4inch HDMI LCD

From Waveshare Wiki

Contents

4inch HDMI LCD
800×480, IPS

4inch Resistive Touch Screen LCD, HDMI interface, IPS Screen, Designed for Raspberry Pi

Primary Attribute

Category: OLEDs / LCDs, LCD, Raspberry Pi LCD

Brand: Waveshare

Website

English: Website (http://www.waveshare.com/4inch-hdmi-lcd.htm)

Chinese: 官网 (http://www.waveshare.net/shop/4inch-hdmi-lcd.htm)

Onboard Interfaces

RPi I/Os	HDMI

Introduction

4inch Resistive Touch Screen LCD, HDMI interface, IPS Screen, Designed for Raspberry Pi

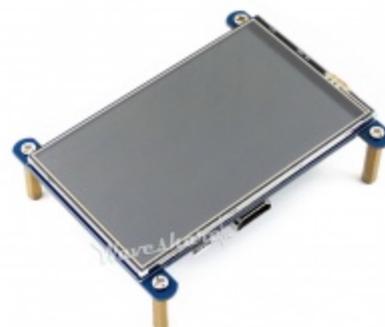More (http://www.waveshare.com/4inch-HDMI-LCD.htm)

Features

- 800×480 high resolution
- Resistive touch control
- IPS technology, high quality and perfect displaying from very wide viewing angle
- Compatible and Direct-connect with any revision of Raspberry Pi (except the Pi 1 model B or Pi Zero, which requires an HDMI cable)
- Drivers provided (works with your own Raspbian/Ubuntu directly)
- Also works as a computer monitor, in this case, touch panel is unavailable and HDMI cable is required
- HDMI interface for displaying, no I/Os required (however, the touch panel still needs I/Os)
- Back light control to lower power consumption

Getting Started

Hardware Connection

1. Plug the LCD to your Raspberry Pi:
   - There are 40 pins on Raspberry Pi Model A+/B+/2 B/3 B but only 26 pins on the LCD, so you should pay attention to connecting the pins to your Pi accordingly.
2. Connect the HDMI Connector to both the HDMI interfaces on the LCD and the Pi.
   - You should connect the LCD to Raspberry Pi Model B or Raspberry Pi Zero with an HDMI cable rather than an HDMI Connector.
3. Turn on the "backlight" switch on the back of the LCD.

Hardware connection

You can enable the touch in two ways: Method 1. install driver to your Raspbian/Ubuntu Mate OS. Method 2. use the Ready-to-use image file of which LCD driver was pre-installed.

Method 1. Driver installation

Description: If the touch screen doesn't work properly, please install the driver: LCD-show-170703.tar.gz, but not LCD-show-161112.tar.gz.

- LCD-show-170703.tar.gz (network connection is required while installing) (http://www.waveshare.com/w/upload/0/00/LCD-show-170703.tar.gz)
- LCD-show-161112.tar.gz (http://www.waveshare.com/w/upload/4/4b/LCD-show-161112.tar.gz)

1) Download the Raspbian / Ubuntu Mate image from Raspberry Pi website (https://www.raspberrypi.org/downloads/) and extract it on a PC.

2) Connect your micro SD card to the PC and write the image to the card using Win32DiskImager. How to write an image to a micro SD card for your Pi? See RPi Image Installation Guides for more details)

3) Copy the LCD driver to the micro SD card (or copy the driver to the system of Pi using a USB drive).

4) Append the following lines to the config.txt file which is located in the root of the card:

```
hdmi_group=2
hdmi_mode=87
hdmi_cvt 480 800 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
display_rotate=3
```

5) The LCD will display after booting up. Then open a terminal to install the touch driver which can be found in the /boot/ directory.

```
tar xzvf /boot/LCD-show-YYMMDD.tar.gz
cd LCD-show/
chmod +x LCD4-800x480-show
./LCD4-800x480-show
```

Touch function will work after restart. For ease of use, you can set the screen orientation, see: #Screen orientation settings.

Method 2. Using Ready-to-use image

The image file with pre-installed driver is located in the IMAGE directory of the CD. Extract the .7z file and you will get an .img file. Write the image to your micro SD card (How to write an image to a micro SD card for your Pi? See RPi Image Installation Guides for more details). Then insert the card to your Pi, power up and enjoy it.

Screen orientation settings

After touch driver installed, the screen orientation can be set by these commands:

- 0 degree rotation

```
cd LCD-show/
./LCD4-800x480-show 0
```

- 90 degree rotation

```
cd LCD-show/
./LCD4-800x480-show 90
```

- 180 degree rotation

```
cd LCD-show/
./LCD4-800x480-show 180
```

- 270 degree rotation

```
cd LCD-show/
./LCD4-800x480-show 270
```

Touch screen calibration

- This LCD can be calibrated using a program called xinput_calibrator which can be downloaded from Xinput-calibrator_0.7.5-1_armhf
- Extract and copy the software Xinput-calibrator_0.7.5-1_armhf.deb to the Raspbian of your Pi.
- Install it with the commands:

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

- Click the "Menu" button on the task bar, choose "Preference" -> "Calibrate Touchscreen".

- Finish the touch calibration following the prompts. Maybe rebooting is required to make calibration active.
- You can create a 99-calibration.conf file to save the touch parameters (not necessary if file exists).

```
/ect/X11/xorg.conf.d/99-calibration.conf
```

- Save the touch parameters (may differ depending on LCD) to 99-calibration.conf, as shown in the picture:

```
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

Resource

Driver

If the touch screen doesn't work properly, please install the driver: LCD-show-170703.tar.gz, but not LCD-show-161112.tar.gz.

- LCD-show-170703.tar.gz (network connection is required while installing) (http://www.waveshare.com/w/upload/0/00/LCD-show-170703.tar.gz)
- LCD-show-161112.tar.gz (http://www.waveshare.com/w/upload/4/4b/LCD-show-161112.tar.gz)

Software

- Panasonic SDFormatter (http://www.waveshare.com/w/upload/d/d7/Panasonic_SDFormatter.zip)
- Win32DiskImager (http://www.waveshare.com/w/upload/7/76/Win32DiskImager.zip)

- PuTTY (http://www.waveshare.com/w/upload/5/56/Putty.zip)

Image

Description: if you felt hard to install driver, try the image with driver pre-installed.

- 4inch_HDMI_Raspbian-160922.7z (https://drive.google.com/open?id=0BxFRtACVZx9fdmk1R1U3bzR4WUk)

LCD Panel Dimension

- 4inch HDMI LCD panel dimension (http://www.waveshare.com/w/upload/6/6d/4inch-hdmi-lcd-panel-dimension.pdf)

FAQ

Question:

Why does the touchscreen not work well?

Answer: [Collapse]

Now, we only provide touch screen drivers for Raspbian and Ubuntu Mate. How to install the driver? See:#Method_1._Driver_installation

Question:

Why does the image in the CD not work on my Pi?

Answer: [Collapse]

- The image in the CD may differ depending on batches, however, some Images are just available for Pi 2 (or before, but not for Pi 3). In such cases you can download the latest version from Raspberry Pi website (https://www.raspberrypi.org/downloads/raspbian/) and install the driver. See:#Method_1._Driver_installation
- Make sure the hardware connection is correct and connects fine.
- Make sure you've written the image to your SD card using the software File:Win32DiskImager.zip rather then just copy and paste.
- It is strongly recommended to use a stand-alone 5V/2A power adapter, because the USB port of PC might not have enough power to support the Pi and LCD.

Question:

What are the power requirements?

Answer: [Collapse]

When working with 5V input, the current is about 200mA with back light on and 30mA with back light off.

Question:

It seems not to work as a computer monitor for a Windows PC, right?

Answer: [Collapse]

This LCD is used for portrait display. You can set the orientation on Windows: desktop right click --> display settings --> orientation: portrait.

Support

Contact your seller (fast response and most recommended)

or send emails to **service@waveshare.com** (not fast enough but please be patient) for help.

Our working time: 09:00-18:00 (**UTC+8** Monday to Saturday)

- This page was last modified on 28 September 2017, at 09:03.
- This page has been accessed 20,888 times.

X-ON Electronics

Largest Supplier of Electrical and Electronic Components

Click to view similar products for Display Modules *category:*

Click to view products by Waveshare *manufacturer:*

Other Similar products are found below :

LCD-WVGA-7IN-1 P6153-PR TDP0700T800480PCAP P6171DPR-DC-RS 99-47-02033A P6171DPR-DC-U 96LEDK-A215FH25NF5 IDK-1121WR-30FHA1E IDK-104R-32SVI1 WF70GTIAGDNT0# G1619W02BBW01 MIKROMEDIA 4 FOR STM32F4 CAPACITIVE FPI MIKROMEDIA 3 FOR STM32F4 CAPACITIVE FPI PH320240T023-IHC09 1148693 1148689 PIM537 TN0216ANVNANN-GN00 TN0104ANVAANN-GN00 TN0181ANVNANN-GN00 12121000 MIKROMEDIA FOR DSPIC33 MIKROMEDIA FOR PIC24 MIKROMEDIA FOR PIC32 MIKROMEDIA FOR STELLARIS M3 MIKROMEDIA FOR XMEGA MIKROMEDIA HMI 3.5 RES MIKROMEDIA HMI 5 MIKROMEDIA PLUS FOR FT90X MIKROMEDIA PLUS FOR PIC32MX7 SHIELD MIKROMEDIA PROTO SHIELD MIKROMEDIA 5 FOR TIVA MIKROMEDIA 5 FOR TIVA SHIELD MIKROMEDIA 7 FOR STM32F4 MIKROMEDIA CONNECT SHIELD MIKROMEDIA FOR ARM MIKROMEDIA FOR DSPIC33EP MIKROMEDIA FOR PSOC5LP MIKROMEDIA GAMING SHIELD MIKROMEDIA HMI 4.3 UXB MIKROMEDIA HMI 5 RES MIKROMEDIA HMI 5 UXB MIKROMEDIA HMI 7 MIKROMEDIA HMI BREAKOUT BOARD MIKROMEDIA PLUS FOR PIC32MX7 MIKROMEDIA PLUS FOR STM32 RVT28AEFNWN00 RVT28UEFNWC01 RVT28UEFNWC03 RVT28UEFNWC05