THE SIDESCROLLER

The Sidescroller is an insane 8-bit sounding fuzz. It does octave down, octave up and pulse width modulation.

The pulse width modulation signal blended with the octave down gives it a retro game'ish sound that brings backs memories of the 8-bit era of videogaming. Sound-wise it's pretty close to The Arcadiator. I guess you can call it the "Arcadiator Light" since it has less control and fits in a 1590B. It does however have a unique feature: an LFO that modulates the pulse width, giving it that C64 phaser'ish sound.

This circuit works best with high output pickups. It's a gated circuit by nature of the CMOS logic. If you are using single coils and need more sustain, try a boost or compressor in front. To improve tracking of the octave down, use your neck pickup with the tone rolled off. Happy playing!
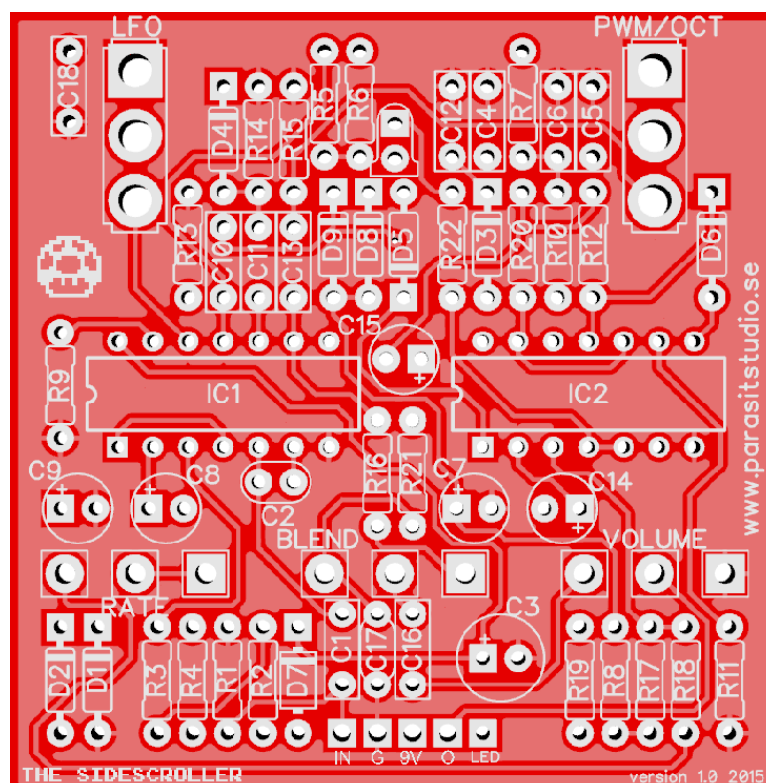
Controls

SWITCHES

- LFO: This turns the LFO/alternating octaves on/off

- PWM/OCT: This toggles between Pulse modulated signal or Otave up

POTENTIOMETERS

- RATE: Controls the rate of the LFO / pulse width modulation

- BLEND: Blends between PWM/Octave up and Octave down

- VOLUME: Controls the overall volume
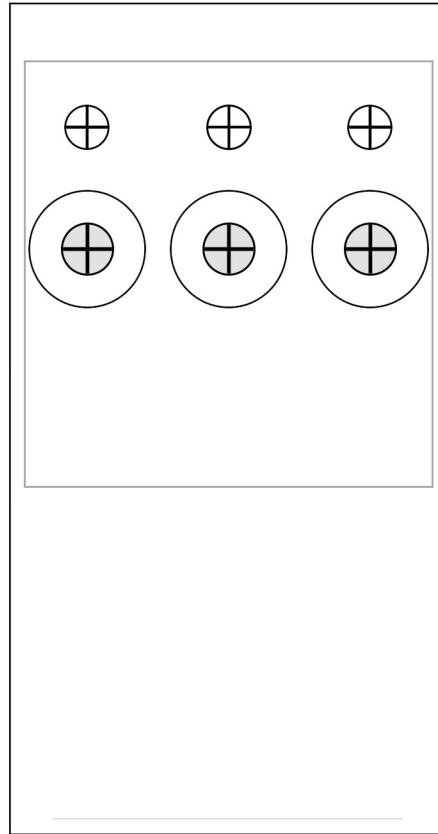
General builds tips

- Solder the low profile components first, from short to tall height. Recommended order: resistors, diodes, IC socket, film-caps, electrolytics, pots and switches
- CMOS chips are very sensitive to static charges and can be easily damaged. It's a good idea to wear a anti-static wristband or at least avoid wearing a wool jumper and petting your cat/dog while building...
- Always use sockets for IC chips and transistors to avoid heating them directly. It also makes it much easier to swap them out if needed.
- Pay special attention to the orientation of the diodes and electrolytics.
- There are many switches and pots on this PCB. Be sure to place them in the PCB without soldering first, THEN place them in your drilled enclosure. Gently tighten the nuts to the enclosure, then solder LAST. Otherwise, it will be really hard to get this in your enclosure.
- This PCB's is designed for 16mm Alpha PCB mounted angeled pots. You could also use solder lug type and just tack some "legs" with short pieces of wire to each pot to mimic a PCB mount type. Again, it is a very good idea to drill holes in your enclosure first, and mount the pots with the nuts BEFORE soldering the pots to the PCB. This ensures you won't put a lot of stress on the PCB.
- The pots, switches and LED are meant to be mounted on the bottom (solder side) of the board, and soldered on the top (component side).
- The square pad represents pin 1 of each pot.

Wiring

For more info on how to wire up the stompswitch, jacks ect, please visit the Parasit Studio website and download the PDF called "offboard wiring". You can find it here:

http://www.parasitstudio.se/build-docs.html

The Sidescroller Bill Of Materials (BOM)

Capacitors		Resistors		IC's	
C1	100nF	R1	1M	IC1	CD4069UBE
C2	470pF	R2	2.2M	IC2	CD4069UBE
C3	100uF	R3	22K		
C4	22nF	R4	1M		
C5	22nF	R5	3.3K		
C6	22nF	R6	3.3K		
C7	4.7uF	R7	1K		
C8	4.7uF	R8	2.2K		
C9	1uF	R9	10K	**Potentiometers**	
C10	22nF	R10	4.7K	Volume	A100K
C11	10nF	R11	100K	Blend	B500K
C12	1nF	R12	10K	Rate	C50K
C13	100nF	R13	470K		
C14	10uF	R14	470K		
C15	2.2uF	R15	2.2M		
C16	100nF	R16	470K		
C17	470pF	R17	470K		
C18	100nF	R18	1M		
Diodes		R19	3.3K	**Switches**	
D1	1N4148	R20	4.7K	LFO	SPDT on/on
D2	1N4148	R21	100K	PWM/OCT	SPDT on/on
D3	1N4148	R22	4.7K*		
D4	1N4148				
D5	1N4148				
D6	1N4148				
D7	1N4001				
D8	1N4148				
D9	1N4148				
1x LED					

- * This is a current limiting resistor for the rate/bypass LED. Use the appropriate value for your LED.
- The ″LED″ hole (next to the output connection hole) should be connected to the ground for LED bypass on your stompswitch.
- The LFO is gated, which means that it's normal for the LED to blink only when playing and stay lit when you are not playing, so it works are both a bypass and rate indicator.
- Not included in the BOM but also good to have: enclosure, input and output jacks, DC jack, 3PDT switch, LED bezel, knobs.

Drilling template (1590B)

- Use at your own risk! This template is approximate.
- Make sure your printer isn't doing any scaling / is set to 100% print size.
- Drill footswitch, DC jack and input/output jacks to your own preference.
- Some PCB mount pots have longer shafts than others, it will change the hole positions slightly =
- **Measure and confirm before drilling!**
- Read the build tips section highlighted in red before soldering pots and switches to the PCB.

Schematic
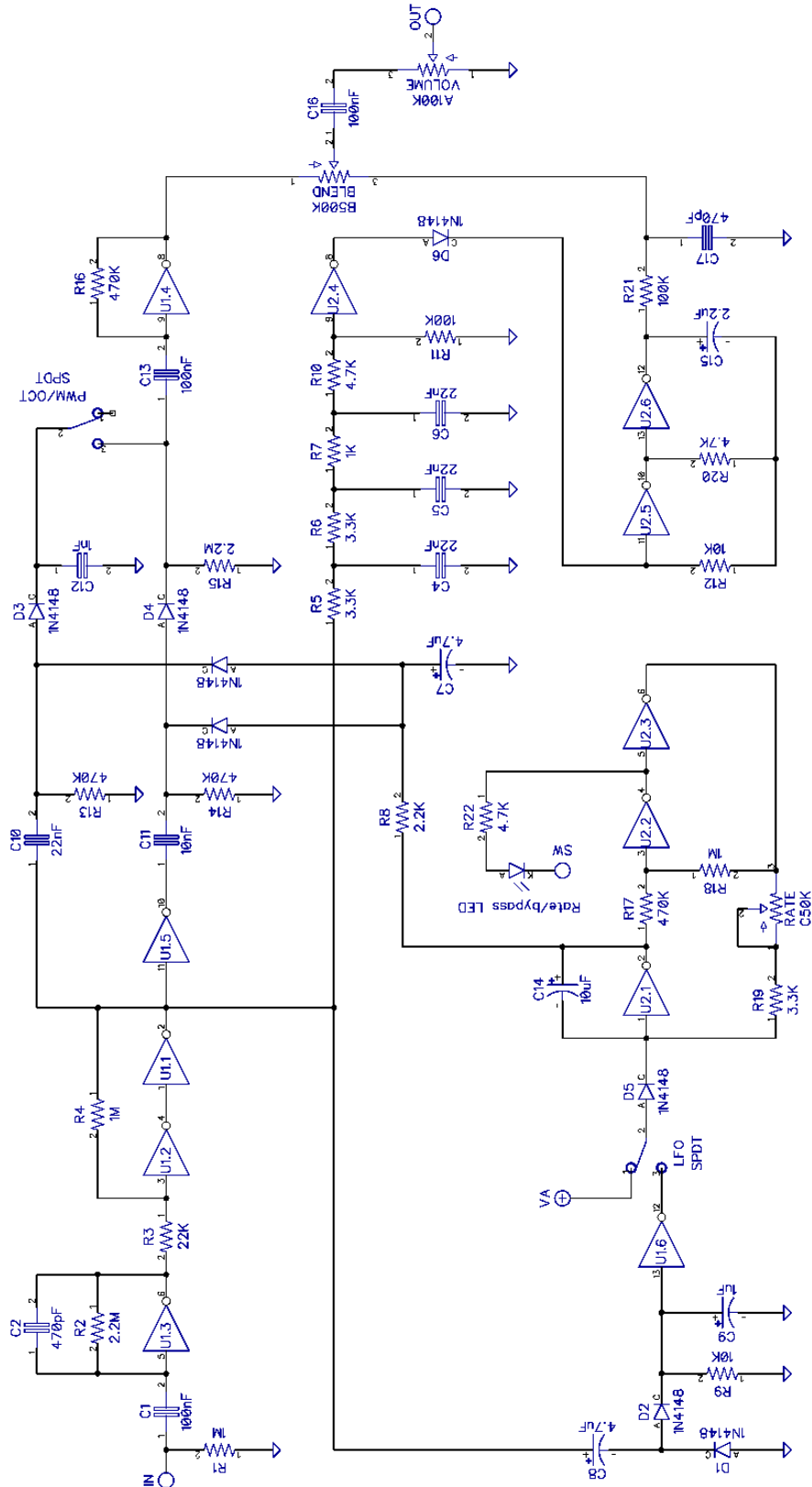
note that power connections, polarity protection and DC-filtering is not shown

Troubleshooting

There's always a chance of running into trouble. To minimize error, follow the BOM and general building tips carefully. Take your time and don't rush. Take a break now and then. Use good solder, and it helps to have a decent soldering station insted of a cheap iron.

If you are still having trouble, please visit the madbean forum Parasit Studio subforum section and ask for help there.

http://www.madbeanpedals.com/forum/index.php?board=84.0

If you have bought the Musikding kit and have recieved a faulty or missing component, please contact musikding directly.

https://www.musikding.de/kontakt.php?lang=eng

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