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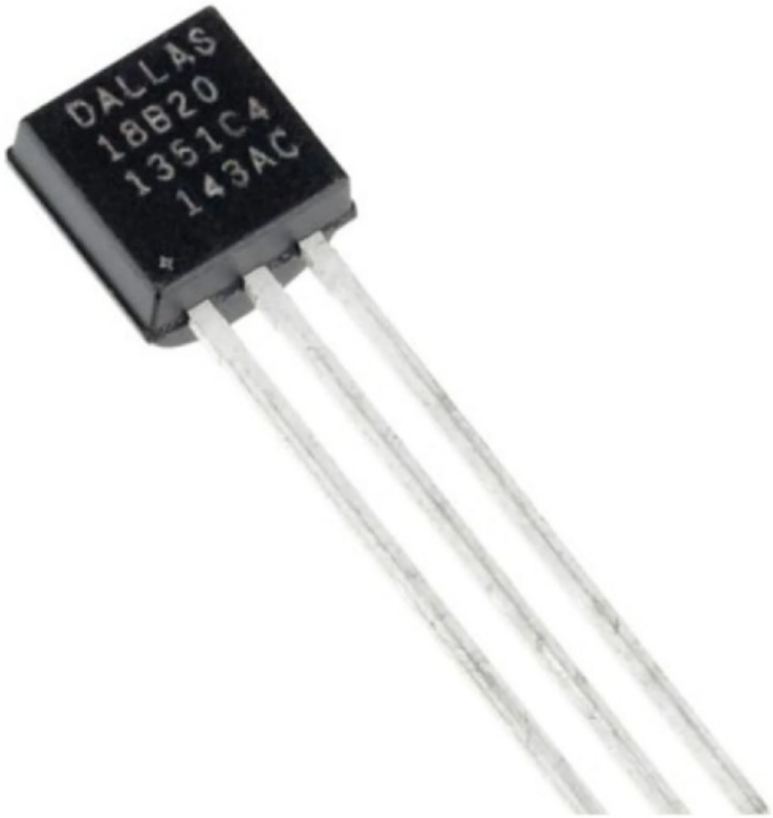
Lonely Binary

Lonely Binary CH34X One Wire Digital Temperature Sensor



Overview

The CH34X family comprises widely used USB-to-serial chips manufactured by WCH (WinChipHead), commonly integrated into generic UNO R3, ESP8266, and ESP32 development boards. Popular models include CH340G, CH340C, CH340K, CH343, and CH9102. While these chips serve the same fundamental purpose—facilitating serial communication—they differ in footprint size and compatibility. For older models like CH340G and CH340C, drivers are typically preinstalled on modern operating systems such as Windows, macOS, and Linux, allowing immediate connection to a PC or Mac. However, newer models, such as CH340K, CH343 and CH9102, require manual driver installation due to their more recent release.

Driver Installation

Drivers for the CH34X family can be downloaded from the official WCH website at https://www.wch-ic.com/downloads/category/30.html

1. **Windows**
   On Windows, if the driver is not installed, plugging in a development board with a CH34X chip may result in an unrecognized serial device appearing in Device Manager. This indicates that the appropriate driver is missing and must be installed

manually.

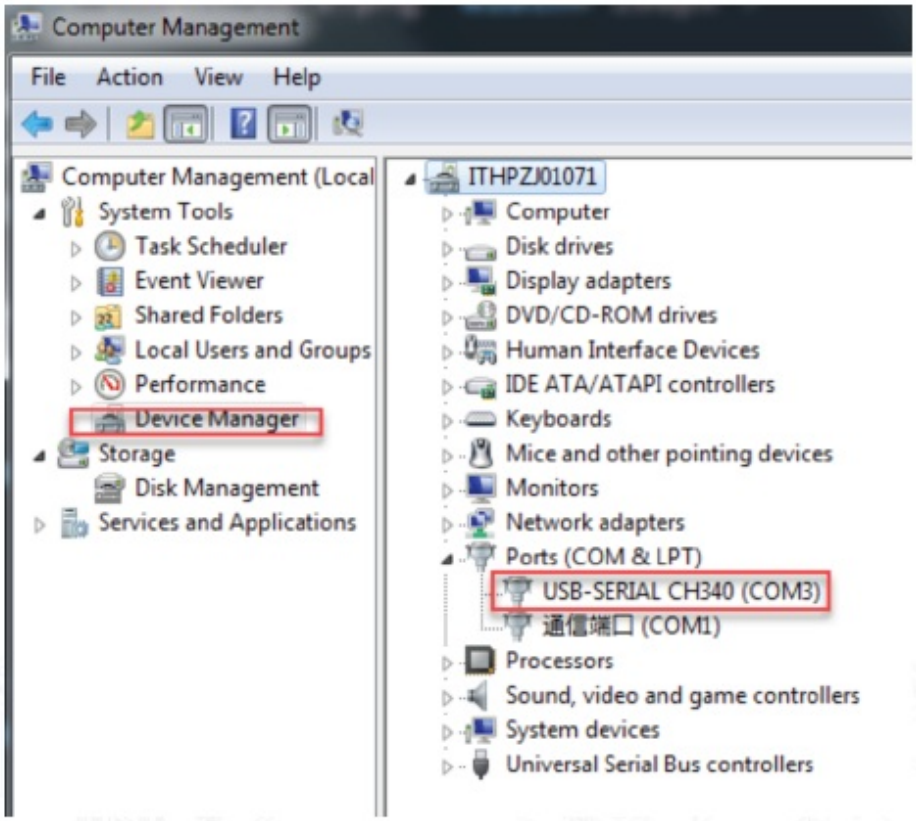


Figure 1: Unknown Serial Device in Device Manager

For Windows, the installation process is straightforward: download the appropriate driver version for your chip and operating system, then follow the installer's instructions to complete the setup.

2. MacBook

   On a MacBook, you can verify whether the development board is detected by using the following terminal commands:

```
cd /dev
ls tty.*
```

These commands list connected serial devices. If the development board appears in the output (e.g., as tty.wchusbserial), it is recognized by the system.

However, when uploading code via the Arduino IDE, you may still encounter an error such as A fatal error occurred: Failed to write to target RAM. This issue is often linked to an outdated or incompatible driver, particularly with newer chips like CH343 or CH9102. In such cases, updating the driver is necessary.

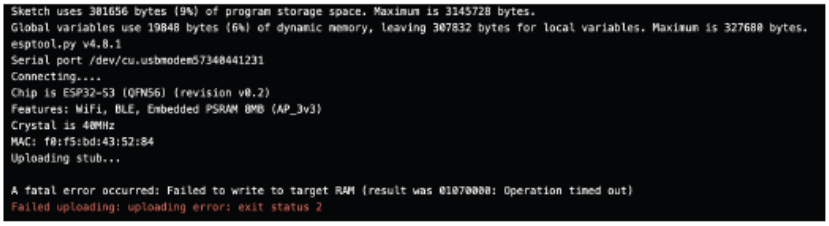


Figure 2: Arduino IDE Error

On macOS, the process of driver installation is slightly more complex. After downloading the driver package, follow the included manual for installation. Once installed, ensure the driver is enabled by navigating to System Settings, selecting Extensions, and verifying that the CH34xVCPDriver is listed under “Driver Extensions.” Enable it if necessary. If the driver does not appear, reinstallation may be required.

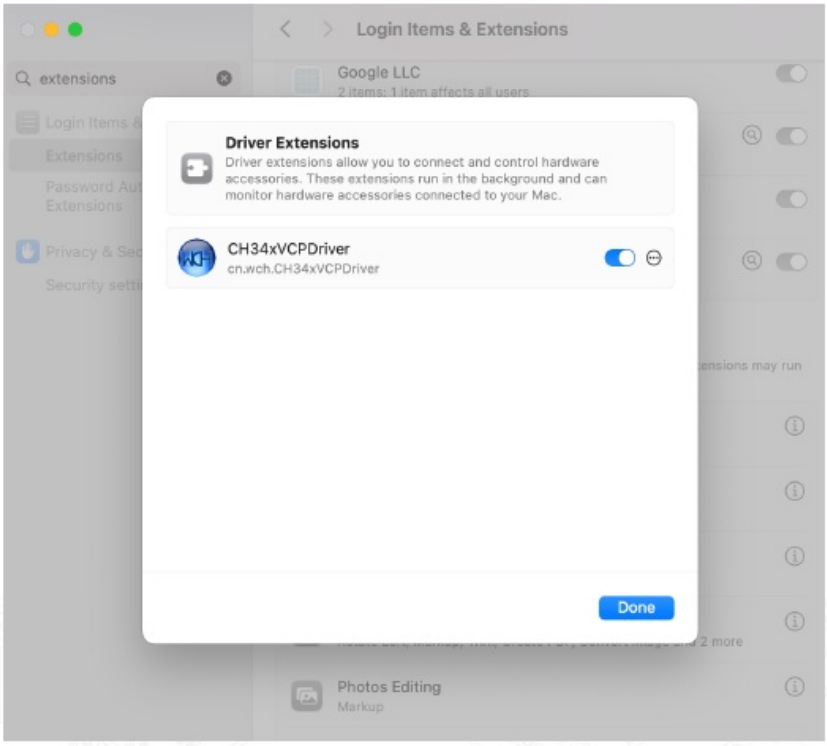


Figure 3: Driver Extensions Settings

Additionally, in Privacy & Security settings, set Allow accessories to connect to Always. This prevents macOS from prompting for permission each time the development board is connected.

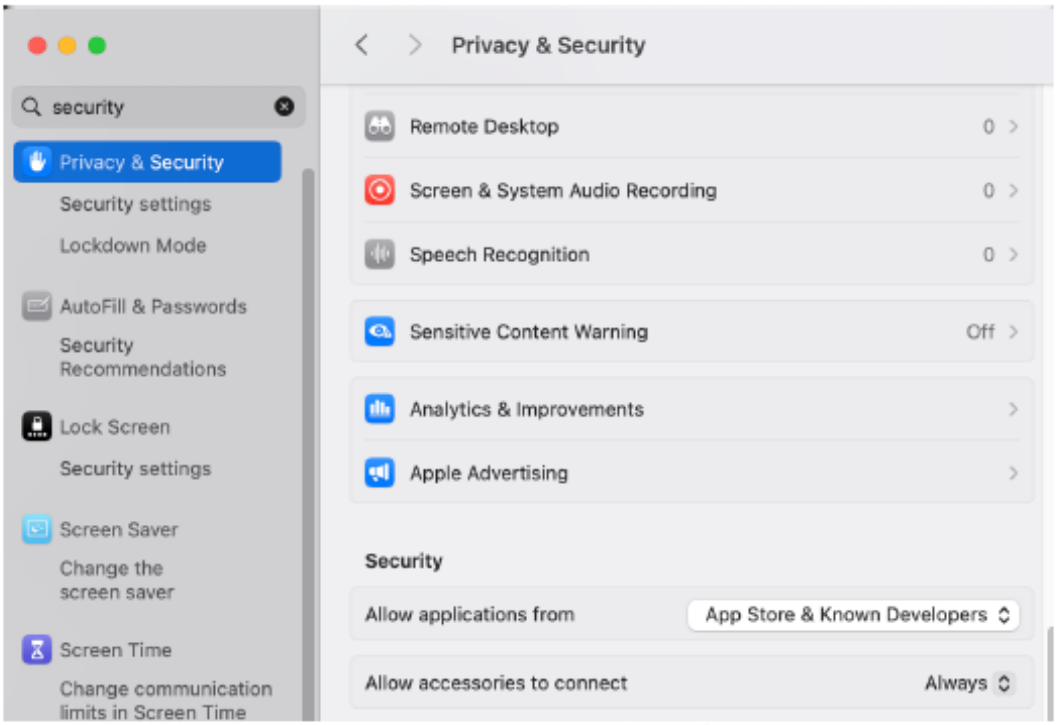


Figure 4: Privacy & Security Settings

Cable Considerations

Another frequent issue arises from the USB cable used with the development board. Cables bundled with devices like toys or Bluetooth speakers (e.g., Micro-USB or USB-C) often support power delivery only, lacking data transfer capabilities. These cables will power the board but cannot be used to upload code. Ensure you use a high-quality cable that supports both power and data transmission for proper functionality.

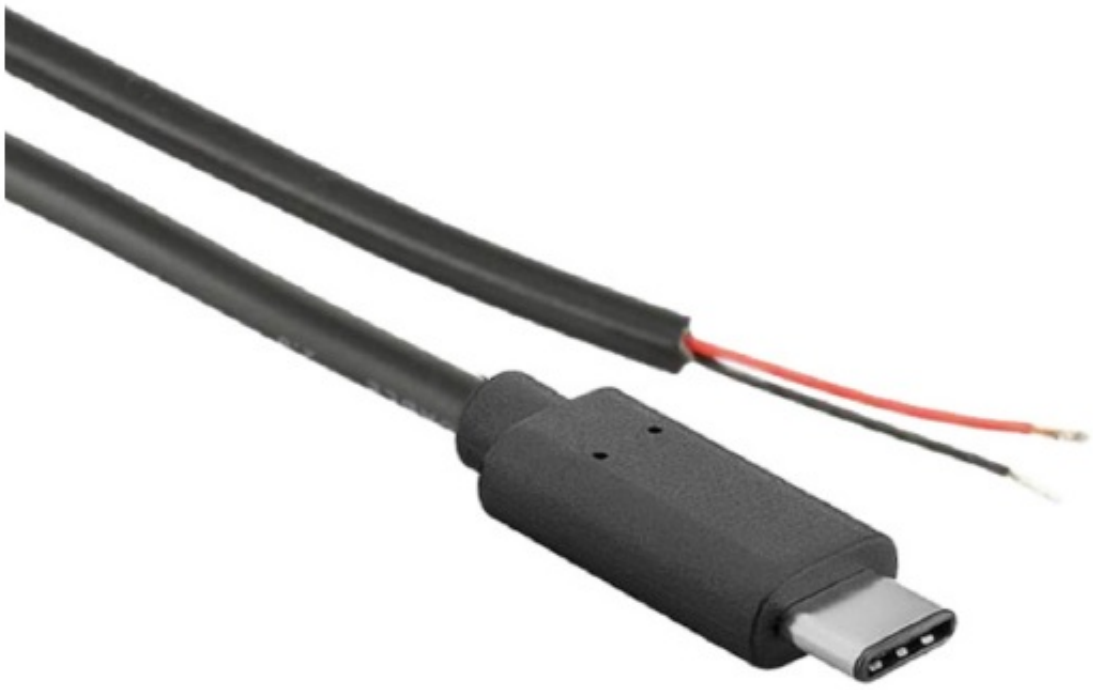
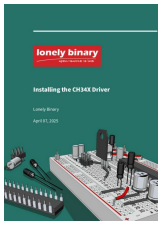


Figure 5: Power Only Cable

Documents / Resources

	Lonely Binary CH34X One Wire Digital Temperature Sensor [pdf] Installation Guide CH340G, CH340C, CH340K, CH343, CH9102, CH34X One Wire Digital Temperature Sensor, CH34X, One Wire Digital Temperature Sensor, Digital Temperature Sensor, Temperature Sensor, Sensor

References

- Driver&Tools - NanjingQinhengMicroelectronics
- User Manual

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CH340C, CH340G, CH340K, CH343, CH34X, CH34X One Wire Digital Temperature Sensor, CH9102, Digital Temperature Sensor, Lonely Binary, One Wire Digital Temperature Sensor, Sensor, Temperature Sensor

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