

### Introduction

Arduino is an open-source physical computing platform based on a simple I/O board and a development environment that implements the Processing / Wiring language. Besides easy-to-use hardware and software interface, Arduino is designed to be as flexible as possible to fit your project's needs.

52072G Arduino-UNO IOT Development Board provides an environment for Arduino to interact with different forms of electronics (26 module blocks) with simple codes and connections. With a universal breadboard, it is convenient for students to construct the circuits that are not provided by the 52072G.

### Features

1. Arduino IDE provided
2. Completely compatible with Arduino Standard Shield
3. Programmable immediately to block program just with basic circuit without wiring
4. Designed for wiring to desired pin
5. The latest version Arduino 1.0.5.
6. Bread board and various Powers usable for application
7. 26 kinds of I/O device
8. Available to control by Smart phone with built-in Bluetooth and Wireless LAN.

### Technical Specifications

#### MCU Board

Type	Specification
Microcontroller	ATmega328P
Operating Voltage	5V
Input Voltage (recommended)	7-12V
Input Voltage (limit)	6-20V
Digital I/O Pins	14 (of which 6 provide PWM output)
PWM Digital I/O Pins	6
Analog Input Pins	6
DC Current per I/O Pin	20 mA
DC Current for 3.3V Pin	50 mA
Flash Memory	32 KB (ATmega328P) of which 0.5 KB used by bootloader
SRAM	2 KB (ATmega328P)
EEPROM	1 KB (ATmega328P)
Clock Speed	16 MHz
LED_BUILTIN	13
Length	68.6 mm
Width	53.4 mm

Note: Specifications are subject to change.

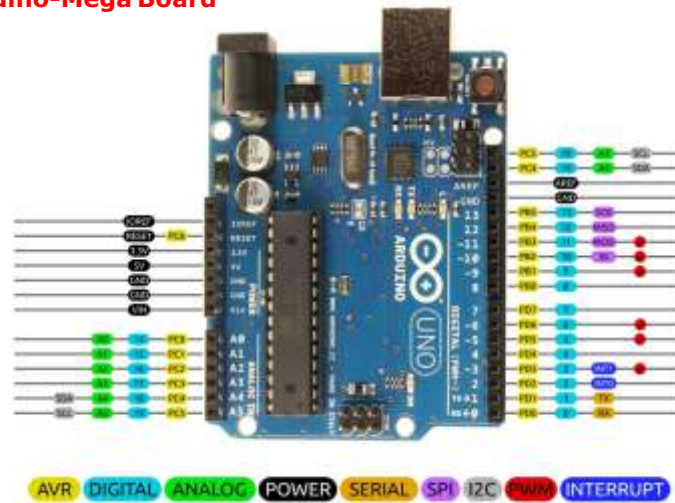


### Main Configuration

Circuit in Arduino-UNO IOT Development Board is composed enough to make us understand the system. In addition, this provides Breadboard and various Voltages. We can use Breadboard to make application circuit and test it.

- |                    |                                |                             |
|--------------------|--------------------------------|-----------------------------|
| 1. Arduino Uno     | 2. Power Supply                | 3. 4x4 Keypad               |
| 4. DIP Switch      | 5. CDS & Microphone            | 6. Joystick                 |
| 7. Accelerometer   | 8. Humidity/Temperature Sensor | 9. IR Line Tracer           |
| 10. Ultrasonic     | 11. Slide Potentiometer        | 12. LED Matrix              |
| 13. LED Bar        | 14. 1W LED                     | 15. RGB LED                 |
| 16. Serial RGB LED | 17. I2C LCD 16x2               | 18. 4-Digit-Segment Display |
| 19. Buzzer         | 20. Relay                      | 21. Servo Motor             |
| 22. DC Motor       | 23. Step Motor                 | 24. Bluetooth               |
| 25. Wi-Fi          | 26. Breadboard                 |                             |

### Block Diagram of Arduino-Mega Board



### List of Experiments

Learning Arduino-Uno Development Board Arduino programming

1. To develop Arduino program for blinking of LED
2. To develop Arduino program for fading of LED
3. To develop Arduino program for controlling LED brightness with a potentiometer
4. To control active and passive buzzers using DIP switches
5. To develop Arduino program for controlling parallel RGB LEDs
6. To develop Arduino program for controlling a 5x5 LED matrix with rainbow colors
7. To develop Arduino program for controlling a 4-digit seven-segment display
8. To develop Arduino program for displaying an emoji on an 8x8 LED matrix
9. To develop Arduino program for displaying text on an i2c LCD
10. To develop Arduino program for interfacing a 4x4 keypad and I2C LCD
11. To develop Arduino program for interfacing mpu6050 and detecting motion
12. To develop Arduino program for interfacing IR sensors and controlling LED bar
13. To develop Arduino program for interfacing dht sensor and displaying temperature and humidity on LCD
14. To develop Arduino program for interfacing smoke sensor and activating alarm system
15. To develop Arduino program for interfacing ultrasonic sensor and displaying distance on LCD
16. To develop Arduino program for interfacing LDR and controlling LED
17. To develop Arduino program for interfacing KY-038 sound sensor module and controlling LED
18. To develop Arduino program for controlling two dc motors using L293D motor driver
19. To develop Arduino program for controlling a step per revolution motor using the stepper library
20. To control two axis servo motors using a joystick
21. To develop Arduino program for remote control LED using Bluetooth module (HC-05) and remotexy platform
22. To develop Arduino program for remote control LED relay using wifi module (ESP-01) and remotexy platform

Note: Specifications are subject to change.