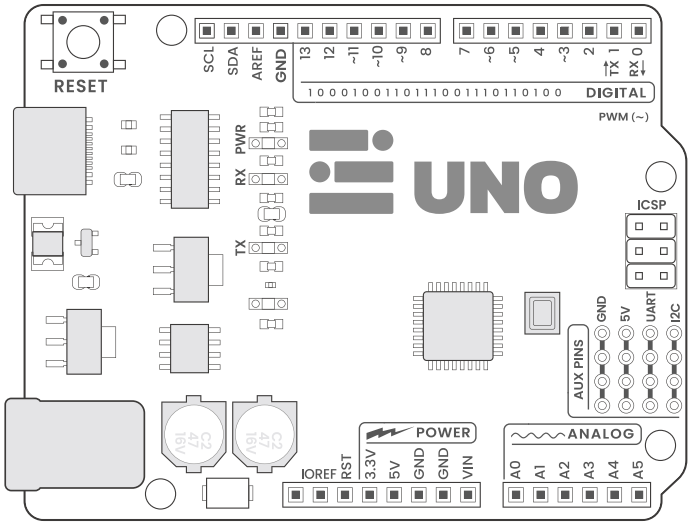
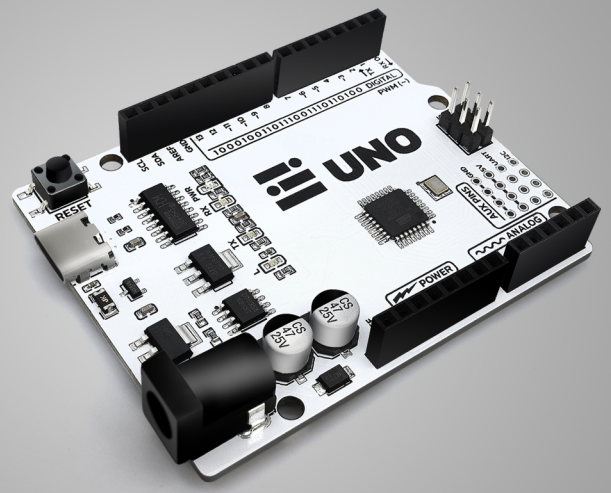
amomii



amomii UNO

DATASHEET SKU : UN01V1C



Description

The amomii UNO is a microcontroller board, based on the popular Arduino UNO, designed for makers, hobbyists, and project enthusiasts. With 14 digital I/O pins, 6 analog inputs, and a 16 MHz ceramic resonator, the board offers all the necessary features for project development.

The amomii UNO boasts an upgrade to the traditional Arduino UNO with a USB-C connection for faster data transfer, improved power delivery, and a user-friendly reversible plug. The board is capable of handling up to 2A at 5V, a four-fold increase from the original Arduino UNO's 500mA power handling.

For advanced users, the amomii UNO has auxiliary ports for soldered UART and I2C connections, as well as additional 5V and Gnd pins. Whether new or experienced in microcontroller projects, the amomii UNO offers a powerful and user-friendly solution.

Technical Specifications

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
DC Current for 5V Pin	Absolute maximum: 2 A(when powering with USB C) 1 A(when powering from the barrel jack)

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
Weight	20g

Operating System

The amomii UNO board is built on the open-source Arduino platform, and comes pre-installed with the Optiboot bootloader. This combination of the platform and bootloader make the amomii UNO board easy to program using the Arduino Integrated Development Environment (IDE). The IDE offers a user-friendly interface, allowing hobbyists, makers, and professionals to develop and upload their sketches with ease. The pre-installed Optiboot bootloader ensures that the board is ready to use right out of the box, and provides a minimal and robust interface for uploading sketches. The amomii UNO board is a powerful and versatile tool for creating and testing a wide range of electronic projects.

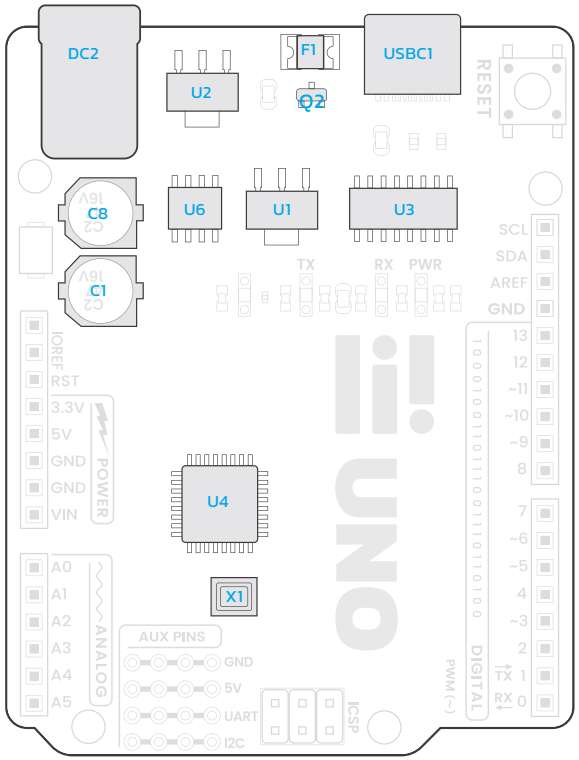
The Arduino Integrated Development Environment (IDE) can be downloaded for free from the Arduino website (www.arduino.cc). The IDE is available for Windows, Mac OS X, and Linux operating systems. Simply go to the "Software" section of the Arduino website, select the appropriate operating system, and follow the instructions for downloading and installing the IDE on your computer.

Drivers

In most cases, manual driver installation is not necessary for proper operation of the board. However, if required, the CH340 drivers can be obtained from the manufacturer, WCH. The latest versions of these drivers are available on the WCH English translated website:

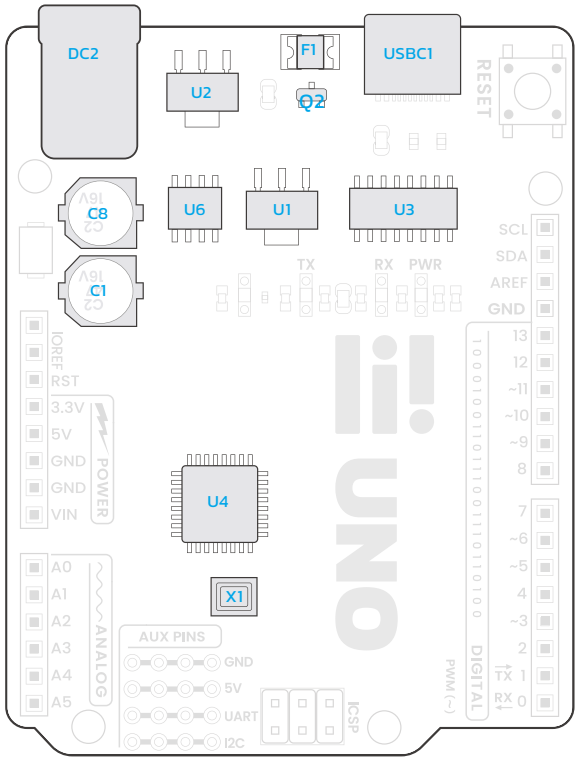
http://www.wch-ic.com/downloads/CH341SER_ZIP.html

Topology



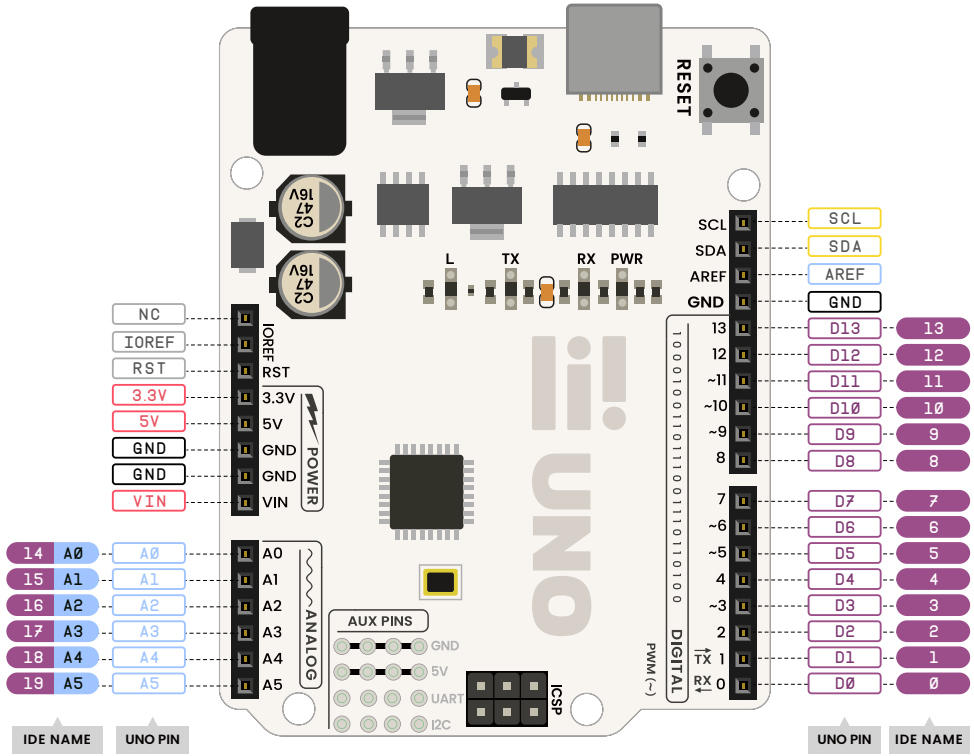
Identifier	Description	Datasheet
USBC1	The USBC1 is a USB Type-C connector that is used for both power and data transfer. It provides a high-speed data transfer rate and a power supply for the device, making it a versatile and convenient interface for a wide range of applications.	
U3	The CH340C is a USB-to-serial converter chip that is commonly used in microcontroller development boards such as the amomii UNO. It enables communication between the microcontroller and a computer via USB, allowing the transfer of data and programming of the microcontroller. The CH340C supports various serial protocols such as RS232 and UART, and supports baud rates of up to 2 Mbps. It is a cost-effective and widely used solution for microcontroller programming and communication.	
F1	The ASMD1206-200 is a fuse that is used to protect electrical circuits from overloading and short circuits. It is a type of resettable fuse that will automatically reset after the overloading or short circuit condition is removed. The ASMD1206-200 has a trip rate current of 3.5 A and is designed for surface-mount applications.	
Q2	The SI2301CDS-T1-GE3 is a N-channel MOSFET transistor that is used to control the flow of current in a circuit. It is commonly used as a switch, amplifying device, or voltage regulator in a wide range of applications. The SI2301CDS-T1-GE3 is a high-performance device with low on-resistance, fast switching speed, and a wide input voltage range.	
U1	The AMS1117-5.0 is a low-dropout voltage regulator that provides a stable 5V output voltage from an input voltage ranging from 7V to 20V. It is designed to deliver a maximum output current of 1A and is widely used in a variety of applications where a stable power supply is required. The AMS1117-5.0 is a cost-effective solution for providing a regulated power supply to a wide range of devices.	
U2	SC1117-3.3V is a low dropout linear voltage regulator that provides a stable 3.3V output voltage from a higher input voltage. It is used to regulate the voltage from the USB supply voltage to 3.3V to provide a stable voltage source for the microcontroller and other components that require a 3.3V supply. The regulator is capable of delivering up to 1A (we recommend no more than 500mA) of current and has thermal protection to protect the components from damage due to overheating.	

Topology



Identifier	Description	Datasheet
U6	The COS358SR opamp acts as a comparator, comparing the voltage levels at its inputs and selecting the higher voltage to use as the output. This allows the board to automatically select between the external power supply and the USB power, ensuring that the board operates with the highest available voltage and providing reliable power to the micro-controller.	
DC2	DC005 is a DC power jack that is used to provide a convenient way to connect a power supply to the board. The jack is compatible with standard 2.1mm DC power plugs and is typically used with an external power supply to power the board when a USB connection is not available. It is also used to light the builtin LED drawing minimal current from pin D13.	
C8/C1	Ceramic capacitors used to filter and stabilize the voltage provided by the power supply. Capacitors store electrical energy and can quickly discharge this energy to smooth out voltage fluctuations and provide a stable voltage source for the components on the board.	
D1	1N4007F is a rectifier diode that is used to protect the board from reverse voltage. It allows current to flow in only one direction, ensuring that the components are not damaged by accidental reverse voltage connections.	
U4	ATMEGA328P-AU is a low-power, high-performance microcontroller from Microchip. It is used as the main processing unit on the board and is responsible for controlling and communicating with the various components on the board. The microcontroller has 32KB of flash memory for storing code, 2KB of SRAM for temporary data storage, and 1KB of EEPROM for permanent data storage.	
X1	16MHz is a quartz crystal that is used to generate a stable 16MHz clock signal for the microcontroller. The crystal ensures that the microcontroller operates at a precise and accurate frequency, enabling accurate timing and synchronization of its operations.	

Basic Pinout



LEGEND

LABELS

UNO PIN	Refers to the pin on the board
IDE NAME	Refers to the pin in Arduino IDE code
PROTOCOL	Pins for communication protocols
CHIP PIN	Name of connected pin on ATMEGA328P
INTERRUPT	Indicates use as interrupt source
ANALOG	Indicates use as analog input
TIMER	Indicates connection to timer(s)

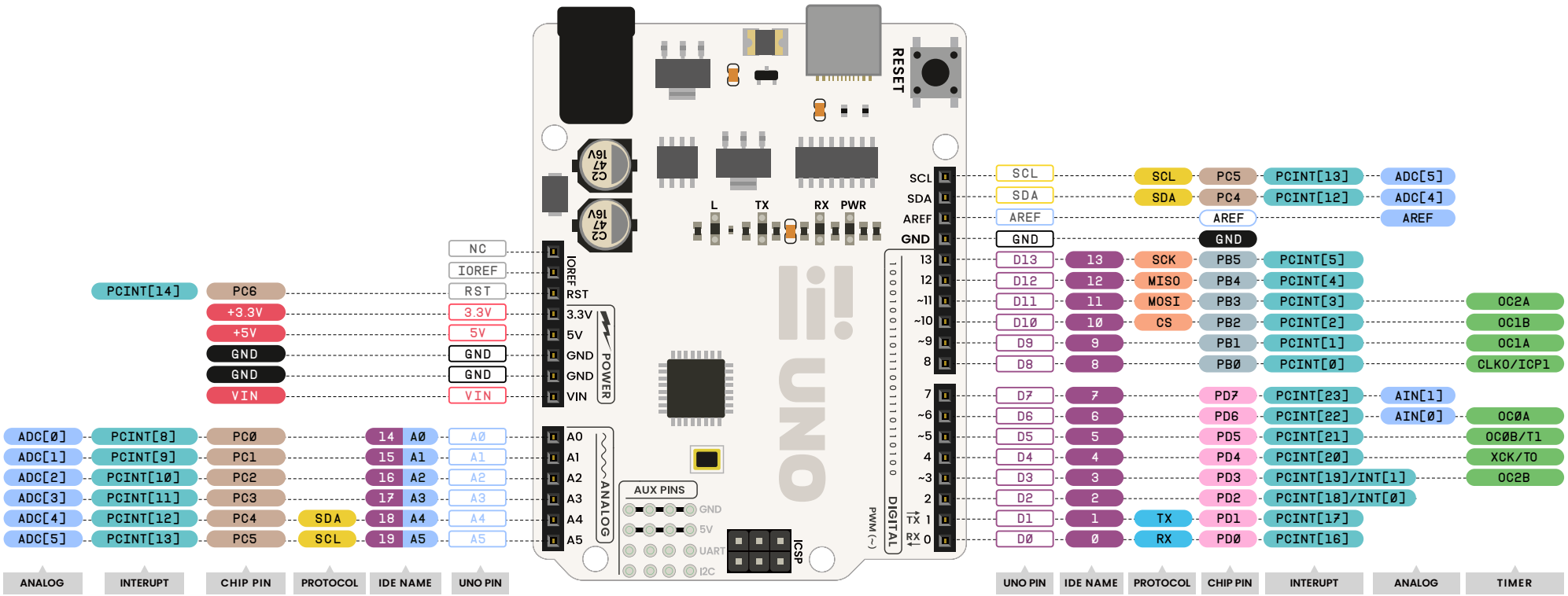
COLOUR CODE

- Analog
- Digital
- Interrupt
- I2C
- ICSP
- UART
- Positive Voltage
- Ground
- Power Group C
- Power Group D
- Power Group B

POWER RATINGS

Barrel Jack: 6V-20V input, max 1A current draw
VIN: 6V-20V input, max 1A current draw
USB C: 5V input, max 2A current draw, compatible with USB and USB C PD supplies
5V Pin: max 2A current draw
3.3V Pin: max 500mA current draw
Digital Pins as OUTPUTS: max 40mA current draw (20mA recommended)
Digital/Analog Pins as INPUTS: max 5V voltage applied.

Advanced Ponout



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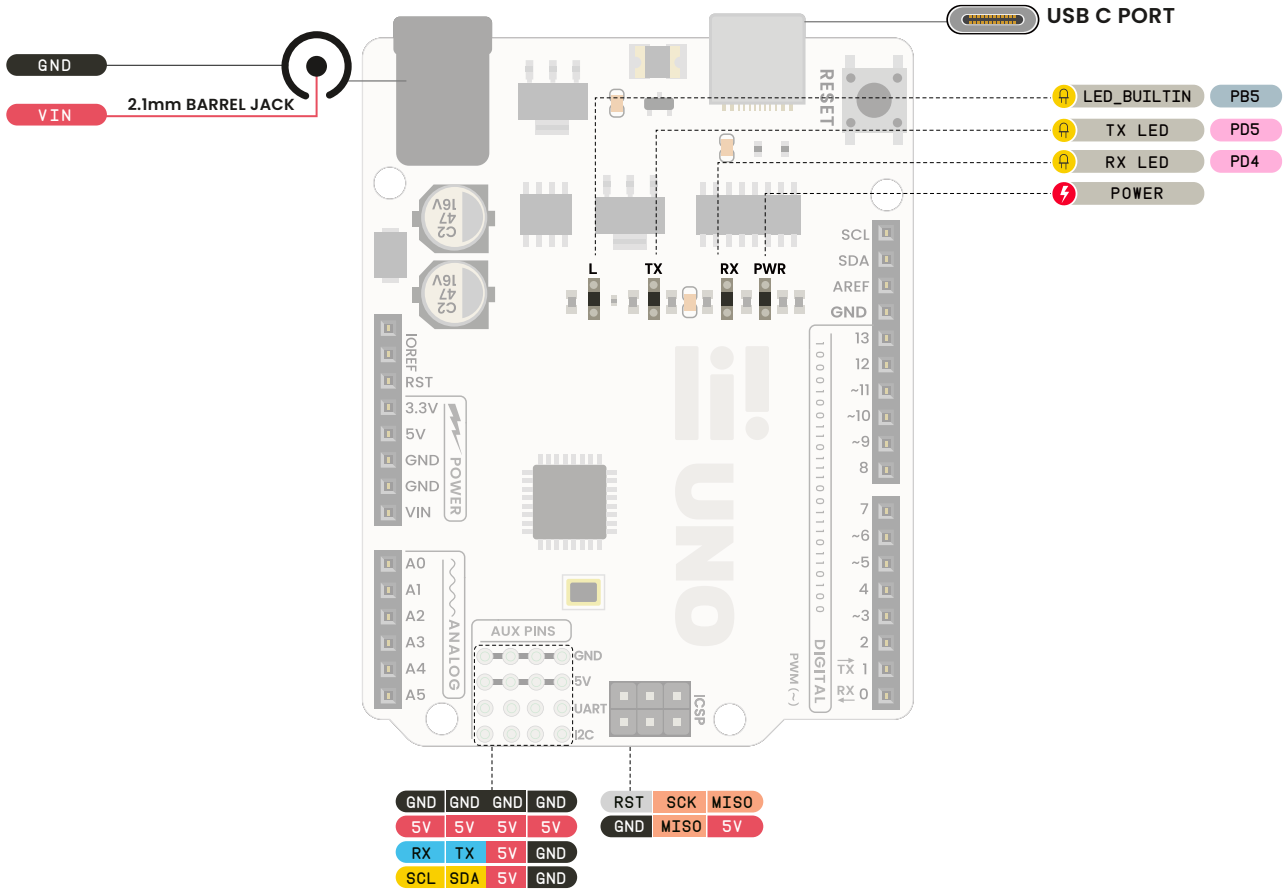
Additional Pins and Connectors



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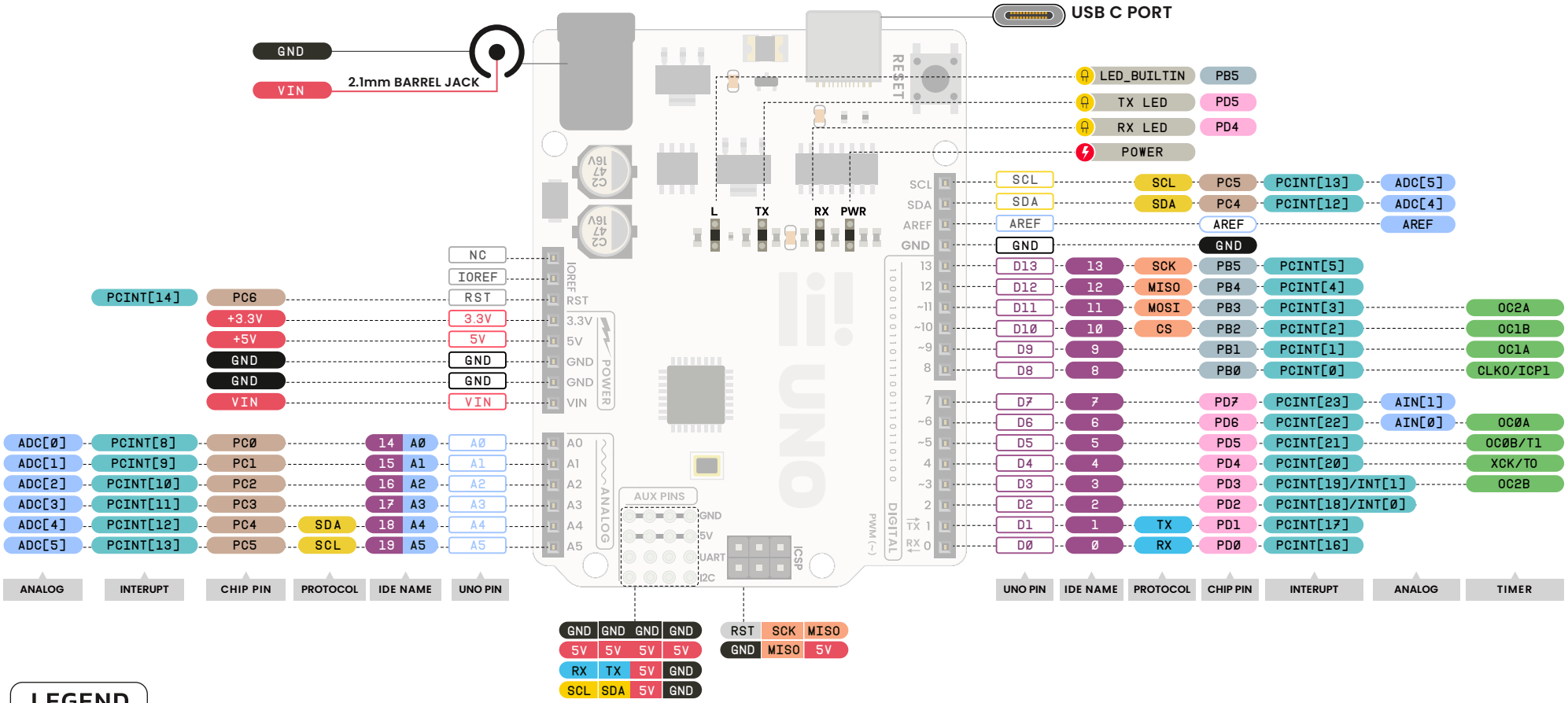
comprehensive pinout



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Power Handling

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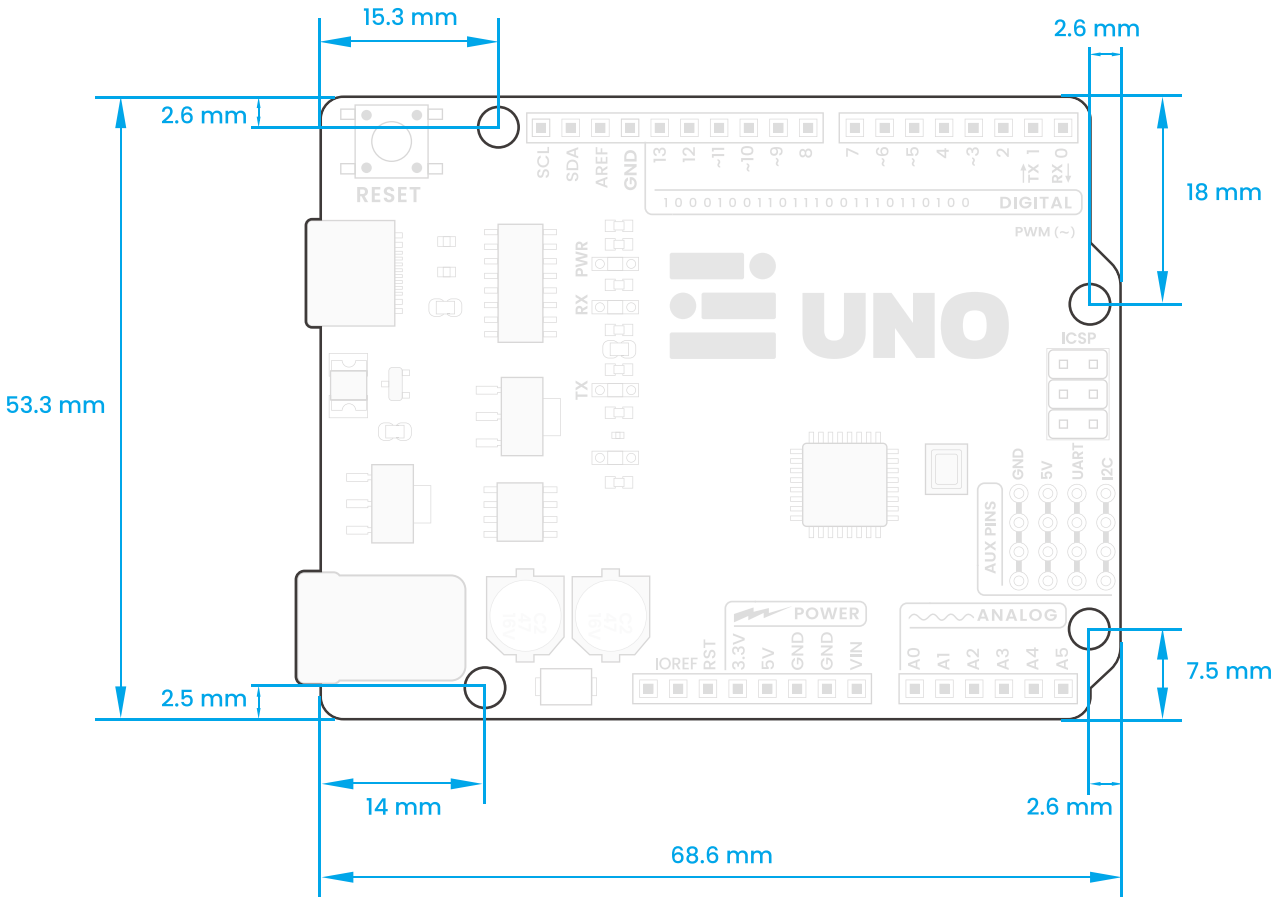
Board Dimension and Mounting Holes



Revision History

Date	Revision	Changes
MAY. 12 . 2023	1.0	First release

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