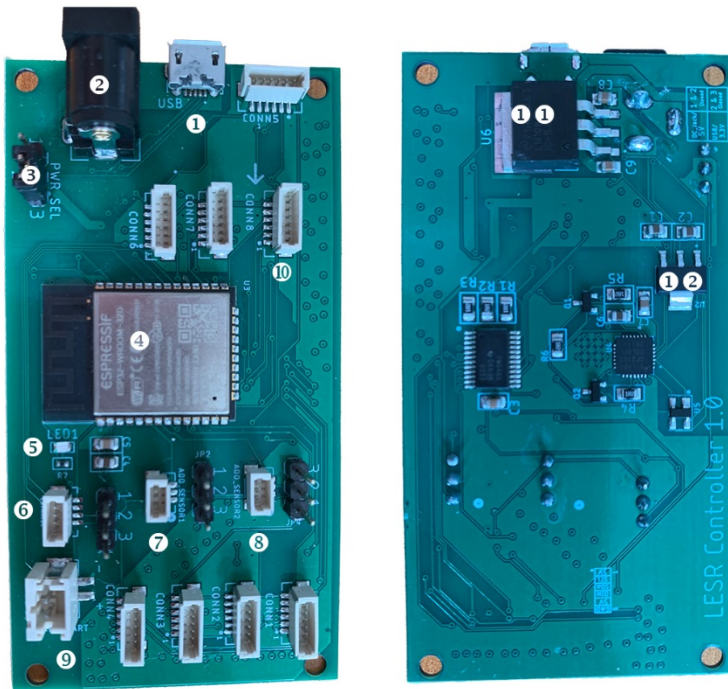


## LESR controller version 1.0 (2020/10/05)

### Legend



#### (1) Micro USB connector

To be connected with USB on Windows or Android. It can function as the power supply to the board with up to 3 LESR rings. This depends on your animations used (more and brighter LEDs = more power consumption) and your USB outbout from the connected device.

#### (2) DC jack

This can be connected to a power supply between 5 and 12 Volts and up to 5A. It's enough to power 8 LESR rings.

If you are using 12V you need to install a heat sink to (11) to reduce the temperature on the board!!!!

#### (3) Power selector

The jumper between 1 and 2 selects the DC adapter as power source, jumper between 2 and 3 selects USB as power source. If you have selected DC you can still connect the USB to your computer in order to exchange serial data.

#### **(4) ESP32**

The ESP32 micro controller. The black part is the built in Wi-Fi and Bluetooth antenna.

#### **(5) Power LED**

This should show POWER ON but doesn't work in revision 1.0.

#### **(6) Additional I2C connector**

You can connect and additional I2C connector here.

The jumper next to it must be used if you want to supply voltage on the connector. Leaving the jumper open, will not output any voltage on the connector, closing pins 3-2 will supply 3.3V, closing pins 1-2 will supply 5V.

The pinout of the connector is from top to bottom:

- SLC
- SDA
- VCC
- GND

#### **(7) (8) Additional analog sensors**

You can use these connectors to add more sensors with an analog reading (no I2C or other digital bus).

The jumper next to it must be used if you want to supply voltage on the connector. Leaving the jumper open, will not output any voltage on the connector, closing pins 3-2 will supply 3.3V, closing pins 1-2 will supply 5V.

The pinout of the connector is from top to bottom:

- IO34 for (7) and IO35 for (8)
- VCC
- GND

#### **(9) Additional UART connector**

You can connect an UART connection here. GND must be connected e.g. by the USB connector.

The pinout of the connector is from top to bottom:

- RX
- TX

### **(10) LESR connectors**

CONN1 to CONN8 are used to connect the LESR rings. One connector connects LEDs, VCC, GND and the sensor.

### **(11) 12V Voltage regulator**

**WARNING:** depending on the amount of LESR rings and brightness as well as source voltage, this component must be monitored in temperature. If it reaches temperatures > 70° you should apply a heat sink.

**WARNING:** this component can heat up to 120°!

### **(12) 3.3V Voltage regulator**

This component reduces 5V to 3.3V.