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

Specification

MODEL	:	**TY021WVP02CH**
ISSUED DATE	:	**2025-8-16**
VERSION	:	**1.2**

Version record

Issued Date	Description	Version	Editor	Audit
2024-09-29	First version	1.0	Xenia	WPY
2025-02-24	Adding debugging tools	1.1	Xenia	
2025-8-16	Added connector	1.2	ZP	

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1. Hardware Introduction

1.1. Connector Pin Definitions

No.	Pin Name	Reset state	Function	Note
1	VCC	-	POWER-IPUT, 5V	All multiplexed functions can be forced to be converted to GPIO functions when not in use
2	VCC	-	POWER-IPUT, 5V	
3	RX	-	Default UART2-RX function, connect to user's TX	
4	TX	-	Default UART2-TX function, connected to user's RX	
5	GND	-	POWER	
6	GND	-	POWER	

2. Product Specifications

● Product parameter	
Model	TY021WVP02CH
Product serial	With Housing Series
Core processor	TR230M
Size	2.1 inch
Resolution	480RGB×480
Active area(mm)	53.28(W)×53.28(H)
Product size(mm)	79(W)×79(H)×41.3(T)
Color	262K
Storage	Customer available 16M Bytes
Pictures format	JPG/PNG
Download pictures	TF card (requires debugging tool)
Firmware update	TF card (requires debugging tool)
● LCD screen	
Display type	TFT LCD IPS
Back light	LED
Brightness(cd/m²)	300
Contrast	1000
Life time(hour)	30000
Perspective(T/B/L/R)	(85/85/85/85)
● Interaction Mode	
Touch mode	Capacitive touch screen
Input mode	Finger Touch / Rotate / Press
● Environmental electrical parameters	
Voltage	3.3V~5.5V,typical 5V DC

Power consumption	5V/103mA (Max brightness) 5V/47mA (Backlight off)
Working temperature	-20℃～70℃
Storage temperature	-30℃～80℃
Working humidity	10%~90%RH
Storage humidity	10%~90%RH
● Communication interface parameters	
Communication mode	3.3V TTL
Baud	2400~3Mbps,typical value is 115200
Data frame format	8N1
Communication plug-in specification	6Pin PH2.0 to 8pin HY2.0 Connection Cable

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.

Test remarks: *The current tests are all bare product tests. On the actual product assembly machine, keep the screen and the machine well grounded, or the touch panel surface is protected by PVC or a cover plate, the ESD performance index of the whole machine will be higher.*



3.1.3. Test Data Results:

Discharge type	Discharge value	Test Results	Performance Criteria
Contact	±4KV	Test Passed	A
Air Discharge	±8KV	Test Passed	A

3.2. Electrical fast transient group pulse testing (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%

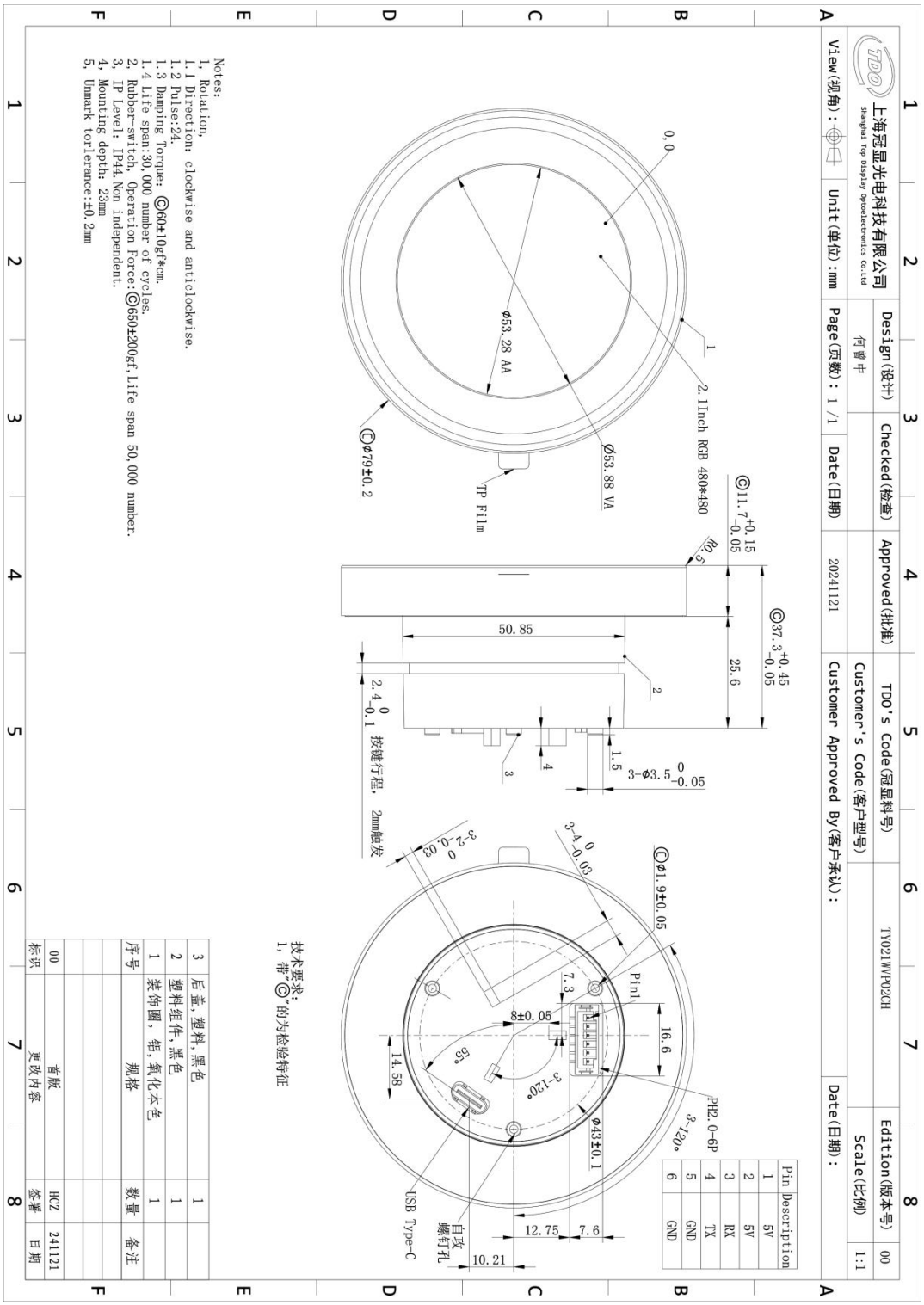
Test process: place the product in the high and low temperature test box, and power the screen through the power supply after the pulse group is coupled by the group pulse generator, and observe whether there is abnormal reset and restart display and other phenomena**.**



3.2.3. Test Data Results:

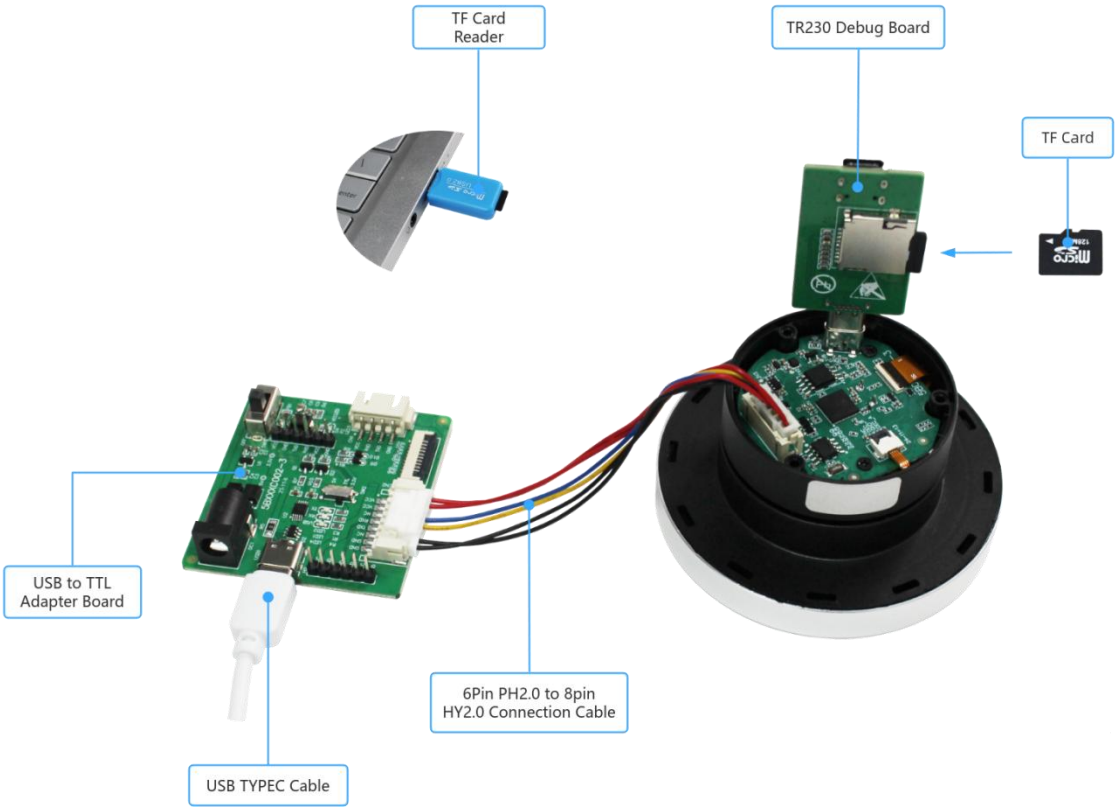
Implementation standards	GB/T 17626.4
Performance criteria	B
Test environment	±4.0KV ; 100KHZ ; 120S

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	021	WV	P	02	C	H
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.021->2.1 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 / DTR670 / 0-Android / 1-Linux

Note: 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 world. The specific items are subject to the received items.

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.