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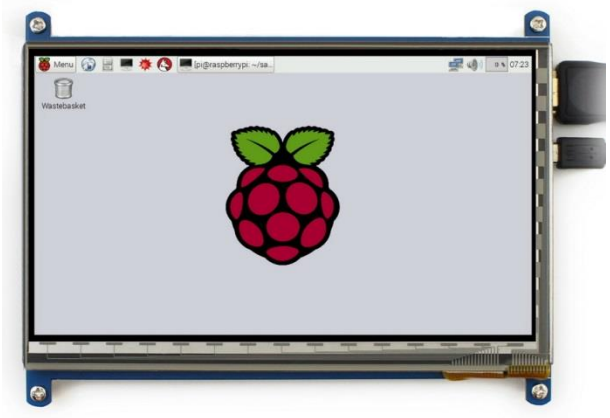
7inch HDMI LCD (C) (Firmware Rev 2.1) User Manual



How to program Raspbian image file

In order to use the LCD with a Raspberry Pi, you should configure the original system first. Of course, you can program a ready-to-use system image file to your Raspberry Pi board as well. In this section, we will illustrate how to program the image file by taking the ready-to-use system image file, **7inch HDMI LCD (C) Raspberry 2 model B Raspbian image 2015-11-21 jessie**, as an example. This image file supports Raspberry Pi 2 Model B. Instead, for Raspberry Pi Model B/A+/B+, you can use **7inch HDMI LCD (C) Raspberry B / B+ Raspbian image 2015-11-21 jessie**.

1. Download the zip file to your PC, unzip it and get an .img file.
2. Connect a TF card to your PC, and format your TF card with the SDFormatter.exe

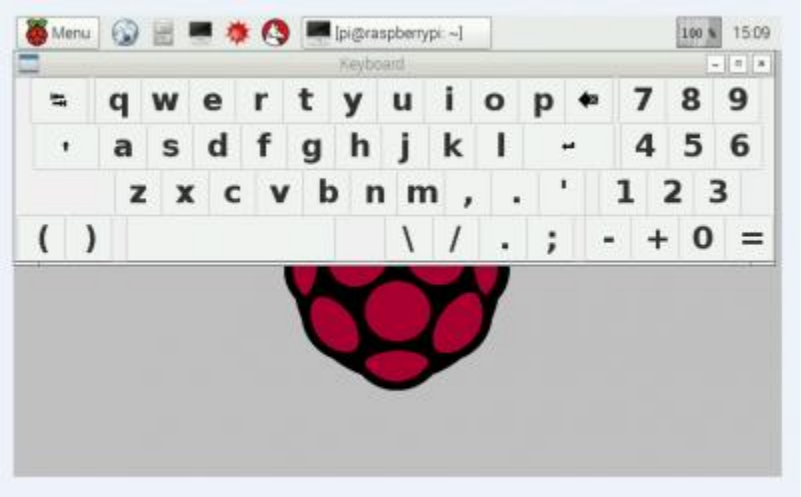
Notices: The capability of TF card in used here should be more than 4GB. In this operation, a TF card reader is also required, which has to be purchased separately.

3. Start the Win32DiskImager, and select the system image file copied into your PC, then, click the button Write to program the system image file.

Hardware connection

1. Connect the LCD to the HDMI on the Raspberry Pi board with a HDMI cable;
2. Connect the USB Touch interface on the LCD to the USB interface on the Raspberry Pi board with a type-A-to-micro USB cable.

Virtual keyboard of Raspberry Pi



Virtual keyboard of Raspberry Pi

The Virtual keyboard of Raspbian system enables you to save the USB resource, providing easy system operations. After the LCD is working properly, this function can be invoked by the following command:

```
DISPLAY=:0.0 matchbox-keyboard -s 100 extended
```

Now, the virtual keyboard is ready to use, as the figure shows.

How to drive LCD on Raspbian

In the section above, we presented the steps of image programming by taking the ready-to-use system image file programming as an example, since the ready-to-use image is easier to use and understand. However, you can freely customize your system by configuring the original Raspbian image file to support this LCD module.

Questions you may have: why offer Rev2.1 driver even if Rev2.1 LCD is compatible with Raspbian without any drivers?

Because the original Raspbian HID touch driver is still not perfect (is not sensitive enough and does not support touch rotation), we provide the driver for fixing problems. (The Ubuntu HID driver is ok so we don't provide images or drivers for it.)

The LCD can be driven in two ways. **What's the difference?** Method 1 provides a smoother touch experience but might conflict with other software. In contrast, method 2 has the better compatibility but of which touch experience is not good enough.

1. Install driver script.
2. Modify the config.txt file.

How to install driver script

1. Copy the driver **Raspbian Driver For Raspberry Pi 2 Model B** or **Raspbian Driver For Raspberry Pi B+/A+/B** to your Raspbian system, and extract it. That is, enter the terminal and input the following command:

```
sudo tar zxvf file_name.tar.gz
```

2. Change the current directory to the directory generated before and then run the script USB_TOUCH_CAP_7.0_RASPBIAN by the following command:

```
cd dir_file_name
sudo ./USB_TOUCH_CAP_7.0_RASPBIAN
```

3. When finished, the system will reboot automatically. And the LCD module can work properly, including display and touch functions, after the system rebooted.
   Note: If the max USB current is limited by the system, the LCD may not work properly. To unlock the current limitation, you can edit the /boot/config.txt and add:

```
max_usb_current=1
```

How to modify config.txt to drive your LCD

Download Raspbian from the Raspberry Pi web site and add the following code to the end of /boot/config.txt:

```
max usb current=1
hdmi_group=2
hdmi_mode=1
hdmi mode=87
hdmi_cvt 1024 600 60 6 0 0 0
```

You must make sure that there are no spaces on either side of the equal sign.

How to enter graphical desktop

Notice: The Raspbian system boots to terminal interface by default. To make the operations simple when using with a LCD, it is recommended to set the system to boot to graphical desktop directly. Please follow the steps below to configure the system.

1. Enter the Raspbian system, and input the following command:

```
sudo raspi-config
```

2. Select the option Enable Boot to Desktop/Scratch by using the Arrow keys, Space key or/and Enter key.
3. Select the option Desktop Login as user 'Pi' at the graphical desktop.
4. When you see the prompt "Would you like to reboot now?", select the option Yes to reboot the system.

How to use with the Ubuntu system

Download UBUNTU MATE image from the Raspberry Pi web site, and add the following code to the end of /boot/config.txt:

```
max usb current=1
hdmi group=2
hdmi_mode=1
hdmi mode=87
hdmi_cvt 1024 600 60 6 0 0 0
```

You must make sure that there are no spaces on either side of the equal sign.

How to use with Windows 10 IoT Core

Download Windows 10 IoT Core from Microsoft github. Follow the steps to make your own Windows 10 IoT Core image and then write it to your TF card. Add the following code to the end of boot/config.txt which can be found in the root directory of the TF card:

```
max_usb_current=1
hdmi_group=2
hdmi_mode=1
hdmi_mode=87
hdmi_cvt 1024 600 60 6 0 0 0
```

You must make sure that there are no spaces on either side of the equal sign.

How to use with BeagleBones

How to program Angstrom image file

If this LCD module is used for display only, you can program the latest Angstrom image file to the board directly without any change. The BeagleBone will read the display parameters of the 7 inch HDMI displayer and set the resolution to 800*480 automatically. When using this LCD module as a touch screen, you should program the image file **7inch HDMI LCD (C) Angstrom Image**. Please follow the steps below to program the image file.

1. Download the zip file to your PC, unzip it and get an .img file.
2. Connect a TF card to your PC, and format your TF card with the SDFormatter.exe

   Notices: The capability of TF card in used here should be more than 4GB. In this operation, a TF card reader is also required, which has to be purchased separately.

3. Start the Win32DiskImager.exe, and select the system image file copied into your PC, then, click the button Write to program the system image file.
4. After programming the image file, please insert the TF card to your board, press the key uBOOT and hold it till power up. Then, you will enter the system located at the TF card. Wait a moment and you will enter the graphical desktop directly.

Hardware connection

1. Connect the LCD to the HDMI on the BeagleBone board with a HDMI to micro HDMI cable (sold separately);

2. Connect the USB Touch interface on the LCD to the USB interface on the BeagleBone board with a type-A-to-micro USB cable. (BeagleBone has two USB interfaces, one for host and the other for client. In here, you should connect the LCD module to the USB host interface).

How to use with Banana Pi

Before powering up the Banana Pi, you should connect it to a LCD displayer properly, since the Banana Pi may read the resolution parameters of the LCD displayer on startup. And the connection should be remained till the Banana Pi enters the desktop. In this case, even if you disconnect the LCD displayer and reconnect it again to the Banana Pi, the LCD can still work properly.

How to program Raspbian_For_BananaPi image file

Program the image file **7inch HDMI LCD (C) Raspbian Image** to the board. This image file supports the modules BananaPi Pro and BananaPi.

1. Download the zip file to your PC, unzip it and get an .img file.
2. Connect a TF card to your PC, and format your TF card with the SDFormatter.exe

   Notices: The capability of TF card in used here should be more than 4GB. In this operation, a TF card reader is also required, which has to be purchased separately.

3. Start the Win32DiskImager.exe, and select the system image file copied into your PC, then, click the button Write to program the system image file.

Hardware connection

1. Connect the LCD to the HDMI on the Banana Pi board with a HDMI cable;
2. Connect the USB Touch interface on the LCD to the USB interface on the Banana Pi board with a type-A-to-micro USB cable.

How to load WiFi driver of BananaPi Pro

Comparing with the Banana Pi, the BananaPi Pro has added an on-board WiFi module. When using the BananaPi Pro, you can use SSH to connect to the Pi and execute the following command to load the WiFi driver:

```
sudo modprobe ap6210
```

How to use with the Lubuntu system

Program the image file **7inch HDMI LCD (C) Lubuntu Image** to the board. This image file supports the modules BananaPi Pro and BananaPi. User name: bananapi Password: bananapi