TFT MODULE SPECIFICATION

# RVT4.3A480272CNWC36 V3

4.3" LCD TFT DATASHEET
Rev. 1.0
2026-08-06

**Riverdi Sp. z o.o.**

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| ITEM | CONTENTS | UNIT |
|---|---|---|
| Display Type | TFT/Transmissive/Normally white | / |
| Size | 4.3 | Inch |
| Viewing Direction | 12:00 (without image inversion) | O' Clock |
| Gray Scale Inversion Direction | 6:00 | O' Clock |
| Outside Dimensions (W x H x D) | 105.50 x 67.20 x 8.78 | mm |
| Active Area (W x H) | 95.04 x 53.86 | mm |
| Pixel Pitch (W x H) | 0.198 x 0.198 | mm |
| Resolution | 480 (RGB) x 272 | / |
| Surface Luminance | 500 | $cd/m^2$ |
| Interface Type | Parallel 8/16b (i80 by default) | / |
| Color Depth | 16.7M | / |
| Backlight Type | 10 LEDs | / |
| Pixel Arrangement | RGB Vertical Stripe | / |
| Driver IC | FT5446U | / |
| Controller IC | SSD1963QL9 | / |
| With/Without Touch | With Capacitive Touch Panel | / |
| LCD Input Voltage | 3.3 | V |
| Weight | TBD | g |

**Note 1.** RoHS compliant

**Note 2.** LCM weight tolerance: ± 5%.

# 1. REVISION RECORD

| REV NO. | REV DATE | CONTENTS | REMARKS |
|---|---|---|---|
| 1.0 | 2026-08-06 | Initial Release | |

# 2. CONTENTS

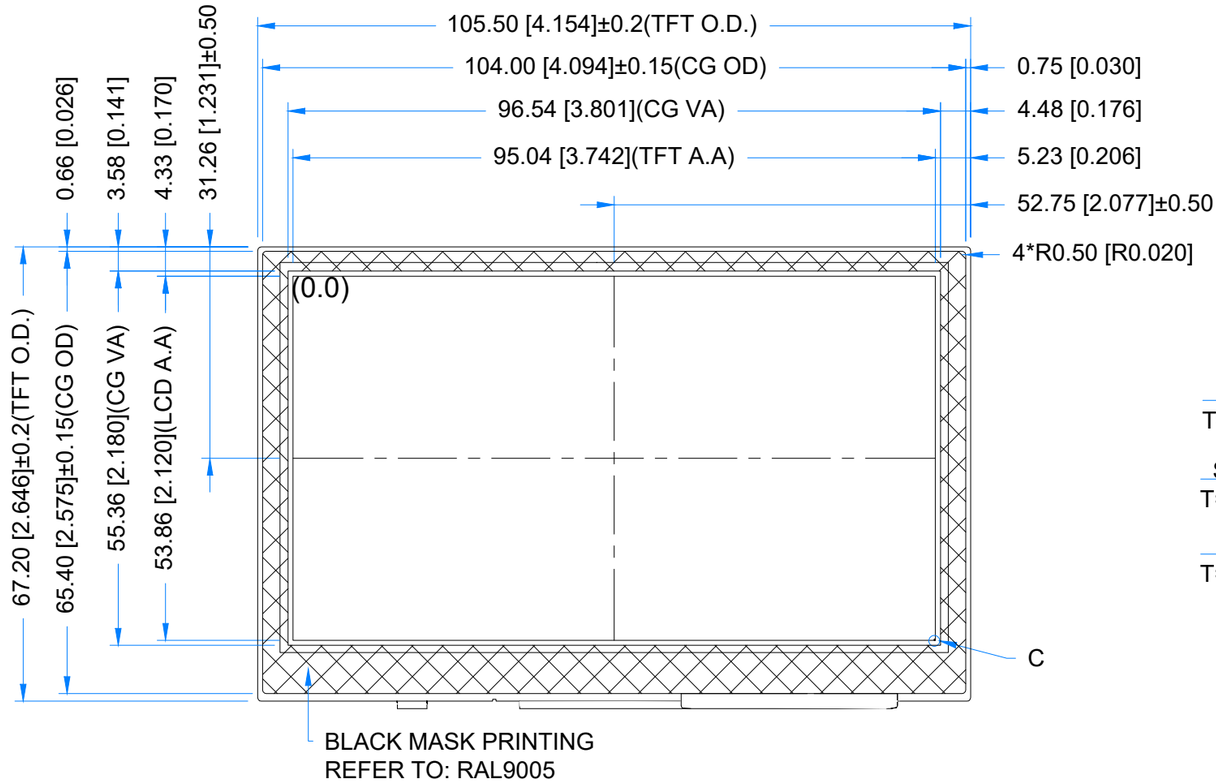

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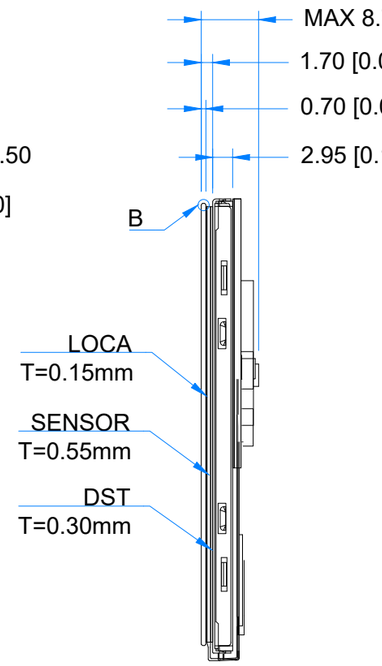
# 3. MODULE CLASSIFICATION INFORMATION

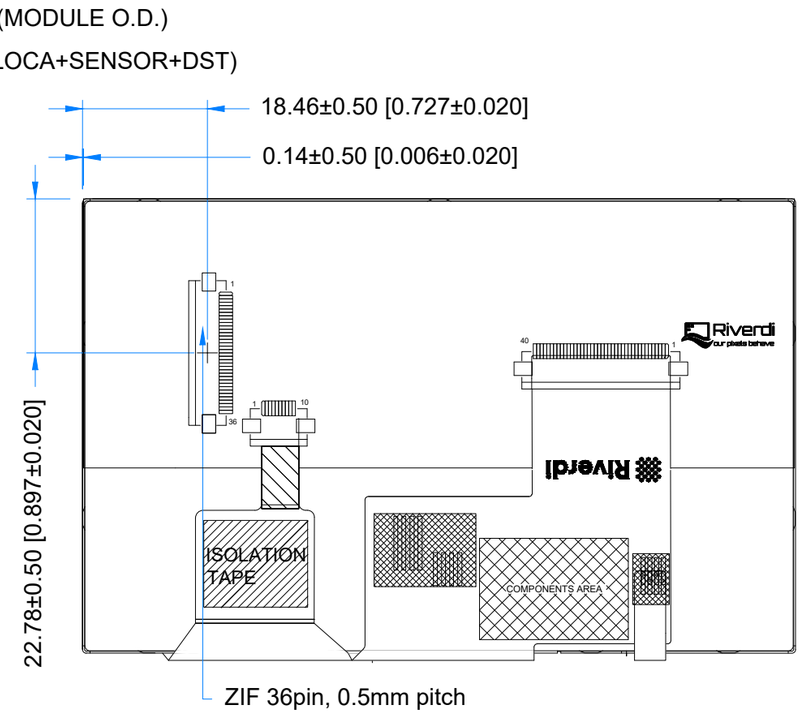
| RV | T | 4.3 | A | 480272 | C | N | W | C | 36 | V3 |
|---|---|---|---|---|---|---|---|---|---|---|
| 1. | 2. | 3. | 4. | 5. | 6. | 7. | 8. | 9. | 10. | 11. |

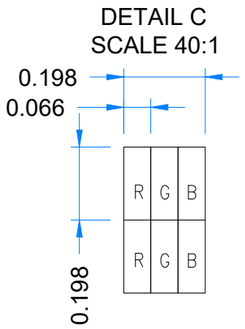
| NO. | PARAMETER | SYMBOL |
|---|---|---|
| 1. | BRAND | RV – Riverdi |
| 2. | PRODUCT TYPE | T – TFT Standard |
| 3. | DISPLAY SIZE | 4.3 – 4.3” |
| 4. | MODEL SERIAL NO. | A (A-Z) |
| 5. | RESOLUTION | 480272 – 480x272 px |
| 6. | INTERFACE | C – TFT + Controller |
| 7. | FRAME | N – Without Mounting Metal Frame |
| 8. | BACKLIGHT TYPE | W – LED White |
| 9. | TOUCH PANEL | C – Capacitive Touch Panel |
| 10. | VERSION | 36 (00-99) |
| 11. | MODULE REVISION | V3 |

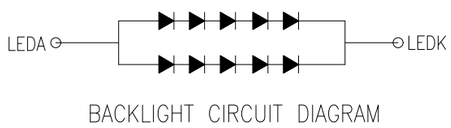
| Revision: | Changes: | Date: |
|---|---|---|
| 1.0 | Initial Case | 2026.04.07 |

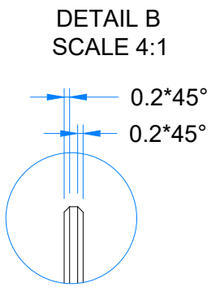



**TFT NOTES:**
1. DISPLAY TYPE: TFT, TRANSMISSIVE, NORMALLY WHITE
2. RESOLUTION: 480 x 272
3. VIEWING ANGLE: 12 O'CLOCK
4. CONTROLLER IC: SSD1963QL9
5. OPERATION VOLTAGE: VDD=3,3V (TYP.)

**TP NOTES:**
1. TP STRUCTURE: G+G
2. CG THICKNESS: 0.70mm
3. DRIVER IC: FT5446U
4. SURFACE HARDNESS: 7H
5. INTERFACE: I2C

**GENERAL NOTES:**
1. SURFACE LUMINANCE: 500cd/$m^2$
2. OPERATING TEMPERATURE: -20°C ~ 70°C
3. STORAGE TEMPERATURE: -30°C ~ 80°C
4. WITHOUT INDIVIDUAL TOLERANCE: ±0.3mm
5. RoHS COMPLIANT

| | | | | |
|---|---|---|---|---|
| PN: RVT4.3A480272CNWC36 V3 | | | | Riverdi |
| SN: | | | | |
| DRAWN: | M.Stabinski | 2026.04.07 | 1:0.91 | |
| CHECKED: | M.Wierzbowski | 2026.04.07 | [mm] | |
| APPR: | M.Wierzbowski | 2026.04.07 | ISO A3 | P. 1 of 1 |

# 5. ABSOLUTE MAXIMUM RATINGS

| PARAMETER | SYMBOL | MIN | MAX | UNIT |
|---|---|---|---|---|
| Power Supply Voltage | VDD | -0.3 | 4.6 | V |
| Input Voltage for Logic | VIN | -0.3 | VDD | V |
| Input Voltage for LED Inverter | BLVDD | -0.3 | 7.0 | V |
| Operating Temperature | $T_{OP}$ | -20 | 70 | °C |
| Storage Temperature | $T_{ST}$ | -30 | 80 | °C |

**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 | 3.0 | 3.3 | 3.6 | V |
| Input Voltage for LED Inverter | BLVDD | 2.8 | 3.3 | 5.5 | V |
| Input Voltage ‘H’ level for BL_E pin | $BL_E_H$ | 1.5 | - | 5.5 | V |
| Input Voltage ‘L’ level for BL_E pin | $BL_E_L$ | 0 | - | 0.7 | |
| Input Current (Exclude LED Backlight) | IDD | - | 25 | 32 | mA |
| LED Backlight Current | $IDD_{backlight}$ | | 265 | 332 | mA |
| LED Backlight Current | $IDD_{backlight}$ | | 156 | 195 | mA |
| Total Input Current (Include LED Backlight 100%) | $IDD_{total}$ | - | 290 | 363 | mA |
| Input Voltage ' H ' level | $V_{IH}$ | 0.7VDD | - | VDD | V |
| Input Voltage ' L ' level | $V_{IL}$ | 0 | - | 0.2VDD | V |
| Backlight lifetime | - | 30,000 | 50,000 | - | hours |

# 7. ELECTRO-OPTICAL CHARACTERISTICS

| ITEM | SYMBOL | CONDITION | MIN | TYP | MAX | UNIT | RMK | NOTE |
|---|---|---|---|---|---|---|---|---|
| Response Time | Tr+Tf | θ=0° ø=0° Ta=25 °C | - | 25 | 50 | ms | FIG 1. | 4, 7 |
| Contrast Ratio | Cr | | 400 | 500 | - | --- | FIG 2. | 1, 7 |
| Surface Luminance | Lv | | - | 500 | - | cd/m2 | | 2, 7 |
| Luminance Uniformity | δ WHITE | | 80 | - | - | % | | 3 |
| Viewing Angle Range | θ | ø = 90° | 40 | 50 | - | deg | FIG 3. | 6 |
| | | ø = 270° | 60 | 70 | - | deg | | |
| | | ø = 0° | 60 | 70 | - | deg | | |
| | | ø = 180° | 60 | 70 | - | deg | | |
| CIE (x, y) Chromaticity | Rx | θ=0° ø=0° Ta=25 °C | 0.546 | 0.596 | 0.646 | - | FIG 2. | 5,7 |
| | Ry | | 0.312 | 0.362 | 0.412 | - | | |
| | Gx | | 0.277 | 0.327 | 0.377 | - | | |
| | Gy | | 0.524 | 0.574 | 0.624 | - | | |
| | Bx | | 0.097 | 0.147 | 0.197 | - | | |
| | By | | 0.016 | 0.066 | 0.116 | - | | |
| | Wx | | 0.236 | 0.286 | 0.336 | - | | |
| | Wy | | 0.256 | 0.306 | 0.356 | - | | |
| NTSC ratio | - | - | | 55.2 | - | % | | |

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

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

**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 BM-7A.

**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.** For TFT module, viewing angle is the angle at which the contrast ratio is greater 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.** Viewing angle is measured at the center point of the LCD by CONOSCOPE (ergo-80). For response time testing, the testing data is based on BM-7A. Instruments for Contrast Ratio, Surface Luminance, Luminance Uniformity, Chromaticity the test data is based on SR-3A.

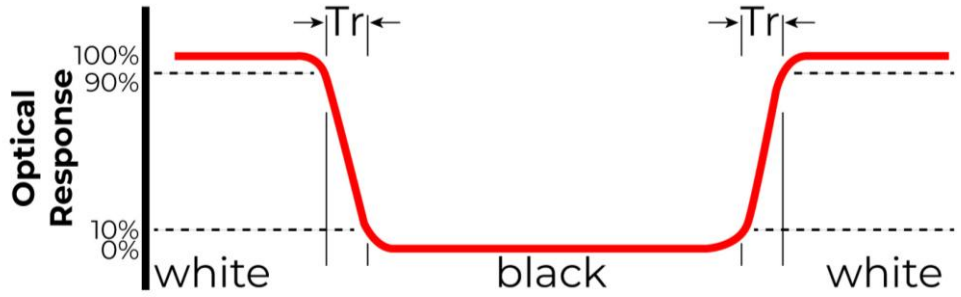
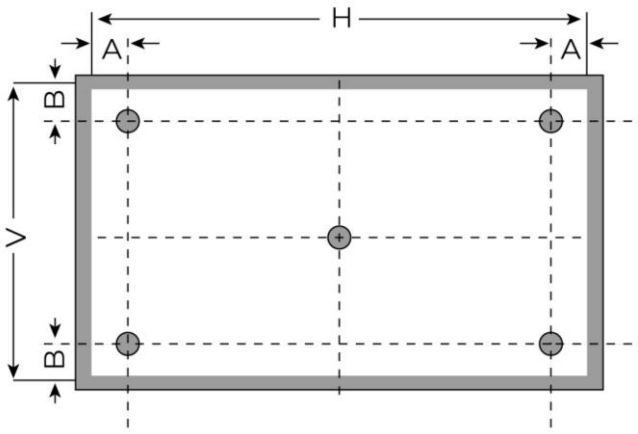



*Figure 1. The definition of response time*




A: 5mm

B: 5mm

H, V: Active Area

Light spot size ∅=5mm, 500mm distance from the LCD surface to detector lens.

Measurement instrument is SR-3A

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

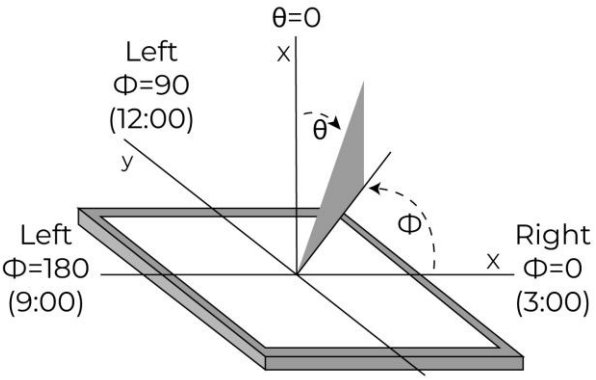



*Figure 3. The definition of viewing angle*

# 8. INTERFACES DESCRIPTION

| PIN | SYMBOL | I/O/P | DESCRIPTION |
|---|---|---|---|
| **1** | GND | P | Power Ground |
| **2** | VDD | P | Power Supply: +3.3V |
| **3** | BL_E | I | Backlight Control Signal, H: On/L: Off (internally pulled-up to BLVDD) |
| **4** | D/C | I | Data/Command Select |
| **5** | WR | I | Write Strobe Signal |
| **6** | RD | I | Read Strobe Signal |
| **7-22** | D0-D15 | I | Data Bus. Pins not used should be floating. |
| **23** | NC | - | No Connection |
| **24** | TP_INT | O | Touch panel interrupt output |
| **25** | CS | I | Chip Select |
| **26** | RESET | I | Hardware reset |
| **27** | DISP ON | I | Display Control H: On/L: Off (internally pulled-up) |
| **28** | NC | - | No Connection |
| **29** | TP_SCL | I | Touch panel I2C clock |
| **30** | TP_SDA | I/O | Touch panel I2C data |
| **31** | TP_RST | I | Touch panel reset |
| **32** | NC | - | No Connection |
| **33** | BLED- | P | Backlight ground, can be connected to GND |
| **34** | VLED- | P | Backlight ground, can be connected to GND |
| **35** | VLED+ | P | Backlight power supply, can be connected to VDD |
| **36** | VLED+ | P | Backlight power supply, can be connected to VDD |

I/O/P definition: I----Input O----Output P----Power/Ground

# 9. INTERFACE TIMING CHARACTERISTICS

## 9.1 8080 Mode

The 8080 mode MCU interface consist of CS#, D/C#, RD#, WR#, D[15:0]. This interface use WR# to define a write cycle and RD# for read cycle. If the WR# goes low when the CS# signal is low, the data or command will be latched into the system at the rising edge of WR#. Similarly, the read cycle will start when RD# goes low and end at the rising edge of RD#.

## 9.2 Parallel 8080-series Interface Timing

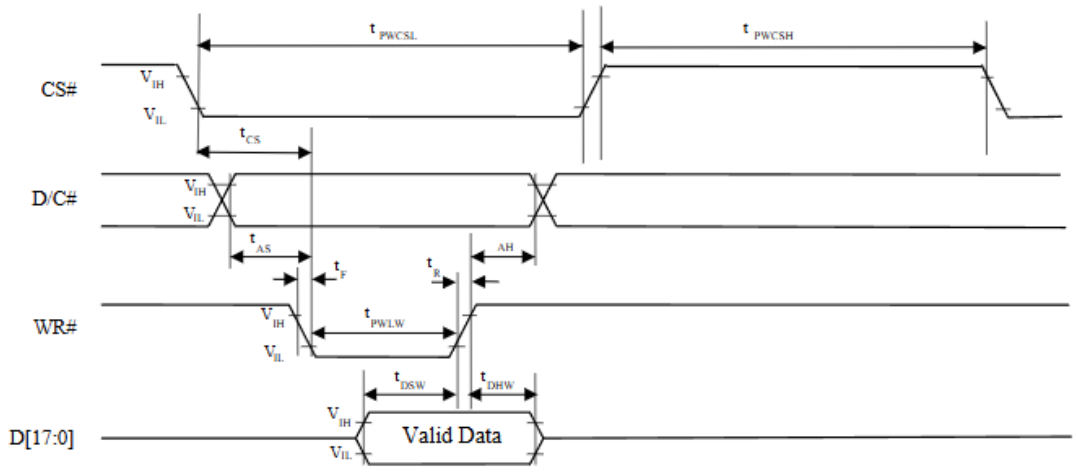



*Figure 5. Parallel 8080-series Interface Timing Diagram (Write Cycle)*

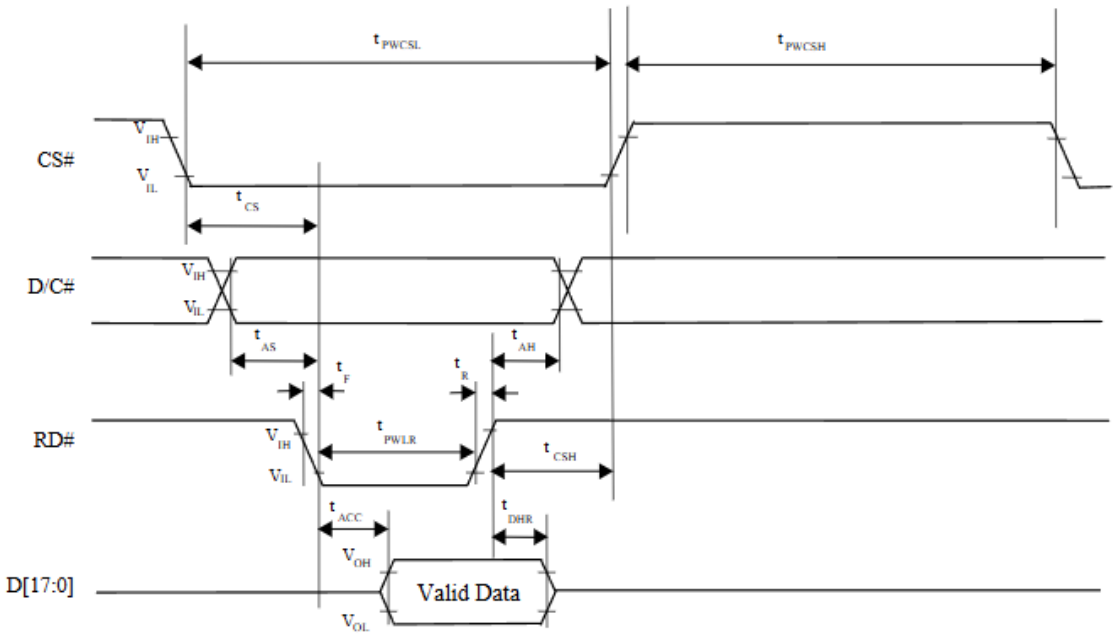


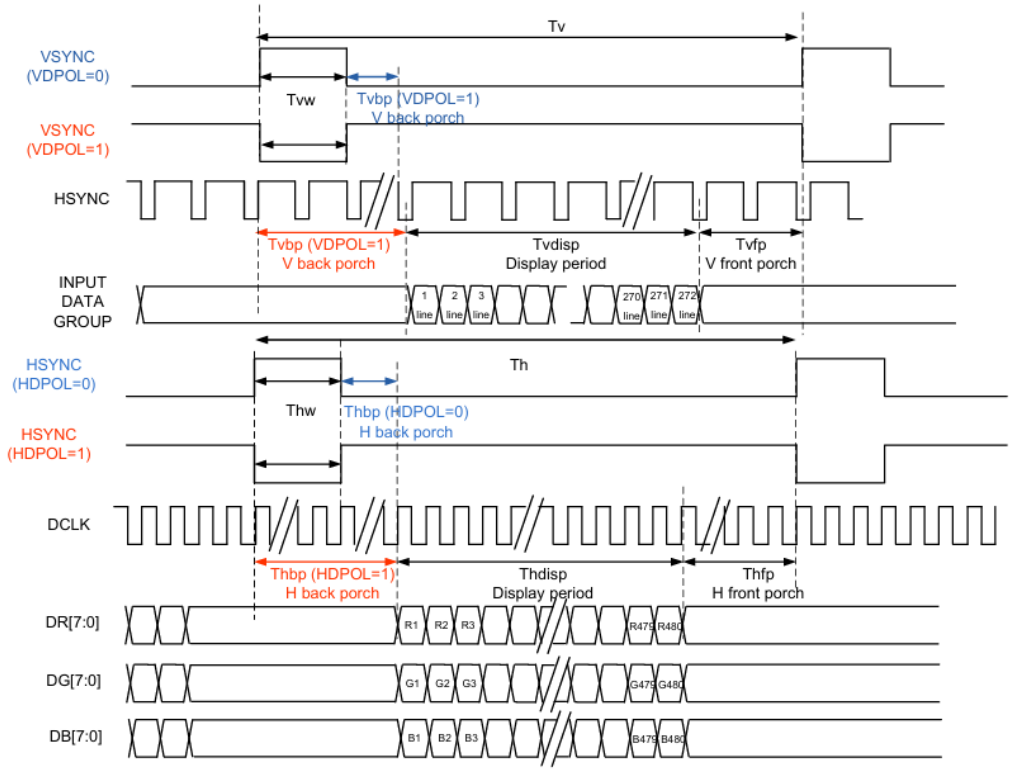

Figure 6. Parallel 8080-series Interface Timing Diagram (Read Cycle)

# 10. TIMING CHARACTERISTICS

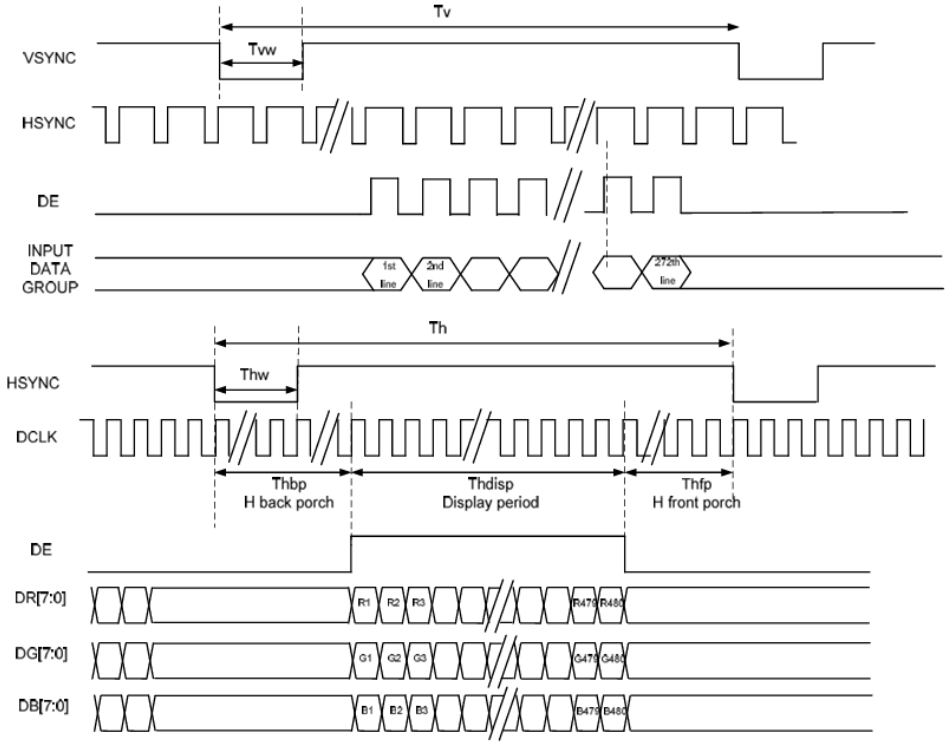
## 10.1 Timing table

| PARAMETER | | SYMBOL | MIN | TYP | MAX | UNIT |
|---|---|---|---|---|---|---|
| DCLK frequency | | Fclk | 8 | 9 | 12 | MHz |
| DCLK Period | | Tclk | 83 | 111 | 125 | ns |
| HSYNC | Period Time | Th | 485 | 531 | 598 | DCLK |
| | Display Period | Thdisp | | 480 | | |
| | $H_{sync}$ Back Porch | Thbp | 3 | 43 | 43 | |
| | $H_{sync}$ Front Porch | Thfp | 2 | 8 | 75 | |
| | $H_{sync}$ Pulse Width | Thw | 2 | 4 | 75 | |
| VSYNC | Period Time | Tv | 276 | 292 | 321 | HSYNC |
| | Display Period | Tvdisp | | 272 | | |
| | $V_{sync}$ Back Porch | Tvbp | 2 | 12 | 12 | |
| | $V_{sync}$ Front Porch | Tvfp | 2 | 8 | 37 | |
| | $V_{sync}$ Pulse Width | Tvw | 2 | 4 | 37 | |

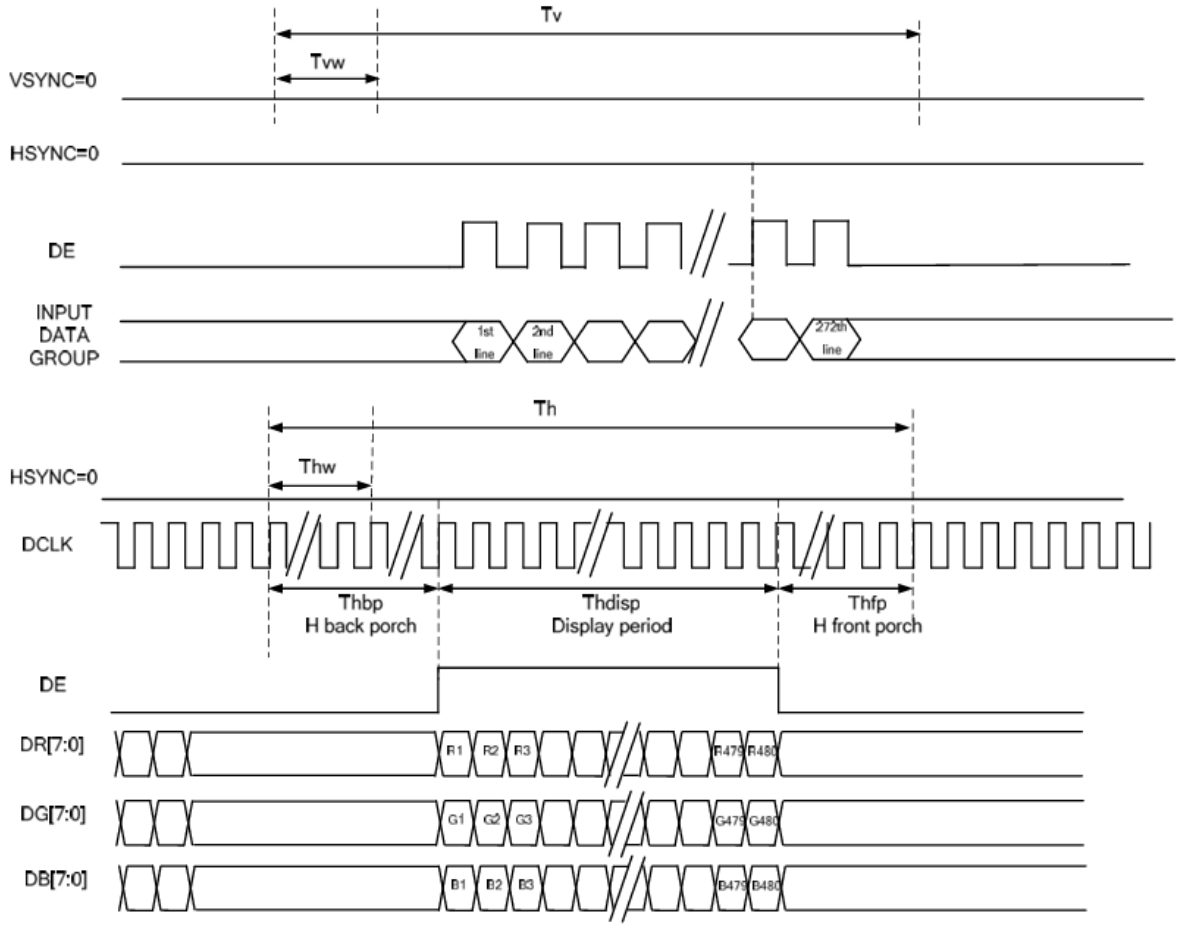
## 10.2 SYNC Mode Timing Diagram




## 10.3 SYNC-DE Mode Timing Diagram



## 10.4 DE Mode Timing Diagram




# 11. INSPECTION

Standard acceptance/rejection criteria for TFT module according to document available here.

# 12. RELIABILITY TEST

| NO. | TEST ITEM | TEST CONDITION | NOTE |
|---|---|---|---|
| 1 | High Temperature Storage | 80℃ ± 2℃ / 240Hrs. | IEC60068-2-2<br>GB2423.2 |
| 2 | Low Temperature Storage | -30℃ ± 2℃ / 240Hrs. | IEC60068-2-1<br>GB2423.1 |
| 3 | High Temperature Operating | 70℃ ± 2℃ / 240Hrs. | IEC60068-2-2<br>GB2423.2 |
| 4 | Low Temperature Operating | -20℃ ± 2℃ / 240Hrs. | IEC60068-2-1<br>GB2423.1 |
| 5 | High Temperature and High Humidity Operation Test | 60 ± 5℃, 90%RH 240Hrs. | IEC60068-2-3<br>GB/T2423.3 |
| 6 | Thermal Shock Test (Non-operating) | -20±2℃(30Min.)~25±2℃(5Min.)~60±2℃(30Min.) 10Cycles | IEC60068-2-14<br>GB2423.22 |
| 7 | Vibration Test (Non-operating) | Frequency: 10~55Hz<br>Amplitude: 1.5mm<br>Sweep Time: 11Mins<br>Test Period: 6 Cycles For Each Direction of X, Y, Z (Packing Condition) | IEC60068-2-6<br>GB2423.10 |
| 8 | Electro Static Discharge Test | R: 330Ω, C:150pF, 5points/panel<br>Air: ±8KV, 10times; Contact: ±4KV, 10times; (Environment: 15℃~35℃, 30%~60%, 86Kpa~106Kpa) | IEC61000-4-2<br>GB/T17626.2 |

Note 1: Without water condensation.

Note 2: The function test shall be conducted after 2 hours storage at the room temperature (25℃±2℃) and room humidity (65%±5%) after removed from the test chamber. In the standard conditions, there shall be no functional defects occurred.

# 13. 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.

This is not a standalone product. It was designed as an electronic component. It needs integration with a whole system to be fully functional.

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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Contact us at
**contact@riverdi.com**

We're here to ensure your project's success, every step of the way!