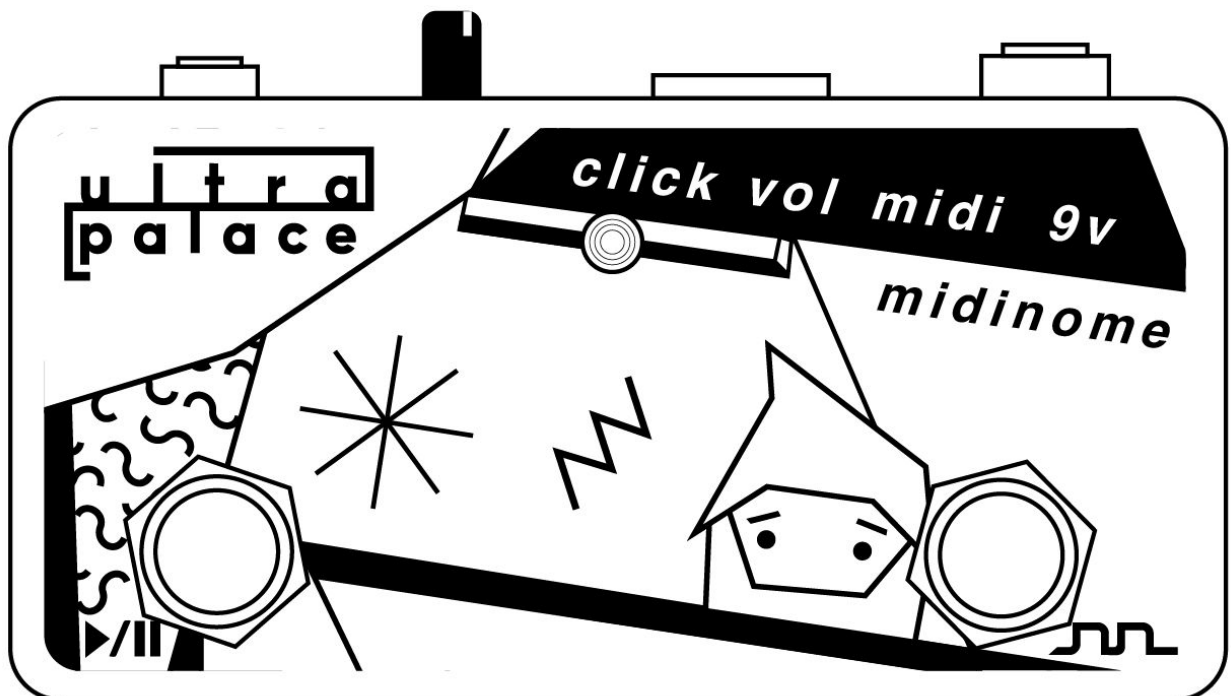# ULTRA PALACE

MIDINOME

A Tap-Tempo Metronome, Master Midi Clock, and CV Clock

Thank you for purchasing the Midinome!

This project started in August 2017, as a utility pedal for loopers and samplers. We wanted a way to synchronize via midi while simultaneously sending an analog audio "metronome" to the performer. This allowed us to enable perfectly aligned layers of sounds, expanding our creative potential and fostering collaboration amongst humans and machines.

Introduction

MIDINOME keeps you and your devices synchronized by generating both a MIDI signal, and an audio click, while keeping both signals perfectly in sync. Midinome can start or stop a MIDI sequence as well as change the tempo by tapping, all while occupying the least amount of real-estate in your pedalboard and keeping functions simple.

Midinome is universal and works with any device with a MIDI Input or CV Input.

Updated Features of Version 3.0 (April 2020)
- Added a hidden menu which allows changing of CV divider, click tone, and default tempo.
- Added a multi-colour LED to represent different functions Midinome is performing.

- Custom tempo can now be saved by pressing and holding the tap tempo button for 5 seconds during operation.
- Re-designed clock circuit which now provides 0.07% stability - eliminating drift in long sessions.
- Firmware upgradable/customizable with Arduino

Inputs, Outputs, & Controls
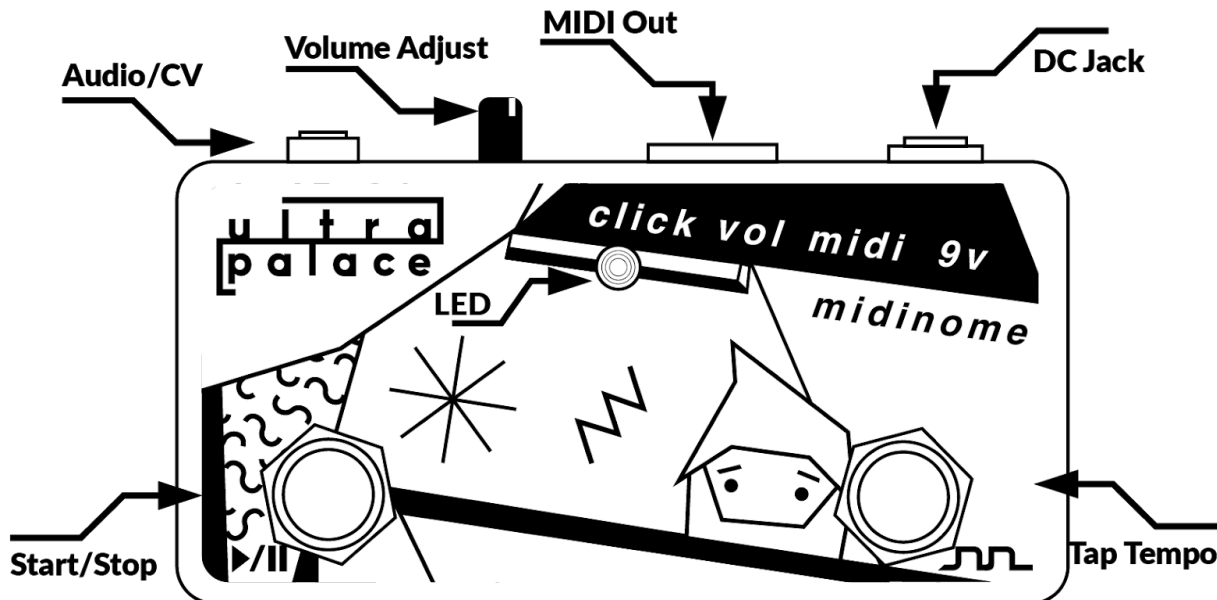
Start/Stop

The Midinome is always either **Active(Green)** or **Halted(Red)**, the *Start/Stop* footswitch alternates between these two modes.
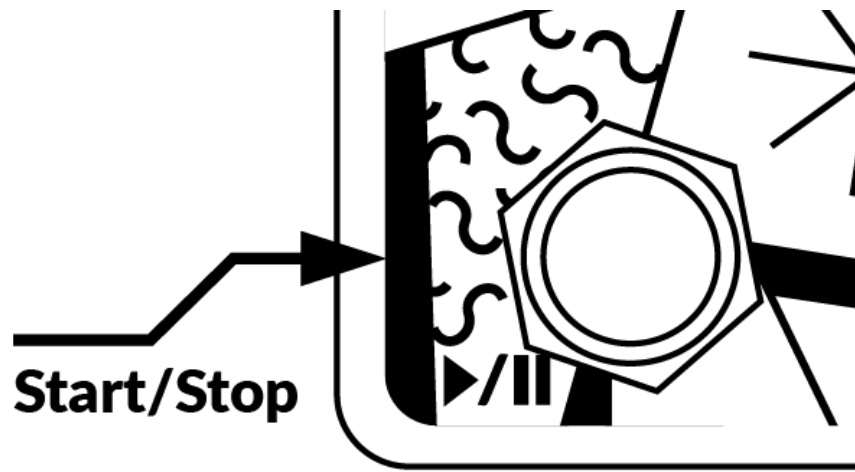
The *Start/Stop* button starts and stops both the MIDI signal, and Audio Click or CV Clock.

When the MIDI clock is started it begins operation at 120 BPM or at the user defined BPM preset.

When the MIDI Clock is stopped, the Audio Click or CV Clock is halted immediately and a red light will come on.

When the Midi Clock is started or stopped it sends a standard MIDI Start Command (0xFA) or Stop Command (0xFC).

If MIDINOME is **Halted (Red),** and the *Start/Stop* button is pressed, it will start both the MIDI Clock and the Audio Click. If the MIDINOME is **Active (Green),** and the *Start/Stop* button is pressed, the MIDINOME will immediately stop both the MIDI Clock and the Audio Click or CV Clock.

Tap Tempo
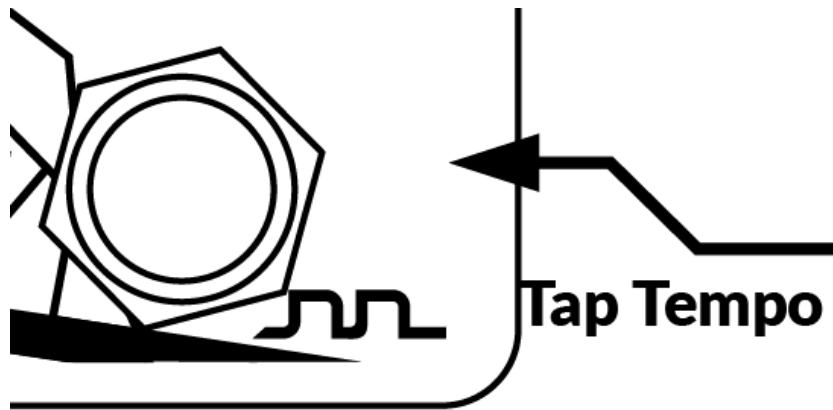
Tapping the Tap Tempo button will adjust the tempo. The flashing of the LED will change, and you will hear the difference in the tempo. Tap faster for *allegro* and tap slower for *largo*.

The limits for tempo are extremely broad and limited only by how fast or how slow you can physically tap the tempo.

Saving a custom tempo

You can save a custom preset by holding the tap tempo button for 5 seconds. The light will turn from Green to white, indicating you have saved the current tempo. This will now be the current default tempo, and will be active when power is removed and reapplied.

Wait a few seconds after you last pressed the Tap Tempo button, or Midinome might think you mean to tap a tempo in.

LED

The LED will flash while the MIDINOME is **Active**, it will flash in sync with the MIDI signal and the audio click or CV clock.

When power is first applied to the MIDINOME the LED will light to indicate it is ready.

LED indicators
- Red LED(Blinking): Midinome is going through it's boot sequence, please stand by while it completes (3 Seconds)
- Red LED(Steady): Midinome is Halted and waiting
- Green LED(Blinking): The Midinome has now started and it is displaying the tempo

Audio Click/CV Output
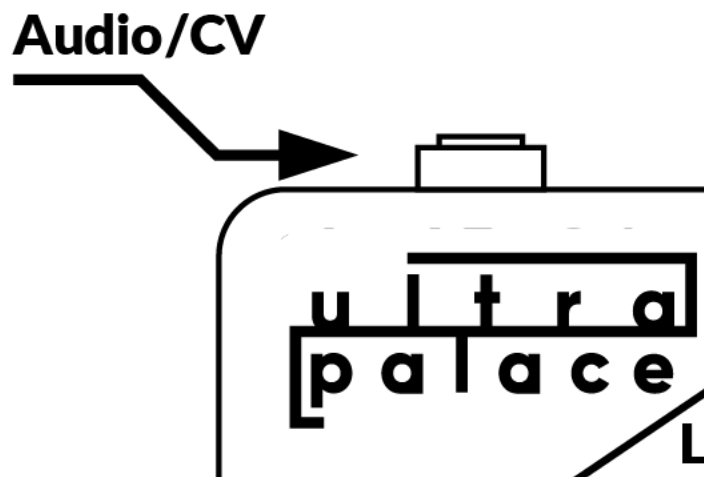
Audio/CV

This 3.5 mm stereo or mono output carries the Audio Click or CV Clock, perfect for headphones or Eurorack patch cables. This output is powerful enough to drive headphones, and the volume control can be used to adjust for line level, suitable for mixers, audio interfaces, or other line level equipment.

The Audio Click is a synthesized and filtered square wave providing a classic metronome "*click*" sound. Pitched at roughly B_4.

The CV Signal swings from 0 to 5 volts and is compatible with most modular and vintage synthesizers or drum machines. For equipment that requires a higher trigger voltage a gate booster might need to be used. For Moog and some Arp equipment, a V-trig to S- trig adapter will be required.

The Midinome has now 9 click tone presets that can be selected from the menu.
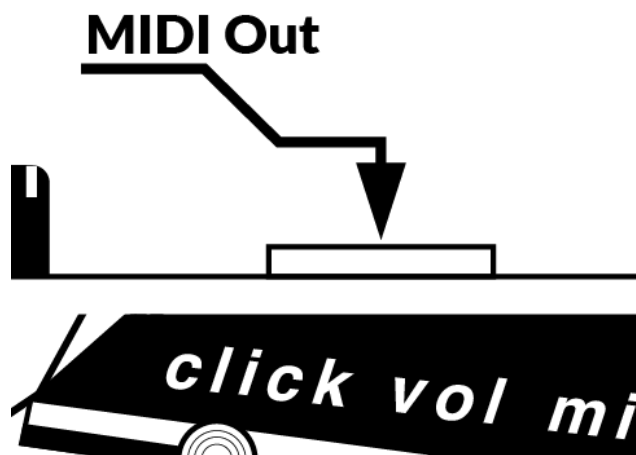
Volume Knob
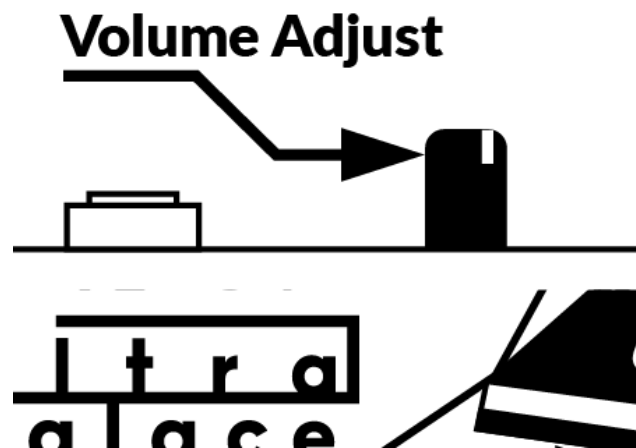
Volume Adjust

Adjust the volume of the Audio Click. Rotate clockwise for louder and counter-clockwise for quieter or silent.

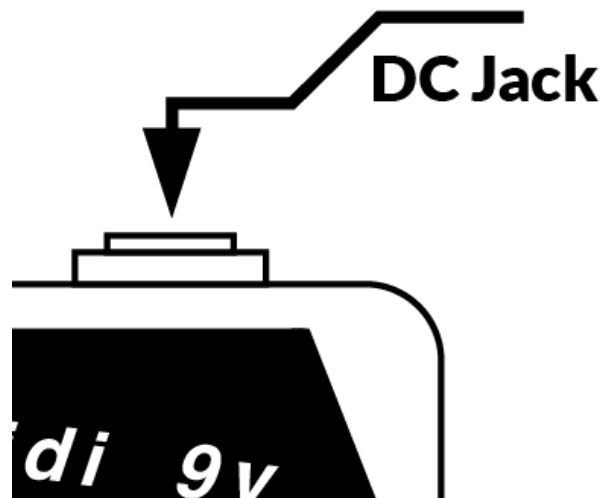When the MIDINOME is in **CV Mode**, the volume knob has no function.

MIDI OUT

MIDI Out

This is the MIDI OUT, to be connected to the MIDI IN on another device. This will send MIDI clock and MIDI commands. MIDI THRU and MIDI OUT can be used on the other device to daisy chain this signal. MIDI splitters and converters can also be used.

DC POWER

Midinome takes a standard 2.1 mm power jack, 9VDC. As is common with guitar pedals, it is **centre negative** to fit easily on your pedalboard. Midinome is reverse polarity protected, so no worries if the wrong type of adapter gets plugged in.

How to operate the MIDINOME

Connect your headphones and MIDI cable. The MIDI cable should run from the Midinome, to the MIDI IN of the device receiving MIDI signal.

Next, connect the power. The LED will flash red for about 3-5 seconds after that the LED will stay lit indicating that the Midinome is ready to go.

Press the *Start/Stop* footswitch, you should see the LED light flashing, indicating that there is both a MIDI Clock and an Audio Click or CV Clock being sent. The default metronome tempo is 120 BPM, and will reset to this tempo when the Midinome is powered down (unless you have saved a different tempo in the menu or during operation). Adjust the metronome volume to desired amount. You're all set!

Adjusting the tempo is as easy as tapping the beat you're thinking of, Midinome will adjust immediately. (Takes two presses minimum). Press Start/Stop to immediately issue a MIDI 'Stop' command, and stop both the MIDI Clock, and the Audio Click or CV Clock.

Press Start/Stop again to resume.

That is all you need to know about basic operation of Midinome!

CV Mode

Midinome has a small built in switch that will toggle the device between **Audio Click Mode**, and **CV Clock Mode**. The **Audio Click Mode** is intended to be a metronome, and **CV Clock Mode** is intended to trigger a synthesiser or drum machine, or to synchronize other electronic devices which accept this standard. To toggle between modes, first power off the MIDINOME and remove all cables, turn the MIDINOME on it's back and remove the 4 screws. The switch is located in the middle of the board, and can be toggled by hand.

Settings Menu

To enter the settings menu, unplug the power to the Midinome, press & hold both the **Start/Stop & Tap Tempo** buttons and plug in DC power again.

Midinome will flash purple, indicating you are in the programmable Menu.

There are 3 options you can change (in order)

CV Divider - Purple LED
Click Tone - Yellow LED
Default Tempo - Blue LED

Press the Tap Tempo to rotate between the menu options. Press the Start Stop to change the current option.

And once you are happy with the current changes, press and hold Tap Tempo and press and hold Start/Stop to Save changes and go into regular Midinome operation.

CV Divider (Purple LED)

You can change the clock division that gets sent out via CV, The purple light will flash accordingly to the subdivision, options are: 1:4, 1:2 , 1:1, and 2:1. 1:1 is the default

Click Tone (Yellow LED

There are 9 presets. Press Start/Stop to rotate between options, the first 4 are clicks, and the remaining 5 presets are tones which are great for cutting through a mix or a very loud environment.

Default Tempo (Blue LED)

There are 5 options to choose from. 80 Bpm, 100 Bpm, 120 Bpm, 140 Bpm and Custom tempo Preset (white LED). The custom tempo is set during operation by holding the Tap Tempo button. It is saved in one slot in the *Default Tempo* menu, and can be recalled later.

Tips and Tricks

It is recommended to press **STOP** *then* **TAP** a new tempo *then* press **START,** each time you want to change the tempo. This might intuitively be the first thing to do for most people since it's a lot easier to count in your head when you aren't hearing a different beat.

Some receiving devices only count the first two clock pulses and will get confused, or simply ignore a new tempo, when the tempo is changed mid-operation, without first stopping and starting the device (ie. Boomerang Rang Phrase Sampler III). Other devices will speed up or slow down the loops as you change the tempo (ie. Boss RC50).

Using an extension cord for your headphones is a great idea!

If you want to send the Audio Click to more people and synchronize your loops live, we recommend using a splitter, headphone amp, or mixer.

Firmware Updates

Firmware updates will be announced on the Ultra Palace facebook page, or ultrapalace.com.

Compatibility

This is a list of devices which we've tested with the MIDINOME for MIDI or CV. Normally MIDI is universal and you shouldn't have any problems with any device, as long as it's configured to receive a MIDI Clock.

Confirmed compatible MIDI devices:

Boomerang Rang Phrase Sampler III
Boss RC50
Arturia Minibrute
Arturia Keystep
Arturia Beatstep Pro
Dave Smith Poly Evolver
Dave Smith OB-6
Korg Volca Series
Alesis SR16 & 18

Confirmed compatible CV devices:

Mutable Instruments Modules (Trigger Inputs)
Ornament and Crime
Temps Utile
4MS Spectral Multiband Filter
Arturia Keystep (Clock input)
Korg Volca Series (Sync In)

Technical Specifications

Default BPM: 120
Maximum BPM: 300 BPM
Minimum BPM: 20 BPM
CV Output voltage: 0 ~ 5 Volts
Audio Output: 9 Vp-p
Output Impedance [Audio]: 68 Ω
Output Impedance [CV]: 1 kΩ
Current Consumption: 20mA Max

Power Supply type: 2.1 mm DC barrel jack centre negative
Maximum Power supply voltage: 22 VDC
Minimum Power supply voltage: 6.7 VDC
Recommended Power supply voltage: 9-12 VDC

SAFETY GUIDELINES

This pedal can be used with a 9v DC power
adaptor dedicated for use with guitar effects (Boss style). It uses
a centre negative polarity 2.1mm socket, standard to 9v guitar pedals.
If any problems occur, stop using the pedal and
contact us for advice on how to proceed.

We love feedback, and would be happy to hear from you! We are also open to suggestions for upcoming versions or firmware revisions.

Contact

info@ultrapalace.com

This manual printed on residue waste from sugar cane processing.