深圳显旸光电科技有限公司

Shenzhen Xianyang Optoelectronic Technology Co., Ltd

Final-specification

MODEL	:	XY070WSH02C0
ISSUED DATE	:	2023-10-30
VERSION	:	1.6

● Version record

Issued Date	Description	Version	Editor
2023-05-31	Pre-specification	1.0	
2023-07-15	Final-specification	1.1	
2023-08-17	Add description	1.2	
2023-08-27	Add reliability test report	1.3	
2023-08-29	Modify the drawing	1.4	
2023-09-01	Modify description	1.5	
2023-10-30	Modify model definition	1.6	

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

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

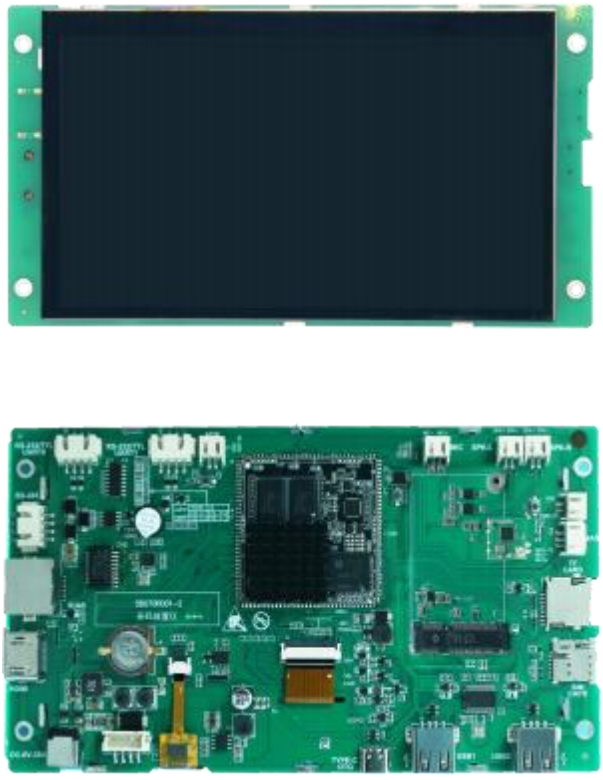


Figure 1.1-1 7.0 inch Android Screen

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 7.0 inch Android Board Hardware Configuration

No.	Interface Name	Description
1	UART0	For RS232/TTL. Device name: ttyS1. Pin definition: 5V, RXD, TXD, GND.
2	UART1	For RS232/TTL. Device name: ttyS0. Pin definition: 5V, RXD, TXD, GND.
3	ADK	For download key.
4	MIC	PH2.0-2P. Microphone Port.
5	SPK-L	PH2.0-2P. Audio output, for speaker left channel. Default 3W/4Ω.
6	SPK-R	PH2.0-2P. Audio output, for speaker right channel. Default 3W/4Ω.
7	Power on Key	PH2.0-2P. Pin definition: PWR-ON, GND.
8	BAT	Li-battery input. Pin definition: TS, +, -.
9	Micro TF Card	

10	Nano SIM Card	
11	USB2	USB HOST Type-A
12	USB1	USB HOST Type-A
13	TYPE-C OTG	To update system.
14	Power Input	Power input, 6~36V. XH2.54-4P. Pin definition: VCC, VCC, GND, GND.
15	DC-IN	Power input, 6~36V. Type:5.5*2.6
16	HDMI	For output, only support to display the same thing om dual screen.
17	Ethernet	100M,provide net work for the display.
18	RS-485	XH2.54-4P. Pin definition: 5V, A, B, GND.
19	Buzzer	
20	Wi-fi	2.4G WIFI
21	RTC	Coin cell, type: 1220.

2. Product Specifications

● Product Parameter	
Model	XY070WSH02C0
Product serial	Standard series
Product size(mm)	190.5(W)×105.4(H)×24.7(T)
Firmware update	USB Type-C
● Core Board	
CPU	RK3128,1.2GHz quad-core, Coretex-A7
RAM	1GB DDR3
eMMC	8G
GPU	Mali400 MP2
Power Management	RK816B-1
● System Version	
Android	Android 7.1(default)
Linux(Buildroot)	2018.02-rc3
● LCD Screen	
Display type	TFT LCD
Back light	LED
Brightness(cd/m²)	500
Size	7.0 inch
Resolution	1024RGB×600
Color	16.7M,24 bit RGB
Active area(mm)	154.21(W)×85.92(H)
Backlight life(hour)	30000
Contrast	800
Perspective(T/B/L/R)	(85/85/85/85)

● Touch Panel	
Touch mode	Capacitive touch screen
Input mode	Finger
● Environmental Electrical Parameters	
Voltage	6~36V DC
Power consumption	24V/218mA (Maximum) 24V/115mA (Stabilised)
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/RS-485/RS-232
Baud	1200~115200,typical value is 115200
Data frame format	8N1
Communication plug-in specification	XH2.54 4P
● Peripherals	
HDMI	Support(output)
USB OTG Type-C	Support
USB HOST Type-A	Support
Ethernet	Support(10m/100m)
Wi-Fi	Support(802.11b/g/n)
RTC	Support
Buzzer	Support
Nano SIM	Support
Micro SD(TF)	Support

Microphone	Support
Speaker	Support(3W/4Ω)
● 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

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
Contact	±2KV	No restart, no abnormal display, normal function
	±4KV	No restart, no abnormal display, normal function
	±6KV	No restart, no abnormal display, normal function
	±8KV	Occasional flashing screen.The sample can return to normal on its own after the test.
Discharge	±2KV	No restart, no abnormal display, normal function
	±4KV	No restart, no abnormal display, normal function
	±6KV	No restart, no abnormal display, normal function
	±8KV	No restart, no abnormal display, normal function
	±10KV	No restart, no abnormal display, normal function
	±15KV	Occasional flashing screen.The sample can return to normal on its own after the test.

3.2. Electrical Fast Transient Group Pulse Test （EFT）

3.2.1. Implementation standards

Implementation standards	GB/T 17626.4
Performance criteria	B

3.2.2. Test Environment

Test ambient temperature: 25℃

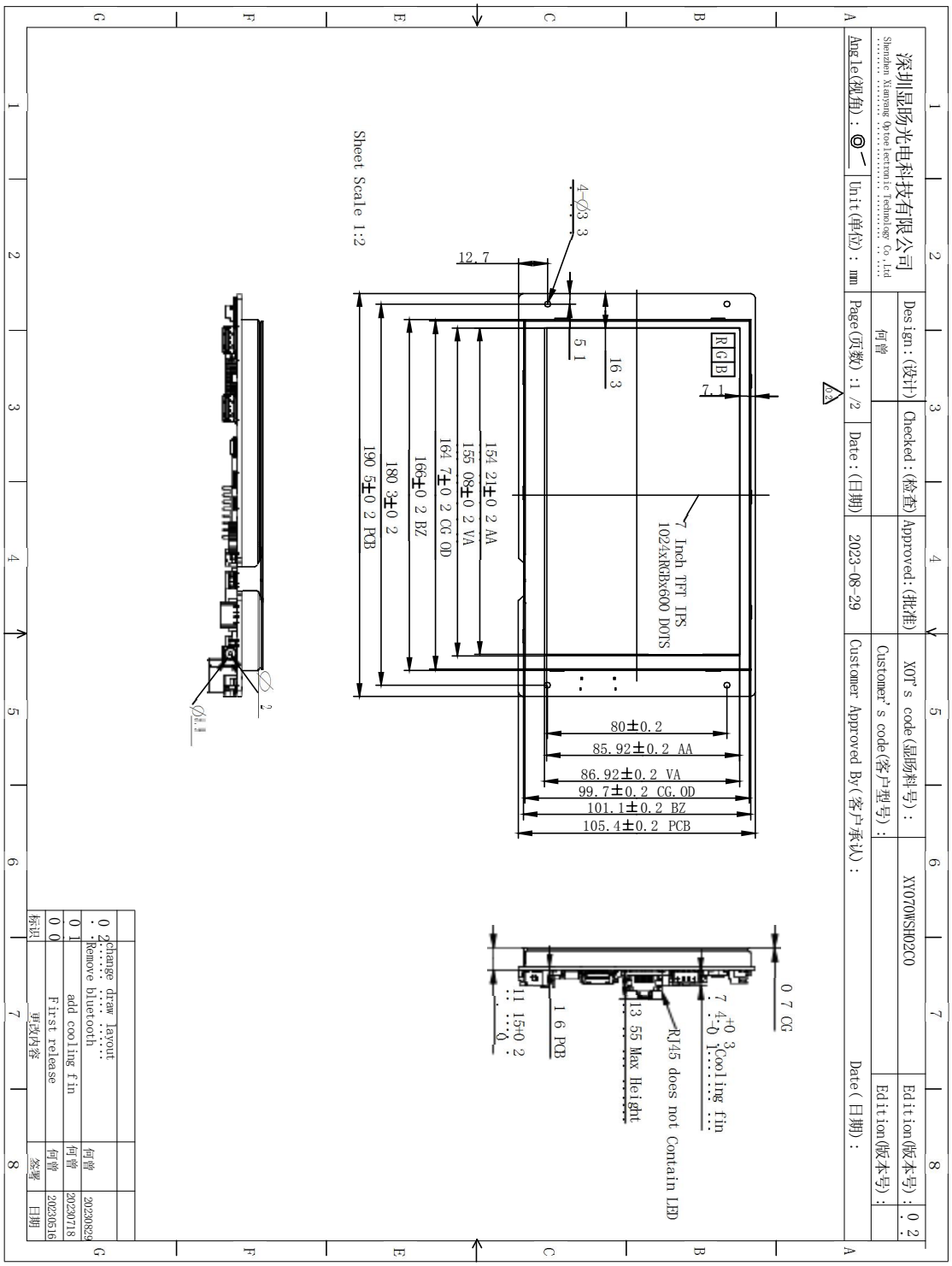
Test environment humidity: 50%

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.

3.2.3. Test Data Results:

Test project	**Test standard(**GB IV)			**Test results**
	Voltage(KV)	Frequency （KHZ）	Time （S）	
Power port	±2KV	100KHZ/5KHZ	120S	The display is normal when there is no touch, and the screen flashes when touched. The sample can return to normal on its own after the test.
Power port	±4KV	100KHZ/5KHZ	120S	Continuous flashing screen, can be restored to normal on its own after the test.

4. Product Size



5. Model Definition

X Y 070 WS H 02 C 0 XX

1 2 3 4 5 6 7 8 9

1 : 1 position--XOT 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.070->7.0 inch

④ : 2 position--resolution abbreviation

⑤ : 1 position--H (standard series)/C (basic series)/L (MINI board series)/P (with housing series)/M (medical series)/A (AV series)

6 : 2 position---serial number

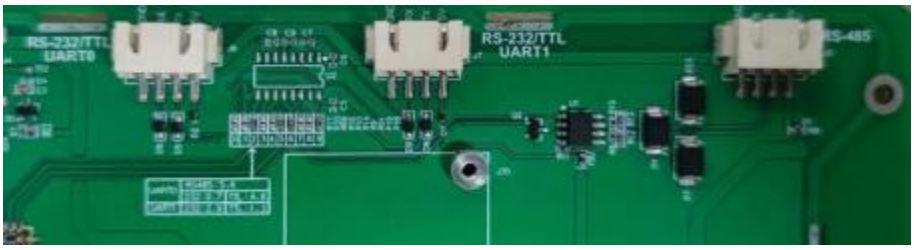
⑦ : 1 position---C (with capacitive touch panel)/R (with resistive touch panel)/N (without touch panel)

8 : 1 position-----Platform: A-Y6 / B-Y13L / C-Y13 / D-Y16 / E-Y18 /0 -Android / 1-Linux

⑨ : 2 position-----UART mode: 4T(UART0: RS485(default); UART1: TTL_3.3V) / T2(UART0: TTL_3.3V; UART1: RS232(default)) / TT(UART0: TTL_3.3V; UART1: TTL_3.3V)/ 22(UART0: RS232 ; UART1: RS232(default))

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

6. Appendix



UART0	RS485:5,6	
	232:0,7	TTL:4,8
UART1	232:2,9	TTL:1,3

Both UART0 and UART1 can be used for serial port debugging.

UART0 supports three modes: 3.3V TTL/RS-485/RS-232.UART1 supports two modes: 3.3V TTL/RS-232.Changing the resistor of the 0~9 bit number can modify the UART mode.Take the picture as an example. Let's look at UART0 first: there are resistors in positions 5 and 6, so the RS485 mode of UART0 is available (i.e., the RS-485 terminal on the right side of the picture can communicate normally). Then we look at UART1: positions 2 and 9 have resistors, so RS232 mode is available for the UART1 port.

Below are the specific modes and the corresponding bit numbers of the required chip resistors.

UART0

(1) RS-485 for UART0

0	1	2	3	4	5	6	7	8	9
×	×	×	×	×	1000 Ω	100 Ω	×	×	×

(2) RS-232 for UART0

0	1	2	3	4	5	6	7	8	9
100 Ω	×	×	×	×	×	×	100 Ω	×	×

(3) 3.3V TTL for UART0

0	1	2	3	4	5	6	7	8	9
×	×	×	×	100 Ω	×	×	×	100 Ω	×

UART1

(1) RS-232 for UART1

0	1	2	3	4	5	6	7	8	9
×	×	100 Ω	×	×	×	×	×	×	100 Ω

(2) 3.3V TTL for UART1

0	1	2	3	4	5	6	7	8	9
×	100 Ω	×	100 Ω	×	×	×	×	×	×

Note: A port cannot support multiple communication modes at the same time. That is, only one of three communication modes can be selected for UART0, and only one of two communication modes can be selected for UART1. The above modes and resistor bit numbers must be soldered against the table in strict accordance with the above