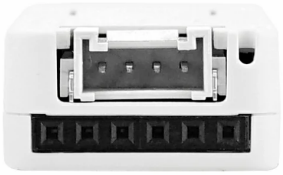
AtomS3U

SKU:K125

















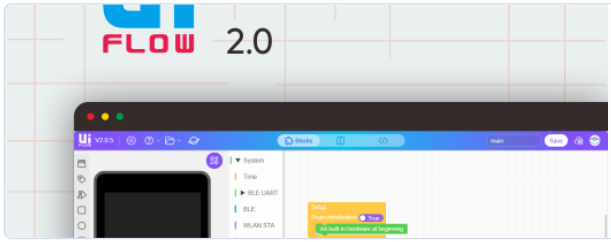




Description

AtomS3U is a **USB flash drive**-shaped multifunctional development board featuring the **ESP32-S3** chip from Espressif. It has a dual-core Xtensa LX7 processor with a main frequency of 240 MHz and built-in Wi-Fi functionality. Its interfaces include a USB Type-A port **(supports OTG)**, 1 Grove port, a 6Pin@2.54mm header (including 4 GPIOs), and peripherals such as 1 **PDM microphone**, 1 **infrared emitter**, and 1 programmable **RGB-LED**. This product can be used in scenarios such as IoT human-computer interaction, voice input/recognition (STT), and IO control.

Tutorial



UiFlow2

This tutorial will introduce you to how to control the AtomS3U device using the UiFlow2 graphical programming platform

Features

- ESP32-S3FN8@240MHz, Xtensa LX7, WIFI, USB-OTG
- Integrated programmable RGB LED and button
- Built-in infrared emitter
- Expandable pins and GROVE interface
- Development Platform
  - UiFlow2
  - Arduino IDE
  - ESP-IDF
  - PlatformIO

Includes

- 1 x AtomS3U

Applications

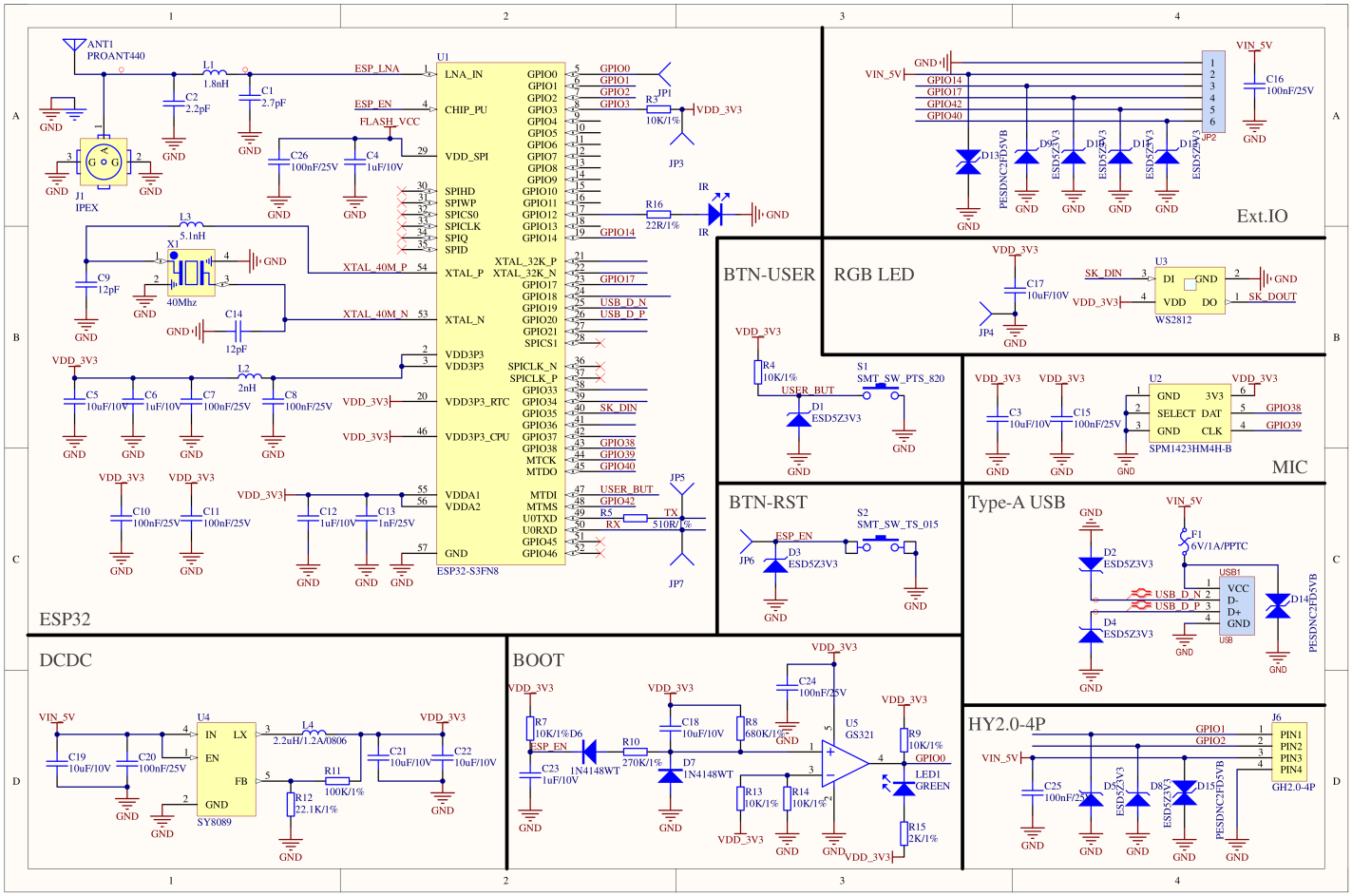
- IoT controller
- Voice recording, cloud STT recognition

Specifications

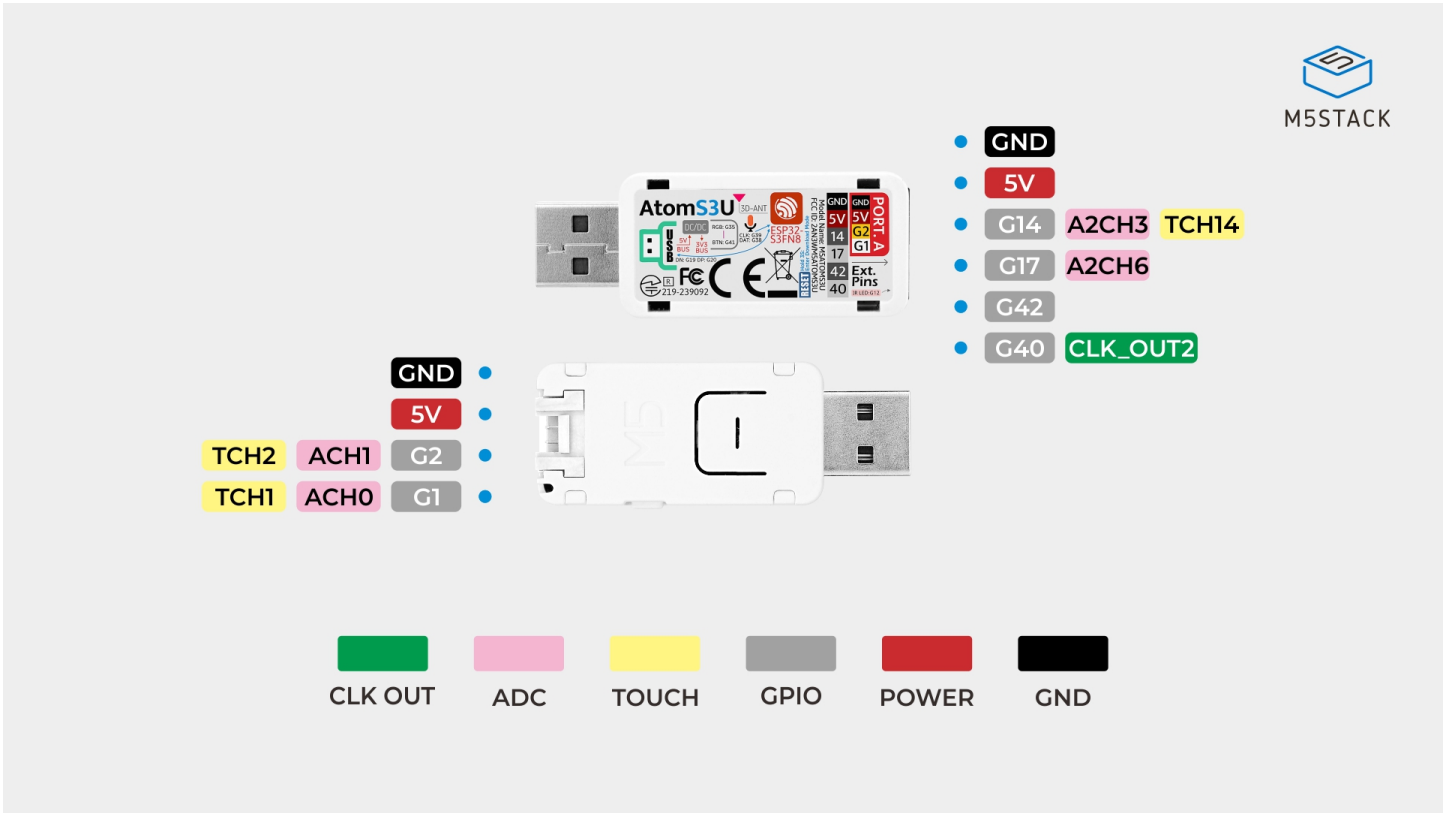
Specification	Parameter
SoC	ESP32-S3FN8 @ Xtensa® 32-bit LX7 dual-core processor, clock frequency 240MHz
USB	USB OTG, USB Serial/JTAG
Wi-Fi	2.4 GHz Wi-Fi
CDC	Supported
Microphone	SPM1423
Interface	USB Type-A
Grove Interface	PORT.A
2.54-6P Interface	GND/VIN_5V/G14/G17/G42/G40
Microphone Sensitivity	94dB SPL@1KHz Typical: -22dBFS
Microphone SNR	94dB SPL@1KHz, A-weighted Typical: 61.4dB
Supported Input Sound Frequency	100Hz ~ 10KHz
Supported PDM Clock Frequency	1.0 ~ 3.25MHz
RGB Light	WS2812
Product Size	53.0 x 20.0 x 10.3mm
Product Weight	8.5g
Package Size	114.2 x 65.6 x 20.6mm
Gross Weight	16.3g

Schematics

- AtomS3U Schematics PDF



PinMap



SPM1423 - PDM

AtomS3U	G38	G39	3.3V	GND
SPM1423	MIC_CLK	MIC_DATA	VCC	GND

IR & WS2812 & BUTTON

AtomS3U	G12	G35	G41
IR	TX		
WS2812		DIN	
BUTTON			SW

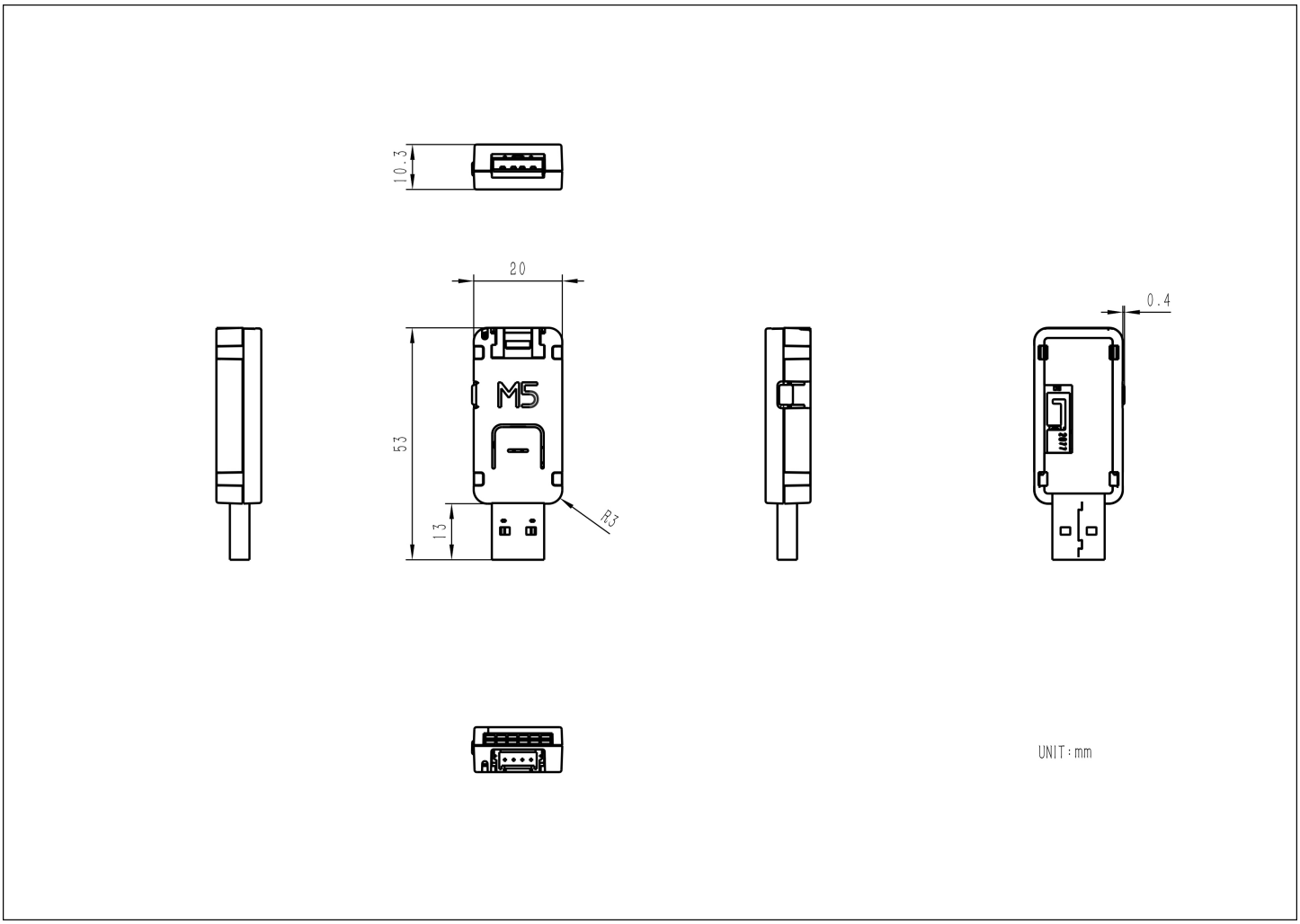
Ext Port-2.54 6P

AtomS3U	GND	VIN_5V	G14	G17	G42	G40

HY2.0-4P

HY2.0-4P	Black	Red	Yellow	White
PORT.CUSTOM	GND	5V	G2	G1

Model Size



Structure

- AtomS3U Structure Files

Datasheets

- ESP32S3
- SPM1423

Softwares

Arduino

- AtomS3U Arduino Quick Start
- AtomS3U Test Example

UiFlow2

- AtomS3R UiFlow2 Quick Start

PlatformIO

```
[env:m5stack-atoms3]
platform = espressif32
board = esp32-s3-devkitc-1
framework = arduino
upload_speed = 1500000
monitor_speed = 115200
build_flags =
    -DESP32S3
    -DCORE_DEBUG_LEVEL=5
    -DARDUINO_USB_CDC_ON_BOOT=1
    -DARDUINO_USB_MODE=1
lib_deps =
    M5Unified=https://github.com/m5stack/M5Unified
```

Video