

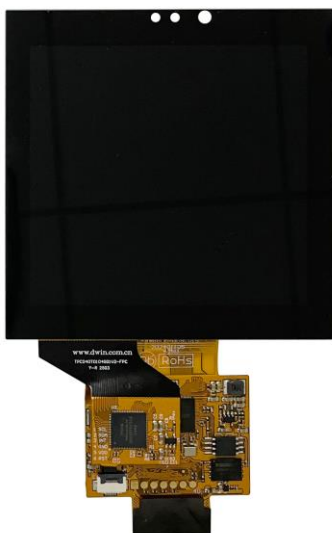
# TC48480C040\_08WTCZ03

## 产品概述:

- 基于 T5F0 ASIC，运行 DGUS II 人机交互软件平台。
- 4 英寸，480\*480 分辨率，IPS 液晶显示屏。
- 基于 TPS04，高可靠性全贴合工艺电容触摸屏。
- 温控器专用 COF 屏，适配 4 英寸超薄系列外壳。

## Features:

- Powered by T5F0 ASIC, running DGUS II HMI platform.
- 4 inch, 480\*480 resolution, IPS-TFT-LCD.
- Power by TPS04, reliable OCA bonded capacitive touch panel.
- COF screen dedicated for thermostats, compatible with 4-inch ultra-slim housing.



## 1 接口定义 Pin Configuration

| 序号<br>Pin# | CPU | 功能 1<br>Function 1 | 说明<br>Description                   | 功能 2<br>Function 2 | 说明<br>Description                       |
|------------|-----|--------------------|-------------------------------------|--------------------|-----------------------------------------|
| 1          | -   | GND                | 公共地<br>GND                          |                    |                                         |
| 2          | -   | GND                | 公共地<br>GND                          | -                  |                                         |
| 3          | OS  | P1.1               | I/O                                 |                    |                                         |
| 4          | OS  | P1.2               | I/O                                 |                    |                                         |
| 5          | OS  | P1.3               | I/O                                 |                    |                                         |
| 6          | OS  | P1.4               | I/O                                 |                    |                                         |
| 7          | OS  | P0.3               | I/O                                 | CRX                | CAN 接口数据发送<br>CAN data transmission     |
| 8          | OS  | P0.2               | I/O                                 | CTX                | CAN 接口数据接收<br>CAN data reception        |
| 9          | OS  | P3.6               | I/O                                 | FTX                | FSK 收发器数据发送<br>FSK data transmission    |
| 10         | OS  | P3.7               | I/O                                 | FRX                | FSK 收发器数据接收<br>FSK data reception       |
| 11         | GUI | ADC1               | 模拟-数字转换<br>Analog-Digital Convertor |                    |                                         |
| 12         | OS  | P1.5               | I/O                                 |                    |                                         |
| 13         | OS  | P1.0               | I/O                                 |                    |                                         |
| 14         | GUI | ADC2               | 模拟-数字转换<br>Analog-Digital Convertor |                    |                                         |
| 15         | -   | 3.3V               | 3.3V 输出<br>3.3V output              |                    |                                         |
| 16         | OS  | P3.5               | I/O                                 | PWM3               | PWM3 输出<br>PWM3 output                  |
| 17         | OS  | P3.2               | I/O                                 | PWM0               | PWM0 输出<br>PWM0 output                  |
| 18         | OS  | P3.0               | I/O                                 | EX0                | 外部中断 0 输入<br>External interrupt 0 input |
| 19         | OS  | P3.1               | I/O                                 | EX1                | 外部中断 1 输入<br>External interrupt 1 input |
| 20         | OS  | P0.5               | I/O                                 | RX2                | 串口 2 数据接收<br>UART2 data reception       |
| 21         | OS  | P0.4               | I/O                                 | TX2                | 串口 2 数据发送<br>UART2 data transmission    |
| 22         | OS  | P3.3               | I/O                                 | PWM1               | PWM1 输出<br>PWM1 output                  |
| 23         | OS  | P3.4               | I/O                                 | PWM2               | PWM2 输出<br>PWM2 output                  |
| 24         | OS  | P0.7               | I/O                                 | RX5                | 串口 5 数据接收<br>UART5 data reception       |
| 25         | OS  | P0.6               | I/O                                 | TX5                | 串口 5 数据发送                               |

|    |     |        |                                                                                                                                                                                         |     |                                          |
|----|-----|--------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----|------------------------------------------|
|    |     |        |                                                                                                                                                                                         |     | UART5 data transmission                  |
| 26 | OS  | P0.1   | I/O                                                                                                                                                                                     | RX4 | 串口 4 数据接收<br>UART4 data reception        |
| 27 | OS  | P0.0   | I/O                                                                                                                                                                                     | TX4 | 串口 4 数据发送<br>UART4 data transmission     |
| 28 | GUI | ADC6   | 模拟-数字转换<br>Analog-Digital Convertor                                                                                                                                                     |     |                                          |
| 29 | GUI | ADC7   | 模拟-数字转换<br>Analog-Digital Convertor                                                                                                                                                     |     |                                          |
| 30 | -   | VBAT   | RTC 备用电源<br>backup power for RTC                                                                                                                                                        |     |                                          |
| 31 | GUI | PWM_DA | 音乐播放的 PWM DA 信号, 频率 32KHz, 需外接 RC 滤波网络转换成模拟信号后接功放。<br>32kHz PWM DA signal for audio. Use an RC filter to convert the signal into an analog form and then fed it to the power amplifier. |     |                                          |
| 32 | GUI | VCC_EN | 电源使能<br>Power                                                                                                                                                                           |     |                                          |
| 33 | GUI | SD-CLK | SD 卡时钟<br>SD Clock                                                                                                                                                                      | TX1 | 调试串口数据发送<br>Debug UART data transmission |
| 34 | GUI | SD-CMD | SD 卡命令<br>SD Command                                                                                                                                                                    | RX1 | 调试串口数据接收<br>Debug UART data reception    |
| 35 | GUI | SD-D0  | SD 卡数据传输<br>SD Data                                                                                                                                                                     |     |                                          |
| 36 | GUI | SD-D1  | SD 卡数据传输<br>SD Data                                                                                                                                                                     |     |                                          |
| 37 | GUI | SD-D2  | SD 卡数据传输<br>SD Data                                                                                                                                                                     |     |                                          |
| 38 | GUI | SD-D3  | SD 卡数据传输<br>SD Data                                                                                                                                                                     |     |                                          |
| 39 | -   | +5V    | 电源<br>Power                                                                                                                                                                             |     |                                          |
| 40 | -   | +5V    | 电源<br>Power                                                                                                                                                                             | -   |                                          |

## 2 规格参数 Specification Parameters

### 2.1 产品参数 Product Parameters

|                                                                                                                               |                                                                                                                                                                                |
|-------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 主控芯片<br>Main Chip                                                                                                             | T5F0                                                                                                                                                                           |
| 用户接口方式<br>User Interface                                                                                                      | 40Pin_0.5mm FPC                                                                                                                                                                |
| FLASH                                                                                                                         | 16Mbytes NOR Flash + 64Mbytes NAND Flash                                                                                                                                       |
| UI 版本<br>UI Version                                                                                                           | DGUS II / TA                                                                                                                                                                   |
| 尺寸<br>Dimensions                                                                                                              | 4 英寸<br>4 inch                                                                                                                                                                 |
| 分辨率<br>Resolution                                                                                                             | 480*480                                                                                                                                                                        |
| 有效显示区域<br>Active Area (AA)                                                                                                    | 71.86mm (W)×70.18mm (H)                                                                                                                                                        |
| 可视区域<br>Viewing Area (VA)                                                                                                     | 71.86mm (W)×67.96mm (H)                                                                                                                                                        |
| 视角<br>Viewing Angle                                                                                                           | 视角宽（典型值是 85°/85°/85°/85°），对比度高、色彩还原好。<br>Wide viewing angle (85°/85°/85°/85° typical), high contrast, and good color reproduction.                                             |
| 背光寿命<br>Backlight Service Life                                                                                                | >20000 小时<br>>20000 hours                                                                                                                                                      |
| 亮度<br>Brightness                                                                                                              | 250nit                                                                                                                                                                         |
| 亮度调节<br>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）<br>100-level brightness adjustment (Flickering may occur at 1%-30% of max brightness; not recommended for use in this range) |
| 注：长时间显示固定画面可能导致残影现象，建议设置动态屏保进行规避。<br>Note: Use dynamic screen saver to prevent afterimages from prolonged fixed page display. |                                                                                                                                                                                |
| 触摸屏类型<br>Type                                                                                                                 | 电容式触摸面板。<br>CTP (Capacitive Touch Panel).                                                                                                                                      |
| 触摸屏结构<br>Structure                                                                                                            | G+G 结构，表层为钢化玻璃，玻璃硬度≥6H。<br>G+G structure with tempered glass surface and hardness ≥ 6H.                                                                                        |
| 透光率<br>Light Transmittance                                                                                                    | >85%                                                                                                                                                                           |

## 2.2 串口参数 Interface Parameters

| 参数<br>Item                          | 测试条件<br>Conditions                                                                                                                                                                                                   | 最小值<br>Min | 典型值<br>Typ | 最大值<br>Max | 单位<br>Unit |
|-------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------|------------|------------|------------|
| 串口波特率<br>Baud rate<br>(UART1)       | 固定值<br>Fixed Value                                                                                                                                                                                                   | -          | 921600     | -          | bps        |
| 串口波特率<br>Baud rate<br>(UART2, 4, 5) | 用户自定义（硬件配置文件设置）<br>User Set(Configure the CFG file)                                                                                                                                                                  | 3150       | 115200     | 3225600    | bps        |
| 串口输出电平<br>Output Voltage<br>(TXD)   | Output 1                                                                                                                                                                                                             | 3.0        | 3.3        | -          | V          |
|                                     | Output 0                                                                                                                                                                                                             | -          | 0          | 0.3        | V          |
| 串口输入电平<br>Input Voltage<br>(RXD)    | Input 1                                                                                                                                                                                                              | -          | -          | 3.3        | V          |
|                                     | Input 0                                                                                                                                                                                                              | 0          | -          | 0.5        | V          |
| 串口模式<br>Interface                   | UART1: TTL;<br>UART2: TTL;<br>UART4: TTL;<br>UART5: TTL;                                                                                                                                                             |            |            |            |            |
| 数据格式<br>Data Format                 | UART1: N81/E81/O81/N82;四种模式可选（OS 配置） 4 modes (OS configuration)<br>UART2: N81;<br>UART4: N81/E81/O81/N82;四种模式可选（OS 配置） 4 modes (OS configuration)<br>UART5: N81/E81/O81/N82;四种模式可选（OS 配置） 4 modes (OS configuration) |            |            |            |            |

## 2.3 电气规格 Electrical Specifications

|                                                                  |                                                    |                                          |
|------------------------------------------------------------------|----------------------------------------------------|------------------------------------------|
| 额定功率<br>Rated Power                                              | <2W                                                |                                          |
| 工作电压<br>Operating Voltage                                        | 4.5~5.5V，典型值 5V。<br>4.5~5.5V, typical value of 5V. |                                          |
| 工作电流<br>Operating Current                                        | 330mA                                              | VCC=5V，背光亮度最大。<br>VCC=5V, max backlight. |
|                                                                  | 130mA                                              | VCC=5V，背光关闭。<br>VCC=5V, backlight off.   |
| 推荐工作电源：5V 0.5A 的直流稳压电源。<br>Recommended power supply: 5V 0.5A DC. |                                                    |                                          |

## 2.4 工作环境 Operating Environment

|                               |                                                             |
|-------------------------------|-------------------------------------------------------------|
| 工作温度<br>Operating Temperature | -10℃~60℃                                                    |
| 存储温度<br>Storage Temperature   | -20℃~70℃                                                    |
| 工作湿度<br>Operating Humidity    | 10%~90%RH，典型值 60%RH。<br>10%~90%RH, typical value of 60% RH. |

### 3 调试工具 Debug 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.



HDL672 调试板

HDL672 debug board

使用 HDL672 调试板时，请以下表为准查阅插针定义。标黄的引脚与丝印标识不一致。SD 卡座、USB 接口及 10Pin 接口均可正常使用。

Refer to the following table for pin definitions when using the HDL672 debug board. Yellow-highlighted pins indicate discrepancies with the silkscreen markings. The SD card slot, USB port, and 10-pin connector are fully supported and functional.

| HDL672 丝印 | TC48480C040_08WN |
|-----------|------------------|
| P11       | P11              |
| P12       | P12              |
| P13       | P13              |
| P14       | P14              |
| P15       | P03_CRX          |
| P16       | P02_CTX          |
| P17       | P36              |
| P20       | P37              |
| P21       | ADC1             |
| P22       | P15              |
| P23       | P10              |
| P24       | ADC2             |
| P25       | 3.3V             |
| P26       | P35              |
| P27       | P32              |
| P30       | P30              |
| P31       | P31              |

|        |                               |
|--------|-------------------------------|
| GND    | GND                           |
| GND    | GND                           |
| +5V    | 转接板 5V 电源输入，经电源处理后连接到产品 5V 电源 |
| 3.3V   | 转接板 3.3V 电源输出，没有连接到液晶排线       |
| GND    | GND                           |
| RX2    | RX2                           |
| TX2    | TX2                           |
| TR5    | P33                           |
| TR4    | P34                           |
| RX5    | RX5                           |
| TX5    | TX5                           |
| RX4    | RX4                           |
| TX4    | TX4                           |
| ADC6   | ADC6                          |
| ADC7   | ADC7                          |
| VBAT   | VBAT                          |
| SPK    | SPK                           |
| VOUT   | 5V                            |
| VCC_EN | VCC_EN                        |

#### 4 包装和物理尺寸 Packing Capacity & Dimension

| 尺寸 Dimension          |                               |                |                           |                         |
|-----------------------|-------------------------------|----------------|---------------------------|-------------------------|
| 外形尺寸<br>Dimension     | 84.4(W) ×85.6(H) × 3.84(T) mm |                |                           |                         |
| 净重量<br>Net Weight     | 57g                           |                |                           |                         |
| 包装标准 Packing Capacity |                               |                |                           |                         |
| 包装箱型号<br>Model        | 包装箱尺寸<br>Size                 | 层数（层）<br>Layer | 数量/层（片）<br>Quantity/Layer | 总数量（片）<br>Quantity(Pcs) |
| 纸箱<br>Carton:         | 455mm(L)×290mm(W)×240mm(H)    | -              | -                         | 100                     |



## 5 修订记录 Record of Revision

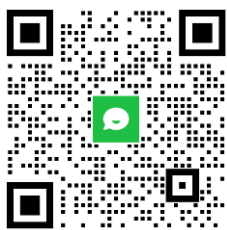
| 版本 Rev | 日期 Date    | 描述 Content                                                            | 编辑人 Editor |
|--------|------------|-----------------------------------------------------------------------|------------|
| 00     | 2025-04-28 | 首次发布<br>First Edition                                                 | 陈律志        |
| 01     | 2025-05-19 | 添加 HDL672 调试板插针定义说明<br>Included pin definition for HDL672 debug board | 陈律志        |

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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！

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