



TFT MODULE SPECIFICATION

RVT101HVCNWCA0 V1

Computer Module 10.1" LCD TFT display datasheet
Rev. 1.2
2026-09-10

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ITEM	CONTENTS	UNIT
LCD Type	TFT/Transmissive/Normally Black/IPS	/
Size	10.1	Inch
Viewing Direction	Free	/
Outside Dimensions (W x H x D)	229.46 x 149.10 x 16.68	mm
Active Area (W x H)	216.96 x 135.60	mm
Pixel Pitch (W x H)	0.1695 x 0.1695	mm
Resolution	1280 (RGB) x 800	/
Brightness	800	cd/m ²
Color Depth	16.7 M	/
Pixel Arrangement	RGB Vertical Stripe	/
Interface	Compute Module 4	/
Supply Voltage for Module	7.5-55.0	V
With/Without Touch	With Projected Capacitive Touch Panel	/
CTP Driver	ILI2132A	/
Bonding Technology	Air Bonding	/
Weight	TBD	g

Note 1. RoHS3 compliant

Note 2. LCM weight tolerance: ± 5%.

1. REVISION RECORD

REV NO.	REV DATE	CONTENTS	REMARKS
1.0	2025-11-13	Initial release	
1.1	2026-07-14	Update of documentation and drawing.	
1.2	2026-09-10	Drawing updated. Changed PCBA position.	

2. CONTENTS

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3. MODULE CLASSIFICATION INFORMATION

RV	T	101	H	V	C	N	W	C	A0	V1
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	101 – 10.1”
4.	MODEL SERIAL NO.	H – High Brightness, IPS
5.	RESOLUTION	V – 1280 x 800 px
6.	INTERFACE	C – Compute Module 4
7.	FRAME	N – Without Mounting Metal Frame
8.	BACKLIGHT TYPE	W – LED White
9.	TOUCH PANEL	C – with Capacitive Touch Panel
10.	VERSION	A0 – aTouch
11.	MODULE REVISION	V1

5. ABSOLUTE MAXIMUM RATINGS

PARAMETER	SYMBOL	MIN	MAX	UNIT
Supply Voltage for Module	V_{DD}	-0.5	60.0	V
Digital I/O signals voltage	-	-0.5	3.3	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.

Most of the GPIOs have the 5.0 V tolerant input voltage, please refer to the datasheet of CM4 for more details.

6. ELECTRICAL CHARACTERISTICS

PARAMETER	SYMBOL	MIN	TYP	MAX	UNIT
Supply Voltage for Module	V_{DD}	7.5	12.0	55.0	V
Power Enable Voltage	V_{EN}	0	-	VDD	V
Input Voltage „L” Level	V_{IL}	0	-	0.8	V
Input Voltage „H” Level	V_{IH}	2.0	-	3.3	V

PARAMETER	CONDITION	SYMBOL	MIN	TYP	MAX	UNIT
Current drawn from V _{DD} @7.5V	Power 'Enable' = '0'	I _{VDD}	-	160	170	uA
Current drawn from V _{DD} @12.0V			-	250	260	uA
Current drawn from V _{DD} @24.0V			-	490	500	uA
Current drawn from V _{DD} @36.0V			-	730	740	uA
Current drawn from V _{DD} @48.0V			-	970	980	uA
Current drawn from V _{DD} @55.0V			-	1110	1120	uA
Current drawn from V _{DD} @7.5V	Power 'Enable' = '1'	I _{VDD}	530	680	840	mA
Current drawn from V _{DD} @12.0V			330	470	610	mA
Current drawn from V _{DD} @24.0V			170	290	410	mA
Current drawn from V _{DD} @36.0V			120	120	320	mA
Current drawn from V _{DD} @48.0V			90	160	240	mA
Current drawn from V _{DD} @55.0V			80	140	200	mA

Note.

POWER 'ENABLE' refers to pin 1, "PWR_EN" of the power input connector(J18).

POWER 'ENABLE' = '1' is when EN pin is floating or shorted to VDD_IN.

POWER 'ENABLE' = '0' is when EN pin is shorted to GND.

By default, POWER 'ENABLE' is set to "1".

MIN, TYP, MAX : Backlight 0%, 50%, 100%.

7. BACKLIGHT ELECTRICAL CHARACTERISTICS

PARAMETER	SYMBOL	MIN	TYP	MAX	UNIT	NOTE
Lifetime	-	-	50,000	-	hours	Note 1

Note. High driving current, high ambient temperature and high humidity will reduce the LED operating lifetime. Operating lifetime means brightness goes down to 50% initial brightness. Typical operating lifetime is estimated data.

8. 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	35	ms	FIG 1.	4, 7
Contrast Ratio	Cr		-	800	1000	---	FIG 2.	1, 7
Surface Luminance	Lv		-	800	-	cd/m ²		2, 7
Viewing Angle Range	θ	$\phi = 90^\circ$	75	85	-	deg	FIG 3.	6
		$\phi = 270^\circ$	75	85	-	deg		
		$\phi = 0^\circ$	75	85	-	deg		
		$\phi = 180^\circ$	75	85	-	deg		
CIE (x, y) Chromaticity	Rx	$\theta=0^\circ$ $\phi=0^\circ$ Ta=25 °C	0.569	0.609	0.649	-	FIG 2.	5,7
	Ry		0.297	0.337	0.377	-		
	Gx		0.325	0.365	0.405	-		
	Gy		0.526	0.566	0.606	-		
	Bx		0.094	0.134	0.18	-		
	By		0.083	0.123	0.174	-		
	Wx		0.280	0.320	0.360	-		
	Wy		0.305	0.345	0.385	-		

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 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, 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.

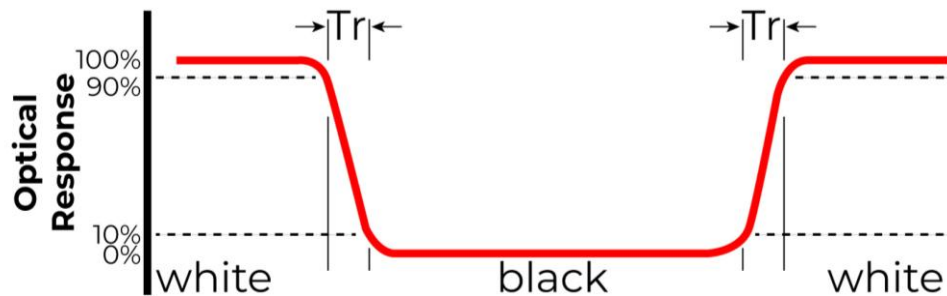


Figure 1. The definition of response time

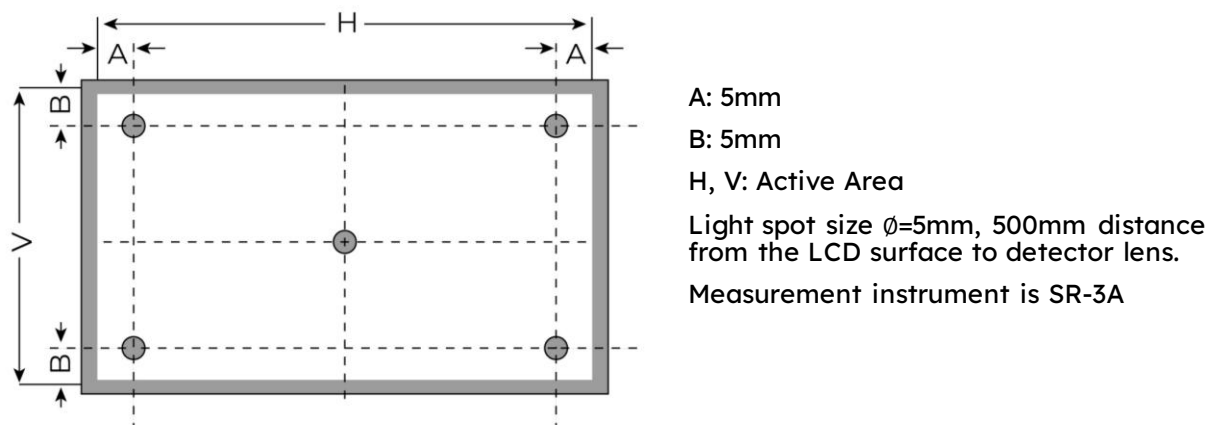


Figure 2. Measuring method for Contrast ratio, surface luminance, Luminance uniformity, CIE (x, y) chromaticity

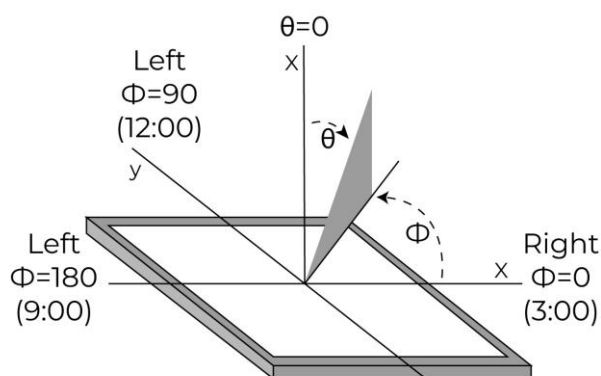
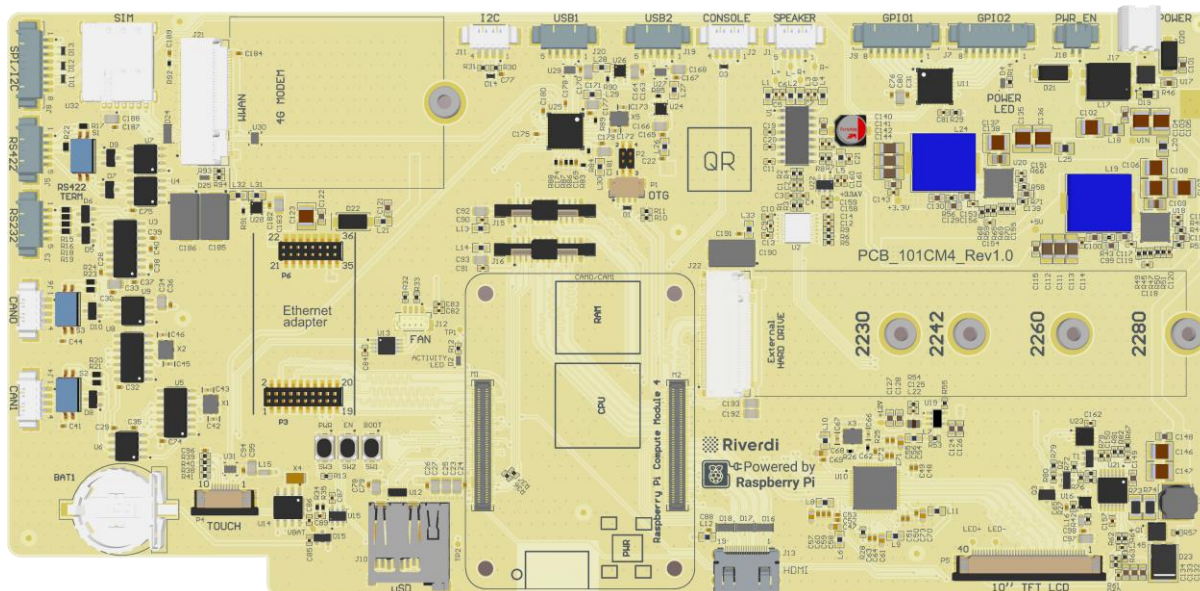


Figure 3. The definition of viewing angle

9. INTERFACES DESCRIPTION

9.1 PCB overview



9.2 Power supply interface (J17)

PIN	SYMBOL	DESCRIPTION
1	VDD_IN	Power supply input; 7.5V-55.0V
2	GND	Ground

9.3 Power enable interface (J18)

PIN	SYMBOL	DESCRIPTION
1	PWR_EN	Power enable pin; Enabled: Open, Disabled: 0V
2	GND	Ground

Note. Matched Riverdi accessory RVA-0102-1.25FF

9.4 GPIO2/GPIO1 – J7/J9

PIN	SYMBOL	DESCRIPTION
1	NC/GPB0	Not connected/ General Purpose IO8
2	GPA1/GPB1	General purpose IO1/ General purpose IO9
3	GPA2/GPB2	General purpose IO2 / General purpose IO10
4	GPA3/GPB3	General purpose IO3 / General purpose IO11
5	GPA4/GPB4	General purpose IO4 / General purpose IO12
6	GPA5/GPB5	General purpose IO5 / General purpose IO13
7	GPA6/GPB6	General purpose IO6 / General purpose IO14
8	GPA7/GPB7	General purpose IO7 / General purpose IO15

Note. Matched Riverdi accessory RVA-0108-1.25FF

9.5 Speaker – J1

PIN	SYMBOL	DESCRIPTION	NOTE
1	RIGHT+	Right channel positive output	
2	RIGHT-	Right channel negative output	
3	LEFT-	Left channel negative output	
4	LEFT+	Left channel positive output	

Note 1. Max available power for speaker is 3W(4Ω).

Note 2. Matched Riverdi accessory RVA-0104-1.25FF

9.6 Console interface (J2)

PIN	SYMBOL	DESCRIPTION
1	VCC	Power supply, 3.3V
2	CM4_GPIO15	Rx data

3	GND	Ground
4	CM4_GPIO14	Tx data

Note. Matched Riverdi accessory RVA-0104-1.25FF

9.7 USB1/USB2 – J20/J19

PIN	SYMBOL	DESCRIPTION	NOTE
1	VBUS2/VBUS1	Power supply, 5V	
2	U21_N/U11_N	USB data-	
3	U21_P/U11_P	USB data+	
4	NC	Not connected	
5	GND	Ground	

Note. Matched Riverdi accessory RVA-0105-1.25FF

9.8 I2C – J11

PIN	SYMBOL	DESCRIPTION	NOTE
1	VCC	Power supply 3.3V	
2	ID_SCL	I ² C serial clock	
3	ID_SDA	I ² C serial data	
4	GND	Ground	

Note. Matched Riverdi accessory RVA-0104-1.25FF

9.9 SIM card holder – U29

Standard nano SIM card holder.

9.10 SPI/I2C – J8

PIN	SYMBOL	DESCRIPTION	NOTE
1	VCC	Power supply 3.3V	
2	SPI1_SCK	SPI serial clock signal	
3	SPI1_MOSI	SPI data input	
4	SPI1_MISO	SPI data output	
5	SPI1_CE2	SPI Chip Select	
6	CTP_SCL	I ² C serial clock (connected to internal I ² C)	
7	CTP_SDA	I ² C serial data (connected to internal I ² C)	
8	GND	Ground	

Note. Matched Riverdi accessory RVA-0108-1.25FF

9.11 RS422/485 – J5

PIN	SYMBOL	DESCRIPTION	NOTE
1	TXA	Driver output A(+)	
2	TXB	Driver output A(-)	
3	RXA	Receiver input(+)	
4	RXB	Receiver input(-)	
5	GND	Ground	

Note. Matched Riverdi accessory RVA-0105-1.25FF

9.12 RS232 – J3

PIN	SYMBOL	DESCRIPTION	NOTE
1	RTS	Request to send	
2	CTS	Clear to send	

3	RXD	Receive data	
4	TXD	Transmit data	
5	GND	Ground	

Note. Matched Riverdi accessory RVA-0105-1.25FF

9.13 CAN0/CAN1 – J6/J4

PIN	SYMBOL	DESCRIPTION	NOTE
1	GND	Ground	
2	CANL	CAN Low differential -	
3	CANH	CAN High differential +	
4	VIN	Power supply, VDD_IN	

Note. Matched Riverdi accessory RVA-0104-1.25FF

9.14 uSD card – J10

The main board is equipped with Micro-SD slot, which supports all types of Micro SD cards.

9.15 CM4 module – M1&M2

Connector for CM4 Module.

9.16 Mini HDMI – J13

PIN	SYMBOL	DESCRIPTION	NOTE
1	GND	TMDS Data2 Shield	
2	HDMI1 TX2 P	TMDS Data2+	
3	HDMI1 TX2 N	TMDS Data2-	
4	GND	TMDS Data1 Shield	
5	HDMI1 TX1 P	TMDS Data1+	
6	HDMI1 TX1 N	TMDS Data1-	

7	GND	TMDS Data0 Shield	
8	HDMI1 TX0 P	TMDS Data0+	
9	HDMI1 TX0 N	TMDS Data0-	
10	GND	TMDS Clock Shield	
11	HDMI1 CLK P	TMDS Clock+	
12	HDMI1 CLK N	TMDS Clock-	
13	GND	DDC/CEC Ground/HEAC Shield	
14	HDMI1 CEC	CEC	
15	HDMI1 SCL	SCL	
16	HDMI1 SDA	SDA	
17	NC	Utility/HEAC+	
18	V _{DD}	Power Supply, 5V	
19	HDMI1 HOTPLUG	Hot Plug Detect/HEAC-	

9.17 PCIe M2 – J22

Dedicated for PCIe M2 SSD 2230, 2242, 22670, 2280.

9.18 4G Modem – J21

Standard 4G Modem interface

9.19 Ethernet adapter – P3, P6

9.19.1 P3

PIN	SYMBOL	DESCRIPTION	NOTE
1-2	GND	Ground	
3	TRD0_N	Ethernet differential pair, channel 0 negative	

4	TRD0_P	Ethernet differential pair, channel 0 positive	
5-6	GND	Ground	
7	TRD1_N	Ethernet differential pair, channel 1 negative	
8	TRD1_P	Ethernet differential pair, channel 1 positive	
9-10	GND	Ground	
11	TRD2_N	Ethernet differential pair, channel 2 negative	
12	TRD2_P	Ethernet differential pair, channel 2 positive	
13-14	GND	Ground	
15	TRD3_N	Ethernet differential pair, channel 3 negative	
16	TRD3_P	Ethernet differential pair, channel 3 positive	
17	VCC	Supply voltage	
18	GND	Ground	
19	ETHLED2	Ethernet LED 2 signal	
20	ETHLED3	Ethernet LED 3 signal	

9.19.2 P6

PIN	SYMBOL	DESCRIPTION	NOTE
21	GND	Ground	
22	NC	Not connected	
23	GND	Ground	
24	NC	Not connected	
25	GND	Ground	
26	NC	Not connected	
27	GND	Ground	
28	NC	Not connected	
29	GND	Ground	

30	NC	Not connected	
31	GND	Ground	
32	NC	Not connected	
33	+5V	+5V supply voltage	
34-36	NC	Not connected	

9.20 Camera connector – J15, J16

9.20.1 J15

PIN	SYMBOL	DESCRIPTION	NOTE
1	VCC	Camera connector power supply	
2	ID_SDA	Camera identification I ² C data	
3	ID_SCL	Camera identification I ² C clock	
4	GND	Ground	
5	NC	Not connected	
6	C_GPIO	Camera control GPIO	
7	GND	Ground	
8-9	NC	Not connected	
10	GND	Ground	
11-12	NC	Not connected	
13	GND	Ground	
14	CAM0_C_P	MIPI CSI-2 clock differential pair, positive	
15	CAM0_C_N	MIPI CSI-2 clock differential pair, negative	
16	GND	Ground	
17	CAM0_D1_P	MIPI CSI-2 data differential pair, lane 1 positive	
18	CAM0_D1_N	MIPI CSI-2 data differential pair, lane 1 negative	

19	GND	Ground	
20	CAM0_D0_P	MIPI CSI-2 data differential pair, lane 0 positive	
21	CAM0_D0_N	MIPI CSI-2 data differential pair, lane 0 negative	
22	GND	Ground	

9.20.2 J16

PIN	SYMBOL	DESCRIPTION	NOTE
1	VCC	Camera connector power supply	
2	SDA	Camera I ² C data	
3	SCL	Camera I ² C clock	
4	GND	Ground	
5	NC	Not connected	
6	C_GPIO	Camera control GPIO	
7	GND	Ground	
8	CAM1_D3_P	MIPI CSI-2 data differential pair, lane 3 positive	
9	CAM1_D3_N	MIPI CSI-2 data differential pair, lane 3 negative	
10	GND	Ground	
11	CAM1_D2_P	MIPI CSI-2 data differential pair, lane 2 positive	
12	CAM1_D2_N	MIPI CSI-2 data differential pair, lane 2 negative	
13	GND	Ground	
14	CAM1_C_P	MIPI CSI-2 clock differential pair, positive	
15	CAM1_C_N	MIPI CSI-2 clock differential pair, negative	
16	GND	Ground	
17	CAM1_D1_P	MIPI CSI-2 data differential pair, lane 1 positive	
18	CAM1_D1_N	MIPI CSI-2 data differential pair, lane 1 negative	
19	GND	Ground	

20	CAM1_D0_P	MIPI CSI-2 data differential pair, lane 0 positive	
21	CAM1_D0_N	MIPI CSI-2 data differential pair, lane 0 negative	
22	GND	Ground	

9.21 OTG – P1

PIN	SYMBOL	DESCRIPTION	NOTE
1	USB_OTG_ID	USB OTG identification signal	
2	USB_N	USB 2.0 differential pair, negative	
3	USB_P	USB 2.0 differential pair, positive	
4	GND	Ground	

9.22 FAN – J12

PIN	SYMBOL	DESCRIPTION	NOTE
1	+5V	Fan power supply	
2	PWM	Fan speed control PWM signal	
3	GND	Ground	
4	TACH	Fan tachometer signal	

10. DISPLAY SPECIFICATION

The TFT of the module applies Riverdi high brightness, IPS, 10.1” LVDS: RVT101HVLFWCA0

The supported resolution of the display in this module is 1280*800.

For detailed information, please refer to datasheet of display.

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°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	
6	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
7	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)	
8	Package drop test	Height:60 cm,1 corner, 3 edges, 6 surfaces	
9	ESD	±2KV, Human Body Mode, 100pF/1500 Ω	

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

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.

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