

Ø ANTUMBRA

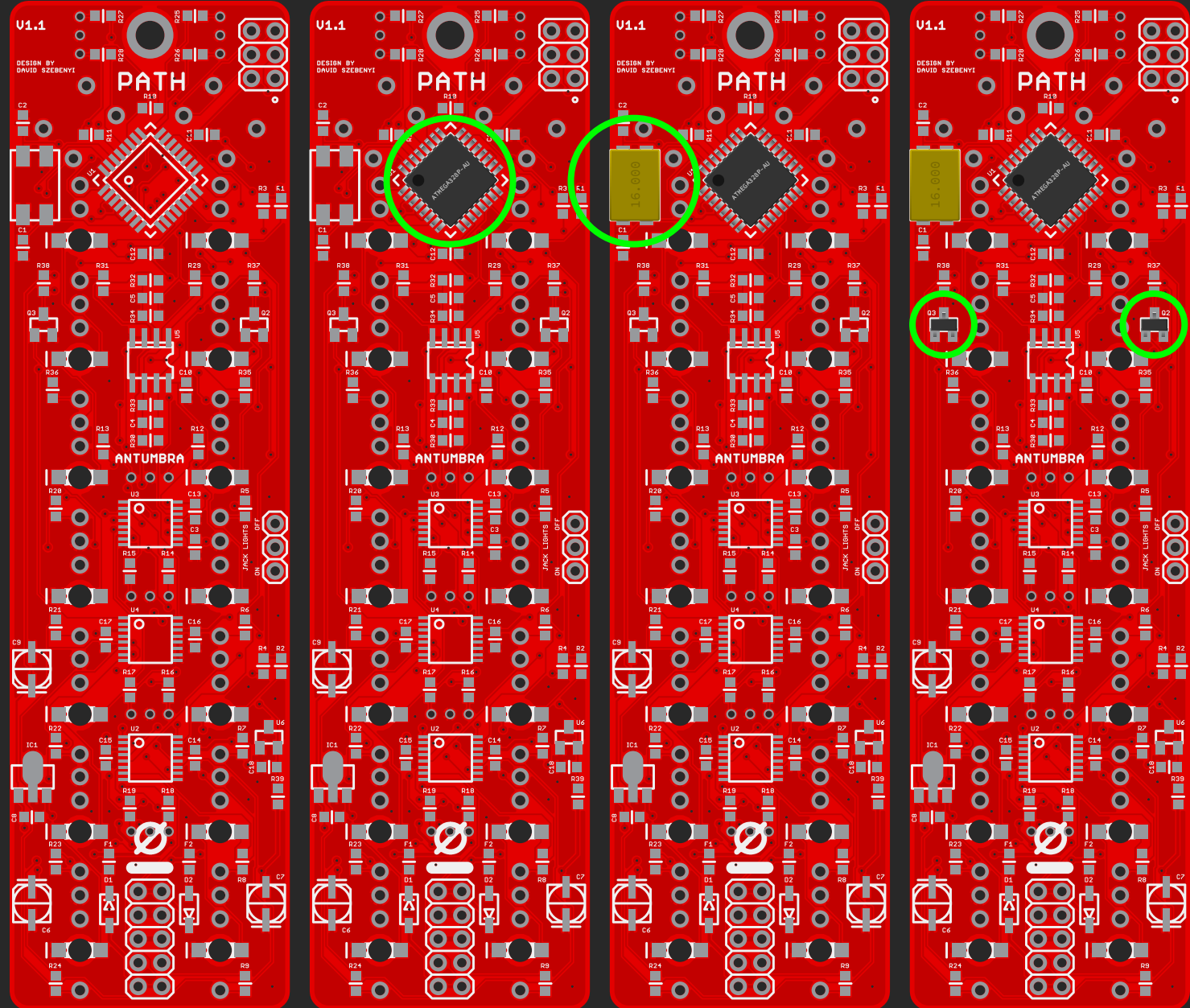
PATH

BUILDING INSTRUCTIONS

PCB V1.1

01. BUILD NOTES

Before you start building look through the build manual so that you'll be familiar with the building process and you won't run into any surprises! 😊



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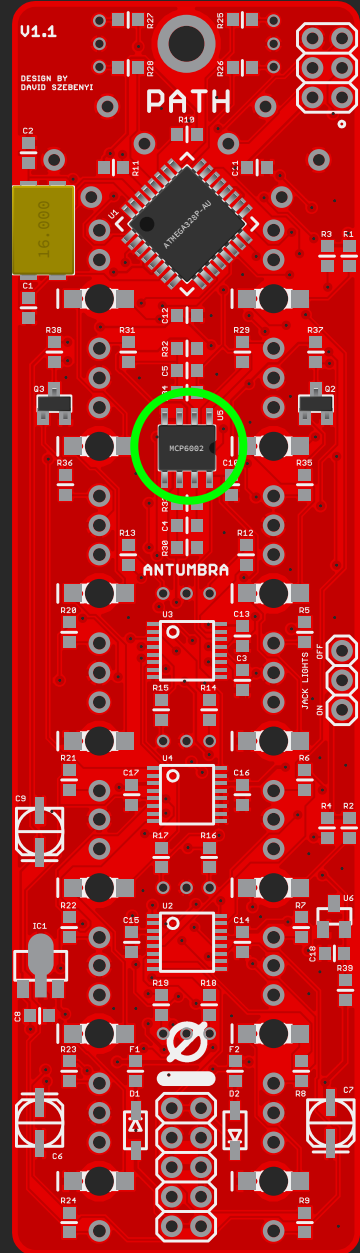
02. BUILD

00. Orient the PCB as seen on the left

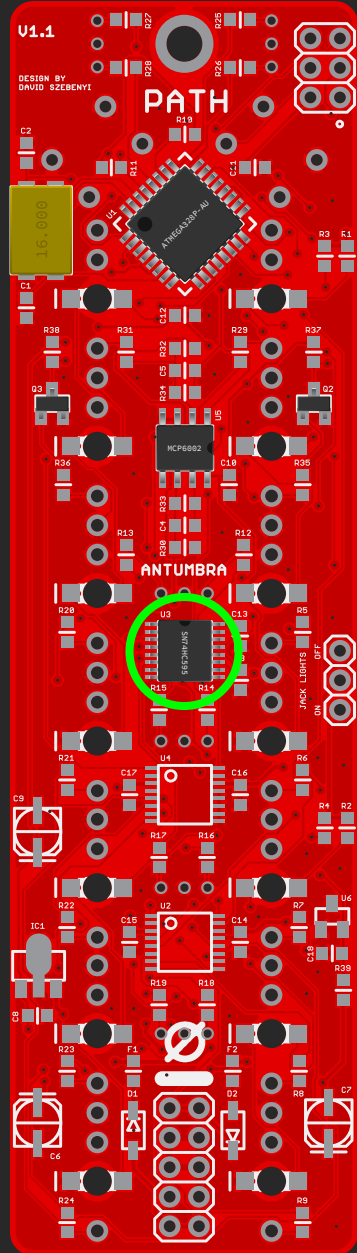
01. Solder the ATMEGA328P-AU
(Check it's orientation)

02. Solder the crystal oscillator

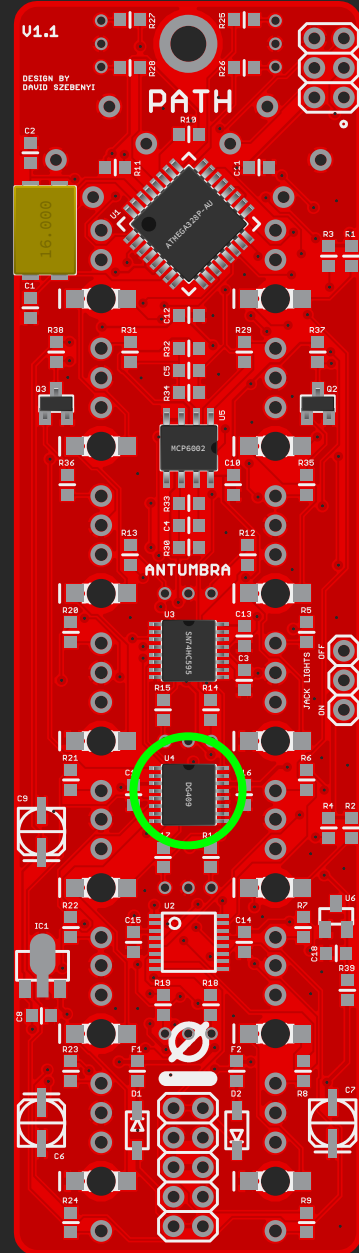
03. Solder the two MMBT3904s



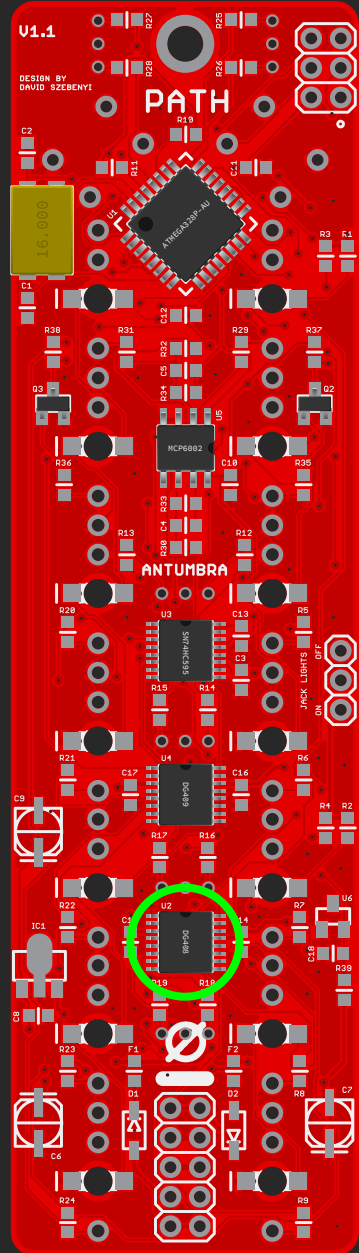
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02. BUILD

04. Solder the MCP6002
(Check it's orientation)

05. Solder the SN74HC595 shift register
(Check it's orientation)

06. Solder the DG409 switch IC
(Check it's orientation)

07. Solder the DG408 switch IC
(Check it's orientation)

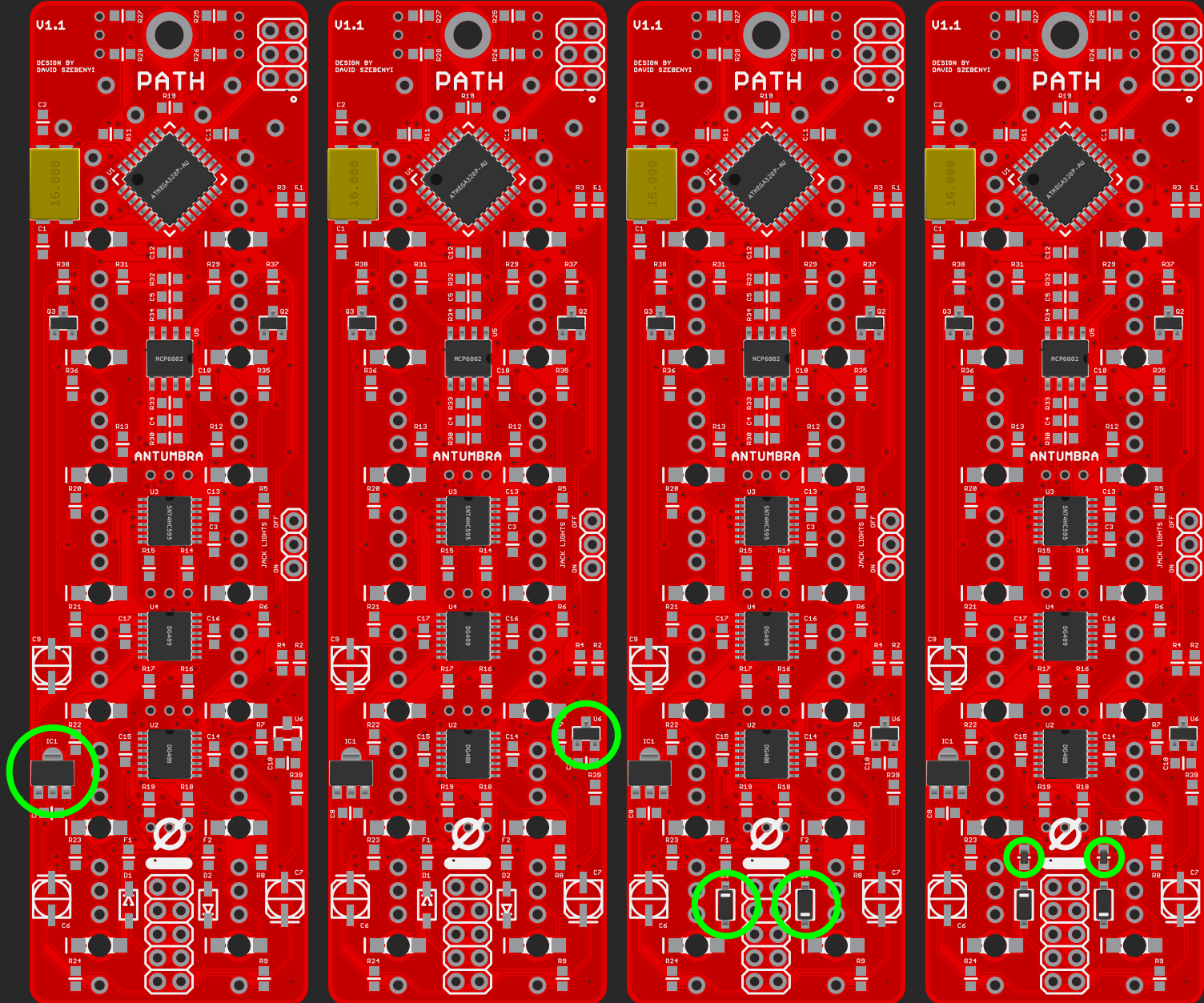
02. BUILD

08. Solder the 78L05 voltage regulator

09. Solder the LM4040 5V

10. Solder the two 1n5819 diodes
(Check their orientation)

11. Solder the two ferrite beads

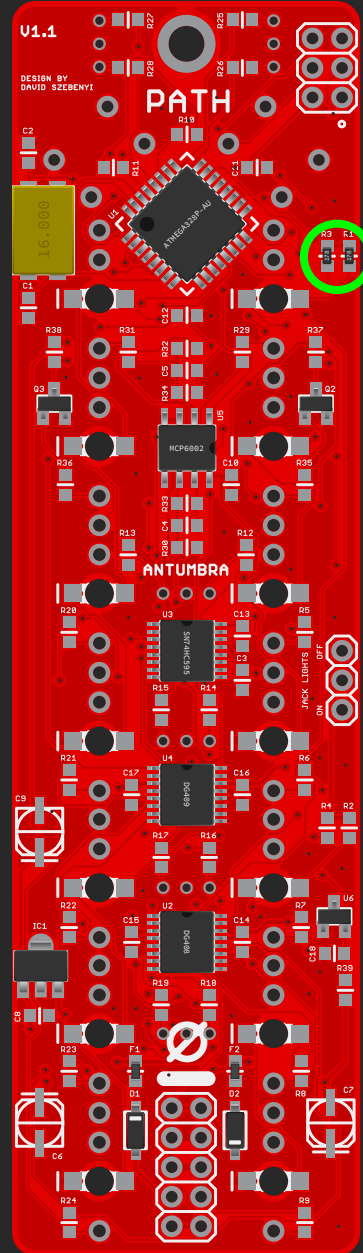


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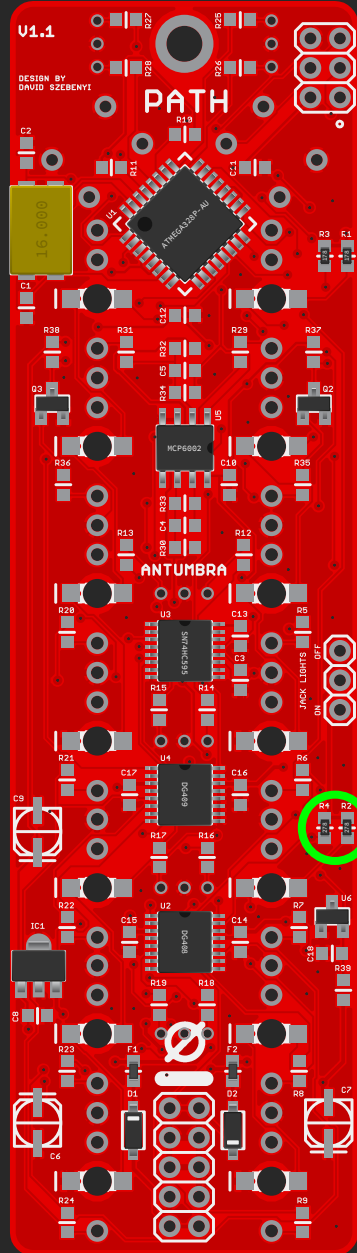
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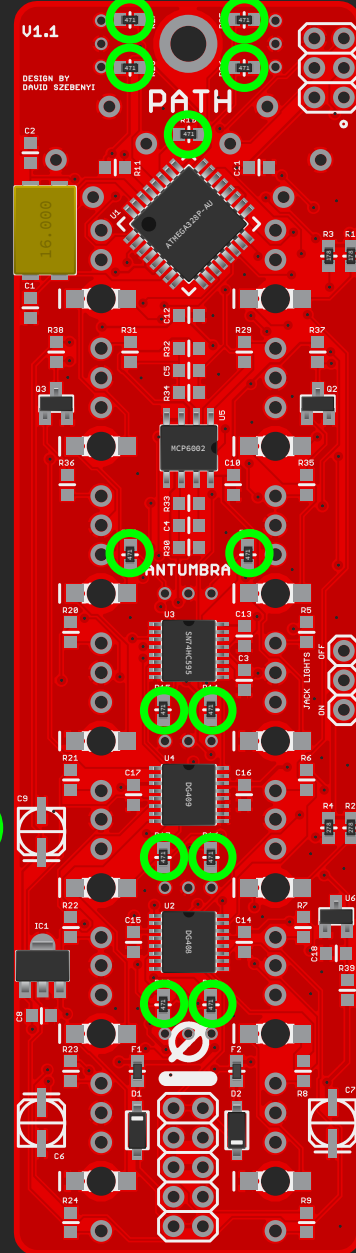
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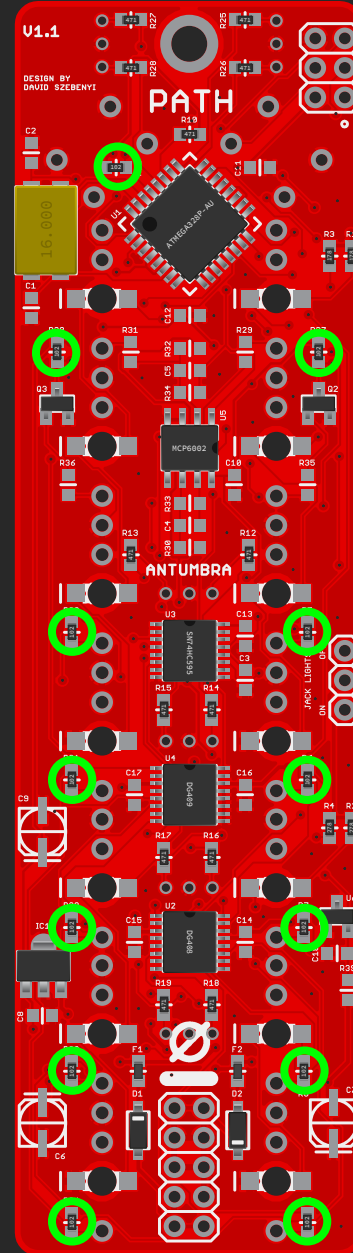
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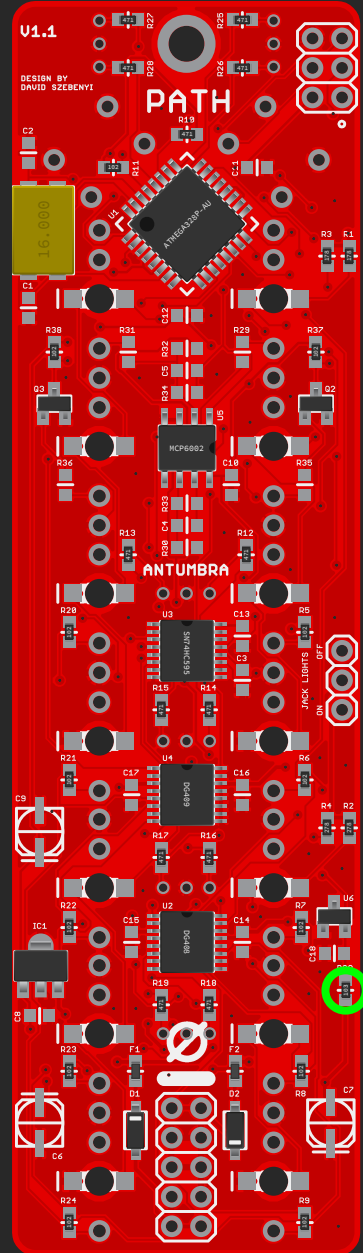
02. BUILD

12. Solder the two 178R resistors
(Optional - They are for the jack LEDs)

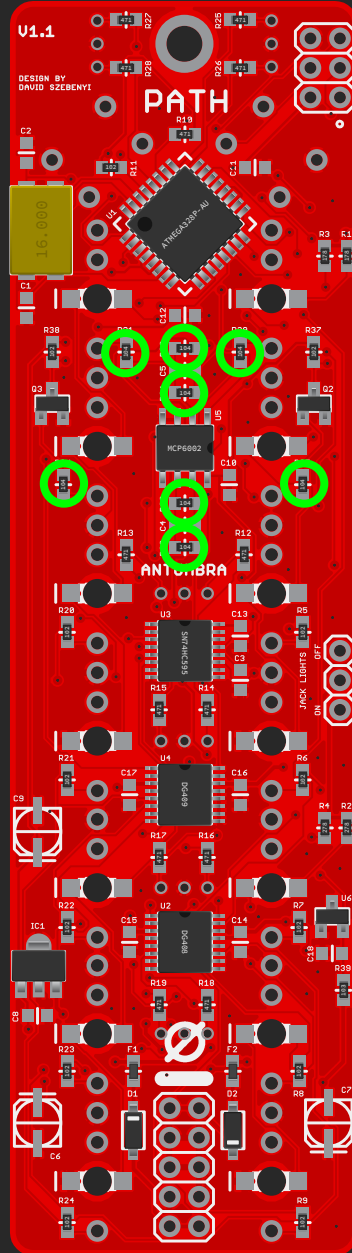
13. Solder the two 280R resistors
(Optional - They are for the jack LEDs)

14. Solder the 13x 470R resistors

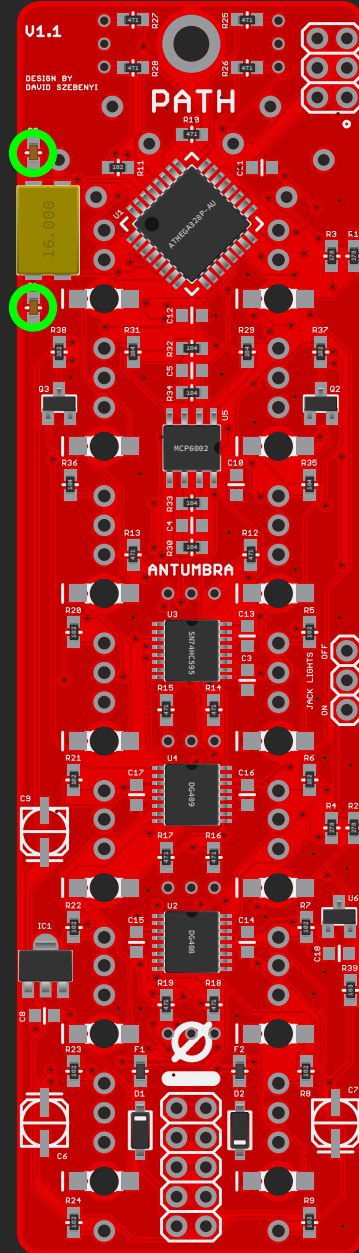
15. Solder 13x 1k resistors



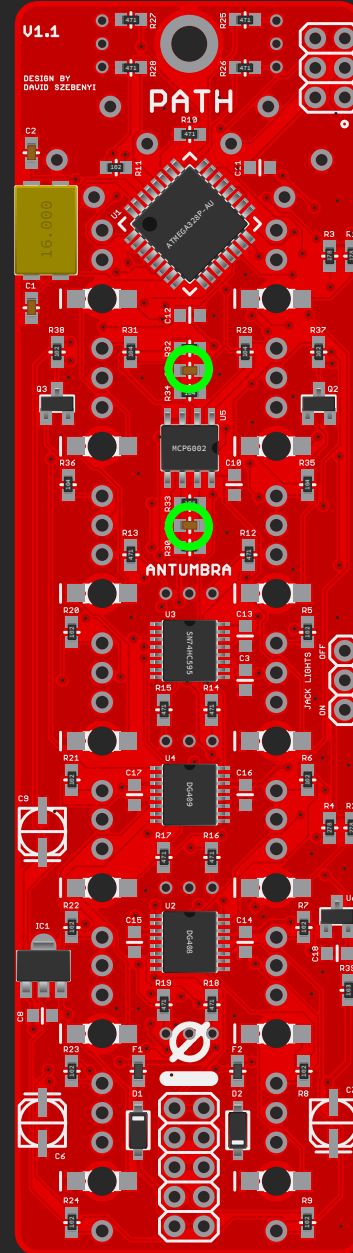
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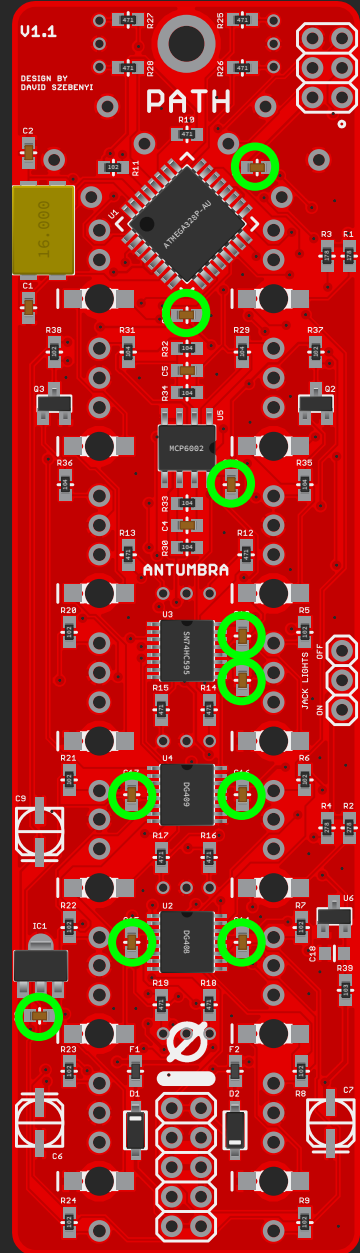
02. BUILD

16. Solder the single 10k resistor

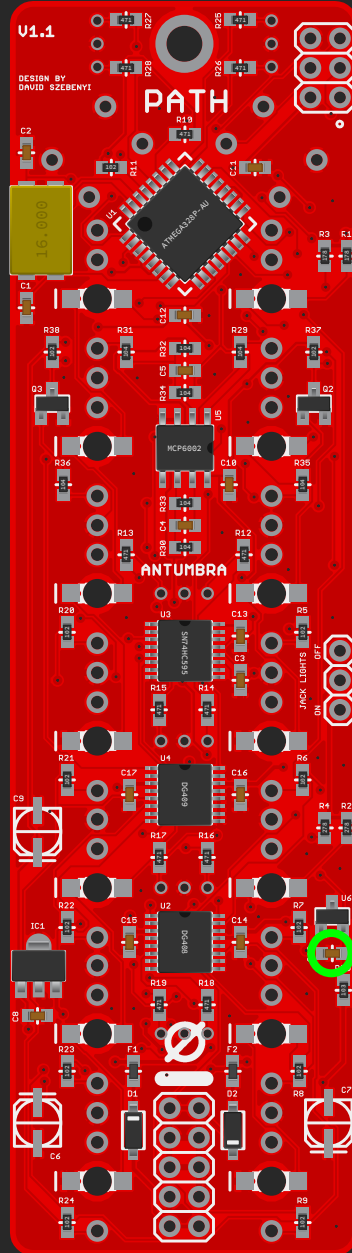
17. Solder the 8x 100k resistors

18. Solder the two 22pF capacitors

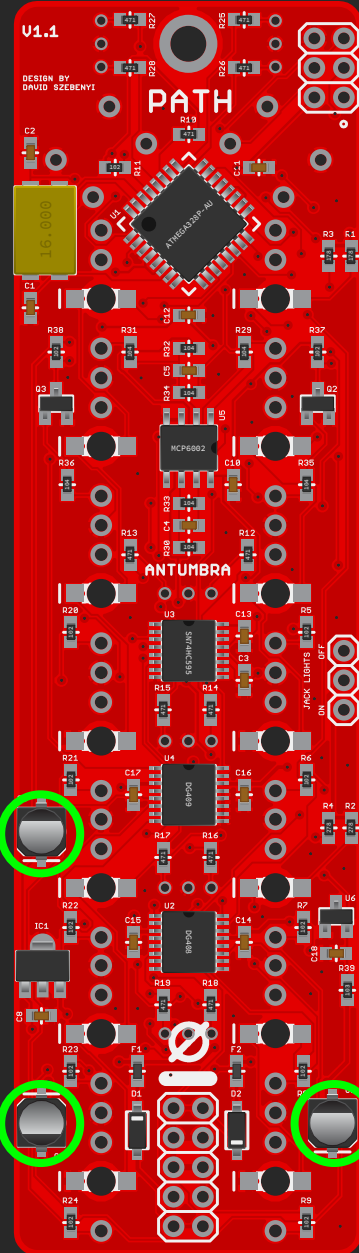
19. Solder two 10nF capacitors



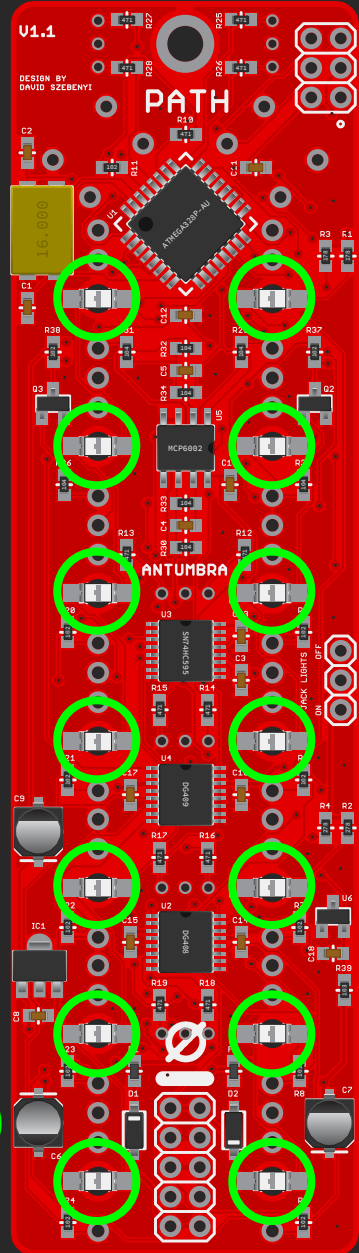
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02. BUILD

20. Solder the 10x 100nF capacitors

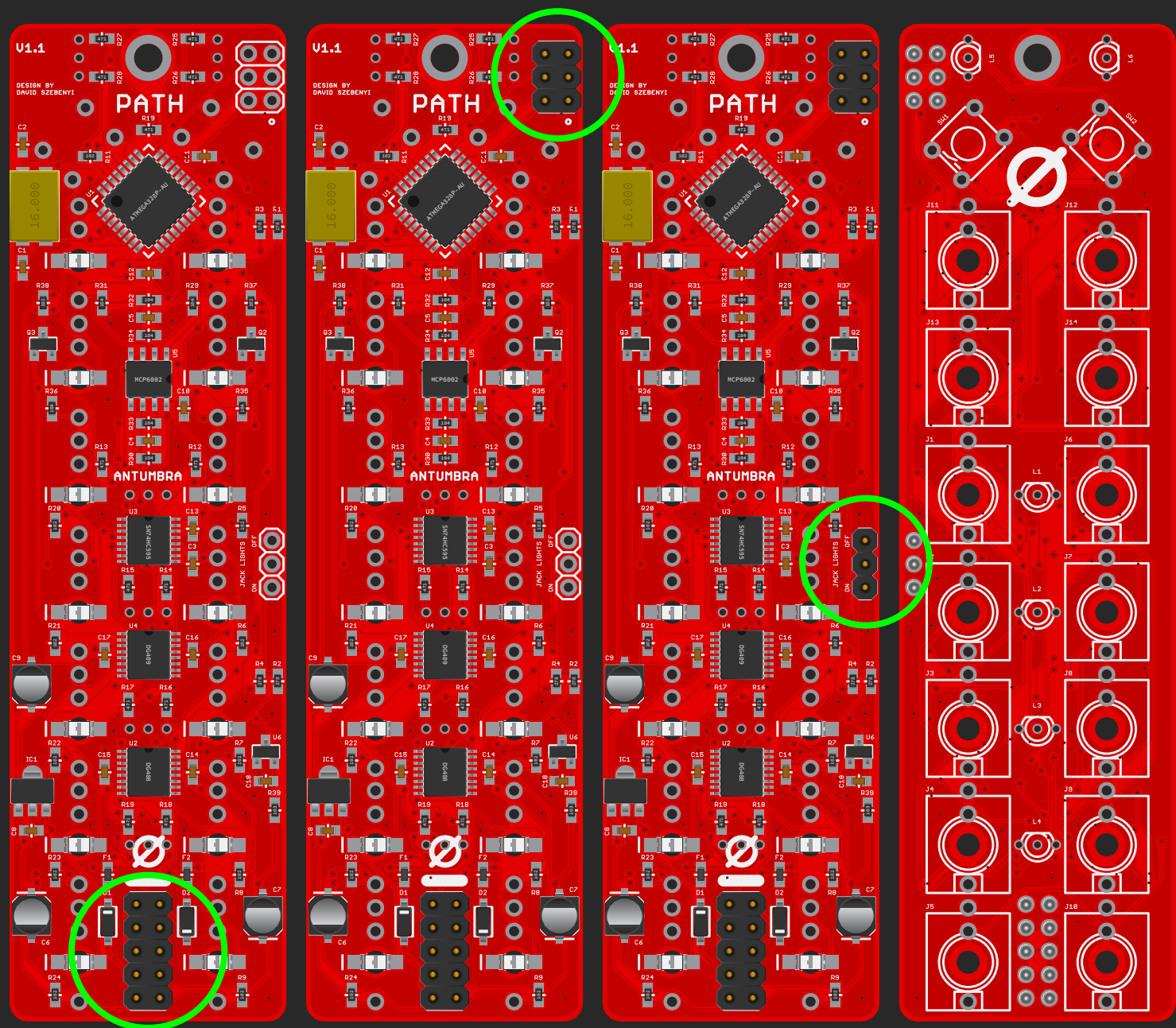
21. Solder the single 470nF capacitor

22. Solder the two 10uF capacitors

(Check their orientation)

23. Solder the 14x SMD LEDs

(These are optional)



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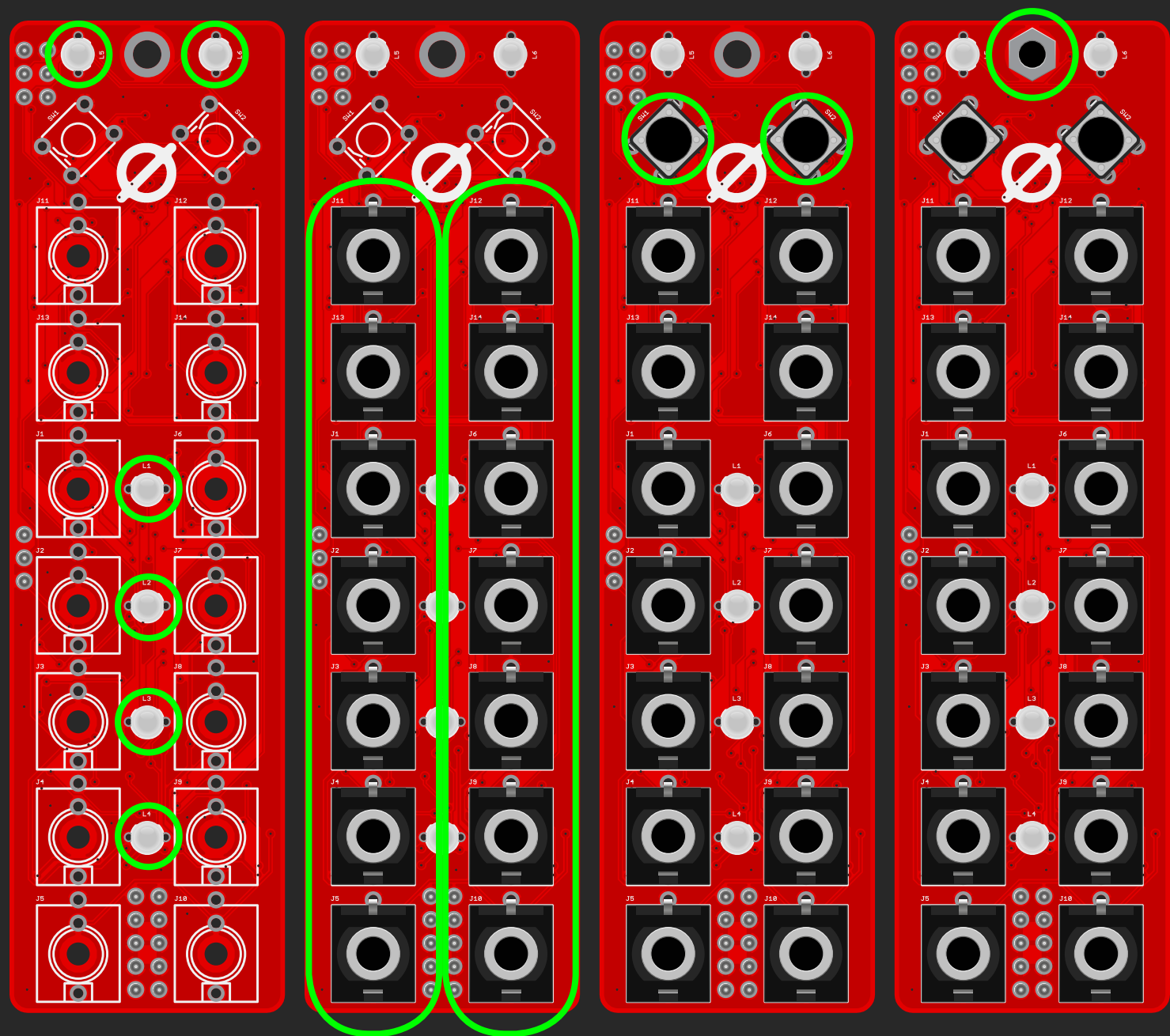
02. BUILD

24. Solder the 2x5 pin power header

25. Solder the 2x3 pin SPI header

26. Solder the 1x3 pin header
(This is optional)

27. Turn the PCB around



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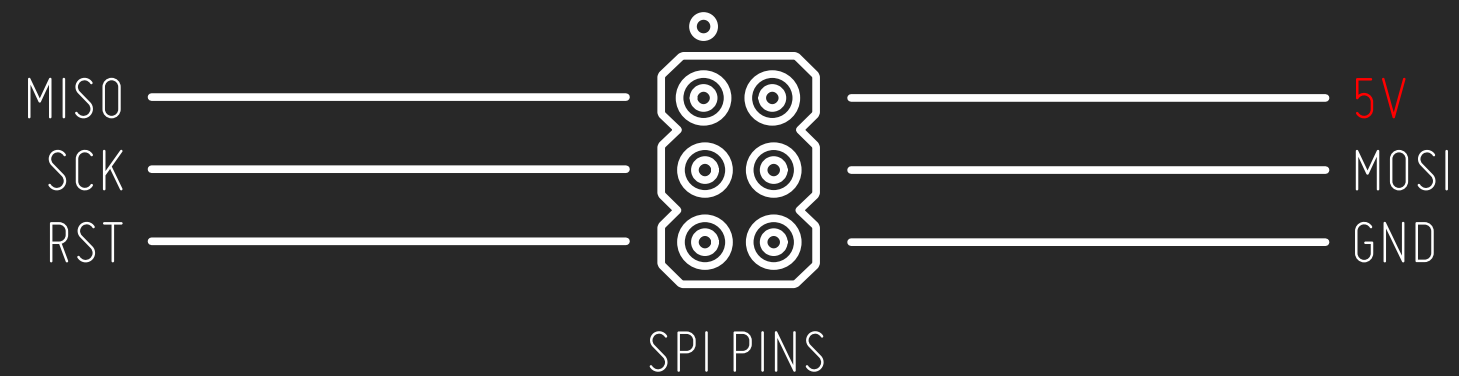
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02. BUILD

DO NOT SOLDER YET!

28. Place the six LEDs
(Check their orientation!)
29. Place the 14x jacks
30. Place the two buttons and their caps
31. Screw in the spacer from the bottom side
32. Now place the front panel on top, put the nuts on the jacks, align everything nicely, and screw in a screw from the front in the spacer as well. If you like how it looks, solder everything on the other side!
You are done with building! Congratulations! 😊



03. UPLOADING SOFTWARE

1. Download the firmware from the Antumbra website.
2. Connect your AVR ISP device to the 6 pin ISP header on the module. Pin 1 is marked with a dot.
3. Use an AVR programmer, like AVR ISP MKII with for example [AVRDUDESS](#) to upload the code.
Fuse settings should be set to:
L-fuse: **0xff** • H-fuse: **0xde** • E-fuse: **0x05**
4. After you've uploaded the firmware with bootloader, connect the module to your power supply. If you were successful, you should see the welcome animation.



PATH is designed by David Szebenyi under Antumbra.

www.antumbra.eu

Manual by David Szebenyi (www.aman.hu)

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