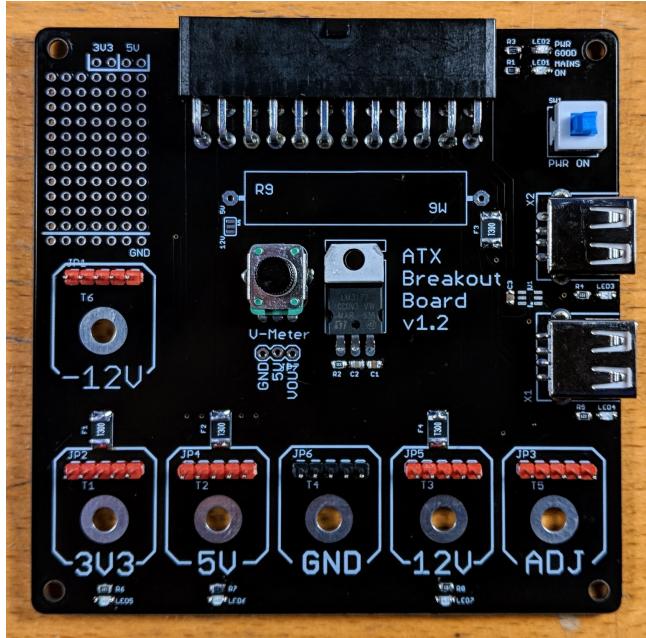


# ATX Breakout Board



Quantity	Name	Description	Signing/Colorcode
3	R1, R3, R7	3.3 kΩ 0805 resistor	3301 or 332
1	R2	330 Ω 0805 resistor	3300 or 331
3	R4, R5, R6	1.2 kΩ 0805 resistor	1201 or 122
1	R8	10 kΩ 0805 resistor	1002 or 103
1	R9	9 Ω 10 W power resistor (optional)	
2	R10, R15	43 kΩ 0805 resistor	4302 or 433
4	R12, R14, R17, R19	51 kΩ 0805 resistor	5102 or 513
2	R11, R16	75 kΩ 0805 resistor	7502 or 753
2	C1,C3	0.1 μF 0805 SMD capacitor	red stripe
1	C2	1 μF 0805 SMD capacitor	blue stripe
6	LED1, LED3-LED7	0805 SMD LED red	
1	LED2	0805 SMD LED green	
4	F1,-F4	1812 SMD PTC Fuse 3 A	T300
1	U1	TPS2513	
1	IC1	LM-317 (through hole)	
2	X1, X2	USB female connector (through hole)	
6	JP1-JP6	5-pin header	
1	JP7	3-pin header (optional)	
1	SW1	8 mm x 8 mm push button	
1	VR1	2 kΩ PCB mount potentiometer 9 mm	
1	J1	24-pin ATX connector	
5	T1-T3, T5, T6,	Red/Black 4 mm Binding Post	
1	T4	Red/Black 4 mm Binding Post	
1	Board		

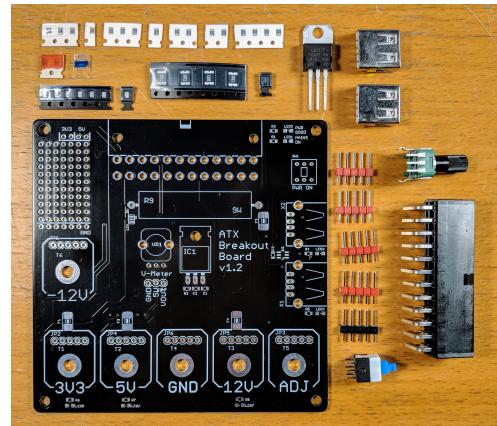
Difficulty: ●●●○ Build-Time: 2-4 Hours

Manual v1.0a CC BY-SA 4.0 Binary Kitchen e.V.  
 Board v1.2 Open-Source-Hardware License Francesco Truzzi - [www.truzzi.me](http://www.truzzi.me)

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### Step 1

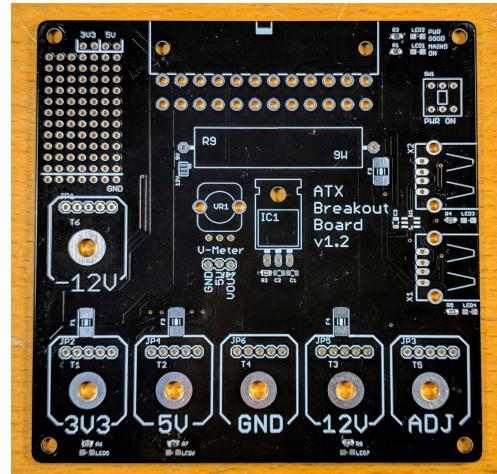
- a) Hint: Resistors (white package) have printed numbers on it and can be found in the overview (direction does not matter)
- b) Capacitors are marked with colours (direction does not matter)
- c) LEDs are in the black packes (DIRECTION IMPORTANT)



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### Step 2

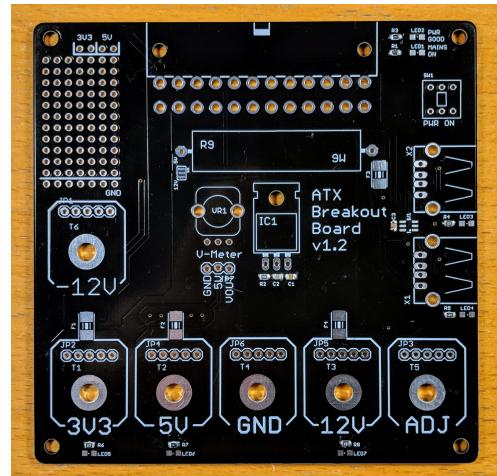
- a) Carefull: Check printed numbers on the resistors with the overview
- b) Solder Resistors R1 - R19 to the board front and back
- c) Direction of the resistors not important
- d) R9, R13 and R18 are not needed



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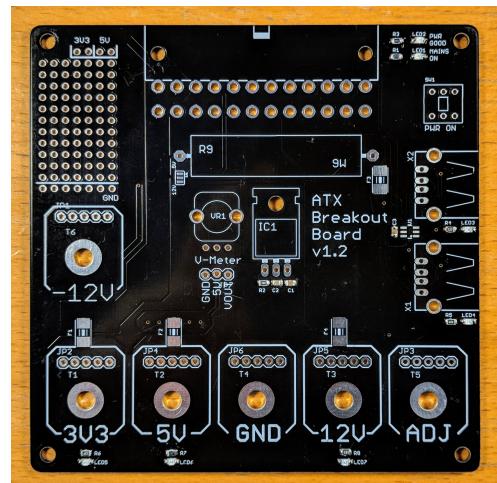
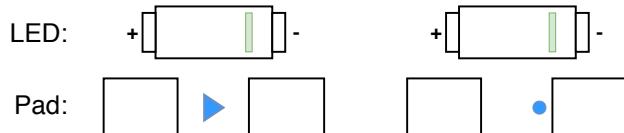
### Step 3

- a) Solder capacitor C1 - C3 on the board
- b) Begin with capacitor C2
- c) Direction of the capacitor is not important



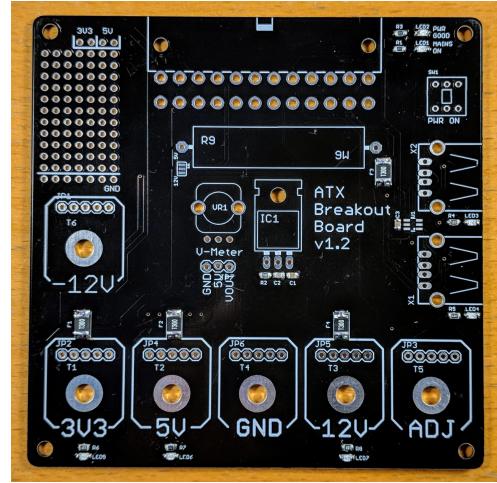
## Step 4

- a) Carefull: LEDs do have a direction! First read this part completely
- b) Solder LED 1 - 7 to the board
- c) LED2 is the green LED (single black package)
- d) The LED has a green marking on top
- e) A dot or a arrow is printed onto the board
- f) The dot/arrow shows the direction where the green marking has to be directed while soldering
- g) Hint: If you can not identify the arrow or dot on the board look at the drawing at the end of this manual



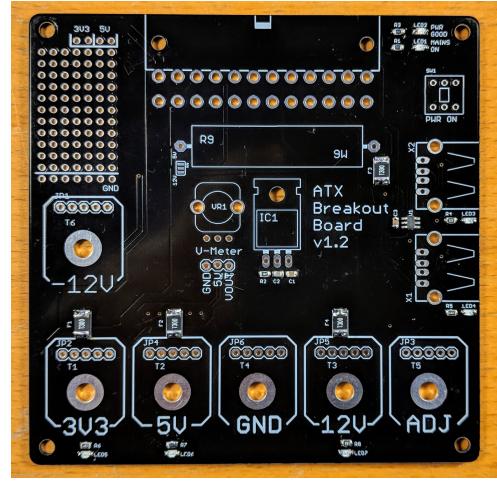
## Step 5

- a) Solder fuse F1 - F4 to the board
- b) Direction of the fuse is not important



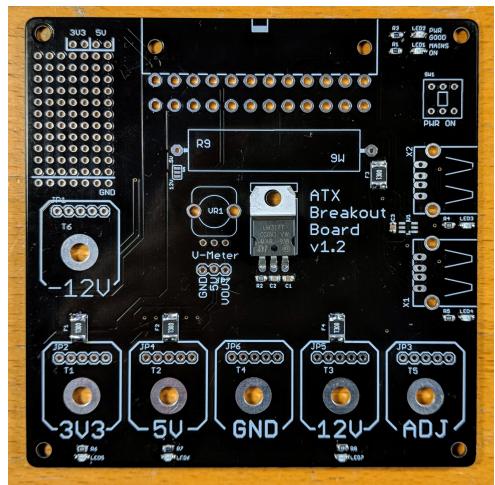
## Step 6

- a) Carefull: Direction important! Solder TPS2513 (6 pins) at U1 to the board
- b) A vertical line (very fine!) is printed on the board and the chip. The line on the chip must be placed next to the line with the dot on the board.



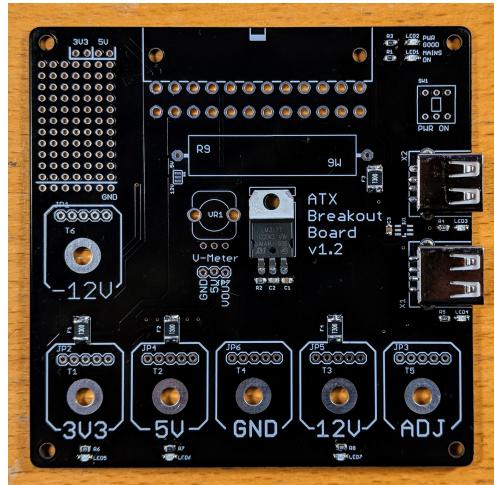
## Step 7

- a) Solder LM-317 to the board
- b) Hint: Bend the legs before soldering



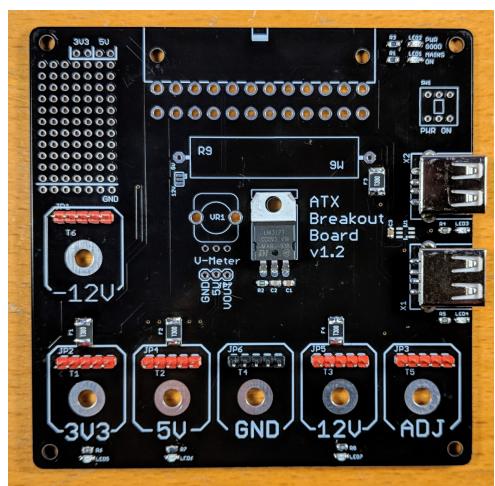
## Step 8

- a) Solder USB connector X1 and X2 to the board
- b) Hint: It is possible that some holder-noses needs to be clipped



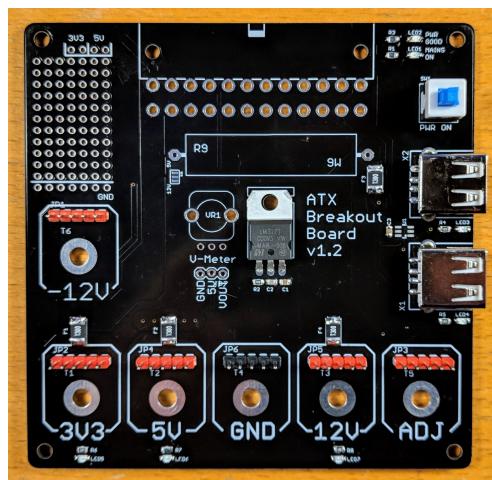
## Step 9

- a) Solder the pin header JP1 - JP6 with the short side to the board
- b) JP7 is optional and is only needed if you want a V-Meter



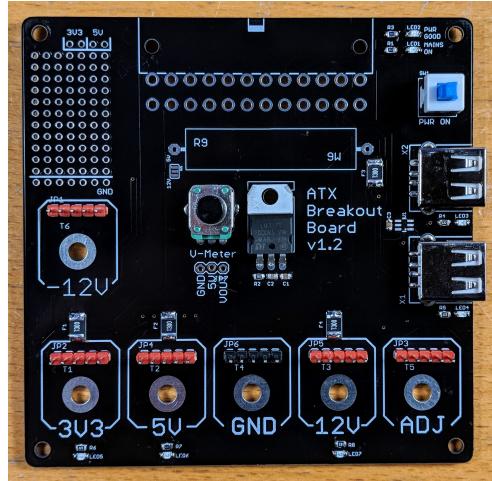
Step 10

- Solder switch SW1 to the board
- Direction not important



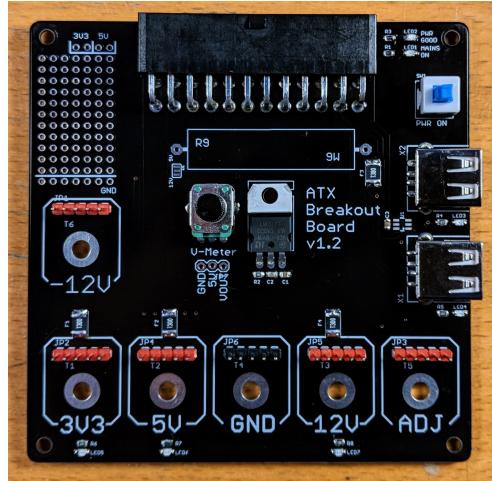
Step 11

- Solder potentiometer VR1 to the board



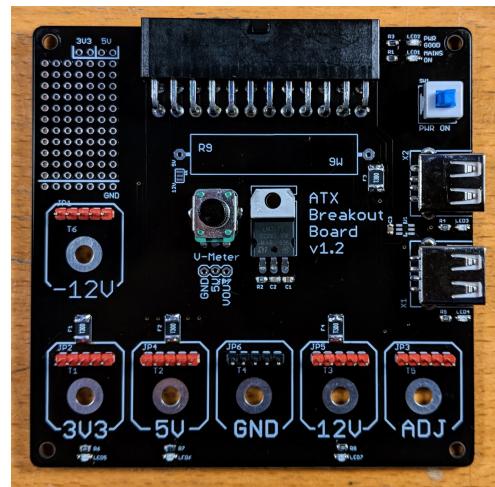
Step 12

- Solder ATX connector J1 to the board



## Step 13

- Screw black and red binding posts to the board



## Step 14

- Optional: If you have nylon legs, push them into the holes in the corner
- Optional: To prevent shortages put some hot glue on the back of the ATX connectors
- Hint: The pin-filed on the top left corner is for development and will not be soldered

