
Track UTILITY Functions 32
CLEAR – Clearing a Track 32
INIT – Initializing a Track 33
Master Effects 33
FX SETUP Pages 1 and 2: DELAY 1 and DELAY 2 33
FX SETUP Page 3: REVERB 35
Sound Parameters 36
TRIGGER 36
Page 1: TRIGGER 36
Page 2: REPEAT 37
TONE 38
Page 1: TONE 38
Page 2: ENV 39
FX 40
Page 1: MIX-FX 40
Page 2: FX 40
MOD 42
Page 1: LFO 42
Page 2: LFO 43

Page 3: VELOCITY 43
SYSTEM 45
Page 1 45
Page 2 46
MIDI Channels and Note Numbers 47
Setting the MIDI Channel and Note Number for the Analog Voice 47
Setting MIDI Channels and Note Numbers for the Tracks 47

# Foreword

Chances are, the drumDING is right in front of you now, and you probably want to dive in right away. Go ahead, that is exactly what we want too. And if you do not have one yet, we hope this manual gives you a good first look at everything the drumDING can do.

If you are already experienced with drum machines and sequencers, you will find a lot that feels familiar here. But also plenty that is new.

The drumDING is simple and intuitive to use. We put a lot of care into that during development. At the same time, the concept behind it is new. With some unconventional ideas, it takes its own approach to creating sounds and beats in many ways.

You get a well-rounded package: versatile analog sound generation, an effortless sampling workflow, and handy digital editing options. Add to that a flexible step sequencer with Parameter Locks and polymeter, plus a rich effects section. Bring your musical ideas to life, and move people, physically or emotionally.

Now, time to get started with the drumDING.

Your VERMONA crew from the
Elektroakustische Manufaktur, Erlbach

PS: We recommend that you take a look at this manual every now and then.

# Safety Instructions

Please take a moment to read this section before you get started. It will not take long, and afterward you will know exactly what matters for using the drumDING safely.

### Intended Use

The drumDING is an electronic musical instrument designed for use in dry environments. Operate it only with the power supply included in the box. It is intended for people with some experience in using drum machines and step sequencers, and it is not meant for children. Use it only for making music. Any other use falls outside what we built it for.

### WARNING – Risk of Electric Shock

Use only the included, CE-certified power supply (12 V DC/1 A). Do not operate the drumDING with a damaged power supply or power cable. Protect the power supply and the device from moisture, and never touch the power supply with wet hands. Unplug the power supply when you do not use the device for an extended period, and always before cleaning it.

### WARNING – Risk of Electric Shock from Opening the Housing

Do not open the housing of the drumDING. There are no parts inside that you need to service yourself. Repairs and maintenance are carried out only by VERMONA or authorized service partners. If the device shows visible damage, has been dropped, or has come into contact with liquid, disconnect it from the power supply right away and contact our service team before you switch it on again.

### CAUTION – Risk of Hearing Damage

The headphone output **[PHONES]** can deliver quite a bit of level. Your ears usually only warn you once the damage is already done, so set the volume low before you put on your headphones, and increase it slowly. If you notice ringing in your ears or a feeling of pressure, turn the volume down and take a break.

### CAUTION – Small Parts

The pre-installed SD card is a small part and can be swallowed. Please keep it away from children.

### NOTE – SD Card

The drumDING can handle you removing the SD card while it is running. The only time you should really avoid this is while a project is being saved. Just leave the card in place during that moment, or the project will likely be lost.

### NOTE – Location and Environment

You can set up the drumDING almost anywhere. It just does not care much for direct sunlight, blazing heat, Siberian cold, or moisture. Give it a normal spot in a room, studio, or on stage.

### NOTE – Cleaning

Unplug the power supply before cleaning. A dry or slightly damp cloth is all you need. Please leave solvents and abrasive cleaners in the kitchen.

### Disposal

The drumDING is built to last for a long time. If it ever breaks, a repair is likely possible and worth it. Please contact us before you consider throwing it away. We would love the chance to talk you out of it. But if you truly see no other way, current law requires you to treat the drumDING as electronic waste. That means it does not belong in your household trash. Instead, take it to a local collection point or back to a retailer.

# Overview

## Conventions Used in This Manual

So you can tell controls, printed values, and display content apart at a glance, this manual uses the following consistent notation styles:

- **[CONTROL]** – bold, capital letters, in square brackets. Refers to a physical button, knob, or switch on the drumDING, whether in the synthesizer or the sequencer part. Example: "Use **[FREQUENCY]** to set the frequency" or "Press the **[VOICE]** button to …".
- **VALUE** or **SECTION** – bold, capital letters, without brackets. Refers to a printed setting or label on a control, or to the name of a section. Example: "Set **[TYPE]** to **LP** in the **VCF** section".
- Display content – shown as it appears on the display. This applies to both individual values and Page titles. Example: "Set `SOURCE` to `A01`" or "Use the **[TONE]** button to reach the `TONE` and `ENV` *Pages*".
- *drumDING-specific term* – (italic). Refers to a term specific to the drumDING that we introduced for this manual, without it being printed on the device or shown on the display. This applies in particular to collective names for a function that relates to several, differently labeled controls, as well as to structural terms. Example: "The *Level/Routing* knob sets the level and routing of a sound source".

## The drumDING Workflow and Structure

Compared to classic drum machines and percussion synthesizers, the drumDING follows a unique concept of its own. That is exactly where its strength lies, but it also asks you to rethink a few things.

Instead of dedicated instruments for kick, snare, hi-hats, and so on, the drumDING gives you a single sound generation. It is extremely flexible and covers the full range of synth drums and percussion. Even better, you can explore the space in between, where one sound blends seamlessly into the next.

Of course, a beat needs a full drum kit, not just a single instrument, no matter how capable the sound generation is. This is where the sample engine comes in. You record the sounds you create with the analog sound generation internally, and store them in 32 slots. The sampling process itself is very simple and never gets in the way of your creative flow. You do not need to fine-tune start or end points, normalize levels, or do any other editing.

You can play the samples you create with the six-track sequencer. On top of that, you can further shape and modulate their sound digitally.

All drumDING data is stored on a SD card. This makes it easy to share your projects, use your samples elsewhere, or load your own samples into the drumDING.

One SD card can hold up to 64 projects. Each project, in turn, contains up to 64 patterns, one pattern chain, and 32 samples.

## Scope of Delivery

The box contains the following items:

- the drumDING
- a power supply, 12 V DC/1 A
- an SD card (already inserted in the drumDING)
- the drumDING Compass

## Getting Started

Power is supplied through the included power supply.

1. Connect the included power supply to a power outlet and to the **[DC 12 V/1 A]** input on the drumDING.
2. Connect the **[MAIN OUT]** stereo outputs on the rear panel to a mixer or audio interface, or connect headphones to the **[PHONES]** jack. Turn the **[MASTER]** or **[PHONES]** knob, depending on which output you use, fully counterclockwise.
3. Switch on the drumDING using the power switch on the rear panel, and slowly turn up the **[MASTER]** or **[PHONES]** knob.

# Controls and Connections

The top panel of the drumDING is divided into two areas. The upper part houses the *analog voice*. Its design deliberately recalls our analog drum synthesizer, the DRM1.

The lower part holds the buttons, endless encoders, and display of the sequencer.

All connections are located on the rear panel of the drumDING.

## The Rear Panel / Connections

### MAIN OUT (LEFT / RIGHT)

The **[LEFT]** and **[RIGHT]** jack outputs form the main output of the drumDING. They are balanced. You set the output level of **[MAIN OUT]** with the **[MASTER]** knob in the upper right of the *analog voice*.

### PHONES

Connect your headphones here. You can set the volume of the headphone output independently of **[MAIN OUT]** with the **[PHONES]** knob.

The **[PHONES]** output carries the same signal as **[MAIN OUT]**.

### OUTPUT 1 – 6

Each track of the drumDING has its own mono output. Tracks that use their individual output are automatically disconnected from **[MAIN OUT]**. The individual outputs are unbalanced.

### VOICE

This mono output carries the unprocessed signal of the *analog voice*.

### CONTROL INPUT

**[INPUT]** is a CV input. In the current version 1.0, this jack has no function yet.

### TRIG OUT

**[TRIG OUT]** sends an analog trigger pulse whenever the *analog voice* is triggered.

### INPUT (EXT)

The external input **[EXT]** is balanced. Connect an external sound source here. You can bring it into the sound generation using the **[AUX IN]** knob of the *analog voice*.

### MIDI IN / OUT

Use the **[MIDI IN]** and **[MIDI OUT]** DIN jacks to integrate the drumDING into your MIDI setup.

### USB

As an alternative to the DIN jacks, MIDI is also available through the USB-B port.

### SD CARD

The SD card stores your projects along with their samples. Any SD card you use with the drumDING must be formatted as FAT32.

### DC 12 V/1 A and POWER

Connect the included power supply here, and use this switch to turn the drumDING on or off.

# The Analog Voice

The *analog voice* is the source of every sound in the drumDING. It is specifically designed to create percussive sounds.

You build your sounds from the **VCO**, **NOISE**, and **CLICK** components. You can mix and filter these signals as you like. You can also bring in external sound sources or already sampled sounds through **[AUX IN]**, which lets you expand the range of sounds even further.

- *NOTE* You may learn more by trying than by reading. If you already know your way around analog or subtractive sound generation, you will find your way here without further explanation. Just keep in mind how the *ROUTING MIXER* works with its bipolar knobs. It behaves a little differently than you might expect.

You trigger the sound of the *analog voice* with the **[VOICE]** button, in the upper left of the sequencer section.

## The Routing Mixer

The *ROUTING MIXER* is the heart of the *analog voice*. With the orange knobs, you set the volume of the four sound sources **CLICK**, **NOISE**, **VCO**, and **AUX IN**, and at the same time you determine their signal path. Unlike on a conventional audio mixer, each signal is at zero when its knob is in the center position. Turn a knob to the left, and the signal goes into the filter at the corresponding level. Turn it to the right, and the signal goes directly to the **[VOICE]** output and into the sample engine.

Once you have gotten used to this behavior, you can work with it quickly and precisely, making fast sound changes.

## The Oscillator (VCO)

The VCO forms the tonal basis for many types of drums.

Use the **[WAVE]** knob to continuously shape its waveform, from a sine wave (fully counterclockwise) to a square wave (fully clockwise).

Use **[PITCH]** to set the pitch of the oscillator. To help you control its wide range, there are two frequency ranges. Use the **[LO-HI]** switch to select between them. The **LO** setting works well for bass drums, low toms, and deep percussion. The **HI** setting suits snares, hi-hats, cymbals, and higher percussion.

- *NOTE* Switching between **LO** and **HI** is not a hard boundary. Even in **HI**, you can use **[PITCH]** to reach lower frequency ranges as well.

The **[BEND]** and **[TIME]** knobs form a simple envelope. Use **[TIME]** to set its duration, and **[BEND]** to set the depth of modulation applied to the pitch. **[BEND]** is bipolar, meaning there is no modulation when the knob is in the center position. If you turn the knob to the right,

the pitch is modulated downward, from high to low. If you turn the knob to the left, the pitch is modulated upward, from low to high.

## The Noise Generator (NOISE)

All controls for the noise generator are located in the **ROUTING MIXER**. Besides the orange *Level/Routing* knob **[NOISE]**, it has a switch with the **PINK** and **BLUE** settings for the tone color, and the **[DECAY]** knob for the decay time.

In the **PINK** setting, the noise generator produces pink noise, which emphasizes lower frequencies. In the **BLUE** setting, it produces blue noise, which emphasizes higher frequencies.

## The Impulse Generator (CLICK)

The controls for the impulse generator are also located in the **ROUTING MIXER**. It creates one or more needle pulses. These are available as an audio signal, and at the same time they trigger the decay envelope of the noise generator.

Use **[STYLE]** to set the number and behavior of the pulses. In the center position, it creates exactly one pulse. If you mix this into a tonal signal, the sound becomes punchier and cuts through better.

If you turn **[STYLE]** to the left from the center position, you increase both the number of pulses and the spacing between them. At first, the pulse feels wider, until the individual pulses separate and become audible as distinct clicks.

If you turn **[STYLE]** to the right from the center position, it creates exactly four individual pulses. The further you turn the knob to the right, the greater the spacing between the pulses. In addition, the fourth pulse extends the decay envelope of the noise generator by a fixed amount.

## The Filter (VCF)

The filter of the *analog voice* processes the internal sound sources as well as the signal fed in through **[AUX IN]**. With high **[RESONANCE]** settings, you can also use the filter itself to generate a tone.

Use the **[TYPE]** knob to continuously adjust the filter character between low-pass (**LP**) at full counterclockwise, band-pass (**BP**) at the center position, and high-pass (**HP**) at full clockwise.

Besides the filter type, **[CUTOFF]** and **[RESONANCE]** have the biggest impact on the sound. Use **[CUTOFF]** to set the cutoff frequency, and **[RESONANCE]** to set the amount of feedback.

At high resonance values, you can excite the filter into self-oscillation by triggering it from one of the internal sound sources (VCO, noise generator, or impulse generator), and use it as an oscillator. To do this, simply turn the corresponding *Level/Routing* knob to the left, toward VCF.

So far, we have always talked about a single filter. That is a bit of an understatement, because the filter section actually consists of two filters. The second filter is tuned a fifth higher than the main filter. You activate it by switching the toggle between **[CUTOFF]** and **[RESONANCE]** to the right, into the **5TH** position.

The additional fifth filter makes the most sense with high **[RESONANCE]** settings. Just try it out. You will likely find interesting sounds very quickly that would not be possible with just one filter.

The filter section has an envelope made up of the **[BEND]** and **[TIME]** knobs. It affects the cutoff frequency and works exactly the same way as the equivalent function of the **VCO** (→ The Oscillator (VCO)).

## The VCA

The output of the filter is routed through its own VCA. It has a decay envelope, and you set the decay time with the **[DECAY]** knob.

## The Modulator

The modulator is an LFO with a triangle waveform. You can use it to modulate either the pitch of the oscillator (**[PITCH]**) or the filter frequency (**[CUTOFF]**).

Use the **[FREQUENCY]** knob to set the modulation rate, in a range from 2 seconds up to about 1 kHz.

Use the **[INT]** knob to set both the modulation target and its depth. In the center position, there is no modulation. Turn it to the left from there, and it modulates the pitch of the oscillator. Turn **[INT]** to the right from the center, and it modulates the filter frequency.

- *NOTE* The modulator restarts (resets) with every trigger pulse. The waveform always starts at the upper peak of the triangle wave.

## AUX IN

Use the **[AUX IN]** knob in the **ROUTING MIXER** to feed additional audio signals into the *analog voice*.

By default, the input **[IN]** is routed to this knob. Just like with the internal sound sources, you can use the **[AUX IN]** *Level*/*Routing* knob to send this signal through the filter, or directly to the output, or into the sample engine.

- *NOTE* The **[TRIG OUT]** output sends a trigger pulse whenever the *analog voice* is triggered. So if you want to bring an external sound source, such as a modular system, into your sampling process, you can use this to trigger your external sounds with precise timing.

# The Sequencer Controls

The lower part of the drumDING is defined by the buttons, the five endless encoders, and the display. Together, they give you control over the sequencer functions.

## Buttons

### Section Buttons

Use the *Section Buttons* to reach the *Pages* for the different areas of the drumDING.

- **[SYSTEM]**: Here you find the global settings for the drumDING (→ SYSTEM).
- **[PROJECT]**: Here you find the settings for the active project, and you can load existing projects (→ Projects).
- **[CHAIN]**: Here you can chain patterns to play them one after another.
- **[PATTERN]**: Here you find the settings for the active pattern, and you can switch between patterns (→ Patterns).
- **[FX SETUP]**: Here you find the settings for the master effects (→ Master Effects).
- **[TRACK]**: Here you find the settings for the current track (→ Tracks).

### Sound Parameter Buttons

Use the *Sound Parameter Buttons* (→ Sound Parameters) to reach *Pages* with settings that shape the sound of the sample. They apply to the active track.

- **[TRIGGER]**: The parameters on this Page determine how the steps trigger the sample.
- **[TONE]**: The parameters on this Page affect the sound of the sample, or the sample itself.
- **[FX]**: Here you find the parameters for the insert effect and send levels for the master effects.
- **[MOD]**: Here you find settings for the LFO and velocity.

### VOICE

Use the **[VOICE]** button to trigger the *analog voice*. At the same time, a trigger signal is sent out at the **[TRIG OUT]** jack.

Press **[SHIFT]** + **[VOICE]** to reach the setup *Page* for the *analog voice*. Here you can set the source for **[AUX IN]**, and use the **[LEVEL]** knob to set the volume of the *analog voice*.

### Track Select Buttons (TRACK 1–6)

Use the **[TRACK1]** to **[TRACK6]** buttons to select the active track. Combined with **[MUTE]** or **[SHIFT]** + **[MUTE]**, you mute or solo the corresponding track.

## AUDITION

Use the **[AUDITION]** button to enable playback of a track's assigned sample whenever you press a *Track Select Button* (the red LED lights up).

Press **[SHIFT]** + **[AUDITION]** to enable the PFL function for the *analog voice* (the green LED lights up). You then hear its audio signal only through the **[PHONES]** headphone output. At the same time, it is disconnected from **[MAIN OUT]**.

## MUTE

Use **[MUTE]** to mute one or more tracks. Hold **[MUTE]** and press one or more *Track Select Buttons* at the same time. You can recognize muted tracks by a steady, gentle blinking of the green LED on the *Track Select Button*.

Once you mute at least one track, the green LED on the **[MUTE]** button blinks steadily as well.

Press **[SHIFT]** + **[MUTE]** + *Track Select Button* to solo a track. All other tracks are then muted.

## SAMPLE

Use the **[SAMPLE]** button to open the corresponding SAMPLE *Page*. Here you get access to the project's 32 *sample slots*.

**[SAMPLE]** is also used to start the sampling process, which turns the sound of the *analog voice* into a sample (→ Sampling to a Track and Sampling to a Sample Slot).

## SHIFT

**[SHIFT]** always works together with another button. It gives you access to additional functions and *Pages*. These functions are labeled in orange on the top panel of the drumDING.

## UTILITY

Use the **[UTILITY]** button to reach context-sensitive Management Functions for certain areas.

## ALT

Use **[ALT]** to define and set steps with what we call *ALT Locks*. These are *Parameter Locks* that apply to several steps at the same time (→ ALT-Locks).

### PLAY / STOP

Use this to start or stop the sequencer.

Press **[MUTE]** + **[PLAY / STOP]** to immediately cut off any lingering effects (delays and reverb).

If you press **[SHIFT]** + **[PLAY / STOP]** while the sequencer is running, you pause playback. Press **[PLAY / STOP]** again, and it resumes from the position where you paused it.

If you press **[ALT]** + **[PLAY / STOP]** while the sequencer is running, it triggers a reset. Every track then starts again from its first step.

### RECORD

Use this to enable the sequencer's recording function. With **[AUDITION]** switched on at the same time, you can play a rhythm live using the *Track Select Buttons*.

Press **[SHIFT]** + **[RECORD]** to reach the `REC SETUP` *Page*. Here you can set the volume of the metronome.

### FILL

While the sequencer is running, hold the **[FILL]** button to jump into a previously defined pattern for as long as you hold it (→ FILL or → FILL).

### LOCK

Use this to lock the current settings. While **[LOCK]** is active (the red LED lights up), any changes to the settings are held in a temporary buffer. The changed values only take effect once you deactivate **[LOCK]**.

Press **[SHIFT]** + **[LOCK]** to activate the *TEMP* function (the green LED lights up). It works exactly the opposite way to **[LOCK]**. Any settings you change take effect immediately, but are not stored permanently. As soon as you deactivate *TEMP* again, the changes are discarded.

### Step Buttons

As long as a *Sound Parameter Button*, **[TRACK]**, or **[FX SETUP]** is active, you use the *Step Buttons* to set steps for the active track.

On the **[PATTERN]**, **[PROJECT]**, **[CHAIN]**, or **[SAMPLE]** *Pages*, the *Step Buttons* represent the storage slots for patterns, projects, or samples.

### Bank Buttons A–D

For patterns longer than 16 steps, use the *Bank Buttons* to access additional steps or bars.

For patterns, projects, and samples, you use them to select additional storage banks.

## Display and Endless Encoders

### LEVEL

Use the orange **[LEVEL]** knob to set the volume for the current track. The volume is shown as a bar in the upper right third of the display.

The knob also has a push function. Use it for quick access to the *MUTE* function, muting or unmuting the current track.

Press **[SHIFT]** + **[LEVEL]** to solo the current track (→ MUTE).

Hold **[SHIFT]** and turn **[LEVEL]** to adjust the volume of all other tracks at once. Their volume ratio to each other stays the same.

### Display and Encoders E–H

The upper third of the display usually shows general information, such as the current pattern, the name of the current *Page*, the *Page indicator*, and the volume of the current track.

The lower third usually shows up to four parameters side by side, along with their values. You adjust these using the **[E]**, **[F]**, **[G]**, and **[H]** knobs. If a value is shown underlined on the display, you can make further changes using the push function of the corresponding knob.

Each *Section Button* or *Sound Parameter Button* gives you access to up to four *Pages*, shown by the *Page indicator*. The active *Page* is shown as a filled rectangle, and the other available *Pages* as outlined rectangles. Press the button repeatedly to page through them.

# Operating Concepts

## The drumDING Magic: From Analog to Digital

Once you have created a drum sound with the *analog voice*, you first need to turn it into a sample. The six tracks of the drumDING always work with samples, not directly with the analog sound.

The sampling process itself is intuitive and needs no presets or follow-up editing. The sampling process itself is intuitive, without the need for complex setup or editing before and afterward. You can start it any time, even while the sequencer is running. There will not be any dropouts or annoying artifacts.

This lets you shape the right sounds with the *analog voice* step by step, while you build up your beat at the same time.

There are two ways to turn an analog sound into a sample:

- You sample directly to one of the six tracks.
- You sample to one of the 32 *sample slots* in your active project.

Below, we describe both approaches and their respective advantages.

### Sampling to a Track

No matter which *Page* you are currently on, sampling directly to a track always works. That is the big advantage of this approach: you can start the sampling process at any time, without the need to switch to a different *Page*.

1. Press and hold the **[SAMPLE]** button. The yellow LED on the button lights up.
2. Keep holding **[SAMPLE]**, and at the same time press a *Track Select Button* **[TRACK1]** to **[TRACK6]**.

Done.

Once you have started the sampling process, you can release both buttons. The yellow LED on the **[SAMPLE]** button turns off once the sample has been created.

The drumDING automatically switches to the `TONE` or `ENV` *Page*, and you can start setting steps right away.

## Sampling to a Sample Slot

Each project can hold up to 32 samples. You can sample directly to one of these slots. Here is how:

1. Press the **[SAMPLE]** button to open the SAMPLE *Page*. The yellow LED on the button lights up.
2. Press and hold **[SAMPLE]**.
3. At the same time, press a *Step Button* **[1]** to **[16]**. The Step Buttons represent the *sample slots*. You have access to 16 slots each in banks **[A]** and **[B]**.

Done.

Once you have started the sampling process, you can release both buttons. The green LED on the selected *Step Button* lights up once the sample has been created.

You might be wondering how you can spread 32 samples across six tracks.

Each track has a SOURCE parameter on the TONE *Page*. This is where you assign a *sample slot* to the track.

If you sample directly to a track, as described in the previous section, the drumDING actually writes to that track's assigned sample slot (SOURCE).

By default, **[TRACK1]** through **[TRACK6]** are set to *sample slots* 1 through 6.

## Sample Undo

If you sample a sound to a slot that already holds a sample, it simply gets overwritten. This lets you make quick changes to the *analog voice*, sample the sound again, and refine it step by step within the full mix.

If you accidentally overwrite a *sample slot,* you can undo the last sampling action. Here is how:

1. Press the **[SAMPLE]** button to open the SAMPLE *Page*. The yellow LED on the button lights up.
2. Press **[SHIFT]** + **[SAMPLE]**.

# Copy and Paste

You can copy patterns, samples, and steps. For steps, this only makes sense when they have different sound parameter settings than the track (→ Individual Sound Settings for Steps). The procedure is always the same. The active Page decides what gets copied.

- The SAMPLE *Page* is active: you copy samples.
- The PATTERN *Page* is active: you copy patterns.
- The FX SETUP or TRACK *Page*, or a *Sound Parameter Page* for **[TRIGGER]**, **[TONE]**, **[FX]**, or **[MOD]**, is active: you copy steps.

## Copy and Paste within a Bank or Bar

1. Press and hold the *Step Button* **[1]** to **[16]** for the slot or step you want to copy, until CP appears in the upper line of the display.
2. Keep holding the *Step Button*. At the same time, press another *Step Button* for the slot or position where you want to paste the content. When its yellow LED briefly blinks, the copy process is complete.

As long as you keep holding the source *Step Button* and CP is shown on the display, the content stays in the clipboard. You can paste it to several slots or positions, one after another.

- *NOTE* Unlike copying patterns or steps, copying samples needs confirmation. The display shows a corresponding prompt. Press the **[E]** knob to cancel, or press the **[H]** knob to confirm.

## Copy and Paste Across Banks or Bars

The steps described above work for copying and pasting within the same bank or bar. If you want to paste the content into a different bank or bar, you first need to hand it over to that bank or bar:

1. Press and hold the *Step Button* **[1]** to **[16]** for the slot or step you want to copy, until CP appears in the upper line of the display.
2. Keep holding the *Step Button*. At the same time, press a *Bank Button* **[A]** to **[D]** for the bank you want to hand the content over to. The drumDING automatically switches to that bank or bar. You can now release the *Step Button*.
3. Keep holding the *Bank Button*. At the same time, press the *Step Button* for the slot or position where you want to paste the content. When its yellow LED briefly blinks, the copy process is complete.

# Individual Sound Settings for Steps

The parameters on the *Pages* you reach through the *Sound Parameter Buttons* **[TRIGGER]**, **[TONE]**, **[FX]**, and **[MOD]** apply to the currently selected track by default. However, you can also set different values for individual steps. This allows you to make every step of a track sound completely different.

## Parameter Locks

With *Parameter Locks*, individual steps can have their own, different sound parameter settings.

1. Press and hold the *Step Button* **[1]** to **[16]** you want to assign individual sound parameters to, until `CP` appears in the upper line of the display.
2. Change one or more sound parameters while you keep holding the *Step Button*. The red LED on the *Step Button* lights up as soon as a step contains *Parameter Locks*.

   • *NOTE* No rule without exception: the `SYNC` parameter on the `LFO` *Page* always applies to the whole track. You cannot set it as a *Parameter Lock*.

## ALT-Locks

With *ALT-Locks*, you can apply sound settings that differ from the track to several steps at the same time.

1. Press and hold the **[ALT]** button until `CP` appears in the upper line of the display.
2. Change one or more sound parameters while you keep holding the **[ALT]** button.
3. Press **[ALT]** + *Step Button* **[1]** to **[16]** to set steps that get these alternative sound properties. *ALT-Locks* are shown by the green LED on the *Step Button*.

You can also perform steps 1/2 and 3 in reverse order.

# Page Structure and Management Functions

## General

We deliberately avoid terms like “menu” or “menu structure” in the context of the drumDING. Instead, the drumDING has buttons that give you access to *Pages*. The following basic rules apply:

- Every button that opens *Pages* gives you access to up to four *Pages*.
- You page through the *Pages* by pressing the same button repeatedly.
- Each *Page* gives you access to up to four parameters.
- The four parameters are always linked to the four **[E]**, **[F]**, **[G]**, and **[H]** knobs.
- If a parameter value is shown underlined on the display, for example `133.0`, the knob’s push function is also relevant, either for changing the value or for activating a function.

# Projects

The top storage level in the drumDING is a project. It stores all data, samples, and patterns.

On the PROJECT *Page*, you set the parameters for the current project, and you can load, save, delete, and initialize projects. Press the **[PROJECT]** button to open it.

- *NOTE* When you switch on the drumDING, it creates a new project in temporary memory and shows it on the display as PROJECT NEW. You can start creating sounds and beats right away. However, the PROJECT NEW project is not saved automatically. You need to save it yourself to one of the 64 slots if you want to use it again later.

## Loading a Project

When you load a project, it is copied from the SD card into temporary memory. The fastest way to load a project is directly from the PROJECT *Page*:

1. Press the **[PROJECT]** button to open the PROJECT *Page*.
2. Use the *Bank Buttons* **[A]** to **[D]** to select the bank your project is stored in.
3. Use the *Step Buttons* **[1]** to **[16]** to select the project you want to load.
4. Press the **[H]** knob to confirm loading.

The LEDs on the *Bank* and *Step Buttons* mean the following:

- red: shows the active bank or the active project.
- green: shows banks or slots that are in use.

- *NOTE* If you select an empty slot with the *Bank* and *Step Buttons*, you cannot confirm loading with the **[H]** knob.

## Project Settings

On the PROJECT *Page*, you can make the following settings:

### TEMPO

*Range:* *20.0 … 300.0*
*Default:* *133.0*

Use the **[E]** knob to set the tempo of your project. The underlined part of the value shows whether you are adjusting the tempo in whole or in 1/10 BPM steps. Use the push function of the **[E]** knob to switch between these ranges.

If you have synced your drumDING to an external source via MIDI, you cannot set the tempo on the drumDING itself. The display then shows EXT instead of the tempo.

### SWING

*Range:* *0 … 23*
*Default:* *0*

Use the **[F]** knob to set the swing of your project in micro-steps. Every even 16th note is shifted to the right by the given amount.

### FILL

*Range:* *A01 … D16*
*Default:* *A16*

Use the **[G]** knob to set a *FILL* pattern for the project. As long as you hold the **[FILL]** button, the sequencer jumps into that pattern.

## Project UTILITY Functions

For projects, you have the management functions LOAD, SAVE, DELETE, and INIT available.

There are two ways to open them:

1. Press the **[UTILITY]** button.
2. Use the *Bank* and *Step Buttons* to select a project slot, then press the **[F]** knob to select the UTILITY option.

Except for INIT, the *UTILITY functions* always apply to a project slot. This means you always need to select a project slot with the *Bank* and *Step Buttons* to open them.

After you switch on the drumDING, or after you initialize it, there is no project in temporary memory. In this state, pressing the **[UTILITY]** button (on the PROJECT *Page*) prompts you to select a project slot first (<select slot>).

Depending on whether the slot you selected already contains a project, the LOAD and DELETE functions may not be available. In that case, they are shown dimmed.

3. Press one of the knobs **[E]**, **[F]**, **[G]**, or **[H]** to choose the corresponding function:

- **[E]** – LOAD: Loads the selected project (identical to the function described in → Loading a Project).
- **[F]** – SAVE: Writes the content of temporary memory to the selected slot on the SD card.
- **[G]** – DELETE: Deletes the selected project from the SD card.
- **[H]** – INIT: Clears temporary memory.

Except for SAVE, these functions run immediately. Saving a project needs an additional confirmation by pressing the **[H]** knob.

Press the **[E]** knob to cancel saving the project.

# Samples

Each project can hold up to 32 samples in two banks of 16 slots each. Use the *Bank Buttons* **[A]** and **[B]** to access the banks, and the *Step Buttons* **[1]** to **[16]** to access the slots. If a slot contains a sample, pressing its *Step Button* plays that sample.

Red LEDs show the currently selected sample or bank. Green LEDs show *sample slots* or banks that are in use.

On the SAMPLE *Page*, you can set individual gain levels for each sample, and use **[UTILITY]** to run management functions.

## Setting Gain

Sometimes a certain kind of sound is a bit too loud or too quiet. Here you can adjust the gain for each sample, in a range from −12 dB to +12 dB:

1. Press the **[SAMPLE]** button to open the SAMPLE *Page*.
2. Use the *Bank* and *Step Buttons* to select a slot that contains a sample.
3. Use the **[E]** knob to set the value you want, in decibel steps.

## Sample UTILITY Functions

For samples, you have management functions for import, export, autoload, and delete available.

### Exporting Samples

When you save a project (→ Project UTILITY Functions), all its samples are automatically written to a corresponding project folder on the SD card.

However, you can also export samples to a general sample folder on the SD card, which we call the *sample pool* (and import them back into a project from there).

The *sample pool* holds a total of 64 slots, *A1* to *D16*.

Here is how:

1. Press the **[SAMPLE]** button to open the SAMPLE *Page*.
2. Use the *Bank* and *Step Buttons* to select the sample you want to export to the *sample pool*.
3. Press the **[UTILITY]** button to open the sample management options.
4. Use the push function of the **[E]** knob to open the export function.
5. You are now prompted to use the *Bank* and *Step Buttons* to select the slot where you want to store the sample in the *sample pool*.
6. Press the **[H]** knob (YES) to confirm the export, or press the **[E]** knob (CANCEL) to cancel it.

*! ATTENTION* If you select a slot in the *sample pool* that already contains a sample, the previous sample on the SD card gets overwritten.

### Importing Samples

You can import samples from the *sample pool* into any of the 64 projects and store them in one of the 32 *sample slots* there. Here is how:

1. Press the **[SAMPLE]** button to open the SAMPLE *Page*.
2. Use the *Bank* and *Step Buttons* to select the sample slot where you want to import a sample from the *sample pool*.
3. Press the **[UTILITY]** button to open the sample management options.
4. Use the push function of the **[E]** knob to open the import function.
5. Use the *Bank* and *Step Buttons* to select a sample from the *sample pool*.
6. Press the **[H]** knob (YES) to confirm the import, or press the **[E]** knob (CANCEL) to cancel it.

   *! ATTENTION* If you select a sample slot for the import that already contains a sample, the previous sample gets overwritten.

However, the sample in the project folder on the SD card is only finally overwritten once you save the project (→ Project UTILITY Functions).

## Sample Autoload

Similar to the *sample pool*, you can save samples from a project to the *autoload folder* on the SD card. Samples in this folder are loaded automatically when you switch on the drumDING.

The *autoload folder* can hold a maximum of 32 samples.

- *NOTE* This function is handy if you never want to start a new project without your favorite sounds. However, every sample that gets loaded automatically adds to the startup time until the drumDING is ready to use.

Here is how to save a sample from a project to the *autoload folder*:

1. Press the **[SAMPLE]** button to open the SAMPLE *Page*.
2. Use the *Bank* and *Step Buttons* to select the sample you want to save to the *autoload folder*.
3. Press the **[UTILITY]** button to open the sample management functions.
4. Use the push function of the **[G]** knob to open the autoload function (AUTOLD).
5. Use the *Bank* and *Step Buttons* (A1–B16) to select the slot in the *autoload folder* where you want to save the sample. This is also the slot it gets loaded into when you switch on the drumDING.
6. Press the **[H]** knob (YES) to confirm saving to the *autoload folder*, or press the **[E]** knob (CANCEL) to cancel it.

## Deleting Samples

Here is how to delete a sample from the active project:

1. Press the **[SAMPLE]** button to open the SAMPLE *Page*.
2. Use the *Bank* and *Step Buttons* to select the sample you want to delete.
3. Press the **[UTILITY]** button to open the sample management functions.
4. Use the push function of the **[H]** knob to run the delete function (DELETE).
5. Press the **[H]** knob (YES) to confirm the deletion, or press the **[E]** knob (CANCEL) to cancel it.

# Patterns

Each project can hold up to 64 patterns. They are organized in four banks of 16 slots each. Use the *Bank Buttons* **[A]** to **[D]** to access the banks, and the *Step Buttons* **[1]** to **[16]** to open the patterns.

Just like with projects, the red LEDs on the buttons show the active bank or the active pattern. The green LEDs show banks and patterns that are in use.

The active pattern is also shown on the left side of the upper line of the display.

Press the **[PATTERN]** button to reach the PATTERN *Page*. Here you can change settings for the active pattern, and use **[UTILITY]** to run the management functions.

If the sequencer is stopped, switching between patterns happens immediately when you press a *Step Button*. If the sequencer is running, switching happens only after the active pattern finishes, based on the length set for track 1.

## Pattern Settings

On the PATTERN *Page*, you can make the following settings:

### LENGTH

*Range:* *1 … 64*
*Default:* *16*

Turn the **[E]** knob to set the length of the pattern. If you hold **[SHIFT]** while turning it, you adjust the length in steps of four.

### SWING

*Range:* *PRJ, 0 … 23*
*Default:* *0*

Use this to set the swing for the selected pattern, in micro-steps. The value PRJ means the pattern inherits the project's SWING setting (→ SWING). Press the **[F]** knob to break this link, then set an individual value for the pattern.

### FILL

*Range: PRJ, A1 … D16*
*Default: PRJ*

Use this to set the fill pattern for the current pattern. Just like with SWING, a pattern first inherits the project's setting (→ FILL). Press the push function of the **[G]** knob to break this link. You can then set an individual value.

## Pattern UTILITY Functions

For patterns, you have the management functions CLEAR, INIT, and TRANSF available. Press the **[UTILITY]** button to reach them.

### Pattern CLEAR and Pattern INIT

Use the CLEAR and INIT management functions to clear a pattern or reset it completely. CLEAR removes all set steps, but keeps the sound settings for the individual tracks. INIT clears the entire pattern and resets the sound settings to their default values.

1. Press the **[PATTERN]** button to open the PATTERN *Page*.
2. Use the *Bank* and *Step Buttons* to select the pattern you want to clear or reset.
3. Press the **[UTILITY]** button to open the pattern management functions.
4. Press the **[E]** or **[F]** knob to select CLEAR or INIT. It runs immediately, without asking for confirmation. The drumDING then automatically leaves the UTILITY *Page*.

    • *NOTE* You can also perform steps 2 and 3 in reverse order: open the management functions with **[UTILITY]** first, and select the pattern afterward.

### Pattern Transfer

Use the TRANSF function to transfer the sound parameter settings of one pattern to others. Here is how:

1. Press the **[PATTERN]** button to open the PATTERN *Page*.
2. Use the *Bank* and *Step Buttons* to select the pattern whose settings you want to transfer.
3. Press the **[UTILITY]** button to open the pattern management functions.
4. Use the push function of the **[G]** knob to open TRANSF.
5. Use the *Track Select Buttons* **[TRACK1]** to **[TRACK6]** to select the track or tracks whose settings you want to transfer. By default, all six tracks are active.
6. Press one of the knobs **[E]** to **[H]** to choose an option for the transfer target:

- **[E]**: CANCEL – cancels the action and leaves the UTILITY *Page*.
- **[F]**: ALL – transfers the sound settings to all 64 patterns. This runs immediately, and the drumDING leaves the UTILITY *Page*.

- **[G]**: EMPTY – transfers the sound settings only to empty patterns. This runs immediately, and the drumDING leaves the UTILITY *Page*.
- **[H]**: SELECT – lets you select, in the next step, which patterns to transfer the sound settings to.

7. If you selected option **[H]** (SELECT), you can now use the *Bank* and *Step Buttons* to select the patterns you want to transfer the sound settings to.
8. Press the **[H]** knob (YES) to confirm and complete the transfer, or press the **[E]** knob (CANCEL) to cancel it.

# Tracks

Each pattern has six tracks. You can select them directly with the *Track Select Buttons* **[TRACK1]** to **[TRACK6]**.

Press the **[TRACK]** button to reach the TRACK *Page*. Here you can change settings for the current track, and use **[UTILITY]** to run management functions.

## Track Settings

On the TRACK *Page*, you can make the following settings independently for each track:

### LENGTH

*Range:* *PTN, 1 … 64*
*Default:* *PTN*

Use this to set the length of the track. Press the **[E]** knob to switch between the pattern default PTN and an individually adjustable value from 1 to 64 (→ LENGTH).

### DIR

*Range:* *FWD, BWD, BOUNCE, RND*
*Default:* *FWD*

Use this to set the playback direction of the track. Use the **[F]** knob to choose between the following settings:

- FWD (forward): The track plays forward, from the first step to the last.
- BWD (backward): The track plays backward, from the last step to the first.
- BOUNCE: Playback bounces back and forth between the first and last step.
- RND (random): The track plays random steps between the first and last step. This includes both steps that are set and steps that are not.

### START

*Range:* *1 … (value of LENGTH)*
*Default:* *1*

Use this to set the first step of the track.

### DIV

*Range:* *1/32, 1/16T, 1/16, 1/8T, 1/8, 1/4T, 1/4*
*Default:* *1/16*
You can set an individual subdivision of the tempo for each track. This changes the note value of a step. Use the DIV parameter to set it.

The default value is 1/16, so each step corresponds exactly to that note value.

Combined with the LENGTH, DIR, and START parameters, DIV lets you create extremely complex rhythms with just a few settings.

## Track UTILITY Functions

For tracks, you have the management functions CLEAR and INIT available.

### CLEAR – Clearing a Track

CLEAR removes the steps set on a track. You can choose to delete all steps, only "normal" steps, or only steps with *ALT-Locks*.

Here is how to run the track management functions:

1. Press the **[TRACK]** button to open the TRACK *Page*.
2. Use the *Track Select Buttons* **[TRACK1]** to **[TRACK6]** to select the track you want to clear.
3. Press the **[UTILITY]** button to show the management functions.
4. Press the **[E]** knob to select the CLEAR function.
5. You can now press the corresponding knob to choose which steps to delete:

- **[E]**: ALL – deletes all steps.
- **[F]**: STEPS – deletes only "normal" steps (including those with *Parameter Locks*).
- **[G]**: ALT – deletes only steps with *ALT-Locks*.

This function runs without any further confirmation.

### INIT – Initializing a Track

INIT fully resets the track. This not only clears the steps, but also resets all settings on the **[FX SETUP]** and **[TRACK]** *Pages*, along with all sound parameters, to their default values.

Here is how to initialize a track:

1. Press the **[TRACK]** button to open the TRACK *Page*.
2. Use the *Track Select Buttons* **[TRACK1]** to **[TRACK6]** to select the track you want to initialize.
3. Press the **[UTILITY]** button to show the management functions.
4. Press the **[F]** knob to select the INIT function.

This function runs without any further confirmation.

## Master Effects

The drumDING offers both master and insert effects.

The insert effects overdrive, bit crusher, and amplitude modulation are available per track and are part of the *sound parameters* (→ Page 2: FX).

The master effects Delay 1, Delay 2, and Reverb exist only once. However, you can set the send level per track (→ Page 1: MIX-FX).

You set the master effects on the *Pages* of the **[FX SETUP]** button. They apply to the active pattern.

### FX SETUP Pages 1 and 2: DELAY 1 and DELAY 2

The first two *Pages* of the **[FX SETUP]** button hold the settings for the delays. Both delays are identical.

#### SYNC

*Range:* *on, off*
*Default:* *on*

Use this to turn the sync of the delay times to the project tempo on or off.

### TIME

*Range:* *1/32T … 1/1 (SYNC on)*
*000.1 … 127.9 (SYNC off)*
*Default:* *1/8*

Use this to set the delay time. The available values depend on the SYNC setting.

With SYNC turned on, you set the delay time in musical note values.

With SYNC turned off, you set the delay time in milliseconds, independent of the project tempo. Press the **[F]** knob to choose the resolution. If the number before the decimal point is underlined, you adjust whole milliseconds. If the number after the decimal point is underlined, you get a finer resolution, in steps of a tenth of a millisecond.

### SHIFT-R

*Range:* *–64 … 0 … +63*
*Default:* *0*

The delays are stereo. Use the SHIFT-R parameter to set an offset from the TIME delay time for the right audio channel. With negative values, the delay time of the right channel becomes shorter than the TIME setting; with positive values, it becomes longer.

### FB

*Range:* *0 … 127*
*Default:* *0*

Use this to set the feedback of the delay.

## FX SETUP Page 3: REVERB

On this *Page*, you set the parameters for the reverb.

### BLEND

*Range:* *–64 … 0 … +63*
*Default:* *0*

Use this to set the balance between the early reflections and the actual reverb tail. At the default value of `0`, the mix is even. With negative values, the early reflections get louder while the reverb tail gets quieter. At `–64`, you only hear the early reflections. With positive values, it works the other way around.

- *NOTE* The following parameters, `SIZE`, `TIME`, and `COLOR`, affect only the reverb tail, not the early reflections. If you have set a value of `–64`, they have no effect.

### SIZE

*Range:* *0 … 127*
*Default:* *127*

Use this to set the room size. The higher the value, the larger the room.

### TIME

*Range:* *0 … 127*
*Default:* *64*

Use this to set the reverb time. The higher the value, the longer the reverb.

### COLOR

*Range:* *–64 … 0 … +63*
*Default:* *0*

Use this to shape the tone of the reverb. With negative values, the reverb becomes darker (more bass, less treble). With positive values, it becomes brighter (less bass, more treble).

# Sound Parameters

Besides setting steps, the sequencer offers functions that shape the sound of the sample and the way it is played. Use the *Sound Parameter Buttons* **[TRIGGER]**, **[TONE]**, **[FX]**, and **[MOD]** to reach them.

All *sound parameters* apply to the whole track by default, but you can also set them individually for single steps as *Parameter Locks* or *ALT-Locks* (→ Individual Sound Settings for Steps).

## TRIGGER

Use the **[TRIGGER]** button to reach the `TRIGGER` and `REPEAT` *Pages*.

### Page 1: TRIGGER

The parameters on this *Page* determine how the sample is played.

#### LEVEL

*Range:* *VELO, 1 … 127*
*Default:* *VELO*

Use this to set the playback volume of the sample. You can set a fixed value between `1` and `127`, or set `LEVEL` to `VELO`. In that case, the volume depends on the velocity.

#### VELO (Velocity)

*Range:* *0 … 127*
*Default:* *100*

Use this to set the velocity, meaning how hard the sample is triggered. On many instruments, velocity directly affects the volume. If you hit a drum hard, it sounds louder than with a light hit. On the drumDING, you can decouple this natural relationship.

On the **[MOD]** *Page* `VELOCITY`, you can set two additional modulation targets for the velocity (→ Page 3: VELOCITY).

You can set `VELO` in a range from `0` to `127`. The default value is `100`.

### uTIME

*Range:* *–23 … +23*
*Default:* *0*

Use this to set the microtiming. You can set `uTIME` in a range from `–23` to `+23`. At a value of `0` (the default), the sample triggers exactly on time. With negative values, it triggers earlier; with positive values, it triggers later.

### T-PROB (Trigger-Probability)

*Range:* *0 … 100*
*Default:* *100*

Use this to set the probability that a step plays, in a range from `0` to `100` percent. At a value of `0`, steps never trigger. At `100` percent, they reliably trigger on every pass.

## Page 2: REPEAT

Steps can repeat automatically. This lets you create ratchets and rolls. You find all the settings for this on the `REPEAT` *Page*.

### COUNT

*Range:* *OFF, 2 … 96*
*Default:* *OFF*

Use this to set the number of repeats.

### RATE

*Range:* *1 … 96*
*Default:* *12*

Use this to set the timing gap between the repeats, in micro-steps. A value of `24` corresponds to the musical value of a sixteenth note.

`RATE` depends on the project tempo you have set.

### FADE

*Range:* *–63 … 0 … +64*
*Default:* *0*

Use this to set the velocity of the repeats. With positive values, it steadily increases from the first trigger to the last repeat; with negative values, it steadily decreases. The starting point is the velocity set on the `TRIGGER` *Page* (→ VELO (Velocity)).

### R-PROB (Repeat-Probability)

*Range: 0 … 100*
*Default: 100*

Use this to set the probability that the step triggers with or without repeats. At a value of `100` percent, the repeats always play; at `0` percent, they never do.

## TONE

Use the **[TONE]** button to reach the `TONE` and `ENV` *Pages*.

### Page 1: TONE

The parameters on this *Page* affect the sample itself and how it is played.

### SOURCE

*Range:* *A01 … B16*
*Default:* *A01 for track 1, A02 for track 2, A03 for track 3, A04 for track 4, A05 for track 5, and A06 for track 6*

Use this to set the sample for the track. The value shown is a sample slot (→ Samples). When you sample directly to a track (→ Sampling to a Track), the drumDING writes to the sample slot referenced here.

### TUNE

*Range:* *–24.00 … +24.00*
*Default:* *0*

Use this to set the pitch at which the sample plays. Press the **[F]** knob to switch its resolution. Turning the knob changes the underlined part of the value:

- The first two digits are underlined: you adjust the pitch in semitone steps.
- The digits after the decimal point are underlined: you adjust the pitch in cents.
- The whole value is underlined: two full turns of the knob cover the entire pitch range of 4 octaves.

• *NOTE* We deliberately chose not to use pitch-shifting algorithms. When you change the `TUNE` value, the sample plays back faster or slower. We care more about the resulting sound character than about a perfectly pitched sample.

If you need a sound at different pitches with perfect accuracy, you can sample it multiple times, each with a different **[PITCH]** setting on the *analog voice*.

### DIR (Direction)

*Range:* *FWD, BWD*
*Default:* *FWD*

Use this to set the playback direction of the sample. With `FWD` (forward), the sample plays forward; with `BWD` (backward), it plays backward.

• *NOTE* When you sample a sound, the drumDING automatically determines the start point for backward playback. For sounds with a long decay, this avoids long fade-in phases when played backward. You automatically get good timing, which you can fine-tune with the `uTIME` parameter if needed (→ uTIME).

## Page 2: ENV

Here you find settings for an AHD envelope that shapes the volume curve of the sample.

### ATTACK

*Range:* *0 … 127*
*Default:* *0*

Use this to set the attack time of the envelope. A value of `127` corresponds to a length of 6 seconds.

### HOLD

*Range:* *0 … 127*
*Default:* *125*

Use this to set the length of the hold phase of the envelope. A value of 127 corresponds to a length of 6 seconds.

### DECAY

*Range:* *0 … 127*
*Default:* *0*

Use this to set the decay time of the envelope. A value of 127 corresponds to a length of 6 seconds.

## FX

Use the **[FX]** button to reach the *Pages* for the insert effects and send levels.

### Page 1: MIX-FX

Here you find the parameters for the master effects and panorama. The drumDING has two delays and one reverb.

### DELAY1, DELAY2, and REVERB

*Range:* *0 … 127*
*Default:* *0*

Use this to set the send level at which the track feeds into the corresponding effect. The three effects work in parallel.

### PAN

*Range:* *L:63 … MID … R:63*
*Default:* *MID*

Use this to set the placement of the track in the stereo image. PAN has no effect on the individual track outputs.

### Page 2: FX

Here you find the parameters for the insert effects. Each track offers an overdrive, bit reduction, and amplitude modulation.

### DRIVE

*Range:* *0 … 127*
*Default:* *0*

Use this to set the amount of distortion from the overdrive.

### BITS

*Range:* *24, 12 … 2*
*Default:* *24*

Use this to set the number of bits for the bit reduction.

### AmFREQ

*Range:* *0 … 127*
*Default:* *0*

Use this to set the frequency of the amplitude modulation, in a range of about 32 Hz to 3300 Hz.

### AmINT

*Range:* *0 … 127*
*Default:* *0*

Use this to set the intensity of the amplitude modulation.

## MOD

Use the **[MOD]** button to reach the modulation settings. These include an LFO (*Pages* 1 and 2) and velocity (*Page* 3).

### Page 1: LFO

On the first LFO *Page*, you find settings for sync, rate, and waveform.

#### SYNC

*Range:* *OFF, STEP, ON*
*Default:* *OFF*

Use this to set the sync mode of the LFO:

- `OFF`: The rate of the LFO is independent of the project tempo.
- `STEP`: The rate of the LFO is independent of the project tempo. However, the waveform (`WAVE`) restarts with every step.
- `ON`: The rate of the LFO depends on the project tempo.

#### RATE

*Range:* *0 … 127 or 8/1 … 1/32T*
*Default:* *0*

Use this to set the rate of the LFO. The available range depends on the `SYNC` setting.

With `SYNC` set to `OFF` or `STEP`, you adjust the rate in a range from about 0.1 Hz to 150 Hz.

With `SYNC` turned on, `RATE` sets a musical note value that depends on the project tempo.

#### WAVE

*Range:* *SIN, TRI, SAW, SAW2, SQR, RND*
*Default:* *SIN*

Use this to set the waveform the LFO oscillates with:

- `SIN`: sine
- `TRI`: triangle
- `SAW`: rising sawtooth
- `SAW2`: rising sawtooth that resets on the falling edge
- `SQR`: square
- `RND`: random

### Page 2: LFO

On the second *Page*, you set the modulation targets and depths. The LFO can modulate two parameters at the same time.

### DEST1 and DEST2

*Default:* ---

Use the DEST1 and DEST2 parameters to choose the modulation targets. The following are available:

- R-COUNT: the number of repeats
- R-RATE: the spacing between repeats
- R-FADE: the velocity of the repeats
- TUNE: the pitch of the sample
- ATTACK: the attack time of the envelope
- HOLD: the hold time of the envelope
- DECAY: the decay time of the envelope
- DELAY1: the send level for Delay 1
- DELAY2: the send level for Delay 2
- REVERB: the send level for the reverb
- PAN: the panorama position of the track
- AM FREQ: the frequency of the amplitude modulation
- AM AMNT: the depth of the amplitude modulation

### INT1 and INT2

*Range:* *–64 … 0 … +64*
*Default:* *0*

Use the INT1 and INT2 parameters to set the depth of the LFO modulation for the DEST1 and DEST2 targets. INT parameters are bipolar.

### Page 3: VELOCITY

On the third **[MOD]** *Page*, you find the settings for the modulation targets and depths of the velocity.

### DEST1 and DEST2

*Default:* ---

Use the DEST1 and DEST2 parameters to choose the modulation targets. The following are available:

- R-COUNT: the number of repeats
- R-RATE: the spacing between repeats
- R-FADE: the velocity of the repeats
- TUNE: the pitch of the sample
- ATTACK: the attack time of the envelope
- HOLD: the hold time of the envelope
- DECAY: the decay time of the envelope
- DELAY1: the send level for Delay 1
- DELAY2: the send level for Delay 2
- REVERB: the send level for the reverb
- PAN: the panorama position of the track
- AM FREQ: the frequency of the amplitude modulation
- AM AMNT: the depth of the amplitude modulation

### NT1 and INT2

*Range:* *–64 … 0 … +64*
*Default:* *0*

Use the INT1 and INT2 parameters to set the depth of the velocity modulation for the DEST1 and DEST2 targets. INT parameters are bipolar.

# SYSTEM

On the SYSTEM *Page*, you find all the global settings for the drumDING.

System settings are only saved permanently once you open a different *Page*.

## Page 1

### RxCLK

*Range:* *off, on*
*Default:* *on*

Use this to set whether the drumDING syncs to an external MIDI clock.

If RxCLK is set to on and no MIDI clock is present at the **[MIDI IN]** jack or over USB, the drumDING uses its internal clock. If the parameter is set to off, incoming clock signals are ignored.

### TxCLK

*Range:* *off, on*
*Default:* *on*

Use this to set whether the internal or external clock is sent through the **[MIDI OUT]** jack and over USB.

### RxPRG

*Range:* *off, on*
*Default:* *on*

Use this to set whether the drumDING reads incoming MIDI Program Change commands. You can use Program Change to switch between the patterns of the active project. Switching follows the drumDING's internal mechanism, so it always happens only after the last step of track 1 (→ Patterns).

### TxPRG

*Range:* *off, on*
*Default:* *on*

Use this to set whether the drumDING sends a Program Change command over MIDI whenever it switches patterns.

## Page 2

### RxSPP

*Range:* *off, on*
*Default:* *off*

Use this to set whether the drumDING reads incoming Song Position Pointer (SPP) information. If RxSPP is set to on, the pattern plays from the position sent through SPP whenever the drumDING receives a MIDI Real Time Continue command. This position is converted to fit the length of the pattern.

### RxCC

*Range: off, on*
*Default: on*

Use this to set whether the drumDING reads MIDI Control Change commands.

### THRU

*Range:* *off, on*
*Default:* *off*

Use this to set whether the **[MIDI OUT]** jack works as a MIDI thru. If THRU is set to on, incoming MIDI information is passed through to the **[MIDI OUT]** jack unfiltered.

### GlCH

*Range:* *off, 1 … 16*
*Default:* *off*

Use this to set the global MIDI channel of the drumDING. On this channel, it receives Program Change and Control Change commands for the master effects. If GlCH is set to off, this MIDI information is ignored.

#### OLED

*Range:* *10 … 255*
*Default:* *47*

Use this to set the brightness of the OLED display.

# MIDI Channels and Note Numbers

You can trigger the *analog voice* and the six tracks of the drumDING over MIDI. To reach the corresponding *Page*, press **[VOICE]** or **[TRACK1]** through **[TRACK6]** while a *Page* of the **[SYSTEM]** button is active.

## Setting the MIDI Channel and Note Number for the Analog Voice

To reach the *Page* for setting the MIDI channel and note number for the *analog voice*, press the **[VOICE]** button while a *Page* of the **[SYSTEM]** button is active.

#### CHAN

*Range:* *1 … 16*

Use this to set the MIDI channel on which the *analog voice* receives Note-On commands.

#### NOTE

*Range:* *0 … 127*

Use this to set the note number that triggers the *analog voice*.

## Setting MIDI Channels and Note Numbers for the Tracks

To reach the *Page* for setting MIDI channels and note numbers for a track, press the corresponding *Track Button* **[TRACK1]** to **[TRACK6]** while a *Page* of the **[SYSTEM]** button is active.

#### CHAN

*Range:* *1 … 16*

Use this to set the MIDI channel on which the corresponding track receives Note-On commands.

### NOTE A

*Range:* *0 … 127*

Use this to set the note number that triggers the track with its regular sound parameter settings.

### NOTE B

*Range:* *0 … 127*

Use this to set the note number that triggers the corresponding track with the alternative *sound parameters* set for *ALT*.

### CC CHAN

*Range:* *off, 1 … 16*

Use this to set the MIDI channel on which the corresponding track receives Control Change commands. If `CC CHAN` is set to `off`, all incoming Control Change commands for the track are ignored.