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

规格书
Final-specfication

型号 MODEL:	**TY121XGT02CF**
日期 ISSUED DATE:	**2026-1-7**
版本 VERSION:	**1.2**

● 版本记录

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1. 硬件介绍 Hardware introduction

本章节主要介绍了产品外观图与硬件配置图。

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

1.1. 产品外观 Product appearance

- 以下为本型号对应的产品外观图（硬件接口等依具体型号背板元器件有所不同），如图 1.1-1 示。

The following is the product appearance of this model(Hardware interface vary according to the backplane components of the special model),as shown in Figure 1.1_1.

注意：未涉及关键结构工艺修改或布局大调整，仅产品工艺或可靠性方面的更迭，公司不对外发起变更，具体以收到的实物为准。

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.



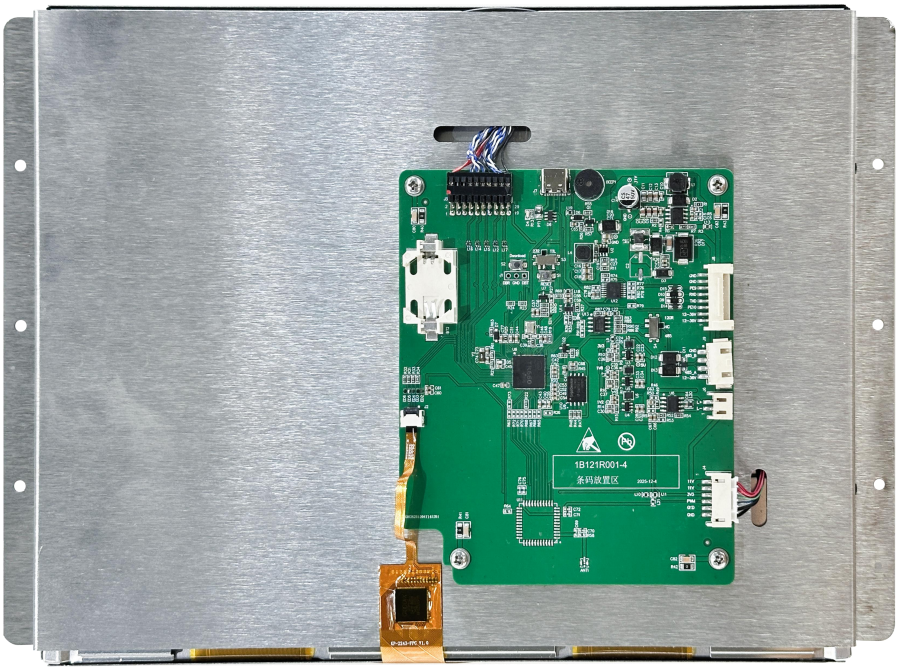


图 1.1-1　　结构外观参考图

Figure 1.1_1　　structure appearance reference diagram

1.2. 硬件配置 hardware configuration

以下为该尺寸产品硬件配置参考图，以电容屏举例说明，如图 1.2-1 所示。

The following is a reference diagram for the hardware configuration of products with this size. Taking the capacitive touch screen as an example, it is shown in Figure 1.2-1.

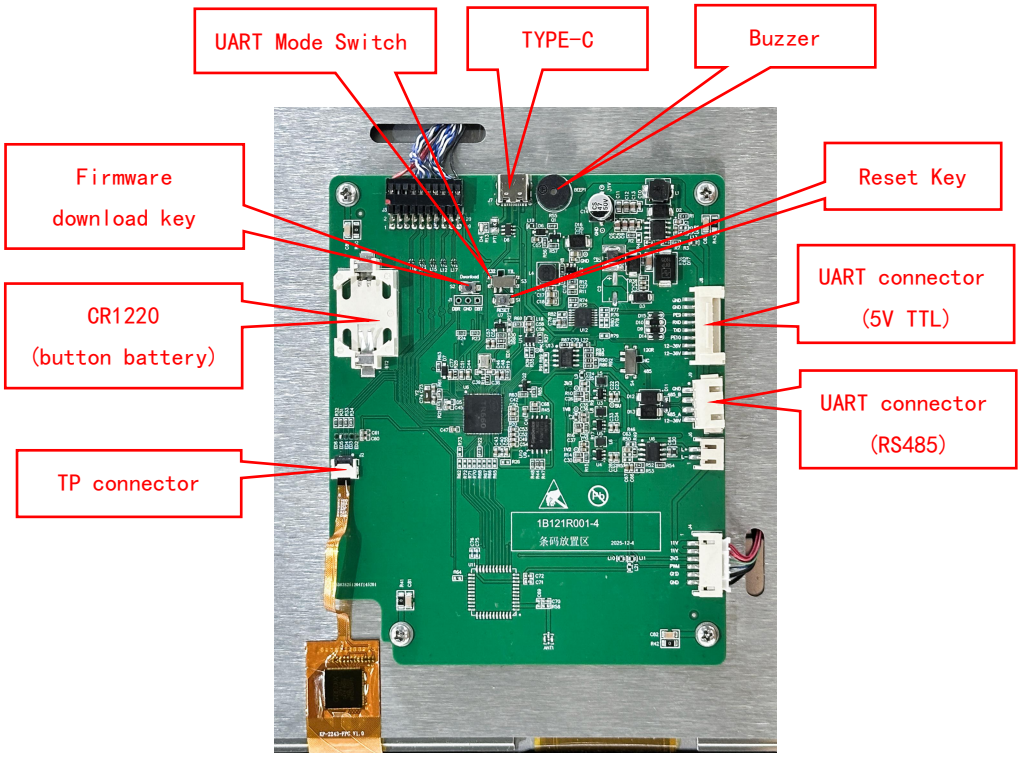


图 1.2-1　驱动板硬件配置参考图

Figure 1.2-1　hardware configuratio

1.3. IO 引脚定义 Pinout IO Definition

引脚名称 Pin Name	类型 Type	复位状态 Reset status	内部可配置上下拉电阻 Internally configurable pull-down resistors	默认驱动能力(mA) Default drive capability (mA)	电压 Voltage	功能 Function
VCC	POWER	-	-	-	12-36V	POWER-IN
VCC	POWER	-	-	-	12-36V	POWER-IN
PE10	-	-	-	-	-	PE10
TXD	-	-	-	-	5V	UART5-TX (to user's RX)
RXD	-	-	-	-	5V	UART5-RX (to user's TX)
PE9	-	-	-	-	-	PE9
GND	POWER	-	-	-	0	POWER-GND
GND	POWER	-	-	-	0	POWER-GND

IO 引脚定义 Pinout IO Definition

引脚名称 Pin Name	类型 Type	复位状态 Reset status	内部可配置上下拉电阻 Internally configurable pull-down resistors	默认驱动能力(mA) Default drive capability (mA)	电压 Voltage	功能 Function
GND	POWER	-	-	-	12-36V	POWER-GND
485-	-	-	-	-	-	485-/485_B
485+	-	-	-	-	-	485+/485_A
VCC	POWER	-	-	-	12-36V	POWER-IN

1.4.产品规格 Product Specifications

● 产品参数 Product parameter	
型号 Model	TY121XGT02CF
产品系列 Product serial	工业级 Industrial series
核心处理器 Core processor	TR660
尺寸 Size	12.1inch
分辨率 Resolution	1024RGB×768
屏幕有效显示区(mm) Active area(mm)	245.76(W)×184.32(H)
产品尺寸(mm) Product size(mm)	289.2(W)×204(H)×26.1(T)
颜色 Color	24-bit 8R8G8B
存储空间 Storage	用户可用 128 M Bytes Customer available 128M Bytes
图片格式 Pictures format	JPG/PNG

视频 Video	仅支持 H.264 格式 H.264 format video only
音频 Audio	支持 MP3 和 WAV 格式 MP3 and WAV format audio support
固件升级方式 Firmware update	TYPE-C
UI 下载方式 Download pictures	TYPE-C
● **屏幕参数 LCD screen**	
显示器类型 Display type	TFT LCD IPS
背光 Back light	LED
亮度（cd/㎡） Brightness(cd/m²)	850
对比度 Contrast	900
背光寿命（小时） Backlight life(hour)	30000
视角(T/B/L/R) Perspective(T/B/L/R)	(85/85/85/85)
● **触摸盖板 Touch panel**	

触摸类型 Touch mode	电容触摸屏 Capacitive touch screen
● **环境电气参数 Environmental electrical parameters**	
输入电压 Voltage	12~36V
功耗 Power consumption	12V/839mA (最大值，启动电流) 12V/839mA (Max brightness) 12V/166mA (关闭背光) 12V/166mA (Backlight off)
工作温度 Working temperature	-20℃ ~ 70℃
存储温度 Storage temperature	-30℃ ~ 80℃
工作湿度 Working humidity	10%~90%
存储湿度 Storage humidity	10%~90%
● **通讯接口参数 Communication interface parameters**	
通讯方式 Communication mode	232/5VTTL/485
通讯波特率 Baud	2400~115200，典型值 115200 2400~115200，typical value is 115200
数据帧格式	8N1

Data frame format	
通讯插件规格 Communication plug-in specification	HY2.0-8pin-卧贴带扣/SMD HY2.0-8pin-Flat paste buckle/SMD
● **其他外设 Other external equipment**	
RTC	支持 Support
蜂鸣器 Buzzer	支持 Support
USB	支持 Support
WIFI	预留（默认不贴） Reserve(not pasted by default)

2. 可靠性测试 Reliability Test

2.1. ESD 测试 ESD Test

2.1.1. 执行标准 Implementation Standards

执行标准 Implementation standards	GB/T 17626.2
性能判据 Performance criteria	B

2.1.2. 测试环境 Test Environment

测试环境温度：25℃

Test ambient temperature: 25℃

测试环境湿度：**50%**

Test environment humidity: 50%

大气压力：**86~106KPa**

Atmospheric pressure: 86 ~ 106Kpa

测试过程：将产品放置于测试台，针对串口屏铁框周边以及显示区域依次进行接触和空气放电，测试过程观察屏幕有无死机、黑屏、白屏、花屏、重启等异常现象。

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.

测试备注：当前试验测试均为产品裸露测试，实际产品装配机器上，保持屏幕和机器良好接地，或触摸板表面有 PVC 或盖板保护，整机 ESD 性能指标会更高。

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.



2.1.3. 测试数据结果：Test Date Results

放电类型 Discharge type	放电值 Discharge value	测试结果 Test Results	性能判据 Performance Criteria
接触放电 Contact	±8KV	测试通过 Test Passed	B
空气放电 Air Discharge	±15KV	测试通过 Test Passed	B

2.2. 电快速瞬变群脉冲测试(EFT)

2.2.1. 执行标准 Implementation Standards

执行标准 Implementation standards	GB/T 17626.4

2.2.2. 测试环境 Test Environment

测试环境温度：25℃

Test ambient temperature: 25℃

测试环境湿度：**50%**

Test environment humidity: 50%

测试过程：将产品放置于测试台上，垫高 10CM,通过群脉冲发生仪耦合脉冲群后的电源对屏幕进行供电，观察是否有复位重启显示异常等现象。

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.



2.2.3. 测试数据结果 Test Date Results

执行标准 Implementation standards	GB/T 17626.4
性能判据 Performance criteria	B
测试环境 Test environment	4.0KV ; 100KHZ ; 120S

2.3. 辐射测试 Radiation Test

2.3.1. 执行标准 Implementation Standards

执行标准 Implementation standards	CISPR
性能判据 Performance criteria	B

2.3.2. 测试环境 Test Environment

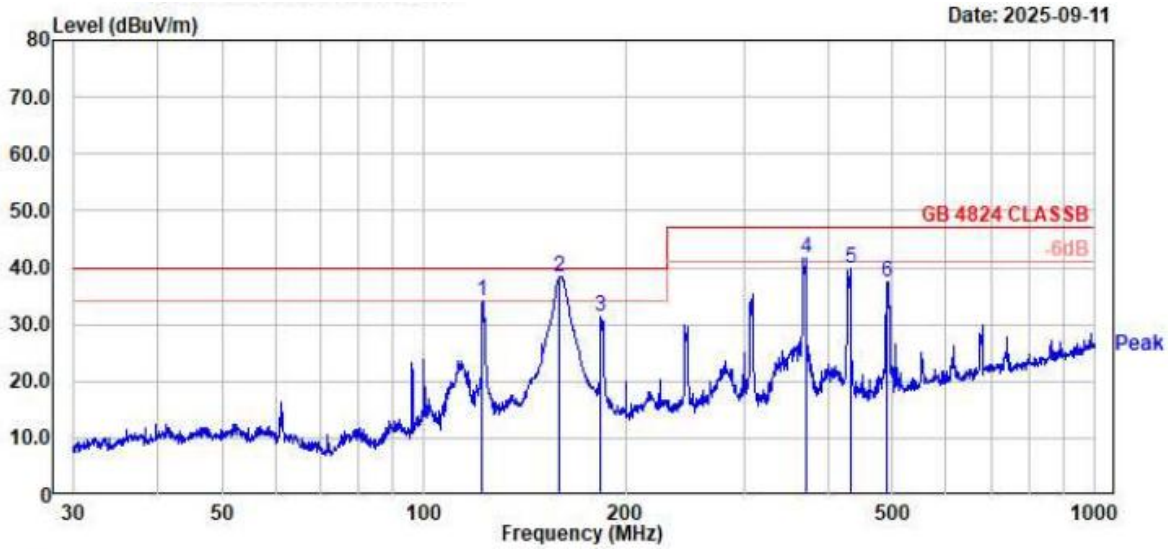
辐射测试环境。

Radiation test Environment

2.3.3. 测试数据结果 Test Date Results

（1）辐射测试水平方向测试数据图

Horizontal test data chart of radiation test




```
Site          : RE #1
Condition     : GB 4824 CLASSB 3m VULB9162-2024 Horizontal
              : DET:Peak
Applicant     : 冠显
EUT           : 12.1
M/N           :
S/N           :
Power Supply  : DC 12V
Ambient       : 25'C/54%RH
Test Mode     :
Test Engineer: ZJX
MEMO          : 【1米，2米，3米】
```

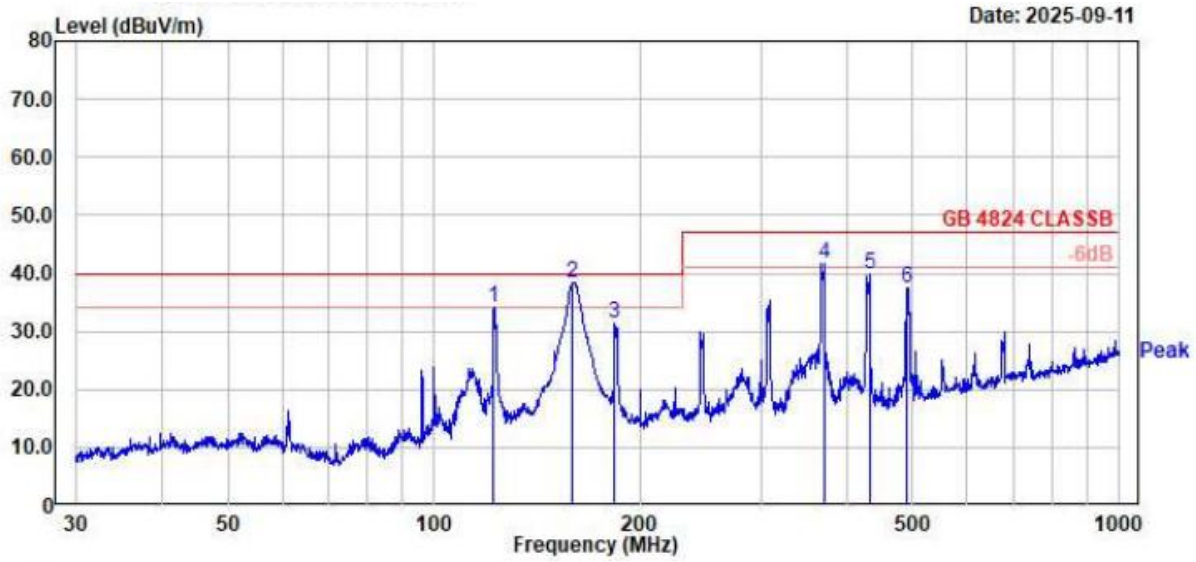
	Freq	Level	Read Level	Limit Line	Over Limit	Ant Factor	Cable Loss	Remark	APos	TPos
	MHz	dBuV/m	dBuV	dBuV/m	dB	dB/m	dB		cm	deg
1	122.197	34.09	22.73	40.00	-5.91	9.67	1.69	Peak	300	287
2	159.382	38.49	28.48	40.00	-1.51	8.21	1.80	Peak	100	165
3	183.237	31.50	19.68	40.00	-8.50	9.95	1.87	Peak	266	1
4	370.483	41.79	24.84	47.00	-5.21	14.53	2.42	Peak	300	116
5	433.066	39.71	21.55	47.00	-7.29	15.56	2.60	Peak	300	116
6	489.686	37.51	18.22	47.00	-9.49	16.52	2.77	Peak	300	330

图 3.3.3-1 辐射测试水平方向测试数据图

Figure3.3.3-1 Horizontal test data chart of radiation test

（2）辐射测试垂直方向测试数据图

Vertical test data chart of radiation test



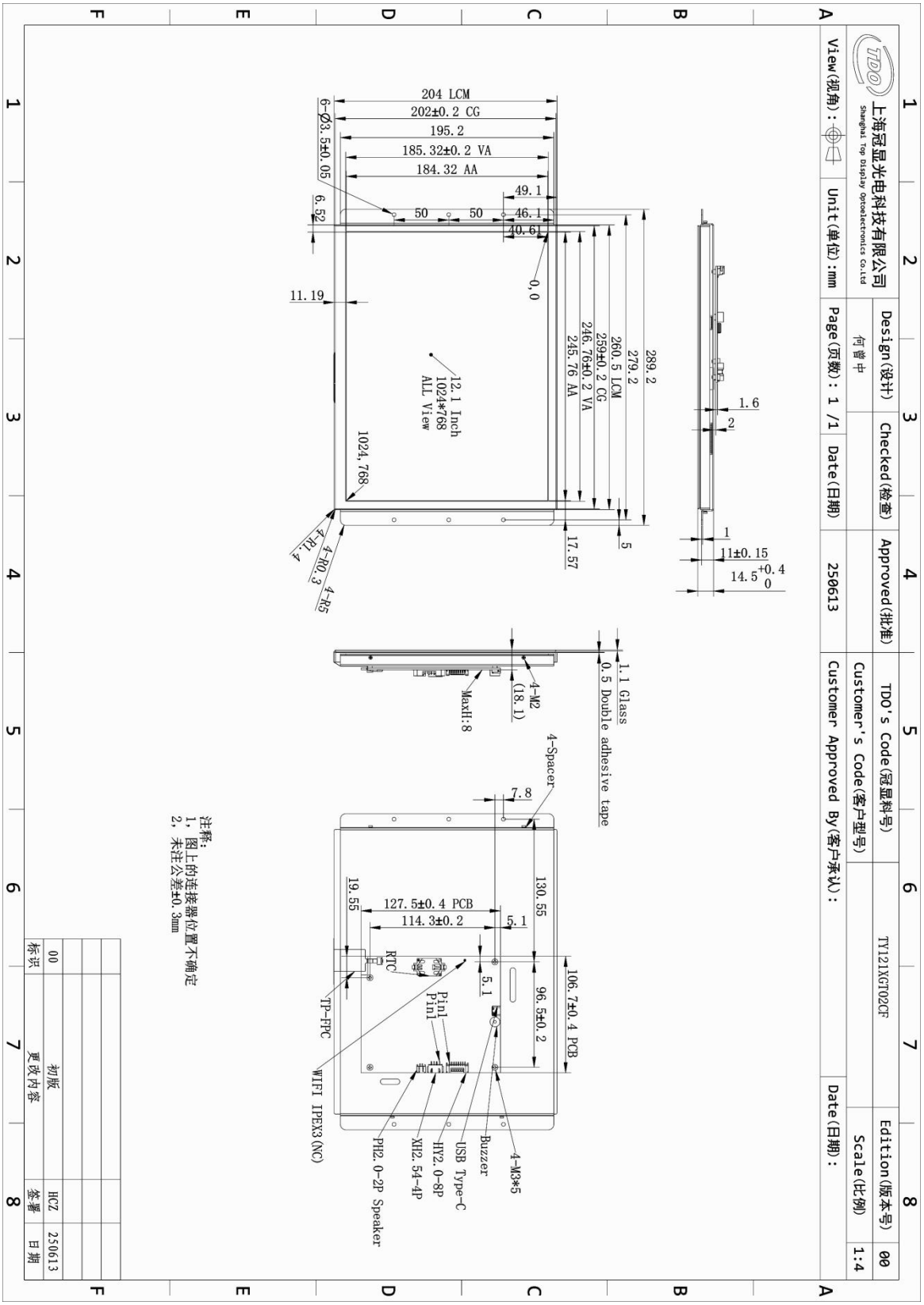

```
Site          : RE #1
Condition     : GB 4824 CLASSB 3m VULB9162-2024 Horizontal
              : DET:Peak
Applicant     : 冠显
EUT           : 12.1
M/N           :
S/N           :
Power Supply  : DC 12V
Ambient       : 25'C/54%RH
Test Mode     :
Test Engineer: ZJX
MEMO          : 【1米，2米，3米】
```

	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	122.197	34.09	22.73	40.00	-5.91	9.67	1.69	Peak	300	287
2	159.382	38.49	28.48	40.00	-1.51	8.21	1.80	Peak	100	165
3	183.237	31.50	19.68	40.00	-8.50	9.95	1.87	Peak	266	1
4	370.483	41.79	24.84	47.00	-5.21	14.53	2.42	Peak	300	116
5	433.066	39.71	21.55	47.00	-7.29	15.56	2.60	Peak	300	116
6	489.686	37.51	18.22	47.00	-9.49	16.52	2.77	Peak	300	330

图 3.3.3-2 辐射测试垂直方向测试数据图

Figure3.3.3-2 Vertical test data chart of radiation test

3. 产品尺寸 Product Size



4. 型号定义 Model Definition

TY 121 XG T 02 C F

12 3 4 5 6 7 8

① ： 1 码--TDO 缩写，固定。

1 position--TDO abbreviation, fixed。

② ： 1 码---U(U 系列串口）/P(并口)/Y(Y 系列串口)/H(HDMI 接口类)/S(转接板)

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

③ ： 3 码--尺寸,eg.121->12.1 寸

3 position--size,eg.121->12.1 inch

④ ： 2 码--分辨率缩写

2 position--resolution abbreviation

⑤ ： 1 码--C（消费级）/ H（商业级）/ M（医疗级）/ L（MINI 板）/ P（带外壳）

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

⑥ ： 2 码--流水号

1 position---serial number

⑦ ： 1 码--C(带电容触摸面板)/R(带电阻触摸面板)/N(不带触摸面板)

1 position---C (with capacitance touch panel)/R (with resistive touch panel)/N(with NO touch panel)

⑧ ： 1 码--平台号， F-TR660/ G-TR540 /H-TR230M / J-TR240 / K-TR661 / D-TR670/0-安卓/ 1-Linux

1 position--platform number，F-TR660/ G-TR540 / H-TR230M / D-TR670/0-android/ 1-Linux

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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.

5. 包装与物理尺寸 Packaging and Physical Dimensions

单品重量 Single product weight					
净重量（G） Net weight (G)	TBD				
包装标准和总重量 Packaging standard and total weight					
包装箱型号 Packing box model	包装箱尺寸(长*宽*高,单位：mm) Packing box size (length*width*height, unit: mm)	层数 Layers	数量（PCS）/层 Quantity (PCS)/layer	总数量（片） Total quantity (pieces)	总重量（KG） Total weight (KG)

6. 销售与服务 Sale and Service

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