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# Europa User Manual

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17 track MIDI  
sequencer

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Analogue Solutions

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# Europa User Manual

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## USING THIS UNIT SAFELY

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Before using this unit read this instruction manual.

Do not open or modify this unit or its power supply.

Do not attempt to repair the unit or replace parts within it. Refer servicing to a qualified service engineer.

Never use or store the unit in places that are;

- Subject to extremes of temperature (such as in direct sunlight in an enclosed vehicle, on a heater or near a heating duct, etc).
- that are damp or wet (e.g. bathrooms),
- humid,
- exposed to rain,
- dusty,
- high levels of vibration.

Make sure the unit is placed on a stable and level surface.

Use only the specified AC adaptor. Make sure the mains voltage matches that of the adaptor. Ensure the correct polarity adaptor is used. Other adaptors could be of the wrong type of voltage or polarity and could result in damage, malfunction, or electric shock.

Do not excessively bend or twist the adaptor cable. Doing so may damage the cable. Damaged cables could cause a malfunction, or a shock or fire hazard.

Do not allow any small parts (like pins, coins), liquids, flammable material to enter the unit.

Immediately disconnect the mains supply and adaptor, and contact a qualified service engineer;

- when the AC adaptor or power supply cord has been damaged,
- when objects have fallen onto, or a liquid has been spilled into the unit,
- when the unit has been exposed to rain or other liquids,
- when the unit does not appear to function correctly.

When small children are present adult supervision must be provided.

Protect the unit from strong impact, including being dropped.

If the unit is sharing a power outlet with several other devices when using extension cords/multi-sockets, ensure the current rating of the cords/sockets are not exceeded.

Before using the unit in a different country, check the mains supply is correct for the AC adaptor.

When disconnecting the AC adaptor plug, always grasp it by the plug body, not the wire.

When the unit is to remain unused for a length of time, disconnect the adaptor from the mains.

Cables can be a risk to small children. Always place the out of reach.

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Never climb, or place objects on top of the unit.

Never handle the unit, the AC adaptor, or any cables with wet or moist hands.

Before cleaning the unit, disconnect from the mains.

Whenever you suspect lightning in the area, disconnect the AC adaptor.

Did you read all this? Good now you will be safe, but please still use what common sense health and safety assumes we all don't have!

## IMPORTANT NOTES

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### PLACEMENT

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This device may interfere with radio and television reception. Do not use this device in the vicinity of such receivers.

Do not expose the unit to direct sunlight or place it near devices that radiate heat, or leave inside an enclosed vehicle, or otherwise subject it to extremes of heat. Excessive heat may also discolour the unit.

Do not use the unit in a wet area, or expose it to rain or moisture.

### MAINTENANCE

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For everyday cleaning, wipe it down with a dry soft cloth, or one that has been slightly dampened with water. To remove stubborn dirt, use a cloth impregnated with a mild non-abrasive detergent. Afterwards be sure to wipe the unit dry thoroughly with a dry cloth.

Be sure to disconnect the AC adaptor before any cleaning.

Never use benzene, thinners, alcohol or other such chemicals and solvents to clean the unit.

### REPAIRS AND DATA.

---

Please be aware that all data in the unit could be lost if the unit is ever sent for servicing or repair.

Always back up your important data on a regular basis.

The unit does not have back up batteries and all data is retained in non-volatile memory. Even so still back up your data regularly.

Analogue Solutions will not be held responsible for the loss of your data for any reason, what so ever, even if due to a fault with the unit.

### ADDITIONAL PRECAUTIONS

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Use a reasonable amount of care when using the buttons and knobs. Unreasonable use or rough handling may cause damage or malfunctions.

Never strike or apply strong pressure to the unit.

When disconnecting or connecting any cable, hold the cable plug not the cable. Insert or remove straight and perpendicular to the case.

To avoid disturbing your neighbours always keep your volume levels at a reasonable level.

When transporting the unit use the original packaging.

## MAIN FEATURES

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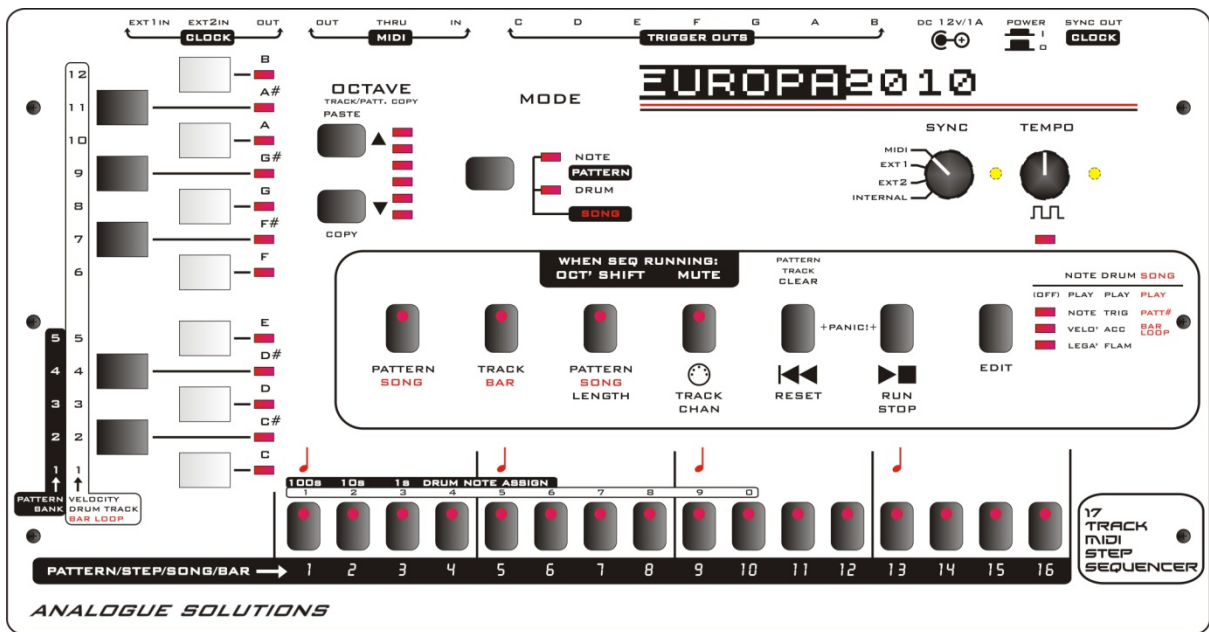
- Quick and easy editing system.
- One function per button (sort of!)\*
- Direct control of data editing.
- No deep layers of sub-menus to plough through.
- Intuitive user interface using familiar methods.
- Live editing possible whilst the sequencer is running. Ideal for live use.
- Live octave shift and track mutes for real time live 'mixing'.
- Live on the fly editing of song structure.
- Designed with the modern musician in mind.
- Designed with electronic and 'dance' music in mind.
- Designed for live use as well as the home or professional studio.
- Analogue connectivity for use with modular systems and analogue sequencers.

\*The Europa uses dynamically allocating function keys so that the button you need is always one hand without having to resort to something as arcane as a shift key.



## PANEL DESCRIPTIONS

### FRONT PANEL



## MANUAL CONVENTIONS

Words in curly brackets {} refer to knobs. E.g. {TEMPO}.

Words in square brackets [] refer to push buttons/keys. E.g. [RESET].

Words in triangles <> refer to connectors. E.g. <TRIG OUT C>.

# MAKING CONNECTIONS

---

To use the unit the AC adaptor must be connected.

The sequencer does not make any sound. It must be connected to a MIDI synthesiser or sound module.

Refer to the user manual of the MIDI device you are using and connect it as described.

Connect a MIDI cable from the sequencer MIDI Out to the MIDI sound module's MIDI In.

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# POWER

---

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## TURNING ON POWER

---



Push the [POWER] button in. It will click in to turn on. The 'I' (push in) position is on.

---

## TURNING OFF POWER

---



Push the [POWER] button in. It will click out to turn off.

---

## CONCEPT

---

There are plenty of MIDI sequencers out there but the problem is they have too many features that you can't just pick it up and start creating great tunes quickly and easily. Sometimes that is fine for complete complex studio productions, but sometimes you can spend so much time navigating menus that you lose contact with creativity. With some sequencers you need a PhD to decipher the user interface, additional fingers to enter sub-menus that require multiple key presses, and a road map to keep track of which sub-menu you are in!

All this gets in the way of creativity. It distracts.

There are even some MIDI sequencers out there that have the audacity to claim in their user manuals that they are easy to use, when they are clearly not! We claim ours is, and we are right!

The aim is that with just minimal experience of MIDI, pattern sequencers and synths, you could use this sequencer without referring to the manual. There are no hidden functions, though to label all functions implicitly on the front panel would make it look a mess. We recommend you skim through the manual quickly to check you aren't missing anything then file it.

---

## BASIC HIERARCHY

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This is a traditional 'pattern' sequencer.

Highest level we have Songs. A Song is an ordered collection of Patterns.

Each Pattern is a single bar of music.

Each Pattern can have 16 note tracks and 1 drum track. Think of tracks like those on a multitrack analogue tape machine (remember those!) Each track would normally play a single instrument.

Each note track is monophonic. Polyphonic patterns and chords are possible by using multiple tracks all assigned to the same MIDI channel.

The drum track can play up to 12 'drum instruments'. The drum track is assigned to MIDI channel 10.

*IN SUMMARY THEN*

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There are five banks of 16 Patterns:

## **16 monophonic MIDI tracks;-**

Note Data:

Note on/off, velocity, Note hold, Legato, transmit channel.

## **1 Drum track with 12 instruments (sub-tracks);-**

Drum Data:

Note on/off, accent high/low, flam.

## **Plus per pattern**

pattern length, swing amount.

## **16 Songs**

There are 16 Songs. Each song can contain a chain of up to 16 patterns. Each Pattern can be looped up to 12 times each. The whole song can loop or just play once.

Each bar can have its own Mute status.

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## MODES

---

There are three basic Modes.

---

### NOTE

---

This is where you use the keyboard and step keys to enter (MIDI) notes (velocity and legato too) into any of the 16 note tracks.

Notes are entered one at a time in 'step time'. Real time is not possible – it's not that kind of sequencer.

---

### DRUM

---

This is where you use the keyboard and step keys to enter (MIDI note) triggers for each of the 12 drum instruments.

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## SONG

---

This is where you chain (order/sequence) patterns (like bars) to create a song.

## EDIT MODES

---

Note, Drum and Song modes have sub-edit modes.

### NOTE EDIT MODE

---

#### NOTE

---

This is for entering note on/off and pitch (note value) information.

#### VELOCITY (VELO')

---

This is for entering velocity controller information for each note.

#### LEGATO (LEGA')

---

This allows you to program adjacent notes to slightly overlap each other.

Normally the 1st step will send its note off command before the next step's note on. When a legato is active for a step, the preceding step will send its note off command just after the next one's note on. Basically the notes will overlap a little.

This special feature has been included to active the Slide feature on Analogue Solutions' TBX303, and their M2CV MIDI converter (which has a legato on/off control voltage out). Using the Europa and the TBX303, accurate TB303 sound sequencers can be created.

### DRUM EDIT MODE

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#### TRIG

---

This is for entering on which beat the drums will trigger.

#### ACCENT (ACC)

---

This is for setting one of two levels of accent (MIDI velocity) for each drum. Low is level 100 high is 127. Note: analogue trigger outputs are fixed level (though you could create an accent voltage using one of the drum instrument tracks and clever use of modules).

#### FLAM

---

This is for programming Flam. Flam is two quick successive drum hits. Listen to the effect, easier than trying to explain!

Flam time is fixed.

### SONG EDIT MODE

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## PATTERN ASSIGN (PATT#)

---

This is for assigning patterns to bars.

## BAR LOOP

---

This is to set the amount of times a bar will loop.

## CURSORS

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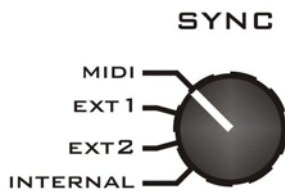
There are two cursors used on this sequencer, Play and Edit.

The Play cursor is visible in Note, Drum or Song mode when the sequencer running, but not when stopped, unless sub-edit mode is off, i.e. in Play mode (sub edit LEDs off). It will show which step is currently being played by lighting/dimming (depending whether the step's LED is already on or off) one of the 16 step LEDs.

The second is the edit cursor is only used in Note edit mode as it is not needed in Drum edit mode. It shows which pattern step or song bar is selected and currently being worked on. This has a slow flash. It is not visible in Play mode or Legato edit mode, where it is not needed.

## SYNC SOURCE

---



The sequencer can be synchronised to four sources;

- Internal analogue clock – adjust the tempo using the rotary TEMPO knob.
- EXT1 – external analogue clock #1 taken from the rear panel jack socket.
- EXT2 – external analogue clock #2 taken from the rear panel jack socket.
- MIDI – MIDI Sync clock.

Turn the {SYNC} knob to select the sync source.

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The sync rate when using external analogue clocks is 4ppqn. There is one pulse per 16th note, the same as most analogue sequencers, allowing easy synchronisation between the sequencer and most external analogue equipment.

Of course, there is no reason why you can't sync to more unusual external sources, for example,

- Gate output from a MIDI to CV converter
- LFO waveform output
- EG output
- Step sequencers,
- Trigger pads.

Note; many of these are untested and may produce (desirable) unusual results!

The sequencer will output a 'Thru' clock to the rear panel <SYNC> socket. This socket will output a 4ppqn clock pulse whenever the sequencer is running, allowing analogue sequencers to be daisy chained and sync'ed.

---

## INTERNAL CLOCK

---

### TEMPO



The internal clock is a free running analogue square wave LFO. The signal it produces is continuously available at the <OUT> socket, regardless of the sequencer's selected clock source or play/stop condition. If the internal clock is not being used as a sync source for the sequencer, then it could be used as a square wave LFO and routed to your modular synth.

Turn the {TEMPO} knob to change the speed of the internal clock/LFO.

---

## MIDI SYNC

---

To use the sequencer with MIDI clock, select [MIDI] as the clock source. As soon as it receives a MIDI start the sequencer will start.

The Europa sequencer can be started and stopped by MIDI start/stop/continue messages, or using the [RUN/STOP] key, regardless of the sync source.

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Note; you will have to manually reset the sequencer each time since MIDI Sync does not contain any position information.

## PLAYING THE SEQUENCER

---



To play the sequencer press [RUN/STOP].

The sequencer will always play from the current step (the last one played after it was stopped).

To stop the sequencer press [RUN/STOP].

To reset the sequencer so it will play from step one, either press [RUN/STOP] then [RESET] or just press [RESET] to jump to step one whilst the sequencer is playing.

[RESET] will work when the sequencer is running.

When the sequencer is stopped and in Play mode, the play cursor is visible. The play cursor is represented by a fast flashing step LED.

The play cursor is visible only when the sequencer is in Play mode (all sub-edit LEDs are off) and the sequencer is stopped.

When the sequencer is running, the step LEDs will flash in sequencer to show which step is being played.

## CHANGING MODES

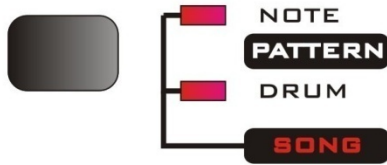
---

To edit note, drum or song data the sequencer must be in the correct Mode.

Use the [MODE] button to change mode.



## MODE



Each time you press the button, the mode will cycle through NOTE, DRUM and SONG modes.

Song mode is active when both LEDs are on.

Note: Song mode cannot be selected when the sequencer is running. This is to stop Song mode changing patterns when you are editing, moving between Note and Drum mode (when writing patterns when the sequencer is running).

---

## CHANGING EDIT MODE.

---

Note, Drum and Song modes each have different sets of data that can be edited. You can cycle through these modes using the [EDIT] button to light the appropriate LED.

When all LEDs are off the sequencer is in Play mode, and data cannot be edited.

For Note Mode, the three LEDs in order indicate the following data types that can be edited.

- 1<sup>st</sup> LED      Note value and trigger on/off
- 2<sup>nd</sup> LED      Velocity
- 3<sup>rd</sup> LED      Legato on/off

For Drum Mode, the three LEDs in order indicate the following data types that can be edited.

- 1<sup>st</sup> LED      Trigger on
- 2<sup>nd</sup> LED      Accent on/off
- 3<sup>rd</sup> LED      Flam on/off

For Song Mode, the three LEDs in order indicate the following data types that can be edited.

- 1<sup>st</sup> LED      Pattern to bar assign

|                     |          |
|---------------------|----------|
| 2 <sup>nd</sup> LED | Loop     |
| 3 <sup>rd</sup> LED | not used |

---

# CREATING PATTERNS – NOTES

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## NOTE EDIT

---

First let's deal with how to enter note data to write patterns. Refer to the relevant parts elsewhere in the manual to find out how to enter the various modes.

---

### INITIALIZING A PATTERN

---

First you need to set up your pattern;

Go to Note Mode. Using the [MODE] button light the Note mode LED.

Select an empty pattern (you may have to clear it first if there is already data there) using the [PATTERN] button. Press the [PATTERN] button. Its LED will light. Then press one of the sixteen step buttons to select a pattern. You can also change the pattern bank by first pressing keys C to E to select bank 1 to 5, then pressing a step key to select the pattern within the bank.

Set pattern length using the [LENGTH] button. Default is 16.

Select pattern track using the [TRACK] button.

Set MIDI channel for the track using the MIDI [TRACK CHAN] button. Default, channel is same as track number. You can check the sequencer track is transmitting on the correct MIDI channel by playing the mini keyboard when the sequencer is in PLAY mode.

Note: Ensure the track is not Muted! Ensure Octave shift and transpose are off / neutral.

---

### ENTER NOTES

---

First program your notes and triggers. To do this you must be in edit mode NOTE, using the [MODE] button.

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Select Note/Trig Edit Mode using the [EDIT] button.

The sequencer can be edited when it is playing or stopped, whichever you prefer.

Assuming the track is clear, all step LEDs will be off.

To turn a note on for a step press a step key once. The LED will turn on to indicate a note trigger has been set for that step.

Pressing that step again will turn the note trigger off.

The LED cursor will flash for the step that is currently selected.

If a step key has no note trigger assigned to it, pressing the key will assign a note trigger, and set the cursor to that step (turn LED on and flash the LED dim/bright).

If a step key already has a note trigger assigned to it, then pressing that step key will not turn it off but select it (flash the LED dim/bright). If you want to turn a step off (clear its note trigger) then press once to select, then a 2nd time to turn off.

Once a note trigger has been selected note value and octave can be set.

First set the octave using the [OCT+] and [OCT-] buttons, then use the mini-keyboard to set pitch.

Note: each time you turn on a new note trigger for a step, the last note value programmed (on a previous step) is assigned.

If you select a step and then turn the trigger off, you can turn the trigger on again by either pressing the step key or pressing a mini keyboard key.

## HOLDING NOTES

---

Each note trigger is one step long. That is one 16th note. It is possible to extend the note to make it longer, in increments of one 16th.

Press and hold the starting step for the note (the note on) then press the last step. Then release.

The first step (the start of the note) will be a bright LED, and all the other LEDs right up to the last step (the end of the note) will all be dim LEDs.

To cancel a held note turn off the press the step button corresponding to the start of the note.

Or you can cut it in half by activating pressing a step key within the held note, thereby creating a new note.

E.g. If you have a note held from steps 3 to step 9. If you press step 5, you will create a new note trigger at step 5. So the held note will now be between steps 3 and 4, with a new note at 5, and nothing from 6 to 9. If this sounds confusing then just try it! It's easier to do than explain.

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## VELOCITY

---

Select VELO sub edit mode.

Select a note trigger using the step keys.

Set the velocity over 12 levels using the mini keyboard.

The 12 LEDs will light like a level bargraph.

## LEGATO

---

This is a special mode. You won't hear a great difference when used with most MIDI gear as it is a special feature for use with several Analogue Solutions products. It is mainly included for use with the Analogue Solutions TBX303, and some synth modules, to turn Slide (TBX303) or Legato CV on and off.

Select LEGA sub edit mode.

All note triggers will light up. To turn Legato on for a step press one of the active steps. The LED will go bright to indicate Legato is on for that step.

Dim LEDs indicate note triggers that have no Legato programmed for them.

Here's what happens. When a step has a Legato programmed on it, if there is a note trigger on the immediately adjacent step before, then the proceeding note off command will be sent just after the next note's (the one with the Legato on it) note on command.

So the note immediately before the one that has a Legato programmed on it will just slightly overlap.

This will then activate the slide feature on the TBX303.

## GENERAL POINTS

---

The pattern can be edited when stopped or playing.

If you put the sequencer in Play mode using the Sub Edit button, then you cannot edit the pattern.

A single track can be cleared, or the entire note pattern. See section on Clearing.

Single tracks can be copied within the same pattern, or to a different pattern.

Whole patterns can be copied.

## PATTERN PLAY MODE

---

To enter pattern Play mode toggle the Sub Edit button until all Sub Edit LEDs are off.

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In this mode you cannot edit the pattern. You can, however, view the data of each track by selecting the appropriate track.

You can change pattern and bank as usual using the [PATTERN SELECT] button. The current pattern playing will be indicated by the bank and pattern LEDs. If you wish to change to a pattern in the same bank press a step key to select the new patterns. The new pattern's LED will flash to indicate it is the next pattern to play. Once the current bar has finished, the last pattern's LED will switch off and the new current pattern's LED will stop flashing and go solid.

Using the above method you can also select a pattern in a different bank. First select the bank, then select the pattern.

You can also change pattern within the active bank without using the [PATTERN SELECT] button just by pressing one of the 16 step keys. The new pattern will play at the start of the next bar.

The mini keyboard is also active and will be transmit on the channel for the active track.

## DRUM EDIT

---

Note: the drum tracks and note tracks are all contained within the same pattern you are editing / playing.

Note: The Drums are preset to transmit on channel 10 and cannot be changed. (You can check the sequencer drum track is transmitting on the correctly on MIDI channel 10 by playing the mini keyboard when the sequencer is in PLAY mode).

### SELECT DRUM EDIT MODE.

---

Select Drum Instrument Track using one of the ten mini keyboard keys.

Note: Ensure the drum instrument track is not Muted!

First program the drum trigger. To do this you must be in Drum sub edit mode TRIG.

The sequencer can be edited when it is playing or stopped, whichever you prefer.

Assuming the track is clear, all step LEDs will be off.

To turn a drum trigger on for a step press a step key once. The LED will turn on to indicate a note trigger has been set for that step.

Pressing that step again will turn the drum trigger off.

Continue to add or turn off drum triggers on any of the 16 steps.

To program a different drum instrument, press one of the 12 mini keyboard keys to select a different drum instrument track.

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## ACCENT

Select ACC sub edit mode.

All the steps that have drum triggers programmed on will still be lit but will go dim.

To turn Accent on for a drum trigger press the appropriate step key. The LED will go bright to indicate you have set Accent for that step. Press the step key again to turn the Accent off (and the LED will go dim).

When accent is on, a higher velocity is sent by MIDI, making the drum sound louder.

## FLAM

Flam can be programmed for each drum trigger. Flam is basically a quick double hit. Flam speed is preset and cannot be changed.

Programming flam is similar to Accent.

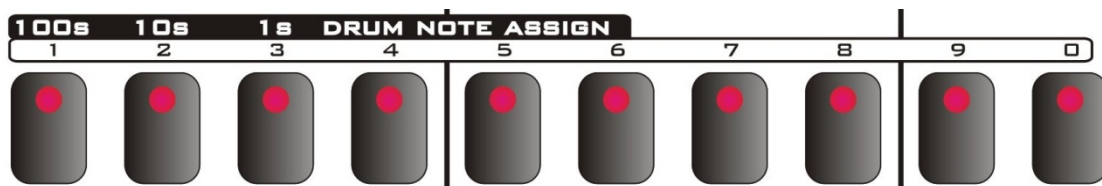
Select FLAM sub edit mode.

All the steps that have drum triggers programmed on will still be lit but will go dim.

To turn Flam on for a drum trigger press the appropriate step key. The LED will go bright to indicate you have set Flam for that step. Press the step key again to turn the Flam off (and the LED will go dim).

Flam delay is preset to 50mS and cannot be changed.

## DRUM NOTE NUMBER VIEW / ASSIGN



The drum tracks 1 to 12 are selected with the mini-keyboard keys C to B (when in drum mode). Note that the notes C to B in no way relate to the transmitted MIDI note number for each drum instrument track, but are merely a label. The actual MIDI note transmitted will be different, and can be viewed as detailed below. (Default settings are listed in the appendix).

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## DRUM INSTRUMENT MIDI NOTE NUMBER

---

It is possible to alter the MIDI note number for each drum instrument track. This is a global parameter and will affect all patterns.

### VIEWING THE NOTE NUMBER

---

To view the assigned MIDI note number for a track;

Ensure you are in Drum Edit mode and that the sequencer is stopped.

Press [TRACK/BAR]

Then press one of the 12 mini keyboard keys to select a drum instrument track.

Three step LEDs will light in sequence to display the drum's MIDI note number in 100s, 10s and units.

Note: step LED 10 indicates a zero digit.

For example, if drum track C has been assigned with note number 119, then LEDs 1, 1, then 9 will light in order.

If the note number is 045, then 10, 4, then 5 will light.

### CHANGING THE MIDI NOTE NUMBER

---

To change the assigned MIDI note number for a track;

Ensure you are in Drum Edit mode and that the sequencer is stopped.

Press MIDI [TRACK CHAN]

Then select a drum track by pressing one of the 12 mini keyboard.

Step LED one will then light.

Next, enter the new note number in order of 100s, 10, then units.

Note: step button 10 is a zero digit.

For example, if you want drum track C to transmit MIDI note number 119, then press and hold the [C] key, then press step buttons [1], [1], then [9]. Then release the C key

If you want to assign the note number is 045, then whilst pressing [C], press [10], [4], then [5] and release.

LED one is lit to show you to enter the 100s. Once you have done this, LED will light to show you to enter 10s. Then lastly LED3 will light to show you to enter 1s.

The same note assignment is used across all patterns.

## COPYING ENTIRE PATTERNS

---

It is possible to 'copy and paste' patterns.

Copying patterns is done in two halves.

If you are in Note mode, then copying pattern will only copy the Note data (and associated velocity, legato, etc).

If you are in Drum mode, then only the drum trigger data (and associated accent and flam) will be copied.

The reason for this is because you might create a common percussion pattern that you want to copy over to existing music patterns. It gives more versatility on transferring ideas.

So to copy an entire pattern, you must first copy the note data, and then do it again for the drum data.

### *Method;*

In Note or Drum edit mode, press the [PATTERN/SONG] select button to enter pattern select mode. The PATTERN/LED select button LED will light.

You will see that the top and bottom Octave LEDs will flash.

Press the [COPY] button to copy the currently selected pattern into the copy buffer.

Select the pattern memory location you want to copy to by first selecting a pattern bank by pressing a bank button (mini keyboard buttons C to E) then pressing one of the 16 step keys to select a pattern location.

Note; there is no need to select a pattern bank if the new pattern location is within the same bank.

Press the [PASTE] button to copy the copy buffer into the selected pattern memory location (like paste on a computer).

The pattern data (drum or note) is copied and will replace data in the destination pattern.

Note; be careful. With an form of copying in Europa, there is no undo feature!



# Europa User Manual

---

## SCRATCH PAD

---

If you wanted to try something out on a pattern, you could first copy the pattern into the copy buffer, try out your idea, and if it doesn't work out, you can then paste the pattern back into its original pattern. Not quite an undo feature but will allow you to revert a pattern back with some planning!

## CREATING MORE PATTERNS.

---

Once you have your first base pattern, this can be copied into other blank patterns to create variations.

Copy a base pattern into a blank pattern memory location, then edit this new pattern by adding variation or deleting notes or even entire drum instrument tracks.

Once a selection of patterns have been created (verse, end of verse, bridge, chorus, middle eight etc patterns) have been created these can then be chained and looped together in SONG mode.

## TRACK COPY

---

You can copy any track into another track. This way you can take a riff or musical line that you have created, paste it into another unused track. Then assign it to another MIDI channel to be played by another synth. The line could then be further edited to add some variation.

Note tracks can be copied, and in drum mode, drum tracks can be copied too.

Track copy works in a similar (if not identical) way to copying entire tracks. A track can be copied and then pasted into a different pattern.

## COPYING NOTE TRACKS

---

To copy a track in Note mode;

Press [TRACK] select. The LED will light. The top and bottom Octave LEDs will also light to highlight the Copy and Paste feature.

Using the sixteen step keys, select the track source (the one you want to copy). Press [COPY]. The track's data is copied into a copy buffer.

Then select the destination track. Press [PASTE]. The data in the buffer is copied into the new track.

# Europa User Manual

---

Press [TRACK] select to exit this mode.

---

## COPYING DRUM TRACKS

---

A similar method is used to copy drum tracks.

You must be in Drum mode.

Press [TRACK] select. The LED will light. The top and bottom Octave LEDs will also light to highlight the Copy and Paste feature.

Using the 12 mini-keyboard keys, select the drum instrument track source (the one you want to copy). Press [COPY]. The track's data is copied into a copy buffer.

Then select the destination track. Press [PASTE]. The data in the buffer is copied into the new track.

Press [TRACK] select to exit this mode.

---

## PATTERN LENGTH

---



**PATTERN  
SONG  
LENGTH**

Normally a pattern length would be 16 steps, to represent 16 16th notes, i.e. one bar.

The length can be changed to any number of 16th notes from one to 16.

First ensure the sequencer is not playing by pressing [RUN/STOP].

Secondly, the sequencer must be in either Drum or Note mode.

It does not matter which of these two edit modes the sequencer is in.

Select the pattern whose length you want to alter.

Press the [LENGTH] button (the button's LED will light).

# Europa User Manual

---

All the step LEDs from one to the current length will light up.

At this point you can exit pattern length edit by pressing the [LENGTH] button again.

Press the step LED corresponding to the last step for the pattern length you want. For example, if you want eight 16th notes to a bar, press the 8 button. All lit steps will play.

---

## PATTERN / TRACK CLEAR

---

You can clear the contents of patterns or just individual tracks.

Note: the note and drum sections of a pattern are separate. If you clear a note pattern, the corresponding drum pattern is retained in memory, and vice versa.

So to clear the whole pattern you must first clear the notes then clear the drums.

---

### CLEARING A NOTE PATTERN

---

Ensure sequencer is stopped.

When in Note mode, press [PATTERN] select. The PATTERN LED will light and so too the currently selected pattern's LED.

Press and hold [RESET]. All 16 step LEDs will flash (except the currently selected Pattern's LED which will stay solid). Whilst still pressing the [RESET] button press the step button for the pattern you wish to clear. That pattern will be cleared.

Release the [RESET] button.

The sequencer will exit Pattern select mode.

All note data will be cleared, but drum data is retained.

---

### CLEARING A NOTE TRACK

---

This works in much the same way as clearing a pattern. First enter [TRACK] select mode using the [TRACK] button. Then in the same way as above, press and hold [RESET] whilst selecting a track.

The track will be cleared.

# Europa User Manual

---

## CLEARING A DRUM PATTERN

---

This will clear all 12 drum tracks, and does not affect the Notes.

Ensure sequencer is stopped.

When in Drum edit mode, press [PATTERN/SONG] select. The PATTERN/SONG LED will.

Press and hold [RESET/CLEAR]. All 16 step key LEDs will flash.

Whilst still pressing the [RESET/CLEAR] button press the step key corresponding to the drum pattern you wish to clear.

Release the [RESET] button.

The sequencer will exit PATTERN/SONG select mode.

All 12 drum instrument tracks will be cleared leaving the 16 note tracks unaffected. (They must be cleared separately if desired in Note Edit mode).

## CLEARING A DRUM INSTRUMENT TRACK

---

Ensure sequencer is stopped.

When in Drum edit mode, press [TRACK/BAR] select. The TRACK/BAR LED will.

Press and hold [RESET/CLEAR]. All 12 drum instrument track LEDs will flash .

Whilst still pressing the [RESET/CLEAR] button press the drum instrument track button drum you wish to clear.

Release the [RESET] button.

The sequencer will exit TRACK/BAR select mode.

Note; there is no undo feature for any of the clearing functions.

## PATTERN SWING

---

Europa can swing the patterns (sometimes called shuffle or groove on other sequencers). There are many ways of implementing swing, and different machines swing in different ways!

The effect of swing is hard to explain. An audio demo is the best way to hear a demonstration (or see our YouTube demos). But best description I have is that swing sort of makes the sequence 'bounce'.

Like the rest of Europa's features, swing is very easy to implement.

# Europa User Manual

---

Swing is accessed by pressing [PATTERN LENGTH] when in Note or Drum mode and when the sequencer is stopped. It is in the same menu as for changing pattern length.

The swing amount for the pattern is set using the 12 mini-keyboard buttons.

The bottom key [C] is no swing, and the top key [B] is maximum swing.

Swing can individually be set and stored for each pattern. Swing affects all tracks within the pattern.

What swing does is slightly delay the even numbered 16<sup>th</sup> note beats in the pattern. That is step 2,4,6, etc will play a little later than normal.

Swing sounds awesome. If you don't understand the description, just use it and see how good it sounds.

*Below details how much swing can be applied;*

|    |                |
|----|----------------|
| B  | 97.5%          |
| A# | 95%            |
| A  | 90%            |
| G# | 85%            |
| G  | 80%            |
| F# | 75%            |
| F  | 70%            |
| E  | 65%            |
| D# | 60%            |
| D  | 55%            |
| C# | 52.5%          |
| C  | 50% (no swing) |

The larger the % the more swing. 97.5% is a crazy amount of swing!

Think of three 16<sup>th</sup> notes. 50% puts the middle note in the middle of the three. Increasing the percentage slowly moves the note right towards the 3<sup>rd</sup> note. (Zero % would place it over the 1<sup>st</sup> note, and 100% over the 3<sup>rd</sup> note). Don't worry about the percentages. Just use what sounds good. I like about 75% [F].

---

## PATTERN PLAY MODE

---

### DIRECT PATTERN SELECT

---

In pattern play mode, you can use the 16 step keys to change the next pattern. Press a new key and its LED will flash for the remainder of the bar. Once the bar has finished the new pattern will play.



When a pattern is playing in either Note or Drum mode, the [TRACK] MIDI and the [LENGTH] buttons have different functions.

[TRACK] MIDI becomes [MUTE]

[LENGTH] become [TRANSPOSE/OCTAVE SHIFT].

---

## MUTES

---

ARNING:  
MUTE



TRACK  
CHAN

It is possible to mute individual drum instrument and note tracks live whilst the sequencer is running. This allows you creative flexibility and the ability to do some live mixing.

The sequencer can be in any edit mode, just as long as [RUN/STOP] has been pressed to play the sequencer.

To enter Mute mode the sequencer must be running, so the [MIDI] buttons becomes [MUTE].

Press the [MUTE] button. The Mute LED will flash to indicate the sequencer is in Mute mode.

All 16 pattern tracks and 12 drum tracks' LEDs will show their Mute status.

Off means the track is not Muted.

On means the track is Muted.

Lit LEDs indicated Muted tracks.

The mini-keyboard buttons are used to mute drum tracks and the step keys to mute note tracks.

Pressing the associated button will mute that track. The LED for the track will go on to indicate the track has been muted. No more MIDI data for that track will be transmitted, except for the final Note off message which will be transmitted when that note's programmed length is over (i.e. the mute is initiated at the end of the note).

Pressing the button again will un-mute the track and the LED will turn off.

Exit Mute mode by pressing the MUTE button.

When a mute is applied to a track, the current note will finish playing.

---

## PATTERN PLAY MODE

---

The same mutes settings are applied to which ever pattern is playing. If you change patterns the same mute settings apply.

Mutes are stored in non-volatile memory so will be retained when powering off.

## SONG MODE

---

Each bar in a Song has its own mute memories. Each bar can have different tracks muted, even if the same pattern is used on separate bars. This means you can build up a varying song, changing the layers of music using just one pattern programmed across many bars, each with different mute settings.

## TRANSCOPE OCTAVE SHIFT MODE

---

WHEN SEQ R  
OCT' SHIFT



PATTERN  
SONG  
LENGTH

## OCTAVE SHIFT

---

It is possible to shift the note value of any group of pattern tracks up and down a number of octaves. This allows even more creative freedom.

The sequencer can be in any mode, just as long as START has been pressed to play the sequencer. The [LENGTH] button becomes [OCTAVE SHIFT] when the sequencer is running.

To enter Octave Shift mode ensure the sequencer is running. Then press the [OCTAVE SHIFT] button. The button's LED will flash to indicate the sequencer is in Octave Shift mode.

Next select the pattern tracks that you want to shift using the 16 step keys. Note; you cannot shift drum tracks!

Only tracks whose LED is lit will be shifted.

Then finally, use the Octave [+] and [-] keys to shift the selected tracks up and down by whole octaves.



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---

The tracks will be transposed after the current bar/pattern has finished playing, that is from the start of the next bar/pattern.

You can de-select tracks to un-shift them by pressing the appropriate step key. They will then play at their programmed note values at the start of the next bar/pattern.

Exit Octave Shift mode by pressing the [OCTAVE SHIFT] button.

To cancel any shifts, you must re-enter Octave Shift mode and de-select the pattern tracks.

Note: Octave shifts are applied globally across all pattern tracks and will be applied to all patterns within a song.

## Chords

If you have chords programmed across a few tracks, octave shifting one or more of the notes will create interesting chord inversions!

---

## TRANSCOPE

---

It is possible to shift the pitch of the ENTIRE track (but not the drum note values!) up by 1-11 semitones. (You can go down in semi-tones by also using octave shift).

To do this enter Octave Shift mode as outlined above, since Transpose and Octave Shift are contain within the same 'menu'.

Press the twelve keyboard keys to select how many semitones to shift the whole pattern to. To cancel (no shift) press [C].

This feature is incredible, for creating movement on the fly by manually transposing a single pattern.

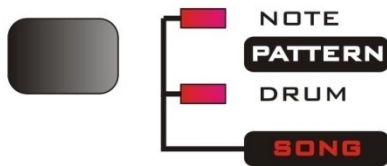
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## SONG MODE

---

Once you have created some patterns it's time to chain them together to make a song.

## MODE



Press the [MODE] button until both LEDs next to it are lit. This will put you in Song mode. Note: sequencer must be stopped to enter Song Mode. Once in Song Mode, the sequencer can be running.

Each of the 16 step keys represents 16 bars of music starting from the left. Patterns need to be assigned to each of those bars.

---

## SELECTING A SONG

---

Press [SONG] select button. Its LED will light. Then press one of the sixteen step buttons to select one of sixteen songs.

---

## PLAY MODE

---

Using the [EDIT] button ensure Europa is in song play mode (edit LEDs off).

---

## CHANGING ACTIVE BAR

---

Press the [BAR] select button. Its LED will light.

The currently select bar will be lit on one of the step keys.

Also you will see the 12 vertical LEDs light to show how many loops have been set to that bar.

Press one of the sixteen step buttons to select a different song bar.



# Europa User Manual

---

You can then either exit bar select mode by pressing [BAR] button a second time or by selecting a new (or the same) bar by pressing a step key.

## WRITING A SONG

---

There are 16 Songs and each can have a chain of up to 16 bars of patterns. Each bar can be looped up to 12 times.

### SELECT A SONG

---

First you need to select a song where you want your patterns to be chained. This is done in an identical way to selecting patterns (in Note/Drum modes).

Press [SONG SELECT]. The LED will light.

The LED will light to indicate the currently selected song. At this point song select mode can be exited by pressing [SONG SELECT] again.

To change the song number press one of the 16 step keys to select a song.

Song select mode will exit.

### SETTING A PATTERN TO A BAR

---

Press the [EDIT] button to light the PATT# LED (pattern number).

Now pressing any of the sixteen step buttons will change the pattern assigned to the currently selected bar.

You can also change the pattern bank by first pressing keys C to E to select bank 1 to 5, then pressing a step key to select the pattern within the bank.

To change the bar use the [BAR] select button, then pressing one of the 16 step buttons, as detailed a little earlier. Then a different pattern can be assigned to this new bar.

Note; you could assign the same pattern to multiple bars, but vary the song by applying different mute settings to each bar.

### LOOPING INDIVIDUAL BARS

---

Press the [EDIT] button to light the BAR LOOP LED.

# Europa User Manual

---

Each bar (pattern) can be repeated up to 12 times before the sequencer advances and plays the next bar.

The loop amount for the currently selected bar can be set by using the keyboard buttons. The LEDs will light up like a vertical bargraph to show the loop amount. Each bar can be looped up to twelve times.

When the sequencer is running you will see these LEDs count down to the bottom as each loop is made. Once the last is played the sequencer will advance to the next bar.

To change the bar you are working on just press the appropriate step key to select a new bar. There is no need to use [BAR SELECT] when in loop edit mode, just press the step keys directly.

Note: The 3<sup>rd</sup> edit LED is not used (there are only two edit modes for Songs).

---

## MANUALLY JUMPING/SKIPPING BARS – FILL IN MODE

---

When the sequencer is in Play mode (all edit LEDs off) you can use the step buttons to jump to any bar in the Song.

If the sequencer is not running, you can select a new bar by pressing the step keys and it will change instantly to the new bar. The Bar Loops LEDs will light to show how many loops have been set.

If the sequencer is running, the new bar (the fill-in pattern) will commence once the current bar has finished.

The new bar selected will play for as many loops as has been set for it, then the sequencer will jump back to the start (or stop if Whole Song Loop is disabled).

You can select another bar (fill-in pattern) to play after the current fill-in pattern has finished.

If no new bar is selected then after completing all loops the sequencer will return to bar one.

Even though you may have a programmed song structure, you can jump to any bar at any time to rearrange the performance 'live'.

Also, this feature allows you to program fill-in bars on any (possibly) unused bars that are outside the programmed song length. They can manually be selected when the mood takes you. When selecting a bar outside the Song's length, that bar will play for as many loops as it has set, then jump back to the start of the song. Note; song will then stop unless Whole Song Loop is on.

---

## SONG LENGTH

---



## PATTERN SONG LENGTH

The length of the Song in numbers of Bars can be changed. The method is the same in principle as changing pattern length.

It is done in an identical way to setting pattern length, except you must be in Song edit mode.

Instead of each LED representing number of 16ths, they will represent number of bars.

First ensure the sequencer is not playing by pressing [RUN/STOP].

Secondly, the sequencer must be in Song mode.

Select the Song whose length you want to alter.

Press the [LENGTH] button.

All the step LEDs from one to the current length will light up.

At this point you can exit song length edit by pressing the [LENGTH] button again.

Press the step LED corresponding to the song length you want. For example, if you want eight bars to a song, press the 8 button.

---

## WHOLE SONG LOOP ON/OFF

---

Once the whole song has played you can have the sequencer stop, or the song loop from the beginning.

To turn song loop on/off, press the [LENGTH] button. Press the step button corresponding to the last bar of the song. If the LED is solid (not flashing) then the song will not loop when it reaches this last bar, but stop at the end of the bar.

If you press the last bar step button a 2<sup>nd</sup> time it will flash. This indicates that the song will loop back to the beginning after the last bar has finished.

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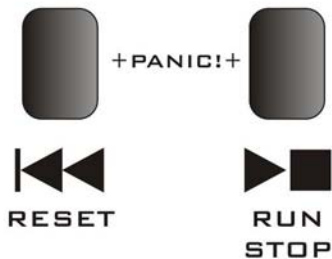
## CHANGING SONGS WHILST RUNNING

---

When playing a song, you can actually change songs whilst the sequencer is running using the [SONG SELECT] button.

## MIDI PANIC

---



If for any reason you get hanging notes a MIDI panic (all notes off) feature has been included. Simply press [RESET] and [START] at the same time. All the LEDs will flash in a crazy way to confirm!

When Panic is activated the sequencer will output an All Notes Off command on all sixteen MIDI channels.

Though the lights will flash as long as you hold them down (pretty aren't they?) you only need to hold for less than about half a second.

## MEMORY

---

All data is stored in non-volatile memory. Memory is retained even when the power is off. There are no internal batteries to worry about.

There are no write or read functions. All data can be edited in real time allowing maximum flexibility for live performances.

Any changes to data are only stored when a pattern is changed or [RUN/STOP] is cycled. If you change data then straight away switch the unit off, those changes will be lost. If you make changes, just toggle [RUN/STOP].

## INITIALISE

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# Europa User Manual

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It is possible to erase all Song, Note, Drum, Setting, etc, data. To do this Press and hold [OCT+], [OCT-] and [RESET] whilst turning on the power.

All memory will be cleared. There is no undo feature.

## MIDI SYSEX DUMP

---

It is possible to dump the entire memory, via MIDI SySex, to a computer, or to receive a dump.

Load up your PC Sysex software. Connect both MIDI In and Out from Europa to your Computers.

### SYSEX TRANSMIT

---

First ensure your computer is ready to receive SySex data.

To transmit Europa's memory to your computer, power it up whilst holding [RUN/STOP]. Europa will send the data out. The 16 step LEDs act as a progress bar. When all LEDs are out the dump is complete and Europa will return to normal mode.

### SYSEX RECEIVE

---

To receive a dump get your computer ready to send.

Power up Europa whilst holding [RESET].

The 12 mini-keyboard LEDs will light.

Then press send on your computer. Europa will first check that the data is Europa SySex data. If it is it will receive the data and overwrite the existing data in the memory. Half of the 12 mini-keyboard LEDs will go out to indicate the SySex header is correct.

If the SySex data is not Europa data, it will exit SySex receive mode.

The 16 step LEDs act as a progress bar. When all LEDs are out the dump is complete and Europa will return to normal mode.

If takes about one minute to perform either task.

There is no 'undo' feature. When receiving a MIDI SySex dump, all previous data is over written. I have only tested this feature on Elektron's C6 SySex application and MIDI-OX Both running on Windows Vista, running through a M-Audio 1x1 MIDI sport interface. Incidentally it didn't work with my Edirol UM1 interface, but that could be more a Vista problem. Also has been tested on a Mac running C6.

# Europa User Manual

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(Download from [www.elektron.se](http://www.elektron.se) – it's in the Support section, or do a search for MIDI-OX. Both are freeware I believe).

You might want to do a test dump with your own choice of software early on to check compatibility.

---

## REAR PANEL

---

### MIDI SOCKETS

---

#### <MIDI OUT>

This outputs the sequencer MIDI data

#### <MIDI IN>

This receives MIDI SySex data dumps

#### <MIDI THRU>

This outputs a copy of the MIDI data coming into the MIDI In socket

---

### ANALOGUE TRIGGER OUTS

---

There are seven rear panel trigger outs. These put out a positive 8v trigger pulse.

They are assigned to drum instruments C, B, D, E, F, G, A and B (white keys). If a drum trigger is programmed on any of those drum instrument tracks (in drum edit mode) then a trigger will be sent.

For the white keys, a MIDI note and an analogue trigger are always both transmitted.

These are ideal for triggering external analogue drum modules, envelopes, sequencers, etc.

---

### POWER SOCKET

---

DC 12V/1A



Plug the power adaptor into here. Only use the one supplied with the sequencer, 1A 12V DC, with positive in the centre of the plug.



## CLOCK SYNC JACKS

---

SYNC OUT  
**CLOCK**

### <SYNC OUT>

When the sequencer is playing, 5v 16th note clock pulses are sent out this jack. This is ideal for sync'ing external analogue sequencers to the Europa sequencer. An ideal partner would be the Oberkorn step sequencer.



### <EXT1> Clock In

Feed an analogue 5v clock into here. Can be routed to act as a master clock using the {SYNC} Rotary switch.

### <EXT2> Clock In

Feed an analogue 5v clock into here. Can be routed to act as a master clock using the {SYNC} Rotary switch.

### <OUT>

This is a constant clock output direct from the internal analogue clock signal (basically an LFO square wave). This is constant, so it still operates even when the sequencer is stopped, or an alternative master clock signal is used.

Can even be used as an LFO to modulate one of your synthesizer modules!

Note: in the world of analogue synths and modulators there is no true standard for triggers and clock signals. Though we are confident Europa will interface both ways with synth modules that send/receive clocks and triggers, we cannot guarantee that all will work! This would not be a fault of Europa, but a consequence of non-uniformity between manufacturers.

## SOME SPECIAL USES

---

Of course the main use is to play your MIDI synths and drums, but it has built in analogue connectivity so you can connect to your modular synths and analogue sequencers!

Experiment with the clock and trigger outs, finding new ways to use Europa to trigger your modular synth's modules and sequencers in unusual ways.

## TWO ANALOGUE SEQUENCERS

---

We make a small 8 step analogue sequencer module called the SQ8. Let's say you have 2 and you want them to play alternately so you can create a 16 step sequencer (which you could do anyway with our Oberkorn!)

Let's call them SQ8 A and B.

You can create two streams of clock signals using two drum tracks. A sequence of eight notes on one track and eight notes on the other. Send the associated trigger output from the Europa to SQ8 A, and the other trigger to SQ8 B.

By playing the 2 drum tracks alternately (using the same or different patterns, song mode, mutes or whatever you choose) you can control which sequencer is triggered.

They do not have to be played alternately. You could create fill-ins with SQ8 B. You could merge their steps together. In fact, play any way you want just by programming the write triggers using the drum sequencer.

### **Analogue Sequencer Reset**

Use another trigger to reset the Oberkorn or SQ8 (using their reset input). This makes it all even more interesting!





---

## SPECIFICATIONS

---

*Power*

Current consumption

<1A

*Voltage*

12V DC

*Power plug*

2.1mm

*Weight (mass)*

1.8Kg

*Size*

195x80x365 (DxHxW)

Packaging weight and size

*LEDs*

44

*Push buttons*

38

*Rotary Switches*

1

*Rotary Potentiometer*

1

*Jack sockets*

11 x 6.35mm mono

*MIDI sockets*

3

*Power Sockets*

1

*Pattern Memories*

# Europa User Manual

---

5 banks each with 16 patterns (80 patterns total). Stored in non-volatile memory.

## *Song Memories*

16 Songs each with 16 bars long (each bar can be looped up to 12 times). Stored in non-volatile memory.

## *Memory Life*

All computer memory has expected maximum life time (write cycles). Estimated heavy use of the unit is 10hrs per day, 5days per week. In this case the non-volatile memory's life is ~10years. Regardless, the memory chip is easy to replace.

## *Analogue Trigger Outs*

8V positive trigger pulse.

36mS long.

## *Analogue Clock / Sync Out*

5V. 4ppqn.

## *Analogue Clock Inputs*

5V

## *Internal Tempo Clock*

555 timer / analogue clock

## *MIDI*

Each Note track can be assigned to any MIDI channel.

Drum track pre-assigned to channel 10,



## MIDI DETAILS

---

### MIDI DRUM NOTE ASSIGNMENT

---

---

MIDI drum notes are pre-assigned to the following note numbers as standard, but can be changed by the user. User changes are stored. Note numbers are global and affect all patterns.

(note; the note name on the left refers to the sequencer key number and is not related to the MIDI note that is transmitted).

| Track | MIDI Note transmitted |
|-------|-----------------------|
| C     | 35                    |
| C#    | 38                    |
| D     | 45                    |
| D#    | 47                    |
| E     | 50                    |
| F     | 37                    |
| F#    | 39                    |
| G     | 56                    |
| G#    | 49                    |
| A     | 46                    |
| A#    | 42                    |
| B     | 32                    |

### DRUM ACCENT LEVELS

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When drum accents are programmed, the note velocity transmitted is 127.

Non-accented note velocities are transmitted as 100.

### NOTE VELOCITY

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## Europa User Manual

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The 12 velocity levels (as indicate by the 12 vertical mini-keyboard LEDs) available in note edit mode are;

10, 20, 30, 40, 50, 60, 70, 80, 90, 100, 110, 127

---

**C**