ATOM U
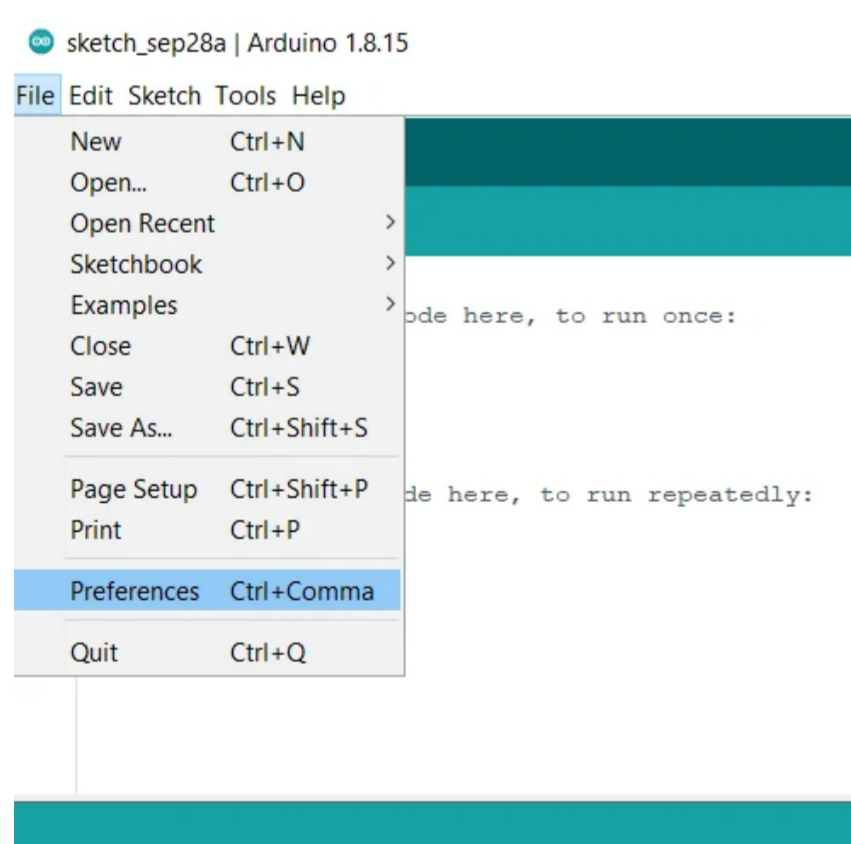
Tutorial
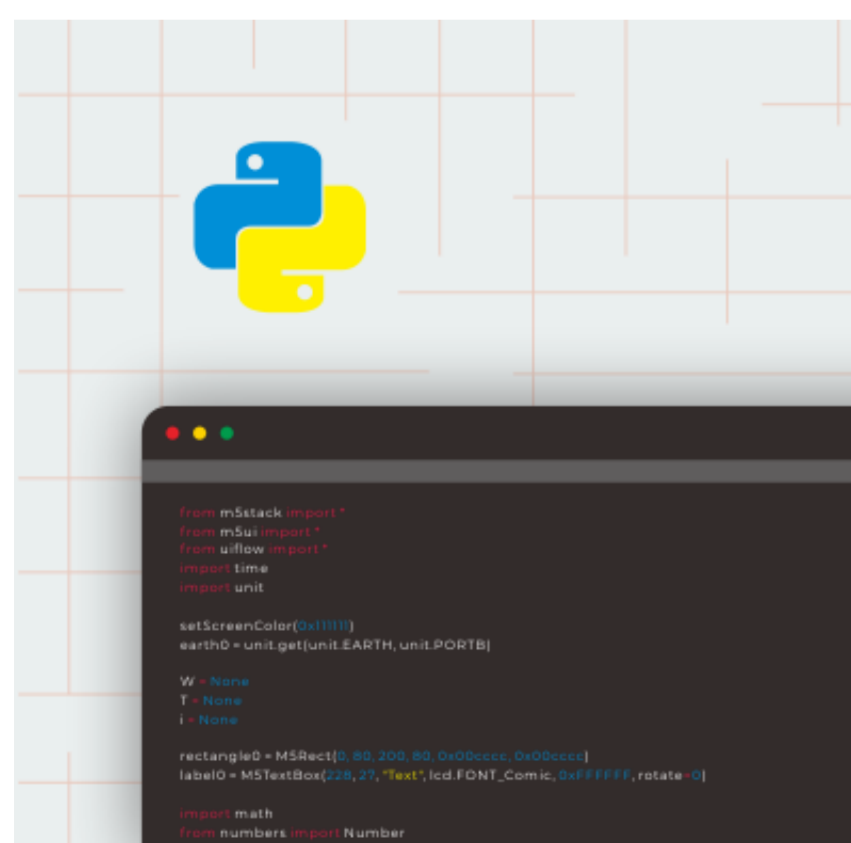

UIFlow

This tutorial will show you how to control ATOM U devices through the UIFlow graphical programming platform

Arduino IDE

This tutorial will show you how to program and control ATOM U devices through Arduino IDE

Micropython

This tutorial will show you how to control ATOM U devices through Micropython programming

Description

ATOM U is a compact low-power consumption speech recognition IoT development kit. It adopts an ESP32 chipset, equipped with 2 low-power Xtensa 32-bit LX6 microprocessors with the main

frequency of up to 240MHz. Built-in USB-A interface, IR emitter, programmable RGB LED. Plug-and-play, easy to upload and download programs. Integrated **Wi-Fi** and **Bluetooth** modes and digital microphone SPM1423(I2S) for the clear sound record. suitable for HMI, Speech-to-Text (STT).

- LOW-CODE DEVELOPMENT:

  - ATOM U supports UIFlow graphical programming platform, scripting-free, cloud push; Fully compatible with Arduino, MicroPython, ESP32-IDF, and other mainstream development platforms, to quickly build various applications.

- HIGH INTEGRATION:

  - ATOM U contains a USB-A port for programming/power supply, IR emitter, programmable RGB LED x1, button x1; Finely tuned RF circuit, providing stable and reliable wireless communication.

- STRONG EXPANDABILITY:

  - ATOM U is easy access to M5Stack's hardware and software system

Product Features

- ESP32-PICO-D4 (2.4GHz Wi-Fi and Bluetooth dual mode)
- Integrated programmable RGB LED and button
- Compact design
- Built-in IR emitter
- Expandable pinout and GROVE port
- Development platform:
  - UIFlow
 - MicroPython
  - Arduino

Includes

- 1x ATOM U

Application

- IoT controller
- Voice recording, Speech-to-Text services

Driver Installation

Connect the device to the PC, open the device manager to install FTDI driver for the device. Take the win10 environment as an example, download the driver file that matches the operating system, unzip it, and install it through the device manager. (Note: In some system environments, the driver needs to be installed twice for the driver to take effect. The unrecognized device name is usually **M5Stack** or **USB Serial**. Windows recommends using the driver file to install directly in the device manager (custom Update), the executable file installation method may not work properly). Click here to download FTDI driver
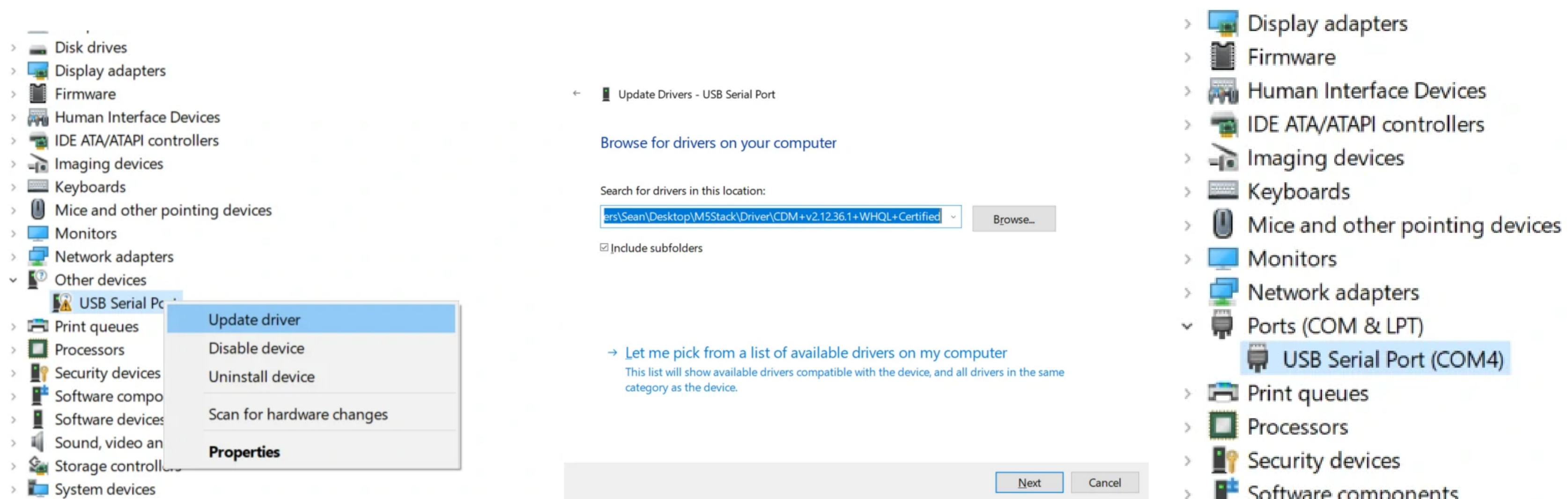
Specification

Specifications	Parameters
ESP32-PICO-D4	240MHz dual core, 600 DMIPS, 520KB SRAM, 2.4G Wi-Fi, dual mode Bluetooth
Microphone	SPM1423
Microphone sensitivity	94dB SPL@1KHz Typical value: -22dBFS
Microphone signal-to-noise ratio	94dB SPL@1KHz, A-weighted Typical value: 61.4dB
Standby working current	40.4mA
Support input sound frequency	100Hz ~ 10KHz
Support PDM clock frequency	1.0 ~ 3.25MHz
Net weight	8.4g

Specification	Parameter
Net weight	8.4g
Gross weight	10.6g
Product size	52 * 20 * 10mm
Packing size	68 * 21 * 11mm

PinMap

○ SPM1423 - I2S

ATOM U	G5	G19	3.3V	GND
SPM1423	MIC_CLK	MIC_DATA	VCC	GND

○ IR & SK6812 & BUTTON

ATOM U	G12	G27	G39
IR	TX	/	/
SK6812	/	DIN	/
BUTTON	/	/	SW

○ HY2.0-4P

ATOM U	G26	G32	5V	GND
PORT-A	SDA	SCL	VCC	GND

Schematic
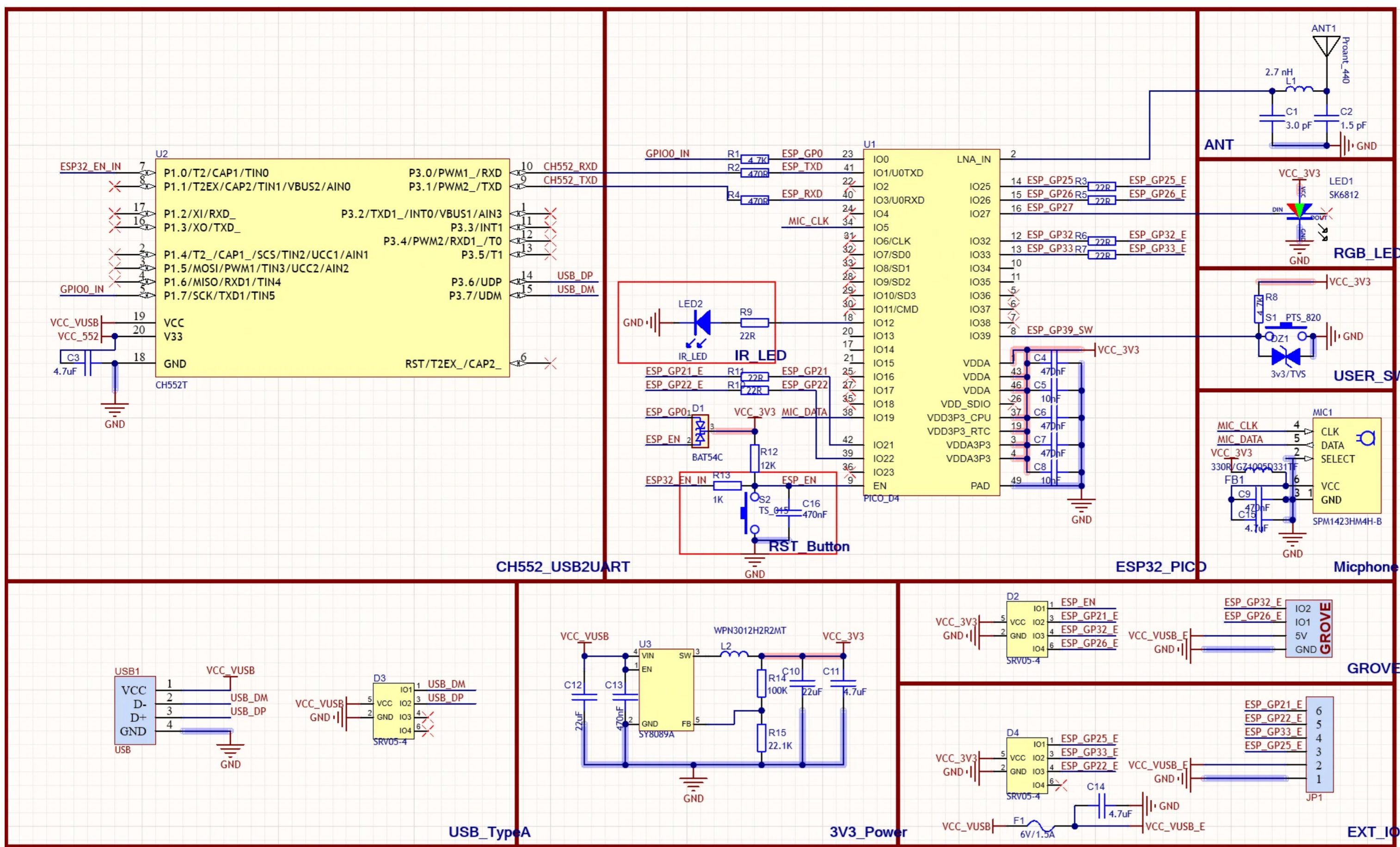
Related Links

- **Datasheet**
  - ESP32-PICO
  - SPM1423

Example

Arduino

- ATOM U - Examples
- ATOM U - STT

Video

STT Example