ANTUMBRA

EURD

MANUAL

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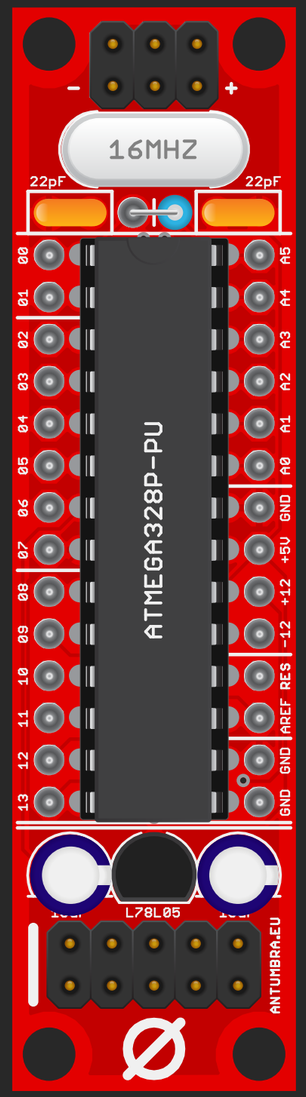
00. THANK YOU!

Thank you for purchasing the Antumbra EURD! EURD is an Arduino, built to be the heart of your DIY Eurorack project. It has a built in power supply, regulating the +12V of your PSU to 5V to power the microcontroller. It also has a built in SPI to allow you to upload code easily. The design of the module is focused to keep building clean and organised, and use less wiring where it's not necessary. It's a great way to kick off your project be it on the breadboard or a working prototype.

01. OVERVIEW



SPI HEADER

DIGITAL PINS (0-13)

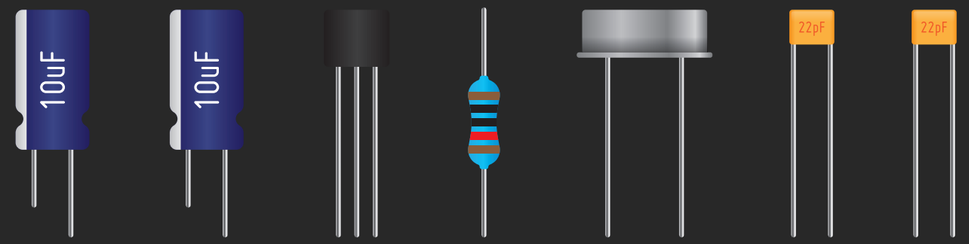
ANALOG PINS (A0-A5)

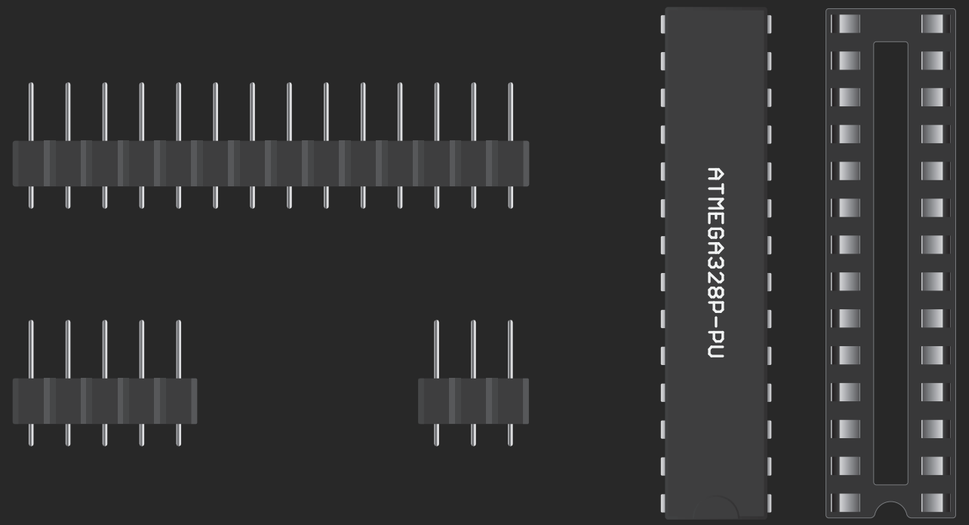
POWER SUPPLY PINS (-12V / +12V / +5V / GND)

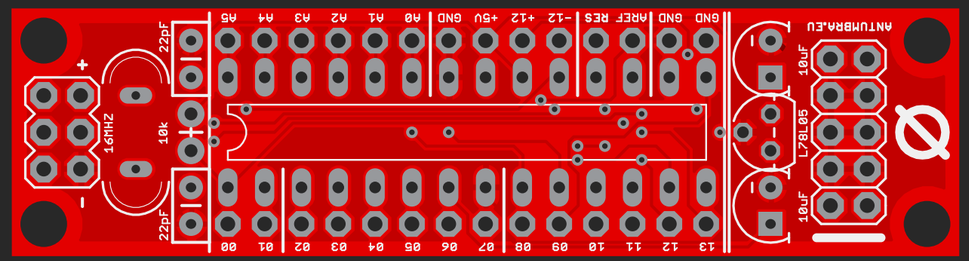
ANALOG REFERENCE PIN / RESET PIN

GROUND PINS

POWER CABLE HEADER: Red stripe always on the LEFT!!!



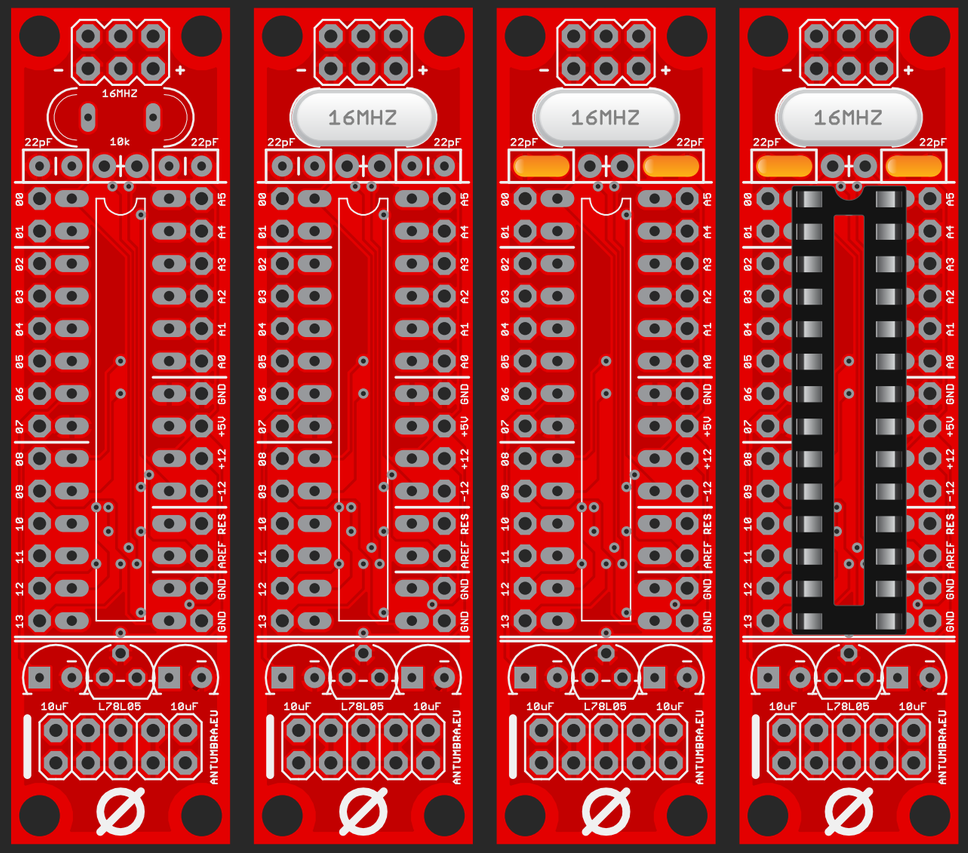




02. BILL OF MATERIALS

1 x Antumbra EURD PCB
2 x 10uF capacitor (2.54mm lead spacing)
1 x 78L05 5V voltage reuglator (check p.09. for other)
1 x 10k Ohm resistor
1 x 16MhZ Crystal
2 x 22pF capacitor (2.54mm lead spacing)
1 x ATMEGA328P-PU microcontroller
1 x 28pin DIP IC socket
1 x 5pin double row male header*
1 x 3pin double row male header*
2 x 14pin single row male header*

* They usually come in 40pin rows, so you can cut them to the desired pin number



0 1 2 3

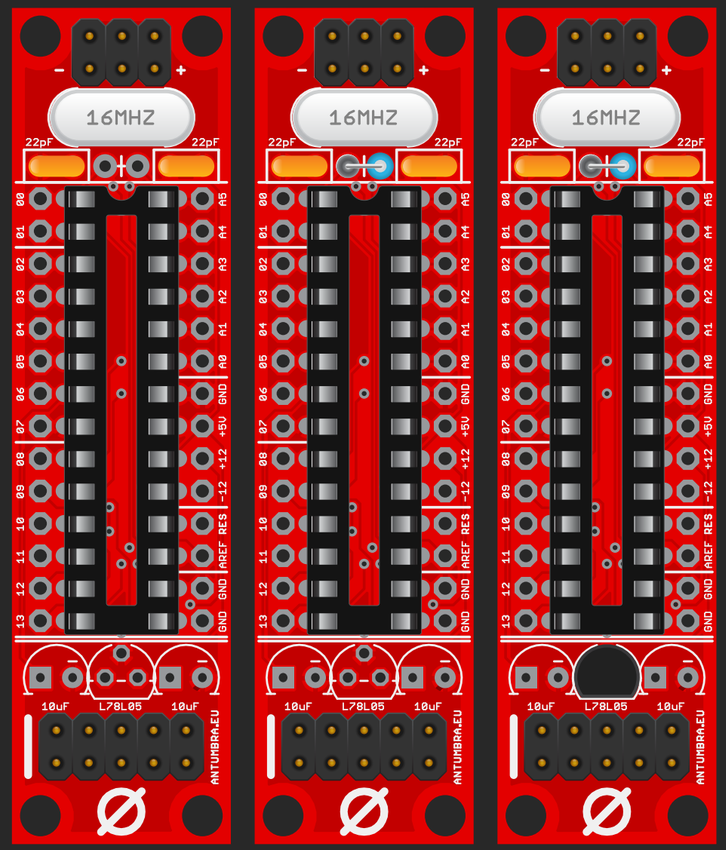
03. ASSEMBLY

0. Orient the PCB to be like on the picture to the left.

1. Solder the crystal in place

2. Solder the 22pF capacitors (orientation doesn't matter)

3. Solder the IC socket in place (the dent on the end should be on top)

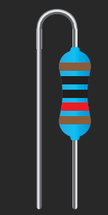


4 5 6

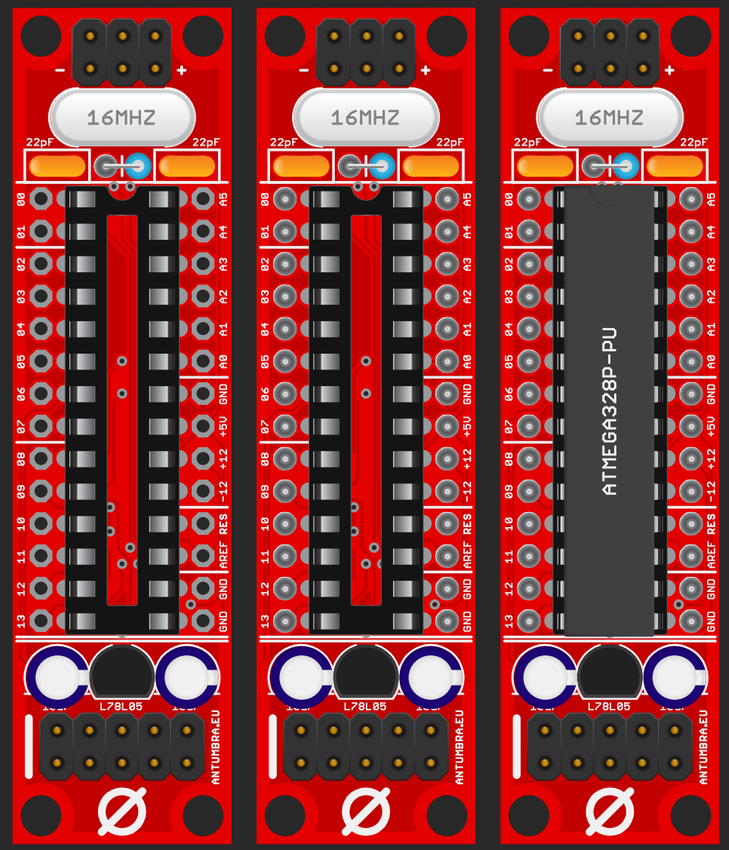
03. ASSEMBLY

4. Solder the 2x3 and 2x5 pin headers so that the longer pins are on top!

5. Solder the 10k resistor. Note that it should be standing, so bend the resistor like this:



6. IMPORTANT! 78L05 is rated for 100mA, if you need bigger current, see p. 09.
   Solder the 78L05 voltage regulator, so that the flat side faces the power pins. (down)



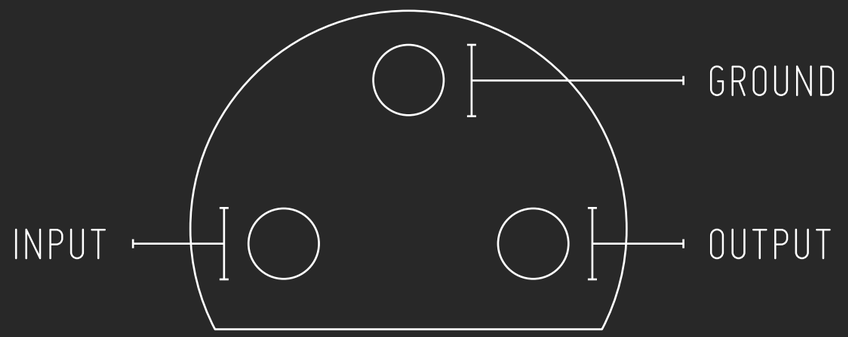
7 8 9

03. ASSEMBLY

7. Solder the 10uF capacitors. The orientation matters, the shorter leg goes into the round hole marked with - symbol.

8. Solder the single row pins on the other side of the PCB so that the longer pins and the plastic part are on the bottom of the PCB. You can solder here of course female headers too, if desired.

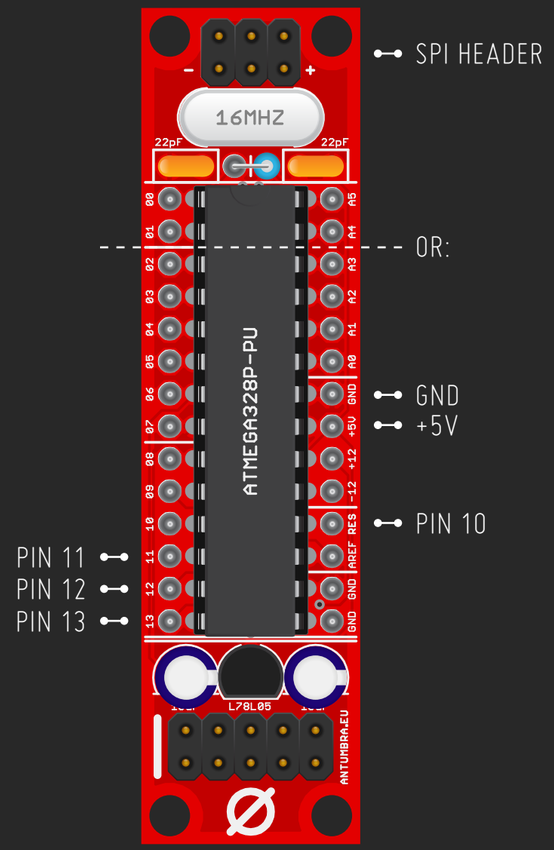
9. Insert the ATMEGA328P-PU in the socket so that the dent is on top. If the pins are too wide, use a snub nose plier to bend them a bit inwards on both sides, or put it on the table, on it's side so that one row of pins are flat on the table and apply a bit of pressure to bend them in.



03. ASSEMBLY (+)

The 78L05 voltage regulator is rated for a maximum current of 100mA, if you need bigger, you can install other voltage regulators, such as the LM7805.

You can do this by either wiring up the appropriate legs of the voltage regulator to the appropriate holes on the PCB, or you can try to fit it by bending the legs.



03. UPLOADING SKETCHES

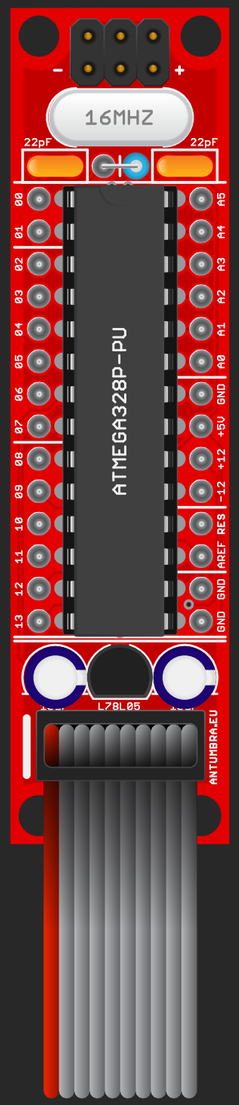
You can upload sketches via an SPI cable from an Arduino or an USB SPI device. Also you can remove the microcontroller and place it in an arduino (UNO), or insert the EURD into a breadboard and connect the correct pins to the Arduino as described here (illustrated on the left):

https://www.arduino.cc/en/Tutorial/ArduinoISP

IMPORTANT NOTE!

Do not use the SPI and the pin setup at once!

Do not connect the unit to the Eurorack power source while it's connected to the SPI / Arduino!



04. POWERING UP

Use an Eurorack 10pin ribbon cable to connect it to your system.

NOTE THAT THE RED STRIPE SHOULD ALWAYS BE ON THE LEFT!!! (marked by the white line on the PCB)

Now good luck and have fun! ☺

EURD is designed by David Szebenyi under Antumbra.

www.antumbra.eu

Manual by David Szebenyi (www.aman.hu)

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