31.2 inch EPD Development Kit Series

1T4TCB

GooDisplay®

Dalian Good Display Co., Ltd.

Product Specifications

Customer	**Standard**
Description	**31.2''EPD Development Kit**
Model Name	**1T4TCB**
Date	**2021/03/09**
Revision	**1.0**

	Design Engineering		
	Approval	**Check**	**Design**
			

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Revision History

Rev.	Issued Date	Revised Contents
1.0	Mar.09.2021	Preliminary

Contents

1. Overview

1T4TCB is a dedicated driver board for E Ink screen, which can directly drive E Ink screen display through dedicated software.

Model	Applicable Temperature	Screen Size	Screen Color
1T4TCB-WM	-15℃ ~ 65℃	31.2 inch	Black and white, 16 gray scales
1T4TCB-RC	0℃ ~ 50℃	31.2 inch	Color screen
1T4TCB-RM	0℃ ~ 50℃	31.2 inch	Black and white, 16 gray scales

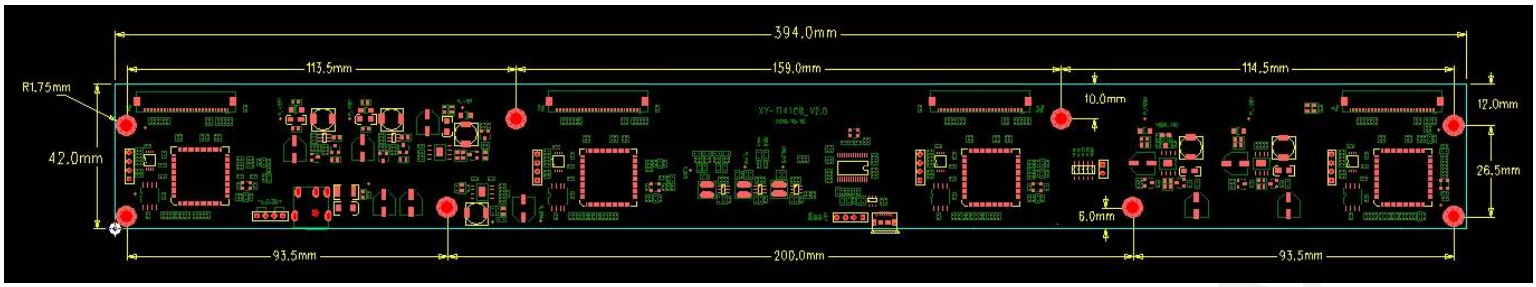
2. Features

1T4TCB can support to drive the E Ink screen, provide driver function for customer's E ink screen equipment, support PC, Android, Linux system, which helps the users to complete product solutions more quickly and efficiently. 1T4TCB-WM/C can support the 31.2 inch e ink screen. It is a reliable and convenient large-size E Ink screen driver board.

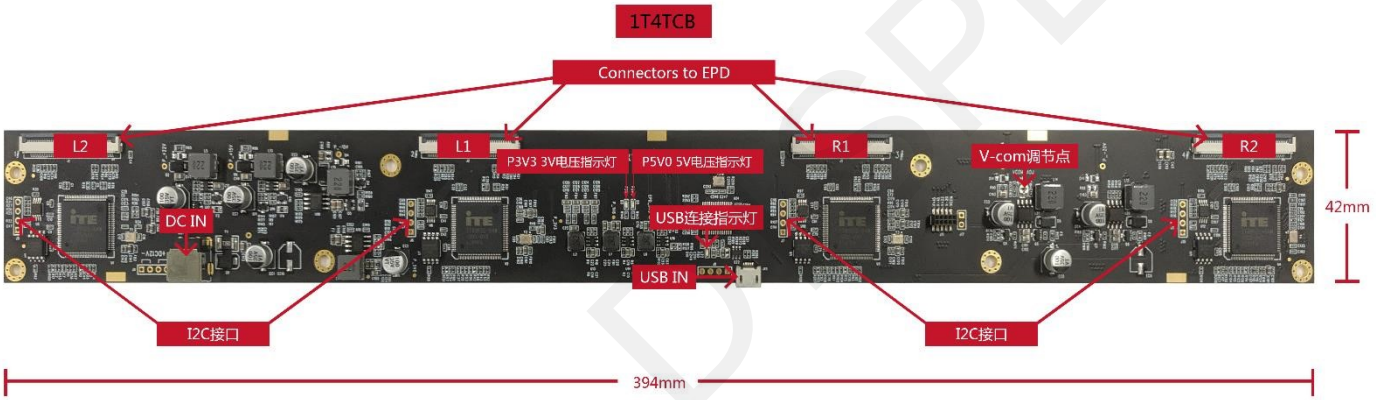
3. Structure Specifications

Parameter	Specification
Function	Drive 31.2 inch e ink screen
Input Port	1. Micro USB interface 2. I2C interfaces x 4 3. DC 5.5 power interface
Output Port	EPD interface x 4
Dimensions	394x42x12 mm
Indicator Light	1. P5V0 5V voltage indicator 2. USB connection indicator 3. P3V3 3V voltage indicator
Fixed way	Screw hole x 4

Dimensional Drawings :



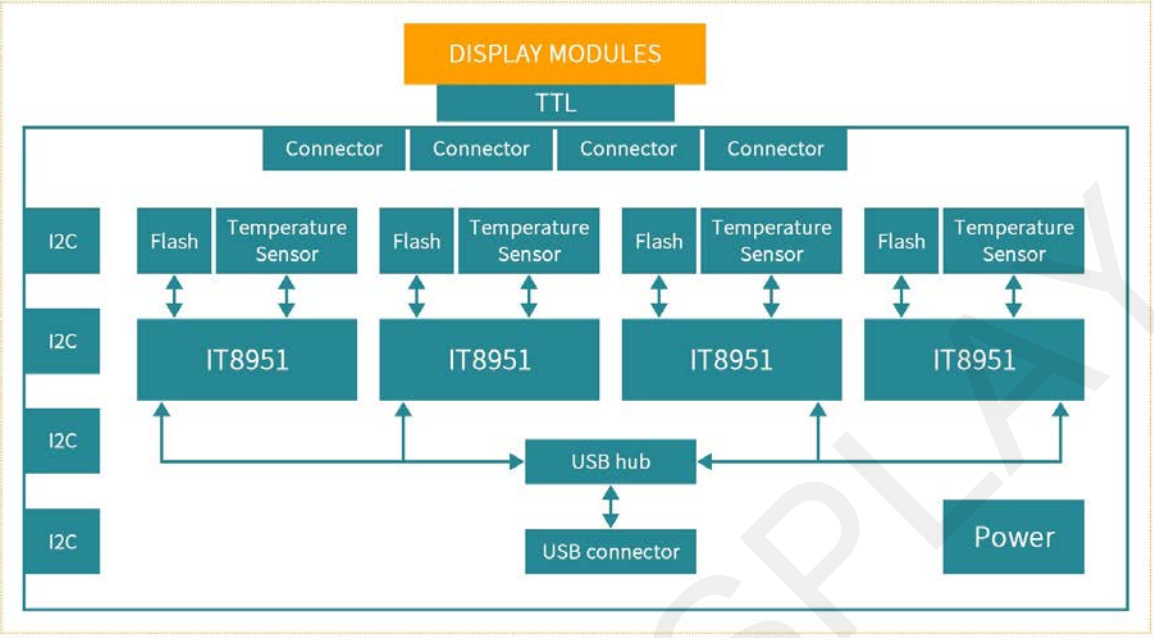
4. Appearance Picture



5. Hardware Specifications

Parameter	Specification
Function	Drive 31.2 inch e ink screen
Power Input	DC12V / 3A
Working Current	● 100mA(standby mode) ● Peak current： 2.2 A
Grayscale Range	1T4TCB-RC supports color display 1T4TCB-WM/RM supports up to 16 gray levels
Supported Screen Size	31.2 inch
Operating Temperature	1T4TCB-RM/RC : 0℃ ~ 50℃ 1T4TCB-W : -15℃ ~ 65℃

6. Architecture Diagram



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7. Pin Definition Table:

Cable connection method: contact under the flip cover.

Connector L2：

Pin #	Signal	Description
1	VGL	Negative power supply gate driver
2	NC	NO Connection
3	VGH	Positive power supply gate driver
4	Mode2_L2	Output enable gate driver
5	VDD	Digital power supply drivers
6	Mode1_L2	Output enable gate driver
7	CKV_L2	Clock gate driver
8	SPV_L2	Start pulse gate driver
9	VSS	Ground
10	VCOM_TFT	Common voltage
11	VDD	Digital power supply drivers
12	VSS	Ground
13	XCL_L2	Clock source driver
14	D0_L2	Data signal source driver
15	D1_L2	Data signal source driver
16	D2_L2	Data signal source driver
17	D3_L2	Data signal source driver
18	D4_L2	Data signal source driver
19	D5_L2	Data signal source driver
20	D6_L2	Data signal source driver
21	D7_L2	Data signal source driver
22	VSS	Ground
23	D8_L2	Data signal source driver
24	D9_L2	Data signal source driver
25	D10_L2	Data signal source driver
26	D11_L2	Data signal source driver
27	D12_L2	Data signal source driver
28	D13_L2	Data signal source driver
29	D14_L2	Data signal source driver
30	D15_L2	Data signal source driver
31	XSTL_L2	Start pulse source driver

32	XLE_L2	Latch enable source driver
33	XOE_L2	Outputs enabled when OE is logic “H”, Outputs forced to GND when OE is logic “L”.
34	ISEL	Input data bus width selection. L: input data bus width is 8-bit, i.e., D7 ~ D0 are valid inputs. D15 ~ D8 are internal pull down, and user should connect to logic “L”
		levels or let them open. H: input data bus width is 16-bit.
35	NC	NO Connection
36	VPOS	Positive power supply source driver
37	NC	NO Connection
38	VNEG	Negative power supply source driver
39	VCOM_FPL	Common Voltage
40	NC	Please keep the pin floating
41	NC	Please keep the pin floating
42	Detect1	Detection function pin
43	Detect2	Detection function pin
44	Detect3	Detection function pin
45	NC	NO Connection
46	Detect4	Detection function pin
47	Detect5	Detection function pin
48	Detect6	Detection function pin
49	NC	NO Connection
50	NC	Please keep the pin floating

Connector L1:

Pin #	Signal	Description
1	VGL	Negative power supply gate driver
2	NC	NO Connection
3	VGH	Positive power supply gate driver
4	Mode2_L1	Output enable gate driver
5	VDD	Digital power supply drivers
6	Mode1_L1	Output enable gate driver
7	CKV_L1	Clock gate driver
8	SPV_L1	Start pulse gate driver
9	VSS	Ground
10	VCOM_TFT	Common voltage
11	VDD	Digital power supply drivers
12	VSS	Ground
13	XCL_L1	Clock source driver
14	D0_L1	Data signal source driver
15	D1_L1	Data signal source driver
16	D2_L1	Data signal source driver
17	D3_L1	Data signal source driver
18	D4_L1	Data signal source driver
19	D5_L1	Data signal source driver
20	D6_L1	Data signal source driver
21	D7_L1	Data signal source driver
22	VSS	Ground
23	D8_L1	Data signal source driver
24	D9_L1	Data signal source driver
25	D10_L1	Data signal source driver
26	D11_L1	Data signal source driver
27	D12_L1	Data signal source driver
28	D13_L1	Data signal source driver
29	D14_L1	Data signal source driver
30	D15_L1	Data signal source driver
31	XSTL_L1	Start pulse source driver
32	XLE_L1	Latch enable source driver
33	XOE_L1	Outputs enabled when OE is logic “H”, Outputs forced to GND when OE is logic “L”.

34	ISEL	Input data bus width selection. L: input data bus width is 8-bit, i.e., D7 ~ D0 are valid inputs. D15 ~ D8 are internal pull down, and user should connect to logic “L” levels or let them open. H: input data bus width is 16-bit.
35	NC	NO Connection
36	VPOS	Positive power supply source driver
37	NC	NO Connection
38	VNEG	Negative power supply source driver
39	VCOM_FPL	Common Voltage
40	NC	NO Connection
41	NC	Please keep the pin floating
42	NC	NO Connection
43	NC	NO Connection
44	NC	NO Connection
45	NC	NO Connection
46	NC	NO Connection
47	NC	NO Connection
48	NC	NO Connection
49	NC	NO Connection
50	NC	Please keep the pin floating

Connector R1:

Pin #	Signal	Description
1	VGL	Negative power supply gate driver
2	NC	NO Connection
3	VGH	Positive power supply gate driver
4	Mode2_R1	Output enable gate driver
5	VDD	Digital power supply drivers
6	Mode1_R1	Output enable gate driver
7	CKV_R1	Clock gate driver
8	SPV_R1	Start pulse gate driver
9	VSS	Ground
10	VCOM_TFT	Common voltage
11	VDD	Digital power supply drivers
12	VSS	Ground
13	XCL_R1	Clock source driver
14	D0_R1	Data signal source driver
15	D1_R1	Data signal source driver
16	D2_R1	Data signal source driver
17	D3_R1	Data signal source driver
18	D4_R1	Data signal source driver
19	D5_R1	Data signal source driver
20	D6_R1	Data signal source driver
21	D7_R1	Data signal source driver
22	VSS	Ground
23	D8_R1	Data signal source driver
24	D9_R1	Data signal source driver
25	D10_R1	Data signal source driver
26	D11_R1	Data signal source driver
27	D12_R1	Data signal source driver
28	D13_R1	Data signal source driver
29	D14_R1	Data signal source driver
30	D15_R1	Data signal source driver
31	XSTL_R1	Start pulse source driver
32	XLE_R1	Latch enable source driver
33	XOE_R1	Outputs enabled when OE is logic “H”, Outputs forced to GND when OE is logic “L”.

34	ISEL	Input data bus width selection. L: input data bus width is 8-bit, i.e., D7 ~ D0 are valid inputs. D15 ~ D8 are internal pull down, and user should connect to logic “L” levels or let them open. H: input data bus width is 16-bit.
35	NC	NO Connection
36	VPOS	Positive power supply source driver
37	NC	NO Connection
38	VNEG	Negative power supply source driver
39	VCOM_FPL	Common Voltage
40	NC	NO Connection
41	NC	Please keep the pin floating
42	NC	NO Connection
43	NC	NO Connection
44	NC	NO Connection
45	NC	NO Connection
46	NC	NO Connection
47	NC	NO Connection
48	NC	NO Connection
49	NC	NO Connection
50	NC	Please keep the pin floating

Connector R2:

Pin #	Signal	Description
1	VGL	Negative power supply gate driver
2	NC	NO Connection
3	VGH	Positive power supply gate driver
4	Mode2_R2	Output enable gate driver
5	VDD	Digital power supply drivers
6	Mode1_R2	Output enable gate driver
7	CKV_R2	Clock gate driver
8	SPV_R2	Start pulse gate driver
9	VSS	Ground
10	VCOM_TFT	Common voltage
11	VDD	Digital power supply drivers
12	VSS	Ground
13	XCL_R2	Clock source driver
14	D0_R2	Data signal source driver
15	D1_R2	Data signal source driver
16	D2_R2	Data signal source driver
17	D3_R2	Data signal source driver
18	D4_R2	Data signal source driver
19	D5_R2	Data signal source driver
20	D6_R2	Data signal source driver
21	D7_R2	Data signal source driver
22	VSS	Ground
23	D8_R2	Data signal source driver
24	D9_R2	Data signal source driver
25	D10_R2	Data signal source driver
26	D11_R2	Data signal source driver
27	D12_R2	Data signal source driver
28	D13_R2	Data signal source driver
29	D14_R2	Data signal source driver
30	D15_R2	Data signal source driver
31	XSTL_R2	Start pulse source driver
32	XLE_R2	Latch enable source driver
33	XOE_R2	Outputs enabled when OE is logic “H”, Outputs forced to GND when OE is logic “L”.

34	ISEL	Input data bus width selection. L: input data bus width is 8-bit, i.e., D7 ~ D0 are valid inputs. D15 ~ D8 are internal pull down, and user should connect to logic “L” levels or let them open. H: input data bus width is 16-bit.
35	NC	NO Connection
36	VPOS	Positive power supply source driver
37	NC	NO Connection
38	VNEG	Negative power supply source driver
39	VCOM_FPL	Common Voltage
40	NC	Please keep the pin floating
41	NC	Please keep the pin floating
42	Detect7	Detection function pin
43	Detect8	Detection function pin
44	Detect9	Detection function pin
45	NC	NO Connection
46	NC	NO Connection
47	Detect10	Detection function pin
48	Detect11	Detection function pin
49	Detect12	Detection function pin
50	NC	Please keep the pin floating

8. Software Specifications

1T4TCB can be connected to a PC or motherboard to run software to drive the screen. There are detailed usage methods in the Programming Guide, please contact the sales to get it.

9. Power State

Input power DC12V /3A

10. Indicator Status Table

1. P5V0 5V voltage indicator light, when the indicator light is on, the power supply is normal
2. USB connection indicator, when the green light is on, it means the USB connection is normal.
3. P3V3 3V voltage indicator, when it is on, the voltage is normal.

11. V-com Voltage Adjustment Method

The default V-Com voltage of 1T4TCB is-2.50V when leaving the factory. Users can adjust this voltage by rotating the resistor. Please consult the supplier for detailed adjustment methods.

12. Voltage Test Point

There are 8 voltage test points on the back of the motherboard. Please consult the supplier for details of the test method.

Voltage Test Point

13. Remarks