# Development Kit for E paper Display



**DERPI-TOA** 

Dalian Good Display Co.,Ltd.



## **Product Specifications**





Customer	Standard	
Description	Development Kit for E-paper Display	
Model Name	DERPI-TOA	
Date	2021/03/25	
Revision	1.0	

Design Engineering Approval Check Design		
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#### 1. Overview

This development kit is designed to help developers to achieve faster and more smooth development for EPD projects. It supports 9.7 inch parallel interface EPD and supports using upper computer to control displaying.

## 2. Mechanical Specifications

Parameter	Specification
Model	DERPI-T0A
Platform	Raspberry Pi
Dimension	64.6mm x 56.8mm (DERPI-M0A)
	48.7mm x 20.5mm(DERPI-C0A)
Power Interface	USB interface
Sample Code	Available (please contact sales)
Operating Temp.	-20°C~+70°C
Main Function	Learn to drive e-paper display;
Additional Function	None

### 3. Functions



Figure 2: DERPI-COA





Take EPD GDEP097TC2 shown in image 3 as en example, first connect the DERPI-COA adaptor panel to the DERPI-TOA development board through FPC wire and then connect the EPD to the DER-COA adaptor panel.

Note: Connect each section accordingly following EPD' s size and pins based on the contents shown in image 1,2,3.

1. Power Supply Module

Input voltage of circuit borad is DC5V, powered by USB interface. 2. Indicator

This development kit has 1 power supply indicator.

3. Communication Section

This development kit supports USB communication.

4. Driver Mode

This development kit supports USB/SPI/I80 modes to drive the EPD.

## 4. Display Control Mode

1. USB-controlled

1) Connect the USB interface of driver borad to the USB interface of PC.

2) Open the test software of E-LINK-TCON-DEMO

3) Click 'connect' normal display as shown below:

4) Tick( $\sqrt{}$ ) the 'AutoSet' box, click 'Open File', select the related image and click to open it. Preview the selected image and click 'Open' as shown below:

5) Click 'Display' and display the image.

connect	🗆 EnMirror 🗖 EnFlip	Engineer Features	Cancel
Generic Storage RamDisc 1.	00		
Searched 1 Disks Panel Width = 1200 Panel Height = 825 Image Buffer Address = 0x Waveform: (8 Modes, 14 T	(1141E0 emperature Segments)	Refresh Display Mode C MulEngine 2 • C SlideShow Time Interval C SlideShow Time Interval Load Image and Display X Y 0 0 Width Heig En Convert to 3 0 Open File EnClrWhite Display	Upgrade

OK		connect Enthrer Enthre Engineer Features About Oc
7inch	Black and white color 1200x825 pixel 16 gray scale Less than 1s refresh time 1)SB/SDI/180/12C Interface	Genera: Starage RamDie: 1.00     Image Starage RamDie: 1.00       Secredrol 10dd Pawer Hegin: 100 Pawer Hegin:
etne E Ink TCon	Demo AP v.2.0	×
Generic St Searched Panel Wid Panel Heig Image But Waveform Decode In Decode In Sending I Send Imag	torage RamDisc 1.00 1 Disks tth = 1200 ght = 825 ffer Address = 0x11A1E0 n: (8 Modes, 14 Temperature Segments) mage File: J:\temp\9.7inch e-paper\E-LINK-TCON-DEMO\DemoPIC\01 mage Time = 937 mage File to Device ge Time = 969	Refresh     Display Mode   C   MulEngine   2   C   SlideShow   Time Interval(Secs)   Start     Load Image and Display   X   Y   Start     Load Image and Display   X   Y   Start Mode   0   0   2   Width   Height   End Mode   1200   825   2   En Convert to 3 color   AutoSet   Open File
Clear		I EnClrWhite I Set Full Panel Display

2. Raspberry Pi-controlled

1) Hardware connection shown as below: Connect IT8951 for EPD driver borad directly to the GPIO interface of Raspberry Pi , using SPI interface for communication.



2) Make sure the dialing switch is selected to SPI mode.



SPI/I80 Mode Switch

3) Install the bcm2835 C function library, here we provide with the install pack (click to download), users can also visit the website: <u>http://www.airspayce.com/mikem/bcm2835/</u> for the latest version. Copy the install pack to the system of Raspberry Pi and execute the following code:

- 1) tar zxvf bcm2835-1.xx.tar.gz
- ② cd bcm2835-1.xx
- ③ ./configure
- ④ make
- 5 sudo make check
- 6 sudo make

install Installation

complete

4) Test the DEMO program to refresh the image with the following code:

- 1) tar zxvf IT8951.tar.gz (ucompress)
- 2 cd IT8951
- ③ make clean
- ④ make
- 5 sudo ./IT8951

This program supports commonly-used BMP formats to display. If coming across a failure for using some uncommonly used BMP format, just open the image through Windows drawing tool and save as another image in a commonly used BMP format so that the problem can be solved.

## 5. Emulator

It needs no emulator because it is a display driver borad.