Adapter Board for 7.3 inch E-Paper Display DESPI-C73

Product Specifications
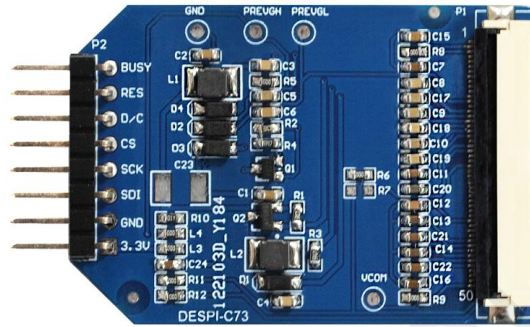
Customer	Standard
Description	**Adapter Board For E-paper Display**
Model Name	**DESPI-C73**
Date	**2023/05/22**
Revision	**1.0**

	Design Engineering		
	Approval	Check	Design

No.18, Zhonghua West ST,Ganjingzi DST,Dalian,CHINA

Tel: +86-411-84619565

Email: info@good-display.com

Website: www.good-display.com

Contents

1.Overview

This is an adapter board specially designed for the 7.3 inch SPI E-paper display GDEY073D46, connected with various platform motherboards launched by Good Display, could provide the boost converter circuit needed for driving the display.

2. Specification

Parameter	Specification
Model	DESPI-C73
Platform	STM32、Arduino
Dimension	47mm x 32mm
Power Supply	3.3V
Example Code	Available
Operating Temp.	-20 ℃ ~ 70 ℃
Main Function	Provide driving voltage for E-paper display; Provide E-paper display communication interface for MCU board; Help users learn to use E-paper display.
Additional Function	E-paper display power consumption measurement, E-paper working state detection

3. Diagram

Voltage Testing Point

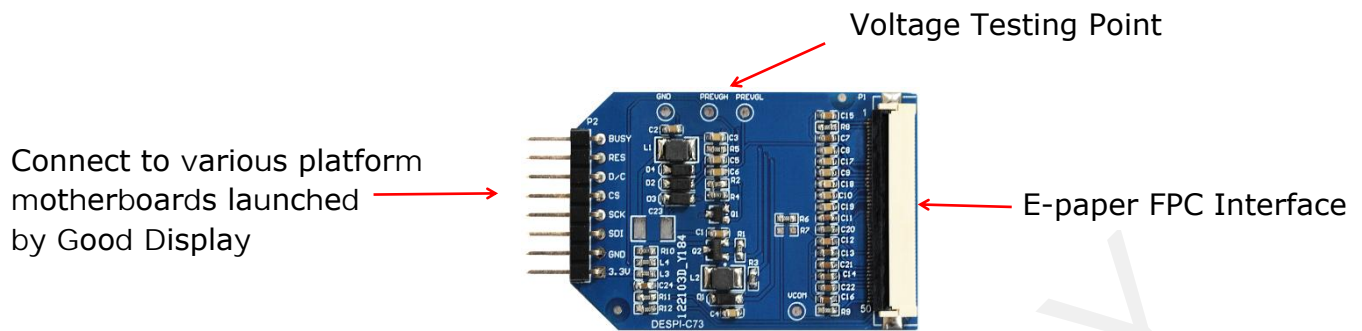Connect to various platform motherboards launched by Good Display

E-paper FPC Interface

Figure 1 DESPI-C73

3.1.Pin Definition

1 BUSY   Electronic paper busy signal. When the electronic paper screen is refreshed, BUSY pin sends a busy signal to MCU, at this time, MCU cannot read or write the electronic paper drive IC; When the electronic paper is refreshed, BUSY pin sends the idle status signal, and MCU can read and write the electronic paper drive IC. Busy state of BUSY pin is low level, idle state is high level.

2 RST   Electronic paper reset signal, valid at low level.

3 DC   Data/command read/write selection, high level is data, low level is command.

4 CS   Chip selection, active at low level.

5 SCL   SPI serial communication clock signal line.

6 SDA   SPI serial communication data signal line.

7 GND   Negative pole of power supply.

8 VDD   Power supply positive pole.

Note: For the IO settings in the process of programming, generally BUSY is set as the input mode, and other IO is set as the output mode.

3.2. Voltage Testing

This adapter has test points for voltage measurement, including PREVGH, PREVGL , VCOM and GND. The functions of each test point are as follows:

1) PREVGH: positive voltage of MOS tube gate pole.

2) PREVGL: MOS tube gate pole negative voltage.

3) VCOM: common terminal voltage test point of electronic paper.

4) GND: negative pole of power supply (common terminal of test point voltage).

3.3. E-paper display FPC interface

The electronic paper is connected with the adapter plate through this interface.

When connecting, insert the electronic paper FPC golden finger downward to the

P1 connector of the adapter board in the way shown in Figure2.

Note: This connector is a rear lock type. When using it, you need to stand up the switch first, insert the E-paper display and then press the switch to lock it.

Figure 2：Connection of E-paper display and Adapter

4. FAQ of Drive Circuit of E-paper Display

4.1. Self-made drive board cannot drive e-paper display
First, measure the voltage of PREVGH and PREVGL to see whether the voltage rise works. If the voltage boost doesn't work, please check whether the voltage boost part of the drive schematic diagram is correct and whether the components meet the requirements (ensure that the voltage withstand of the boost capacitor is sufficient, and if the voltage withstand is not enough, the capacitor will burn out during the voltage boost).

4.2. Selection of diode for e-paper display drive circuit
Schottky diode equivalent to MBR0530 parameters shall be selected, and the switching frequency shall meet the actual requirements.

4.3. Selection of FPC socket for e-paper display drive circuit
Select the FPC socket with 24PIN of upper contact or upper and lower contact, and the pin spacing is 0.5mm.

4.4. High current in e-paper display deep sleep mode
The high current in deep sleep mode may be caused by the large capacitance of the boost part.