



TFT MODULE SPECIFICATION

## **RVT156HKLFWCA0-B**

HB, IPS LVDS 15.6" FULL HD LCD TFT display datasheet  
Rev. 1.1  
2026-02-06

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

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ITEM	CONTENTS	UNIT
LCD Type	TFT/Transmissive/Normally Black/IPS	/
Size	15.6	Inch
Viewing Direction	All	/
Outside Dimensions (W x H x D)	385.20 x 214.40 x 10.55	mm
Active Area (W x H)	345.76 x 195.19	mm
Pixel Pitch (W x H)	0.1793 x 0.1793	mm
Resolution	1920 x 1080	/
Brightness	850	cd/m <sup>2</sup>
Color Depth	16.7 M	/
Pixel Arrangement	RGB Vertical Stripe	/
Interface	LVDS	/
With/Without Touch	With Projected Capacitive Touch Panel	/
CTP Driver	ILI2510	/
Bonding Technology	Optical Bonding	/
Weight	1550	g

**Note 1.** RoHS3 compliant

**Note 2.** LCM weight tolerance:  $\pm 5\%$ .

## 1. REVISION RECORD

REV NO.	REV DATE	CONTENTS	REMARKS
1.0	2025-05-26	Initial release	
1.1	2026-02-06	Drawing LED diagram update	

## 2. CONTENTS

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### 3. MODULE CLASSIFICATION INFORMATION

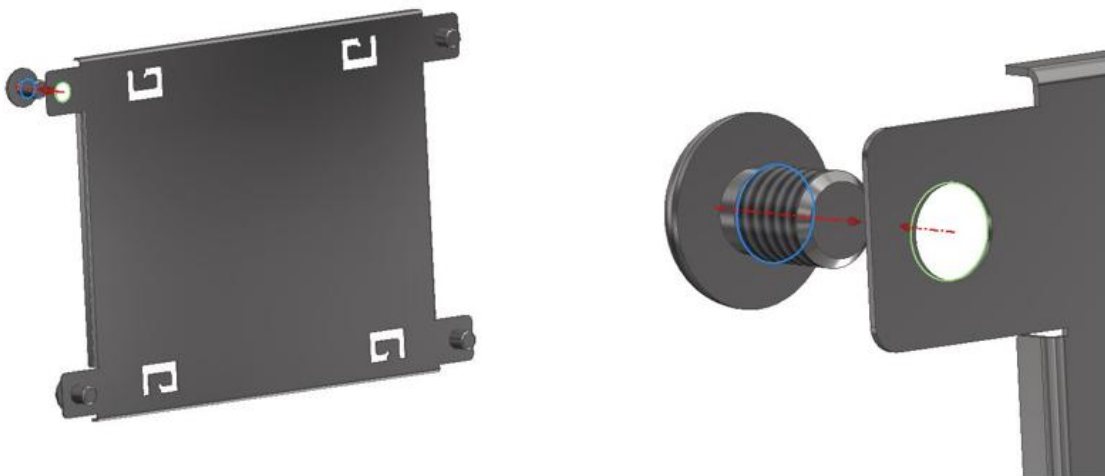
RV	T	156	H	K	L	F	W	C	A0	B
1.	2.	3.	4.	5.	6.	7.	8.	9.	10.	11.

NO.	PARAMETER	SYMBOL
1.	BRAND	RV - Riverdi
2.	PRODUCT TYPE	T - TFT Standard
3.	DISPLAY SIZE	156 - 15.6"
4.	MODEL SERIAL NO.	H - High Brightness, IPS
5.	RESOLUTION	K - 1920 x 1080 px
6.	INTERFACE	L - LVDS
7.	FRAME	F - With Mounting Metal Frame
8.	BACKLIGHT TYPE	W - LED White
9.	TOUCH PANEL	C - With Capacitive Touch Panel
10.	VERSION	A0 - version
11.	BONDING TECHNOLOGY	B - Optical bonding

## 4. ASSEMBLY

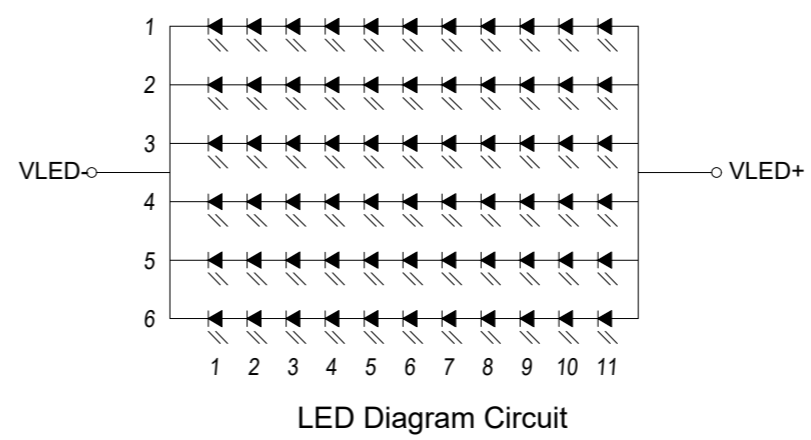
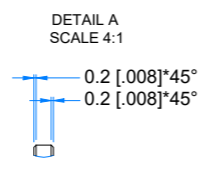
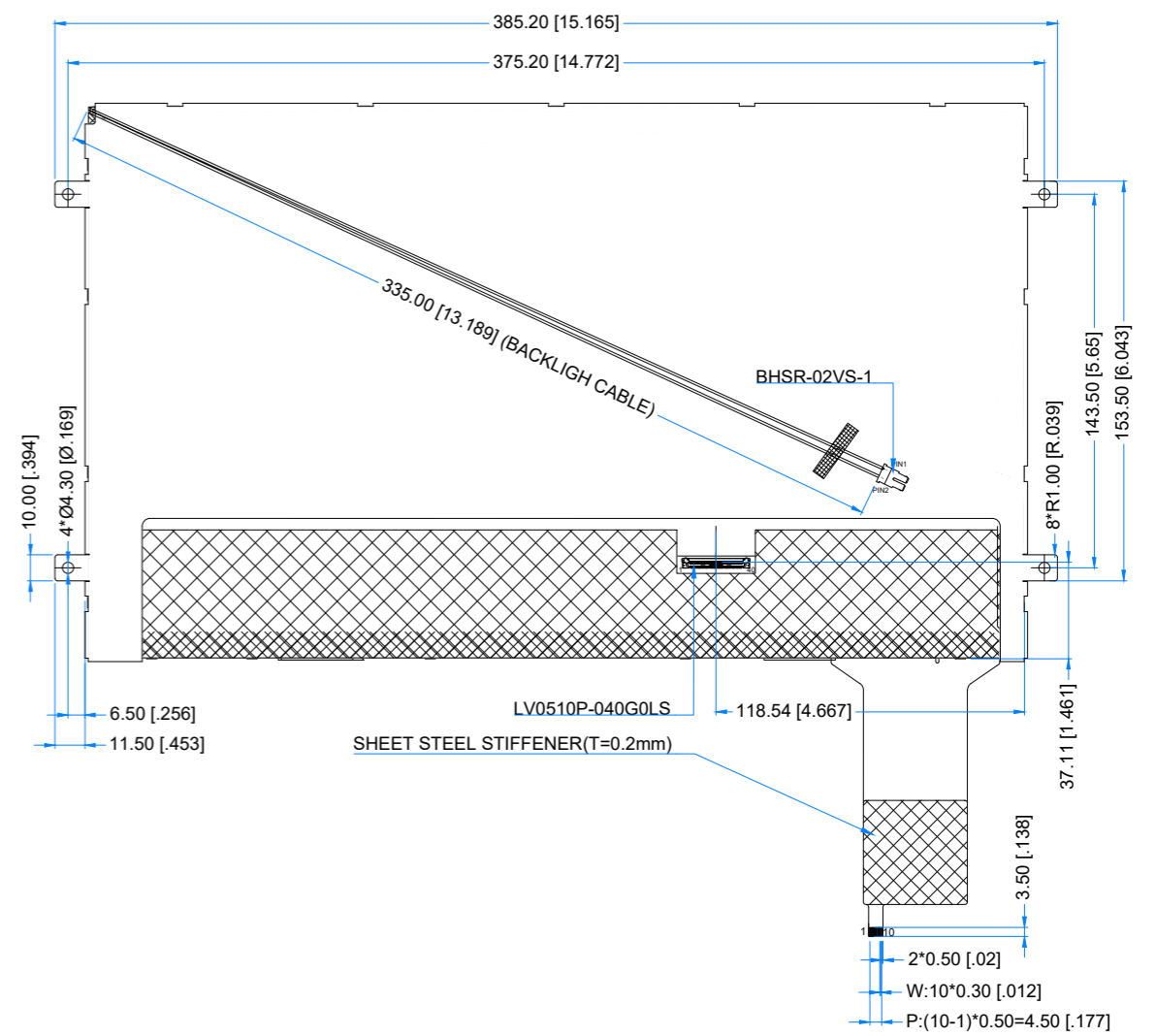
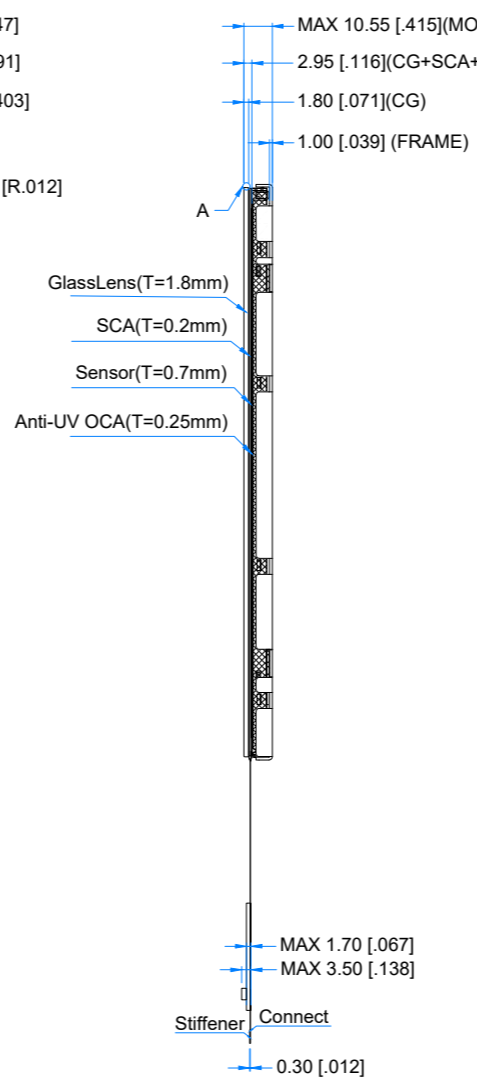
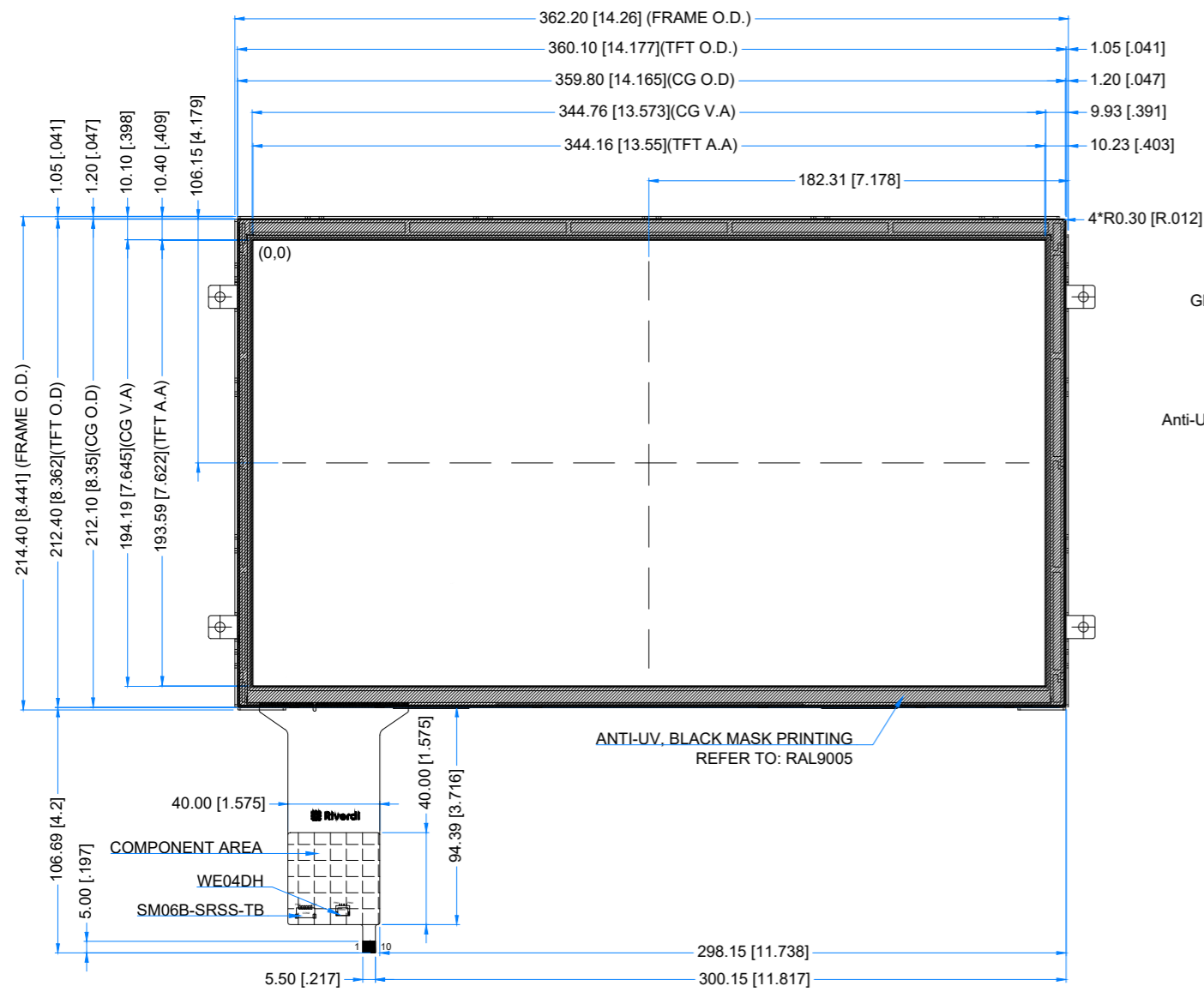
### 4.1 Mounting Frame

For dimensions 3.5", 4.3", 5.0", 7.0", 10.1", 12.1" and 15.6", the product with mounting frame version is available. Thanks to the four catches attached to the side, frame provides strong assembly to the surface by mounting element (like the screw, see Figure 1). The frames are specially designed to fit Riverdi products perfectly. The diameter of the mounting hole is 3.5mm.



*Figure 1. Mounting Frame*

Revision:	Changes:	Date:
1.0	Initial Case	2025.05.13
1.1	Changed LED Diagram Circuit	2026.02.06



**TFT NOTES:**  
1. DISPLAY TYPE: TRANSMISSIVE, NORMALLY BLACK  
2. RESOLUTION: 1920 x 1080  
3. VIEWING ANGLE: FREE  
4. DRIVING VOLTAGE: 3.3V  
5. BACKLIGHT: 66 PCS LEDS, Vf=32.0V(typ.), If=300mA

**TP NOTES:**  
1. TP STRUCTURE: G+G  
2. CG THICKNESS: 1.8mm  
3. DRIVER IC: ILI2510  
4. INTERFACE: USB, I2C  
5. OPERATING VOLTAGE: 3.3V(CTP\_I2C); 5.0V (CTP\_USB)

**GENERAL NOTES:**  
1. MODULE SURFACE LUMINANCE: 850 cd/m<sup>2</sup>  
2. OPTICAL BONDING  
3. OPERATING TEMPERATURE: -20°C ~ 70°C  
4. STORAGE TEMPERATURE: -30°C ~ 80°C  
5. WITHOUT INDIVIDUAL TOLERANCE: ±0.3mm  
6. RoHS COMPLIANT

PN: RVT156HKLFWCA0-B	
SN:	
DRAWN: M.Stabinski	2026.02.06
CHECKED: M.Wierzbowski	2026.02.06
APPR: M.Wierzbowski	2026.02.06



1:2.82	
[mm]	
ISO A3	
P. 1 of 1	

## 6. ABSOLUTE MAXIMUM RATINGS

PARAMETER	SYMBOL	MIN	MAX	UNIT
Power Supply Voltage	$V_{CC}$	-0.3	4.0	V
Reference Voltage	$V_{IN}$	-0.3	$V_{CC}+0.3$	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.

## 7. ELECTRICAL CHARACTERISTICS

PARAMETER	SYMBOL	MIN	TYP	MAX	UNIT
Power Supply Voltage	$V_{CC}$	3.0	3.3	3.6	V
Logic Input Voltage	$V_{IH}$	$0.7V_{CC}$	-	$V_{CC}$	V
	$V_{IL}$	0	-	$0.3V_{CC}$	V

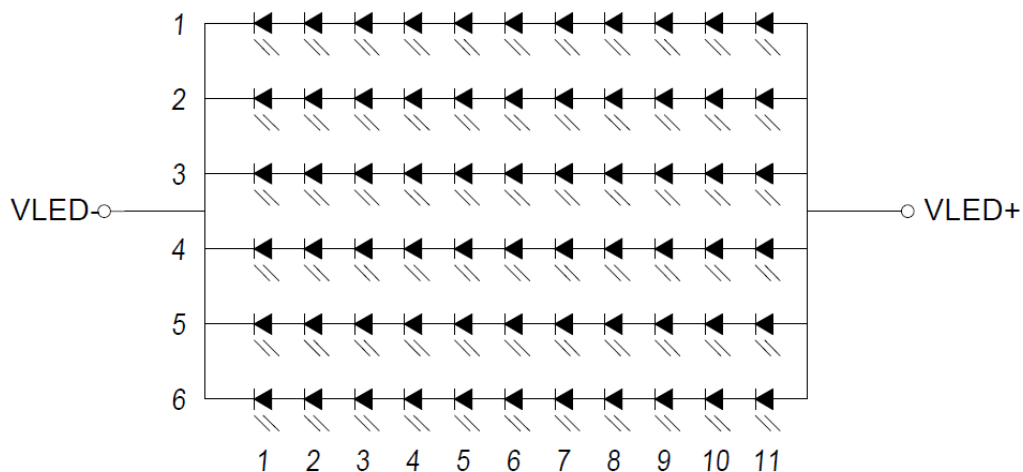
## 8. BACKLIGHT ELECTRICAL CHARACTERISTICS

PARAMETER	SYMBOL	MIN	TYP	MAX	UNIT	NOTE
Backlight driving voltage	$V_F$	30.0	32.0	35.0	V	
Backlight driving current	$I_F$	-	300		mA	
Backlight Power Consumption	$W_{BL}$	-	9.6		W	
Lifetime	-	-	50,000	-	hours	Note 1

**Note 1.** Unless specified, the ambient temperature  $T_a = 25^\circ\text{C}$ , each LED,  $I_f = 50\text{mA}$ ,  $V_f = 3.2 \pm 0.2$  V.

**Note 2.** The recommended operating conditions refer to a range in which operation of this product is guaranteed. The operation cannot be guaranteed if the absolute maximum values exceed.

**Note 3.** If LED is driven by high current, high ambient temperature and humidity condition, the lifetime of LED will be reduced. Operating life means brightness goes down to 50% initial brightness. Typical operating lifetime is estimated data.



LED Diagram Circuit

## 9. ELECTRO-OPTICAL CHARACTERISTICS

ITEM	SYMBOL	CONDITION	MIN	TYP	MAX	UNIT	RMK	NOTE
Response Time	Tr+Tf	$\theta=0^\circ$ $\phi=0^\circ$ Ta=25 °C	-	25	30	ms	FIG 2.	4, 7
Contrast Ratio	Cr		800	1000	-	---	FIG 3.	1, 7
Surface Luminance	Lv		-	850	-	cd/m <sup>2</sup>		2, 7
Viewing Angle Range	$\theta$	$\phi = 90^\circ$ $\phi = 270^\circ$ $\phi = 0^\circ$ $\phi = 180^\circ$	80	85	-	deg	FIG 4.	6
			80	85	-	deg		
			80	85	-	deg		
			80	85	-	deg		
CIE (x, y) Chromaticity	Rx	$\theta=0^\circ$ $\phi=0^\circ$ Ta=25 °C	0.562	0.602	0.642	-	FIG 3.	5,7
	Ry		0.299	0.339	0.379	-		
	Gx		0.302	0.342	0.382	-		
	Gy		0.531	0.571	0.611	-		
	Bx		0.075	0.115	0.155	-		
	By		0.103	0.143	0.183	-		
	Wx		0.274	0.314	0.354	-		
	Wy		0.319	0.359	0.399	-		

**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, 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.

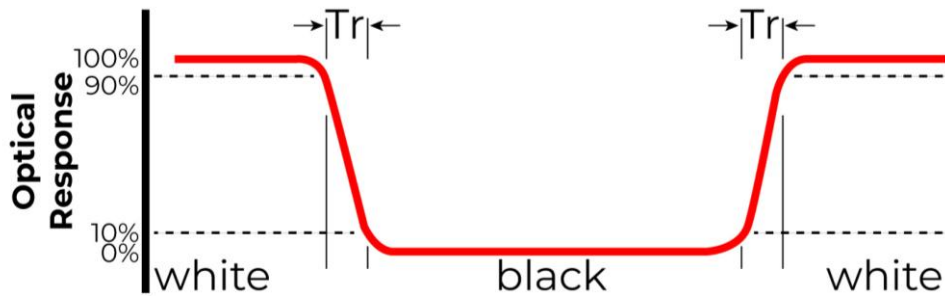


Figure 2. The definition of response time

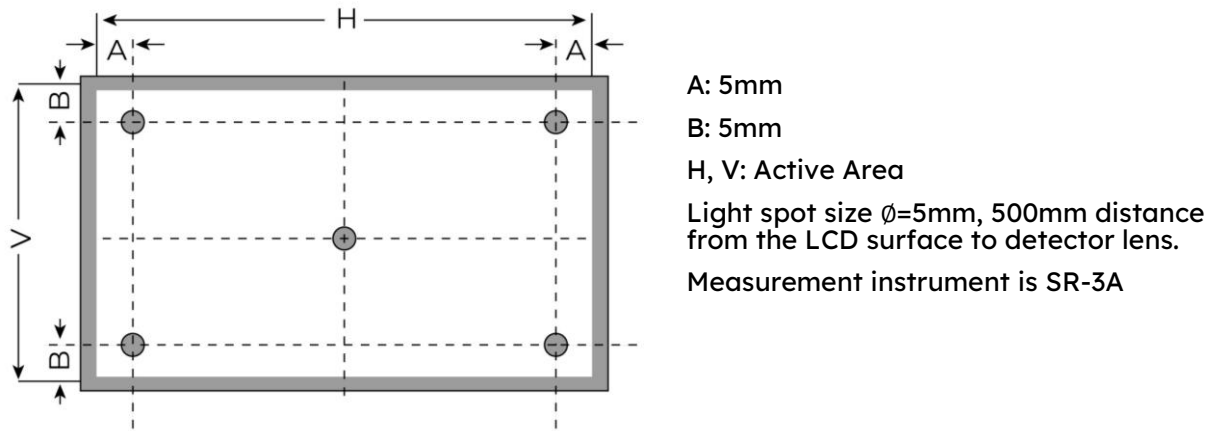


Figure 3. Measuring method for Contrast ratio, surface luminance, Luminance uniformity, CIE (x, y) chromaticity

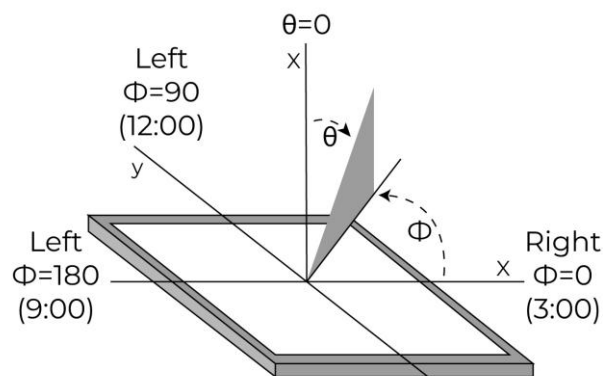


Figure 4. The definition of viewing angle

## 10. INTERFACES DESCRIPTION

### 10.1 TFT assingment

PIN	SYMBOL	I/O	DESCRIPTION	NOTE
1	RXO0-	I	Odd LVDS Negative Data Signal (-)	
2	RXO0+	I	Odd LVDS Positive Data Signal (+)	
3	RXO1-	I	Odd LVDS Negative Data Signal (-)	
4	RXO1+	I	Odd LVDS Positive Data Signal (+)	
5	RXO2-	I	Odd LVDS Negative Data Signal (-)	
6	RXO2+	I	Odd LVDS Positive Data Signal (+)	
7	GND	P	Ground	
8	RXOCLK-	I	Odd LVDS Negative Clock Signal (-)	
9	RXOCLK+	I	Odd LVDS Positive Clock Signal (+)	
10	GND	P	Ground	
11	RXO3-	I	Odd LVDS Negative Data Signal (-)	
12	RXO3+	I	Odd LVDS Positive Data Signal (+)	
13	GND	P	Ground	
14	RXE0-	I	Even LVDS Negative Data Signal (-)	
15	RXE0+	I	Even LVDS Positive Data Signal (+)	
16	RXE1-	I	Even LVDS Negative Data Signal (-)	
17	RXE1+	I	Even LVDS Positive Data Signal (+)	
18	RXE2-	I	Even LVDS Negative Data Signal (-)	
19	RXE2+	I	Even LVDS Positive Data Signal (+)	
20	GND	P	Ground	
21	RXECLK-	I	Even LVDS Negative Clock Signal (-)	

<b>22</b>	RXECLK+	I	Even LVDS Positive Clock Signal (+)	
<b>23</b>	GND	P	Ground	
<b>24</b>	RXE3-	I	Even LVDS Negative Data Signal (-)	
<b>25</b>	RXE3+	I	Even LVDS Positive Data Signal (+)	
<b>26</b>	GND	P	Ground	
<b>27</b>	V <sub>CC</sub>	P	Power supply, 3.3V	
<b>28</b>	V <sub>CC</sub>	P	Power supply, 3.3V	
<b>29</b>	BIST	I	LCD self-test Normal mode: NC or pull low; BIST mode: Pull high	
<b>30-40</b>	NC	-	No connection	

## 10.2 Touch Panel assignment

PIN	SYMBOL	DESCRIPTION	NOTE
<b>1</b>	USB_GND	USB_Ground	
<b>2</b>	USB_VDD (3.3V)	USB Power for CTP, 5.0V	Note 1
<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 (3.3V)	I2C_Power for CTP, 3.3V	Note 1
<b>7</b>	I2C_RST	I2C_Reset Pin, Active low	Note 2
<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/TXD	I2C_Data Signal	

**Note 1.** Please do not supply power to both USB\_VDD and I2C\_VDD at the same time, otherwise there is a risk that the LDO on the PCAP FPC will be destroyed.

**Note 2.** External pull-up resistors are required.

## 10.3 CN1 assingment

PIN	SYMBOL	DESCRIPTION	NOTE
1	USB_VDD (5.0V)	USB_Power for CTP, DC 5.0V	Note 1
2	USB_D-	USB_Data Signal -	
3	USB_D+	USB_Data Signal +	
4	USB_GND	USB_Ground	

**Note 1.** If USB\_VDD of CN1 is powered, please make sure to disconnect the PCAP FPC from the PCAP ZIF connector on your application. Otherwise, there is a risk that the PCAP electrical circuit will be destroyed.

## 10.4 CN2 assingment

PIN	SYMBOL	DESCRIPTION	NOTE
1	I2C_GND	I2C_Ground	
2	I2C_VDD (3.3V)	I2C_Power for CTP, 3.3V	
3	I2C_RST	I2C_Reset Pin, Active low	Note 1
4	I2C_SCL	I2C_Clock Input	
5	I2C_INT	I2C_Interrupt Signal from CTP, Active low	
6	I2C_SDA/TXD	I2C_Data Signal	

**Note 1.** External pull-up resistors are required.

## 10.5 Backlight assingment

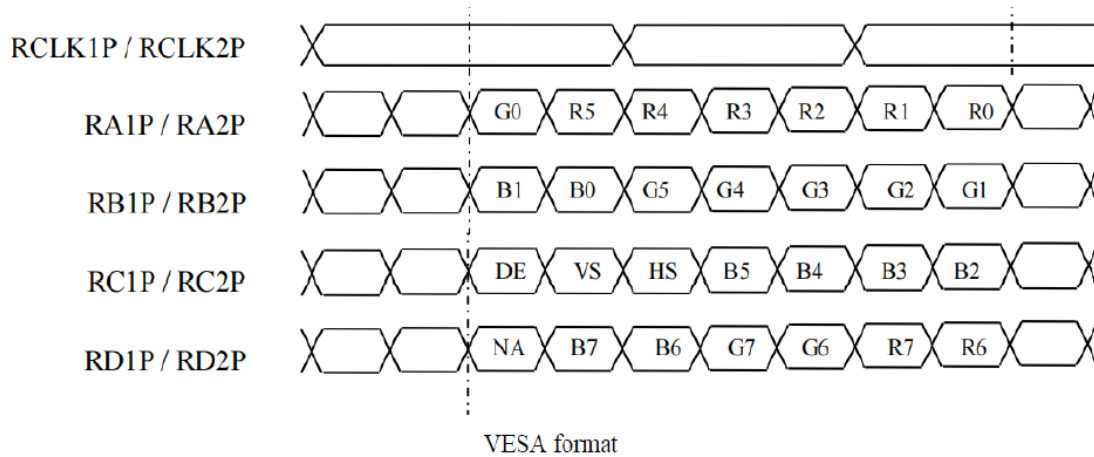
PIN	SYMBOL	DESCRIPTION	NOTE
<b>1</b>	VLED+	LEDA	Note 1
<b>2</b>	VLED-	LEDK	

**Note 1.** Backlight cable connector BHSR-02VS-1.

Matched Riverdi connector: RVA-0235-BHS

# 11. TIMING CHARACTERISTICS

## 11.1 LVDS interface

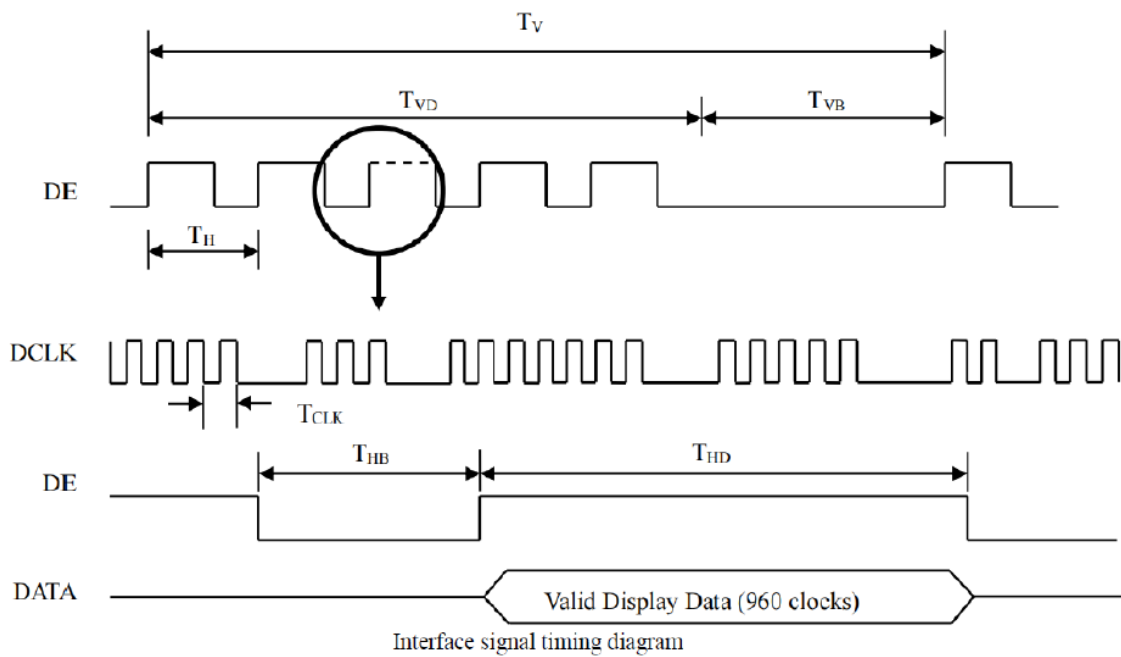


## 11.2 Display timing specifications

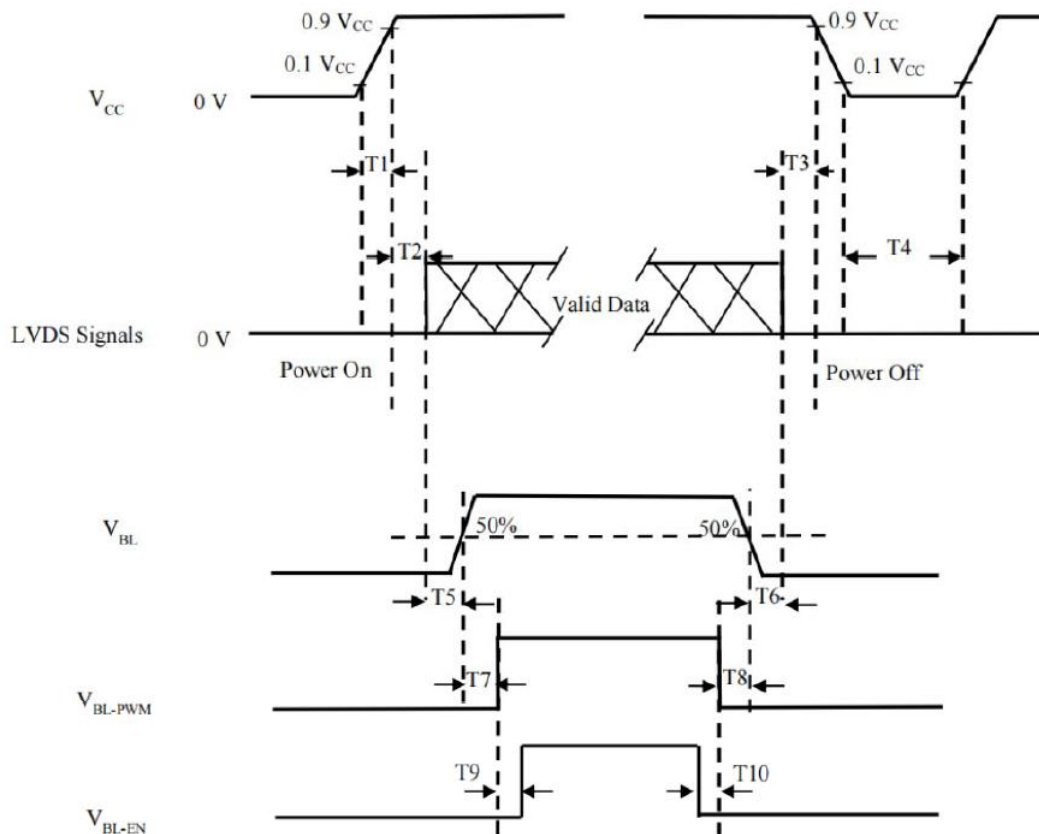
Timing Table (DE Mode Only)

SIGNAL	ITEM	SYMBOL	MIN	TYP	MAX	UNIT	NOTE
LVDS Receiver Clock	Frequency	Fclk (=1/Tclk)	59.4	74.25	77.34	MHz	
	Input cycle to cycle jitter	Trcl	-	-	200	Ps	
	Spread spectrum modulation range	Fclk_mod	Fclk-2%	-	Fclk+2%	MHz	
	Spread spectrum modulation frequency	FSSM	60	-	200	KHz	
LVDS Receiver Data	Receiver Skew Margin	TRSM	-400	-	400	Ps	
Vertical Active Display Term	Frame Rate	F	48	60	62.5	Hz	
	Total	TV	1092	1125	1380	TH	TV = TVD + TVB
	Display	TVD		1080			

	Blank	TVB	12	45	300	TH	
Horizontal Active Display Term	Total	TH	1046	1100	1174	TCLK	TH = THD + THB
	Display	THD		960			960=1920/2port
	Blank	THB	86	140	214	TCLK	



## 11.3 Power ON/OFF Sequence



PARAMETER	MIN	TYP	MAX	UNIT
T1	0.5	-	10.0	ms
T2	0.0	50	200	ms
T3	0.0	50	200	ms
T4	1000.0	-		ms
T5	500.0	-		ms
T6	100.0	-		ms
T7	0	-		ms
T8	0	-		ms
T9	0	-		ms
T10	0	-		ms

## 12. CAPACITIVE TOUCH SCREEN PANEL SPECIFICATIONS

### 12.1 Mechanical characteristics

DESCRIPTION	SPECIFICATION	REMARK
<b>Touch Panel Size</b>	15.6 inch	
<b>Outline Dimension of CTP</b>	385.20 mm x 214.40 mm	
<b>Product Thickness</b>	2.95 mm	
<b>Glass Thickness</b>	1.8 mm	
<b>CTP View Area</b>	344.16 mm x 193.59 mm	
<b>Sensor Active Area</b>	345.76 mm x 194.19 mm	
<b>Surface Hardness</b>	6H	

### 12.2 Electrical characteristics

DESCRIPTION	SPECIFICATION	REMARK
<b>Linearity</b>	+/-1.5mm	
<b>Controller</b>	ILI2510	
<b>Resolution</b>	1920 x 1080	

## 13. INSPECTION

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

## 14. RELIABILITY TEST

NO.	TEST ITEM	TEST CONDITION	NOTE
1	High Temperature Storage	80°C/120 hours	Note 1
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	40°C, 90%RH, 120Hrs	
7	Thermal Cycling Test (No operation)	-20°C for 30min, 70°C for 30 min. 100 cycles. Then test at room temperature after 1 hour	Note 2
8	Vibration Test	Frequency: 10 ÷ 55 Hz. Stroke: 1.5 mm. Sweep: 10Hz ÷ 55Hz ÷ 10 Hz. 2 hours for each direction of X, Y, Z (Total 6 hours)	
9	Package Drop Test	Height: 60 cm 1 corner, 3 edges, 6 surfaces	

**Note 1.** Sample quantity for each test item is 5 ÷ 10 pcs.

**Note 2.** The device is kept at room temperature for 2 hours prior to starting the test

## 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.

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](mailto:contact@riverdi.com)

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