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Analog Four/Keys OS 1.24C Release information

Elektron Music Machines

February 13, 2017

How to upgrade:

Upgrading from within the OS

- Select OS UPGRADE in the GLOBAL MENU
- Send the SysEx firmware file to the Analog Four either using the MIDI In Port or the USB MIDI In Port.

When the update is done the unit will restart itself.

After some upgrades the bootstrap is also be upgraded, this upgrade is performed right after restarting the Analog Four, *do not turn the power off during the upgrade.*

Upgrading from the Early Startup Menu

Upgrading using the Early Startup Menu is broken in all OSes before OS 1.1 and may leave you without a working operating system, *do not do this!*

- Hold down the **[FUNCTION]** button while powering on. This should take you to the Analog Four boot menu.
- Enter the OS UPGRADE mode by pressing the **[TRIG 4]** key.
- Send the SysEx firmware file to the Analog Four MIDI In Port.

During the transfer a bar in the display shows the progress.

After the transfer the trig LED's light up showing flash reprogramming progress and when the update is done the unit restarts itself, booting the new OS.

After some upgrades the bootstrap is also upgraded, this upgrade is performed right after the first restart of the Analog Four, *do not turn the power off during the upgrade.*

To transfer the SysEx file we recommend using C6 - SysEx Tool by Elektron.

Downgrading the Analog Keys beyond version 1.1 is not possible.

Downgrading is generally not recommended as user data may be lost and SysEx backups may not be compatible.

Please report any bugs you may find using support found at:

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http://www.elektron.se/support-and-downloads
You will need a customer account to log in.

Enjoy!

The Elektron development team

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List of changes from OS 1.24B to 1.24C

Bug fixes

Pattern change behavior was broken. This was a regression introduced in OS 1.24B. Fixed.

List of changes from OS 1.24 to 1.24B

Bug fixes

Turbo MIDI negotiation at 10x didn't work on the physical MIDI ports. This was a regression introduced in OS 1.24. Fixed.

High resolution parameter locks were permanently lost when loading projects or receiving SysEx pattern dumps. Fixed.

List of changes from OS 1.23C to 1.24

Changes

The lowest required Overbridge Software Suite version is now 1.15.0. Should you want to keep support for Overbridge 1.10.x, you must stay on OS 1.30D.

The unit will no longer react to MIDI transport (or MIDI clock) when synced via the Overbridge plugin. The old behavior was confusing to many users and didn't work well with certain DAWs.

Bug fixes

Minor USB stability improvements.

Turbo MIDI sometimes didn't work on USB-MIDI.

Overbridge was not always notified about changes in sound pool and/or sound library, causing sound listings in Overbridge plugins to become outdated.

Setting the LFO retrig flags on a trig when using the random LFO waveform would cause the LFO to run at maximum frequency. Fixed.

The display of note length parameter values were clipped to three characters resulting in ambiguous or erroneous values in some cases. Fixed.

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List of changes from OS 1.23B to 1.23C

Changes

The bootstrap will update, no functionality has changed, *do not turn the power off during the upgrade.*

Bug fixes

Change of the **CHGN** parameter in SCALE SETUP could be lost after a restart. Fixed.

Direct Jump regressions when using infinite length patterns fixed.

Glitches when naming sounds containing the space character fixed.

List of changes from OS 1.23 to 1.23B

Resolved issue with direct pattern changes sometimes resulting in out-of-sync playback or unintentional retriggering of notes.

List of changes from OS 1.22 to 1.23

Changes

Overbridge 1.10 support added. Older versions versions of Overbridge are not compatible.

Added possibility to maintain kit association also for empty patterns. The association will become persistent once a kit has been loaded or saved, or if the pattern is edited. To remove the association, the pattern must be cleared.

When selecting a new pattern, if not in song nor chain mode, the new pattern will no longer replace the old. Instead the new pattern will be placed alone in the work chain, and playback will continue there.

Bug fixes

Opening SOUND MANAGER could result in a crash. Fixed.

Trig condition states were not reset when stopping the sequencer from Overbridge. Fixed.

When playing many notes simultaneously on a polyphonic track, the notes could sometimes be left hanging without a note-off. Fixed.

CV settings menu would not trigger notes as supposed to when pressing **[YES]** while the note options were selected. Fixed.

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CV settings menu would sometimes show values from a CV channel other than the selected, when switching channels while the menu was open. Fixed.

Full name of performance parameter was not shown in title bar. Fixed.

List of changes from OS 1.21C to 1.22

Changes

Portamento and legato on the CV track

The same portamento and legato settings which are available on tracks 1-4 have been added to the CV track. This can be configured in the SETTINGS menu which can be opened from the SOUND menu of the CV track.

New LFO synchronization modes

New options have been added to the LFO multiplier parameter, which now has 36 different settings.

The first twelve settings (denoted with a ⨯ *cross* multiplication symbol) are the same as before, selecting a multiplier of the current sequencer tempo setting.

The following twelve (denoted with a · *dot* multiplication symbol) synchronizes the LFO to 120 BPM, irrespective of the sequencer tempo setting. This means that you can more easily do sound design with the LFO, as the modulation rate wont change with the sequencer tempo.

The last twelve settings (denoted with a ♮ tuning fork symbol) allow synchronization of the LFO to one of the oscillators. This means that if you for instance play a note one octave higher, the LFO will run twice as fast. LFO 1 is synchronized to oscillator 1, and LFO 2 is synchronized to oscillator 2.

New LFO destinations

Three LFO destinations have been added: FM1, FM2, and FMX. These added linear frequency to the oscillators, either individually using FM1/FM2, or to both at once using FMX.

Sequencer note conditions

A Note page parameter called **TRIG CONDITION (TRC)** has been added. It is only available for parameter locking, and has 64 different settings. Each setting is a condition, which will decide whether or not the sequencer note should be triggered.

- X % is a random probability condition. There is an *X* percent chance of it being true.

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- A:B will be true on the *A*'th pattern iteration, then true again after *B* iterations, repeating indefinitely. You can use this setting to program periodically recurring notes, where the period can be longer than the actual patten. If you for instance set it to N:4, the note will be triggered every fourth loop of the pattern.

- FILL is true when the sequencer is in fill mode. Fill mode is activated for one pattern iteration by pressing **[YES]** + **[SCALE]**. It will activate when the pattern loops and remain active until it loops again. It is also possible to momentarily activate fill mode by pressing the **[SCALE]** key when not in grid recording mode. The fill mode will then be active for as long as the key is being held down.

- $\overline{\text{FILL}}$ is true when FILL is not. You can use FILL to program pattern variations. The notes which should played only in the varation should be set to FILL, and notes which should be excluded from the variation to $\overline{\text{FILL}}$. The variation is then easily accessible from the **[SCALE]** key.

- PRE is true if the most recently evaluated note condition on the same track was true.

- $\overline{\text{PRE}}$ is true when PRE is not. If you program a pattern variation using PRE and/or $\overline{\text{PRE}}$, but set the first note of the variation to use a probability condition, then the whole variation will depend on whether or not the first note triggered.

- NEI is true if the most recently evaluated note condition on the neighbour track was true.

- $\overline{\text{NEI}}$ is true when NEI is not. If you program a pattern variation using NEI and/or $\overline{\text{NEI}}$ on track 3, and have a probability trig before the variation on track 2, then the whole variation will depend on whether or not the note on track 2 triggered.

- 1ST is true the first pattern iteration (ie. until the pattern has looped). You could use this setting for instance to program a one-shot percussive hit in your pattern. Or just any note that you do not wish to have repeated.

- $\overline{\text{1ST}}$ is true when 1ST is not.

Overbridge

Overbridge Protocol Version is now 1.06, meaning this OS requires at least Overbridge Software Suite Version 1.10.

General improvements to DAW sequencer synchronization.

Added support for *Total Recall*. Please refer to the Overbridge documentation for details about this feature.

Notes played from Overbridge are no longer affected by track mute.

Bug Fixes

Write protection in SOUND MANAGER did not work, and has been fixed.

Graphical glitch in SOUND MANAGER corrected.

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List of changes from OS 1.21B to 1.21C

Bug Fixes

Device would crash with exception error when placing two notes with parameter slide on the exact same time in the sequencer (using micro timing).

List of changes from OS 1.21 to 1.21B

Bug Fixes

The factory preset project song was incomplete. Changed so all patterns are included.

The arpeggiator would not play chords at all (regression). Fixed.

When playing note 0 or 127 on the keyboard of the Analog Keys, too many LEDs would light up. Fixed.

Some menus opened from the main screen would not remember their states after being closed. Fixed.

When changing pattern with Direct Start or Direct Jump, when the sequencer is close to the end of the current pattern, the pattern change would some times not occur until one bar later. Fixed.

List of changes from OS 1.20D to 1.21

Changes

Added MIDI output configuration EXT for the keyboard. This means you can play the keyboard and send only MIDI, without triggering the internal sounds.

Overbridge

Overbridge Protocol Version is now 1.02, meaning this OS requires at least Overbridge Software Suite Version 1.0.0.0.

List of changes from OS 1.20C to 1.20D

Overbridge

Support for position-aware Overbridge sequencer sync (i.e. song pointer position).

Overbridge Protocol Version is now 1.00, meaning this OS requires Overbridge Software Suite Public Beta 0.9.5.0.

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List of changes from OS 1.20B to 1.20C

Bug Fixes

Overbridge

When using DAW sequencer sync the first metronome tick was always lost. Fixed.

When using DAW sequencer sync the metronome would on most occasions play out of sync. Fixed.

When using DAW sequencer sync patterns would play out of sync if the time signatature differed from a previously played pattern. Fixed.

List of changes from OS 1.20 to 1.20B

Bug Fixes

Overbridge

When sequencing the device from the host, notes could sometimes be dropped. Fixed

When muting/un-muting the WDM Audio driver from Windows, the audio could sometimes become corrupt (distorted). Fixed.

List of changes from OS 1.12E to 1.20

Changes

A new parameter, **COLOR**, has been added to the noise page. This parameter gives you control over a filter that changes the frequency content of the noise oscillator. Negative parameter values renders low pass filtered noise. For example, a setting of -64 is ''red'' (-6 dB/oct) and -32 is ''pink'' (-3 dB/oct). Positive parameter values renders high pass filtered noise. A setting of zero disables the filter, meaning the output is white noise.

The preset project and sounds have been updated. This is only available after a factory reset.

In menus TRIG MUTE, ACCENT, NOTE SLIDE, and PARAMETER SLIDE, you can now edit the step property of all tracks simoultaneously by holding **[FUNCTION]** while pressing the grid keys.

Overbridge Support

Beta status support for Elektron Overbridge technology. This includes USB Audio streaming, with driver support for Steinberg ASIO, Microsoft WDM and Apple Core Audio interfaces on the computer side. This OS requires Elektron Overbridge software suite beta version 0.9.0.

In order to enable the Overbridge functionality, you have to enable Overbridge in the new USB CONFIG menu, located inside GLOBAL ▶ SYSTEM.

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```
        ⇇⇉   OVERBRIDGE MODE  ☐
        ⇇⇉   USB-MIDI ONLY   ☑
  USB CFG
```

Bug Fixes

Sequencer initiated notes could sometimes be note offed together with manually triggered notes when polyphony was enabled on a track. Fixed.

The accent envelope would reset upon trig of an unaccented note. Fixed.

Clear CV settings cleared the FX track settings. Fixed.

List of changes from OS 1.12D to 1.12E

Bug Fixes

USB MIDI did not work on Analog Keys. Fixed.

List of changes from OS 1.12C to 1.12D

Bug Fixes

Recalibration caused system halt. Fixed.

Effect return levels too low. Fixed.

List of changes from OS 1.12B to 1.12C

Changes

The **[FUNCTION]** key can now be kept pressed while loading sounds from the Sound Browser, without affecting the scroll speed inside the menu. Improves the experience when trying out different sounds on a track.

Voice routing menus are now available on the Analog Four. You can use these to mute individual voices from the main output, or from the FX sends. This was previously only available on the Analog Keys.

Bug Fixes

Velocity, Aftertouch, Breath and Modulation wheel settings for FX and CV tracks were not properly initialized when upgrading old kits to the new version. If you have unexpected behavior on the FX and CV tracks in your already upgraded kits, you may want to go into the SOUND SETTINGS menu

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on the FX and CV tracks and clear all the modulators. You only need to do this if you have remaining problems from OS 1.12.

The clear modulation operation did not work properly. Fixed.

Clearing the parameter page OSC1 did not work correctly due to a regression. Fixed.

The press-and-hold key combinations **[FUNCTION]** + **[SOUND]** and **[FUNCTION]** + **[GLOBAL]** (to quickly enter the sound browser and the project browser) did not work correctly. Fixed.

List of changes from OS 1.12 to 1.12B

Bug Fixes

The SOUND SETTINGS menu did not refresh properly after changing settings. This was a regression in 1.12. Fixed.

List of changes from OS 1.11B to 1.12

Changes

CV Pitch Config

The way pitch CV output is configured has been changed to be easier and more precise.

This manifests in new options in the CV CONFIG menu for the TYPE settings PITCH V/OCT and PITCH HZ/V.

CV pitch is now configured by finding the voltages generating two different notes from the synthesizer you wish to control. To get a good result you should select the notes two or three octaves apart

Before configuring the pitch output you should setup a gate output so that notes can be triggered on the receiving end. You should also set up the gate and pitch parameters so that they use the same source track for triggering notes.

Then select NOTE 1, it could for example be C-3. Then highlight VOLTAGE 1 and press **[YES/SAVE]**. This will trigger a C 3 note which is played for as long as you hold down the key. While keeping **[YES/SAVE]** pressed, adjust the voltage until the controlled synthesizer actually plays the note C 3 using **[LEFT]**/**[RIGHT]** keys or the *A* encoder. If you don't have a tuning device, the easiest way is to play the corresponding note on one of the Analog Four's internal tracks and tune by ear.

Repeat the process for NOTE 2 and VOLTAGE 2, but choose for instance C 5 or C 6.

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Finally play some random notes to see if they are in tune. If not, then you probably need to change from V/OCT to HZ/V or vice versa. That's all.

CV Trim Settings

CV VOLTAGE TRIM is a new menu which can be reached from CV CONFIG in GLOBAL.

From this menu it is possible to trim the CV out voltage levels. These settings are stored in the machine without being connected to a project.

Make sure you have a good voltmeter before proceeding. Connect a TRS cable to the output you want to trim. Connect the volt meter's negative terminal to the sleeve of the connector. Connect the positive terminal to either the tip or the ring of the connector, depending on the channel you wish to trim.

Each CV output has three trim settings. Begin by selecting 0 V, then press and hold **[YES/SAVE]**. 0 V is output as long as **[YES/SAVE]** is held down. Use **[LEFT]**/**[RIGHT]** keys or the *A* encoder to adjust the voltage until your voltmeter shows exactly 0 V. Repeat the process for both 8 V settings (one is for continuous voltage, the other for pulse).

Note that adjusting the CV does not actually improve CV pitch control. If you have set up pitch control of an external synth properly then any linear error has already been compensated for by that calibration. In fact, you will have to reconfigure the CV pitch control after changing the values in the CV Trim Menu, because you've changed the point of reference.

Adjusting the values in this menu is mainly beneficial if you wish to send pulses with very exact voltage levels, or to generate very specific voltages as a linear value and you believe that the factory trim is off.

CV and FX Track Modulations

Modulation of FX and CV track parameters using Pitch Bend, After Touch, Modulation Wheel and Breath Controller is now available. The configuration settings for these are found in the SOUND menu. Configuration is identical to that of the synth tracks.

DIN Sync

When **[STOP]**+**[STOP]** is pressed the DIN Sync outputs are put in a ready to start mode, so that when the sequencer starts the synced units will be able to start directly with it. When placed in this mode a TB-303 can not be programmed. Therefore you can now exit this mode by pressing **[STOP]** and re-enter it by pressing **[STOP]**+**[STOP]**.

Analog Keys

The aftertouch sensitivity curve has been adjusted.

Modulation destination selection

The selection of modulation destinations can be now be confirmed with an encoder click, and not only by pressing **[YES]** as before.

Bug Fixes

A bug would make CV note slide behave erroneously in some cases. Fixed.

Pressing **[PERF]**+**[CLEAR]** would not clear Performance parameter I properly (setting it to 64 rather than 0). Fixed.

When holding down several trigs to view their parameter locks, some of the trigs could incorrectly get erased upon key release. Fixed.

Some menus would not properly close when other menus opened. This has been improved.

Analog Keys

When trying to alter trigs outside the length of the pattern on an Analog Keys, the machine could sometimes crash. Fixed.

List of changes from OS 1.11 to 1.11B

Bug Fixes

When running on external sync, some delay modulation artifacts could sometimes be heard when changing page or track. Fixed.

Editing performance parameters while on the FX or CV track did not work properly. Fixed.

Certain Global Settings (like Track Routing and Synth Master Tune) were not properly restored after boot. Fixed.

Song mutes and Song transpose did not affect the last sequencer step correctly. Fixed.

Certain Grid Record functions (like held down steps and held down notes) could get stuck when going into menus where grid record mode is not available (Scale Setup, Sound Browser etc). Fixed.

If RECORD mode was changed inside SOUND BROWSER, the sound preview would stop working until a new sound had been selected. Fixed.

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List of changes from OS 1.1D to 1.11

Changes

In the SWING menu, you can now use the **[GRID]** keys to alter the swing pattern of the current track. This means you can select which steps are being swinged individually per track. You can use copy/clear/paste operations inside the SWING menu to copy/paste or reset the swing pattern to default.

The GLOBAL menu has a new option, SYSTEM, into which the system maintenance activities CALIBRATION, OS UPGRADE and FORMAT +DRIVE have been moved. This makes the GLOBAL menu less cluttered.

The SYNTH MASTER TUNE now has a dedicated menu, which is available directly in the GLOBAL menu rather than being inside a SYNTH CONFIG submenu.

In the MIDI PORT CONFIG menu there is now a new option, MUTE DEST, which determines whether track muting/unmuting sends out MIDI CC/NRPN.

The rename window now remembers previously inserted character, allowing for slightly faster writing.

Grid record mode is now preserved while inside menus where grid record mode is temporarily disallowed, for example in the SCALE SETUP menu.

When erasing parameter locks during live record, empty trigless locks are now removed from the pattern when no locks remain, to make it easier to erase recorded automation.

USB MIDI clock data is no longer sent in the middle of a USB MIDI sysex message, due to bad support in several Computer Operating systems. This should make sysex transfers more robust on certain configurations.

When any SONG Mutes are currently active (i.e. tracks are currently muted by the song), the SONG and CHAIN LEDs are slightly dimmed to clearly indicate this.

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Bug Fixes

The chain cursor in main screen could sometimes be out of range when opening a new project or editing the song from the song editor. Fixed.

Some operations like trig removal and undo were difficult to use while running on external sync. Fixed.

Live-record mode incorrectly accepted note and parameter input while sequencer was in pause- or stop-modes. Fixed.

When loading old projects, the project name would sometimes be reset to "New Project". Fixed.

An empty pattern could sometimes contain advanced scale settings from a previous pattern on the same position. Fixed.

When changing track from within the VELOCITY MOD and AFTERTOUCH, the menus did not reflect the modulation settings of the new track until re-opened. Fixed.

Attempting to paste or clear trigs outside the length of the current track would cause the sequencer to stop (due to the normal pause/stop functionality of the transport keys). Fixed.

List of changes from OS 1.1C to 1.1D

Changes

Analog Keys

The joystick and aftertouch are now interpolated for smooth operation.

On some units the user interface firmware will be updated. The firmware update will take a few seconds, if the unit does not prompt you to restart within 30 seconds, please do it anyway.

Bug Fixes

Analog Keys

Locking notes to steps in grid record mode did not work correctly while HOLD mode was engaged, and could also behave erratically after HOLD mode had been disengaged. Fixed.

General

When reloading the kit in one pattern and then later changing to a pattern using a different kit the correct sounds would not always be played in that pattern. Fixed.

Notes from USB MIDI or the built in keyboard could get stuck. Fixed.

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List of changes from OS 1.1B to 1.1C

Changes

Empty patterns (i.e. patterns without any trigs) would preserve their swing and scale settings, which could lead to unexpected results when moving back into a pattern that was indicated empty. Now, when leaving an empty pattern, it will therefore be fully cleared, with swing and scale settings reset to default.

Bug Fixes

General

The new Arp Mode POLY was not remembered after reboot or when saving projects. Fixed.

The "Live Rec on Trk Ch" option would only allow notes and MIDI NRPN parameter changes to be recorded, not MIDI CC parameter changes. Fixed.

Renaming the active project in PROJECT MANAGER would rename only the +DRIVE version of the project, not the RAM version (potentially causing the project to revert to its original name if saved again). Fixed.

Analog Keys

On Analog Keys, the joystick modulation wheel or breath values could get stuck when moving quickly between these two types of modulation.

List of changes from OS 1.1 to 1.1B

Bug fixes

The pattern selection in multimap pattern play mode didn't work properly and could hang the machine if patterns above D16 were selected. Fixed.

List of changes from Analog Four OS 1.06 to 1.1

Introduction

OS 1.1 is a major update for the Analog Four, it is also the first OS for the new Analog Keys synthesizer.

The update enables a non-volatile storage unit called the +DRIVE, which is already built into every Analog Four and Keys. The +DRIVE allows you to store thousands of sounds and more than a hundred different projects inside your machine.

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OS 1.1 also has powerful, multitimbral polyphony support both to the synthesizer and the built-in sequencer, bringing many new possibilities.

The digital control system has also been tweaked such that the analog ladder filter can reach much higher levels of resonance, allowing for new sonic possibilities.

There are many changes, improvements and fixes under the hood. More details are found below.

Changes

Factory sounds and patterns

New factory presets are included with OS 1.1. They can be installed by performing a factory reset. The factory patterns have been expanded from 32 to 64, and there is also an extensive sound library consisting of 512 quality sounds.

The new factory content has been contributed by the following sound designers and musicians.

Daren Ager

Richard Devine

Nicholas Lem

Jimmy Myhrman

Jon Mårtensson

Cenk Sayınlı

Alex Schetter

Charles Storm

Daniel Troberg

General

After booting the machine, there is now a small barber pole activity indicator next to the kit name, showing that the OS is still performing background activities (such as initializing the +DRIVE). The machine is fully operational while this indicator is shown, but any changes that you make to your project will not be stored in the NVRAM until the activity has stopped. Therefore, it is not recommended to turn the machine off while this indicator is showing. The indicator can also appear when transferring or receiving large SysEx dumps.

When altering modulation destinations, the list of parameters now show the previously selected destination with a highlighted row. Although the destination is changed immediately while scrolling through the list for preview purposes, the new choice now has to be actively confirmed by pressing **[YES/SAVE]** or by pressing the encoder itself once. Otherwise, the list will automatically revert to the previously selected destination upon closure. Note that this is only true when editing the default kit/sound parameters, and not when parameter locking the modulation destinations on a sequencer trig.

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[FUNCTION]+**[COPY/PASTE/CLEAR]** can now be used to clear or copy/paste modulation setup between velocity mod, pitch bend, modulation wheel, breath controller, aftertouch and also performance parameters. This means that the copying and pasting of performance parameter configuration is changed so that only the visible modulation setup information is copied when copying from inside the modulation setup view. To include the performance name, its modulation setup and the actual knob value (as included in previous OS versions), you need to copy from the performance setup view, where you can see the list of all performance parameter names.

CV Fine Tune, CV Bend Depth and CV Note Slide time can now be controlled via NRPN.

NRPN MSB	NRPN LSB	Data Range MSB	Data Range LSB	Parameter
3	1	0-127	-	CV A Fine Tune #1
3	5	0-127	-	CV A Bend Depth #1
3	6	0-127	-	CV A Note Slide time #1
3	21	0-127	-	CV B Fine Tune #1
3	25	0-127	-	CV B Bend Depth #1
3	26	0-127	-	CV B Note Slide time #1
3	41	0-127	-	CV C Fine Tune #1
3	45	0-127	-	CV C Bend Depth #1
3	46	0-127	-	CV C Note Slide time #1
3	51	0-127	-	CV D Fine Tune #1
3	55	0-127	-	CV D Bend Depth #1
3	56	0-127	-	CV D Note Slide time #1

Track mutes can now be controlled via CC and NRPN. Value 0 means the track is unmuted, and values 1-127 mean the track is muted. Values can be received both on track channels and on auto channel. But the mutes are only sent out on track channels.

CC MSB	CC LSB	Data Range MSB	Data Range LSB	Parameter
94	-	0-127	-	Track Mute #1

NRPN MSB	NRPN LSB	Data Range MSB	Data Range LSB	Parameter
1	101	0-127	-	Track Mute #1

Quantized real time recording can now be toggled on/off via **[RECORD]**+**[PLAY]** while live record mode is enabled.

A clear pattern operation now preserves scale settings and swing amount.

Parameter locks can now be real-time recorded into the sequencer via external MIDI CC or NRPN. This could previously only be real-time recorded using the physical encoders.

Real-time recording of notes and automation can now be done both via auto channel and via the dedicated track channels. This allows you to record on multiple channels simultaneously in a live situation. Should you wish to real-time record only on the auto channel, you can turn off this new functionality by toggling the LIVE REC ON TRK CH option in the MIDI Port Config menu.

Parameter page keys can now be held down to unveil the values for all parameters at once. This is

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similar to pressing a single encoder to show its value, but for all parameters on the page at once. The small dots indicating the fine-values of high resolution parameters are also visible while this key combination is held, making it easier to do slow fine-adjustments.

Changing parameter page subpage is now done on full key click (i.e. key press followed by key release) rather than directly on key press. This Improves the experience when copy/clear/pasting parameter pages.

Metronome click is now toggled by pressing and holding **[FUNCTION]**+**[KEY A]** instead of double clicking it.

The **[TRANSPOSE]** button can now be used together with the **[UP]**/**[DOWN]** keys inside the SOUND BROWSER to change the keyboard octave. This is very convenient while previewing sounds with the mini keyboard.

Boosted Filter Resonance

A new sound setting, F1 RESONANCE BOOST, is available. When enabled, the resonance of filter 1 (the ladder filter) gets a higher range, allowing for more extreme resonance settings. In addition, the boosted resonance values are higher for low filter frequencies, to compensate for the natural loss of resonance on low filter frequencies in this analog filter. As a consequence of this linear boost curve, background noise will become more present at low filter frequency values when the booster is active.

The new resonance booster is disabled per default on all old sounds and kits, but is enabled on all new sounds. It can be enabled/disabled from within the SOUND SETTINGS menu. Note that very high resonance values might cause the filter to become unstable and produce unexpected sounds, especially in combination with the overdrive parameter.

Polyphony

The Analog Four is now polyphonic, which means that the four synth voices are no longer directly controlled by the four tracks. Instead, each track can play up to four notes simultaneously and allocate voices dynamically. This functionality can be configured per kit, allowing each kit to decide how the voices will be allocated.

The sequencer is now also fully polyphonic. Overlapping notes can be programmed on each track (via the note page **LEN** parameter), and chords can be programmed by using the ARP **NO2**, **NO3**, **NO4** parameters. When entering chords in grid record mode, these parameters are now automatically set by the played chord. The real time recorder has also been improved to support chord recording.

The polyphonic capabilities are configured by entering the POLY CONFIG menu, found inside the KIT Menu.

Inside the POLY CONFIG menu, you can select which of the four hardware voices are allowed to play polyphonic notes, i.e. which voices are allowed to be used by other tracks than it's directly
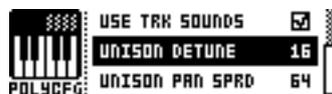
corresponding track. If you, for instance choose to include only voices 2,3 and 4 in the poly configuration, track 1 will always have a dedicated voice (for monophonic playback), and tracks 2,3 and 4 will be able to play up to 3 notes simultaneously (in total, spanning all tracks) since voices 2,3 and 4 are available for dynamic allocation.

The synthesizer is still multitimbral, meaning that each track can play its own track sound at any point in time, with any number of voices available in the poly config, as long as no other track is using the voices at this time. So you can program a 4-note chord using track sound 2 on one step, while on another step you play a 4-note chord using track sound 4.

The dynamic voice allocation can be done in a number of different ways, using different allocation methods. This can also be configured per kit. Below follows descriptions of the methods:

- RESET (default mode) The first free voice, starting from the track voice belonging to the triggered track, is allocated. This means that the first played note will always be played by the corresponding track voice, and each consecutive note will be played by the next available voice in the group. If all voices are busy, the oldest voice is stolen for the new note.

- ROTATE A round robin policy is used to allocate voices. Each time a note is triggered, the next voice in the poly group is used. If all voices are busy, the oldest voice is stolen for the new note. This method is useful for playing notes with long release tails, since it allows the tails to overlap until the next round.

- RE-ASSIGN Remember which note and track sound was most recently played by each voice, and if the played note and sound is the same as any of the previously played notes by any of the track voices, the corresponding voice is reused again. Otherwise, use the oldest unused voice. If all voices are busy, the oldest voice is stolen for the new note. This mimics the normal rompler/digital piano behavior.

- UNISON Each note triggers all voices inside the poly group. In addition, the unison detune and pan spread settings in the kit are applied to the triggered voices in a uniformly spread out manner (i.e. each voice gets a certain fraction of the detune amount). The unison parameters are also configured inside the POLY CONFIG menu.

Another option available in the poly config menu is the USE TRK SOUNDS option. When enabled, each voice always plays its corresponding track sounds rather than the requested sounds. This can be used to play chords formed by different sounds for each note, i.e. when you want to layer different sounds. It can also be used together with unison mode to form one huge monophonic voice, consisting of 8 oscillators and 4 dual analog filters running in parallel, each with their own settings.

The arpeggiator also has a new mode available, POLY, for playing the selected notes as a polyphonic chord rather than as consecutive notes.

....

```
 120.0 ARP  MOD SPD RNG LEN LEG
    1:1:1 PLY  12   3  ○  ⊘
KIT1:NEW KIT  N02 N03 N04 ▓ ▓
__:[A01]      +3  +7 OFF ▓ ▓
```

+Drive

The *+Drive* is a non-volatile memory that is available in all Analog Four units. As of OS 1.1, it is used to store machine projects as well as a sound library. When you start your AF for the first time after installing OS 1.1, the +Drive will be formatted. The factory preset project will automatically be written to +Drive project slot 1, and the active working state of the AF will be copied to slot 2. The factory sound library is also installed in the +Drive sound library.

If you do a factory reset in the future, the factory project and sounds will be written to their slots regardless of what has been saved there before. So you should not use those slots for your own projects and sounds if you wish to keep them after a factory reset.

Changes in your active project will not automatically be written to the +Drive. You have to explicitly save and load your projects. The machine keeps track of what project slot the active project is attached to.

The project menu and the project manager

There is a new menu called PROJECT located inside the GLOBAL menu.

The following options are available from the menu:

- LOAD PROJECT - opens a project selection screen where you choose a project to be loaded. You may also choose to create a new project from this menu, which is equivalent to performing an empty reset.

- SAVE PROJECT - opens a project selection screen where you choose a slot to save to.

- PROJECT MANAGER - launches the project manager. See further down for description.

The *project manager* contains a list of the projects on the +Drive and a number of operations. Move the cursor to a slot (or select multiple slots with the **[YES]** key) and then press **[RIGHT]** to open the operations menu which has some of the following options, depending on context:

```
001 ▣ PRESETS │CLEAR
002    KLUBB  │DELETE
003   ▸GOA    │RENAME
004    GUBBAR │LOAD FROM
```

- CLEAR - resets the project slot to a clean state.

- INIT NEW - initializes an empty file slot with a clean project.

- DELETE - removes the project from the slot.

- RENAME - opens a screen where you can rename the project file.

- LOAD FROM - loads the selected project.

- SAVE TO - saves the active project to the selected slot.

. . . .

You can open the LOAD PROJECT menu directly from the main screen by pressing and holding **[FUNCTION]**+**[GLOBAL]**.

The sound manager and the sound browser

The *sound manager* provides access to the +Drive sound library as well as the active project sound pool, and a number of operations.

Press **[LEFT]** to access a navigation menu with the following options:

- →POOL - lists the sounds available in the active project sound pool.

- →+DRIVE - lists the sounds available on the +Drive sound library.

- SORT ABC - sort the sounds in alphabetical order.

- SORT 123 - sort the sounds by slot number.

- FILTER - select to list only those sounds which have specific tags.

- SEARCH - perform a text search listing only sounds with a matching name.

Press **[RIGHT]** to access the operations menu with some of the following options, depending on context:

- LOAD TO TRACK - load the selected sound to the active track.

- STORE TRK SOUND - save the active track sound to the selected slot.

- COPY TO POOL - copy selected sounds to the first free slots of the active project sound pool.

- COPY TO +DRIVE - copy selected sounds to the first free slots of the +Drive sound library.

- RENAME - rename the selected sound

- EDIT TAGS - opens the EDIT TAGS menu.

- DELETE - deletes the selected sounds.

- TOGGLE LOCK -toggles write protection for the selected sounds.

- SEND SYSEX - sends the selected sounds as SysEx.

- SELECT ALL - select all sounds in the list.

- DESELECT ALL - deselect all sounds in the list.

The sounds are organized into 16 banks for your convenience. Use the **[TRIG]** keys to toggle viewing only sound from a specific bank. You can preview the currently selected sound using the mini keyboard or via the midi auto-channel.

The *sound browser* is a more graphical version of the sound manager intended for previewing and loading sounds. The sound manager sorting options are available from this menu too, but you can't access the manipulation options. Empty slots are not listed in the sound browser.

....

```
A:005 HAY BASS
A:006
SQUELCH
A:007 MEAN BASS
```

You can open the sound browser directly from the main screen either by pressing and holding **[FUNCTION]**+**[SOUND]**, or by double pressing on a **[TRACK]**.

EDIT TAGS menu

The EDIT TAGS menu can be accessed from the sound manager. The **[YES]** key is used to toggle the state of a tag. Enabled tags are enclosed by a solid rectangle. If you are editing multiple sounds at once, a specific tag may have a conflicting state, which is indicated by a dotted rectangle. The **[NO]** key exits the menu and consolidates changes.
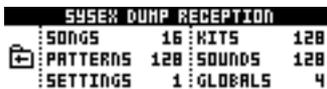
```
SOUND FX  HIHAT    EVOLVING
KICK      PERCUSSI  NOISY
SNARE     ATMOSPHE GLITCH
```


SysEx receive menu

In the SysEx receive menu you can select to receive sounds to the +Drive. You may choose a specific destination bank, or just anywhere. Received sounds will be placed in free slots. The number of free slots in each bank is shown in parenthesis after the bank letter.

```
KIT          BANK H (249)
SOUND POOL   BANK I (253)
+DRIVE SOUND BANK J (128)
PATTERN      BANK K (256)
```

In the SysEx receive menu, a new receive category ANYTHING - is available. This brings up a menu from which any type of SysEx backup can be restored, with original positions retained. In other words, it is similar to receiving SysEx dumps directly from the main screen, but this new menu also shows counters for each type of SysEx object. If you want to restore a full SysEx backup (i.e. a full project), you can do it conveniently from this menu and make sure that no objects are missing or broken when the process is complete. Note that reception to original positions is still possible directly from the main screen as well.

```
SYSEX DUMP RECEPTION
SONGS      16  KITS    128
PATTERNS  128  SOUNDS  128
SETTINGS    1  GLOBALS   4
```


SysEx send menu

In the SysEx send menu there's now an option to send all project sound slots. Note that +Drive sounds are not included in the dump.

In the SysEx send menu there's now an option to send all project settings. This contains all settings that are not included in the project globals. Examples are track mutes, song/chain modes, pattern change mode etc.

....

The FULL BACKUP SysEx option has been renamed to WHOLE PROJECT, to emphasize that no +Drive contents are included in the backup. Only the data belonging to the loaded project will be included in the backup.
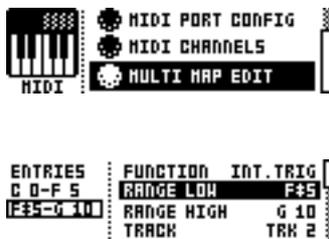

Multi map

Notes received on the configured performance MIDI channel are now interpreted according to a Multi map created by the user. Each global slot has a Multi map. Each map contains a number of range entries, allowing each note range to perform a different function. Its most typical use is probably to create keyboard splits where each range triggers a different track.

The available functions are: INT.TRIG - trigs an internal track with a defined note. Sound slot locks can optionally be set, as well as sound slot increment value for each note, allowing you to set up ''kits'' of different sound slots inside a note range. Other optional settings are fixed velocity as well as custom note increment value.

EXT. TRIG - trigs an external MIDI note on a specified MIDI channel. Optional settings are fixed velocity and note increment value.

PAT. PLAY - starts a pattern. Transpose and start method can be selected, as well as transpose increment value for each note, and pattern increment in case you want a different pattern for each note.

The Multi map editor is located in the MIDI menu.

You cannot overlap any of the Multi map range entries, so in order to be able to insert a new entry between two other entries, you must first adjust the other entries such that they make space for the new entry.

Bug fixes

The OSC pitch MIDI NRPN/CC value was only transmitted when adjusting OSC Coarse Tune, not when adjusting OSC Fine Tune. Fixed.

Receiving MIDI CC LSB value without the MSB value didn't work correctly. Fixed.

Some parameters (Performance A, OSC A Tune, Ext.L Chorus Send, CV A Tune) could not be controlled via NRPN. Fixed.

Level encoder didn't work properly when second page of ENV or LFO was active on either of the tracks. Fixed.

When patterns changed implicitly via copy-paste operations or via SysEx reception, the active kit wasn't immediately updated. Fixed.

When chaining patterns with infinite master length the pattern would not change at the correct step. Fixed.

When copy/pasting trigs, parameters with high resolution (i.e. OSC Tune, Filter Frequency, Mod Depths etc.) would be pasted with a quantized value rather than with the fine value preserved. Fixed.

USB MIDI halted the unit when the host stopped receiving MIDI data. Fixed.

Midi CC and NRPN received on the Performance Channel would affect all tracks. The performance channels should only accept CCs and NRPNs affecting the performance parameters. Fixed.

On FX track, the LFO speed was presented with 0-127 range rather than -64..+63. Fixed.

Real-time recording while chaining patterns now works better. Note OFF events corresponding to notes within a previously played pattern would previously not set the note lengths in the previous pattern properly. Fixed.

On new sounds, ENV2 dest was initialized to LFO2 speed, which is not modulatable by ENV2. Fixed.

When receiving SETTINGS SysEx, new tempo wasn't properly set. Fixed.

Receiving large SysEx dumps using Turbo MIDI would not always work correctly. Fixed.

It was possible to program steps with sound slot locks also on FX and CV tracks. This should only be possible on synth tracks. Fixed.

Sometimes, after upgrading the OS, the unit would hang without rebooting. Fixed.

Pressing **[STOP]**+**[STOP]** would not work properly if receive transport wasn't enabled in the MIDI Sync settings. Fixed.
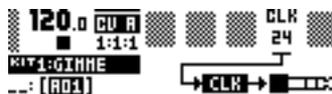
The combination of LFO HOLD mode and LFO retrig on a trig didn't work. The LFO would not hold it's value, rather act like being in FREE mode. Fixed.

Various arpeggiator bugs have been fixed.

List of changes from Analog Four OS 1.05 to 1.06

Changes

Trigging of ENV/LFO can now be individually activated on trigless locks on the NOTE screen. Previously only available on trigs.

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A new mode has been added to the CV track, CLOCK. CLOCK sends periodical pulses with a period synced to the sequencer step length and divided down by the parameter *CLK*.

A new pattern setting is available, **CHNG**, a modulo position at which the sequencer will change to the next cued or chained pattern.

Track level can now be controlled via MIDI CC 95 or MIDI NRPN (MSB=1, LSB=100).

Bug fixes

Envelope 1 on the CV track only outputted envelope during the attack phase. Fixed.

Erasing a specific parameter lock during real-time recording was incorrectly implemented with key combination **[FUNCTION]**+**[DATA ENTRY]** instead of **[NO]**+**[DATA ENTRY]**, as described in the manual. Fixed.

List of changes from Analog Four OS 1.04C to 1.05

Changes

A new sub oscillator type is available; 5th. This new sub oscillator plays a 5th component below the corresponding oscillator pitch (i e 7 semitones below the oscillator pitch). It can be used to create chord sounds using only one synth voice.

The sequencer can now be paused by pressing **[PLAY]**. The playback position is preserved and pressing **[PLAY]** again resumes playing.

When altering the NORMAL pattern scale length, all ADVANCED track scale lengths are now set to the same length as well. This makes the change from NORMAL to ADVANCED more transparent.

Held mini keyboard notes (and MIDI auto channel notes) are no longer interrupted when changing track or changing keyboard octave.

When clearing or pasting patterns while in pattern selection mode (**[BANK]** + **[GRID]** + **[PLAY]**), a timeout window now precedes the operation. If key combination is released before the timeout period, the operation is canceled. This reduces the risk of losing data by mistake when selecting patterns.

The active position within the chain (and song) are now preserved when powering off the machine.

A new global option is available; KIT RELOADS ON CHG. When enabled, this will cause kits to reload to their saved state automatically as soon as a new kit becomes active. The option is found in the SEQUENCER CONFIG global menu.

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Real time recording is now done using micro timing. You can enable or disable this functionality via the global option QUANTIZE LIVE REC, found in the SEQUENCER CONFIG global menu.

To quantize recorded notes non-destructively, use the quantize parameters in the NOTES SETUP menu. To quantize recorded notes destructively, the **MICRO TIMING** parameter can be erased while live recording by pressing **[FUNCTION]** + **[ENCODER D]** on the NOTE parameter page (similarly to how parameter locks are erased).

If both CLOCK RECEIVE and TRANSPORT RECEIVE are selected the unit will wait for clock after receiving start or continue messages for 16 seconds before considering external sync lost. This, for example, allows for preroll in sequencers not starting clock until preroll is completed.

If only TRANSPORT RECEIVE is enabled the machine will start as soon as possible after receiving start or continue.

When external sync is lost the sequencer enters pause and changes the tempo setting to the last detected external tempo.

Note slide and bend is now available on the CV track. Use the new bend depth and note slide time parameters on the CV track to control the behavior.

The filter default settings have been changed and now use HP2 in the multi mode filter.

When using pattern change modes DIRECT START or DIRECT JUMP, the change is now done immediately on grid key press rather than grid key release. Also, the possibility to create chains by using multiple grid keys is now disabled while using the direct change pattern modes, to reduce the risk of altering the chain while performing with these functions.

When using pattern change mode DIRECT JUMP to jump into a pattern with shorter length, the position is now wrapped into the new pattern, instead of starting the new pattern from the beginning.

When going from SONG MODE or CHAIN MODE into pattern mode, the chain cursor is now moved to the currently playing pattern.

When sending DIN sync pressing **[PLAY]** manually will now delay clock start for 2 milliseconds to allow synced devices time to react. When double clicking **[STOP]** the unit will prepare the devices for start and hold clock until **[PLAY]** is pressed or a MIDI start message is received and no delay is necessary.

Bug fixes

Previewing steps with their parameter locks applied only worked on steps with sound locks, it now works also on steps without sound locks.

Performance parameters used NRPN MSB 1 instead of NRPN MSB 0. Fixed.

Ext.R. Volume parameter used CC 29 instead of CC 31. Fixed.

CV Env1. Decay used CC 113 instead of CC 109. Fixed.

Held notes could get stuck during pattern change if the pattern change implicitly changed keyboard octave. Fixed.

When live recording short consecutive notes, the recorded trigs could sometimes be converted to trigless locks. Fixed.

When the machine was turned off with an active pattern other than the first pattern in the active chain, the active kit settings would sometimes be restored to the wrong slot during boot. Fixed.

When changing between patterns that used different kits, the kit changes would occur too early. Fixed.

Sequencer note slide did not work properly when externally synced. Fixed.

List of changes from Analog Four OS 1.04B to 1.04C

Bug fixes

Notes with infinite length did not get trigged by the sequencer. Fixed.

List of changes from Analog Four OS 1.04 to 1.04B

Bug fixes

Reception of MIDI NRPN data and reception of LSB part of high-res CC params did not work satisfactorily. Fixed.
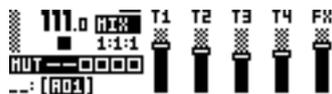
When pasting a performance setup, not all performance parameters were included. Fixed.

When using slide, the envelope trig of an adjacent, non legato note only occurred randomly. Fixed.

List of changes from Analog Four OS 1.03 to 1.04

Changes

Mute functionality has been added to the **[GRID]** keys on the PERFORMANCE page. Mute tracks pressing **[GRID 1]** to **[GRID 6]**, hold **[FUNCTION]** to delay the change until it is released. During changing of the muted tracks mute information covers the kit information on screen. A muted track is displayed as a '-', an active track is displayed as a square, tracks that are going to be muted are displayed as an 'X', tracks that are about to be unmuted are displayed as a '+'.

A mixer screen has been added, it is accessed pressing **[PERF]** a second time. The level of the four tracks plus the FX track can be edited using knob *A* to *E*.

Kit and Song selection now highlights previous selection.

Loading the same kit as is selected now reloads the saved kit.

Copy, paste and clear can now be performed on complete performance setups if pressed from within the PERFORMANCE SETUP menu (where Configure and Rename is normally chosen). The

....

actual performance parameter values are not included in these operations, only the configuration of them and their names.

[FUNCTION] + double clicking **[CLICK]** toggles metronome.

Scale LEDs and REC LED in live record mode now blink in sync with the sequencer rather than with a constant rate.

Bug fixes

The unit would hold until USB MIDI was read from computer. Fixed.

The unit would sometimes hang during USB MIDI transfers. Fixed.

DIN Sync did not work with all devices. Fixed.

When copy/pasting or rotating a track with parameter locks, the track could lose the parameter locks after a reboot. Fixed.

When saving a kit to a new position, the chosen kit name was incorrectly written also to the previous kit position (although only to the working copy, requiring a kit reload to restore the correct name). Fixed.

List of changes from Analog Four OS 1.02B to 1.03

Changes

In the display a queued patterns position now blinks over the current position until the pattern changes.

Full audio range pitches can now be played.

Micro timing can now be adjusted holding a key in GRID EDIT mode and pressing **[LEFT]** or **[RIGHT]**.

To prevent accidental change **[ENTER]** must be pressed before Global slot changes.

Program change can now be sent or received changing or enqueueing the corresponding pattern. Enabling is done in the GLOBAL ▸ MIDI CONFIG ▸ MIDI SYNC menu. Configuration of the MIDI channels is done in the GLOBAL ▸ MIDI CONFIG ▸ MIDI CHANNEL menu.

Arpeggiator position is now displayed in the ARP SETUP menu.

Pitch slide is now possible even if the sequencer note is not played legato.

It is now possible to real time record and real time erase note parameters (**NOTE**, **VELOCITY** and **LENGTH**). When real time erasing all locks **[FUNCTION]**+**[NO/RELOAD]**, the note parameters are not included.

Kit lists now shows a small circle on kits not used in any pattern. Similarly, the circle is used to indicate which patterns are empty all pattern lists.

Sound lists now show a small sequencer step icon on sounds that are locked to steps in any of the patterns. Helps user avoid overwriting sounds that are used in the patterns.

. . . .

Clearing a kit, a sound, or a song will now clear its name as well, instead of setting a default name.

The pattern list in SysEx send/receive menus now show which kit is used in each pattern, if any.

A new SysEx send category was added for sending Pattern+Kits in one go.

Accent level is now a valid modulation destination.

Improved timing while live-recording trigs and locks.

Using the **[LEFT]** or **[RIGHT]** buttons the RELOAD KIT menu option in KIT menu now allows reload of either active kit or all kits.

SYSEX SEND category PATTERN+KIT, which sends both the pattern and its assigned kit, has been added

Bug fixes

The bank selector presented banks E to H as I to L. Fixed.

Pressing **[STOP]** in the last pattern of the song could crash the unit. Fixed.

Arpeggios started by the sequencer weren't properly stopped by an external arpeggio. Fixed.

Sound locks and arpeggiator didn't work together. Sound reverted back to the track sound on the second arpeggiated note. Fixed.

When releasing an arpeggio the last note did not release immediately. Fixed.

Locking trig notes on steps with sound slot locks would not preview using the locked sound. Fixed.

Note and parameter slide wasn't activated on trigless locks. Fixed.

Main screen and GRID EDIT mode didn't present scale length properly when scale length was not set to multiples of 16. Fixed

Copy/paste of tracks didn't include parameter locks. Fixed.

General

At this time, we do not recommend SysEx dumping via USB to a Microsoft Windows XP operating system. Instead use the MIDI ports, or throttle the speed selecting OUTPUT TO MIDI+USB in GLOBAL ▶ MIDI CONFIG ▶ MIDI PORT CONFIG

Also, do not send MIDI (tweaking knobs, sending SysEx etc) using USB unless the port has been opened by software in the other end, otherwise the unit will freeze.

List of changes from Analog Four OS 1.02 to 1.02B

Changes

Load/save sound now remembers the previously selected position in sound slot list.

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SysEx receive to specific position now automatically advances to next position in the list after after each successful reception

Bug fixes

Empty reset did not empty NVRAM properly. Fixed.

External Sync did not work via USB MIDI. Fixed.

List of changes from Analog Four OS 1.01 to 1.02

Changes

Song muted track LEDs are now dimmed unless they are also manually muted, then they are not lit.

Use **[SONG]**+**[TRACK]** or **[CHAIN]**+**[TRACK]** to edit song mutes.

Only applicable CV settings are now shown in the CV setup menu.

When moving to an empty pattern the latest used kit is selected.

LFO exponential waveform decay time set to match the rate of Octatrack.

A new chain can now be created by selecting multiple patterns at once.

When selecting a pattern, before releasing the pattern selection, **[COPY]**, **[CLEAR]** and **[PASTE]** may be used to copy, clear or paste patterns. No new chain will then be built nor pattern enqueued. Multiple selections of patterns can be cleared or pasted to at the same time.

Bug fixes

When clearing a chain the song mutes were active. Fixed.

The song mutes were not active the first cycle of a pattern after restart. Fixed.

Arpeggiator did not always start. Fixed.

LFO ONE and HALF mode did not work in reverse. Fixed.

LFO HOLD mode did not hold a new value. Fixed.

List of changes from Analog Four OS 1.0 to 1.01

Changes

Noise restarts when osc retrig is on.

Selection between sending mini keyboard and encoders on auto channel or on the MIDI channel of the selected track.

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Performance MIDI channel added routing performance knobs to sending on this channel.

When in STOP mode, placing notes in grid edit mode trigs the notes.

Bug fixes

LFO and Envelope depth only reached half way. Fixed.

Arpeggiator octave range fixed in random mode.

Held notes were released when moving to effects track. Fixed.

Fixes of the Destructive Transpose.

DIN sync stopped when the pattern looped. Fixed.

Too easily dropped out of external sync. Fixed.

No blinking record symbol in live recording. Fixed.

Performance parameters could not be controlled thru CC/NRPN. Fixed.

List of changes from Analog Four OS 0.99 to 1.0

Changes

Arpeggiator is available.

DIN Sync is available.

DIRECT CHANGE mode is available.

Song mode mutes and transpose is available.

Song row repeat implemented.

Ext In sound level has been increased.

LFO MODE is now shown using text.

[STOP]+**[STOP]** kills all sound.

Bug fixes

Ext In effects routing did not work properly. Fixed.

[BANK] key did not work in GRID EDIT mode. Fixed.

SONG mode was mainly inoperable. Fixed.

Trigless locks triggered a note off event. Fixed.

Triangle waveform shape improved.

Bend depth could not be used as performance destination. Fixed.

....

RANDOM LFO did not update value directly on RETRIG Mode. Fixed.

Bipolar Performance parameters did not work. Fixed.