SOUND CHECK

Atari Punk Console

BY GORKY

About: a DIY Atari Punk Console synthesizer project that combines the nostalgia of 80's arcade games with the thrill of creating your own unique soundscapes. Easy to assemble and customizable, with endless possibilities for experimentation. Perfect for any synth enthusiast looking to add a new dimension to their music.

Atari Punk Console is one of the most revered DIY synthesizer circuits that is more than 30 years old and has gained a sort of a cult following in Synth DIY circles over decades as a somewhat classic staple of the scene.

Instructions: either push the button or put the toggle switch to the upper position, and a sound emerges! Control the aspects of the sound with the two knobs that control the two oscillators on the circuit board! You can enjoy long arcadepunk screams and bends by using the switch, or tap in your own chippy rhythms with the button.

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The Little Chaos Box

BY LAURI LEST

About: The Little Chaos Box starts producing constant chaotic tones as soon as it has been turned on, and gets even more chaotic when touched. The chaos that it emanates cannot be totally controlled, but can be influenced by twisting the knobs and connecting between the touch plates using your own fingers or any other somewhat conductive material (e.g. metallic sponge, VHS tape).

The unit is comprised of two oscillator pairs – sound wave generators with frequencies controlled by the four knobs. Each pair of two oscillators is processed through a special element – a shift register – which derives a chaotic complex wave dependent on both oscillators of the pair. The chaos is further increased by introducing feedback interference from shift register outputs back to the oscillators using the touch plates, creating unpredictable, but reproducible effects. This in itself is a basic chaos generator – the process is not random, but too complex to be predicted.

Instructions: power the unit on – the LED should light up red. You should immediately start hearing a sound, that you can now manipulate. Change the frequencies of the four oscillators using the big knobs. Introduce feedback of the complex waves to the oscillators by touching *the cuts between* the upper or lower long touch plate and the four small plates in the middle. Each touch plate affects the oscillator whose frequency control is directly above a pad. The touch plates are very sensitive, so the effect of a gentle touch and a thorough push will differ. The topmost knob fades between the two pairs' complex waves. Left pair tends to be more screamy, while the right one is more bassy – mix and match by taste! Don't forget to turn the unit off (toggle switch to the down position) after you're done interacting.

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Super Drummachine 420

BY MIKAEL RISTMETS

About: what you are witnessing is essentially a temporary installation of a drum machine based on the "Arduino Mozzi Sample Drum Machine" project by Kevin of diyelectromusic.wordpress.com. However, it does not make usual drum sounds – instead, you are hearing 4 extremely compressed synthetic woodblock sounds of different pitch. The sound samples were loaded onto the Arduino board as raw data. The four low frequency oscillators then activate the corresponding samples, randomizing their volume on every hit.

All four oscillators are very primitive and are essentially electric metronomes. A single drum playing at equal time divisions endlessly gets boring quickly, but 4 independent analog "metronomes" create evolving patterns of varying levels of complexity.

Instructions: turn the volume up (the small white knob on the left). You should start hearing clicks, pings and pongs corresponding to the four blinking LEDs. Now, feel free to twist and turn the knobs (potentiometers) to alter the rate at which each sound is being triggered. Explore different patterns created by the interaction of completely asynchronous tempos, listen carefully as weird polyrythms and patterns emerge! Don't forget to bring the volume all the way down once you're done experimenting.

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soundxcape

BY KATRIN SELIN

About: soundxcape is a portable setup for exploring the world of sounds that we are always surrounded by, but which we simply do not notice. The setup consists of a custom 3D-printed box with an audio input, an amplifier board that reveals and boosts the sounds coming from the audio source, an audio output for listening to sounds and/or recording them, and a battery holder with a 9 volt battery. The box is designed for very low level audio sources; in this case it is a piezo disc (surface microphone) attached to a 3.5mm plug with wires. The way piezos transduce sound is analogous to laying your ear flat on a surface: it reveals all sorts of alternative, otherwise hidden sounds. Another possibilities, among many, is to use a coil (inductor) to transduce electromagnetic fields around us into sound, or as a generic microphone amplifier.

Instructions: in front of you is the setup and a set of objects that make different sounds. Rub, scratch, knock the rusty metal surface to which the piezo is attached with the provided objects. Happy exploring!

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Shifting of Triads

BY OLIVER ÜDEKÜLL

About: A drone synthesizer built following the schematics of John Jansen, Shifting of Triads is based around a digital logic chip. It has three square wave generators (oscillators); one is covering a lower, bassier frequency range than the other two.

Each oscillator has individual controls for its frequency and volume, making it possible to arbitrarily tune, mix and match the three oscillators. The upper row of knobs set the oscillators' frequencies, while the lower row is for volumes. The frequency control knobs adjust the electrical resistance in the oscillator circuit, to which the resulting frequency is directly proportional. These individual controls allow creating harmonious chords and dissonant sounds between different tunings.

Visually, the device's aluminum enclosure embraces the logic chip’s rough and unpolished sound, while the cloth wrap attempts to disguise it, analogous to the effects processor processing the sound output.

Instructions: play this instrument by raising one or more of the oscillators' volume using the lower row of knobs, and tune them to different frequencies to produce consonant and dissonant sounds, beatings, and so on. Mix, match, and experiment. Don't forget to mute all the oscillators (volume knobs full counter-clockwise) after you're done interacting.

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Musique Concrète

BY SIMON BAGUETTE

About: my project is an experiment with concrete in applied electronics for music and sound. I have made a moulded concrete device that contains rubber bands, pieces of wood and metal. When these are set in motion, they generate vibrations in the concrete. These vibrations are picked up by a piezoelectric disc and amplified by a hand built amplifier. This project reveals the acoustic properties of concrete: this material has a very high sound propagation speed (3100m/s), so the transmission of sound is immediate, there is no latency.

Instructions: Use your fingers or the provided tools to interact with the object: gently strum the rubber band strings, pluck the pins, tap and scratch the concrete. Be gentle and mind the piezoelectric disc under the strings: please, do not touch it or the wires coming from it.

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ARCH

BY BERNÁT HAUPT

About: leaving a place to see under the surface.

The sound sculpture is a memorial to my time spent in Estonia as an exchange student. Distance and six months away from home reminded me of the importance of connecting with my origins. The piezo microphone attached to the bent metal sheet picks up the vibrations caused by the the one interacting with the sculpture and further processed by spacial sound transformations (reverberation and delay).

Instructions: pluck, brush or rub the metallic surface. Gently roll the provided spheric objects on the metallic arch and observe the pickup and transformation of the sound.

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Tool-Assisted Afterlife

BY AUBERY LIS

About: what was once an old digital Casio phase-modulation wavetable keyboard abandoned by someone in a cold corridor in one of Tallinn's industrial buildings has been lovingly reduced to just its core – the motherboard. Everything else was stripped off and destroyed. Then, new body and new purpose was built for the instrument's brain: hand-made, reduced in size by a factor of ~6, and full of weird undocumented modifications, additions and alterations. Along with being an insane harsh glitch generator, "Tool-Assisted Afterlife" is a somewhat humorous tongue-in-cheek take on my personal fears and thoughts on death, afterlife and transhumanism.

Instructions: Turn on the volume knob (bottom left corner). If nothing is happening, press the CPU RESET button right next to it. Then try to turn the STARVE and FREQUENCY knobs and pressing the ACT switch. This unit is utterly unpredictable and may get stuck or crash at any given time: then, press CPU RESET again. Don't forget to bring the volume down once you're done playing.

Another option is to ask Aubery (the girl curating the whole thing) to do a micro-live on it for you!