

# The Atari Punk Console

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## Background

The Atari Punk Console (commonly shortened to APC) is a popular circuit that utilizes two 555 timer ICs or a single 556 dual timer IC. The original circuit, called a "Stepped Tone Generator", was published in a Radio Shack booklet: "Engineer's Notebook: Integrated Circuit Applications" in 1980 and then in "Engineer's Mini-Notebook - 555 Circuits" by its designer, Forrest M. Mims III (Silicon Concepts, 1984). It was named "Atari Punk Console" (APC) by Kaustic Machines crew because its "low-fi" sounds resemble classic Atari console games from the 1980s, with a square wave output similar to the Atari 2600. Kaustic Machines added a -4db line level output to the circuit which was originally designed to drive a small 8 ohm speaker.

Atari Punk console is an astable square wave oscillator driving a monostable oscillator that creates a single (square) pulse. There are two controls, one for the frequency of the oscillator and one to control the width of the pulse. The controls are usually potentiometers but the circuit can also be controlled by light, temperature, pressure etc. by replacing a potentiometer with a suitable sensor (e.g., photo resistor for light sensitivity). Most of the time there is also a power switch (often a toggle switch) and a volume knob.

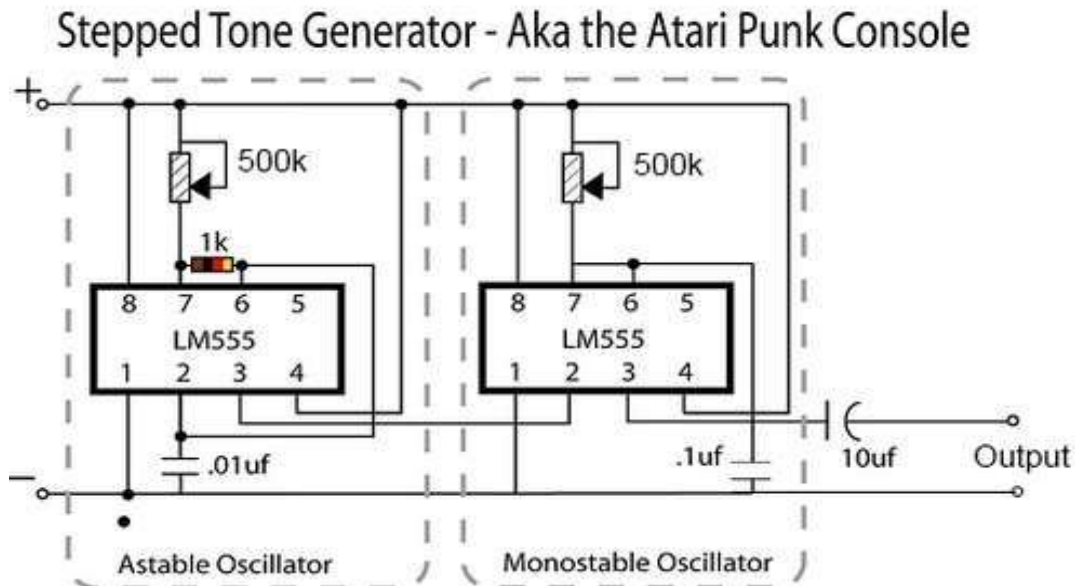
The circuit is a simple DIY noisemaker circuit that is relatively inexpensive and easy to build, easily adaptable and is configurable in many ways. It has been built into a wide variety of cases, from metal IKEA bowls to light bulbs, an old Atari mouse or joystick. Its flexibility has led to wide scale popularity among electronics enthusiasts. It is often suggested as a good circuit to build for beginners.

## Definitions

Astable, in which the circuit is not stable in either state —it continually switches from one state to the other. It does not require an input such as a clock pulse.

Monostable, in which one of the states is stable, but the other state is unstable (transient). A trigger causes the circuit to enter the unstable state. After entering the unstable state, the circuit will return to the stable state after a set time. Such a circuit is useful for creating a timing period of fixed duration in response to some external event. This circuit is also known as a **one shot**.

## Schematic



atari punk console composed as two 555s. Its basically an astable Oscillator driving a Monostable Oscillator.

[www.robthefiddler.com](http://www.robthefiddler.com)  
Original circuit Forrest M. Mims, III (Siliconcepts, 1984)

## Pinout

First, 555 Timer IC

Pin 1 goes to ground

Pin 2 goes to .01 capacitor that goes to ground

Pin 3 goes to pin 2 on the other 555

Pin 4 goes to positive supply voltage (9 Volts)

Pin 8 goes to positive supply voltage (9 Volts)

Pin 7 goes to the potentiometer and the resistor

Pin 6 goes to the resistor and to pin 2 on the same 555

Second, 555 Timer IC

Pin 1 goes to ground

Pin 2 goes to pin 3 on the other 555.

Pin 3 goes to output

Pin 4 goes to positive supply voltage (9 Volts)

Pin 6 goes to .1 capacitor that goes to ground

Pin 7 goes to the potentiometer

Pin 8 goes to positive supply voltage (9 Volts)

## Parts List

- 2 - 555 Timer IC
- 1 - 1K ohm 1/8W 5% Carbon Film Resistor
- 1 - 0.01 $\mu$ f 50V Ceramic Disc Capacitor
- 1 - 0.1 $\mu$ f 50V Ceramic Disc Capacitor
- 1 - 10 $\mu$ F 50V Electrolytic Capacitor
- 1 - Female stereo jack 3.5 mm (optional)
- 1 - DC female jack (optional)
- 2 - 50K-Ohm Linear-Taper Potentiometer
- 1 - Switch (optional)
- 2 - Knobs (optional)
- 1 - Dual General-Purpose IC PC Board (optional)
- 1 - Project Enclosure (optional)
- 2 - 8 pin sockets (optional)

## Sources

Instruction on making an Atari Punk Console

<http://www.instructables.com/id/How-to-make-the-Atari-Punk-Console/#step1>

Background on the Atari Punk Console

[http://en.wikipedia.org/wiki/Atari\\_Punk\\_Console](http://en.wikipedia.org/wiki/Atari_Punk_Console)

For more information regarding the 555 Timer IC

[http://en.wikipedia.org/wiki/555\\_timer\\_IC](http://en.wikipedia.org/wiki/555_timer_IC)