

IPS MIPI 7.0" LCD TFT DATASHEET

Rev.1.3 2024-01-31

| ITEM | CONTENTS | UNIT |
|--------------------------------|---------------------------------------|-------|
| LCD Type | TFT/Transmissive/Normally Black/IPS | / |
| Size | 7.0 | Inch |
| Viewing Direction | Free | / |
| Outside Dimensions (W x H x D) | 164.90 x 100.00 x 8.15 | mm |
| Active Area (W x H) | 154.21 x 85.92 | mm |
| Pixel Pitch (W x H) | 0.1506 x 0.1432 | mm |
| Resolution | 1024 (RGB) x 600 | / |
| Brightness | 800 | cd/m² |
| LCD Interface Type | MIPI | / |
| Color Depth | 16.7 M | / |
| Pixel Arrangement | RGB Vertical Stripe | / |
| LCD Driver | EK79007AD3+EK73217BCGA | / |
| With/Without Touch | With Projected Capacitive Touch Panel | / |
| CTP Driver | ILI2132A | / |
| Touch Interface | USB /I2C/Optional UART | / |
| Weight | 205 | g |

Note 1: RoHS3 compliant

Note 2: LCM weight tolerance: ± 5%.



1. REVISION RECORD

| REV NO. | REV DATE | CONTENTS | REMARKS |
|---------|------------|--|---------|
| 1.0 | 2021-05-28 | Initial Release | |
| 1.1 | 2021-09-02 | Updating New Template | |
| 1.2 | 2023-02-23 | Update the chapter of Initialization code. Delete <i>Generic_Short_Write_1P(0x87,0x5A)</i> ; Add timing characteristic table | |
| 1.3 | 2024-01-31 | Added chapter 10.3 MIPI-DSI timings. | |



2. CONTENTS

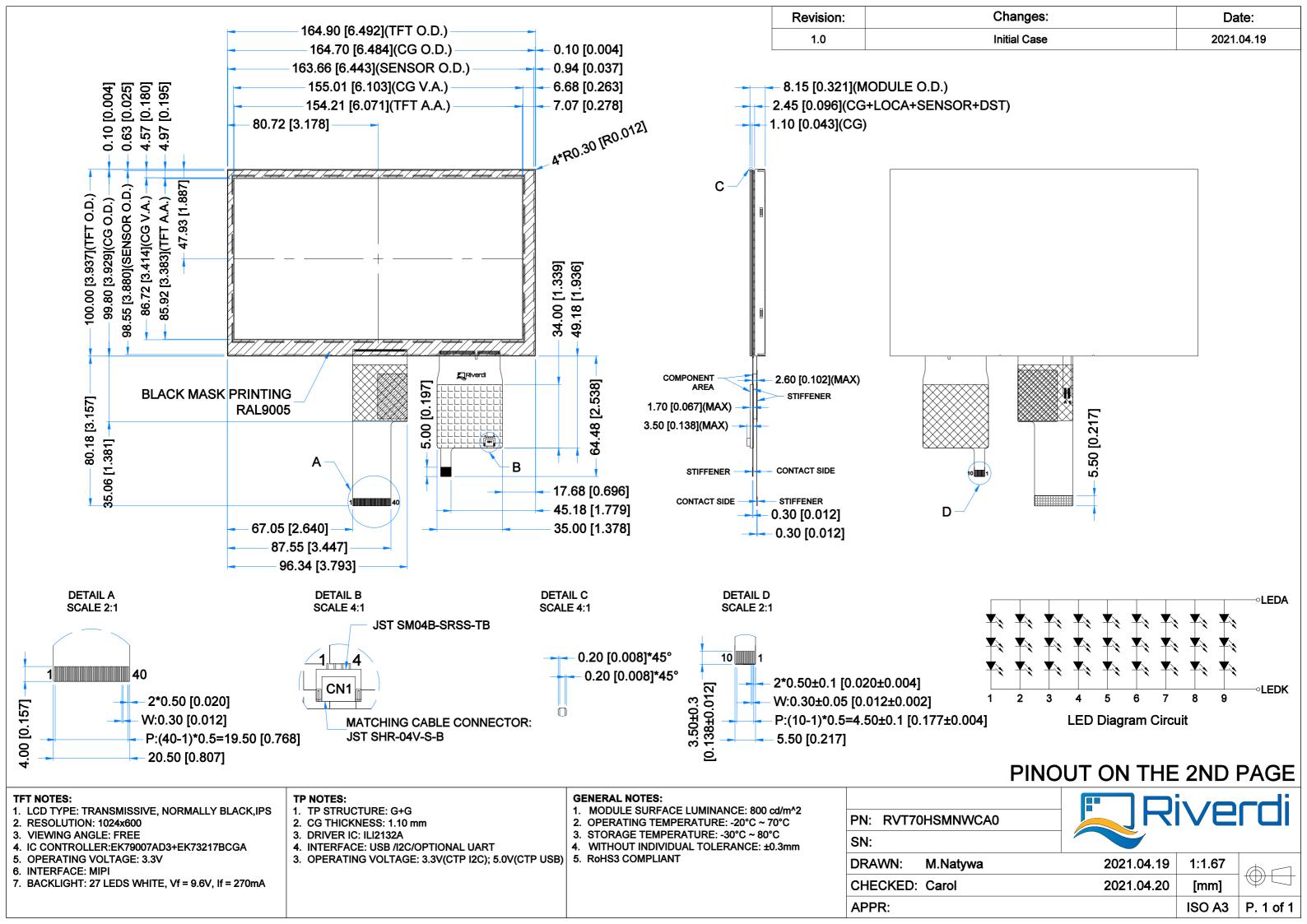
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3. MODULE CLASSIFICATION INFORMATION

| | | 70 | | | | | | | |
|----|----|----|----|----|----|----|----|----|-----|
| 1. | 2. | 3. | 4. | 5. | 6. | 7. | 8. | 9. | 10. |

| NO. | PARAMETER | SYMBOL |
|-----|------------------|---|
| 1. | BRAND | RV – Riverdi |
| 2. | PRODUCT TYPE | T – TFT Standard |
| 3. | DISPLAY SIZE | 70 – 7.0" |
| 4. | MODEL SERIAL NO. | H – High Brightness, IPS |
| 5. | RESOLUTION | S – 1024 x 600 px |
| 6. | INTERFACE | M – MIPI |
| 7. | FRAME | N – Without Mounting Metal Frame |
| 8. | BACKLIGHT TYPE | W – LED White |
| 9. | TOUCH PANEL | C – With Capacitive Touch Panel, aTouch |
| 10. | VERSION | A0 – aTouch |





5. ABSOLUTE MAXIMUM RATINGS

| PARAMETER | SYMBOL | MIN | MAX | UNIT |
|---|-----------------|------|------|------|
| Power for Circuit Driving | VDD | -0.3 | +4.6 | V |
| Operating Temperature | T _{OP} | -20 | 70 | °C |
| Storage Temperature | T _{ST} | -30 | 80 | °C |
| Storage Humidity (@ 25 ± 5°C) | H _{ST} | 10 | - | % RH |
| Operating Ambient Humidity (@ 25 ± 5°C) | H _{OP} | 10 | - | % RH |

Note. The above are maximum values. If exceeded, they may cause permanent damage to the unit.

6. ELECTRICAL CHARACTERISTICS

| PARAMETER | SYMBOL | MIN | TYP | MAX | UNIT |
|-----------------------------|--------|--------|-----|--------|------|
| Supply Voltage for Module | VDD | 2.6 | 3.3 | 3.6 | V |
| Digital Power Current | IDD | - | 168 | - | mA |
| Logic Input Signal Voltage | VIH | 0.7VDD | - | VDD | V |
| Logic iriput signal voltage | VIL | 0 | - | 0.3VDD | V |

7. BACKLIGHT ELECTRICAL CHARACTERISTICS

| PARAMETER | SYMBOL | MIN | TYP | MAX | UNIT |
|--------------------------------|--------|-----|--------|------|------|
| Backlight Driving Voltage | VF | 9.0 | 9.6 | 10.2 | V |
| Backlight Driving Current | IF | - | 270 | 315 | mA |
| Backlight Power Consumption | WBL | - | 2592 | - | mW |
| Lifetime | - | - | 50,000 | - | |

Note. Operating life means the period in which the LED brightness goes down to 50% of the initial brightness. Typical operating lifetime is the estimated parameter.



8. ELECTRO-OPTICAL CHARACTERISTICS

Optical characteristics are determined after the unit has been 'ON' and stable for approximately 30 minutes in a dark environment at 25 °C. The values specified are at an approximate distance 500mm from the LCD surface at a viewing angle of Φ and θ equal to 0°.

| ITEM | SYMBOL | CONDITION | MIN | TYP | MAX | UNIT | RMK | NOTE |
|-------------------------|------------|------------------|-------|-------|-------|-------|--------|------|
| Response Time | Tr+Tf | | - | 35 | - | ms | FIG 1. | 4 |
| Contrast Ratio | Cr | θ=O° | - | 800 | - | | FIG 2. | 1 |
| Luminance Uniformity | δ WHITE | ø=0° Ta=25 °C | - | 75 | - | % | FIG 2. | 3 |
| Surface Luminance | Lv | 14-25 C | - | 800 | - | cd/m2 | FIG 2. | 2 |
| | θ | ø = 90° | - | 85 | - | deg | FIG 3. | 6 |
| Viewing Angle | | ø = 270° | - | 85 | - | deg | FIG 3. | |
| Range | | ø = O∘ | - | 85 | - | deg | FIG 3. | |
| | | ø = 180° | - | 85 | - | deg | FIG 3. | |
| | Rx | | 0.578 | 0.618 | 0.658 | - | | |
| | Ry | | 0.489 | 0.329 | 0.369 | - | | |
| | Gx | θ=0° | 0.376 | 0.416 | 0.456 | - | | |
| CIE (x, y) | Gy | ø=0° | 0.493 | 0.533 | 0.573 | - | FIG 2. | 5 |
| Chromaticity | Bx | | 0.071 | 0.111 | 0.151 | - | FIG 2. | 5 |
| | Ву | 1a-25 C | 0.108 | 0.148 | 0.188 | - | | |
| | Wx | | 0.270 | 0.310 | 0.350 | - | | |
| | Wy | | 0.290 | 0.330 | 0.370 | - | 1 | |

Note 1. Contrast Ratio (CR) is defined mathematically as below, for more information see Figure 2.

Contrast Ratio = $\frac{\text{Average Surface Luminance with all white pixels (P1, P2, P3, P4, P5)}}{\text{Average Surface Luminance with all black pixels (P1, P2, P3, P4, P5)}}$

Note 2. Surface luminance is the LCD surface from the surface with all pixels displaying white. For more information see Figure 2.

Lv = Average Surface Luminance with all white pixels (P1, P2, P3, P4, P5)

Note 3. The uniformity in surface luminance δ WHITE is determined by measuring luminance at each test position 1 through 5, and then dividing the minimum luminance of 5 points luminance by maximum luminance of 5 points luminance. For more information see Figure 2.

 $\delta \text{ WHITE } = \frac{\text{Minimum Surface Luminance with all white pixels (P1, P2, P3, P4, P5)}}{\text{Maximum Surface Luminance with all white pixels (P1, P2, P3, P4, P5)}}$

Note 4. Response time is the time required for the display to transition from white to black (Rise Time, Tr) and from black to white (Decay Time, Tf). For additional information see Figure 1. The test equipment is Autronic-Melchers's ConoScope series.

Note 5. CIE (x, y) chromaticity, the x, y value is determined by measuring luminance at each test position 1 through 5, and then make average value.



Note 6. Viewing angle is the angle at which the contrast ratio is greater than 2. For TFT module the contrast ratio is greater than 10. The angles are determined for the horizontal or x axis and the vertical or y axis with respect to the z axis which is normal to LCD surface. For more information see figure 3.

Note 7. For viewing angle and response time testing, the testing data is based on Autronic-Melchers's ConoScope series. Instruments for Contrast Ratio, Surface Luminance, Luminance Uniformity, CIE the test data is based on TOPCON's BM-5 photo detector.

Figure 1. The definition of response time

Figure 2. Measuring method for Contrast ratio, surface luminance, Luminance uniformity, CIE (x, y) chromaticity

black

white

white

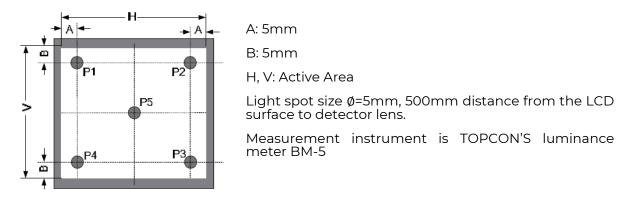
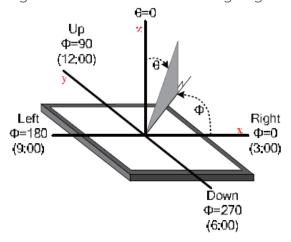


Figure 3. The definition of viewing angle





9. INTERFACE DESCRIPTION

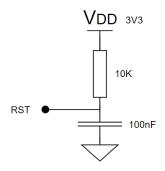
9.1 TFT assignment

| PIN NO. | SYMBOL | I/O | DESCRIPTION | NOTE |
|---------|--------|-----|---|--------|
| 1 | NC | - | No connection | |
| 2 | VDD | Р | Power supply 3.3V | |
| 3 | VDD | Р | Power supply 3.3V | |
| 4 | NC | - | No connection | |
| 5 | RESET | I | Global reset pin. Active low to enter reset state. | NOTE 1 |
| 6 | STBYB | I | Internally pull-up, STBYB=1, normal operation. STBYB=0, timing control, source driver will turn off | |
| 7 | GND | Р | Ground | |
| 8 | DON | I/O | Negative MIPI differential data input | |
| 9 | D0P | 1/0 | Positive MIPI differential data input | |
| 10 | GND | Р | Ground | |
| 11 | DIN | I/O | Negative MIPI differential data input | |
| 12 | D1P | 1/0 | Positive MIPI differential data input | |
| 13 | GND | Р | Ground | |
| 14 | D2N | 1/0 | Negative MIPI differential data input | |
| 15 | D2P | 1/0 | Positive MIPI differential data input | |
| 16 | GND | Р | Ground | |
| 17 | DCLKN | 1/0 | Negative MIPI differential clock input | |
| 18 | DCLKP | I/O | Positive MIPI differential clock input | |
| 19 | GND | Р | Ground | |
| 20 | D3N | 1/0 | Negative MIPI differential data input | |
| 21 | D3P | I/O | Positive MIPI differential data input | |
| 22 | GND | Р | Ground | |
| 23 | NC | - | No connection | |
| 24 | NC | - | No connection | |
| 25 | GND | Р | Ground | |
| 26 | NC | - | No connection | |
| 27 | NC | - | No connection | |
| 28 | NC | - | No connection | |
| 29 | NC | - | No connection | |
| 30 | GND | Р | Ground | |
| 31 | LED- | Р | LED Cathode | |
| 32 | LED- | Р | LED Cathode | |
| 33 | L/R | I | Left/Right display control, internally pull-up | NI-# O |
| 34 | U/D | I | Up/Down display control, internally pull down | Note 2 |
| 35 | NC | - | No connection | |
| 36 | NC | - | No connection | |
| 37 | NC | - | No connection | |
| 38 | NC | - | No connection | |
| 39 | LED+ | Р | LED Anode | |
| 40 | LED+ | Р | LED Anode | |

I: input, O: output, P: Power



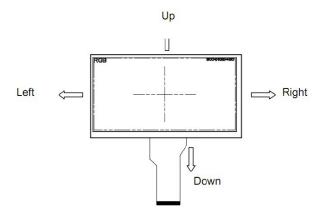
Note 1: Recommended Reset circuit:



Note 2: U/D (Pin 34) is internally pull-down, and R/L (Pin 33) is internally pull-up. The default scanning direction is up to down, left to right.

| SETTING OF SCAN CONTROL INPUT | | SCANNING DIRECTION |
|-------------------------------|-----|---------------------------|
| U/D | L/R | |
| GND | VDD | Up to down, left to right |
| VDD | GND | Down to up, right to left |
| GND | GND | Up to down, right to left |
| VDD | VDD | Down to up, left to right |

Definition of scanning direction, refer to the figure as below:



9.2 Touch panel assignment

| PIN NO. | SYMBOL | DESCRIPTION | NOTE |
|---------|---------|--|--------|
| 1 | USB_GND | USB_ Ground | |
| 2 | USB_VDD | USB Power for CTP, 5.0V | |
| 3 | USB_D- | USB _Data Signal – | |
| 4 | USB_D+ | USB _Data Signal + | |
| 5 | I2C_GND | I2C _ Ground | |
| 6 | I2C_VDD | I2C _Power for CTP, 3.3 V | |
| 7 | I2C_RST | I2C _Reset Pin, Active low | |
| 8 | I2C_SCL | I2C _Clock Input | Note 1 |
| 9 | I2C_INT | I2C _Interrupt Signal from CTP, Active low | |
| 10 | I2C_SDA | I2C _Data Signal | |

Note 1. External pull-up resistors are required.



9.3 CON1 assignment

| PIN NO. | SYMBOL | DESCRIPTION |
|---------|---------|----------------------------|
| 1 | USB_VDD | USB_Power for CTP, DC 5.0V |
| 2 | USB_D- | USB _Data Signal - |
| 3 | USB_D+ | USB _Data Signal + |
| 4 | USB_GND | USB_Ground |

10. TIMING CHARACTERISTICS

10.1 Input timing table

DE MODE

| PARAMETER | SYMBOL | MIN | TYP | MAX | UNIT |
|-------------------------------------|----------|------|------|------|------|
| DCLK frequency (Frame rate 60Hz) | fclk | 40.8 | 51.2 | 67.2 | MHz |
| Horizontal display area | thd | | DCLK | | |
| HSYNC period time | th | 1114 | 1344 | 1400 | DCLK |
| HSYNC blanking | thb+thfp | 90 | 320 | 376 | DCLK |
| Vertical display area | tvd | 600 | | | Н |
| VSYNC period time | tv | 610 | 635 | 800 | Н |
| VSYNC blanking | tvb+tvfp | 10 | 85 | 200 | Н |

HV MODE- Horizontal input timing

| PARAMETER | SYMBOL | MIN | TYP | MAX | UNIT |
|-------------------------------------|--------|------|------|------|------|
| Horizontal display area | thd | | 1024 | | DCLK |
| DCLK frequency (frame rate 60Hz) | fclk | 44.9 | 51.2 | 63 | MHz |
| 1 Horizontal Line | th | 1200 | 1344 | 1400 | DCLK |
| HSYNC pulse width | thpw | 1 | 70 | 140 | DCLK |
| HSYNC blanking | thb | 160 | 160 | 160 | DCLK |
| HSYNC front porch | thfp | 16 | 160 | 216 | DCLK |

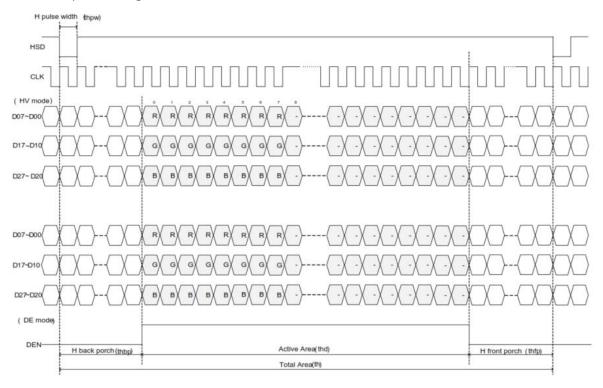
HV MODE -Vertical input timing

| PARAMETER | SYMBOL | MIN | TYP | MAX | UNIT |
|-----------------------|--------|-----|-----|-----|------|
| Vertical display area | tvd | | 600 | | Н |
| VSYNC period time | tv | 624 | 635 | 750 | Н |
| VSYNC pulse width | tvpw | 1 | 10 | 20 | Н |
| VSYNC back porch | tvb | 23 | 23 | 23 | Н |
| VSYNC front porch | tvfp | 1 | 12 | 127 | Н |

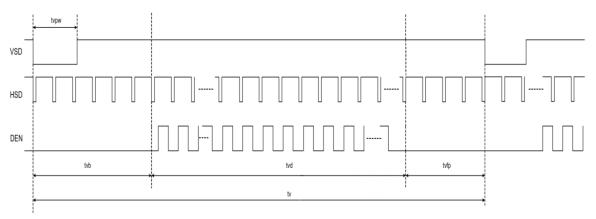


10.2 Input timing diagram

Horizontal input timing



Vertical input timing



10.3 MIPI-DSI timings

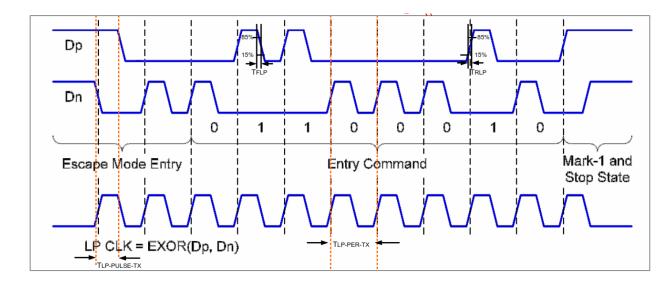
The MIPI display we are using is together with THS_ZERO time. Unfortunately, Driver MIPI does not meet the minimum value allowed by the MIPI standard. If the THS_ZERO time is in the lower range, the Driver may not initialize correctly. This results in "jumping" of the image.

For correct operation of the display, it is necessary to modify the THS_ZERO parameter in the DSI-PHY controller. The default value of THS_ZERO should be changed to a value of about 213 ns.



10.4 Low power transmitter AC characteristic

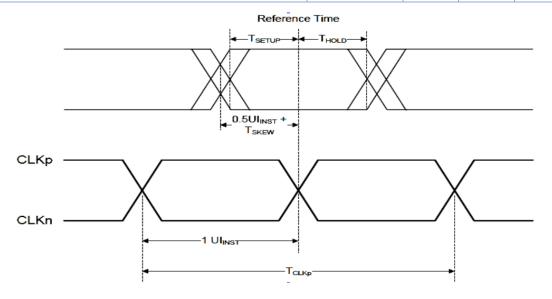
| PARAMETER | | SYMBOL | MIN | TYP | MAX | UNIT |
|------------------------|-----------------------------|----------------------------|-----|-----|-----|-------|
| 15%~85% rising time | e and falling time | T_{RLP}/T_{FLP} | - | - | 25 | |
| 30%~85% rising tim | e and falling time | T_{REOT} | - | - | 35 | |
| | First LP EXOR clock pulse | | | | | |
| Pulse width of LP | after STOP state or LAST | | 40 | - | - | ns |
| exclusive -OR | pulse before stop state | T _{LP-PULSE-TX} | | | | |
| clock | All other pulses | | 20 | - | - | |
| Period of the LP EX | Period of the LP EXOR clock | | 90 | - | - | |
| Slew Rate @CLOAD |) =0pF | | 30 | - | 500 | |
| Slew Rate @CLOAD =5pF | | $\delta V / \delta t_{SR}$ | 30 | - | 200 | mV/ns |
| Slew Rate @CLOAD =20pF | | OV /OLSR | 30 | - | 150 | |
| Slew Rate @CLOAD =70pF | | | 30 | - | 100 | |
| Load Capacitance | | T_RLP | - | - | 70 | рF |





10.5 High speed transmission

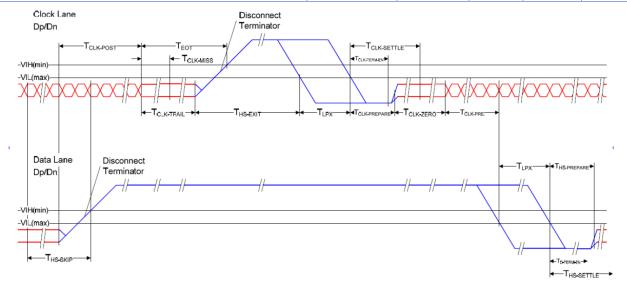
| PARAMETER | SYMBOL | MIN | TYP | MAX | UNIT |
|--|------------------------|----------|-----|----------|--------------------------|
| UI instantaneous | UI _{INST} | 2 | - | 12.5 | ns |
| Data to Clock Skew (measured at transmitter) | T _{SKEW(TX)} | -0.15 | - | 0.15 | |
| Data to Clock Setup time (Measured at receiver) | T _{SETUP(RX)} | 0.15 | - | - | UI _{INST} |
| Data to Clock Hold time (Measured at receiver) | T _{HOLD(RX)} | 0.15 | - | | |
| 20%~80% rising time and falling time | T_R,T_F | 150 - | - | - 0.3 | ps Ul _{inst} |





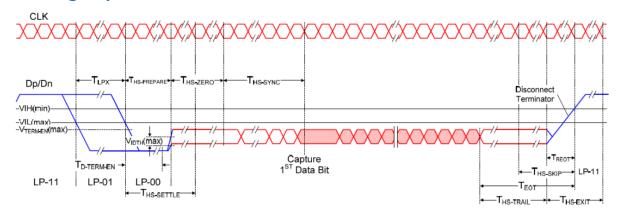
10.6 High speed clock transmission

| PARAMETER | SYMBOL | MIN | TYP | MAX | UNIT |
|---|---|---------|-----|-----|------|
| Time that the transmitter shall continue sending HS clock after the last associated Data Lane has transitioned to LP mode | T _{CLK-POST} | 60+52UI | - | - | |
| Detection time that the clock has stopped toggling | T _{CLK-MISS} | - | - | 60 | |
| Time to drive LP-00 to prepare for HS clock transmission | T _{CLK-PREPARE} | 38 | - | 95 | ns |
| Minimum lead HS-0 drive period before starting clock | T _{CLK-PREPARE+} T _{CLK-ZERO} | 300 | - | - | |
| Time to enable Clock Lane receiver line termination measured from when Dn cross $V_{\text{IL,MAX}}$ | T _{HS-TERM-EN} | - | - | 38 | |
| Minimum time that the HS clock must be prior to any associated data lane beginning the transmission from LP to HS mode | T _{CLK-PRE} | 8 | - | - | UI |
| Time to drive HS differential state after last payload clock bit of a HS transmission burst | T _{CLK} -TRAIL | 60 | - | - | ns |





10.7 High speed data transmission in bursts



11. CAPACITIVE TOUCH SCREEN PANEL SPECIFICATIONS

11.1 Mechanical characteristics

| DESCRIPTION | SPECIFICATION | REMARK |
|--------------------------|----------------------|--------|
| Touch Panel Size | 7.0 inch | |
| Outline Dimension of CTP | 164.70 mm x 99.80 mm | |
| Product Thickness | 2.45 mm | |
| Glass Thickness | 1.1 mm | aTouch |
| CTP View Area | 155.01 mm x 86.72 mm | |
| Sensor Active Area | 156.68 mm x 88.52 mm | |
| Structure type | Glass + Glass | |
| Surface Hardness | 7H | |

11.2 Electrical characteristics

| PARAMETER | | SPECIFICATION | REMARK |
|--|-------------|--------------------------|--------|
| O a service of the se | | DC 5.0 V (USB) | |
| Operating Voltage | | DC 3.3 V (I2C) | |
| Power | Active Mode | 90 mA | |
| Consumption (IDD) | Sleep Mode | 10 mA | aTouch |
| Interface | | USB / I2C /Optional UART | arouch |
| Linearity | | +/-1.5mm | |
| Controller | | ILI2132A | |
| I2C address | | 0x82 | |
| Resolution | | 1024 x 600 | |



12. INITIALIZATION CODE

DCS_Short_Write_NP(0x01); //Software Reset

Delay (120);

Generic_Short_Write_1P(0xB2,0x70); //Set Channels 2LANE:0x50; 3LANE:0x60; 4LANE:0x70

Generic_Short_Write_1P(0x80,0x4B); //Set Gamma voltage

Generic_Short_Write_1P(0x81,0xFF); //Set Gamma voltage

Generic_Short_Write_1P(0x82,0x1A); //Set Gamma voltage

Generic_Short_Write_1P(0x83,0x88); //Set Gamma voltage

Generic_Short_Write_1P(0x84,0x8F); //Set Gamma voltage

Generic_Short_Write_1P(0x85,0x35); //Set Gamma voltage

Generic_Short_Write_1P(0x86,0xB0); //Set Gamma voltage

DCS_Short_Write_NP(0x11); //Exit Sleep Mode

Delay (120);

DCS_Short_Write_NP(0x29); //Display on; 0x28 is display off

Delay (20);



13.INSPECTION

Standard acceptance/rejection criteria for TFT module

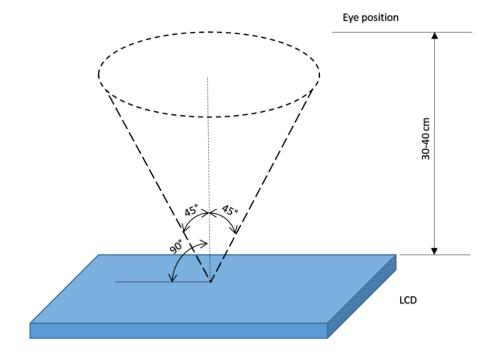
13.1 Inspection condition

Ambient conditions:

- Temperature: 25 ± 2°C
- Humidity: (60 ± 10) %RH
- Illumination: Single fluorescent lamp non-directive (300 to 700 lux)

Viewing distance: 35 ± 5cm between inspector bare eye and LCD.

Viewing Angle: U/D: 45°/45°, L/R: 45°/45°





13.2 Inspection standard

| Black spots, white spots, | <u> </u> | | | C: | | |
|-------------------------------|------------------------------------|-----------------------------|------------------------|--------------------------|---------|---------------|
| white spots, | x | | | Size = 7" | | |
| • | _ | Average Diameter D ≤ 0.2 mm | | Qualified Qty Ignored | | |
| light leakage, | ← | 0.2 mm < D s | ا 0.3 ا | mm | N≤3 | 3 |
| Foreign Particle (round Type) | <u> </u> | 0.5mm < D | | | Not | allowed |
| | D=(x+y)/2 Spot's density: 10 mm | 0.5mm < D | | | | |
| | Width | | | Size = 7" | | |
| LCD black spots, | | Length | | Width | | Qualified Qty |
| white spots, |) | - | | W ≤ 0.0 | 5 | Ignored |
| light leakage (line Type) | Length | L ≤ 5.0 | | 0.05 < W ≤ | 60.1 | 3 |
| | | 5.0 < L | | 0.1 < W | | Not allowed |
| | | Size = | - 7" | | | |
| Bright/Dark | Item | | Qualified Qty | | | |
| Dots | Bright dots | | N≤2 | | | |
| | Dark dots | | | N≤3 | | |
| | Total bright and da | ght and dark dots | | N≤4 | | |
| _ | Size = 7" | | | Qualified Oty | | |
| _ | Average Diame | ter | Qualified Qty | | | |
| Clear spots | D < 0.2 mm | | Ignored 4 | | | |
| _ | 0.2 mm < D < 0.3 mm | | | | | |
| _ | 0.3 mm < D < 0.5 mm | | 0 | | | |
| | 0.5 mm < D | Size = 7" | | | 0 | |
| D. L. i | | | Qualified Qty | | | |
| Polarizer bubbles | Average Diame D ≤ 0.2 mm | ter | | | | |
| bubbles | 0.2 mm < D ≤ 0.5 | no no | Ignored | | | |
| _ | 0.2 mm < D | [11[1] | 4 | | | |
| | 0.511111 \ D | Size ≥ | 0 | | | |
| _ | Average Diame | | Qualified Qty | | | |
| Touch panel | D < 0.25 mm | | Qualified Qty Ignored | | | |
| spot | 0.25 mm < D < 0.5 | | ignorea 4 | | | |
| _ | 0.5 mm < D | | 0 | | | |
| | S.S. THITT 'D | Size ≥ | ≥ 5" | | | |
| Touch panel | Length | Width | | Oua | alified | d Qty |
| White line | - | W < 0.03 | | | ored | |
| | L < 5.0 | 0.03 < W < 0. | 05 | 2 | | |
| | - | 0.05 < W | | 0 | | |



14. RELIABILITY TEST

| NO. | TEST ITEM | TEST CONDITION |
|-----|-------------------------------------|---------------------------------------|
| 1 | High Temperature Storage | 80°C/120 hours |
| 2 | Low Temperature Storage | -30°C/120 hours |
| 3 | High Temperature Operating | 70 °C /120 hours |
| 4 | Low Temperature Operating | -20°C/120 hours |
| 5 | High Temperature and High Humidity | Humidity 40°C, 90%RH, 120Hrs |
| | | -20°C for 30min, 70°C for 30 min. |
| 6 | Thermal Cycling Test (No operation) | 100 cycles. Then test at room |
| | | temperature after 1 hour |
| | | Frequency: 10 ÷ 55 Hz. |
| | | Stroke: 1.5 mm. |
| 7 | Vibration Test | Sweep: 10Hz ÷ 55Hz ÷ 10 Hz. |
| | | 2 hours for each direction of X, Y, Z |
| | | (Total 6 hours) |
| 8 | Dackage Drop Test | Height: 60 cm |
| 0 | Package Drop Test | 1 corner, 3 edges, 6 surfaces |
| | | Air: ±2 kV, |
| 9 | ESD Test | Human Body Mode, |
| | | 100 pF /1500 Ω |

Note 1. Sample quantity for each test item is $5 \div 10$ pcs.

Note 2. Before cosmetic and function test, the product must have enough recovery time, at least 2 hours at room temperature.



15.LEGAL INFORMATION

CE marking is usually obligatory only for a complete end product. Riverdi display modules are semi-finished goods which are used as inputs to become part of the finished products.

Therefore, Riverdi display modules are not CE marked.

Riverdi grants the guarantee for the proper operation of the goods for a period of 12 months from the date of possession of the goods. If in a consequence of this guaranteed execution the customer has received the defects-free item as replacement for the defective item, the effectiveness period of this guarantee shall start anew from the moment the customer receives the defects-free item.

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