user's Guide

Version 1.3, December 2024

Warning – safety

PLEASE READ ALL INSTRUCTIONS CAREFULLY BEFORE USING THIS APPLIANCE. KEEP THIS NOTICE FOR ANY FUTURE NEEDS. THE SAFETY INSTRUCTIONS CITED IN THIS INSTRUCTION MANUAL CANNOT COVER ALL POSSIBLE CONDITIONS AND SITUATIONS. IT IS UNDERSTANDING THAT THE USE OF THIS DEVICE REQUIRES SPECIAL ATTENTION.

IMPORTANT
The manufacturer's legal warranty does not cover service charges incurred due to lack of knowledge regarding the correct use of a function or feature (when the device operates as intended) are not covered by the manufacturer's legal warranty. manufacturer's warranty, and are therefore the responsibility of the owner.

1. Read and understand all instructions.
2. Always follow the instructions on the instrument.
3. Before cleaning the instrument, always unplug the mains cable. When cleaning, use a soft, dry microfiber cloth. Do not use gasoline, alcohol, turpentine or any other organic solutions. Do not use liquid or spray cleaners or a damp cloth.
4. Do not position the instrument in an unstable manner to avoid accidental falling.
5. Do not place heavy objects on the instrument. Do not place the instrument near a heat source or in a place without ventilation.
6. Do not attempt to open or insert anything into the instrument as this may cause a fire or short circuit.
7. Do not pour any liquid on the instrument.
8. Do not open the device under any circumstances. Do not attempt to repair the device or make any modifications to it (unless the manual gives you specific instructions to do so). Contact the manufacturer or your authorized maintenance center for any repair or conversion.
9. Do not use the instrument during storms or thunder; This could cause electric shock from a distance.
10. If the internal AC input cable protection fuse needs to be replaced, replace it with a fuse with the following technical specifications: F5A, 250v AC.
11. Do not use or store the device in locations subject to extreme temperatures. Do not expose your instrument to direct sunlight. Do not block the ventilation openings.
The operating temperature range of the instrument should be 15°-35°C (59°-95°F).
12. This device, whether used alone or in combination with an amplifier or headphones, can produce sound levels that could cause permanent hearing loss. Never use it at high volume for a long period of time or in any circumstance where listening would become uncomfortable. If you experience hearing loss, consult a specialist doctor immediately.
13. At the end of its life, as waste electronic equipment, The Pool must be entrusted to a waste collection and treatment sector.

Baloran assumes no responsibility for any damage or loss of data caused by improper operation of the instrument.

Notes

I. Contents

I. Welcome

I welcome you to the community of The Pool users and thank you for your trust. The Pool is the culmination of several years of reflection and work. I hope you have as much fun with it as I had creating it and now using it.

I doubt it's possible to discover all the tricks and power of the instrument without ever opening the manual. Also, I advise you to read at least the *Presentation* and *Architecture chapters* that follow. Then you can draw detailed information from the *References* according to your needs.

Baloran SAS is a small company. I set up a forum and a wiki to share information, support, discussions and news around The River and The Pool.

http://forum.baloran.com
http://wiki.baloran.com

They will only be able to enrich themselves with your collaboration 😉.

Yours sincerely,

--
Laurent Lecatelier
Baloran SAS

Hardware, software, design:	Laurent Lecatelier
Sound design:	Laurent Lecatelier
Manual:	Laurent Lecatelier

I sincerely thank all the comrades and friends who helped me, inspired me, challenged me and congratulated me but whose kindness gave me the energy to see this project through to the end: the communities and friends of Facebook, SynthFest France as well as Audiofanzine , Gearspace and many others.

II. Presentation and first steps

1. Presentation

The Pool offers original, efficient and very open architecture. You will notice that its power in terms of the richness of the elements and the modulation capabilities is close to a modular one, with more accessible ergonomics. You will discover that in classic use, it is as powerful and easy to use as the best polyphonics on the market. But it offers even more: multitimbrality supported from the hardware, an exceptional sequencer, two effects modules as musical as they are powerful as well as numerous modes and tools to open The Pool to the outside world.

The Pool is an analog synthesizer. Digital (digital oscillators, special effects) is added to analog, but the path to the XLR outputs is 100% analog 😉.

The large capacitive touch screen surrounded by its twelve encoders is an important element in the ergonomics of The Pool. It effectively complements the 200 direct access controls on the panel. No menu or sub-function in The Pool, everything is accessible either directly by a button or a potentiometer, or directly on the touch screen and by dedicated encoders. The sequencer and the arpeggiator work according to the same logic: each step has its multi-role encoder and its dedicated illuminated button. The screen allows immediate access to all the sequencer settings and to view/edit/draw all the step parameters.

The Pool is the first synthesizer that offers a view of modulations as soon as a sound is loaded without having to consult a long list of modulations and virtual cords. *This is also the founding concept of this project:* almost each potentiometer is associated with an illuminated button which allows you to adjust the sources and modulation amplitudes of this control: frequency of filters, sustain of envelopes, panning of output VCAs and same speed and amplitude of the LFOs , everything can be modulated by other sources. The number of modulations is virtually unlimited, all positive or negative. *You have a matrix of 20 modulation sources on 70 destinations, positive and negative, all multiplied by the eight synthesizers present in The Pool….*

To contribute even more to the living sound, The Pool integrates, for each channel, a motion sequencer which acts like an automaton on the majority of the panel controls.

This potential is supplemented by optimal source management: MPE keyboards as well as polyphonic pressure keyboards are fully supported: each parameter from these sources is immediately available in the modulation sources and can be assigned to all modular commands from The Pool, without restriction.

Designed from the outset, from the design of the voice cards for multitimbral use, The Pool offers all possible organizations: from classic 8-voice polyphony to quadruple bitimbral monophony. To make operation as simple as possible, the different modes are accessible via a dedicated button: after having created a superb monophonic sound, you can test it in polyphonic 4 bitimbral voices, or polyphonic 8 monotimbral voices simply by pressing the dedicated button. The Pool benefits so well from multitimbrality that, even if a software split is offered, the use of two master keyboards makes the experience even more enjoyable: the first keyboard will be configured on MIDI channel 1 and the second on channel 2. You can then very simply assign a sound to the first keyboard and another to the second. Likewise, the transposition of arpeggios and sequences can be limited to one channel, so the first keyboard transposes, the second allows normal playing, even in a classic 8-voice polyphonic mode.

2. First steps

If you have not yet done so, carefully unpack your The Pool and store all transport items in a safe place. In the box, you must find:

- The Pool with a microSD card inserted on the back
- Two tilt legs
- A power supply and its power cable
- A Goose Neck Light XLR
- A bag containing self-adhesive feet, cable ties and knobs for tightening the legs
- A USB 2.0 type A to B cable with filter
- The manual.

Install The Pool at your convenience.

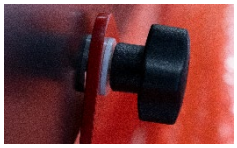
Placed flat on a support

In this case you can use the self-adhesive feet provided if the surface of the support is fragile.

Posed inclined using the legs provided

The four possible locations for attaching the legs to the box, combined with the three possible locations on the legs offer a very wide choice of inclinations: from almost vertical to almost lying down.

You must insert a nylon washer delivered in the bag between the wheel and the foot AND another between the foot and the housing.



For each leg, it is important that the support is placed on the two roundings opposite the fixing rounding before final tightening.

Placed on the desk support

The next model, K&M 28075, is perfectly suited. You just have to adjust the arms to the maximum spacing

Attachment to a VESA 100x100mm mount

On the bottom of The Pool, four M5 slots allow attachment to a VESA 100mmx100mm wall or table mount. The photo shows a VESA support articulated arm with GAS actuator but in practice, the assembly is not rigid enough for comfortable use of the panel. It is preferable to use a rigid VESA mount, which can just be folded out.

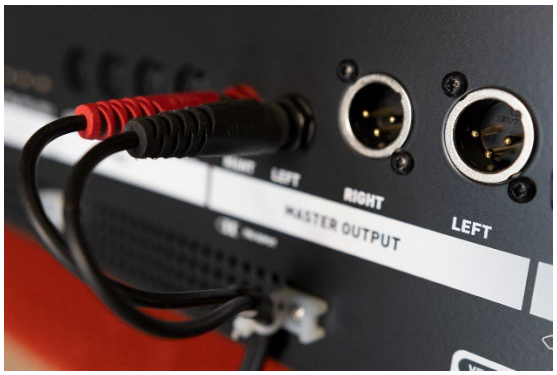
Any damage related to the use of the VESA mount will not be covered by the warranty on the instrument.

• Connect the Goose Neck Light which will envelop your The Pool in warm light.

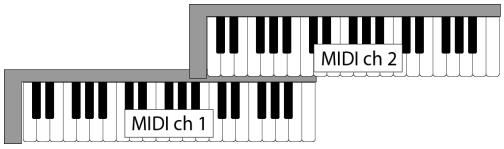
• Connect the power supply to The Pool and your electricity network.

The power supply supplied, from the manufacturer Meanwell , is of the best quality, it will adapt to all networks and voltages, but avoid mountains of multiple sockets, extension cords on extension cords and two-wire connections which do not have an earth connection .

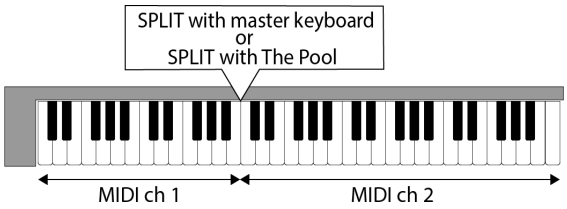
• Once your The Pool is correctly installed and the connections made, you can use the nylon ties provided in the bag to secure the connections: the objective is to remove the constraints on the connectors.



• Connect a master keyboard to the MIDI USB Host socket. Check that it is set to channel 1. The Pool can easily power up to two small keyboards at 500mA. Otherwise, use the dedicated power supply of your keyboard or the USB hub that will be connected to The Pool. To make it even easier to use multitimbrality and tools such as the sequencer, arpeggiator or automatic tunings, the availability of two simultaneous MIDI channels provides great comfort. Two solutions are recommended:



Two master keyboards connected to the USB Host socket via a small USB hub.



A large master keyboard with a SPLIT in two zones, connected to USB Host or MIDI IN. If the SPLIT function is offered by the master keyboard, this is ideal. Alternatively, you can set SPLIT as a sound parameter in The Pool.

The AUTO CHANGE CH parameter in System Settings allows you to adapt the way you work to the MIDI equipment connected to The Pool.

• Check that the microSD card is securely seated in its holder (see The rear panel).

• Turn on The Pool.

• Press the LOAD button.

The loading screen is displayed. The list of sounds contained in the FACTORY folder on the microSD card is displayed.

• Select the sound of your choice with encoder 1.

• Touch Load to load the sound without leaving this screen or press the flashing LOAD button to load the sound and exit the screen. You can also load the sound without leaving the screen by touching the line of your choice.

The list of sounds can be filtered by STYLE and/or MODE: Select for example with encoder 10, POLY 8 mode. Thus, only sounds configured as a classic 8-voice polyphonic synth will be displayed.

• If your instrument is a little cold or out of tune, press SYS and LOAD simultaneously to perform a Fast Autotune.

It's time to take a quick look at the effects side: The Pool has two stereo digital effects that can be routed in series, in parallel. They are configured automatically when loading a sound.

• Press the FX button

To change an effect, touch the corresponding FX button (Fx1 or Fx2) then use encoder 1 to change the effect. To turn off an effect, touch the corresponding BYPASS button (BYPASS Fx1 or BYPASS Fx2). By default, effects are routed in serial mode. The sounds go first to effect 2 and then to effect 1. The small diagram displayed reminds us of this.

Encoders 9 and 10 allow you to adjust the effect (WET) and the direct signal (DRY). The DRY is never digitized, it remains analog up to the XLR socket 😉

To finish this quick overview, you can also test these two commands:

• Press the INIT button at the bottom right. The Pool uses the basic configuration, without effects, sequences or arpeggios.

• Press the RAND button . The Pool invents a sound. Sometimes, when the stars are well aligned, the result can be interesting. But it always remains educational, it's interesting and very educational to understand the sound heard 😉.

The **11/VALUE encoder** offers a practical function: when you turn a potentiometer to change a parameter, you can then use this encoder to search for a specific value with the greatest precision.

You will find all the detailed information on each button, each screen, each option in the References chapter .

You will find all the explanations on the concepts and some usage information in the chapter The Architecture of The Pool

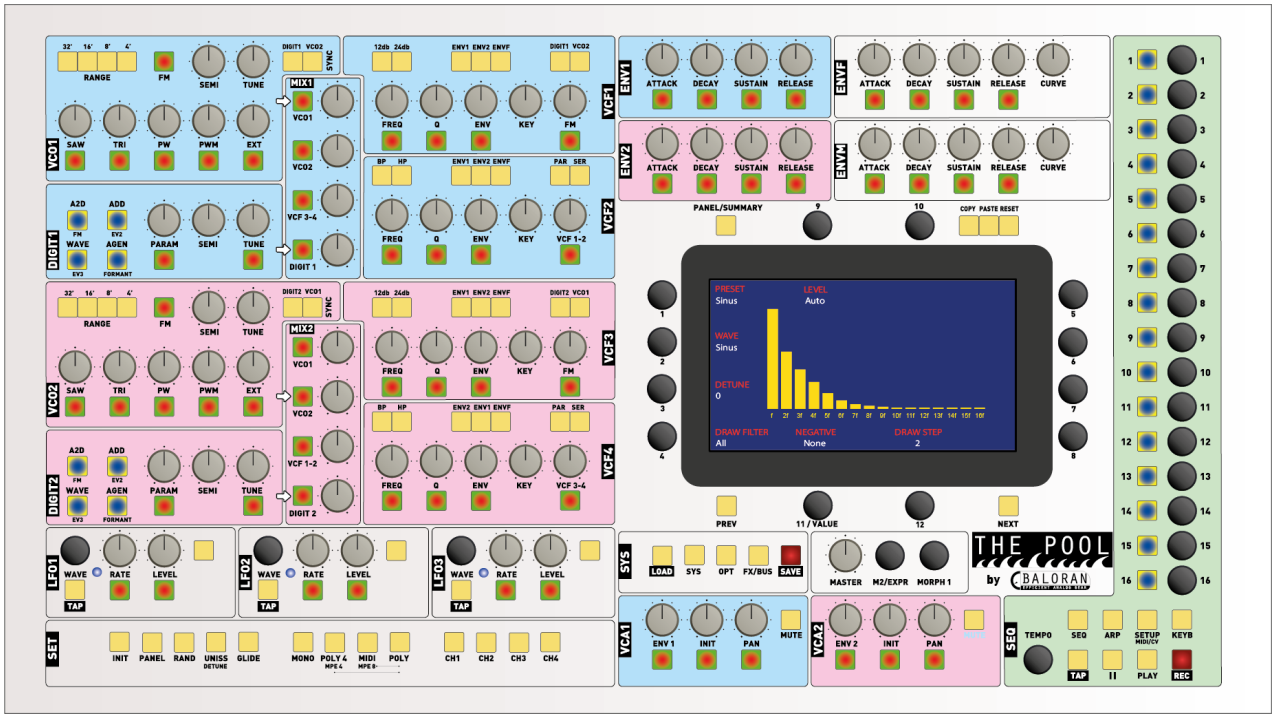
III. The architecture of The Pool

1. Voice and voice card

In The Pool there are four voice cards, each card containing its own processor, two digital generators/converters (16bits 96K). On each voice card there are two full mono analog synthesizers. Each of these synthesizers contains a VCO (3340), a digital oscillator offering several syntheses, two analog filters (3320 and 3350), an analog envelope/VCA (3310 + 3360) as well as dozens of VCAs (2164, 3363, 3364) and switches to dose the signals in the mixers and on the two output channels.

So, you have at your hands eight monophonic synthesizers or four monophonic bitimbral synthesizers or one polyphonic eight-voice or polyphonic four-voice bitimbral synthesizer.

The panel is the image of the voice card. The controls for both synthesizers are directly accessible.



The areas, colored here with a blue background , show the controls of the first synthesizer.
The areas, colored here with a pink background , show the controls for the second synthesizer.

If you already master analog synthesizers, you should be on familiar ground 😉

The two synths of a voice card share the settings of two digital envelopes (ENVM and ENVF) as well as three LFOs : LFO 1 , LFO 2 and LFO 3 . LFO 1 is a bit special because it is polyphonic, that is to say its instance is specific to the synthesizer it modulates while LFO 2 and LFO 3 are always synchronized on the two synths of a voice card. The M and F envelopes are also polyphonic: the settings are common but the instances are specific to each synthesizer.

In the SET area, you can see four buttons MONO, POLY 4, MIDI and POLY.
They will be developed in the SET panel , they will allow you to choose the operating mode.

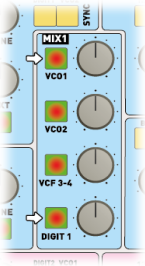
- MONO : The Pool configures four bitimbral monophonic synthesizers. The CH1 , CH2, CH3 and CH4 buttons allow you to activate/select on which voice card the panel will act. By default, only CH1 is activated, so the panel acts on the two synths of the first voice card and we only hear it, that is to say a stack of the two timbres of its synths. If you activate all the cards, you will obtain a stack of four voice cards or eight stamps. To activate another card, press the corresponding button twice quickly.

- POLY 4 : The Pool configures a 4-voice bitimbral polyphonic. You can therefore play up to 4 notes simultaneously and, for each note, you will hear a stack of two synths/timbres.

- MIDI : The Pool configures 4 bitimbral monophonic synthesizers. CH1 , CH2, CH3 and CH4 allow you to activate/select which card the panel will act on. The difference compared to MONO is that CH1 will correspond to MIDI channel 1, CH2 to MIDI channel 2 and so on up to 4. If you use a hardware or software MIDI split, this will allow you to have one sound on one hand, and another sound on the other hand. There are MIDI sub-modes which allow you to finely configure the content of each channel such as MIDI mode 1 + 6 which defines 2 channels, the first monophonic bitrimbral and the second polyphonic 6 monotimbral voices.

- POLY : The Pool configures a classic 8-voice polyphonic synthesizer. In this mode, the controls colored with a pink background are disabled because all synthesizers in The Pool will share the same parameters. There is just one exception: the VCA2 PAN potentiometer and its associated modulation which remain active in this mode.

2. Links between the two synthesizers of a voice card



In MIX1 block of the synth 1, the potentiometers VCO2 and VCF 3-4 make it possible to inject into the VCF 1-2 either the signal available at the output of VCO2, or the signal available at the output of VCF 3-4.

In the MIX 2 block of the synth 2, the potentiometers VCO1 and VCF 1-2 make it possible to inject into the VCF 3-4 either the signal available at the output of VCO1, or the signal available at the output of VCF 1-2.

This type of crossover between the two synths on a card allows for multiple combinations. Example: in MIX1 , dose at the input of VCF1-2, the two analog VCOs VCO1 and VCO2. In MIX2 , at the VCF3-4 input, set VCO2 to 0 which is defined by default and only dose VCF1-2.
Mutate VCA1. You recover on VCA2, the two VCO1 and VCO2 filtered by four filters .
In POLY 4 mode, it becomes very interesting. And digital sources have not yet been exploited. They could add two ADD and/or FM oscillators to further enlarge/enrich the sound.

We find these links in the choice of the filter envelope, the filter FM or the sync of VCO1 and VCO2. In our previous example, we could therefore very well use ENV1 as the envelope of FILTER 3 while ENV2 will be used for the VCA2 output.

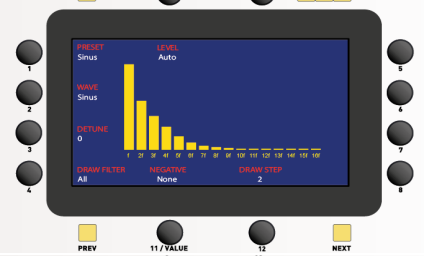
3. Digital oscillators

Each of the synthesizers on a voice card has a complex digital oscillator. These are the DIGIT1 blocks and DIGIT2. They can be dosed in the mix before the filters with the DIGIT 1 potentiometers of the block MIX1 , and DIGIT 2 of the block MIX2 .

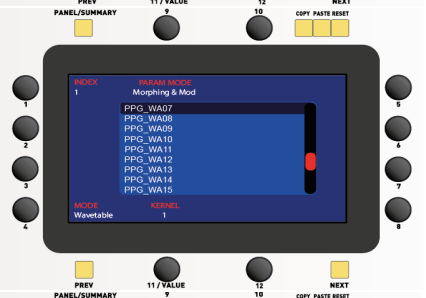
The Pool is not a classic hybrid instrument. Its digital generators are designed more as complements to the analog part than as a basis for sound generation. To enable logical or mathematical operations and processing, a digital copy of the analog VCO is made to become an additional source available to the digital oscillator. The ring modulator, for example, multiplies the wave coming from the digital generator with the digital copy of the VCO.

For the moment, five types of digital synthesis are offered.

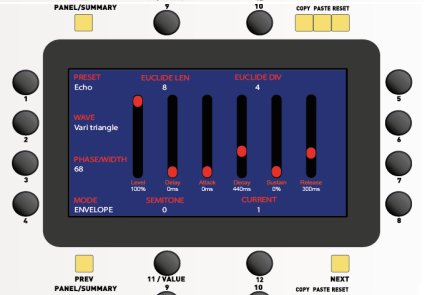
A2D : it is a digital generator that imitates an analog VCO very well. It additionally offers a ring modulator and frequency modulation using a digitized copy of the analog VCO. The Kernel parameter allows you to multiply the instances of this generator to enlarge the sound.



ADD : it is an additive synthesis generator. You draw on the screen the amplitude of the fundamental and its 15 following multiples (x2…x16). Three syntheses can be defined and a modulation allows you to travel between these three syntheses, like a wave morphing.



WAVE : In *Wavetable mode* , it is a 64x256 wavetable generator. A modulation allows you to travel between the 64 waves. The Kernel parameter allows you to multiply the instances of this generator to enlarge the sound. Wavetables can be edited/created with the Free/Open Source WaveEdit application from Synthesis Technology . In *Samples mode* , it is a multi-sample player based on adapted Soundfonts. Specific wavetables and Soundfonts are on the microSD card and can therefore be imported by you.



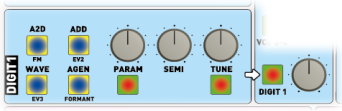
AGE : It is an original generator which allows you to combine four continuous waves, enveloped, delayed and sequenced by a Euclidean counter.

FM : It is a four-operator FM type generator which uses the classic eight algorithms of this synthesis to offer its characteristic sounds.

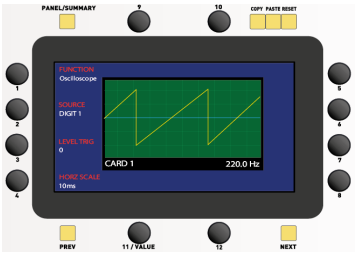
To select a mode, press the corresponding button. To access FM mode, quickly double-press the A2D button .

formant filtering module has been added. It allows the digital oscillator to pass through a battery of six adjustable filters. The presets rely on vocal formants but it is entirely possible to do something else 😉 . To filter the analog VCO, simply use its digital copy in A2D mode which will then pass into formant filtering.

To access the formantic filter , quickly double-press the AGEN button , and use encoder 6 to activate it or not.



To hear the digital generators, do not forget to adjust the corresponding level in the pre-filter mix (MIX1 and/or MIX2) with the DIGIT 1 and DIGIT 2 controls.

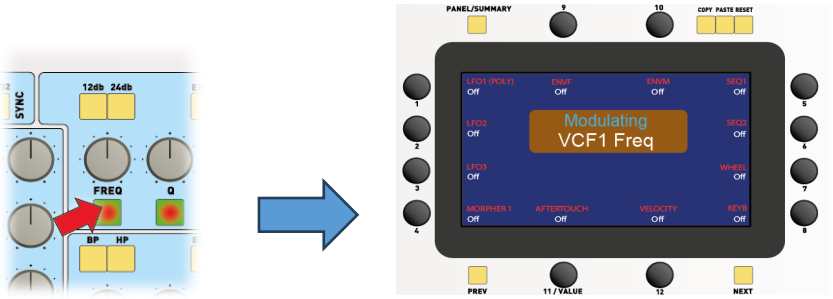


From the previous screens, press the PANEL button to observe with a simplified oscilloscope the signal or spectrum generated by the digital oscillators.

4. The modulations

The Pool offers an exclusive ergonomic approach to modulations. Almost each potentiometer (68 exactly) has below it (or on the left for some) a two-color illuminated button (red and green). By pressing this button, the large screen displays all possible modulation sources for that potentiometer.

Example for modulating the filter frequency



Using the nearest encoder, each modulation source can be finely tuned, either positively or negatively. Modulations are added, you can define as many as necessary. The NEXT button provides access to the next page of modulations (MPE, MIDI, MORPHER, SEQUENCER), as well as setting the maximum modulation width (MODULATION WIDTH): by default, the maximum modulations of a VCO's FM and LFO speed are attenuated.

When a modulation is defined, the illuminated button remains green. Without modulation it is off. You can therefore control all the sound parameters that are modulated at a glance on the panel.

During modification, the illuminated button is flashing red if no modulation is defined or flashing red/green if one or more modulations are defined.

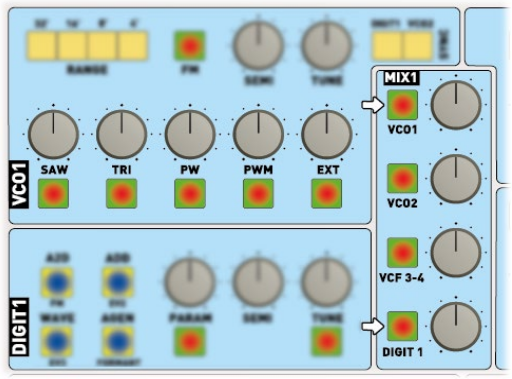
Morpher modulation sources are two encoders available on the panel. Morpher 2 is also linked to the expression pedal. By assigning a Morpher as the modulation source for many parameters, you can modify with a single encoder or the expression pedal all of these parameters simultaneously.

By touching a modulation on the screen, you can deactivate/reactivate it in order to listen to its influence. The RESET button clears all modulations from the parameter currently being edited.

To exit the modulation screen, press the PANEL button.

5. VCA saturation

The Pool allows you to extend your sonic territories in a remarkable way simply with this “defect”… perfectly mastered 😉. The component used as a wave mixer at the output of the VCOs and as a source mixer before the filters (MIX1 and MIX2), can exceed the unity gain: it becomes an amplifier.



The non-blurred potentiometers adjust the dosage of the corresponding signal via a VCA 2164. The gain of each stage is unity when the potentiometer is turned completely to the right, that is to say that the signal is available at the output at its original amplitude, as faithfully as possible. Also, by adding a positive modulation, ideally Morpher 1 or 2 type , the gain can be greater than 1, therefore amplifier. And there, this component acts on a simple signal like a wave-shaper , it distorts the signal, adds harmonics, offers unique timbres.

You will find many sounds in The Pool that exploit this possibility. Try for example the VCA_2164 sound. After loading, you will notice that the VCO1 and DIGIT 1 indicator lights are green: modulation is assigned to these two parameters. Press these buttons, on the display the modulation is a Morpher 1 value of +40. Slowly turn the MORPH 1 encoder to the right while leaving a key on the keyboard pressed, you will hear the progressive transformation of the signal.
When the amplification is strong, the saturation at the VCF input is such that the filter resonance disappears: set the filter resonance to 75% and listen to the influence of Morpher 1 on the whole.

6. Digital effects and routing of voice cards.

Two stereophonic digital effects are integrated into the synthesis. They are common throughout The Pool. To access the effect settings, press the FX/BUS button.

To adjust effect 1, touch the Fx 1 button, it turns red. To adjust effect 2, touch the Fx 2 button, it turns red. You can also use the PREV and NEXT buttons.

Encoder 1 selects the effect. Encoders 2, 3 and 4 adjust the specific parameters of the effect. Encoder 9 sets the effect output level (WET), encoder 10 sets the direct sign output level (DRY). You can thus finely mix the effect.

Encoder 5 allows you to adjust the hardware feedback of the effect. A VCA which allows you to control the reinjection of the output of the effect on the input. Beyond the essential repetition of an echo, this parameter allows you to experiment with lots of other effects, such as timbre variations over short delays. Encoder 6 allows you to choose an effect parameter that will be modulated. Encoders 7, 8 and 12 allow you to configure this modulation. The last choice of encoder 7 allows you to use the first voice card of The Pool as a modulation source. You can therefore use a digital envelope,

LFOs or MPE data to modulate an effect parameter!

To bypass an effect, touch the corresponding BYPASS Fx 1 or BYPASS Fx 2 button, it turns red. This is indeed hardware bypass (except in Parallel mode if only one effect is bypassed), always with the aim of preserving the quality of the signal up to the outputs.

Two buses and routings have been integrated to make the most of these effects. Encoder 11 allows you to simply modify the voice card/bus routing.

- Parallel : the voice cards are all directed to bus 1 which passes in parallel between effect 1 and effect 2. The set is available on MASTER outputs. Incidentally, we have effect 2 alone on the SUB output.
- Serial : the voice cards are all directed to bus 1 which goes first to effect 2 then to effect 1. The set is available on MASTER outputs. Incidentally, we have effect 2 alone on the SUB output.
- Serial bus 2 : The voice cards are all directed to bus 2 which passes first into effect 2 then into effect 1. The whole thing is available on the master outputs. Incidentally, we have effect 2 alone on the SUB output. This routing is important because The Pool offers a stereo insert on BUS 2. You can therefore connect a stereo multi-effect to the insert sockets which will therefore be placed before effect 2. By switching from SERIAL to SERIAL BUS 2 you will activate the external effect.
- Independent : Bus 1 goes to effect 1, the output is available on the MASTER jacks. Bus 2 goes to effect 2, output is available on the SUB jacks. This mode is particularly interesting with the multitimbrality of The Pool. By customizing the destination bus for each voice card, you can dedicate an effect to each sound and have separate outputs. You can bypass the effects to keep only the outputs separate.
- Summation : Bus 1 goes to effect 1. Bus 2 goes to effect 2. The outputs of effects 1 and 2 are summed and available on the MASTER jacks. Incidentally, we have effect 2 alone on the SUB output. This mode is particularly interesting with the multitimbrality of The Pool. By customizing the destination bus of each voice card, you can dedicate an effect to each sound and mix everything on MASTER.

7. The Specificity of the MASTER Control

The MASTER control on The Pool's panel is misleadingly named: it is not a typical MASTER control (often a mechanical potentiometer) that attenuates the global output signal of The Pool.
It is, in fact, a **VCA** (Voltage Controlled Amplifier) control located upstream of the effects unit. Its role is to reduce the overall signal level sent to the effect. A programming mechanism ensures that when this control is near 0, the **WET** and **FX** outputs are also set to zero.

As a result, the instrument's inherent noise becomes audible if you connect The Pool to high-gain inputs and use this MASTER control thinking it will attenuate the global signal.

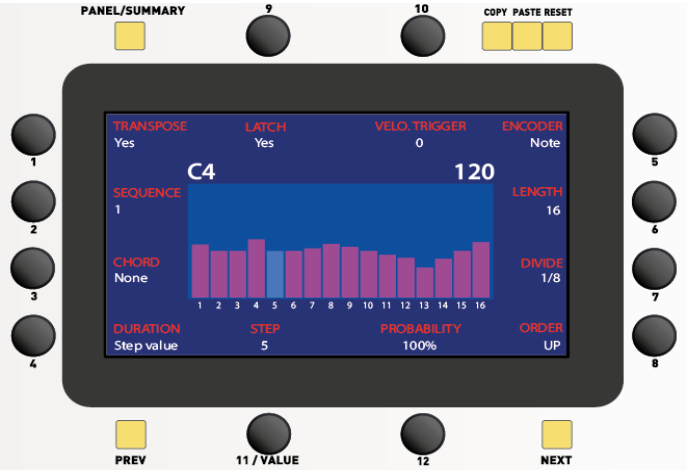
I therefore recommend adjusting the input levels of the equipment to which The Pool is connected:

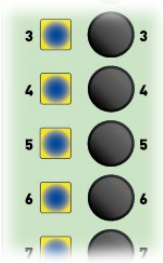
- Set them to a **line level**.
- If necessary, use a **PAD** with a -10 dB attenuation to avoid any overloading or noise issues.

8. The sequencer (standard mode)

The Pool's sequencer was designed with the same logic as the rest of the instrument: direct access to the settings. It has a capacity of 16 sequences of 64 steps can be recorded. SONG mode allows you to define 32 sequence steps on 4 channels. This sequencer is not polyphonic, it is just multichannel in SONG and GRID mode and real-time recording is not integrated. Even though it offers unique features and exemplary ergonomics, it
is not designed to replace a software sequencer.

To access the sequencer settings, press the SEQ button.





The sequencer adds 16 physical encoders and 16 illuminated buttons for direct access to the settings of a step as well as for sequential visualization of the progress of the sequence even if the screen is occupied by another use.

The current step is illuminated blue, a set step is yellow, a silent step is off, and an ungated step is blue/yellow. The step encoder acts on the parameter defined by the ENCODER parameter (encoder 5). By default, it acts on the pitch (note) of the step.

The sequencer screen provides direct access to all sequencer execution settings. They will be seen in detail in the *References section* but we will already overview some significant elements of the tool's power.

Encoder 5 allows you to select the parameter which will be modified by the physical encoders of the 16 steps and also by tactile drawing on the screen.

- Note : the screen displays bars representing the pitch of the notes in the sequence. Try drawing your note progression by tracing a curve on the screen with your finger.
- Velocity : the screen displays bars representing the velocity of the notes in the sequence.
- Duration : the screen displays bars representing the duration of the notes in the sequence. This duration has nothing to do with the tempo, it is the ratio of time pressed/released of the note in the step.
- Spoiled : the screen displays bars representing pitch management: silent, no gate , gate , gate + glide.
- Ratchet : the screen displays bars representing the number of repetitions (1, 2, 3 or 4) in the step. A ratchet of two will trigger the note twice at a tempo double the sequence tempo in order to stay within the overall tempo.

- SEQ1, SEQ2 and SEQ3 : the screen displays bars representing a value which will be available as a modulation source (see *Modulations*). Example: to change the filter frequency at each step, draw a curve in SEQ 1, then dose the amplitude of the modulation source SEQ 1 into the filter frequency modulation.
- Tempo : the screen displays bars representing the tempo of each step. Yes, yes, it is indeed access to the tempo of each step. You can thus draw a slight slowdown at the end of the sequence, a small acceleration in the center… 😉

The CHORD function (encoder 3) enriches the sequence of notes (fifth, octave, minor third, major, etc.) which can have a random presence determined by the PROBABILITY parameter (encoder 12). This last parameter also acts on the occurrence of Ratchets and on the progress of the sequence with the ORDER parameter set to Rand.

LATCH parameter (encoder 9) defines how the keyboard playing interferes with the sequence progress.

- No: the sequence continues execution as soon as a key is pressed. It stops when the key is released.
- No with Restart : the sequence resumes execution from step 1 as soon as a key is pressed. It stops when the key is released.
- Step by Step : the sequence advances one step for each note played.
- Toogle On/Off : starts at step 1 and stops the sequence alternately with each note played.
- Yes : the sequence runs normally regardless of the notes played.
- Yes with Restart causes a return to step 1 as soon as a note is played.

You can directly adjust the length of the sequence with encoder 6 without altering the recorded notes, so you can test several lengths. Encoder 7 sets the tempo division from (1/1 to 1/32).

The SWING of the clock, common to sequences and arpeggios, is defined in the sound options. MIDI inputs/outputs/routing and clocks are set in the SETUP screens.

REC button twice quickly then play the notes successively on the keyboard. The current step advances, the saved step buttons turn yellow. To record a sequence or a few steps without erasing previous content, press the REC button once .

To stop recording, press the button ❙❙ (STOP) or directly to PLAY to listen to the recording. To adjust the playback speed, use the TEMPO encoder or tap the TAP button at the desired tempo.

You can use encoder 11 (STEP) and individual encoders at any time to edit the sequence.

To record a sequence the old-fashioned way, without a keyboard, first define the length of the sequence with encoder 6 (LENGTH) then use encoder 11 (STEP), the individual encoders and the step buttons to retouch the sequence .

In multitimbral modes, the sequencer is run on the selected channel (CH 1.. CH4) when the sequence is started. The transposition will then only be active for this channel. Any note arriving on another channel will be played without transposing the sequence. In a non-multitimbral mode like POLY 8, only channel 1 transposes the sequence. By defining a software split or using two keyboards, this will allow you to have a keyboard zone or keyboard for transposing and another zone or keyboard for playing normally.

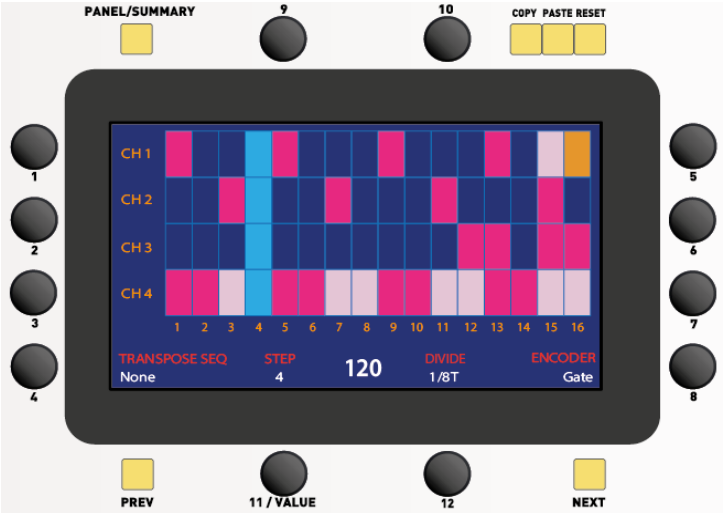
9. The sequencer (Grid mode)

In this mode, the sequencer links with the CH1, CH2, CH3 and CH4 buttons. When you press one of them, you access the corresponding sequencer track. When the sequencer is playing, it plays all four tracks simultaneously. When a MIDI mode is selected, each track controls the corresponding channel. Otherwise, tracks are sent to the single channel, allowing you to construct polyphonic sequences in POLY 4 or POLY 8 mode.

To activate the sequencer grid mode , from the Sequencer screen, turn the encoder 2 (SEQUENCE) to the left until “Link Chan” is displayed.

The number below indicates the track currently displayed. Use the CH1, CH2, CH3 and CH4 buttons to change channels and change tracks at the same time.

Press the SEQ button to switch to grid editing.

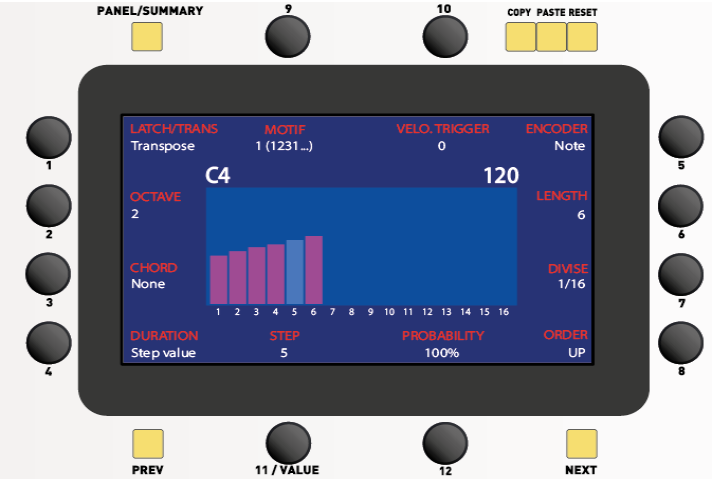


Touching the displayed grid toggles the gate of the corresponding track/step.
Direct access to the ENCODER command allows you to assign the function of the encoders of the 16 steps on the active track. See Grid View for complete information.

10. The arpeggiator

The resemblance of the arpeggiator and the sequencer is obvious. All editing functions by touch or with dedicated encoders are identical.

To access the arpeggiator settings, press the ARP button.



REC button is inactive for the arpeggiator but not the PLAY and || (STOP). The arpeggio will be started after pressing PLAY. To adjust the playback speed, use the TEMPO encoder or tap in the desired rhythm on the TAP button.

PATTERN setting (encoder 9) allows you to select the arpeggio pattern. The sequence of numbers in parentheses tries to explain the pattern 😉.

The OCTAVE setting (encoder 2) allows you to select the extent of the arpeggio expressed in number of octaves.

The LATCH/TRANS setting (encoder 1) allows you to select the interaction between the keyboard playing and the progress of the arpeggio.

In multitimbral modes, the arpeggiator is played on the selected channel (CH 1.. CH4) when the arpeggio is started. Transpose and pattern drawing will only be active for this channel. Any note arriving on another channel will be played without modifying the arpeggio. In a non-multitimbral mode like POLY 8, the arpeggiator is run on channel 1. By defining a software split or by using two keyboards, this allows you to have a keyboard zone or keyboard for arpeggiating/transposing and another zone or keyboard for playing normally.

11. The microSD card

Located on the back of the instrument, it is a very important element of The Pool. The sounds are saved on this card. The different BANKs on the LOAD screen are simply folders. The advantage of this solution is obvious: the available space is almost infinite, you do not need specific software to save your sounds, change names en masse, organize your lives, create BANKs , distribute a bank or simply share a sound.

Turn off The Pool, carefully remove the card by pressing it until it unlocks, then insert it into your computer's drive: save it by copying the contents and the tree structure into a backup folder and work on your files. Once the job is done, replace the card on The Pool by pressing it until it locks and turn it back on.

This microSD card also contains data useful for voice cards: Wavetables and soundfonts specific to WAV synthesis as well as specific waves for LFOs (Wave 1 to Wave 64). Using the Free/Open Source WaveEdit application from Synthesis Technology , you can create and import your own Wavetables as well as modify Wave LFOs , or new Soundfonts. Once this is done, you must use the microSD card synchronization function , available in the second System screen , to synchronize all this data on each voice card.

This microSD card also contains definitions for all auto tuning styles. These are simple text files that are very easy to edit with a text editor. More detailed

information about the microSD card can be found in APPENDICES .

12. Some other important features

a. Copy/Paste

The two COPY and PASTE buttons allow you to copy elements from one sound to another, from one parameter to another. The data that will be copied depends on the context: *the copy applies to the screen that is displayed* .

If you are in the modulation screen, the copy will concern the definition of the modulation sources of the destination being edited. Pasting can be done on another modulation destination. Example: copy the modulations of filter 1 to the modulations of filter 3.

If you are in the sequence screen, the copy will concern the sequence currently being edited. It can be pasted in another location (sequence 2 .. sequence 16) or in another sound after loading the latter.

If you are in the general screen, the one which just displays the last modified parameter, then the copy will concern the parameters of this sound. In the multitimbral use of The Pool, it is very practical for example to copy the sound from channel 1 to channel 2, 3 and/or 4.

For some screens, there is a subtlety.

- In the ADD synthesis definition screen, the PASTE command only affects the wave data (DRAW STEP) currently being drawn. To copy all the ADD synthesis parameters, the three waves and all the ADD parameters, you must quickly press the PASTE button twice.
- In the FM synthesis definition screen, the PASTE command only affects the operator data (OPERATOR) being adjusted. To copy all the parameters of the FM synthesis, i.e. the four operators and all the FM parameters, you must quickly press the PASTE button twice .
- In the AGED synthesis definition screen, the PASTE command only affects the generator data (CURRENT) being adjusted. To copy all the parameters of the AGED synthesis, i.e. the four generators and all the AGED parameters, you must quickly press the PASTE button twice .
- In the Sequence screen, the PASTE command only affects the current sequence. To copy the 16 sequences and " song " from the source, you must quickly press the PASTE button twice .

Copying is not affected by loading another sound or pressing the INIT button . You can therefore copy elements from one sound to another in the most intuitive way.

b. The RESET button

This button allows you to return to the default settings in a contextual manner. The data that will be reset depends on the context: *the reset applies to the screen that is displayed* .

To reset exclusively the sequences and settings of the sequencer, simply activate the sequencer screen by pressing the SEQ button. The RESET button is then lit, indicating that the operation is possible. Press RESET: a message will then inform you that the specific operation has been carried out.

To clear all modulations assigned to a parameter, press the modulation button, which should be green if modulations have been defined, located below that parameter's knob. If modulations are active, the RESET button will be yellow. Press this button to turn off all modulation sources.

c. The sound synthesis screen

While waiting for the synthesizer to turn all the potentiometers itself when loading a sound, this screen allows you to have an overall view of the value of the potentiometers. Press PANEL once or twice to access this screen.

Values other than the default are displayed in yellow. This makes it easier to see which settings have been adjusted. When you adjust a potentiometer, this screen updates in real time. The two buttons at the bottom left allow you to copy parameters from synthesizer 1 to synthesizer 2 and vice versa.

This function allows you to create a bitimbral timbre of two very close timbres, the second having for example just a different evolution in time or space.

d. Automatic agreements

It is obvious that this tool is not aimed at musicians who master harmony and composition but for others, like yours truly, it is a nice, even educational tool and which makes the arpeggiator even more efficient. This tool requires polyphonic sounds or the use of the arpeggiator.

Press OPT once or twice then NEXT to access page 2 of sound options. The automatic tuning or one-finger tuning functionality is set here.

The idea is simple: on a reference octave, we associate some of the 12 semitones with a chord. Example: Select style 11 Arpo 1 MAP which corresponds to C4 = Cmin , D4 = D7, F4 = Ddim , G4=G7 or previously load the AUTOCHORD_1 sound which makes this setting and loads a polyphonic sound.

In this case, only 4 keys generate a chord, the others are silent. You can already test it. If you start the arpeggiator, each press of one of these keys will update the pattern as if you had played the chord yourself.

With this example and a very simplified playing of the left hand (one finger on C, D, F or G), your right hand will quickly venture into melodies and patterns. The played chord is displayed in the blue frame under Patch Options. With the second keyboard/ split (MIDI channel 2) you can play freely above the arpeggio.

The Pool offers a few dozen styles: they are defined in very simple text files and reside on the microSD card. So, you can create your own styles.

The OF STYLE parameter allows you to choose the style. The OF OCTAVE parameter allows you to choose how notes in octaves higher or lower than the reference octave will be processed. In Copy mode, nothing changes, the chord is played in its reference octave. In Transpose mode, the chord will be played at the pitch of the octave played. In Reverse mode, one or more inversions of the chord will be performed.

By default, this tool is active on MIDI channel 1. You can therefore use channel 2 for normal playing, via a software split available on the same page or with a second keyboard. If you are using a mode such as MIDI 1 + 6 , in this case auto tuning will be active on channel 2, where polyphony is possible.

You can find detailed information in Sound options .

e. Microtonality and SCALA files.

With The Pool, you can explore all alternative tuning systems, from traditional music to the more modern approaches of our contemporary musicians and composers. The Pool is compatible with SCALA files. SCALA is a tool developed by Manuel Op de Coul, a musician and engineer passionate about microtonal scales. A large community has grown online around this tool and standard. You can find all the information, tutorials, and SCALA file libraries there.

You will find detailed information in Microtonality and SCALA files

IV. References

1. Load / Save

a. Loading a sound

To load a sound or certain elements of a sound, press the LOAD button. The following screen appears. If you press LOAD a second time, it loads the selected sound and exits the list.

The list of sounds available in the selected BANK is displayed. In addition to the file name, the style and mode are displayed on the right of the selection bar. To select a file by touch, use the slider if necessary to scroll the list down or up, then touch the line of your choice. You can also use INDEX (encoder 1) to select the file of your choice then touch the Load button.

INDEX : allows you to select the file of your choice from the list. Once the file is selected, touch the Load button to load the sound and stay in the list or press the LOAD button again to load the sound and leave the list.

LOAD : allows you to select the sound information that will be loaded . When you save a sound, everything is saved: the sound or sounds for multiple channel configurations, effects, route and MIDI settings, sequences, song and arpeggio.

- All : Everything is loaded.
- Sounds : Only all sounds are loaded.
- Sounds and FXs : All sounds and effect settings are loaded.
- FXs only : Only effect settings are loaded.
- Sequences only : Only sequences, SONGs and arpeggios are loaded.
- Channel 1 only : Only channel 1 audio is loaded.
- Channel 2 only : Only channel 2 audio is loaded.
- Channel 3 only : Only channel 3 audio is loaded.
- Channel 4 only : Only channel 4 audio is loaded.

STYLE : allows you to filter the list to a certain style. All allows you to deactivate this filter.

MODE : allows you to filter the list in a certain mode. All allows you to deactivate this filter. This is very practical if, for example, you are looking for all 8-voice polyphonic sounds: in this case select POLY 8.

BANK : allows you to choose the BANK (the folder on the microSD card) which contains the desired sound. The bank FACTORY is selected by default. See Manage sounds on the oSD microphone

ACTION : in combination with the EXECUTE touch button, allows you to select an action to perform on the selected file.

The author suggests that you prefer to use your computer to manage the contents of the microSD . This allows you to make a backup before performing irreversible actions. See Managing sounds on the map microSD

EXECUTE : in combination with the ACTION encoder, executes the selected action on the selected file.

- None : no action will be executed.
- Rename : rename and/or move the selected file.
- Delete : delete the selected file.
- New Bank : create a new BANK, i.e. a new folder on the microSD card .

To stop loading a sound, press the PANEL button.

b. Saving a sound

To save a sound, press the SAVE button. The following screen appears.

If you press SAVE a second time, this completes the save. To stop saving, simply press the PANEL button.

Saving a sound includes all elements: the sound(s) for multiple channel configurations, motion sequences, effects, route and midi settings, sequences, SONGs and arpeggios.

STYLE : allows you to define the style of the sound.

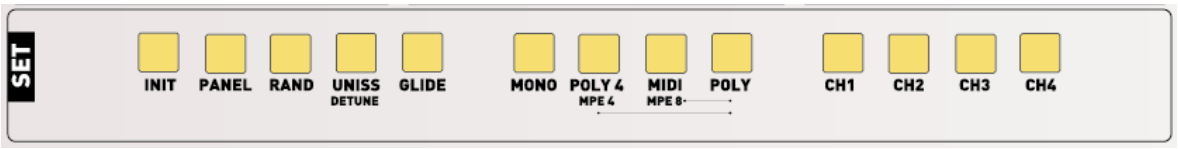
BANK : allows you to choose the BANK (the folder on the microSD card) where the sound will be recorded. The bank FACTORY is selected by default. See Manage sounds on the microSD card

Using the touch keyboard, type or correct the file name. The Clear key erases all entry. Back deletes the last character. Shift toggles between upper and lower case.

Touch Enter or press the SAVE button to complete the save.

2. The SET panel

Available in the lower left part of The Pool panel, it offers direct access to the organization of voice cards, the operation of the panel as well as certain global commands.



INIT : Resets the sound, sequencer and arpeggiator settings. This function does not change the current mode (MONO, MIDI or POLY)

PANEL : This function applies the physical position of all knobs to the sound being edited.

RAND : invents a sound on the selected channel. In an attempt to achieve usable sounds, the scope of many parameters is restricted. For some parameters, it is the physical position of the potentiometer which indicates the limit: level of the external input, CURVE of the digital envelopes, INIT of the VCAs .

UNISS/DETUNE : In MONO mode, this command activates unison: all four voice cards will play the same sound, with just an overall detuning adjustable with the DETUNE parameter in Sound Options .
In other modes, this command enables or disables voice card detuning. The intensity of the detuning is adjustable in the same way.

GLIDE : activates or deactivates Glide/ Glissendo mode . Glide intensity and Glide type are adjustable in Sound Options .

MONO : selects The Pool's bitrimbral monophonic mode : the voice cards all respond to the same MIDI channel. If active, they play the same note simultaneously. Each voice card has two synthesizers, so you potentially have 8 instruments which will play the same note with different sounds . The panel is active on the selected channel. In this case, the corresponding CH button flashes. Voice cards can be activated/deactivated individually by pressing the CH button on the corresponding card twice quickly.

POLY 4 : selects The Pool's 4-voice bitimbral polyphonic mode: the voice cards contain the same bitimbral sound and all respond to the same MIDI channel. So you can play four notes simultaneously. Voice cards can be activated/deactivated individually by pressing the CH button on the corresponding card twice quickly.

MIDI : Selects one of The Pool's MIDI modes: the voice cards respond to the MIDI channel that is defined in the selected mode. The panel is active on the selected channel. The CH button corresponding to the selected channel flashes. If multiple voice cards respond to the same channel, then multiple buttons will flash. Voice cards can be activated/deactivated individually by pressing the CH button on the corresponding card twice quickly. The different MIDI modes offered are as follows.

- MIDI : voice card 1 is assigned to MIDI channel 1, card 2 to MIDI channel 2 and so on. So you have four midi channels, each channel playing a bitimbral sound. This mode is particularly suited to the grid mode of the sequencer .
- MIDI 1 + 3 : voice card 1 is assigned to MIDI channel 1, it allows bitimbral mono playing. The other 3 cards make up a 3-voice bitimbral polyphonic synthesizer accessible via channel 2.
- MIDI 1+ 6 : voice card 1 is assigned to MIDI channel 1, it allows bitimbral mono playing. The other 3 cards make up a 6 monotimbral voice polyphonic synthesizer accessible via channel 2.
- MIDI 4 x 2 : Each voice card allows polyphonic play with 2 monotimbral voices.

- MIDI 2 x 4 : Voice cards 1 and 2 make up a 4 monotimbral voice polyphonic synth accessible on MIDI channel 1. Voice cards 3 and 4 compose the same, this time accessible on MIDI channel 2.

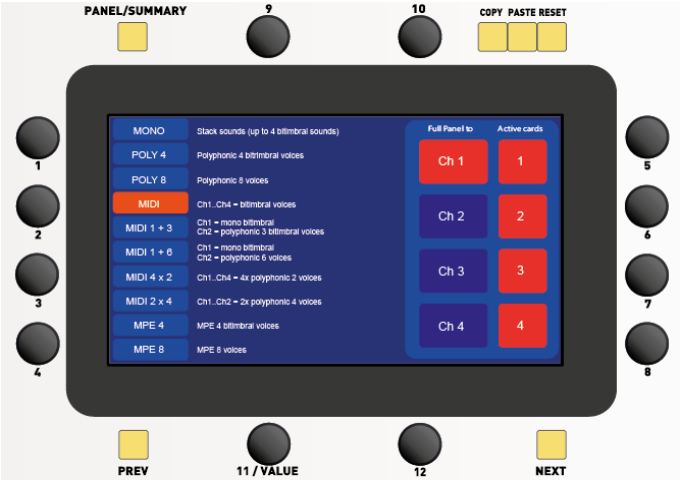
POLY : selects the 8 monotimbral voice polyphonic mode.

MPE 4 : By simultaneously pressing POLY 4 and POLY to select this mode: MIDI channel 1 of the MPE source must be the control channel and MIDI channels 2 to 5 control the voice cards that make up a four-voice bitimbral polyphonic synthesizer. See Modulations for exploiting MPE expressivity information.

MPE 8 : By simultaneously pressing MIDI and POLY to select this mode: MIDI channel 1 of the MPE source must be the control channel and MIDI channels 2 to 9 control the voice cards which make up an eight-voice monotimbral polyphonic synthesizer. See Modulations for exploiting MPE expressivity information.

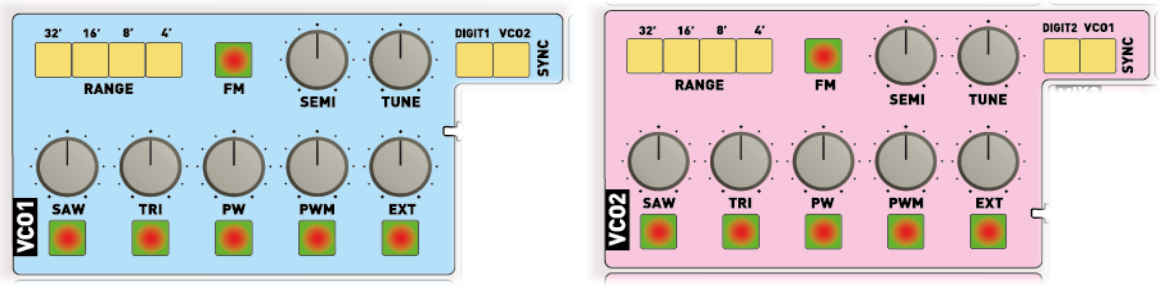
CH 1.. CH4 : these four buttons allow you to select the channel or voice card receiving the settings made on the panel. When the sequencer is in grid mode , these buttons simultaneously select the sequencer track associated with the corresponding channel.
By pressing these buttons twice quickly, you activate or deactivate the corresponding voice card. In this case, the button is turned off and the corresponding card is no longer used. If you want, for example, a MONO mode with only two active cards, you can deactivate CH3 and CH4.
See also the AUTO CHANGE CH parameter in System Settings : it defines the relationship between the MIDI channel and these four buttons.

When you press the button of an already selected mode (MONO, POLY4, MIDI or POLY) a second time, the following screen is displayed.

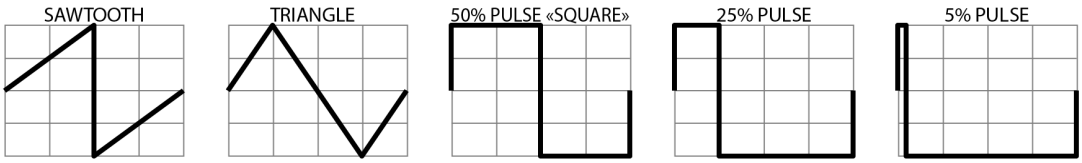


It allows you to quickly view the configuration of The Pool, the assignment of voice cards and the complete or partial use of the control panel. Touch-sensitive MODE, channel and map buttons allow you to quickly change configuration, active channel or enabled/disabled maps.

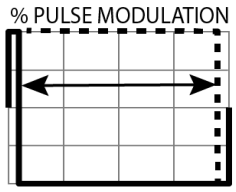
3. VCOs



The VCO is an analog oscillator driven by voltages. Each VCO allows you to mix three waveforms and an external signal.



The sawtooth (SAWTOOTH) is the brightest wave, ideal for strings, brass or fat basses. The triangle wave is much softer, useful for fluted sounds or organs. The pulse (PULSE) is an intermediate wave, the PWM control of which makes it possible to adjust the duty cycle (%), that is to say the width of the pulse. With a ratio of 50%, the signal is square (SQUARE).



By varying the pulse width (PWM) with a sinusoidal LFO at medium speed, we create richer strings or layers than with sawtooth waves.

32-16-8-4 : VCO octave expressed in feet.

FM : access to the frequency modulation of this VCO. Press this button, the screen displays all VCO modulation sources (see Modulations). There are no “Audio” sources for this FM. If you wish to frequency modulate the VCO with another Audio source, use the digital copy of the VCO in A2D synthesis (see A2D Synthesis).

SEMI (-24…+24) : VCO semitone detuning.

TUNE : VCO end detune. This setting allows you to obtain a slight beat between two oscillators to fatten the sound.

SYNC : VCO1 can be synchronized with DIGIT1 or VCO2. VCO2 can be synchronized with DIGIT2 or VCO1 . This makes it possible to create harmonic content by making the two oscillators interact. By modulating the frequency of one of the sources, ideally the modulated one, we obtain a modulation of the harmonic content. If you use the Digital oscillator as a synchronization source, use A2D synthesis with Saw for Sync or Sine waveforms for best results. When you use the other VCO as a modulation source, the sawtooth is used as the modulator. In this case, limit polyphony to 4 voices, as the two VCOs are linked. When you use the other VCO as a modulation source, the sawtooth is used as the modulator. In this case, limit the polyphony to 4 voices because the two VCOs are linked.

SAW (0..200) : sawtooth wave level. This parameter can be modulated (see Modulations). It is compatible with VCA saturation (see VCA saturation)

TRI (0..200) : Triangle wave level. This parameter can be modulated (see Modulations). It is compatible with VCA saturation (see VCA saturation)

PW (0..200) : Pulse wave level. This parameter can be modulated (see Modulations). It is compatible with VCA saturation (see VCA saturation)

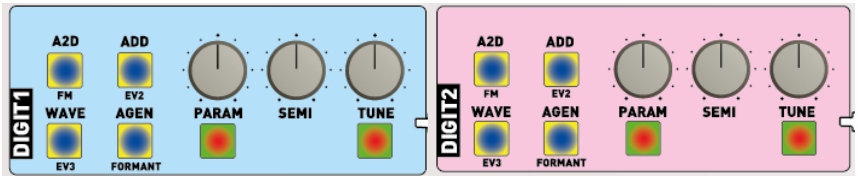
PWM (- 100.. +100) : duty cycle of the Pulse wave. This parameter can be modulated (see Modulations). For the value 0, the duty cycle is 50%, the output signal is therefore square.

EXT (0..200) : external signal level. For VCO1, the source is connected to EXT 1+2. For VCO2, the source is EXT 1+2 if nothing is connected to EXT 2 otherwise EXT 2 if a source is connected to it. This parameter can be modulated (see Modulations). It is compatible with VCA saturation (see VCA saturation). The sensitivity of these inputs is adjustable in the System menu (see System settings), INPUT GAIN.
When using an external source, it is important to understand that the latter is not continuous like an oscillator, it often has its own envelope. So, the influence of all the settings of The Pool's analog channel must take this point into account.

In POLY 8 mode, that is to say an 8-voice polyphonic synthesizer, VCO2 is inaccessible individually because it becomes a copy of VCO1 to provide eight analog voices. If you want to use two oscillators for each voice, then add the digital oscillator in A2D mode.

4. Digital Oscillators

Each of the two synthesizers of a voice card has its own digital oscillator: DIGIT1 and DIGIT2.



The four illuminated buttons allow you to choose the type of synthesis or overall digital processing that will be applied to this digital oscillator. Some buttons have two functions: the second, written under the button, is obtained by pressing this button twice quickly. In this case, it lights up blue. EV2 and EV3 are reserved for future development 😉.
Formant is a special case because it is not a digital generator: it is a processing which applies to the output of the digital oscillator.

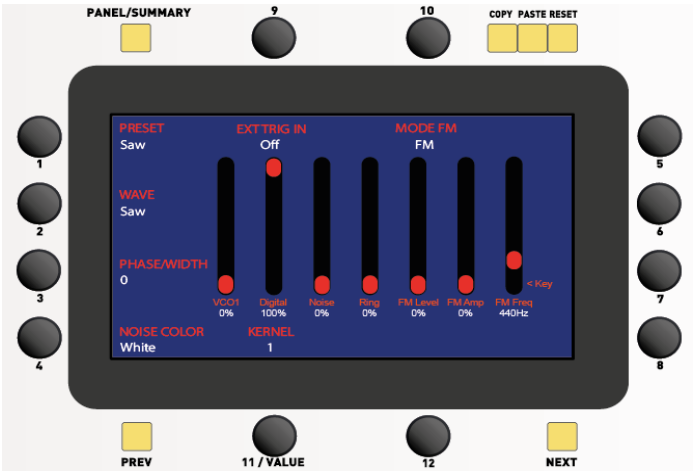
PARAM : allows you to modify a parameter of the chosen synthesis. This parameter can be modulated (see Modulations). The role of PARAM will be explained a little further for each synthesis.

SEMI (-24…+24) : semitone detuning of the VCO digital oscillator. This parameter can be modulated (see Modulations).

TUNE (- 100.. +100) : Fine detune of the digital oscillator. This parameter can be modulated (see Modulations).

a. A2D synthesis

Press the A2D button to open this screen.



This mode combines a digitized copy of the analog VCO, a digital oscillator close to a VCO, a noise generator and processing between the digital copy of the VCO and the digital oscillator: a ring modulator and frequency/phase modulation. The VCO , Digital , Noise , Ring and FM or PH Level sliders allow you to mix these five signal sources. The FM Amp (or PH Amp) cursor adjusts the amplitude of the modulation, FM Freq (or PH Freq) adjusts the carrier frequency: at 0 the carrier follows the keyboard, greater than zero the carrier is a fixed frequency.

PRESET : allows you to select a predefined configuration.

WAVE : Selects the digital oscillator waveform.

PHASE/WIDTH (0..360 or 100) : For Pulse and Vari Triangle, this parameter allows you to vary the duty cycle of the waveform from 0 to 100. The signal is symmetrical at 50. For other waveforms, this parameter changes the phase from 0 to 360°. The PARAM potentiometer (0..255) acts on this parameter. For example, you can do pulse width modulation by selecting Pulse for WAVE and then selecting an LFO as the PARAM modulation source.

NOISE COLOR (White, Pink, 1.. 99) : adjusts the color of the noise.

- White : White noise has the same sound intensity at all frequencies
- Pink : Pink noise decreases sound intensity by 3dB per octave
- 1..99 _ : A 6dB Lowpass filter is applied to white noise.

KERNEL (1..5) : sets the number of instances of the digital oscillator. The latter can be duplicated in several more or less detuned copies with the WIDE parameter to enlarge the sound.

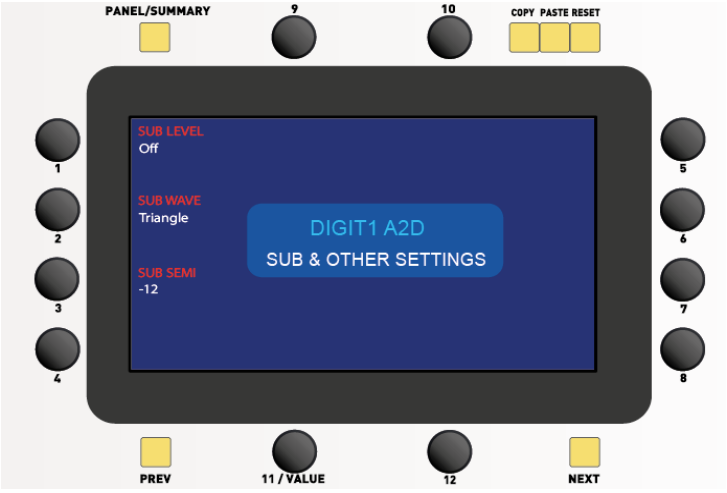
WIDE (0..100) : adjusts the amplitude of the detuning between instances of the digital oscillator.

EXT TRIG IN (Off.. 100) : Sets the Trig threshold on the external input. This parameter allows you to generate a gate similar to pressing a key on a keyboard when the sound level on the EXT input reaches this threshold.

FM MODE : sets the modulation mode of the digital oscillator by the digital copy of the VCO.

- FM : the digital copy modulates the digital oscillator in frequency.
- Phase : The digital copy modulates the digital oscillator in phase.

Press the A2D button a second time or NEXT to open this screen..



The extensions of the A2D mode are accessible from this screen. The Sub Oscillator adds an oscillator that is, by default, shifted one octave down (-12 semitones) with a harmonically sparse triangle wave. When you increase the volume of the sub oscillator, the A2D signal's volume is progressively reduced to prevent the digital-to-analog converter from saturating.

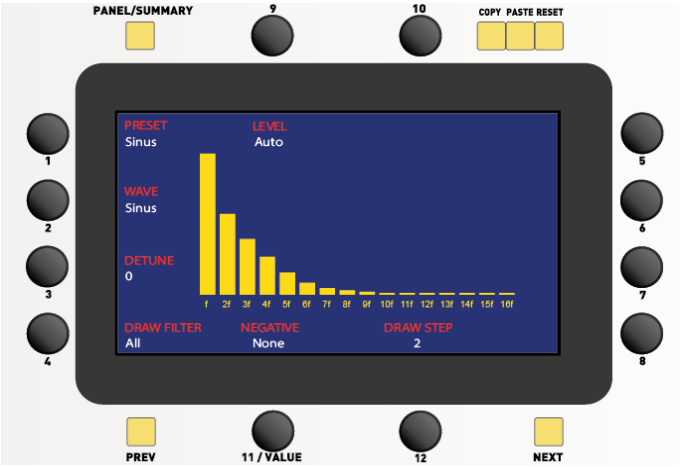
SUB LEVEL (OFF..100) : Activates and adjusts the amplitude of the Sub Oscillator. When you increase the sub oscillator volume, the A2D signal's volume is progressively reduced to avoid converter saturation.

WAVE : Selects the waveform of the digital sub oscillator : Sinus, Triangle, Square.

SUB SEMI (-24…0) : Adjusts the pitch of the Sub Oscillator in semitone increments. Standard values are -12 for one octave lower and -24 for two octaves lower.

b. ADD summary

Press the A2D button to open this screen.



ADD as additive synthesis: you draw on the screen the amplitude of the fundamental and its 15 multiples (x2…x16). Three syntheses can be defined and the modulation allows you to travel between these three syntheses, like a wave morphing.

PRESET : selects a factory preset .

WAVE (sine, triangle, saw, square) : selects the waveform that will be used by the 16 oscillators. By default, the sinusoid is used.

DETUNE (0..100) : By default, multiple frequencies are exact. This parameter allows you to adjust some disagreement regarding the frequency of the multiples.

DRAW FILTER : sets the interaction filter on the bars.

- All : all bars are accessible.
- Octave : only the octave bars of the fundamental are accessible (x2, x4, x8 and x16).
- Drawbar : only the bars corresponding to the ranks of drawbar organs are accessible. Please note, on these organs, the 5'1/3 (x3) drawbar is in front of 8' (x2), not in The Pool . 😉
- Other : only “non-octave” bars are accessible.

LEVEL (Auto.. 100) : adjusts the output level of the oscillators.

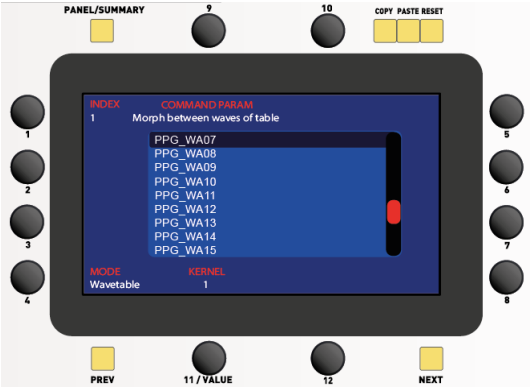
- Auto : in this mode, The Pool adapts the output level of the oscillators to the synthesis to prevent it from exceeding the maximum level of the digital to analog conversion.
- 1..100 : in this mode you set the output level of the oscillators yourself. The ear will be your best tool to detect the threshold of the beginning of the saturation of the converter.

NEGATIVE : sets the amplitude inversion for certain multiples. When you choose the *Triangle* PRESET, if this parameter did not exist, you would be surprised by the waveform observed on an oscilloscope: it would not approach the triangle. By subtracting harmonics 3, 7, 11 and 15 instead of adding them, the waveform becomes a triangle 😉.

DRAW STEP : selects the represented/edited wave. The ADD synthesis allows you to draw 3 waves. The **PARAM** potentiometer allows you to progressively slide (morph) on the three waves. This potentiometer is modular, so you can very well assign modulation to this parameter. Thus, an LFO and/or a wheel can control the ADD morphing (see Modulations).

c. WAVE synthesis

Press the WAVE button to open this screen.



In *Wavetable* MODE , it is a 64x256 wavetable generator. The PARAM potentiometer allows you to travel between the 64 waves. The Kernel parameter allows you to multiply the instances of this generator to enlarge the sound. Wavetables can be edited/created with the Free/Open Source WaveEdit application from Synthesis Technology .

In *Samples* MODE , it is a multi-sample player based on adapted Soundfonts.

The specific wavetables and Soundfonts are on the microSD card and can therefore be imported by you (see Create an importer of Wavetables for Wave synthesis and Create and import soundfonts for Wave synthesis).

INDEX : allows you to move the selection bar to the file of your choice. The wavetable is activated immediately. You can also use the touch scrollbar then touch the line of your choice.

MODE : allows you to choose the type of reader.

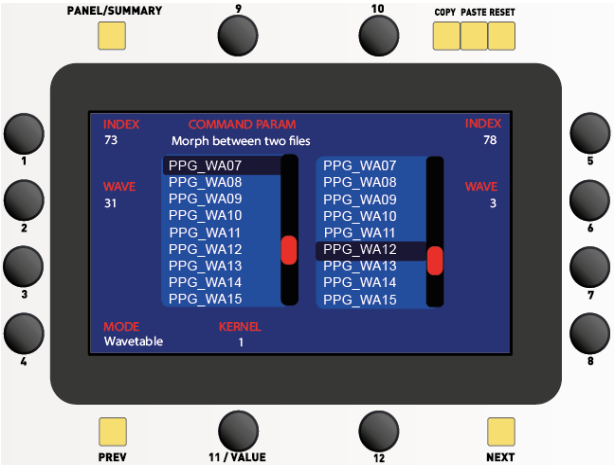
- Wave table : 64x256 wavetable reader.
- Samples : soundfont player. In this mode, the KERNEL parameters, WIDE and PARAM MODE are not active.

KERNEL (1..5) : sets the number of wavetable reader instances. The latter can be duplicated in several more or less detuned copies with the WIDE parameter to enlarge the sound.

WIDE (0..100) : Adjusts the amount of disagreement between wavetable reader instances.

COMMAND PARAM : Defines the action of the PARAM command (potentiometer and modulations) on the wavetables :

- Morph between waves of table: Interpolation is enabled. The **PARAM** potentiometer, with a value from 0 to 255, scrolls through the 64 waveforms with interpolated waves between each. Since the **PARAM** potentiometer can be modulated, you can control the morphing with an LFO and/or an envelope. (See Modulations). This mode is suitable for wavetables offering successive close wave ranges, such as the PPG_.
- Select one wave in table: Interpolation is disabled. The WAVE encoder (or the PARAM potentiometer) allows you to select the wave from the wavetable. Modulation of the PARAM potentiometer is inactive. This mode is suitable for all wavetables.
- Morph between two files: In this mode, you select a wavetable 1 and a wave from this table, and a wavetable 2 and a wave from this other table. Interpolation with the **PARAM** potentiometer is enabled to transition from one to the other. This mode is suitable for all wavetables..



Il this last mode, The **PARAM** potentiometer, with a value from 0 to 255, allows morphing between these two waves. Since this potentiometer can be modulated, you can, for example, control the morphing using an LFO and/or an envelope and/or the modulation wheels. (See Modulations). This is undoubtedly the most practical mode. Set the **PARAM** potentiometer to the left (0) and select INDEX and WAVE for wave 1. Set the PARAM potentiometer to the right (255) and select INDEX and WAVE for wave 2. Then, turn the PARAM potentiometer to verify the gradual blending of the two waves. You can then define the modulation of PARAM: envelopes produce outstanding results in this case.

Soundfonts use multiple samples, each assigned to a note range. Example :

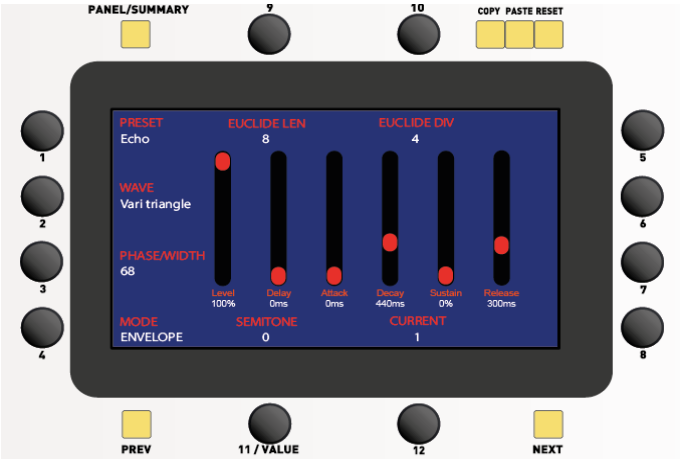
- Note C 0.. B3 = sample 1
- Note C4 to B5 = sample 2
- Note C6 to C9 = sample 3

This principle means that, very often, we will hear a different timbre, for example between B3 and C4. The **MS LIMIT** parameter (Off, 1, 2, 3) , available only in *Samples* MODE , allows you to limit this multi-sampling.

- Off : multisampling is preserved.
- 1 : The first sample is used for all notes.
- 2 : The second sample is used in place of all upper samples.
- 3 : The third sample is used in place of all upper samples.

d. AGEN synthesis

Press the AGEN button to open this screen.



This synthesis makes it possible to combine four oscillators which can be continuous, enveloped, delayed and/or sequenced by a Euclidean counter. The envelopes used here have no link, other than the keyboard gate , with the hardware or software envelopes of The Pool.

The next six sliders act on the oscillator being edited (CURRENT from *1 to 4*) .

- Level (0..100 %) : adjusts the oscillator level.
- Delay (0.. 2s) : adjusts the envelope trigger delay in relation to the gate received from the keyboard for *ENVELOP* MODE and *EUCLIDEAN* .
- Attack (0..4s) : sets the Attack duration for *ENVELOP* and *EUCLIDEAN* modes .
- Decay (0.. 4s) : sets the Decay duration for *ENVELOP* and *EUCLIDEAN* modes .
- Sustain (0..100 %) : adjusts the Sustain level of sustain for *ENVELOP* and *EUCLIDEAN* modes .
- Release (0..4s) : sets the Release duration for *ENVELOP* and *EUCLIDEAN* modes .

PRESET : allows you to select a predefined configuration.

WAVE : selects the waveform of the oscillator currently being edited (CURRENT from *1 to 4*) .

PHASE/WIDTH (0..360 or 100) : For *Pulse* and *Vari Triangle* , this parameter allows you to vary the duty cycle of the waveform from 0 to 100. The signal is symmetrical at 50. For other waveforms, this parameter changes the phase from 0 to 360°. The **PARAM** potentiometer (0..255) acts on this parameter and on the four oscillators simultaneously.

MODE : adjusts the dynamics of the oscillator currently being edited.

- HOLD : the oscillator is continuous, it does not pass into an envelope. Its level is just adjustable using the Level slider .
- ENVELOPE : the oscillator passes into an envelope configured with the sliders.
- EUCLIDEAN : the oscillator passes into an envelope configured with the cursors and this envelope is looped (repeated) on the rhythm defined by EUCLIDE LEN and EUCLIDE DIV .

EUCLIDE LEN, **EUCLIDE DIV** : sets the Euclidean division which will generate the pattern. EUCLIDE LEN defines the number of steps of the pattern, EUCLIDE DIV the frequency in number of steps which will trigger the envelope. If the division of LEN by DIV is not integer, the envelopes will not be triggered on the same steps each time the step pointer loops, giving rise to polyrhythms if several oscillators are played with different divisions and/or lengths.

SEMITONE (**- 24.. +24**): adjusts the semitone deviation from the note played.

CURRENT (1..4) : selects the oscillator currently being edited.

e. FM synthesis

A2D button twice quickly to open this screen.

This synthesis uses the technology popularized by Yamaha synthesizers: DX synthesis. The Pool offers a simplified version with four operators, 8 algorithms.

The following seven cursors act on the operator currently being edited (OPERATOR from *1 to 4*) .

- Level (0..100 %) : adjusts the oscillator level.
- Delay (0.. 2s) : adjusts the trigger delay of the operator envelope in relation to the gate received from the keyboard.
- Attack (0..4s) : sets the Attack duration for the operator envelope.
- Decay (0..4s) : sets the Decay duration for the operator envelope.
- Sustain (0..100 %) : adjusts the Sustain level of sustain for the operator envelope.
- Release (0..4s) : sets the Release duration for the operator envelope.

PRESET : allows you to select a predefined configuration.

MODULATION (**PHASE, FM**): allows you to select the type of modulation of the operator being edited.

HARMONIC (0.25..PI) : allows you to adjust the frequency multiplier of the note played for the operator currently being edited.

FINE (-100. .+ 100) : allows fine tuning of the operator being edited. **In this case, it is rather a question of finely detuning one operator in relation to the others to allow the creation of new harmonics and beats.**

ENVELOP : adjusts the dynamics of the operator being edited.

- Inactive : the envelope is not active, the signal coming from the operator being edited is continuous.
- Active : the envelope is active and triggered by the GATE signal from the keyboard.

FB OP4 : operator 4 has a particular operation. It can only be modulated by itself. Using this parameter, we therefore adjust the rate of the output signal which will modulate its phase or its frequency.

ALGORYTHM (1 to 8) : represented by a diagram, this parameter regulates the algorithm, i.e. the organization of the four operators for sound generation.


4 module 3 which modules 2 which modules 1.


4 and 3 are in parallel and modulate 2 which modulates 1.


3 module 2. 2 and 4 are in parallel and modulate 1.


4 module 2. 3 and 2 are in parallel and modulate 1.


4 module 2, 3 module 1, 2 and 1 are in parallel.


4 modules 1, 2 and 3. 1, 2 and 3 are in parallel.


4 module 3. 1, 2, and 3 are in parallel.


1, 2, 3 and 4 are in parallel.

OPERATOR (OP 1.. 4) : selects the operator currently being edited.

f. Formant Filter

AGEN button twice quickly to open this screen.

In addition to these five synthesis modes, a formant filtering module has been added. It allows the digital oscillator to pass through a battery of six adjustable “Chamberlin” filters. The first filter is a Lowpass, the last a Highpass and the other four are Bandpass . Three sets of settings for the six filters are definable and the TRAVEL parameter allows you to travel between these three sets, like a filter morph.

The six sliders act on the parameter defined in EDIT for the six filters in the set being edited. The button below each slider indicates the filter being adjusted. Encoders 2, 3 and 4 allow fine adjustment of the three parameters of this filter.

PRESET : applies a configuration template of the six filters to the set being edited.

FREQUENCY (Off.. 7000Hz) : adjusts the frequency of the selected filter in the ensemble currently being edited. To deactivate the filter, you must set its frequency to the lowest.

Q (0.7 .. 20) : adjusts the slope of the selected filter in the set being edited.

LEVEL (0..100) : adjusts the output level of the selected filter .

DRY (0..100) : adjusts the level of the unfiltered signal that will be mixed with the filtered signal.

EDIT (Frequency, Q, Level) : selects the parameter that will be modified by the six sliders.

TRAVEL (0..256) : Sets the travel through the three filter sets, such as a filter morph.

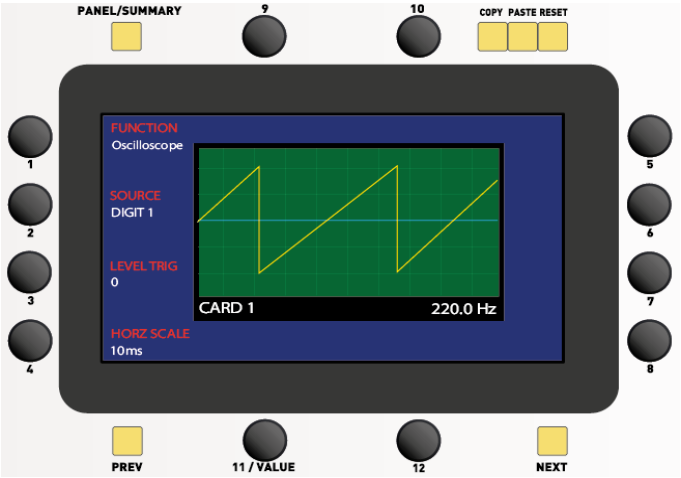
CURRENT (1..3) : selects one of three filter sets.

The MODUL button allows you to assign modulation sources to the TRAVEL parameter. The logic is the same as for modulations linked to a panel potentiometer. By assigning an envelope to this modulation, you can for example create a formant that morphs from vowel A to vowel U in the note cycle. Once the modulations are set, touch the BACK button to return to the formant setting.

ACTIVE (No, Yes) : activates or deactivates the formant filter . When activated, the AGEN button is illuminated white if the AGEN synthesis is also selected, or blue if another synthesis is selected.

g. Oscilloscope / Spectrum analyzer

From a “digital oscillators” screen, you can access a simplified oscilloscope/spectrum analyzer by pressing the PANEL button. The following screen is then displayed.



This tool only displays the digital signal (**DIGIT1** or **DIGIT2**) of the selected card. The oscillator frequency is displayed. In multitimbral modes, the voice card is selected by the CH1, CH2, CH3and CH4 buttons on the panel.

FUNCTION (Oscilloscope, FFT) : selects the function . In *Oscilloscope mode* , the signal from the selected digital oscillator is displayed in real time with its modulations and morphings. In *FFT mode* , the tool displays the spectrum of the signal from a real-time FFT.

SOURCE (DIGIT1, DIGIT2) : selects the source to view .

LEVEL TRIG (- 100.. +100) : For *Oscilloscope* mode , represented by a blue bar on the screen, this setting allows you to select the threshold for the start of signal display. As soon as the upstream signal exceeds this

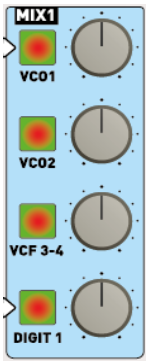
threshold, the display begins.
This is a particularly useful setting for stabilizing the display with complex waveforms.

HORZ SCALE : For *Oscilloscope* mode , expressed in milliseconds, this setting allows you to select the duration represented on the width of the screen: for the value 10ms, a 100 Hz signal will display a complete period. For *FFT* mode , this setting allows you to select the magnification on the first frequencies of the spectrum.

WINDOWING : For *FFT* mode , this setting allows you to change the "windowing " of the spectrum analysis. The influence of this parameter is more visible for high frequencies.

In A2D synthesis , if you set the VCO level to 100% and the other levels to 0%, you will then be able to observe the corresponding Analog VCO signal, more precisely its digital copy. Please note, the frequency displayed remains that of the digital oscillator 😉

5. Pre-filter mixers

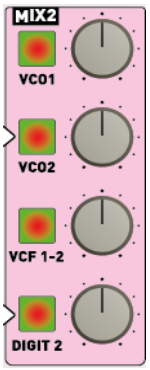


VCO1 (0…200) : dosage of VCO1 in filter 1-2. This parameter can be modulated (see Modulations). It is compatible with the saturation of VCAs .

VCO2 (0…200) : dosage of VCO2 in filter 1-2. This parameter can be modulated (see Modulations). It is compatible with the saturation of VCAs . See also Link between the two synthesizers of a voice card .

VCF 3-4 (0…200) : dosage of the output of filter 3-4 into filter 1-2. This parameter can be modulated (see Modulations). It is compatible with the saturation of VCAs . See also Link between the two synthesizers of a voice card .

DIGIT 1 (0…200) : dosage of digital oscillator 1 in filter 1-2. This parameter can be modulated (see Modulations). It is compatible with the saturation of VCAs .



VCO1 (0…200) : dosage of VCO1 in filter 3-4. This parameter can be modulated (see Modulations). It is compatible with the saturation of VCAs . See also Link between the two synthesizers of a voice card .

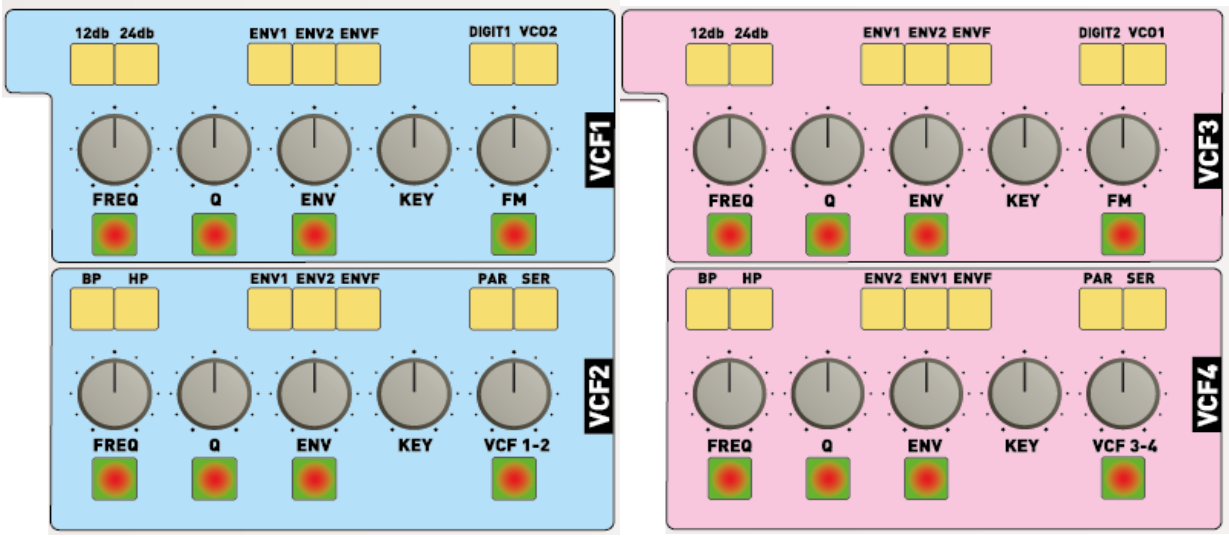
VCO2 (0…200) : dosage of VCO2 in filter 3-4. This parameter can be modulated (see Modulations). It is compatible with the saturation of VCAs .

VCF 1-2 (0…200) : dosage of the output of filter 1-2 in filter 3-4 ..This parameter can be modulated (see Modulations). It is compatible with the saturation of VCAs . See also Link between the two synthesizers of a voice card .

DIGIT 2 (0…200) : dosage of digital oscillator 2 in filter 3-4. This parameter can be modulated (see Modulations). It is compatible with the saturation of VCAs .

In POLY 8 mode, that is to say an 8-voice polyphonic synthesizer, MIX2 is inaccessible individually because it becomes a copy of MIX1 to provide eight analog voices. Also, nothing prohibits using the link between the two synthesizers of a voice card , this can give very interesting results.

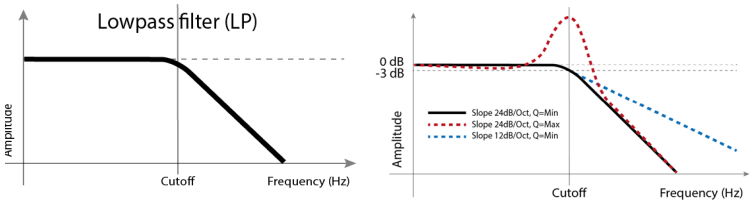
6. VCFs



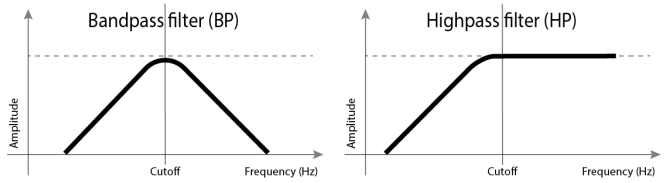
Each synthesizer on a voice card has two analog filters: the classic 3320 (VCF1 and VCF3) which equips many synthesizers such as Elka Synthex , Sequential Pro-One, Prophet 10, Prophet V, PPG Wave 2, Oberheim OB-x, OB 8.As for the 3350 (VCF2 and VCF4) with its strong character, it is used among others by the Rhodes Chroma, Crumar Spirit and Syrix .

By default, the two filters are in parallel.

The 3320 is fixed in LP (Lowpass) mode.Its slope can be chosen between 12dB/ Oct and 24 db /Oct.



The 3350 is fixed at 12dB/ Oct and can be configured in BP (Bandpass) or HP (Highpass)



FREQ (0..400) : VCF cutoff frequency. For an LP filter, frequencies beyond the cutoff frequency are attenuated. For a BP filter, the frequencies on either side of the cutoff frequency are attenuated. For a HP filter, frequencies upstream of the cutoff frequency are attenuated.
This parameter can be modulated (see Modulations).

Q (0..400) : Filter resonance or Q. The frequencies are amplified on either side of the cutoff frequency. Above a certain level, the 3320 enters self-oscillation: it produces a pure sine wave, tuned by the cutoff frequency and right on the keyboard range if the KEY parameter is at 100%. This parameter can be modulated (see Modulations).

ENV (- 200.. +200) : modulation amplitude of the envelope selected above on the VCF, this parameter defines with what intensity the envelope curve increases the cutoff frequency. With a negative value, the cutoff frequency is reduced. This parameter can be modulated (see Modulations). By default, the digital

envelope F is selected.

KEY (0..100) : modulation of CUTOFF by keyboard tracking. A higher value allows the filter to be opened more as you move up the keyboard, avoiding muffling high notes. If the filter is self-oscillating, this parameter adjusts the slope of the sine wave produced by the filter.

FM (0…100) : VCF cutoff frequency modulation by the source selected above (DIGIT or VCO). This allows you to obtain strange sounds and resonances. Filter resonance setting and modulator frequency are very important in filter FM modulation.

VCF 1-2 or VCF 3-4 (- 200.. +200) : balance between the two filters. To the left (-200) is 3320, to the right (+200) is 3350. In the middle you hear the two filters. If you select the series connection of the filters, then you must turn the balance to the left (-200). This parameter can be modulated (see Modulations).

12dB-24dB : selects the slope of the 3320 filter.

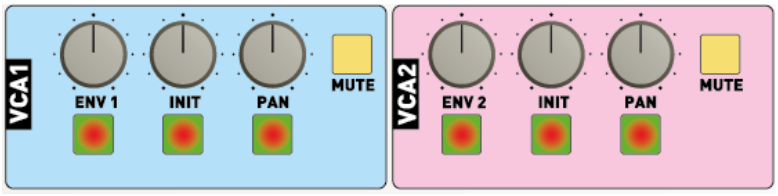
BP-HP : selects the 3350 filter mode, Bandpass or Highpass .

PAR-SER : selects the organization of the two filters. In PAR mode, the two filters are in parallel. The scale allows you to measure the volume of each person. In SER mode, the two filters are in series. The signal from the pre-filter Mixer passes into the 3350 then into the 3320. You have to turn the balance to the left (-200) because otherwise you will only hear the signal coming from the 3350.

In POLY 8 mode, that is to say an 8-voice polyphonic, the VCF3 and VCF4 group is inaccessible individually because it becomes a copy of the VCF1 and VCF2 to provide eight analog voices.

VCF 2 and 4 (type 3350) are not " tuned " because they are not resonant. The resonance parameter (Q) is only stable in the first quarter (0..60). Then it goes from simple oscillation to screaming in pain. You will find that it is possible to tone down the resonance by lowering the signal level at the filter input using the MIX1 and MIX2 settings.

7. VCAs



The output VCAs control the amplitude of each synthesizer as well as the position of the signal in stereophonic space. VCAs are voltage controlled. They receive the voltage generated by the associated envelope (ENV1 or ENV2) as well as a constant voltage defined by INIT. The latter allows you to open the VCA (i.e. let a fraction of the signal pass, independently of the envelope).

This is very practical for drone modes, but it's also exciting in combination with envelopes: adding a little INIT allows a slight signal to pass through even when the keys are released, like infinite reverb. **ENV1-ENV2 (0..200)** : adjusts the amplitude of the associated envelope (ENV1 or ENV2). This parameter can be modulated (see Modulations). For example, by assigning an LFO to this modulation, you can create a tremolo.

INIT (0..200) : sets the constant voltage sent to the VCA. This parameter can be modulated (see Modulations).

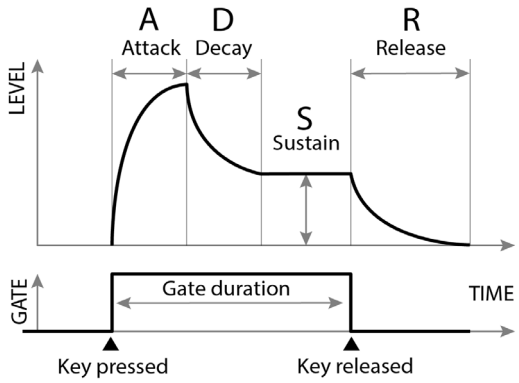
PAN (- 100.. +100) : adjusts the position of the synthesizer on the left and right busses of the output. This parameter can be modulated (see Modulations). For example, by assigning an LFO to the modulation, the signal can move from left to right at the rate of the LFO. *VCO2 PAN remains active even in 8-voice 8 Polyphonic mode: this allows you to have a different PAN and PAN modulation parameter for half of the notes played.*

MUTE : allows you to mute the associated VCA. This feature is very useful in many circumstances. When you create a bitimbral sound, this allows you to temporarily turn off one timbre to work on the other and vice versa. Likewise if you are creating a monotimbral sound that uses both VCOs, all four VCFs , you will almost certainly send the entire stream to one VCA and mute the second.

8. Envelopes

Envelopes allow you to create the dynamics of a sound. When you type a key on the keyboard, should the sound come instantly? Stay consistent? Turn off even if the button is pressed or turn off only when the button is released?

The ADSR envelope will allow you to make these choices.



Attack : This parameter adjusts the time it takes for the sound to reach its maximum amplitude when you press a key. **Decay** : Once maximum amplitude is reached, this parameter adjusts the time required to reach the sustain level.
Sustain : this parameter adjusts the sustain level, that is to say, the amplitude when the key is left pressed and Attack and Decay have been executed.

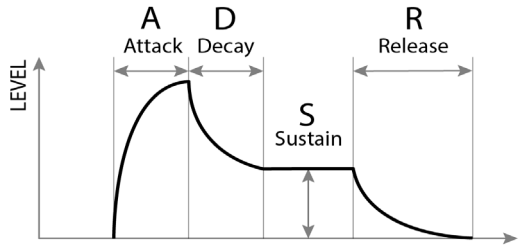
Release : This parameter sets the time it takes for the sound to turn off when you release the key.

For a piano, when you press a key, the sound is immediately at its maximum amplitude so **Attack** should be minimum. When you leave the button pressed, the sound will slowly turn off. There is no sustain so **Sustain** will be at a minimum and **Decay** will be quite long. When you release the button the sound goes out quickly, so **Release** will be short.

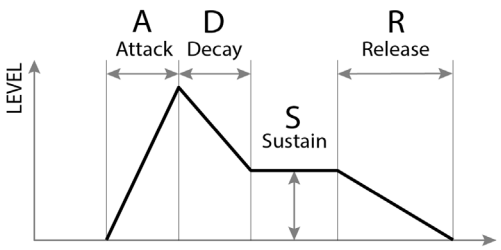
For an organ, it's very short **Attack** , no **Decay** (unless you want a little percussive effect) , maximum **Sustain and very short Release** .

Each synthesizer on a voice card has an analog envelope (ENV1 and ENV2) which controls the output VCA and can also be used for filter modulation. The Pool adds to your tools two digital envelopes ENVF and ENVM which behave like the analog envelopes but add a **CURVE setting** which linearizes the segments.

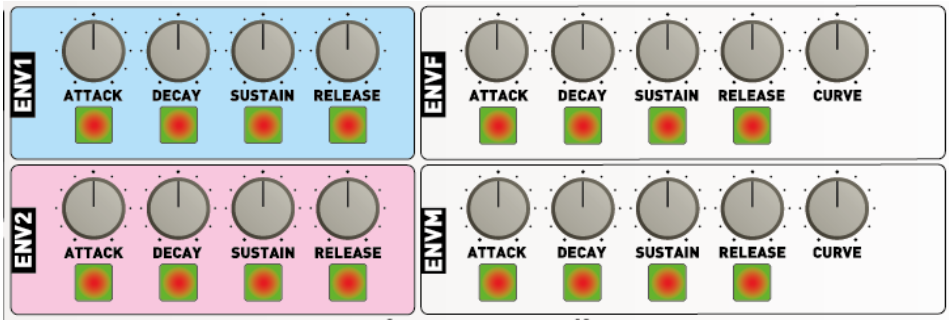
CURVE to 0



CURVE at 100



These two digital envelopes are also modulation sources available for all modulations. Finally, ENVF is the default modulation source for the filters ENV parameter.



ATTACK (0..200) : sets the duration of the Attack segment. This parameter can be modulated (see Modulations).

DECAY (0..200) : sets the duration of the Decay segment . This parameter can be modulated (see Modulations).

SUSTAIN (0..200) : adjusts the sustain level. This parameter can be modulated (see Modulations).

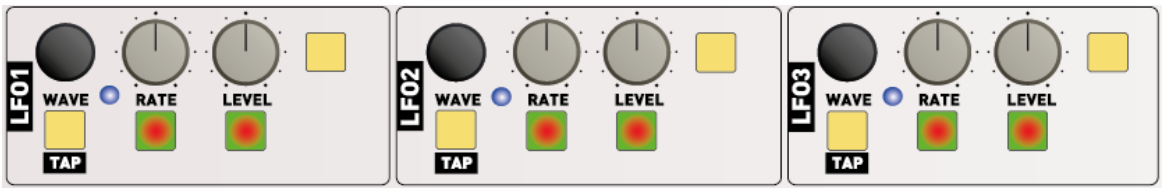
RELEASE (0..200) : rule for the duration of the Release segment. This parameter can be modulated (see Modulations).

CURVE (0..100) : adjusts the linearization of the segments.

A delay can be added to delay the triggering of envelopes. Digital envelopes can also be looped, i.e. the AD cycle is repeated as long as the key is pressed. This setting is in the sound options .

9. LFOs

Three digital LFOs are available for each voice card. LFO1 is a bit special because even if the settings are common, each synthesizer on the voice card has its own LFO1. LFO2 and LFO3 are shared with both synthesizers.



WAVE : Choice of LFO waveform (see below)

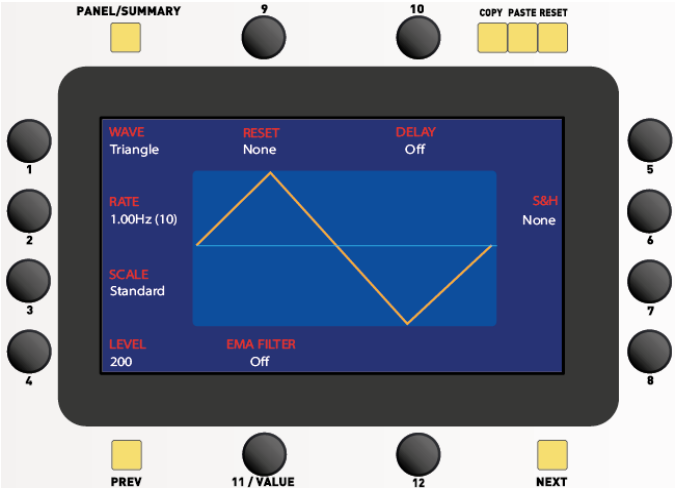
RATE (0…400) : LFO frequency. This parameter can be modulated (see M odulations).

LEVEL (0..200) : Amplitude of the LFO signal. This parameter can be modulated (see M odulations).

For each LFO, an RGB LED follows the frequency of the LFO and its color changes depending on the chosen waveform. This behavior as well as the brightness can be changed in the system settings.

TAP several times at the desired frequency , you set the LFO frequency.

TAP once , the screen of all settings for the corresponding LFO is displayed.



WAVE : Choice of LFO waveform. A representation of the waveform is displayed. The Tape waveform is a true recording of the wailing of a tape echo. If you are patient you will even hear the passage of the tape sticking.

WAVE waveforms 1 to 64 are waves from a wavetable in the LFO folder of the microSD card . This wavetable can be edited/created with the Free / Open Source WaveEdit application from Synthesis Technology and can therefore be imported/modified by you .

To be able to draw the modulation wave yourself, turn encoder 1 (WAVE) to the left to CUSTOM: You can then draw the period of the wave on the screen. Finger drawing is not very precise: use EMA FILTER to soften the curve, or draw the curve by pressing successively on the significant points, they will be linked by straight segments.

RATE (0..400) : LFO frequency. This parameter can be modulated with the button under the LFO RATE control (see M odulations). The frequency range depends on the SCALE mode chosen.

SCALE : frequency range of the LFO.
- /10 : RATE goes from 100 seconds to 4 Hz. This choice is recommended to have good precision at slow LFO speeds.
- Standard : RATE ranges from 10 seconds to 40 Hz.
- X 4 : RATE goes from 2.5 seconds to 160 Hz. This choice is recommended to have good precision in fast LFO speeds.

LEVEL (0..200) : Amplitude of the LFO signal. This parameter can be modulated with the button under the LFO LEVEL control (see M odulations). For example, you can assign the M envelope as a modulation source, so the amplitude of the LFO will vary over the entire life cycle of the note.
If you assign the same modulation source to RATE, amplitude and speed will vary together.

RESET : sets the return to the start of the LFO generation cycle.

- None : Return to start zero occurs when the end of the wave is reached.
- Gate 1 : Return to the beginning is forced as soon as a note is played for Synthesizer 1.
- Gate 2 : Return to the beginning is forced as soon as a note is played for Synthesizer 2.
- Gate 1, one cycle : the LFO starts as soon as a note is played for Synthesizer 1 and the LFO will be stopped as soon as the end of the wave is reached.
- Gate 2, one cycle : the LFO starts as soon as a note is played for Synthesizer 2 and the LFO will be stopped as soon as the end of the wave is reached.
- Gate 1&2, one cycle : the LFO starts as soon as a note is played and the LFO will be stopped as soon as the end of the wave is reached.
- Clock : Return to the beginning is forced as soon as a MIDI Clock message is received.

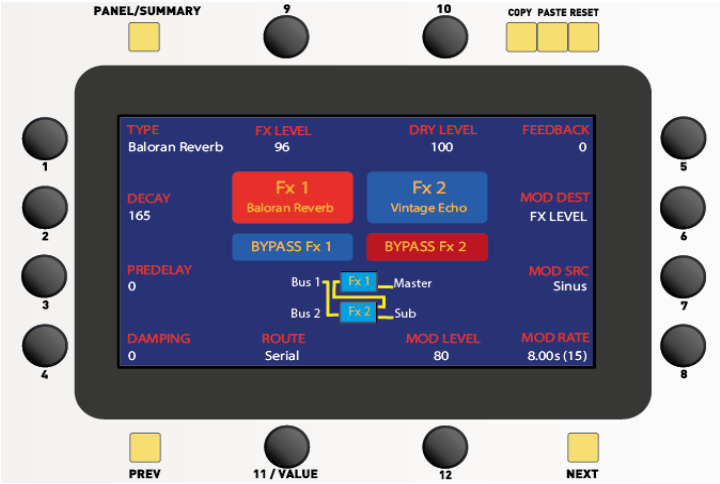
DELAY: sets a delay of 0 to 4000 ms for the launch of the LFO. This parameter is active only if RESET is different from None .

EMA FILTER (Off.. 100) : allows you to filter the LFO signal to soften variations and smooth out stairs. The influence of this parameter is not displayed on the screen, your ear will be the only judge of its great effectiveness.

S&H : Applies a Sample and Hold to the LFO signal. This function allows you to create very interesting stairs in modulations. This option is disabled for non-periodic waves.

10. FX and voice card routing

To access the effect settings, press the FX/BUS button. The following screen is displayed.



To set effect 1, touch the Fx 1 button, it turns red. To adjust effect 2, touch the Fx 2 button, it turns red. You can also use the PREV and NEXT buttons.

TYPE : selects the type of effect that will be assigned to the selected effect.

ENCODER 2, 3 and **4** : adjust one of the three parameters specific to the type of effect selected.

FX LEVEL : Adjusts the level of the signal processed by the selected effect. This dosage is hardware, managed by VCAs and adjustable by MODE DEST.

DRY LEVEL : Adjusts the level of the unprocessed signal. In combination with FX LEVEL, these parameters allow you to adjust the mix between the direct signal and the processed signal. This dosage is hardware, managed by VCAs and adjustable by MODE DEST.

FEEDBACK : adjusts the quantity of signal taken from the output of the effect which will be reinjected into its input. This setting is particularly useful for echoes because it allows you to adjust the number of repetitions. But it remains interesting for other effects like CHORUS or certain reverberations. This routing is hardware, managed by VCAs and adjustable by MODE DEST.

MOD DEST : a parameter of each effect can be modulated by an integrated LFO or be the destination of the modulation sources of voice card 1.

- NONE : no parameter is modulated.
- "ENCODER 2" : the parameter linked to encoder 2 is modulated. Its wording corresponds to the chosen effect.
- "ENCODER 3" : the parameter linked to encoder 3 is modulated. Its wording corresponds to the chosen effect.
- "ENCODER 4" : the parameter linked to encoder 4 is modulated. Its wording corresponds to the chosen effect.
- FX LEVEL : modulates the level of the processed signal.
- DRY LEVEL : Modulates the level of the direct signal.
- FEEDBACK : modulates the FEEDBACK return level.

MOD SRC : Selects the modulation source.

- Sinus : no parameter is modulated.
- Triangle : the parameter linked to encoder 2 is modulated. Its wording corresponds to the chosen effect.

- Square : the parameter linked to encoder 3 is modulated. Its wording corresponds to the chosen effect.
- Saw Up : the parameter linked to encoder 4 is modulated. Its wording corresponds to the chosen effect.
- Saw Down : modulates the level of the processed signal.
- S&H : Modulates the level of the direct signal.
- TAPE : modulates the FEEDBACK level.
- The Pool Card 1 : Uses the modulation sources available for voice card 1 as modulation for the effect. You can use LFOs , envelopes, morphers or MPE expressiveness in your effect. In this case, to configure the sources, touch this line or press the NEXT button twice .

MOD RATE : Sets the frequency of the internal LFO. This parameter is not accessible if the modulation source is set to *The Pool Card 1* .

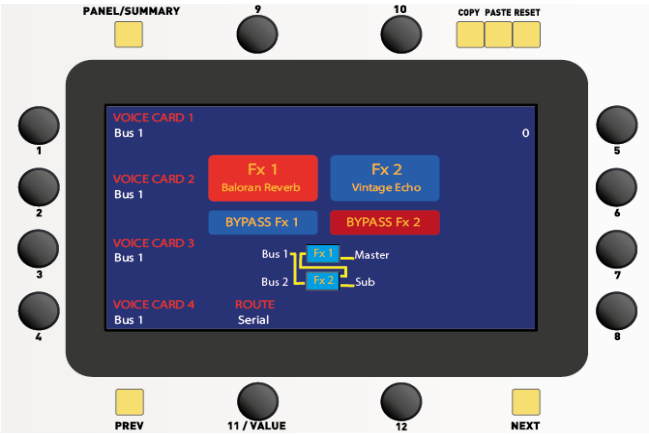
MOD LEVEL : Adjusts the amplitude of the modulation. This parameter is not accessible if the modulation source is set to *The Pool Card 1* .

ROUTE: This parameter allows you to simply modify the voice card/bus routing.

- Parallel : the voice cards are all directed to bus 1 which passes in parallel between effect 1 and effect 2. The set is available on MASTER outputs. Incidentally, we have effect 2 alone on the SUB output.
- Serial : the voice cards are all directed to bus 1 which goes first to effect 2 then to effect 1. The set is available on MASTER outputs. Incidentally, we have effect 2 alone on the SUB output.
- Serial bus 2: The voice cards are all directed to bus 2 which passes first into effect 2 then into effect 1. The whole thing is available on the master outputs. Incidentally, we have effect 2 alone on the SUB output. This routing is important because The Pool offers a *stereo insert on BUS 2* . You can therefore connect a stereo multi-effect to the insert sockets which will therefore be placed before effect 2. By switching from SERIAL to SERIAL BUS 2 you will activate the external effect.
- Independent : Bus 1 goes to effect 1, the output is available on the MASTER jacks. Bus 2 goes to effect 2, output is available on the SUB jacks. This mode is particularly interesting with the multitimbrality of The Pool. By customizing the destination bus for each voice card, you can dedicate an effect to each sound and have separate outputs. You can bypass the effects to keep only the outputs separate.
- Summation : Bus 1 goes to effect 1. Bus 2 goes to effect 2. The outputs of effects 1 and 2 are summed and available on the MASTER jacks. Incidentally, we have effect 2 alone on the SUB output. This mode is particularly interesting with the multitimbrality of The Pool. By customizing the destination bus of each voice card, you can dedicate an effect to each sound and mix everything on MASTER.

To bypass an effect, touch the corresponding BYPASS Fx 1 or BYPASS Fx 2 button, it turns red. This is indeed hardware bypass (except in Parallel mode if only one effect is bypassed), always with the aim of preserving the quality of the signal up to the outputs.

To access the individual voice card routing screen, touch the routing representation or press the NEXT button once.



Encoders 1 to 4 allow you to select the destination bus of each voice card and therefore the effect if you have chosen INDEPENDENT or SUMMATION routing. When you use encoder 11 to modify the routing, the voice card assignments are forced.

11. Sound options

OPT button once to access the sound options.

DELAY GATE 1 (Off.. 4000ms) : sets an optional delay which will be applied between the note played and the reception of this information by the analog envelope ENV1 and the instances of the digital envelopes ENVF and ENVM of synthesizer 1.

ENVF & ENVM 1 : sets the automatic repetition of ENVF digital envelope instances and ENVM of synthesizer 1.

- No loop : The envelopes are not repeated.
- ENVF LOOP : ENVF is repeated at the frequency of the duration of the AD segments.
- ENVM LOOP : ENVM is repeated at the frequency of the duration of the AD segments.
- ENVF & M LOOP : The two envelopes are repeated at the frequency of the duration of the AD segments.
- ENVF CLOCK : ENVF is repeated at the Tempo frequency.
- ENVM CLOCK : ENVM is repeated at the Tempo frequency.
- ENVF & M CLOCK : Both envelopes are repeated at the Tempo frequency.

DELAY GATE 2 (Off.. 4000ms) : sets an optional delay which will be applied between the note played and the reception of this information by the analog envelope ENV2 and the instances of the digital envelopes ENVF and ENVM of synthesizer 2. This parameter is very interesting for a bitimbral sound. The second timbre can flourish with a shift compared to the first.

ENVF & ENVM 2 : sets the automatic repetition of instances of ENVF digital envelopes and ENVM of synthesizer 2. See choices and explanations a little above.

GLIDE TIME (0..200) : sets the duration of sliding from one note to another.

GLIDE STYLE : Sets the glide type.

- Glide **:** progress is continuous.This is the classic portamento .
- Glissendo **:** the progression is made in successive increments or decrements of a semitone.

MONO KEY : sets the keyboard management when playing monophonically and one note is played without the other being released.

- Priority low : if the new note is lower than the pressed note, the oscillators are updated but the envelopes are not triggered.
- Priority high : if the new note is higher than the pressed note, the oscillators are updated but the envelopes are not triggered.
- Retrig both : lower or higher, the new note is played and the envelopes triggered.

BEND SEMI (0..48) : number of semitones down and up for full action on the BEND control (wheel, joystick or other).

PEDAL SUSTAIN : Adjusts the operation of the Sustain command received from an external MIDI device.

- Infinity **:** This is the classic operation. Notes already pressed as well as new notes are held as long as the sustain pedal is pressed.
- Very long..Very short : with these values, the sustain pedal acts as a Release imposed on all notes, from very long to very short. This imitates for example the behavior of sustain on a piano, the notes will take a long time to disappear if the sustain pedal is pressed but they will not be infinite.

DETUNE (0..100) : In UNISSON mode, that is to say when The Pool is configured in Mono mode and the UNISS/DETUNE button is active, this parameter adjusts the detuning of the different voices which produce unison . The larger the value, the faster the beats and the bigger the sound.
In other modes, this parameter simulates voice detuning when the UNISS/DETUNE button is active.

SWING (0ff..50%) : adjusts the swing amplitude of The POOL's internal clock. When the swing value exceeds 15%, the result is more reminiscent of a rhythmic pattern than a SWING.

SWING PATTERN : Sets the swing type. The character set defines this pattern.

- x - indicates that step x will be decreased.
- x + indicates that step x will be increased.
- x = indicates that step x will not be modified.

The pattern described as 1+ 2- will therefore be: step 1 longer , step 2 shorter. The pattern is then repeated over the entire length of the sequence: over a sequence of 4 steps, the previous pattern will give: step 1 longer , step 2 shorter, step 3 longer, step 4 shorter.
If the length of the sequence is not a multiple of the pattern, this will shift the pattern in the sequence each loop.

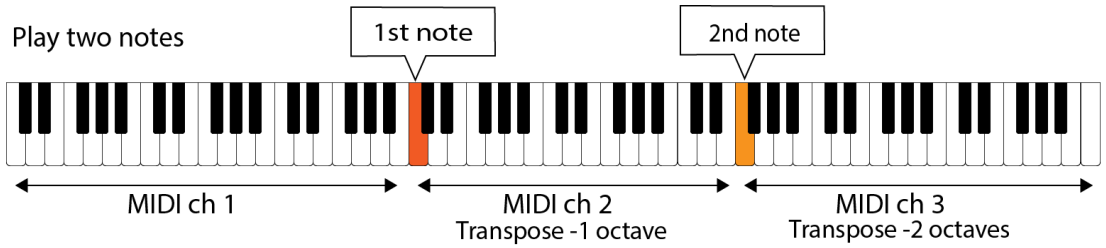
Press the OPT button a second time or press NEXT to access the following options.

VELO TRIGGER : sets the minimum velocity threshold to trigger the envelopes. This is a fairly experimental function which has sometimes brought pleasant surprises with the arpeggiator, for example by creating unexpected rhythmic patterns by extinction of notes played more gently.

SOFT SPLIT : adjusts the software split of The Pool. Turn encoder 9 to the right to choose the number of zones: Press one key will create two zones (channels 1 and 2), Press two keys will create three zones (channels 1 to 3) and Press three keys will create four zones (channels 1 to 4). Then play from left to right the number of notes requested, each note will define the start of the new zone.

Once the split is defined, an automatic transpose is applied to the zones. In zone four, notes are transposed 3 octaves down, in zone 3 two octaves down, and in zone 2 one octave down.

Example:



The following three parameters control the One-Finger Chord or One-Finger Assist Harmony function. 😉
You will find information on the concept in Automatic chords

ONE FINGER : activates one-finger tuning mode.

OF STYLE : Selects the style of the one-finger chord. For creating or modifying styles, you will find all the information in Create automatic tuning styles

OF OCTAVE : selects the treatment of octaves higher and lower than the reference octave of the style.

- Copy : nothing changes, the chord is played in its reference octave.
- Transpose : the chord will be played at the height of the octave played.
- Reverse : one or more reversals of the agreement will be carried out.

12. Motion-s sequencer

The motion sequencer allows you to automate the action of the panel controls: it is active on all the potentiometers as well as on the **RANGE buttons** of the VCOs , on the **WAVES encoders** of LFO and on the two **MORPH1** and **M2/EXPR encoders** .

To access the motion sequencer screen, press the OPT button twice quickly or use the NEXT button twice from the OPTION screen.

Each channel of The Pool has its own motion sequencer. So, if you are in MONO or MIDI mode , you will have several motion sequencers which will be executed simultaneously .

The motion sequencer allows you to record the movements of 1 to 8 commands over 2 to 32 steps. If capture is enabled, the buttons, initially Empty, are automatically assigned to the command you operate on the panel.

First recording method

- Define the length (LENGHT) of the motion-sequence and the duration of the steps in relation to the overall TEMPO (DIVIDE).
- Enable panel capture (CAPTURE = On).
- Activate the execution of the motion sequence (ACTIVE = Yes) to listen to the modifications in real time.
- On the panel, move the potentiometer of your choice. It will be assigned to the first Empty button.
- Draw on the screen the variation of this command over the entire length of the sequence. You can finely modify a step value by using STEP to select the step then VALUE to modify its value.
- Change the position of a second potentiometer. It will be assigned to the next available Empty button .
- Draw on the screen the variation of this command over the entire length of the sequence.
- …and so on up to 8 commands.
- Turn off CAPTURE.

Second recording method

- Define the length (LENGHT) of the motion-sequence and the duration of the steps in relation to the overall TEMPO (DIVIDE).
- Enable panel capture (CAPTURE = On)
- Disable the execution of the motion sequence (ACTIVE = No) otherwise there will be crackles due to conflicts between the actions on the panel and the execution of the motion sequence.
- Select step 1 (STEP = 1) and modify up to 8 commands on the panel which will be assigned to the buttons/lines.
- Select step 2 (STEP = 2) and modify the same commands. As soon as you touch a potentiometer, it is recognized and the corresponding line is selected/displayed.

- …and so on until the last step of your motion sequence.
- Turn off CAPTURE.
- Activate the execution of the motion sequence (ACTIVE = Yes) to listen to the result.

CAPTURE (Off/On) : This setting enables parameter capture and parameter assignment to lines/buttons.

LINE (1.. 8) : This parameter allows you to select the line which can be retouched by drawing on the screen or with the STEP and VALUE parameters. You can also tap the corresponding button for the same result.

STEP (1.. 32) : This parameter allows you to select the column which can be retouched by drawing, action on the command on the screen or with the VALUE parameter.

VALUE : This parameter allows you to manually and finely modify the step value of the motion sequence.

ACTIVE (No, Yes) : Set this parameter to Yes to enable execution of the motion sequence.

DIVIDE : Sets the division of the tempo.

- 1/1 : round. For a tempo of 60, the sequencer will advance every 4s.
- 1/2 : white. For a tempo of 60, the sequencer will advance every 2s.
- 1/4 : black. For a tempo of 60, the sequencer will advance every second.
- 1/4T : triplet of triplet. For a tempo of 60, the sequencer will advance every 667ms.
- 1/8 : eighth note. For a tempo of 60, the sequencer will advance every 500ms.
- 1/8T : eighth note triplet. For a tempo of 60, the sequencer will advance every 333ms.
- 1/16 : semiquaver. For a tempo of 60, the sequencer will advance every 250ms.
- 1/16T : sixteenth note triplet . For a tempo of 60, the sequencer will advance every 167ms.
- 1/32 : 32nd note. For a tempo of 60, the sequencer will advance every 125ms.

LENGHT (2.. 32) : This parameter allows you to adjust the length of the motion sequence. The width of the displayed columns is adapted to the selected length.

RESET : This parameter adjusts the sequence playback mode.

- None : The sequence starts at step 1 and returns to step 1 once the lenght has been reached.
- Gates : Sequence restarts at step 1 each time a note is played or when the lenght has been reached.
- One cycle : The sequence restarts at step 1 each time a note is played, and stops once the lenght has been reached.

To reset a line and unassign the linked command, select the line by touching the corresponding button or using the LINE parameter, then press the RESET button.

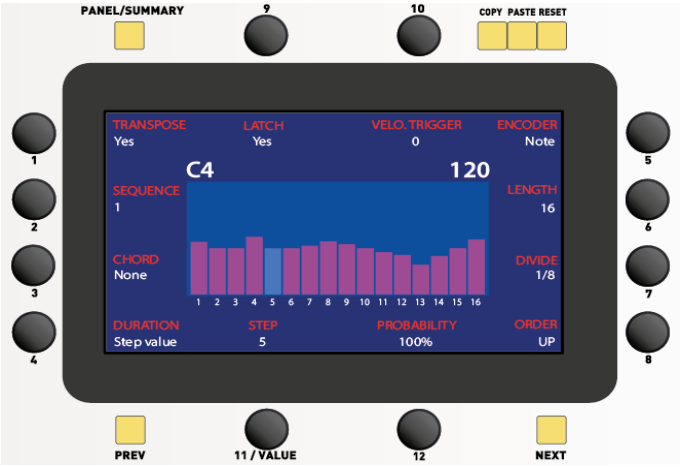
To reset all motion sequence settings, press RESET twice quickly.

13. Sequencer

For information on using the sequencer, it is important to first read The Sequencer .

a. The sequencer screen

To access the sequencer screen, press the SEQ button.



TRANSPOSE : defines how transposition works.

- No : no transposition is performed.
- Yes : transposition is active. It corresponds to the semitone difference between the first note of the sequence and the note played.
- When restart : transposition is active, but only applies when the sequence loops.
- Relative : transposition is active, but the deviation is calculated to stay within a range of -4 to +8 semitones.

SEQUENCE (1-16) : Sets the sequence currently running and editing.

CHORD : enriches the sequence of notes.

- None : no note is added.
- Fifth : A perfect fifth is added.
- Sus : A perfect fourth is added.
- Octav +- : an octave is added randomly higher or lower.
- Fifth / Octav : an octave or perfect fifth is added randomly higher or lower.
- Major : a major third or perfect fifth is added randomly.
- Minor : a minor third or perfect fifth is added randomly.
- Shift 7 : a major third, perfect fifth or seventh is added randomly.
- Min 7 : a minor third, perfect fifth or minor seventh is added randomly.
- Dim 7 : a minor third, a diminished fifth or a diminished seventh is added randomly.

PROBABILITY parameter influences the occurrence of added notes. *It is essential to use a polyphonic mode to use this function.*

DURATION : defines the duration of the note gate , that is to say the percentage of total time of the step during which the note is “pressed”. The remaining time therefore corresponds to the “relaxed” note.

- Step value : default value or drawn value when ENCODER is on Duration.
- 10 %.. 200% : percentage of step time. When you exceed 100%, this allows you to have a note held over several steps.

ENCODER : selects the parameter which will be modified by the physical encoders of the 16 steps and also by tactile drawing on the screen.

- Note : the screen displays bars representing the pitch of the notes in the sequence.
- Velocity : the screen displays bars representing the velocity of the notes in the sequence.
- Duration : the screen displays bars representing the duration of the notes in the sequence.
- Spoiled : the screen displays bars representing pitch management: silent, no gate , gate , gate + glide.
- Ratchet : the screen displays bars representing the number of repetitions (1, 2, 3 or 4) of the step within the step.
- SEQ1, SEQ2 and SEQ3 : the screen displays bars representing a value which will be available as a modulation source (see *Modulations*).
- Tempo : the screen displays bars representing the tempo of each step.

LENGTH (1.. 64) : defines the duration of the sequence. Changing the length of the sequence does not alter the recorded notes. You can therefore test several lengths without changing the content of the sequence.

DIVIDE : Sets the division of the tempo.

- 1/1 : round. For a tempo of 60, the sequencer will advance every 4s.
- 1/2 : white. For a tempo of 60, the sequencer will advance every 2s.
- 1/4 : black. For a tempo of 60, the sequencer will advance every second.
- 1/4T : triplet of triplet. For a tempo of 60, the sequencer will advance every 667ms.
- 1/8 : eighth note. For a tempo of 60, the sequencer will advance every 500ms.
- 1/8T : eighth note triplet. For a tempo of 60, the sequencer will advance every 333ms.
- 1/16 : semiquaver. For a tempo of 60, the sequencer will advance every 250ms.
- 1/16T : sixteenth note triplet . For a tempo of 60, the sequencer will advance every 167ms.
- 1/32 : 32nd note. For a tempo of 60, the sequencer will advance every 125ms.

ORDER : sets the sequence.

- Up : the sequence is played in order.
- Down : The sequence is played in reverse order.
- Up/Down : the sequence is played in order then once the last note is played, it goes in the opposite direction.
- Rand : The sequence is played in random order.
- Odd / Even : the sequence plays all the odd steps first, then plays the even steps .

LATCH : defines how the keyboard play interferes with the progress of the sequence.

- No : the sequence continues its execution as soon as a key is pressed. It stops when the key is released.
- No with Restart : the sequence resumes execution from step 1 as soon as a key is pressed. It stops when the key is released.
- Step by Step : The sequence advances one step with each note played.
- Toogle On/Off : starts at step 1 and stops the sequence alternately with each note played.
- Yes : the sequence runs normally regardless of the notes played.
- Yes with Restart : causes a return to step 1 as soon as a note is played.

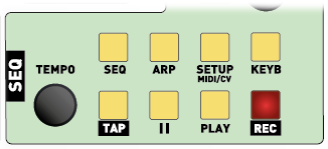
VELO. TRIGGER : sets the minimum velocity threshold to trigger envelopes. This is a fairly experimental function which has sometimes brought pleasant surprises with the arpeggiator, for example by creating unexpected rhythmic patterns by extinction of notes played more gently.

STEP (1.. LENGTH) : pointer to the current step in the sequence. When the sequence is not running, you can use this encoder to navigate through the steps, especially if the sequence exceeds 16 steps. This command also works in recording mode, allowing you to compose old-fashioned sequences 😉

PROBABILITY : adjusts the probability. This parameter affects 3 parameters:

- CHORD : at 100%, all requested notes are added. At 0%, no note is added.
- RATCHET : 100% all ratchets are executed. At 0%, no ratchet is executed.
- ORDER RAND : at 100% all steps are played in random order. At 0%, the reading order becomes a classic *Up again* .

b. The sequencer control panel



TEMPO : sets the tempo of the internal clock. This tempo is used by the sequencer, the arpeggiator and by the LFOs if the RESET parameter of the LFO is on Clock (see LFOs), as well as by the digital envelopes as part of the repetitions (see Envelopes).

TAP : Sets the tempo by tapping the rhythm on the button.

SEQ : selects the sequencer.

ARP : selects the arpeggiator.

SETUP MIDI/CV : provides access to all settings relating to MIDI streams including routings and clocks (see SETUP (MIDI, Clock and CVs)).

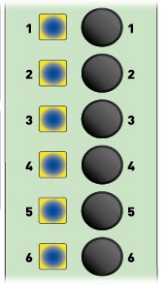
KEYB : activates the keyboard screen (see The Keyboard Screen).

|| : Stops playback or recording of the sequence.

PLAY : starts playing the sequence. By pressing this button twice quickly, you start playing the sequence in SONG mode (see SONG mode). In SONG mode, the PLAY button flashes opposite the **TAP**. In SEQUENCE mode, the PLAY button is illuminated continuously.

REC : starts recording the sequence. By pressing this button once, the recording is not destructive, it keeps the content of the sequence. This allows, in conjunction with the Step encoder from the sequencer screen, to correct/define specific steps .
By pressing this button twice quickly, the current sequence is reset and its contents erased.In record mode, the sequencer advances one step after each note is recorded.
The length of the sequence is increased if necessary.

c. Step controls



16 physical encoders and 16 illuminated buttons allow direct access to the settings of a step as well as sequential visualization of the progress.

The current step is illuminated blue, a set step is yellow, a silent step is off, and an ungated step is “white” .

The step encoder acts on the parameter defined by the ENCODER parameter (encoder 5). By default, it acts on the pitch (note) of the step.

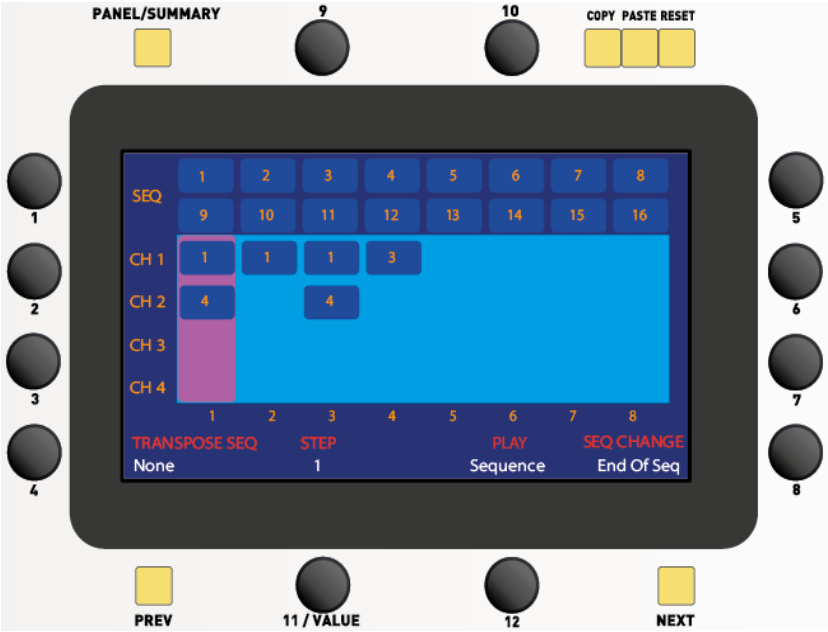
For sequences longer than 16, the assignment of these controls slides by page of 16. Example: when you are on step 24, the controls are assigned to steps 17.. 32 and it is number 8 (16 + 8) which is active.

By pressing the button one step you mute/unmute it.

Pressing two step buttons simultaneously disables the gate for steps following the first button pressed up to and including the second button pressed. To reactivate the gate , press the button once for each step in question.

d. SONG mode

SEQ button once if the Sequencer screen is already displayed or twice if another screen is displayed.



SEQ 1.. 16 : these sixteen buttons allow you to select the active sequence. They can also be played on the four tracks of SONG mode.

CH1 1.. 4 : four tracks are at your disposal to compose your SONG. The length of the tracks is 32 steps. Drop a sequence on the desired location by dragging it with your finger. To remove a sequence from a location, simply tap the location.

TRANSPOSE SEQ (None.. 16) : Sets the transpose sequence. This functionality is a valuable aid for building themes in the simplest way possible: a sequence can be chosen as the automatic transposition of other sequences. When set, all four tracks of the current step in SONG will be transposed by the current note in the transpose sequence. Each time the SONG advances one step, the current note of the transposition sequence also advances one step. *Example*: sequence 2 is defined as a transpose sequence. It is of length 4 and contains four notes: C3, E3, F3, G3. In SONG mode, over four steps, a pattern is drawn, combining many sequences other than sequence 2. When you perform playback in SONG mode, step 1 of the four tracks will be transposed as if you had pressed C3, step 2 as if you had pressed E3, and so on until step 4.

If the transpose sequence is longer than the number of steps set in the SONG screen, progress through the transpose sequence continues while the SONG step returns to 1.
If the transpose sequence is shorter than the number of steps set in the SONG screen, the progress in the transpose sequence will return to 1 while the SONG step continues to advance.

STEP (1.. 32) : allows you to select the active step in the SONG and access all locations: the display of the four tracks will scroll horizontally.

PLAY : Sets the play mode.

- Sequence : The sequence selected in the list of 16 sequences is played repeatedly. If a transpose sequence is selected, it will be active.
- Song : The increment of the current SONG step is executed as soon as the end of the first sequence encountered on the four tracks is reached.

SEQ CHANGE : Sets the transpose application.

- End Of Seq : when a note is played on the keyboard, the transposition of the sequence will only occur when the sequence loops.
- Next beat : when a note is played on the keyboard, the transposition of the sequence occurs from the next step.

The length of the SONG is defined by the location of the last sequence encountered on one of the four tracks.

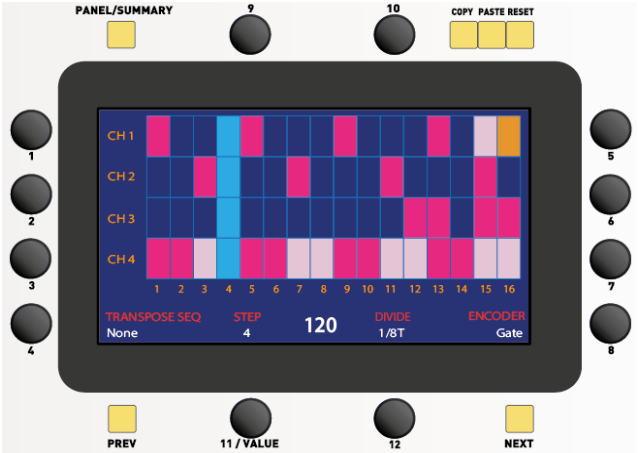
The length of a SONG step is defined by the length of the first sequence encountered on one of the four tracks.

e. Grid view

For explanations of this mode, see The sequencer (grid mode) .

To access the grid mode screen, make sure you have chosen *Link Chan.* In SEQUENCE.

SEQ button once if the Sequencer screen is already displayed or twice if another screen is displayed.



TRANSPOSE SEQ (None.. 16) : Sets the transpose sequence. This functionality is a valuable aid for building themes in the simplest way possible: a sequence can be chosen as the automatic transposition of other sequences. When set, all four tracks will be transposed by the current note in the transpose sequence. Each time the SONG advances one step, the current note of the transposition sequence also advances one step.

STEP (1.. 64) : allows you to select the active step in the sequences and to access all locations: the display of the four tracks will scroll horizontally.

DIVIDE : Sets the division of the tempo.

- 1/1 : round. For a tempo of 60, the sequencer will advance every 4s.
- 1/2 : white. For a tempo of 60, the sequencer will advance every 2s.
- 1/4 : black. For a tempo of 60, the sequencer will advance every second.
- 1/4T : triplet of triplet. For a tempo of 60, the sequencer will advance every 667ms.
- 1/8 : eighth note. For a tempo of 60, the sequencer will advance every 500ms.
- 1/8T : eighth note triplet. For a tempo of 60, the sequencer will advance every 333ms.
- 1/16 : semiquaver. For a tempo of 60, the sequencer will advance every 250ms.
- 1/16T : sixteenth note triplet . For a tempo of 60, the sequencer will advance every 167ms.
- 1/32 : 32nd note. For a tempo of 60, the sequencer will advance every 125ms.

ENCODER : select the parameter which will be modified by the physical encoders of the 16 steps and also by tactile drawing on the screen. Use the CH1, CH2, CH3and CH4 buttons to change channels and change tracks at the same time.

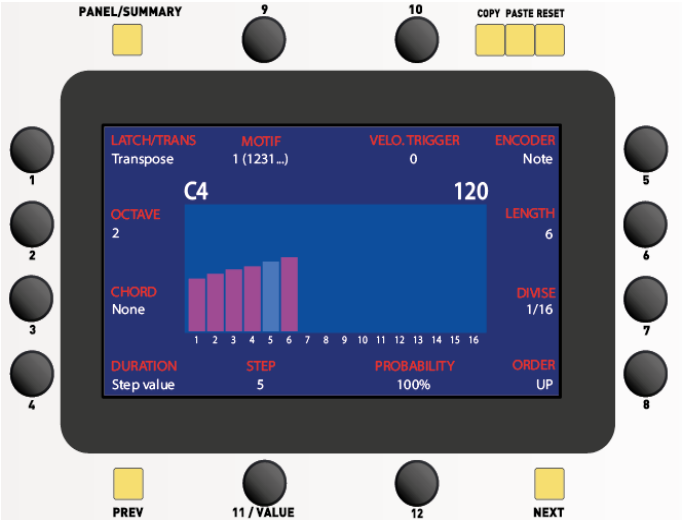
- Note : the screen displays bars representing the pitch of the notes in the sequence.
- Velocity : the screen displays bars representing the velocity of the notes in the sequence.
- Duration : the screen displays bars representing the duration of the notes in the sequence.
- Spoiled : the screen displays bars representing pitch management: silent, no gate , gate , gate + glide.
- Ratchet : the screen displays bars representing the number of repetitions (1, 2, 3 or 4) of the step within the step.
- SEQ1, SEQ2 and SEQ3 : the screen displays bars representing a value which will be available as a modulation source (see *Modulations*).
- Tempo : the screen displays bars representing the tempo of each step.

14. Arpeggiator

For information on using the arpeggiator, it is important to first read The Arpeggiator .

a. The arpeggiator screen

To access the sequencer screen, press the ARP button.



LATCH/TRANS : Defines how the arpeggiator sustain and transpose.

- No : as soon as you release the keys the arpeggiator stops. On the next chord, the arpeggio will start from the beginning.
- Single : the arpeggio is held automatically, if you release the keys, only for one cycle. Even if you hold the keys, only one cycle will be executed.
- Transpose : When you play a chord with multiple fingers, the arpeggio pattern is redrawn and the arpeggio is started if necessary. It is maintained if you release the keys. If you play only one note, the previous arpeggio is just transposed.
- Trans+Restart : works like Transpose. The arpeggio is just restarted each time a key is pressed.

OCTAVE (1-4) : Sets the range in octaves for the pattern repeat.

CHORD : enriches the sequence of notes.

- None : no note is added.
- Fifth : A perfect fifth is added.
- Sus : A perfect fourth is added.
- Octav +- : an octave is added randomly higher or lower.
- Fifth / Octav : an octave or perfect fifth is added randomly higher or lower.
- Major : a major third or perfect fifth is added randomly.
- Minor : a minor third or perfect fifth is added randomly.
- Shift 7 : a major third, perfect fifth or seventh is added randomly.
- Min 7 : a minor third, perfect fifth or minor seventh is added randomly.
- Dim 7 : a minor third, a diminished fifth or a diminished seventh is added randomly.

PROBABILITY parameter influences the occurrence of added notes. *It is essential to use a polyphonic mode to use this function.*

DURATION : defines the duration of the note gate , that is to say the percentage of total time of the step during which the note is "pressed". The remaining time therefore corresponds to the "relaxed" note.

- Step value : default value or drawn value when ENCODER is on Duration.
- 10 %.. 200% : percentage of step time. When you exceed 100%, this allows you to have a note held over several steps.

ENCODER : selects the parameter which will be modified by the physical encoders of the 16 steps and also by tactile drawing on the screen.

- Note : the screen displays bars representing the pitch of the notes in the sequence.
- Velocity : the screen displays bars representing the velocity of the notes in the sequence.
- Duration : the screen displays bars representing the duration of the notes in the sequence.
- Spoiled : the screen displays bars representing pitch management: silent, no gate , gate , gate + glide.
- Ratchet : the screen displays bars representing the number of repetitions (1, 2, 3 or 4) of the step within the step.
- SEQ1, SEQ2 and SEQ3 : the screen displays bars representing a value which will be available as a modulation source (see *Modulations*).
- Tempo : the screen displays bars representing the tempo of each step.

LENGTH (1..64) : sets the duration of the arpeggio. When you redefine the pattern by playing in tune, this value is automatically changed. You can then reduce it to limit the length of the calculated pattern.

DIVIDE : Sets the division of the tempo.

- 1/1 : round. For a tempo of 60, the sequencer will advance every 4s.
- 1/2 : white. For a tempo of 60, the sequencer will advance every 2s.
- 1/4 : black. For a tempo of 60, the sequencer will advance every second.
- 1/4T : triplet of triplet. For a tempo of 60, the sequencer will advance every 667ms.
- 1/8 : eighth note. For a tempo of 60, the sequencer will advance every 500ms.
- 1/8T : triplet of eighth note.For a tempo of 60, the sequencer will advance every 333ms.
- 1/16 : semiquaver. For a tempo of 60, the sequencer will advance every 250ms.
- 1/16T : sixteenth note triplet . For a tempo of 60, the sequencer will advance every 167ms.
- 1/32 : 32nd note. For a tempo of 60, the sequencer will advance every 125ms.

ORDER : Sets the order in which the pattern is scrolled.

- Up : The pattern is played in order.
- Down : The pattern is played in reverse order.
- Up/Down : The pattern is played in order and then once the last note is played, it starts in reverse order.
- Rand : The pattern is played in random order.
- Odd / Even : the pattern plays all the odd steps first, then plays the even steps .

PATTERN : selects the ruler that will draw the pattern with the notes of the chord played and repeated over the chosen number of octaves. The sequence of numbers in parentheses attempts to explain the pattern.

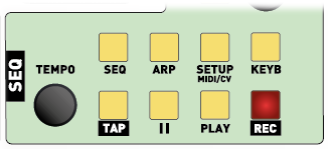
VELO. TRIGGER : sets the minimum velocity threshold to trigger envelopes. This is a fairly experimental function which has sometimes brought pleasant surprises with the arpeggiator, for example by creating unexpected rhythmic patterns by extinction of notes played more gently.

STEP (1.. LENGTH) : pointer to the current step in the arpeggio. When the arpeggio is not playing, you can use this encoder to navigate the steps.

PROBABILITY : adjusts the probability. This parameter affects 3 parameters:

- CHORD : at 100%, all requested notes are added. At 0%, no note is added.
- RATCHET : 100% all ratchets are executed. At 0%, no ratchet is executed.
- ORDER RAND : at 100% all steps are played in random order. At 0%, the reading order becomes a classic **Up again** .

b. The arpeggiator control panel



TEMPO : sets the tempo of the internal clock. This tempo is used by the sequencer, the arpeggiator and by the LFOs if the RESET parameter of the LFO is on Clock (see LFOs), as well as by the digital envelopes as part of the repetitions (see Envelopes).

TAP : Sets the tempo by tapping the rhythm on the button.

SEQ : selects the sequencer.

ARP : selects the arpeggiator.

SETUP MIDI/CV : provides access to all settings relating to MIDI streams including routings and clocks (see SETUP (MIDI, Clock and CVs)).

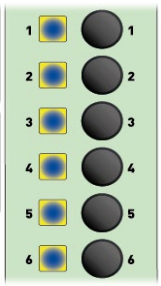
KEYB : activates the keyboard screen (see The Keyboard Screen).

|| : stops execution of the arpeggiator.

PLAY : starts the arpeggiator.

REC : This button is not used for the arpeggiator.

c. Step controls



16 physical encoders and 16 illuminated buttons allow direct access to the settings of a step as well as sequential visualization of the progress.

The current step is illuminated blue, a set step is yellow, a silent step is off, and an ungated step is “ white .”

The step encoder acts on the parameter defined by the ENCODER parameter (encoder 5). By default, it acts on the pitch (note) of the step.

For patterns longer than 16, the assignment of these controls slides by page of 16. Example: when you are on step 24, the controls are assigned to steps 17.. 32 and it is number 8 (16 + 8) which is active.

By pressing the button one step you mute/unmute it.

Pressing two step buttons simultaneously disables the gate for steps following the first button pressed up to and including the second button pressed. To reactivate the gate , press the button once for each step in question.

15. SETUP (MIDI, Clock and CVs)

SETUP button once to access MIDI settings.

CHANNEL 1..4 : Sets the destination of MIDI information **received** on The Pool channels (not the source MIDI channel).

- POOL : Information received on the channel is sent to The Pool.
- POOL + USB : Information received on the channel is sent to The Pool and output simultaneously to the USB port.
- POOL + MIDI 1 : Information received on the channel is sent to The Pool and output simultaneously to the MIDI 1 jack.
- POOL + MIDI 2 : Information received on the channel is sent to The Pool and output simultaneously to the MIDI 2 jack.
- POOL + Host 1 : The information received on the channel is sent to The Pool and transmitted simultaneously on the USB HOST socket, to the equipment connected to Host 1.
- POOL + Host 2 : The information received on the channel is sent to The Pool and transmitted simultaneously on the USB HOST socket, to the equipment connected to Host 2.
- POOL + Host 3 : The information received on the channel is sent to The Pool and transmitted simultaneously on the USB HOST socket, to the equipment connected to Host 3.
- POOL + Host 4 : The information received on the channel is sent to The Pool and transmitted simultaneously on the USB HOST socket, to the equipment connected to Host 4.
- POOL + CV Gate 1 : Information received on the channel is sent to The Pool and output simultaneously to the CV1 jack for the pitch and Gate 1 for the gate signal .
- POOL + CV Gate 2 : Information received on the channel is sent to The Pool and output simultaneously to the CV2 jack for the pitch and Gate 2 for the gate signal .
- USB : Information received on the channel is transmitted exclusively on MIDI socket 1.
- MIDI 1 : Information received on the channel is output exclusively on the MIDI 1 jack.
- MIDI 2 : Information received on the channel is output exclusively on the MIDI 2 jack.
- Host 1 : The information received on the channel is transmitted exclusively on the USB HOST socket, to the equipment connected to Host 1.
- Host 2 : The information received on the channel is transmitted exclusively on the USB HOST socket, to the equipment connected to Host 2.

- Host 3 : The information received on the channel is transmitted exclusively on the USB HOST socket, to the equipment connected to Host 3.
- Host 4 : The information received on the channel is transmitted exclusively on the USB HOST socket, to the equipment connected to Host 4.
- CV Gate 1 : The information received on the channel is transmitted exclusively on the CV1 socket for the pitch and Gate 1 for the gate signal .
- CV Gate 2 : The information received on the channel is transmitted exclusively on the CV2 socket for the pitch and Gate 2 for the gate signal .

You can therefore direct the stream from the MIDI and USB sources to the pool and or any other equipment connected to The Pool, independently for channels 1 to 4.

SEQ MODE : Sets the channel to which sequencer notes are sent.

- Selected channel : the sequencer is executed on the selected channel (CH1.. CH4) when the sequence is started. The transposition will then only be active for this channel.
- Channel 1.. 4 : the sequencer is executed on the channel selected here.

ARP MODE : Sets the channel on which arpeggiator notes are sent.

- Selected channel : the arpeggiator is executed on the selected channel (CH1.. CH4) when starting the arpeggio . Transpose and pattern drawing will only be active for this channel.
- Channel 1.. 4 : The arpeggiator is executed on the channel selected here.

MIDI OUT CHAN : Optionally forces the MIDI channel for MIDI stream routings.

- Selected channel : the MIDI channel of the source is preserved.
- Channel 1.. 16 : the selected MIDI channel is imposed.

Press the SETUP button a second time or press NEXT to access CV settings.

CV1 MODE and **CV2 MODE** : adjust the voltage sent to the CV1 and CV2 socket.

- Volt/Octave : the most common standard, for each volt the frequency is doubled.
- Hz/Volt : mainly used at Korg and Yamaha, you have to double the voltage to double the frequency.
- Wheel : the value of the Wheel wheel converted into tension
- Bend : the value of the Bend dial converted to voltage
- Velocity : the Velocity value of the last note played converted into tension
- Aftertouch : the value of the Aftertouch channel converted to voltage
- Wheel + Aftertouch : The value of the Wheel plus the value of the Aftertouch channel converted to voltage.

- The Pool Card 1 : Uses the modulation sources available for voice card 1 as the source of the voltage available at the jack. You can export LFOs , envelopes, morphers or MPE expressiveness to this CV jack. In this case, to configure the sources, press the NEXT button two or three times .

GATE 1 and **GATE 2** : regulate the use of the GATE 1 and GATE 2 socket

- V-TRIG 5V : Classic positive gate with an amplitude of 5 volts.
- V-TRIG 10V : Classic positive gate with an amplitude of 5 volts.
- S-TRIG 5V : Negative gate with an amplitude of 5 volts.
- S-TRIG 10V : Negative gate with an amplitude of 10 volts.
- Wheel : the value of the Wheel wheel converted into tension
- Bend : the value of the Bend dial converted to voltage
- Velocity : the Velocity value of the last note played converted into tension
- Aftertouch : the value of the aftertouch channel converted into voltage
- Wheel + Aftertouch : The value of the Wheel plus the value of the Aftertouch channel converted to voltage.
- The Pool Card 1 : Uses the modulation sources available for voice card 1 as the source of the voltage available at the jack. You can export LFOs , envelopes, morphers or MPE expressiveness to this Gate jack . In this case, to configure the sources, press the NEXT button two or three times.

CV1 GATE1 ALGO and **CV2 GATE1 ALGO** : adjust the management of the tension and torque CV1/Gate1 and CV2/ Gate 2 when one note is played without the other being released.

- Priority low **:** if the new note is lower than the pressed note, the oscillators are updated but the envelopes are not triggered.
- Priority high **:** if the new note is higher than the pressed note, the oscillators are updated but the envelopes are not triggered.
- Retrig both **:** lower or higher, the new note is played and the envelopes triggered.

BEND SEMITONE (1..24) : defines the amplitude of the BEND voltage optionally available on the CV and GATE sockets. For **24** , the output voltage is 0 to 4V for Bend alone, otherwise a voltage of -2V to 2V is added to the keyboard voltage.

MOD SEMITONE (0.. 127) : defines the amplitude of the Wheel, Velocity and Aftertouch voltages optionally available on the CV and GATE jacks. For **127** , the output voltage amplitude is 0 to 10V.

SETUP button a third time or press NEXT to access the CLOCK settings.

CLOCK : sets the clock source for the sequencer, arpeggiator and parameters that can use the clock (Effects, LFOs , Envelopes).

- Internal : the clock is created by The Pool. The Tempo is set to The Pool with the dedicated encoder/ Tap .
- MIDI : Clock is received at the MIDI in jack.
- USB : the clock is received on the USB socket.
- Host 1 : the clock is received from the equipment connected to the USB HOST socket, Host 1.
- Host 2 : the clock is received from the equipment connected to the USB HOST socket, Host 2.
- Host 3 : the clock is received from the equipment connected to the USB HOST socket, Host 3 .
- Host 4 : the clock is received from the equipment connected to the USB HOST socket, Host 4.

SEND TO (1..3) : Three clock redirectors are offered. They allow MIDI clock and Realtime (Start/Stop) information to be broadcast to external equipment.

- None : the redirector is not used.
- MIDI 1 : The clock is output from the MIDI 1 jack.
- MIDI 2 : The clock is output from the MIDI 2 jack.
- USB : the clock is output from the USB socket.
- Host 1 : the clock is sent to the equipment connected to the USB HOST socket, Host 1.
- Host 2 : the clock is sent to the equipment connected to the USB HOST socket, Host 2.
- Host 3 : the clock is sent to the equipment connected to the USB HOST socket, Host 3.
- Host 4 : the clock is sent to the equipment connected to the USB HOST socket, Host 4.

PULSE PER QUARTER (24, 48) : sets the resolution of the clock tempo both in reception and internal and transmission. **48** offers greater resolution, this means that a time is counted by 48 pulses.Also this resolution is not supported by all equipment.

OUT DIVIDE (None, 2, 4, 6, 8) : sets the division of the internal clock which will be exported by the redirectors. When a device receives an external clock, it is sometimes useful and nice to be able to divide this time. Example: The Pool sequencer is set to a fast tempo, in resolution 48. The connected BAR only supports 24. We must therefore already divide by 2. And if, despite this, the tempo received by the BAR is not yet adapted to the pattern used, we can increase the division.

OUT MODE : Sets the MIDI Realtime mode used in internal clock export.

- Start/Stop : The Pool sends MIDI Realtime Start and Stop messages .
- Song pointer : The Pool sends MIDI Realtime Song position messages .

16. Microtonality and SCALA Files

Press the KEY button once to access the SCALA screen.

Classical instruments are predominantly tuned according to the standard **12-tone equal temperament** system per octave. Microtonality explores finer divisions of the octave, enabling the use of **quarts de ton, huitièmes de ton ou d'autres fractions**, thus offering a rich and novel sound palette.

These alternative tunings provide the opportunity to access custom or historical scales and to explore surprising, disorienting, or even unprecedented sound textures.

Scala is software designed for working with microtonal tuning systems and alternative scales. It has become an essential tool for musicians, composers, and researchers exploring unconventional harmonic systems. The Scala community is very active online through forums and groups, offering numerous tutorials, extensive information, and an immense library of SCALA files.

The Pool is compatible with SCALA files. On the **microSD card**, there is a **SCALA** folder where you can place your own SCALA files and also save those you create with The Pool.

The screen list displays all SCALA files in this folder.

INDEX: Allows you to move the selection bar to the file of your choice. You can also use the touch scrollbar and then tap on the desired line.

ACTIVE (No, Yes): Enables or disables the selected microtonality. This allows you to switch quickly between active and inactive states.

SHOW MAP (1..13, 13..25, 25..37): The Pool is compatible with SCALA files up to 36 intervals. Therefore, the interval mapping on the keyboard can extend up to three octaves. This parameter allows you to select the octave displayed. When **ECHO KEYS** is set to **Yes**, **SHOW MAP** is automatically selected based on the note played on the keyboard.

KEYS MAP: Selects the mapping algorithm between intervals and keyboard keys. If you desire specific mappings, a discussion is open on the forum for this, and they can easily be integrated. 😉

ECHO KEYS (No, Yes): Enables or disables the echo of the note played on the physical keyboard and the note selected on the screen. In **Yes** mode, as soon as you play a note, **SHOW MAP** is updated, and the corresponding key is selected on the screen. You can then directly modify the interval using encoders 11 and 12.

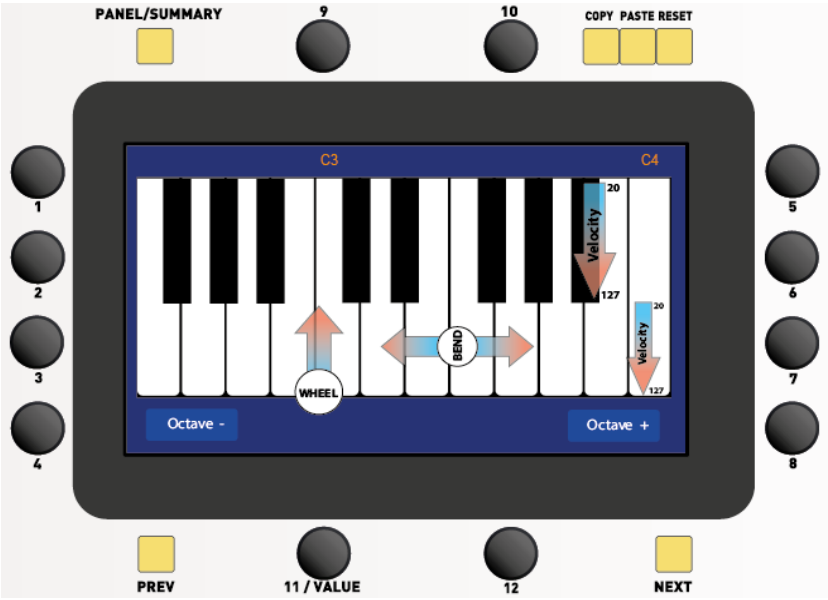
100th, MULTIPLIER, DIVIDER: When a key is selected on the screen keyboard, the corresponding interval can be directly modified using encoders 11 and 12:

- For intervals expressed in 100ths, only encoder 11 is used.
- For intervals expressed as fractions, encoder 11 adjusts the numerator, and encoder 12 adjusts the denominator.

You can save your microtonal definition by pressing the KEY button and the SAVE button simultaneously.

17. The Keyboard screen

KEY button once to access the keyboard screen.



This keyboard allows you to use, briefly and only for a monophonic game, The Pool. Its use is very simple. Play the note just by touching the screen. Velocity is defined by the position of the touch on the note.

You can simulate the modulation wheel by sliding your finger vertically from the bottom edge of the keyboard to the center.

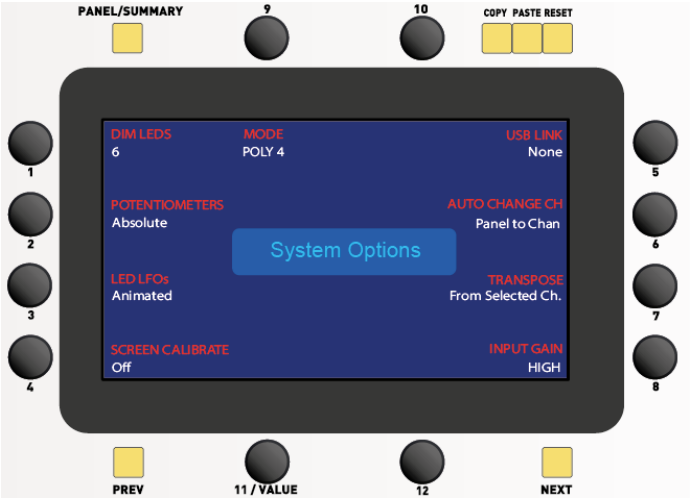
You can simulate the bend wheel by sliding your finger left or right over a length of 2 keys.

Touch the Octave – button to transpose the keyboard down one octave. Touch the Octave + button to transpose the keyboard up one octave. The reference note for each DO is indicated above the keyboard.

It is entirely possible to record a sequence with this keyboard.

18. System settings

SYS button once to access system settings.



DIM LEDS (1.. 15) : adjusts the light intensity of the LEDs and buttons.

POTENTIOMETERS : sets the operating mode of the potentiometers.

- Absolute : as soon as you touch a potentiometer, its value is sent to the instrument. If your knob is turned all the way to the left, and you load a sound whose value of this control corresponds to a position all the way to the right, when you touch the knob, this parameter will undergo a significant jump.
- Tracking : in this mode, you must turn the potentiometer to find the parameter value. It is only when the potentiometer "holds" this value that its action will be effective on the sound. In global display mode (press PANEL to return to this display), the value to be reached is displayed next to the potentiometer value and, once hooked, it disappears.
- Relative : in this mode, the physical position of the potentiometer is considered to be the parameter value. This changes the resolution of the potentiometer travel but avoids value jumps.

LED LFOs : adjusts the display of the LFO LEDs .

- Off : the LEDs are off.
- Animated : the LEDs change color depending on the waveform chosen and they are animated in intensity by the corresponding LFO.
- Static : the LEDs just change color depending on the chosen waveform. They are not animated.

SCREEN CALIBRATE : calibrates the touch of the screen. As soon as you turn encoder 4 to the right, the procedure begins. Follow the on-screen instructions: just tap a target on the screen three times with the best accuracy. Pay attention to the inclination of your hand and your finger, it influences the quality of the result.

USB LINK : controls the USB connection between The Pool and an Audio/Midi application on a computer. If necessary, check that the dip switches on the back of The Pool are in the PANEL position (1 and 2 down).

- None : For Output, only Routes defined on The POOL + USB or USB are used (see SETUP). The Pool receives the MIDI message (NOTE ON/OFF, CC, NRPN) stored in the sequence from the DAW.
- DAW : with this setting, all actions on the panel are addressed to your DAW without being executed by the panel. It's the echo/monitoring you define in the DAW that makes the commands operative. This mode of operation is very interesting, as it avoids any conflicts between the direct commands on the panel and what's in the sequence. This mode, combined with MIDI Program Change, really lets you take control of The Pool with your software.

- DAW & KEY : identical to the previous mode, but also including MIDI messages from keyboards connected to The POOL. The Pool will only receive messages from its keyboards via the echo/monitoring you define in the DAW. Among other things, this mode lets you use the keyboards connected to The POOL to control virtual instruments hosted in your DAW.

AUTO CHANGE CH : Sets the relationship between the MIDI channel and the CH1.. CH4 buttons on the panel.

- Panel to Chan : forces the MIDI channel with the selection CH1 .. CH4. If CH1 is flashing, then the MIDI channel will be forced to 1, if CH2 is flashing, then the MIDI channel will be forced to 2 and so on. This mode is the default operating mode: It is ideal if you use only one external keyboard.
- Chan to Panel : Automatically activates the panel channel based on the incoming MIDI stream. As soon as The Pool receives on/off notes regularly on a MIDI channel, it selects the corresponding CH1 .. CH4 button. This mode is interesting if you use several external keyboards configured on different channels. Thus the CH1.. CH4 buttons will be automatically selected according to the keyboard on which you are playing and the panel will then be active on the sound corresponding to the channel.
- None : no channel change, it is the keyboard and the panel which define sources and targets. This is the preferred mode if your The Pool is controlled by external software or if you use several keyboards connected to The Pool and channel selection is easy on them.

TRANSPOSE : sets the active sources for transposing a sequence and transposing, drawing an arpeggio pattern.

- From Selected Ch.: for this setting, transposition is active only for the channel that was selected when the arpeggio or sequence was started.
- From All Ch : For this setting, transpose is active for all channels.

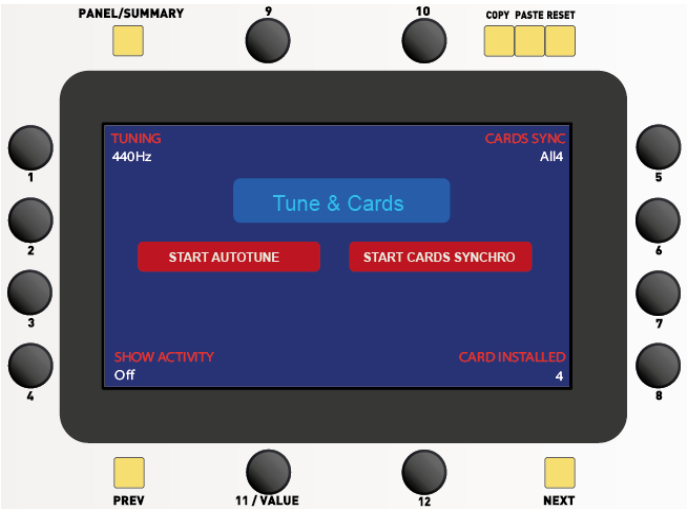
INPUT GAIN : Adjusts the gain of the external input.

- LOW : corresponds to a line level
- HIGH : corresponds to an instrument or dynamic microphone input.

The input is high impedance (100 kΩ).

MODE : sets the operating mode of The Pool. It is normally simpler to use the dedicated buttons in the SET panel .

Press the SYS button a second time or press NEXT to access the next settings.



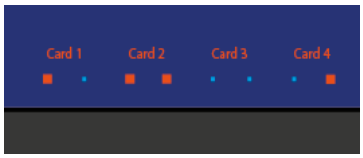
TUNING : adjusts the overall tuning of The Pool.

CARDS SYNCHRO : adjusts the extent of synchronization that will be executed by the **START CARDS SYNCHRO** button .

- All : All content needed for voice cards microSD cards is synced from the external microSD card.
- LFO Wavetables : only the LFO Wavetable is synchronized.
- Wavetables : all Wavetables in the WAV synthesis are synchronized.
- Soundfonts : all Soundfonts of the WAV synthesis are synchronized. The operation takes several minutes for each voice card if many files are modified or added. In this case, prefer the next option.
- All Erase & Copy : the voice cards are simultaneously formatted and all files synchronized. The operation takes ten of minutes.

CARDS INSTALLED : Sets the number of voice cards installed in The Pool. By default, your Pool was delivered complete, therefore with four voice cards.

SHOW ACTIVITY : activates or deactivates the visualization of voice and channel card activity in the basic screen. When this option is valid, below the frame which displays the last modified parameter and its value, the following indicator is displayed:



For each voice card, two rectangles which symbolize each of the synthesizers on a card flash depending on the activity and the management mode chosen.

START AUTOTUNE : launches the agreement of VCOs 3340 and VCFs 3320 of The Pool. Even if the 3340 is a rather stable VCO in temperature, its use in polyphony requires fair tuning of all VCOs .
As for the VCF, when it is well tuned, with the KEY parameter at 100 and the resonance at maximum, you have a true sinusoidal generator. The operation lasts 3 minutes.

! This procedure must be carried out once the machine is at working temperature, i.e. around ten minutes after switching it on and repeated when you find that the polyphonic mode is no longer very accurate. It is important not to touch the panel controls or the keyboard during this operation.

For a quick autotune , i.e. just set each VCO to the tuning frequency (**TUNING parameter**) , press the SYS and LOAD buttons simultaneously. This procedure lasts 3 seconds and is very often sufficient to obtain perfect agreement from The Pool.

START CARDS SYNCHRO : starts the procedure for synchronizing microSD voice cards with the external microSD card. The **CARDS SYNCHRO parameter** regulates the extent of synchronization: if you have not updated the soundfonts, there is no point in wasting ten minutes synchronizing them.

! You must start synchronization as soon as you have modified the contents of the LFO (LFO wavetables) , SF (WAVE synthesis soundfonts) and WT (WAVE synthesis wavetables) folders on the external micro SD.

V. The rear panel

USB HOST : connect to this socket, directly or via a USB hub, the USB MIDI devices that will communicate with your The Pool. The socket can supply up to 300mA. For example, it easily supports two KeySteps Arturia . This connection receives both control sources (keyboards, controllers) and destinations such as external expanders or synthesizers. After connections, the recognized devices are displayed in the SETUP screens (MIDI, Clock and CVs) . It is also in these screens that the MIDI stream routings will be defined.

12V LED : your The Pool comes with a small gooseneck lamp which will gently illuminate your panel with its warm light 😉 . This is where you need to connect your gooseneck. With the equipment provided, the lamp turns on as soon as The Pool is powered on. There are other compatible lamps such as the *Adam Hall SLED 1 ULTRA XLR 3* which has a switch. After tests, yours truly found this solution less practical because the switch has no memory: you have to turn on the lamp manually after each switching on of The Pool and the temperature of the LEDs is cold, less pleasant.

CARD : microSD card slot . *It is essential for the proper functioning of The Pool.*The card must be locked in its slot, it must be inserted until it *clicks* . If you have to force it, stop, it is certainly because you are putting the card in the wrong direction: the screen printing (logo) must be on top and the contacts presented first, below. To remove the card, push it into its slot until it clicks, it will be unlocked and will move back to allow you to extract it.
The card contacts must be kept clean.
Handle the card without touching them.
For more information on the management of this card, consult the first appendices .

DC Input 15V 90W : the power supply supplied with your The Pool must be connected to this socket via the 5.1mm jack. Even though the connectors are of excellent quality, it is important not to work this socket. The cable must be straight at the back of The Pool, not making a bend that would press on the plug. Ideally, for a fixed installation, you can secure the cable with the clamps provided in the accessories bag (see the photos in First steps). This
Meanwell power supply supplied is of very good quality. It is compatible with all local standards and all safety and protection obligations. The Pool was delivered with a mains cable fitted with a plug adapted to local standards. You must not use a power supply other than that supplied by Baloran . This is important and any damage linked to improper use will not be covered by the warranty.

FUSE : this housing receives a 5x20 fast or semi-fast 5A fuse. The screen print may indicate 6A because these two values are compatible with good protection of The Pool. To change or check the fuse, turn the cap/holder an eighth of a turn counterclockwise. The cap/holder will be unlocked and ejected from its housing. Pull it to extract the fuse. To replace it, check that the fuse is correctly placed in the cap/support then push the latter into its housing and rotate an eighth of a turn to lock the cap/support.

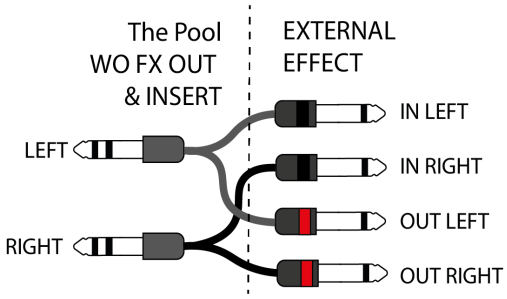
POWER : The Pool on/off switch. Switched to the fuse, it is ON. Switched to the DIP contact row, it is OFF. If after switching to ON, The Pool remains off, check the indicator light on the power supply and, if necessary, the condition of the fuse.

USB and DIP switches : the USB Type B connector receives the supplied USB A/B cable. This link is used for updates to The Pool and for connecting The Pool to a computer. The DIP Switches allow you to configure the connection in The Pool.

- PANEL : the first two contacts (1 and 2 from the left), all others upwards.
  The USB socket is linked to the panel, it allows good communication of The Pool with a computer and DAW software or for updating the panel software.

- FX : contacts 3 and 4 down, all others up. The USB socket is attached to the effect unit. This position is only used for updating this map.
- VOICE 1 : contacts 5 and 6 down, all others up. The USB jack is attached to voice card 1. This position is only used for updating this map.
- VOICE 2 : contacts 7 and 8 down, all others up. The USB jack is attached to voice card 2. This position is only used for updating this map.
- VOICE 3 : contacts 9 and 10 lowered, all others up. The USB socket is attached to voice card 3. This position is only used for updating this map.
- VOICE 4 : contacts 11 and 12 lowered, all others up. The USB socket is attached to voice card 4. This position is only used for updating this map.

WO FX OUT & INSERT : allows you to have a direct output without effect (WithOut FX OUT) for all voice cards routed to BUS 2. By using two Y-cables like the one below, you can insert a stereo effect into the



processing chain.

You will find all the information on routing effects in FX and routing voice cards in particular SERIAL BUS 2 routing .

EXT INPUT (1+2 and 2) : inputs for an external signal. Jack 1+2 should be used for a monaural source. In this case, the signal arriving at this jack will be available in each VCO via the EXT parameter. For a stereo source or two separate mono sources, use both input jacks. The signal from jack 1+2 will be available on EXT of VCO1. The signal from jack 2 will be available on EXT of VCO2. The gain of these inputs is adjustable in System Settings .

CV AND GATE : The Pool manages two CV and Gate sets in 3.5 format. You will find all the information on using these connections in SETUP (MIDI, Clock and CVs) .

MIDI : The Pool manages two DIN MIDI OUT sockets and one MIDI IN socket. The MIDI THRU jack is a hardware copy output of the MIDI IN jack. You will find all the information on using these connections in SETUP (MIDI, Clock and CVs) .

MASTER OUTPUT : Available in XLR format and 6.35 TRS jack format, The Pool's stereo output will be connected to recording equipment, a mixer, an amplifier or a sound card. Signal balance is ensured by high-end THAT Corporation components.

SUB OUT : This output receives the signal at the output of the FX2 effect unit. Voice cards can be directed to bus 1 or bus2. By routing certain cards on bus 2 and bypassing effect 2, you can therefore obtain a direct separate output for certain voice cards.

HEADPHONE : stereo headphone jack in 6.35 format, compatible with all impedances. The output volume can be adjusted with the potentiometer located next to it.

VI. APPENDICES

1. Manage sounds on microSD and MIDI PROGRAM CHANGE

All sounds are saved on the microSD card . The latter can be extracted from The Pool to read and organize it from a computer. This allows you with the greatest user-friendliness to rename sounds, organize sounds by folder and above all to make a frequent backup of all your work.

There are a few folder names reserved for The Pool. Do not rename or delete them.

- **CHORD** : folder reserved for automatic chord styles
- **WT :** Wavetables file from the WAVE synthesis.
- **SF** : Soundfonts and Samples folder of the WAVE mode Samples synthesis .
- **LFO :** Wavetable folder for LFOs.

All other names are possible, but the author advises you to use names that do not exceed 12 characters and in capital letters: DEMO, TUTO, EXPERIMENTAL, LIVE20102025, MPE OSMOSE etc….

The folder opened by default when The Pool is launched is the first encountered in alphabetical order. If you want **FACTORY** to always open first, you can rename it to **@FACTORY**.

You can create folders into which you copy the sounds of your choice by using a 3-character index in front of the sound name: 001 Tabasse.pool , 002 Keysoft.pool … 128 Bassdrum.pool . So the PROGRAM CHANGE 127 will load the sound 128 BassDrum.pool . If there is no file starting with 128, then PROGRAM CHANGE 127 will select the 128th file in the list or the last if the folder has fewer than 128 files.

2. Create automatic chord styles

Turn off The Pool, carefully remove the microSD card and insert it into your computer's reader. Take the opportunity to make a complete copy of the map. Styles are text files from the CHORD directory of the microSD card . You can create your own styles with a text editor and place them in this folder. The file name begins with an index. Numbers 1 to 200 are reserved for Baloran . If you are creating styles, use a numbering that will start at 200 or higher.

Below are three examples of style files

Line of text	*Explanations*
NOTES, 12, C4	12 defined semitones, reference note C4, chord expressed in note
Cmin,3,C3,G3,Eb4,	1st semitone and reference note, display “Cmin”, 3 notes: C3, G3 and Eb4
NONE	2nd semitone, undefined so do not play
D7,3,D3,F#3,C4,	3th semitone, display “D7”, 3 notes: D3, F#3 and C4
NONE	4th semitone , undefined so do not play anything
NONE	5th semitone , undefined so do not play anything
Ddim,3,F3,G#3,D4,	6th semitone , display “Ddim”, 3 notes : F3, G#3 and D4,
NONE	7th semitone, undefined so do not play anything
G7,3,G3,B3,F4	8th semitone, display “G7”, 3 notes: G3,B3 and F4
NONE	9th semitone, therefore do not play anything 10th semitone ' therefore
NONE	10th semitone, don't play anything
NONE	11th semitone, don't play anything
NONE	12th semitone, don't play anything

In this other example, the chords are expressed in midi notes.

Line of text	*Explanations*
MIDI, 12, C4	12 defined semitones, reference note C4, chord expressed in MIDI
Cm9,4,48,51,58,62,	1st semitone and reference note, display “Cm9”, 4 notes: 48,51,58 and 62,

AbM7,4,51,55,56,60, Dm7,4,50,53,57,60, EbDimM7,4,51,54,57,62, EbM7,4,51,55,58,62, Fm7,4,53,56,60,63, CM7#5,4,55,56,60,64, Gm7,4,55,58,62,65, G7#5,4,55,59,63,65, AbM7,4,56,60,63,67, Fm7b5/B,4,59,63,65,68, Bb13/D,4,50,56,58,67,	2nd semitone, display “AbM7 ″, 4 notes: 51,55,56 and 60 etc…

There is a third way, to create a style that is both simpler but at the same time less precise because the agreement, by analyzing its “spelling”, will be interpreted by The Pool.

Line of text	*Explanations*
CHORDS, 12, C4	12 defined semitones, reference note C4, chord list
Cm,C#,Ddim,D#,Em,Fm,F#,G,G#,Am,A#,Bm,	List of 12 chords.

There is a third way, to create a style that is both simpler but at the same time less precise because the agreement, by analyzing its “spelling”, will be interpreted by The Pool.

Line of text	*Explanations*
CHORDS, 12, C4	12 defined semitones, reference note C4, chord list
Cm,C# ,Ddim,D#,Em,Fm,F#,G,G#,Am,A#,Bm,	List of 12 chords.

Once you've edited or added styles, place the microSD card back into The Pool and turn it back on.

! The CHORD folder is limited to 200 entries. The file name must not exceed 40 characters, extension “. chord ” included. Filenames starting with 1 through 200 are reserved for Baloran .

See also The Back Panel .

3. Create and import new waveforms for LFOs .

Turn off The Pool, carefully remove the microSD card and insert it into your computer's reader. Take the opportunity to make a complete copy of the map. The LFO folder on the microSD card contains a single file: 00LFO.WAV.It is a Wavetable of 64 x 256 samples compatible with the Waveedit editor available here:

https://synthtech.com/waveedit/

We suggest, in order to maintain the compatibility of the sound examples, not to change the Waves from 0 to 15: from 16, you are free to redesign your modulations. Internally, The Pool interpolates the 256 samples of a wave into 512 samples and for slow speeds, the intermediate samples are further interpolated to avoid staircase effects.

Once you have edited a copy of the 00LFO.WAV file, replace the file on the microSD card , put the card back in and then power on The Pool. Run the CARDS SYNCHRO function in System Settings , limiting the scope to LFO Wavetable .

See also The Back Panel .

4. Create an importer of Wavetables for Wave synthesis

Turn off The Pool, carefully remove the microSD card and insert it into your computer's reader. Take the opportunity to make a complete copy of the map.

The WT folder on the microSD card contains all Wavetables available in the Wavtable mode of WAVE Synthesis . These Wavetables are in 64 x 256 16-bit mono samples format, compatible with the Waveedit editor available here:

https://synthtech.com/waveedit/

! If you change the name of a Wavetable or delete it from the folder, sounds that use this file will be corrupted.

! The WT file is limited to 400 entries. The file name must not exceed 40 characters, extension ". wav " included. Filenames starting with 001_ through 199_ are reserved for Baloran .

Once you have edited, added or deleted Wavetables , replace the file(s) on the microSD card , put the card back in and then power on The Pool. Run the CARDS SYNCHRO function in System Settings , limiting the scope to Wavetables .

See also The Back Panel .

5. Create and import soundfonts for Wave synthesis

Turn off The Pool, carefully remove the microSD card and insert it into your computer's reader. Take the opportunity to make a complete copy of the map.

The SF folder on the microSD card contains all the Soundfonts available in the *Samples mode* of the WAVE Synthesis . For the moment these files are proprietary: the Soundfont format is widespread but the files must be adapted to be compatible with The Pool: contact us if you have specific needs. Likewise, if you have a set of 16bit mono waves files with looping information, the range of notes covered as well as the initial frequency of the files, we can compile a specific sfp file.

! If you change the name of a Soundfont or delete it from the folder, sounds that use this file will be corrupted.

! The SF file is limited to 200 entries. The file name must not exceed 40 characters, extension ". sfp " included. Filenames starting with 001_ through 199_ are reserved for Baloran .

Once you have edited, added or deleted Soundfonts, replace the file(s) on the microSD card , put the card back in and then turn on The Pool. Run the CARDS SYNCHRO function in System Settings , limiting the scope to Soundfonts .

See also The Back Panel .

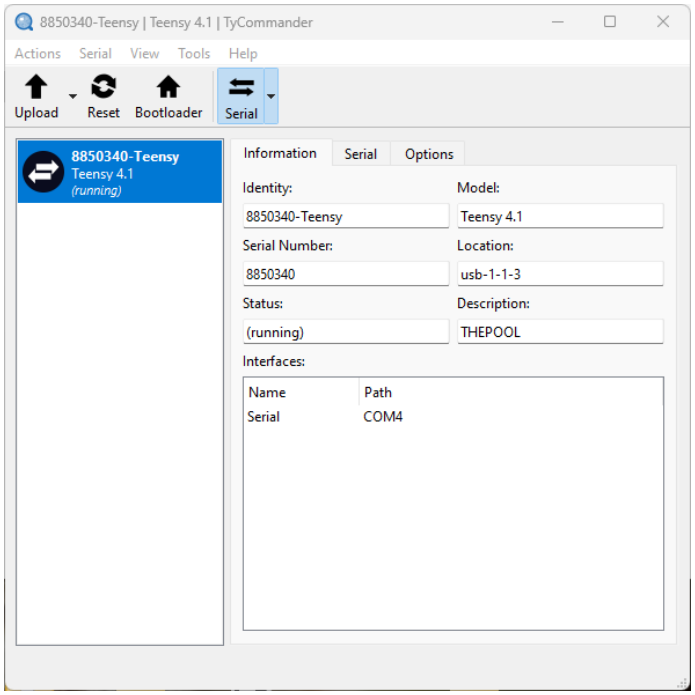
6. The Pool Update

Software Installation

On Windows : download https://www.baloran.com/ThePool/Updates/tytools_0.9.9_win64.zip
On MAC : download https://www.baloran.com/ThePool/Updates/tytools_0.9.9_osx.dmg
Unzip and/or install these files in the same folder where you installed the update files.

Updated The Pool on PC/MAC

- Connect the supplied USB cable to your PC and to The Pool.
- Look on the back of the instrument for the table that shows the position of the small switches. We'll start with updating the Panel.
- Using a thin flat screwdriver or another suitable tool, lower contacts **1 then 2** and check that the others are in the up position.
- Launch the **TyCommander** application, it should display this



- In the **Actions** menu, select **Upload New Firmware** or click the **arrow** next to the **Upload** button and select **Upload New Firmware**. A file selection window opens. Select the **Pool_Panel_XXX.hex file** then click **Open** . A gauge indicates the end of the update procedure.
- On The Pool, press SYS and PANEL simultaneously to verify that the panel is in the version of the selected file.
- Don't leave the application and on the back of The Pool, raise 1 and 2 and lower **3 then 4** . We will update the effects.
- In the **Actions** menu, select **Upload New Firmware** or click the **arrow** next to the **Upload** button and select **Upload New Firmware**. A file selection window opens. Select the file **Pool_FX_XXX.hex** then click **Open** . A gauge indicates the end of the update procedure.
- On The Pool, press SYS and PANEL simultaneously to verify that the effects are in the version of the selected file.
- Don't leave the application and on the back of The Pool, raise 3 and 4 and lower **5 then 6** . We will update voice card 1.

- In the **Actions** menu, select **Upload New Firmware** or click the **arrow** next to the **Upload** button and select **Upload New Firmware**. A file selection window opens. Select the file **Pool_VoiceCard_XXX.hex** then click **Open** . A gauge indicates the end of the update procedure.
- On The Pool, press SYS and PANEL simultaneously to verify that voice card 1 is in the version of the selected file.
- Don't exit the app and on the back of The Pool, raise 5 and 6 and lower **7 then 8** . We will update voice card 2.
- In the **Actions** menu, select **Upload New Firmware** or click the **arrow** next to the **Upload** button and select **Upload New Firmware**. A file selection window opens. Select the file **Pool_VoiceCard_XXX.hex** then click **Open** . A gauge indicates the end of the update procedure.
- On The Pool, press SYS and PANEL simultaneously to verify that voice card 2 is in the version of the selected file.
- Don't leave the app and on the back of The Pool, raise 7 and 8 and lower **9 then 10** . We will update voice card 3.
- In the **Actions** menu, select **Upload New Firmware** or click the **arrow** next to the **Upload** button and select **Upload New Firmware**. A file selection window opens. Select the file **Pool_VoiceCard_XXX.hex** then click **Open** . A gauge indicates the end of the update procedure.
- On The Pool, press SYS and PANEL simultaneously to verify that voice card 3 is in the version of the selected file.
- Don't leave the app and on the back of The Pool, raise 9 and 10 and lower **11 then 12** . We will update voice card 4.
- In the **Actions** menu, select **Upload New Firmware** or click the **arrow** next to the **Upload** button and select **Upload New Firmware**. A file selection window opens. Select the file **Pool_VoiceCard_XXX.hex** then click **Open** . A gauge indicates the end of the update procedure.
- On The Pool, press SYS and PANEL simultaneously to verify that voice card 4 is in the version of the selected file.
- You can exit the application, raise 11 and 12 and lower **1 then 2** to re-establish the default connection with the panel.

It's over. Turn off The Pool, wait a few seconds and restart The Pool. After about twenty minutes, start an Autotune by pressing SYS twice then touching the **START AUTOTUNE** button. Then do not touch anything until the message “Please Wait, Autotune in progress …” is displayed.

The latest programs, firmware and information are available on forum.baloran.com

7. MIDI implementation

See the reference document available on forum.baloran.com

8. FAQs

This is the main role of forum.baloran.com . We will be happy to see you there.

9. Certification of conformity

See the document attached to the instrument.

10. Specifications / Dimensions

- 100% analog subtractive synthesis.
- 16-bit 96K multi-synthesis digital generator: A2D, ADD, FM, WAVES, AGE and formantic filters .
- 2 analog filters per voice, mixable and routable in parallel or series.
- Analog and digital envelopes
- 3 digital LFOs
- Voices, busses and stereophonic effects
- Full multitimbrality
- Extensive expressiveness management: Aftertouch channel , polyphonic aftertouch , MPE.
- Advanced MPE compatibility with configurable support for all axes.
- 20 x 70 polyphonic modulation matrix. Visualization and access to modulation settings using the 70 dedicated illuminated buttons. All modulations can be signed.
- Sequencer and Arpeggiator directly controlled by the 12 encoders around the touch screen and the 16 encoders + illuminated buttons dedicated to the steps. Touch drawing on the notes and settings screen.
- Motion-sequencer 8 x 32 steps by sound.
- mode sequencer, BAR type.
- Automatic tuning mode.
- Two digital effects units configurable in series or parallel (reverbs, echoes, chorus, flangers , phasers , shimmer) . Analog routing/dosing and analog path preservation.
- Two independent buses with routing of voice cards, effects and external stereo effect insert.
- Routing MIDI clocks and RT messages to USB, MIDI DIN and USB Host.
- Routing of MIDI streams on USB, MIDI DIN, USB Host.
- MIDI DIN Thru hardware jack.
- 2 CV + GATE pairs in 3.5' compatible V/ Oct , Hz/Volt, +5V, +10V.
- 2 pairs of stereo XLR and 6.35 TRS jack outputs.
- 1 sub 2 output on 6.35 TS jack.
- 1 stereo input/output/insert 6.35 TS jack.
- 1 6.35 stereo jack headphone output (rear panel) with dedicated potentiometer.
- 1 6.35 jack stereo audio input routed to the VCOs MIXER.
- Warm LED gooseneck lighting 12V XLR 3 pin.
- Storage of sounds and ancillary files on a microSD card compatible with computer operation to facilitate the management of sounds, imports and backups.
- Copy/paste functions on sound elements.
- 7-inch 800 x 480 TFT capacitive screen.
- 34 encoders.
- 79 potentiometers.
- 169 illuminated buttons.
- No menus and submenus. Each adjustment screen is called up by a dedicated key and each screen parameter is adjustable directly by the linked encoder or by touching the screen.

Analog ICs .

- 4 x 2 analog VCOs type AS3340.
- 4 x 2 analog VCFs type AS3320
- 4 x 1 dual analog VCF type AS3350
- 4 x 5 quadruple analog VCAs type AS2164
- 4 x 3 triple analog VCAs type AS3363
- 4 x 2 analog VCAs type CEM3360
- 4 x 2 CEM3310 type analog enclosures

Operating mode

- Polyphonic 8 voices
- Polyphonic 4 bitimbral voices
- MPE 8 voices
- MPE 4 bitimbral voices
- MONO up to four bitimbral layers
- MIDI 4 bitimbral channels
- MIDI 2 polyphonic channels 4 voices
- MIDI 4 polyphonic channels 2 voices
- 2-channel MIDI, bitimbral mono and polyphonic 3 or 6 voices

Accessories included:

- Meanwell 90W 15V external universal power supply 100-240V, 50/60 Hz.
- 1 x 12V gooseneck LED lighting.
- 1 x USB Type B to A cable with filter.
- 2 x tilt feet.
- Bag of accessories.

Dimensions

- Dimensions (L x D x H): 64 x 36 x 12 cm.
- Weight: 12 kg.

Notes

Notes