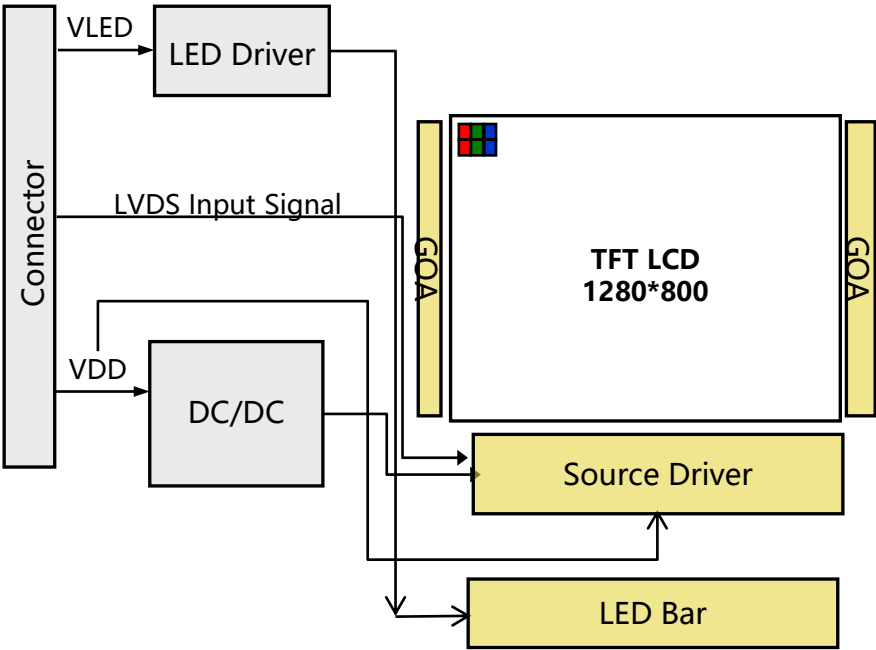


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1.0 GENERAL DESCRIPTION

1.0.1 Introduction

GV101WXM-N80 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 10.1 inch diagonally measured active area with XGA resolutions (1280 horizontal by 800 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.



1.0.2 Features

- LED back-light
- LVDS interface
- RoHS Compliant

1.0.3 Application

- Video Phone/IP Phone/Smart Key/ e-cigarettes etc.

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1.0.4 General Specification

< Table 1. General Specifications >

| Parameter           | Specification (15inch 参考)                            | Unit   | Remarks |
|---------------------|------------------------------------------------------|--------|---------|
| Active area         | 216.96 (H) × 135.6(V)                                | mm     |         |
| Number of pixels    | 1280(H) × 800(V)                                     | Pixels |         |
| Pixel pitch         | 0.1695(H) × 0.1695 (V)                               | mm     |         |
| Pixel arrangement   | RGB Vertical stripe                                  |        |         |
| Display colors      | 16.7M                                                | Colors | 8bit    |
| Display mode        | Normally Black                                       |        |         |
| Dimensional outline | 228.2±0.3(H) x 148.85±0.3(V) x 2.8max<br>x/4.9(max.) | mm     | 10.0max |
| Weight              | 150 (max.)                                           | g      |         |
| Surface treatment   | Hard Coating, 3H                                     |        |         |
| Back-light          | Edge side, 1-LED Lighting Bar Type                   |        | 42*LED  |
| LED Life-Time       | 30000                                                | Hr     | @L50%   |

|              |                                                        |                 |
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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                               |
|---------------------------------|------------------|------|------|------|---------------------------------------|
| LCD Power Supply Voltage        | VDD              | -0.3 | 4    | V    |                                       |
| LED Driver Power Supply Voltage | V <sub>LED</sub> | 5    | 24   | V    | Ta = 25 °C<br>Note 1&2                |
| Operating Temperature           | T <sub>OP</sub>  | -20  | 70   | °C   | Environment<br>Temperature            |
| Storage Temperature             | T <sub>ST</sub>  | -30  | 80   | °C   |                                       |
| Operating Ambient Humidity      | Hop              | 10   | 90   | %RH  |                                       |
| Storage Humidity                | Hst              | 10   | 90   | %RH  |                                       |
| Heat Release Requirement        | Trls             | 15   |      | °C   | Note3<br>仅适用于Q/Sin<br>gle/FOG出货项<br>目 |

- Note:
- 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 ;
  - BOE is not responsible for product problems beyond the use conditions.
  - When the ambient temperature is T °C, the surface temperature of Panel can not exceed (T+15)°C.

|              |                                                        |                 |
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3.0 ELECTRICAL SPECIFICATIONS

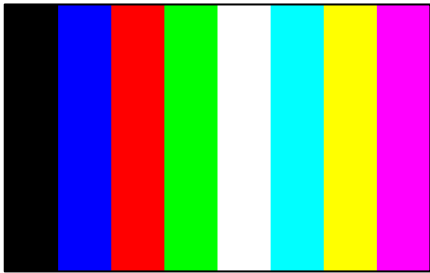
3.0.1 TFT LCD Module

< Table 3. LCD Module Electrical Specifications > [Ta =25±2 °C]

| Parameter                              | Symbol           | Values |     |               | Unit | Notes  |
|----------------------------------------|------------------|--------|-----|---------------|------|--------|
|                                        |                  | Min    | Typ | Max           |      |        |
| Power Supply Input Voltage             | V <sub>DD</sub>  | 3.3    | 3.3 | 3.6           | V    | Note 1 |
| Power Supply Current                   | I <sub>DD</sub>  | -      | 330 | 420           | mA   |        |
| LED Driver Power Supply Voltage        | V <sub>LED</sub> | 10.8   | 12  | 13.2          | V    | Note 2 |
| LED Driver Power Supply Current        | I <sub>LED</sub> | -      | 275 | 300           | mA   |        |
| Positive-going Input Threshold Voltage | V <sub>IT+</sub> | -      | -   | +100          | mV   |        |
| Negative-going Input Threshold Voltage | V <sub>IT-</sub> | -100   | -   | -             | mV   |        |
| Differential input common mode voltage | V <sub>com</sub> | 0.6    | 1.2 | 2.4-  VID  /2 | V    |        |
| Differential input voltage             | VID              | 0.2    | 0.4 | 0.6           |      |        |

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, Typ value at colorbar Pattern, Max value at L255 Pattern

2. Calculated value for reference  $I_{LED} \times V_{LED} \div 0.85 = P_{LED}$



colorbar



L255

|              |                                                        |                 |
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3.2 Back-light Driving Unit

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

| Parameter                           |                | Min.             | Typ. | Max. | Unit | Remarks |                       |
|-------------------------------------|----------------|------------------|------|------|------|---------|-----------------------|
| Power supply voltage for LED Driver |                | V <sub>LED</sub> | -    | 21   | 23.1 | V       |                       |
| Power supply Current for Back light |                | I <sub>LED</sub> | -    | 120  | -    | mA      |                       |
| Power supply for Back light         |                | P <sub>LED</sub> | -    | 2.52 | 2.8  | W       | Note 1                |
| EN Control Level                    | Backlight on   | V <sub>ENH</sub> | 1.4  | -    | 3.3  | V       | EN logic high voltage |
|                                     | Backlight off  | V <sub>ENL</sub> | -    | -    | 0.6  | V       | EN logic low voltage  |
| PWM Control Level                   | PWM High Level | V <sub>PML</sub> | 1.4  | -    | 3.3  | V       |                       |
|                                     | PWM Low Level  | V <sub>PML</sub> | -    | -    | 0.6  | V       |                       |
| PWM Control Frequency               |                | F <sub>PWM</sub> | 2    | -    | 25   | KHz     |                       |
| Duty Ratio                          |                | -                | 10   | -    | 100  | %       |                       |

|              |                                                        |                 |
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4.0 INTERFACE CONNECTION.

4.0.1 Electrical Interface Connection

The electronics interface connector is 20455-040E-12.

The connector interface pin assignments are listed in Table 6

<Table 6. Pin Assignments for the Interface Connector>

| Terminal | Symbol    | Functions                           |
|----------|-----------|-------------------------------------|
| Pin No.  | Symbol    | Description                         |
| 1        | NC        | No Connection                       |
| 2        | VDDIN     | Power Supply,3.3V(typical)          |
| 3        | VDDIN     | Power Supply,3.3V(typical)          |
| 4        | VDC       | EDID,3.3V(typical)                  |
| 5        | NC        | No Connection                       |
| 6        | CLK_EDID  | EDID时钟                              |
| 7        | Data_EDID | EDID data读取                         |
| 8        | RIN0-     | -LVDS differential data lane0 input |
| 9        | RIN0+     | +LVDS differential data lane0 input |
| 10       | GND       | Ground                              |
| 11       | RIN1-     | -LVDS differential data lane1 input |
| 12       | RIN1+     | +LVDS differential data lane1 input |
| 13       | GND       | Ground                              |
| 14       | RIN2-     | -LVDS differential data lane2 input |
| 15       | RIN2+     | +LVDS differential data lane2 input |
| 16       | GND       | Ground                              |
| 17       | LVDS_CLK- | -LVDS differential clock input      |
| 18       | LVDS_CLK+ | +LVDS differential clock input      |
| 19       | GND       | Ground                              |
| 20       | RIN3-     | -LVDS differential data lane3 input |
| 21       | RIN3+     | +LVDS differential data lane3 input |
| 22       | NC        | No Connection                       |

|              |                                                        |                 |
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## 4.0 INTERFACE CONNECTION.

### 4.0.1 Electrical Interface Connection

The electronics interface connector is 20455-040E-12.

The connector interface pin assignments are listed in Table 6

<Table 6. Pin Assignments for the Interface Connector>

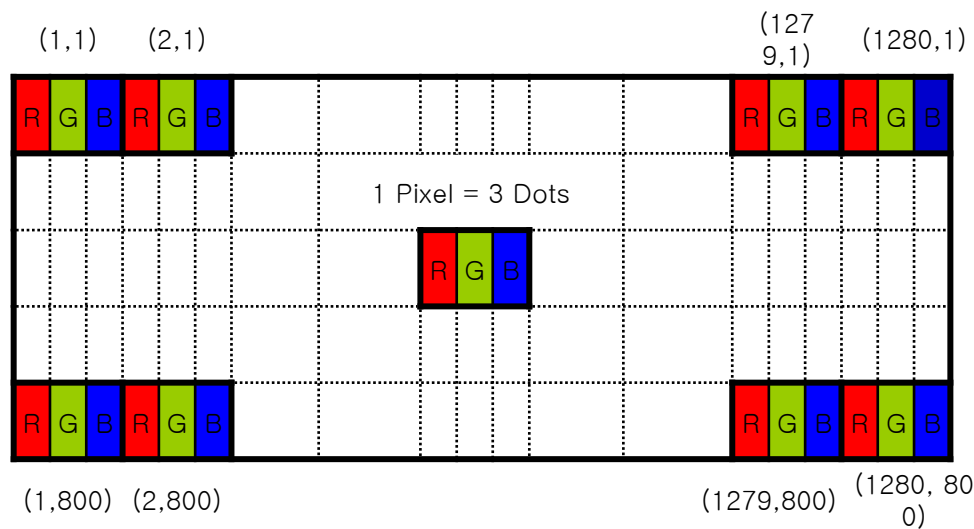
| Terminal | Symbol       | Functions                                |
|----------|--------------|------------------------------------------|
| Pin No.  | Symbol       | Description                              |
| 23       | NC(SPI_CSB)  | No Connection (SPI 片选)                   |
| 24       | NC(SPI_SCL)  | No Connection (SPI 时钟)                   |
| 25       | GND          | Ground                                   |
| 26       | NC(SPI_SDAO) | No Connection (SPI Data output)          |
| 27       | NC(SPI_SDAI) | No Connection (SPI Data input)           |
| 28       | GND          | Ground                                   |
| 29       | NC           | No Connection                            |
| 30       | NC           | No Connection                            |
| 31       | LED_GND      | Ground                                   |
| 32       | LED_GND      | Ground                                   |
| 33       | LED_GND      | Ground                                   |
| 34       | NC           | No Connection                            |
| 35       | LED_PWM      | LED Driver PWM dimming control pin       |
| 36       | LED_EN       | LED Driver Chip Enable pin (Active High) |
| 37       | NC           | No Connection                            |
| 38       | VLED         | LED Driver Power supply input            |
| 39       | VLED         | LED Driver Power supply input            |
| 40       | VLED         | LED Driver Power supply input            |

|              |                                                        |                  |
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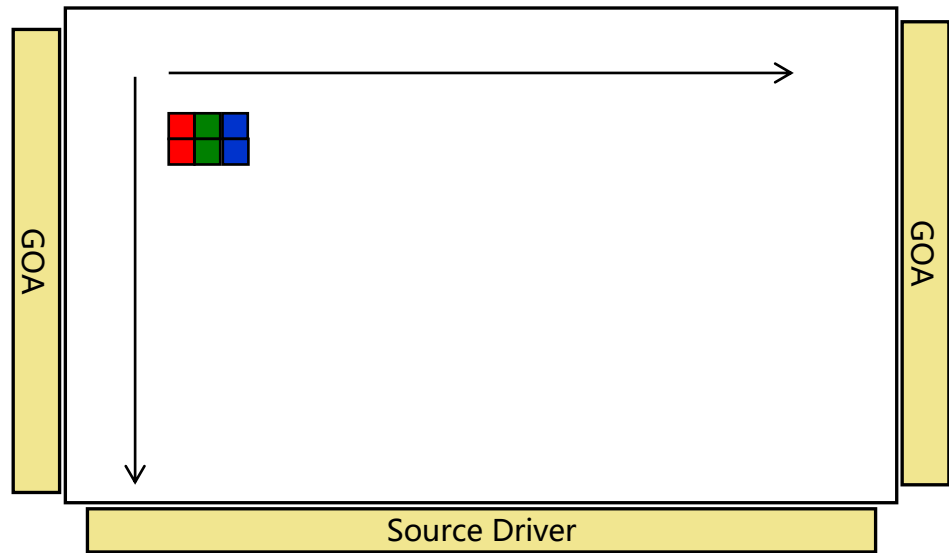
4.2 Data Input Format

Figure 5. Pixel Format



Display Position of Input Data (V-H)

Figure 6. Scan direction



|              |                                                        |                  |
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