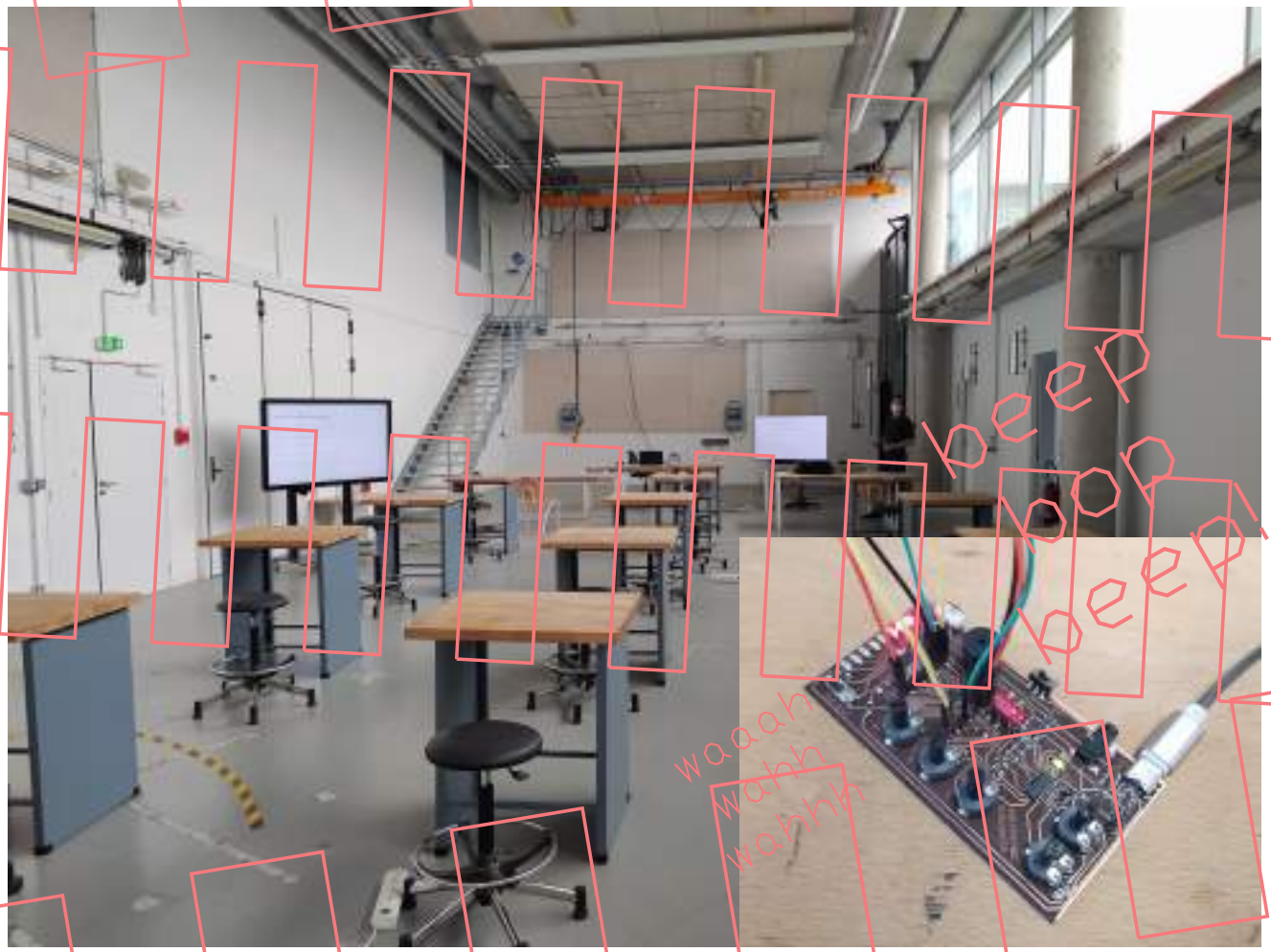
Free Synthesizer Workshops @ Fablab Digiscope | LISN

~November + December 2021~

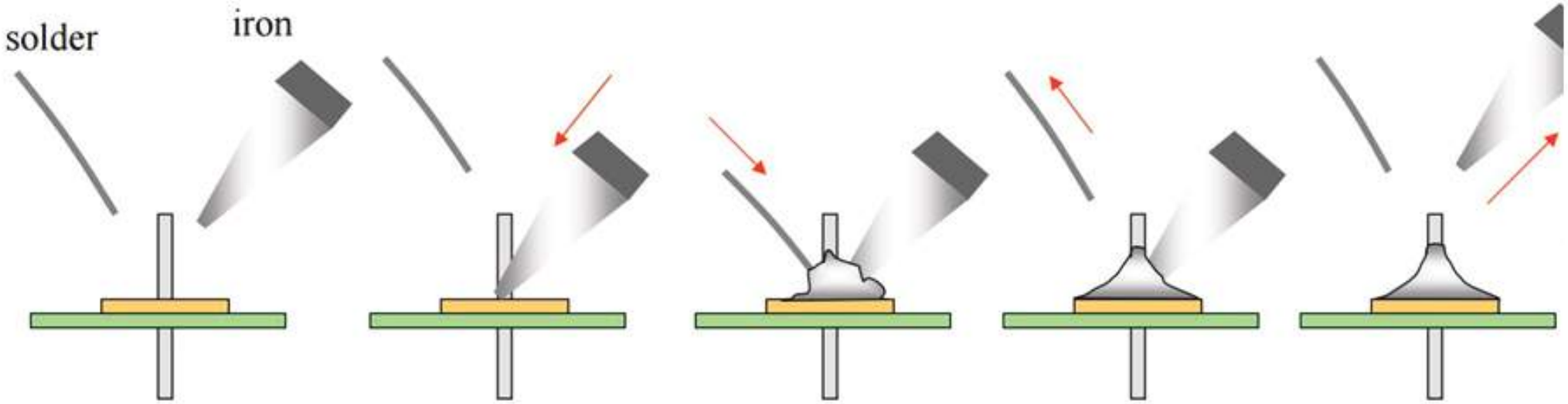


SAFETY

THIS BOARD IS EXPERIMENTAL

- IT IS UNINSULATED
- IT COULD DAMAGE YOUR PC
- YOU SHOULD NOT LEAVE IT PLUGGED IN UNATTENDED
- RISK OF EPILEPTIC SEIZURES

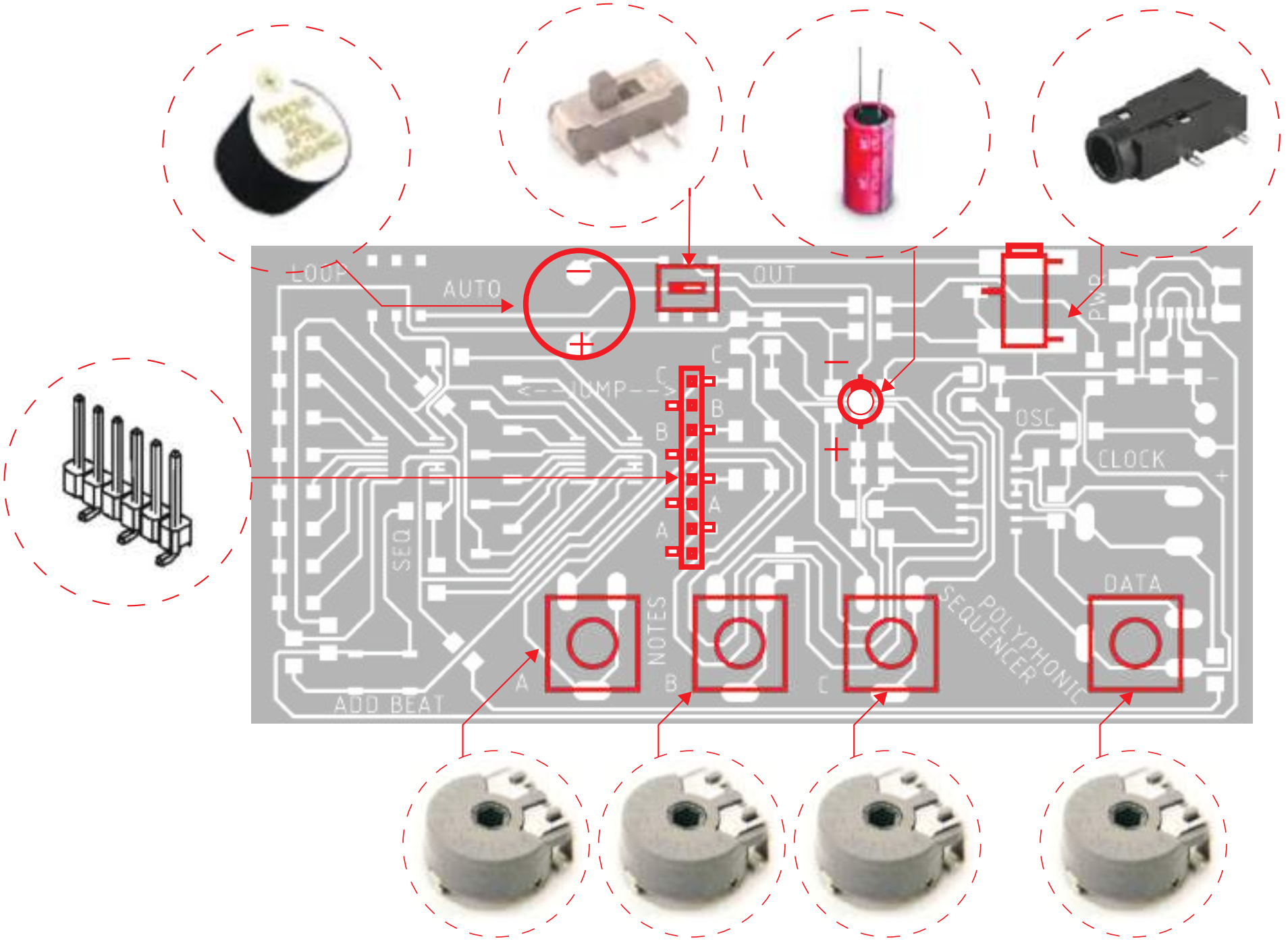
COMMENT SOUDER



IT GETS HOT!

WASH YOUR HANDS BEFORE
YOU EAT
(LEAD IN THE SOLDER)

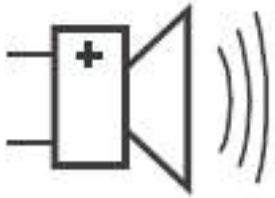
ASSEMBLY


LOOP
AUTO
OUT
PWR
JUMP
OSC
CLOCK
SEQ
NOTES
DATA
ADD BEAT
POLYPHONIC SEQUENCER

CAPACITOR
STORES ELECTRICAL ENERGY
HI FREQ PASSES WHILE LOW FREQ BLOCKED

POTENTIOMETER
A VARIABLE RESISTOR
CONTROLS VOLUME IN YOUR STEREO

SWITCH
ALLOWS US TO CONNECT / DISCONNECT BETWEEN TWO OPTIONS LIKE AM / FM ON A RADIO



PIEZO BUZZER
A MINI SPEAKER THAT VIBRATES TO CREATE SOUND

OPERATION

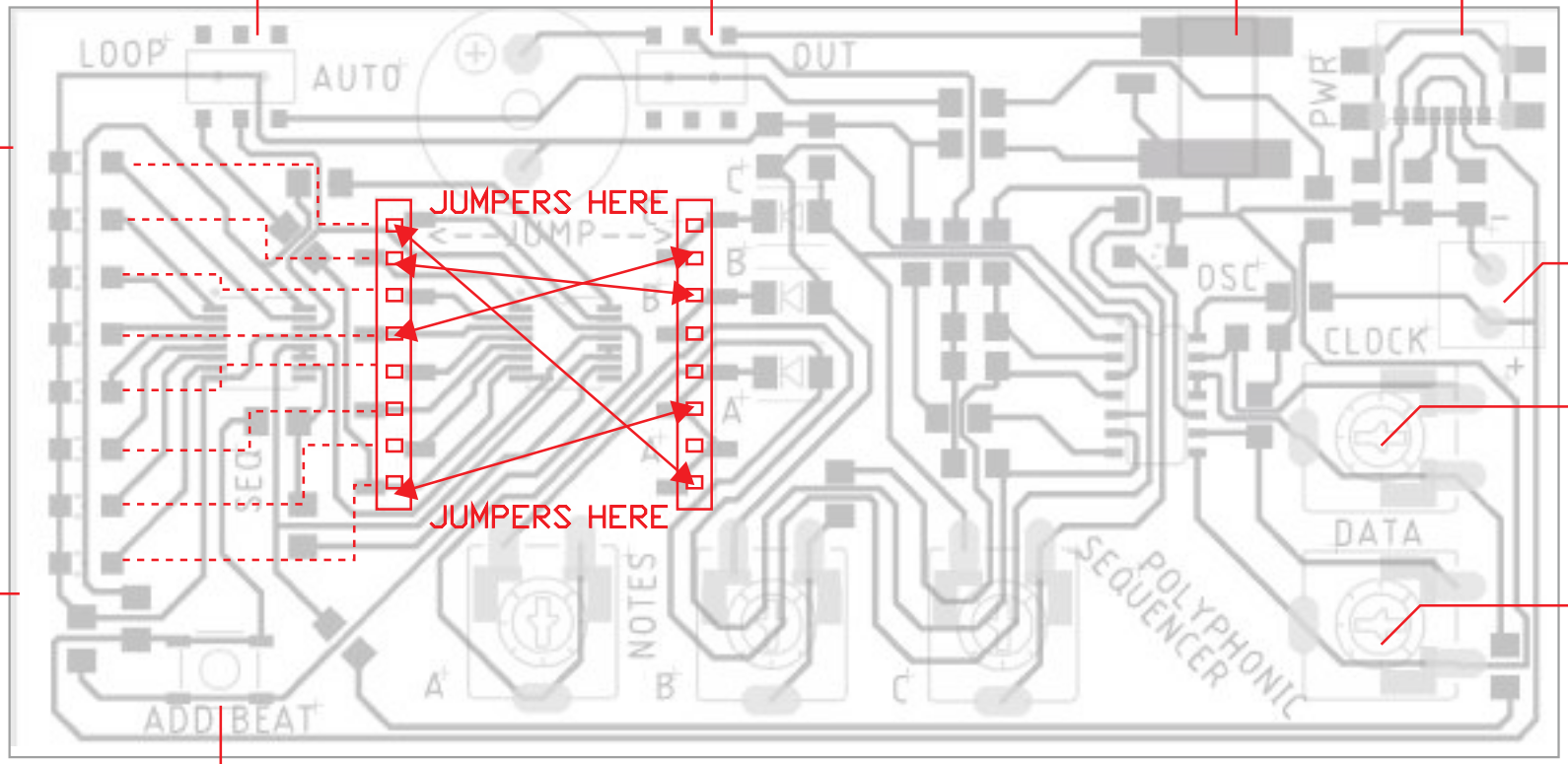
LOOP: HIT **ADD BEATS** TO ADD LED FLASHES TO AN ENDLESS LOOP

AUTO: ADJUST **CLOCK** AND **DATA** TO PRODUCE YOUR OWN LED BEAT PATTERNS

OUTPUT SWITCH: EITHER SENDS SOUND TO THE 3.5MM AUDIO OUT OR THE BUILT-IN SPEAKER

3.5MM AUDIO OUT

USB C POWER



LOOP LEDS: THE BEATS THAT CAN TRIGGER NOTES USING THE JUMPER WIRES PROVIDED

ALT POWER 5V MAX

CLOCK: CONTROLS THE TEMPO

DATA: COMBINES WITH THE CLOCK KNOB TO MAKE LED PATTERNS WHEN IN **AUTO** MODE

ADD BEATS: HIT THIS BUTTON TO ADD LED BEATS TO THE LOOP

NOTES: THESE KNOBS CONTROL THE RELATIVE PITCHES OF NOTES A,B & C

RESEARCH

HACKADAY

HOME BLOG HACKADAY.IO TINDIE HACKADAY PRIZE SUBMIT ABOUT November 5, 2021

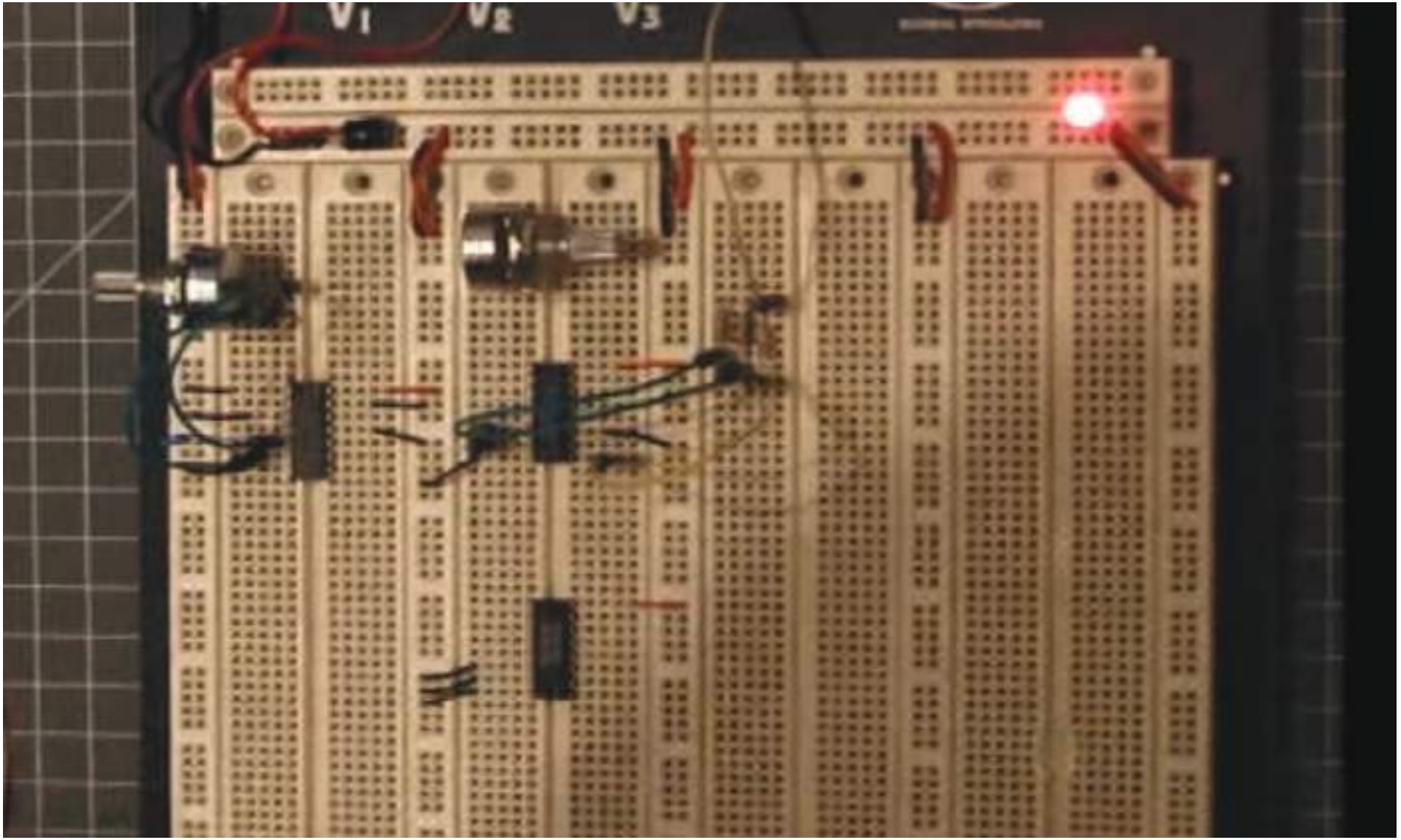
LOGIC NOISE: SWEET, SWEET OSCILLATOR SOUNDS

by: Elliot Williams

50 Comments

February 4, 2015

PROTOTYPING



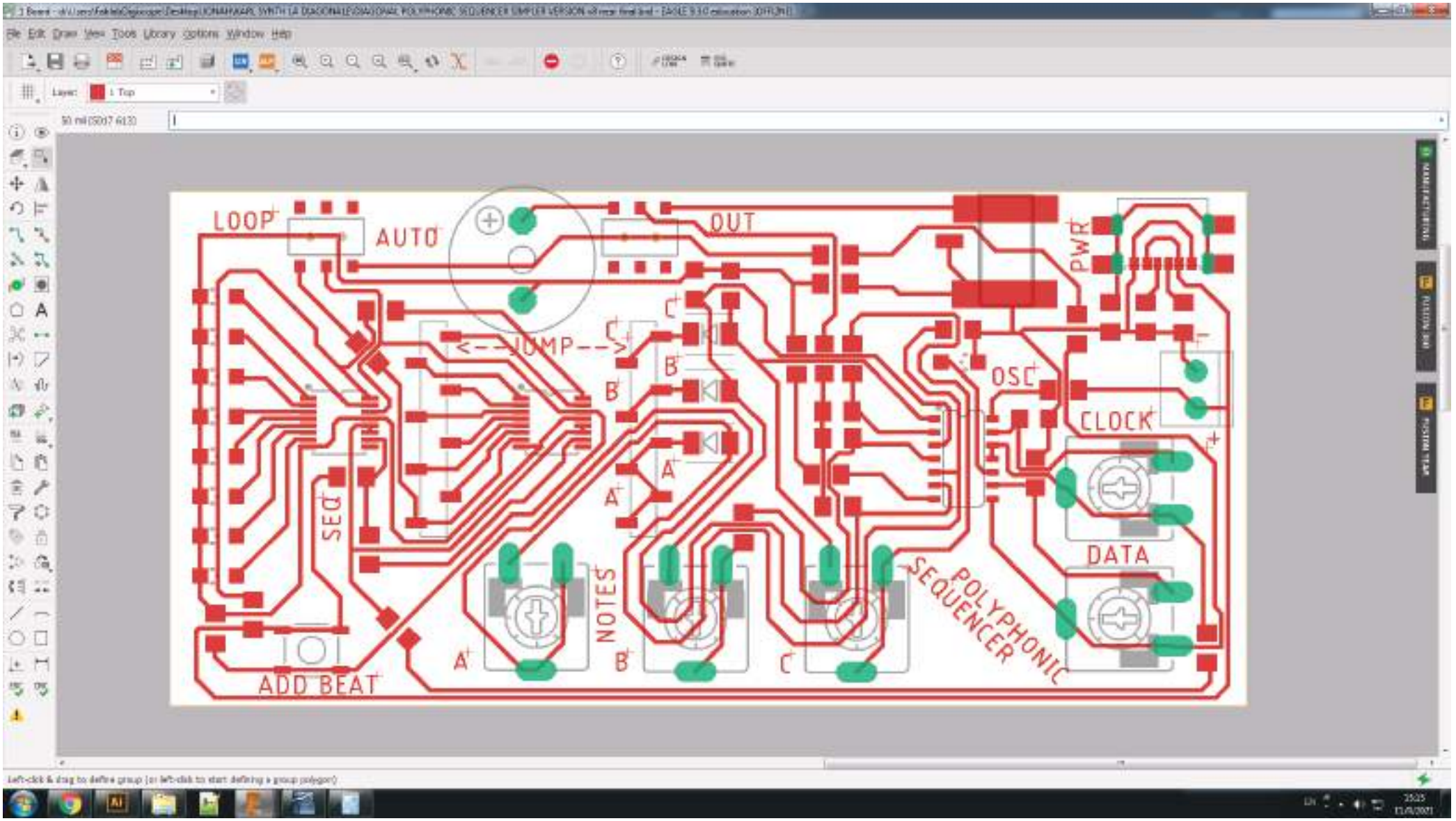
SOURCING

1 - 37 of 37

Checkout

Sort	Product Detail		Description	Quantity	Availability	Unit Price (EUR)	Ext. Price (EUR)	
10		Mouser No: Mfr. No: Mfr.: Customer No:	652-CR1206-FX-5101ELF CR1206-FX-5101ELF Bourns Customer No	Thick Film Resistors - SMD 5 1K 1% RoHS Compliant By Exemption QuickView	60 Packaging: **Cut Tape	60 Dispatches Now	0,061 €	4,88 €	
11		Mouser No: Mfr. No: Mfr.: Customer No:	485-1201 1201 Adafruit Customer No	Adafruit Accessories Vibrating Mini Motor Disc QuickView	5	5 Dispatches Now	1,65 €	8,25 €	
12		Mouser No: Mfr. No: Mfr.: Customer No:	119-17541 17541 Aven Customer No	Desoldering Braid / Solder Removal DESOLDRING WICK, 2MM RoHS Compliant QuickView	5	5 Dispatches Now	1,63 €	8,15 €	
13		Mouser No: Mfr. No: Mfr.: Customer No:	650-400R0111-22-9 400R0111-22-9 TE Connectivity Customer No	Hook-up Wire 400R0111-22-9 Price Per Foot RoHS Compliant QuickView	50	50 Dispatches Now	0,091 €	4,55 €	
14		Mouser No: Mfr. No: Mfr.: Customer No:	640-MEM20510019600A MEM2051-00-195-00-A Global Connector Technology (GCT) Customer No	Memory Card Connectors Micro SD Push Push, Open, SMT, 1.95mm profile, No Peg, T&R RoHS Compliant QuickView	6	6 Dispatches Now	1,02 €	6,12 €	
15		Mouser No: Mfr. No: Mfr.: Customer No:	710-860010572002 860010572002 Wurth Elektronik Customer No	Aluminum Electrolytic Capacitors - Radial Leaded WCAP-ATG8 10uF 35V 20% Radial RoHS Compliant	20	20 Dispatches Now	0,086 €	1,70 €	

DESIGN


LOOP
AUTO
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PWR
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OSC
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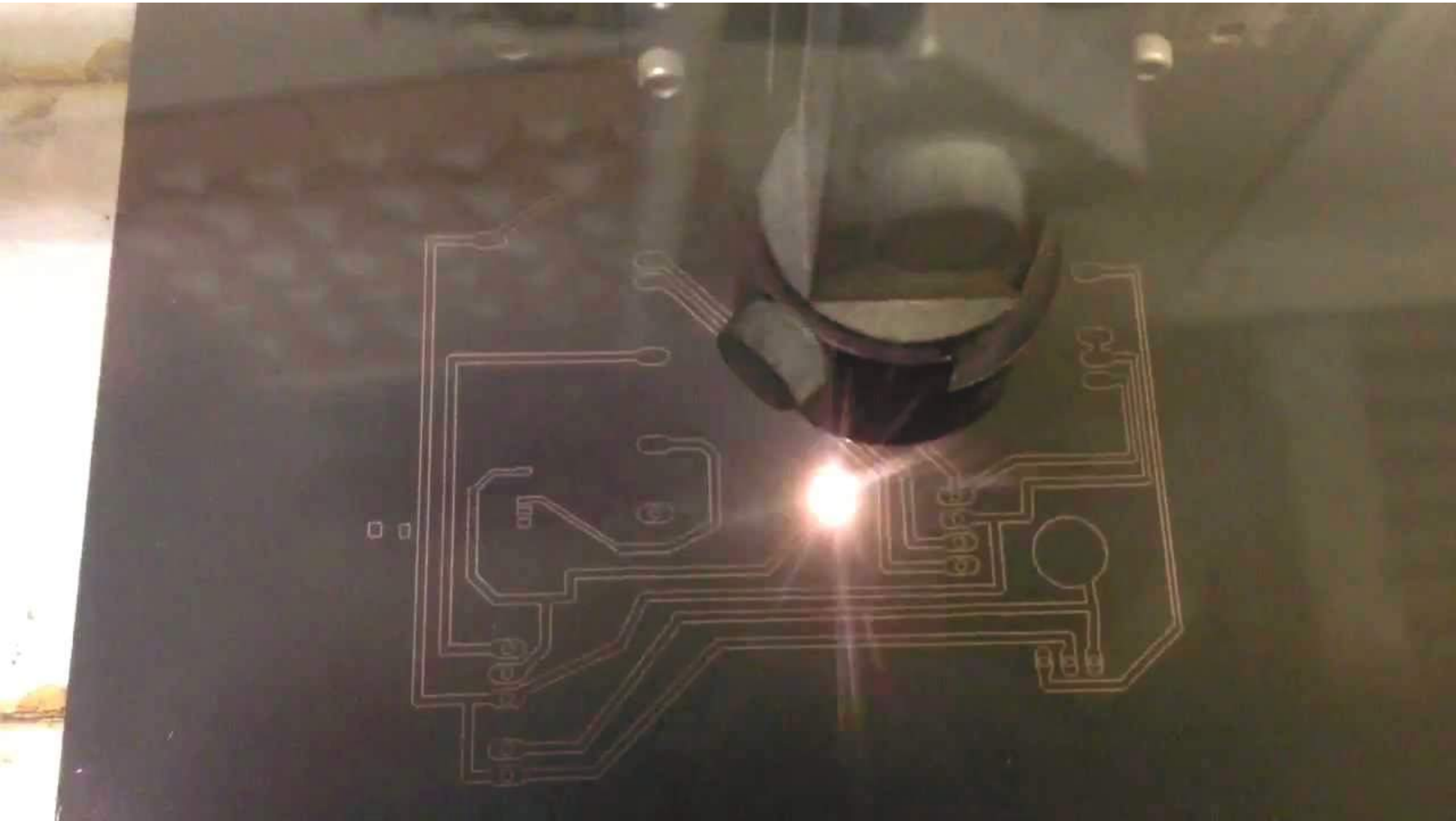
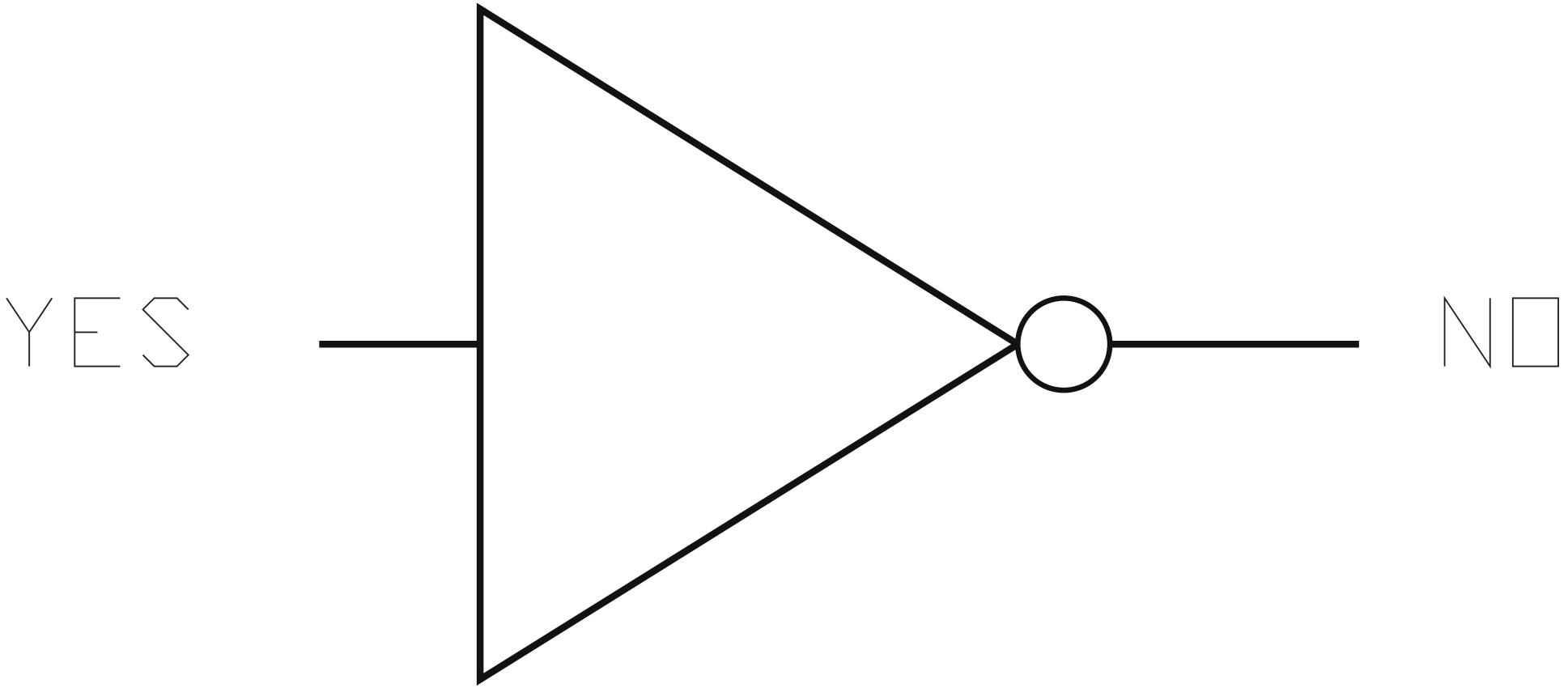
NOTES
DATA
ADD BEAT
POLYPHONIC SEQUENCER

PRODUCTION



INVERTER



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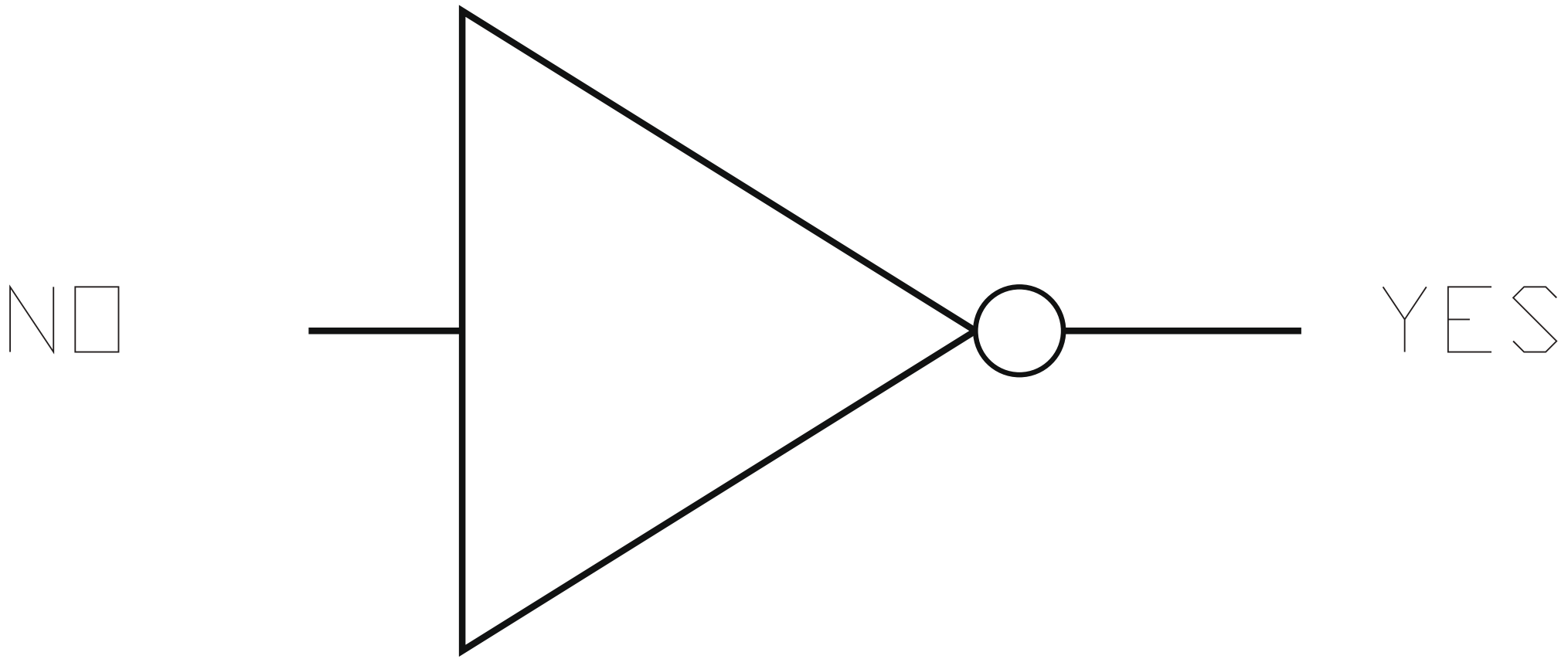
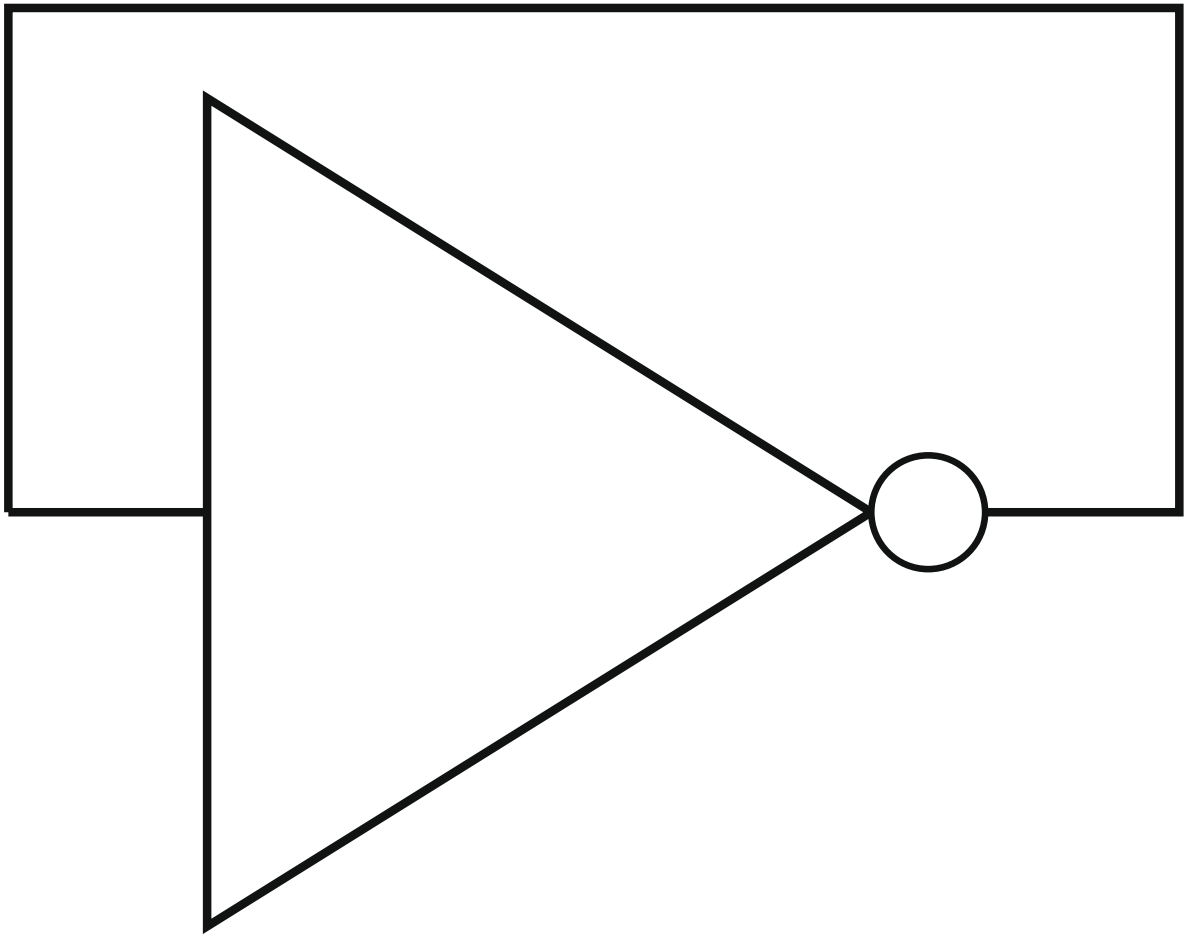


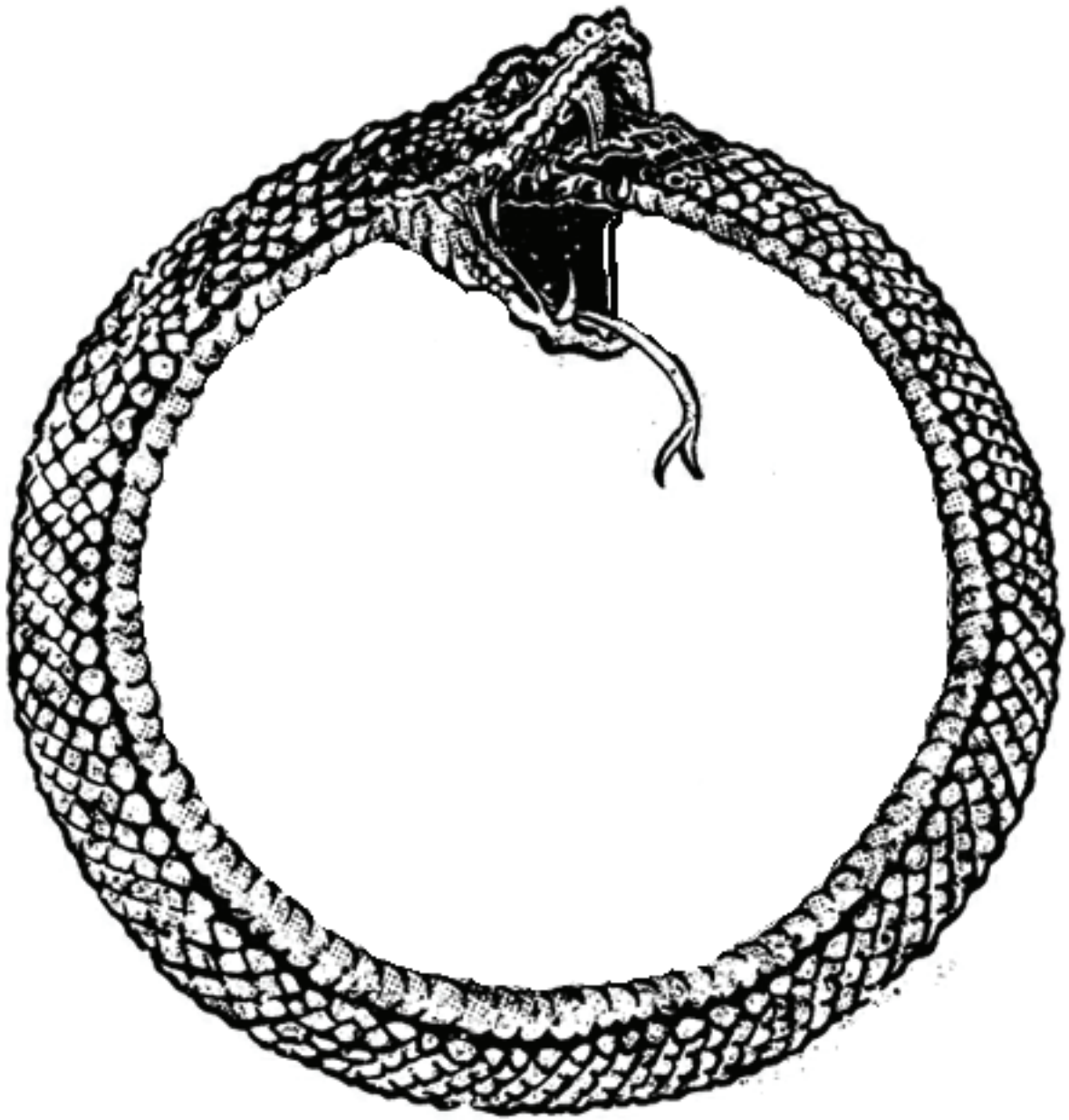
INVERTER

"YES, I DID!"

"NO, YOU DIDN'T"

INVERTER





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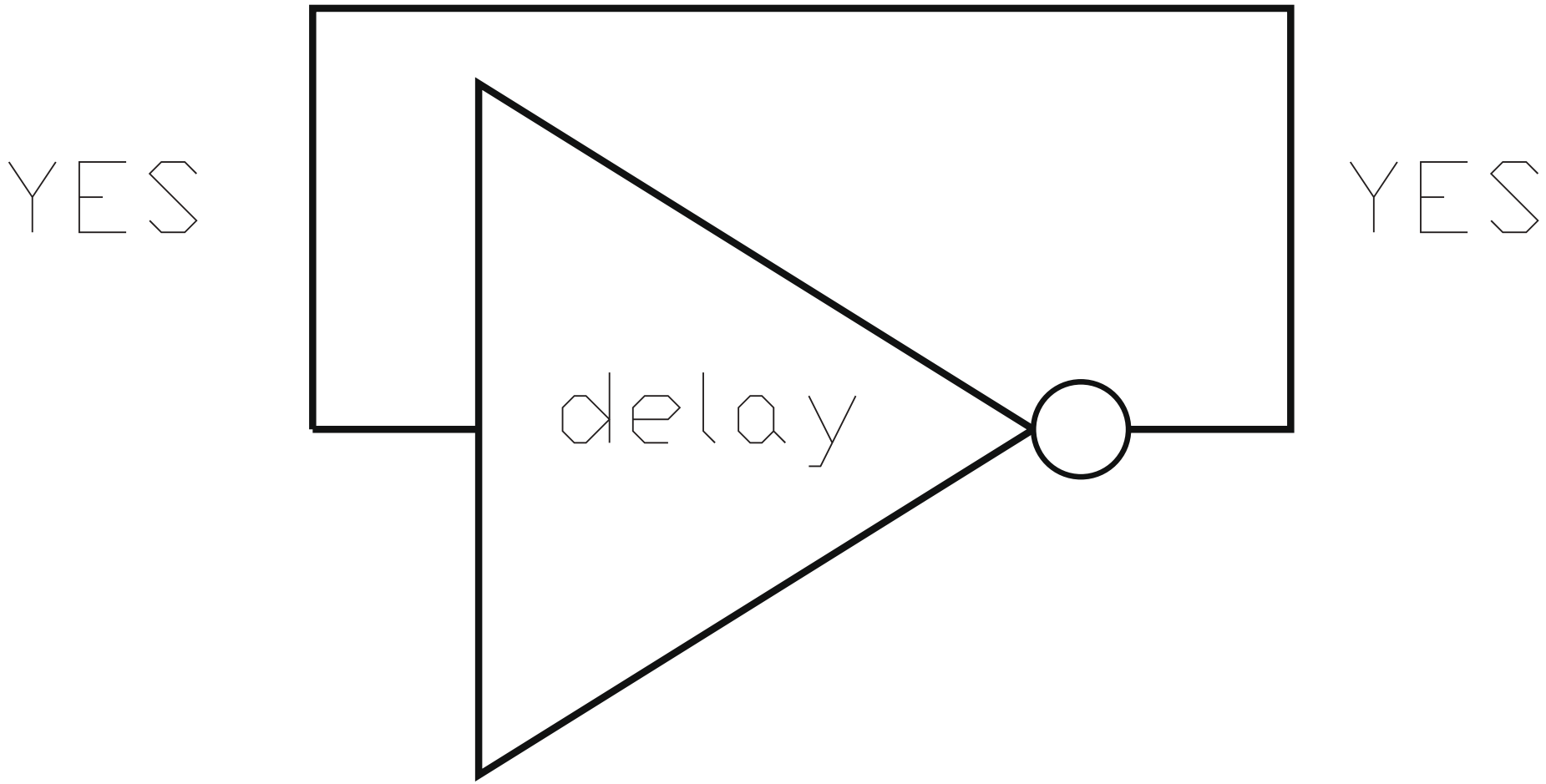

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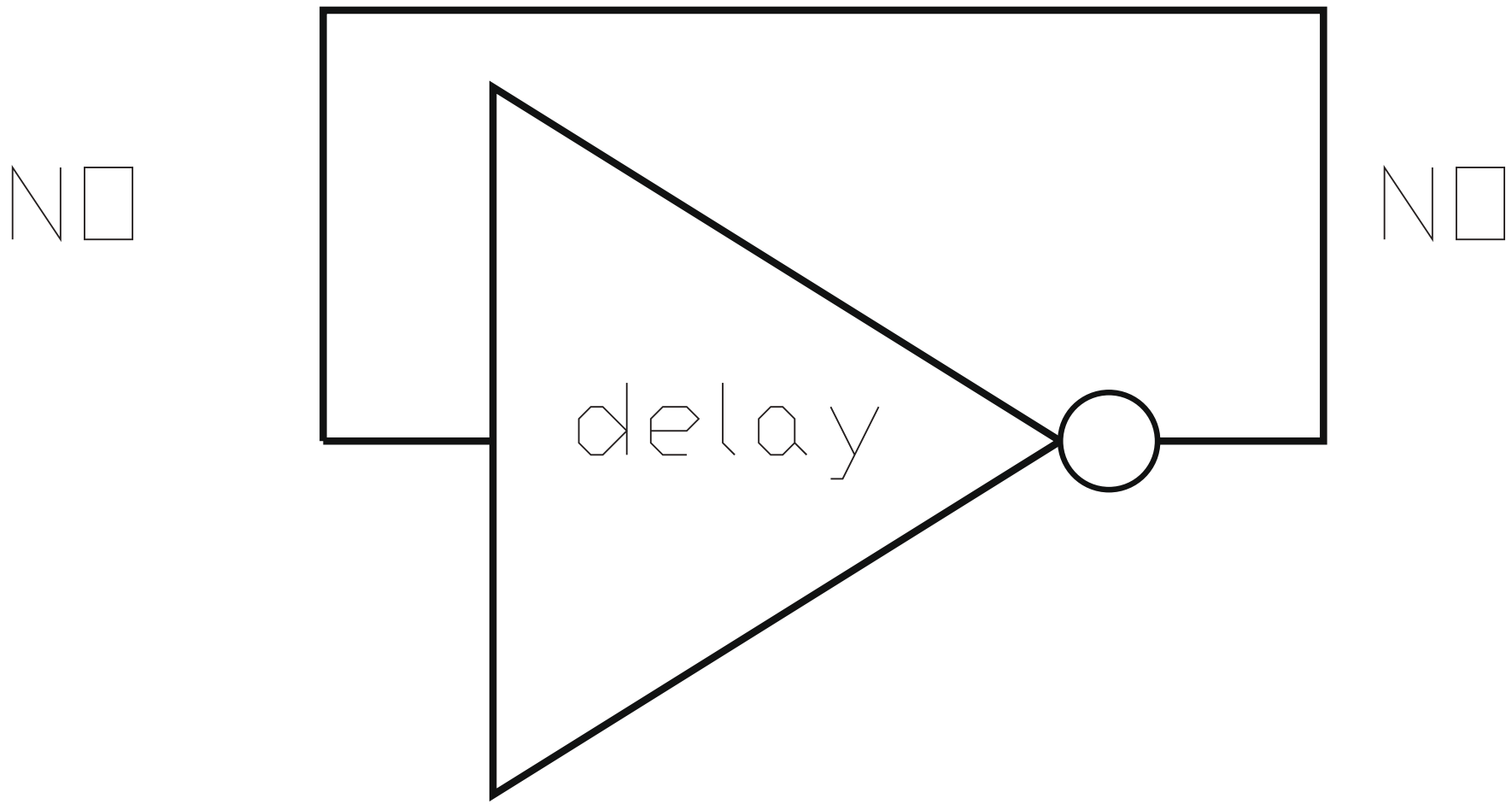
INVERTER



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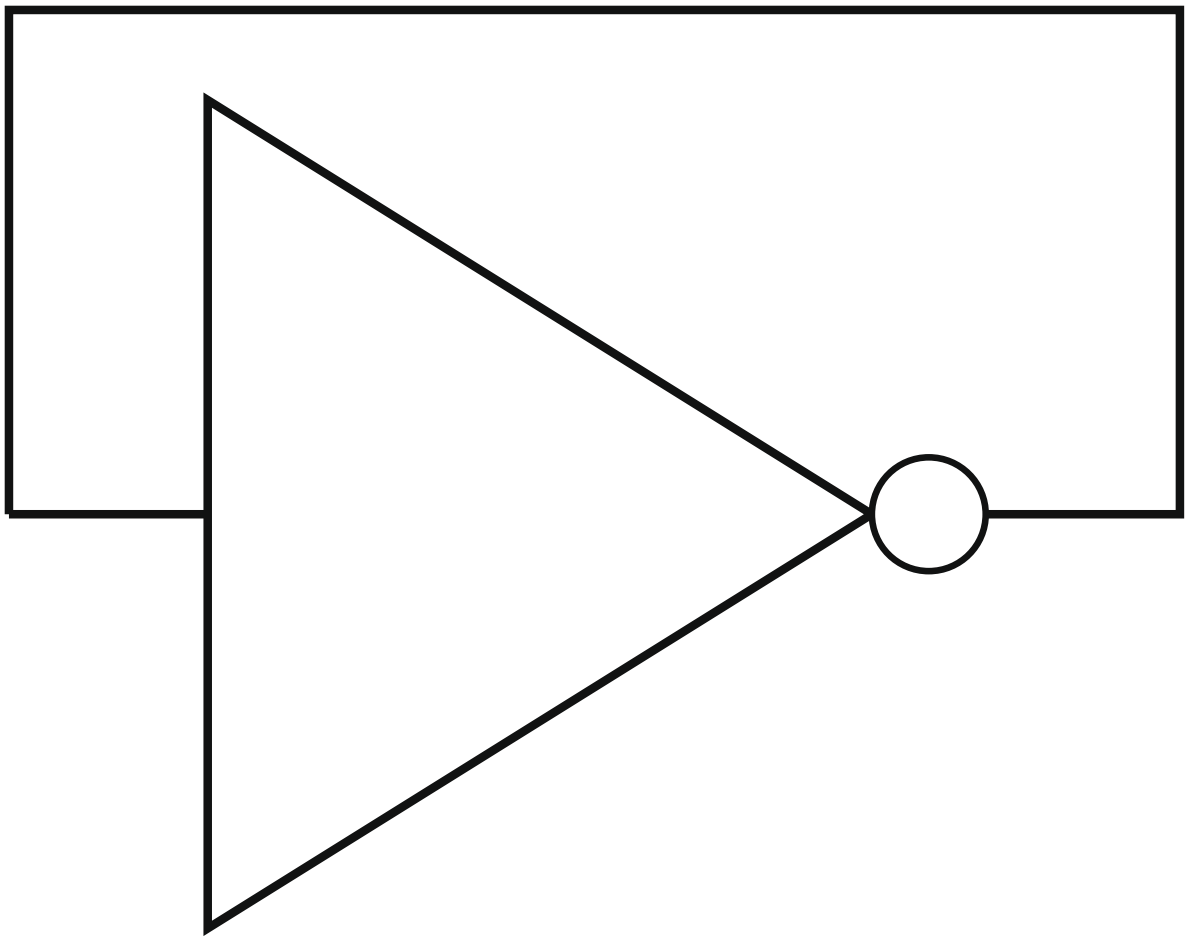
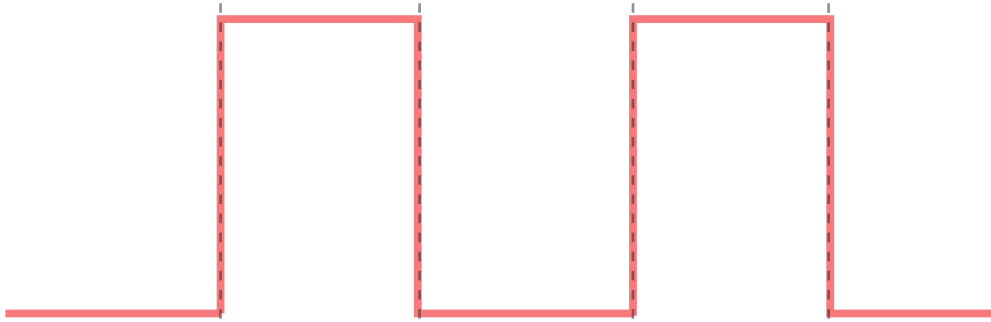
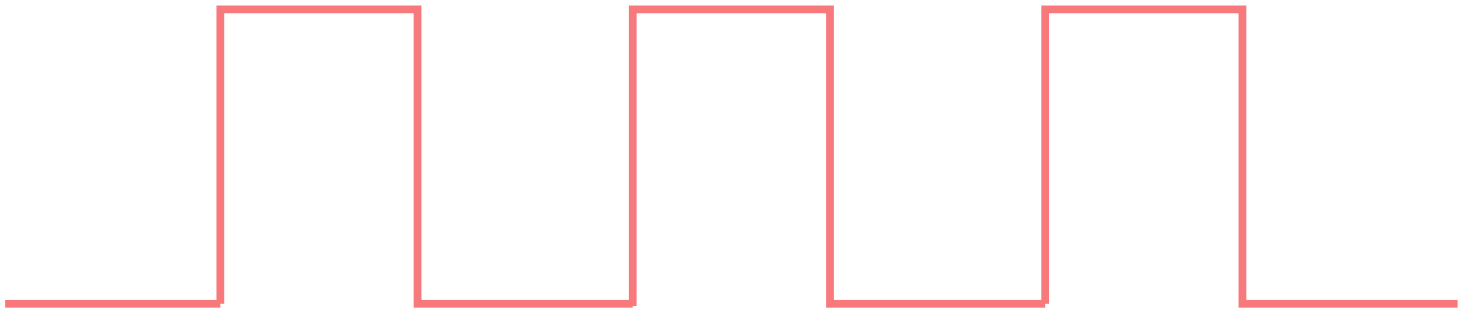
INVERTER



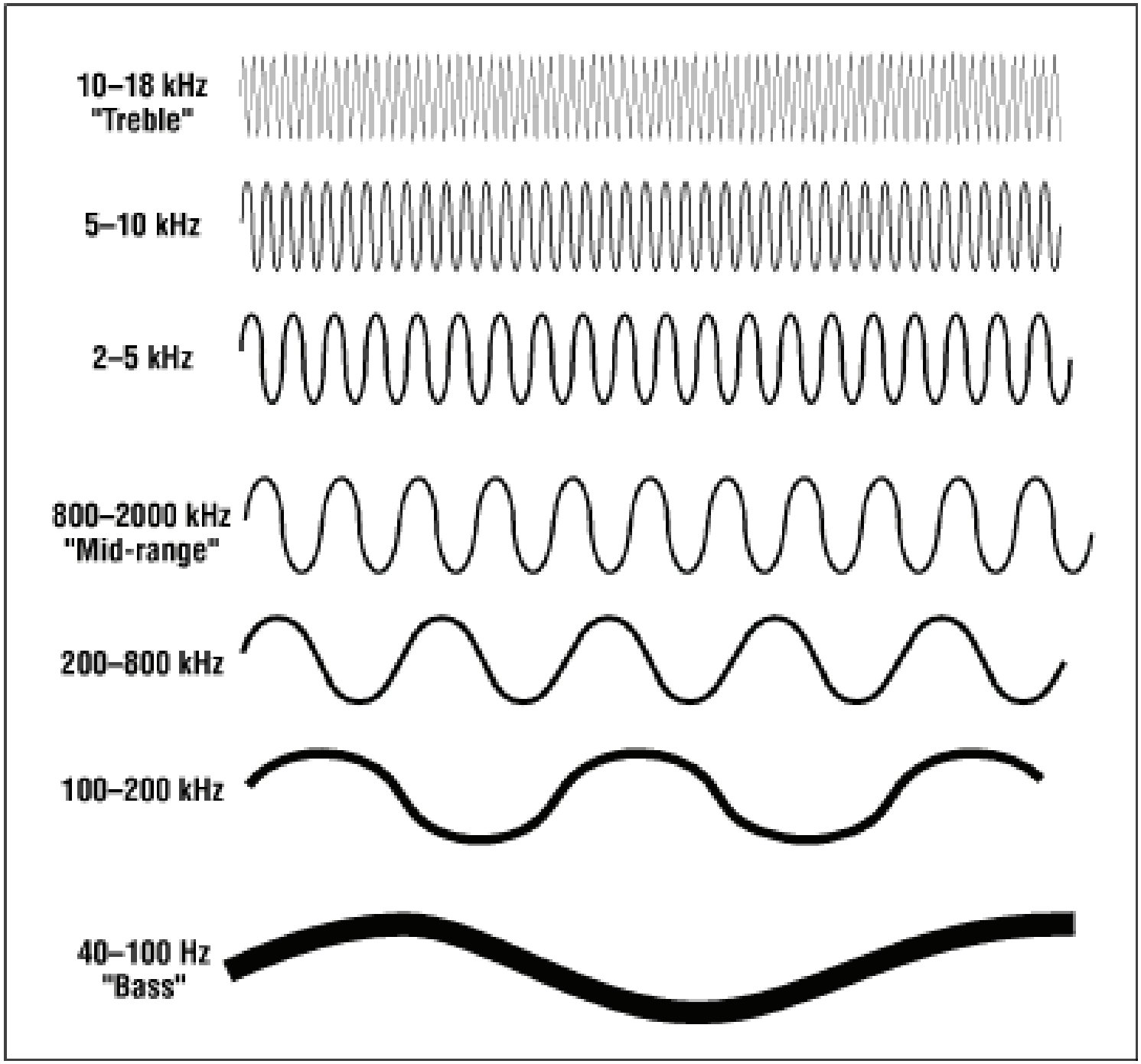


NO YES NO YES NO

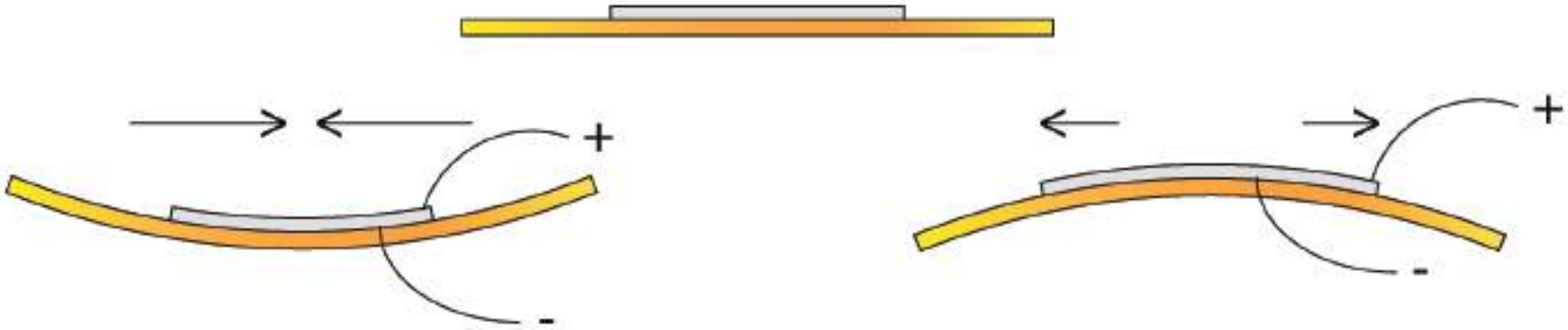
t = 0 1 2 3 4

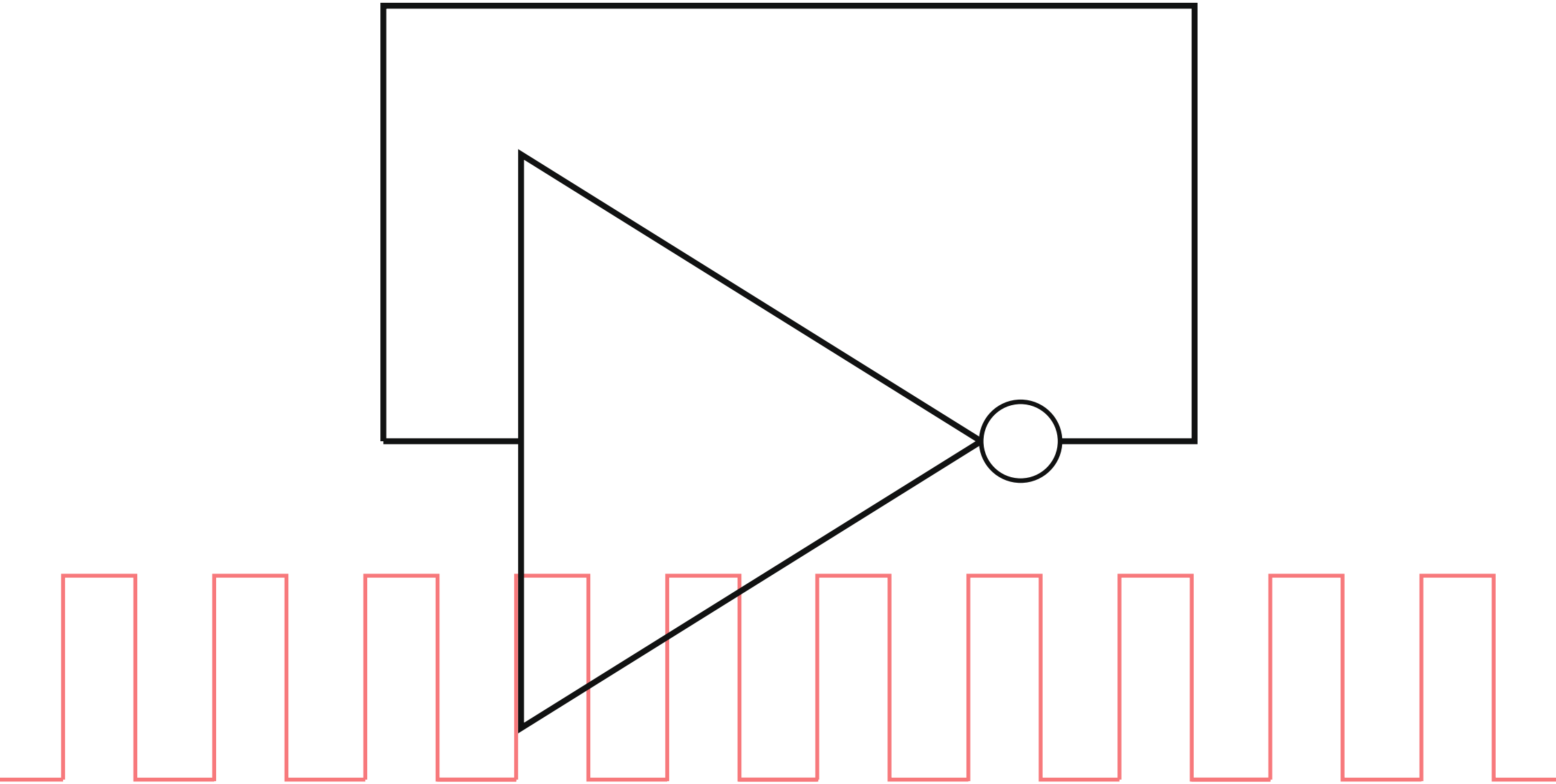


Sound Is Just Wiggly Air !

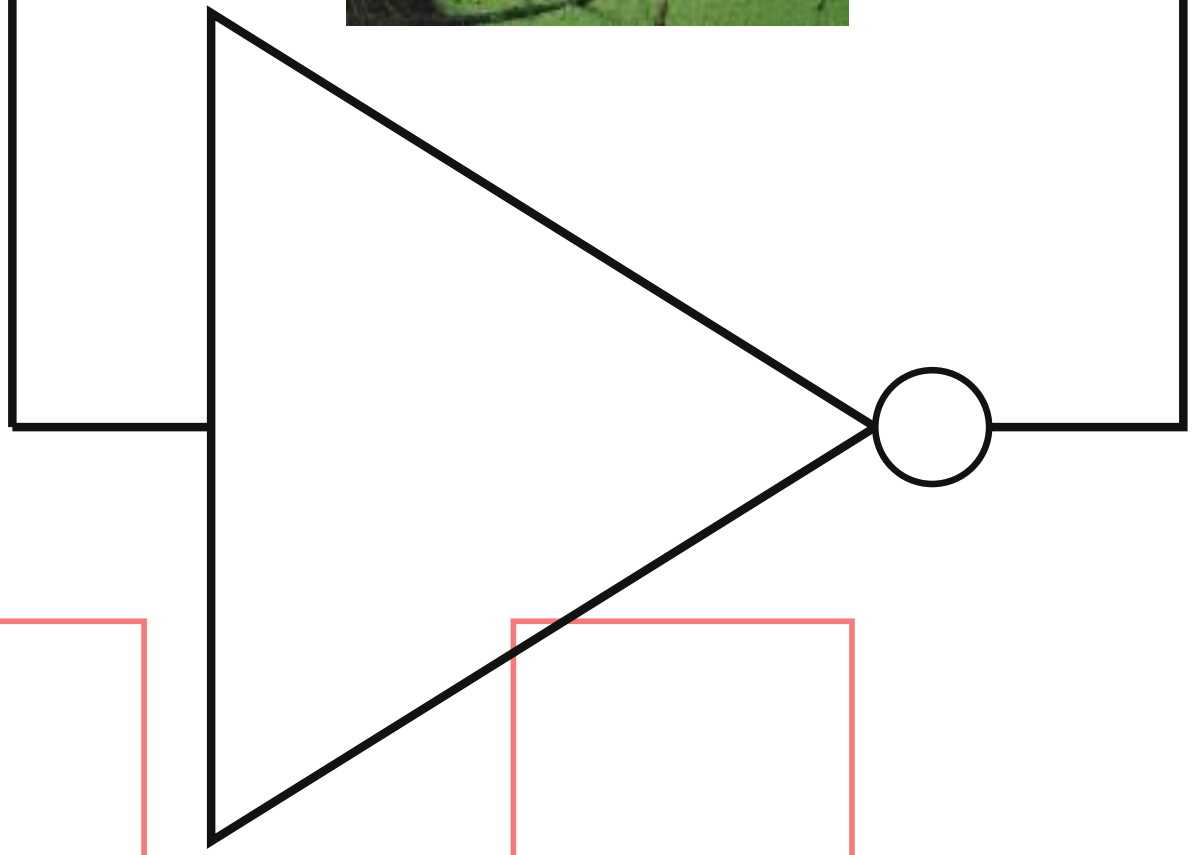

10–18 kHz
"Treble"
5–10 kHz
2–5 kHz
800–2000 kHz
"Mid-range"
200–800 kHz
100–200 kHz
40–100 Hz
"Bass"

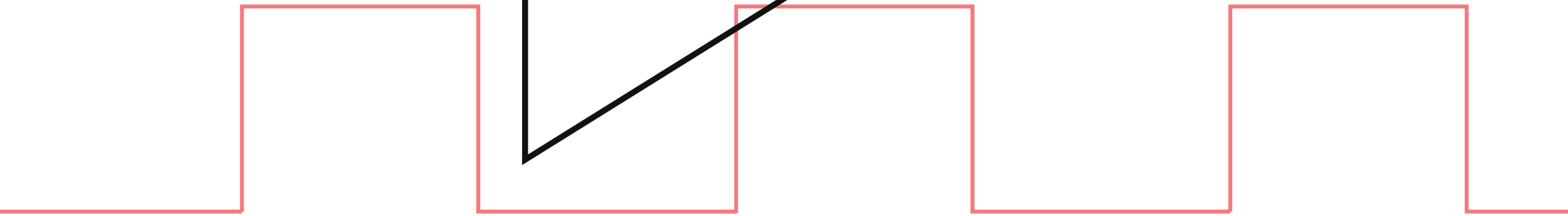
PIEZO SPEAKER



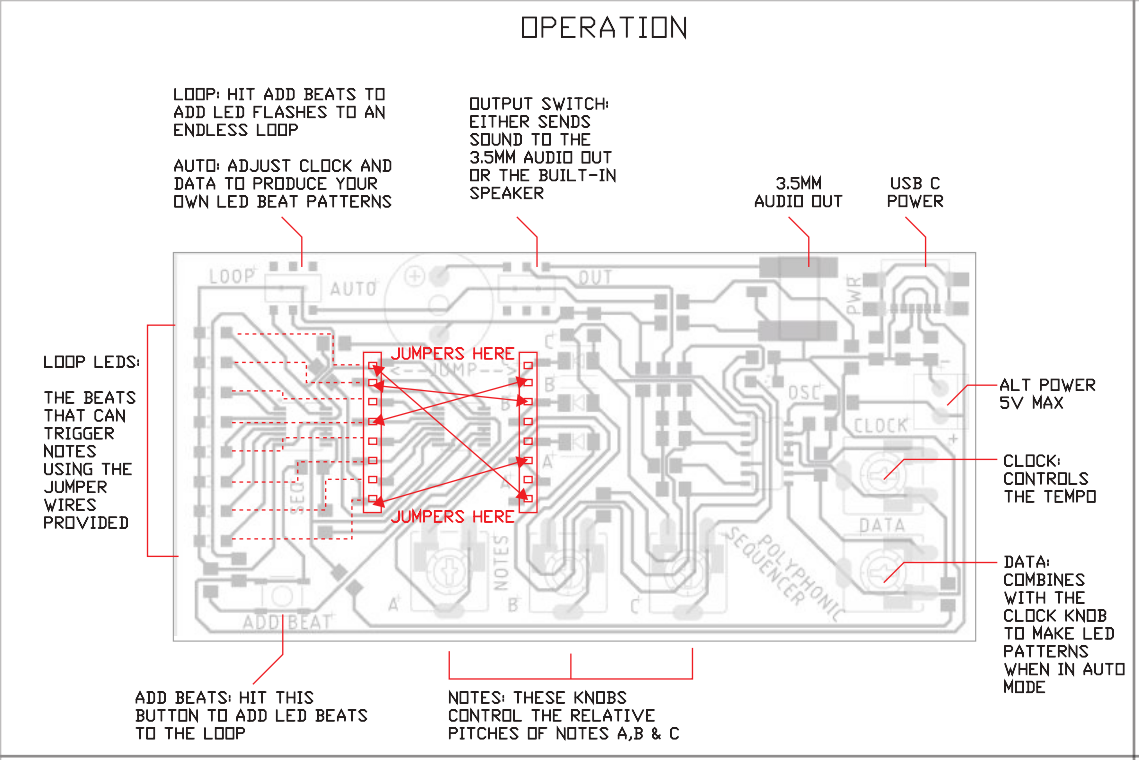


SWAMP

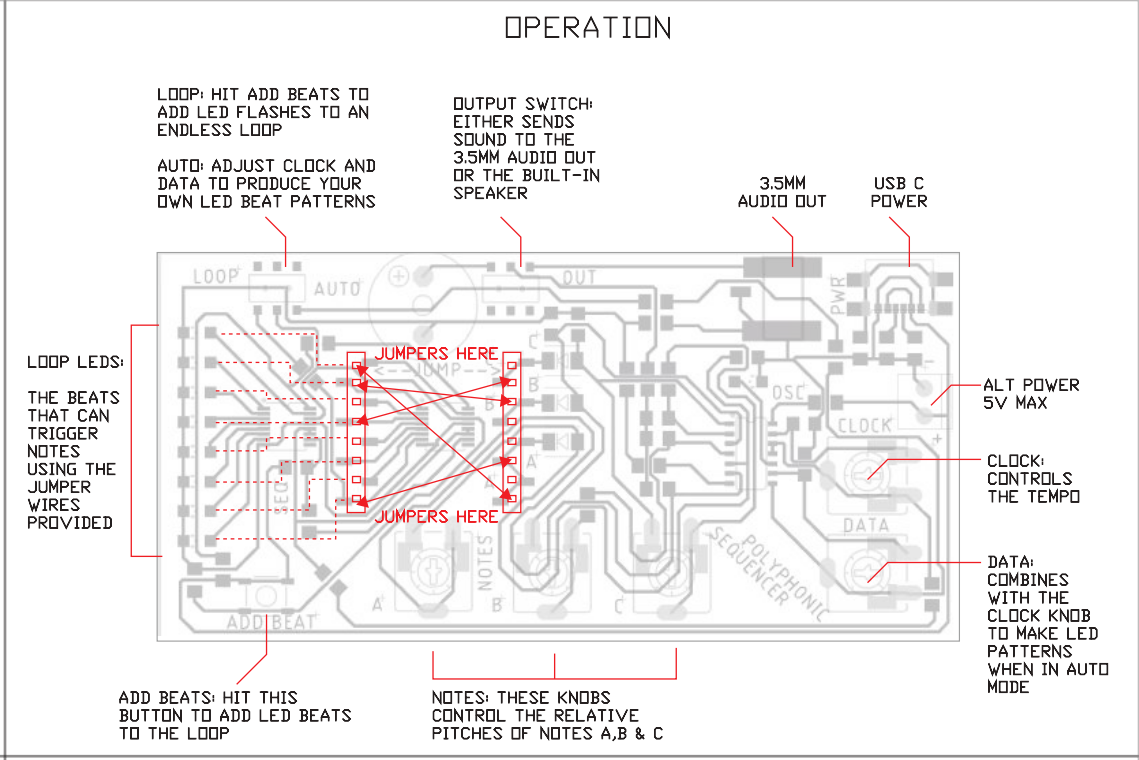




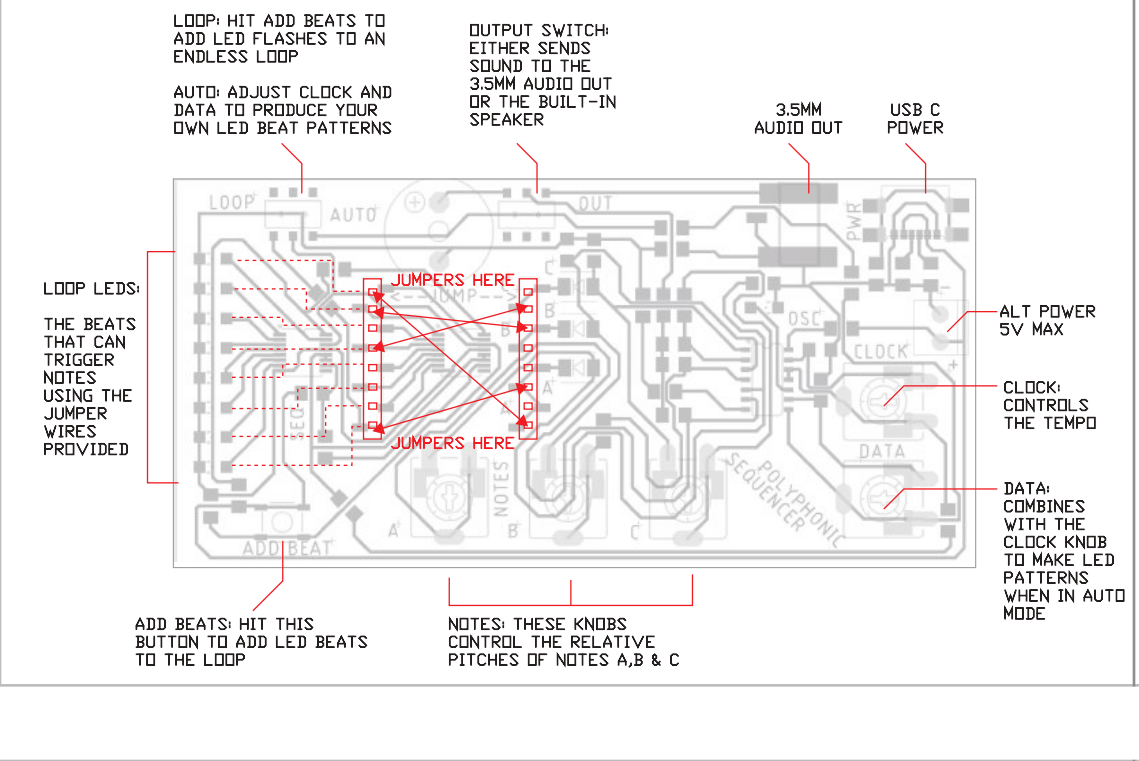
OPERATION



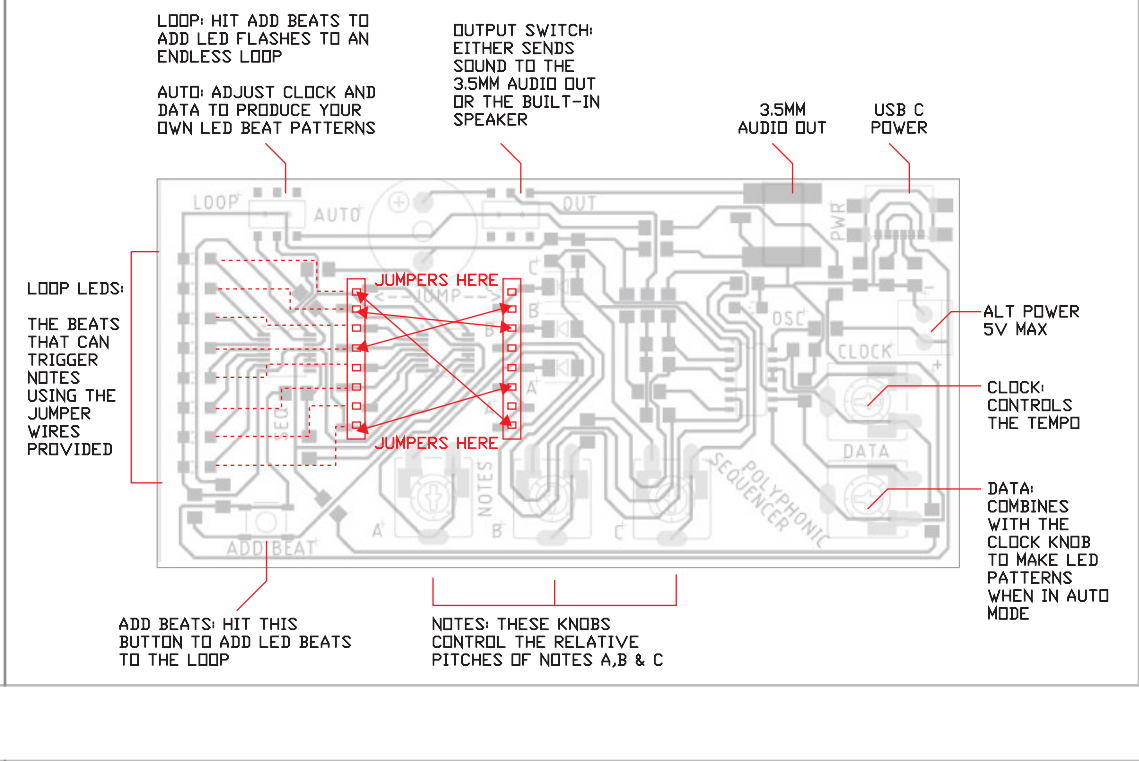
OPERATION



OPERATION



OPERATION



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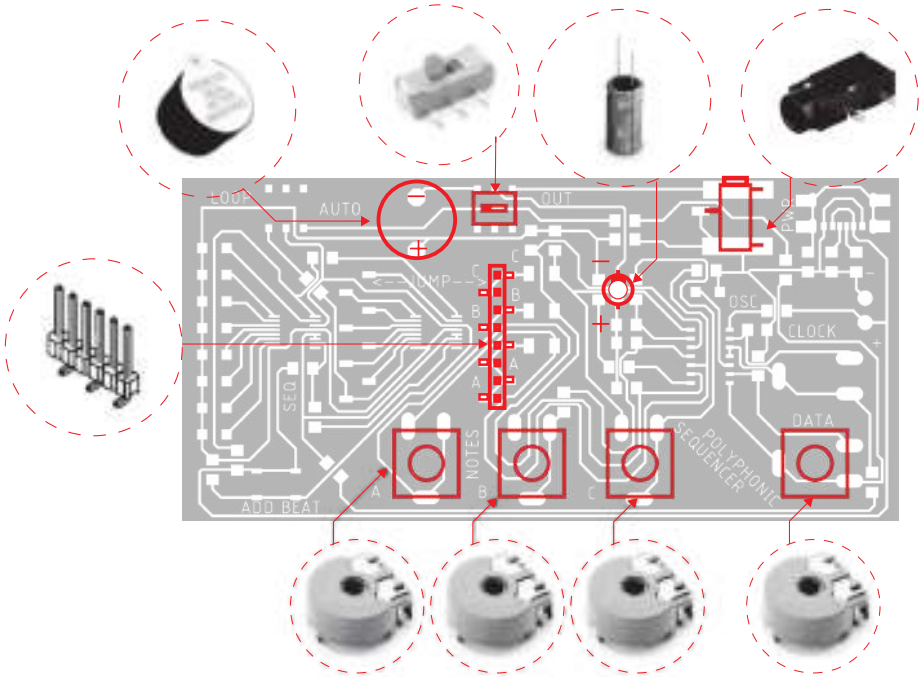

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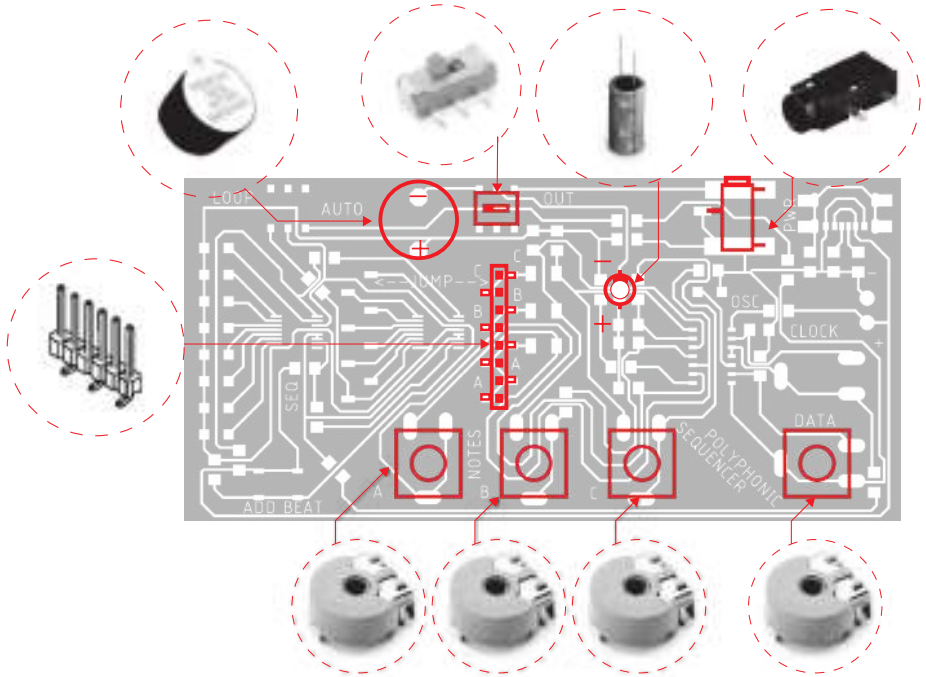

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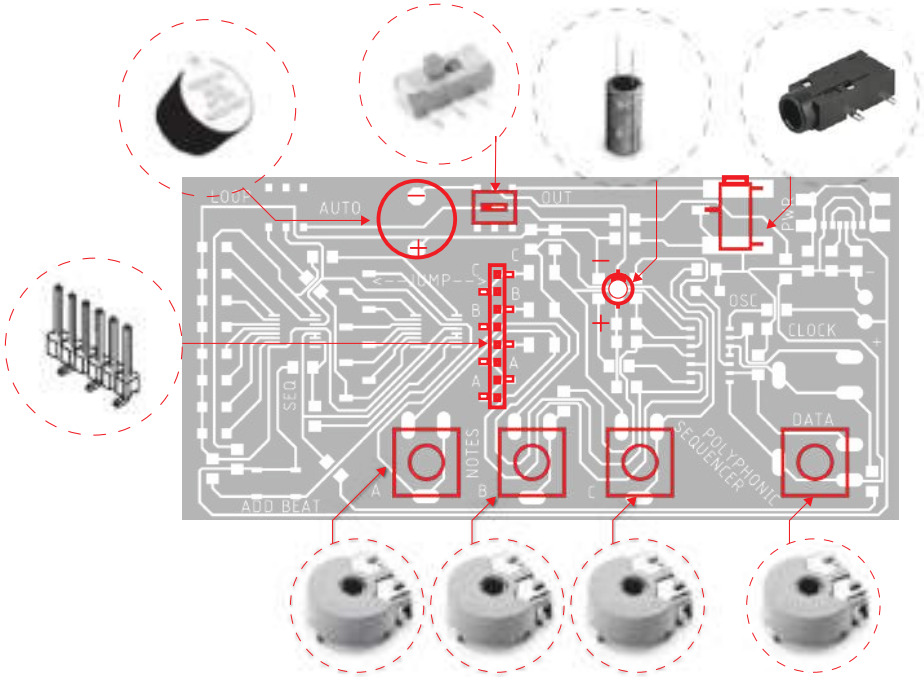
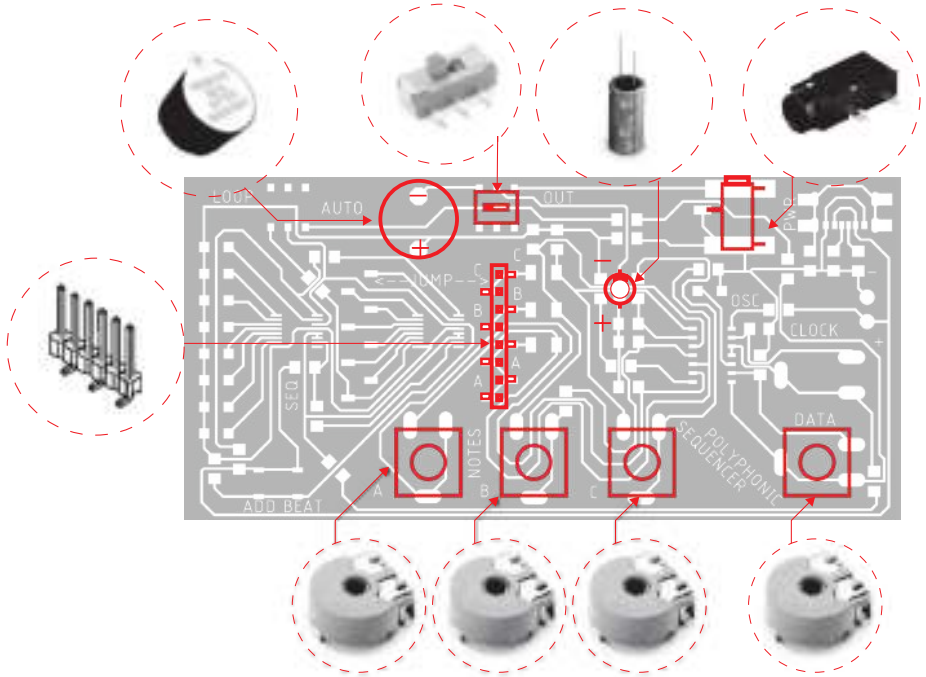
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