

# D1 – A DATA PROJECT

## AN ARDUINO UNO / WIFI KIT

MICRO SD READER / MICRO SD / LCD / SENSOR

AlbaElektronica

<https://github.com/Alba-Elektronica/Arduino-Uno-D1-OLED-Micro-SD-Sensor>

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<https://github.com/Alba-Elektronica/>

## Required hardware & software

Connect D1 with computer / Raspberry Pi either by wired cable / Wifi

A phone / pad using an Arduino application (not all phones supports )

The Arduino app / software / IoT

## Inside the box

Arduino Uno R3	D1 board with WiFi	
Charger Arduino	micro USB / USB	
Liquid Crystical Display	OLED Display 12864 module	
Connectors	male-female / male-male (x 12)	
Micro SD card	32 G (x1)	
Sensor	Photosensitive resistor module (x1)	
MicroSD card adapter	Mini TF card reader / writer	
Manual	Description / Tips	
USB / USBC adapter	USB to USB C adapter	

## D1 = Arduino Uno / Wifi

➔ ***Uses the pinout of Arduino Uno!***

- ➔ Download software from Arduino.cc; Install
- ➔ Install the D1 board using the Esp8266 library

Open Preferences / Additional Boards Manager URLs:

[http://arduino.esp8266.com/stable/package\\_esp8266com\\_index.json](http://arduino.esp8266.com/stable/package_esp8266com_index.json)

- ➔ Select the board *Wemos D1 R2*
- ➔ Select the port of the connection

## OLED Display 12864 module

The OLED display has a 128x64 resolution and a I2C SSD1306 LCD interface

- ➔ Connect the pins Arduino ↔ I2C LCD module with male / female connectors
- ➔ Install the Arduino library ESP8266 and ESP32 OLED driver for SSD1306 displays
- ➔ Test the module by running the SSD1305DrawingDemo application or another application.

### Tips

- ➔ Follow the advise for the pinout from the demo file:  
GNC ↔ GNC, Vcc ↔ 5V, SDA ↔ D3, SCL ↔ D5
- ➔ There are a number of libraries for the OLED displays which you could try out

## Micro SD card adapter

The MicroSD card adapter has a mini TF card reader module and uses a SPI Interface with level converter

- ➔ Connect the Arduino with the MicroSD card module with the male / female connectors
- ➔ Insert the MicroSD card
- ➔ Test the module by running one of the examples of the SD library

### Tips

- ➔ Follow the advice for the pinout from the demo file, for example, the read / write file
- ➔ GND ↔ GND, Vcc ↔ 5V, MOSI ↔ D11, MISO ↔ D12, CLK ↔ D13, CS ↔ D4
- ➔ SD uses the SPI interface and is integrated in Arduino

## A simple sensor

The KY-018 sensor module has a photosensitive resistor to detect light and intensity

- ➔ Connect the sensor to the Arduino board using the signal on an analog pin, for example A5
- ➔ Use the extra 5V and GND slots from D1 to connect the other two pins  
S ↔ A5, + ↔ +5V, - ↔ GND
- ➔ Test with a simple program reading the analog input A5

## Putting all together

The three modules, naming the MicroSD card, OLED display and the sensor, may be combined on a single D1 board using the program on github

Other examples of programs and projects available at: Arduino.cc, Instructables.com, Pinterest

<https://github.com/Alba-Elektronica/>