



TFT MODULE SPECIFICATION

## **RVT70HSTNWCA0 V1.1A**

IPS RGB 7.0” display datasheet  
Rev. 1.0  
2026-05-15

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

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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 8.21	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/m <sup>2</sup>
LCD Interface Type	RGB	/
Color Depth	16.7 M	/
Pixel Arrangement	RGB Vertical Stripe	/
LCD Driver	EK79001HK+EK73215BCGA	/
With/Without Touch	With Capacitive Touch Panel	/
CTP IC	ILI2132A	/
LCD Input Voltage	3.3	V
Weight	TBD	g

**Note 1.** RoHS3 compliant

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

## 1. REVISION RECORD

REV NO.	REV DATE	CONTENTS	REMARKS
1.0	2026-05-15	Initial release	

## 2. CONTENTS

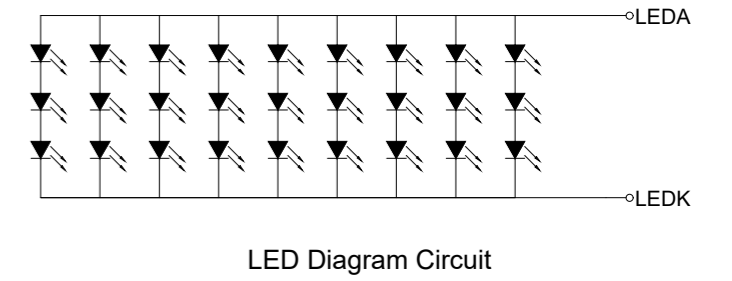
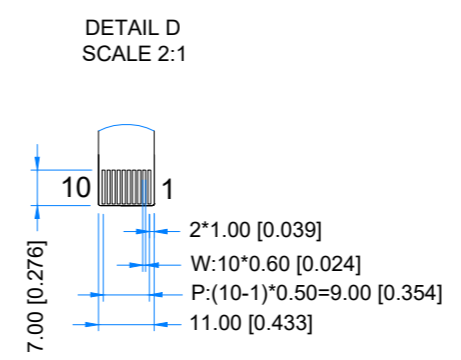
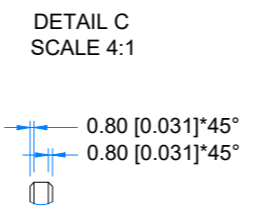
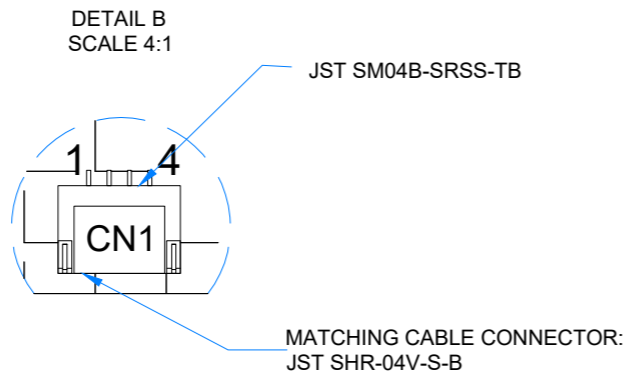
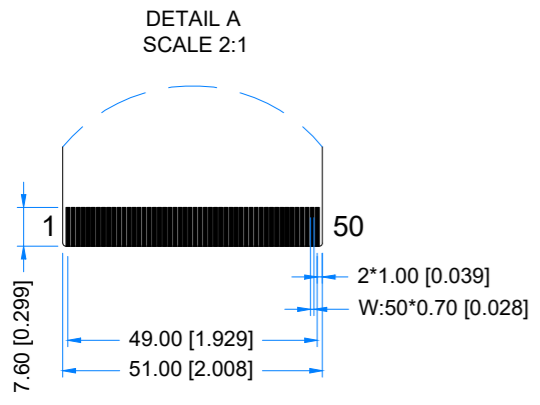
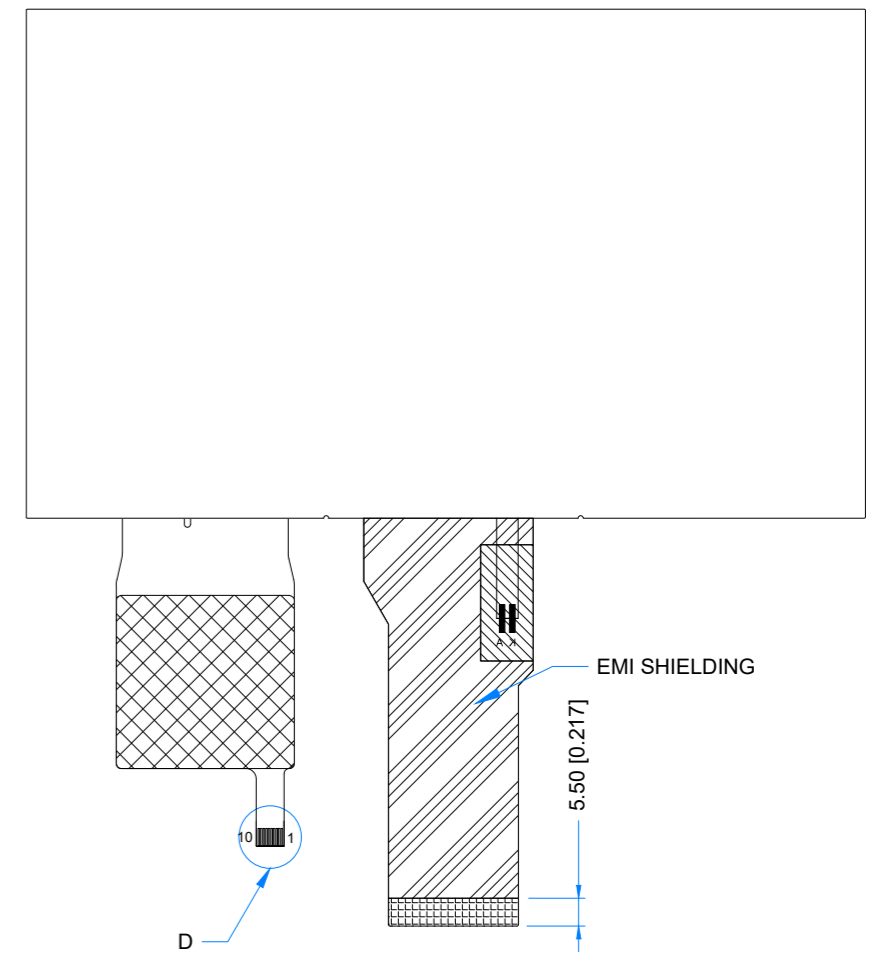
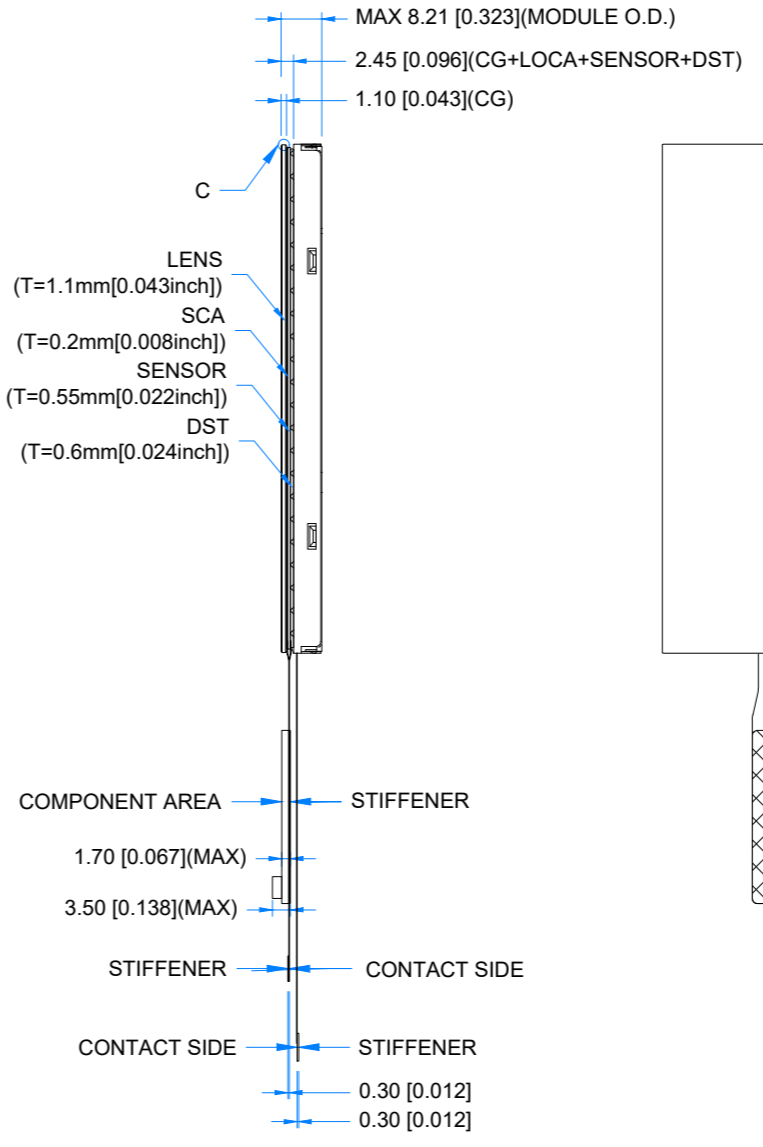
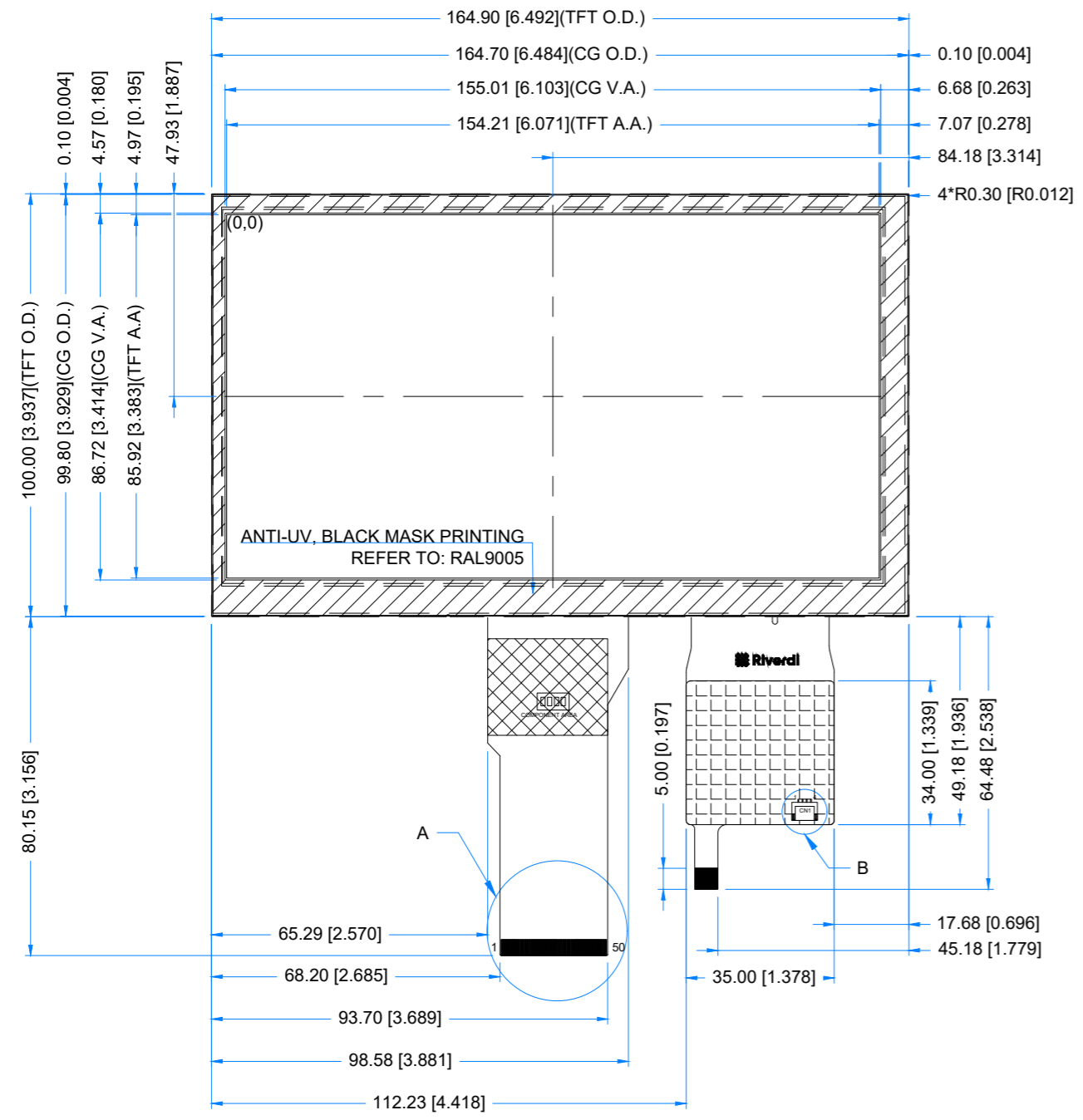
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### 3. MODULE CLASSIFICATION INFORMATION

RV	T	70	H	S	T	N	W	C	A0	V1.1A
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	70 - 7.0"
4.	MODEL SERIAL NO.	H - High Brightness, IPS
5.	RESOLUTION	S - 1024 x 600 px
6.	INTERFACE	T - TFT LCD, RGB
7.	FRAME	N - Without Mounting Metal Frame
8.	BACKLIGHT TYPE	W - LED White
9.	TOUCH PANEL	C - With Capacitive Touch Panel
10.	VERSION	00 - aTouch
11	MODULE REVISION	V1.1A

Revision:	Changes:	Date:
1.0	Initial Case	2026.03.19



**TFT NOTES:**

- LCD TYPE: TRANSMISSIVE, NORMALLY BLACK, IPS
- RESOLUTION: 1024x600
- VIEWING ANGLE: FREE
- IC CONTROLLER: EK79001HK+EK73215BCGA
- OPERATING VOLTAGE: 3.3V
- INTERFACE: RGB
- BACKLIGHT: 27 LEDS WHITE, Vf = 8.4-10.2V, If = 270mA

**TP NOTES:**

- TP STRUCTURE: G+G
- CG THICKNESS: 1.10 mm
- DRIVER IC: ILI2132A
- INTERFACE: USB /I2C
- OPERATING VOLTAGE: 3.3V(CTP I2C); 5.0V(CTP USB)

**GENERAL NOTES:**

- MODULE SURFACE LUMINANCE: 800 cd/m<sup>2</sup>
- OPERATING TEMPERATURE: -20°C ~ 70°C
- STORAGE TEMPERATURE: -30°C ~ 80°C
- WITHOUT INDIVIDUAL TOLERANCE: ±0.3mm
- RoHS3 COMPLIANT

PN: RVT70HSTNWCA0 V1.1A			
SN:			
DRAWN: M.Stabinski	2026.03.19	1:1.49	
CHECKED: M.Wierzbowski	2026.03.19	[mm]	
APPR: M.Wierzbowski	2026.03.19	ISO A3	

## 5. ABSOLUTE MAXIMUM RATINGS

PARAMETER	SYMBOL	MIN	MAX	UNIT	REMARK
Analog supply voltage	$V_{CI}$	-0.3	+3.6	V	-
Backlight Forward Current	$I_F$	-	40	mA	For each serial LED
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	REMARK
Digital supply voltage		$V_{DD}$	3.0	3.3	3.6	V	-
		$A_{VDD}$	8.9	9.0	9.1	V	
		$V_{GH}$	17	18	19	V	
		$V_{GL}$	-6.5	-6.0	-5.5	V	
		$V_{COM}$	3.0	3.15	3.3	V	
Input Signal Voltage	Low Level	$V_{IL}$	0	-	$0.3V_{DD}$	V	RXIN0- ,RXIN0+,RXI N1- ,RXIN1+,RXI N2- ,RXIN2+SELB ,RESET,STBY B,L/R,U/D
	High Level	$V_{IH}$	$0.7V_{DD}$	-	$V_{DD}$	V	

Touch Panel Supply Current	$I_{CTP}$	-	117	-	mA	Measured average current, touch panel active
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## 7. TOUCH PANEL CHARACTERISTICS

PARAMETER	SYMBOL	VALUE	REMARK
Touch panel interface	-	I <sup>2</sup> C	
I <sup>2</sup> C 7-bit slave address	ADDR <sub>7-bit</sub>	0x41	Standard I <sup>2</sup> C address format
I <sup>2</sup> C write address	ADDR <sub>w</sub>	0x82	8-bit address format
I <sup>2</sup> C read address	ADDR <sub>r</sub>	0x83	8-bit address format

## 8. BACKLIGHT ELECTRICAL CHARACTERISTICS

PARAMETER	SYMBOL	MIN	TYP	MAX	UNIT	NOTE
Backlight Driving Voltage	$V_F$	8.4	9.0	10.2	V	Notes 1, 2
Backlight Driving Current	$I_F$	-	270	-	mA	
Backlight Power Consumption	$W_{BL}$	-	2430	-	mW	
Backlight Lifetime	-	-	30,000	-	hours	Note 3

**Note 1:** The LED driving condition is defined for total backlight consumption, and which depend on Forward Current setting.

**Note 2:** Forward Voltage is just for reference for one serial.

**Note 3:** The “Operating lifetime” is defined as the module brightness decrease to 50% original brightness at  $T_a=25^\circ\text{C}$  and  $IF=270\text{mA}$ . The LED lifetime could be decreased if operating  $IF$  is larger than  $270\text{mA}$ .

## 9. ELECTRO-OPTICAL CHARACTERISTICS

ITEM	SYMBOL	CONDITION	MIN	TYP	MAX	UNIT	RMK	NOTE
Response Time	Tr+Tf	$\theta=0^\circ$ $\phi=0^\circ$ $T_a=25^\circ\text{C}$	-	27	45	ms	FIG 2.	4, 7
Contrast Ratio	Cr		600	800	-	---	FIG 3.	1, 7
Surface Luminance	Lv		-	800	-	$\text{cd}/\text{m}^2$		2, 7
Uniformity	U	-	70	75	-	%	FIG 3.	3
Viewing Angle Range	$\theta$	$\phi = 90^\circ$	80	85	-	deg	FIG 4.	6
		$\phi = 270^\circ$	80	85	-	deg		
		$\phi = 0^\circ$	80	85	-	deg		
		$\phi = 180^\circ$	80	85	-	deg		
CIE (x, y) Chromaticity	Rx	$\theta=0^\circ$ $\phi=0^\circ$ $T_a=25^\circ\text{C}$	0.581	0.611	0.641	-	FIG 3.	5,7
	Ry		0.295	0.325	0.355	-		
	Gx		0.306	0.336	0.366	-		
	Gy		0.513	0.543	0.573	-		
	Bx		0.117	0.148	0.178	-		
	By		0.127	0.157	0.187	-		
	Wx		0.291	0.321	0.351	-		
	Wy		0.315	0.345	0.375	-		
NTSC ratio	-	-	40	47	-	%		

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

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

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

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

**Note 3.** The uniformity in surface luminance  $\delta$  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,  $T_r$ ) and from black to white (Decay Time,  $T_f$ ). 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.

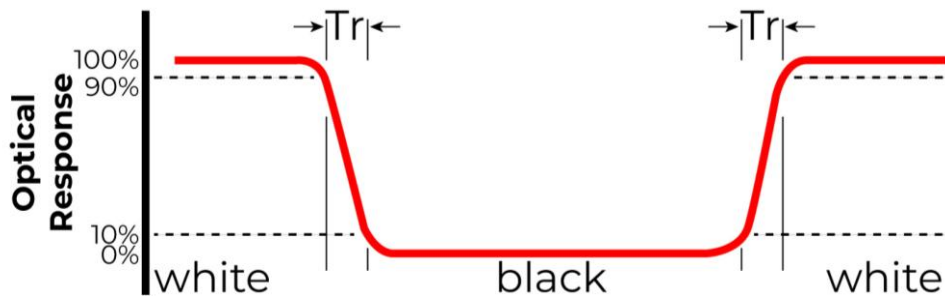


Figure 1. The definition of response time

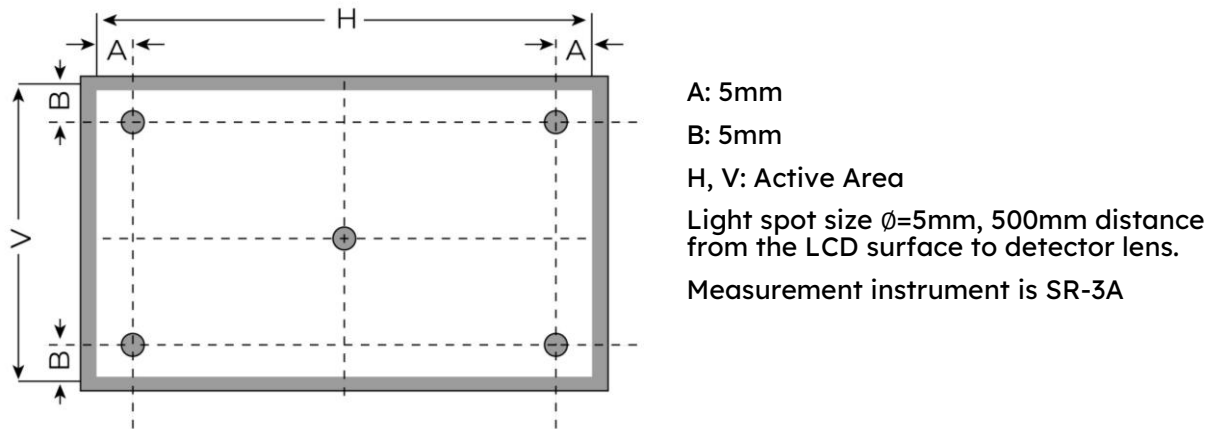


Figure 2. Measuring method for Contrast ratio, surface luminance, Luminance uniformity, CIE (x, y) chromaticity

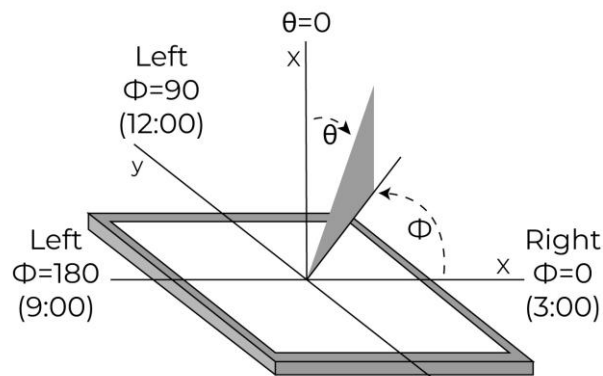


Figure 3. The definition of viewing angle

## 10. INTERFACES DESCRIPTION

### 10.1 TFT ASSIGNMENT

PIN	SYMBOL	I/O/P	DESCRIPTION
<b>1</b>	VLED+	P	Power for LED backlight (Anode)
<b>2</b>	VLED+	P	Power for LED backlight (Anode)
<b>3</b>	VLED-	P	Power for LED backlight (Cathode)
<b>4</b>	VLED-	P	Power for LED backlight (Cathode)
<b>5</b>	GND	P	Ground
<b>6</b>	VCOM	P	Common voltage
<b>7</b>	DVDD	P	Power for Digital Circuit
<b>8</b>	MODE	I	DE/SYNC mode select
<b>9</b>	DE	I	Data Input Enable
<b>10</b>	VS	I	Vertical Sync Input
<b>11</b>	HS	I	Horizontal Sync Input
<b>12-19</b>	B7-B0	I	Blue data
<b>20-27</b>	G7-G0	I	Green data
<b>28-35</b>	R7-R0	I	Red data
<b>36</b>	GND	P	Ground
<b>37</b>	DCLK	I	Sample Clock
<b>38</b>	GND	P	Ground
<b>39</b>	L/R	I	Left/right selection
<b>40</b>	U/D	I	Up/down selection
<b>41</b>	VGH	P	Gate ON voltage
<b>42</b>	VGL	P	Gate OFF voltage

<b>43</b>	AVDD	P	Power for Analog Circuit
<b>44</b>	RESET	I	Global reset pin
<b>45</b>	STBYB	I	ON display and OFF display
<b>46</b>	VCOM	P	Common voltage
<b>47</b>	DITHB	I	Dithering function
<b>48</b>	GND	P	Ground
<b>49-50</b>	NC	-	No connection

## 10.2 Touch Panel Connector

PIN	SYMBOL	DESCRIPTION
<b>1</b>	USB_GND	USB Ground
<b>2</b>	USB_VDD	USB Power for CTP, 5.0V
<b>3</b>	USB_D-	USB Data signal-
<b>4</b>	USB_D+	USB Data signal+
<b>5</b>	I2C_GND	I2C Ground
<b>6</b>	I2C_VDD	I2C Power for CTP 3.3V
<b>7</b>	I2C_RST	I2C Reset pin, active low
<b>8</b>	I2C_SCL	I2C Clock input
<b>9</b>	I2C_INT	I2C Interrupt signal from CTP, active low
<b>10</b>	I2C_SDA	I2C Data signal

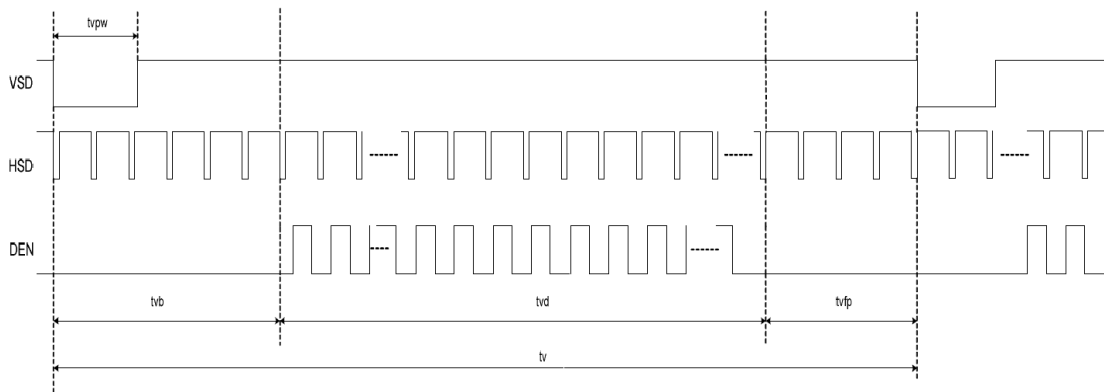
## 10.3 CN1 assignment

PIN	SYMBOL	DESCRIPTION
<b>1</b>	USB_VDD	USB_Power for CTP, DC 5.0V
<b>2</b>	USB_D-	USB_Data signal -

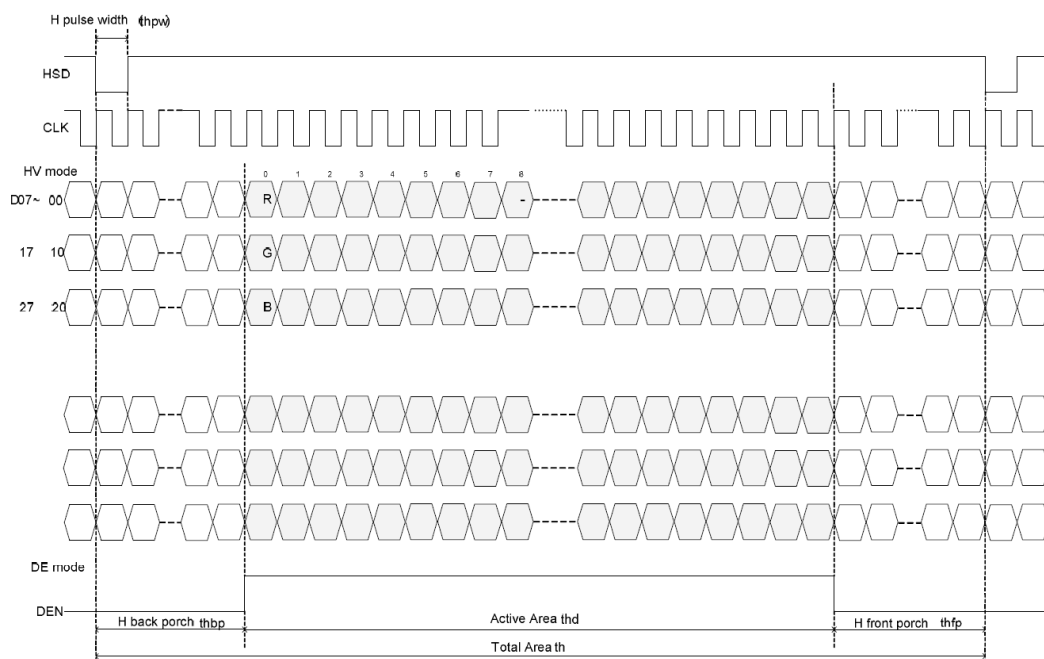
3	USB_D+	USB_Data signal +
4	USB_GND	USB_Ground

## 11. TIMING CHART

### 11.1 Vertical Input Timing



### 11.2 Horizontal Input Timing



## 11.3 Parallel RGB Timing Characteristic

### 11.3.1 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	1024			DCLK
HSYNC period time	Th	1114	1344	1400	DCLK
HSYNC blanking	Thb+thfp	90	320	376	DCLK
Vertical display area	Tvd	600			H
VSYNC period time	Tv	610	635	800	H
VSYNC blanking	Tvb+tvfp	10	35	200	H

### 11.3.2 HV Mode (Horizontal input timing)

PARAMETER	SYMBOL	MIN	TYP	MAX	UNIT
DCLK frequency @Frame rate=60Hz	Fclk	44.9	51.2	63	MHz
Horizontal display area	Thd	1024			DCLK
1 Horizontal line	Th	1200	1344	1400	DCLK
HSYNC Pulse Width	Thpw	1	-	140	DCLK
HSYNC back porch	Thbp	160	160	160	DCLK
HSYNC front porch	Thfp	16	160	216	DCLK

### 11.3.3 HV Mode (Vertical input timing)

PARAMETER	SYMBOL	MIN	TYP	MAX	UNIT
Vertical display area	Tvd	600			H
1 VSYNC period time	Tv	624	635	750	H
VSYNC Pulse Width	Tvpw	1	-	20	H
VSYNC back porch	Tvbp	23	23	23	H
VSYNC front porch	Tvfp	1	12	127	H

## 12. INSPECTION

Standard acceptance/rejection criteria for TFT module according to document available [here](#).

## 13. RELIABILITY TEST

NO.	TEST ITEM	TEST CONDITION	NOTE
1	High Temperature Storage	80°C/120 hours	A,B,C,D,E
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	+60°C, 90%RH, 120hrs	
6	Thermal Cycling Test (No operation)	-20°C/30 min ~ +70°C/30 min for a total 10 cycles, Start with cold temperature and end with high temperature.	A,B,C,D,E
7	Vibration Test	Sweep:10Hz~55Hz~10Hz 2G 2 hours for each direction of X. Y. Z. (6 hours for total)	A,B,C,D,E
8	Package Vibration Test	Random Vibration : 0.015G*G/Hz from 5-200HZ, -6dB/Octave from 200-500HZ 2 hours for each direction of X. Y. Z. (6 hours for total)	A,B,C,D,E
8	Package Drop Test	Height: 60 cm 1 corner, 3 edges, 6 surfaces	A,B,C,D,E
9	ESD	Contact=+/-2KV, Air=+/-4KV,(R=330R,C=150pF), 1 sec,9point,10times/point;	A,B,C,D,E

### Notes

- A. LCM each function is OK.
- B. LCM appearance inspection without abnormalities (Including scratch, damage, corrosion and serious deformation)
- C. LCM brightness above the Min. value of Spec.
- D. Luminance uniformity above the Min. value of Spec.
- E. Color chromaticity within tolerance range.

## 14. 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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Stuck on a technical challenge? Need expert guidance?  
Our dedicated support team is just a message away.

Contact us at

[contact@riverdi.com](mailto:contact@riverdi.com)

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