Arduino Leonardo R3

ATmega32U4 USB Development Board



The Arduino Leonardo R3 is an ATmega32U4-based development board with built-in USB communication. Unlike many Arduino boards, it can appear to a computer as a keyboard or mouse, making it useful for USB control, automation, robotics and interactive projects.

TOP USES

- USB HID Projects
- Robotics
- Automation
- Interactive Devices

KEY FEATURES

- ATmega32U4
- 16 MHz Clock
- 20 Digital I/O
- 7 PWM Outputs
- 12 Analog Inputs
- Built-in USB

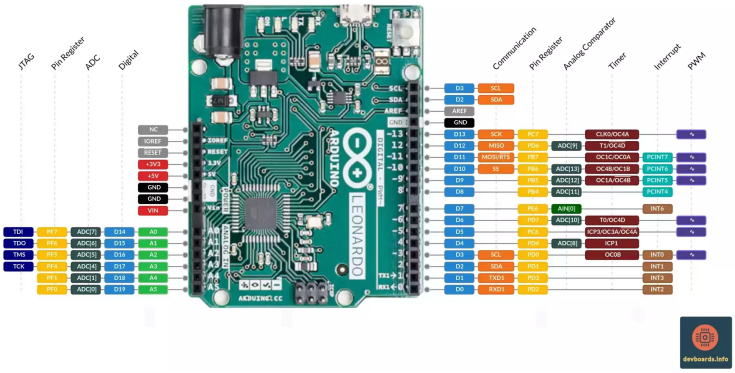
Technical Specifications

Arduino Leonardo R3

Parameter	Value
Microcontroller	ATmega32U4
Operating Voltage	5 V
Clock Speed	16 MHz
Digital I/O	20
PWM	7
Analog Inputs	12
Flash	32 KB
SRAM	2.5 KB
EEPROM	1 KB
USB	Micro-B

Pinout

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PIN FUNCTIONS

Pin	Function	Notes
D0 / D1	Serial RX / TX	
D2 - D13	Digital I/O	
D3 / D5 / D6 / D9 / D10 / D11 / D13	PWM	
A0 - A5	Analog Input	
A4 / A5	I2C SDA / SCL	
D14 - D17	SPI	
5V	Power	
3.3V	Power	
GND	Ground	
VIN	Input Power	

WIRING NOTES

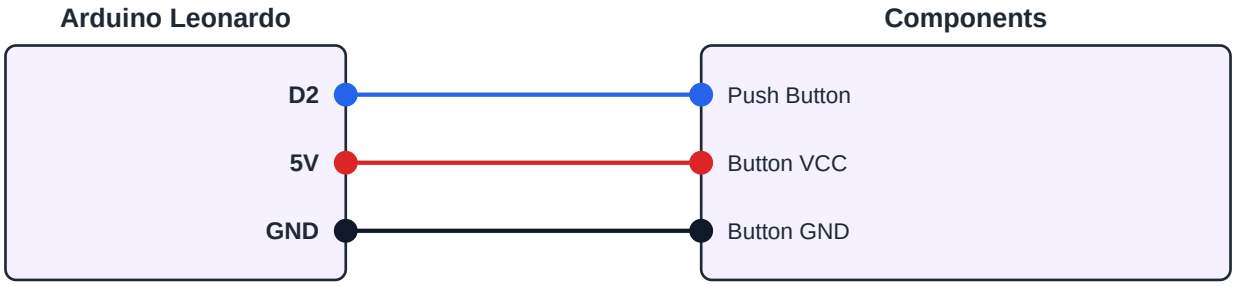
- 5 V logic.
- Built-in USB supports HID devices such as keyboard and mouse.
- Use external power for motors and servos.

Example Project

USB Keyboard + Sensor

Use a button to make the Leonardo send a keyboard command directly to the computer.

CIRCUIT



EXAMPLE CODE

```
#include <Keyboard.h>

#define BUTTON 2

void setup(){
  pinMode(BUTTON, INPUT_PULLUP);
  Keyboard.begin();
}

void loop(){
  if(digitalRead(BUTTON)==LOW){
    Keyboard.write('A');
    delay(500);
  }
}
```

EXPECTED RESULT

- Button press is detected.
- Leonardo sends the letter A to the computer.
- The board works as a USB keyboard.

Useful Links

Arduino Leonardo R3

Resource	Link
Arduino Leonardo	https://docs.arduino.cc/hardware/leonardo/
Arduino IDE	https://www.arduino.cc/en/software
Language Reference	https://www.arduino.cc/reference/en/

COMPATIBLE COMPONENTS

- Push Button
- DHT22
- HC-SR04
- MPU6050
- OLED Display

Need this component?

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https://techzoneegypt.com/p/arduino-leonardo-r3