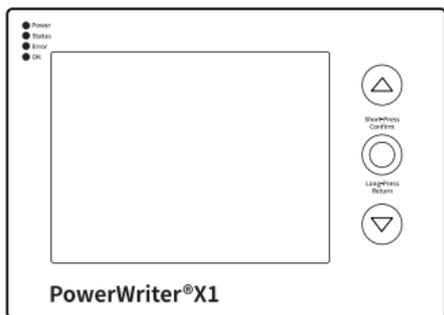




多功能调试烧录器说明书

(型号: X1)



软件下载



在线文档



FAQ

powerwriter.com | icworkshop.com

创芯工坊科技(深圳)有限公司

感谢您购买此产品,为了让您更充分的了解产品特性和操作方法,我们建议您在使用之前先阅读本手册。

1. 重要提示(必读)

- 请使用随机配备的配件,Type-C USB 线缆、信号线材以及其他配件,避免通信不稳定造成无法正常与设备或者与目标芯片进行通讯。
- 应尽量避免使用Hub,选择直连PC USB端口将提高通信的稳定性。
- 在驱动功率较大的PCB板卡时,请使用随机配备的DC 电源进行供电,避免USB供电不足造成系统工作不稳定。
- 设备通讯端口带隔离保护功能,但应用在特殊(高压)场景下,仍需要配备PowerWriter®高压隔离驱动控制器来进行隔离,详询客服或技术支持。
- 当系统 ≥ Windows 7 SP1 时,设备为免驱(无需额外安装驱动),通过系统原生驱动即可驱动设备,如设备通讯异常,请通过PowerWriter®客户端->菜单->帮助->设备驱动安装进行驱动的安装、卸载、清理重装等操作,如需帮助,请联系技术支持。

2. 包装清单(标配)

名称	数量	单位
收纳包	1	个
PowerWriter® X1 主机	1	台
DC 电源适配器(12V/2A)	1	个
Type-C USB 数据线(带屏蔽)	1	条
2.54mm/24AWG/20mm 4 pin 定制硅胶线	2	条
2.54mm/24AWG/20mm 5 pin 定制硅胶线	2	条
2.54mm/24AWG/20mm 6 pin 定制硅胶线	1	条
2.54mm 20 pin JTAG 线	1	条
2.54mm 5 pin 烧录探针	1	个
接口信号转接板	1	个
防滑脚垫	8	个
说明书	1	张

(*注:支持选配ICWKEY:高阶加密授权签名;USB无线适配器:支持蓝牙连接。详询客服。)

3. 基本参数

主机尺寸	(长宽高) 107mm * 75mm * 17mm(≈)
主机重量(不含配件)	≈ 145g
显示接口	3.2 英寸/320 * 240 (RGB565)
操作模式	左上/右下导航,短按确认,长按返回
电源输入	USB Type C : 5.0V ± 0.2V / 500mA
	DC : 9~24V(耐压)/ 3A(3.5mm)

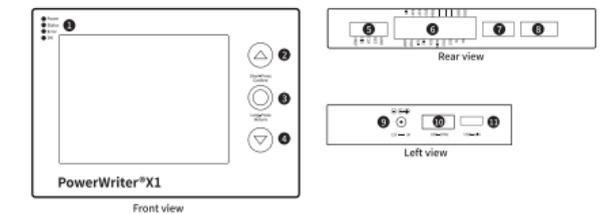
电源输入	VIN : 3.3V ~ 5.5V / 3A
	VREF : 1.8V~5.0V(±0.1V) / 700mA
电源输出	3.3V / 700mA(±0.1V)
	5.0V *1A(±0.1V)
波形输出	1Hz~120Mhz (电压可调) (*)
LED指示	VREF 电源输出/状态/错误/成功
USB 接口(主机)	USB 2.0 (Type -A 输出5.0V/500mA)
USB 接口(从机)	USB 2.0 (Type -C 支持正反插)
信号接口	2.54mm (2 * 5 pin, 1 * 4 pin, 20 pin 标准牛角座)
工作温度	-20°C~+60°C

4. 功能参数

通信时钟	最高20Mhz(可调) (*)
接口协议	SWD / JTAG/SWIM / SPI / I2C / UART (支持代理) / 自定义 (*)
在线功能	全功能在线、自动化编程(自启停)、工厂模式
离线功能(脱机)	机台、多镜像、U盘模式,断点恢复等
安全与签名	内置签名、ICWKEY授权密钥、设备锁等
调试器	ARM® Cortex-M (Win-USB、HID)
平台(App)支持	创芯工坊平台、微信小程序(*需配无线适配器)
扩展	AT接口、USB Host 扩展 (*)
其他	日志、主题、显示翻转、多语言、屏保、显示格式、亮度调节等

(*注:部分特性在设备更新维护过程中可能会进行调整,以更新为准,恕不另行通知)

5. 外观与接口定义



视图 / 编号	功能	介绍
前视图	① 状态灯	Power Status VREF 电源输出指示 常亮:目标芯片连接、闪烁:忙

前视图	①	状态灯	Error OK	操作失败 操作成功
	②	左/上		往左, 往上导航
	③	确认/返回		短按确认、长按返回上一级菜单
	④	右/下		往右、往下导航
后视图	⑤	SWD	GND RST CLK DIO VREF TDO SWIM TDI TRST	电源GND 目标芯片复位引脚 SWD时钟(JTAG时钟) SWD数据(JTAG测试模式选择) 目标芯片参考电压(输入/输出) JTAG 数据输出 STM8 信号 JTAG 数据输入 JTAG 复位
	⑥	组合信号	PWM(CLR)	波形输出(1Hz~120Mhz)
			BOT0	BOOT0 控制引脚
			3.3V	独立3.3V电源输出(700mA)
	5.0V	独立5.0V电源输出(700mA)		
	VIN	系统电源输入(3.3V~5.5V)		
	⑦	串口	RX	串口接收
			TX	串口发送
	⑧	机台	OK	机台OK信号输出(高)
			NG	机台Error信号输出(高)
CTRL			机台启动信号(低脉冲)	
左视图	⑨	DC	3.5mm DC电源,支持9~24V/3A输入	
	⑩	主机USB	USB无线适配器、功能扩展	
	⑪	从机USB	设备通信、ICWKEY连接	

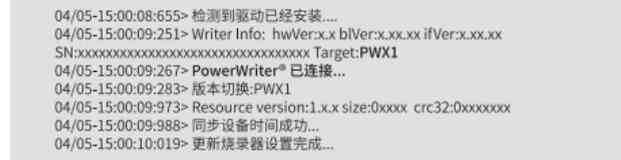
(*注:EXT13用于功能扩展保留引脚,上述表格重复引脚仅标注一次,不同的硬件版本(丝印)可能存在调整,恕不另行通知,组合信号端口建议使用信号转接板。)

6. 快速入门

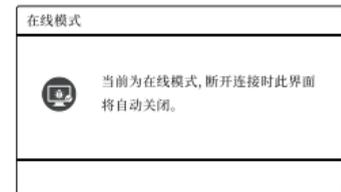
6.1 准备

- 扫描首页二维码(软件下载)或访问:https://www.powerwriter.com/index/index/products?p=26&c=files&t=Client下载PowerWriter® For ARM客户端软件并安装,安装完成后将在桌面上出现PowerWriter®的快捷方式,双击启动。
- 使用随机配备的Type-C USB线连接PXW1主机与PC的USB端口,等待启动完成。

- PowerWriter® 客户端默认自动识别并连接PXW1主机,如果设备连接成功,则将会在日志栏看到设备信息,如下所示:



- 此外X1 主机显示设备在线提示框,如下所示:

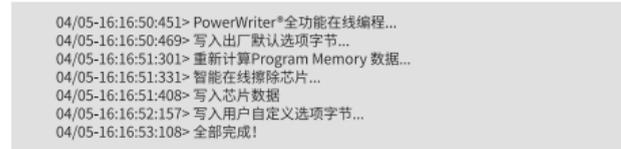


- 点击PowerWriter®客户端软件->烧录器设置->MCU型号,根据弹出的窗口选择需要操作的目标芯片(可使用搜索功能),点击确定按钮。
- 参考外观与端口定义连接芯片与X1设备,如连接成功,将在PowerWriter®客户端日志栏以及底部状态栏看到目标芯片已连接的提示,如下所示:
04/05-16:05:32:394> 目标芯片已连接

(*注:如无法连接设备,请尝试更换USB端口或通过PowerWriter®客户端菜单:帮助->驱动安装->安装最新驱动后重试,无法连接目标芯片时请检查通信端口接线,如仍无法解决,请联系客服或技术支持。)

6.2 在线编程

- 切换PowerWriter®页面到Program Memory(或Main Flash)页面,点击添加固件按钮导入需要烧录的固件,然后点击确定按钮(如提示多段固件可合并添加)。
- 点击工具栏的自动(机器人图标)按钮,PowerWriter®将自动完成数据的烧录和校验,并将信息显示在日志栏中,如下所示:



6.3 离线编程

- 点击PowerWriter®菜单:执行->离线加载(根据提示选择保存项目)。
- 加载完成后,点击烧录器设置->通讯配置->断开连接,断开设备在线连接。
- 切换PXW1 界面到脱机烧录按钮,移动焦点到 ▶点击启动烧录,烧录结束后,界面将显示操作结果。

6.4 更多功能

PowerWriter® X1 支持完整的在线编程、离线编程、工厂模式编程、机台烧录,二次开发集成、连接创芯工坊云平台、微信蓝牙小程序、集成调试器等丰富的功能特性,更多操作教程请扫描首页二维码或访问:https://docs.powerwriter.com/。

7. 保修条款【仅适用于中国大陆地区】

- 产品自售出之日起7天无理由退换货(不影响二次销售、人为损坏除外)。
- 1个月内非人员损坏只换不修(包邮)。
- 提供1年的质保。
- 超过1年包修,需承担维修人工和材料费、以及邮费。

对于以下情形,不提供免费保修服务:

- 一切人为损坏、私自改装、维修造成设备损坏的。
- 超出设备工作环境要求造成设备损坏的。

(*注:服务条款如有变更,请关注更新服务条款信息,恕不另行通知。)

8. 附录

- ☎ 服务电话: (+86) 400-1568-598 或 (+86) 0755-83831322
- ✉ 服务邮箱: cs@icworkshop.com
- 📞 技术支持: (+86) 136 3278 4295

(周一~周五:上午9:00-12:00、下午1:30~7:00)



天猫商城



手机淘宝扫一扫



微信公众号



微信交流群



技术支持QQ群

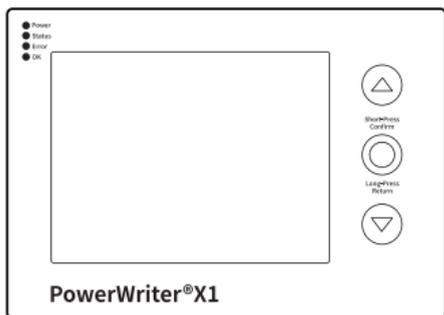


商务合作



Multifunctional Programmer

(Model: X1)



Download



Docs



FAQ

powerwriter.com | icworkshop.com
ICWORKSHOP Technology (Shenzhen) Co., Ltd.

Thank you for purchasing PowerWriter X1, in order to fully understand the product, we strongly recommend that you read this manual before using!

1. Important Note (Required)

- Please use original accessories, such as Type-C USB cables, signal cables etc. to avoid failure to communicate with the device or the target chip.
- Connecting PC USB port instead of Hub improves communication stability.
- When the current load of the PCB board is large, use DC power supply to improve power stability.
- Device communication port with isolation protection. However, for special (high voltage) applications, PowerWriter® High-Voltage Isolated Module is required for isolation. For details, please contact us.
- As system version ≥ Windows7 SP1, driver installation is optional. If communication fails, clear previous driver and re-install the drivers from: Menu->Help->Driver Installation. For help, contact technical support.

2. Packing List (Standard)

Description	Quantity	Unit
Storage bag	1	pcs
PowerWriter® X1 device	1	pcs
DC power adapter (12V/2A)	1	pcs
Type-C USB cable (shielded)	1	pcs
2.54mm/24AWG/20mm 4 pin silicone wire	2	pcs
2.54mm/24AWG/20mm 5 pin silicone wire	2	pcs
2.54mm/24AWG/20mm 6 pin silicone wire	1	pcs
2.54mm 20 pin JTAG cable	1	pcs
2.54mm 5 pin programming probe	1	pcs
Interface signal switching board	1	pcs
Non-slip pads	8	pcs
User manual	1	page

(*Note: Support optional ICWKEY: for high-level encryption authorization signature; USB-wireless adapter: for BLE connection, contact us for details.)

3. Basic

Size	(LWH) 107mm * 75mm * 17mm(≈)
Weight (device)	≈ 145g
Display	3.2 inch /320 * 240 (RGB565)
Operation	Left/Up & Right/Down for navigation Confirm(short press), Return(long press)
Power Supply	USB Type C :5.0V±0.2V / 500mA DC:9-24V (withstand voltage) / 3A (3.5mm)

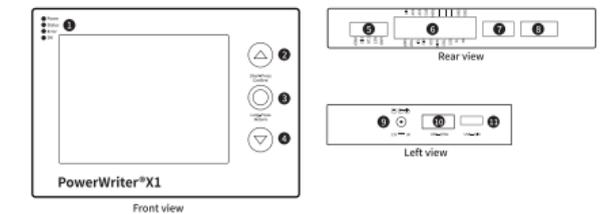
Power Supply	VIN :3.3V~5.5V / 3A
	VREF :1.8V~5.0V(±0.1V) / 700mA
Power Output	3.3V :700mA(±0.1V)
	5.0V :1A(±0.1V)
Output wave	1Hz~120Mhz (adjustable voltage)(*)
LED indicate	VREF Power/Status/Error/Succeed
USB (Host)	USB 2.0 (Type-A 5.0V/500mA)
USB (Device)	USB 2.0 (Type-C, supports FWD & REV)
Signal interface	2.54mm (2 * 5 pin, 1 * 4 pin, 20 pin)
Working Temp.	-20°C~+60°C

4. Functional Parameter

Clock	Max. 20Mhz (adjustable)(*)
Protocol	SWD / JTAG/SWIM / SPI / I2C / UART (agent) / User-Defined (*)
Online	Full automation, Automatic Programming, Factory mode
Offline	Full automation, U-disk, Mirror programming, etc.
Security & Auth.	Matrix, ICWKEY License, Lock
Debugger	ARM® Cortex-M (Win-USB, HID)
App (Cloud)	ICW Cloud, WeChat Applet (*Wireless adapter required)
Extension	AT interface, USB Host(*)
Others	Logger, Theme, Muti-language, SCR etc.

(*Note: Feature adjustment during update and maintenance without prior notice.)

5. Appearance and interface



View / No	Feature	Description
Front	① Status LED	Power Status On: Connected; Blinking: Busy
		VREF indication

Front	①	Status LED	Error OK	Operation failure Operation success
	②	L/U	Left/Up navigate	
	③	Conf./Rtn.	Short press: Confirm; Long press: Return	
	④	R/D	Right/Down navigate	
Rear	⑤	SWD	GND	Power ground
			RST	Target reset pin
			CLK	SWD clock (JTAG TCK)
			DIO	SWD data (JTAG TMS)
			VREF	IO VREF (Input/Output)
	⑥	Composite IO	TDO	JTAG TDO
			SWIM	STM8 IO
			TDI	JTAG TDI
			TRST	JTAG TRST
			PWM	Wave out (1Hz~120Mhz)
⑦	UART	BOT0	BOOT0 control	
		3.3V	Independent 3.3V (700mA)	
⑧	Programming machine	5.0V	Independent 5.0V (700mA)	
		VIN	System power (3.3V~5.5V)	
		RX	UART RX	
Left	⑨	DC	TX	UART TX
			OK	OK output (High)
	⑩	USB Host	NG	Error output (High)
			CTRL	Set low-pulse startup
⑪	Slave USB	3.5mm DC, 9~24V/3A supported	USB wireless adapter, Function expansion Device communication, external ICWKEY	

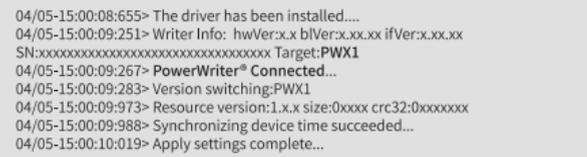
(*Note: EXT1~3 are reserved for function expansion. Duplicate pins are marked only once. Different HW version may be adjusted without notice. Signal adapter plates are recommended for combination signal ports.)

6. Quick Start

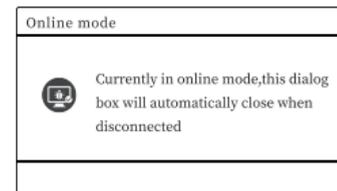
6.1 Prepare

- Visit "https://www.powerwriter.com/index/index/products?p=26&c=files&t=Client" to download PowerWriter For ARM software & install, launch desktop shortcut named PowerWriter®.
- Use original Type-C USB cable to connect PowerWriter X1 to PC USB port and wait for the startup to complete.

- Desktop software identifies and connects to the X1 device. If successfully connected, device information will be displayed in the logger, as follows:



- In addition, the X1 displays the device online prompt box, as follows:

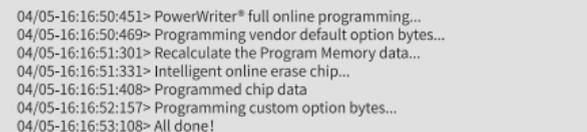


- Click PowerWriter®-> Writer Setting -> Select. Select target MCU part no., that click OK.
- Refer page-3 connect chip to X1. If connection is successful, you will see in the logger & status bar indicate target chip is connected, as follows:
04/05-16:05:32:394> Target chip connected

(*Note: If device connect failed, changed USB port or refer menu: Help -> Driver Installation -> Install the latest driver and try again. If the target connection failed, check the cable of connection. If you need help, please contact us.)

6.2 Online programming

- Switch tab to Program Memory (Main Flash)page. Click Add Firmware button Import the firmware that needs to be programming.
- Click the Auto (robot icon) button and will automatically complete the programming (verification), logging as follows:



6.3 Offline programming

- Click menu: Operation->Offline load (Follow the prompts to select save project).
- After loaded, click Disconnect button to disconnect the device.
- Switch to Writer of PWX1, move to ► button and click to start programming. After programmed, the interface will display the operation result.

6.4 More

PowerWriter® X1 supports online & offline programming, automatic machine, AT-command, ICWORKSHOP cloud, WeChat BLE and integrated debugger etc. For more features, please visit: <http://docs.powerwriter.com>.

7. Warranty (Only available in Mainland China)

- Return and exchange within 7 days. (Does not affect secondary sales).
- Within 1 month only replacement without repair (free shipping).
- 1 year warranty.
- > 1 year, charged service and parts for repairs.

No free warranty service is provided for the following situations:

- Equipment damaged due to artificial damage, modification or maintenance.
- Equipment is damaged beyond the environment requirements.

(*Note: Terms of Service are subject to change without prior notice.)

8. Appendix

- Tel : (+86) 400-1568-598 或 (+86) 0755-83831322
- Email: cs@icworkshop.com
- Technical support: (+86) 136 3278 4295
(Mon. ~ Fri., AM 9:00-12:00, PM 1:30-7:00)



Tmall



TaoBao



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WeChat Group



QQ Group



Business Contact