TFT MODULE SPECIFICATION

RVT156HKLNWCA0-B

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

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)	360.10 x 212.40 x 9.10	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^2
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	1075	g

Note 1. RoHS3 compliant

Note 2. LCM weight tolerance: ± 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	

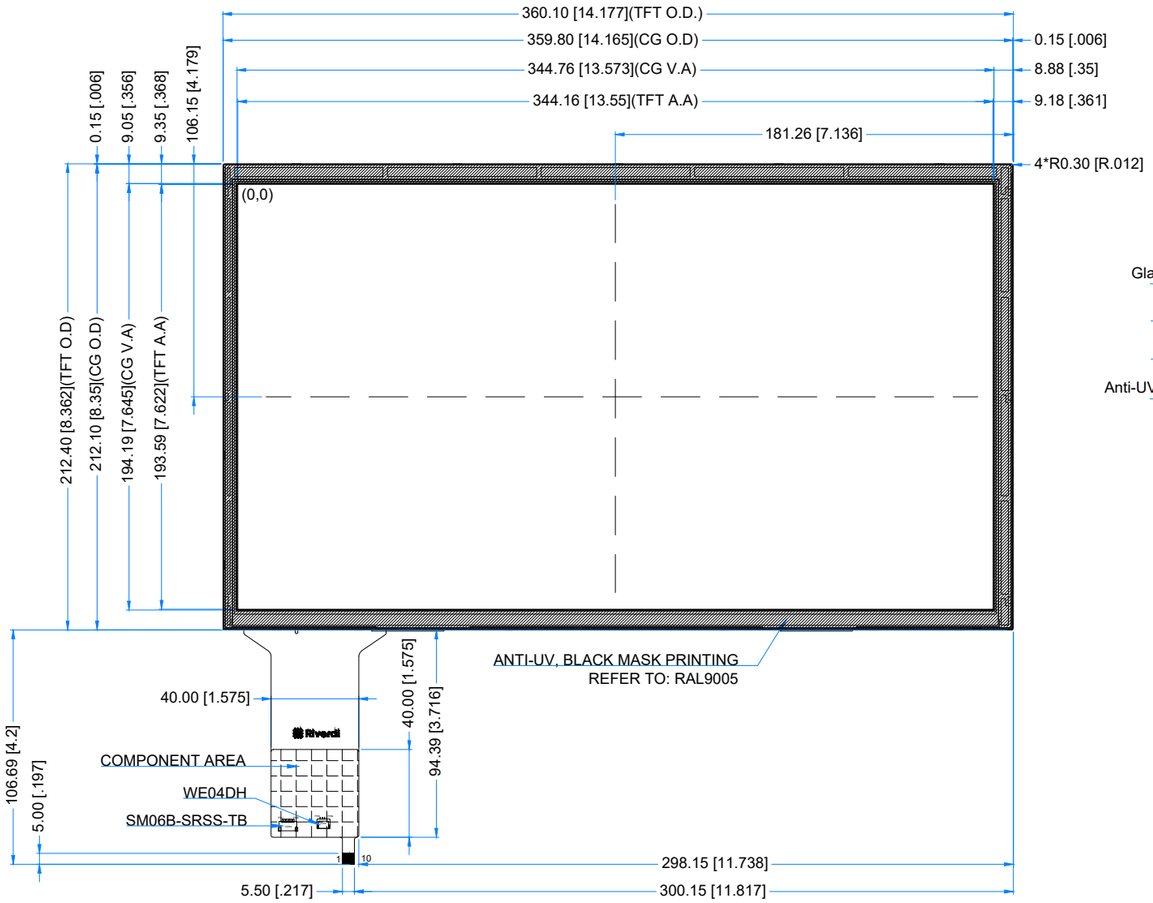
2. CONTENTS

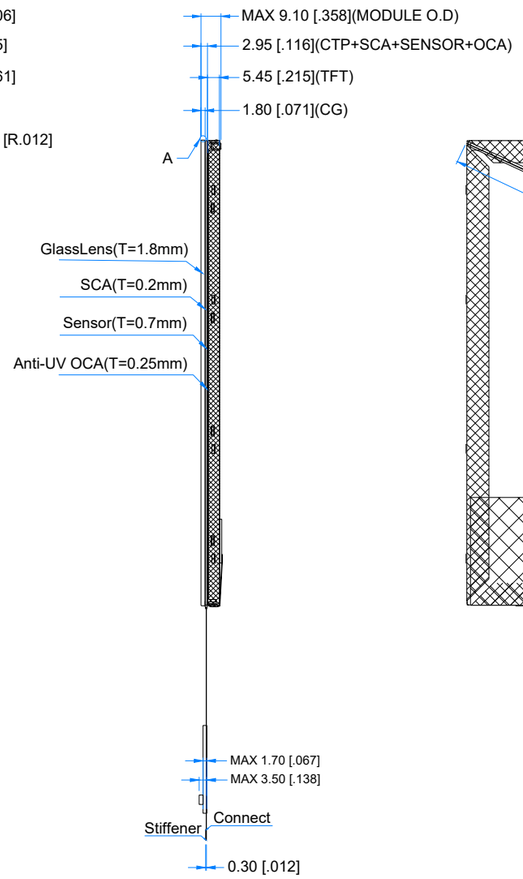
3. MODULE CLASSIFICATION INFORMATION

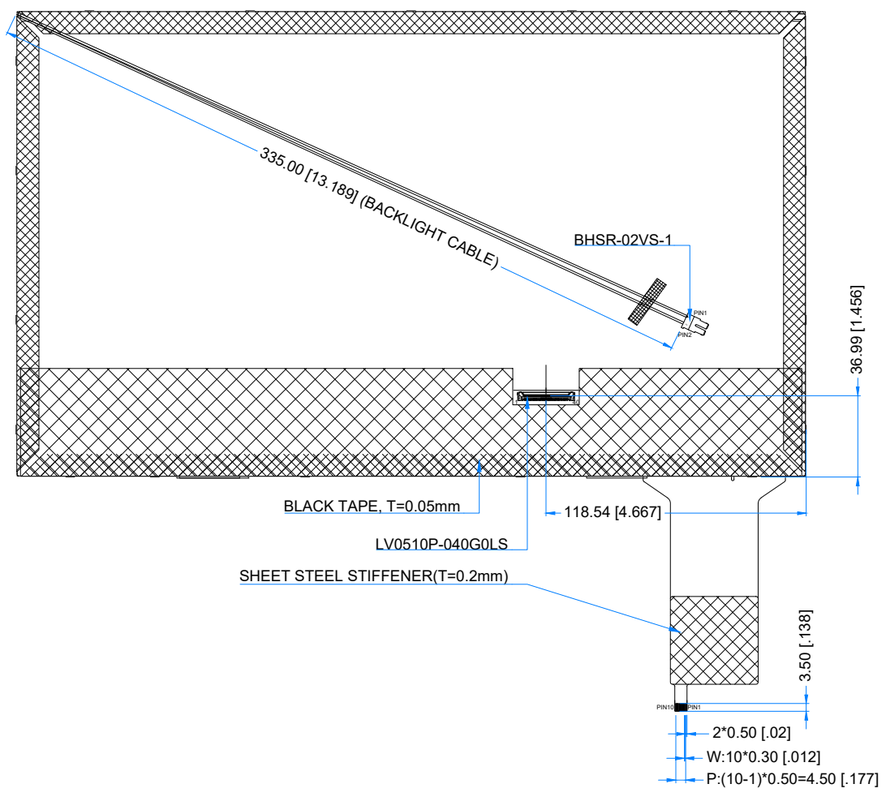
RV	T	156	H	K	L	N	W	C	A0	B
1.	2.	3.	4.	5.	6.	7.	8.	9.	10.	11.

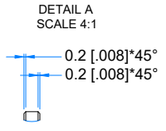
NO.	PARAMETER	SYMBOL
1.	BRAND	RV – Riverdi
2.	PRODUCT TYPE	T – TFT Standard
3.	DISPLAY SIZE	156 – 15.6”
4.	MODEL SERIAL NO.	H – High Brightness, IPS
5.	RESOLUTION	K – 1920 x 1080 px
6.	INTERFACE	L – LVDS
7.	FRAME	N – Without Mounting Metal Frame
8.	BACKLIGHT TYPE	W – LED White
9.	TOUCH PANEL	C – With Capacitive Touch Panel
10.	VERSION	A0 – version
11.	BONDING TECHNOLOGY	B – Optical bonding

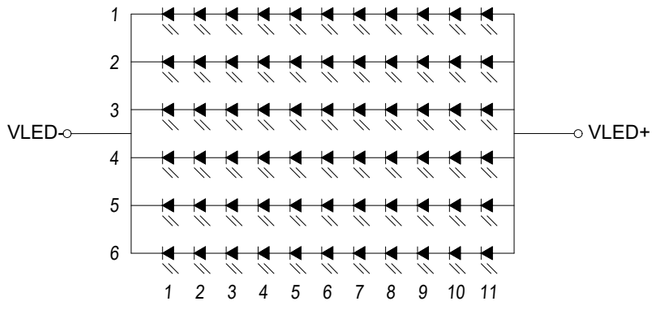
Revision:	Changes:	Date:
1.0	Initial Case	2025.05.13
1.1	Changed LED Diagram Circuit	2026.02.06











LED Diagram Circuit

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. OPERATING VOLTAGE: 3.3V(CTP_I2C); 5.0V (CTP_USB)

GENERAL NOTES:
1. MODULE LUMINANCE: 850 cd/m^2
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: RVT156HKLNWCA0-B				Riverdi
SN:				
DRAWN:	M.Stabinski	2026.02.06	1:2.79	
CHECKED:	M.Wierzbowski	2026.02.06	[mm]	
APPR:	M.Wierzbowski	2026.02.06	ISO A3	P. 1 of 1

5. 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.

6. 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

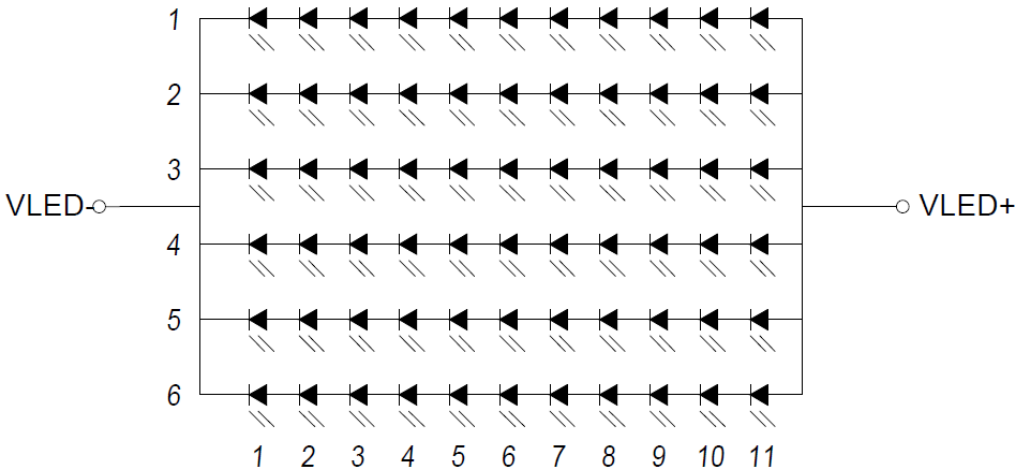
7. BACKLIGHT ELECTRICAL CHARACTERISTICS

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℃, each LED, If = 50mA, Vf= 3.2+/-02. 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

8. ELECTRO-OPTICAL CHARACTERISTICS

ITEM	SYMBOL	CONDITION	MIN	TYP	MAX	UNIT	RMK	NOTE
Response Time	Tr+Tf	θ=0° ø=0° Ta=25 °C	-	25	30	ms	FIG 1.	4, 7
Contrast Ratio	Cr		800	1000	-	---	FIG 2.	1, 7
Surface Luminance	Lv		-	850	-	cd/m 2		2, 7
Viewing Angle Range	θ	ø = 90°	80	85	-	deg	FIG 3.	6
		ø = 270°	80	85	-	deg		
		ø = 0°	80	85	-	deg		
		ø = 180°	80	85	-	deg		
CIE (x, y) Chromaticity	Rx	θ=0° ø=0° Ta=25 °C	0.562	0.602	0.642	-	FIG 2.	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.

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.

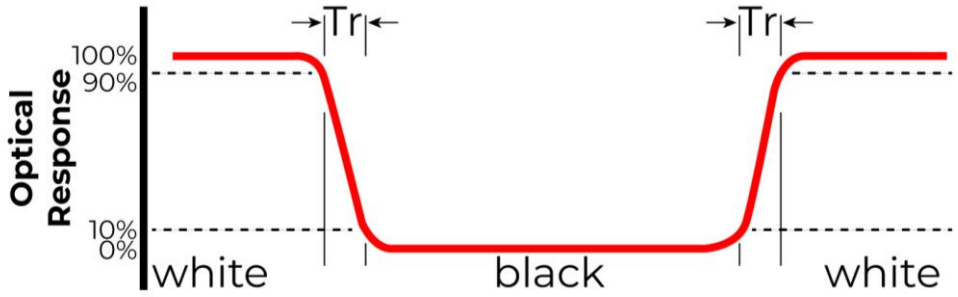
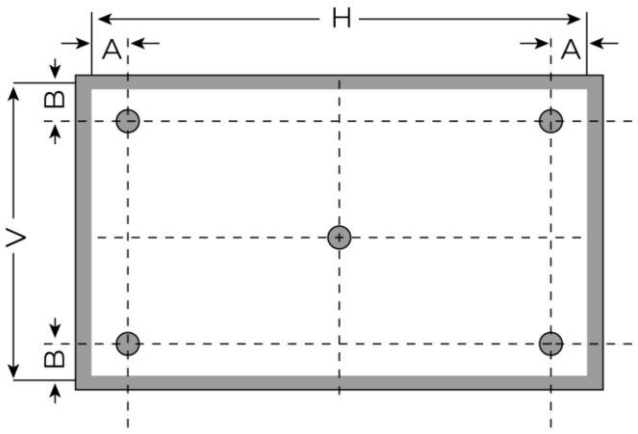


Figure 1. The definition of response time



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

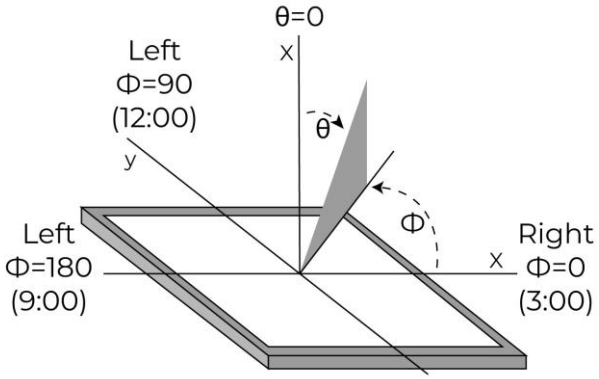


Figure 3. The definition of viewing angle

9. INTERFACES DESCRIPTION

9.1 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	RXO03+	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 (-)	

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

9.2 Touch Panel assingment

PIN	SYMBOL	DESCRIPTION	NOTE
1	USB_GND	USB_Ground	
2	USB_VDD (3.3V)	USB Power for CTP, 5.0V	Note 1
3	USB_D-	USB_Data Signal -	
4	USB_D+	USB_Data Signal +	
5	I2C_GND	I2C_Ground	
6	I2C_VDD (3.3V)	I2C_Power for CTP, 3.3V	Note 1
7	I2C_RST	I2C_Reset Pin, Active low	Note 2
8	I2C_SCL	I2C_Clock Input	
9	I2C_INT	I2C_Interrupt Signal from CTP, Active low	
10	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.

9.3 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.

9.4 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.

9.5 Backlight assingment

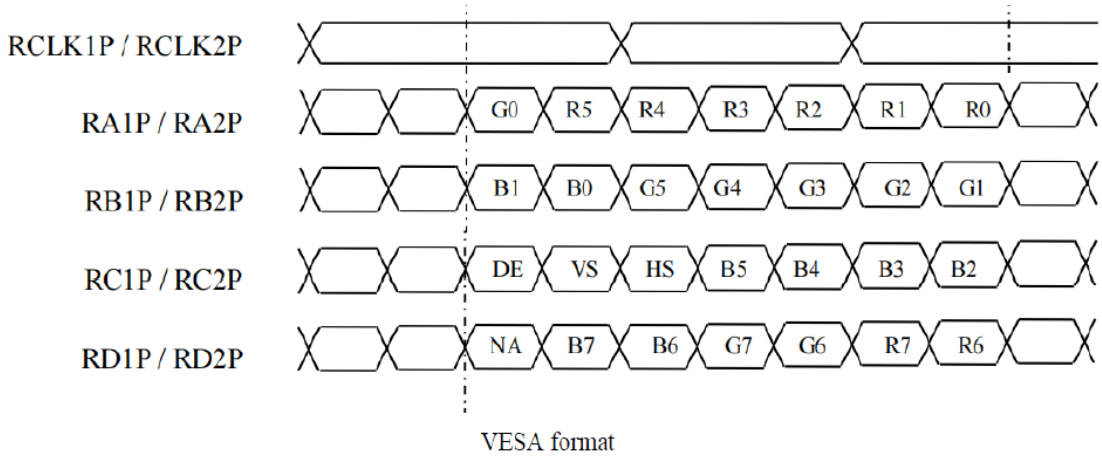
PIN	SYMBOL	DESCRIPTION	NOTE
1	VLED+	LEDA	Note 1
2	VLED-	LEDK	

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

Matched Riverdi connector: RVA-0235-BHS

10. TIMING CHARACTERISTICS

10.1 LVDS interface

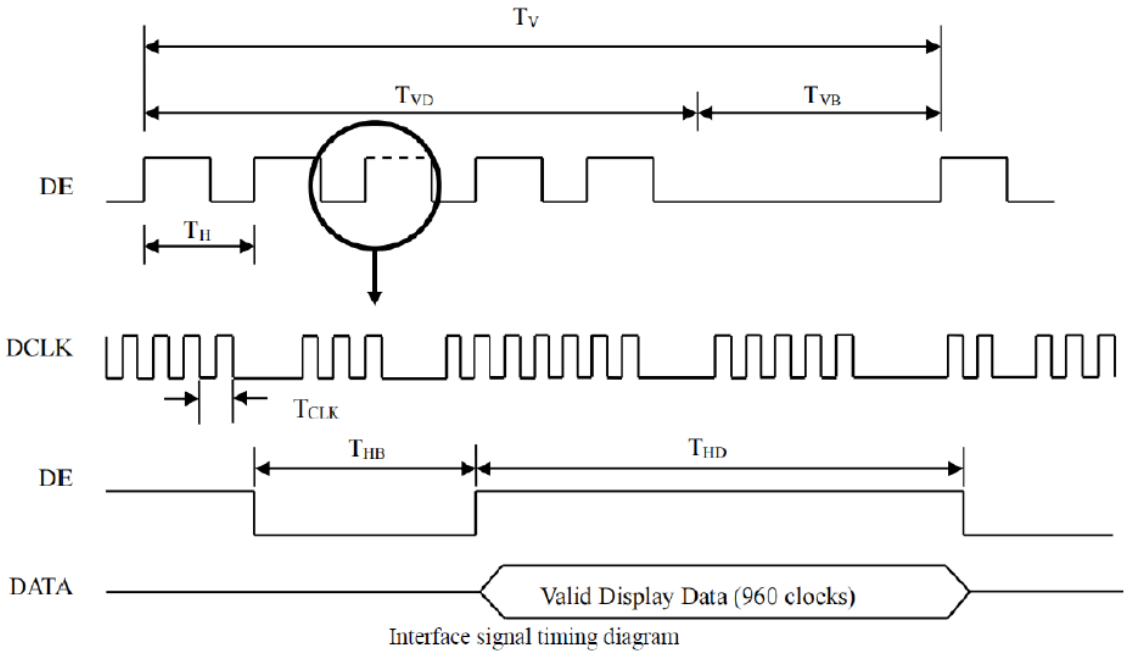


10.2 Display timing specifications

Timing Table (DE Mode Only)

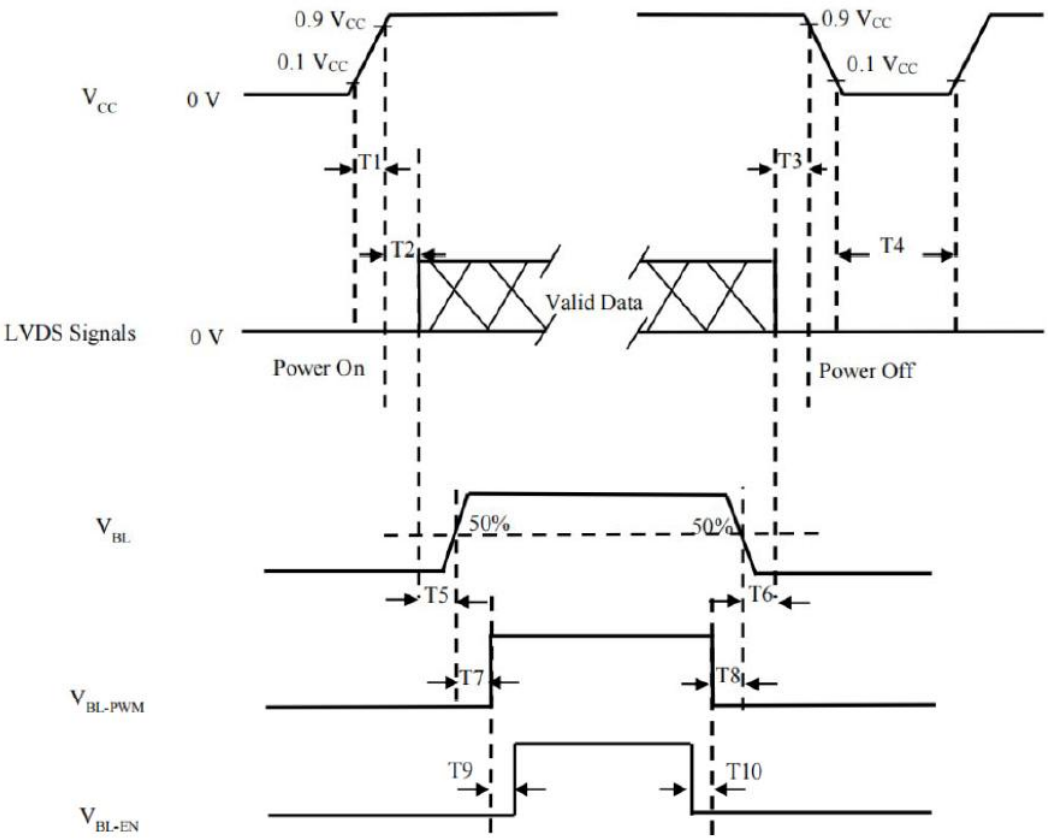
SIGNAL	ITEM	SYMBOL	MIN	TYP	MAX	UNIT	NOTE
LVDS Receiver Clock	Frequency	Fclkin (=1/TClk)	59.4	74.25	77.34	MHz	
	Input cycle to cycle jitter	Trcl	-	-	200	Ps	
	Spread spectrum modulation range	Fclkin_mod	Fclkin-2%	-	Fclkin+2%	MHz	
	Spread spectrum modulation frequency	FSSM	60	-	200	KHz	
LVDS Receiver Data	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	



Interface signal timing diagram

10.3 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

11. CAPACITIVE TOUCH SCREEN PANEL SPECIFICATIONS

11.1 Mechanical characteristics

DESCRIPTION	SPECIFICATION	REMARK
Touch Panel Size	15.6 inch	uxTouch
Outline Dimension of CTP	360.10 mm x 212.40 mm	
Product Thickness	2.95 mm	
Glass Thickness	1.8 mm	
CTP View Area	344.76 mm x 194.19 mm	
Sensor Active Area	345.76 mm x 195.19 mm	
Surface Hardness	6H	

11.2 Electrical characteristics

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

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	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℃, 90%RH, 120Hrs	
7	Thermal Cycling Test (No operation)	-20℃ for 30min, 70℃ 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

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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