Universal e-Paper / e ink Raw Panel Driver Board, ESP8266 WiFi Wireless

SKU 105990071

2.13inch E-Ink display HAT for Raspberry Pi & Arduino yellow/black/white 3 color e paper

ADD TO CART
Description

This is a universal driver board for e-Paper raw panels, thanks to the WiFi connectivity, it is allowed to display image from PC/smart phone via WiFi conveniently. Furthermore, it can also be used for Arduino development, just like any other normal Arduino board.

Features

- Onboard ESP8266, supports Arduino development
- Provides HTML host code
- Supports Floyd-Steinberg dithering algorithm, more color combinations, better shadow rendering for the original image
- Supports popular image formats: BMP, JPEG, GIF, PNG, etc.
- Easy to be integrated into wireless applications
- Comes with e-Paper driver (open source)
- Comes with development resources and manual
Technical Details

- Dimensions: 48.30mm x 29.60mm x 10mm
- Weight: G.W 17g, N.W 10g
- Battery: Exclude
- WiFi protocol: 802.11b/g/n
- Interface: 3-wire SPI, 4-wire SPI (default)
- Operating voltage: 5V
- Operating current: 50mA ~ 100mA
- Outline dimension: 29.57mm x 48.26mm
- Mounting holes size: 2.9mm

Part List

- e-Paper ESP8266 Driver Board: 1
- e-Paper Adapter: 1
- 24PIN FFC: 1

Downloaded from Arrow.com.
USER INTERFACE

The application user interface has following controls (figure 5):

- **Select image file** – opens the file browser;

- **Level: black, Level: black and red, Dithering: black, Dithering: black and red** – make a new picture based on opened image with proper size and colors;

- **Upload image** – makes a POST request with the type of e-Paper, sends it to the server-side application and waits response ‘Ok’, sends the processed image part by part;

- **Device IP**. shows IP of server-side application;

- **Bounds** are source copying rectangle offset \((X, Y)\) and display size \((W, H)\) defined by radio buttons: 1.5 inch e-Paper \((W, H)\) 7.5 inch e-Paper(b);

- **Viewers**: Original image (drag & drop control), Processed image (is empty initially).

Note: Bounds \(W, H\) and Device IP are supposed to be not editable and updated automatically when you change e-Paper’s type or the server, but they are changeable to allow you to test the software or to control a few boards just pasting their IP into Device IP text box.
HARDWARE

The board of the E-Paper Image Loader is developed to control an e-Paper display by Wi-Fi net, but the EPS-8266 module allows performing a lot of other useful functions the same time: keep loaded images in SD-card or external flash memory, get data from sensors and display them in e-Paper, and so on. All of additional components need correspondent circuits: the e-Paper display circuits are on the board, other possible circuits are connected by 2 series of pins at the bottom of the board.

PINOUT

If you need to use some of EPS8266-Arduino project, just detach your display, because it is connected to pins:

```c
/* SPI pin definition -----------------------------------------------*/
// SPI pin definition
#define CS_PIN 15
#define RST_PIN 5
#define DC_PIN 4
#define BUSY_PIN 16
```

If a display is detached from the board, their display circuits situated in it don't make any influence on the ESP-8266 circuits.
Questions and Answers

1. Smart labels require to be wire free. How long does it last on battery? Is it pull or push from WiFi?

jp on Sep 19, 2018
Hi there, we do not test the battery last time yet. for the second questions, please help provide more detail info. thanks.

bill.yu on Sep 19, 2018 09:57 AM
You may find the needed info. in the [e-Paper Driver Board USER MANUAL] and DATA TRANSMISSION PROTOCOL for the 2nd question, thanks.
evan.xh.cheng on Sep 19, 2018 13:12 PM
@jp, I think that you would make pricetag battery powered or similar object. I'm interested too. If you want make some words about this write me an email: parma.luca@gmail.com. Luca

lucacorradinet on Oct 06, 2018 16:37 PM
Hi there, we do not test the battery last time yet. for the second questions, please help provide more detail info. thanks.

2. wifi link broken. what is esp8266 spec? I want to use micropython and need RAM, Pram
mschafer on Sep 19, 2018
Hi there, it is ESP8266-12E/12F. thanks.
bill.yu on Sep 19, 2018 09:56 AM
The link of the Wiki have been fixed, and the link of the Spec have been added too ~
evan.xh.cheng on Sep 19, 2018 12:58 PM
The link of the Wiki have been fixed, and the link of the Spec have been added too ~