Represented by:
FIRST Components s.r.l.
www.first-components.com
technical@first-components.com
+39 0332 1888005

DMG80480T070_41WTC

Features:

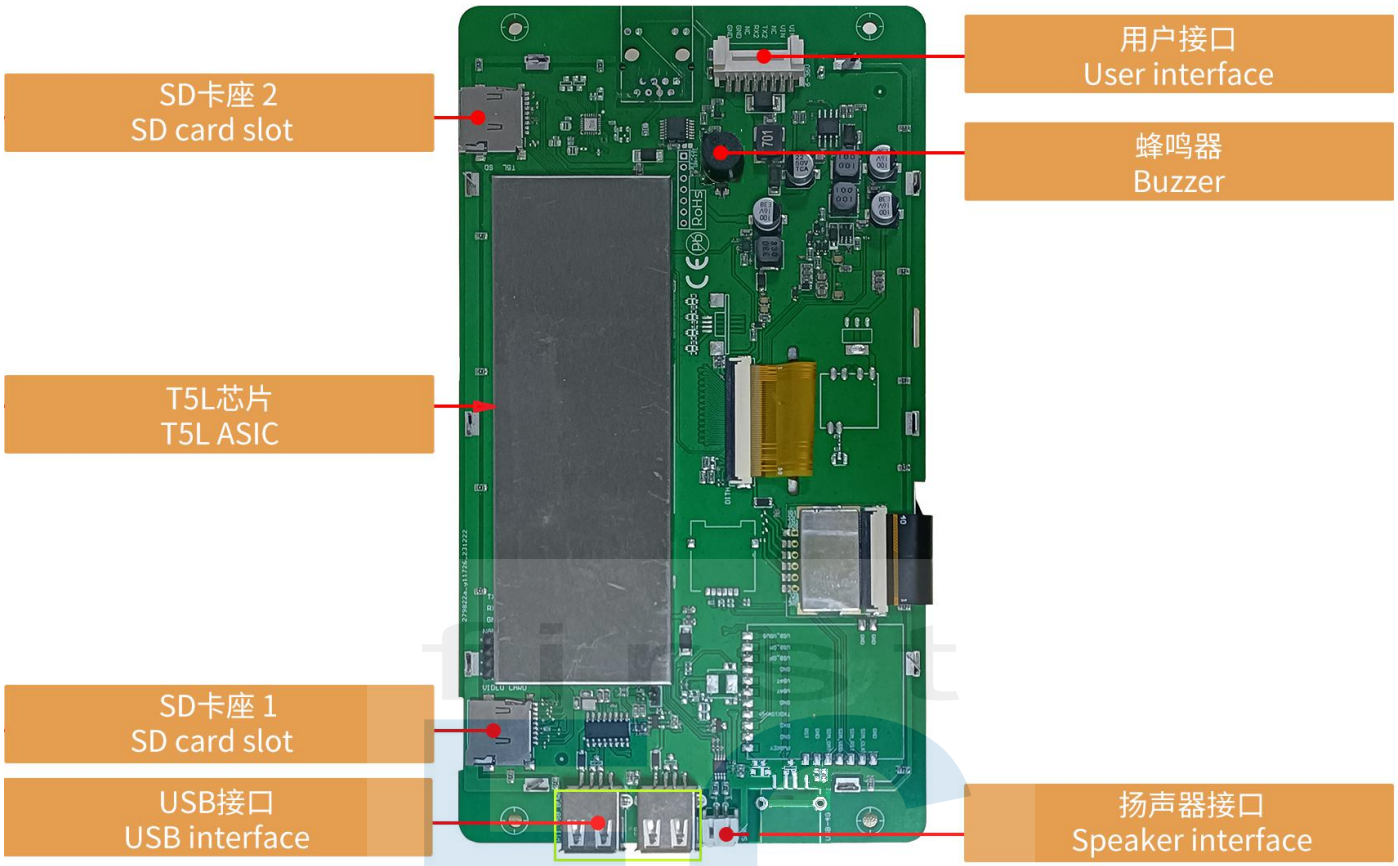
- **Based on the T5L2 ASIC CPU, running the DGUSII human-machine interaction software platform, smart LCM for industrial-grade applications.**
- **7.0-inch, 800*480 pixels resolution, 16.7 M colors true-color display, TN TFT display.**
- **High-reliability capacitive touch panel suitable for industrial environments.**
- **Digital signal multimedia solution screen.**
- **Support image, audio, and video playback, as well as USB camera video recording and screen capture function.**
- **Support extended remote video updates and network camera function.**



迪文科技 技术文档 DWIN Technology Technical Document

1、硬件及接口 Hardware and interface

1.1 硬件接口图 Hardware interface



硬件接口图
Hardware interface

迪文科技 技术文档 DWIN
first components

1.2 硬件及接口说明 Hardware and interface description

序号 No.	名称 Name	说明 Description
1	T5L2 芯片 T5L2 ASIC	迪文自主研发，2019 年量产；专利加密技术，确保代码和数据安全；功耗低，抗干扰能力强，双面 PCB 设计上轻松通过 EMC/EMI 测试。 DWIN independently developed, mass production in 2019; patented encryption technology ensures code and data security; low power consumption, strong anti-interference capability, easily passes EMC/EMI tests with dual-sided PCB design.
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	NOR Flash	32MBytes (2 颗 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。 32MBytes (2*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	NAND Flash	512Mbytes，用于存储 R11 固件。 512Mbytes, used to store R11 firmware.
5	蜂鸣器 Buzzer	3V 无源蜂鸣器。 3V passive buzzer.
6	SD 卡座 1 SD card slot 1	支持 SD 卡图片、音频、视频播放。还可用于导出摄像头截图文件（JPEG）或录像文件（MP4）。 Supports SD card image, audio, and video playback. It can also be used to export camera screenshot files (JPEG) or video files (MP4).
7	SD 卡座 2 SD card slot 2	支持所有文件（用户 UI 文件、CFG 硬件配置文件、底层内核固件）下载，屏幕显示下载统计信息，下载速率：4Mb/s。下载文件时，SD 卡需格式化为 FAT32 格式，推荐块大小为 4096。 Supports downloading of all files (user UI files, CFG files, underlying kernel firmware), displays download statistics on the screen, download rate: 4 Mb/s. When downloading files, the SD card needs to be formatted in FAT32 format, with a recommended allocation unit size of 4096.
8	扬声器接口 Speaker	2Pin_2.0mm 接口，外接扬声器。 2Pin_ 2.0mm interface, external speaker.
9	USB 接口 USB interface	R11_USB：卧式 USB 接口，用于固件烧录。 USB 接口：卧式 USB 接口，可外接 USB 摄像头或播放 U 盘文件。 R11_USB: Horizontal USB interface, Used for firmware burning. USB interface: Horizontal USB interface, can connect to USB camera or play USB files.
10	预留模块焊盘 Reserved module solder pads	本产品预留了 4G 模块焊盘、以太网接口（RJ45 座子）焊盘、WIFI 模块焊盘。可拓展远程更新视频功能，网络摄像头功能，如有相关需求与对应业务沟通。 This product has reserved 4G modules, Ethernet interfaces (RJ45 socket), and WIFI module pads. Expandable remote update video function and network camera function, communicate with corresponding business if there are related needs.

迪文科技技术文件 DWIN Technologies Technical Documents

2、规格参数 Specification parameters

2.1 显示参数 Display parameters

显示屏类型 **LCD Type**	TN 工艺 TFT 显示屏。 TN process TFT display screen.
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 (support 0°/90°/180°/270°)
色彩 **Color**	16.7M 色（24 位 8R8G8B） 16.7M color (24-bit 8R8G8B)
AA 区 **Active Area (A.A.)**	154.08mm (W)×85.92mm (H)
VA 区 **View Area (V.A.)**	154.08mm (W)×85.92mm (H)
接口 **Interface**	RGB
背光模式 **Backlight Mode**	LED
背光寿命 **Backlight Service Life**	>30000 小时（以最高亮度连续工作，亮度减半时间） >30000 hours (Time of the brightness decaying to 50% on the condition of continuous working with the maximum brightness)
背光亮度 **Brightness**	250nit
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**	电容式触摸面板 CTP (Capacitive touch panel)
接口 **Interface**	I^2C
触摸屏结构 **Structure**	G+G 结构，表面盖板为钢化玻璃 G+G structure with surface cover of tempered glass
触摸方式 **Touch Mode**	单点触摸，支持连续滑动触摸 Support point touch and drag
表面硬度 **Surface Hardness**	6H
透光率 **Light Transmittance**	>85%
触控次数 **Life**	>1,000,000 次 Over 1,000,000 times touch

First Components
技术支持 DWIN Technologies Technical Document

2.3 串口参数 Serial interface parameters

串口模式 Mode	UART2: 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	UART2: N81				
接口排线 Interface Cable	8Pin_2.0mm				

2.4 电气规格 Electrical specifications

额定功率 Rated Power	<3W	
工作电压 Operating Voltage	9~36V，典型值 12V 9~36V, typical value of 12V	
工作电流 Operating Current	230mA	VCC=12V，背光亮度最大 VCC=12V, max backlight
	90mA	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	有 Yes
工作湿度 Operating Humidity	10%~90%RH，典型值 60%RH 10%~90%RH, typical value of 60% RH

First Components 技术文档 DWIN Technologies Technical Document

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；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. 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.

■ Test standard : ☐EN 61000-4-2:2009 ☐IEC 61000-4-2:2008 ☐GB/T 17626.2-2018

☐Other:

Table 1: Electrostatic Discharge Immunity (Air Discharge)

Test Points Locations	Test Levels							
	-2kV	+2kV	-4kV	+4kV	-8kV	+8kV	-15kV	+15kV
屏幕					△	△		

Table 2: Electrostatic Discharge Immunity (Direct Contact)

Test Points Locations	Test Levels							
	-2kV	+2kV	-4kV	+4kV	-6kV	+6kV	-8kV	+8kV
边框					△	△		

迪文科技 技术文档 First Document components

3.2 电快速瞬变脉冲群 EFT 测试 EFT 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.

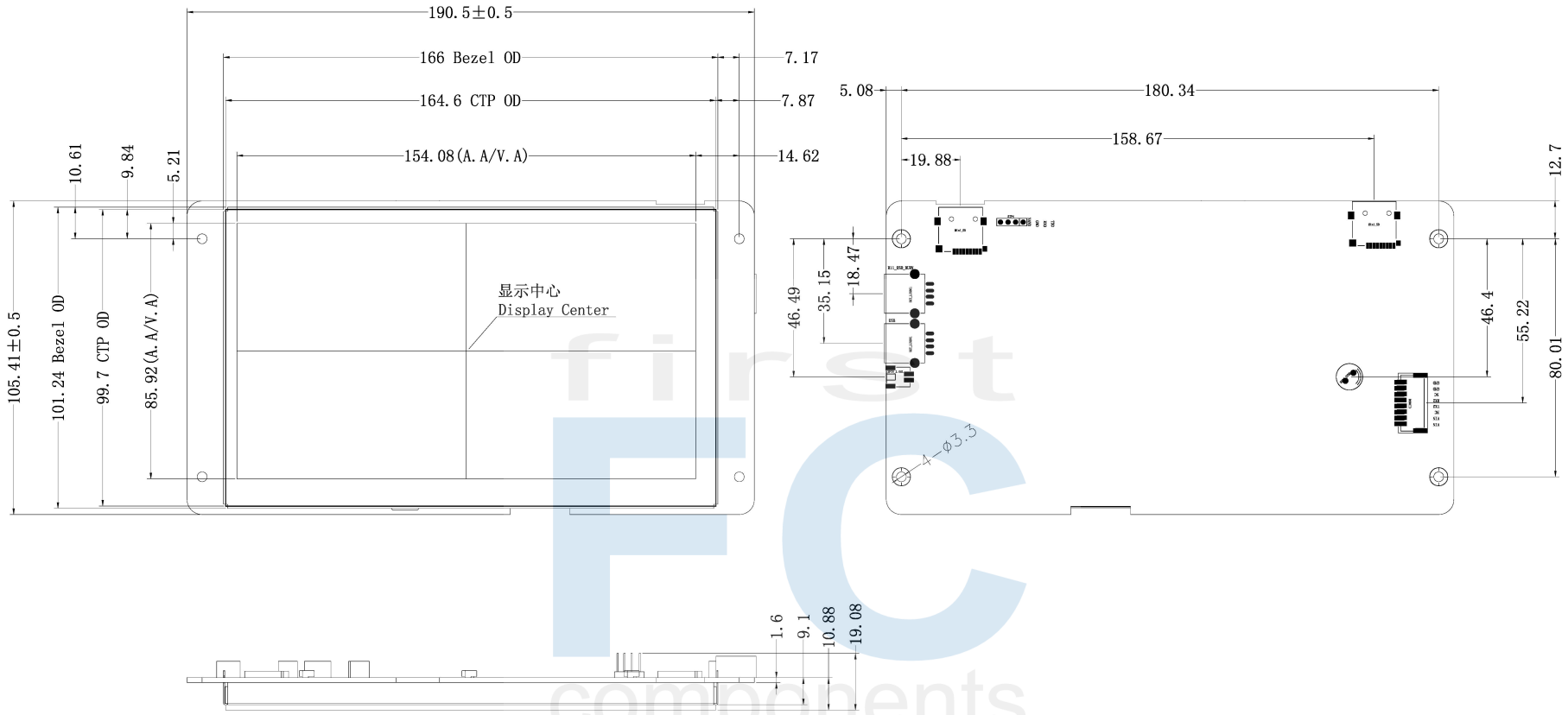
试验过程：将产品平置于测试台上，通过脉冲群发生仪耦合脉冲群后的电源对智能屏进行供电如下图 3.2 所示；实验过程观察屏幕是否出现复位重启、异常显示、触摸异常等现象，性能符合 GB/T 17626.4 B 级及以上。

Test process: the product was placed on the test bench to perform contact and the smart screen is energized by the power supply coupled with a EFT generator as shown in Fig. 3.2 below. During the experimental process, it was observed whether abnormal reset, display or touch phenomena occurs. According to the experiment results, the performance is in line with the criteria GB/T 17626.4 B level and above.

■ Test standard : ☐EN 61000-4-4:2012 ☑IEC 61000-4-4:2012 ☐GB/T 17626.4-2018
☐Other:

Test Points		Test Levels(kV)							
		-0.5	+0.5	-1.0	+1.0	-2.0	+2.0	-4.0	+4.0
Power ports (-DC)	L	A	A	A	A	A	A	/	/
	N	A	A	A	A	A	A	/	/
	Earth	/	/	/	/	/	/	/	/
	L+N	A	A	A	A	A	A	/	/
	L + Earth	/	/	/	/	/	/	/	/
	N + Earth	/	/	/	/	/	/	/	/
	L+N+Earth	/	/	/	/	/	/	/	/
Signal ports	____/__	/	/	/	/	/	/	/	/

迪文科技 技术文档 Document
first components



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+/-0.3mm
Unmarked Tolerance is +/-0.3mm
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
VIN	1,2	P	电源输入 Power Input
NC	3	-	未定义 Undefined
TX2	4	O	串口2输出 Output
RX2	5	I	串口2输入 Input
NC	6	-	未定义 Undefined
GND	7,8	P	公共接地 GND

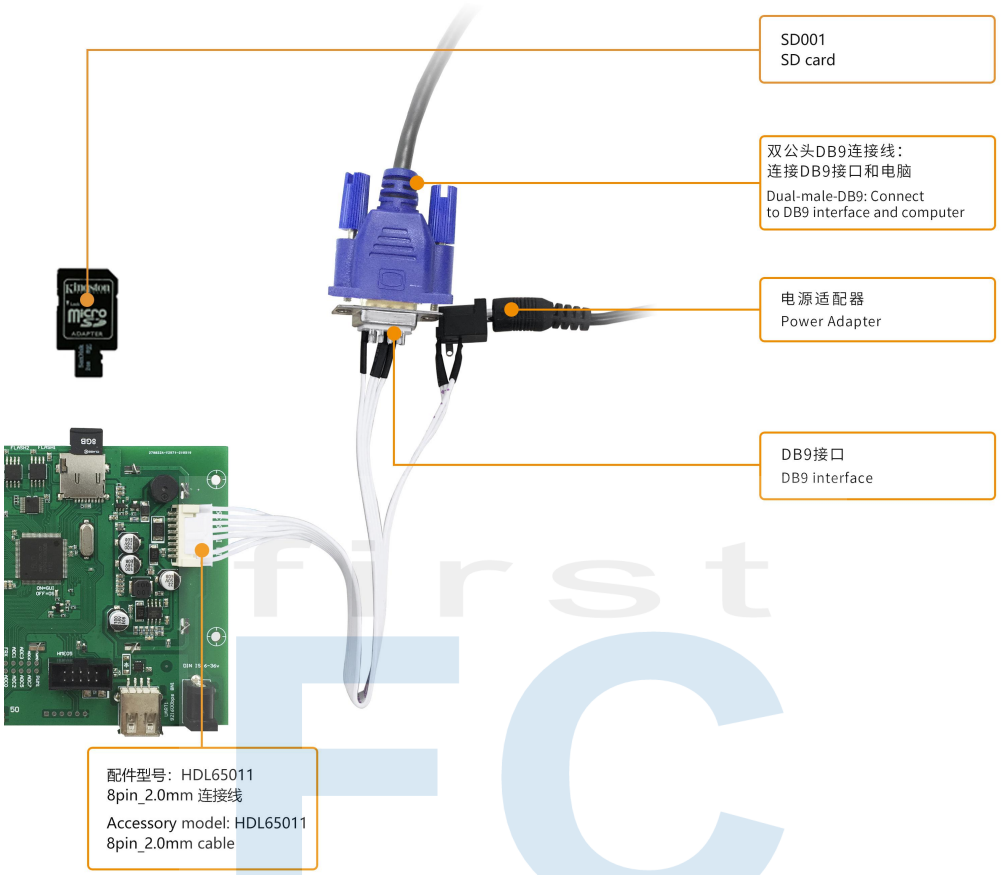
型号 Model	DMG80480T070_41WTC				
图纸 Drawing	A 4	绘制 Drawn	DWIN	日期 Date	2023.01.24
比例 Scale	1:1	审核 Review		日期 Date	
单位 Unit	MM	批准 Approval		日期 Date	

迪文科技
DWIN Technologies

4、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.



迪文科技 技术文档

5、修订记录 Revision records

版本 Rev	日期 Revise Date	描述 Content	编辑人 Editor
00	2024-01-25	首次发布 First Edition	郑运佳
01	2024-03-26	更新 FLASH 参数 Update FLASH parameters	郑运佳
02	2024-09-10	更新供电电压 Modify Power Voltage	赵方维

DWIN Developer Forum: https://forums.dwin-global.com/index.php/forums/

first FC components
+39 0332 1888005
+39 0332 320856
info@first-components.com
Via 2 Giugno, 20 – 21022 Azzate (VA) Italy
VAT number IT02764420127
REA Varese 285686
Social capital fully paid 100.000€
迪文科技 技术文档 DWIN Technical Document