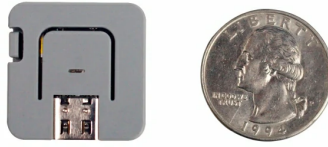
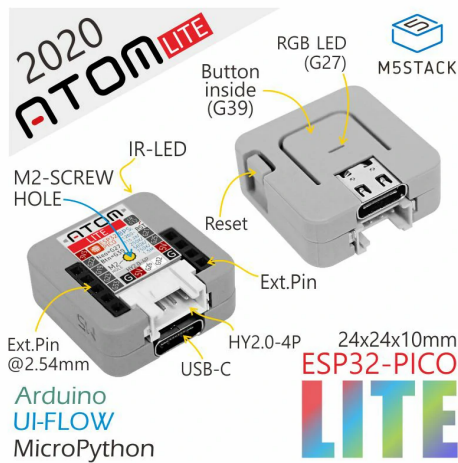


Atom-Lite

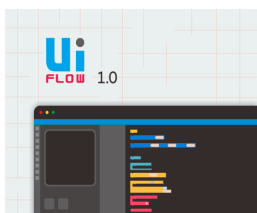
SKU:C008



Description

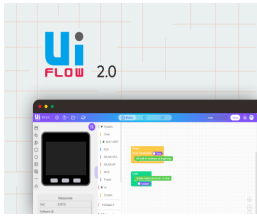
Atom-Lite is a very compact development board in the M5Stack development kit series, with a size of **only 24.0 x 24.0 mm**, providing more GPIO for user customization, making it very suitable for embedded smart hardware development. The main controller uses the **ESP32-PICO-D4** solution, integrates a **Wi-Fi** module, has a built-in 3D antenna, and features **4 MB** of SPI flash, providing Infra-Red, RGB Led, button, and GROVE/HY2.0 interfaces. The onboard USB Type-C interface allows for quick program upload and download, and there is an M2 screw hole on the back for fixing.

Tutorial



UiFlow1

This tutorial will show you how to control the Atom-Lite device using the UiFlow1 graphical programming platform.



UiFlow2

This tutorial will show you how to control the Atom-Lite device using the UiFlow2 graphical programming platform.

| Features

- Based on ESP32 development
- Compact body
- Built-in infrared transmission function
- Programmable button
- RGB LED indicator
- Expandable pins and interfaces
- Development Platform
 - UiFlow1
 - UiFlow2
 - Arduino IDE
 - ESP-IDF
 - PlatformIO

| Includes

- 1 x Atom-Lite

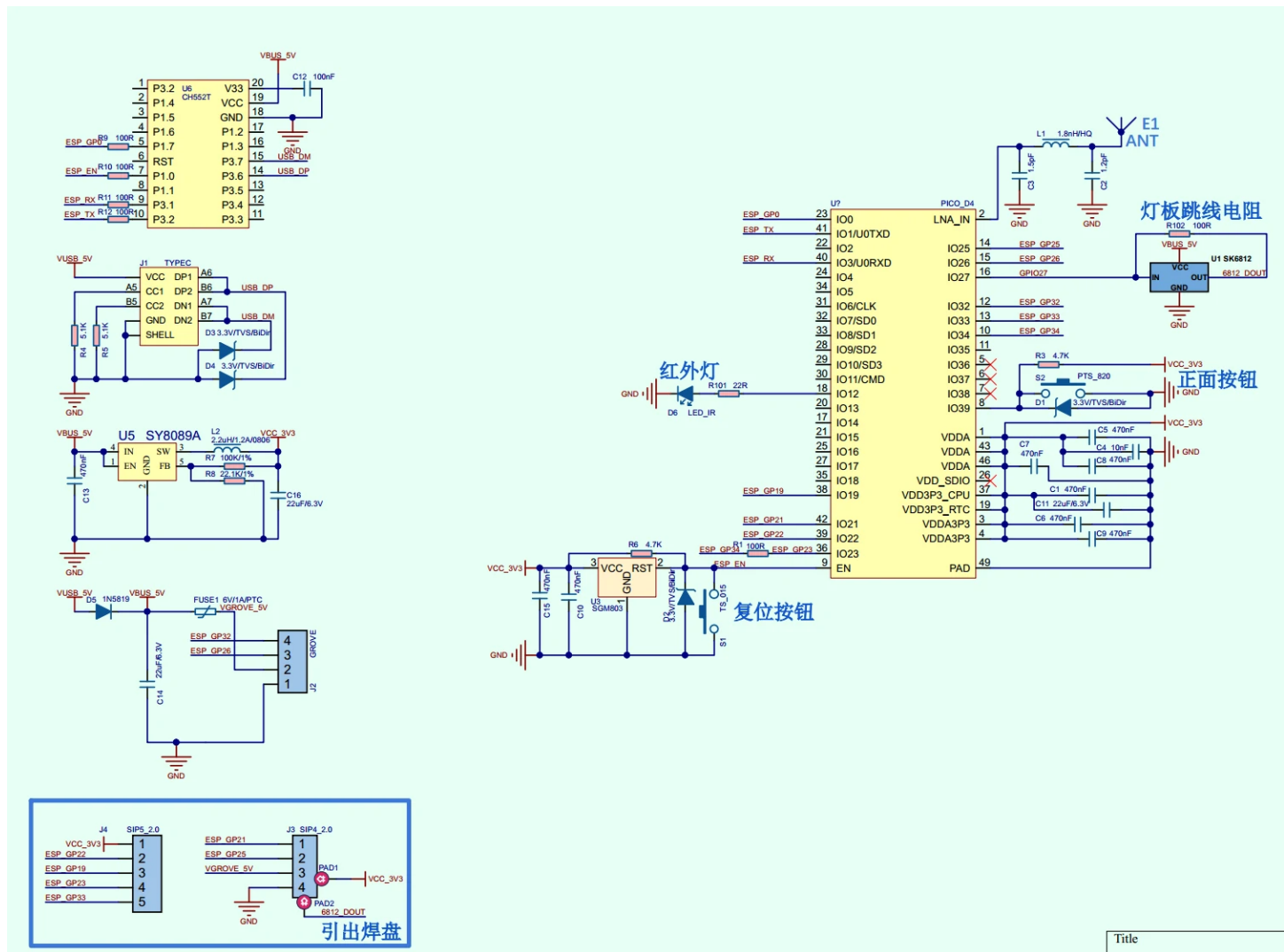
| Applications

- IoT nodes
- Microcontrollers
- Wearable devices

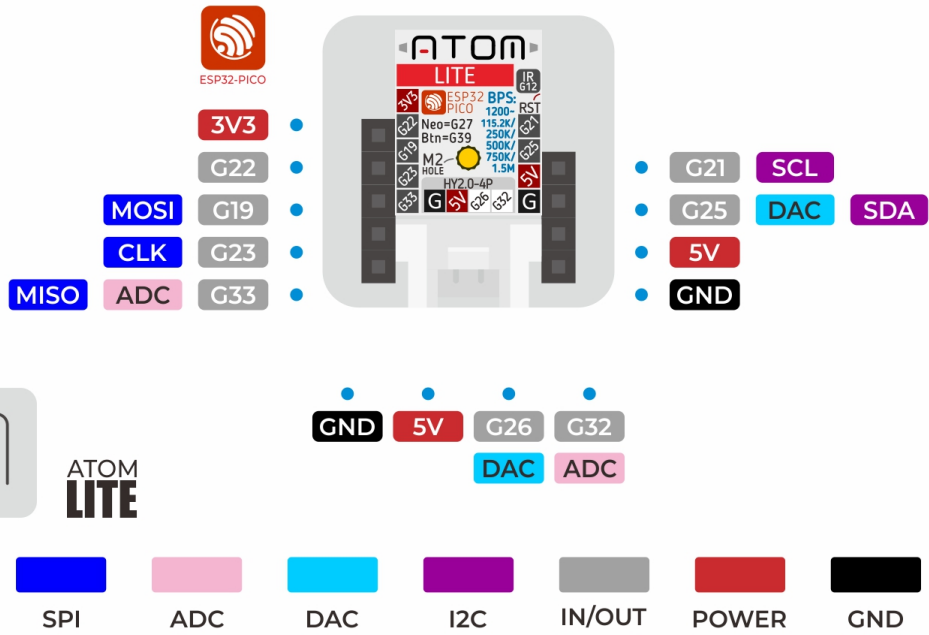
| Specifications

Specification	Parameter
SoC	ESP32-PICO-D4 @ Xtensa® 32-bit LX6 dual-core processor, clock frequency up to 240MHz
DMIPS	600
SRAM	520KB
Flash	4MB
Wi-Fi	2.4 GHz Wi-Fi
Input Voltage	5V @ 500mA
Host Interface	USB Type-C x 1, GROVE(I2C+I/O+UART) x 1
PIN Interface	G19, G21, G22, G23, G25, G33
RGB LED	SK6812 3535 x 1
IR	IR transmitter
Button	Customizable button x 1
Antenna	2.4G 3D antenna
Operating Temp	0 ~ 40°C
Case Material	Plastic (PC) + ABS
Product Size	24.0 x 24.0 x 9.5mm
Product Weight	5.5g
Package Size	81.0 x 65.0 x 13.0mm
Gross Weight	10.9g

Schematics



PinMap



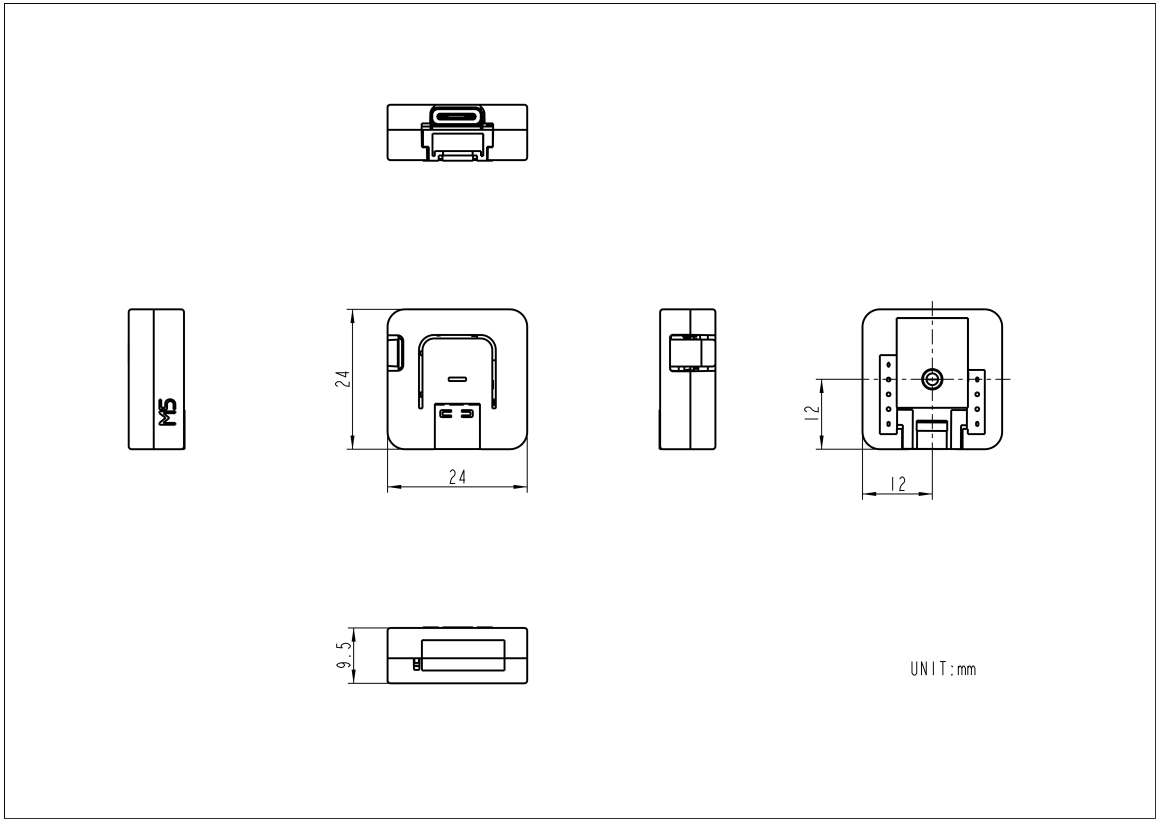
RGB & Button & IR & I2C

ESP32-PICO-D4	G27	G39	G12	G21	G25
RGB	RGB				
Button		Button			
IR			IR		
I2C				SCL	SDA

HY2.0-4P

HY2.0-4P	Black	Red	Yellow	White
PORT.CUSTOM	GND	5V	G26	G32

Model Size



Structure

- [ATOM Lite Structure Files](#)

Datasheets

- [ESP32-PICO](#)

Softwares

Arduino

- [Atom Arduino Library](#)

UiFlow1

- [Atom-Lite UiFlow1 Quick Start](#)
- [Atom-Lite Test Example](#)

UiFlow2

- [Atom-Lite UiFlow2 Quick Start](#)
- [Atom-Lite Test Example](#)

Home Assistant

- [Home Assistant Integration](#)

PlatformIO

```
[env:m5stack-atom]
platform = espressif32@6.7.0
board = m5stack-atom
framework = arduino
upload_speed = 1500000
monitor_speed = 115200
build_flags =
    -DCORE_DEBUG_LEVEL=5
lib_deps =
    M5Unified=https://github.com/m5stack/M5Unified
```

USB Driver

Atom-Lite may not work driver-free on some systems. Users can manually install the FTDI VCP driver to resolve this issue. Taking Windows 10 as an example, download the driver file that matches your operating system and extract it. Then, install it via Device Manager. (Note: In certain system environments, you may need to install the driver twice for it to take effect. The unrecognized device name is usually **M5Stack** or **USB Serial**. For Windows, it is recommended to use Device Manager to install the driver manually (custom update). The executable installation method may not work properly.)

FTDI VCP Driver Download Page:

Operating System	Release Date	Processor Architecture							Comments
		X86 (32-Bit)	X64 (64-Bit)	PPC	ARM	MIPSII	MIPSIV	SH4	
Windows (Desktop)*	2025-03-04	2.12.36.20	2.12.36.20	—	2.12.36.20A *** *	—	—	—	WHQL Certified. Includes VCP and D2XX. Available as a setup executable (non-ARM64). Please read the Release Notes and Installation Guides .
Windows (Universal)***	2025-03-04	2.12.36.20U	2.12.36.20U	—	2.12.36.20UA	—	—	—	WHQL Certified. Includes VCP and D2XX.
Linux	—	—	—	—	—	—	—	—	All FTDI devices now supported in Ubuntu 11.10, kernel 3.0.0-19. Refer to TN-101 if you need a custom VCP VID/PID in Linux. VCP drivers are integrated into the kernel.
Mac OS X 10.3 to 10.8	2012-08-10	2.2.18	2.2.18	2.2.18	—	—	—	—	Refer to TN-105 if you need a custom VCP VID/PID in MAC OS
Mac OS X 10.9 to 10.13	2019-12-24	—	2.4.2	—	—	—	—	—	This driver is signed by Apple
Mac OS X 10.14	2019-12-24	—	2.4.4	—	—	—	—	—	This driver is signed by Apple
Mac OS X10.15 and macOS 11/12	2022-06-13	—	1.5.0 (zip) 1.5.0 (dmg)	—	1.5.0 (zip) 1.5.0 (dmg)	—	—	—	This is a Beta driver release and the installer should be run from the Applications folder on your machine

* Includes the following version of the Windows operating system: Windows 10, Windows 11, Windows Server 2022 and Windows server 2025.

*** Windows 10 and Windows 11 only. Universal Windows Drivers enable developers to create a single driver package that runs across multiple different device types, from embedded systems to tablets and desktop PCs.

**** Windows 11 only for ARM64 based Windows PCs. Also works on Mac M1/M2/Mx running Parallels or VMWare Virtual Machines running Windows.

Installation Method:

The installation process is shown in three steps:

- Step 1:** In Device Manager, expand 'Other devices', right-click on 'USB Serial Port', and select 'Update driver'.
- Step 2:** In the 'Update Drivers - USB Serial Port' window, click 'Browse for drivers on your computer'. In the 'Search for drivers in this location' field, enter the path: `C:\Sear\Desktop\M5Stack\Driver\CDM+v2.12.36.1+WHQL+Certified`. Click 'Browse...'.
- Step 3:** In the 'Update Drivers - USB Serial Port' window, click 'Let me pick from a list of available drivers on my computer'. This will show a list of available drivers, including 'USB Serial Port (COM4)'.

| Easyloader

Easyloader	Download Link	Note
Atom-Lite Factory Test Easyloader	download	/

| Video

- Test if the RGB LED and button are working properly with the color-changing breathing light program

[ATOM_LITE.mp4](#)

| Product Comparison

To compare information on the Atom series products, you can visit the [Product Selection Table](#), check the target products, and get the comparison results. The selection table covers key information such as core parameters and functional features, and supports comparison of multiple products simultaneously.