CW-DAPLINK User Manual

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:
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>
<thead>
<tr>
<th>Order Code</th>
<th>CW-DAPLINK Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>CW-DAPLINK-1</td>
<td>Includes TYPE-A to TYPE-C USB cable, 6PIN connection cable</td>
</tr>
</tbody>
</table>
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>
<thead>
<tr>
<th>Pin Number</th>
<th>Signal Definition</th>
<th>IO characteristics</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>VDD</td>
<td>Power supply, output</td>
<td>Power supply positive, if the target board is self-powered, it can be left unconnected</td>
</tr>
<tr>
<td>2</td>
<td>NRESET</td>
<td>Output</td>
<td>Reset signal, used to reset the target board MCU</td>
</tr>
<tr>
<td>3</td>
<td>SWCLK</td>
<td>Output</td>
<td>SWCLK signal</td>
</tr>
<tr>
<td>4</td>
<td>SWDIO</td>
<td>Input/Output</td>
<td>SWDIO signal</td>
</tr>
<tr>
<td>5</td>
<td>GND</td>
<td>Ground</td>
<td>Power supply negative</td>
</tr>
<tr>
<td>6</td>
<td>VTREF</td>
<td>Power supply, input</td>
<td>Target board power, output from target board</td>
</tr>
</tbody>
</table>

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
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](image)

CW-DAPLINK supports the following 3rd party tools:

<table>
<thead>
<tr>
<th>Third party</th>
<th>Tool chain</th>
<th>Version</th>
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<tbody>
<tr>
<td>IAR™</td>
<td>EWARM</td>
<td>7.70</td>
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<tr>
<td>Keil®</td>
<td>MDK-ARM™</td>
<td>5.17</td>
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</tbody>
</table>

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**
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

<table>
<thead>
<tr>
<th>Date</th>
<th>Revision</th>
<th>Changes</th>
</tr>
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<tbody>
<tr>
<td>June 16, 2023</td>
<td>Rev 1.0</td>
<td>Initial release.</td>
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