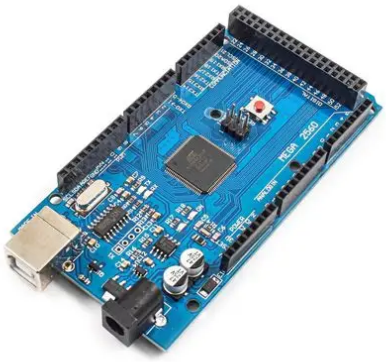
Arduino Mega 2560 R3

ATmega2560 High-I/O Development Board



The Arduino Mega 2560 R3 is a powerful ATmega2560-based development board with 54 digital I/O pins, 16 analog inputs and 4 hardware serial ports. Its large number of I/O pins allows you to connect multiple sensors, motors, servos and modules at the same time, making it ideal for robotics, automation and complex embedded projects.

TOP USES

- Robotics
- Automation
- 3D Printers
- Motor Control

KEY FEATURES

- 54 Digital I/O
- 15 PWM
- 16 Analog Inputs
- 4 UART
- SPI / I2C
- 5 V Logic

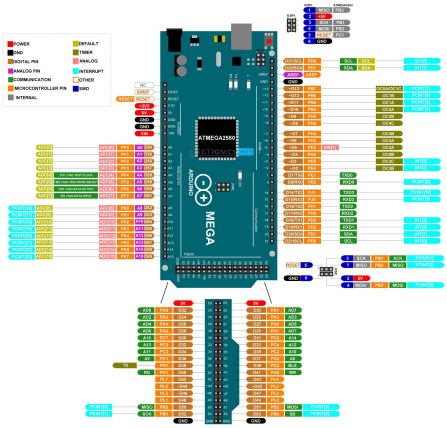
Technical Specifications

Arduino Mega 2560 R3

Parameter	Value
MCU	ATmega2560
Voltage	5 V
Input	7 - 12 V
Flash	256 KB
SRAM	8 KB
Clock	16 MHz
USB	Type-B

Pinout

Arduino Mega 2560 R3



PIN FUNCTIONS

Pin	Function	Notes
D0 / D1	UART0 RX / TX	
D2 - D13	GPIO / PWM	
D14 - D19	UART1-3	
D20 / D21	I2C SDA / SCL	
D50 - D53	SPI	
A0 - A15	Analog	
5V	Power	
3.3V	Power	
GND	Ground	
VIN	Input	

WIRING NOTES

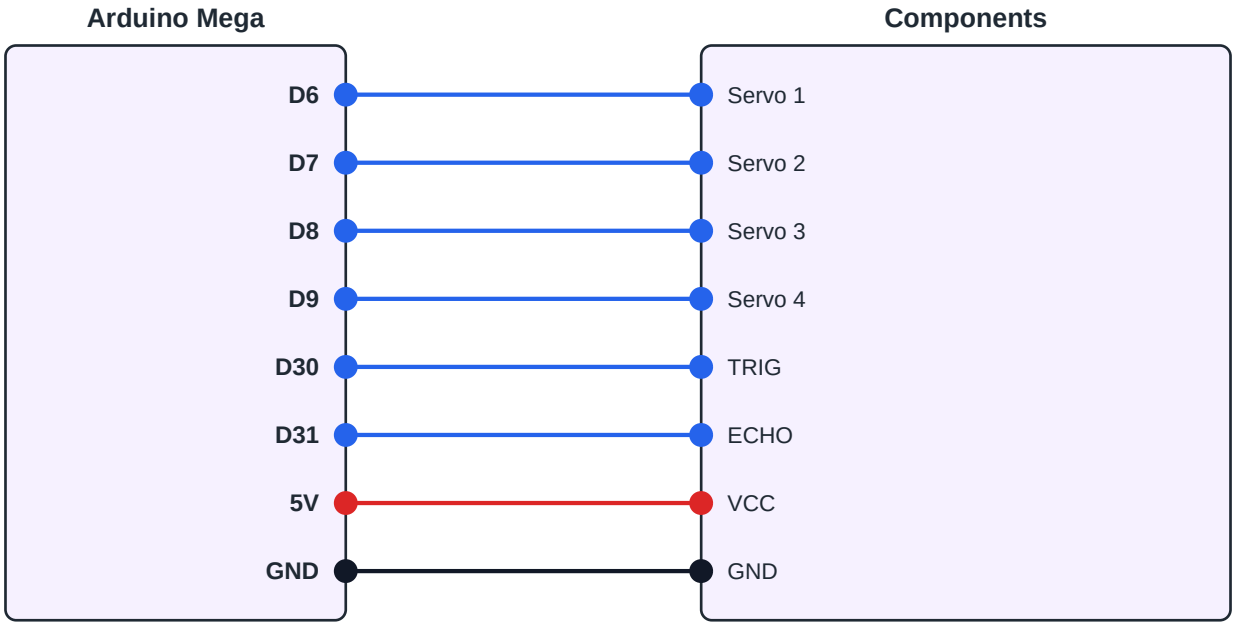
- 5 V logic.
- External power for motors and servos.

Example Project

Robotic Arm + HC-SR04

Four servos respond to nearby objects detected by HC-SR04.

CIRCUIT



EXAMPLE CODE

```
#include <Servo.h>
Servo s1,s2,s3,s4;
#define T 30
#define E 31
void setup(){
 s1.attach(6);s2.attach(7);s3.attach(8);s4.attach(9);
 pinMode(T,OUTPUT);pinMode(E,INPUT);
}
void loop(){
 digitalWrite(T,LOW);delayMicroseconds(2);
 digitalWrite(T,HIGH);delayMicroseconds(10);
 digitalWrite(T,LOW);
 long d=pulseIn(E,HIGH,30000)*0.017;
 if(d>0&&d<15){
  s1.write(45);s2.write(120);s3.write(140);s4.write(90);
 }else{
  s1.write(90);s2.write(60);s3.write(90);s4.write(30);
 }
 delay(100);
}
```

EXPECTED RESULT

- Servos move automatically.
- HC-SR04 detects nearby objects.

Useful Links

Arduino Mega 2560 R3

Resource	Link
Mega Documentation	https://docs.arduino.cc/hardware/mega-2560/
Arduino IDE	https://www.arduino.cc/en/software
Language Reference	https://www.arduino.cc/reference/en/

COMPATIBLE COMPONENTS

- HC-SR04
- SG90 Servo
- DHT22
- MPU6050

Need this component?

Buy Arduino Mega 2560 R3 >>

https://techzoneegypt.com/p/arduino-mega-2560-r3-with-usb-cable