# USER MANUAL

# 34ONE II

MIDI CLOCK
TAP ON
TEMPO PEDAL


**We thank you for ordering 34onell and hope you are happy with this innovative product. Please read the following instructions attentively to know how the device functions. 34onell is a musical instrument, which requires practice. With this instrument, you will be able to create great sounds.**

## Getting started

As soon as you tap the foot switch, 34onell is activated and awaits another tap for 2 seconds. During this time, the LED flashes. **Right after the second "tap", 34onell starts transmitting a so called "MIDI Clock" signal.** This information synchronizes your synthesizer, sequencer or computer software to the tempo. The 34onell calculates the tempo with the time between the two taps on the pedal and bases the calculation on a quarter note. Example: was there 1 second between the two taps, this would equal 60bpm: 60 beats per minute. Half a second means 120bpm, 2 seconds 30bpm....

In case the foot pedal has only been tapped once, the LED will blink red after the 2 seconds waiting time is past. A battery test will follow and the 34onell is turned off automatically. The device can be started again at any time.

**Data on MIDI In** is merged with the 34onell generated data and send via the MIDI Out cable. For using MIDI In you need the supplied mini-DIN to DIN adapter. "MIDI clock" messages on MIDI in are always filtered since 34onell generates another MIDI clock signal.

**MIDI Clock is a so called real-time message, which is sent 24 times per quarter note. (MIDI Time Code has to do with time information and has nothing to do with MIDI Clock).**

**The instructions of your keyboard or sequencer will explain the use of MIDI Clock for synchronization with your device.**

**The MIDI In** can also be used to update or change 34onell's firmware. We will supply MIDI sys-ex files on our website that e.g. are capable of turning the box into a MIDI sustain pedal.

# Turning off

**To turn 34onell off, press the foot pedal down for at least one second.**

While the 34onell is turning off, a battery test will take place: when the LED shines green the battery is OK, when the LED is red, this means that the battery is losing its charge. When you release the foot pedal the battery test is complete and 34onell is turned off and ready to be started again.

Usually, there will be a few hours of operating time left after the red light first appears during the battery test. A standard 9V block battery (type: Alkaline) should give you a running time from over 90 hours. When turned off, 34onell does not use any energy.

In case 34onell is not touched for more than 2 hours and 30 minutes, it will be turned off automatically. This feature prevents the battery from discharging after forgetting to turn off 34onell.

# Turning on and starting

Tap the pedal on the "3" and the "4" (4/4 time). 34onell now transmits a continuous MIDI Clock signal and on the following "1" a "MIDI Start" command is also transmitted. This will start a connected sequencer. Ac-cordingly, the 34onell will transmit a "MIDI Stop" when you turn it off.
An arpeggiator ignores such commands and will start the first time you use the keyboard-keys. In this case, you do not necessarily have to wait for the "1".

The LED assumes a 4/4 time and signals the "1" with red, and the "2" "3" and"4" with blue lights. However, the 34onell may also be used for any other times (e.g. 3/4).

# Tap-on function

While 34onell is running you can keep tapping at any time. This tapping influences the tempo and phase.

**The 34onell calculates the tempo with the average values of the last four time measurements.**

After each time 34onell is turned on, all four measuring values are initialized on the first time measurement. New values will only be accepted when they are at least half of the actual tempo. Therefore, for larger tempo changes you should change the tempo in small steps.

**For four new measurements you will have to tap five times: e.g. "1" - measurement - "2" - measurement - "3" - measurement - "4" - measurement - "1"**

**Each tap has an influence on the phase and shifts the rhythm in the direction of the next quarter note.** (To the next "2" or "4" in the "24onell mode", see below.)

The most exact tempo is not useful, when the music is completely out of time. This is why the 34onell uses a sophisticated algorithm, which will slightly increase or decrease the tempo in short time, to get constantly closer to the time you are tapping.

To keep the influence of inaccurate taps small, the average values are constantly calculated. This means that with an increasing amount of taps the influence on the phase is larger. When you stop tapping, the phase shift ceases. However, single taps still have a certain influence.

**Keep in mind that 34onell is an instrument and exact tapping has to be learned in the same way as time-correct playing of other instruments.**

## 24onell Mode

High exactness in taps for higher tempi are offered by the 24onell mode, which can be activated via a small switch at the back of the device. **In this mode only half notes are tapped,** which means that in the begin-ning you **tap on the "2" and the "4"** (instead "3" and "4"), and on the "1" it starts as usual.

For the tap on (see before) you can only tap the "2" and "4" during the time. Tapping "1" and "3" creates a huge chaotic phase shifting, since the 34onell will try to get to the next "2" or "4". The "24" mode is, therefore, only useful for straight time (2/4, 4/4, 6/8....).

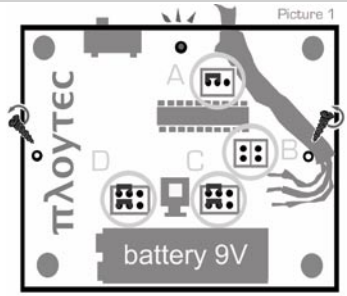
## Battery change

To change the battery you have to unfasten the two screws on the back and carefully open the 34onell. Exchange the discharged battery with a new 9V Alkaline block battery. Be careful with the polarity of the battery clip.

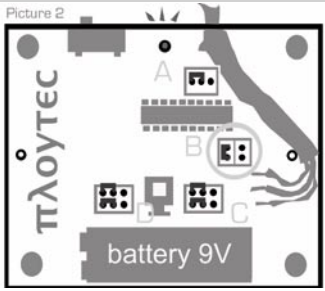
Be careful not to get cables stuck when closing the device again, especially the knob must not be covered with the cables. The LED of the upper device part shows to the back, where the lower part has the 24onell switch and the gap for the cable.
(You might want to ask a technical skilled friend for assistance.)

You should only use brandname batteries and dispose of old batteries accordingly.

## Options

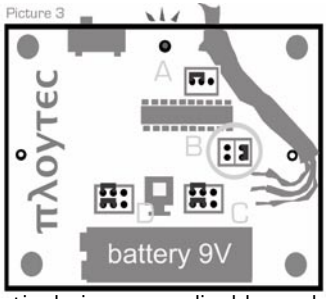



There's a number of jumpers on the board allowing different options.



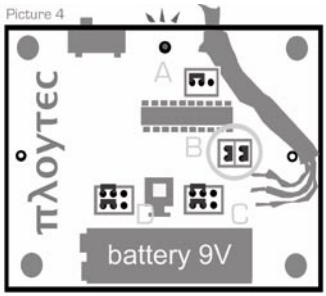

Vertical jumper, disables using the average values of the last four time measurements on calculation (page before)

Picture 3



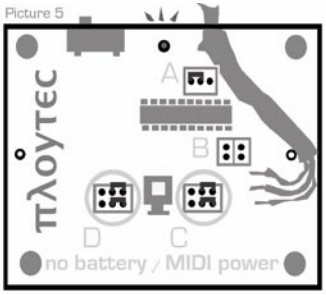

Vertical jumper, disables phase shifting (page before), e.g. if you use an arpeggiator and trigger sequences by pressing keys at "1"

Picture 4



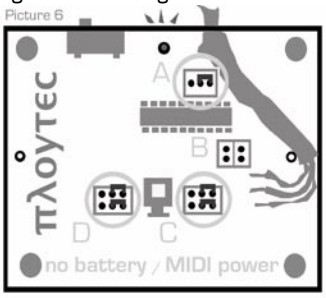

If both are set there's no more "tap on": First tap stops the unit and starts a new measurement, second tap gets it running

Picture 5




For running the unit on MIDI power all four horizontal jumpers must be changed. Now the unit is powered from MIDI In.

Picture 6




If you just want the MIDI power without seeing the data MIDI merged disable the MIDI input by setting the horizontal jumper A

# Technical Data

**MIDI implementation:**

- Control Change Channel1, Controller 90, Value 127 for turning on[1]
- MIDI Clock from second tap on the foot switch
- MIDI Start on the first "1" (after 24clocks) MIDI Stop when turning off
- Control Change Channel1, Controller 90, Value 0 when turning off [1]

([1] enables turning on and off of an arpeggiator)

**Performance data:**

- Tempo range: 30 – 300 bpm
- CPU: Atmel® RISC Microcontroller
- Calculation exactness: 24bit intern
- Battery operating time: > 90 hours with Alkaline 9V Blocks

34onell can be powered using an external power supply unit, 7V-12V DC, polarity doesn't matter.

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