



AUO Display+

Product Specification

G101EAN02.2

- (j) Preliminary Specifications
- (v) Final Specifications

| | |
|--------------------|-------------------------|
| Module | 10.1 Inch Color TFT-LCD |
| Model Name | G101EAN02.2 |
| Part Number | 97D10G28.201 |

| | |
|----------------------------------|-------------|
| Company | |
| | |
| Checked & Approved by | Date |
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|---|-------------------|
| Approved by | Date |
| <u>LeaDer Feng</u> | <u>2024/02/02</u> |
| | |
| Prepared by | |
| <u>Andy Fu</u> | <u>2024/02/02</u> |
| General Display Business Unit / AUO Display Plus Corporation | |

Contents

| | |
|--|-----------|
| 1. Operating Precautions | 5 |
| 2. General Description | 6 |
| 2.1 Display Characteristics..... | 6 |
| 2.2 Optical Characteristics | 7 |
| 3. Functional Block Diagram..... | 10 |
| 4. Absolute Maximum Ratings..... | 11 |
| 4.1 Absolute Ratings of TFT LCD Module..... | 11 |
| 4.2 Absolute Ratings of Environment | 11 |
| 5. Electrical Characteristics | 12 |
| 5.1 TFT LCD Module..... | 12 |
| 5.2 Backlight Unit..... | 15 |
| 6. Signal Characteristic | 16 |
| 6.1 Pixel Format Image | 16 |
| 6.2 Signal Description | 17 |
| 6.3 Interface Timing | 19 |
| 7. Reliability Test Criteria | 21 |
| 8. Mechanical Characteristics..... | 22 |
| 8.1 Outline Dimension (Front View) | 22 |
| 8.2 Outline Dimension (Rear View)..... | 23 |
| 9. Label and Packaging | 24 |
| 9.1 Shipping Label (on the rear side of TFT-LCD display) | 24 |
| 9.2 Carton/Pallet Package | 24 |
| 10 Safety..... | 25 |
| 10.1 Sharp Edge Requirements..... | 25 |
| 10.2 Materials | 25 |
| 10.3 Capacitors..... | 25 |
| 10.4 National Test Lab Requirement..... | 25 |

AUO Display+ Record of Revision

| Version and Date | Page | Old description | New Description | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
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| 0.0 2019/07/01 | All | First draft specification | - | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 0.1 2019/07/16 | 5 | <table border="1"> <tr> <td>Power Consumption¹</td> <td>[Watt]</td> <td>Logic Power : TBD(Max)@White pattern 3.3V input²</td> </tr> <tr> <td>Weight (Max.)³</td> <td>[Grams]</td> <td>TBD⁴</td> </tr> <tr> <td>Physical Size (typ.)⁵</td> <td>[mm]</td> <td>227.91(H) x 148.0(V) x 7.25(T) Max PCBA side⁶</td> </tr> </table> | Power Consumption ¹ | [Watt] | Logic Power : TBD(Max)@White pattern 3.3V input ² | Weight (Max.) ³ | [Grams] | TBD ⁴ | Physical Size (typ.) ⁵ | [mm] | 227.91(H) x 148.0(V) x 7.25(T) Max PCBA side ⁶ | <table border="1"> <tr> <td>Power Consumption¹</td> <td>[Watt]</td> <td>Logic Power : 1(Max)@White pattern 3.3V input²</td> </tr> <tr> <td>Weight (Max.)³</td> <td>[Grams]</td> <td>290⁴</td> </tr> <tr> <td>Physical Size (typ.)⁵</td> <td>[mm]</td> <td>227.91(H) x 148.0(V) x 7.25(T) (typ.) PCBA side⁶</td> </tr> </table> | Power Consumption ¹ | [Watt] | Logic Power : 1(Max)@White pattern 3.3V input ² | Weight (Max.) ³ | [Grams] | 290 ⁴ | Physical Size (typ.) ⁵ | [mm] | 227.91(H) x 148.0(V) x 7.25(T) (typ.) PCBA side ⁶ | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
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| PDD ¹¹ | VDD Power ¹² | -- ¹³ | TBD ¹⁴ | TBD ¹⁵ | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
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| IDD ¹ | VDD Current ² | -- ³ | 278.7 ⁴ | 303 ⁵ | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Inrush ⁶ | LCD Inrush Current ⁷ | -- ⁸ | -- ⁹ | 1500 ¹⁰ | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
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| 13 | T2 ¹ | TBD ² | TBD ³ | TBD ⁴ | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 17 | Manufacturer: STM | | Manufacturer: IPEX | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
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| Clock Frequency ⁷ | 1/ TClock ⁸ | TBD ⁹ | 71.1 ¹⁰ | TBD ¹¹ | MHz ¹² | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Vertical Section ¹³ | Period ¹⁴ | TV ¹⁵ | TBD ¹⁶ | 923 ¹⁷ | TBD ¹⁸ | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | Active ¹⁹ | TVD ²⁰ | 800 ²¹ | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | Blanking ²² | TVB ²³ | TBD ²⁴ | 23 ²⁵ | TBD ²⁶ | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Horizontal Section ²⁷ | Period ²⁸ | TH ²⁹ | TBD ³⁰ | 1440 ³¹ | TBD ³² | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | Active ³³ | THD ³⁴ | 1280 ³⁵ | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | Blanking ³⁶ | THB ³⁷ | TBD ³⁸ | 180 ³⁹ | TBD ⁴⁰ | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Signal ¹ | Symbol ² | Min. ³ | Typ. ⁴ | Max. ⁵ | Unit ⁶ | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
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| Vertical Section ¹³ | Period ¹⁴ | TV ¹⁵ | 815 ¹⁶ | 823 ¹⁷ | 800 ¹⁸ | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | Active ¹⁹ | TVD ²⁰ | 600 ²¹ | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | Blanking ²² | TVB ²³ | 15 ²⁴ | 23 ²⁵ | 00 ²⁶ | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Horizontal Section ²⁷ | Period ²⁸ | TH ²⁹ | 1410 ³⁰ | 1440 ³¹ | 1500 ³² | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | Active ³³ | THD ³⁴ | 1280 ³⁵ | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | Blanking ³⁶ | THB ³⁷ | TBD ³⁸ | 180 ³⁹ | TBD ⁴⁰ | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 21 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 0.2 2019/09/03 | 5 | LED power max TBD W | LED power max 3.024 W | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | 5 | Physical Size 7.25(T) (typ.) PCBA side | Physical Size 7.75(T) (max.) PCBA side | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | 6 | I _{LED} = 30mA | I _{LED} = 28mA | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | 6 | <table border="1"> <tr><td>Red x¹</td><td>TBD²</td><td>TBD³</td><td>TBD⁴</td></tr> <tr><td>Red y⁵</td><td>TBD⁶</td><td>TBD⁷</td><td>TBD⁸</td></tr> <tr><td>Green x⁹</td><td>TBD¹⁰</td><td>TBD¹¹</td><td>TBD¹²</td></tr> <tr><td>Green y¹³</td><td>TBD¹⁴</td><td>TBD¹⁵</td><td>TBD¹⁶</td></tr> <tr><td>Blue x¹⁷</td><td>TBD¹⁸</td><td>TBD¹⁹</td><td>TBD²⁰</td></tr> <tr><td>Blue y²¹</td><td>TBD²²</td><td>TBD²³</td><td>TBD²⁴</td></tr> <tr><td>White x²⁵</td><td>0.263²⁶</td><td>0.313²⁷</td><td>0.363²⁸</td></tr> <tr><td>White y²⁹</td><td>0.279³⁰</td><td>0.329³¹</td><td>0.379³²</td></tr> </table> | Red x ¹ | TBD ² | TBD ³ | TBD ⁴ | Red y ⁵ | TBD ⁶ | TBD ⁷ | TBD ⁸ | Green x ⁹ | TBD ¹⁰ | TBD ¹¹ | TBD ¹² | Green y ¹³ | TBD ¹⁴ | TBD ¹⁵ | TBD ¹⁶ | Blue x ¹⁷ | TBD ¹⁸ | TBD ¹⁹ | TBD ²⁰ | Blue y ²¹ | TBD ²² | TBD ²³ | TBD ²⁴ | White x ²⁵ | 0.263 ²⁶ | 0.313 ²⁷ | 0.363 ²⁸ | White y ²⁹ | 0.279 ³⁰ | 0.329 ³¹ | 0.379 ³² | <table border="1"> <tr><td>Red x¹</td><td>0.551²</td><td>0.601³</td><td>0.651⁴</td></tr> <tr><td>Red y⁵</td><td>0.293⁶</td><td>0.343⁷</td><td>0.393⁸</td></tr> <tr><td>Green x⁹</td><td>0.274¹⁰</td><td>0.324¹¹</td><td>0.374¹²</td></tr> <tr><td>Green y¹³</td><td>0.512¹⁴</td><td>0.562¹⁵</td><td>0.612¹⁶</td></tr> <tr><td>Blue x¹⁷</td><td>0.101¹⁸</td><td>0.151¹⁹</td><td>0.201²⁰</td></tr> <tr><td>Blue y²¹</td><td>0.085²²</td><td>0.135²³</td><td>0.185²⁴</td></tr> <tr><td>White x²⁵</td><td>0.283²⁶</td><td>0.313²⁷</td><td>0.363²⁸</td></tr> <tr><td>White y²⁹</td><td>0.279³⁰</td><td>0.329³¹</td><td>0.379³²</td></tr> </table> | Red x ¹ | 0.551 ² | 0.601 ³ | 0.651 ⁴ | Red y ⁵ | 0.293 ⁶ | 0.343 ⁷ | 0.393 ⁸ | Green x ⁹ | 0.274 ¹⁰ | 0.324 ¹¹ | 0.374 ¹² | Green y ¹³ | 0.512 ¹⁴ | 0.562 ¹⁵ | 0.612 ¹⁶ | Blue x ¹⁷ | 0.101 ¹⁸ | 0.151 ¹⁹ | 0.201 ²⁰ | Blue y ²¹ | 0.085 ²² | 0.135 ²³ | 0.185 ²⁴ | White x ²⁵ | 0.283 ²⁶ | 0.313 ²⁷ | 0.363 ²⁸ | White y ²⁹ | 0.279 ³⁰ | 0.329 ³¹ | 0.379 ³² | | | | | | | | | | | | | | | | | | | | | | | |
| | Red x ¹ | TBD ² | TBD ³ | TBD ⁴ | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | Red y ⁵ | TBD ⁶ | TBD ⁷ | TBD ⁸ | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | Green x ⁹ | TBD ¹⁰ | TBD ¹¹ | TBD ¹² | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | Green y ¹³ | TBD ¹⁴ | TBD ¹⁵ | TBD ¹⁶ | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Blue x ¹⁷ | TBD ¹⁸ | TBD ¹⁹ | TBD ²⁰ | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Blue y ²¹ | TBD ²² | TBD ²³ | TBD ²⁴ | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| White x ²⁵ | 0.263 ²⁶ | 0.313 ²⁷ | 0.363 ²⁸ | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| White y ²⁹ | 0.279 ³⁰ | 0.329 ³¹ | 0.379 ³² | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Red x ¹ | 0.551 ² | 0.601 ³ | 0.651 ⁴ | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Red y ⁵ | 0.293 ⁶ | 0.343 ⁷ | 0.393 ⁸ | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Green x ⁹ | 0.274 ¹⁰ | 0.324 ¹¹ | 0.374 ¹² | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Green y ¹³ | 0.512 ¹⁴ | 0.562 ¹⁵ | 0.612 ¹⁶ | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Blue x ¹⁷ | 0.101 ¹⁸ | 0.151 ¹⁹ | 0.201 ²⁰ | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Blue y ²¹ | 0.085 ²² | 0.135 ²³ | 0.185 ²⁴ | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| White x ²⁵ | 0.283 ²⁶ | 0.313 ²⁷ | 0.363 ²⁸ | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| White y ²⁹ | 0.279 ³⁰ | 0.329 ³¹ | 0.379 ³² | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 6 | Color Gamut 50% | Color Gamut 45% | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 14 | <table border="1"> <tr> <td>Input Current¹</td> <td>--²</td> <td>TBD³</td> <td>TBD⁴</td> <td>[mA]⁵</td> </tr> <tr> <td>Power Consumption⁶</td> <td>--⁷</td> <td>TBD⁸</td> <td>TBD⁹</td> <td>[Watt]¹⁰</td> </tr> <tr> <td>LED Forward Current¹¹</td> <td>--¹²</td> <td>30¹³</td> <td>--¹⁴</td> <td>[mA]¹⁵</td> </tr> </table> | Input Current ¹ | -- ² | TBD ³ | TBD ⁴ | [mA] ⁵ | Power Consumption ⁶ | -- ⁷ | TBD ⁸ | TBD ⁹ | [Watt] ¹⁰ | LED Forward Current ¹¹ | -- ¹² | 30 ¹³ | -- ¹⁴ | [mA] ¹⁵ | <table border="1"> <tr> <td>Input Current¹</td> <td>--²</td> <td>222³</td> <td>252⁴</td> <td>[mA]⁵</td> </tr> <tr> <td>Power Consumption⁶</td> <td>--⁷</td> <td>2.664⁸</td> <td>3.024⁹</td> <td>[Watt]¹⁰</td> </tr> <tr> <td>LED Forward Current¹¹</td> <td>--¹²</td> <td>28¹³</td> <td>--¹⁴</td> <td>[mA]¹⁵</td> </tr> </table> | Input Current ¹ | -- ² | 222 ³ | 252 ⁴ | [mA] ⁵ | Power Consumption ⁶ | -- ⁷ | 2.664 ⁸ | 3.024 ⁹ | [Watt] ¹⁰ | LED Forward Current ¹¹ | -- ¹² | 28 ¹³ | -- ¹⁴ | [mA] ¹⁵ | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Input Current ¹ | -- ² | TBD ³ | TBD ⁴ | [mA] ⁵ | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Power Consumption ⁶ | -- ⁷ | TBD ⁸ | TBD ⁹ | [Watt] ¹⁰ | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| LED Forward Current ¹¹ | -- ¹² | 30 ¹³ | -- ¹⁴ | [mA] ¹⁵ | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Input Current ¹ | -- ² | 222 ³ | 252 ⁴ | [mA] ⁵ | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Power Consumption ⁶ | -- ⁷ | 2.664 ⁸ | 3.024 ⁹ | [Watt] ¹⁰ | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| LED Forward Current ¹¹ | -- ¹² | 28 ¹³ | -- ¹⁴ | [mA] ¹⁵ | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 14 | (Ta=70°C), Note 2 ¹ I _F =30mA ² | (Ta=70°C), Note 2 ¹ I _F =28mA ² | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 21 | -- | Add more dimension | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

| 0.3 2019/10/16 | 14 | <table border="1"> <thead> <tr> <th rowspan="2">Parameter</th> <th colspan="3">Value</th> <th rowspan="2">Unit</th> </tr> <tr> <th>Min.</th> <th>Typ.</th> <th>Max.</th> </tr> </thead> <tbody> <tr><td>T1.</td><td>0.5.</td><td>~</td><td>10.</td><td>[ms]</td></tr> <tr><td>T2.</td><td>30.</td><td>40.</td><td>50.</td><td>[ms]</td></tr> <tr><td>T3.</td><td>200.</td><td>~</td><td>~</td><td>[ms]</td></tr> <tr><td>T4.</td><td>0.5.</td><td>~</td><td>10.</td><td>[ms]</td></tr> <tr><td>T5.</td><td>10.</td><td>~</td><td>~</td><td>[ms]</td></tr> <tr><td>T6.</td><td>10.</td><td>~</td><td>~</td><td>[ms]</td></tr> <tr><td>T7.</td><td>0.</td><td>~</td><td>~</td><td>[ms]</td></tr> <tr><td>T8.</td><td>10.</td><td>~</td><td>~</td><td>[ms]</td></tr> <tr><td>T9.</td><td>~</td><td>~</td><td>200.</td><td>[ms]</td></tr> <tr><td>T10.</td><td>110.</td><td>~</td><td>~</td><td>[ms]</td></tr> <tr><td>T11.</td><td>0.</td><td>16.</td><td>50.</td><td>[ms]</td></tr> <tr><td>T12.</td><td>~</td><td>~</td><td>200.</td><td>[ms]</td></tr> <tr><td>T13.</td><td>1000.</td><td>~</td><td>~</td><td>[ms]</td></tr> </tbody> </table> | Parameter | Value | | | Unit | Min. | Typ. | Max. | T1. | 0.5. | ~ | 10. | [ms] | T2. | 30. | 40. | 50. | [ms] | T3. | 200. | ~ | ~ | [ms] | T4. | 0.5. | ~ | 10. | [ms] | T5. | 10. | ~ | ~ | [ms] | T6. | 10. | ~ | ~ | [ms] | T7. | 0. | ~ | ~ | [ms] | T8. | 10. | ~ | ~ | [ms] | T9. | ~ | ~ | 200. | [ms] | T10. | 110. | ~ | ~ | [ms] | T11. | 0. | 16. | 50. | [ms] | T12. | ~ | ~ | 200. | [ms] | T13. | 1000. | ~ | ~ | [ms] | <table border="1"> <thead> <tr> <th rowspan="2">Parameter</th> <th colspan="3">Value</th> <th rowspan="2">Unit</th> </tr> <tr> <th>Min.</th> <th>Typ.</th> <th>Max.</th> </tr> </thead> <tbody> <tr><td>T1.</td><td>0.5.</td><td>~</td><td>10.</td><td>[ms]</td></tr> <tr><td>T2.</td><td>50.</td><td>60.</td><td>70.</td><td>[ms]</td></tr> <tr><td>T3.</td><td>200.</td><td>~</td><td>~</td><td>[ms]</td></tr> <tr><td>T4.</td><td>0.5.</td><td>~</td><td>10.</td><td>[ms]</td></tr> <tr><td>T5.</td><td>10.</td><td>~</td><td>~</td><td>[ms]</td></tr> <tr><td>T6.</td><td>10.</td><td>~</td><td>~</td><td>[ms]</td></tr> <tr><td>T7.</td><td>0.</td><td>~</td><td>~</td><td>[ms]</td></tr> <tr><td>T8.</td><td>10.</td><td>~</td><td>~</td><td>[ms]</td></tr> <tr><td>T9.</td><td>~</td><td>~</td><td>10.</td><td>[ms]</td></tr> <tr><td>T10.</td><td>110.</td><td>~</td><td>~</td><td>[ms]</td></tr> <tr><td>T11.</td><td>0.</td><td>16.</td><td>50.</td><td>[ms]</td></tr> <tr><td>T12.</td><td>~</td><td>~</td><td>10.</td><td>[ms]</td></tr> <tr><td>T13.</td><td>1000.</td><td>~</td><td>~</td><td>[ms]</td></tr> </tbody> </table> | Parameter | Value | | | Unit | Min. | Typ. | Max. | T1. | 0.5. | ~ | 10. | [ms] | T2. | 50. | 60. | 70. | [ms] | T3. | 200. | ~ | ~ | [ms] | T4. | 0.5. | ~ | 10. | [ms] | T5. | 10. | ~ | ~ | [ms] | T6. | 10. | ~ | ~ | [ms] | T7. | 0. | ~ | ~ | [ms] | T8. | 10. | ~ | ~ | [ms] | T9. | ~ | ~ | 10. | [ms] | T10. | 110. | ~ | ~ | [ms] | T11. | 0. | 16. | 50. | [ms] | T12. | ~ | ~ | 10. | [ms] | T13. | 1000. | ~ | ~ | [ms] |
|--------------------|---|--|---|------------|---|------------------------------|---|------|------------------------------|--|----------------|------|--------|-----|------------------|--------|------------------------------|-----|-----|------|--------|------|-----|---|------|-------|---------|----------|-----|------|-----|-----|--------|----|------|------|------|--------------------|--------|------|------|----|---|--------|----------|-----|-----|-----|-----|------------|-----|-----|-------|------|------|--|--------|--------|------|------|------|------|-----------------|-----------|------|------|------|-----|------------------|--------|------|-------|-----|-----|--------|--|-----------|-------|--|-------|---------|----------|------|------|-----|------|--------|-----|------|------|------|--------------------|--------|------|------|------|---|--------|----------|-----|------|-----|-----|------------|-----|-----|-------|-----|------|-----|-----|---|---|------|-----|----|---|---|------|-----|-----|---|---|------|-----|---|---|-----|------|------|------|---|---|------|------|----|-----|-----|------|------|---|---|-----|------|------|-------|---|---|------|
| Parameter | Value | | | Unit | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | Min. | Typ. | Max. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| T1. | 0.5. | ~ | 10. | [ms] | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| T2. | 30. | 40. | 50. | [ms] | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| T3. | 200. | ~ | ~ | [ms] | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| T4. | 0.5. | ~ | 10. | [ms] | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| T5. | 10. | ~ | ~ | [ms] | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| T6. | 10. | ~ | ~ | [ms] | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| T7. | 0. | ~ | ~ | [ms] | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| T8. | 10. | ~ | ~ | [ms] | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| T9. | ~ | ~ | 200. | [ms] | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| T10. | 110. | ~ | ~ | [ms] | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| T11. | 0. | 16. | 50. | [ms] | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| T12. | ~ | ~ | 200. | [ms] | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| T13. | 1000. | ~ | ~ | [ms] | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Parameter | Value | | | Unit | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | Min. | Typ. | Max. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| T1. | 0.5. | ~ | 10. | [ms] | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| T2. | 50. | 60. | 70. | [ms] | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| T3. | 200. | ~ | ~ | [ms] | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| T4. | 0.5. | ~ | 10. | [ms] | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| T5. | 10. | ~ | ~ | [ms] | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| T6. | 10. | ~ | ~ | [ms] | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| T7. | 0. | ~ | ~ | [ms] | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| T8. | 10. | ~ | ~ | [ms] | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| T9. | ~ | ~ | 10. | [ms] | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| T10. | 110. | ~ | ~ | [ms] | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| T11. | 0. | 16. | 50. | [ms] | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| T12. | ~ | ~ | 10. | [ms] | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| T13. | 1000. | ~ | ~ | [ms] | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 0.3 2019/10/16 | 19 | <table border="1"> <thead> <tr> <th>Signal</th> <th>Symbol</th> <th>Min.</th> <th>Typ.</th> <th>Max.</th> <th>Unit</th> </tr> </thead> <tbody> <tr> <td>Clock Frequency</td> <td>1/ TClock</td> <td>68.9</td> <td>71.1</td> <td>80.</td> <td>MHz</td> </tr> <tr> <td rowspan="2">Vertical Section</td> <td>Period</td> <td>TV</td> <td>815</td> <td>823</td> <td>860</td> </tr> <tr> <td>Active</td> <td>TVD</td> <td colspan="3">800</td> <td>TLine</td> </tr> <tr> <td rowspan="2">Section</td> <td>Blanking</td> <td>TVB</td> <td>15</td> <td>23</td> <td>60</td> </tr> <tr> <td>Period</td> <td>TH</td> <td>1410</td> <td>1440</td> <td>1480</td> </tr> <tr> <td rowspan="2">Horizontal Section</td> <td>Active</td> <td>THD</td> <td colspan="3">1280</td> <td>TClock</td> </tr> <tr> <td>Blanking</td> <td>THB</td> <td>130</td> <td>160</td> <td>270</td> </tr> <tr> <td>Frame Rate</td> <td>F</td> <td>---</td> <td>59.99</td> <td>---</td> <td>Hz</td> </tr> </tbody> </table> | Signal | Symbol | Min. | Typ. | Max. | Unit | Clock Frequency | 1/ TClock | 68.9 | 71.1 | 80. | MHz | Vertical Section | Period | TV | 815 | 823 | 860 | Active | TVD | 800 | | | TLine | Section | Blanking | TVB | 15 | 23 | 60 | Period | TH | 1410 | 1440 | 1480 | Horizontal Section | Active | THD | 1280 | | | TClock | Blanking | THB | 130 | 160 | 270 | Frame Rate | F | --- | 59.99 | --- | Hz | <table border="1"> <thead> <tr> <th>Signal</th> <th>Symbol</th> <th>Min.</th> <th>Typ.</th> <th>Max.</th> <th>Unit</th> </tr> </thead> <tbody> <tr> <td>Clock Frequency</td> <td>1/ TClock</td> <td>68.9</td> <td>71.1</td> <td>74.5</td> <td>MHz</td> </tr> <tr> <td rowspan="2">Vertical Section</td> <td>Period</td> <td>TV</td> <td>815</td> <td>823</td> <td>840</td> </tr> <tr> <td>Active</td> <td>TVD</td> <td colspan="3">800</td> <td>TLine</td> </tr> <tr> <td rowspan="2">Section</td> <td>Blanking</td> <td>TVB</td> <td>15</td> <td>23</td> <td>40</td> </tr> <tr> <td>Period</td> <td>TH</td> <td>1410</td> <td>1440</td> <td>1480</td> </tr> <tr> <td rowspan="2">Horizontal Section</td> <td>Active</td> <td>THD</td> <td colspan="3">1280</td> <td>TClock</td> </tr> <tr> <td>Blanking</td> <td>THB</td> <td>130</td> <td>160</td> <td>200</td> </tr> <tr> <td>Frame Rate</td> <td>F</td> <td>---</td> <td>59.99</td> <td>---</td> <td>Hz</td> </tr> </tbody> </table> | Signal | Symbol | Min. | Typ. | Max. | Unit | Clock Frequency | 1/ TClock | 68.9 | 71.1 | 74.5 | MHz | Vertical Section | Period | TV | 815 | 823 | 840 | Active | TVD | 800 | | | TLine | Section | Blanking | TVB | 15 | 23 | 40 | Period | TH | 1410 | 1440 | 1480 | Horizontal Section | Active | THD | 1280 | | | TClock | Blanking | THB | 130 | 160 | 200 | Frame Rate | F | --- | 59.99 | --- | Hz | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Signal | Symbol | Min. | Typ. | Max. | Unit | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Clock Frequency | 1/ TClock | 68.9 | 71.1 | 80. | MHz | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Vertical Section | Period | TV | 815 | 823 | 860 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | Active | TVD | 800 | | | TLine | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Section | Blanking | TVB | 15 | 23 | 60 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | Period | TH | 1410 | 1440 | 1480 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Horizontal Section | Active | THD | 1280 | | | TClock | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | Blanking | THB | 130 | 160 | 270 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Frame Rate | F | --- | 59.99 | --- | Hz | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Signal | Symbol | Min. | Typ. | Max. | Unit | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Clock Frequency | 1/ TClock | 68.9 | 71.1 | 74.5 | MHz | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Vertical Section | Period | TV | 815 | 823 | 840 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | Active | TVD | 800 | | | TLine | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Section | Blanking | TVB | 15 | 23 | 40 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | Period | TH | 1410 | 1440 | 1480 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Horizontal Section | Active | THD | 1280 | | | TClock | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | Blanking | THB | 130 | 160 | 200 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Frame Rate | F | --- | 59.99 | --- | Hz | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | 21 | -- | Add ESD Criter | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1.0 2020/02/26 | -- | -- | Final specification | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1.1 2020/05/21 | 15 | <table border="1"> <tr> <td>Operation Life</td> <td>---</td> <td>50,000</td> <td>---</td> <td>---</td> <td>Hrs.</td> <td>(Ta=70°C), Note 2 Ib=28mA</td> </tr> </table> | Operation Life | --- | 50,000 | --- | --- | Hrs. | (Ta=70°C), Note 2 Ib=28mA | <table border="1"> <tr> <td>Operation Life</td> <td>---</td> <td>50,000</td> <td>---</td> <td>---</td> <td>Hrs.</td> <td>(Ta=25°C), Note 2 Ib=28mA</td> </tr> </table> | Operation Life | --- | 50,000 | --- | --- | Hrs. | (Ta=25°C), Note 2 Ib=28mA | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Operation Life | --- | 50,000 | --- | --- | Hrs. | (Ta=70°C), Note 2 Ib=28mA | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Operation Life | --- | 50,000 | --- | --- | Hrs. | (Ta=25°C), Note 2 Ib=28mA | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1.2 2020/07/06 | 21 | -- | <table border="1"> <tr> <td>Shock test</td> <td>50G,20ms,Half-sine wave,(±X, ±Y, ±Z), non-operation</td> </tr> <tr> <td>Vibration test</td> <td>1.5G, (10-200Hz, random), 30 mins / axis (X, Y, Z),non-operation.</td> </tr> </table> | Shock test | 50G,20ms,Half-sine wave,(±X, ±Y, ±Z), non-operation | Vibration test | 1.5G, (10-200Hz, random), 30 mins / axis (X, Y, Z),non-operation. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Shock test | 50G,20ms,Half-sine wave,(±X, ±Y, ±Z), non-operation | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Vibration test | 1.5G, (10-200Hz, random), 30 mins / axis (X, Y, Z),non-operation. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1.3 2021/07/20 | 24 | -- | Carton/Pallet Package drawing | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | 24 | 入庫堆棧層數：4 层 | Box stacked layer : 4 layers | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1.4 2022/11/03 | -- | | Modidy spec comply title from AUO to AUO Display Plus. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1.5 2024/02/02 | 1 |  | Change POL protective film from soft film to hard film. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | 24 | <p>9.1 Shipping Label (on the rear side of TFT-LCD display)</p>  | <p>Add part number 97D10G28.201</p>  <p>Modify shipping info for G101EAN02.201 version</p>  | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

AUO Display+

1. Operating Precautions

- 1) Since front polarizer is easily damaged, please be cautious and not to scratch it.
- 2) Be sure to turn off power supply when inserting or disconnecting from input connector.
- 3) Wipe off water drop immediately. Long contact with water may cause discoloration or spots.
- 4) When the panel surface is soiled, wipe it with absorbent cotton or soft cloth.
- 5) Since the panel is made of glass, it may be broken or cracked if dropped or bumped on hard surface.
- 6) To avoid ESD (Electro Static Discharge) damage, be sure to ground yourself before handling TFT-LCD Module.
- 7) Do not open nor modify the module assembly.
- 8) Do not press the reflector sheet at the back of the module to any direction.
- 9) In case if a module has to be put back into the packing container slot after it was taken out from the container, do not press the center of the LED light bar edge. Instead, press at the far ends of the LED light bar edge softly. Otherwise the TFT Module may be damaged.
- 10) At the insertion or removal of the Signal Interface Connector, be sure not to rotate nor tilt the Interface Connector of the TFT Module.
- 11) TFT-LCD Module is not allowed to be twisted & bent even force is added on module in a very short time. Please design your display product well to avoid external force applying to module by end-user directly.
- 12) Small amount of materials having no flammability grade is used in the LCD module. The LCD module should be supplied by power complied with requirements of Limited Power Source (IEC60950 or UL1950), or be applied exemption.
- 13) Severe temperature condition may result in different luminance, response time and lamp ignition voltage.
- 14) Continuous operating TFT-LCD display under low temperature environment may accelerate lamp exhaustion and reduce luminance dramatically.
- 15) The data on this specification sheet is applicable when LCD module is placed in landscape position.
- 16) Continuous displaying fixed pattern may induce image sticking. It's recommended to use screen saver or shuffle content periodically if fixed pattern is displayed on the screen.

2. General Description

G101EAN02.2 is a Color Active Matrix Liquid Crystal Display composed of a TFT LCD panel and LED backlight system. The screen format is intended to support the 16:10 WXGA, 1280(H) x 800(V) screen and 16.7M colors with LED backlight driving circuit. All input signals are LVDS interface compatible.

2.1 Display Characteristics

The following items are characteristics summary under 25 °C condition:

| Items | Unit | Specifications |
|---------------------------|---------|--|
| Screen Diagonal | [inch] | 10.1" |
| Active Area | [mm] | 216.96(H) x 135.6(V) |
| Pixels H x V | | 1280(RGB)x 800 |
| Pixel Pitch | [mm] | 0.1695X 0.1695 |
| Pixel Arrangement | | R.G.B. Vertical Stripe |
| Display Mode | | AHVA, Normally Black |
| Nominal Input Voltage VDD | [Volt] | 3.3 (Typical) |
| Power Consumption | [Watt] | Logic Power : 1(Max)@White pattern 3.3V input LED power max 3.024 W |
| Weight (Max.) | [Grams] | 290 |
| Physical Size (typ.) | [mm] | 227.91(H) x 148(V)x 7.75(T) (max.) PCBA side |
| Electrical Interface | | LVDS 1Port 8bit |
| Surface Treatment | | HC |
| Support Color | | 16.7M colors |
| Temperature Range | | |
| Operating | [°C] | -20 to +70 (Front and rear surface) |
| Storage (Non-Operating) | [°C] | -30 to +80 |
| RoHS Compliance | | RoHS Compliance |

AUO Display+

2.2 Optical Characteristics

The optical characteristics are measured under stable conditions at 25 °C (Room Temperature):

| Item | Unit | Conditions | Min. | Typ. | Max. | Note |
|---|----------------------|--------------------------------------|-------|-------|-------|------|
| White Luminance | [cd/m ²] | I _{LED} = 28mA (center) | 400 | 500 | --- | |
| Uniformity | % | 5 points | 70% | | --- | |
| Contrast Ratio | | | 600 | 800 | --- | |
| Response Time | [msec] | Rising + Falling | --- | 29 | 38 | |
| Viewing Angle | [degree] | Horizontal (Right) CR = 10 (Left) | 80 | 89 | --- | |
| | [degree] | | 80 | 89 | --- | |
| | [degree] | Vertical (Upper) CR = 10 (Lower) | 80 | 89 | --- | |
| | [degree] | | 80 | 89 | --- | |
| Color / Chromaticity Coordinates (CIE 1931) | | Red x | 0.551 | 0.601 | 0.651 | |
| | | Red y | 0.293 | 0.343 | 0.393 | |
| | | Green x | 0.274 | 0.324 | 0.374 | |
| | | Green y | 0.512 | 0.562 | 0.612 | |
| | | Blue x | 0.101 | 0.151 | 0.201 | |
| | | Blue y | 0.085 | 0.135 | 0.185 | |
| | | White x | 0.263 | 0.313 | 0.363 | |
| | | White y | 0.279 | 0.329 | 0.379 | |
| Color Gamut | % | | --- | 45 | --- | |

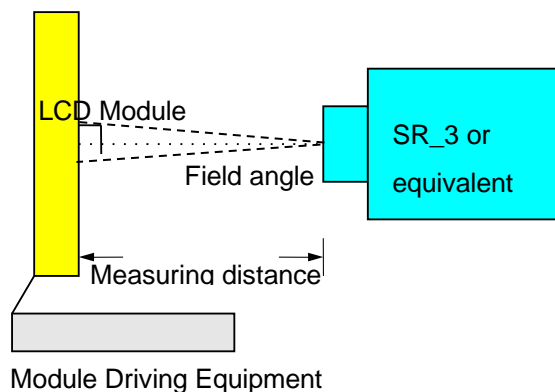
Note 1: Measurement method

Equipment Pattern Generator, Power Supply, Digital Voltmeter, Luminance meter (SR_3 or equivalent)

Aperture Field angle 2° with 50cm measuring distance

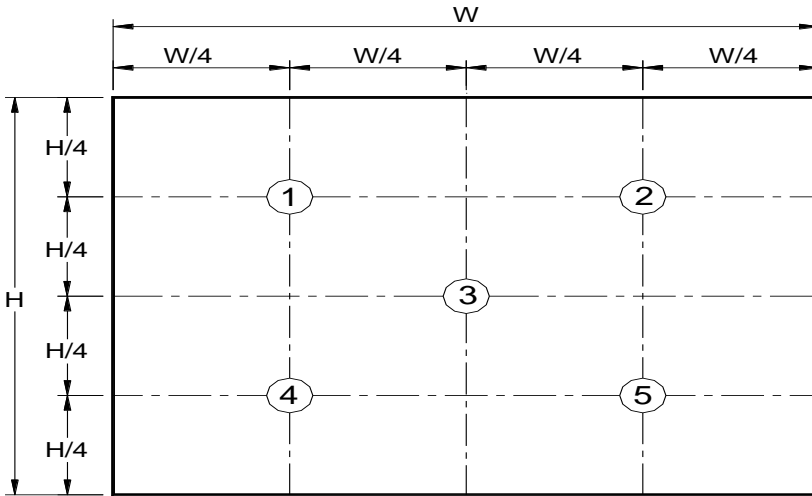
Test Point Follow Note 2 position

Environment < 1 lux



AUO Display+

Note 2: Definition of 5 points position



Note 3: The luminance uniformity of 5 points is defined by dividing the minimum luminance values by the maximum test point luminance

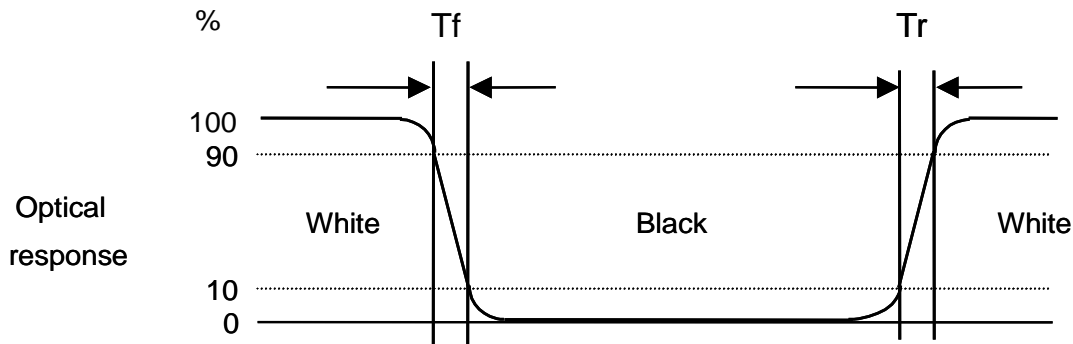
$$\delta w_5 = \frac{\text{Minimum Brightness of five points}}{\text{Maximum Brightness of five points}}$$

Note 4: Definition of contrast ratio (CR):

$$\text{Contrast ratio (CR)} = \frac{\text{Brightness on the "White" state}}{\text{Brightness on the "Black" state}}$$

Note 5: Definition of response time:

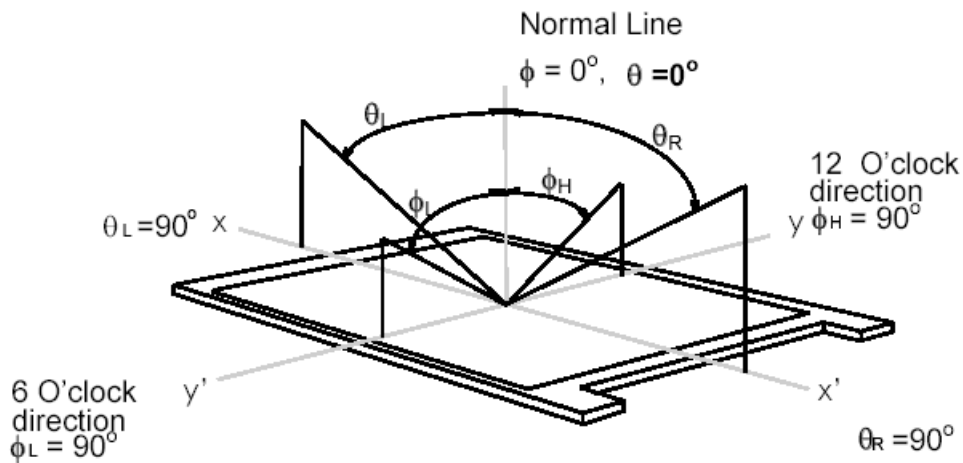
The output signals of photo detector are measured when the input signals are changed from "White" to "Black" (falling time) and from "Black" to "White" (rising time), respectively. The response time interval is between 10% and 90% of amplitudes. Please refer to the figure as below.



AUO Display+

Note 6: Definition of viewing angle

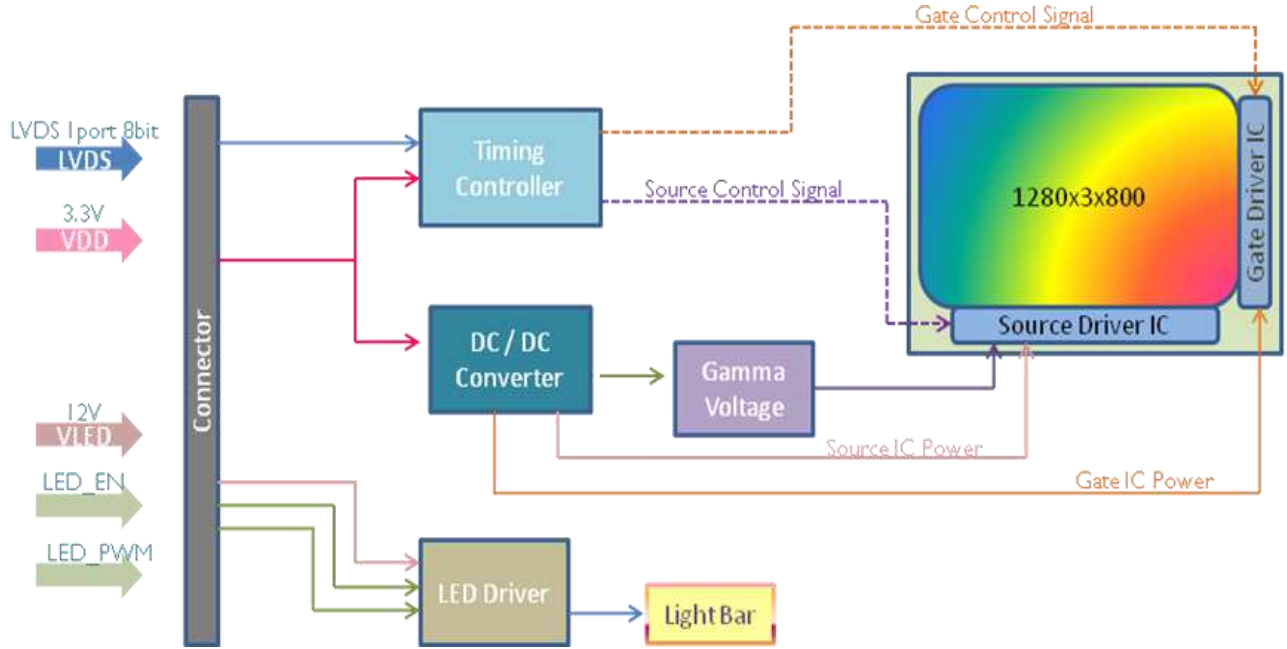
Viewing angle is the measurement of contrast ratio ≥ 10 , at the screen center, over a 180° horizontal and 180° vertical range (off-normal viewing angles). The 180° viewing angle range is broken down as below: 90° (θ) horizontal left and right, and 90° (Φ) vertical high (up) and low (down). The measurement direction is typically perpendicular to the display surface with the screen rotated to its center to develop the desired measurement viewing angle.



AUO Display+

3. Functional Block Diagram

The following diagram shows the functional block of the 10.1 inch color TFT/LCD module:



AUO Display+

4. Absolute Maximum Ratings

4.1 Absolute Ratings of TFT LCD Module

| Item | Symbol | Min | Max | Unit |
|--------------------------|---------------------|------|-----|--------|
| Logic/LCD drive Voltage | VDD | -0.3 | 3.6 | [Volt] |
| LCD Input Signal Voltage | V _{SIGNAL} | -0.3 | 3.6 | [Volt] |

4.2 Absolute Ratings of Environment

| Item | Symbol | Min | Max | Unit |
|-----------------------|--------|-----|-----|-------|
| Operating Temperature | TOP | -20 | +70 | [°C] |
| Humidity | HOP | 5 | 90 | [%RH] |
| Storage Temperature | TST | -30 | +80 | [°C] |
| Storage Humidity | HST | 5 | 90 | [%RH] |

Note 1: Permanent damage to the device may occur if exceed maximum values

Note 2: Maximum wet-bulb temperature is less than 39 oC and no condensation

Note 3: Operating temperature means “Front and rear surface” of panel

5. Electrical Characteristics

5.1 TFT LCD Module

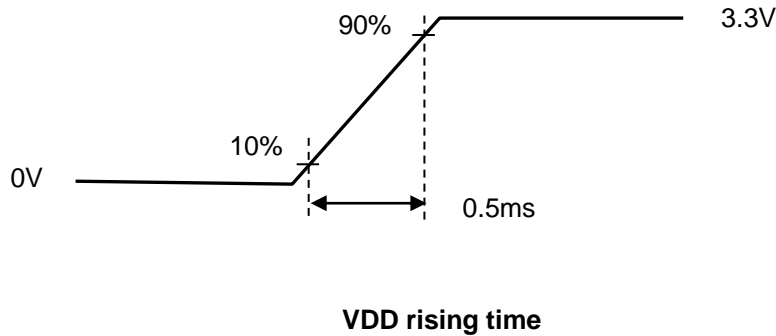
5.1.1 Power Specification

The power specification are measured under 25°C and frame frequency under 59.99Hz

| Symbol | Parameter | Min | Typ | Max | Units | Remark |
|--------|--|-----|-------|------|-------------|--|
| VDD | Logic/LCD Drive Voltage | 3.0 | 3.3 | 3.6 | [Volt] | |
| IDD | VDD Current | - | 278.7 | 303 | [mA] | All White Pattern (VDD=3.3V, at 59.9Hz) |
| Irush | LCD Inrush Current | - | - | 1500 | [mA] | Note 1 |
| PDD | VDD Power | - | 0.92 | 1 | [Watt] | All White Pattern (VDD=3.3V, at 59.9Hz) |
| VDDrp | Allowable Logic/LCD Drive Ripple Voltage | - | - | 100 | [mV] p-p | All White Pattern (VDD=3.3V, at 59.9Hz) |

Note 1 : Maximum Measurement Condition : White Pattern at 3.3V driving voltage. ($P_{max}=V_{3.3} \times I_{white}$)

Note 2 : Measure Condition



AUO Display+

5.1.2 Signal Electrical Characteristics

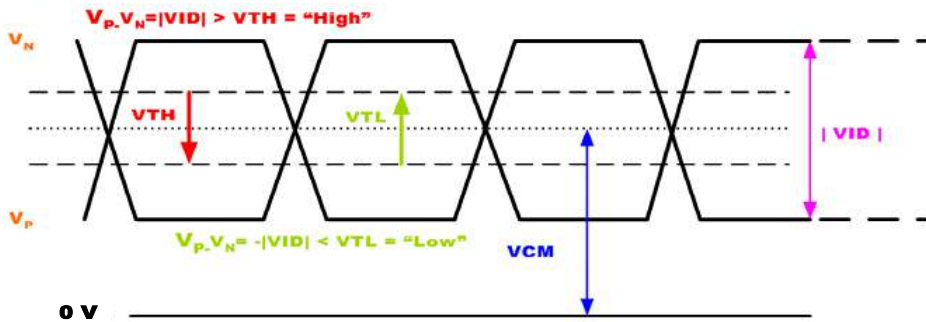
Input signals shall be low or Hi-Z state when VDD is off.

| Symbol | Item | Min. | Typ. | Max. | Unit | Remark |
|--------|--|------|------|------|------|----------------|
| VTH | Differential Input High Threshold | - | - | 100 | [mV] | VCM=1.2V |
| VTL | Differential Input Low Threshold | -100 | - | - | [mV] | VCM=1.2V |
| VID | Input Differential Voltage | 100 | | 600 | [mV] | |
| VICM | Differential Input Common Mode Voltage | 1.0 | 1.2 | 1.5 | [V] | VTH/VTL=±100mV |

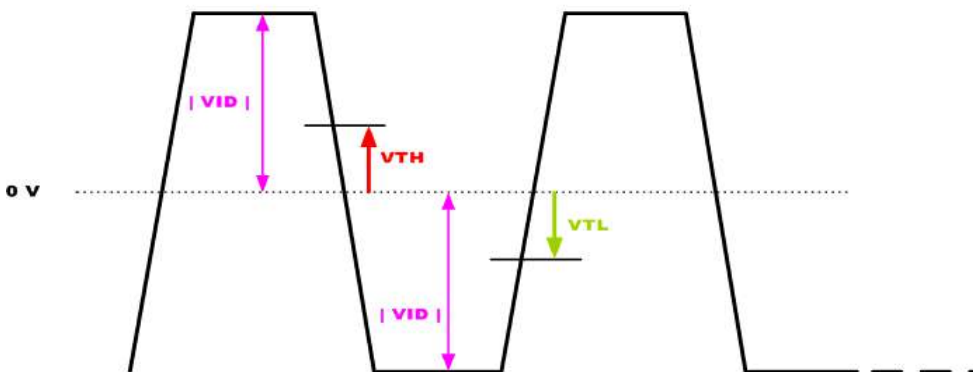
Note: LVDS Signal Waveform.

$V_P - V_N = |VID| > V_{TH} = \text{"High"}$
 $V_P - V_N = -|VID| < V_{TL} = \text{"Low"}$

Single-end Signal



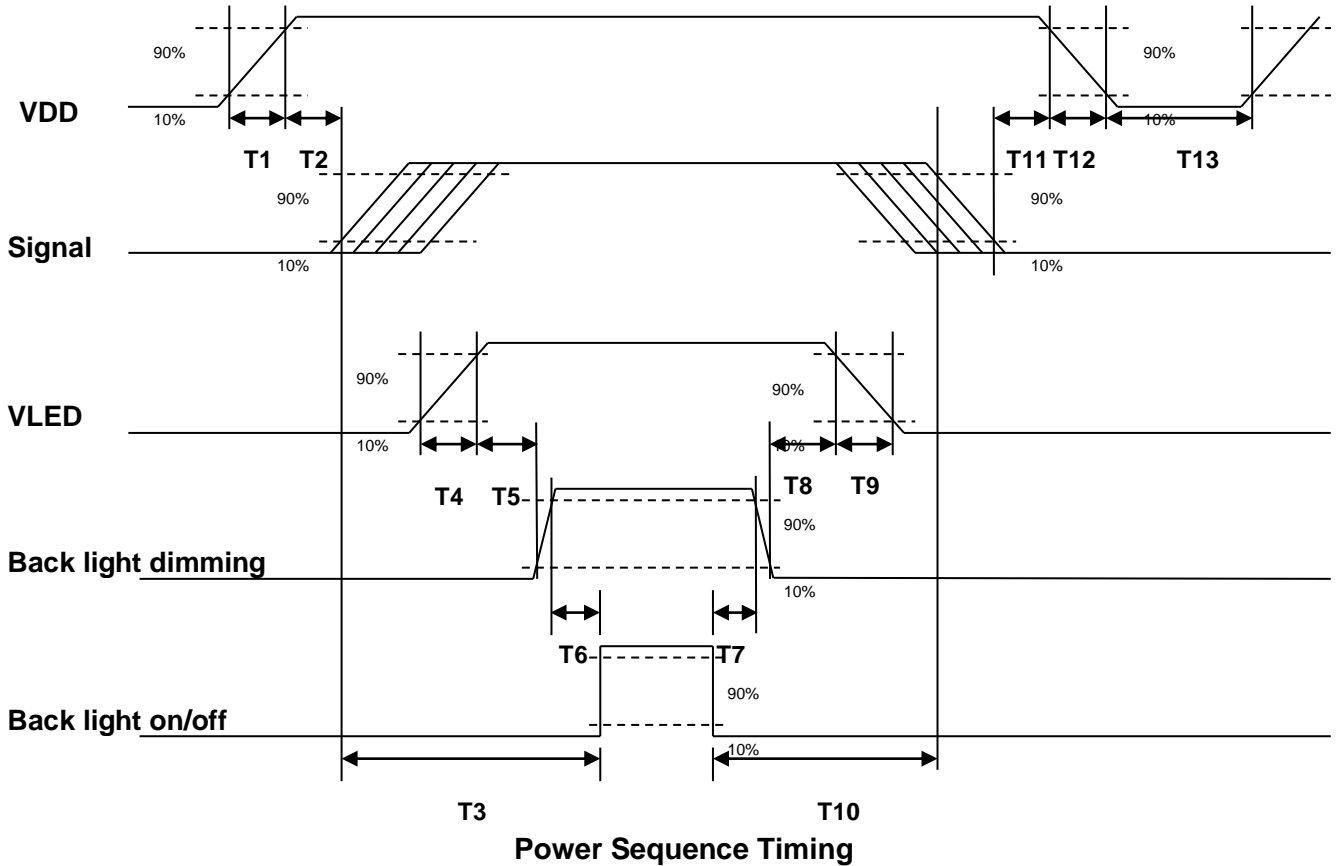
Differential Signal



AUO Display+

5.1.3 Power ON/OFF Sequence

VDD power and backlight on/off sequence is as below. Interface signals are also shown in the chart. Signals from any system shall be Hi-Z state or low level when VDD is off.



| Parameter | Value | | | Unit |
|-----------|-------|------|------|------|
| | Min. | Typ. | Max. | |
| T1 | 0.5 | - | 10 | [ms] |
| T2 | 50 | 60 | 70 | [ms] |
| T3 | 200 | - | - | [ms] |
| T4 | 0.5 | - | 10 | [ms] |
| T5 | 10 | - | - | [ms] |
| T6 | 10 | - | - | [ms] |
| T7 | 0 | - | - | [ms] |
| T8 | 10 | - | - | [ms] |
| T9 | - | - | 10 | [ms] |
| T10 | 110 | - | - | [ms] |
| T11 | 0 | 16 | 50 | [ms] |
| T12 | - | - | 10 | [ms] |
| T13 | 1000 | - | - | [ms] |

The above on/off sequence should be applied to avoid abnormal function in the display. Please make sure to turn off the power when you plug the cable into the input connector or pull the cable out of the connector.

AUO Display+

5.2 Backlight Unit

5.2.1 Parameter guideline for LED

Following characteristics are measured under a stable condition using an inverter at 25°C (Room Temperature):

| Symbol | Parameter | Min. | Typ. | Max. | Unit | Remark |
|---------------------|-----------------------------|--------|-------|-------|--------|---|
| VLED | Input Voltage | 10.8 | 12 | 13.2 | [Volt] | |
| I _{VLED} | Input Current | --- | 222 | 252 | [mA] | 100% Brightness (VLED = 12V) |
| P _{VLED} | Power Consumption | --- | 2.664 | 3.024 | [Watt] | 100% Brightness (VLED = 12V) |
| I _F | LED Forward Current | --- | 28 | --- | [mA] | Ta = 25°C |
| VEN | LED Enable Input High Level | 2.3 | - | 5.5 | [Volt] | |
| | LED Enable Input Low Level | - | - | 0.3 | [Volt] | |
| VPWM | PWM Logic Input High Level | 2.3 | - | 5.5 | [Volt] | |
| | PWM Logic Input Low Level | - | - | 0.3 | [Volt] | |
| PWM Input Frequency | FPWM | 200 | - | 20K | Hz | |
| PWM Duty Ratio | Duty | 5 | | 100 | % | |
| Operation Life | --- | 50,000 | --- | --- | Hrs | (Ta=25°C), Note 2 I _F =28mA |

Note 1: Ta means ambient temperature of TFT-LCD module.

Note 2: V_{LED}, I_{VLED}, P_{VLED} are defined for LED backlight.(100% duty of PWM dimming)

Note 3: If G101EAN02.2 module is driven by high current or at high ambient temperature & humidity condition. The operating life will be reduced.

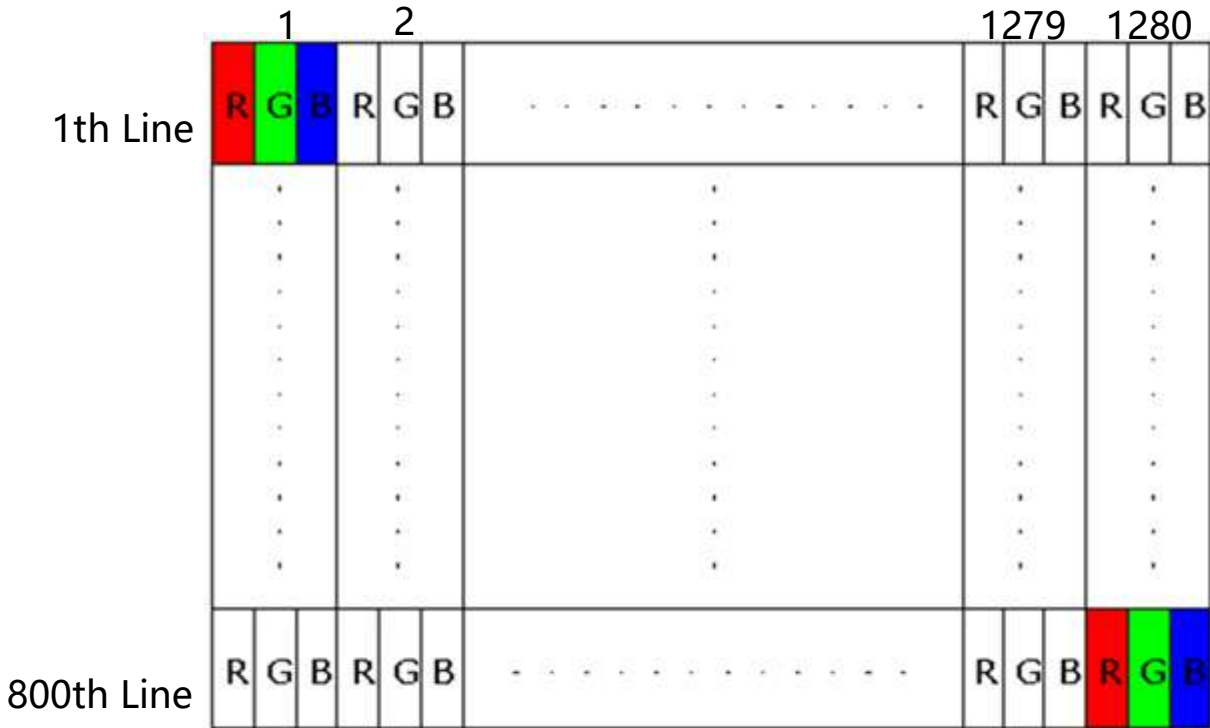
Note 4: Operating life means brightness goes down to 50% initial brightness. Minimum operating life time is estimated data.

AUO Display+

6. Signal Characteristic

6.1 Pixel Format Image

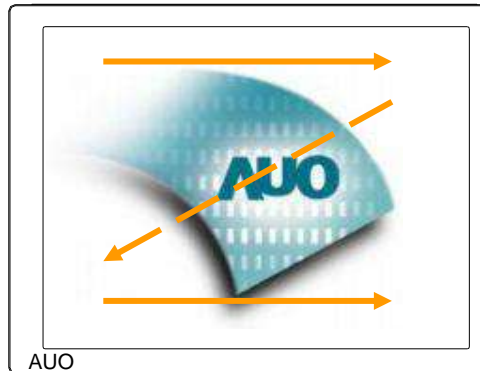
Following figure shows the relationship between input signal and LCD pixel format.



AUO Display+

6.2 Signal Description

The following figures show the image seen from the front view. The arrow indicates the direction of scan.



6.2.1 Pin Assignment

LVDS is a differential signal technology for LCD interface and high speed data transfer device.

| PIN NO | Symbol | Function |
|--------|--------|--------------------------------|
| 1 | GND | Ground |
| 2 | VDD | LCD Power Supply +3.3V |
| 3 | VDD | LCD Power Supply +3.3V |
| 4 | VDD | LCD Power Supply +3.3V |
| 5 | NC | AUO Self Test Pin |
| 6 | NC | AUO Self Test Pin |
| 7 | NC | AUO Self Test Pin |
| 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 | ClkIN- | -LVDS differential clock input |
| 18 | ClkIN+ | +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 connect |
| 24 | NC | No connect |
| 25 | GND | Ground |
| 26 | NC | No connect |
| 27 | NC | No connect |
| 28 | GND | Ground |
| 29 | NC | No connect |
| 30 | NC | No connect |
| 31 | BL_GND | Ground for backlight |
| 32 | BL_GND | Ground for backlight |
| 33 | BL_GND | Ground for backlight |
| 34 | NC | No connect |
| 35 | LED_PWM | PWM Dimming |
| 36 | LED_EN | LED ON/OFF |
| 37 | NC | No connect |
| 38 | VLED | LED Power Supply +12V |
| 39 | VLED | LED Power Supply +12V |
| 40 | VLED | LED Power Supply +12V |

6.2.2 LVDS Connector

Physical interface is described as for the connector on module.

These connectors are capable of accommodating the following signals and will be following components.

| Connector Name / Designation | Signal Connector |
|------------------------------|-----------------------------------|
| Manufacturer | IPEX or compatible |
| Connector Model Number | IPEX 20765-040E-11A or compatible |
| Adaptable Plug | IPEX 20453-040T-01 or compatible |

AUO Display+

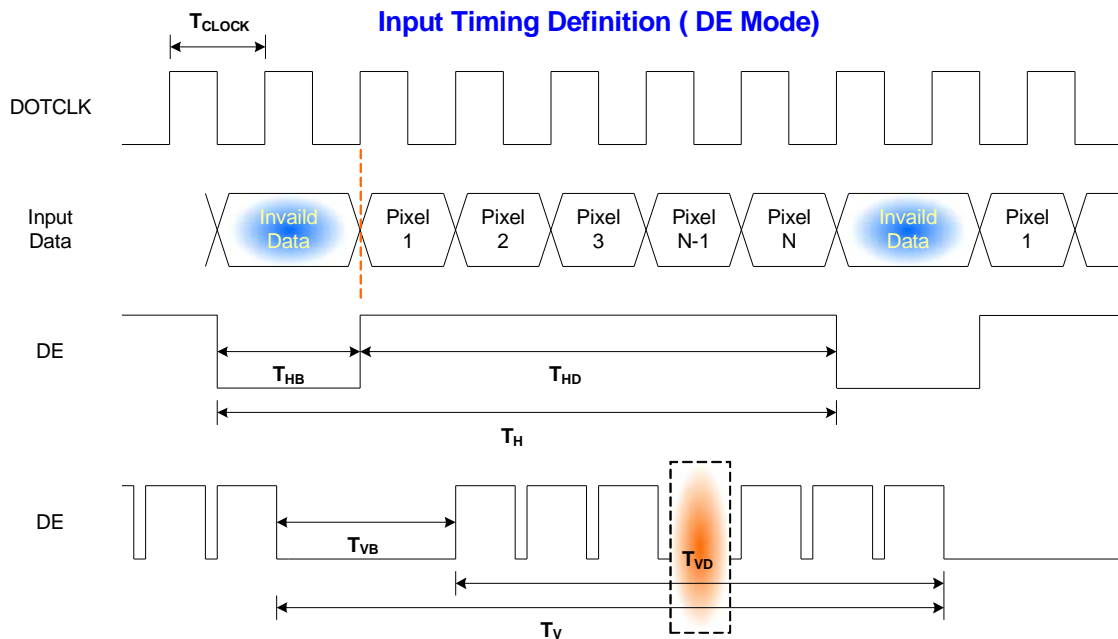
6.3 Interface Timing

6.3.1 Timing Characteristics

| Signal | Symbol | Min. | Typ. | Max. | Unit | |
|--------------------|-----------------------|-----------------|-------|------|------|--------------------|
| Clock Frequency | 1/ T _{clock} | 68.9 | 71.1 | 74.5 | MHz | |
| Vertical Section | Period | T _V | 815 | 823 | 840 | T _{Line} |
| | Active | T _{VD} | 800 | | | |
| | Blanking | T _{VB} | 15 | 23 | 40 | |
| Horizontal Section | Period | T _H | 1410 | 1440 | 1480 | T _{clock} |
| | Active | T _{HD} | 1280 | | | |
| | Blanking | T _{HB} | 130 | 160 | 200 | |
| Frame Rate | F | --- | 59.99 | --- | Hz | |

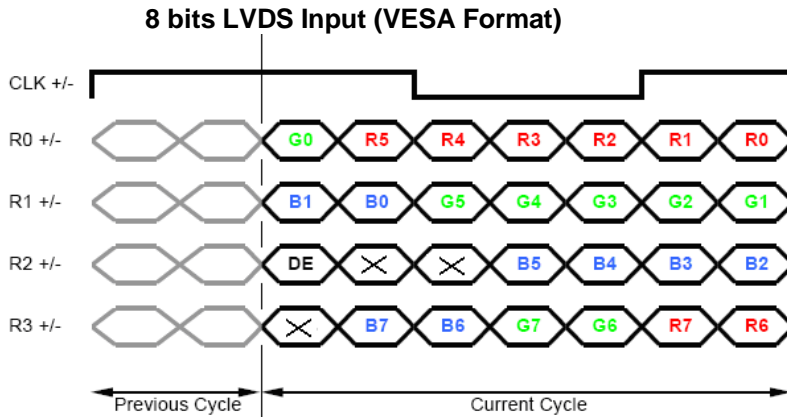
Note : DE mode.

6.3.2 Input Timing Diagram



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6.3.3 The Input Data Format



| Signal Name | Description | |
|--|--|---|
| R7 R6 R5 R4 R3 R2 R1 R0 | Red Data 7 (MSB) Red Data 6 Red Data 5 Red Data 4 Red Data 3 Red Data 2 Red Data 1 Red Data 0 (LSB) | Red-pixel Data For 8Bits LVDS input MSB: R7 ; LSB: R0 |
| G7 G6 G5 G4 G3 G2 G1 G0 | Green Data 7 (MSB) Green Data 6 Green Data 5 Green Data 4 Green Data 3 Green Data 2 Green Data 1 Green Data 0 (LSB) | Green-pixel Data For 8Bits LVDS input MSB: R7 ; LSB: R0 |
| B7 B6 B5 B4 B3 B2 B1 B0 | Blue Data 7 (MSB) Blue Data 6 Blue Data 5 Blue Data 4 Blue Data 3 Blue Data 2 Blue Data 1 Blue Data 0 (LSB) | Blue-pixel Data For 8Bits LVDS input MSB: R7 ; LSB: R0 |
| RxCLKIN | Data Clock | The signal is used to strobe the pixel data and DE signals. All pixel data shall be valid at the falling edge when the DE signal is high. |
| DE | Display Timing | This signal is strobed at the falling edge of RxCLKIN. When the signal is high, the pixel data shall be valid to be displayed. |

Note: Output signals from any system shall be low or High-impedance state when VDD is off.

7. Reliability Test Criteria

| Items | Required Condition | Note |
|----------------------------|--|-------------------|
| Temperature Humidity Bias | 40 °C /90%,300Hr | |
| High Temperature Operation | 70°C, 300Hr | LCD Surface Temp. |
| Low Temperature Operation | -20 °C, 300Hr | |
| Hot Storage | 80 °C, 300Hr | |
| Cold Storage | -30 °C, 300Hr | |
| Thermal Shock Test | -30 °C /30 min , 70 °C /30 min , 20cycles | |
| Hot Start Test | 70 °C /1 Hr min. power on/off per 5 minutes, 5 times | |
| Cold Start Test | -20 °C /1 Hr min. power on/off per 5 minutes, 5 times | |
| On/off test | On/10 sec, Off/10 sec, 30,000 cycles | |
| ESD | Contact : ± 8KV/ operation, Class B Air : ± 15KV / operation, Class B | Note 1 |
| Shock test | 50G,20ms,Half-sine wave,(±X, ±Y, ±Z), non-operation | |
| Vibration test | 1.5G, (10~200Hz, random), 30 mins / axis (X, Y, Z),non-operation | |

Note1: According to EN61000-4-2 , ESD class B: Some performance degradation allowed. No data lost . Self-recoverable. No hardware failures.

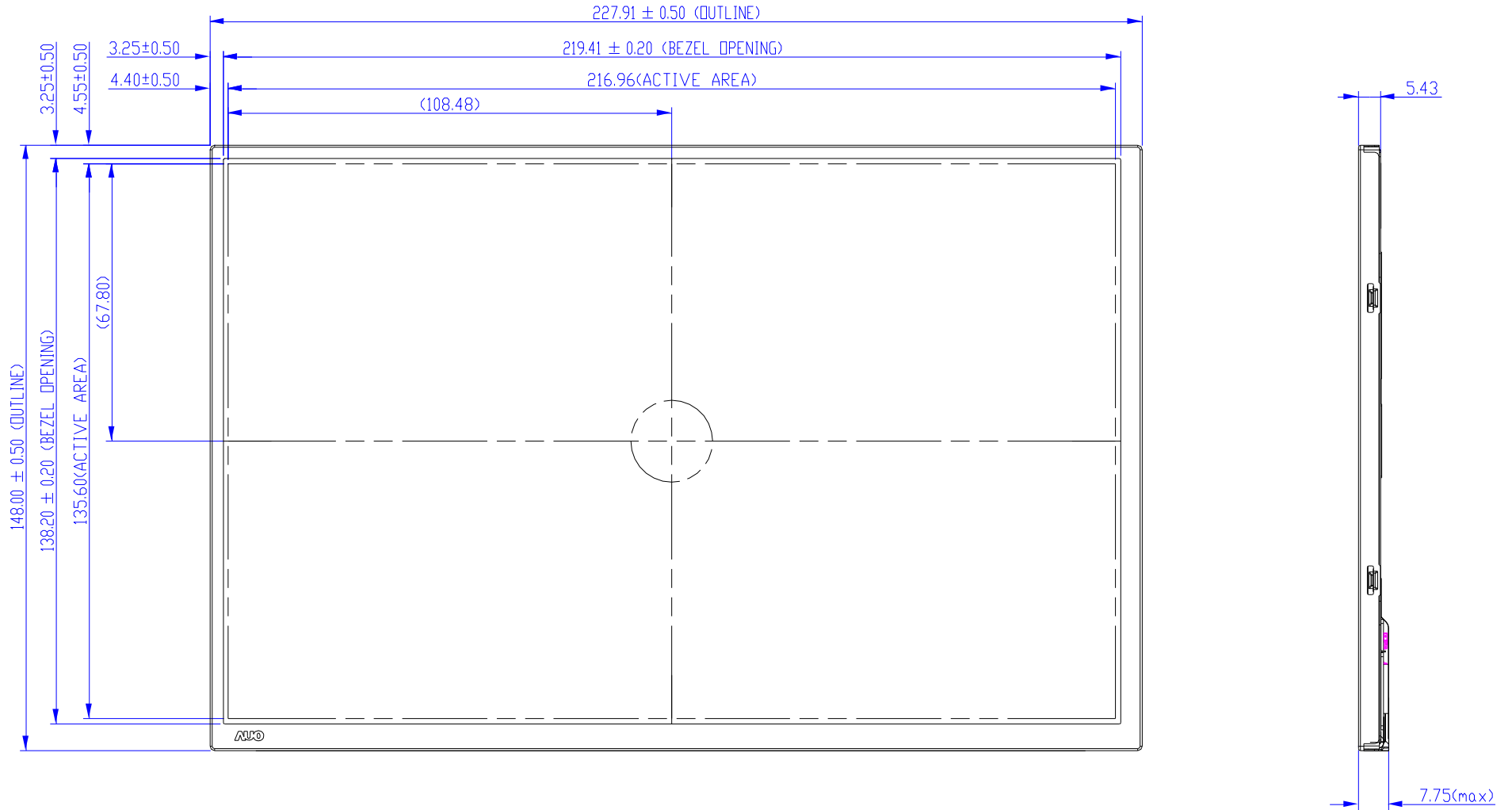
Note2:

- Water condensation is not allowed for each test items.
- Each test is done by new TFT-LCD module. Don't use the same TFT-LCD module repeatedly for reliability test.
- The reliability test is performed only to examine the TFT-LCD module capability.
- To inspect TFT-LCD module after reliability test, please store it at room temperature and room humidity for 24 hours at least in advance.

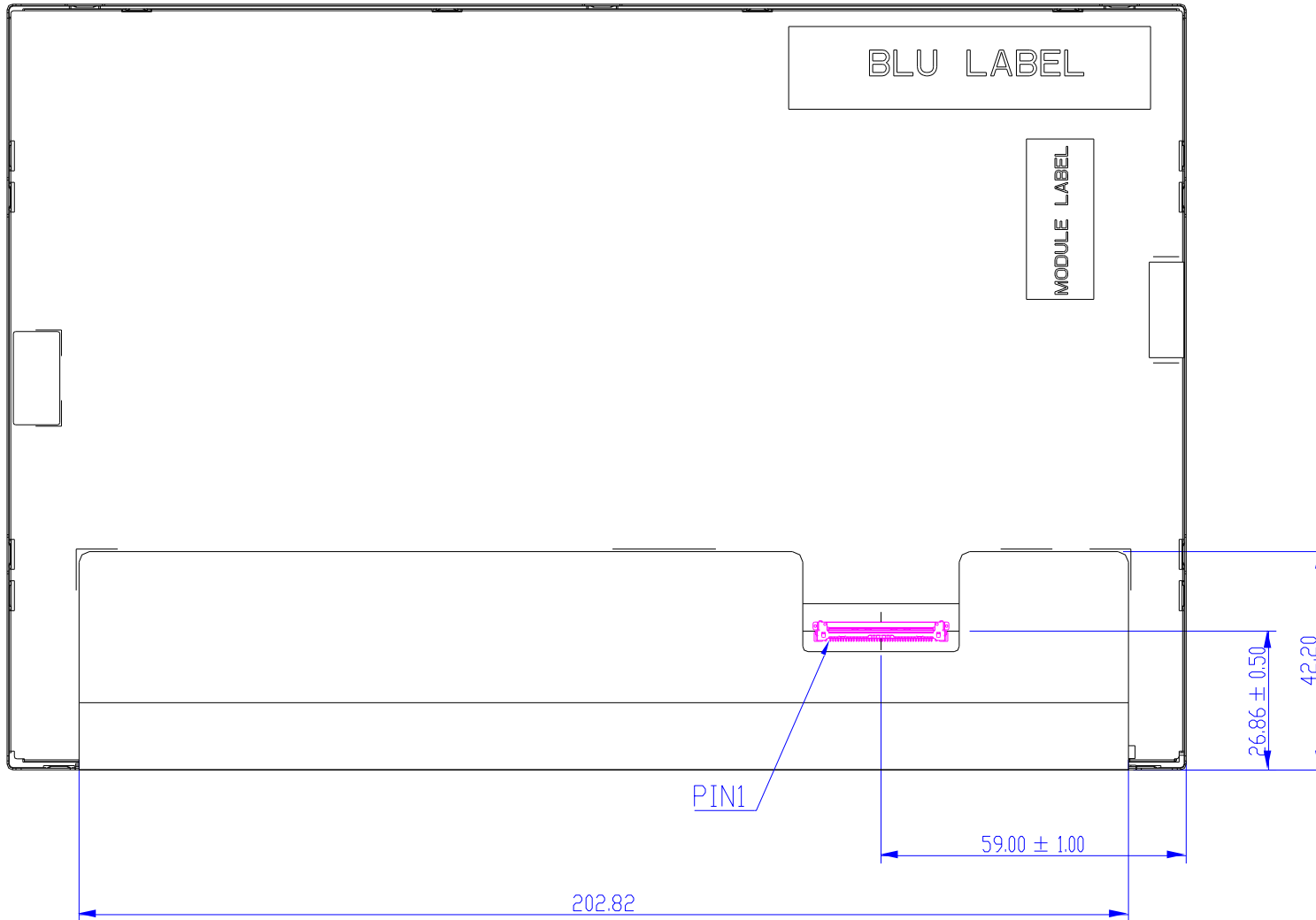
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8. Mechanical Characteristics

8.1 Outline Dimension (Front View)



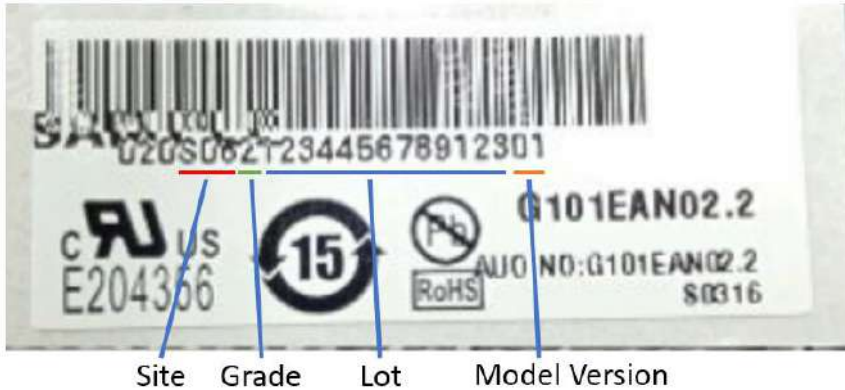
8.2 Outline Dimension (Rear View)



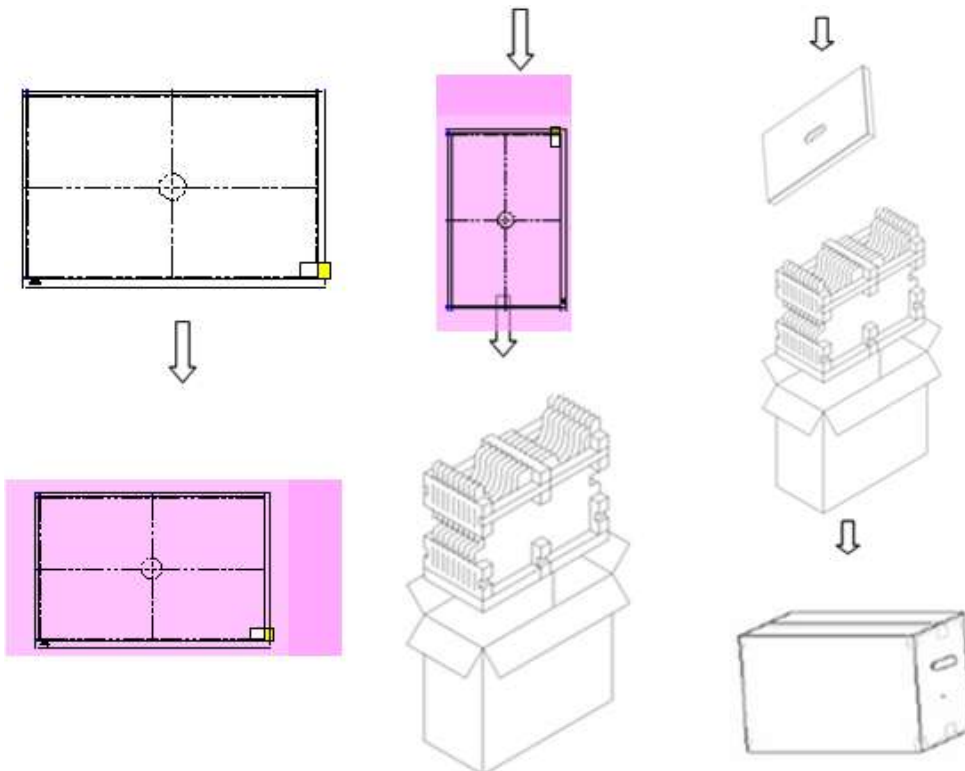
AUO Display+

9. Label and Packaging

9.1 Shipping Label (on the rear side of TFT-LCD display)



9.2 Carton/Pallet Package



Max capacity : 44 TFT LCD module per carton

Outside dimension of carton: 450*375*320mm

Pallet size : 1150 mm * 910 mm * 132mm

Box stacked layer : 4 layers

Box stacked

Module by air : (2 *3) *4 layers , one pallet put 24 boxes , total 1056pcs module

Module by sea : One pallet (2 *3) *4 layers + One pallet (2 *3) *1 layers , total 1320pcs module

Module by sea_ HQ : One pallet (2 *3) *4 layers + One pallet (2 *3) *2 layers, Total 1584pcs module

10 Safety

10.1 Sharp Edge Requirements

There will be no sharp edges or comers on the display assembly that could cause injury.

10.2 Materials

10.2.1 Toxicity

There will be no carcinogenic materials used anywhere in the display module. If toxic materials are used, they will be reviewed and approved by the responsible AUO toxicologist.

10.2.2 Flammability

All components including electrical components that do not meet the flammability grade UL94 V1 in the module will complete the flammability rating exception approval process.

The printed circuit board will be made from material rated 94-V1 or better. The actual UL flammability rating will be printed on the printed circuit board.

10.3 Capacitors

If any polarized capacitors are used in the display assembly, provisions will be made to keep them from being inserted backwards.

10.4 National Test Lab Requirement

The display module will satisfy all requirements for compliance to:

UL 60950-1 second edition

U.S.A. Information Technology Equipment