TFT MODULE SPECIFICATION

RVT70HSDFWCA0 V2

MIPI DSI, IPS 7.0” LCD TFT display datasheet
Rev. 1.1
2026-10-20

Riverdi Sp. z o.o.

Nowy Swiat 36
80-299 Gdansk, Poland
VAT ID: PL5842767153
Registration number (KRS): 0000923967

+48 587 703 116

Office hours: 9:00 to 17:30 CET (Mon-Fri)

contact@riverdi.com

riverdi.com

ITEM	CONTENTS	UNIT
LCD Type	TFT/Transmissive/Normally Black/IPS	/
Size	7.0	Inch
Viewing Direction	Free	/
Outside Dimensions (W x H x D)	181.60 x 100.60 x 15.15	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 x 600	/
Brightness	800	cd/m^2
Color Depth	16.7 M	/
Pixel Arrangement	RGB Vertical Stripe	/
Driver IC of Board	SN65DSI83	/
Interface	MIPI DSI	/
EEPROM Memory Size	2-Kbit	/
Host Connector	ZIF 34 pins, 0.5mm pitch, down-side contact	/
With/Without Touch	With Projected Capacitive Touch Panel	/
CTP Driver	ILI2132A	/
Supply Voltage for Module	5.0	V
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	2026-10-02	Initial release	
1.1	2026-10-20	Updated drawing detail	

2. CONTENTS

1. REVISION RECORD 3
2. CONTENTS 4
3. MODULE CLASSIFICATION INFORMATION 5
4. Assembly guide 6
   4.1 Mounting Frame 6
5. MODULE DRAWING 7
6. ABSOLUTE MAXIMUM RATINGS 8
7. ELECTRICAL CHARACTERISTICS 8
8. BACKLIGHT ELECTRICAL CHARACTERISTICS 9
9. ELECTRO-OPTICAL CHARACTERISTICS 10
10. INTERFACES DESCRIPTION 13
    10.1 J1 connector 13
11. DIAGRAM BLOCK 15
12. TIMING CHARACTERISTICS 16
13. INSPECTION 16
14. RELIABILITY TEST 17
15. LEGAL INFORMATION 18
16. CONTACT 19

3. MODULE CLASSIFICATION INFORMATION

RV	T	70	H	S	D	F	W	C	A0	V2
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	D – MIPI DSI
7.	FRAME	F – With Mounting Metal Frame
8.	BACKLIGHT TYPE	W – LED White
9.	TOUCH PANEL	C – With Capacitive Touch Panel
10.	PCAP VERSION	A0 – aTouch, Air Bonding
11.	MODULE REVISION	V2

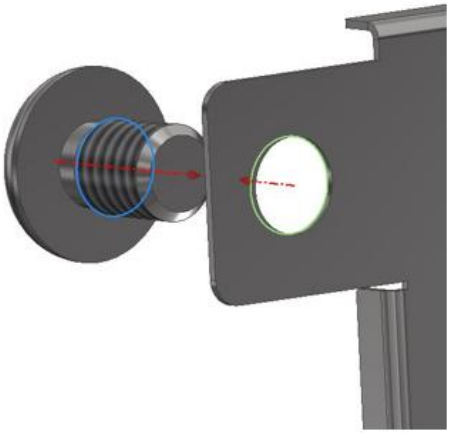
© 2026 Riverdi

4. ASSEMBLY GUIDE

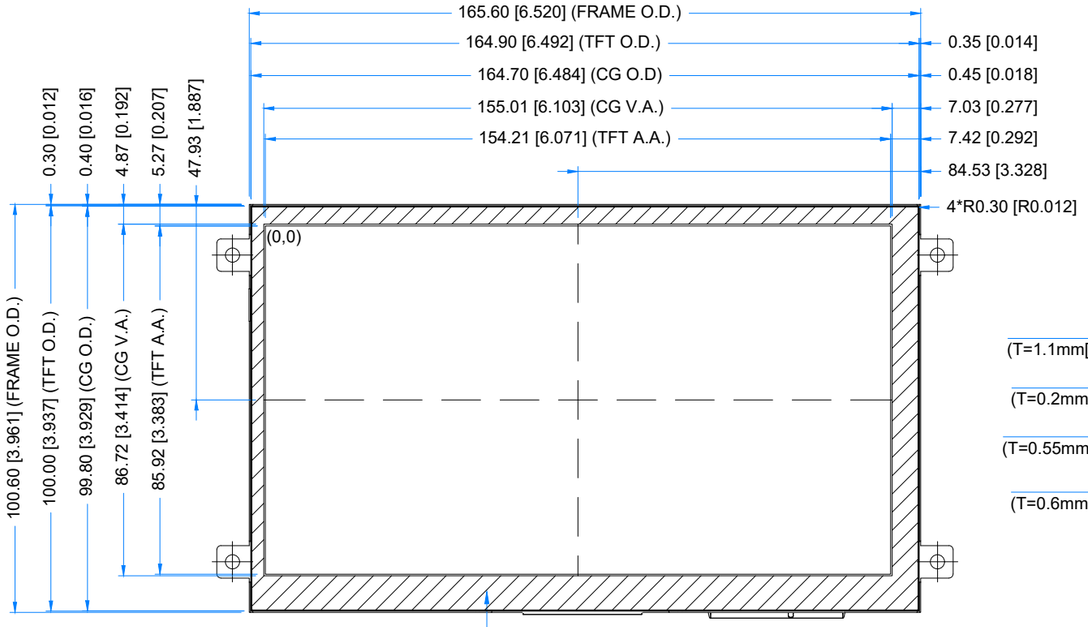
4.1 Mounting Frame

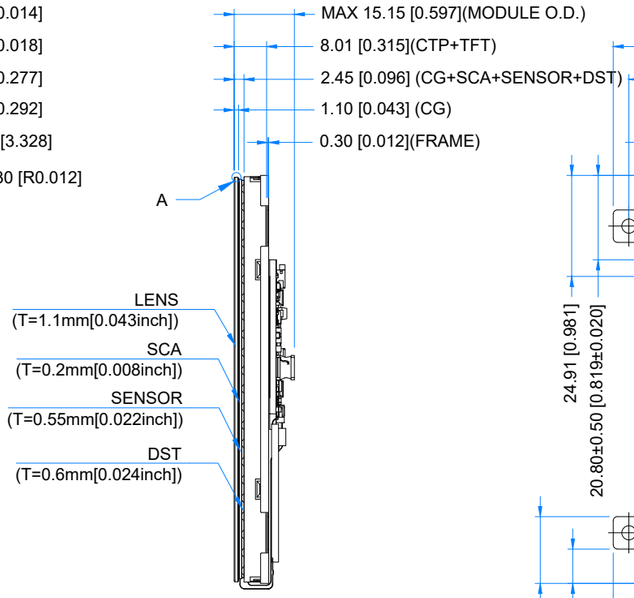
For dimensions 7.0”, 10.1”, 12.1” and 15.6”, the product with mounting frame version is available. Thanks to the four catches attached to the side, frame provides strong assembly to the surface by mounting element (like the screw, see Figure 1). The frames are specially designed to fit Riverdi products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

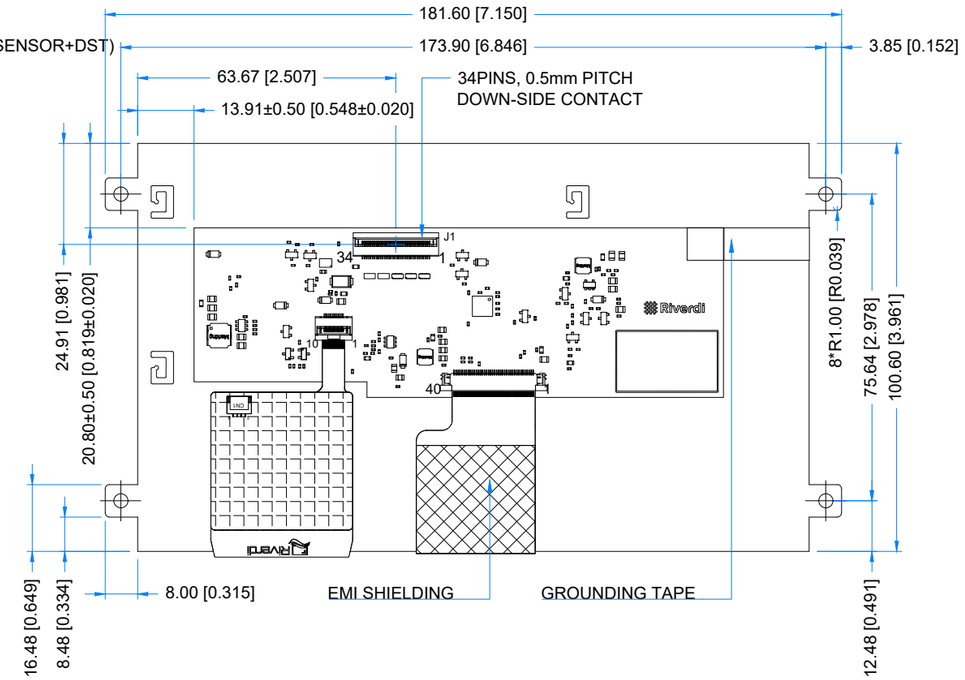


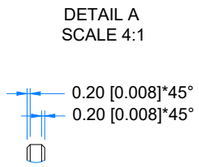


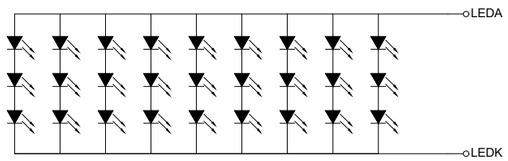
Revision:	Changes:	Date:
1.0	Initial Case	2026.05.27
1.1	Corrected detail view	2026.10.20











LED Diagram Circuit

LCD NOTES:
1. LCD TYPE: TRANSMISSIVE, NORMALLY BLACK, IPS
2. RESOLUTION: 1024x600
3. VIEWING ANGLE: FREE
4. DRIVING IC ON THE BOARD: SN65DSI83ZXHR
5. INTERFACE: MIPI DSI
5. OPERATION VOLTAGE: 5.0V
6. BACKLIGHT: 27LED, If=270mA; Vf=8.4-10.2V

TP NOTES:
1. TP STRUCTURE: G+G
2. CG THICKNESS: 1.1mm[0.043inch]
3. SURFACE HARDNESS: 7H
4. DRIVER IC: ILI2132A
5. INTERFACE: I2C

GENERAL NOTES:
1. SURFACE LUMINANCE: 800cd/m^2
2. OPERATING TEMPERATURE: -20°C ~ 70°C
3. STORAGE TEMPERATURE: -30°C ~ 80°C
4. WITHOUT INDIVIDUAL TOLERANCE: ±0.3mm[0.012inch]
5. RoHS3 COMPLIANT

PN: RVT70HSDFWCA0 V2

SN:

Riverdi

DRAWN:	M.Stabinski	2026.10.20	1:1.51	
CHECKED:	M.Wierzbowski	2026.10.20	[mm]	
APPR:	M.Wierzbowski	2026.10.20	ISO A3	P. 1 of 1

6. ABSOLUTE MAXIMUM RATINGS

PARAMETER	SYMBOL	MIN	MAX	UNIT
Supply Voltage for Module	V_{DD}	0	7.4	V
Reference Voltage	V_{REF}	0	4.6	V
PWM Input Voltage	V_{PWM}	-0.3	7.4	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	NOTE
Supply Voltage for Module	V_{DD}	-	5.0	-	V	
Reference Voltage	V_{REF}	0	-	3.6	V	Note 1
Current drawn from VREF	I_{VREF}	-	1	-	uA	V_{REF}=1.8V
Input High Voltage	V_{IH}	0.7VREF	-	-	V	
Input Low Voltage	V_{IL}	0	-	0.3VREF	V	
PWM Logic Input High Voltage	V_{PWMH}	1.2	-	VDD	V	Note 2
PWM Logic Input Low Voltage	V_{PWML}	0	-	0.4	V	Note 2
PWM Frequency	F_{PWM}	200	-	200k	Hz	Note 3

Note 1. TYP of reference Voltage is 1.8V or 3.3V which is dependent on the SBC.

Note 2. PWM input is independent of $V_{REF.}$ Min of logic high level is 1.2V and max of logic low level is 0.4V.

Note 3. The backlight driver is DIO5661 and the recommended PWM frequency is 10kHz.

PARAMETER	SYMBOL	BL 0%	BL 58 %	BL 100%	UNIT	NOTE
Current drawn from V_{DD}@5.0V	I_{VDD}	194	450	737	mA	Note 3

Note 3.
BL 0%, current was measured with BL brightness set to 0%,
BL 58%, current was measured with BL brightness set to 58%,
BL 100%, current was measured with BL brightness set to 100%.

Test condition: ambient temperature 25°C, PCAP is in active mode. The I_{VDD} current measurement was conducted based on Dahlia Carrier board + Verdin iMX8M. Backlight levels on Verdin iMX8M can be set from 0 to 7(8 levels).

BACKLIGHT LEVEL	0%	14.5%	29%	43.5%	58%	72.5%	85.5%	100%
SOM BL SET	0	1	2	3	4	5	6	7

8. BACKLIGHT ELECTRICAL CHARACTERISTICS

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

Note 1. Unless specified, the ambient temperature T_a = 25°C

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.

9. ELECTRO-OPTICAL CHARACTERISTICS

ITEM	SYMBOL	CONDITION	MIN	TYP	MAX	UNIT	RMK	NOTE
Response Time	Tr+Tf	θ=0° ø=0° Ta=25 °C	-	28	45	ms	FIG 2.	4, 7
Contrast Ratio	Cr		600	800	-	---	FIG 3.	1, 7
Surface Luminance	Lv		-	800	-	cd/m2		2, 7
Viewing Angle Range	θ	ø = 90°	80	85	-	deg	FIG 4.	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	0.557	0.587	0.617	-	FIG 3.	5,7
	Ry		0.313	0.343	0.373	-		
	Gx		0.323	0.353	0.383	-		
	Gy		0.552	0.582	0.612	-		
	Bx		0.124	0.154	0.184	-		
	By		0.091	0.121	0.151	-		
	Wx		0.274	0.304	0.334	-		
	Wy		0.300	0.330	0.360	-		
Uniformity	U	-	70	75	-	%	FIG 2.	3
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.

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.

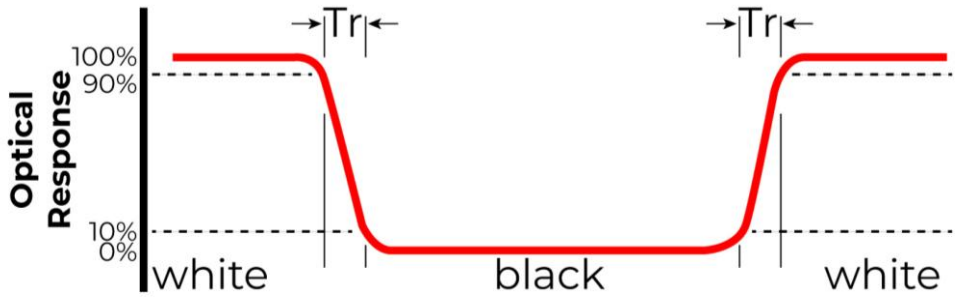
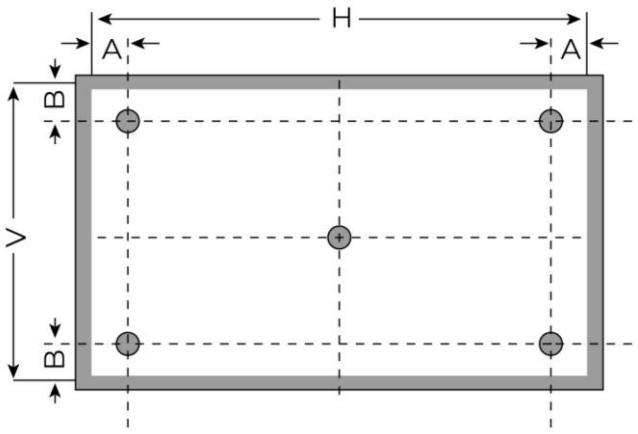


Figure 2. The definition of response time



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

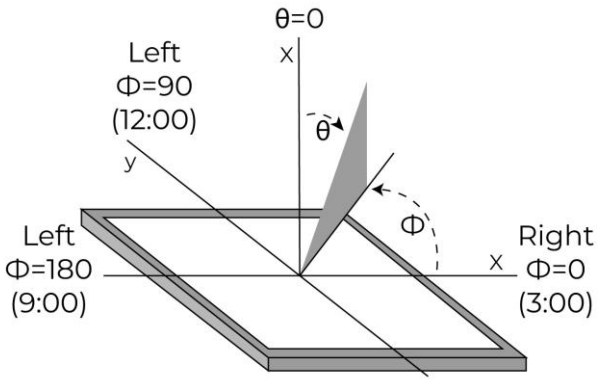


Figure 4. The definition of viewing angle

10. INTERFACES DESCRIPTION

10.1 J1 connector

PIN	SYMBOL	I/O	DESCRIPTION	NOTE
1	GND	P	Ground	
2	DSI_D0P	I/O	MIPI DSI differential data pair. (Data lane 0)	
3	DSI_D0N	I/O		
4	GND	P	Ground	
5	DSI_D1P	I	MIPI DSI differential data pair. (Data lane 1)	
6	DSI_D1N	I		
7	GND	P	Ground	
8	DSI_CLKP	I	MIPI DSI differential clock pair	
9	DSI_CLKN	I		
10	GND	P	Ground	
11	DSI_D2P	I	MIPI DSI differential data pair. (Data lane 2)	
12	DSI_D2N	I		
13	GND	P	Ground	
14	DSI_D3P	I	MIPI DSI differential data pair. (Data lane 3)	
15	DSI_D3N	I		
16	GND	P	Ground	
17	PWR_DN	I	Power down (With locally generated reset after releasing power-down) Active Low, display is off when signal is low;	Note 2
18	PWM	I	Backlight brightness control	Note 3

19	INT	O	Touch panel Interrupt signal; Open-drain output, active low	Note 2
20	I2C_SCL	I	I2C clock signal	Note 2
21	I2C_SDA	I/O	I2C data signal	
22	RESET	I	Touch panel reset	
23	1.8Vext (NC)	/	No connection	Note 4
24	V_{REF}	P	Reference voltage	
25	3.3Vext (NC)	/	No connection	Note 4
26	5.0V	P	Power supply V_{DD}	
27				
28				
29				
30	GND	P	Ground	
31	NC	/	No connection	
32				
33				
34				

Note 1. Matched 34 pins, 0.5 mm pitch, 150 mm long FFC accessory: FFC0534150

Note 2. Internally pull-up with 15K resistors to V_{REF} for pins 17, 19
Internally pull-up with 10K resistors to V_{REF} for pins 20, 21

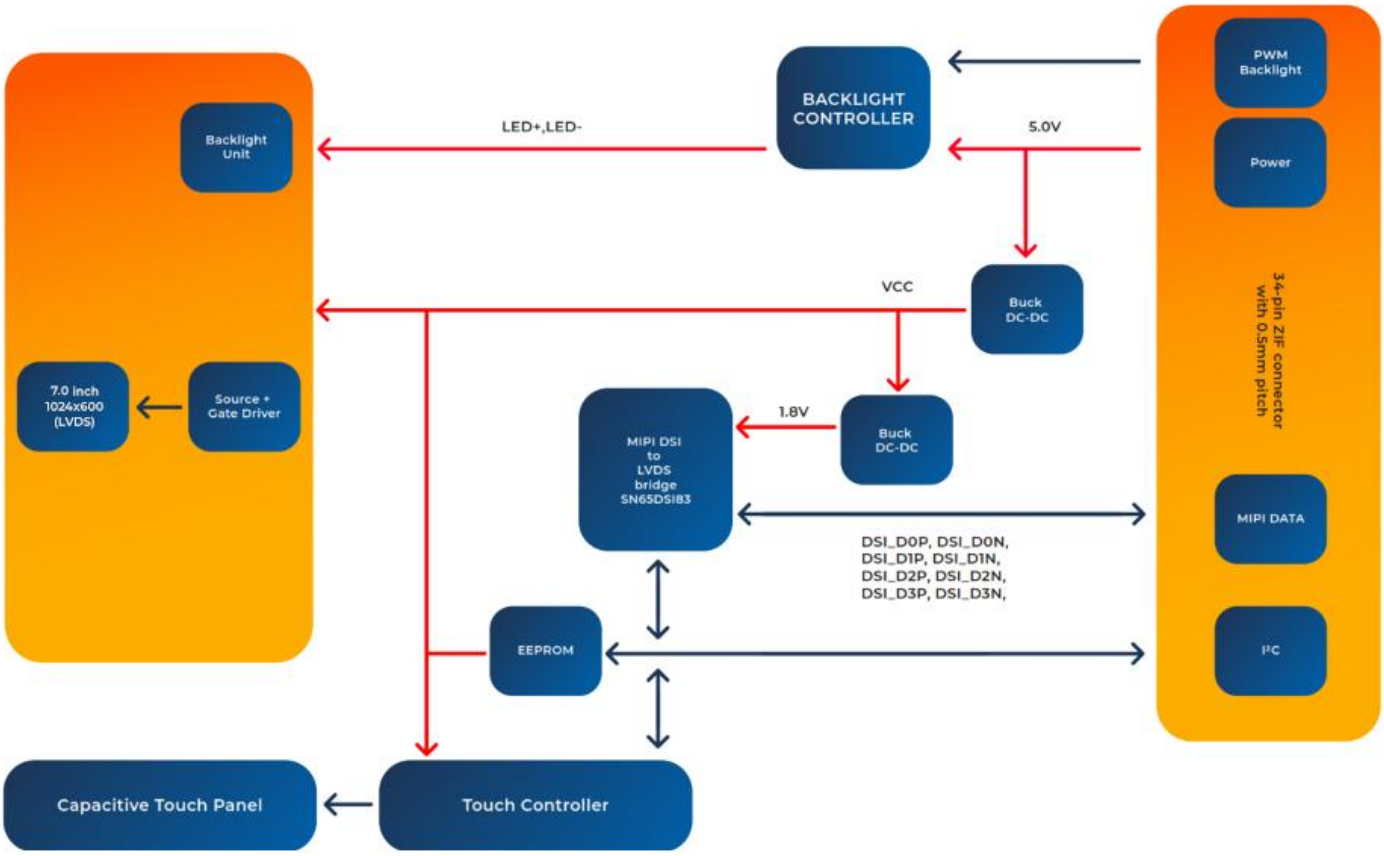
Note 3. The backlight driver is DIO5661. PWM frequency range: 200Hz – 200KHz and the recommended PWM frequency is 10kHz.

0% PWM duty cycle corresponds to minimum brightness.

100 PWM duty cycle corresponds to maximum brightness.

Note 4. Pins 23 and 25 are not internally connected (NC).

11. DIAGRAM BLOCK



12. TIMING CHARACTERISTICS

The TFT of the module applies Riverdi high brightness, IPS, 7.0” TFT: RVT70HSLFWCA0

For detailed information of the display, please refer to the datasheet of display.

PARAMETER	SYMBOL	VALUE			UNIT
		MIN.	TYP.	MAX.	
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	
HSYNC blanking	Thb+Thfp	90	320	376	
Vertical display area	Tvd		600		H
VSYNC period time	Tv	610	635	800	
VSYNC blanking	Tvb+Tvfp	10	85	200	

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	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℃, 90%RH, 120hrs	
6	Thermal Cycling Test (No operation)	-20℃/30 min ~ +70℃/30 min for a total 100 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
9	Package Drop Test	Height: 60 cm 1 corner, 3 edges, 6 surfaces	A,B,C,D,E
10	ESD	Contact=+/-4KV, Air=+/-8KV,(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.

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.

Information about device is the property of Riverdi and may be the subject of patents pending or granted. It is not allowed to copy or disclosed this document without prior written permission.

Riverdi endeavors to ensure that all contained information in this document is correct but does not accept liability for any error or omission. Riverdi products are in developing process and published information may be not up to date. Riverdi reserves the right to update and makes changes to Specifications or written material without prior notice at any time. It is important to check the current position with Riverdi.

Images and graphics used in this document are only for illustrative the purpose. All images and graphics are possible to be displayed on the range products of Riverdi, however the quality may vary. Riverdi is no liable to the buyer or to any third party for any indirect, incidental, special, consequential, punitive, or exemplary damages (including without limitation lost profits, lost savings, or loss of business opportunity) relating to any product, service provided or to be provided by Riverdi, or the use or inability to use the same, even if Riverdi has been advised of the possibility of such damages.

Riverdi products are not fault tolerant nor designed, manufactured or intended for use or resale as on line control equipment in hazardous environments requiring fail–safe performance, such as in the operation of nuclear facilities, aircraft navigation or communication systems, air traffic control, direct life support machines or weapons systems in which the failure of the product could lead directly to death, personal injury or severe physical or environmental damage (‘High-Risk Activities’). Riverdi and its suppliers specifically disclaim any expressed or implied warranty of fitness for High-Risk Activities. Using Riverdi products and devices in 'High-Risk Activities' and in any other application is entirely at the buyer’s risk, and the buyer agrees to defend, indemnify and hold harmless Riverdi from all damages, claims or expenses resulting from such use. No licenses are conveyed, implicitly or otherwise, under any Riverdi intellectual property rights.

16. CONTACT

Your Success is Our Priority

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

Contact us at
contact@riverdi.com

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