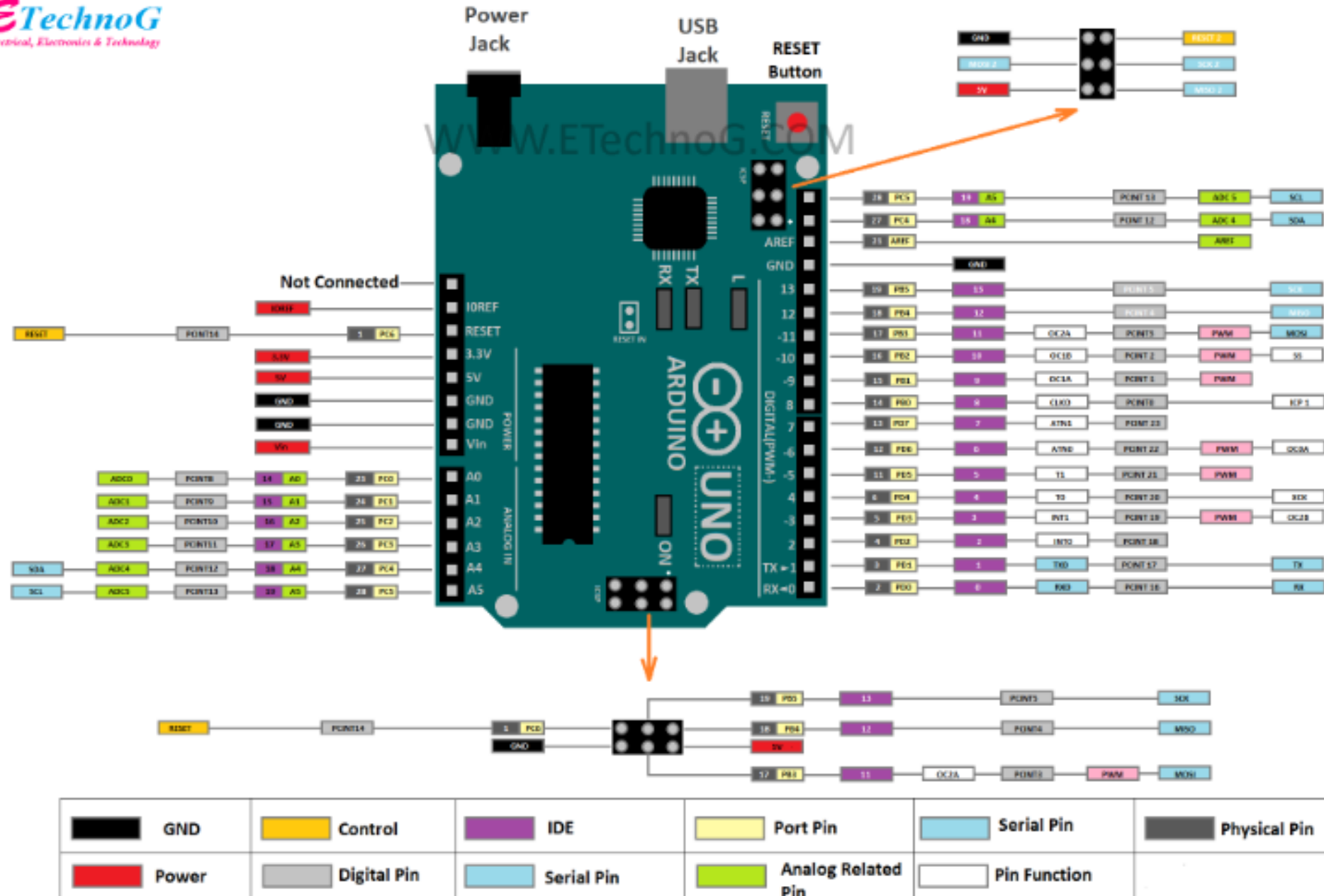# Arduino UNO Pinout Diagram and Pin Configuration Explained

For electronics projects DIY projects, the Arduino UNO is a very useful device. It is built based on the ATmega328P microcontroller. Its architecture is based on 8-bit AVR technology. It comes with two versions - one consists of a 28 pin DIP package microcontroller while the other one consists of a 32 pin quad flat package microcontroller. In this article, we are going to see the pin diagram of Arduino UNO consists of a 28 pin microcontroller.

Arduino UNO Pinout Diagram

	GND		Control		IDE		Port Pin		Serial Pin		Physical Pin
	Power		Digital Pin		Serial Pin		Analog Related Pin		Pin Function		

Power Supply Pins

There are three ways to provide power supply to this board - 1. Through Barrel Jack 2. Through USB Port 3. Through Input Pins It is designed to operate at 5V DC voltage and the input voltage range is 6V-20V. It is recommended to provide a power supply to this board from 7V-12V.

The barrel Jack helps to provide power to the board through an adapter. Using a wall adapter by connecting to the barrel jack we can provide a power supply.

When we connect the Arduino board to the computer through the USB port, the computer will provide the power supply to the board at 5V, 500mA.

The power also can be given through the pin 'Vin' and a 'GND' pin, but the voltage should be within the range.

GND Pin: The Arduino UNO has a total of five Ground(GND) pins all are interconnected to each other. Both power input and output purpose ground pins are can be used.

5V and 3.3V: It also has a 5V pin and a 3.3V pin to power the external component or device connected to this board.

RESET and IOREF: The Reset pin is used to reset the Arduino. The IOREF or Input/Output Reference pin provides the reference voltage to operate the microcontroller.

Analog Input/Output Pins

The Arduino UNO has a total of 6 analog pins and they are connected through Analog to Digital Converter(ADC). Using these pins we can give analog signals to the Arduino board or take analog signals from the board. These analog pins are identified as PC0, PC1, PC2, PC3, PC4, PC5

Digital Pins

Pin 0 to 13 are the digital pins through which digital signal can be output or input. Digital pins are those that helps for the transmission of digital signal such as 0 or 1 bits. When the voltage is below 0.8V it os considered as 0 and when the voltage is above 2 it is considered as 1 and the value between this range considered as undefined. Each of these pins are capable to handle up to 40mA current but is is recommended to use up to 20mA current only.

The pin no 3, 5, 6, 9, 10, 11 are also capable to handle PWM(Pulsed Width Modulation) Signals. It is a technique to encode a message into pulsating signal. The pulse width technique work by the varying of frequency and duty cycles.

ICSP Pins

ICSP means In-Circuit Serial Programming. These pins are used for the programming of the Aurdino Board. The programmer can connect the Arduino board with a programming device through these pins and can program the the firmware of the arduino board.

AVR DIGITAL ANALOG POWER SERIAL SPI I2C PWM INTERRUPT

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