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

☐ Pre-specification

☑ Final-specification

MODEL	:	TY080WXM02CF
ISSUED DATE	:	2025-02-22
VERSION	:	1.6

Version record

Issued Date	Description	Version	Editor	Audit
2023-08-26	First version	1.0		
2023-11-18	Modify description	1.1		
2023-12-12	Modify model definition	1.2		
2023-12-27	Change the drawing	1.3		
2024-05-10	Final version	1.4	Amber	GR
2024-11-22	Add radiation test results / Update structural drawing	1.5	Xenia	
2025-02-22	Final release (Adding debugging tools)	1.6	Xenia	

Content

1. Hardware Introduction

This chapter mainly introduces the product appearance diagram and hardware configuration diagram.

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.

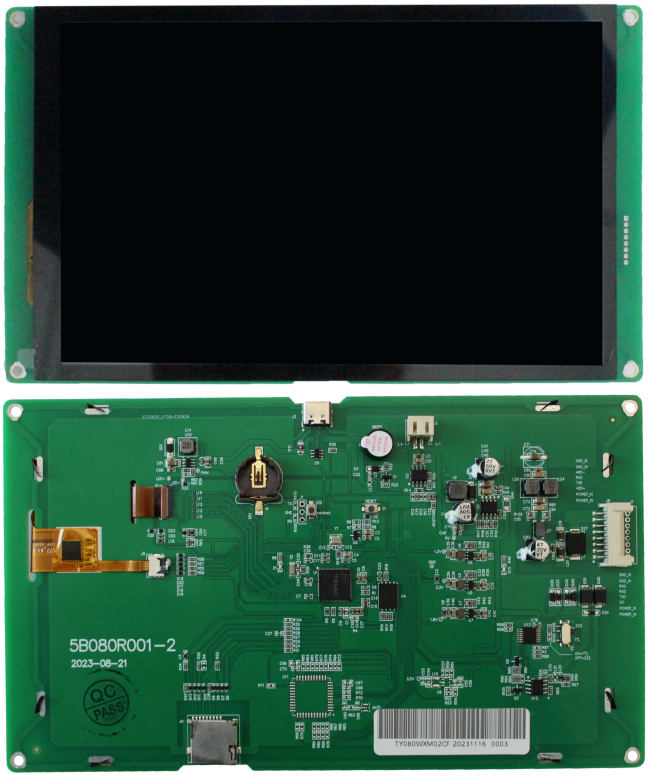


Figure 1.1-1 8.0 inch UART display

1.2. Hardware Configuration

The following is the reference diagram of the hardware configuration of the product of this size, taking the capacitive screen as an example, as shown in Figure 1.2-1.

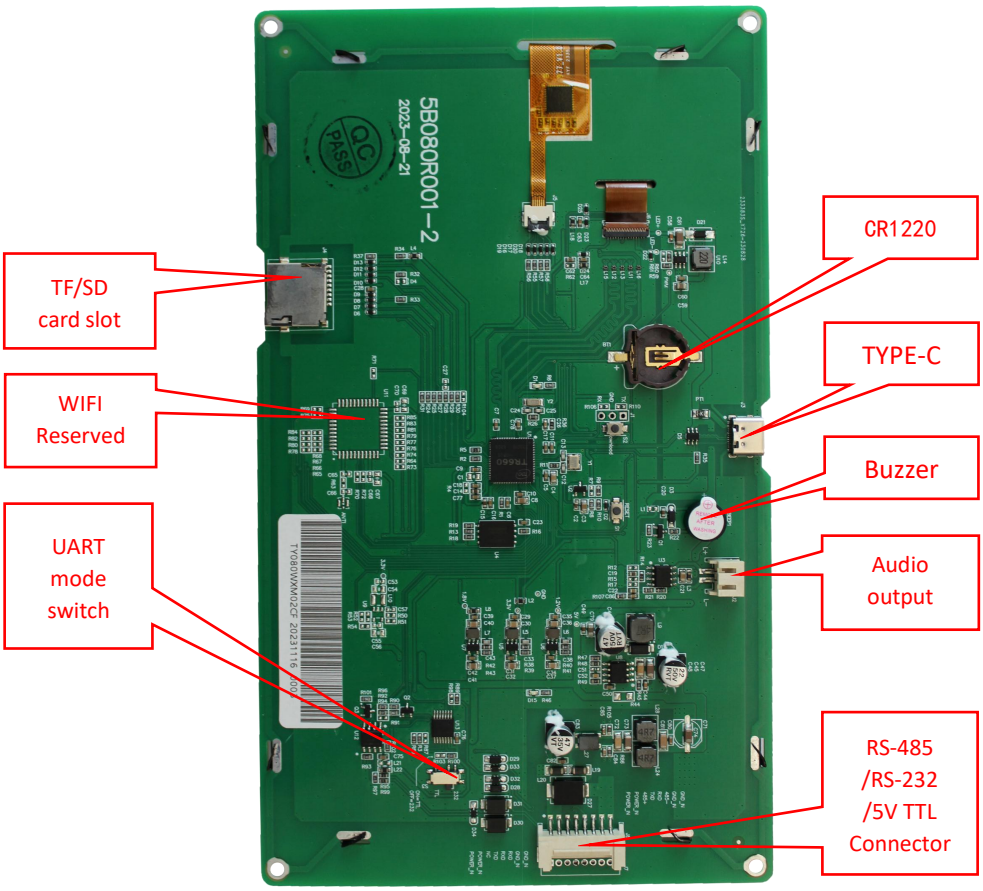


Figure 1.2-1 8.0 inch UART Board Hardware Configuration

1.3. UART Mode

The serial communication method can be switched via toggle switch (S3).

(1) The UART port supports 5V TTL communication when the switch is toggled to the “TTL” position.
(2) When the switch is toggled to the “232” position, the UART port supports RS-232 communication.
(3) The UART port supports RS-485 communication when the switch is set to the "TTL" or "232" position.

1.4. 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-	-	-	-	-	-	485-/485_B
RXD	-	-	-	-	5V	UART3-RX (to user's TX)
TXD	-	-	-	-	5V	UART3-TX (to user's RX)
485+	-	-	-	-	-	485+/485_A
POWER_IN	POWER	-	-	-	-	POWER-INPUT, DC 4.7-27V
POWER_IN	POWER	-	-	-	-	POWER-INPUT, DC 4.7-27V

2. Product Specifications

● Product parameter	
Model	TY080WXM02CF
Product serial	Medical series
Core processor	TR660
Size	8.0 inch
Resolution	800RGB×1280
Active area(mm)	107.64(W)×172.2(H)
Product size(mm)	206.0(W)×120.6(H)×17.4(T)
Color	16.7M,24 bit RGB
Storage	Customer available 60M Bytes
Pictures format	JPG/PNG
Video playback	H.264 format video only (Up to 1280*800 pixels)
Audio playback	MP3 and WAV format audio support
Download pictures	TYPE-C or TF card
Firmware update	TYPE-C or TF card
● LCD	
Display type	TFT LCD IPS
Back light	LED
Brightness(cd/m²)	320
Backlight life(hour)	30000
Contrast	1500
● Touch panel	
Touch mode	Capacitive touch screen
Input mode	Finger
● Environmental electrical parameters	
Voltage	4.7~27V DC

Power consumption	12V/261mA(maximum) 12V/109mA(backlight off)
Working temperature	-20℃～70℃
Storage temperature	-30℃～80℃
Working humidity	10%~90%RH
Storage humidity	10%~90%RH
ESD level	±8KV Contact/15KV Air
● Communication interface parameters	
Communication mode	485/232/5V TTL, default is 485 or 232.
Baud	1200~115200,typical value is 115200
Data frame format	8N1
Communication plug-in specification	HY2.0-8P
● Other hardware specifications	
TF card	Default function, Multiplexing with WIFI function. Micro TF for updating firmware or user interface.
Buzzer	Support
TYPE-C	Support
WiFi	Reserved; IF need WIFI, please according 【PN : TY080WXM02CF-Wifi】to place an order.
RTC	Support
Speaker	Support 4Ω2W speakers
● Product certification	
Environmental protection grade	RoSH II

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

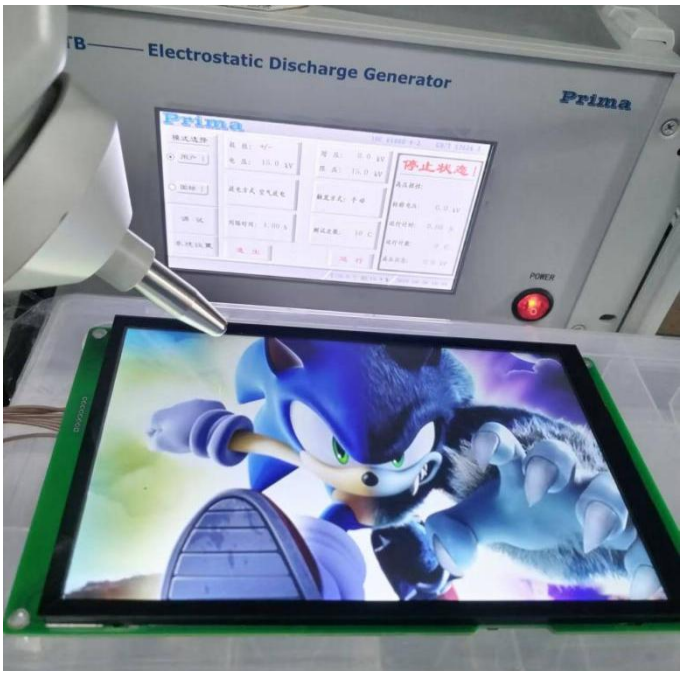


Figure3.1.2-1 ESD Test Environment

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.

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

Figure3.2-1 EFT 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.

3.2.3. Test Data Results:

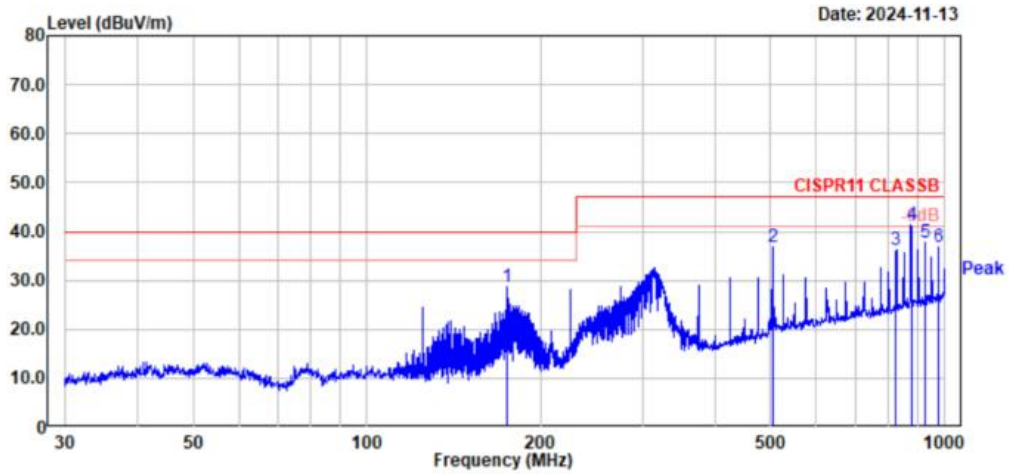
Implementation standards	GB/T 17626.4
Performance criteria	B

3.3. Radiation test

3.3.1. Implementation Standard

Implementation standards	CISPR
Performance criteria	B

3.3.2. Radiation test horizontal direction test data diagram

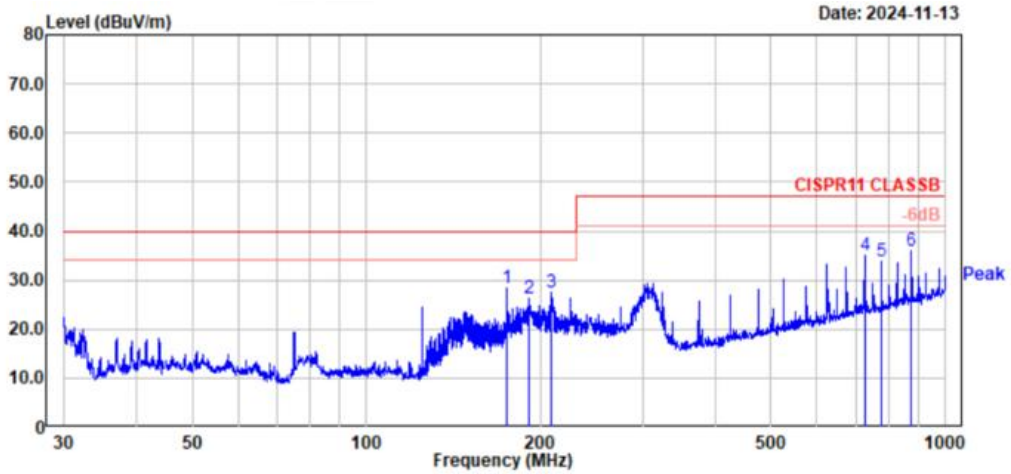



```
Site          : RE #1
Condition     : CISPR11 CLASSB 3m VULB9162-2023 Horizontal
              : DET:Peak
Applicant     : 冠显
EUT           : 8*V03CTP
M/N           :
S/N           :
Power Supply  : DC5V
Ambient       : 25'C/54%RH
Test Mode     :
Test Engineer: AC
Memo          :
```

	Freq	Level	Read Level	Limit Line	Over Limit	Ant Factor	Cable Loss	Remark	APos	TPos
	MHz	dBuV/m	dBuV	dBuV/m	dB	dB/m	dB		cm	deg
1	174.860	28.68	17.53	40.00	-11.32	9.30	1.85	Peak	207	1
2	504.483	36.73	17.03	47.00	-10.27	16.89	2.81	Peak	300	95
3	824.775	36.23	11.55	47.00	-10.77	21.20	3.48	Peak	200	295
4	875.589	41.42	16.02	47.00	-5.58	21.81	3.59	Peak	300	259
5	923.379	37.75	11.77	47.00	-9.25	22.29	3.69	Peak	200	286
6	977.018	36.85	10.33	47.00	-10.15	22.72	3.80	Peak	200	256

Figure3.3.3-1 radio test horizontal direction test data diagram

3.3.3. Vertical direction test data chart of radiation test

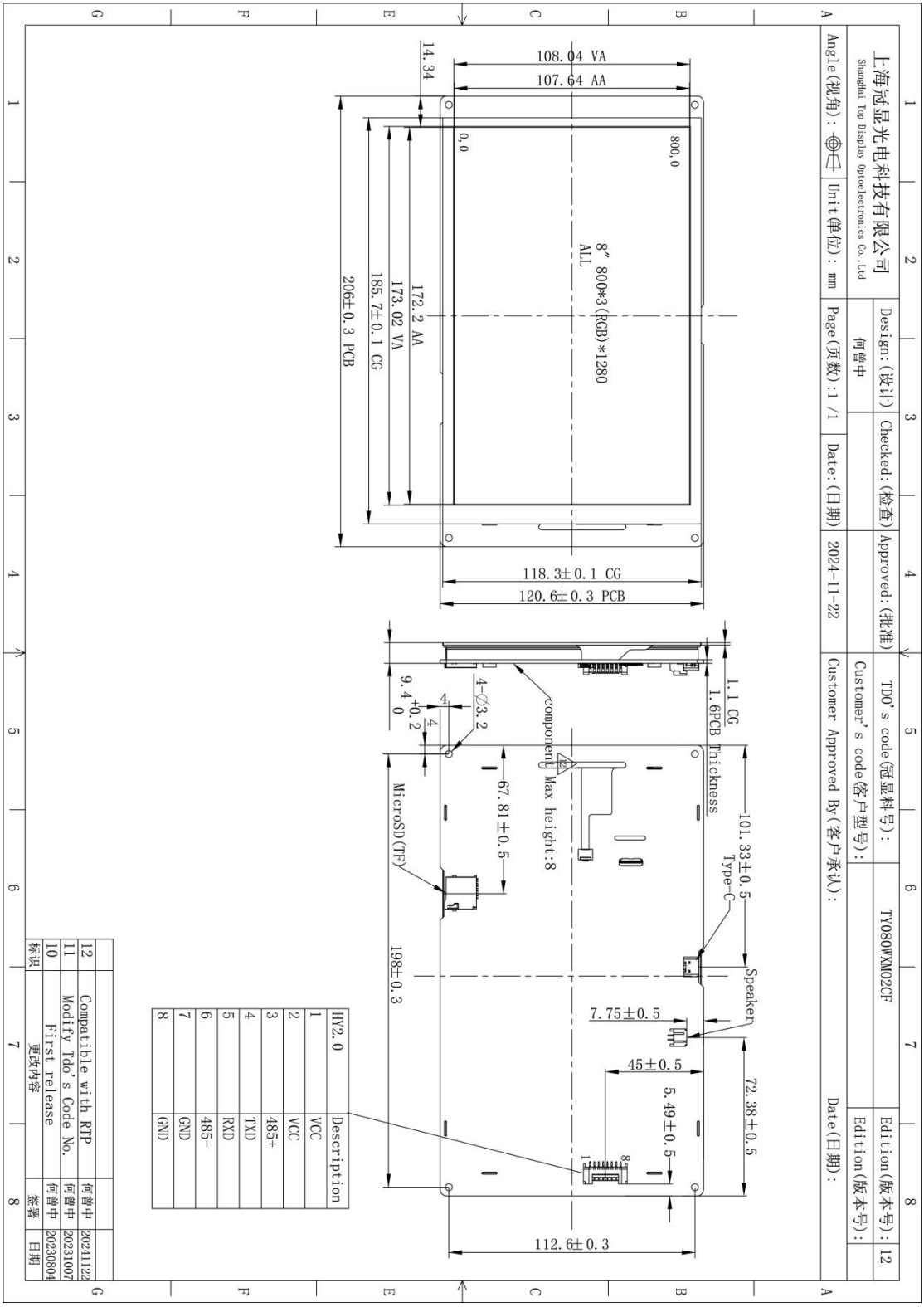



```
Site          : RE #1
Condition     : CISPR11 CLASSB 3m VULB9162-2023 Vertical
              : DET:Peak
Applicant     : 冠显
EUT           : 8*V03NTP
M/N           :
S/N           :
Power Supply  : DC5V
Ambient       : 25'C/54%RH
Test Mode     :
Test Engineer: AC
Memo          :
```

	Freq	Level	Read Level	Limit Line	Over Limit	Ant Factor	Cable Loss	Remark	APos	TPos
	MHz	dBuV/m	dBuV	dBuV/m	dB	dB/m	dB		cm	deg
1	175.037	28.39	16.79	40.00	-11.61	9.75	1.85	Peak	300	316
2	191.074	26.24	13.20	40.00	-13.76	11.14	1.90	Peak	300	0
3	208.580	27.43	13.77	40.00	-12.57	11.71	1.95	Peak	300	214
4	726.805	34.96	10.81	47.00	-12.04	20.87	3.28	Peak	100	61
5	776.878	33.78	9.03	47.00	-13.22	21.37	3.38	Peak	100	258
6	875.247	35.90	9.88	47.00	-11.10	22.43	3.59	Peak	100	221

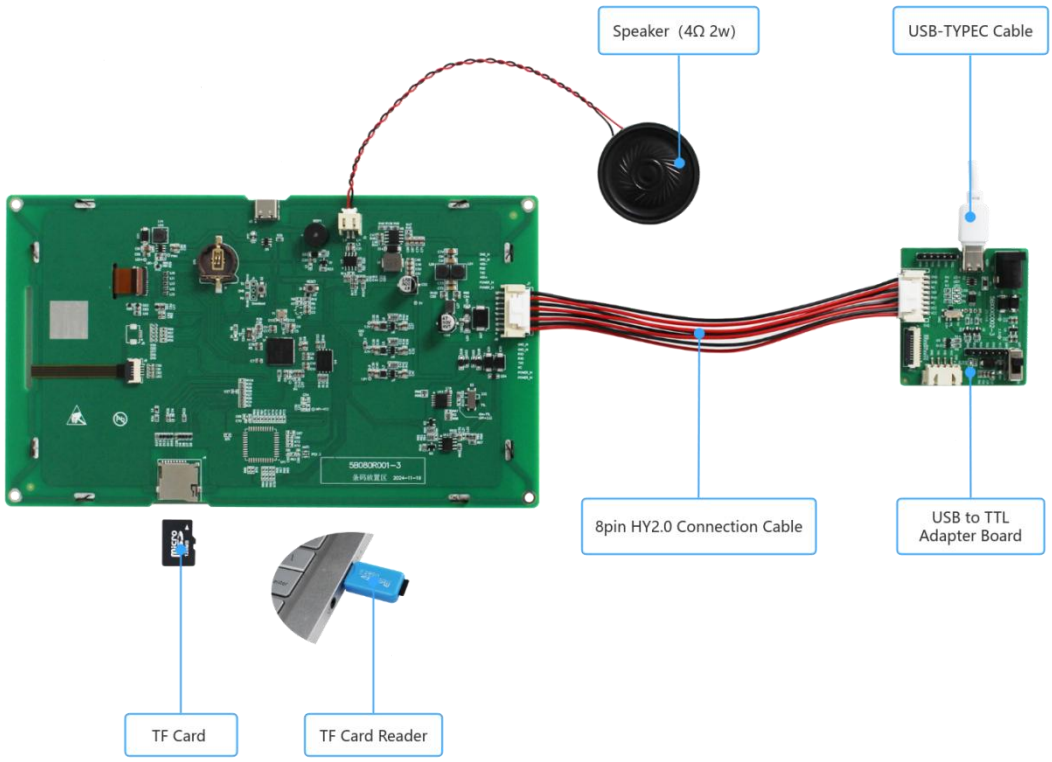
Figure 3.3.3-2 radio test Vertical direction test data diagram

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.



6. Model Definition

T	Y	080	WX	M	02	C	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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Online shop:http://shtdo.en.alibaba.com/

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