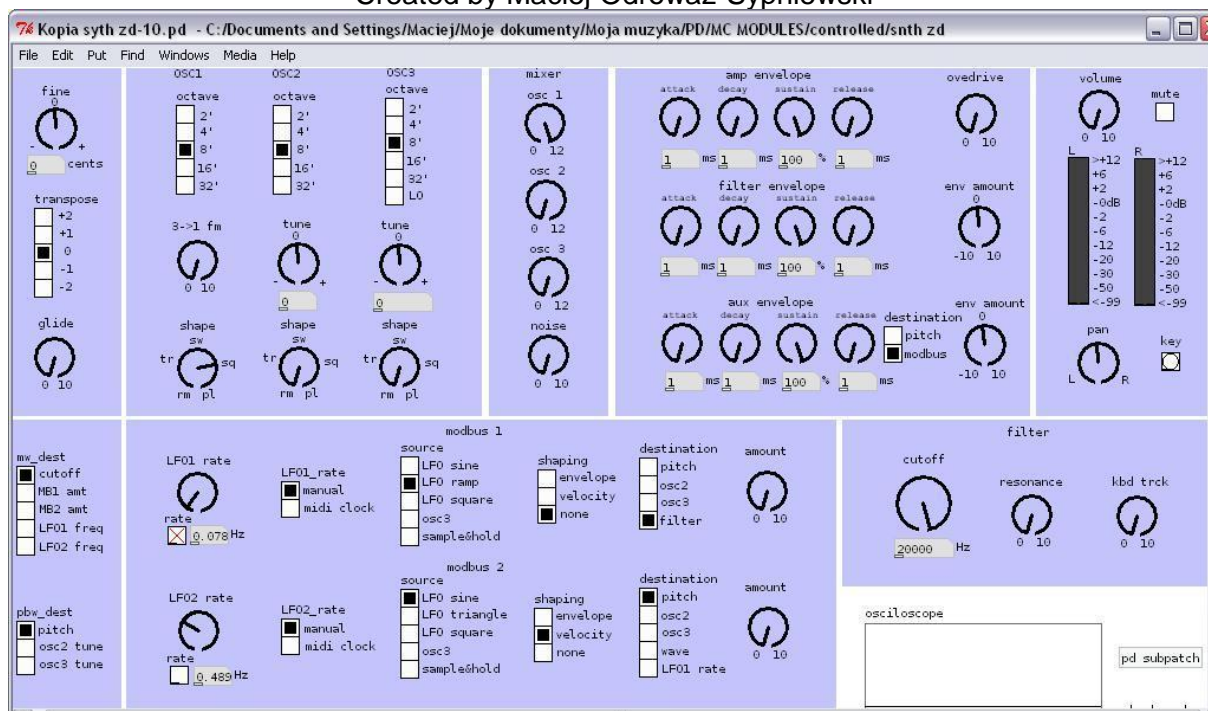


ZD-10 software synthesizer

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Created in Pure Data 0.42.5 extended

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Intro

quick start

- 1 Go to **Media** menu and click '**MIDI settings**'
- 2 Set Your midi input device
note - 'key' diode will flash if ZD-10 will receive midi note on message
- 3 Adjust the **volume** knob level
note - vu meters and oscilloscope will react to sound
- 4 Enjoy

Main panel:

performance controls section

volume

Master volume control.

mute

Mute the sound

pan

Adjusts the panoramic potentiometer.

keyboard

Switch keyboard mode on/off

*note - see appendix **keyboard shortcuts***

subpatch

Open the sub-patch panel.

fine

Adjusts the pitch. (+/-2 or +/-12 semitones)

note - see advanced settings section

transpose

Adjusts the pitch transposition. (+/- 2 octaves)

glide

Sets the portamento rate.

mw_dest

Sets the destination of a modulation wheel; filter cutoff frequency, modulation bus 1 amount, modulation bus 2 amount, LFO1 frequency or LFO2 frequency. User can set it by selecting the box corresponding to the function or by pressing 'x' on a keyboard if keyboard mode is switched on

*note - see appendix **keyboard shortcuts***

pbw_dest

Sets the destination of a pitch bend wheel; pitch, oscillator 2 tune or oscillator 3 tune. User can set it by selecting the box corresponding to the function or by pressing 'z' on a keyboard if keyboard mode is switched on

*note - see appendix **keyboard shortcuts***

oscillators section

OSC1

octave

Sets the octave of OSC1 (+/-2 octaves)

3->1 FM

Adjusts the amount of frequency modulation of OSC1 by OSC3

shape

Sets the shape of the OSC1 (reverse saw - triangle - saw - square - narrow pulse)

OSC2**octave**

Sets the octave of OSC2 (+/-2 octaves)

tune

Sets the tune of OSC2 (+/-7 or +/-1 semitone)

note - see advanced settings section

shape

Sets the shape of the OSC2 (reverse saw - triangle - saw - square - narrow pulse)

OSC3**octave**

Sets the octave of OSC3 (+2/-4 octaves)

tune

Sets the tune of OSC3 (+/-7 semitone or manually sets the frequency)

note - see advanced settings section

shape

Sets the shape of the OSC1 (reverse saw - triangle - saw - square - narrow pulse)

mixer section**osc 1**

Sets the OSC1 level

osc 2

Sets the OSC2 level

osc 3

Sets the OSC3 level

noise

Sets the noise level

filter section**cutoff**

Sets the filter cutoff frequency (16-20000Hz)

resonance

Sets the filter resonance

kbd trck

Sets the filter keyboard amount

envelopes section**amp envelope****attack, decay, release**

Adjusts correspondent parameter time (1-3 or 1-10 seconds)

note - see advanced settings section

sustain

Sets sustain level (0-100%)

overdrive

Sets the overdrive amount.

filter envelope

attack, decay, release

Adjusts correspondent parameter time (1-3 or 1-10 seconds)

note - see advanced settings section

sustain

Sets sustain level (0-100%)

env amount

Adjust the amount envelope effect on the cutoff.

aux envelope

attack, decay, release

Adjusts correspondent parameter time (1-3 or 1-10 seconds)

note - see advanced settings section

sustain

Sets sustain level (0-100%)

destination

Toggles the aux envelope destination.

env amount

Adjust the amount envelope effect on its destination.

modulation buses section

LFO1 rate

Sets the LFO1 rate. (0.05 - 50 Hz or midi clock divider 1/1, 1/2, 1/4, 1/8, 1/16)

LFO1_rate

Toggles the LFO1 rate control. Manual mode - LFO1 rate sets the LFO1 rate continuously, midi clock mode - LFO1 rate toggles midi clock divider

source

Selects the modulation bus 1 source. (LFO1 sine, LFO1 ramp, LFO1 square, OSC3, sample&hold)

shaping

Selects the modulation bus 1 shaping. (aux envelope, velocity, none)

destination

Selects the modulation bus 1 destination (pitch, OSC2, OSC3, filter cutoff frequency)

amount

Sets the modulation bus 1 amount

LFO2 rate

Sets the LFO1 rate. (0.05 - 50 Hz or midi clock divider 1/1, 1/2, 1/4, 1/8, 1/16)

LFO2_rate

Toggles the LFO2 rate control. Manual mode - LFO2 rate sets the LFO1 rate continuously, midi clock mode - LFO2 rate toggles midi clock divider

source

Selects the modulation bus 2 source. (LFO2 sine, LFO1triangle, LFO2 square, OSC3, sample&hold)

shaping

Selects the modulation bus 2 shaping. (aux envelope, velocity, none)

destination

Selects the modulation bus 2 destination (pitch, OSC2, OSC3, wave shape of the oscillators, LFO1 frequency)

amount

Sets the modulation bus 2 amount

memory presets section**write**

Enables preset overwrite mode. When box is ticked, pressing any of the preset buttons will overwrite the preset. (except **Initial** preset)

Preset number	preset name
0	Initial (load up automatically with ZD-10 patch)
1	Super saw
2	Vintage bass
3	Lead bass
4	Not a piano
5	Chord square
6	Evolving ramp pad
7	Dirty FM bass
8	Growling bass
9	Kick drum

*note - presets 0 and 9 are only accessible from computer keyboard in **keyboard mode***

Subpatch panel:**midi_channel**

Hold and slide up or down to select midi input device channel number (1-16)

midi_clock

Diode flash if midi clock signal is being received.

advanced settings section**fine_range**

Toggles fine tune knob range (+/-2, +/-12 semitones)

oscillators_retrig

Toggles OSC1, OSC2 and OSC3 retrig each time a key is being pressed

pitch_bend_wheel_range

Toggles pitch bend wheel range (+/-2, +/-12 semitones)

key_hold

Toggles key hold

OSC2_tune_range

Toggles OSC2 tune range (+/-7 or +/-1 semitone)

OSC3_manual_frequency

Toggles OSC3 tune mode, manual mode - OSC3 is not controlled by a keyboard, only by a tune knob and octave switch

noise

Toggles noise type (white, pink)

envelopes_range

Toggles envelopes tame range (1-3, 1-10 seconds)

LFO1_retrig

Toggles LFO1 retrig each time a key is being pressed.

LFO1_range

Toggles LFO1 output range (+/-1, +/- 10)

LFO1_inverse

Toggles LFO1 inversion

LFO2_retrig

Toggles LFO2 retrig each time key is being pressed.

LFO2_range

Toggles LFO2 output range (+/-1, +/- 10)

LFO2_inverse

Toggles LFO2 inversion

effects section

ring_mod

Toggles ring modulator on/off

freq

Sets the oscillator frequency (1.02 - 12543 Hz or +/-2 octaves)

shape

Adjust the waveshape of the oscillator (sine-square)

env_fll

Adjusts the envelope follower amount. Envelope is affecting the frequency of the oscillator.

mix

Adjusts ring modulator amount (0-100%)

ring_freq

Toggles oscillator frequency mode, manual - continues 1.02 - 12543 Hz, sync - toggles +/- 2 octaves synchronised with pitch

stereo

Toggles mono/stereo mode.

chorus

Toggles chorus on/off

rate

Sets chorus effect rate.

depth

Adjusts chorus effect depth.

mix

Adjusts chorus effect amount (0-100%)

stereo

Toggles mono/stereo mode.

delay

Toggles delay on/off

left

Sets left channel delay time (both channel in mono mode)

right

Sets right channel delay time (in stereo mode only)

hi_cut

Sets delay loop high cut frequency.

low_cut

Sets delay loop low cut frequency.

fdbck

Sets delay feedback amount (0-99%)

mix

Adjusts delay effect amount (0-100%)

stereo

Toggles mono/stereo mode.

Appendices

midi implementation chart

section	control	function	cc	value/range
performance control	modulation wheel	modulation control	1	0-127
	pitch bend wheel destination	sets the destination of a pitch bend wheel	3	0-42 = pitch, 43-85 = osc2 tune, 86-127 = osc3 tune
	modulation wheel destination	sets the destination of a modulation wheel	4	0-24 = cutoff, 25-50 = modbus1, 51-75 = modbus2, 76-101 = lfo1 freq, 102-127 = lfo2 freq
	glide	sets the portamento rate	5	0-127
	transposition switch	adjusts the pitch transposition (+/-2 octaves)	6	0-24 = +2, 25-50 = +1, 51-75 = 0, 76-101 = -1, 102-127 = -2
	master volume	volume control	7	0-127
	fine tune	adjusts the pitch (+/-2 +/-12 semitones)	9	0-127
	pan	adjusts the panoramic potentiometer	10	0-127
oscillators	osc1 octave	sets the octave of osc1 (+/-2 octaves)	11	0-24 = +2, 25-50 = +1, 51-75 = 0, 76-101 = -1, 102-127 = -2
	osc3->osc1 FM	adjusts the amount frequency modulation	15	0-127
	osc1 wave shape	sets the shape of osc1	16	0-127
	osc2 octave	sets the octave of osc2 (+/-2 octaves)	17	0-24 = +2, 25-50 = +1, 51-75 = 0, 76-101 = -1, 102-127 = -2
	osc2 tune	sets the tune of osc2 (+/-7 +/-1 semitones)	18	0-127
	osc2 wave shape	sets the shape of osc2	19	0-127
	osc3 octave	sets the octave of osc3 (+2/-4 octaves)	20	0-21 = +2, 22-42 = +1, 43-63 = 0, 64-84 = -1, 85-105 = -2, 106-127 = LO
	osc3 tune	adjusts the tune of osc3 (+/-7 semitones)*	21	0-127
osc3 wave shape	sets the shape of osc3	22	0-127	
mixer	osc1 level	sets the level of osc1	23	0-127
	osc2 level	sets the level of osc2	24	0-127
	osc3 level	sets the level of osc3	25	0-127
	noise level	sets the level of noise	118	0-127
filter	filter cutoff frequency	sets the filter cutoff frequency (16-20000Hz)	26	0-127
	filter resonance	sets the filter resonance	27	0-127
	filter keyboard amount	sets the filter keyboard amount	28	0-127
envelopes	filter envelope	adjusts the filter envelope attack (1-3/10 seconds)	29	0-127

	attack			
	filter envelope decay	adjusts the filter envelope decay (1-3/10 seconds)	30	0-127
	filter envelope sustain	sets the filter envelope sustain level (0-100%)	31	0-127
	filter envelope release	adjusts the filter envelope release (1-3/10 seconds)	68	0-127
	filter envelope amount	adjusts the amount of envelope affect on the cutoff	69	0-127
	amp envelope attack	adjusts the amplifier envelope attack (1-3/10 seconds)	74	0-127
	amp envelope decay	adjusts the amplifier envelope decay (1-3/10 seconds)	85	0-127
	amp envelope sustain	sets the amplifier envelope sustain level (0-100%)	86	0-127
	amp envelope release	adjusts the amplifier envelope release (1-3/10 seconds)	87	0-127
	overdrive	sets the overdrive amount	88	0-127
	aux envelope attack	adjusts the aux envelope attack (1-3/10 seconds)	89	0-127
	aux envelope decay	adjusts the aux envelope decay (1-3/10 seconds)	90	0-127
	aux envelope sustain	sets the aux envelope sustain level (0-100%)	102	0-127
	aux envelope release	adjusts the aux envelope release (1-3/10 seconds)	103	0-127
	aux envelope amount	adjusts the amount envelope affect on its destination	104	0-127
	aux envelope destination	toggles the aux envelope destination	105	0-63 = pitch, 64-127 = modbus
modulation bus 1-2	lfo1 rate	sets the LFO1 rate**	106	0-127
	lfo1 rate2	toggles the LFO1 rate control	107	0-63 = manual, 64-127 = midi clock
	modulation bus 1 source	selects the modulation bus 1 source	108	0-24 = LFO sine, 25-50 = LFO ramp, 51-75 = LFO square, 76-101 = osc3, 102-127 = sample&hold
	modulation bus 1 shaping	selects the modulation bus 1 shaping	109	0-42 = envelope, 43-85 = velocity, 86-127 = none
	modulation bus 1 destination	selects the modulation bus 1 destination	110	0-32 = pitch, 33-64 = osc2, 65-96 = osc3, 97-127 = filter
	modulation bus 1 amount	sets the modulation bus 1 amount	111	0-127
	lfo2 rate	sets the LFO2 rate**	112	0-127
	lfo2 rate2	toggles the LFO2 rate control	113	0-63 = manual, 64-127 = midi clock

	modulation bus 2 source	selects the modulation bus 2 source	114	0-24 = LFO sine, 25-50 = LFO triangle, 51-75 = LFO square, 76-101 = osc3, 102-127 = sample&hold
	modulation bus 2 shaping	selects the modulation bus 2 shaping	115	0-42 = envelope, 43-85 = velocity, 86-127 = none
	modulation bus 2 destination	selects the modulation bus 2 destination	116	0-24 = pitch, 25-50 = osc2, 51-75 = osc3, 76-101 = wave, 102-127 = LFO1 rate
	modulation bus 2 amount	sets the modulation bus 2 amount	117	0-127

*-sets the oscillator frequency while in manual control mode

**-adjusts the tempo sync value while in midi clock mode

keyboard shortcuts

to activate keyboard mode tick the **keyboard** box on the front panel

key	function
0-9	selects corresponding preset
m	mute the sound
z	change the pitch bend destination
x	change the modulation wheel destination
r	all midi notes off
s	enable preset overwrite
k	switch keyboard mode off
t	tap LFO1 tempo
h	key hold on/off
q	ring modulator effect on/off
w	chorus effect on/off
e	delay effect on/off