

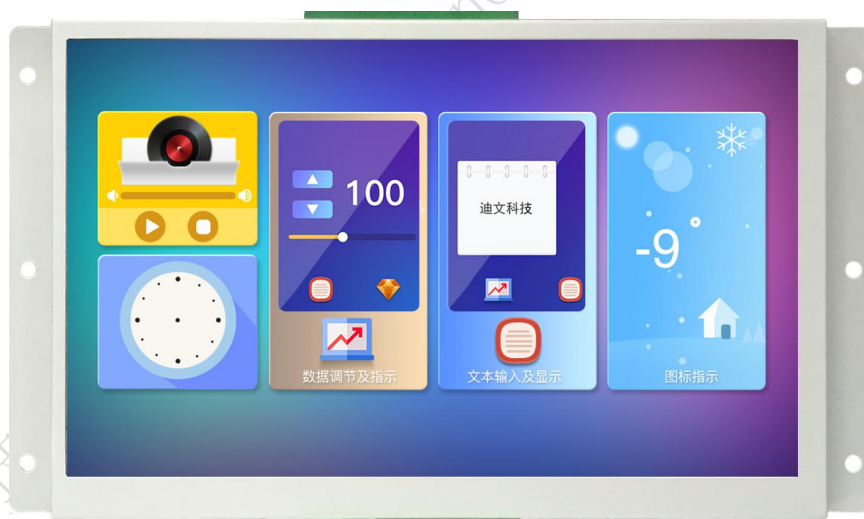
DMG80480L070_01WTR

产品特点:

- 基于 T5L1 芯片，支持 DGUS II 系统/标准指令集（TA），消费级产品。
- 7.0 英寸，800*480 分辨率，16.7M 色，TN 屏，普通视角。
- 电阻触摸屏。

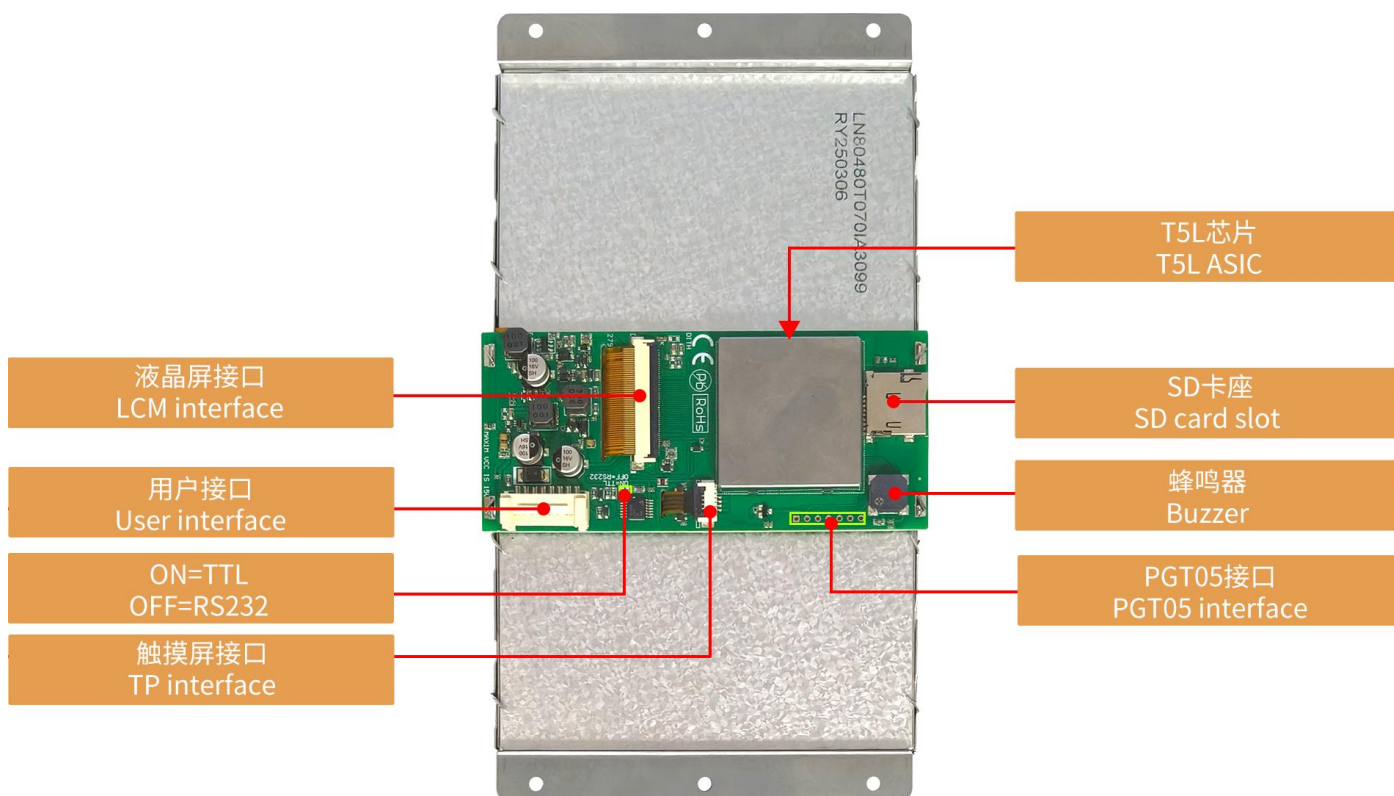
Features:

- Based on T5L1, Support DGUS II system/standard instruction set(TA), Consumption grade.
- 7.0-inch, 800*480 Pixels resolution, 16.7M Colors, TN-TFT-LCD, normal viewing angle.
- Resistive touch screen.



1、硬件及接口 Hardware and interface

1.1 硬件接口图 Hardware interface



1.2 硬件及接口说明 Hardware and interface description

序号 No.	名称 Name	说明 Description
1	T5L1 芯片 T5L1 ASIC	迪文自主研发，2019 年量产。芯片采用双 8051 核架构，GUI 和应用分别在一颗 8051 核中运行。 DWIN independently developed, mass production in 2019. Dual 8051 cores, GUI and application run on separate 8051 cores.
2	用户接口 User interface	用于供电和串口通讯，8Pin_2.0mm 座子。串口下载速率(典型值): 12KByte/s 8Pin_2.0mm socket for power supply and serial communication. Download rate(typical value): 12KByte/s
3	Flash	16Mbytes NOR Flash，可用于存放字库、图片、音乐等用户 UI 文件，擦写次数>100,000 次 16Mbytes NOR Flash, can be used to store user UI files such as fonts, images, music, etc., with erase/write cycles > 100,000 times
4	蜂鸣器 Buzzer	3V 无源蜂鸣器 3V passive buzzer
5	SD 卡座 SD card slot	用于 DGUS 工程文件下载 (UI 文件、CFG 文件、内核等)，下载速率: 4Mb/s。 For DGUS project file downloads (UI, CFG files, kernel, etc.), 4 Mb/s rate.
6	PGT05 接口 PGT05 interface	用于烧录 DGUS 底层程序。 For programming DGUS firmware.

2、规格参数 Specification parameters

2.1 显示参数 Display parameters

显示屏类型 LCD Type	TN, TFT LCD
视角 Viewing Angle	普通视角，典型值 70°/70°/50°/70° (L/R/U/D) Normal viewing angle, 70°/70°/50°/70° (L/R/U/D)
分辨率 Resolution	800×480 (支持 0°/90°/180°/270°显示模式) 800×480 pixels (0°/90°/180°/270°)
有效显示区域 Active Area (AA)	153.8mm (W) × 85.6mm (H)
可视区域 Viewing Area (VA)	156.4mm (W) × 88.5mm (H)
背光模式 Backlight Mode	LED
背光寿命 Backlight Service Life	>10000 小时 (以最高亮度连续工作，亮度减半时间) >10000 hours (Time of the brightness decaying to 50% on the condition of continuous working with the maximum brightness)
背光亮度 Brightness	200nit
背光调节 Brightness Control	100 级亮度调节 (当亮度调节至最高亮度的 1%~30%时，可能出现闪烁现象，不建议在此范围使用) 0~100 grade (When the brightness is adjusted to 1%~30% of the maximum brightness, flickering may occur and is not recommended to use in this range)
注：长时间固定画面显示可能导致屏幕残影，可以用动态图片切换做屏保解决。 Note: You can use dynamic screen saver wallpapers to avoid afterimages caused by fixed page display for a long time.	

2.2 触摸参数 Touch parameters

触摸屏类型 Type	电阻式触摸面板 RTP (Resistive touch panel)
触摸屏结构 Structure	ITO 膜+ITO 玻璃 ITO film + ITO glass
透光率 Light Transmittance	78%±3%

2.3 串口参数 Serial interface parameters

串口模式 Mode	串口电平选择跳线选择：（出厂默认 TTL/CMOS） ON=TTL/CMOS； OFF=RS232 兼容接口 Mode is determined by Jumper: (Default to TTL/CMOS mode) ON =TTL/CMOS; OFF=RS232				
串口电平 Voltage Level	测试条件 Test Condition	最小值 Min	典型值 Typ	最大值 Max	单位 Unit
	Output 1, Iout =-4mA	4.78	5.0	-	V
	Output 0, Iout = 4mA	-	-	0.4	V
	Input 1	2.5	5.0	-	V
	Input 0	-	-	1.0	V
串口波特率 Baud Rate	3150~3225600bps，典型值：115200bps 3150~3225600bps, typical value of 115200bps				
数据格式 Data Format	N81				
接口排线 Interface Cable	8Pin_2.0mm				

2.4 电气规格 Electrical specifications

额定功率 Rated Power	<5W	
工作电压 Operating Voltage	6.0~15.0V，典型值 12V 6.0~15.0V, typical value of 12V	
工作电流 Operating Current	200mA	VCC=12V，背光亮度最大 VCC=12V, max backlight
	80mA	VCC=12V，背光关闭 VCC=12V, backlight off
推荐工作电源：12V 1A 的直流稳压电源 Recommended power supply:12V 1A DC		

2.5 工作环境 Operating environment

工作温度 Operating Temperature	-20℃~70℃ (12V @ 60% RH)
存储温度 Storage Temperature	-30℃~80℃
三防漆工艺 Conformal coating	无 None
工作湿度 Operating Humidity	10%~90%RH，典型值 60%RH 10%~90%RH, typical value of 60% RH

2.6 UI 版本 UI

UI 版本 UI Version	TA/DGUS II（出厂预装 TA） TA/DGUS II (TA pre-installed)
---------------------	--

3、可靠性测试 Reliability test

3.1 静电放电测试 Electrostatic discharge test

测试环境温度：25°C，测试环境湿度：50%RH。

Test temperature: 25°C. Test humidity: 50%RH.

试验过程：将产品平置于测试台上，针对串口屏铁框和显示区域依次进行接触和空气放电，如下图 3.1 所示；实验过程观察屏幕有无死机、黑屏、白屏、花屏、重启等异常现象。性能符合判据 GB/T 17626.2 B 级及以上。

Test process: the product was placed on the test bench to perform contact and air discharge in turn of the serial screen iron frame and display area as shown in Fig.3.1 below. During the experimental process, it was observed whether the screen is dead, black, white, splash, or reboot. According to the experiment results, the performance is in line with the criteria GB/T 17626.2 B level and above.

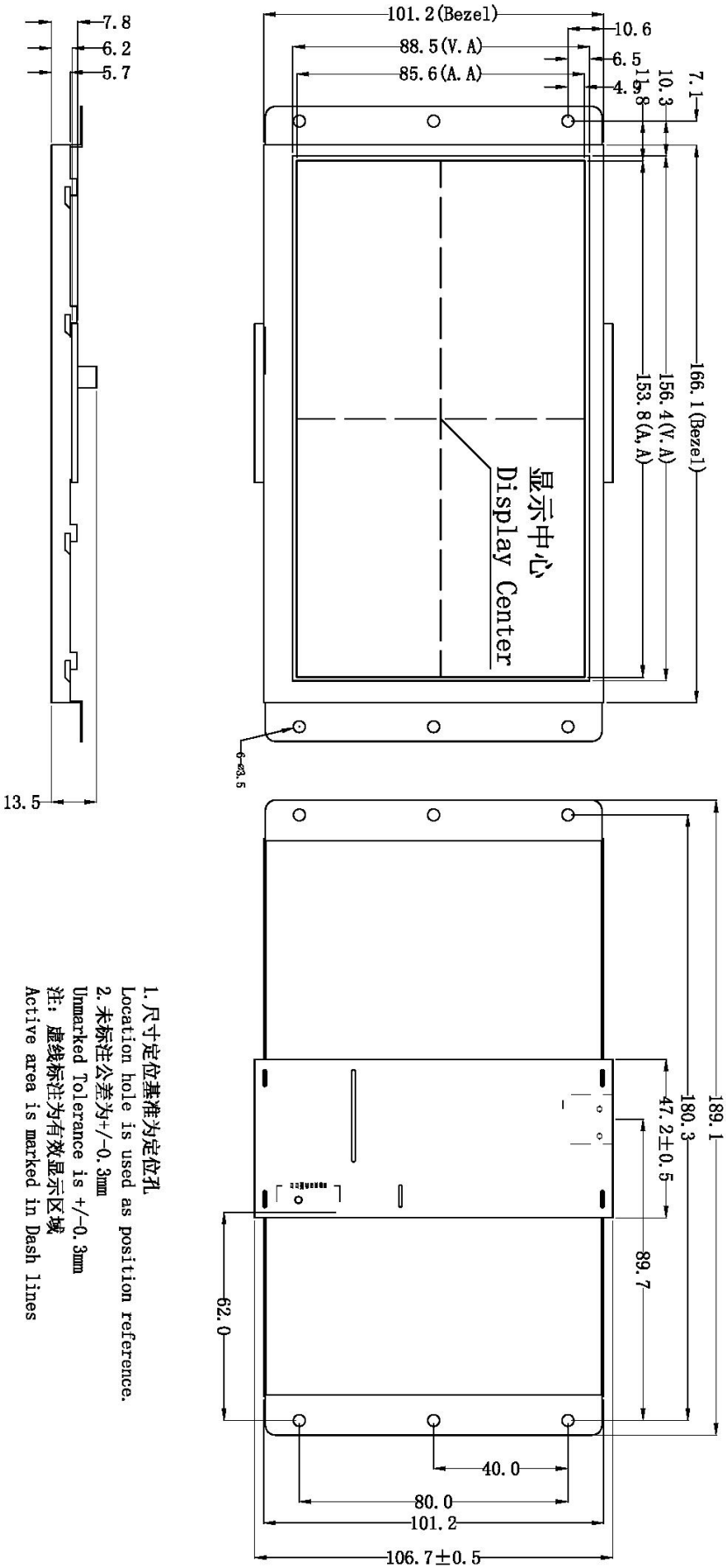


3.1 静电放电测试图
Electrostatic discharge test

放电类型 Discharge Type	放电值 Discharge Value	结果 Result
接触放电 Contact discharge	±4KV	正常工作 Normal operation
空气放电 Air discharge	±4KV	正常工作 Normal operation

4、包装和物理尺寸 Packaging & dimensions

外形尺寸 Form Factor	189.1mm (W)×106.7mm (H)×13.5mm (T)			
安装尺寸 Installation Dimensions	开孔尺寸: 166.1 (+0.3mm) ×101.2 (+0.3mm) Positioning hole: 166.1(+0.3mm)×101.2(+0.3mm)			
净重量 Net Weight	215g			
包装标准 Packaging Standards				
包装箱型号 Model	包装箱尺寸 Dimensions	层数 (层) Layer	数量/层 (片) Quantity/Layer	总数量 (片) Quantity(Pcs)
1 号箱 Carton1:	220mm(L)×160mm(W)×47mm (H)	-	-	-
2 号箱 Carton2:	250mm(L)×200mm(W)×80mm (H)	2	1	2
3 号箱 Carton3:	320mm(L)×270mm(W)×80mm (H)	2	2	4
4 号箱 Carton4:	435mm(L)×335mm(W)×290mm(H)	1	10	10
5 号箱 Carton5:	600mm(L)×430mm(W)×290mm(H)	1	40	40



1. 尺寸定位基准为定位孔
Location hole is used as position reference.
2. 未标注公差为 $\pm 0.3\text{mm}$
Unmarked Tolerance is $\pm 0.3\text{mm}$
注: 虚线标注为有效显示区域
Active area is marked in Dash lines

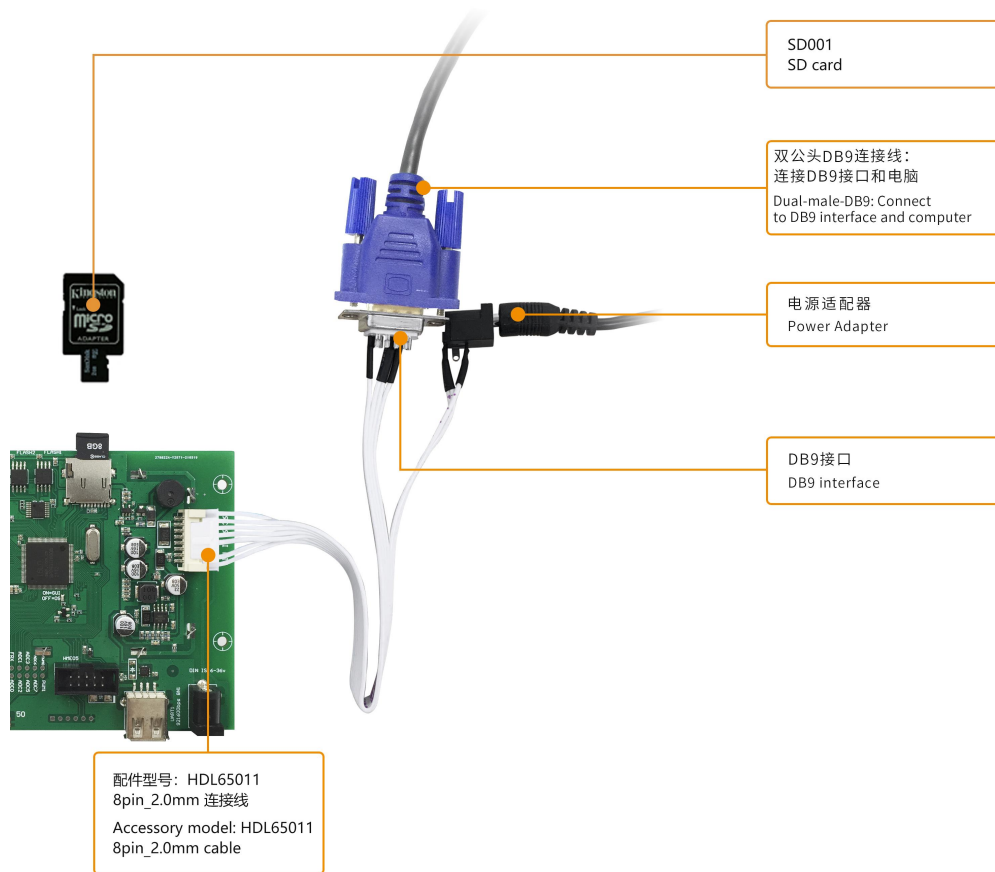
定义 Definition	序号 Pin#	类型 Type	说明 Description
GND	1, 2	P	公共接地/GND
RXD	3, 4	I	迪文串口输入DIN
TXD	5	O	迪文串口输出DOUT
BUIZY	6	-	未定义/Not Defined
VIN	7, 8	P	电源输入 /Power Input

型号	DMG80480L070_01WTR				北京迪文科技 Beijing DWIN Technology Co.Ltd	
图 纸	A 4	图 纸	DWIN	日期		
比 例		审 核		日期		
单 位	MM	批 准		日期		

5、调试工具 Debugging tools

建议首次使用迪文智能屏的用户购买标准配件。详细信息可联系客服人员。

It is recommended for new users of DWIN smart LCMs to purchase official accessories. For more details, please refer to customer service center.



6、T5L 系列芯片特点 T5L series IC features

(1) 采用应用最广泛、成熟和稳定的 8051 核，1T（单指令周期）高速工作，最高主频 250MHz。

Mature and stable 8051 core which is the most widely used with the maximum operating frequency of T5L is up to 250MHz, 1T(single instruction cycle)high speed operation.

(2) 单独 CPU 核（GUI CPU）运行 DGUS II 系统：

Separate GUI CPU Core running DGUS II System:

- 内置高速显存，2.4GB/S 带宽。

High-speed display memory, 2.4GB/S bandwidth.

- 2D 硬件加速，JPEG 解压缩速度高达 200fps@1280*800，UI 极其流畅。

2D hardware acceleration, the decompression speed of JPEG is up to 200fps@1280*800 and the UI with animation and icons as its main feature is extremely cool and smooth.

- JPEG 压缩模式存储图片、图标，大幅度缩小外置存储器到低成本的 16Mbytes SPI Flash。

Images and icons stored in JPEG format. Adopt Low-cost 16Mbytes SPI Flash.

- 支持电阻或电容触摸屏，灵敏度可以调节，最快 400Hz 触控打点速度。

Support CTP or RTP with adjustable sensitivity and maximum 400 Hz touch frequency.

- 1 路 15bit 32Ksps PWM 数字功放驱动扬声器，实现高品质语音压缩存储和播放。

1-way 15bit 32Ksps PWM digital power amplifier driver loudspeaker, save power amplifier cost and achieve high signal-to-noise ratio and sound quality restoration.

- 128Kbytes 变量存储器空间，存储器接口和 OS CPU 核交换数据，应用及其简单。

128Kbytes variable storage space for exchanging data with OS CPU Core and memory.

- 支持 PC 端组态开发和仿真，支持后台远程升级。

Support DGUS development and simulation on PC. Support background remote upgrade.

(3) 单独 CPU 核（OS CPU）运行用户 8051 代码，应用中省掉用户 CPU：

Separate CPU (OS CPU) core runs user 8051 code or DWIN OS system and user CPU is omitted in practical application:

- 标准 8051 架构和指令集，64Kbytes 代码空间，32Kbytes 片内 RAM。

Standard 8051 architecture and instruction set, 64Kbytes code space, 32Kbytes on-chip RAM.

- 64bit 整数型数学运算单元（MDU），包括 64bit MAC 和 64bit 除法器。

64 bit integer mathematical operation unit (MDU), including 64 bit MAC and 64 bit divider.

- 28 个 IO，4 路 UARTs，1 路 CAN 接口，最多 8 路 12bit A/D，2 路 16bit 分辨率可调的 PWM。

28 IOs, 4-channel UARTs, 1-channel CAN, up to 8-channel 12-bit A/Ds and 2-channle 16-bit PWM of adjustable resolution.

- 支持 IAP 在线仿真和调试，断点数量无限制。

Support IAP on-line simulation and debugging with unlimited number of breakpoints.

- 可以透过 DGUS 系统在线升级代码。

Upgrade code online through DGUS system.

- (4) 1Mbytes 片内 Flash, 迪文专利加密技术, 确保代码和数据安全, 杜绝山寨和克隆。

1Mbytes on-chip Flash with DWIN patent encryption technology ensure code and data security.

- (5) $-40^{\circ}\text{C} \sim +85^{\circ}\text{C}$ 工作温度范围 (可定制 $-55^{\circ}\text{C} \sim 105^{\circ}\text{C}$ 工作温度范围 IC)。

Operating temperature ranges from -40°C to $+85^{\circ}\text{C}$ (IC operating temperature customizable from -55°C to 105°C).

迪文欢迎广大用户基于 T5L 自主设计客制化产品。

DWIN encourages users to design your own customized product based on T5L.

7、修订记录 Revision records

版本 Rev	日期 Revise Date	描述 Content	编辑人 Editor
00	2019-01-14	首次发布 First Edition	ZK
01	2019-01-28	修改工作温度 Modify Working Temperature	ZK
02	2019-12-09	修改工作电压 Modify Power Voltage	ZK
03	2021-11-04	升级版本 Upgrade version	郑运佳
04	2022-11-14	修改尺寸说明 Modify dimension description	郑运佳
05	2025-08-06	蜂鸣器变更，更新实物图 Buzzer change, update physical image	郑运佳

使用本文档或迪文产品过程中如存在任何疑问，或欲了解更多迪文产品最新信息，请及时与我们联系：

Please contact us if you have any questions about the use of this document or our products, or if you would like to know the latest information about our products:

客服电话 Customer service Tel: 400 018 9008

客服 QQ Customer service QQ: 400 018 9008



企业微信 WeCom:

客服邮箱 Customer service email: dwinhmi@dwin.com.cn

迪文开发者论坛 DWIN Developer Forum: <http://inforum.dwin.com.cn:20080/forum.php>

感谢大家一直以来对迪文的支持，您的支持是我们进步的动力！

Thank you all for continuous support of DWIN, and your approval is the driving force of our progress!

重要声明

Important Disclaimer

迪文有权进行产品设计的任何改善或变更，且不另行单独通知客户。

客户应自行确保在产品应用过程中严格遵循所有相关标准及其他要求，包括但不限于功能安全、信息安全及监管等方面的规定。

对于客户在其产品中采用迪文产品可能引发的任何后果，迪文不承担连带责任。特别地，对于可能导致的重大财产损失、环境危害、人身伤害甚至死亡等风险，尤其是在军事、易燃易爆、生命医疗设备等高风险应用领域，客户应自行评估风险，并采取相应的预防和保护措施，迪文不承担相关责任。

DWIN reserves the right to make any changes to product designs without prior notice.

Customers should ensure strictly adhering to all the relevant standards and requirements during the product application process, including but not limited to functional safety, information security, and regulatory provisions.

DWIN shall not bear any joint and several liability for any consequences that may arise from customers' adoption of DWIN products. In particular, for risks that may lead to significant property losses, environmental hazards, personal injury, or even death, especially in high-risk application areas such as military applications, flammable and explosive places, and life-saving medical equipment, customers should independently assess the risks and take corresponding preventive and protective measures. DWIN shall not bear any relevant responsibility.