4.3inch HDMI LCD User Manual

OVERVIEW

This is 4inch resistive touch screen with 480x272 resolution, HDMI interface, designed for Raspberry Pi

FEATURES

- 480x272 hardware resolution
- Resistive touch control
- Supports Raspberry Pi Zero/Zero W/Zero WH/A+/B+/2B/3B (the Pi 1 model B or Pi Zero requires an HDMI cable)
- Drivers provided (works with your own Raspbian/Ubuntu/Kali/Retropie)
- HDMI interface for displaying, no I/Os required (however, the touch panel still needs I/Os)
- Backlight can be turned off to lower power consumption

CONTENT

VERSIONS

We updated of the controller from TFP401A to RTD2660H because of supply reasons. RTD2660H has higher compatibility than TFP401A, however, higher the consumption.

V1:

V2:

HOW TO USE

The touch of the LCD can be driven in two ways: Method 1: Install driver manually; Method 2: Using ready-to-use Image

HARDWARE CONNECTION

- Insert LCD directly to 40PIN header of Raspberry Pi.
- Using the HDMI adapter or HDMI cable to connect HDMI interface of LCD to Raspberry Pi' s

METHOD 1, INSTALL DRIVER

1. Download lasted OS[1] image from Raspberry Pi website.
2. Extract image from ZIP archive and write it to SD card
3. After writing, modify the config.txt file which is located at root directory (BOOT) of SD card. Append these statements to the end of config.txt file

[1] This instruction is based on Raspbian OS

a) For V1 version:

```
max_usb_current=1
hdmi_group=2
hdmi_mode=87
hdmi_timings=480 0 1 41 2 272 0 2 10 2 0 0 0 60 0 9009000 3
display_rotate=2
hdmi_drive=2
```

b) For V2 version

```
display_rotate=2
max_usb_current=1
hdmi_group=2
hdmi_mode=87
hdmi_cvt 480 272 60 6 0 0 0
dtoverlay=ads7846,cs=1,penirq=25,penirq_pull=2,speed=50000,keep_vref_on=0,swapxy=0,pmax=255,xohms=150,xmin=200,xmax=3900,ymin=200,ymax=3900
hdmi_drive=1
hdmi_force_hotplug=1
```

4. Insert SD card to Raspberry Pi and power it on.

5. Connect to network，open terminal to download and install driver.

a) For V1 version

```
git clone https://github.com/waveshare/LCD-show.git

cd LCD-show/

sudo ./LCD43-show
```

b) For V2 version

```
git clone https://github.com/waveshare/LCD-show.git

cd LCD-show/

sudo ./LCD43-show-V2
```

6. Waiting for rebooting

METHOD 2 USING READY-TO-USE IMAGE

1. Download image we provided on wiki

   - Raspbian for 4.3inch HDMI LCD

2. Extract the image file and write to SD card

3. Insert the SD card to Raspberry Pi and power on.

SETTING ORIENTATION

After installing driver, you can set the orientation as below

- For V1 version

```
cd LCD-show/

#Choose one command to execute

sudo ./LCD43-show X
```

- For V2 version

```
cd LCD-show/

#Choose one command to execute

sudo ./LCD43-show-V2 X
```

【Note】X can be 0, 90, 180 or 270

CALIBRATION

If the touch of RPi LCD is not calibrated, you can calibrate the touch screen.

1. Copy and install calibrator tool

```
cp LCD-show/xinput-calibrator_0.7.5-1_armhf.deb ~/

sudo dpkg -i -B xinput-calibrator_0.7.5-1_armhf.deb
```

2. Install X service

```
sudo apt-get install xserver-xorg-input-evdev
sudo cp -rf /usr/share/X11/xorg.conf.d/10-evdev.conf /usr/share/X11/xorg.conf.d/45-evdev.conf
sudo reboot
```

3. Running calibrator and finish calibration

```
DISPLAY=:0.0 xinput_calibrator
```

4. Saving the calibration data to 99-clibration.conf file

```
sudo mkdir /etc/X11/xorg.conf.d

sudo nano /etc/X11/xorg.conf.d./99-calibration.conf
```

The calibration data looks like;

```
Section "InputClass"
        Identifier      "calibration"
        MatchProduct    "ADS7846 Touchscreen"
        Option  "Calibration"   "208 3905 288 3910"
        Option  "SwapAxes"      "0"
EndSection
```

INTERFACE

PIN NO.	Symbol	Description
1, 17	3.3V	Power positive (3.3V power input)
2, 4	5V	Power positive (5V power input)
3, 5, 7, 8, 10, 11, 12, 13, 15, 16, 18, 24	NC	NC
6, 9, 14, 20, 25	GND	Ground
19	TP_SI	SPI data input of Touch Panel
21	TP_SO	SPI data output of Touch Panel
22	TP_IRQ	Touch Panel interrupt, low level while the Touch Panel detects touching
23	TP_SCK	SPI clock of Touch Panel
26	TP_CS	Touch Panel chip selection, low active