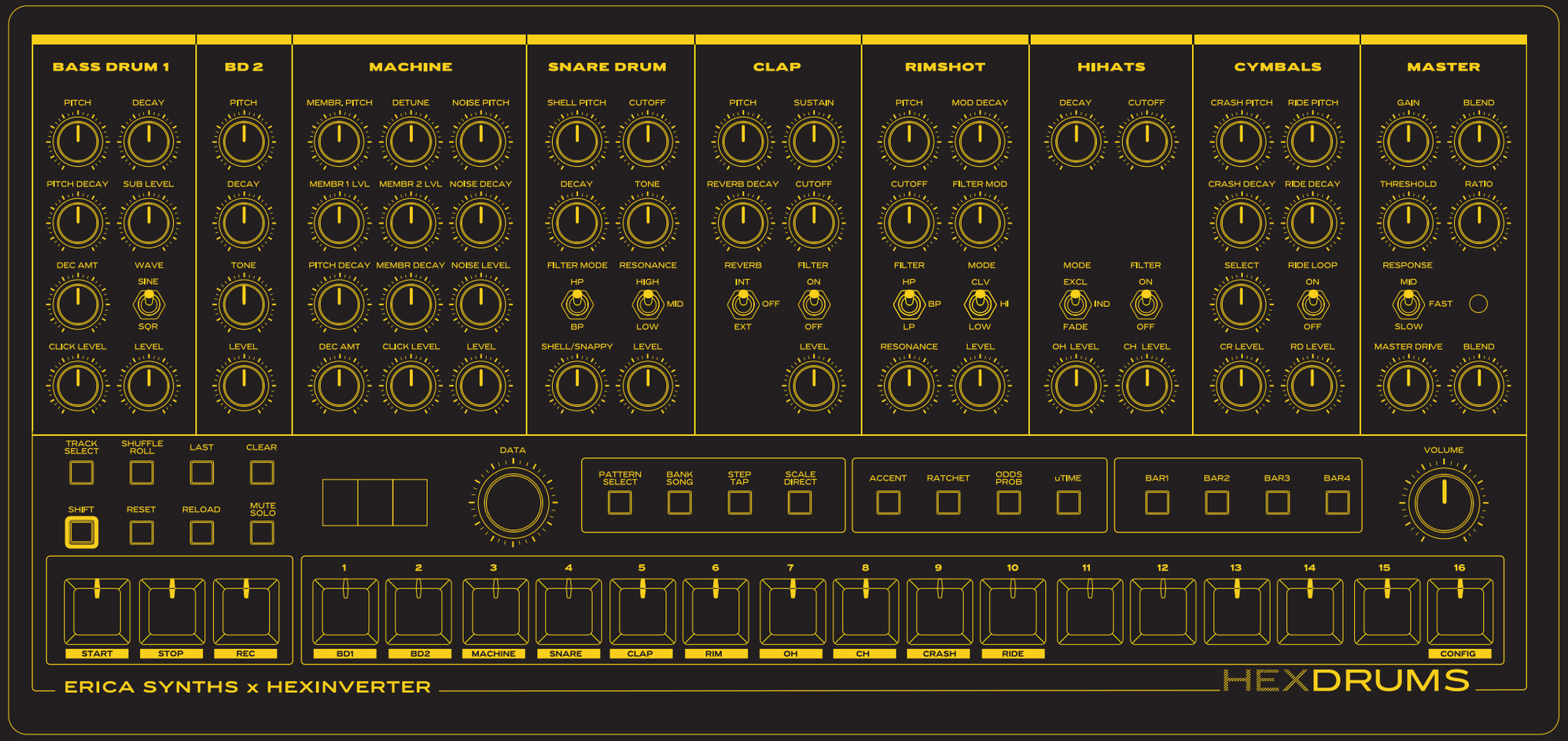


USER MANUAL

HEXDRUMS

HEXDRUMS

THANK YOU FOR PURCHASING THE ERICA SYNTHS X HEXINVERTER HEXDRUMS DRUM SYNTHESIZER!

"Our plan was always to use the Mutant Drum DNA to create a next-level desktop drum machine. We began early work on one before the Pan-demic. I'm so glad that the Erica Synths crew was able to carry out the vision and finish the dream!

- Stacy Gaudreau,
  Hexinverter Électronique

The industrial magic of Erica Synths techno weapons, fused with the DNA of Hexinverter's mutant circuits is brought to life as the HexDrums – an analog drum machine forged out of deep respect for traditional designs with innovative improvements and the combined spellwork of its makers. Combining the range and flexibility of sounds by Hexinverter with the hands-on, no-nonsense layout and aesthetics of Erica Synths, the HexDrums offers the distilled, iconic essence of analog electronic drums in a practical form factor.

The HexDrums has 10 sound sources, mostly based on the great sounding Hexinverter Mutant series of percussion modules: two kick drums for different (or combined) flavours – the BD9 and Bass drum, an optimized Mutant Machine, Snare drum, Clap, Rimshot and HiHats.

To complete the setup, Erica Synths Cymbals have been added, featuring 10 sets of crash and ride cymbal samples. All drums have individual outputs and in the master section, they are panned in the stereo field before being sent into the Compressor and Master Drive, derived from the Mutant Glue.
A hands-on and easy-to-program sequencer provides nuanced, up to 64-step pattern design, accents, per-step microtiming, ratchets, rolls, per-step probability and a memory of 16 banks with 16 patterns each.

FEATURES

HEXDRUMS

- 8 fully analog percussion voices: 2 Bass drums, Machine, a complex and versatile percussion generator, Snare drum, Clap, Rimshot/Claves, Open HiHats, Closed HiHats
- Sample based Crash Cymbal and Ride Cymbal with 10 custom sample set selection and individual tuning of samples
- Individual voice outputs
- Stereo panning of all voices
- Stereo compressor
- Master drive
- 16 banks of 16 patterns memory
- Memory backup via USB B
- Song mode
- Versatile, hands-on X0X-style sequencer
- MIDI IN and MIDI OUT

WHAT'S INCLUDED

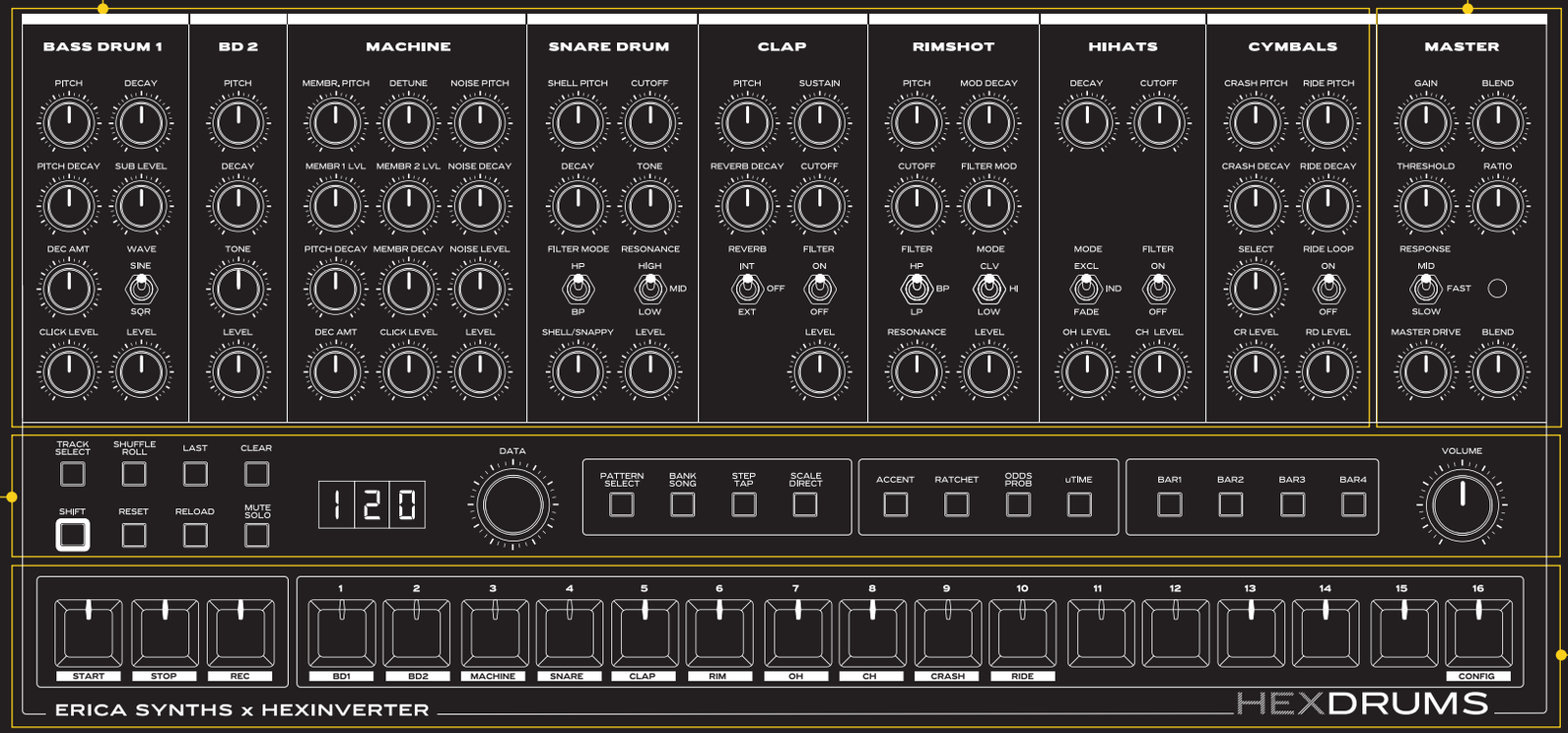
- HexDrums drum synthesizer
- Universal 12VDC wall wart adapter
- User manual

THE INTERFACE

HEXDRUMS

**The user interface of the HexDrums consists of 4 main parts:
the voices, the master section, the tempo and main controls and the step sequencer.**

10 great-sounding percussion voices provide a wide spectrum of sounds for various music styles, and controls are tuned around sweet spots that make the drum machine very playable in live setups



The master section includes a master volume control, master drive with a blend parameter that controls the balance between the dry and overdriven signals and a stereo compressor

The step sequencer allows for hands-on pattern programming both in step or tap modes, as well as performance features like drum mutes, per-track shuffle amount, etc.

The tempo and main controls section consists of the master tempo control and the main performance controls. The alpha numeric display indicates tempo and other performance-related information

CONNECTIONS

HEXDRUMS

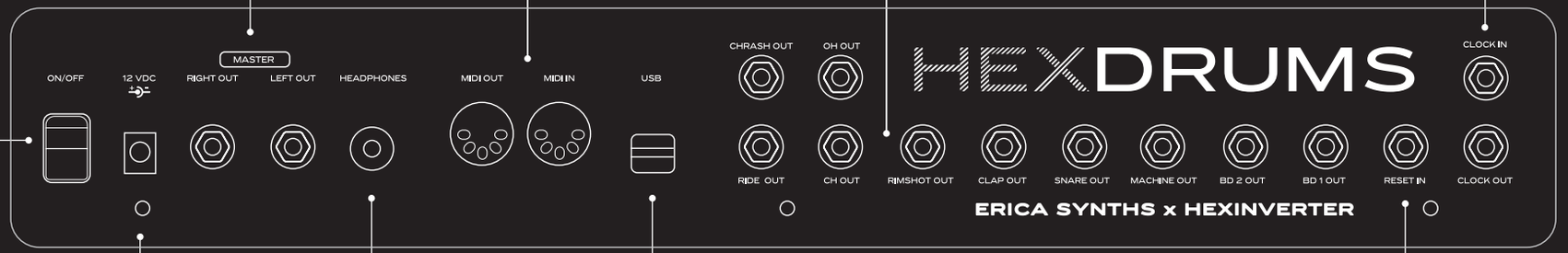
The DIN5 MIDI in receives trigger note messages and MIDI clock. Please refer to the MIDI implementation chart in the manual. MIDI Out outputs trigger and MIDI clock messages

The master output provides a balanced, line-level stereo signal, where drums are hard panned in the stereo field

Each voice has a dedicated line-level audio output for individual treatment of drum sounds

Clock In/Out connectors are for analogue sync with external gear. PPQ is configurable in CONFIG settings

Flip the switch to turn the HexDrums on



Use the 6.3 mm stereo headphones output for monitoring

The USB-B port is for MIDI control, user sample upload, pattern memory backup and firmware updates

Sending a trigger signal to the reset input resets all tracks to the first step

Connect the external power supply here! Use only the power supplied with the unit, otherwise you risk permanent damage to the synth

BASS DRUM 1

The Bass Drum 1 is derived from the BD9 euro-rack module which is a thumping, heavy kick suitable for many different styles of electronic music. It uses a triangle core VCO (voltage-controlled oscillator) with a novel sine waveshaper and other support circuitry to form a kick drum tone. The flexibility gained by using a VCO core means that we have been able to add a lot of control over the various parameters that shape the sound of the kick drum, while a sub-oscillator adds more depth to the sound.

The PITCH of the VCO spans several octaves. A novel PITCH DECAY circuit allows for adjusting the duration and DECAY AMOUNT of the pitch-modulation envelope applied to the bass drum, from short blips to exaggerated tom-like sweeps. A classic setting is to dial in a relatively brief (about 1/3rd of the way up) PITCH DECAY with a high AMOUNT setting. This will generate a punchy kick drum. Adjust the PITCH to taste.

The DECAY allows adjustment of the length of the bass drum, from short punchy kicks to massive booms. The CLICK LEVEL controls the amount of the transient generator, which is responsible for the attack intensity of the bass drum sound. The level of this effect can be adjusted in a wide range.

A square wave, one-octave-down sub-oscillator, derived from the primary oscillator's pitch, can be mixed in via the SUB LEVEL control. The effect can range anywhere from subtle depth to extreme timbre changes.

Select the core VCO waveform of the kick drum with the SINE/SQUARE switch. Classic percussion synthesis usually calls for a sinusoidal waveform, as this is the oscillation that naturally occurs in acoustic drums when struck with a mallet. The Bass Drum 1 also offers a harmonically-rich square wave option.

The LEVEL control sets the overall volume of the Bass Drum 1.

BASS DRUM 2

The Bass Drum 2 gets its organic sound from a twin-t damped sinewave oscillator, just like the one on the legendary TR-808. With relatively few controls, it is capable of those vanilla, vintage kick drum sounds.

The fundamental frequency of the bass drum can be altered via the PITCH control. The frequency can be adjusted in a range from sub-sonic to frequencies high enough for a full range of tom drums. The DECAY control adjusts the decay of the bass drum from short to long.

The TONE control works like a lowpass filter on the bass drum. Turning the control up allows more high frequencies to pass through and makes the bass drum more pronounced and punchy while turning the control down will soften its character.

The LEVEL control sets overall volume of the Bass Drum 2.

MACHINE

The Machine is a unique and versatile percussion voice - a dynamic analog instrument capable of generating a wide palette of sounds ranging from various forms of analog percussion to complex drones and oscillations. To achieve such variety, the Machine features two synthesis sections which are summed together before the final output: MEMBRANE and SNAPPY. The MEMBRANE forms the main body of the sound by way of two analog triangle VCOs where the ratio between VCO frequencies determine the character of the sound, and the SNAPPY section further adds to the timbre by contributing noisy elements to the mix. The noisy CLICK which occurs at the beginning of the SNAPPY sound can have its volume adjusted independently of the main decaying SNAPPY texture.

The MEMBRANE PITCH adjusts the pitch of both membrane waveforms.

The DETUNE control allows for detuning the waveform 2 up or down from waveform 1, across a wide frequency range, resulting in wide range of FM-like timbres.

The MEMBRANE 1 LVL and MEMBRANE 2 LVL each adjust the volume of the respective waveform.

The PITCH DECAY controls a percussive decay envelope can be applied to the pitch of both waveforms.

The DECAY AMOUNT determines amount of the pitch-modulation envelope applied to the pitch of both membranes, from short blips to exaggerated tom-like sweeps.

The MEMBRANE DECAY adjusts the length of decay applied to the membrane.

The CLICK LEVEL control determines the level of the initial click in the transient generator.

The NOISE PITCH control changes the pitch of the snappy noise generator.

The NOISE DECAY adjusts the decay of the main noise element from a short snap to a long decaying swash of noise. If set fully clockwise, you will get constant noise drone sound.

The NOISE LEVEL determines the amount of noise sent to the transient generator.

The LEVEL control sets the overall volume of the Machine.

SNARE DRUM

The SNARE voice of the HexDrums evolves away from classic drum synthesis techniques and offers something with a unique character of its own, a snare drum that would stand the test of time and offers the possibility of sounds not found in any vintage drum machine. The Snare's SHELL is comprised of two bridged-t sinewave oscillators, much like on some vintage drum machines. These oscillators have a particularly clean waveform that produces a low-harmonic sine which naturally decays in amplitude and pitch over time. The tone of these oscillators is quite natural sounding to our ears, which is perhaps part of the reason why some vintage analog drum machines still see daily use by many contemporary artists. You can tune the pitch of one of these oscillators by about two octaves - a useful feature not found on the circuit this percussion voice was inspired by.

The SHELL PITCH control adjusts the pitch of the primary sine wave oscillator in the SHELL tone. This control has an adjustment range of about two octaves and spans from low tom/bass drum sounds up to high-pitched snare tones.
The DECAY control allows for adjusting the decay of the SNAPPY envelope. This control is adjustable all the way from short decays of only a few miliseconds up to about 10 seconds.

The FILTER MODE switch selects the mode of the 12dB/oct filter the SNAPPY sound passes through. The filter can be either highpass (HP) or bandpass (BP).
The RESONANCE switch selects the resonance of the SNAPPY filter. In the MID position it produces the same mild resonance found on classical drum machines, the switch in the UP position causes self-oscillation of the filter to occur, while the LOW position selects medium resonance, which is higher than the MID position, but not enough resonance for self-oscillation to occur.
The CUTOFF frequency of the filter can be adjusted.
The TONE control blends the mix between the two sine wave oscillators that make up the SHELL sound. Turning the knob all the way clockwise results in only the secondary fixed frequency sine wave in the mix, while the full counter-clockwise position results in only the primary pitch-adjustable sine wave making it into the SHELL mix.
The SHELL/SNAPPY control blends between both tones that make up the overall snare sound. For example, turning it all the way clockwise means no shell is present in the mix – you can hear only the snappy noise.
The LEVEL control sets overall volume of the Snare Drum.

CLAP

The hand clap sound has been a staple of house, hip-hop and dance music and more recently has found its way into some of the more modern EDM genres like trap and witch house. Regardless of musical style, the sound used has been pretty much the same re-sampled clap tone in every track for the last couple of decades.

The Clap is a highly versatile percussion voice, based on a voltage controlled LFSR (linear feedback shift register) noise oscillator as well as a powerful percussion synthesis engine.
Pitch control of the noise generator means you can create everything from vanilla TR-909-like claps to broken, chiptune-like alien sounds, while the built-in reverb decay forms the decay of the clap sound.

The PITCH control adjusts the frequency of the internal linear feedback shift register (LFSR) noise generator which makes up the clap sound. It works just like the pitch control on a VCO - at maximum frequency, white noise is generated and as you turn the frequency down, the sound changes to crunchy, 8-bit-sounding bit streams.

The SUSTAIN control directly affects the volume shape of the clap sound by affecting the bias of the VCAs controlling the shape of the clap. Turning it all the way up will make the clap stay on indefinitely, while turning it all the way down will make it inaudible.

The REVERB DECAY parameter adjusts the decay for the simulated reverb effect. Part of why the infamous drum machine claps sounded so good is because they cleverly simulated a reverb effect which sits acoustically underneath the main body of the clap sound, giving the otherwise flat clap some additional depth.

The REVERB SWITCH allows for selecting the simulated reverb effect. In the center position, the reverb is off. The effect can be turned on by throwing the switch to either the top or bottom position. The top position selects the internal sound source as the source for generating the reverb sound, taken from before the filter and the bottom position selects the external sound source, taken after the filter.

The CUTOFF control sets the resonant band-pass filter cutoff.

The FILTER switch bypasses the bandpass filter (which the CUTOFF knob controls).

The LEVEL control sets overall volume of the Clap.

RIMSHOT

A mainstay in electronic drums, the rimshot has a woody, staccato character that helps it cut through the mix. The clave, which recreates the sound a pair of wooden claves make when struck together, has a higher and brighter tonal quality. The Rimshot voice on the Hexdrums is a fully-analog rimshot and clave generator based on a triple bridged-T oscillator coupled with a state variable filter. The clave is achieved by using just one of the oscillators. The pitch control allows adjustment of the fundamental oscillator over about two octaves, while the voltage

controlled filter with cutoff and resonance controls expands the versatility of the rimshot into new territories of sonic adventure.

The PITCH knob adjusts the pitch of one of the three internal VCOs with a range of around two octaves.

The MODE switch selects among three modes: HI mode creates classic rimshot sounds, LOW gives a lower pitch range; try playing with the filter on this setting to get low tom and kickdrum sounds, while CLV (Clave) mode uses just one of the oscillators to give you a brighter, higher percussive sound.

The MOD DECAY envelope controls the VCA (voltage controlled amplifier, used for amplitude control) allowing for adjustment of the length of the sound.

The CUTOFF and RESONANCE controls alter the timbre of the rimshot sound. The filter self-resonates at extreme settings.

The FILTER switch selects among three filter modes - use the lowpass or highpass filter modes for classic-sounding rimshots, while bandpass can give a wider range of clave and rimshot sounds, as well as completely different percussive elements (especially when turning the resonance up).

The FILTER MOD knob lets you modulate the filter cutoff with the same MOD DECAY envelope.

The FILTER MOD control is an attenuverter - in the 12 o'clock setting, no modulation is applied to the filter, turning the knob clockwise results in a positive envelope applied to the filter cutoff, turning it counterclockwise applies a negative envelope.

The LEVEL control sets the overall volume of the Rimshot voice.

HiHats

The HiHats voice on the HexDrums is a powerful, TR-808 inspired, dual hihat drum generator. There is an OPEN hihat and a CLOSED hihat circuit which share a noise source, but they function independently. With an added filter and distinct mode switch, this percussion voice takes HiHat sounds to the next level.

The Decay of the open hihat can be varied with the DECAY control (the closed hihat decay is fixed). The decay length can be varied from brief “clicks” to an almost sustained sound.

The CUTOFF knob controls the resonant band-pass filter cutoff.

The FILTER switch in the OFF position bypasses the bandpass filter.

The MODE switch changes the way the two hihat generators interact with each other when they are triggered at the same time. Interesting dynamic effects can be achieved without any accent modulation by using these features. The TR-808’s closed hihat created a musically pleasing effect by turning off the tail of the open hihat’s decay envelope so that the open hihat’s length was reduced when the closed hihat was triggered. This mimicked the way a real drum kit works. This classic mode is called FADE on the HexDrums. To enable more control, we added a new EXCLUSIVE mode in which the closed hihat immediately turns off the open hihat instead of just shortening its tail, creating a more dramatic effect. If you don’t want either, you can disable all interaction between the two hihats by flipping the switch to INDEPENDENT.

The OH LEVEL and CH LEVEL controls set the overall volume of each hihats voice.

CYMBALS

The Crash and Ride Cymbals on the HexDrums is a distinct topology digital/analogue voice, where cymbal samples are passed through an analogue VCA and controlled via envelope generators of unique design. The voice features 10 sets of custom Crash and Ride cymbal samples with individual Pitch and Decay controls. An extra feature is sample looping on the Ride cymbal – when it's on, the sample is looped while the envelope decay is on, thus creating a distinct, delay-like effect.

The CRASH PITCH and RIDE PITCH controls set the tune of the cymbals, they essentially control the sample playback rate.

The CRASH DECAY and RIDE DECAY adjust the decay length of each cymbal voice. The decay can be varied from brief "clicks" to several seconds.

The SELECT knob selects one of 10 sample sets of cymbal sounds. These are custom samples ranging from classical drum machine cymbal emulations to extreme industrial sounds. And yes, you can upload your own samples, please, refer to Sample Upload section in this manual.

When the RIDE LOOP switch is on, after the initial hit, the sample starts to loop during envelope generator decay until the VCA closes completely. This creates a feeling of delay applied to the ride cymbal. Note that looping works the best with a long decay setting.

The CR LEVEL and RD LEVEL controls set the overall volume of each cymbal voice.

MASTER SECTION

The MASTER section of the HexDrums is co prised of two main parts to add a final touch to the sound of the drum machine - a Hi-Fidelity soft-knee COMPRESSOR based on the same family of premium audio ICs used in some 500 Series studio gear and classic topology optical distortion. Because all drum voices are panned in the stereo field, the master section is stereo.

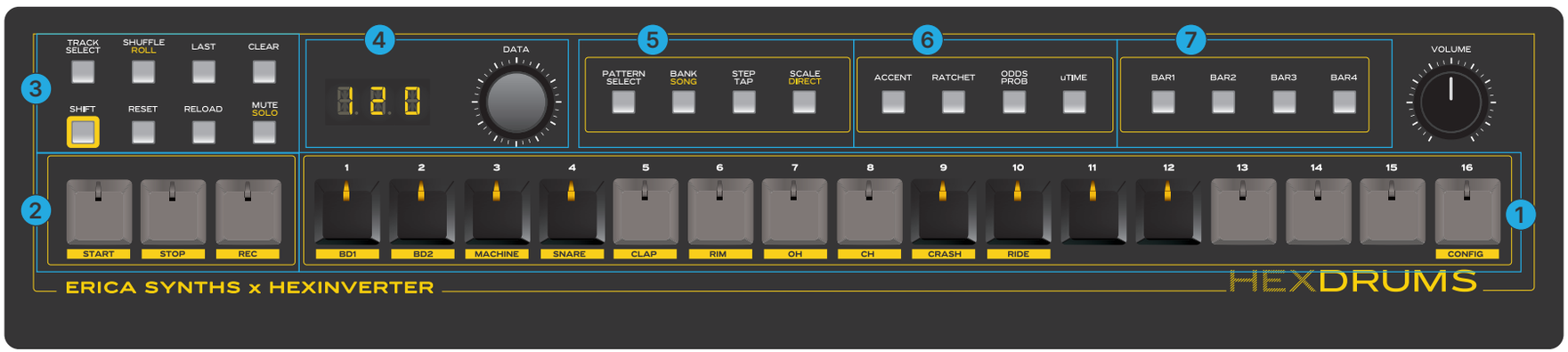
The GAIN control adds make-up gain to the compressor. This control is capable of adding an overwhelming amount of gain (+40dB) to the signal.

The BLEND control adjusts the wet/dry mix of the compressor from completely dry to fully compressed with this control all way clockwise.

The THRESHOLD adjusts the amplitude of signal which the compressor begins to react at and the RATIO adjusts the amount of compression applied to the signal when it kicks in.

The RESPONSE switch selects among FAST, MEDIUM and SLOW compressor response, and the gain reduction LED gives visual feedback on the compressor operation.

The MASTER DRIVE control adjusts the amount of distortion, while the BLEND control adjusts the DISTORTION wet/dry balance, where the full counter-clockwise setting is a dry, undistorted signal.



THE SEQUENCER INTERFACE

The sequencer of the HexDrums is designed to provide maximum hands-on flexibility for live performances.

1. The main programming pushbuttons are found on the bottom row. These are cherry keys, similar to the ones found on some classical drum machines. They are used for step or tap programming. The keys on steps 1-10 represent each percussion voice and each voice can also be triggered manually.

2. The three keys on the bottom left are for starting and stopping sequences and saving patterns. When you hit START, the sequencer starts running and if you press it a second time, the sequence is PAUSED on the current step. To STOP the sequence and RESET it to the first step, hit the STOP button. The REC button is used for saving patterns and for pattern record in TAP mode.

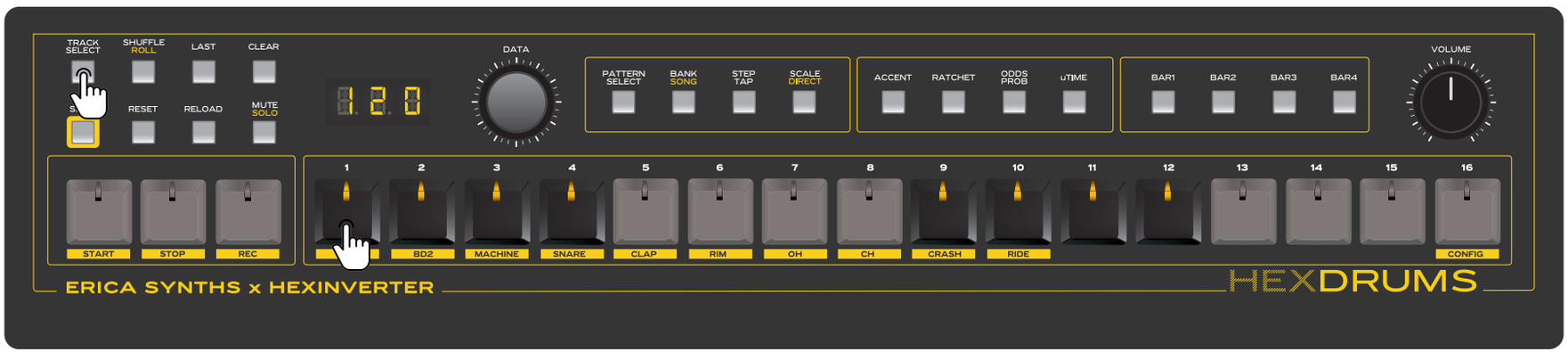
3. There are 8 function buttons in the top-left corner that represent the most important functions for programming the drum machine and performance features. The SHIFT button allows access to the secondary functions of these buttons, marked in yellow. To access them, push and hold the SHIFT button and push the relevant function button. The function button will light up, indicating that the secondary function is activated.

4. By default, the alphanumeric display indicates BPM, but other information is also displayed on it. The encoder next to it adjusts the BPM and other functions described in the manual below.

5. This group of four push buttons is for features that are used to set up a pattern before it is programed.

6. These pushbuttons are for per-step functions that expand the expressive programming of drum patterns.

7. These are the BAR selection pushbuttons. Each pattern can be up to 64 steps long and it is divided into 4 bars of 16 steps each.



LET'S DO IT!

Let's start the sequence and explore the HexDrums as we go! As you turn the drum machine on, it boots into a default state. The alphanumeric display indicates 120 BPM, the encoder adjusts BPM, the sequencer is in step programming mode, pattern length on all tracks is 16 steps and the scale is 4/4.

Hit the START button and the sequencer starts running.

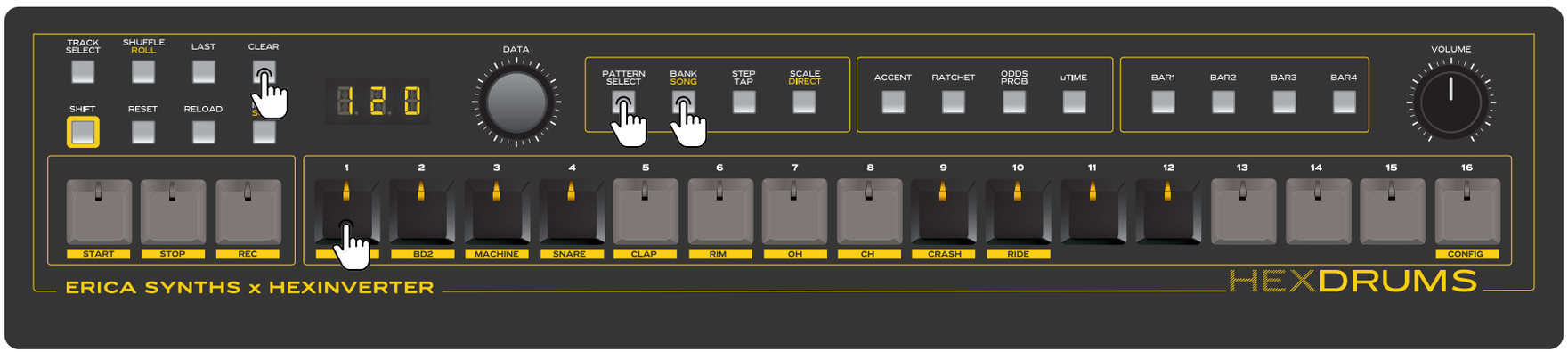
Now you need to select which TRACK (drum voice) you want to program. Push and hold the TRACK SELECT button and hit one of the step keys representing a TRACK (voice), for example, BD1.

Now you can enter Bass Drum 1 triggers simply by hitting the step keys.

To advance to the next TRACK (voice), push and hold the TRACK SELECT button and hit another step key representing the TRACK you want to program.

This way you can quickly build a pattern.

Now, let's do a deep dive into programming, saving patterns, adding dynamics to the pattern and other features of the HexDrums!



MEMORY STRUCTURE, SAVING, RECALLING AND DELETING PATTERNS

The HexDrums has a memory of 16 BANKS with 16 PATTERNS each, it can be backed up to a computer via the USB port, refer to the CONFIGURATION SETTINGS for the backup procedure.

Before you start making a pattern, select the BANK where the pattern will be saved – push and hold the BANK button and push one of the step keys, representing BANKS. For example, you can select BANK 1 by pushing step key 1. The BANK button is non-latching, meaning it is active only when pushed and held. Once a BANK is selected, the HexDrums will automatically advance to the PATTERN SELECT mode, meaning that the PATTERN SELECT button will be lit. Please note that the PATTERN SELECT button latches – when pushed once, the button lights up and stays like that until you push it again to exit pattern select mode.

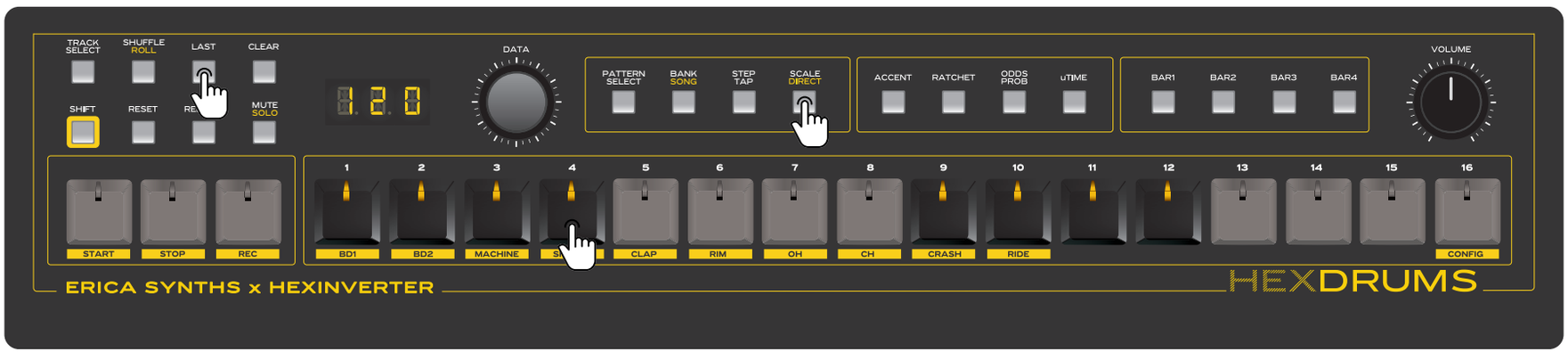
Then select the PATTERN within the bank – as the PATTERN mode is already active (the PATTERN SELECT button is lit), just push one of the step keys representing a PATTERN within the bank. For example, you can select PATTERN 1 by pushing step key 1. Once you are happy with the pattern you have created, you can SAVE it by pushing the REC key. The pattern is saved into the current pattern slot. Now push the PATTERN SELECT button again to exit pattern select mode.

If you want to COPY the pattern in another slot, for example slot 2, you need to SAVE it into the relevant slot. To do so, push the PATTERN button, then push and hold the REC key and push the STEP 2 key. Now the pattern is copied into slot 2 and you can alter it to develop a performance.

If you want to copy the pattern into another BANK, push the BANK button, use the step keys to select the desired bank and the sequencer will automatically advance to the PATTERN SELECT mode. Now hit the step key representing the slot you wish to save the pattern in.

You can inspect the currently selected BANK by pushing the BANK button – the display will indicate the current bank and the step key of the current bank will be lit. The same goes for the PATTERN – push the PATTERN SELECT button. The display will indicate the current pattern and the step key representing the pattern will be lit.

If you want to delete, in other words, CLEAR the pattern, push and hold the CLEAR button and push the step key representing the pattern you want to clear.



PREPARING THE PATTERNS – LAST STEP, SCALE AND PLAY DIRECTION

Before you start programming patterns, we recommend setting up the scene. Each TRACK of the HexDrums can have a different LENGTH, PLAY DIRECTION and SCALE (time division).

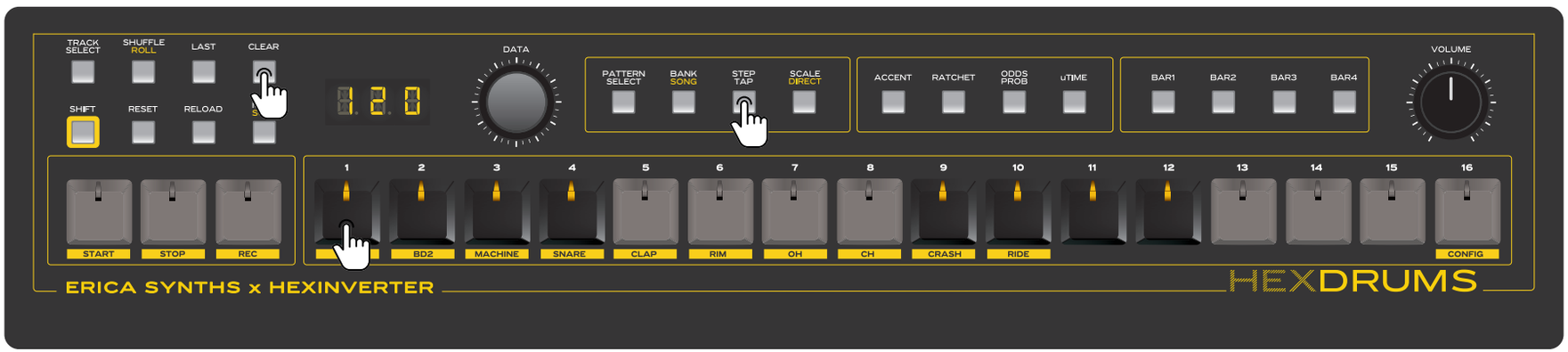
Start by selecting the TRACK. For example, if you want to program Bass Drum 1, push and hold the TRACK SELECT button and hit step key 1 (BD1).

To set the TRACK LENGTH, push and hold the LAST (last step) button and push the relevant step key to set the TRACK LENGTH. If you want to set a track length of 4 steps, push step key 4. If you wish to set a TRACK LENGTH longer than 16 steps, use the BAR buttons in the top-right corner to navigate through the four sets of 16 steps (BARS) and set the track length the same way as before – by pushing the relevant step key. Alternatively, you can push and hold the LAST button and rotate the encoder to set desired last step. While the TRACK is playing, the BAR buttons will blink to indicate the active BAR.

For more advanced setups, for example, designing an entire performance on the HexDrums and switching between patterns during the performance, or when designing SONGS, you may want to set the MASTER LENGTH. To set the MASTER LENGTH, push and hold the SHIFT button and push the LAST button. The alphanumeric display will indicate, for example M16, which means that the master length is 16 steps. Rotate the encoder to set a desired MASTER LENGTH. The maximum master length is 64 steps. If you set the MASTER LENGTH, all tracks, no matter how long they are, will loop until the master track is completed. For example, if you set the MASTER LENGTH to 64 steps, but the BD1 track is 16 steps, the BD1 track will be played 4 times until it advances to the next pattern. If the master length is 16 steps, but the BD1 track is 64 steps, normally when playing a single pattern, the BD1 track will loop through all 64 steps, but now as you switch to another pattern, the HexDrums will complete only 16 steps (master length) before the next pattern.

To set the TIME DIVISION, push the SCALE button and the available time divisions will appear on the alphanumeric display. Rotate the encoder to set the desired time division. Available time divisions are: 1/8, 1/4, 1/2, 3/4, 1, 3/2, 2 and 4.

To set the PLAY DIRECTION, push and hold the SHIFT button and push the SCALE DIRECT button. The button will light up and the alphanumeric display will indicate the play direction. Now you can rotate the encoder to select the PLAY DIRECTION. The available directions are: forward (FWD), backward (BWD, Ping-Pong (PP), Ping-Pong with repeat on the last step (PP2) and random (RND).



PROGRAMMING THE PATTERNS

The HexDrums has two programming modes – STEP programming where you enter steps for voice triggering track-by-track and TAP mode where you tap in the triggers while the sequencer is running. The default mode is STEP mode.

In STEP mode, hit the START key and let the sequencer run, rotate the encoder to set the BPM and proceed to track-by-track programming.

Push and hold the TRACK SELECT button and hit one of step keys representing a TRACK (voice), for example, BD1. Now you can enter Bass Drum 1 triggers simply by hitting the step keys.

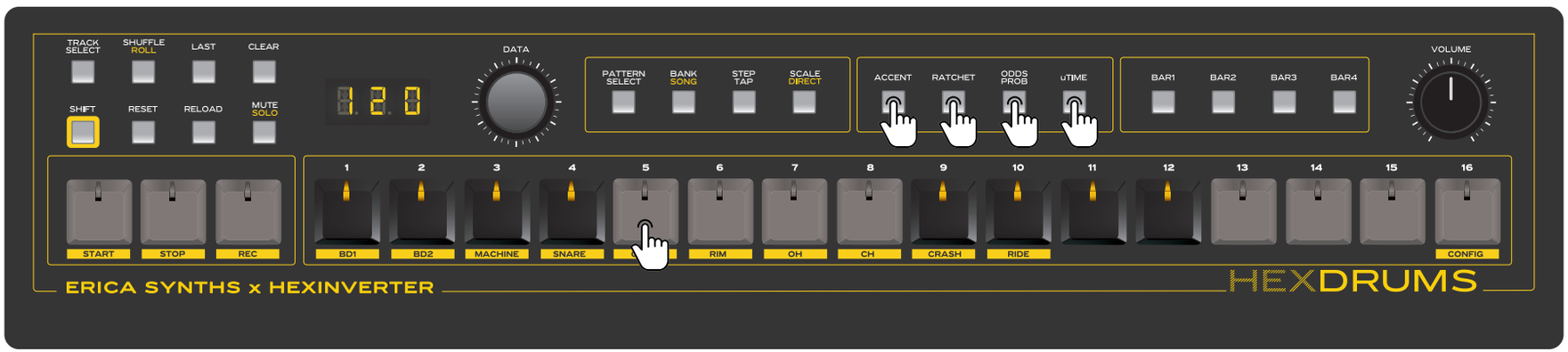
To advance to the next TRACK (voice), push and hold the TRACK SELECT button and hit another step key representing the TRACK you want to program. For example, push step key 7 representing the Open HiHats and use the step keys to enter Open HiHats triggers, etc.

If you have set a TRACK LENGTH longer than 16 steps, use the BAR buttons to navigate through the four sets of 16 steps and enter triggers into the relevant BAR.

To use TAP programming, push the STEP/TAP button and it will light up. Now the sequencer is in TAP programming mode. Hit the START key and use the first 10 step keys to fire the drum triggers. In order to start recording the pattern, hit the REC key and tap in the drum triggers. You can engage and disengage recording in any moment by switching off the REC.

In case you want to CLEAR triggers in a certain track, push and hold the CLEAR button and push the relevant step key. For example, to remove all triggers from the Open HiHats track, push and hold the CLEAR button and push step button 7. Triggers will be cleared as the sequencer playhead moves through the pattern. This way you can remove just several triggers.

If you want to alter/correct the track you have programmed in TAP mode, you can simply set it to STEP mode and add or remove steps one-by-one, as desired.



PER-STEP FEATURES – ACCENT, RATCHET, PROBABILITIES AND MICROTIMING

In order to add some dynamics to your drum patterns, the HexDrums has several per-step features that let you spice up any static drum patterns.

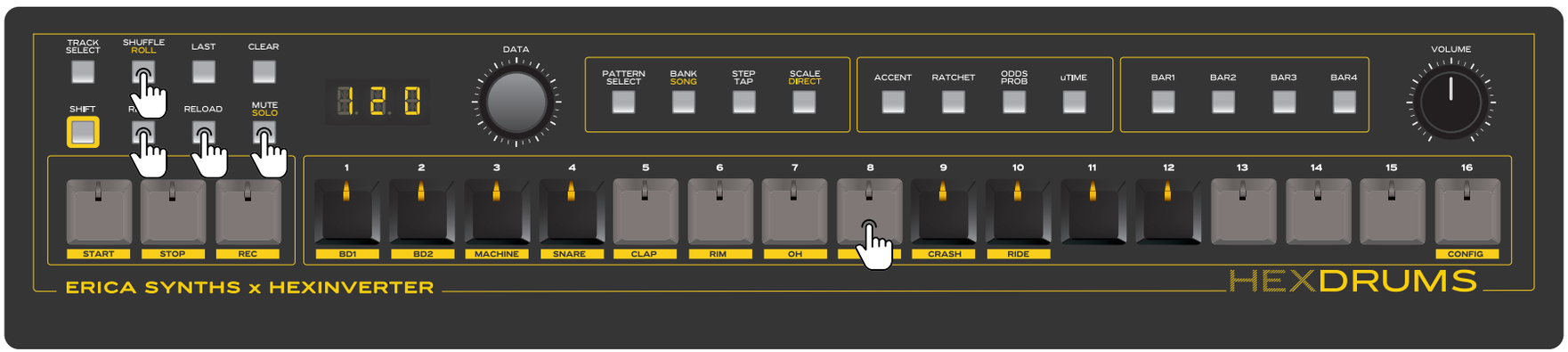
The HexDrums has a configurable ACCENT, both in the global settings and per-track settings. By default, the drum machine has the GLOBAL ACCENT ON and in the configuration settings menu you can configure the step key response for the accent input (see the CONFIGURATION SETTINGS section). The LEDs in the step keys have two levels of brightness each – full (accent) and dimmed (no accent). The step keys in the global accent configuration can have two response options – ONE STEP (1) or TWO STEP (2). If the ONE STEP response is selected, when step triggers are programmed, all steps are accented, meaning that the first push of the step key enters the accented trigger, the second push of the same key removes the trigger. If the TWO STEP response is selected, the step keys allow entering accented or non-accented steps, meaning that the first push of the step key enters an accented trigger, the second push removes the accent and the LED in the step key gets dimmed, and the third push of the key removes the trigger.

Furthermore, you can adjust the accents after the pattern is designed. To do so, push the ACCENT button and manipulate the accent settings with the step keys. If the accent mode is selected, all step keys are automatically set to the two-step response mode.

You can program per-step RATCHETS (trigger repeats on specific steps) on the HexDrums. Push the RATCHET button push and hold the step key for which you want to program the ratchets and rotate the encoder to set the desired amount of ratchets. Available ratchet count is: 1(no ratchet), 2, 3, 4, 5, 6, 7, 8.

In order to make your drum patterns less predictable and repetitive, you can set PROBABILITIES and ODDS of triggers on selected steps. To program the chance of a step playing, push the ODDS/PROB button, push and hold the relevant step key and rotate the encoder to set the desired probability. If you rotate the encoder counterclockwise $\frac{1}{8}$, $\frac{1}{7}$, $\frac{1}{6}$, $\frac{1}{5}$, $\frac{1}{4}$, $\frac{1}{3}$, $\frac{1}{2}$, $\frac{2}{3}$, $\frac{3}{4}$, $\frac{7}{8}$ ODDS are available, clockwise – 10%, 25%, 50%, 75% and 90% probabilities.

Last but not least, per-step MICROTIMING is available, which means that voice triggers are moved up to 50% up or down off the trigger grid. To program the microtiming, push the uTIME button, push and hold the relevant step key and rotate the encoder to set the desired timing offset. By rotating the encoder counterclockwise, a trigger is moved backwards – it will trigger before the regular trigger in the grid, by rotating it clockwise, the trigger is moved forward and it will trigger a bit after the regular trigger in the grid.



DURING A PERFORMANCE

The HexDrums offers several features that make the instrument particularly useful in live performances.

If you alter the drum pattern during a performance, you can instantly RELOAD the original state. To do so, push the RELOAD button and the currently running pattern will be reloaded.

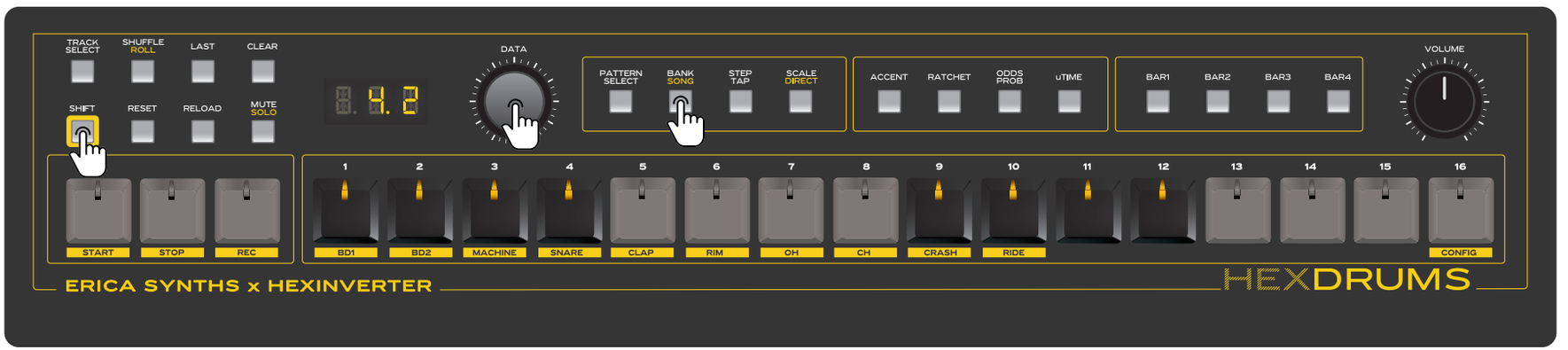
Hitting the RESET button resets the entire (all tracks) pattern to the first step without stopping the sequencer. If you push and hold the SHIFT button, push the RESET button and hit one of the step keys representing drum voices, you can reset the specific track only.

You can MUTE one or multiple tracks. Push the MUTE button and it will light up to indicate that the HexDrums are in MUTE control mode. Here you will see that all active drum triggers – LEDs in the step keys representing drum voices - will blink as they are triggered. Now, you can push the step keys that represent drum tracks (voices) to mute/unmute. LEDs on the the step keys of the muted voices will turn ON. This way you can easily see the active and muted voices. Sometimes you may not have any signal from a voice, even when the level control is in the maximum setting - most probably, the voice is simply muted. You can easily inspect the mute status by pushing the MUTE button.

You can SOLO one or several tracks at time. Push and hold the SHIFT button and push the MUTE/SOLO button - it will start blinking. You can now select the track you wish to SOLO by pushing the relevant STEP key.

You can apply SHUFFLE to one or several tracks. SHUFFLE will automatically apply drum trigger “floating” around their position on the grid and add a more human feel to the drum tracks. To do so, select the track you wish to shuffle, for example, Closed HiHats (push and hold the TRACK SELECT and push step key 8), then push and hold the SHUFFLE button and use the step keys to set desired shuffle amount. All step keys before the selected one will be lit to indicate the shuffle amount. If only step key 1 is lit, there is no shuffle; if you hit key 8, keys 1-8 will be lit and this means that 50% shuffle is applied. The more keys are lit, the higher the shuffle amount.

You may want to occasionally ROLL (trigger drums constantly at a certain rate) some drum voices while performing. To do so, push and hold the SHIFT button and push the SHUFFLE/ROLL button - it will light up indicating that ROLL mode is activated. Now use the encoder to set the desired roll time signature and push one or several step keys representing the drum voices to apply roll to the selected drums. Available roll rates are 1/16 1/8, 1/16 and 1/32.



SONG MODE

When preparing for live sets, you can compile entire SONGS on the HexDrums. A SONG is assembled from the patterns in a single bank, and the song can consist of up to 16 steps, where each step is a pattern within the bank and each step can be repeated up to 9 times. You can save up to 16 songs on the HexDrums.

Before designing a SONG, make sure to set the MASTER LENGTH for each pattern that will be included in the song.

To compile a SONG, push and hold the SHIFT button and push the BANK/SONG button. SNG will appear on the alphanumeric display. Step keys with LEDs on will indicate slots where the songs are saved, keys with LEDs off show empty slots.

Select a slot by pushing one of the step keys and enter the song design or edit mode. --.- will appear on the alphanumeric display. As mentioned above, the SONG can consist of up to 16 parts, and the step keys represent these parts. Push step key 1 for the first part of the song and rotate the encoder to select the pattern. Then push the encoder and rotate it to set the number of repeats. The alphanumeric display indicating, for example, 4.2 means that in the first part, pattern 4 will be repeated 2 times. Then proceed to the next part – push step key 2 and select the pattern and number of repeats the same way.

If you rotate the encoder past the 16th pattern, STOP will be indicated on the alphanumeric display. Normally, after completing the last part of the song, it will loop automatically, starting again from the first part, but if the last part is programmed for STOP, the song will terminate as soon the last part is reached.

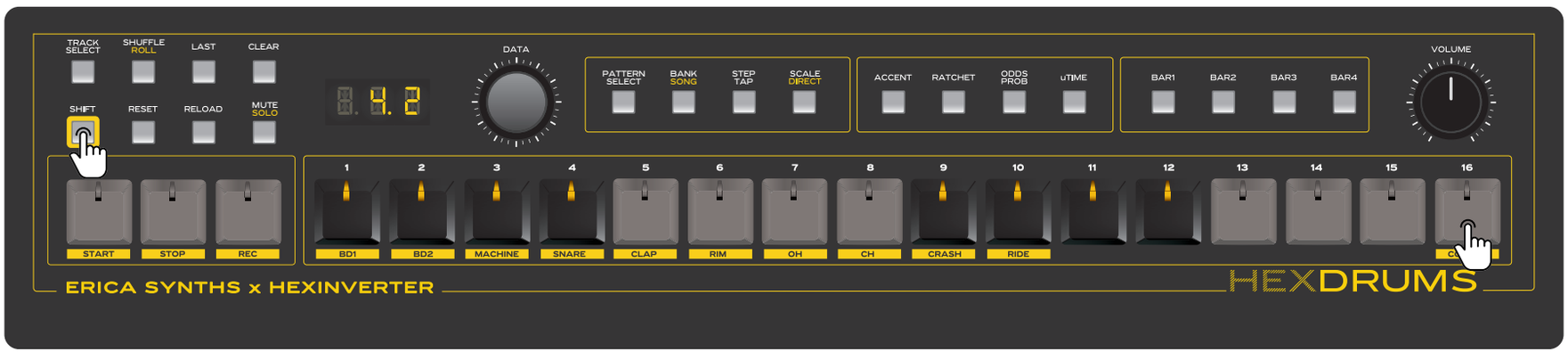
Once done compiling the song, hit the REC key and the song will be saved into the previously selected slot. You can later edit the song by selecting the same slot when entering SONG mode.

To PLAY the song, enter SONG mode, select the song and press the PLAY key – the song will start playing and blinking LEDs on the step keys will indicate the currently playing part of the song. As mentioned above, the song will automatically loop unless you have programmed STOP in the last part.

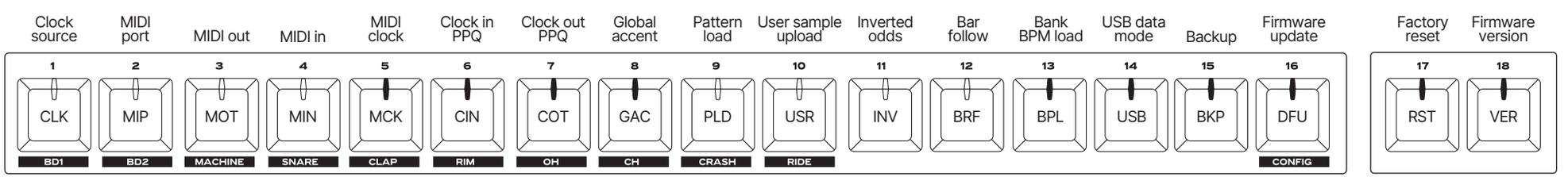
To delete the SONG, simply enter song mode, push and hold the CLEAR button and hit the step key representing the song you want to delete.

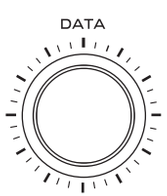
CONFIGURATION SETTINGS

HEXDRUMS

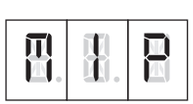


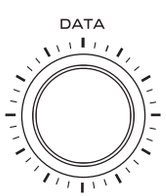
To enter the configuration settings, push and hold the SHIFT button and push step key 16 (CONFIG). You can access the configuration menu sections by pushing the step keys; each step key represents a specific configuration setting or by rotationg the DATA encoder to scroll through all configuration options.





1. CLOCK SETTINGS
The first step key provides access to the CLOCK SOURCE settings. Push the encoder to enter the menu and rotate it to select between INT – internal clock, MID – MIDI clock and EXT – external analog clock.
Push the encoder to confirm selection.

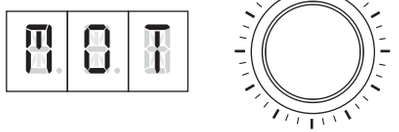




2. MIDI PORT SETTINGS
The second step key provides access to the MIDI PORT selection. Push the encoder to enter the menu and rotate it to select between DIN5 and USB. Push the encoder to confirm selection.

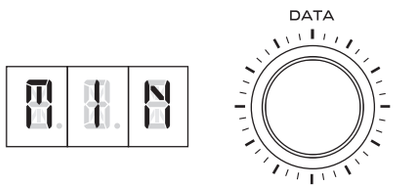
CONFIGURATION SETTINGS

HEXDRUMS



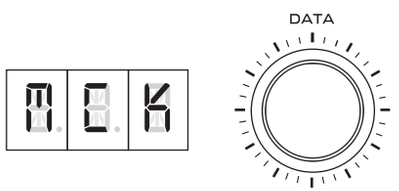
3. MIDI OUT SETTINGS

The third step key provides access to the MIDI output configuration. Push the encoder to enter the menu and rotate it to select between OFF – no MIDI messages are transmitted, THR – MIDI output is configured to MIDI thru mode, and 1 – 16 representing the MIDI channels. Push the encoder to confirm selection.



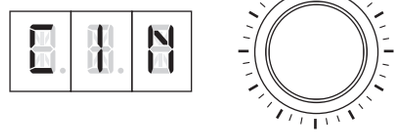
4. MIDI INPUT SETTINGS

The fourth step key provides access to the MIDI INPUT settings. Push the encoder to enter the menu and rotate it to select between OFF – no MIDI messages are received, OMNI – the synth receives MIDI messages on all channels, and 1 – 16 representing the individual MIDI channels. Push the encoder to confirm selection.



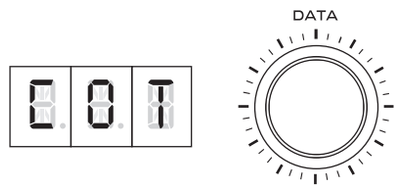
5. MIDI CLOCK OUTPUT SETTINGS

The fifth step key provides access to the MIDI CLOCK OUTPUT settings. Push the encoder to enter the menu and rotate it to select between OFF – no MIDI clock messages are transmitted, ON – MIDI clock messages are transmitted when the sequencer is playing and CON – MIDI clock messages are transmitted continuously. Push the encoder to confirm selection.



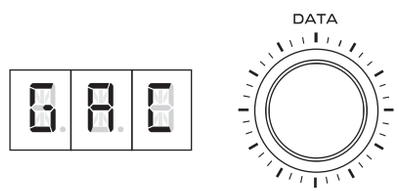
6. CLOCK IN SETTINGS

The sixth step key provides access to the CLOCK INPUT PPQ settings. Push the encoder to enter the menu and rotate it to select 1, 2, 4 or 24 PPQ. Push the encoder to confirm selection.



7. CLOCK OUT SETTINGS

The seventh step key provides access to the CLOCK OUTPUT PPQ settings. Push the encoder to enter the menu and rotate it to select 1, 2, 4 or 24 PPQ. Push the encoder to confirm selection.

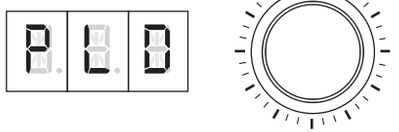


8. GLOBAL ACCENT SETTINGS

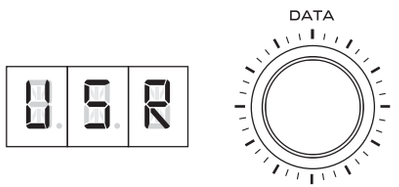
The eighth step key provides access to the GLOBAL ACCENT selection. Push the encoder to enter the menu and rotate it to select between 1 or 2 step response. See the manual above for ACCENT implementation. Push the encoder to confirm selection. This setting enables accents on all tracks by default!

CONFIGURATION SETTINGS

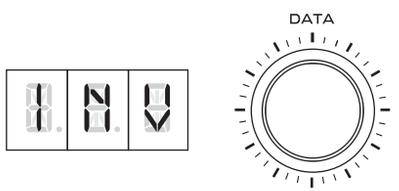
HEXDRUMS



9. PATTERN LOADING SETTINGS
The ninth step key provides access to the LAST PATTERN LOAD configuration. Push the encoder to enter the menu and rotate it to select between ON and OFF. If ON is selected, upon the next power up of the HexDrums, the last active pattern will be loaded automatically. If OFF is selected, the drum machine will power up with no pattern loaded.
Push the encoder to confirm selection.

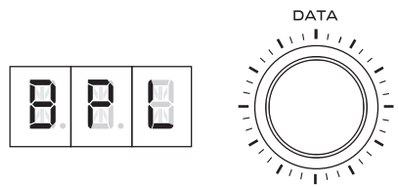


10. USER SAMPLE ACCESS SETTINGS
By pushing the tenth step you turn access to the user uploaded samples ON or OFF.
Push the encoder to enter the menu and rotate it to make a selection. If OFF is selected, only factory samples will be available.
Push the encoder to confirm selection.

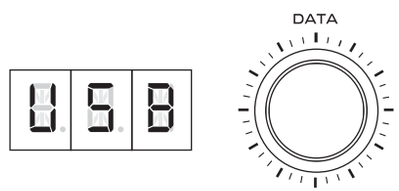


11. INVERTED ODDS SETTINGS
The eleventh step key provides access to the INVERTED ODDS settings. Push the encoder to enter the menu and rotate it to select between ON and OFF. With inverse odds enabled, the configured per-step ODDS1 will play the step on the last pass rather than the first (the opposite for ODDS2), for example, if a step has 1/3 ODDS1 enabled, by default, the step will be played in the first pass and omitted in the following two. With inverse odds ON, the step will be omitted in the first two passes and played in the third.

12. BAR FOLLOW
If some tracks are longer that 16 steps, you can activate the Bar Follow option, which will indicate currently active BAR by sequentially lighting up BAR select pushbuttons.
Push the encoder to enter the Bar Follow menu and rotate it to select between ON and OFF.



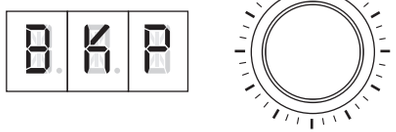
13. BANK BPM LOAD
You may want to load a pattern with it's initially intended BPM without need to adjust it manually. If Bank BPM Load is activated, the original BPM is saved and loaded as soon you switch to a new bank. Push the encoder to enter the BPL menu and rotate it to select between ON and OFF settings.



14. USB ACCESS
This ensures the USB connection for user sample upload. Connect the drum machine to your computer via the USB port and push the encoder.
The HexDrums will appear as an external HDD and you can upload user samples here. For user sample upload instructions, please refer to the next page of this manual.
Push the encoder to return to the settings menu.
NB! It may take few seconds before the HexDrums returns to the settings menu.

CONFIGURATION SETTINGS

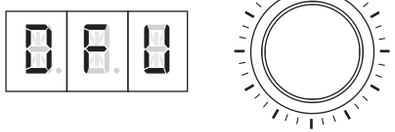
HEXDRUMS



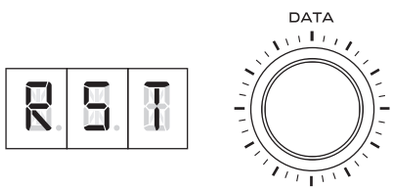
15. BACKUP
For piece of mind (or when you decide to perform factory reset or run out of internal pattern memory) you may want to backup your patterns time by time. The backup saves all patterns and songs as a backup file to your computer.

The Backup and Restore procedure is following:
1. Connect the HexDrums to your computer using a USB cable.
2. The device will appear as a Mass Storage Device named HEXDRUMS.
3. To CREATE a backup, copy the file BACKUP.HXB from the HexDrums drive to your computer.
5. To RESTORE a backup, copy your saved BACKUP.HXB file back to the HEXDRUMS drive, replacing the existing file.
6. Safely eject the HEXDRUMS drive from your computer, or press the DATA encoder to complete the backup/restore process.

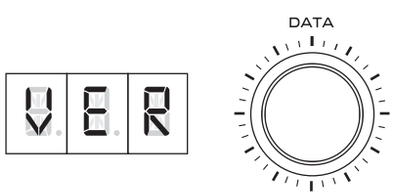
NB! Do not disconnect the device or power it off during the backup or restore operation.



16. DFU - FIRMWARE UPDATE MODE
1) Download the latest firmware (.uf2) file.
2) Press the DATA encoder while on the DFU page
3) It will appear as an external drive on your computer.
4) Drag and drop the .uf2 firmware file onto the HexDrum drive.
5) After updating, check the version via the 15th step key while in the CONFIG menu.



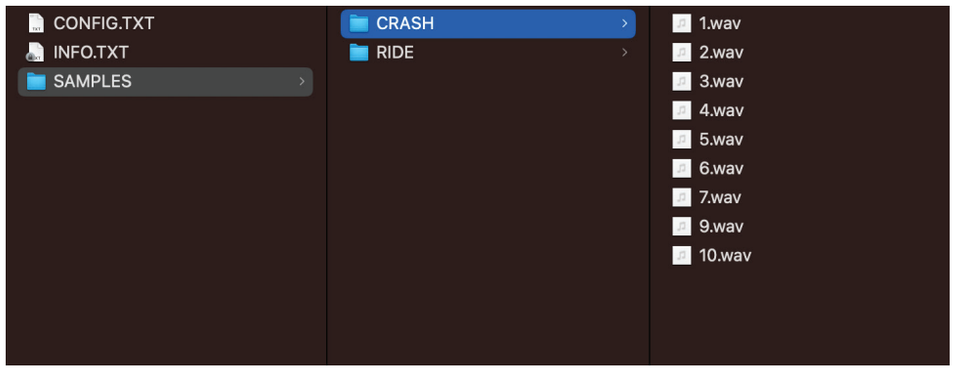
17. FACTORY RESET
As the Factory Reset is 17th option in configuration settings, you need to rotate the DATA encoder, until the display shows RST or push the BAR2 pushbutton and the step key 1.
Press the DATA encoder and hold it for 5 seconds to do the factory reset.
NB! All user patterns will be lost!



18. FIRMWARE VERSION
See the installed firmware version!

USER SAMPLE UPLOAD

HEXDRUMS



As mentioned above, you can upload your own samples into the CYMBALS voice. The original factory samples are hard-coded and they cannot be deleted, downloaded or permanently replaced. User samples will temporarily replace factory samples if the user sample feature is enabled in the configuration settings. The CYMBALS voice features 10 samples for Crash cymbals and 10 samples for Ride cymbals and they are selected in pairs. You can replace any sample in the list with a user sample. Once the user sample feature is disabled, the HexDrums automatically loads the factory samples.

Make sure to prepare your samples! The samples must be 48 kHz, 16 bit mono. The samples are stored in two folders - one for the Crash and one for the Ride cymbals. In each folder, the samples are numbered from 1 to 10.
If you want to replace, say, sample 5 in the Crash cymbals voice, you need to rename the new sample “5” before placing it into the folder. If you want to replace sample 8 in the Ride cymbals voice, you need to name it “8”, etc.
This may be obvious, but you simply need to rename each sample as the number without the apostrophes, as shown in the screenshot.
As mentioned, the samples are selected in pairs on the Cymbals voice.
For example, if you assign the name “1” to the samples in both the Crash and Ride cymbals folders, then the first pair of samples in the Cymbals voice will be replaced by these user samples. You can upload up to 10 samples in each folder, naming them 1-10 correspondingly.

Upload your samples! Connect the HexDrums to your computer, select USB in the configuration settings and push the encoder. HexDrums will appear as an external HDD on your computer. Open the HDD and you will find two folders for sample upload – Crash and Ride. Drag and drop your samples in each folder and confirm by pushing the encoder. You have now personalized the HexDrums with your own samples!

HEXDRUMS

SAFETY INSTRUCTIONS

Please follow the instructions for the use of the Erica Synths the HexDrums below, because only this will guarantee proper operation of the unit and ensure warranty from Erica Synths.

Use the HexDrums only with the 12V, 3A, center-positive power supply unit (PSU) that it was shipped with. Powering it with another PSU may cause permanent damage to the device.

Water is lethal for most electric devices unless they have been rendered waterproof. the HexDrums is NOT intended for use in a humid or wet environment. No liquids or other conducting substances should be allowed into the unit. Should this happen, the HexDrums should be disconnected from mains power immediately, dried, examined and cleaned by a qualified technician.

Do not expose the instrument to temperatures above +50° C or below -20° C. If you have transported the instrument in extremely low temperatures, leave it at room temperature for an hour before plugging it in.

Transport the instrument carefully. Never let it drop or fall over. Warranty does not apply to instruments with visual damage.

The HexDrums must be shipped in the original packaging only. Any instrument shipped to us for return, exchange and/or warranty repair must be in its original packaging. All other deliveries will be rejected and returned to you. Ensure that you keep the original packaging and technical documentation.

DISPOSAL

This device complies with EU guidelines and is manufactured and confront RoHS without the use of lead, mercury, cadmium or chrome. Nevertheless, this device is special waste and disposal in household waste is not recommended.

User manual by Girts Ozolins@Erica Synths and Leo Novus@Erica Synths.

Design by Ineta Briede@Black8

WARRANTY

You will find the Erica Synths terms of warranty at www.ericasynths.lv

Items for return, exchange and/or warranty repair should be sent to us according to the guidelines outlined in the SUPPORT section at www.ericasynths.lv

User Manual October 2025