Request information

# PRODUCT SPECIFICATION

# TFT-LCD HDMI MODULE

## Module No：1000059-01

☑ Preliminary Specification

☐ Approval Specification

| Designed by | Checked by | Approved by |
|---|---|---|
| | | |

## Final Approval by Customer

| Approved by | Comment |
|---|---|
| | |

For more information, contact us:

**WWW.DCLTEK.COM | 1-800-407-8917 | SALES@DCLTEK.COM**

ń The specification of “TBD” should refer to the measured value of sample . If there is difference between the design specification and measured value, we naturally shall negotiate and agree to solution with customer.

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# 1.Document Revision History

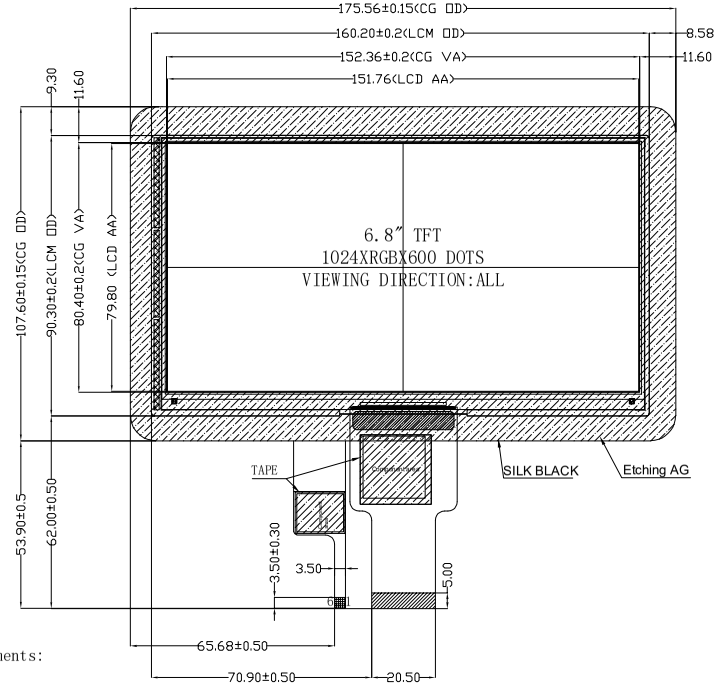
| Version | Contents | Date | Note |
|---|---|---|---|
| V0 | Initial version | 2024.07.10 | |
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## 2. General Description

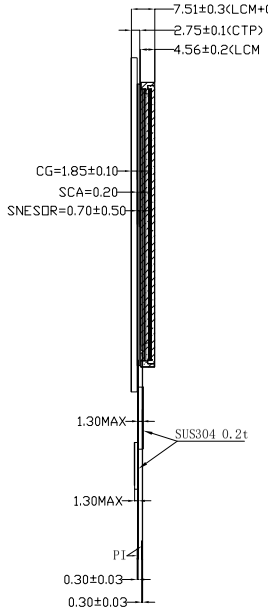
| NO | Item | Specification | Unit |
|---|---|---|---|
| 1 | LCD Size | TFT"6.8 | inch |
| 2 | Panel Type | IPS | mm |
| 3 | Display Resolution | 1024xRGBx600 | pixel |
| 4 | Display Mode | Normally Black | - |
| 5 | Number of Colors | 16.7M | - |
| 6 | Viewing Direction | ALL | - |
| 7 | CTP+LCM Module size | 175.56(H)x107.60(V)x6.13(T) | mm |
| 8 | Active Area | 151.76(H)x79.80(V) | mm |
| 9 | LCM Driver | - | |
| 10 | Light Source | White LED | |
| 11 | LCM Interface | LVDS | bit |

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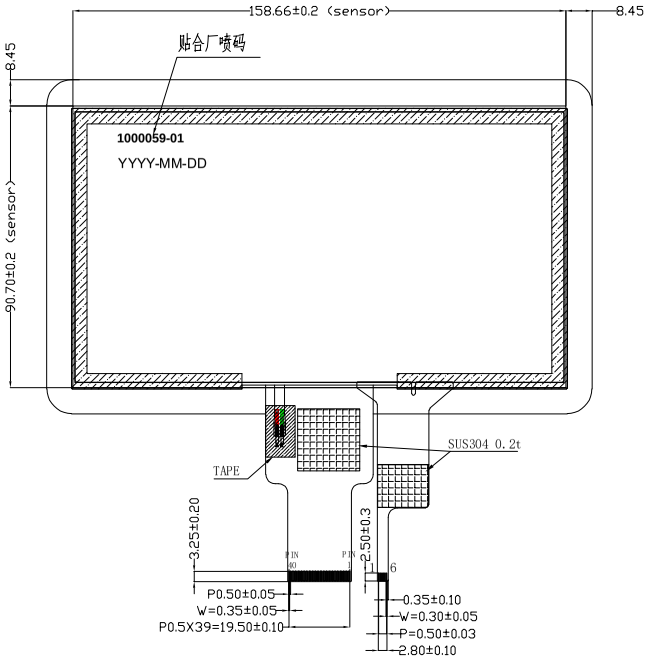
# Front View




# Side View




# Back View



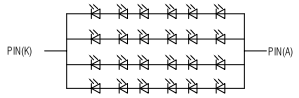

PIN DESCRIPTION

| | |
|---|---|
| 1 | NC |
| 2 | VDD=3.3V |
| 3 | VDD=3.3V |
| 4 | NC |
| 5 | RESET |
| 6 | STBYB |
| 7 | GND |
| 8 | RXIN0- |
| 9 | RXIN0+ |
| 10 | GND |
| 11 | RXIN1- |
| 12 | RXIN1+ |
| 13 | GND |
| 14 | RXIN2- |
| 15 | RXIN2+ |
| 16 | GND |
| 17 | RXCLKIN- |
| 18 | RXCLKIN+ |
| 19 | GND |
| 20 | RXIN3- |
| 21 | RXIN3+ |
| 22 | GND |
| 23~24 | NC |
| 25 | GND |
| 26~27 | NC |
| 28 | SELB |
| 29 | NC |
| 30 | GND |
| 31~32 | LED- |
| 33 | SHLR |
| 34 | UPDN |
| 35 | NC |
| 36~37 | NC |
| 38 | NC |
| 39~40 | LED+ |

| CTP PIN | Definition |
|---|---|
| PIN1 | GND |
| PIN2 | SCL-1.8V |
| PIN3 | SDA-1.8V |
| PIN4 | INT-1.8V |
| PIN5 | RESET-1.8V |
| PIN6 | VCC-3.3V |

Technical requirements:
1. structure: G+G.
2. transmittance: ≥85%.
3. All unmarked tolerance: ±0.15mm.
4. IC: FT7311
5. Toughened degrees: 110g steel ball, 40cm drop height is not broken, surface hardness Test: ≥6H (pencil hardness test)
6. CG unmarked hole and edge≤0.20mm.
7. operate temperature: -30℃~80℃;
   storage temperature:-30~80℃;
8. All material compliant with ROHS.

Notes:
1. Display : 6.8″, TFT
2. Resolution: 1024xRGBx600
3. LCD Viewing Direction: ALL,
4. Drive IC:JD9168
5. Display Mode: Normally Black/Transmissive
6. LCM Bringhtness: 850cd/m²(TYP)
   LCM+CTP Bringhtness: 800cd/m²(TYP),uniformity≥80%
7. unmark Tolerance:±0.2
8. OPERATING TEMP: -30° C~ +80° C
9. STORAGE TEMP: -30° C~ +80° C
10. Requirements on Environmental Protection: ROHS




If= 100 mA, Vf= 18.0 V(typ)

| REV | DESCRIPTION | DATE | NAME |
|---|---|---|---|
| 3 | | | |
| 2 | | | |
| 1 | | | |
| 0 | NEW | 2022.07.27 | |

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| | | | | | |
|---|---|---|---|---|---|
| SCALE:1/1 | UNIT:mm | PAGE:1/1 | Approve | Check | Drawn |
| Part No: | 1000059-01 | VER:V0 | | | |
| Customer No: | | | | | |

## 5.0 Interface Pin Connection

**(Input signal): FPC Down Connector, (FH19SC-60S-0.5SH (HIROSE), 50pin, pitch = 0.5mm)**

| Pin No. | Symbol | I/O | Function | Remark |
|---|---|---|---|---|
| 1 | NC | P | No connection | |
| 2 | VDD | P | Power Voltage for digital circuit | |
| 3 | VDD | P | Power Voltage for digital circuit | |
| 4 | NC | --- | No connection | |
| 5 | Reset | I | Global reset pin | |
| 6 | STBYB | I | Standby mode, Normally pulled high STBYB = “1”, normal operation<br>STBYB = “0”, timing controller, source driver will turn off, all output are High-Z | |
| 7 | GND | P | Ground | |
| 8 | RXIN0- | I | - LVDS differential data input | |
| 9 | RXIN0+ | I | + LVDS differential data input | |
| 10 | GND | P | Ground | |
| 11 | RXIN1- | I | - LVDS differential data input | |
| 12 | RXIN1+ | I | + LVDS differential data input | |
| 13 | GND | P | Ground | |
| 14 | RXIN2- | I | - LVDS differential data input | |
| 15 | RXIN2+ | I | + LVDS differential data input | |
| 16 | GND | P | Ground | |
| 17 | RXCLKIN- | I | - LVDS differential clock input | |
| 18 | RXCLKIN+ | I | + LVDS differential clock input | |
| 19 | GND | P | Ground | |
| 20 | RXIN3- | I | - LVDS differential data input | |
| 21 | RXIN3+ | I | + LVDS differential data input | |
| 22 | GND | P | Ground | |
| 23 | NC | --- | No connection | |
| 24 | NC | --- | No connection | |
| 25 | GND | P | Ground | |
| 26 | NC | --- | No connection | |

| | | | | |
|---|---|---|---|---|
| 27 | NC | --- | No connection | |
| 28 | SELB | I | 6bit/8bit mode select | Note1 |
| 29 | NC | P | No connection | |
| 30 | GND | P | Ground | |
| 31 | LED- | P | LED Cathode | |
| 32 | LED- | P | LED Cathode | |
| 33 | L/R | I | Horizontal inversion | Note3 |
| 34 | U/D | I | Vertical inversion | Note3 |
| 35 | NC | P | No connection | |
| 36 | NC | P | No connection | |
| 37 | NC | P | No connection | |
| 38 | NC | P | Gate ON Voltage | |
| 39 | LED+ | P | LED Anode | |
| 40 | LED+ | P | LED Anode | |

Note() Selection of scanning mode (please refer to the following table)

| **Setting of scan control input** | | **IN/OUT state for start pulse** | | | | **Scanning direction** |
|---|---|---|---|---|---|---|
| U/D | L/R | STVD | STVU | STHR | STHL | |
| GND | $DV_{DD}$ | Output | input | output | input | up to down, and from left to right |
| $DV_{DD}$ | GND | input | output | input | output | down to up, and from right to left |
| GND | GND | output | input | input | output | up to down, and from right to left |
| $DV_{DD}$ | $DV_{DD}$ | input | output | output | input | down to up, and from left to right |

Note() MOD=H: Simultaneous sampling.(Please check CPH2 and CPH3 to GND when MOD=H)
MOD=L: Sequential sampling.

## 2.0 Absolute Maximum Ratings

### 2.1 Electrical Absolute Rating

| Parameter | Symbol | Min. | Max. | Unit | Note |
|---|---|---|---|---|---|
| Power supply voltage | VCC | -0.3 | +3.6 | V | GND=0 |
| | IOVCC | +0.3 | +3.3 | V | GND=0 |

### 2.2 Environment Absolute Rating

| Item | Symbol | Min. | Max. | Unit | Note |
|---|---|---|---|---|---|
| Operating Temperature | Topa | -30 | 80 | Ņ | |
| Storage Temperature | Tstg | -30 | 80 | Ņ | |

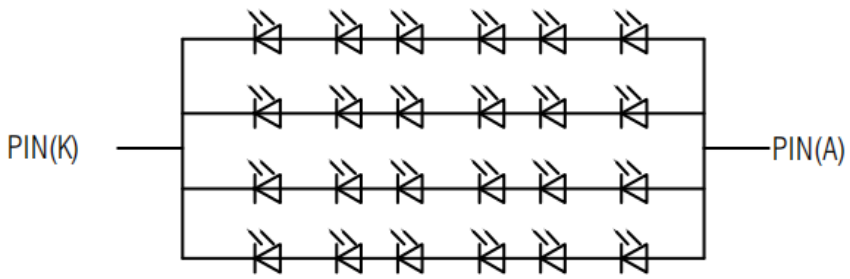
### 2.3 Back-light Unit:

| PARAMETER | Sym. | Min. | Typ. | Max. | Unit | Test Condition | Note |
|---|---|---|---|---|---|---|---|
| LED Current | IF | – | 100 | – | mA | – | – |
| LED Voltage | VF | – | 18 | – | V | I=100mA | – |
| Life Time | | – | 30000 | – | Hr. | I 100mA | – |
| Brightness | Luminance | – | 800 | -- | cd/m2 | I=100mA | |
| Color | White | | | | | | |

Note (1) Permanent damage may occur to the LCD module if beyond this specification. Functional operation should be restricted to the conditions described under normal operating conditions.

(2)Ta=25±2 Ņ

(3)Test condition: LED Current 100mA




If= 100 mA, Vf= 18.0 V(typ)

# 3.0 OPTICAL CHARACTERISTICS

## 3.1 Optical Specification

| Parameter | | Symbol | Condition | Min | Typ | Max | Unit | Remark |
|---|---|---|---|---|---|---|---|---|
| Viewing Angle | Horizontal | $\Theta_3$ | CR > 10 | 80 | 85 | - | Deg. | Note 1 |
| | | $\Theta_9$ | | 80 | 85 | - | Deg. | |
| | Vertical | $\Theta_{12}$ | | 80 | 85 | - | Deg. | |
| | | $\Theta_6$ | | 80 | 85 | - | Deg. | |
| Cell Transmittance | | | Θ = 0° (Center) Normal Viewing Angle | 3.6 | 4.75 | | % | |
| Contrast ratio | | CR | | 800:1 | 1000:1 | - | | Note 2 |
| Reproduction of color | White | $W_x$ | | TYP. - 0.03 | 0.309 | TYP. + 0.03 | | Note 3 |
| | | $W_y$ | | | 0.348 | | | |
| | Red | $R_x$ | | | - | | | |
| | | $R_y$ | | | - | | | |
| | Green | $G_x$ | | | - | | | |
| | | $G_y$ | | | - | | | |
| | Blue | $B_x$ | | | - | | | |
| | | $B_y$ | | | - | | | |
| Color Gamut | | | | 50 | 55 | - | % NTSC | |
| Response Time | | Tr+Td | | - | 30 | 35 | ms | Note 4 |
| Gamma Scale | | | | 1.9 | 2.2 | 2.5 | | |

## 4.Features

4.1,Support HDMI
VGA(Common resolutions: 640*480,800*480,800*600,1024*600,1024*768， 1280*800, CVBS

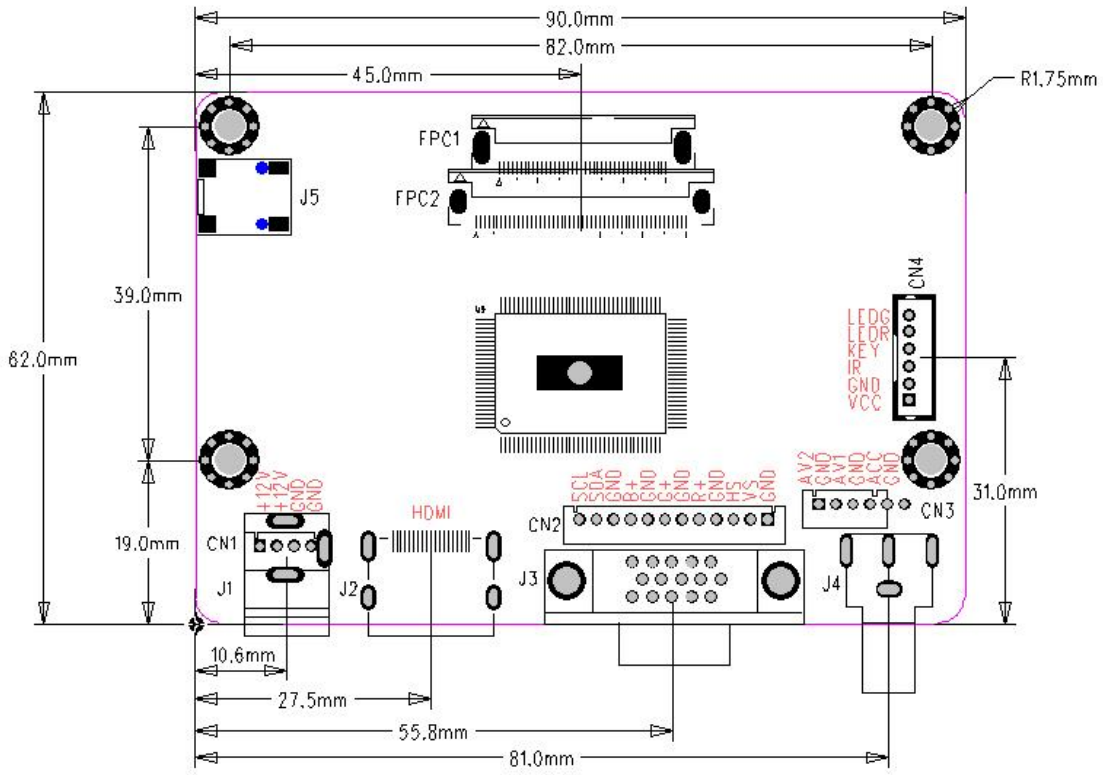
**4.2,Input Voltage :DC +12V（9V-15V）**

**4.3, Multi-function OSD, support brightness, contrast and pareter adjustment**

**4.4,Support remote control function**

**4.5,Power-on and power-off indicator status**

## 5.Outline structure diagram 2.1Driver board

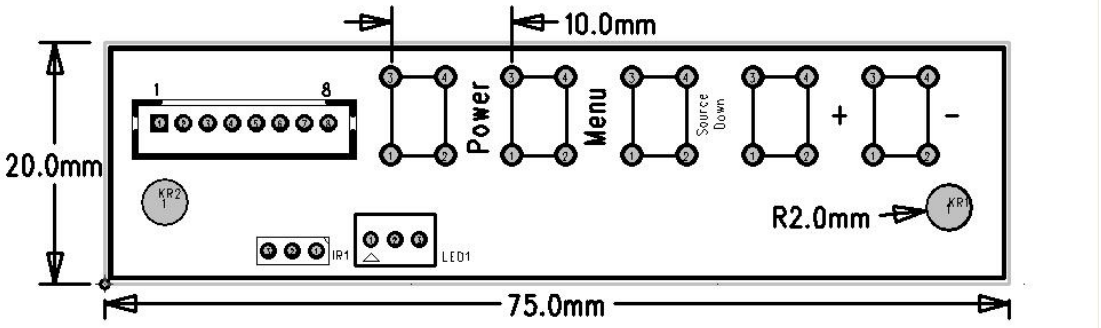



length：90mm

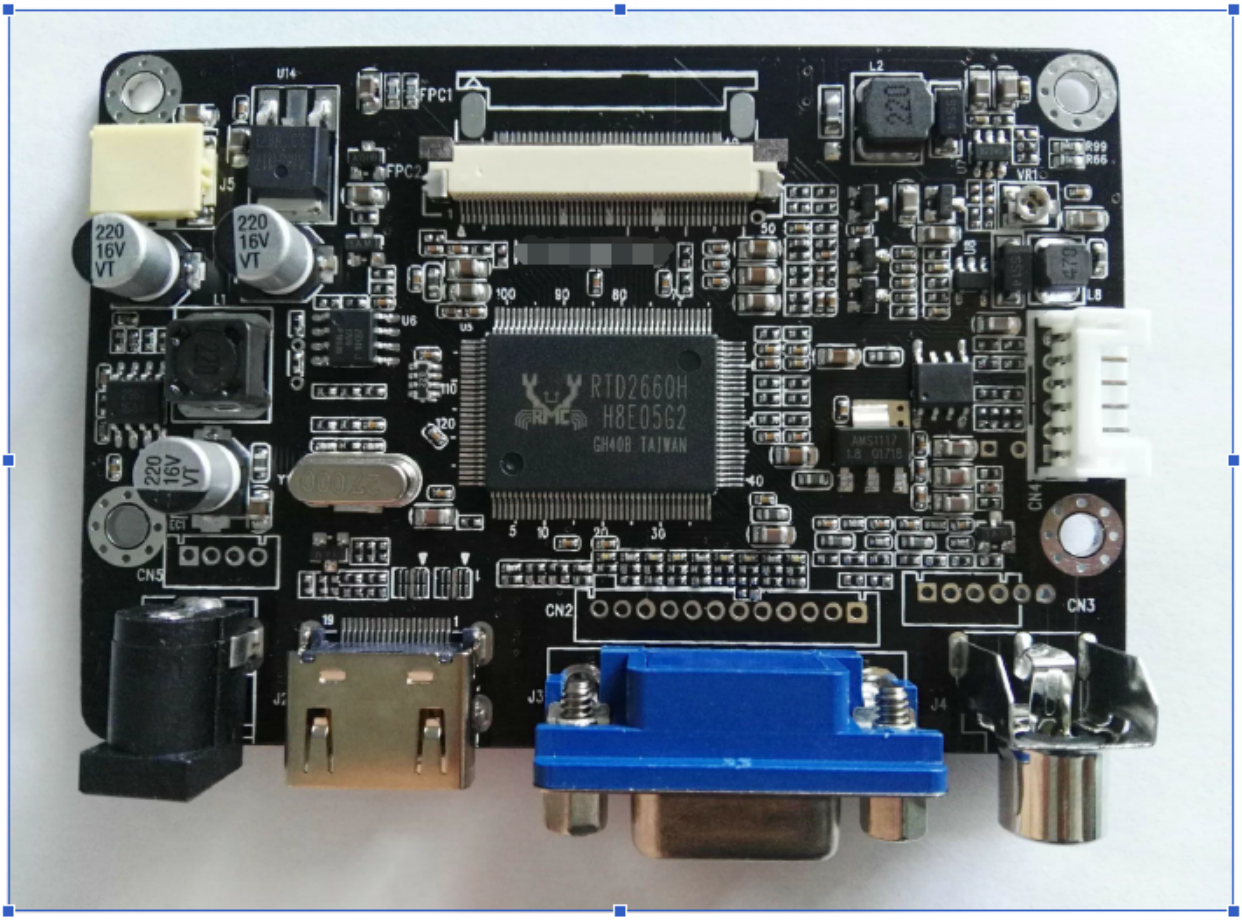
width：62mm

high：15mm (Component height + PCB thickness)

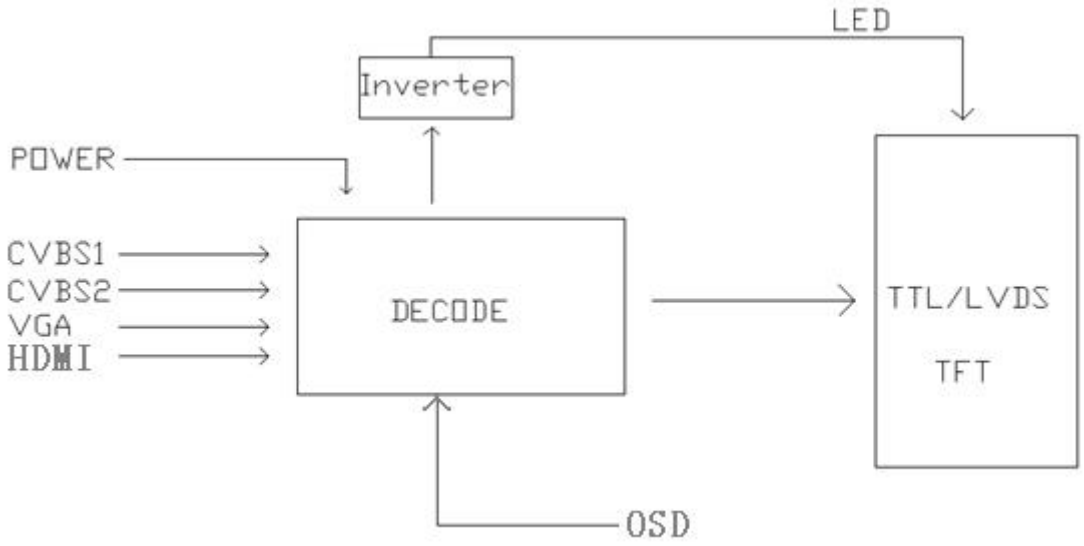
2.2 keyboard



## 6. External drawing



## 7.Electrical Circuit




## 8. Interface Definition

power supply J1 (DC-2.1-005

power supply CN1/CN5

| Foot number | Definition | Describe |
|---|---|---|
| 1 | +12V | power |
| 2 | +12V | power |
| 3 | GND | land |
| 4 | GND | land |

J2，HDMI

J3　VGA Interface (VGA-15P-3.08)

CN2 VGA Interface

| Pin number | Definition | Describe |
|---|---|---|
| 1 | SCL | I2C |
| 2 | SDA | I2C |
| 3 | GND | land |

| | | |
|---|---|---|
| 4 | B+ | blue signal+ |
| 5 | GND | land |
| 6 | G+ | green signal+ |
| 7 | GND | land |
| 8 | R+ | red signal+ |
| 9 | GND | land |
| 10 | HS | line sync signal |
| 11 | VS | field sync signal |
| 12 | GND | land |

## Signal input CN3

| Foot number | Definition | Describe |
|---|---|---|
| 1 | CVBS2 | AV2 enter |
| 2 | GND | land |
| 3 | CVBS1 | AV1 enter |
| 4 | GND | land |
| 5 | ACC | Reversing detection12V（5V-16V） |
| 6 | GND | |

## Keypad Interface CN4

| Foot number | Definition | Describe |
|---|---|---|
| 1 | VCC +3.3V | key board power |
| 2 | GND | land |
| 3 | IR INT | Infrared acceptance |
| 4 | KEY | Keypad AD interface |
| 5 | LED RED | Keypad LED |
| 6 | LED GREEN | Keypad LED |

## 9. Reliability test items

| No. | Test Item | Test Condition | Notes |
|---|---|---|---|
| 1 | High Temp. Storage | +80°C / 48H | 1. Functional test isOK. Missing Segment,short, unclear segment non-display,display abnormally and liquid crystal leakare un-allowed. 2. No low temperature bubbles,end seal loose andfall, frame rainbow. |
| 2 | Low Temp. Storage | -30°C / 48H | |
| 3 | High Tempe. Operating | +80°C / 48H | |
| 4 | Low Tempe. Operating | -30°C / 48H | |
| 5 | High Temperature /Humidity storage | 50°C x 90%RH /48H | |
| 6 | Thermal and cold shock | Static state，-20℃（30min）~60℃（30min），50 cycles | |
| 7 | ESD test | ±2KV,Human Body Mode, 150pF/330Ω; ±4KV, Air Mode, 150pF/330Ω; | |

Note: All tests above are practiced at module type.

There is no display function NG issue occurred, All the cosmetic specification is judged before the reliability stress.

# 10. General Precaution

## 10.1 Use Restriction

This product is not authorized for use in life supporting systems, aircraft navigation control systems, military systems and any other application where performance failure could be life-threatening or otherwise catastrophic.

## 10.2 Asembly Precaytton

1、Please use the mounting hole on the module side in installing and do not bending or wrenching LCD in assembling. And please do not drop, bend or twist LCD module in handling.

2、Please design display housing in accordance with the following guide lines.

3、Housing case must be destined carefully so as not to put stresses on LCD all sides and not to wrench module. The stresses may cause non-uniformity even if there is no non-uniformity statically.

4、Keep sufficient clearance between LCD module back surface and housing when the LCD module is mounted. The clearance in the design is recommended taking into account the tolerance of LCD module thickness and mounting structure height on the housing.

5、 Please do not push or scratch LCD panel surface with any-thing hard. And do not soil LCD panel surface by touching with bare hands. ( Polarizer film, surface of LCD panel is easy to be flawed.)

6、Please do not press any parts on the rear side such as source IC, gate IC, and FPC during handling LCD module. If pressing rear part is unavoidable, handle the LCD module with care not to damage them.

7、Please wipe out LCD panel surface with absorbent cotton or soft cloth in case of it being soiled.

8、 Please wipe out drops of adhesives like saliva and water on LCD panel surface immediately. They might damage to cause panel surface variation and color change. 11.2.7 Please do not take a LCD module to pieces and reconstruct it. Resolving and reconstructing modules may cause them not to work well.

## 10.3 Disassembling or Modification

Do not disassemble or modify the module. It may damage sensitive parts inside LCD module, and may cause scratches or dust on the display. does not warrant the module, if customers disassemble or modify the module.

## 10.4 Breakage of LCD Panel

1 、If LCD panel is broken and liquid crystal spills out, do not ingest or inhale liquid crystal, and do not contact liquid crystal with skin.

2、 If liquid crystal contacts mouth or eyes, rinse out with water immediately.

3、 If liquid crystal contacts skin or cloths, wash it off immediately with alcohol and rinse thoroughly with water.

4、 Handle carefully with chips of glass that may cause injury, when the glass is broken.

## 10.5 Absolute Maximum Ratings and Power Protection Circuit

1、Do not exceed the absolute maximum rating values, such as the supply voltage variation, input voltage variation, variation in parts' parameters, environmental temperature, etc., otherwise LCD module may be damaged.

2、 Please do not leave LCD module in the environment of high humidity and high temperature for a long time.

3、 It's recommended employing protection circuit for power supply.

11.6 Operation

1、Do not touch, push or rub the polarizer with anything harder than HB pencil lead.Use fingerstalls of soft gloves in order to keep clean display quality, when persons handle the LCD module for incoming inspection or assembly.

2、 When the surface is dusty, please wipe gently with absorbent cotton or other soft material.

3、Wipe off saliva or water drops as soon as possible. If saliva or water drops contact with polarizer for a long time, they may causes deformation or color fading.

4、When cleaning the adhesives, please use absorbent cotton wetted with a little petroleum benzine or other adequate solvent.

## 10.6 Static Electricity

1、Protection film must remove very slowly from the surface of LCD module to prevent from electrostatic occurrence.

2、 Because LCD module uses CMOS-IC on TFT-LCD panel, it is very weak to electrostatic discharge. Please be careful with electrostatic discharge.

3、Persons who handle the module should be grounded through adequate methods.

## 10.7 Disposal

When disposing LCD module, obey the local environmental regulations.

## 10.8 OTHERS

1、A strong incident light into LCD panel might cause display characteristics' changing inferior because of polarizer film, color filter, and other materials becoming inferior. Please do not expose LCD module direct sunlight land strong UV rays.

2、 Please pay attention to a panel side of LCD module not to contact with other materials in preserving it alone.

3、 For the packaging box, please pay attention to the followings:

4、Packaging box and inner case for LCD are designed to protect the LCDs from the damage or scratching during transportation. Please do not open except picking LCDs up from the box.

5、 Please do not pile them up more than 6 boxes. (They are not designed so.) And please do not turn over.

6、 Please handle packaging box with care not to give them sudden shock and vibrations. And also please do not throw them up.

7、Packing box and inner case for LCDs are made of cardboard. So please pay attention not to get them wet. (Such like keeping them in high humidity or wet place can occur getting them wet.)

## 11.0 Packing form-TBD

# 深圳市丽台电子有限公司

# Quality inspection standards

# 品质允收标准

**MODEL No. / 产品型号：** **Applies 5.0~9.0 TFT-LCD Panel**
**UPDATED DATE / 生效日期：** **2022-05-20**
**VERSION / 版 本：** **A0**
**Customer Signature/客户签字：** _____

**RECORD OF REVISION/修订履历：**

| Version<br>版本 | Revision Record<br>修订内容 | Compile<br>修订者 | Date of Revision<br>修订日期 |
|---|---|---|---|
| V0 | 首发/Starting | Green | 2022.05.20 |
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## 1.Scope 1适用范围

This document shall be applied to 5.0~9.0 TFT-LCD Panel.

本文件适用于5.0~9.0 TFT-LCD Panel.

## 2.Inspection and Environment onditions/检查条件与环境

### 2. 1 Inspection Conditions 检查条件:

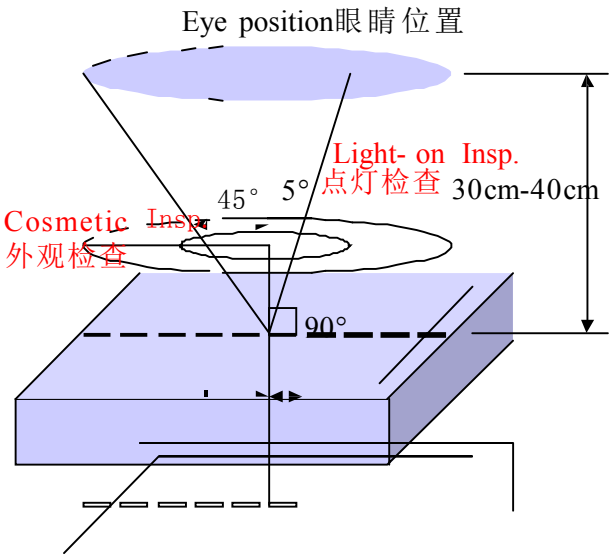
(1) Inspection Distance检测距离: 35 cm±5cm

(2) Each picture /每个画面：2~3 secs/秒，Cosmetic Inspection/外观10~12 secs/秒

(3) View Angle观看角度:

Light-on Inspection Angle点灯检验角度 ： ±45°

Cosmetic Inspection Angle外观检验角度 ： ±45°




(Perpendicular to LCD panel surface垂直于液晶显示表面)

### 2.2 Environment Conditions环境条件:

| | | |
|---|---|---|
| Ambient Temperature<br>温度 | | 25℃±5℃ |
| Ambient Humidity<br>湿度 | | 55±5%RH |
| Ambient Illumination<br>亮度 | Cosmetic Inspection<br>外观检验 | 800-1000 Lux |
| | Functional Inspection<br>点灯检验 | 200~300Lux |

### 2.3 Sampling Conditions 抽样条件:

(1) Lot Size ： Quantity of shipment lot per model/.

批量：单次运送单一机型数量

(2) Sampling Method ：
抽样方法：

| Sampling Plan 抽样计划 | | GB2828/2003 |
|---|---|---|
| | | Normal Inspection, Single Sampling 正常检验、单次抽样 |
| | | Geneal II Inspection 普通二级 |
| AQL | Major Defect 主要缺点 | 0.25 |
| | Minor Defect 次要缺点 | 0.65 |

(3) The classification of Major(MA) and Minor(MI) defects is shown as 3. Inspection Criteria.
主缺(MA)及次缺(MI)定义于”3.检查标准”

## 3.Terms and Definitions/术语和定义

3.1 Classification of defects缺陷的分类:

Major defects: A major defect is a defect that is likely to result in failure, or to reduce materially the usability of the product for its intended purpose.

主要缺陷：会导致产品功能失效或减少产品可用性的缺陷。

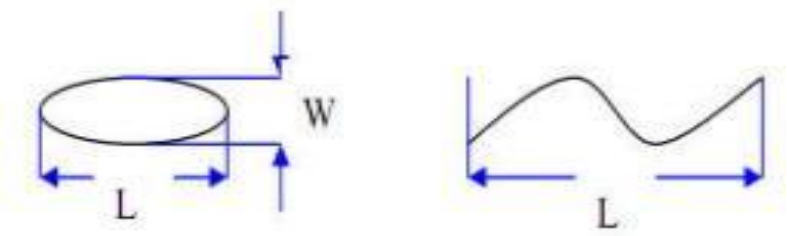
Minor defects: A minor defect either is a defect that is not likely to reduce materially the usability of the product for its intended purpose, or is a departure from an established having little bearing on the effective use or operation of the product.

次要缺陷：不会导致产品功能失效，不会减少产品的有效使用和操作。

3.2 Extraneous substances that can be wiped out ,like Finger point,Particles are not cnsidered as a defect . 可以被擦拭干净的表面物质不视为缺陷 (如手指印，尘粒) 。

3.3 Defects on the Black Matraix(outside ofActive Area) are not considered as a defect . BM 区域 (AA 区以外) 的缺陷不视为缺陷。

3.4 Size of circular defect,is defined by diameter”D” 。The defect average diameter D=1/2(W+L) 圆形缺陷的大小是由直径 D 定义的。缺陷的平均直径 D=1/2(W+L)



3.5 When defect size L≥2W,the defect count as liner type defect.Size of linear defect is defined by length(L) and the maximum width(W).

当缺陷尺寸 L≥2W 时，被视为线状缺陷。线状缺陷是由长度 (L) 和最大宽度 (W) 定义的。 3.6 3.6 Mura criteria :judged by ND filter6%,and can't be seen under at ND filter 6% .

3.6 MURA 判断标准：使用 ND6%判定，且透过 ND6%，遮住不可见.

3.7 Dot defect is defind as the defective area of the dot is larger than 50% of the dot area and is visible through 6% ND filter

DOT 定义为点缺陷面积大于 50% DOT 面积, 且透过 ND6%遮住是可见的.

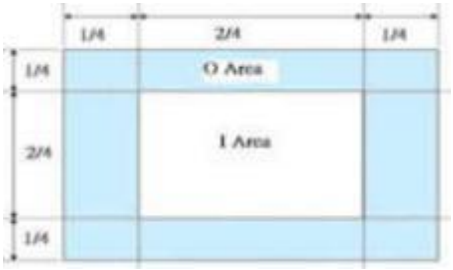
The drawing of 1/2 area sub-pixel definition: The 1/2 area sub-pixel can be defined as below one or more of specific shapes

1/2 面积的子像素定义绘图：1 / 2 面积的子像素可以定义为如下一个或多个特定形状图：



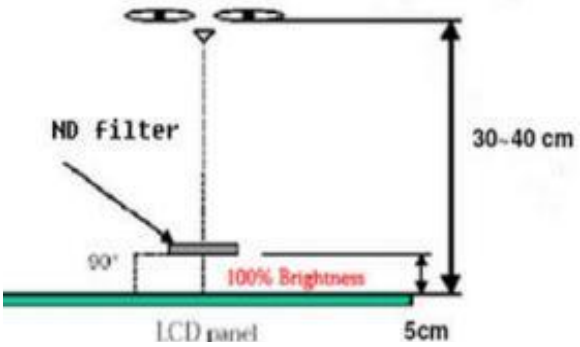
3.8 A dot defect that is smaller than the defined dot defect will be treated as small bright dot. 细碎亮点：小于"DOT 定义"的点缺陷视为细碎亮点。

I 区与 O 区比例：1：2：1




3.9 Inspection method of ND Filter - holding ND filter in front of the panel around 5cm and examine the panel from 35±5 cm in the front view for 2~3 second.

ND 卡的检查方法：在面板上方大约 5CM 处握住 ND 卡，眼睛距离面板 30-40CM，通过 2~3 秒观察。



## 4. Inspection Criteria 检验标准

4.1 Appearance Inspection specification 外观检查规格:

| Judge area 区域 | Judge item 项目 | Specification inspection 检查规格 | Judge criterion | |
|---|---|---|---|---|
| | | | Major | Minor |
| Silicone 硅胶 | Silicone spread 硅胶涂布 | The height can't over C/F , color filter , or gomu 高度不能过超 C/F | | MI |
| | Silicone residue 硅胶残余 | Can't cover polarizer, FPC …etc. 不能覆盖 POL, FPC 等 | | MI |
| LCD 玻璃 | Wire(on Array) 线路 | No damage 不能损伤 | MA | |
| | Edge 边缘 | No extended crack 不可有延伸性裂纹 | MA | |
| PCBA Connector FPC/FFC | Appearance 外观 | Scratch or damage result in copper expose is not allowed 划伤或损伤不允许导致出现露铜 | | MI |
| | Component 零件 | No damage 不能损伤 | MA | |
| | Connection status 连接状况 | Need correct connection 需要正确连接 | MA | |
| | Broken 破裂 | Not allowable 不允许 | MA | |
| | Folding sign 对位记号折叠 | Not allowable 不允许 | MA | |
| POL 偏光片 | Scract on the polarizer 偏光片划伤 | 1.W≤0.07mm; L≤5mm, Ignore (忽略) | | MI |
| | | 2.0.07mm<W≦0.15mm ; L≤5mm ; N≤4 ; DS≥10mm | | |
| | | 3.0. 15mm＜W; 5mm＜ L , Not allowable不允许 | | |

| Judge area<br>区域 | Judge item<br>项目 | Specification inspection<br>检查规格 | Judge criterion | |
|---|---|---|---|---|
| | | | Major | Minor |
| POL<br>偏光片 | Dent on the polarizer<br>偏光片凹痕 | 1.D＜0. 20mm，Ignore（忽略） | | MI |
| | | 2.0.20mm＜D≤0.40mm；N≤4；DS≥10mm | | |
| | | 3.0.40mm＜D，Not allowable不允许 | | |
| | POL Linear bubble<br>线状气泡 | 1.W≤0.07mm；L≤5mm，Ignore（忽略） | | MI |
| | | 2.0.07mm<W≦0.15mm ; L≤5mm ; N≤4 ; DS≥10mm | | |
| | | 3.0. 15mm＜W；5mm＜ L，Not allowable不允许 | | |
| | POL dot bubble<br>点状气泡 | 1.D＜0. 20mm，Ignore（忽略） | | MI |
| | | 2.0.20mm＜D≤0.40mm；N≤4；DS≥10mm | | |
| | | 3.0.40mm＜D，Not allowable不允许 | | |
| | POL edge bubble<br>片边缘气泡 | 1. The display area is 1/2BM outside，Not allowable<br>显示区往外 1/2BM 区域内，不允许<br>2. The display area is outside the outer 1/2BM area，Not allowable<br>显示区往外1/2BM区域以外，不管控 | | MI |

| Judge area<br>区域 | Judge item<br>项目 | Specification inspection<br>检查规格 | Judge criterion | |
|---|---|---|---|---|
| | | | Major | Minor |
| TP&CG | Foreign Material in spot shape<br>点状异物 | 1.D≤0.20mm；Ignored（忽略）<br>2.0.20mm＜D≤0.40mm；N≤4；DS≥10mm<br>3.D＞0.40mm；Not allowable不允许 | | MI |
| | Fisheye/bubbles<br>鱼眼/气泡 | 1.D≤0.20mm；Ignored（忽略）<br>2.0.20mm＜D≤0.40mm；N≤4；DS≥10mm<br>3.D＞0.40mm；Not allowable不允许 | | MI |
| | Scratches on the surface<br>表面划伤 | 1.W≤0.07mm；Ignored（忽略）<br>2.0.07mm<W≤0.15mm，L≤5mm；N≤4；DS≥10mm<br>3.W＞0.15mm，L＞5mm；Not allowable不允许 | | MI |
| | Collapse corner、Crash edge<br>崩角、崩边 | Product front:/产品正面：<br>collapse corners, collapsed edges are not allowed<br>崩角、崩边不允许；<br>Product back/产品背面：<br>X≤ 0.5 , Y≤0.5，Z≤1/2T；N≤4；DS≥10mm | MA | |
| | Printed fonts/LOGO<br>丝印/LOGO | Printed fonts/LOGO clarity、complete、content right<br>字体/LOGO丝印清晰、完整、内容正确 | | MI |
| | Broken<br>破损 | Not allowable不允许 | MA | |
| | Dirty surfaces<br>表面脏污 | Dirt cannot be wiped， Not allowable<br>不可擦拭的脏污，不允许 | | MI |
| | IR hole<br>IR孔 | Black spots/黑点：<br>W ≤0.15mm，N≤2，Not visible against a black background/黑色背景下不可见 | | MI |
| | | IR hole Scratches：<br>1.W＜0.05mm，Ignored（忽略）<br>（Dense points Not allowable 不允许密集）；<br>2.0.05mm＜W≤0.07mm；L≤2mm；N≤2；<br>3.W＞0.07mm，L＞2mm，Not allowable 不允许 | | MI |

4.2 Electrical Inspection specification电性检查规格:

| Item<br>项目 | Judgment Criteria<br>判定标准 | Judge criterion | |
|---|---|---|---|
| | | Major | Minor |
| LCD Bright /Dark dot<br>玻璃亮点/暗点 | 1.D≦0. 20mm， Ignored（忽略），Not dense（不可密集）<br>2.0.20mm<D≦0.40mm ； N≦4 ； DS≥10mm<br>3.D＞0.40mm ，Not allowed/不允许 | | MI |
| Mura | Invisible through 6% ND filter，200~300Lux<br>透过ND6% 遮住 ， 目测不可见即为OK， 200~300Lux | | MI |
| Small bright dot<br>细碎亮点 | Not allowed if it can be observed<br>through ND Filter6%<br>透过ND6%目测看得见，不允许 | | MI |
| ZBD Rate<br>玻璃亮点比率 | 90:10 | | MI |
| Light Leakage<br>漏光 | Invisible through 6% ND filter，OK<br>透过ND6%遮住目测不可见即为OK<br>If necessary,set up set up Limit Sample.<br>如果有必要，可制订限度样品 | | MI |
| Bubble in Cell (LC Bubble/Actice Area)<br>CELL气泡<br>(AA区LCD气泡) | Eyes should not find it .<br>目视观察不可见，视为 OK | MA | |

| Item<br>项目 | Judgment Criteria<br>判定标准 | Judge criterion | |
|---|---|---|---|
| | | Major | Minor |
| Foreign Material in spot shape<br>点状异物 | 1.D≦0.20mm， Ignored（忽略）<br>2.0.20mm<D≦0.40mm ； N≦4； DS≥10mm<br>3.D＞0.40mm ， Not allowable/不允许 | | MI |
| Foreign Material in line or spiral shape<br>线状异物 | 1.W≦0.07mm ， Ignored（忽略）<br>2. 0.07mm<W≦0.15mm ； L≤5mm ； N≦4<br>3.W＞0.15mm ； L＞5mm ， Not allowable/不允许 | | MI |
| White dot in back-light<br>白点 | 1.D≦0. 20mm，Ignored（忽略）<br>2.0.20mm<D≦0.40mm ； N≦4 ； DS≥10mm<br>3.D＞0.40mm ， Not allowed/不允许 | | MI |
| TP no touch<br>无触摸 | Not allowable<br>不允许 | MA | |
| Abnormal Disply<br>显示异常 | Not Allowed<br>不允许 | MA | |
| NO display<br>无显示 | Not Allowed<br>不允许 | MA | |
| Line Defect<br>缺线 | Not Allowed<br>不允许 | MA | |
| Angle of view error<br>视角错误 | Not Allowed<br>不允许 | MA | |
| Tect crostalk<br>不消失的残影 | Not Allowed<br>不允许 | MA | |