上海冠显光电科技有限公司
Shanghai Top Display Optoelectronics Co., LTD

☐ Pre-specification

☑ Final-specification

MODEL	:	TY080SVM03NF
ISSUED DATE	:	2025-02-24
VERSION	:	1.2

Version record

Issued Date	Description	Version	Editor	Audit
2023-12-19	First version	1.0		
2024-5-9	Final version	1.1	Amber	GR
2025-02-24	Final release (Adding debugging tools)	1.2	Xenia	

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1. Hardware Introduction

This chapter mainly introduces the product appearance diagram, hardware configuration diagram and tools required for debugging.

1.1. Product Appearance

The following is the appearance of the product corresponding to this model (hardware interfaces, etc., vary according to the specific model of backplane components), as shown in Figure 1.1-1.

Note: If there is no key structural process modification or major layout adjustment, only changes in product process or reliability. The company will not initiate changes to the outside product appearance. The specific items are subject to the received goods.

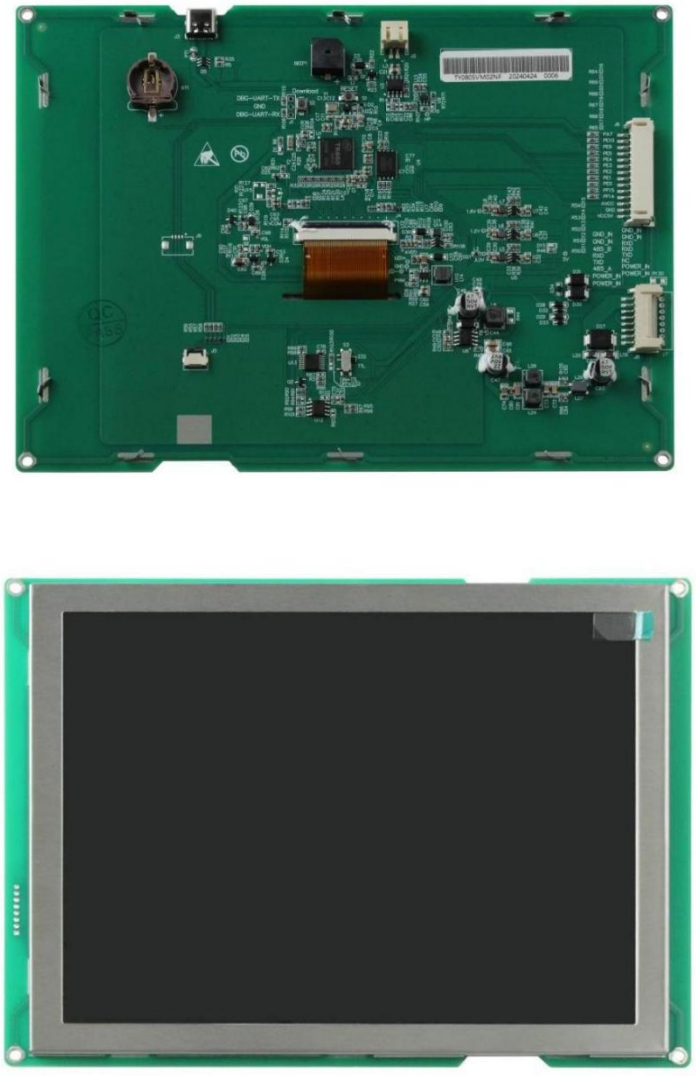


Figure 1.1-1 8.0 inch UART display

1.2. Pinout IO Definitions

Pin Name	Type	Reset state	Internal Configurable Pull-up and Pull-down Resistors	Default drive capability (mA)	Voltage	Function
5V	OUTPUT	5V	-	1500	5V	5V
GND	POWER	GND	-	-	GND	GND
3.3V	OUTPUT	3.3V	-	500	3.3V	3.3V
PF14	I/O	Z	√	20	3.3V	GPIO-PF14
PF15	I/O	Z	√	20	3.3V	GPIO-PF15
PE0	I/O	Z	√	20	3.3V	I2C0_SCL
PE1	I/O	Z	√	20	3.3V	I2C0_SDA
PE2	I/O	Z	√	20	3.3V	PWM1
PE3	I/O	Z	√	20	3.3V	GPIO-PE3
PE4	I/O	Z	√	20	3.3V	UART5_TX (can be customized as CAN-TX)
PE5	I/O	Z	√	20	3.3V	UART5_RX (can be customized as CAN-RX)
PE9	I/O	Z	√	20	3.3V	GPIO-PE9
PE10	I/O	Z	√	20	3.3V	GPIO-PE10
PA7	ADC	Z	√	20	3.3V	ADC

1.3. Connector Pin Definitions

Pin Name	Type	Reset state	Internal Configurable Pull-up and Pull-down Resistors	Default drive capability (mA)	Voltage	Function
GND_IN	POWER	0V	-	-	0V	POWER-GND
GND_IN	POWER	0V	-	-	0V	POWER-GND
485_B	-	-	-	-	-	485-/485_B
RXD	-	-	-	-	5V	UART6-RX (to user's TX)
TXD	-	-	-	-	5V	UART6-TX (to user's RX)
485_A	-	-	-	-	-	485+/485_A
POWER_IN	POWER	-	-	-	-	POWER-INPUT, DC 3.2-24V
POWER_IN	POWER	-	-	-	-	POWER-INPUT, DC 3.2-24V

2. Product Specifications

● Product parameter	
Model	TY080SVM03NF
Core processor	TR660
Size	8.0 inch
Resolution	800RGB×600
Active area(mm)	162(W) ×121.5(H)
Product size(mm)	199.4(W)×142.3(H)×17.1(T)
Color	16.7M,24 bit RGB
Storage	Customer available 60M Bytes
Pictures format	JPG/PNG
Video playback	H.264 format video only
Audio playback	MP3 and WAV format audio support
Download pictures	TYPE-C
Firmware update	TYPE-C
Feature	Reserved GPIO port
● LCD screen	
Display type	TFT LCD TN
Back light	LED
Brightness(cd/m²)	300
Contrast	500
Life time(hour)	30000
Perspective(T/B/L/R)	(75/70/75/75)
● Environmental electrical parameters	
Voltage	3.2~24V DC
Power consumption	5V/500mA (Maximum starting current) 5V/230mA (Turn off the backlight)

Working temperature	-20℃～70℃
Storage temperature	-30℃～80℃
Working humidity	10%~90%RH
Storage humidity	10%~90%RH
● Communication interface parameters	
Communication mode	RS-485/RS-232/5V TTL
Baud	1200~115200,typical value is 115200
Data frame format	8N1
Communication plug-in specification	HY2.0-8P
● Other hardware specifications	
Buzzer	Support
TYPE-C	Support
RTC	Support
Speaker	Support 4Ω 2W speakers

3. Reliability Test

3.1. ESD Test

3.1.1. Implementation Standards

Implementation standards	GB/T 17626.2
Performance criteria	B

3.1.2. Test Environment

Test ambient temperature: 25℃

Test environment humidity: 50%

Test process: place the product on the test bench, conduct contact and air discharge in turn around the iron frame of the serial port screen and the display area, and observe whether there is any abnormal reset and restart display.

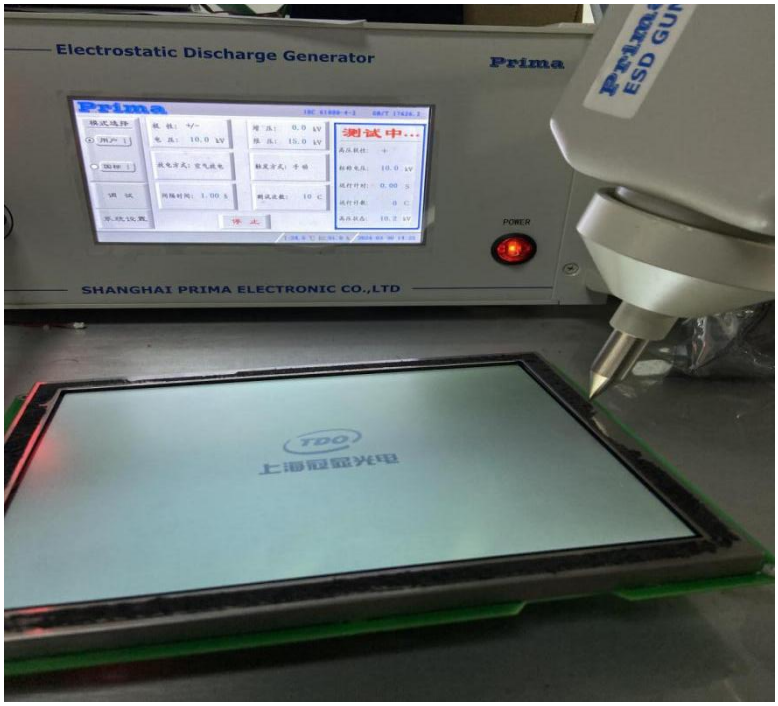


Figure3.1.2-1 ESD Test Environment

3.1.3. Test Data Results:

Discharge type	Discharge value	Test Results	Performance criteria
Contact	±8KV	Pass	B
Discharge	±15KV	Pass	B

3.2. Electrical Fast Transient Group Pulse Test （EFT）

3.2.1. Implementation Standards

Implementation standards	GB/T 17626.4

3.2.2. Test Environment

Test ambient temperature: 25℃

Test environment humidity: 50%

Test process: Place the product flat on the test bench, 10cm high, and supply power to the smart screen through the power supply after coupling the pulse group by the pulse group generator. Observe the screen during the experiment to see if there are phenomena such as reset and restart, abnormal display, touch abnormality, and so on.

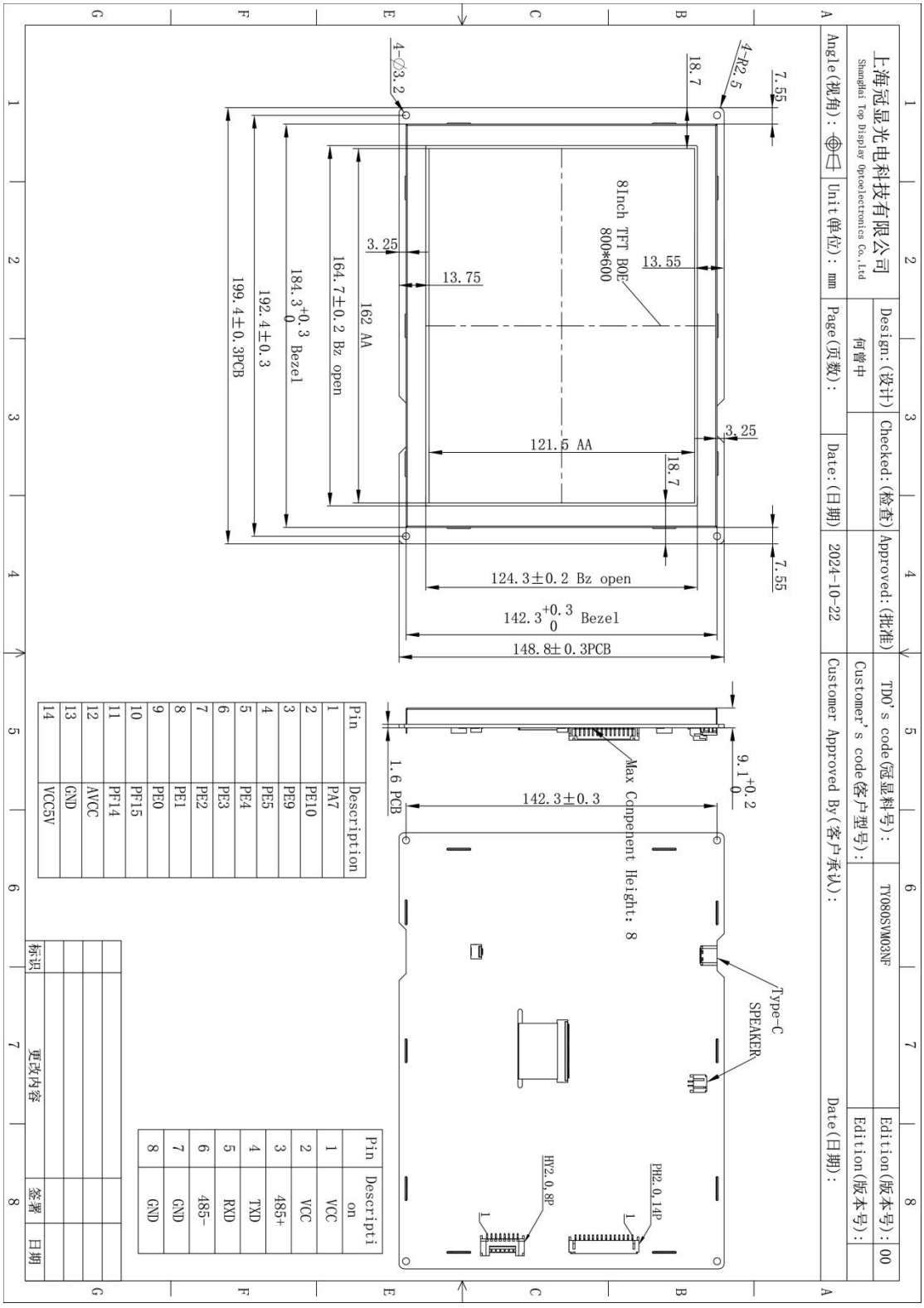


Figure3.2-1 EFT Test Environment

3.2.3. Test Data Results:

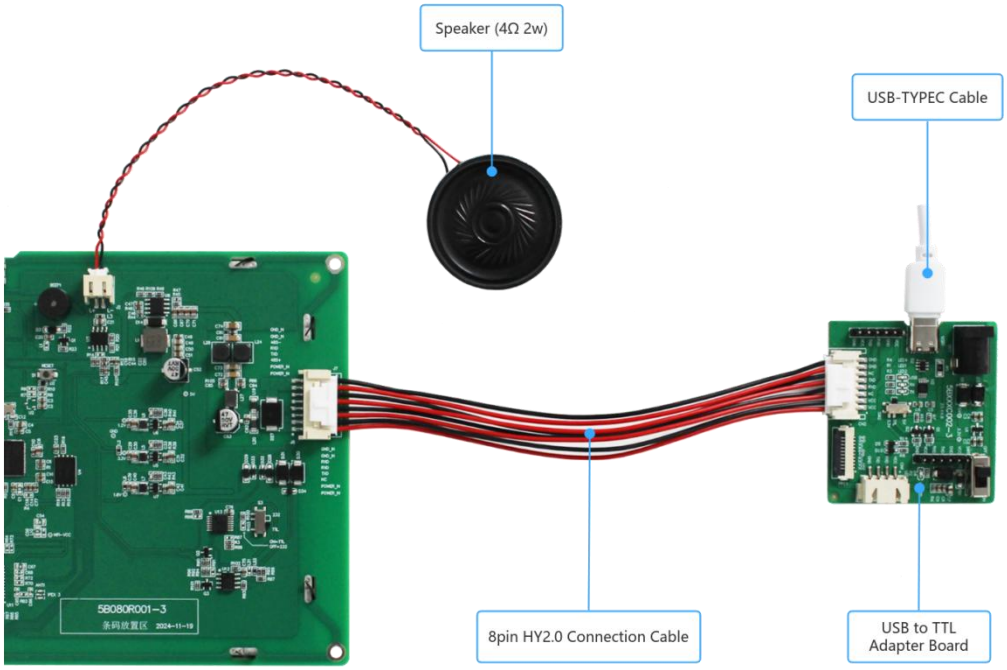
Implementation standards	GB/T 17626.4
Performance criteria	B

4. Product Size



5. Debugging Tools

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



(The above diagram shows the use of the debugging tools, not the product diagram. Please refer to document 1.1 for the physical drawing of this product.)

6. Model Definition

T Y 080 SV M 03 N F

1 2 3 4 5 6 7 8

① : 1 position--TDO abbreviation, fixed。

② : 1 position--U(U series serial port)/P(parallel port)/Y(Y series serial port)/H(HDMI interface type)/S(adapter board)/L

③ : 3 position--size,eg.080->8.0 inch

④ : 2 position--resolution abbreviation

⑤ : 1 position--C (Consumer Grade) / H (Commercial Grade) / T (Industrial Grade) / M (Medical Grade) / L (MINI Board) / P (With Case)

⑥ : 2 position---serial number

⑦ : 1 position---C (with capacitive touch panel)/R (with resistive touch panel)/N (without touch panel)

⑧ : 1 position-----Platform: F-TR660 / G-TR540 / H-TR230M /J -TR240 / K-TR661 / D-TR670 / 0-Android / 1-Linux

7. Sale and Service



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8. Disclaimer

This document provides product information about Shanghai Top Display Optoelectronics Technology Co., Ltd. (hereinafter referred to as Shanghai Top Display), which aims to assist customers to speed up product development progress, short development cycles, any routine programs provided in the service process or other channels , technical documents, data manuals, product drawings and other materials and information are for reference only, and customers have the right not to use or to modify and use for their own reference. The company does not provide any guarantee of completeness and reliability. If the customer causes special, incidental or indirect losses for any reason during the use process, the company does not assume any responsibility.