HexaTone

SINE / NOISE TONE GENERATOR

Version 1.0.0

FRONT PANEL

HexaTone Sine/Noise Generator is an instrument inspired by old school tone generators from the early days of electronic music.

HexaTone's six oscillators can be set to either **SINE** or band passed **NOISE**. The individual oscillators can be tuned freely from 20Hz-15kHz with the option to track the keyboard.

The oscillators can be routed to individual output jacks for experimental routing. The oscillators can be played all together (keyrange C2 - C7) or independently, using the white keys of octave C1-B1. The black keys in this octave will give a combination of adjesent oscillators.

Each oscillator can be modulated up and down six octaves by their respective **ENVELOPE** or by the global **LFO (LOW FREQ OSC)**

Each oscillator also has an individual ring modulation (**R.MOD**) circuit. The ring modulation can be set to either hard or soft mode. In **SOFT** mode the audio signal generated by the oscillator is multiplied by the selected ring modulatrion frequency and in **HARD** mode it's modulated by the polarity of the selected frequency. When **FREQ** is set to value zero the ring modulator is completely deactivaded. Keep this in mind if you want to modulate it with CV - be sure it's **FREQ** value is set to a value larger than zero.

Each oscillator also has a waveshaper (**SHAPE**) that can be used to bring out overtones. In the **GLOBAL** section **SHAPE** can be set to either tanh (⌐) or sines (〰). Tanh will shape the sine towards a square wave, sines will produce an FM like timbre.

The **LOW FREQ OSC** can be synced to tempo, retrig on new notes and adjust speed by keyboard tracking.

The effect section includes a flanger, an echo, a reverb and a phaser that can be used independently or in 11 different combinations, set by the **MODE** switch.

CTRL/CMD Clicking on knobs will reset them to their default value. By defatult the Oscillators are tuned to C with the exception of oscillator 2 & 6, both set to a G.
SHIFT will make your mouse movements more precise.

As a help you can click the **FREQUENCY** label below each oscillator big frequency knob to reveal a **Note / Hertz Cheat Sheet.** Click again, or on the sheet to hide it. This can come in very handy when tuning the frequencies!

BACK PANEL

Signals connected to the CV Jacks will modulate the corresponding parameter.
Keep in mind that **R.MOD FREQ** (on the front panel) needs to be set to a value larger than zero for the circuit to become active.

MOD WHEEL DEST can be set to:
LFO RATE (Scale the Frequency)
LFO DEPTH (Scale the amount sent applied to the oscillators)
FX Amount (Add effect amount)

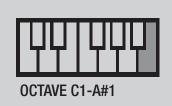**P.BEND RANGE** can be set to 1-24 semi notes.

NOISE RESO TRIM and **PANNING** can be accessed from the front panel via the small brass trimmers. To automate these alt-click on the brass trimmers. Controls on the backside can otherwise not be automated.

The effects are only applied to the **MAIN OUT**. Using **DIRECT** out will result in the dry signals directly from each oscillator. By panning the oscillators fully left or right you can use each stereo pair as two mono outputs.

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LFO RATE (Scale the Frequency)
LFO DEPTH (Scale the amount sent applied to the oscillators)
FX Amount (Add effect amount)

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OCTAVE C1-A#1

OSC1 = C1, C#1
OSC2 = C#1, D1, D#1
OSC3 = D#1, E1
OSC4 = F1, F#1
OSC5 = F#1, G1, G#1
OSC6 = G#1, A1, A#1

OCTAVE C2-C7

All OSC = ALL KEYS

MAX Polyphony = 48 voices
(8 per OSC)

Note / Hertz Cheat Sheet

C1	32.70	C2	65.41	C3	130.81	C4	261.63	C5	523.25	C6	1046.50	C7	2093.00	C8	4186.01
C#1	34.65	C#2	69.30	C#3	138.59	C#4	277.18	C#5	554.37	C#6	1108.73	C#7	2217.46	C#8	4434.92
D1	36.71	D2	73.42	D3	146.83	D4	293.66	D5	587.33	D6	1174.66	D7	2349.32	D8	4698.63
D#1	38.89	D#2	77.78	D#3	155.56	D#4	311.13	D#5	622.25	D#6	1244.51	D#7	2489.02	D#8	4978.03
E1	41.20	E2	82.41	E3	164.81	E4	329.63	E5	659.25	E6	1318.51	E7	2637.02	E8	5274.04
F1	43.65	F2	87.31	F3	174.61	F4	349.23	F5	698.46	F6	1396.91	F7	2793.83	F8	5587.65
F#1	46.25	F#2	92.50	F#3	185.00	F#4	369.99	F#5	739.99	F#6	1479.98	F#7	2959.96	F#8	5919.91
G1	49.00	G2	98.00	G3	196.00	G4	392.00	G5	783.99	G6	1567.98	G7	3135.96	G8	6271.93
G#1	51.91	G#2	103.83	G#3	207.65	G#4	415.30	G#5	830.61	G#6	1661.22	G#7	3322.44	G#8	6644.88
A1	55.00	A2	110.00	A3	220.00	A4	440.00	A5	880.00	A6	1760.00	A7	3520.00	A8	7040.00
A#1	58.27	A#2	116.54	A#3	233.08	A#4	466.16	A#5	932.33	A#6	1864.66	A#7	3729.31	A#8	7458.62
B1	61.74	B2	123.47	B3	246.94	B4	493.88	B5	987.77	B6	1975.53	B7	3951.07	B8	7902.13

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To reveal this cheat sheet, click the **FREQUENCY** label below each oscillator big frequency knob
Click on the label or on the cheat sheet to hide it again.

Thank you for supporting Ekssperimental Sounds Studio!

Ekssperimental Sounds Studio is a one man project driven by the passion for experimental electronic sounds, new and old synthesizers and music gear.
As a Reason user since 2001 it truly is a dream come true to finally be able to create my own synthesizers and effects for the Reason rack.
Thanks to all of you who buy my products I can continue to learn and develope more fun and inspiring devices for our beloved rack.

I hope you will enjoy HexaTone!

Cheers,
Erik Söderberg 2022

Thanks to Mr.Figg (Beta test) and M. Jarl (Patches)