武汉芯源半导体有限公司
WUHAN XINYUAN SEMICONDUCTOR CO.,LTD

CW-DAPLINK User Manual

Rev 1.0

www.whxy.com

Introduction

This manual introduces CW-DAPLINK, an in-circuit debugging and programming tool for CW32 series MCUs.

The CW-DAPLINK communicates in-circuit with the MCU of the application board through the SWD interface.

Through CW-DAPLINK's full-speed USB interface, the CW32 series MCUs can communicate with the IAR™, Keil® IDEs on the PC.

The CW-DAPLINK debugger is shown in the following figure:

Contents

1   Features

- Powering the debugger via the USB port 5V power supply

- Full-speed USB 2.0, TYPE-C connector

- USB TYPE-A to TYPE-C connection cable

- SWD interface characteristics:

  - Interface level 1.65V ~ 5.5V adaptive, reference voltage output from target board

  - Up to 10Mbps communication rate

  - 6PIN PA2.0 interface to IDC2.54 interface

- Status indicator for USB communication/ debugging/ programming etc.

- Operating temperature range 0 ~ 50° C

2   Ordering Information

To order a CW-DAPLINK debugger, please refer to the following table:
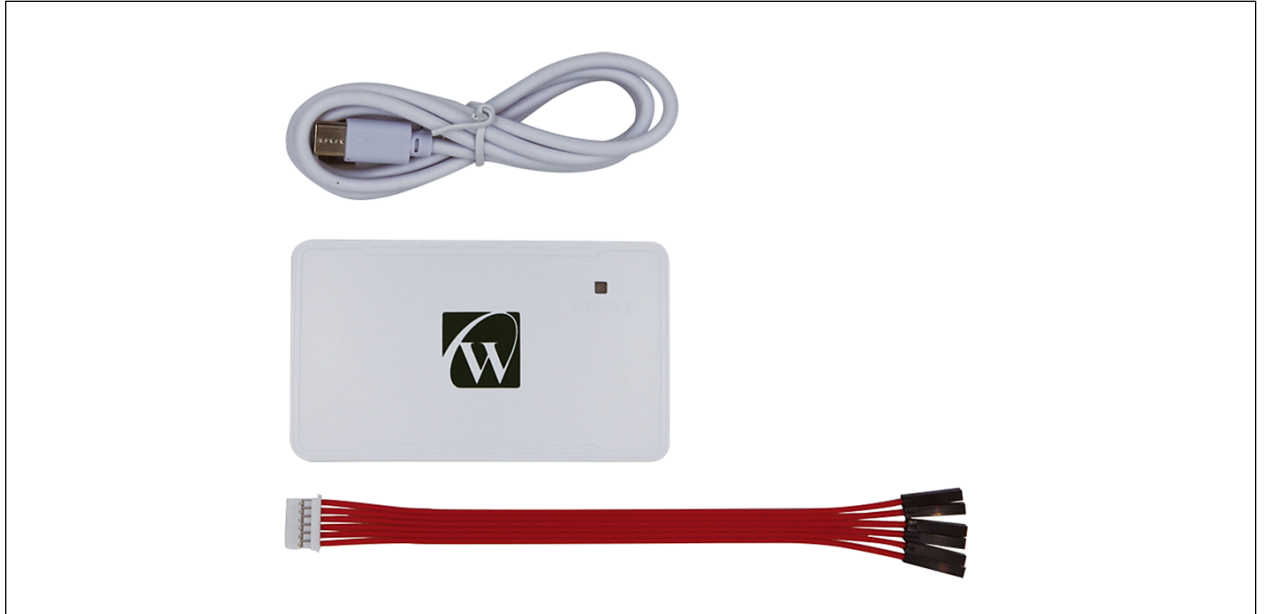
Table 2-1 Ordering Information

Order Code	CW-DAPLINK Description
CW-DAPLINK-1	Includes TYPE-A to TYPE-C USB cable, 6PIN connection cable

3   Product description

CW-DAPLINK products and accessories are shown below, in order from top to bottom:

- USB connection cable, TYPE-A to TYPE-C

- CW-DAPLINK Debugger

- SWD cable

Figure 3-1 Composition of CW-DAPLINK Debugger Tool

4   Hardware Configuration

The CW-DAPLINK is designed as an ARM core MCU with an integrated high performance Arm® Cortex®-M3 core, with the following structure:

Figure 4-1 Top View of CW-DAPLINK Debugger

Figure 4-2 Bottom View of CW-DAPLINK Debugger

4.1   Debugging connections

For developing applications based on CW32 series MCUs, CW-DAPLINK needs to be connected to the target MCU through the 6PIN SWD interface.
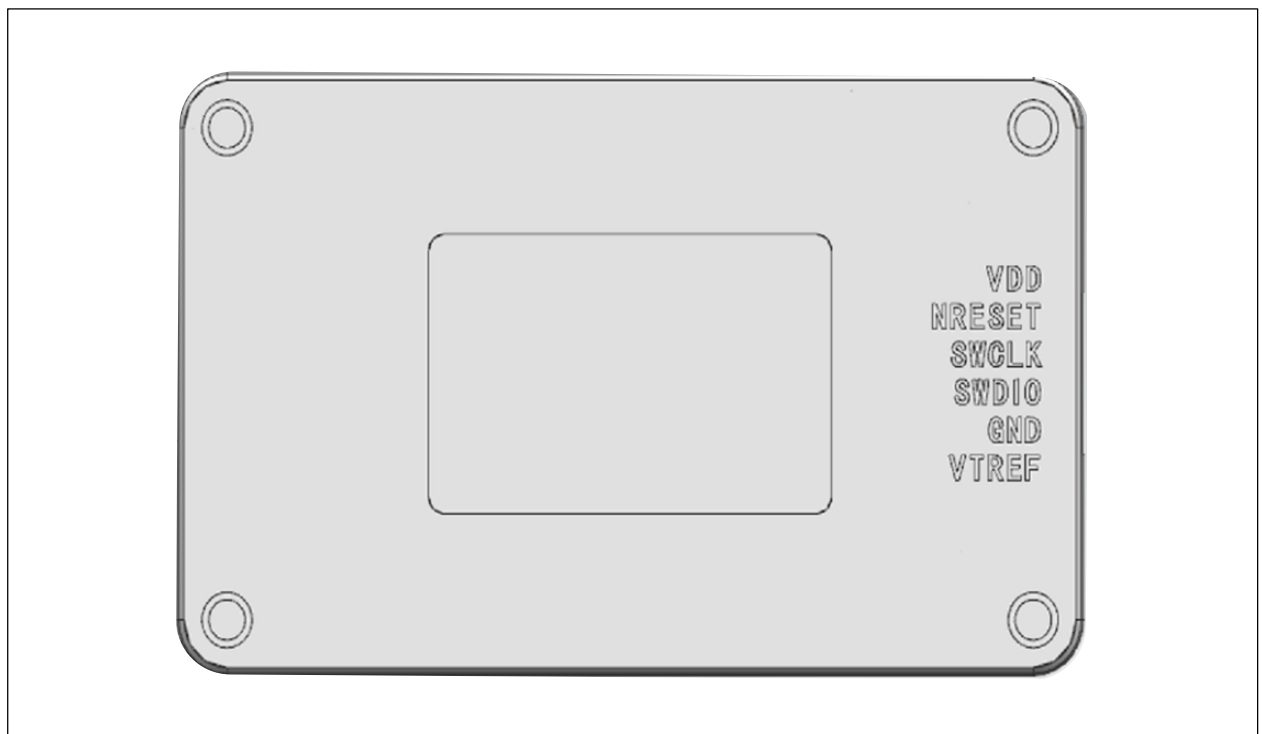
The 6PIN pins are defined as shown in the following table:

Table 4-1 SWD Interface Pin Definitions

Pin Number	Signal Definition	IO characteristics	Description
1	VDD	Power supply, output	Power supply positive, if the target board is self-powered, it can be left unconnected
2	NRESET	Output	Reset signal, used to reset the target board MCU
3	SWCLK	Output	SWCLK signal
4	SWDIO	Input/Output	SWDIO signal
5	GND	Ground	Power supply negative
6	VTREF	Power supply, input	Target board power, output from target board

The bottom of the debugger corresponds to the silkscreen of the pin definition, as shown in the figure below, so that users can refer to the connection.

Figure 4-3 CW-DAPLINK Debugger Bottom Side Silkscreen

武汉芯源半导体有限公司
WUHAN XINYUAN SEMICONDUCTOR CO.,LTD

4.2   Status Indicator

The indicator on the top of the CW-DAPLINK, marked STATUS, indicates the operating status of the CW-DAPLINK, as follows:

- Green light blinks (on for 100ms, off for 900ms): the debugger and the PC are communicating normally, and the target MCU is not connected.

- Green light is always on: the debugger and the target board are in continuous communication
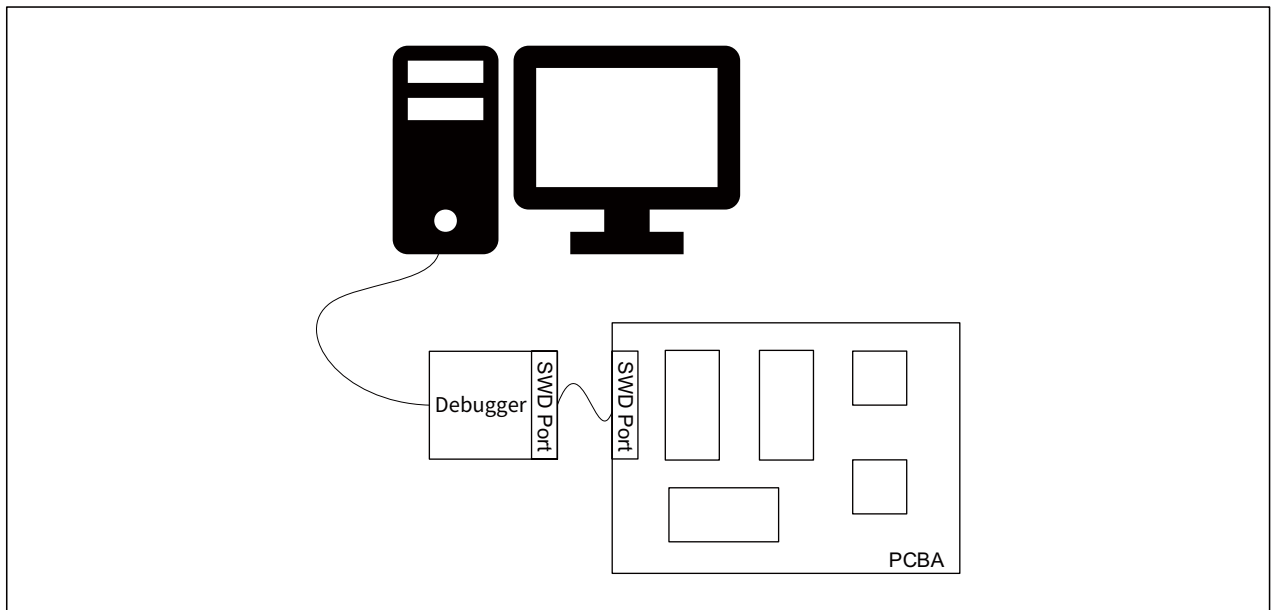
5   Software Configuration

5.1   Firmware Upgrade

The firmware of CW-DAPLINK is programmed at the factory and does not support upgrading the firmware in the application.

5.2   CW32 application development and programming

Typical connections are as follows:

Figure 5-1 Typical connection of debugger

CW-DAPLINK supports the following 3rd party tools:
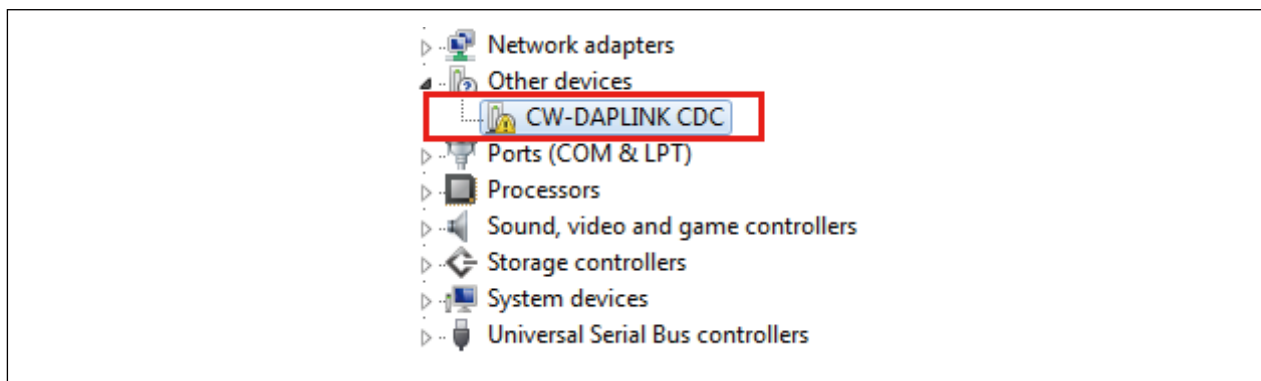
Third party	Tool chain	Version
IAR ™	EWARM	7.70
Keil®	MDK-ARM ™	5.17

The detailed configuration of CW-DAPLINK in the 3rd party tool chain can be found in the document "Getting Started with CW32 Series Microcontroller Software Development Tools".

6   CW-DAPLINK Driver

If you are using Windows®10 system, CW-DAPLINK is driver-free. For some Windows® 7 or Windows® 8 systems, the CW-DAPLINK virtual serial port is not available as shown in *Figure 6-1 CW-DAPLINK Device Not Recognized* , so you need to add the driver manually. The driver can be downloaded from the *www.whxy.com* website. The installation method is described as follows:
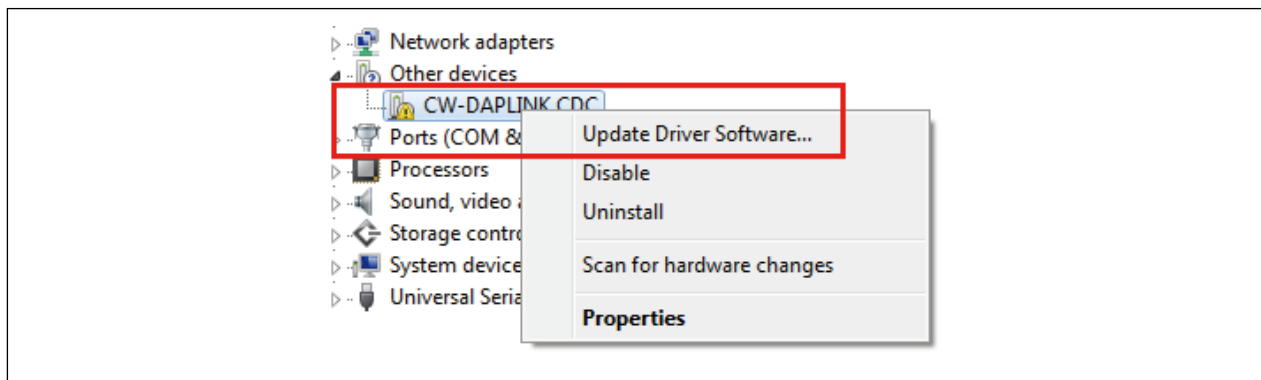
1. After the debugger is plugged into the USB port of the computer, there is an unavailable device in the device manager of the computer, as shown in the following figure:

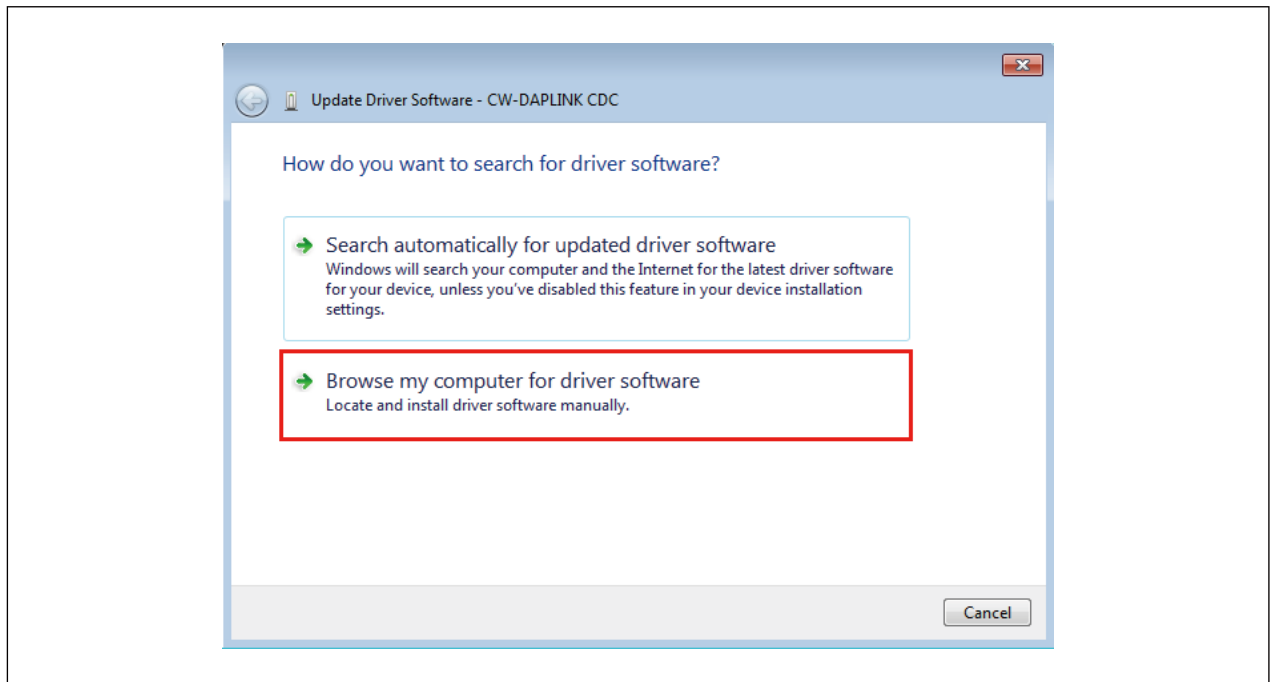Figure 6-1 CW-DAPLINK Device Not Recognized

2. Right-click the unrecognized device, and then click Update Driver Software.

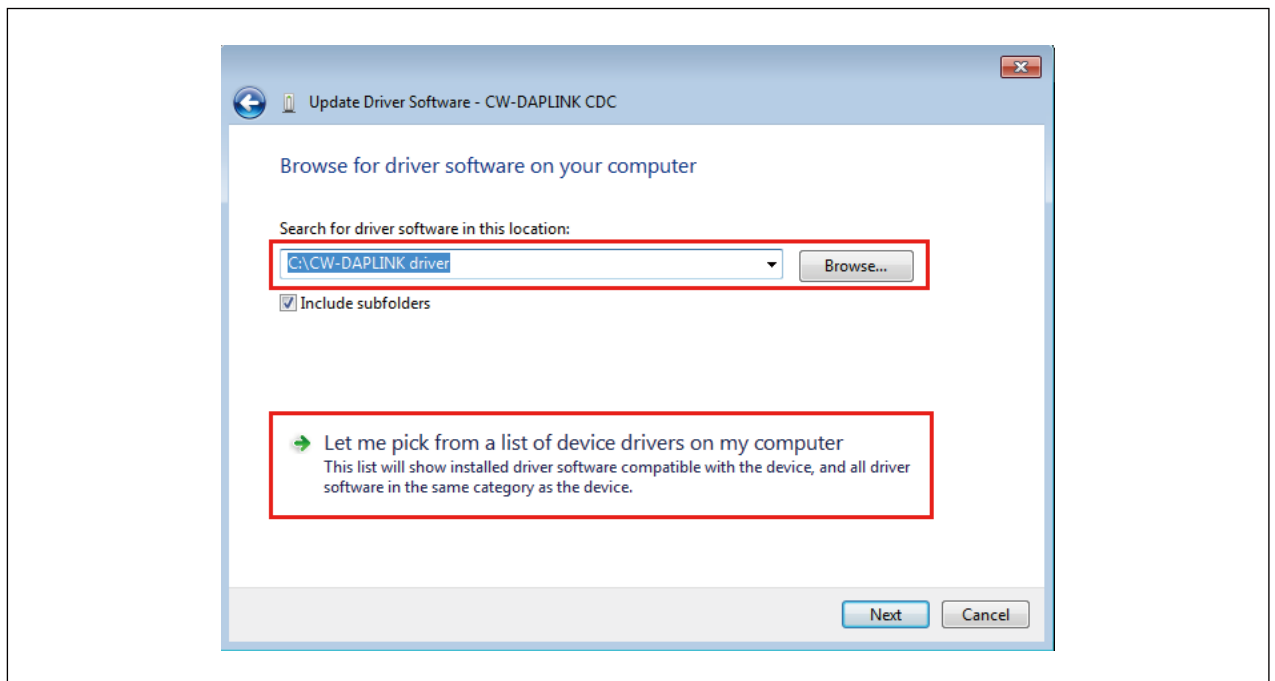Figure 6-2 CW-DAPLINK Driver Update Portal

3. Select Browse Computer to find the driver software, as shown in the following figure:
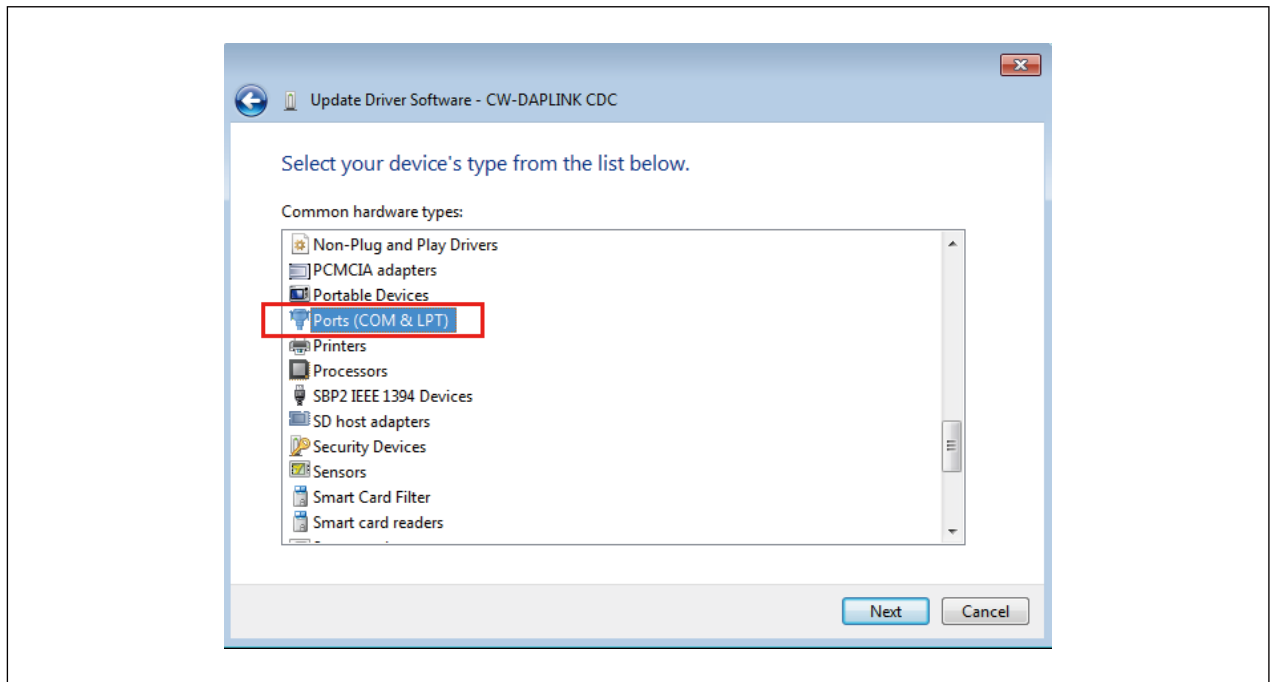
Figure 6-3 Update driver software

4. Select the driver path, and then select Select from the list of device drivers on your computer, as shown in the following figure:
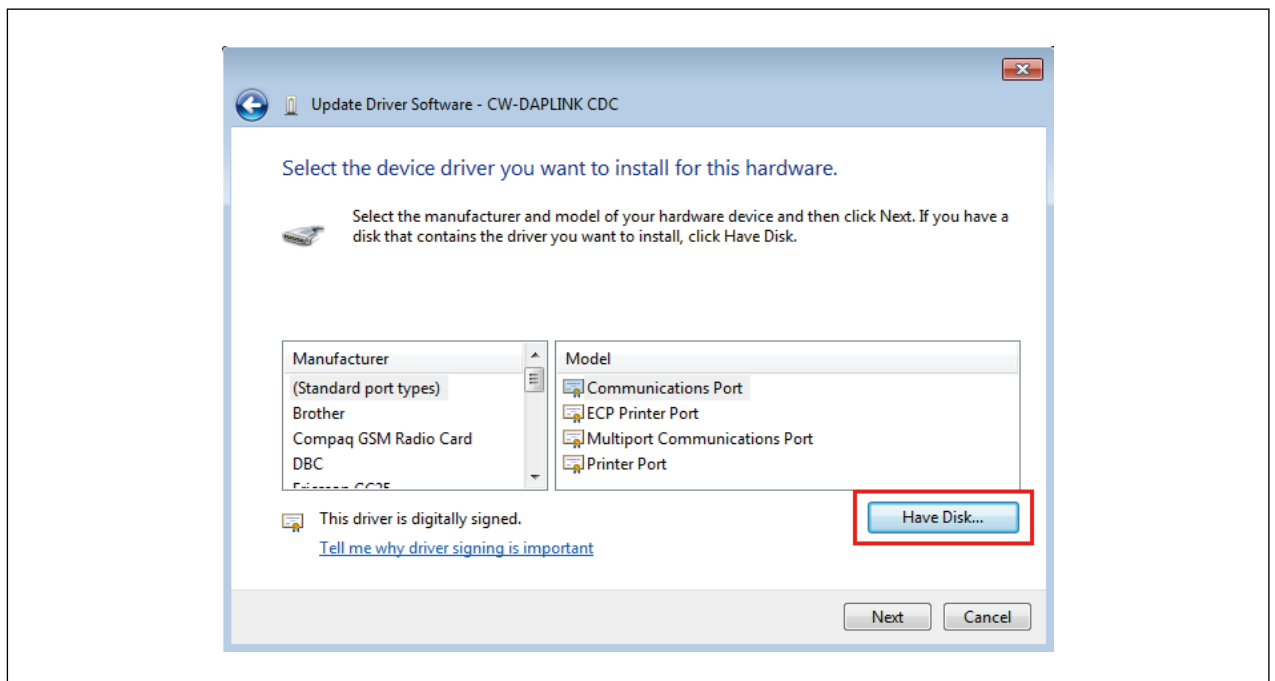
Figure 6-4 Select the driver path

5. Select the ports (COM and LPT) and click Next, as shown in the following figure:
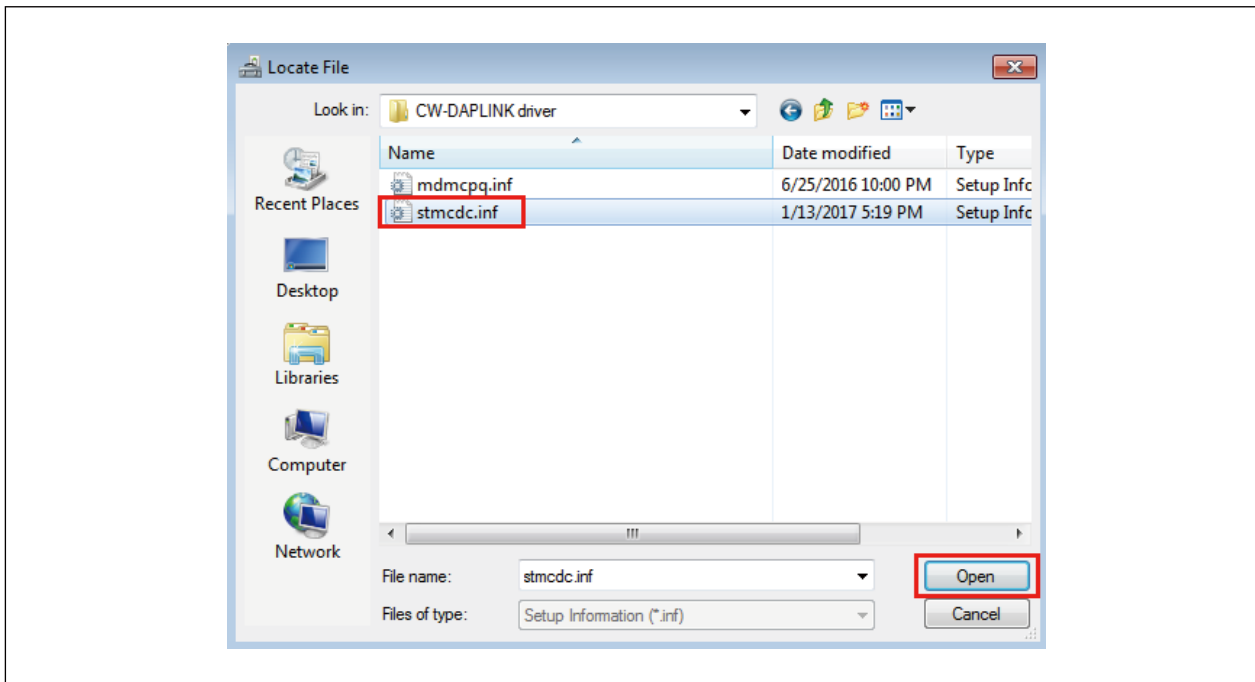
Figure 6-5 Select Ports (COM and LPT)

6. Click Install from Disk, as shown below:

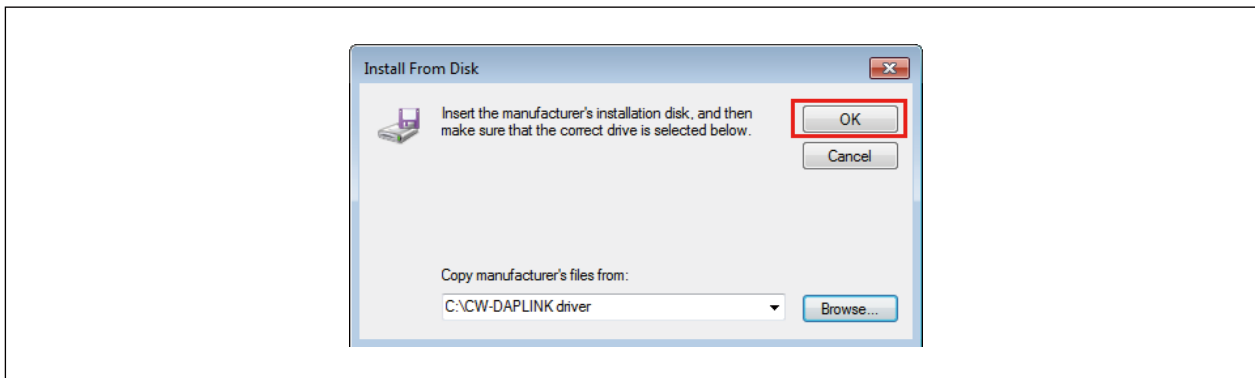Figure 6-6 Selecting installation from disk

7. Select the stmcdc.inf file in the driver folder and click to open it, as shown below:
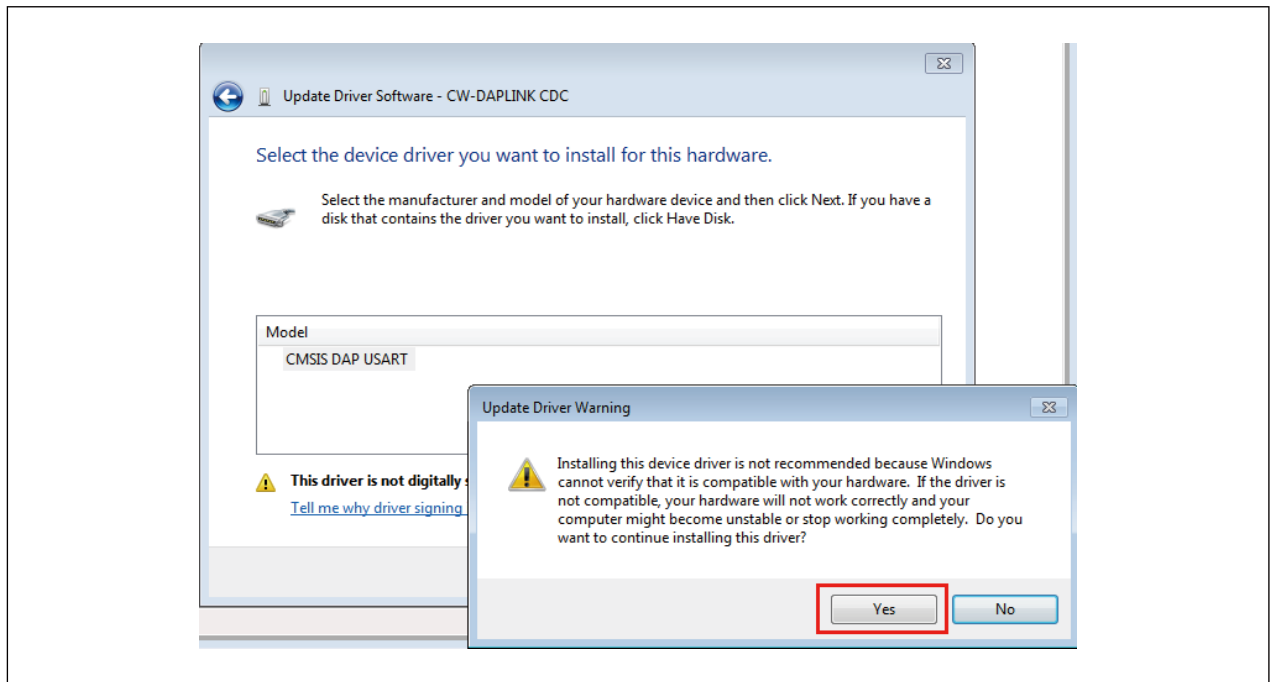
Figure 6-7 Selecting the stmcdc.inf file

8. The interface is displayed as shown below, click OK.

Figure 6-8 Determine the selection of the stmcdc.inf file

武汉芯源半导体有限公司
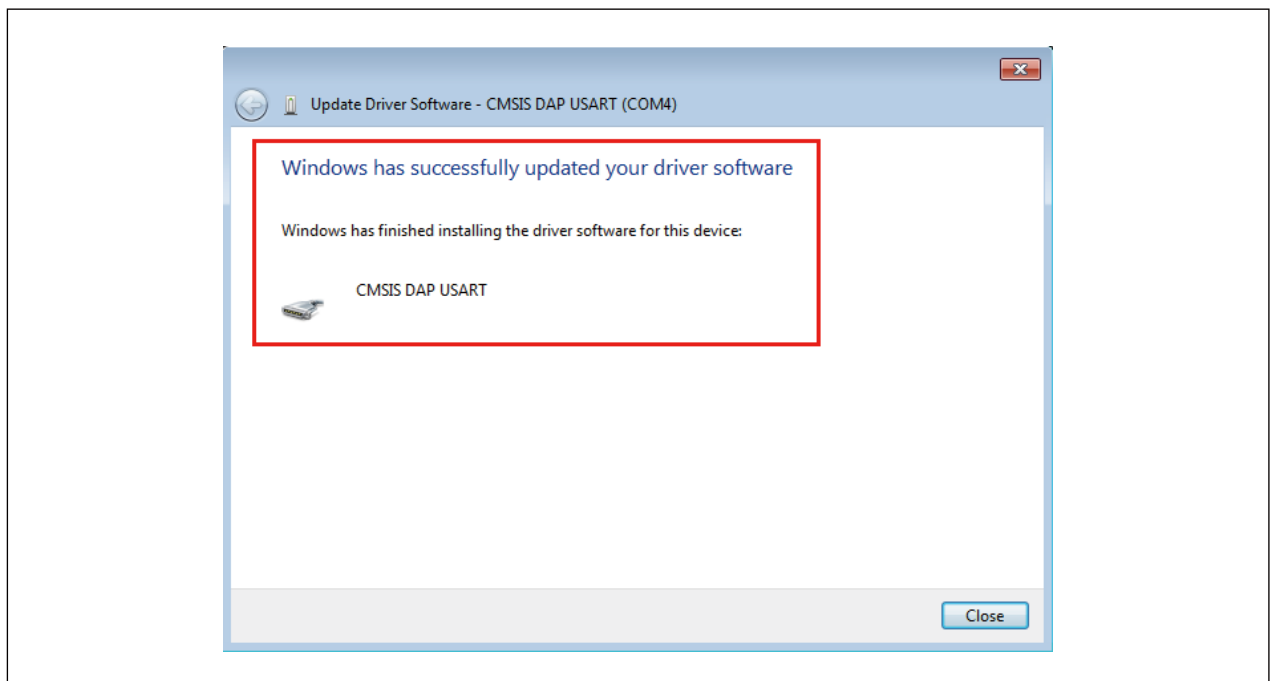WUHAN XINYUAN SEMICONDUCTOR CO.,LTD
www.whxy.com

9. The interface is displayed as shown below, click Yes to continue installing the driver.

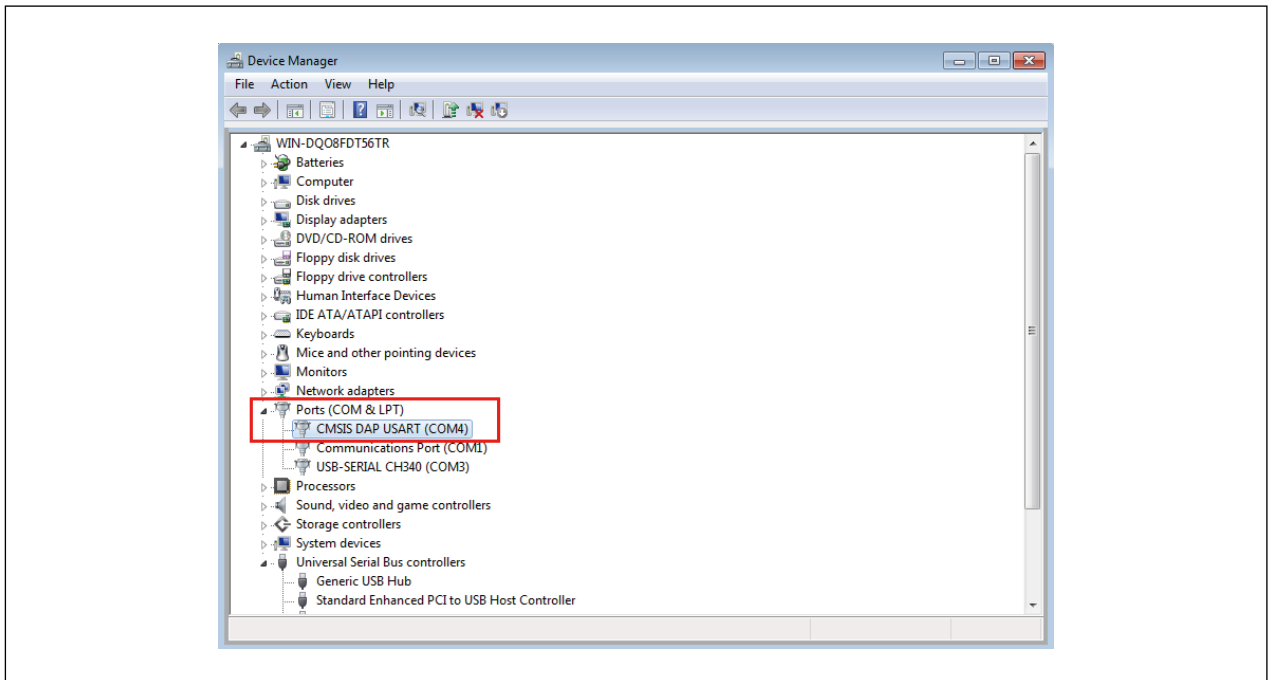Figure 6-9 Determine to continue driver installation

10. Wait for the installation to complete, as shown in the following figure, click Close.

Figure 6-10 Successful installation

11. The driver installation is completed and the device is recognized successfully, as shown in the following figure:

Figure 6-11 Successful device identification

7   Revision history

Table 7-1 Document revision history

Date	Revision	Changes
June 16, 2023	Rev 1.0	Initial release.

武汉芯源半导体有限公司
WUHAN XINYUAN SEMICONDUCTOR CO.,LTD

www.whxy.com