

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 $^{\rm m}$, Keil® IDEs on the PC.

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





Contents

Intr	oduc	tion	1
1	Feat	ures	3
2	Orde	ering Information	4
3	Proc	luct description	5
4	Hard	dware Configuration	6
	4.1	Debugging connections	. 7
	4.2	Status Indicator	. 8
5	Soft	ware Configuration	9
	5.1	Firmware Upgrade	. 9
	5.2	CW32 application development and programming	, 9
6	CW-	DAPLINK Driver	.0
7	Revi	sion history	.6



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





Hardware Configuration 4

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:

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

Table 4-1	SWD Interface	e Pin Definitions
	SWD Internace	

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:





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

	Natural adapted
	Network adapters
4 - 13	Other devices
	🖟 CW-DAPLINK CDC
⊳ ¹	Ports (COM & LPT)
Þ - 🔲	Processors
⊳ ¤	Sound, video and game controllers
Þ 📀	Storage controllers
⊳ ₁ !	System devices
Þ 🖶	Universal Serial Bus controllers

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

Figure 6-2 CW-DAPLINK Driver Update Portal

Other devices CW-DAPLINK CDC Ports (COM & Update Driver Software Ports (COM & Update Driver Software Processors Sound, video Storage contro System device System device Uninstall Scan for hardware changes Properties	Network adapt	ters	
CW-DAPLINK CDC Ports (COM & Update Driver Software Processors Disable Sound, video Uninstall Storage contro Scan for hardware changes System device Scan for hardware changes Universal Seria Properties	Other devices		
Ports (COM & Update Driver Software Processors Disable Sound, video Uninstall Storage contro Scan for hardware changes System device Scan for hardware changes Universal Seria Properties	🛛 🔓 CW-DAPLIN	NK CDC	
Image: Processors Disable Image: Sound, video i Uninstall Image: Storage control Scan for hardware changes Image: System device Scan for hardware changes Image: Image: Image: System device Properties	Ports (COM &	Update Driver Software	
Sound, video Uninstall Storage contro Scan for hardware changes Universal Seria Properties	Processors	Disable	
Storage contro Image: System device Image: System device <	🔈 🐗 🛛 Sound, video i	Uninstall	
Image: System device Scan for hardware changes Image: Image: System device Properties	👂 🗇 Storage contre		
View Properties	Image: A state of the state	Scan for hardware changes	
	🔈 🖷 Universal Seria	Properties	



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

Figure 6-3 Update driver software

 How do you want to search for driver software? Search automatically for updated driver software Windows will search your computer and the Internet for the latest driver software for your device, unless you've disabled this feature in your device installation settings. Browse my computer for driver software Locate and install driver software manually. 	 How do you want to search for driver software? Search automatically for updated driver software Windows will search your computer and the Internet for the latest driver software for your device, unless you've disabled this feature in your device installation settings. Browse my computer for driver software Locate and install driver software manually. 	Update Driver Software - CW-DAPLINK CDC	×
 Search automatically for updated driver software Windows will search your computer and the Internet for the latest driver software for your device, unless you've disabled this feature in your device installation settings. Browse my computer for driver software Locate and install driver software manually. 	 Search automatically for updated driver software Windows will search your computer and the Internet for the latest driver software for your device, unless you've disabled this feature in your device installation settings. Browse my computer for driver software Locate and install driver software manually. 	How do you want to search for driver software?	
Browse my computer for driver software Locate and install driver software manually.	Browse my computer for driver software Locate and install driver software manually.	Search automatically for updated driver software Windows will search your computer and the Internet for the latest driver software for your device, unless you've disabled this feature in your device installation settings.	
		Browse my computer for driver software Locate and install driver software manually.	

- 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

Update Driver Software - CW-DAPLINK CDC		—
Browse for driver software on your computer		
Search for driver software in this location:	Browse	
✓ Include subfolders		
Let me pick from a list of device drivers on my comp This list will show installed driver software compatible with the devic software in the same category as the device.	outer :e, and all driver	
	Next	Cancel



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

Figure 6-5 Select Ports (COM and LPT)

G	Dupdate Driver Software - CW-DAPLINK CDC	×
	Select your device's type from the list below.	
C	Non-Plug and Play Drivers PCMCIA adapters Portable Devices Ports (COM & LPT) Processors SP2 IEEE 1394 Devices SD host adapters Security Devices Sensors Sensors Smart Card Filter Smart card readers	
		Next Cancel

6. Click Install from Disk, as shown below:



🚱 🧕 Update Dri	ver Software - CW-DAPI	LINK CDC	×
Select the d Selec disk t Manufacturer (Standard por Brother Compaq GSM DBC Frience CCM	evice driver you w t the manufacturer and that contains the driver t types) I Radio Card r is digitally signed. hy driver signing is imp	want to install for this hardwar model of your hardware device and th you want to install, click Have Disk. Model Communications Port Communications Port Printer Port Ortant	re. nen click Next. If you have a Have Disk
			Next Cancel



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

Figure	6-7	Selecting	, the	stmc	dc inf	file
inguic	01	Sciecing	, uic	Junco	ac	inc

🚔 Locate File					×
Look in:	🐌 CW-DAPLIN	IK driver	•	G 🤌 📂 🛄 🗸	
(Ha	Name	~		Date modified	Туре
	💼 mdmcpq.ir	nf		6/25/2016 10:00 PM	Setup Infc
Recent Places	🖉 stmcdc.inf			1/13/2017 5:19 PM	Setup Info
Desktop Desktop Libraries Computer					
	•				Þ
Network	File name:	stmcdc.inf		-	Open
	Files of type:	Setup Informati	on (*.inf)	▼ [Cancel

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

Install From Disk	
Insert the manufacturer's installation disk, and then make sure that the correct drive is selected below.	OK Cancel
Copy manufacturer's files from: C:\CW-DAPLINK driver	Browse



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

Figure 6-9 Determine to continue driver installation

Update Driver Software - CW	DAPLINK CDC	
Select the device driver you Select the manufacture disk that contains the c	ou want to install for this hardware. r and model of your hardware device and then click Next. If you have a river you want to install, click Have Disk.	
Model CMSIS DAP USART	- Undets Drives Werning	57
This driver is not digitally : <u>Tell me why driver signing</u>	Installing this device driver is not recommended because Window: cannot verify that it is compatible with your hardware. If the drive not compatible, your hardware will not work correctly and your computer might become unstable or stop working completely. Do want to continue installing this driver?	s er is o you
	Yes	No

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

Figure 6-10 Successful installation

G	🕘 🗓 Update Driver Software - CMSIS DAP USART (COM4)	×
	Windows has successfully updated your driver software	
	Windows has finished installing the driver software for this device:	
	CMSIS DAP USART	
		Close



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

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

Table 7-1 Document revision history

