# SPECIFICATIONS

| | | |
|---|---|---|
| CUSTOMER | : | SCHUKAT |
| MASS PRODUCTION CODE | : | SMMT0701024600S-A21 |
| SAMPLE VERSION | : | 01 |
| SPECIFICATIONS EDITION | : | 002 |
| DRAWING NO. (Ver.) | : | SMMT0701024600S-A21-WX-B |

## Customer Approved

Date:

| Approved | Checked | Designer |
|---|---|---|
| JS SMARTWIN 2025.01.24 R&D Department 罗潇 | 闫伟 | 朱海 |

☐ Preliminary specification for design input

☑ Specification for sample approval

## History of Version

| Date (mm / dd / yyyy) | Ver. | Edi. | Description | Page | Design by |
|---|---|---|---|---|---|
| 12/03/2024 | 01 | 001 | New Spec | - | 朱海 |
| 01/24/2025 | 01 | 002 | Change the drawing | - | 朱海 |
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Total: 22Pages

## Contents



**Note : For detailed information please refer to IC data sheet :**
**Primacy(TFT LCD):**EK79001+EK73215

# 1. SPECIFICATIONS

## 1.1 Features

| Item | Standard Value |
|---|---|
| Display Type | 1024*600 |
| LCD Type | Normally black, Transmissive type |
| Screen size(inch) | 7 inch |
| Viewing Direction | FREE |
| Other(controller/driver IC) | EK79001+EK73215 |
| Interface | RGB |

## 1.2 Mechanical Specifications

**Module**

| Item | Standard Value | Unit |
|---|---|---|
| Outline Dimension | 164.42(W) ×99.42(H) ×5.52(D) mm | mm |

**TFT LCD**

| Item | Standard Value | Unit |
|---|---|---|
| Active Area | 154.21(H)x85.92(V) | mm |

## 1.3 Absolute Maximum Ratings

**Module**

| Item | Symbol | Condition | Min. | Max. | Unit |
|---|---|---|---|---|---|
| Operating Temperature | $T_{OP}$ | - | -30 | 80 | °C |
| Storage Temperature | $T_{ST}$ | - | -30 | 80 | °C |

## 1.4 DC Electrical Characteristics

**Module** GND = 0V, Ta = 25°C

| Item | Symbol | Condition | Min. | Typ. | Max. | Unit |
|---|---|---|---|---|---|---|
| Digital Supply Voltage | VDD | - | 3.0 | 3.3 | 3.6 | V |
| Input H/L Level Voltage | VIH | - | 0.7VDD | - | VDD | V |
| | VIL | - | 0 | - | 0.3VDD | V |
| Output H/L Level Voltage | VOH | - | VDD-0.4 | - | - | V |
| | VOL | - | - | | GND+0.4 | V |
| Supply Current | IDD | | - | 200 | 250 | mA |

## 1.5 Optical Characteristics

**TFT LCD Module** VDD= 3.3 V, Ta=25°C

| Item | | Symbol | Condition | Min. | Typ. | Max. | unit | - |
|---|---|---|---|---|---|---|---|---|
| Response time | Tr+Tf | 25℃ | - | - | 25 | 35 | ms | - |
| Viewing angle | Top | θY+ | CR ≥ 10 | 80 | - | - | Deg. | Note 4 |
| | Bottom | θY- | | 80 | - | - | | |
| | Left | θX- | | 80 | - | - | | |
| | Right | θX+ | | 80 | - | - | | |
| Contrast ratio | | CR | IF=270mA | 800 | 1000 | - | - | Note 3 |
| Color of CIE Coordinate (B/L & LCD) | White | X | | -0.05 | 0.310 | +0.05 | - | Note1 |
| | | Y | | | 0.350 | | | |
| | Red | X | | | 0.600 | | | |
| | | Y | | | 0.350 | | | |
| | Green | X | | | 0.340 | | | |
| | | Y | | | 0.600 | | | |
| | Blue | X | | | 0.159 | | | |
| | | Y | | | 0.110 | | | |
| Average Brightness Pattern=white display (B/L & LCD) | | IV | IF=270mA | 900 | 1100 | - | cd/m2 | Note1 |
| Uniformity (B/L & LCD) | | △B | IF=270mA | 75 | - | - | % | Note1 |

Note 1:

*1：△B=B(min) / B(max) * 100%

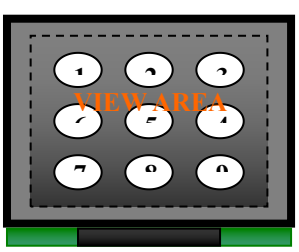
*2：Measurement Condition for Optical Characteristics:

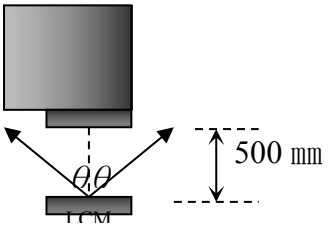
a：Environment: 25℃±5℃ / 60±20%R.H，no wind，dark room below 10 Lux at typical lamp current and typical operating frequency.

b：Measurement Distance: 500 ± 50 ㎜ ，(θ= 0°)

c：Equipment: TOPCON BM-7 fast，(field 1°)，after 10 minutes operation.

d：The uncertainty of the C.I.E coordinate measurement ±0.01，Average Brightness ± 4%




Colorimeter=BM-7

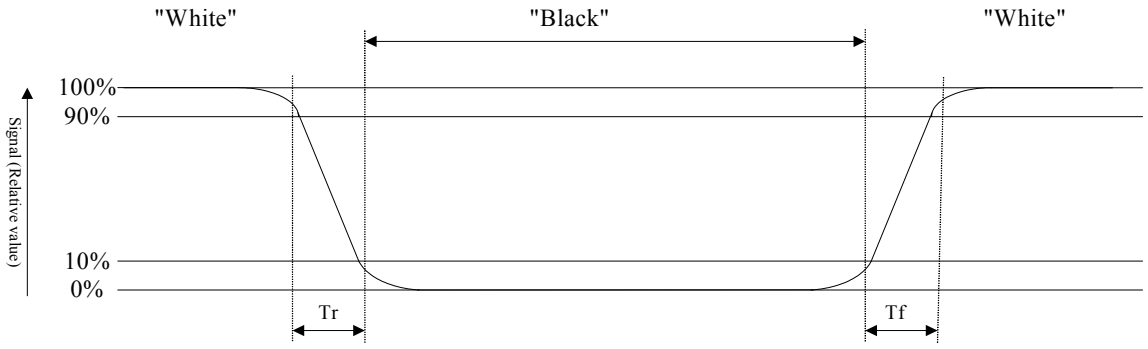
To be measured at the center area of panel with a viewing cone of 1° by Topcon luminance meter BM-7, after 10 minutes operation (module)

Note2: Definition of response time:

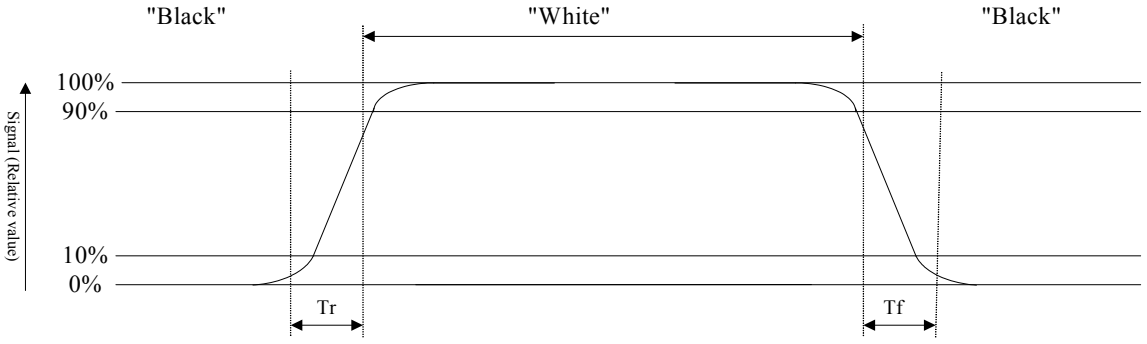
The output signals of photo detector are measured when the input signals are changed from “black” to “white”(falling time) and from “white” to “black”(rising time), respectively. The response time is defined as the time interval between the 10% and 90% of Amplitudes.

Refer to figure as below:

Normally White




Normally Black



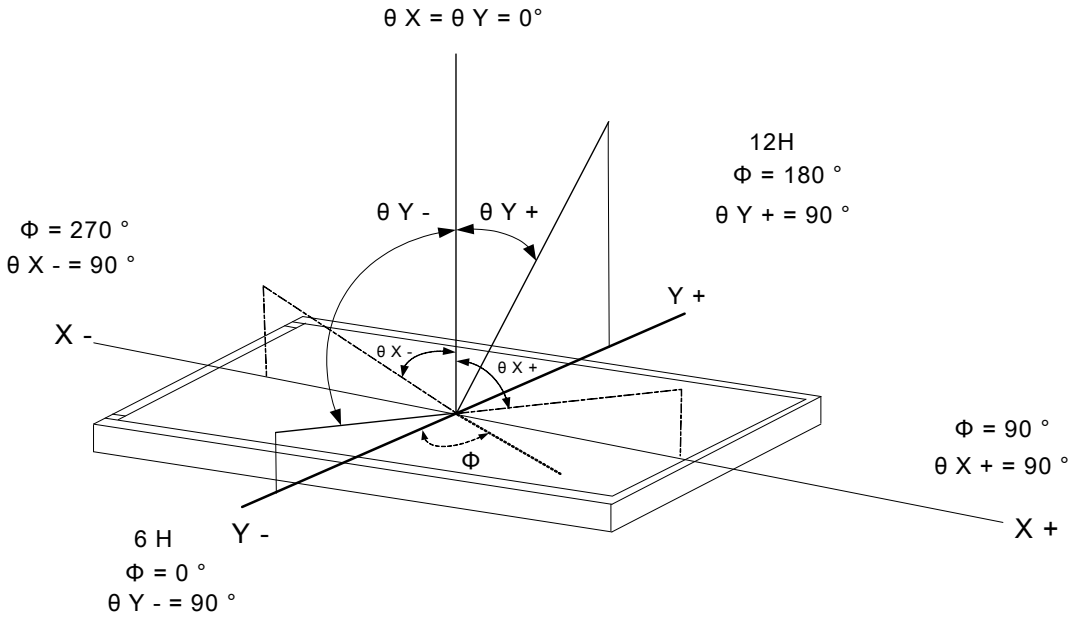

\Note3: Definition of contrast ratio:

Contrast ratio is calculated with the following formula

$$\text{Contrast ratio (CR)} = \frac{\text{Photo detector output when LCD is at “White” state}}{\text{Photo detector output when LCD is at “Black” state}}$$

Note4: Definition of viewing angle:

Refer to figure as below:


θ X = θ Y = 0°
12H
Φ = 180 °
θ Y + = 90 °
θ Y -
θ Y +
Φ = 270 °
θ X - = 90 °
Y +
X -
θ X -
θ X +
Φ
Φ = 90 °
θ X + = 90 °
X +
Y -
6 H
Φ = 0 °
θ Y - = 90 °

## 1.6 Backlight Characteristics

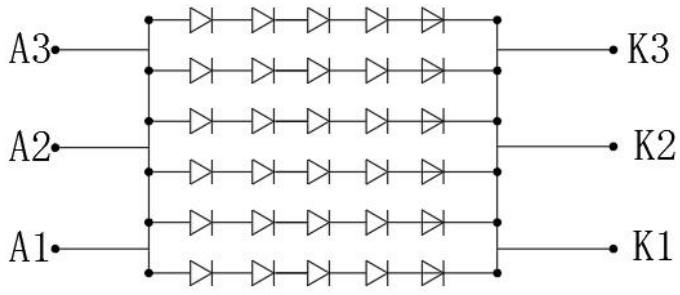
### 1.6.1 Backlight LED Driver IC (MP3362) Characteristics

| Item | Symbol | Min. | Typ. | Max. | Unit |
|---|---|---|---|---|---|
| Led Driver Power Voltage | VLED | 3.0 | 3.3 | 12 | V |
| Led Driver Power Current | ILED | - | 1.05 | - | A |
| PWM Dimming Freq | FDIM | - | - | 2 | kHZ |
| EN threshold | EN ON | 1.3 | - | - | V |
| | EN OFF | - | - | 0.4 | V |

### 1.6.2 Internal Backlight Electrical / Optical Characteristics

| Item | Symbol | Conditions | Min. | Typ. | Max. | Unit |
|---|---|---|---|---|---|---|
| Forward Voltage | VF | IF=200mA | 13.5 | 15 | 16.5 | V |
| Average Brightness | IV | | 13000 | 15000 | - | cd/m$^2$ |
| CIE Color Coordinate | X | | 0.29 | 0.31 | 0.33 | - |
| | Y | | 0.29 | 0.31 | 0.33 | |
| Led lifetime | | | 50k | | | Hrs |
| Color | White | | | | | |

Circuit Diagram



## 1.7 EEPROM Information

### 1.7.1 EEPROM Number :M24C02-RMN6TP

### 1.7.2 EEPROM Device Address 7bit :0X50

### 1.7.3 EEPROM Register Information:

| Address | Description | Data | Name/Value(typ) | Notes |
|---|---|---|---|---|
| 00h | No Data | 00h | 0 | |
| 01h | TFP-Interface | 01h | DPI | 1: DPI, 2: DSI |
| 02h | CTP-Interface | 00h | No CTP | 0: No CTP, 1: I2C |
| 03h | Manufacturer | 53h | S | SM: Smartwin (ASCII) |
| 04h | | 57h | M | |
| 05h | | 00h | | |
| 06h | Size | 07h | 7 inch | xx.xx inch |
| 07h | | 00h | | |
| 08h | X-Res.(H-Byte) | 04h | 1024 px | |
| 09h | X-Res.(L-Byte) | 00h | | |
| 0Ah | Y-Res.(H-Byte) | 02h | 600px | |
| 0Bh | Y-Res.(L-Byte) | 58h | | |
| 0Ch | Pixel-Clock(typ.) | 33h | 51.2 MHz | xx.xx MHz |
| 0Dh | | 02h | | |
| 0Eh | Color-Depth | 18h | 24 bit | |
| 0Fh | HBP(H-Byte) | 00h | 160 | |
| 10h | HBP(L-Byte) | A0h | | |
| 11h | HPW | 46h | 70 | |
| 12h | HFP(H-Byte) | 00h | 160 | |
| 13h | HFP(L-Byte) | A0h | | |
| 14h | VBP(H-Byte) | 00h | 23 | |
| 15h | VBP(L-Byte) | 17h | | |
| 16h | VPW | 0Ah | 10 | |
| 17h | VFP(H-Byte) | 00h | 12 | |
| 18h | VFP(L-Byte) | 0Ch | | |
| 19h | Polarity_Mode | 24h | 00100100b | Bit0: H_sync_polarity<br>Bit1: V_sync_polarity<br>Bit2: DE_polarity<br>(0: Negative, 1: Positive)<br><br>Bit3: H_sync _phase(Reserve)<br>Bit4: V_sync _phase(Reserve)<br>Bit5: DE_phase<br>(0: Rising edge, 1: Falling edge)<br><br>Bit6: Pixel_invert<br><br>Bit7: DE_mode<br>(0: DE enabled,1: Combined Sync) |
| 1Ah | Rotation | 00h | 00000000b | Bit 0: Display Mirror X<br>Bit 1: Display Mirror Y<br>Bit 2: Display Swap X/Y<br>Bit 3: Reserved, 0<br>Bit 4: Touch Mirror X<br>Bit 5: Touch Mirror Y<br>Bit 6: Touch Swap X/Y<br>Bit 7: Reserved, 0 |
| 1Bh | Reserve | 00h | 0 | |
| 1Ch-FFh | No Data | 00h | 0 | |

# 2. MODULE STRUCTURE

## 2.1 Interface Pin Description

### Interface of TFT

| Pin No. | Symbol | Description |
|---|---|---|
| 1 | GND | Ground |
| 2 | GND | Ground |
| 3 | GND | Ground |
| 4 | GND | Ground |
| 5 | +3V3 BKL | 3.3V Power Input for BKL |
| 6 | +3V3 BKL | 3.3V Power Input for BKL |
| 7 | +3V3 BKL | 3.3V Power Input for BKL |
| 8 | +3V3 BKL | 3.3V Power Input for BKL |
| 9 | PWM BKL | Back light PWM Control signal |
| 10 | +3V3 TFT | 3.3V Power Input for TFT |
| 11 | GND | Ground |
| 12 | R0 | Red data signal |
| 13 | R1 | Red data signal |
| 14 | R2 | Red data signal |
| 15 | R3 | Red data signal |
| 16 | R4 | Red data signal |
| 17 | R5 | Red data signal |
| 18 | R6 | Red data signal |
| 19 | R7 | Red data signal |
| 20 | G0 | Green data signal |

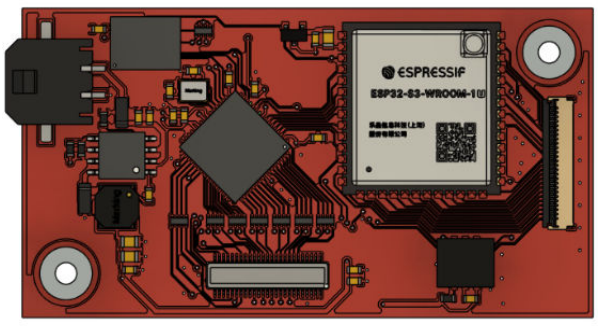
| | | |
|---|---|---|
| 21 | G1 | Green data signal |
| 22 | G2 | Green data signal |
| 23 | G3 | Green data signal |
| 24 | G4 | Green data signal |
| 25 | G5 | Green data signal |
| 26 | G6 | Green data signal |
| 27 | G7 | Green data signal |
| 28 | B0 | Blue data signal |
| 29 | B1 | Blue data signal |
| 30 | B2 | Blue data signal |
| 31 | B3 | Blue data signal |
| 32 | B4 | Blue data signal |
| 33 | B5 | Blue data signal |
| 34 | B6 | Blue data signal |
| 35 | B7 | Blue data signal |
| 36 | GND | Ground |
| 37 | VSYNC | Vertical Sync input for TTL mode. |
| 38 | HSYNC | Horizontal Sync input for TTL mode |
| 39 | DE | Data input enable applied to the RGB |

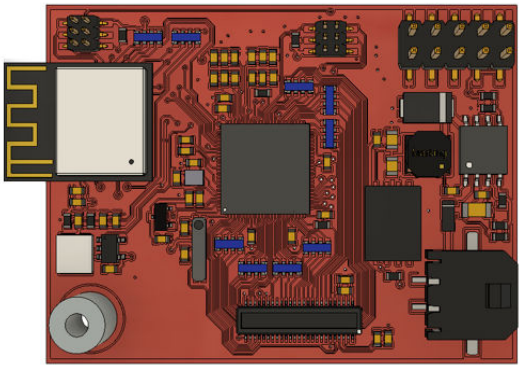
| | | |
|---|---|---|
| 40 | GND | Ground |
| 41 | PCLK | Clock signal for data latching and internal |
| 42 | GND | Ground |
| 43 | MODE(STDYB) | Standby mode, Normally pull high. |
| 44 | TFT_RESET | TFT Reset Pin |
| 45 | NC | No Connected |
| 46 | NC | No Connected |
| 47 | EEPROM-SDA | EEPROM I2C Data |
| 48 | EEPROM-SCL | EEPROM I2C Clock |
| 49 | +3V3 EEPROM | 3.3V Power Input for EEPROM |
| 50 | GND | Ground |

## Recommended matched connector :DF23C-50DP-0.5V

## Recommended driving boards:

- ESoPe :SLD_C_W_S3_BT817
- ESoPe :SLD_C_W_P4_C6



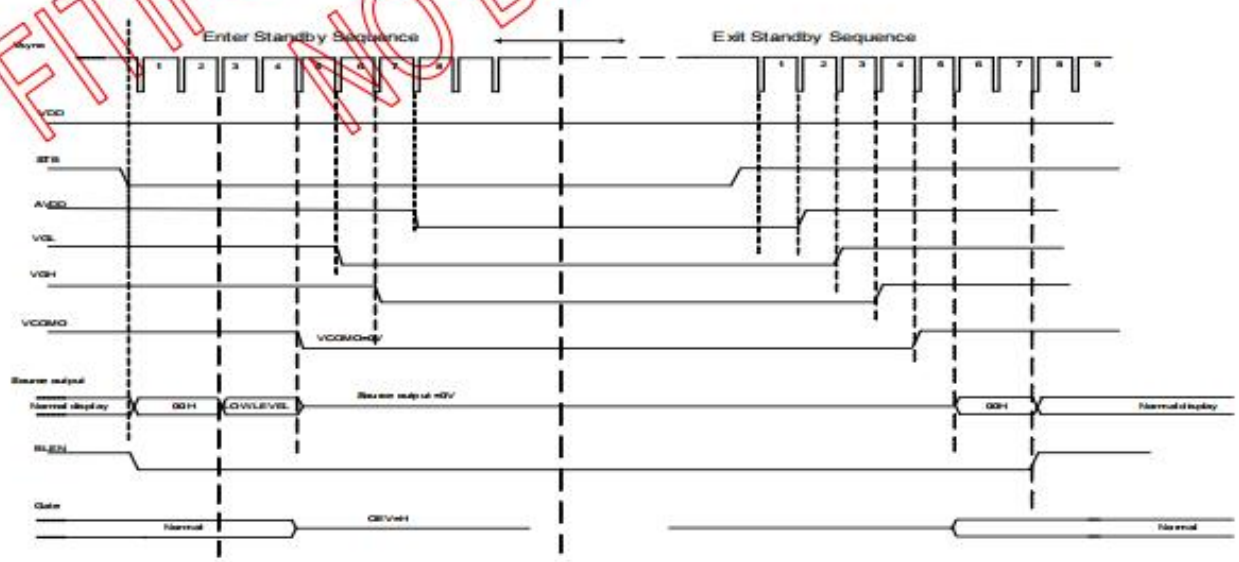



## 2.2 Timing Characteristics

### 2.2.1 Power-On/Off Timing Sequence


Power On/Off timing chart



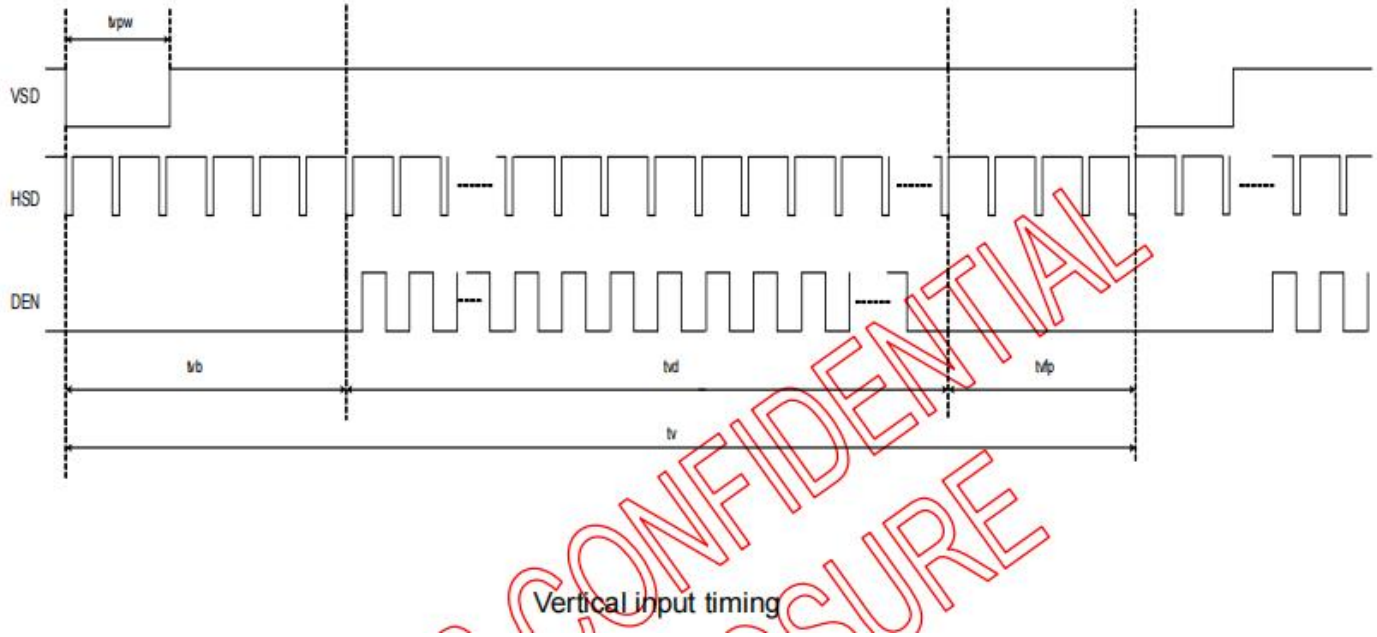



Enter and Exit Standby Mode timing chart

Note: Low level=3Fh,when NBW=L(Normally white)
Low level=00h,when NBW=H(Normally black)

## 2.2.2 Data Input Format for TTL

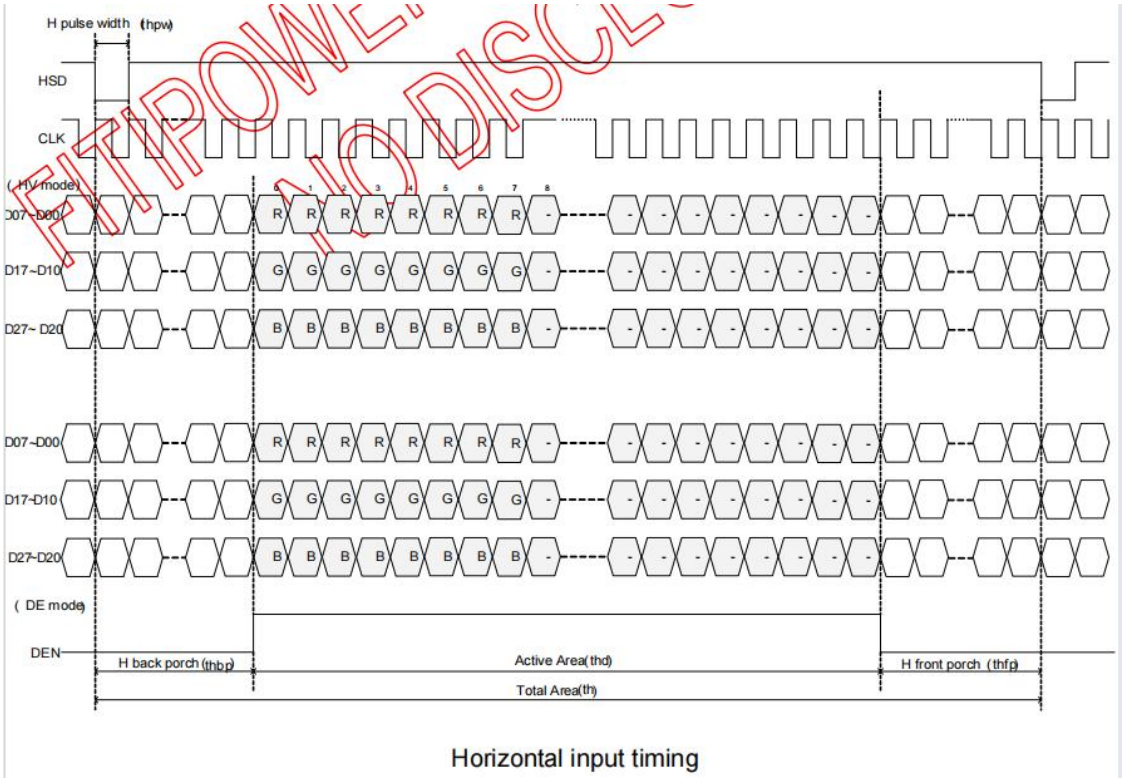
### Vertical input timing




Vertical input timing



### Horizontal input timing




Horizontal input timing

## 2.2.3 Parallel RGB Timing Characteristic(1024*600)

DE mode

| DE mode | | | | | |
|---|---|---|---|---|---|
| Parameter | Symbol | Value | | | Unit |
| | | Min. | Typ. | Max. | |
| DCLK frequency @Frame rate=60hz | fclk | 40.8 | 51.2 | 67.2 | Mhz |
| Horizontal display area | thd | | 1024 | | DCLK |
| HSYNC period time | th | 1114 | 1344 | 1400 | DCLK |
| HSYNC blanking | thb+thfp | 90 | 320 | 376 | DCLK |
| Vertical display area | tvd | | 600 | | H |
| VSYNC period time | tv | 610 | 635 | 800 | H |
| VSYNC blanking | tvb+tvfp | 10 | 35 | 200 | H |

HV mode(1)

| HV mode<br>Horizontal input timing | | | | | | |
|---|---|---|---|---|---|---|
| Parameter | | Symbol | Value | | | Unit |
| Horizontal display area | | thd | 1024 | | | DCLK |
| DCLK frequency@Frame rate=60hz | | fclk | Min. | Typ. | Max. | |
| | | | 44.9 | 51.2 | 63 | Mhz |
| 1 Horizontal Line | | th | 1200 | 1344 | 1400 | DCLK |
| HSYNC pulse width | Min. | thpw | 1 | | | |
| | Typ. | | – | | | |
| | Max. | | 140 | | | |
| HSYNC back porch | | thbp | 160 | 160 | 160 | |
| HSYNC front porch | | thfp | 16 | 160 | 216 | |

HV mode(2)

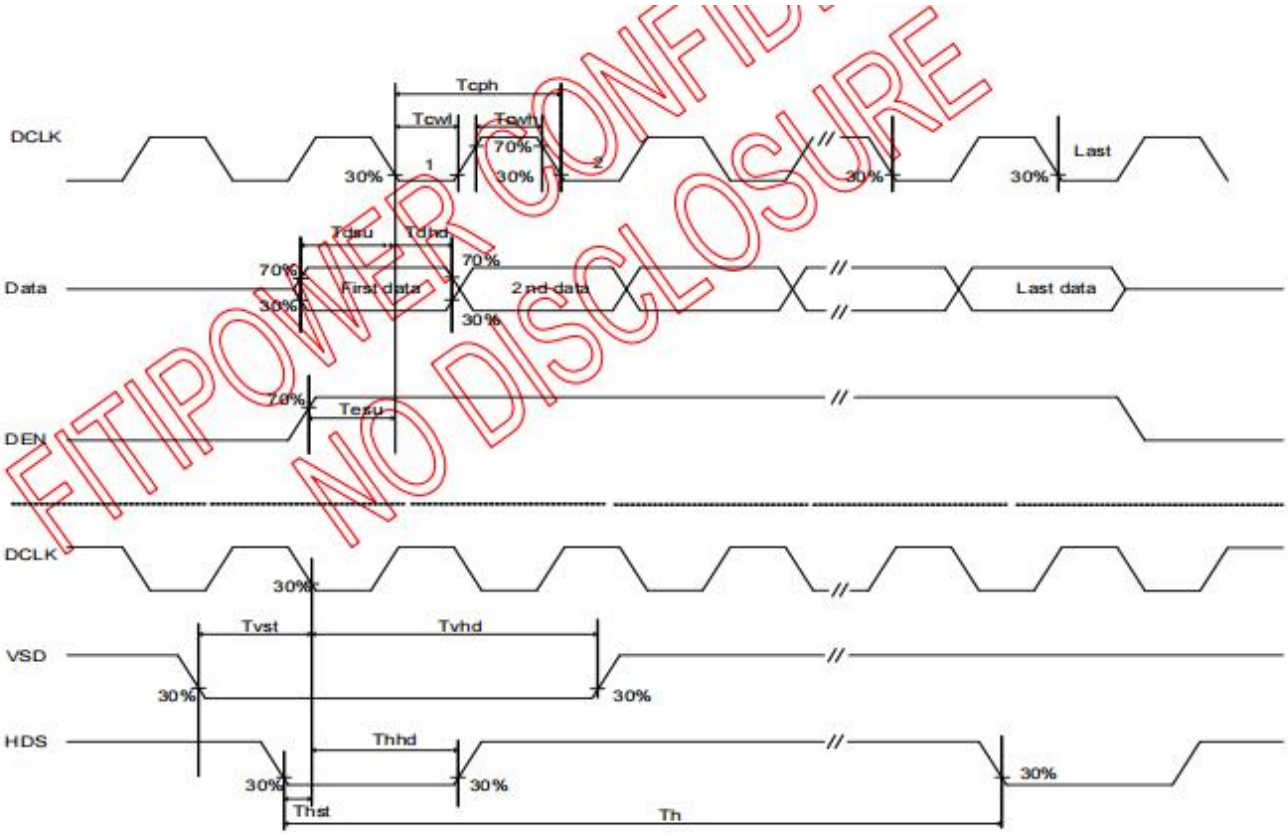
| Vertical input timing | | | | | |
|---|---|---|---|---|---|
| Parameter | Symbol | Value | | | Unit |
| | | Min. | Typ. | Max. | |
| Vertical display area | tvd | | 600 | | H |
| VSYNC period time | tv | 624 | 635 | 750 | H |
| VSYNC pulse width | tvpw | 1 | – | 20 | H |
| VSYNC back porch | tvb | 23 | 23 | 23 | H |
| VSYNC front porch | tvfp | 1 | 12 | 127 | H |

## 2.2.4 AC Electrical Characteristics

TTL mode

| Parameter | Symbol | Condition | Min. | Typ. | Max. | Unit |
|---|---|---|---|---|---|---|
| VDD Power On Slew rate | TPOR | From 0V to 90% VDD | 1 | - | 20 | ms |
| RST pulse width | TRST | DCLK = 65MHz | 50 | - | - | us |
| DCLK cycle time | Tcph | - | 14 | - | - | ns |
| DCLK pulse duty | Tcwh | - | 40 | 50 | 60 | % |
| VSD setup time | Tvst | - | 5 | - | - | ns |
| VSD hold time | Tvhd | - | 5 | - | - | ns |
| HSD setup time | Thst | - | 5 | - | - | ns |
| HSD hold time | Thhd | - | 5 | - | - | ns |
| Data set-up time | Tdsu | D0[7:0], D1[7:0], D2[7:0] to DCLK | 5 | - | - | ns |
| Data hold time | Tdhd | D0[7:0], D1[7:0], D2[7:0] to DCLK | 5 | - | - | ns |
| DE setup time | Tesu | - | 5 | - | - | ns |
| DE hold time | Tehd | - | 5 | - | - | ns |
| Output stable time | Tsst | Dual gate | - | - | 3 | us |






Parallel Input Clock and Data timing

# 3. Inspection Specification

◆Scope：The document shall be applied to TFT-LCD Module for 0.96″ ~12.3″ (Ver.A01).

◆Inspection Standard：MIL-STD-105E Table Normal Inspection Single Sampling Level Ⅱ.

◆Equipment：Gauge、MIL-STD、SmartWin Tester、Sample

◆Defect Level：Major Defect AQL： 0.65 ； Minor Defect AQL： 1.5

◆OUT Going Defect Level：Sampling.

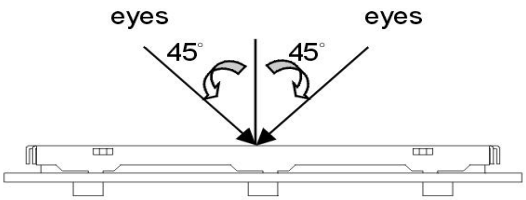
◆Standard of the product appearance test：

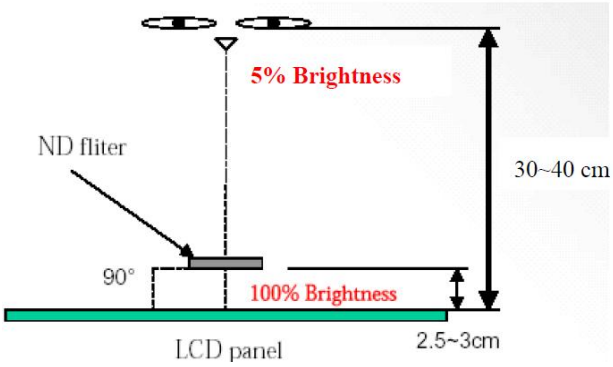
a. Manner of appearance test：

(1). The test best be under 20W×2 fluorescent light(about 300lux ～500lux)

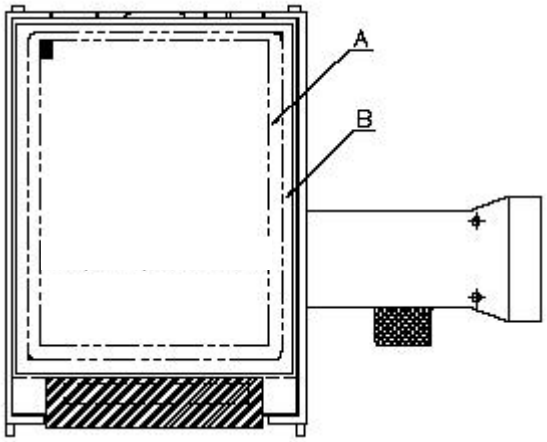
，and distance of view must be at 30~40 cm.

(2). The test direction is base on about around 45° of vertical line.




(3). Definition of area.




*A* area : viewing area

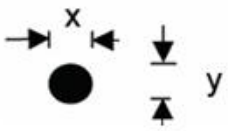
*B* area : Outside of viewing area

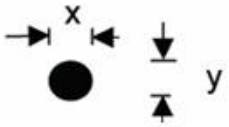
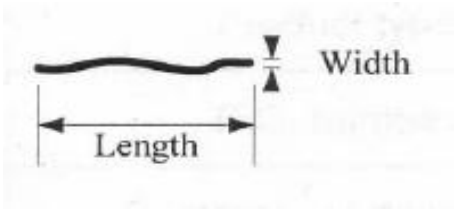
**(4). Standard of inspection： (Unit：mm)**

3.1 Major defect

| Item No | Items to be inspected | Inspection Standard |
|---|---|---|
| 3.1.1 | All functional defects | 1) No display<br>2) Display abnormally<br>3) Short circuit<br>4) line defect |
| 3.1.2 | Missing | Missing function component |
| 3.1.3 | Crack | Glass Crack |

3.2 Minor defect

<table>
<tr><th>Item No</th><th>Items to be inspected</th><th colspan="2">Inspection Standard</th></tr>
<tr><td rowspan="5">3.2.1</td><td rowspan="5">Polarizer dirt and spot</td><td colspan="2">For dark/white spot is defined<br>φ=（x+y）／2<br>  </td></tr>
<tr><td>Size φ(mm)</td><td>Acceptable Quantity</td></tr>
<tr><td>φ≤0.15</td><td>Ignore</td></tr>
<tr><td>0.15＜ φ≤0.50</td><td>2</td></tr>
<tr><td>0.50＜ φ</td><td>0</td></tr>
</table>

<table>
<tr><th>Item No</th><th>Items to be inspected</th><th colspan="2">Inspection Standard</th></tr>
<tr><td rowspan="5">3.2.2</td><td rowspan="5">Panel dirt and spot</td><td colspan="2">For dark/white spot is defined<br>φ=（x+y）／2<br>  <br></td></tr>
<tr><td>Size φ(mm)</td><td>Acceptable Quantity</td></tr>
<tr><td>φ≤0.10</td><td>Ignore</td></tr>
<tr><td>0.10 < φ ≤ 0.25</td><td>3</td></tr>
<tr><td>0.25 < φ</td><td>Not allowed</td></tr>
<tr><td rowspan="5">3.2.3</td><td rowspan="5">Line Defect<br>Including Black line<br>White line<br>Scratch</td><td colspan="2">Define:<br>  <br></td></tr>
<tr><td>Width(mm) Length(mm)</td><td>Acceptable Quantity</td></tr>
<tr><td>W≤0.03</td><td>Ignore</td></tr>
<tr><td>0.03 < W≤0.07 L≤5.0</td><td>3</td></tr>
<tr><td>W> 0.07</td><td>As round type</td></tr>
</table>

<table>
<tr><td rowspan="4">3.2.4</td><td rowspan="4">Polarizer Dent/Bubble</td><td colspan="2">Size φ(mm)</td><td>Acceptable Quantity</td></tr>
<tr><td colspan="2">φ≤0.15</td><td>Ignore</td></tr>
<tr><td colspan="2">0.15 < φ≤0.50</td><td>2</td></tr>
<tr><td colspan="2">0.50 < φ</td><td>0</td></tr>
<tr><td rowspan="4">3.2.5</td><td rowspan="4">Electrical Dot Defect</td><td colspan="2">Item</td><td>Acceptance (Q’ty)</td></tr>
<tr><td rowspan="2">Dot Defect</td><td>Bright dot</td><td>≦ 4</td></tr>
<tr><td>Dark dot</td><td>≦ 4</td></tr>
<tr><td colspan="3">Inspection pattern: full white, full black, Red, Green and blue screens.<br>It is defined as dot defect if defect area ＞1/2 dot.<br>The distance between two dot defect ≧5 mm.<br>Bright dot that can not be seen through 2% ND filter.</td></tr>
<tr><td>3.2.6</td><td>Mura</td><td colspan="3">Visible through ND5% at fullblack pattern is not allowed</td></tr>
</table>

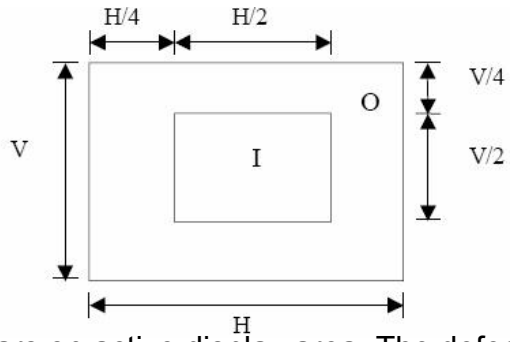
Note: 1. Dot defect is defined as the defective area of the dot area is larger than 50% of the dot area.

2. The distance between two bright dot defects (red, green, blue, and white) should be larger than 5mm.

3. The distance between black dot defects or black and bright dot defects should be more than 5mm apart.

4. The definitions of the inner display area
And outer display area

I: Inner display area
O: Outer display area




5. Polarizer bubble is defined as the bubble appears on active display area. The defect of polarizer bubble shall be ignored if the polarizer bubble appears on the outside of active display area.

# 4. RELIABILITY TEST

## 4.1 Reliability Test Condition (Ver.B01)

<table>
<tr><th>NO.</th><th>TEST ITEM</th><th>TEST CONDITION</th></tr>
<tr><td>1</td><td>High Temperature Storage Test</td><td>Keep in +80 ±2℃ 240 hrs<br>Surrounding temperature, then storage at normal condition 4hrs.</td></tr>
<tr><td>2</td><td>Low Temperature Storage Test</td><td>Keep in -30 ±2℃ 240 hrs<br>Surrounding temperature, then storage at normal condition 4hrs.</td></tr>
<tr><td>3</td><td>High Temperature Operating Test</td><td>Keep in +80 ±2℃ 240 hrs<br>Surrounding temperature, then Operating at normal condition 4hrs.</td></tr>
<tr><td>4</td><td>Low Temperature Operating Test</td><td>Keep in -30 ±2℃ 240 hrs<br>Surrounding temperature, then Operating at normal condition 4hrs.</td></tr>
<tr><td>5</td><td>High Temperature / High Humidity Storage Test</td><td>Keep in +60 ℃ / 90% R.H duration for 100 hrs<br>Surrounding temperature, then storage at normal condition 4hrs.<br>(Excluding the polarizer)</td></tr>
<tr><td>6</td><td>Temperature Cycling Storage Test</td><td>-30℃ → +25℃ → +80℃ → +25℃<br>(30mins) (5mins) (30mins) (5mins)<br>20 Cycle<br>Surrounding temperature, then storage at normal condition 4hrs.</td></tr>
<tr><td rowspan="2">7</td><td rowspan="2">ESD Test</td><td>Air Discharge:<br>±8kV, 5times</td><td>Contact Discharge:<br>±4kV, 5times</td></tr>
<tr><td colspan="2">1. Temperature ambiance : 15℃～35℃<br>2. Humidity relative : 30%～60%<br>3. Energy Storage Capacitance(Cs+Cd) : 150pF±10%<br>4. Discharge Resistance(Rd) : 330Ω±10%<br>5. Discharge, mode of operation :<br>Single Discharge (time between successive discharges at least 1 sec)<br>(Tolerance if the output voltage indication : ±5%)</td></tr>
<tr><td>8</td><td>Vibration Test (Packaged)</td><td colspan="2">1. Sine wave 10～55 Hz frequency (1 min/sweep)<br>2. The amplitude of vibration :1.5 mm<br>3. Each direction (X、Y、Z) duration for 2 Hrs</td></tr>
<tr><td>9</td><td>Drop Test (Packaged)</td><td colspan="2">
<table>
<tr><th>Packing Weight (Kg)</th><th>Drop Height (cm)</th></tr>
<tr><td>M ＜ 10</td><td>100</td></tr>
<tr><td>10 ~ 20</td><td>80</td></tr>
<tr><td>20 ~ 30</td><td>70</td></tr>
<tr><td>30 ~ 40</td><td>60</td></tr>
<tr><td>40 ~ 50</td><td>50</td></tr>
</table>
Drop<br>Direction :※1 corner / 3 edges / 6 sides each 1time</td></tr>
</table>

# 5. PRECAUTION RELATING PRODUCT HANDLING

## 5.1 SAFETY

5.1.1 If the LCD panel breaks , be careful not to get the liquid crystal to touch your skin.

5.1.2 If the liquid crystal touches your skin or clothes , please wash it off immediately by using soap and water.

## 5.2 HANDLING

5.2.1 Avoid any strong mechanical shock which can break the glass.

5.2.2 Avoid static electricity which can damage the CMOS LSI—When working with the module , be sure to ground your body and any electrical equipment you may be using.

5.2.3 Do not remove the panel or frame from the module.

5.2.4 The polarizing plate of the display is very fragile. So , please handle it very carefully ,do not touch , push or rub the exposed polarizing with anything harder than an HB pencil lead (glass , tweezers , etc.)

5.2.5 Do not wipe the polarizing plate with a dry cloth , as it may easily scratch the surface of plate.

5.2.6 Do not touch the display area with bare hands , this will stain the display area.

5.2.7 Do not use ketonics solvent & aromatic solvent. Use with a soft cloth soaked with a cleaning naphtha solvent.

5.2.8 To control temperature and time of soldering is 320±10℃and 3-5 sec.

5.2.9 To avoid liquid (include organic solvent) stained on LCM .

5.2.10 Caution!( LCM with Capacitive Touch Panel)Strong EMI-sources such as switch-mode power supplies (SMPS) can lead to touch malfunction (e.g. ghost-touches).Therefore, the touch needs to be thoroughly tested inside the target application.

## 5.3 STORAGE

5.3.1 Store the panel or module in a dark place where the temperature is 25℃ ±5℃ and the humidity is below 65% RH.

5.3.2 Do not place the module near organics solvents or corrosive gases.

5.3.3 Do not crush , shake , or jolt the module.

## 5.4 TERMS OF WARRANTY

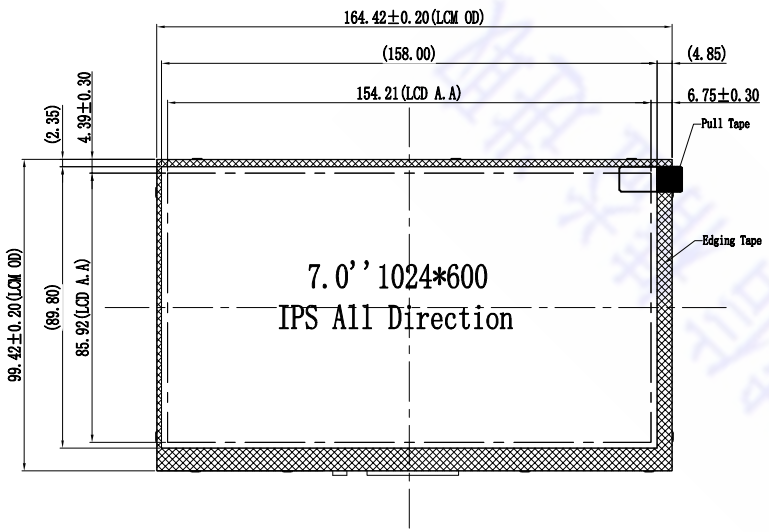
5.4.1 Applicable warrant period

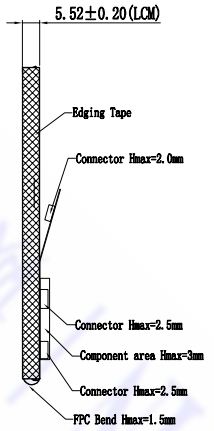
The period is within thirteen months since the date of shipping out under normal using and storage conditions.

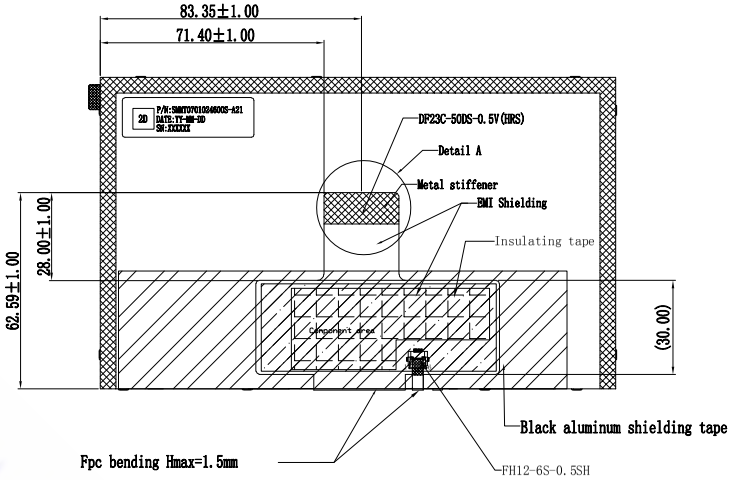
5.4.2 Unaccepted responsibility

This product has been manufactured to your company’s specification as a part for use in your company’s general electronic products. It is guaranteed to perform according to delivery specifications. For any other use apart from general electronic equipment , we cannot take responsibility if the product is used in nuclear power control equipment , aerospace equipment , fire and security systems or any other applications in which there is a direct risk to human life and where extremely high levels of reliability are required.

| REV | REVISION RECORD | DATE |
|---|---|---|
| A | New drawing | 2024-12-03 |
| B | Add Edging Tape | 2025-01-13 |



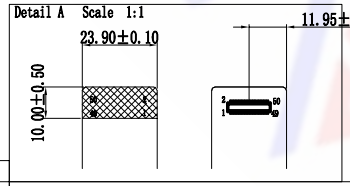



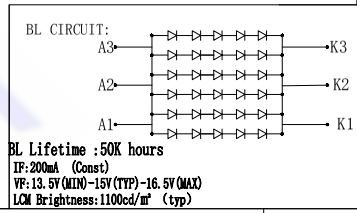

CN1

| PIN | SYMBOL |
|---|---|
| 1 | GND |
| 2 | GND |
| 3 | GND |
| 4 | GND |
| 5 | +3V3_BKL |
| 6 | +3V3_BKL |
| 7 | +3V3_BKL |
| 8 | +3V3_BKL |
| 9 | PWM_BKL |
| 10 | +3V3_TFT |
| 11 | GND |
| 12 | R0 |
| 13 | R1 |
| 14 | R2 |
| 15 | R3 |
| 16 | R4 |
| 17 | R5 |
| 18 | R6 |
| 19 | R7 |
| 20 | G0 |
| 21 | G1 |
| 22 | G2 |
| 23 | G3 |
| 24 | G4 |
| 25 | G5 |
| 26 | G6 |
| 27 | G7 |
| 28 | B0 |
| 29 | B1 |
| 30 | B2 |
| 31 | B3 |
| 32 | B4 |
| 33 | B5 |
| 34 | B6 |
| 35 | B7 |
| 36 | GND |
| 37 | VSYNC |
| 38 | HSYNC |
| 39 | DE |
| 40 | GND |
| 41 | PCLK |
| 42 | GND |
| 43 | MODE(TDBY) |
| 44 | TFT-RESET |
| 45 | NC |
| 46 | NC |
| 47 | EEPROM-SDA |
| 48 | EEPROM-SCL |
| 49 | +3V3 EEPROM |
| 50 | GND |

BL

| PIN | SYMBOL |
|---|---|
| 1 | A3 |
| 2 | A2 |
| 3 | A3 |
| 4 | K1 |
| 5 | K2 |
| 6 | K3 |




Note: CN1 Recommended Matched connector DF23C-50DP-0.5V(HRS)
Make EEPROM on FPC

CONFIRM ALL TYPE DRAWINGS OF THIS AND PASS BACK!

| | |
|---|---|
| OPERATING VOLTAGE:3.3V | OPERATING CURRENT: -- |
| DISPLAY TYPE: Normally black | VIEW DIRECTION:Free |
| LCD Resolution:1024 (H) RGB× 600 (V) | CTP Interface:-- |
| LCD CONTROLLER:EK79001+EK73215 | CTP CONTROLLER:— |
| BACK LIGHT:If=200mA,Vf=15V(typ) | |
| OPERATING TEMPERATURE:-30℃ TO 80℃(240hrs) | STORAGE TEMPERATURE:-30℃ TO 80℃(240hrs) |
| DEFAULT TOLERANCE: ±0.2 | ROHS STANDARD:YES |

江苏骏成电子科技股份有限公司
JIANGSU SMARTWIN ELECTRONICS TECHNOLOGY Co.,LTD

| | | | | | |
|---|---|---|---|---|---|
| TITLE | 模块外形图 | CUSTMER NUMBER | - | REV | B |
| DES'D BY | 朱海 | PRODUCT MODEL | SMMT0701024600S-A21-WX | UNIT | mm |
| CHK'D BY | | SERIAL NUMBER | -- | DATE | 2024-12-03 |
| APPROVED | | SCALE | 1:1 | NO. | 1/1 |

FORMAT(6)