Arduino GIGA/Mega – Hands-On Guide

1. Installing the Arduino Software

• Download the Arduino IDE from the official website: https://www.arduino.cc/en/software
• Install the software and confirm permissions if prompted.
• In the Board Manager, search for 'Arduino Mbed OS Giga Boards' and install the GIGA board package.

2. Installing Libraries

• Unpack the required libraries and copy them to the folder Documents → Arduino → libraries.
• In the Arduino IDE, select the board 'Giga R1'.

3. Setting up the GIGA Camera (Optional)

• Install the 'Arducam_dvp' library via the Library Manager.
• Open the example 'GigaCameraDisplay'.
• Replace line 7 in the code with: #define ARDUCAM_CAMERA_OV767X
• Connect the display and the camera.
• Select the correct port and upload the code. The video image should then appear on the display.

4. Setting up the Pulse Sensor

• Connect the pulse sensor to 3.3 V.
• Example code: int Threshold = 580
• Use the Serial Plotter to visualize the pulse wave.
• For graphical visualization: install Processing (Processing.org) and use the repository 'PulseSensor_Amped_Processing_Visualizer'.

5. Setting up the MPU6050 Sensor (Gyroscope)

• Install the 'Adafruit MPU6050' library using the Library Manager.
• Upload the example 'basic_readings'.
• Wiring:
  - VCC → 5V

- GND → GND
- SCL → D101 (SCL1)
- SDA → D102 (SDA1)

• Open the Serial Monitor to view sensor data.

6. MPU6050 – Visualization

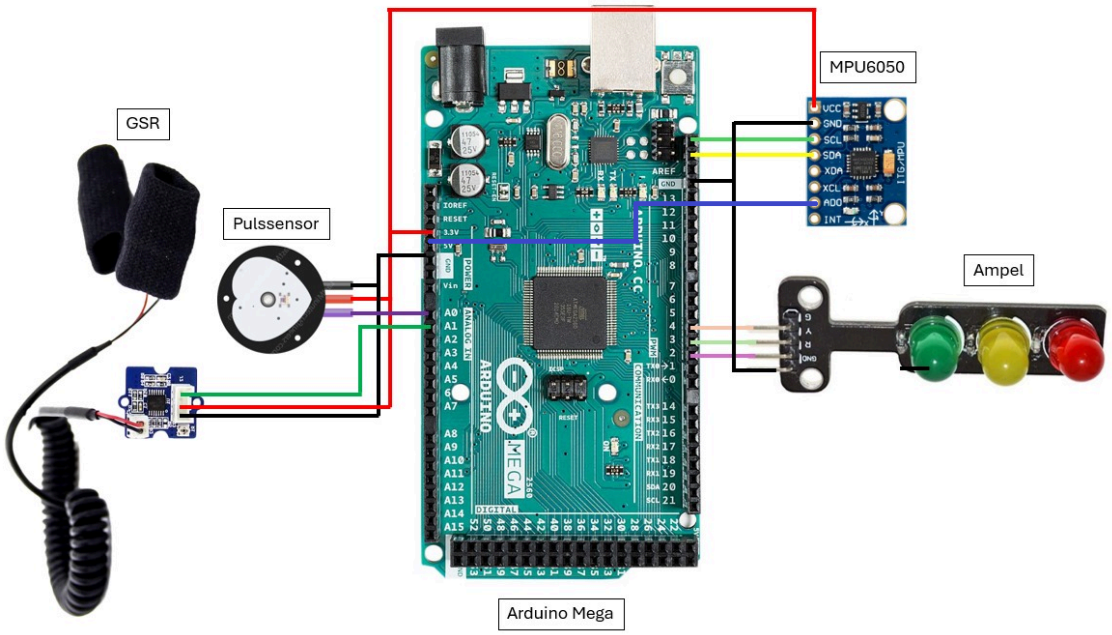
• Copy Processing libraries into Documents → Processing → libraries.
• Open the example 'MPU6050_DMP6' and adjust the code (lines 120 and 103).
• Upload the sketch.
• In Processing, open the file 'MPUTeapot.pde' to display the sensor's movement.

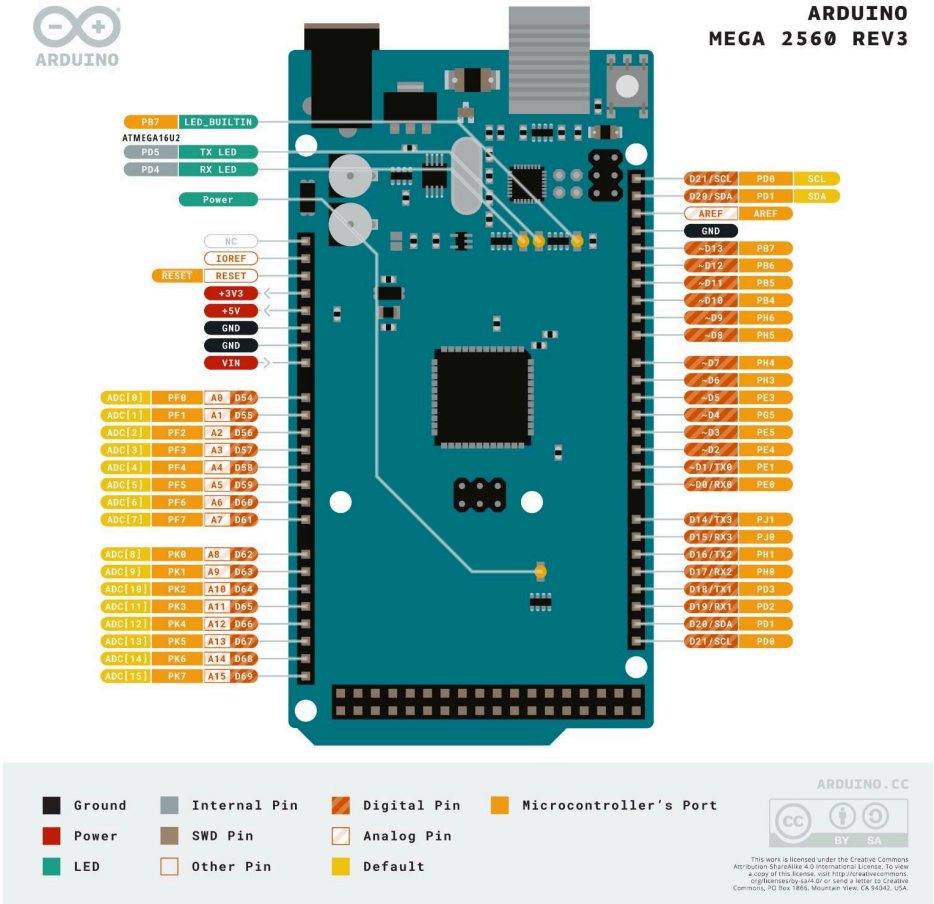
7. Storing GSR Sensor Data

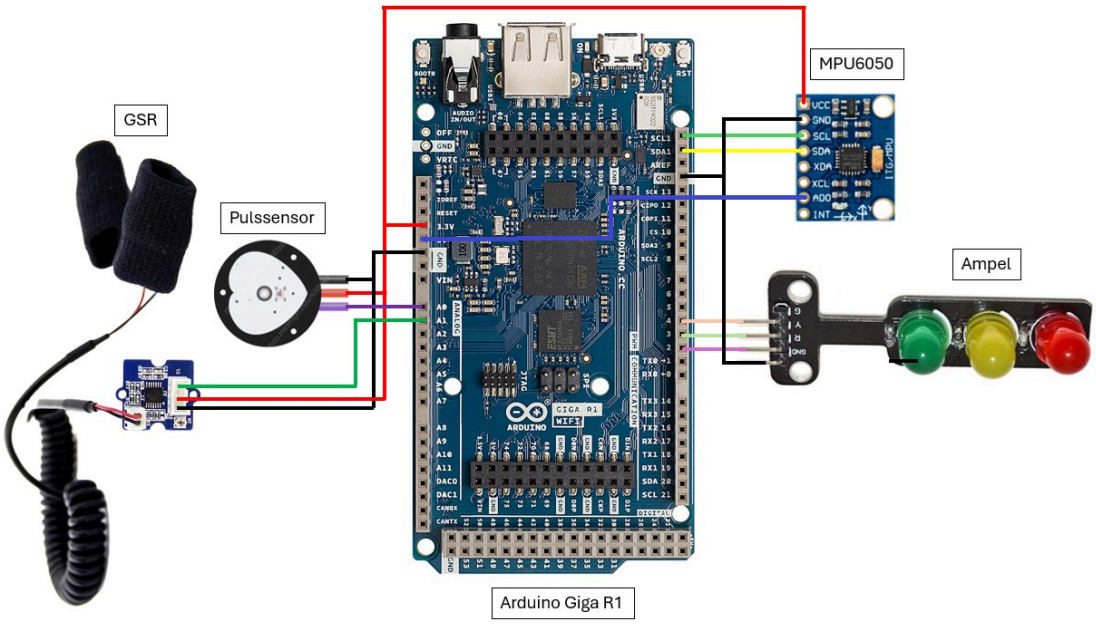
• Format a USB stick using the FAT32 file system.
• Upload the GSR sketch.
• Data will be stored in 'GSR_LOG.CSV'.
• For continuous logging, assign different filenames in the code.

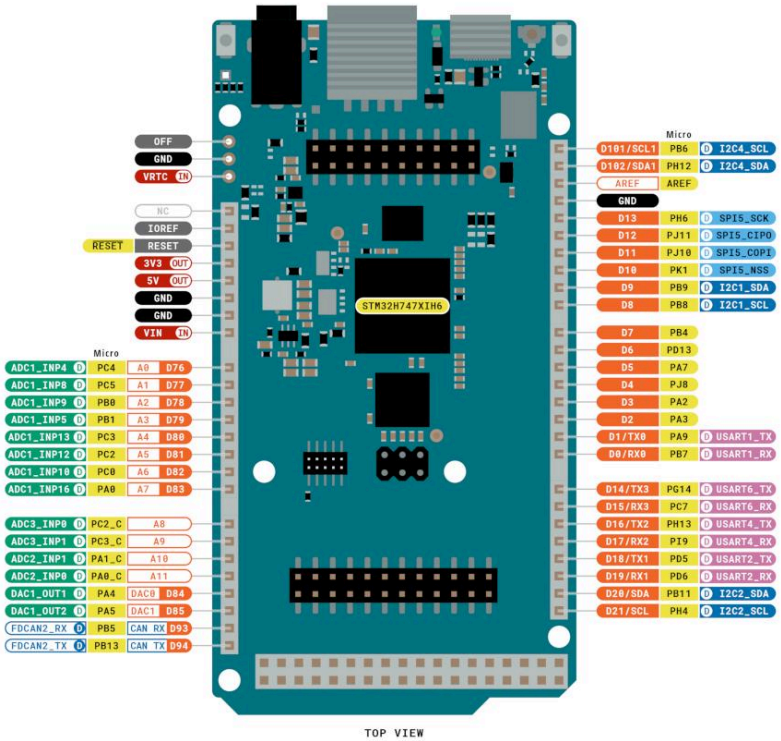
8. Displaying GSR Values on the LCD Shield

• Upload the provided code.
• The GSR values will be shown on the LCD shield.


GSR
Pulssensor
MPU6050
Ampel
Arduino Mega


ARDUINO
MEGA 2560 REV3
Ground
Power
LED
Internal Pin
SWD Pin
Other Pin
Digital Pin
Analog Pin
Default
Microcontroller's Port
ARDUINO.CC





Legend:	Digital	I2C	Other SERIAL
Power	Analog	SPI	Analog
Ground	Main Part	UART/USART	PWM/Timer

ARDUINO

ARDUINO GIGA R1 WiFi
SKU code: ABX00063
Pinout
Last update: 21 Feb, 2023