

**Important PLEASE READ :** On the final 2.0 version, there will be an internal script that will transcript old projects into the new format. **THIS IS NOT YET IMPLEMENTED.** Please upgrade to 1.99, dump your projects on your computer and load them back on an empty slot on mono, to make sure it loads back correctly. Not many people uses this feature so I want to make sure nobody loses their projects!

This is an initial beta release, it has only been tested internally. **THERE WILL BE BUGS.**

## Instruction

Beta testing is an involved process, if you are a casual user and want a smooth experience, I would suggest you to wait for the final release, or at least for a more stable beta in some time.

If you use Mono on stage, please do not use this beta! There will be bugs for sure, and there even might be freezes.

There is NO risk of bricking your unit, even if you do something wrong.

At any time, you can revert back to V1.99, load your project back and make some music. If the beta experience feels frustrating for you, don't hesitate to revert!

1. Start by upgrading to V1.99 "mono\_V1.99.syx" version with the usual process (see V1 update instruction)
2. Dump your projects on you computer using your favorite sysex software.
3. I recommend testing one of the dump by loading it back to an empty project, we've had strange issues with exotic combination of OS/Sysex software.
4. V2's firmware is HUGE. I didn't anticipate this when initially developing the bootloader. To avoid any risk of bricked unit, I developped a second stage bootloader, which needs to be installed to then install v2.0. This only has to be done once (except if you revert to 1.99, then you'll have to reinstall it).
5. Install the secondary bootloader with the usual process (see V1 update instruction). 3 Seq leds should lit up, then they all turn off.
6. Once the LED turns off, turn off mono, let's boot into the secondary bootloader : hold [TEMPO + FUNC] and turn Mono back on. In the secondary bootloader all the keyboard LEDs blink along with the SEQ LEDs.
7. Upload the V2.0 beta firmware "mono\_V2.0b1.syx" with your sysex software, as usual, a minimum "delay between message" of 1ms is required.
8. Once it's done it'll take a bit of time to boot (it'll recalibrate and reinitialise the memory)

Beta test !

## V2.0 beta 0

**NOT Implemented :**

- Undo/Redo
- Patchless pattern
- CV clock
- project transcription

## New feature

- There are tons of cosmetic UI changes.
- Setting offset parameters is not relative to the current potentiometer position anymore, but to the center position. Although it was handy to start record automation or place step locks without jumping to a position, it was pretty much impossible to know exactly what was the starting position, so you needed to only trust your ears anyway. Starting from the middle allows to use the maximum range of offset at any time.
- Visualization mode is gone : now the knobs parameter LED brightness will always reflect the current parameter value, the selected parameter is brighter than the others
- Locking selected parameter : FUNC + SYNC (selected param will blink)
- Patch load on pattern change is deferred to the first trig of newly loaded pattern (long note aren't silenced at the end of the ending pattern anymore)
- Pattern morphing : there are always 2 pattern loaded into memory. To select and load the "morphing pattern" (the pattern to morph to). Go to pattern mode, hold [FUNCTION] + [PATTERN] and select your morphing pattern. Then to morph between the 2, hold [FUNC] and use the [CUTOFF] knob to go from your active pattern fully CCW to the morphing pattern full CW.
- Duophonic mode : FUNC + SWING -> PAGE B to enable (PAGE A to disable). In duophonic mode you can set a pitch for both oscillator. Hold 2 notes on the minikeyboard to set the duophonic pitch and add duophonic notes with the Seq switches. Make a step duophonic : hold the step, hold the first pitch, and press the second pitch.
- Expressive feature : velocity, pitch, aftertouch, vertical. Each of these MIDI parameters can affect the patch according to custom offsets on any and all parameters and their modulation values, just like the accent on V1. To check/set these offset, a switch needs to be held, when the switch is held the LED brightness of the parameter shows the offset "strength". Offset can be negative, a potentiometer at center position means no offset, full CCW means maximum negative offset, full CW means maximum positive offset. Here are the 4 switches:
  - [SLIDE] -> Velocity
  - [UP] -> Aftertouch
  - [DOWN] -> Vertical (CC74)
  - [FOLLOW] -> pitch (pitchbend)

These MIDI parameters can be recorded on each steps, like automation when played from an external keyboard or sequencer. There are also ways to edit velocity and Vertical (CC74) automation directly on the synth, as follow.

- Velocity : To edit a step velocity, hold [FUNC] + the [SEQ] step, and use the X-Mod amount pot to set the velocity from 0 at full CCW to 127 at full CW. When record is enabled, you can hold [FUNC] and move the X-Mod amount pot to record velocity values on the fly.
- Vertical (CC74) : CC74 is often used for the vertical (Y) axis on expressive keyboard. To edit the CC74 of a step (regardless if there is a trig on that note or not), hold [FUNC] + the [SEQ] step, and use the X-Mod Rate pot to set the CC74 value, from 0 at full CCW to 127 at full CW. When record is enabled, you can hold [FUNC] and move the X-Mod amount pot to record CC74 values on the fly.

- Pitch : a pitch offset makes the parameter follow the pitch played on the synth (note + pitchbend). By default the 2 oscillators and the filter have an offset of 1 semitone by semitone (logically). The filter tracking can still be enabled/disabled with the follow switch. On the 2 oscs on the filter the offset is not linear but quantized, this allow for microtonal/macrotonal playing. At center position the oscs/filter don't track, there are then 6 positions on the positive and negative side :  $\frac{1}{8}$  semitone -  $\frac{1}{4}$  semitone -  $\frac{1}{2}$  semitone - 1 semitone - 1 tone - 2 tone .
- Aftertouch is the only paramater that cannot be set directly on mono, but can be recorded via MIDI
- You can delete a step's aftertouch, CC74 and pitchbend value by holding [DELETE] + the [SEQ] step, and press [FOLLOW]
- Randomize step range : you can now randomize a range of step, hold [TEMPO] + [FUNC], hold the [SEQ] starting the range, and then press the [SEQ] ending the range, release, and voila
- Randomize automation range : hold [TEMPO] + [FUNC], set the desired range by holding the first [SEQ] and pressing the end [SEQ]. Release the [SEQ] switches (not [TEMPO] and [FUNC] then turn the desired knobs parameter left and right to set the randomisation range, just like the randomize automation feature.
- New global param : quantize record (on by default) [FUNC] + [Bend Rg] -> PAGE A disabled, PAGE B enabled
- New pattern param : Scale autoquantize : [FUNC]+ [TRANSPPOSE] -> PAGE A disabled, PAGE B enabled. When scale autoquantize is enabled, changing the scale will move the notes of the pattern according to the new scale, it uses a smart algorithm that works pretty well even on custom scale. The algorithm is however destructive : if you go from a 7 note scale to a custom scale of 4 notes and switch back to a 7 note scale, you wont get back the same pattern.
- Automation on mod notes -> mod note are not "set in stone" as they used to be, they can now be affected by automations
- mod note pitch : you can edit a mod note's pitch : hold the mod note [KEY] and press [UP] or [DOWN] to set the mod note octave. hold [UP] + [DOWN] and press a [KEY] to set the current modnote semitone. Hold a step [SEQ] that contains a modnote and press [UP] or [DOWN] to change its pitch.
- Step dice range : since you can now randomize step ranges, step dice shortcut has changed, you need to hold [TEMPO] + [FUNC], press the end step, and then the first step of the range (the order is important).
- range copy/paste: You can copy/paste a range of steps : hold [FUNC] + [COPY], hold the start [SEQ] of the range and press the end [SEQ] to copy a range of steps. Then hold [FUNC] + [PASTE], the starting [SEQ] step where you want to paste, and then the end [SEQ].
- Page copy/paste : you can copy/paste, hold [FUNC] + [COPY] then press the [PAGE] to copy, then hold [FUNC] + [PASTE] and press the [PAGE] where you want to paste.
- Song mode : The number of patterns in a song is now unlimited.

## V2.0 beta 2

### Instruction

Beta testing is an involved process, if you are a casual user and want a smooth experience, I would suggest you to wait for the final release, or at least for a more stable beta in some time.

If you use Mono on stage, please do not use this beta! There will be bugs for sure, and there even might be freezes.

There is NO risk of bricking your unit, even if you do something wrong.

At any time, you can revert back to V1.99, load your project back and make some music. If the beta experience feels frustrating for you, don't hesitate to revert!

1. If this is your first time installing the beta firmware, refer to the instruction of beta1 first, otherwise proceed as follow
2. hold [TEMPO + FUNC] and turn Mono on. In the secondary bootloader all the keyboard LEDs blink along with the SEQ LEDs.
3. Upload the V2.0 beta firmware "mono\_V2.0b2.syx" with your sysex software, as usual, a minimum "delay between message" of 1ms is required.
4. Once it's done it'll take a bit of time to boot (it'll recalibrate)

#### NOT Implemented :

- Undo/Redo
- Patchless pattern
- CV clock
- project transcription

#### New feature :

**Swing** is now properly implemented

**Duophonic mode** : You can edit the second pitch of a duonote by holding FUNC + the duonote's [SEQ] position, and selecting a pitch on the minikeyboard (allows for spreads wider than an octave)

#### Bug fixes :

- Lots of small stability improvment
- Reworked some of the morphing internal event handling, which solve most of the bug related to it.
- Reworked duonote mode handling, solving bugs
- Increased boot speed (no clicky sound at startup)
- Switching pattern no longer resets morphing value
- Master volume and synth mute now works properly
- Improved save and load (now fully asynchronous) and added a blink confirmation
- Improved synced LFO stability, SH now works properly
- Fixed step dice
- Recording duonotes now works properly

- Fixed an XEnv trig display bug
- Fixed rotate pattern
- Pattern change now works in modnote
- Copy/Paste pattern properly copies pattern parameters
- Clear modulation now works on modnotes

## V2.0 beta 3 (stable)

### Instruction

I made the last API breaking change on this version of the software, and updated the secondary to greatly improve update speed (x6 ...). To really beta test the transcript feature, I would greatly appreciate if you could update it “as new” to test the feature under different conditions, otherwise you can just reinstall the secondary bootloader and then clear the memory to start fresh.

**Firmware upload tested with “MIDI Sysex file transfer utility” on windows, “Sysex librarian” on OS X, and “amidi” on linux.**

#### Installing as new

1. Re-install V1.99 (boot in the primary bootloader with [PATTERN] + [RUN] then send mono\_v1.99.syx)
2. Reboot while holding [F#] + [G#] + [A#] + [FOLLOW] to clear the internal memory
3. Use the project receive feature to reload your project from your computer (don't forget to save after the program receive)
4. Reboot in the primary bootloader ([PATTERN] + [RUN] and power cycle) then send the secondary\_bootloader.syx file . Note that at the end of that installation it'll probably boot to your previous version of 2.0, ignore that.
5. Reboot in the secondary bootloader ([TEMPO] + [FUNC] and power cycle) then send the mono\_v2.0b3.syx file. Make sure to wait until the unit boots and is responsive.
6. After install and calibration, your v1.99 project will be automatically transcribed and loaded, the interface will flash 3 times when it is ready. You can check if your pattern have been properly transcribed then save.
7. Load other projects will transcript them as well.

#### Installing without project transcription

1. Reboot in the primary bootloader ([PATTERN] + [RUN] and power cycle) then send the secondary\_bootloader.syx file. Note that at the end of that installation it'll probably boot to your previous version of 2.0, ignore that.mono\_main
2. Reboot in the secondary bootloader ([TEMPO] + [FUNC] and power cycle) then send the mono\_v2.0b3.syx file. Make sure to wait until the unit boots and is responsive.
3. Reboot while holding [F#] + [G#] + [A#] + [FOLLOW] to clear the internal memory
4. You can use the program receive feature to load back your old projects

**NOTE:** When transcribing/program receiving old projects, there will be subtle differences on your patterns. This has to do with the new data representation and is inevitable.

All 1.x features have been reimplemented

TODO :

- API documentation
- 2.0 manual
- 2.0 exhaustive new feature list

**New feature:**

- Old project transcription : when booting after updating from 1.99, Mono will transcribe your "old" project into the new format, this takes a while but is visible on the interface. Once the project is loaded you can listen to your old pattern before saving into the new format.
- Old and new project program receive with the usual key combination
- Clear pattern velocity automation [DELETE] + [SLIDE]
- Clear pattern accent automation [DELETE] + [ACCENT]
- Clear pattern aftertouch automation [DELETE] + [UP]
- Clear pattern vertical automation [DELETE] + [DOWN]
- Clear pattern slide [SLIDE] + [DELETE]
- Clear pattern accents [ACCENT] + [DELETE]
- Set Mod note midi channel : Go to Midi param with [FUNC] + [MIDI/Clock], hold [MIDI/Clock] and select channel with a [SEQ] key.
- Play/Record mod note via MIDI : use the mod note midi channel (channel 2 by default)
- Mute : The "mute" key previously was [SLIDE], it is now [DOWN] (Hold down + key or modnote to mute/unmute) hold DOWN and press delete to unmute all
- CV output calibration : You can now precisely calibrate the CV outputs of mono. The calibration works by octave, you can precisely set the voltage output level for each of the 11 octaves, on each output (From -5V to +5V). To do so, boot the unit while holding [UP] + [DOWN], connect CV1 output to a precise VCO, set the offset for the first octave using VCO1 Freq knob. Press [C] to switch to the next octave, set the offset with the same pot ... and so on. Once you are done with CV1 it'll switch to CV2. Repeat the operation until the end, and voila. Note : Most analog VCO don't have a -5V to 5V range at their input, so make sure to use one that does, or just don't change the calibration of the out-of-range low octaves.

**Bug fixes:**

There is 188 closed tickets on the issue tracker, I will spare you the list.

## V2.0 beta 4

### Instruction

If you haven't installed beta3 before, please follow the instructions of beta3, replacing mono\_v2.0b3.syx by mono\_v2.0b4.syx.

If you previously had beta 3 installed, you can directly install mono\_v2.0b4.syx : Reboot in the secondary bootloader ([TEMPO] + [FUNC] and power cycle) then send the mono\_v2.0b4.syx file. Make sure to wait until the unit boots and is responsive.

#### **Bug fixes:**

- The sustain knob was unresponsive, it now works properly
- There was a lot of clocking instability on large patterns with heavy mod note use. Patch loading was greatly optimized (x10) to solve this.
- Program receive automatically swapped to project 1, fixed.
- Pattern morphing was impossible in Mod Note mode, fixed.
- Some menu switching inconsistency were solved
- MIDI/USB sync stability was improved
- Some duophonic note would stuck, solved.

## V2.0 beta 5

### Instruction

If you haven't installed beta3 or beta4 before, please follow the instructions of beta3, replacing mono\_v2.0b3.syx by mono\_v2.0b5.syx.

If you previously had beta 3 or beta 4 installed, you can directly install mono\_v2.0b5.syx : Reboot in the secondary bootloader ([TEMPO] + [FUNC] and power cycle) then send the mono\_v2.0b5.syx file. Make sure to wait until the unit boots and is responsive.

### Note

A couple of overflow bugs were found and solved, which mean that prior to this version there was a possibility that your project would get corrupted. If you experience a freeze, this might be the cause. In that case please copy/paste another empty project over the corrupted one, or simply wipe the memory with [FOLLOW] + [F#] + [G#] + [A#] at boot if you don't have data you wish to keep.

#### **New feature:**

- Morphing rework : A lot of small but important improvement where made to the morphing system. On top of a lot of bug fixes, there are 2 new feature.
- When starting to morph from main to morph pattern by holding [FUNC], you will need to bring the [CUTOFF] pot to the previous morphing position to enable it, e.g. fully CCW at the beginning of the morph, to avoid weird morph jump.

- When reaching full CC position (main pattern silent, morph pattern full), the 2 pattern will swap : the main pattern will become the morph and vice versa. The previous morph pattern is now active and editable. To morph back, you need to go back to CCW position and proceed!
- You can now save the current morph patch in a new pattern : go to pattern mode, hold record and press a pattern slot. The patch will be created there, it'll copy pattern A or B steps depending on your morph position.
- Improved CV output calibration : same system but you can now use Freq for rough calibration and fine pot for fine!

#### **Bug fixes:**

- Clock/Reset now works properly
- MIDI/USB clock was sometime not working properly, this was fixed
- Some fatal bugs were found on the sequencer (unlinked XEnv was causing crash and project corruption, among others), all taken care of
- CV/Gate out now works properly
- Solved a few bugs regarding scales and scale auto transpose

## V2.0 beta 6

#### **Bug fixes:**

- More pattern morph tweaking
- LEDs shows pattern correctly in pattern mode
- TEMPO + X-ENV AMOUNT works correctly for tempo change
- Mod Note patch sometime didn't load properly
- Interface unresponsive after copy/paste pattern
- Pitch bend range was off by 1 semitone
- Randomize step & mod note doesn't affect fine parameters anymore
- Improved undo redo in record mode
- MIDI clock could not start under certain situation
- Improved mod note randomizer
- Improved note visualization