MINIWARE

敏维®MHP50迷你焊台适配器

MHP50 MINI SOLDERING STATION ADAPTER

使用前请先详细阅读此手册内容，本用户手册基于MHP50 DFU V1.00，APPV2.0。
Please read this manual before use. This user manual is based on MHP50
DFU V1.00, APP V2.0.

NOTICE

This appliance can be used by children aged from 8 years and above and persons with reduced physical, sensory or mental capabilities or lack of experience and knowledge if they have been given supervision or instruction concerning use of the appliance in a safe way and understand the hazards involved.

Children shall not play with the appliance. Cleaning and user maintenance shall not be made by children without supervision.

It must only be supplied at safety extra low voltage corresponding to the marking on the appliance.

WARNING:

This tool must be placed on its stand when not in use.

产品合格证
Product Certificate

本产品经检验合格，准予出厂。
This product has passed the quality inspection.

生产日期：_____   检验员QC：_____

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  QC
 PASS
 检02
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目录

安全声明

　　使用产品前请仔细阅读本用户手册。用户手册中含有安全使用信息，并请妥善保存，以备日后查阅。用户可访问我司网站了解用户手册更新情况。

常规安全

- 请只使用本产品适用并经所在国家/地区认证的电源适配器。（详细标准请查阅P7）
- 请勿在潮湿环境下操作。
- 请勿在易燃易爆的环境中操作。
- 请保持产品表面清洁干燥。

警告事项

　　在使用MHP50迷你焊台适配器时，

- 使用结束或要离开时请关闭电源，慎防火灾。
- 接通电源升温后，发热体/烙铁头温度会达到100℃～350℃（212℉～662℉），慎防烫伤。
- 切勿将MHP50整体泡入水中或双手湿水时使用，慎防漏电。
- 请勿同时连接DC和USB-C口。

注意事项

　　MHP50迷你焊台适配器，

- 控制端由精密元器件组成，请避免跌落。
- 在300℃以上连续使用40分钟后，控制端温度将会达到50℃～60℃；
- 受热后，请勿接触发热体/烙铁头，以免烫伤；
- 通电时，请勿移除或更换焊台适配器；
- 发热体/烙铁头加热后，不锈钢隔热支架可能会轻微发黄，属于正常现象。

责任声明

- 若产品因任何不正当使用原因而导致的任何特别、间接、附带或继起的损坏或损失，均由使用者负责。
- 凡因私自拆装、改造产品而引起的损坏或损失，均由使用者负责。
- 请妥善保管本产品，以免让儿童当做玩具或在无人看管的情况下使用本产品。

操作环境

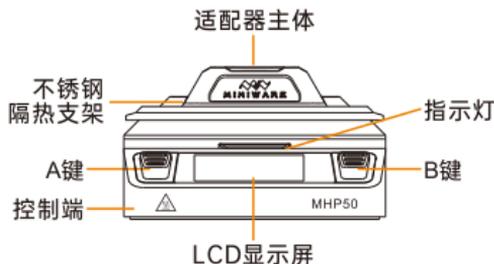|	工作状态		非工作状态
温度	0℃~50℃		-20℃~60℃
相对湿度	高温（40℃~50℃）	0%~60%RH	5%~60%RH
	低温（0℃~40℃）	10%~90%RH	5%~90%RH

01 产品概览

MHP50迷你焊台适配器，是MHP50迷你恒温加热台的一个拓展功能使用模块。由MHP50控制端通过焊台适配器，连接相应兼容的烙铁头作为焊台烙铁使用。可使用符合PD协议标准的充电头，或者DC5525接口的19 - 28V电源供电，输出功率23-110W。配合烙铁支架可实现手柄放在烙铁支架上立即休眠的功能。MHP50焊台适配器共有SA80、SA115、SA210、SA245四种型号。
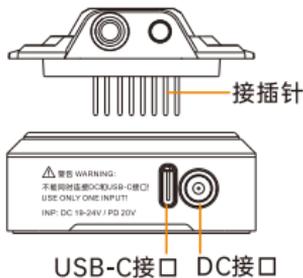
1.1 功能特点：（1.2 1.3 1.4等其他编号顺延）

- 160*80分辨率 LCD显示屏
- 兼容PD2.0、PD3.0、PD3.1协议电源
- 支持DC5525 直流DC输入
- 功率范围23W到110W
- 快速加热，最快加热时间只需3秒（从室温加热至300℃）

正面（整机）：

适配器主体
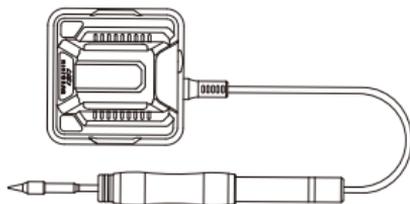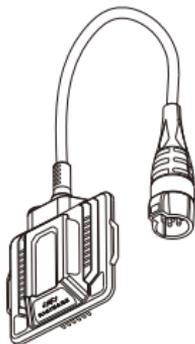
不锈钢
隔热支架

A键

控制端

指示灯

B键

MHP50

LCD显示屏

背面（分体）：

接插针

⚠警告 WARNING:
不能同时连接DC和USB-C接口!
USE ONLY ONE INPUT!
INP: DC 18-24V / PD 20V

USB-C接口   DC接口

控制端底部:

MINIWARE

i-design CIC RoHS

www.-design.com.cn   Made in China

SA80线图:

SA115/SA210/SA245线图：

1.2 性能参数

屏幕	彩色LCD（160*80分辨率）
电源接口	USB Type-C（可用于固件升级）
	DC 5525
外形尺寸(控制端)	L71.5mm*W55.5mm*H22.5mm
重量(控制端)	78g

参数项	SA80	SA115	SA210	SA245
烙铁头型号	TS80T系列	115系列	210系列	245系列
是否配备手柄	是	否	否	否
线缆长度	100cm	25cm		
供电方式	USB-C PD2.0 PD3.0 PD3.1 / DC 5525			
工作电压	DC 19 - 24V / PD 20 - 28V（不可同时使用）			
加热功率	60W	23W	50W	110W

参数项	SA80	SA115	SA210	SA245
温控范围	50-400℃			
加热时 (至300℃)	6s	3s	3s	6s
温度稳定性	±3%			
烙铁头对地电阻	<2Ω			
其他功能	感应休眠、自动休眠、自动关机、固件升级等			

注意事项

- SA80型焊台适配器包含烙铁手柄，SA115、SA210、SA245型焊台适配器不含烙铁手柄；
- SA80焊台适配器兼容TS80、TS80T系列烙铁头；
- TS80系列烙铁头最大功率30W，不可使用"Turbo"功能，否则会造成烙铁头损坏！
- SA115焊台适配器兼容115系列手柄及烙铁头，SA210焊台适配器兼容210系列手柄及烙铁头，SA245焊台适配器兼容245系列手柄及烙铁头；
- 请勿将SA115、SA210和SA245焊台适配器与不同型号烙铁头混用，以免造成烙铁头损坏；
- 请勿同时连接DC和USB-C口，否则会造成损坏！
- 在使用焊台适配器时，请勿带电插拔适配器，否则会造成适配器损坏或其他安全问题！

1.3 灯光提示

真彩灯颜色随发热体
温度而变化。

<50℃   ≥200℃

绿   黄   白   红
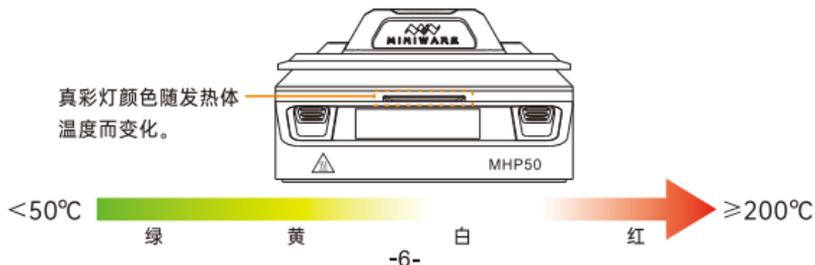
真彩灯颜色	释义
蓝色	固件升级状态
红色闪光	出错、警示灯光

SA80手柄灯状态	释义
慢闪	加热状态
快闪	保持恒温状态

警告：MHP50接通电源后请勿触碰或更换烙铁头，以免烫伤！

02 电源选择

　　MHP50焊台适配器支持DC与PD两种供电模式。选用符合PD快充协议的电源适配器时，请选择最低支持20V 5A档位输出的PD电源适配器及可通过5A电流的电源线以获得最佳体验。选用支持DC5525接口的电源适配器时，请选择24V 5A或以上的电源适配器以获得最佳体验。
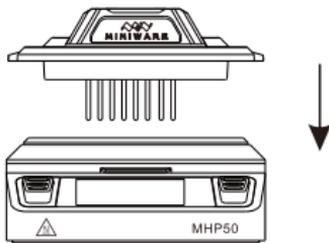
设备状态	供电模式	最大功率	最大工作电压
加热状态	PD	110W	28V
	DC	110W	24V
待机状态	PD/DC	≤0.3W	28/24V

注意：DC与PD两个供电接口不可同时使用！PD协议供电时最大110W功率，需要电源和电源线都支持PD3.1协议有19/20V 5A或以上档位电源输出

3.1 安装

1) 将焊台适配器的接插针插入MHP50控制端；
2) 使用PD电源或DC5525接口的电源适配器为MHP50迷你焊台适配器供电，接通电源后设备进入待机状态，可进入各功能菜单进行操作。

3.2 出厂设置

预设温度单位	℃
预设工作温度T1	300℃
预设工作温度T2	330℃
预设工作温度T3	280℃

3.3 基本操作

3.3.1 开机显示

接通电源后，MHP50迷你焊台适配器首先显示品牌图标、个性化图标，随后进入功能菜单项界面，用户可以通过短按A/B键选择不同的功能菜单项，长按A键进入该菜单项。

	品牌图标，不可修改
MINIWARE	个性化图标，可修改；不修改时默认显示品牌图标
Heat	加热（默认）
Menu	菜单
Info	信息

3.3.2 加热界面

在待机状态下短按A/B键选择加热菜单项"Heat"，长按A键可直接进入加热状态。屏幕显示如下：
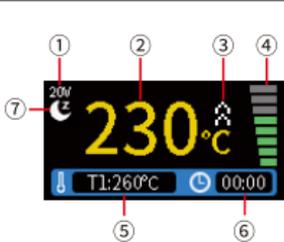
①	输入电压
②	烙铁头温度
③	当前加热状态（☆:升温；☆:降温；☆:恒温）
④	加热功率条（占电源适配器的最大功率百分比）
⑤	预设温度T1/T2/T3
⑥	加热时间（MM:SS）
⑦	休眠图标

● 升温、调温

　MHP50迷你焊台适配器有两种调温方式：

　　　在加热状态下，

　1） 短按A键，选择预设温度T1、T2或T3目标加热温度，MHP50迷你焊台适配器自动加热至预设温度后自动恒温；

2）长按A键进入修改当前预设温度值，短按A/B键调低或调高温度设定值（长按时可快调），松开按键5秒后自动返回加热状态（当次设置的预设温度断电后不保存）。

● **工作状态下返回菜单项界面：**

1) 在工作状态下，MHP50迷你焊台适配器的加热时间超过设定的加热超时时间（自定义范围0~999分钟），机器将发出"TIME OUT!"提示，并自动返回加热菜单项界面；

2) 设备处于工作状态时，长按B键可退出加热返回加热菜单项界面。

● **自动休眠：**

在菜单项界面下，无按键操作10分钟（默认，可修改）且发热体内部温度低于50℃，MHP50迷你焊台适配器将自动休眠。

警告：在使用焊台适配器时，请勿带电插拔适配器，否则会造成适配器损坏！

● **加热状态下，MHP50迷你焊台适配器按键及功能操作汇总：**

功能	按键	操作方式
选择预设温度	短按A键	加热状态下，短按A键可切换T1/T2/T3预设温度
进入调温状态	长按A键	加热状态下，长按A键进入调温状态
调温操作	短按/长按A/B键	调温状态下，短按A/B键调低或调高当前预设温度（长按时可快调）
返回待机状态	长按B键	加热状态下长按B键退出加热，返回待机状态
重新计算加热时间	短按B键	加热状态下短按B键可重新计算加热时间

3.3.3 菜单界面
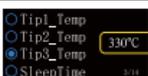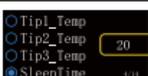
在待机状态下短按A/B键选择菜单菜单项界面"Menu"，长按A键进入该菜单项。

● 参数设置

① 在菜单界面下，短按A/B键选择需要修改的参数项，长按A键进入修改状态；

② 在修改状态下短按A/B键编辑参数值（长按时可快调），选定后等待5秒自动退出修改状态；

③ 设置完成后长按B键保存设置并返菜单项界面。

注意： 进入各功能界面后无操作8秒，设备将自动退出界面，但不保存所修改的参数值。

● 参数释义

参数	图标	参数名称	说明
Tip1_Temp		预设温度 1	范围：50~400℃或212~752℉，默认300℃
Tip2_Temp		预设温度 2	范围：50~400℃或212~752℉，默认330℃
Tip3_Temp		预设温度 3	范围：50~400℃或212~752℉，默认280℃
SleepTime		休眠时间	烙铁手柄从静止到进入休眠模式的时间。范围0（关闭）~999秒，默认120秒。
StdbyTime		待机时间	烙铁手柄从睡眠状态到进入待机状态的时间。范围0（关闭）~999分钟，默认10分钟。

参数	图标	参数名称	说明
Backlight	StdbyTime / Backlight 6 / Volume / TempUnit	背光亮度	范围: 1~9（数值越大，亮度越高），默认6
Volume	StdbyTime / Backlight / Volume 3 / TempUnit	音量	提示音音量，范围: 0~5（数值越大，音量越响），默认3
TempUnit	TempUnit ℃ / PD_PwrMax / DC_PwrMax / TempCalib	温度单位	温度显示单位，可选℃（摄氏度）或℉（华氏度），默认℃（摄氏度）
PD_PwrMax	TempUnit / PD_PwrMax 0 / DC_PwrMax / TempCalib	PD功率限制	范围: 0（关闭）或36~65W，默认0
DC_PwrMax	PD_PwrMax / DC_PwrMax 150 / TempCalib / Turbo	DC功率限制	范围: 36~150W，默认150
TempCalib	PD_PwrMax / DC_PwrMax / TempCalib 0℃ / Turbo	温度校准	设置校准温度参数
Turbo	DC_PwrMax / TempCalib / Turbo / Language	强力模式	针对使用TS80T系列烙铁头时加热的强力模式（请谨慎使用）。可选ON（打开）或OFF（关闭），默认OFF
Language	DC_PwrMax / TempCalib / Turbo / Language	语言选择	显示语言。可选: EN、中文、DE、RU
Restore	TempCalib / Turbo / Language / Restore	恢复出厂设置	恢复出厂设置
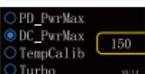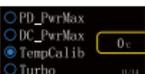
3.3.4 信息界面

在待机状态下短按A/B键选择信息菜单项"Info"，长按A键可进入查看设备的基本信息。

① MHP50	① 设备型号
② Resis:4.5R	② 发热体内阻
③ Temp150℃	③ 烙铁头温度
④ Module:SA0	④ 适配器类型
⑤ FanSpeed:10000rpm	⑤ 风扇转速
⑥ Volt:20V	⑥ 当前输入电压
⑦ MCU_Temp:38℃	⑦ MCU温度
⑧ S_Ver:1.00	⑧ 软件版本
⑨ H_Ver:1.00	⑨ 硬件版本

3.4 图示与警告

在待机状态下，当MHP50迷你焊台适配器检测到设备出现异常，屏幕将出现不同的图标提示。

图标	释义
🖥x	检测不到烙铁头
⚠	烙铁头温度过高
🌀!	检测不到风扇

在加热状态下，当出现影响加热的情况时，屏幕会弹出当前错误的提示，指示灯会闪烁红光，蜂鸣器鸣响，随后设备停止加热返回待机状态。

警告提示	释义
⚠ NO PLATE!	检测不到烙铁头
⚠ OVER TEMP!	控制端内部温度过高
⚠ OVER TURN!	机体倾倒（机体倾倒提示会一直显示，直到机体回正）
⚠ TIME OVER!	加热超时（加热时间超过设定的加热超时时间）
⚠ LOW VOLT!	电压过低

3.5 配置文件

1) 使用USB Type-C连接线将MHP50控制端与电脑连接。电脑将出现虚拟磁盘 "MHP50_APP"，此时设备进入USB模式；
2) 打开虚拟磁盘中的CONFIG.TXT文件，可修改设备参数。

参数释义如下：

参数名称	释义	出厂设置	可调范围
Tip1	预设温度T1	300	℃: 100~400或℉: 212~752
Tip2	预设温度T2	330	℃: 100~400或℉: 212~752
Tip3	预设温度T3	280	℃: 100~400或℉: 212~752
SleepTime	休眠时间	120	0（关闭）~999（秒）
StdbyTime	待机时间	10	0（关闭）~999（分钟）
Backlight	背景亮度	6	1~9
TiltAngle	倾倒角度	30	20~50（度）
Volume	音量	3	0~5
TempUnit	温度单位	0	0为摄氏度（℃），1为华氏度（℉）
PD_PwrMax	Pd功率限制	0	0（关闭）或36~65（W）

参数名称	释义	出厂设置	可调范围
DC_PwrMax	DC功率限制	150	36~150 (W)
Turbo	强力模式	1	0（关闭）~1（打开）
Language	语言选择	0	0: EN 1: CN 2: DE 3: RU

04 焊台适配器和烙铁头

4.1 安装与更换
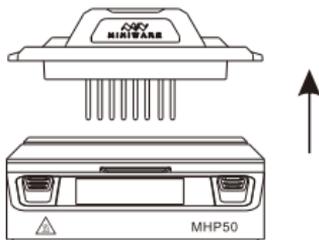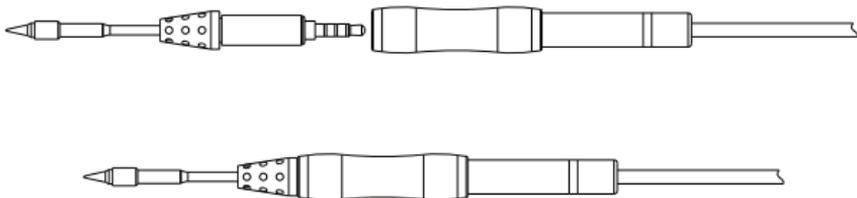

1）请确认设备断电后再拨插或更换焊台适配器；
2）向上直接拔出焊台适配器，更换后将电源接插针对准控制端插口，插入新的焊台适配器；
3）确保焊台适配器完全插入控制端后可接通电源或电脑进行操作。如焊台适配器未完全安装好，设备通电后将出现红色闪光及蜂鸣提示，屏幕显示"NO PLATE!"警告。

4.2 更换烙铁头

   1）请在断电后更换烙铁头；
   2）拔出原烙铁头，重新插入另一支烙铁头；
   3）再次通电，如焊台适配器提示"No PLATE!"，则表示烙铁头未装牢固，请重新插入烙铁头。
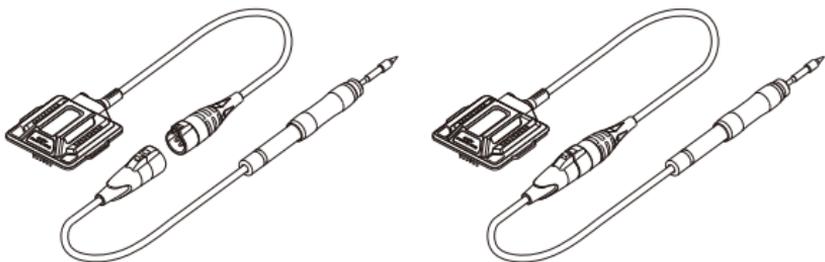 注意：请确认烙铁头完全插入手柄！

     SA80手柄插入手柄转接头线图:

4.3 SA115/SA210/SA245安装拆卸手柄

   1）请在断电后插拔手柄转接头；
   2）按下手柄插座的锁定开关，将手柄插座插进或拔出手柄转接头；
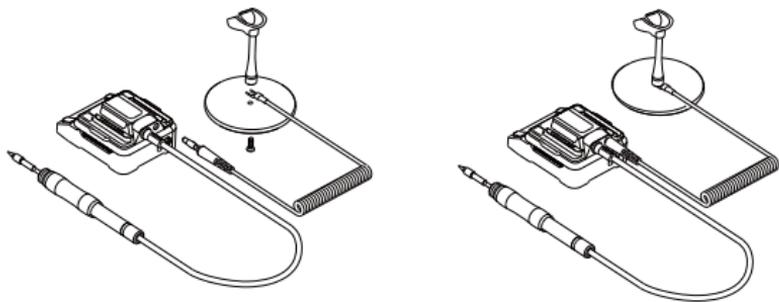 注意：请确认手柄插座完全插入手柄转接头！

SA210手柄插入手柄转接头线图：

4.4 烙铁头的选择

1） SA80焊台适配器兼容TS80、TS80T系列烙铁头；
2） SA115焊台适配器兼容115系列手柄及烙铁头，SA210焊台适配器兼容210系列焊台及烙铁头，SA245焊台适配器兼容245系列手柄及烙铁头；
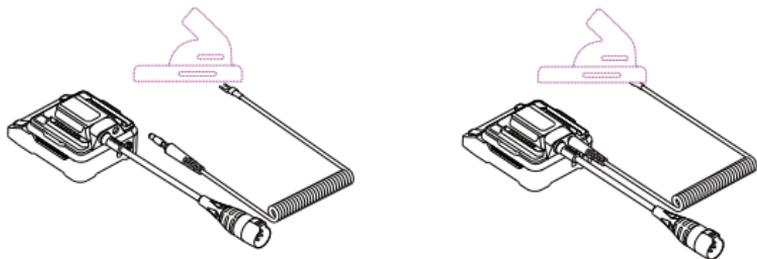3） TS80系列烙铁头最大功率30W，不可使用"Turbo"功能，否则会造成烙铁头损坏！

05 接地线

    MHP50焊台适配器具有接地休眠功能，要使用此功能，请用接地线将焊台适配器与烙铁座相连，当焊台手柄与烙铁座正确相连并接地后，焊台适配器自动进入休眠，当焊台手柄离开烙铁座后，自动升温至工作温度。

SA80适配器与I-STAND正确接地线图:

备注：SA115、SA210、SA245适配器请自备烙铁座，使用接地线的鳄鱼夹可轻松与烙铁座连接。

问题1: MHP50通电后屏幕无显示

检查1: 检查电源和连接线,请确保使用可通过5A电流的USB Type-C对C的连接线
及符合PD协议的电源,或使用DC 5525接口的电源适配器为设备供电;

检查2: 控制端连接电脑后能否进入DFU模式,并读取到U盘。

问题2: MHP50温度在预设温度左右跳动

检查1: 如烙铁头为第一次使用或者存放在潮湿环境中,待发热体充分加热后即可恒温;

检查2: 烙铁头是否已安装好;

检查3: 电源线是否接触不良。

问题3: MHP50自动重启

检查1: 请检查电源是否已接好并可正常通电;

检查2: 电源参数是否符合使用要求。

问题4: 屏幕显示"LOW VOLT!"

检查1: 电源参数是否符合使用要求。

问题5: 屏幕显示"NO PLATE!"

检查1: 烙铁头是否已安装好;

检查2: 烙铁头是否接触不良。

7.1 售后服务

MHP50迷你焊台适配器在非人为损坏的情况下提供三个月免费保修服务。保修服务请于销售商联系。

烙铁头属消耗品，非质量问题，一经使用不予退换。

7.2 固件更新

DFU（全称为"Device Firmware Upgrade"）软件是易迪赛公司产品独有的固件升级软件。通过DFU软件，用户可简单便捷地对产品进行固件升级。

1、访问www.e-design.com.cn，将适用的MHP50固件（分为UI和APP两款固件）下载至电脑；

2、按住MHP50的A键，用USB Type-C数据线将MHP50与电脑连接，进入DFU模式，屏幕显示"DFU Mode V1.00"，此时电脑将出现虚拟磁盘"MHP50_DFU"；

3、把准备好的hex固件拷贝到该虚拟磁盘的根目录下，当固件后缀由.hex变为.rdy后，断开USB连接，完成固件升级。

MHP50_DFU (G:)

MHP50_APP.hex   MHP50_APP.rdy

7.3 自定义个性化图标

1) 准备一张160*80像素的16位（RGB565）BMP图片，并将文件名设置为logoin.bmp；
2) 用USB Type-C数据线将MHP50控制端与电脑连接，进入虚拟磁盘"MHP50_APP"；
3) 将准备好的图片拷贝至虚拟磁盘根目录，断开连接完成更新。

FC 此设备符合美国联邦通讯委员会FCC 规则第15 部分中的规范。操作设备须符合以下两个条件:
(1) 本设备不得引发干扰;
(2) 本设备必须能承受其收到的任何干扰, 包括可能导致意外操作的干扰。

CE CE 标记是欧洲共同体的注册商标。此CE 标记表示产品符合所有相关的欧洲法律规定。

UKCA UKCA(United Kingdom Conformity Assessed)标记是英国合格认定的认证标识。本设备符合电子电气产品进入英国市场需要通过的英国法规下的标准测试认证。

⚠ 本产品不可与生活垃圾一起丢弃。请根据当地法律和法规进行处理。

RoHS 本产品符合RoHS指令要求。

Contents

Safety Instructions

Please read this user manual carefully before using the product. The user manual contains safe use information, and please keep it properly for future reference. Users can visit our website to learn about the update of the user manual.

General Safety

- Please only use reliable power adapters dedicated to this product or certified by your country/region (please refer to P28 for detailed power standards);
- Do not operate in a humid environment;
- Do not operate in flammable/explosive environments;
- Please keep the surface of the product clean and dry.

Warnings

When using the MHP50 Mini Soldering Station Adapter ,
- Please turn off the power when finishing using or leaving to prevent fire;
- After the power is turned on, The temperature of the heating element/soldering iron tip will reach 100°C-350°C (212°C-662°C), be careful to prevent burns;
- Do not soak the whole MHP50 in water or use it with wet hands to prevent leakage.
- Do not connect DC and USB-C ports at the same time

Precautions

- MHP50 mini soldering station adapter is composed of precision components, please avoid falling;
- After 40 minutes of continuous use above 300°C, the temperature of the controller will reach 50°C~60°C;
- After heating, please do not touch the heating element/soldering iron tip to avoid burns;
- Do not remove or replace the soldering station adapter while power is on;
- After the heating element/soldering iron tip is heated, the hot plate's stainless steel heat insulation bracket may become yellowish, this is a normal phenomenon.

For Any special, indirect, incidental or consequential damages or losses arising from any inappropriate use of the product shall be borne by the user. Any damage or loss caused by unauthorized disassembly and modification of the product shall be borne by the user.

Please keep this product properly to prevent children from using it as a toy without supervision.

Operating Environment

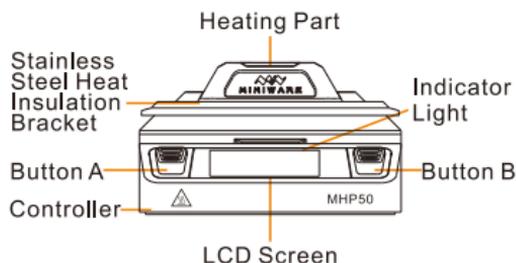| Operating Environment	Working state		Non-working State
Temperature	0°C~50°C		-20°C~60°C
Humidity	High temperature(40°C~50°C)	0%~60%RH	5%~60%RH
	Low temperature (0°C~40°C)	10%~90%RH	5%~90%RH

01 Product Introduction

The MHP50 mini soldering station adapter is an expansion function module of the MHP50 mini constant temperature heating station. The MHP50 control end connects the corresponding compatible soldering iron tip through the soldering station adapter and uses it as a soldering iron. It can be powered by a charging head that complies with the PD protocol standard, or a 19-28V power supply with a Dc5525 interface, with an output power of 23-110W. With the soldering iron stand, the handle can be put into sleep mode immediately when placed on the soldering iron stand. There are four models of MHP50 soldering station adapters: SA80, SA115, SA210, and SA245.
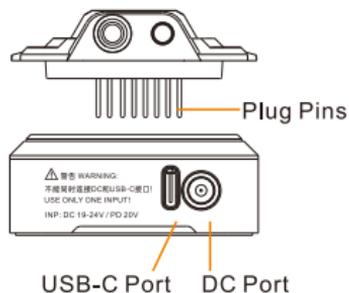
1.1 Buttons And Interface

- 160*80 resolution LCD display
- Compatible with PD2.0, PD3.0, PD3.1 protocol power supply
- Support DC5525 DC input
- Power range 23W to 110W
- Fast heating, the fastest heating time is only 3 seconds (from room temperature to 300℃)

Front (Whole device) :

Back (Separate) :

Heating Part

Stainless
Steel Heat
Insulation
Bracket

Indicator
Light

Button A

Button B

Controller

MHP50

LCD Screen

Plug Pins

⚠ 警告 WARNING:
不能同時連接DC与USB-C接口!
USE ONLY ONE INPUT!
INP: DC 19-24V / PD 20V

USB-C Port

DC Port

Controller Bottom:

SA80 LINE DIAGRAM:

ⓘ i-Design 认证 C E F C RoHS
www.i-design.com.cn   Made in China
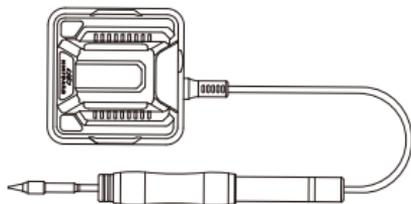
SA115/SA210/SA245 LINE DIAGRAM:
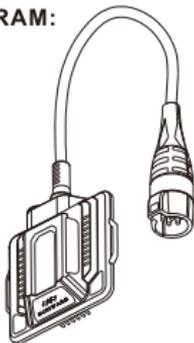
1.2 Performance Parameters

Display	Color LCD (160*80 resolution)
Power interface	USB Type-C (can be used for firmware upgrade)
	DC 5525
Dimensions (control end)	L71.5mm*W55.5mm*H22.5mm
Weight (control end)	78g

Parameters	SA80	SA115	SA210	SA245
Tip model	TS80T Series	115Series	210Series	245Series
Handle Included: Yes/No	Yes	N0	N0	N0
Cable length	100cm	25cm		
Power supply	USB-C PD2.0 PD3.0 PD3.1 / DC 5525			

| Parameters	SA80	SA115	SA210	SA245
Working voltage	DC 19 - 24V / PD 20 - 28V(Cannot be used simultaneously)			
Heating power	60W	23W	50W	110W
Temperature control range	50-400°C			
Heating time (up to 300°c)	6s	3s	3s	6s
Temperature stability	±3%			
Tip resistance to ground	<2Ω			
Other functions	Induction sleep, automatic sleep, automatic shutdown, firmware upgrade, etc.			

Notes:

1. SA80 soldering station adapter includes a soldering iron handle, while SA115, SA210, SA245 soldering station adapters do not include a soldering iron handle;
2. SA80 handle adapter is compatible with TS80 and TS80T series soldering iron tips;
3. The maximum power of TS80 series soldering iron tips is 36W. Do not use the "Turbo" function, otherwise the soldering iron tip will be damaged!
4. The SA115 handle adapter is compatible with the 115 series handles and soldering iron tips, the SA210 handle adapter is compatible with the 210 series handles and soldering iron tips, and the SA245 handle adapter is compatible with the 245 series handles and soldering iron tips;
5. Do not mix the SA115, SA210 and SA245 soldering station adapters with different types of soldering iron tips to avoid damage to the soldering iron tips;
6. Do not connect the DC and USB-C ports at the same time, otherwise it will cause damage!
7. When using the soldering station adapter, do not plug or unplug the adapter

with power on, otherwise it will cause damage to the adapter or other safety issues!

1.3 Light Indicator

The true color light will change color with hot plate's temperature.

<50°C   Green   Yellow   White   Red   ≥200°C
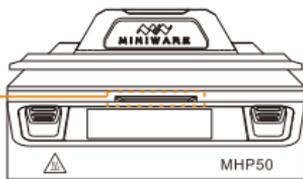
Light Color	Indication
Blue	Firmware upgrade
Red flash	Error,warning

SA80 handle light status	Explanation
Slow flash	Heating status
Quick flash	Maintain constant temperature

Warning: Do not touch or replace the soldering iron tip when the MHP50 is powered on to avoid burns!

02 Power Selection

MHP50 supports two power supply modes: DC and PD. When choosing a power

adapter that complies with the PD fast charging protocol, please choose a PD power adapter that supports a minimum output of 20V 5A and a power cord that can pass . 5A current for the best experience. When choosing a power adapter that supports DC5525 interface, please choose a 24V 5A power adapter for the best experience.
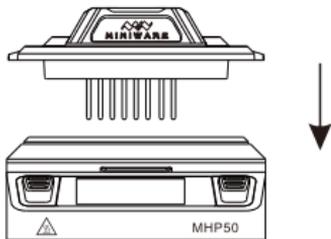
Device State	Input Mode	Max Power	Max Working Voltage
Heating	PD	110W	28V
	DC	110W	24V
Standby	PD/DC	≤0.3W	28/24V

Notice: DC and PD interface can not be used at the same time! The maximum power is 110W when powered by the PD protocol. The power supply and power cord need to support the PD3.1 protocol and have a 19/20V 5A power output.

03 How to Use

3.1 Installation

1) Insert the soldering station adapter's connector pins into the MHP50 control terminal;
2) Connect PD or DC 5525 power supply to MHP50 mini soldering station adapter. After being powered on, the device will enter standby state, user can enter different menu item interface for further operations.

3.2 Factory Settings

Default Temperature Unit	°C
Preset Working Temperature T1	300°C
Preset Working Temperature T2	330°C
Preset Working Temperature T3	280°C

3.3 Basic Operations

3.3.1 Boot Up Display

After power on, MHP50 mini soldering station adapter will first display the brand icon and customized icon, and then enters the function menu item interface. User can select different function menu items by short pressing Button A/B, and long press Button A to enter the menu item.

MINIWARE	Brand icon, not modifiable
	Customized icon, modifiable; if not modified, it will display the brand icon by default
Heat	Heat (Default)
Menu	Menu
Info	Info

3.3.2 Heat

In standby state, short press Button A/B to select the heating menu item "Heat", and long press Button A to directly enter the heating state. The screen displays as

follows:
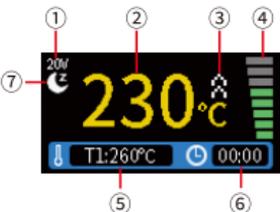
①	Input voltage
②	Soldering tip temperature
③	Current heating status (🔥:heating/ ❄:cooling/ ♨:constant temperature)
④	Heating power bar (the current power ratio of the power adaptor)
⑤	Preset temperature T1/T2/T3
⑥	Heating time (MM:SS)
⑦	Sleep Icon

● **Heating and temperature adjustment**
  MHP50 mini soldering station adapterhas two ways to adjust temperature:

  When MHP50 mini soldering station adapteris in heating state,
  1) Short press Button A to select preset temperature T1, T2 or T3, MHP50 mini soldering station adapter will heat up to the preset temperature and enter constant temperature status automatically;
  2) Long press Button A to modify the current preset temperature, short press Button A/B to decrease or increase the temperature values (long press Button A/B for quick adjustment). Release the button, after 5 seconds it will return to heating state (this current preset temperature value will not be saved after power off).

● **How to return to the menu item interface in working state:**

  1) In working state, if the heating time of MHP50 exceeds the heating over time setting (can be modified, range 0~999 minutes), MHP50 mini soldering station adapterwill issue a "TIME OVER!" prompt and automatically return to the heating menu item interface;
  2) When the device is in working state, long press Button B to exit heating and return to the heating menu item interface.

● Automatic sleep:

In the menu interface, if there is no key operation for 10 minutes (default, editable) and the internal temperature of the soldering iron tip is lower than 50℃, the MHP50 will automatically sleep.

Warning: When using the soldering station adapter, do not plug or unplug the adapter while it is powered on, otherwise the adapter will be damaged!

● In heating state, MHP50's button operations and functions are as follows:

Functions	Button	Operations
Select preset temperature	Short press Button A	In heating state, short press Button A to switch Preset Temperature T1/T2/T3
Enter temperature adjustment	Long press Button A	In heating state, long press Button A to enter temperature adjustment
Temperature adjustment	Short /Long press Button A/B	In temperature adjustment state, short press Button A/B to decrease or increase current preset temperature (long press for quick adjustment)
Back to standby state	Long press Button B	In heating state, long press Button B to exit heating and back to standby state
Recalculate heating time	Short press Button B	In heating state, short press Button B to recalculate heating time

3.3.3 Menu

In standby state, short press Button A/B to select the menu item "Menu", and long press Button A to enter menu.

● Parameter Settings

① In menu interface, short press Button A/B to select the items to be modified, long press Button A to enter modification mode;

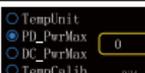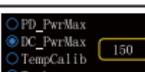② In the modification mode, short press Button A/B to select the set values

(long press for quick adjustment); Once selection is completed, wait 5 seconds to automatically exit modification mode;

③ After setting is completed, long press Button B to save the modified values and return to menu item interface.

Note: If there is no operation for 8 seconds after entering each function interface, the device will automatically exit the interface, but the modified parameter values will not be saved.

● **Parameter Definitions**

Parameter		Name	Definition
T1_Temp	●Tip1_Temp ○Tip2_Temp ○Tip3_Temp 300℃ ○SleepTime	Preset Temperature T1	Range: 50~400°C or 212~662°F, default 300°C
T2_Temp	○Tip1_Temp ●Tip2_Temp 330℃ ○Tip3_Temp ○SleepTime	Preset Temperature T2	Range: 50~400°C or 212~662°F, default 330°C
T3_Temp	○Tip1_Temp ○Tip2_Temp 330℃ ●Tip3_Temp ○SleepTime	Preset Temperature T3	Range: 50~400°C or 212~662°F, default 280°C
SleepTime	○Tip1_Temp ○Tip2_Temp ○Tip3_Temp 20 ●SleepTime	Sleep time	The time it takes for the soldering iron handle to enter sleep mode from being stationary. Range: 0 (off) ~ 999 seconds, default: 120 seconds.
StdbyTime	●StdbyTime 10 ○Backlight ○Volume ○TempUnit	Standby time	The time it takes for the soldering iron handle to go from sleep mode to standby mode. Range 0 (off) ~ 999 minutes, default 10 minutes.
Backlight	○StdbyTime ●Backlight 6 ○Volume ○TempUnit	Backlight brightness	Range: 1~9 (bigger number means brighter setting), default 6

Parameter		Name	Definition
Volume	StdbyTime / Backlight / Volume 3 / TempUnit	Volume	Beeper volume. Range: 0~5 (bigger number means higher volume), default 3
TempUnit	TempUnit / PD_PwrMax / DC_PwrMax °C / TempCalib	Temperature unit	Temperature display unit, degree centigrade (°C) or Fahrenheit (°F), default °C
PD_PwrMax	TempUnit / PD_PwrMax 0 / DC_PwrMax / TempCalib	Max PD power Limit	Range: 0 (OFF) or 36~65W, default 0
DC_PwrMax	PD_PwrMax / DC_PwrMax 150 / TempCalib / Turbo	DC Power Limit	Range: 36~150W, Standard 150
TempCalib	PD_PwrMax / DC_PwrMax / TempCalib 0 / Turbo	Temperature Calibrated	Setting the calibration temperature parameters
Turbo	DC_PwrMax / TempCalib / Turbo / Language	Trubo	A strong heating mode for TS80T series soldering iron tips (please use with caution). You can choose ON or OFF, the default is OFF
Language	DC_PwrMax / TempCalib / Turbo / Language	Language Selection	Display language. Optional: EN, Chinese, DE, RU
Restore	TempCalib / Turbo / Language / Restore	Restore	Restore factory setting

3.3.4 Info

In standby state, short press Button A/B to select the menu item "Info", and long press Button A to view device information.

①	MHP50	①	Device model
②	Resis:4.5R	②	Hot plate internal resistance
③	Temp150°C	③	Soldering tip temperature
④	Module:SA80	④	Adapter Type
⑤	FanSpeed:10000rpm	⑤	Fan speed
⑥	Volt:20V	⑥	Current input voltage
⑦	MCU_Temp:38°C	⑦	MCU temperature
⑧	S_Ver:1.00	⑧	Software version
⑨	H_Ver:1.00	⑨	Hardware version

3.4 Icons and warnings

In standby state, when MHP50 mini soldering station adapter detects an abnormality in the device, different icon prompts will appear on the screen.

Icons	Definitions
🖥✕	Soldering tip not detected
⚠	Hot plate over temperature
🔧!	Detect no fan

In heating state, when heating is affected, the screen will pop up the current error prompts, the indicator light will flash in red, the beeper sound, and then the device stops heating and returns to standby state.

Warnings	Definitions
⚠ NO PLATE!	Soldering tip not detected

Warnings	Definitions
⚠ OVER TEMP!	Controller internal over temperature
⚠ OVER TURN!	The device tips over (the prompt will be displayed until the device returns to the right position)
⚠ TIME OVER!	Heating over time (the heating time exceeds the set heating over time.
⚠ LOW VOLT!	Low input voltage

3.5 Configuration

1) Use the USB Type-C cable to connect the MHP50 controller to your computer. The virtual disk "MHP50_APP" will appear on the computer, and the device will enter USB mode;

2) Open the CONFIG.TXT file in the virtual disk to modify the device parameters.

Parameter definitions are as follows:

Name	Definition	Default	Range
Tip1	Preset Temperature T1	300	°C: 100~350 or °F: 212~662
Tip2	Preset Temperature T2	330	°C: 100~350 or °F: 212~662
Tip3	Preset Temperature T3	2801	°C: 100~350 or °F: 212~662
Sleep Time	Heating Over Time	120	0 (OFF) ~999 (minutes)
StdbyTime	Shut Down Time	10	0 (OFF) ~999 (minutes)
Backlight	Backlight Brightness	6	1~9
TiltAngle	Tilt Angle	30	20~50 (degree)
Volume	Volume	3	0~5
TempUnit	Temperature Unit	0	0:°C, 1:°F
PD_PwrMax	Max PD Power Limit	0	0 (OFF) or 36~65 (W)

Name	Definition	Default	Range
DC_PwrMax	DC Power Limit	150	36~150 (W)
Turbo	Turbo mode	1	0 (OFF) ~ 1 (ON)
Language	Language Selection	0	0:EN 1:CN 2:DE 3:RU

04 Soldering station adapters and tips

4.1 Installation And Replacement
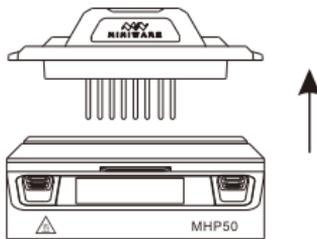
1) Please make sure the device is powered off before plugging in or replacing the soldering station adapter;

2) Pull out the soldering station adapter upwards, and after replacing it, align the power plug with the control terminal socket and insert the new soldering station adapter;

3) Make sure the soldering station adapter is fully inserted into the control terminal before connecting to the power supply or computer for operation. If the soldering station adapter is not fully installed, a red flash and buzzer will appear after the device is powered on, and the screen will display a warning "NO PLATE!"

4.2 Replace the soldering tip

    1) Please replace the soldering tip after power off;

    2) Pull out the original soldering tip and reinsert another one;

    3) ower on again. If the soldering station adapter prompts "NO PLATE!", it means that the soldering tip is not firmly installed. Please reinsert the soldering tip.

    Note: Please make sure that the soldering tip is fully inserted into the handle!

SA245 HANDLE INSERT HANDLE ADAPTER WIRE DIAGRAM:
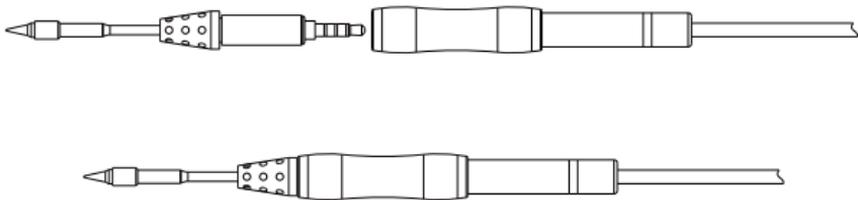
4.3 A115/SA210/SA245 handle installation and removal

    1) Please plug and unplug the handle adapter after power off;

    2) Press the lock switch of the handle socket, and plug or unplug the handle socket into or out of the handle adapter;

    Note: Please make sure that the handle socket is fully inserted into the handle adapter!

SA210 HANDLE INSERT HANDLE ADAPTER WIRE DIAGRAM:
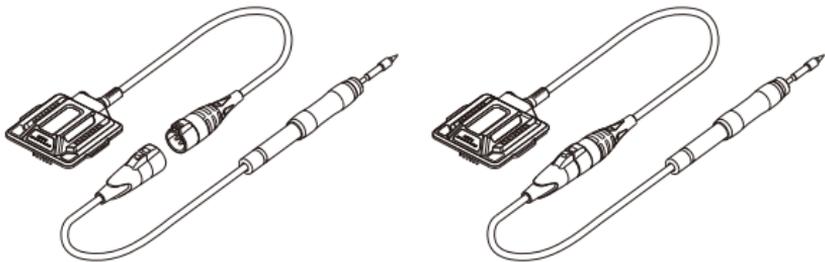
4.4 Selection of soldering iron tips

　　1) SA80 handle adapter is compatible with TS80 and TS80T series soldering iron tips;

　　2) SA115 handle adapter is compatible with 115 series handles and soldering iron tips, SA210 handle adapter is compatible with 210 series handles and soldering iron tips, and SA245 handle adapter is compatible with 245 series handles and soldering iron tips;

　　3)The maximum power of TS80 series soldering iron tips is 30W. Do not use the "Turbo" function, otherwise the soldering iron tip will be damaged!

05 Ground wire

　　The MHP50 soldering station adapter has a grounding sleep function. To use this function, please connect the soldering station adapter to the soldering iron holder with a grounding wire. When the soldering station handle is correctly connected to the soldering iron holder and grounded, the soldering station adapter automatically enters sleep mode. When the soldering station handle leaves the soldering iron holder, it automatically heats up to the working temperature.

SA80 ADAPTER WITH I-STAND CORRECT GROUND WIRE DIAGRAM:
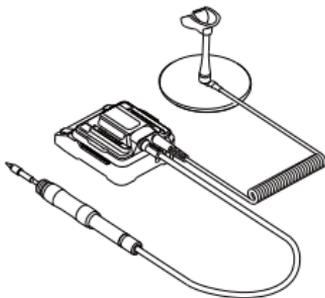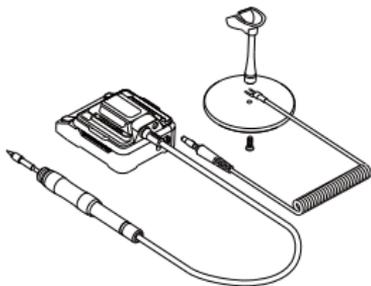
Note: Please bring your own soldering iron stand for SA115, SA210, and SA245 adapters. The alligator clip of the ground wire can be easily connected to the soldering iron stand.

06 FAQ
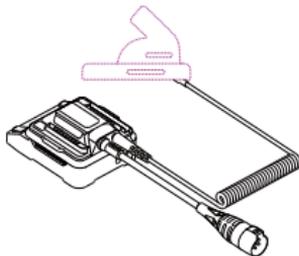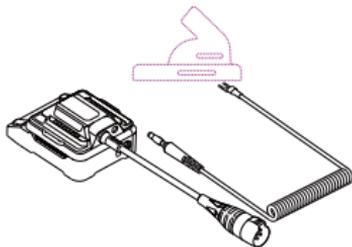
Problem 1: No display on the screen after MHP50 is powered on.

Check 1: Make sure to use a USB Type-C to Type-C cable that can withstand 5A current and a PD standard protocol power supply, or a DC 5525 power adaptor to power MHP50;

Check 2: Connect MHP50 to computer, see if computer has a USB connection or MHP50 enters DFU mode.

Problem 2: MHP50's temperature jumps between the preset temperature.

Check 1: If the soldering iron tip is used for the first time or stored in a humid environment,

Check 2: Is the soldering iron tip properly installed;

Check 3: Is the soldering iron tip in poor contact.

Problem 3: MHP50 restarts automatically.

Check 1: If the power supply is in good connection and can output normally;

Check 2: If the performance of the power adaptor meets the input standards.

Problem 4: Screen shows "LOW VOLT!"

Check 1: If the performance of the power adaptor meets the input standards.

Problem 5: Screen shows "NO PLATE!"

Check 1: Is the soldering iron tip is fully installed;

Check 2: Is the soldering iron tip is in good contact.

7.1 After-Sales Service

The MHP50 mini soldering station adapter provides a three-month free warranty service in the case of non-human damage. Please contact the seller for warranty service.

Soldering iron tips are consumables, once used, no replacement will be provided.

7.2 Firmware Upgrade

DFU (Device Firmware Upgrade) soft ware is a unique firmware upgrade software for e-Design products. User can easily upgrade product firmware via DFU software.

1.Visit www.e-design.com.cn and download the suitable MHP50 firmware (divided into UI and APP firmware) to your PC;

2.Hold MHP50's Button A and connect MHP50 to your PC with USB Type-C data cable, enter DFU mode. A display of "DFU Mode V1.00" will appear on MHP50's screen and a virtual disk "MHP50_DFU" will appear on your PC;

3.Copy the hex firmware to the root directory of that disk. When the extension of the firmware changes from "hex" to "rdy", disconnect USB to complete upgrade.

MHP50_DFU (G:)

MHP50_APP.hex   MHP50_APP.rdy
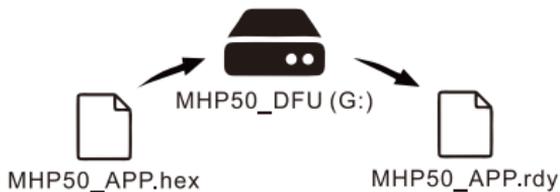
7.3 Changing Bootup Icon

1) Prepare a 160*80 pixel 16-bit (RGB565) BMP picture and set the file name to logoin.bmp;
2) Use a USB Type-C data cable to connect MHP50 controller to the computer and enter the virtual disk "MHP50_APP";
3) Copy the prepared picture to the root directory of the virtual disk and disconnect to complete the update.

08 Legal Statements

FC This device is complied with the regulation in the 15th part of FCC regulation. Operation is subject to the following two conditions:
(1) This device may not cause harmful interference.
(2) This device must accept any interference received, including the interference that may cause undesired operation.

CE The CE mark is a registered trademark of European Community. This CE mark shows that the product complies with all the relevant European Legal Directives.

UKCA UKCA (United Kingdom Conformity Assessed) mark is a certification mark for UK conformity. This device complies with the standard testing and certification under British regulations required for electrical and electronic products to enter theBritish market.

⚠ Please do not dispose of the product together with household garbage. Please handle it according to your local laws and regulations.

RoHS This product complies with the requirements of RoHS directive.