GooDisplay

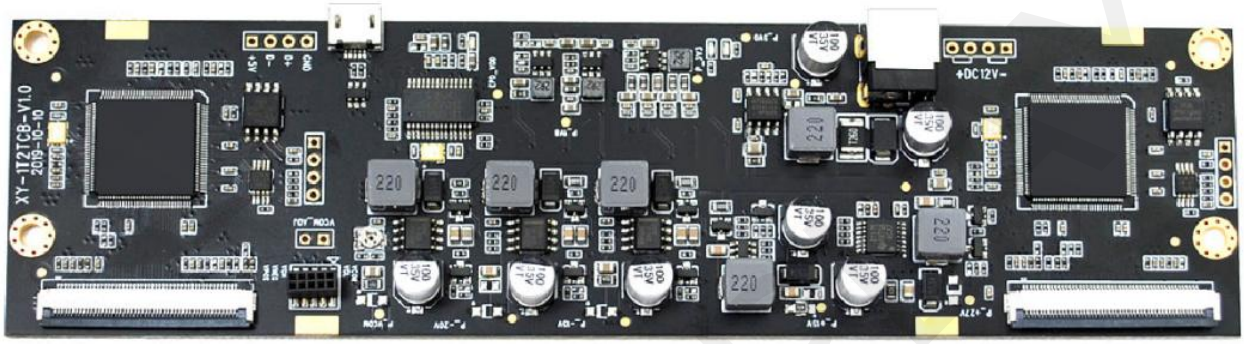
Development Board for 42 inch E-paper Display

DEXWM-C42

GooDisplay®

Dalian Good Display Co., Ltd.

Product Specifications



Customer	**Standard**
Description	**Drive Board for 42'' E-paper**
Model Name	**DEXWM-C42**
Date	**2023/09/06**
Revision	**1.0**

	Design Engineering		
	Approval	**Check**	**Design**
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1.Overview

DEXWM-C42 is a dedicated controller board for the 42 inch E-paper display GDEP420T01, equipped with PC software to directly drive the screen.

Part No.	Operating Temp.	E-paper Display Model	Color
DEXWM-C42	0℃~ 50℃	GDEP420T01	B/W 16 Greys

2. Parameters

Parameters	Specifications
Model Name	DEXWM-C42
Platform	Windows7/10
Outline Dimension	172mm x 46mm
Power Supply	DC12/3A
Operating Temp.	0 ℃ ~ 50 ℃
Main Functions	Learn to drive E-paper display; Test and evaluate E-paper display; Support secondary development
Additional Functions	Micro USB interface

3. Main Functions

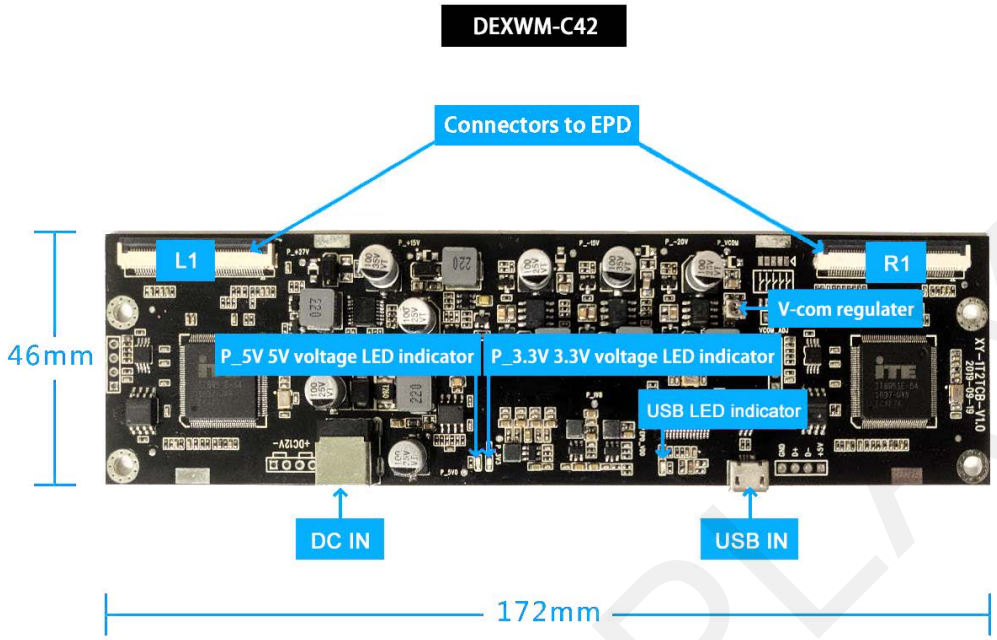


Figure 1 DEXWM-C42

4. Architecture Diagram

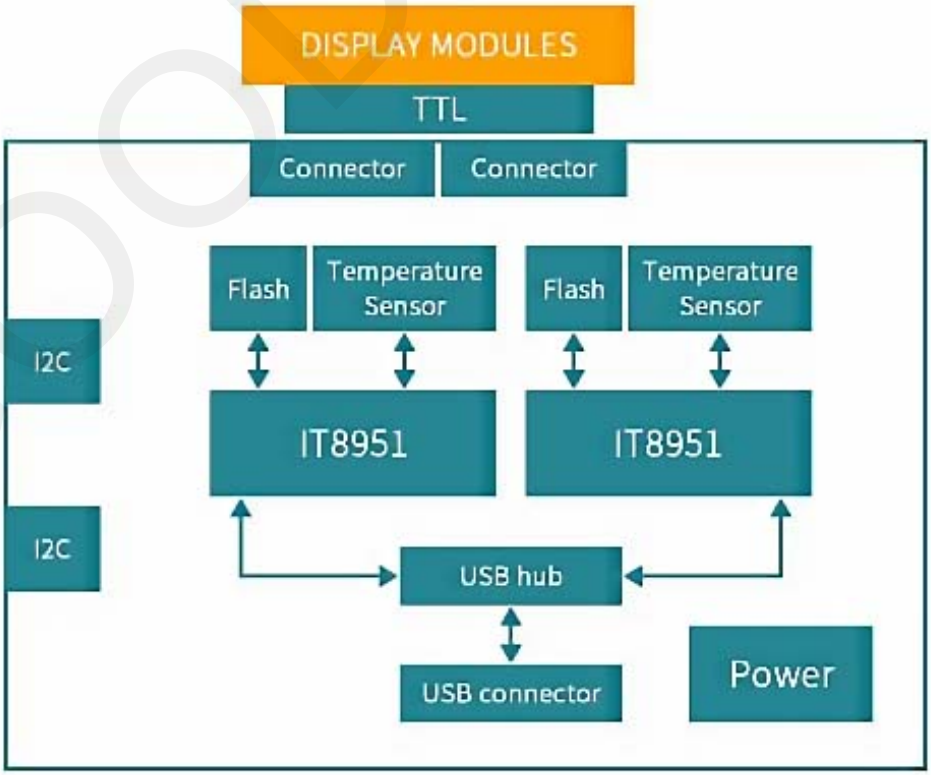


Figure 2 Architecture Diagram

5. Pin Definition

Pin #	Signal	Description
1	VGL	Negative power supply gate driver
2	NC	NO Connection
3	VGH	Positive power supply gate driver
4	Mode2_L	Output enable gate driver
5	VDD	Digital power supply drivers
6	Mode1_L	Output enable gate driver
7	CKV_L	Clock gate driver
8	SPV_L	Start pulse gate driver
9	VSS	Ground
10	VCOM_TFT	Common voltage
11	VDD	Digital power supply drivers
12	VSS	Ground
13	XCL_L	Clock source driver
14	D0	Data signal source driver
15	D1	Data signal source driver
16	D2	Data signal source driver
17	D3	Data signal source driver
18	D4	Data signal source driver
19	D5	Data signal source driver
20	D6	Data signal source driver
21	D7	Data signal source driver
22	VSS	Ground
23	D8	Data signal source driver
24	D9	Data signal source driver
25	D10	Data signal source driver
26	D11	Data signal source driver
27	D12	Data signal source driver
28	D13	Data signal source driver
29	D14	Data signal source driver
30	D15	Data signal source driver
31	NC	Please keep the pin floating
32	XLE_L	Latch enable source driver
33	XOE_L	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, Please keeps the pin floating.
36	VPOS	Positive power supply source driver
37	NC	NO Connection, Please keeps the pin floating.
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	NC	Please keep the pin floating
43	NC	Please keep the pin floating
44	NC	Please keep the pin floating
45	NC	NO Connection
46	NC	NO Connection
47	NC	Please keep the pin floating
48	NC	Please keep the pin floating
49	NC	Please keep the pin floating
50	XSTL_L	Start pulse source driver

Pin #	**Signal**	**Description**
1	VGL	Negative power supply gate driver
2	NC	NO Connection
3	VGH	Positive power supply gate driver
4	Mode2_R	Output mode selection gate driver
5	VDD	Digital power supply drivers
6	Mode1_R	Output mode selection gate driver
7	CKV_R	Clock gate driver
8	NC	Please keep the pin floating
9	VSS	Ground
10	VCOM_TFT	Common voltage
11	VDD	Digital power supply drivers
12	VSS	Ground
13	XCL_R	Clock source driver
14	D0	Data signal source driver
15	D1	Data signal source driver
16	D2	Data signal source driver
17	D3	Data signal source driver
18	D4	Data signal source driver
19	D5	Data signal source driver
20	D6	Data signal source driver
21	D7	Data signal source driver

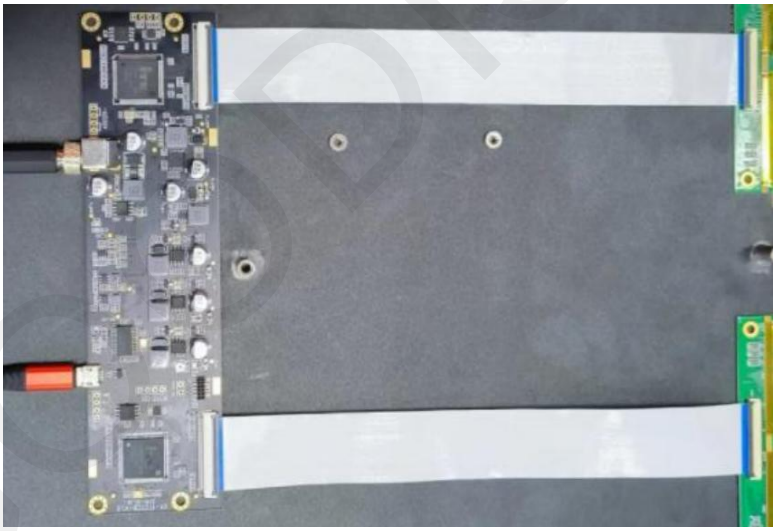
22	VSS	Ground
23	D8	Data signal source driver
24	D9	Data signal source driver
25	D10	Data signal source driver
26	D11	Data signal source driver
27	D12	Data signal source driver
28	D13	Data signal source driver
29	D14	Data signal source driver
30	D15	Data signal source driver
31	XSTL_R	Start pulse source driver
32	XLE_R	Latch enable source driver
33	XOE_R	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, Please keeps the pin floating.
36	VPOS	Positive power supply source driver
37	NC	NO Connection, Please keeps the pin floating.
38	VNEG	Negative power supply source driver
39	VCOM_FPL	Common voltage
40	NC	Please keep the pin floating
41	SPV_R	Start pulse gate driver
42	NC	Please keep the pin floating
43	NC	Please keep the pin floating
44	NC	Please keep the pin floating
45	NC	NO Connection
46	NC	NO Connection
47	NC	Please keep the pin floating
48	NC	Please keep the pin floating
49	NC	Please keep the pin floating
50	NC	Please keep the pin floating

6 . Instruction

1. V-com voltage adjustment method
The factory default V-com is -2.50V, the V-com voltage value of each screen is different, the user can adjust the voltage by turning the resistor of "V-com adjustment point", as shown in Figure 3-2 , you can use a multimeter to test the "P_VCOM test point" test voltage value. This voltage value should correspond to the label on the screen. As shown in Figure 6-1, the label -2.36 means that the current V-com voltage value of the electronic paper display needs to be adjusted to -2.36 volts.

2. Refresh mode
The wide temperature version of the driver board supports 3 screen refresh modes, namely Mode 0, Mode 1, and Mode 2.
The normal temperature version of the driver board supports 6 screen refresh modes, namely Mode 0, Mode 1, Mode 2, Mode 3, Mode 4, and Mode 5.
Note: The general mode 2 of the wave file of the wide temperature version only supports 0°C~50°C, the actual situation refers to the wave file provided by the supplier of the screen

3. Use of cables All cables should be connected in such a way that the reinforcing plate of the cables faces upwards and the “golden fingers” face downwards.



4. Test tools under Windows for image refresh. power connection, please use 12V/3A adapter;

a. Open the test tool: "ITE_TCon_DemoAP_v.3.5_ID.exe".

b. Make sure the screen is properly connected to the driver board, and use Micro USB to connect the driver board to the computer.

c. Click "connect" in the drawing tool, if the computer has detected the driver board, it will prompt information such as the screen resolution supported by the current driver board.

d. Click "Open File..." and select the picture to be refreshed in the pop-up dialog box.

e. If full screen refresh is required, click "Set Full Panel". If the image resolution is inconsistent with the resolution of the current driver board, the displayed image will have a stretching effect.

f. Finally, click "Display" to update the screen.

g. By default, the refresh tool uses mode 2 to refresh. If you need to test other modes, you can fill in the corresponding modes in "StartMode" and "End Mode". If the two values are not the same, they will be refreshed sequentially from "Start Mode" to "End Mode", value increasing by one each time. If the two values are the same, it will be refreshed according to the filled value for once.