

**PROPRIETARY NOTE**

THIS SPECIFICATION IS THE PROPERTY OF BOE HF AND SHALL NOT BE REPRODUCED OR COPIED WITHOUT THE WRITTEN PERMISSION OF BOE HF AND MUST BE RETURNED TO BOE HF UPON ITS REQUEST

**BOE**

SPEC. NUMBER

S801-5126

PRODUCT GROUP

TFT- LCD

REV.

1

ISSUE DATE

2025.12.18

PAGE

1 OF 27

**GT080X0M-N12 Product Specification Rev.1**

SUPPLIER

FG-Code

GT080X0M-N12-1QP0  
(模组厂FG-CODE **2021080BXG030001-01G**)

ITEM BUYER SIGNATURE DATE

ITEM SUPPLIER SIGNATURE DATE

Prepared \_\_\_\_\_

Reviewed \_\_\_\_\_

Approved \_\_\_\_\_



|            |                      |     |            |
|------------|----------------------|-----|------------|
| <b>BOE</b> | <b>PRODUCT GROUP</b> | REV | ISSUE DATE |
|            | TFT LCD PRODUCT      | 1   | 2025.12.18 |

Contents

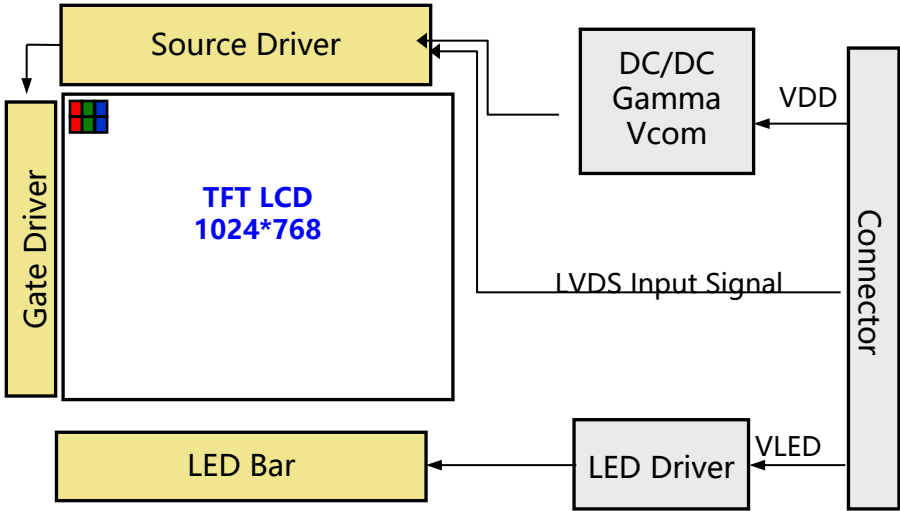
| No.  | Items                                       | Page |
|------|---------------------------------------------|------|
| 1.0  | General Description                         | 4    |
| 2.0  | Absolute Maximum ratings                    | 6    |
| 3.0  | Electrical specifications.                  | 7    |
| 4.0  | Interface Connection                        | 9    |
| 5.0  | Signal Timing Specifications                | 11   |
| 6.0  | Signal Timing Waveforms Of Interface Signal | 14   |
| 7.0  | Power Sequence                              | 16   |
| 8.0  | Optical specifications.                     | 17   |
| 9.0  | Mechanical Outline Dimension                | 21   |
| 10.0 | Reliability Test                            | 23   |
| 11.0 | Precautions                                 | 23   |
| 12.0 | Packing Information                         | 27   |

|                |                 |     |            |
|----------------|-----------------|-----|------------|
| <div>BOE</div> | PRODUCT GROUP   | REV | ISSUE DATE |
|                | TFT LCD PRODUCT | 1   | 2025.12.18 |

## 1.0 GENERAL DESCRIPTION

### 1.1 Introduction

2021080BXG030001-01G is a color active matrix TFT LCD module using amorphous silicon TFT's (Thin Film Transistors) as an active switching devices. This module has a 8 inch diagonally measured active area with XGA resolutions (1024 horizontal by 768 vertical pixel array). Each pixel is divided into RED, GREEN, BLUE dots which are arranged in vertical stripe and this module can display 16.7 M colors.



### 1.2 Features

- LED back-light
- LVDS interface
- RoHS Compliant

### 1.3 Application

- Industrial control

|                  |                                         |         |
|------------------|-----------------------------------------|---------|
| SPEC. NUMBER     | SPEC TITLE                              | PAGE    |
| <b>S801-5126</b> | GT080X0M-N12-1QP0 Product Specification | 4 OF 27 |

|     |                 |     |            |
|-----|-----------------|-----|------------|
| BOE | PRODUCT GROUP   | REV | ISSUE DATE |
|     | TFT LCD PRODUCT | 1   | 2025.12.18 |

1.4 General Specification

< Table 1. General Specifications >

| Parameter           | ITEMS                              | Unit   | Remarks |
|---------------------|------------------------------------|--------|---------|
| Active area         | 162.05 (H) × 121.5(V)              | mm     |         |
| Number of pixels    | 1024(H) × 768(V)                   | Pixels |         |
| Pixel pitch         | 0.052(H) × RGB×0.158(V)            | mm     |         |
| Pixel arrangement   | RGB Vertical stripe                | -      |         |
| Display colors      | 16.7M                              | Colors |         |
| Display mode        | Normally White                     | -      |         |
| Dimensional outline | 183.0 (H) × 141.0(V) × 3.4(D) typ. | Mm     |         |
| Surface treatment   | Anti-Glare                         | -      |         |
| Back-light          | Edge side, 1-LED Lighting Bar Type | -      | 30*LED  |
| Weight              | 179                                | gram   |         |

|                           |                                                       |                 |
|---------------------------|-------------------------------------------------------|-----------------|
| SPEC. NUMBER<br>S801-5126 | SPEC TITLE<br>GT080X0M-N12-1QP0 Product Specification | PAGE<br>5 OF 27 |
|---------------------------|-------------------------------------------------------|-----------------|

|     |                 |     |            |
|-----|-----------------|-----|------------|
| BOE | PRODUCT GROUP   | REV | ISSUE DATE |
|     | TFT LCD PRODUCT | 1   | 2025.12.18 |

## 2.0 ABSOLUTE MAXIMUM RATINGS

The followings are maximum values which, if exceed, may cause faulty operation or damage to the unit. The operational and non-operational maximum voltage and current values are listed in Table 2.

< Table 2. Environment Absolute Maximum Ratings> [Ta =25±2 °C]

| Parameter                       | Symbol              | Min. | Max. | Unit | Remarks                    |
|---------------------------------|---------------------|------|------|------|----------------------------|
| Back-light Power Supply Voltage | HV <sub>DDOUT</sub> | -0.3 | 24   | V    | Ta = 25 °C<br>Note 1&2     |
| Back-light LED Reverse Voltage  | V <sub>R</sub>      | -    | 12.8 | V    |                            |
| Operating Temperature           | T <sub>OP</sub>     | -20  | 70   | °C   | Environment<br>Temperature |
| Storage Temperature             | T <sub>ST</sub>     | -30  | 80   | °C   |                            |

**Note:**

1. These range above is maximum value not the actual operating temperature . Actual Operating temperature is no more than 40°C and temperature refers to the LCM surface temperature ;
- 2.BOE is not responsible for product problems beyond the use conditions.
- 3.When the ambient temperature is T °C, the surface temperature of Panel can not exceed (T+15)°C.

|              |                                         |         |
|--------------|-----------------------------------------|---------|
| SPEC. NUMBER | SPEC TITLE                              | PAGE    |
| S801-5126    | GT080X0M-N12-1QP0 Product Specification | 6 OF 27 |

### 3.0 ELECTRICAL SPECIFICATIONS

#### 3.1 TFT LCD Module

&lt; Table 3. LCD Module Electrical Specifications &gt;

[Ta =25±2 °C]

| Parameter                  | Symbol            | Values |       |       | Unit | Notes  |
|----------------------------|-------------------|--------|-------|-------|------|--------|
|                            |                   | Min    | Typ   | Max   |      |        |
| Power Supply Input Voltage | V <sub>DD</sub>   | 3.0    | 3.3   | 3.6   | V    | Note 1 |
| Power Supply Current       | I <sub>DD</sub>   | -      | 22.5  | -     | mA   |        |
| Analog Supply Voltage      | AVDD              | 11.42  | 11.62 | 11.82 | V    | Note 1 |
| Analog Current             | I <sub>AVDD</sub> | -      | 30.5  | -     | mA   |        |
| Gate On Voltage            | V <sub>GH</sub>   | 22     | 23    | 24    | V    |        |
| Gate on Current            | I <sub>VGH</sub>  | -      | 0.5   | -     | mA   |        |
| Gate Off Voltage           | V <sub>GL</sub>   | -7.98  | -7.8  | -7.58 | V    |        |
| Gate off Current           | I <sub>VGL</sub>  | -      | 4.21  | -     | mA   |        |
| Common Voltage             | V <sub>com</sub>  | 4.58   | 4.78  | 4.98  | V    | Note 2 |

**Notes :**

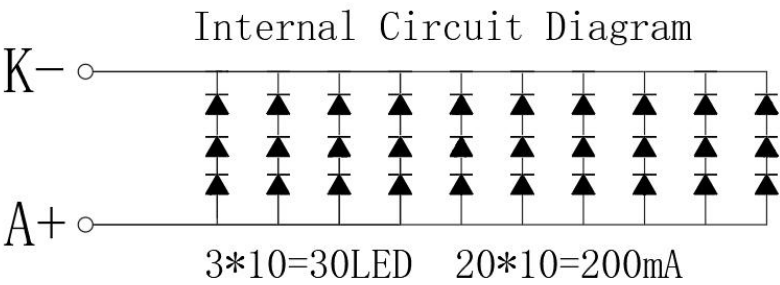
1. The supply voltage is measured and specified at the interface connector of LCM.  
The current draw and power consumption specified is for 3.3V at 25 °C  
Max value at Black Pattern
2. TYP VCOM is only reference value. It must be optimized according to each LCM. Be sure to use VR and OP buffer on VCOM output. Please adjust VCOM to make the flicker level be minimum for getting excellent image.

|     |                 |     |            |
|-----|-----------------|-----|------------|
| BOE | PRODUCT GROUP   | REV | ISSUE DATE |
|     | TFT LCD PRODUCT | 1   | 2025.12.18 |

3.2 Back-light Unit

< Table 4. LED Driving guideline specifications > Ta=25+/-2°C

| Parameter                           |                  | Min.  | Typ. | Max. | Unit | Remarks  |
|-------------------------------------|------------------|-------|------|------|------|----------|
| Power supply voltage for Back light | V <sub>LED</sub> | 8.1   | 9.0  | 9.6  | V    |          |
| Power supply Current for Back light | I <sub>LED</sub> | -     | 200  | -    | mA   |          |
| Power supply for Back light         | P <sub>LED</sub> | -     | 1.8  | -    | W    | Note 1   |
| LED Life Time                       | T <sub>LED</sub> | 30000 |      |      | Hrs  | Note 2,3 |



- Notes :
1. Calculator Value for reference  $I_{LED} \times V_{LED} = P_{LED}$
  2. The LED Life-time define as the estimated time to 50% degradation of initial luminous under the condition of the ambient temperature of 25°C.
  3. Only under the above operating conditions could the life time of LED be guaranteed.

|              |                                         |         |
|--------------|-----------------------------------------|---------|
| SPEC. NUMBER | SPEC TITLE                              | PAGE    |
| S801-5126    | GT080X0M-N12-1QP0 Product Specification | 8 OF 27 |

## 4.0 INTERFACE CONNECTION.

### 4.1 Electrical Interface Connection

FPC connector:FPC40-T1T1-2021-A or equal

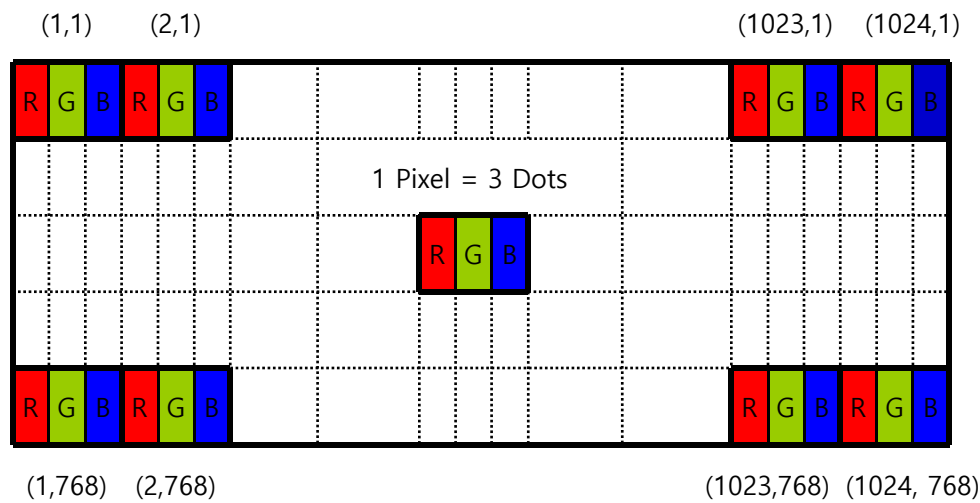
<Table 5. Pin Assignments for the Interface Connector>

| Terminal | Symbol      | Functions                                                      |
|----------|-------------|----------------------------------------------------------------|
| 1        | VCOM        | Common voltage                                                 |
| 2        | VDD(3.3V)   | Power voltage for digital circuit                              |
| 3        | VDD(3.3V)   | Power voltage for digital circuit                              |
| 4        | NC          | No Connection                                                  |
| 5        | RESET(3.3V) | Global reset pin.Keep VDD during operation.Normally pull high. |
| 6        | STBYB       | Standby mode control.Normally pull High.                       |
| 7        | GND         | Ground                                                         |
| 8        | RXIN0-      | -LVDS differential data input                                  |
| 9        | RXIN0+      | +LVDS differential data input                                  |
| 10       | GND         | Ground                                                         |
| 11       | RXIN1-      | -LVDS differential data input                                  |
| 12       | RXIN1+      | +LVDS differential data input                                  |
| 13       | GND         | Ground                                                         |
| 14       | RXIN2-      | -LVDS differential data input                                  |
| 15       | RXIN2+      | +LVDS differential data input                                  |
| 16       | GND         | Ground                                                         |
| 17       | RXCLKIN-    | -LVDS differential clock input                                 |
| 18       | RXCLKIN+    | +LVDS differential clock input                                 |
| 19       | GND         | Ground                                                         |
| 20       | RXIN3-      | -LVDS differential data input                                  |
| 21       | RXIN3+      | +LVDS differential data input                                  |
| 22       | GND         | Ground                                                         |
| 23       | NC          | No Connection                                                  |
| 24       | NC          | No Connection                                                  |
| 25       | GND         | Ground                                                         |
| 26       | NC          | No Connection                                                  |
| 27       | DIMO        | Backlight CABC controller signal output                        |
| 28       | SELB        | Mode select :H=6bit / GND=8bit                                 |
| 29       | AVDD        | Power for Analog Circuit                                       |
| 30       | GND         | Ground                                                         |
| 31       | LED-        | LED Cathode                                                    |
| 32       | LED-        | LED Cathode                                                    |
| 33       | L/R         | Horizontal inversion Normal=H                                  |
| 34       | U/D         | Vertical inversion Normal=L                                    |
| 35       | VGL         | Negative power for TFT                                         |
| 36       | CABCEN1     | CABC H/W enable pin.Normally pull low.                         |
| 37       | CABCEN0     | CABC H/W enable pin.Normally pull low.                         |
| 38       | VGH         | Positive power for TFT                                         |
| 39       | LED+        | LED Anode                                                      |
| 40       | LED+        | LED Anode                                                      |

|     |                 |     |            |
|-----|-----------------|-----|------------|
| BOE | PRODUCT GROUP   | REV | ISSUE DATE |
|     | TFT LCD PRODUCT | 1   | 2025.12.18 |

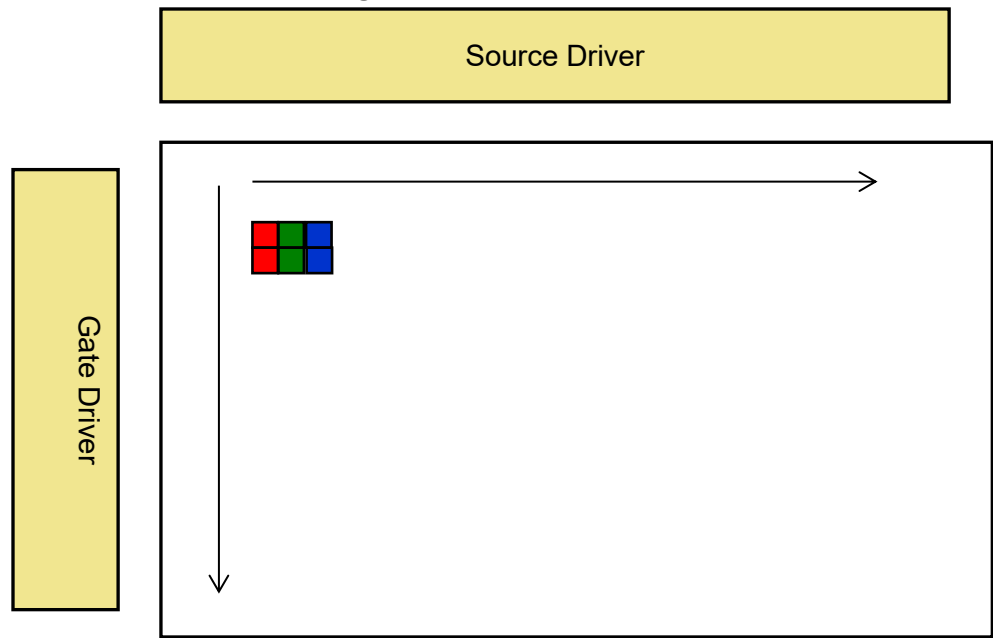
4.2 Data Input Format

Figure 5. Pixel Format



Display Position of Input Data (V-H)

Figure 6. Scan direction



|                                  |                                                       |                  |
|----------------------------------|-------------------------------------------------------|------------------|
| SPEC. NUMBER<br><b>S801-5126</b> | SPEC TITLE<br>GT080X0M-N12-1QP0 Product Specification | PAGE<br>10 OF 27 |
|----------------------------------|-------------------------------------------------------|------------------|

## 5.0 SIGNAL TIMING SPECIFICATION

### 5.1 The LCM input timing table

#### DE Mode

| Parameter               | Symbol     | Spec. |      |      | Unit           |
|-------------------------|------------|-------|------|------|----------------|
|                         |            | Min.  | Typ. | Max. |                |
| DCLK frequency          | fclk       | 52    | 65   | 71   | MHz            |
| Horizontal display area | thd        | 1024  |      |      | DCLK           |
| HSD period              | th         | 1114  | 1344 | 1400 | DCLK           |
| HSD blanking            | thb+ thfp  | 90    | 320  | 376  | DCLK           |
| Vertical display area   | tvd        | 768   |      |      | T <sub>H</sub> |
| VSD period              | tvbp       | 778   | 806  | 845  | T <sub>H</sub> |
| VSD blanking            | tvbp+ tvfp | 10    | 38   | 77   | T <sub>H</sub> |

#### HV Mode

##### • Horizontal timing

| Parameter               | Symbol | Spec. |      |      | Unit |
|-------------------------|--------|-------|------|------|------|
|                         |        | Min.  | Typ. | Max. |      |
| DCLK frequency          | fclk   | 57    | 65   | 70.5 | MHz  |
| Horizontal display area | thd    | 1024  |      |      | DCLK |
| HSD period              | th     | 1200  | 1344 | 1400 | DCLK |
| HSD pulse width         | thpw   | 1     | -    | 140  | DCLK |
| HSD back porch          | thbp   | 160   |      |      | DCLK |
| HSD front porch         | thfp   | 16    | 160  | 216  | DCLK |

##### • Vertical timing

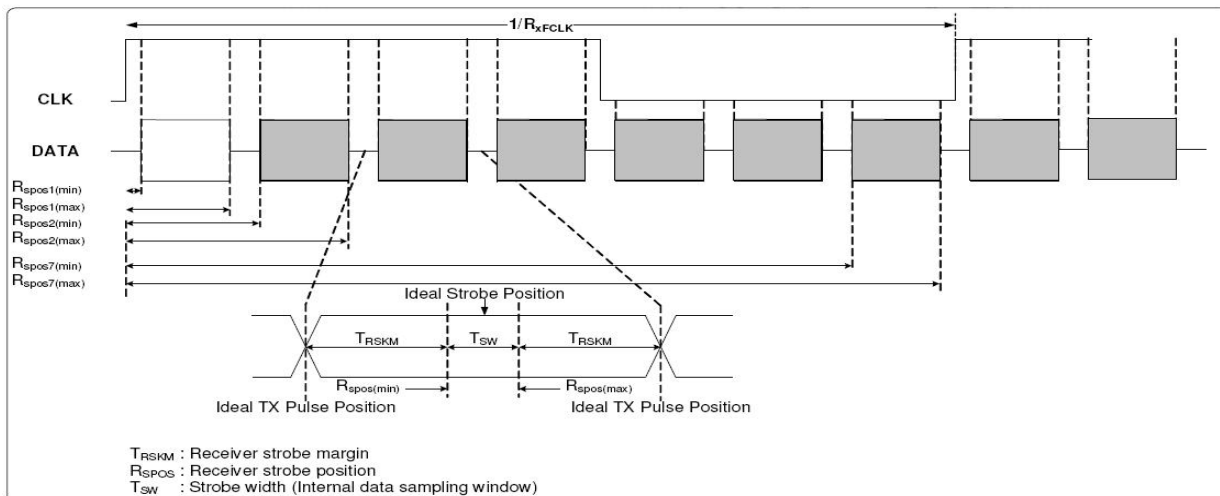
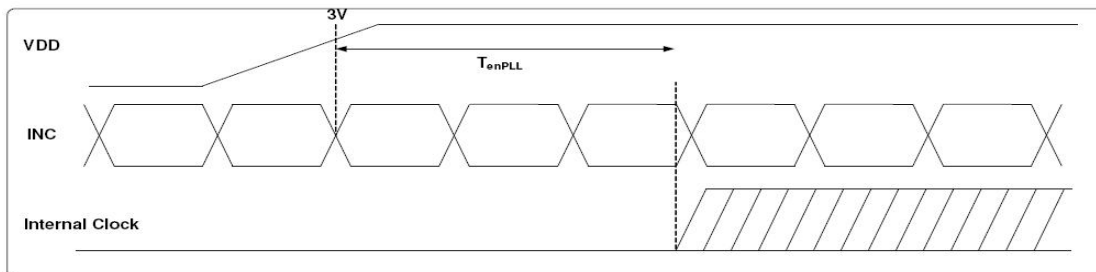
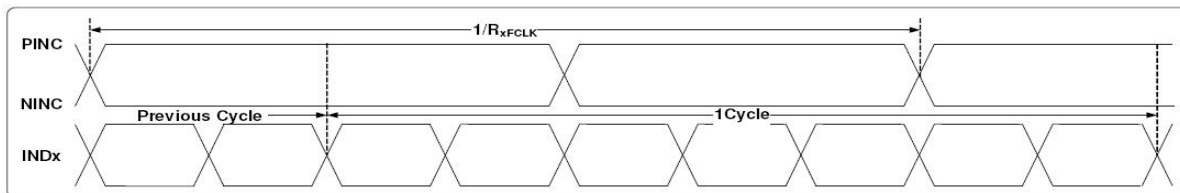
| Parameter             | Symbol | Spec. |      |      | Unit           |
|-----------------------|--------|-------|------|------|----------------|
|                       |        | Min.  | Typ. | Max. |                |
| Vertical display area | tvd    | 768   |      |      | T <sub>H</sub> |
| VSD period            | tv     | 792   | 806  | 840  | T <sub>H</sub> |
| VSD pulse width       | tvpw   | 1     | -    | 20   | T <sub>H</sub> |
| VSD back porch        | tvbp   | 23    |      |      | T <sub>H</sub> |
| VSD front porch       | tvfp   | 1     | 15   | 49   | T <sub>H</sub> |

Note: The DCLK range at last line of V-blanking should be set in 0-H-active/2.

## 5.2 TTL Rx Interface Timing Parameter

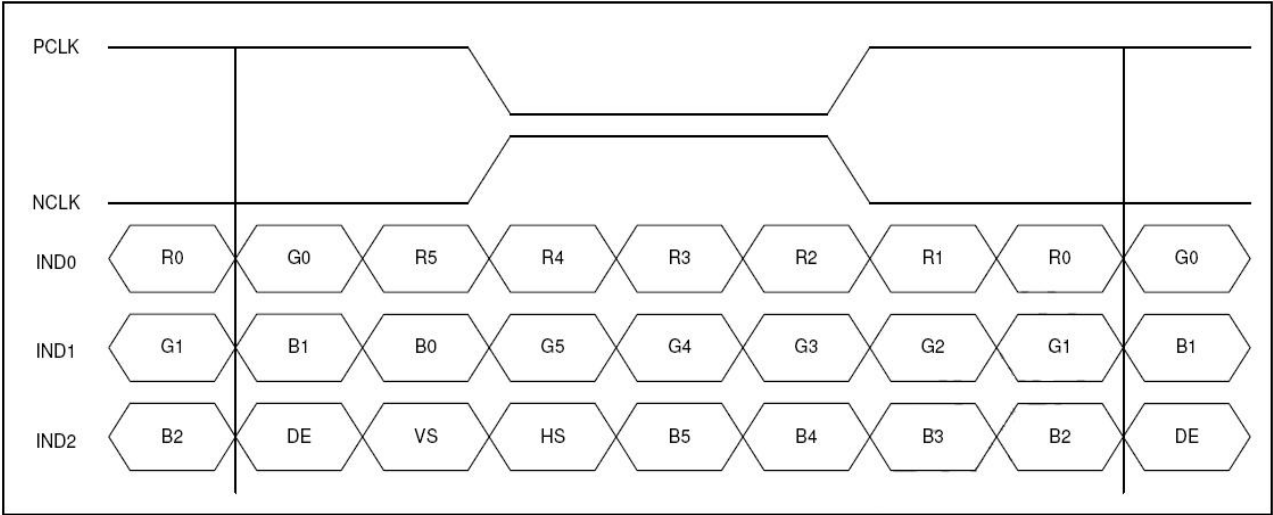
The specification of the LVDS Rx interface timing parameter is shown in Table 4.

| Parameter              | Symbol | Spec. |                             |      | Unit | Condition                                            |
|------------------------|--------|-------|-----------------------------|------|------|------------------------------------------------------|
|                        |        | Min.  | Typ.                        | Max. |      |                                                      |
| Clock frequency        | RXFCLK | 20    | -                           | 71   | MHz  | -                                                    |
| Input data skew margin | TRSKM  | 500   | -                           | -    | pS   | VID<br> =400mV<br>RXVCM<br>=1.2V<br>RXFCLK<br>=71MHz |
| Clock high time        | TLVCH  | -     | $4/(7 \cdot \text{RXFCLK})$ | -    | ns   | -                                                    |
| Clock low time         | TLVCL  | -     | $3/(7 \cdot \text{RXFCLK})$ | -    | ns   | -                                                    |
| PLL wake-up time       | TemPLL | -     | -                           | 150  | μs   | -                                                    |

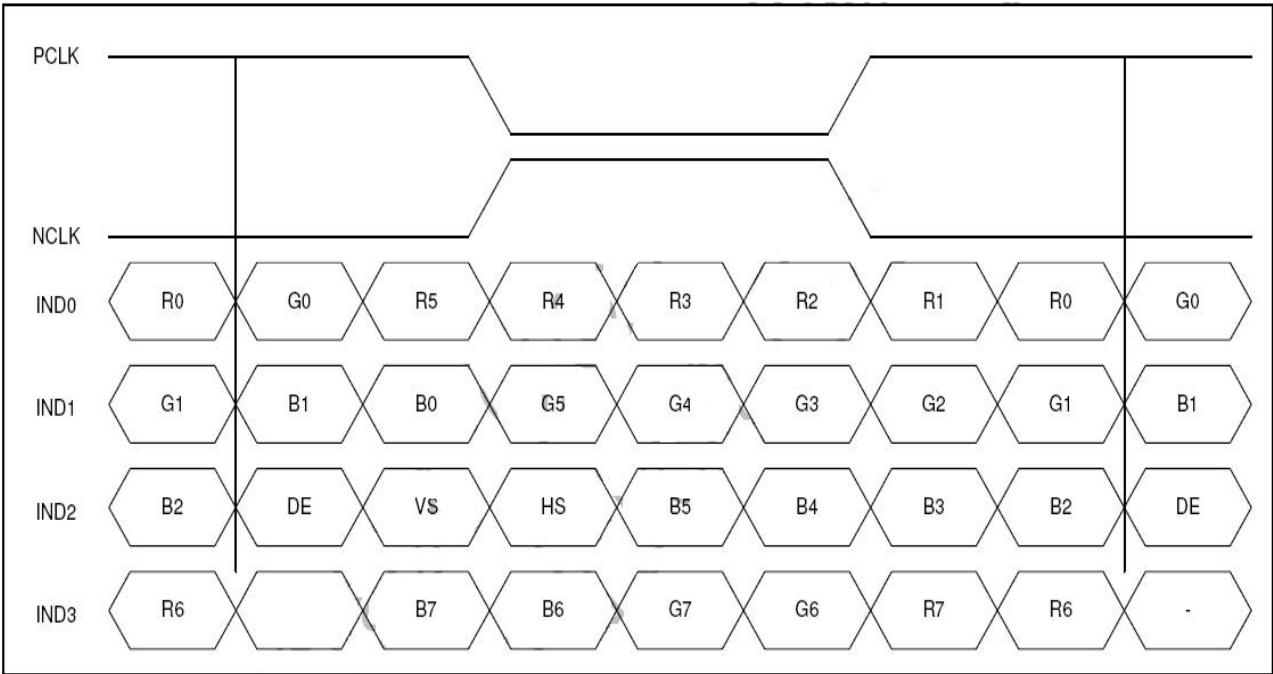


|     |                 |     |            |
|-----|-----------------|-----|------------|
| BOE | PRODUCT GROUP   | REV | ISSUE DATE |
|     | TFT LCD PRODUCT | 1   | 2025.12.18 |

5.3 6-bits LVDS Input



5.4 8-bits LVDS Input

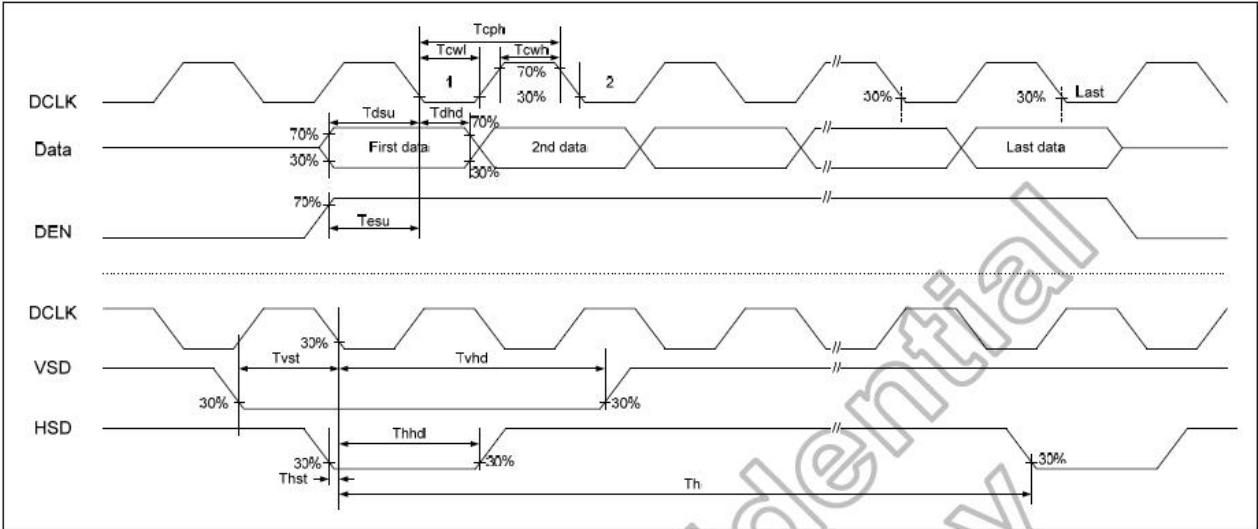


|              |                                         |          |
|--------------|-----------------------------------------|----------|
| SPEC. NUMBER | SPEC TITLE                              | PAGE     |
| S801-5126    | GT080X0M-N12-1QP0 Product Specification | 13 OF 27 |

|     |                 |     |            |
|-----|-----------------|-----|------------|
| BOE | PRODUCT GROUP   | REV | ISSUE DATE |
|     | TFT LCD PRODUCT | 1   | 2025.12.18 |

6.0 SIGNAL TIMING WAVEFORMS OF INTERFACE SIGNAL

6.1 Input clock and data timing diagram

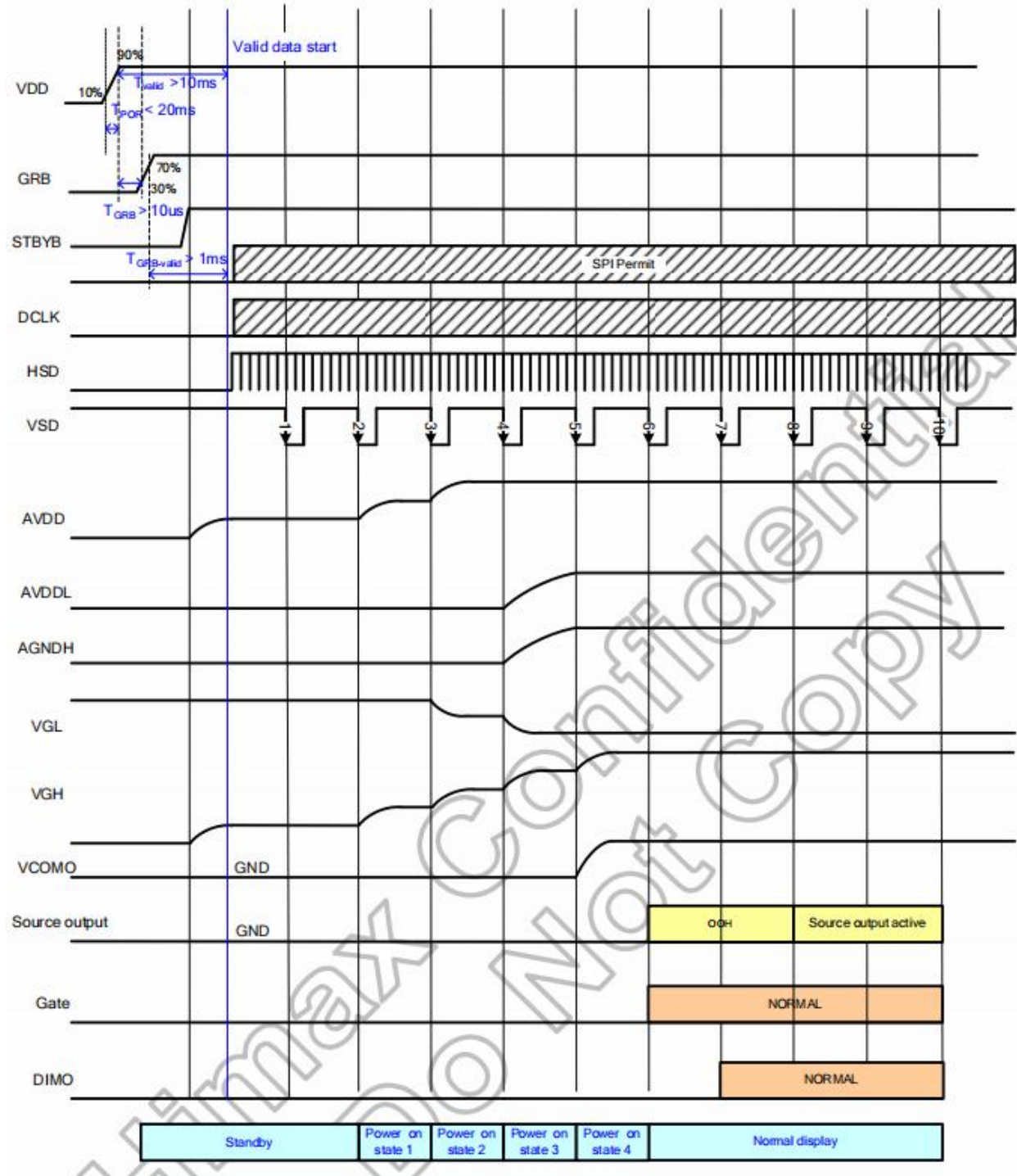


1024

|                                  |                                                       |                  |
|----------------------------------|-------------------------------------------------------|------------------|
| SPEC. NUMBER<br><b>S801-5126</b> | SPEC TITLE<br>GT080X0M-N12-1QP0 Product Specification | PAGE<br>14 OF 27 |
|----------------------------------|-------------------------------------------------------|------------------|

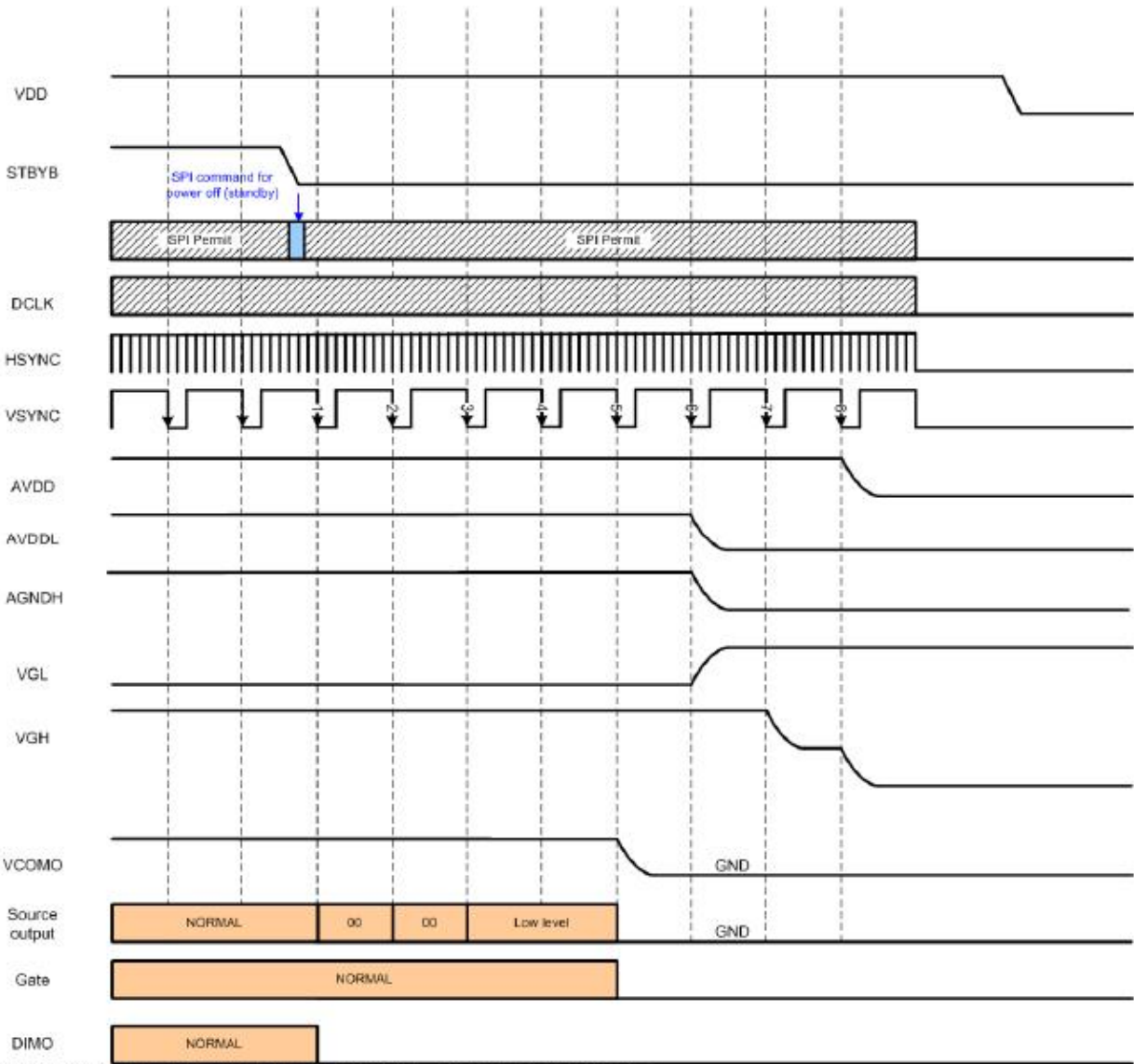
7.0 POWER SEQUENCE

7.1POWER ON



|     |                 |     |            |
|-----|-----------------|-----|------------|
| BOE | PRODUCT GROUP   | REV | ISSUE DATE |
|     | TFT LCD PRODUCT | 1   | 2025.12.18 |

7.2POWER OFF



**Note:** (1) Low level=3FH, when NBW=L. **(Normally white)**  
 (2) Low level=00H, when NBW=H. **(Normally black)**

|                  |                                         |          |
|------------------|-----------------------------------------|----------|
| SPEC. NUMBER     | SPEC TITLE                              | PAGE     |
| <b>S801-5126</b> | GT080X0M-N12-1QP0 Product Specification | 16 OF 27 |

|     |                 |     |            |
|-----|-----------------|-----|------------|
| BOE | PRODUCT GROUP   | REV | ISSUE DATE |
|     | TFT LCD PRODUCT | 1   | 2025.12.18 |

## 8.0 OPTICAL SPECIFICATION

### 8.1 Overview

The test of view angle range shall be measured in a dark room (ambient luminance  $\leq 1$ lux and temperature =  $25\pm 2^{\circ}\text{C}$ ) with the equipment of Luminance meter system (Goniometer system and TOPCON CS2000/CA310) and test unit shall be located at an approximate distance 50cm from the LCD surface at a viewing angle of  $\theta$  and  $\Phi$  equal to  $0^{\circ}$ . We refer to  $\theta\Phi=0$  ( $=\theta_3$ ) as the 3 o'clock direction (the “right”),  $\theta\Phi=90$  ( $=\theta_{12}$ ) as the 12 o'clock direction (“upward”),  $\theta\Phi=180$  ( $=\theta_9$ ) as the 9 o'clock direction (“left”) and  $\theta\Phi=270$ ( $=\theta_6$ ) as the 6 o'clock direction (“bottom”). While scanning  $\theta$  and/or  $\Phi$ , the center of the measuring spot on the Display surface shall stay fixed. The luminance, color and uniformity (etc) should be tested by CS2000/CA310. The backlight should be operating for 10 minutes prior to measurement. VDD shall be  $3.3 \pm 0.3\text{V}$  at  $25^{\circ}\text{C}$ .

<Table 5. Optical Specifications>

| Parameter                |            | Symbol        | Condition                         | Min.         | Typ.  | Max.         | Unit              | Remark |
|--------------------------|------------|---------------|-----------------------------------|--------------|-------|--------------|-------------------|--------|
| Viewing Angle range      | Horizontal | $\Theta_3$    | CR > 10                           | -            | 75    | -            | Deg.              | Note 1 |
|                          |            | $\Theta_9$    |                                   | -            | 75    | -            | Deg.              |        |
|                          | Vertical   | $\Theta_{12}$ |                                   | -            | 75    | -            | Deg.              |        |
|                          |            | $\Theta_6$    |                                   | -            | 70    | -            | Deg.              |        |
| Luminance Contrast ratio |            | CR            | $\Theta = 0^{\circ}$              | 500          | 800   | -            |                   | Note 2 |
| Luminance of White       | Center     | $Y_w$         | $\Theta = 0^{\circ}$              | 350          | 400   | -            | cd/m <sup>2</sup> | Note 3 |
| Color Gamut              | NTSC       | CIE1931       | $\Theta = 0^{\circ}$              | -            | 50    | -            | %                 | Note 4 |
| Reproduction of color    | White      | $W_x$         | $\Theta = 0^{\circ}$              | Typ<br>-0.05 | 0.296 | Typ<br>+0.05 |                   |        |
|                          |            | $W_y$         |                                   |              | 0.287 |              |                   |        |
|                          |            | $R_x$         |                                   |              | 0.590 |              |                   |        |
|                          |            | $R_y$         |                                   |              | 0.354 |              |                   |        |
|                          |            | $G_x$         |                                   |              | 0.335 |              |                   |        |
|                          |            | $G_y$         |                                   |              | 0.534 |              |                   |        |
|                          |            | $B_x$         |                                   |              | 0.157 |              |                   |        |
|                          |            | $B_y$         |                                   |              | 0.083 |              |                   |        |
| Response Time            |            | Tr+Td         | Ta= 25° C<br>$\Theta = 0^{\circ}$ | -            | 20    | 40           | ms                | Note 5 |

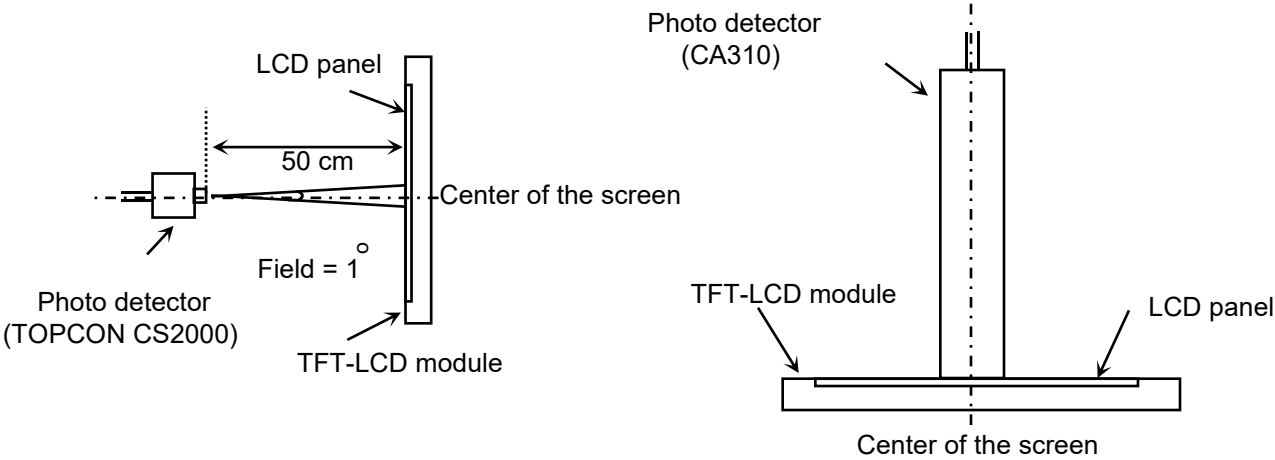
|                                  |                                                       |                  |
|----------------------------------|-------------------------------------------------------|------------------|
| SPEC. NUMBER<br><b>S801-5126</b> | SPEC TITLE<br>GT080X0M-N12-1QP0 Product Specification | PAGE<br>17 OF 27 |
|----------------------------------|-------------------------------------------------------|------------------|

|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                                                       |     |                  |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------|-----|------------------|
| BOE                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | PRODUCT GROUP                                         | REV | ISSUE DATE       |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | TFT LCD PRODUCT                                       | 1   | 2025.12.18       |
| <p>Notes : 1. Viewing angle is the angle at which the contrast ratio is greater than 10. The viewing angles are determined for the horizontal or 3, 9 o'clock direction and the vertical or 6, 12 o'clock direction with respect to the optical axis which is normal to the LCD surface .</p> <p>2. Contrast measurements shall be made at viewing angle of <math>\Theta = 0</math> and at the center of the LCD surface. Luminance shall be measured with all pixels in the view field set first to white, then to the dark (black) state . (see FIGURE 1) Luminance Contrast Ratio (CR) is defined mathematically.</p> $CR = \frac{\text{Luminance when displaying a white raster}}{\text{Luminance when displaying a black raster}}$ <p>3. Luminance of white is defined as luminance values of center of the LCD surface. Luminance shall be measured with all pixels in the view field set first to white. This measurement shall be taken at the locations shown in FIGURE 1 for a total of the measurements per display. The luminance is measured by CS2000/CA310 when the LED current is set at 200mA.</p> <p>4. The color chromaticity coordinates specified in Table 5. shall be calculated from the spectral data measured with all pixels first in red, green, blue and white. Measurements shall be made at the center of the panel.</p> <p>5. The electro-optical response time measurements shall be made as FIGURE 2 . The times needed for the, luminance to change from 10% to 90% is Tr, and 90% to 10% is Tf.</p> |                                                       |     |                  |
| SPEC. NUMBER<br>S801-5126                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | SPEC TITLE<br>GT080X0M-N12-1QP0 Product Specification |     | PAGE<br>18 OF 27 |

|     |                 |     |            |
|-----|-----------------|-----|------------|
| BOE | PRODUCT GROUP   | REV | ISSUE DATE |
|     | TFT LCD PRODUCT | 1   | 2025.12.18 |

8.2 Optical measurements

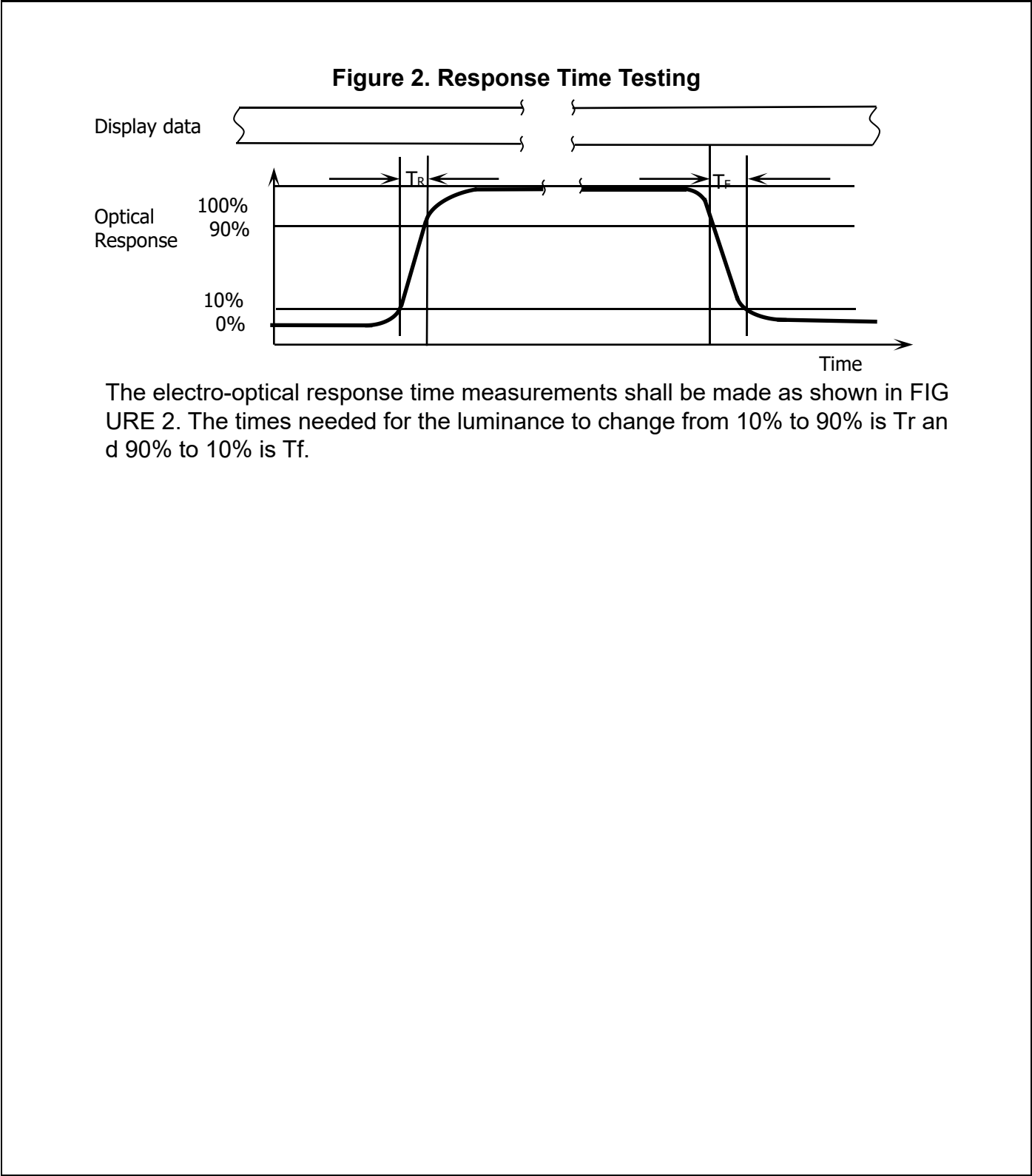
Figure 1. Measurement Set Up



View angel range, uniformity, etc. measurement setup      Flicker, measurement setup

|                                  |                                                       |                  |
|----------------------------------|-------------------------------------------------------|------------------|
| SPEC. NUMBER<br><b>S801-5126</b> | SPEC TITLE<br>GT080X0M-N12-1QP0 Product Specification | PAGE<br>19 OF 27 |
|----------------------------------|-------------------------------------------------------|------------------|

|     |                 |     |            |
|-----|-----------------|-----|------------|
| BOE | PRODUCT GROUP   | REV | ISSUE DATE |
|     | TFT LCD PRODUCT | 1   | 2025.12.18 |

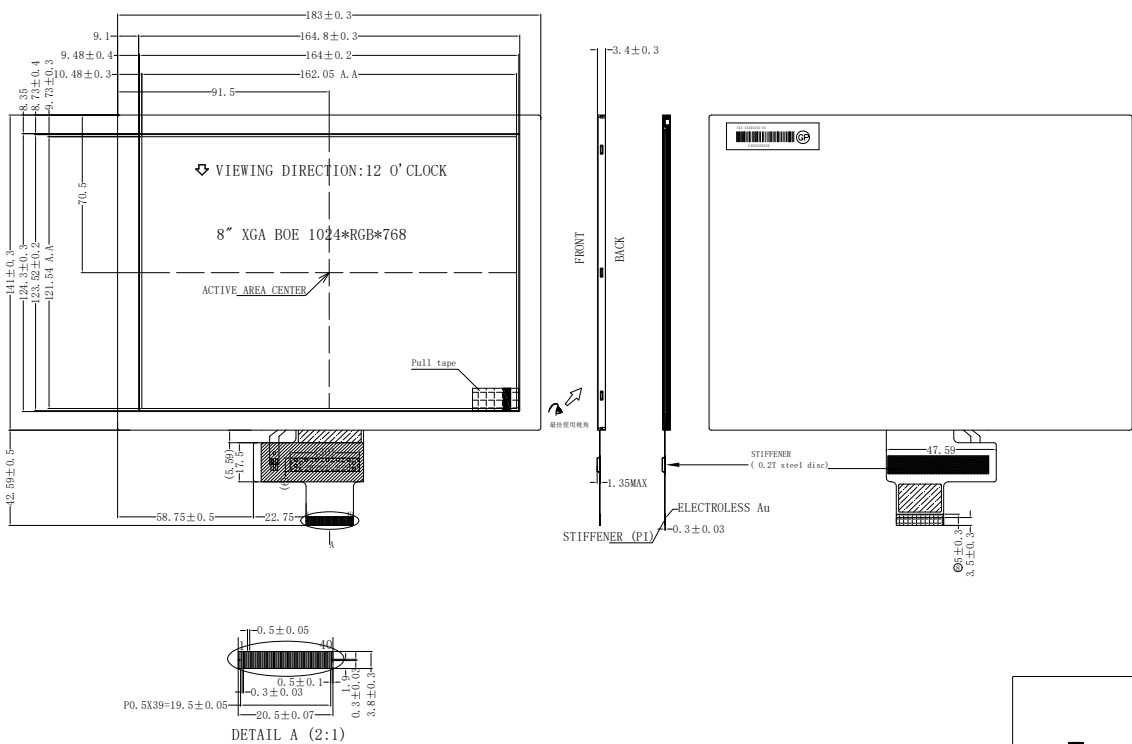


|                                  |                                                       |                  |
|----------------------------------|-------------------------------------------------------|------------------|
| SPEC. NUMBER<br><b>S801-5126</b> | SPEC TITLE<br>GT080X0M-N12-1QP0 Product Specification | PAGE<br>20 OF 27 |
|----------------------------------|-------------------------------------------------------|------------------|

|     |                 |     |            |
|-----|-----------------|-----|------------|
| BOE | PRODUCT GROUP   | REV | ISSUE DATE |
|     | TFT LCD PRODUCT | 1   | 2025.12.18 |

9.0 MECHANICAL OUTLINE DIMENSION

Figure 1. TFT-LCD Module Outline Dimension (Front View)



|                                  |                                                       |                  |
|----------------------------------|-------------------------------------------------------|------------------|
| SPEC. NUMBER<br><b>S801-5126</b> | SPEC TITLE<br>GT080X0M-N12-1QP0 Product Specification | PAGE<br>21 OF 27 |
|----------------------------------|-------------------------------------------------------|------------------|

|     |                 |     |            |
|-----|-----------------|-----|------------|
| BOE | PRODUCT GROUP   | REV | ISSUE DATE |
|     | TFT LCD PRODUCT | 1   | 2025.12.18 |

10.0 RELIABILITY TEST

The Reliability test items and its conditions are shown in below.

<Table 9. Reliability test>

| No | Test Items                                      | Conditions                                                          | Remark        |
|----|-------------------------------------------------|---------------------------------------------------------------------|---------------|
| 1  | High temperature storage test                   | Ta = 80℃, 240 hrs                                                   |               |
| 2  | Low temperature storage test                    | Ta = -30 ℃, 240 hrs                                                 |               |
| 3  | High temperature operation test                 | Ta = 70℃, 240 hrs                                                   |               |
| 4  | Low temperature operation test                  | Ta = -20 ℃, 240 hrs                                                 |               |
| 5  | High temperature & high humidity operation test | Ta = 60 ℃, 90%RH, 240 hrs                                           |               |
| 6  | Thermal shock                                   | Ta = -30 ℃ ↔ 80℃ (0.5 hr), 100 cycle                                | Non-operation |
| 7  | ESD test                                        | Air Voltage:±8KV<br>Contact Voltage:±4KV<br>R: 330Ω C: 5point/panel |               |
| 8  | Drop                                            | Height:80cm<br>1 corner,3edges,6surfaces                            |               |

Note : After the reliability test, the product only guarantee function normally without any fatal defect (non-display, line defect, abnormal display etc ). All the cosmetic specification is judged before the reliability test.

|                           |                                                       |                  |
|---------------------------|-------------------------------------------------------|------------------|
| SPEC. NUMBER<br>S801-5126 | SPEC TITLE<br>GT080X0M-N12-1QP0 Product Specification | PAGE<br>22 OF 27 |
|---------------------------|-------------------------------------------------------|------------------|

|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                                                                          |                                     |            |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------|-------------------------------------|------------|
| <div>BOE</div>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | PRODUCT GROUP                                                            | REV                                 | ISSUE DATE |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | TFT LCD PRODUCT                                                          | 1                                   | 2025.12.18 |
| <div>11.0 Precautions</div> <div>Please pay attention to the followings when you use this TFT LCD Panel.</div> <div>11.1 Mounting Precautions</div> <div>           (1) Use fingerstalls with soft gloves in order to keep display clean during the incoming inspection and assembly process.<br/>           (2) You must mount a module using specified mounting holes (Details refer to the drawings).<br/>           (3) Please make sure to avoid external forces applied to the Source PCB or FPC and D-IC during the process of handling or assembling. If not, It causes panel damage or malfunction.<br/>           (4) Note that LCD surface are very fragile and could be easily damaged. Do not touch, push or rub the exposed LCD surface with glass, tweezers or anything harder than HB pencil lead. And please do not rub with dust clothes with chemical treatment.<br/>           (5) Do not pull or fold the source D-IC which connect the source PCB or FPC and the panel. Do not pull or fold the LED wire.<br/>           (6) After removing the protective film, when the surface becomes dusty, please wipe gently with absorbent cotton or other soft materials like chamois soaks with alcohol or purified water. Do not strong polar solvent because they cause chemical damage to the LCD surface<br/>           (7) Wipe off saliva or water drops as soon as possible. Their long time contact with LCD surface causes deformations and color fading.<br/>           (8) Since the LCD is made of glass, do not apply strong mechanical impact or static load onto it. Handling with care since shock, vibration, and careless handling may seriously affect the product. If it falls from a high place or receives a strong shock, the glass may be broken.<br/>           (9) Do not disassemble the module.<br/>           (10) To determine the optimum mounting angle, refer to the viewing angle range in the specification for each model.<br/>           (11) If the customer's set presses the main parts of the LCD, the LCD may show the abnormal display. But this phenomenon does not mean the malfunction of the LCD and should be pressed by the way of mutual agreement.<br/>           (12)Do not drop water or any chemicals onto the LCD's surface.         </div> |                                                                          |                                     |            |
| <div>SPEC. NUMBER</div> <div>S801-5126</div>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | <div>SPEC TITLE</div> <div>GT080X0M-N12-1QP0 Product Specification</div> | <div>PAGE</div> <div>23 OF 27</div> |            |

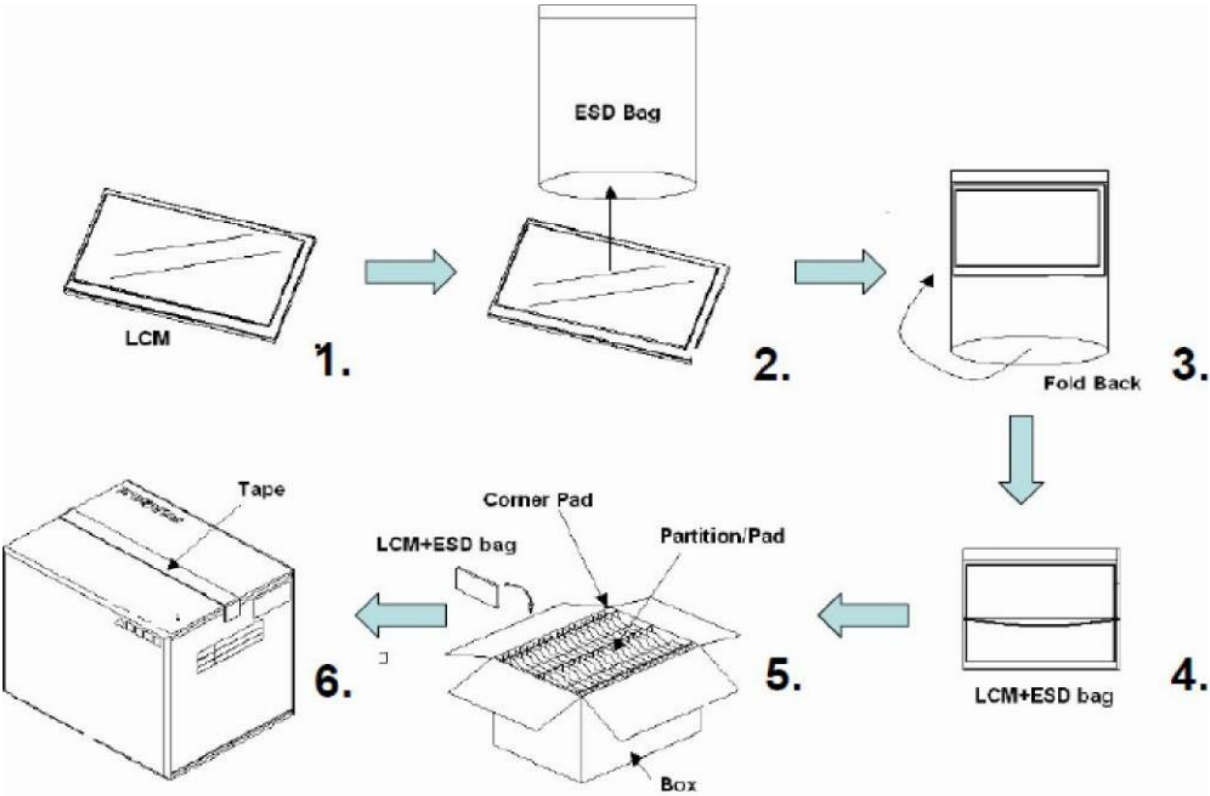
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                                                       |                  |            |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------|------------------|------------|
| BOE                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | PRODUCT GROUP                                         | REV              | ISSUE DATE |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | TFT LCD PRODUCT                                       | 1                | 2025.12.18 |
| <p><b>11.2 Operating Precautions</b></p> <p>(1) Be careful for condensation at sudden temperature change. Condensation makes damage to polarizer or electrical contacted parts. And after fading condensation, smear or spot will occur.</p> <p>(2) Module has high frequency circuits. Sufficient suppression to the electromagnetic interference shall be done by system manufacturers. Grounding and shielding methods may be important to minimized the interference.</p> <p>(3) The electrochemical reaction caused by DC voltage will lead to LCD degradation, so DC drive should be avoided.</p> <p>(4) The LCD modules use C-MOS LSI drivers, so customers are recommended that any unused input terminal would be connected to Vdd or Vss, do not input any signals before power is turn on, and ground you body, work/assembly area, assembly equipments to protect against static electricity.</p> <p>(5) Do not exceed the absolute maximum rating value. (supply voltage variation, input voltage variation, variation in part contents and environmental temperature, and so on) Otherwise the Module may be damaged.</p> <p>(6) Design the length of cable to connect between the connector for back-light and the converter as short as possible and the shorter cable shall be connected directly.<br/>The longer cable between that of back-light and that of converter may cause the luminance of LED to lower and need a higher startup voltage(Vs).</p> <p>(7) Connectors are precise devices for connecting PCB and transmitting electrical signals. Operators should insert and unplug MDL in parallel when assembling MDL.</p> <p>(8) Do not connect or disconnect the cable to/ from the module at the "Power On" condition.</p> <p>(9) When the module is operating, do not lose CLK, ENAB signals. If any one these signals is lost, the LCD panel would be damaged.</p> <p>(10) Obey the supply voltage sequence. If wrong sequence is applied, the module would be damaged.</p> <p>(11) Do not re-adjust variable resistor or switch etc.</p> <p><b>11.3 Electrostatic Discharge Control</b></p> <p>(1) Since a module is composed of electronic circuits, it is not strong to electrostatic discharge. Make certain that treatment persons are connected to ground through wrist band etc. And don't touch interface pin directly. Keep products as far away from static electricity as possible.</p> <p>(2) Avoid the use work clothing made of synthetic fibers. We recommend cotton clothing or other conductivity-treated fibers.</p> |                                                       |                  |            |
| SPEC. NUMBER<br>S801-5126                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | SPEC TITLE<br>GT080X0M-N12-1QP0 Product Specification | PAGE<br>24 OF 27 |            |

|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                                         |          |            |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------|----------|------------|
| BOE                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | PRODUCT GROUP                           | REV      | ISSUE DATE |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | TFT LCD PRODUCT                         | 1        | 2025.12.18 |
| <div>11.4 Precautions for Extreme Outdoor Environments</div> <div>Products should be protected against extreme high or low temperature, water vapor and ultraviolet radiation. Products need to avoid prolonged exposure to extreme outdoor environments.</div> <div>11.5 Storage Precautions</div> <div>When storing modules as spares for a long time, the following precautions are necessary.</div> <div>(1) The polarizer surface should not come in contact with any other object.</div> <div>It is recommended that they be stored in the container in which they were shipped.</div> <div>Temperature : 5 ~ 40 °C</div> <div>(2) Humidity : 35 ~ 75 %RH</div> <div>(3) Period : 6 months</div> <div>(4) Control of ventilation and temperature is necessary.</div> <div>(5) Please make sure to protect the product from strong light exposure, water or moisture.</div> <div>Be careful for condensation.</div> <div>(6) Store in a polyethylene bag with sealed so as not to enter fresh air outside in it.</div> <div>(7)Do not store the LCD near organic solvents or corrosive gasses.</div> <div>(8) Please keep the Modules/OC/FOG at a circumstance shown below Fig.</div> <div><div><div>No Baking</div><div>50°C , 10% , 24hr</div><div>50°C , 10% , 48hr</div></div><div>2 month3 month6 month</div></div> <div>11.6 Precautions for Protection Film (适用通用产品, 含Q/Single Production)</div> <div>(1) Remove the protective film slowly, keeping the removing direction approximate 30-degree not vertical from panel surface, If possible, under ESD control device like ion blower, and the humidity of working room should be kept over 50%RH to reduce the risk of static charge.</div> <div>(2) In handling the LCD, wear non-charged material gloves. And the conducting wrist to the earth and the conducting shoes to the earth are necessary.</div> <div>11.7 Appropriate Condition for Display</div> <div>(1) Normal operating condition</div> <div>-Temperature: 0 ~ 40°C</div> <div>-Operating Ambient Humidity : 10 ~ 90 %</div> <div>-Display pattern: dynamic pattern (Real display)</div> <div>-Long-term lighting products recommended regular shutdown</div> <div>(2) Special operating condition</div> <div>If the product will be used in extreme conditions such as high temperature, humidity, display patterns or 7*24hrs operation time etc.,, It is strongly recommended to contact BOE for Application engineering advice. Otherwise, its reliability and function may not be guaranteed.</div> <div>(3)Black image or moving image is strongly recommended as a screen save.</div> |                                         |          |            |
| SPEC. NUMBER                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | SPEC TITLE                              | PAGE     |            |
| S801-5126                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | GT080X0M-N12-1QP0 Product Specification | 25 OF 27 |            |

|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | PRODUCT GROUP                                         | REV | ISSUE DATE       |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------|-----|------------------|
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | TFT LCD PRODUCT                                       | 1   | 2025.12.18       |
| <p>(4) Lifetime in this spec. is guaranteed only when commercial display is used according to operating usages.</p> <p>(5) Please contract BOE in advance when you want to switch between portrait and landscape</p> <p>(6) Please contact BOE in advance when you display the same pattern for a long time.</p> <p>(7) If the Module keeps displaying the same pattern for a long period of time, the image may be "sticked" to the screen. To avoid image sticking, it is recommended to use a screen saver.</p> <p>(8) Do not exceed the absolute maximum rating value. (supply voltage variation, input voltage variation, variation in part contents and environmental temperature, and so on) Otherwise the Module may be damaged.</p> <p>(9) Dew drop atmosphere should be avoided.</p> <p>(10) The storage room should be equipped with a good ventilation facility and avoid to expose to corrosive gas , which has a temperature controlling system.</p> <p>(11) When expose to drastic fluctuation of temperature (hot to cold or cold to hot ) ,the LCD may be affected; Specifically, drastic temperature fluctuation from cold to hot ,produces dew on the LCD's surface which may affect the operation of the polarizer and the LCD.</p> <p>(12) Response time will be extremely delayed at lower temperature than the operating temperature range and on the other hand at higher temperature LCD may turn black at temperature above its operational range. However those phenomena do not mean malfunction or out of order with the LCD. The LCD will revert to normal operation once the temperature returns to the recommended temperature range for normal operation</p> <p><b>11.8 Others</b></p> <p><b>A. LC Leak</b></p> <ul style="list-style-type: none"><li>• If the liquid crystal material leaks from the panel, it is recommended to wash the LC with acetone or ethanol and then burn it.</li><li>• In case of contact with hands, skin or clothes, it has to be washed away thoroughly with soap.</li><li>• If LC in mouth, mouth need to be washed, drink plenty of water to induce vomiting and follow medical advice.</li><li>• If LC touch eyes, eyes need to be washed with running water at least 15 minutes.</li></ul> <p><b>B. Rework</b></p> <ul style="list-style-type: none"><li>• When returning the module for repair or etc., Please pack the module not to be broken. We recommend to use the original shipping packages.</li></ul> |                                                       |     |                  |
| SPEC. NUMBER<br><b>S801-5126</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | SPEC TITLE<br>GT080X0M-N12-1QP0 Product Specification |     | PAGE<br>26 OF 27 |

|     |                 |     |            |
|-----|-----------------|-----|------------|
| BOE | PRODUCT GROUP   | REV | ISSUE DATE |
|     | TFT LCD PRODUCT | 1   | 2025.12.18 |

12.0 PACKING INFORMATION



12.1 Packing Note

Box Dimension: 520mm(W) x 387mm(D) x 200mm(H)  
Package Quantity in one Box: 60pcs

|              |                                         |          |
|--------------|-----------------------------------------|----------|
| SPEC. NUMBER | SPEC TITLE                              | PAGE     |
| S801-5126    | GT080X0M-N12-1QP0 Product Specification | 27 OF 27 |