.:.:DOMINO.:::

Rules of the game

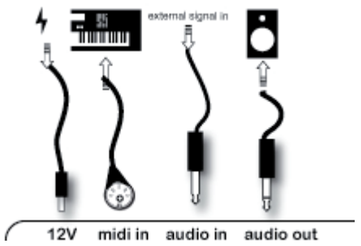
by eowave

What is Eowave Domino?

Eowave Domino is a discrete analogue synthesizer with a **VCO in the tradition of MS20 and TB303**. VCO, filter & VCA are transistor made. Filter is a **24dB resonant filter.**
Its transistor architecture gives the Domino **a unique raw sound**. Rich and raw at the same time, no need of external effects to give life to the sound. **Easy to use**. Direct access to all parameters. Small size and metal enclosure. **Uncompromised sounds** can be obtained by mixing the variable waveform from saw to square.
The 8 LFO variable types offer **infinite modulation possibilities**. **Extra additional features** including a 8 steps sequencer, an arpeggiator, glide and accent recognition widen the field of sound possibilities.
Provided with MIDI In, audio In and Out. Well, no winner, no looser, the only rule of the game is to make cool sounds and have fun!

Connections

1/ Connect the **power supply AC 12 V** to the powerplug input. The LFO LED will light up and blink.
2/ Connect the Domino audio out to your sound system (jack 6,35 mm - 1/4").
3/ To use the Domino like an effect processor, connect the audio in to an external sound source like another synth. it will disconnect the internal VCO
4/ Connect the MIDI in to the MIDI out of your MIDI keyboard or to a MIDI sequencer.



The VCO is the Voltage Controlled Oscillator, which creates continuous waveforms from saw to square. The VCO is the sound source of the syntheziser.
Tune: -/+ 7 semitones.
Mix: There are 2 types of waveforms from the VCO (saw and square). They can be mixed to go continuously from saw to square. The level is a bit lower on mid position for a cleaner sound.
Lfo mod is the LFO modulation amount of the LFO on the pitch.
Pwm is the Pulse Width modulation amount of the LFO on the pwm.

The VCO likes it hot!!!

Allow 1/2 hour pre-heating before the final tuning. In the first hour, the tune will be going a couple of herz lower.

In the need for transposition

To transpose the sound more than 7 semitones, use the transpose function of your keyboard, the internal MIDI to CV converter range from MIDI note 12 to 108, which represents 8 octaves.

LFo section (depth + speed) >> LFO = Low Frequency Oscillator

This LFO generates 8 different waveforms. Its speed range is from 0 to 20 Hz. It allows to modulate the VCO, the PW and the filter cutoff frequency. Play with the corresponding amount modulation knob to modulate the sound.

Speed

When you apply a MIDI clock signal to the MIDI in port, the LFO is synced to the midi clock signal. Unplug &replug the unit to reset to default settings. In MIDI sync mode there are 16 different speeds available from 8 (4/4) mesures to 1/32 notes. (see the MIDI Clock Time table on the back)

Type

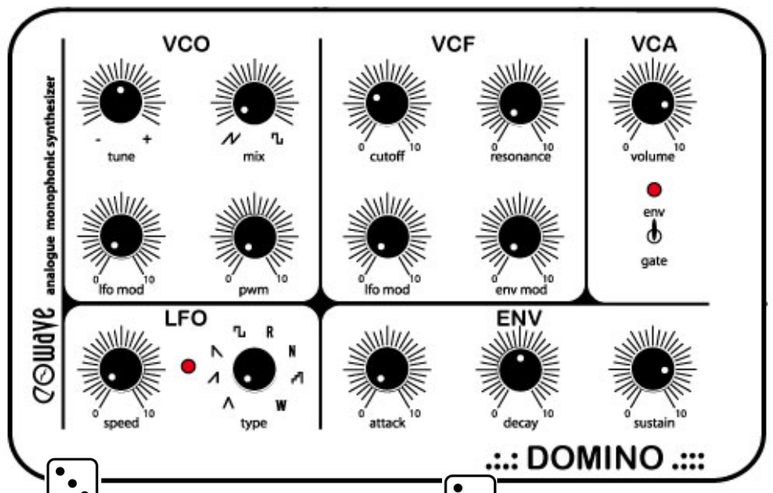
The LFO has 8 different waveforms types: Λ = Triangle, ◢ = saw, ◺ = inverse saw, ⊓ = square, R = random, N = noise, ⌐┐ = staircase, W = modwheel ☆
In the 8th position the LFO is replaced by the modwheel of your keyboard (or MIDI CC1).

Turn the LFO into a 8 steps sequencer!!!!

On LFO modwheel position, the LFO turns into a 8 steps sequencer! In this position, CC 9-16 modulate the intensity of each step. Plug a control surface to the Domino MIDI IN and try this!

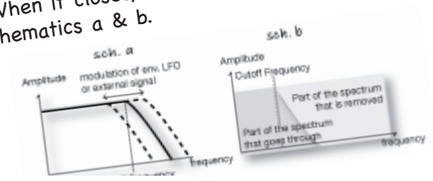
LFO RESET

CC20 resets the LFO at each new note that is played.



Definition: What is a low-pass filter?

Filters boost and attenuate regions of a sound spectrum. They have two essential parameters : cutoff and resonance. A low-pass filter will let all low frequencies go thru up to the cutoff frequency. When the low-pass filter opens, all frequencies go thru. When it closes, only low frequencies go thru.
See schematics a & b.



VCF = Voltage Controlled Filter

The DOMINO VCF is a 24dB resonant low-pass filter.

Cutoff
The cutoff knob determines the cutoff frequency of the VCF. In its highiest position (10), the sound will pass unchanged. As you lower the knob, the frequencies in the higher pitch range will be cut, fading the sound out in its lowest position (0).

Resonance
The resonance knob will emphasize the frequency at the point set with the cutoff. As you raise the knob, certain harmonics are boosted and the sound will be more unusual, more electronic in its nature. If setting the resonance knob to the high position and move the cutoff knob, you can obtain a type of sound that is impossible to be reproduces by any other musical instrument. At its highest level, self oscilation will begin (at the cutoff frequency).

Env mod
Env mod controls how much the cutoff frequency is affected by the envelope.

lfo mod
This controls how much the cutoff frequency is affected by the LFO.

VCA = Voltage Controlled Amplifier

The VCA controls the volume (amplitude) of the sound and is controlled by the output voltage from the envelope generator.

env/gate switch

This selector switch enables to select whether to control the VCA by the signal from the envelope generator or by the gate signal. When the switch is down, Gate is on. When the switch is up, envelope is on.

The envelope LED in the VCA section shows the envelope activity. When the switch is up, the VCA is controlled by the envelope.

ENV = Envelope

The envelope generator generates the control voltage applied to the VCF and the VCA, thereby controlling the volume and the tone color of each note. This output voltage is generated when you press a key. The analogue envelope range is from 1ms to 10s with attack, decay/release, sustain.

Attack

The attack knob sets the time required for the voltage to reach it's maximum from the moment the key is pressed down.

Decay/Release

The decay knob determines the time required for the voltage to drop from the maximum to the sustain level. When the sustain level is high, the envelope curve does not change by adjusting the decay time. Note that the decay also affects the time of release of the envelope.

Sustain

The sustain knob determines the sustain level to which the voltage falls at the end of the decay time. The sustain is maintained during the gate time.

Multiple Trigger Mode

CC21 activates the Multiple Trigger Mode. In this mode, the envelope is retriggered at each new note that is played.
Per default, the Domino is set on Single Trigger Mode.

Another additional feature: there is an arpeggiator inside!

The internal arpeggiator is be activated by MIDI CC4, CC5 and CC6.
CC4 sets the direction: up, down, up&down or sequancial (follows the played notes).
CC5 activates the arpegiator (off - 1 oct - 2 oct - 3 oct)
CC6 activates the latch mode (on - off). In latch mode off, only the notes being played will be arpeggiated. In latch mode on, any notes played are latched (memorized) and will continue to be arpeggiated even if they are not being played anymore.
The arpeggiator is controlled by the LFO speed and therefore it can be synced to a midi clock.

Cool tips!

Glide!

Per default, the glide is activated when notes are played legato. It can be off or continuously on.
CC2 sets the glide off/legato only/on.
CC3 sets the glide time.
The last set-up is saved in a non-volatile memory.

Accent feature!

Velocity values above 120 are recognized as an accent.

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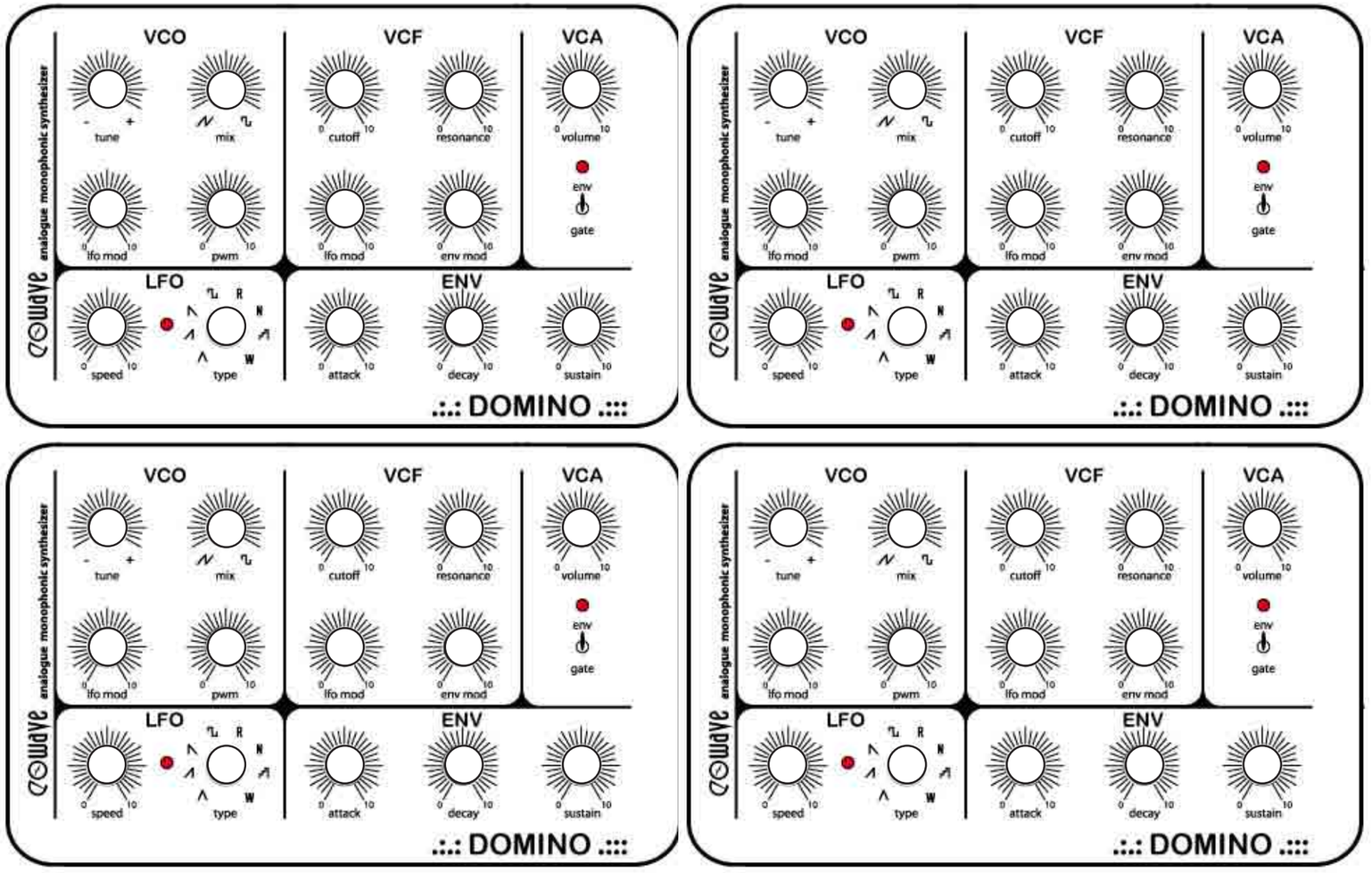

Use this drawing to note your favorite settings.

MIDI Implementation Chart

Pitch-Bend	+/- 2 half tones
Modulation wheel	CC1 0 - 127
Glide OFF/ON legato/ON MIDI	CC2 (0/32/64)
Glite time	CC3 0 - 127
apr dir UP - DOWN - UP&DOWN sequential	CC4 (0,32,64,96)
arp OFF - 1 OCT, 2 OCT 3 OCT	CC5 (0,32,64,96)
arp LATCH	CC6 (on above 64)
Sequencer steps	CC9-CC16 0-127
MIDI CLOCK	
MIDI START (set MIDI Sync ON)	
MIDI STOP (reset the LFO)	
MIDI channel	1-16 (default 1)

MIDI Clock time table

speed	notes
1	8 bars
2	4 bars
3	3 bars
4	2 bars
5	1,5 bar
6	1 bar
7	1/2.
8	1/2
9	1/4.
10	1/2 t
11	1/4
12	1/4 t
13	1/8
14	1/8t
15	1/32
16	1/64

Setting a new MIDI channel

Sending a Program Change from 1 to 16 will set the new MIDI channel. This new MIDI channel is saved in the internal memory. The Program Change has to be sent at the current MIDI channel. If you have forgotten on which channel the unit is set, try to send notes on all channels one after the other.

Support
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⚠ Cautions

- DOMINO don't like to be fried. **Only use a AC 12V 1A power supply** or the one supplied.
- To store your DOMINO, use its original packaging.
- Do not open or try to modify the unit or its main adapter when the unit is externally powered.
- During lightning, unplug the unit; make sure the main adapter is not plugged.
- Before cleaning your DOMINO, make sure the main adapter and/or any external elements are disconnected from the unit. Clean it with a dry cloth.
- Do not try to repair the unit or the components inside of it. Please contact eowave for technical support at sales@eowave.com
- Do not use your DOMINO nor store it in dusty areas, damp areas, extreme temperatures, exposed to direct sunlight, areas prone to strong vibrations.
- Do not insert any objects nor pour any liquid into the unit. Protect the unit against violent shocks.
- Before using DOMINO in a foreign country, make sure that your main adapter is compatible with the main supply.
- Never touch your DOMINO or its adapter with wet hands when it is plugged in. Never place heavy objects on your DOMINO.
- DOMINO can spread very high & very low frequencies. Mind your speakers.

CE norm & FCC INFORMATION

1. Important notice: do not modify this unit! This product, when installed as indicated in the instructions contained in this manual, is compatible with the CE norm & FCC requirements.
2. Important! When connecting this product to accessories and/or another product, use only high quality shielded cables. Cables supplied with this product must be used. Follow all installation instructions. Failure to follow instructions could void your FCC authorisation to use this product in the USA.
Note: this product has been tested and found to comply with the requirements listed in FCC Regulations, Part 15 for Class B digital devices & in The European Standard EN 50081-1 on Electromagnetic Compatibility - Generic emission standard on residential, commercial and light industry. Compliance with these requirements provides a reasonable level of assurance that the use of this product in a residential environment will not result in harmful interference with other electronic devices.