7HP-CAPQLED

Introduction
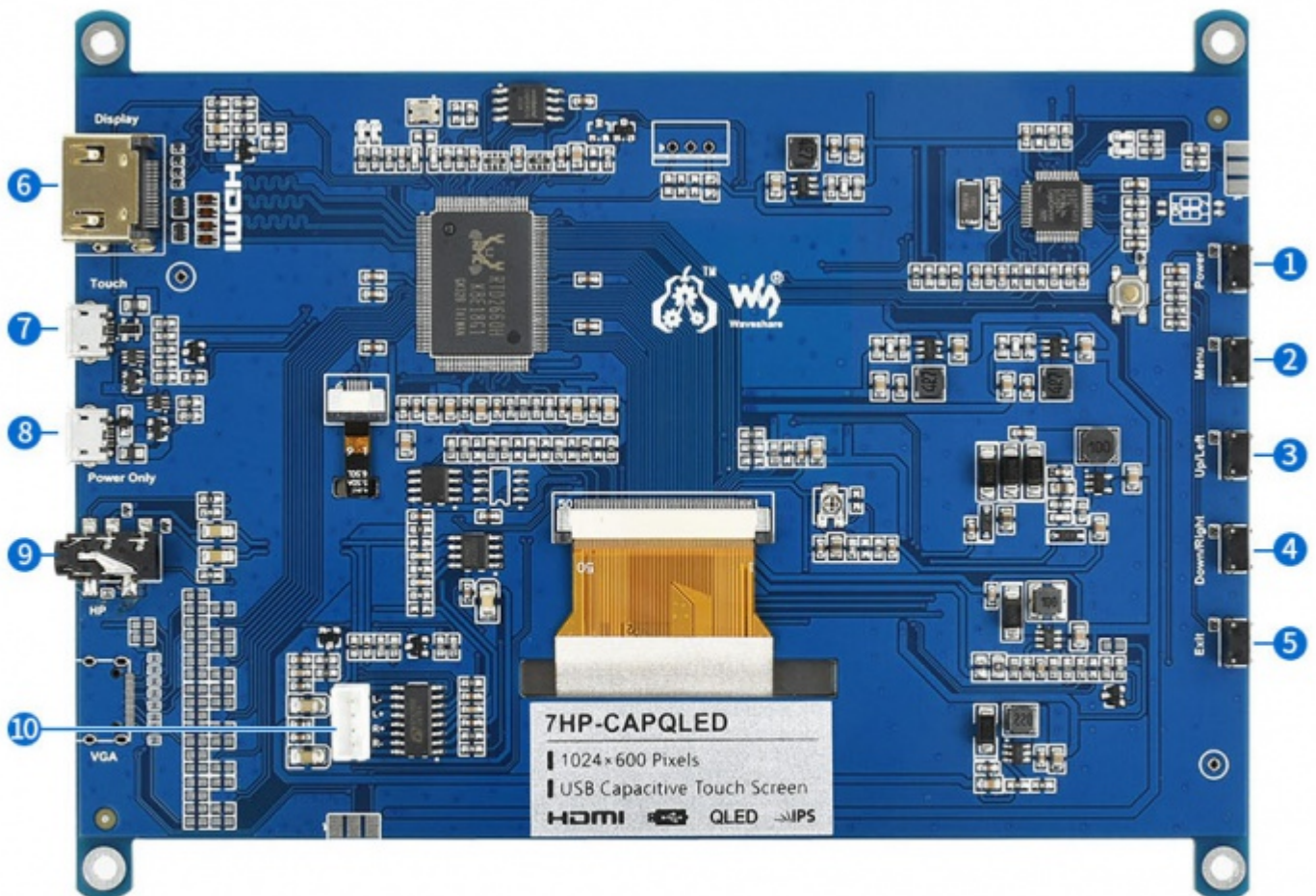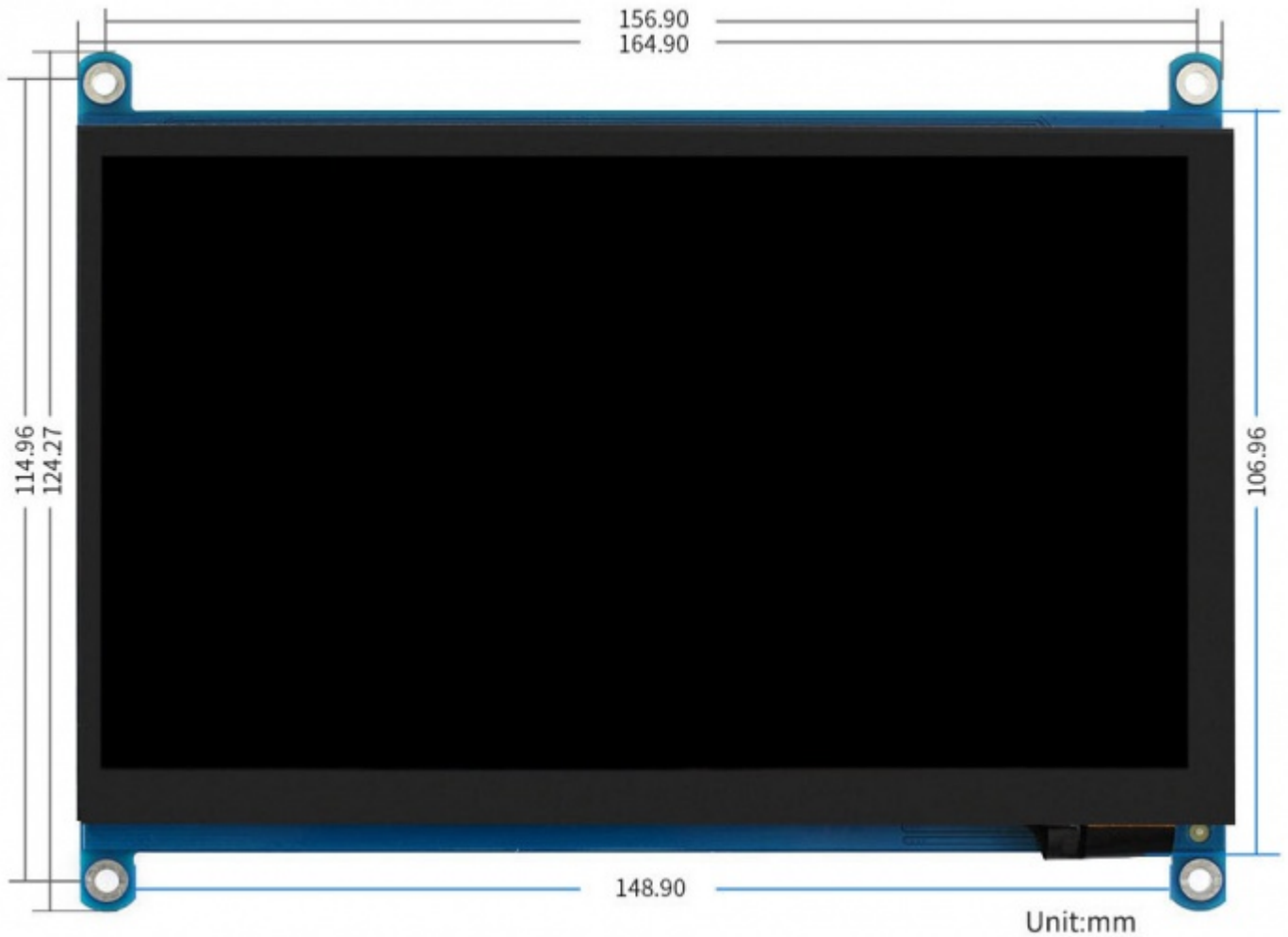
7inch QLED Quantum Dot Display, Capacitive Touch, 1024×600, G+G Toughened Glass Panel, Various Devices & Systems Support

More

Features

- 7inch QLED quantum dot display, wider color gamut, more pure chroma and longer lifetime.
- 1024x600 hardware resolution, support software resolution (up to 1920x1080)
- Toughened glass capacitive touch panel, 6H hardness. (case version only)
- Support Jetson Nano Developer Kit, driver free
- Used with Raspberry Pi, supports Raspbian, Ubuntu, WIN 10 IoT, driver free.
- Support popular Game Consoles like Xbox360, PS4 and SWITCH.
- Multi-languages OSD menu, for power management, brightness/contrast adjustment, etc.
- It has a 3.5mm audio jack and supports HDMI audio output

What's ON Board

156.90
164.90

114.96
124.27

106.96

148.90

Unit:mm

Display

6

HDMI

Touch

7

8

Power Only

9

HP

10

VGA

7HP-CAPQLED

1024×600 Pixels

USB Capacitive Touch Screen

HDMI ⬛🔲 QLED ◞IPS

Waveshare

1 Power

2 Menu

3 Up/Left

4 Down/Right

5 Exit

1 Power Button 2 Menu Button 3 Up/Left 4 Down/Right 5 Return/Exit

6 HDMI Port 7 Touch Port 8 Power Supply 9 Audio Jack 10 Speaker Header

Working with PC

This product supports Windows 10/8.1/8/7 OS. :

1. Connect the TOUCH interface of LCD to the USB interface of PC. Wait for a while, the windows will automatically recognize the touch function.

2. Connect the HDMI interface of LCD to the HDMI port of PC. About 5s later, you can see the LCD display properly. If you need the audio, you can insert a 3.5mm earphones to HP ports.

Note:

1) When the computer is connected to several different displays at the same time, only this LCD can be used to control the cursor on the main display, so we recommended to set this LCD as the main display.

2) Some of PC cannot support HDMI screen Hot Plug. In this case, restart the PC can solve.

3) Sometimes LCD will flicker because of undersupplying from USB cable of PC. You need to connect an external power supply (5V/2A) to DC port.

4) HP audio output only works while using HDMI communication

5) Mini HDMI to VGA Cable is necessary and need to be purchased separately if you use VGA communication.

Touch Settings on Win 10 PC

Some users want to connect more than one display to their PC. Here we talk about how to setting the touch to make the touchscreen control its screen separately.

- Connect touchscreen to PC. Here we use a standard PC monitor and connect a 7inch HDMI LCD (C) for example. We make the monitor as the main screen and the touchscreen as a secondary screen.

- By default, The touchscreen can only control the cursor on the main screen. Here we set it to control the secondary screen.

- Open Control Panel and search Tablet PC setting on the control panel and open the tool.
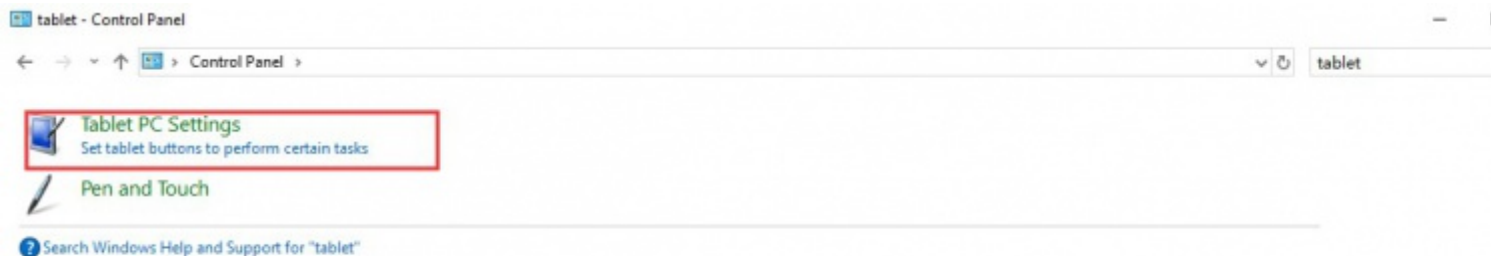
- Click button "Setup..." to set the touchscreen
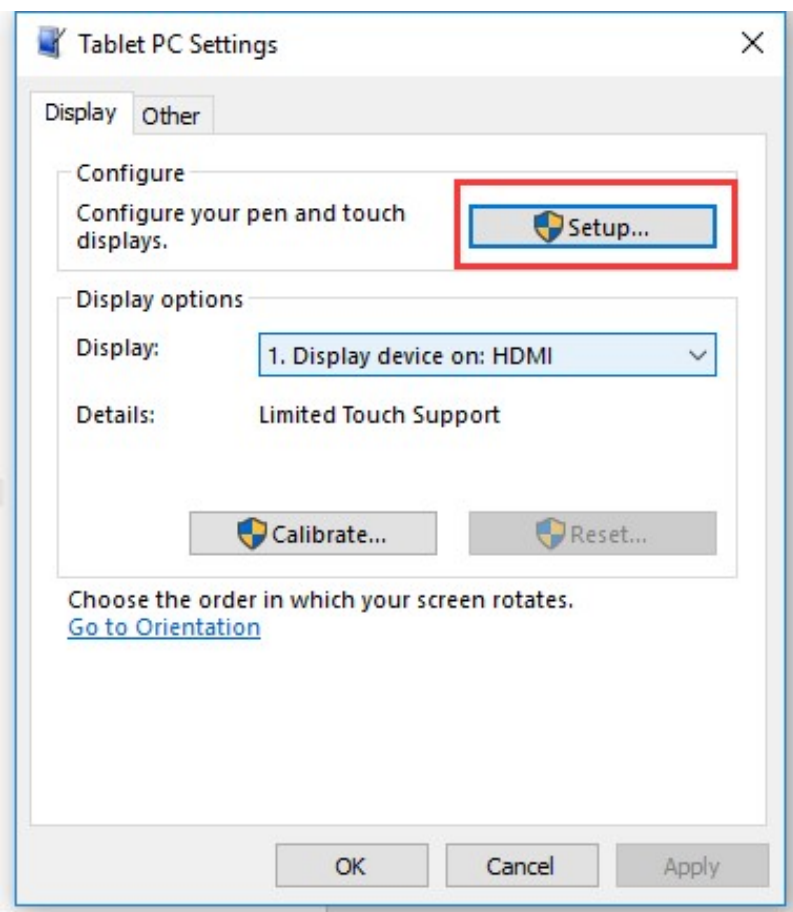
- After clicking the setup you can find that it is prompt on your first screen with white color background and other screens are white.

- If we want the touch of the touchscreen to control the desktop of the touchscreen itself. Just press Enter key to pass the first screen. And the second screen, when you find that the black text is displayed on the touchscreen, just touch the center of the touchscreen to finish this setting.

- After this setting, the touch on the screen will just control this touchscreen even though it is not the main screen.

Note:

1 If the first screen and the second screen are touchscreens as well, you can touch them when the text is displayed on the screens. Then you can find that all the touchscreen can work.

2 This method is just tested on win 10 PC.

Working with Raspberry Pi

Supports Raspbian/Ubuntu mate/Windows 10 IoT Core

When working with Raspberry Pi, you should set the resolution of the LCD by yourself, otherwise, the LCD screen will not work. For more detailed information, please read the following section.

Please download the latest version of the image on the Raspberry Pi official website.

1) Download the compressed file to the PC, and unzip it to get the .img file.

2) Connect the TF card to the PC, use SDFormatter.exe software to format the TF card.

3) Open the Win32DiskImager.exe software, select the system image downloaded in step 1, and click'Write' to write the system image.

4) After the image has finished writing, open the config.txt file in the root directory of the TF card, and comment out dtoverlay=vc4-fkms-V3D.

5) Add the following code at the end of config.txt, then save and quit the TF card safely.

```
max usb current=1
hdmi_force_hotplug=1
config hdmi boost=10
hdmi_group=2
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.

6) Save and connect the TF card to your Pi then power up.

7) Connect the Touch interface of LCD to the USB port of Raspberry Pi.

8) Connect the HDMI interface of LCD to the HDMI port of Raspberry Pi.

Note:

- Resolution of Ubuntu Mate OS or Windows 10 IoT Core OS can also be set properly by editing config.txt.
- For Pi Zero / Zero W: if you've used an SD card on a Pi 3 and then attached the card to the Pi Zero, the touch screen often doesn't work. In such cases, you have to write a fresh system image to the SD card. The first boot up must be done on the Pi Zero but not Pi 3, due to initialization for a corresponding device.

Rotation(Working with Raspberry Pi)

Display Rotating

Add this statement in the config.txt file (the config file is located in the root directory of the TF card, which is named /boot):

```
display_rotate=1 #1: 90; 2: 180;  3: 270
```

Note: For Raspberry Pi 4, you need to comment out dtoverlay=vc4-fkms-V3D.

```
#dtoverlay=vc4-fkms-V3D.
```

And then restart the Raspberry Pi after saving.

```
sudo reboot
```

Touch Rotating

After the display is rotated, the position of touch is incorrect because the touch doesn't change with the display angle. So the touch also needs to be modified.

1.Install libinput.

```
sudo apt-get install xserver-xorg-input-libinput
```

If the system you installed is Ubuntu or Jetson Nano. The installation code is:

```
sudo apt install xserver-xorg-input-synaptics
```

2.Create the xorg.conf.d directory under /etc/X11/ (if the directory already exists, proceed directly to step 3).

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

3.Copy the 40-libinput-conf file to the directory you created just now.

```
sudo cp /usr/share/X11/xorg.conf.d/40-libinput.conf /etc/X11/xorg.conf.d/
```
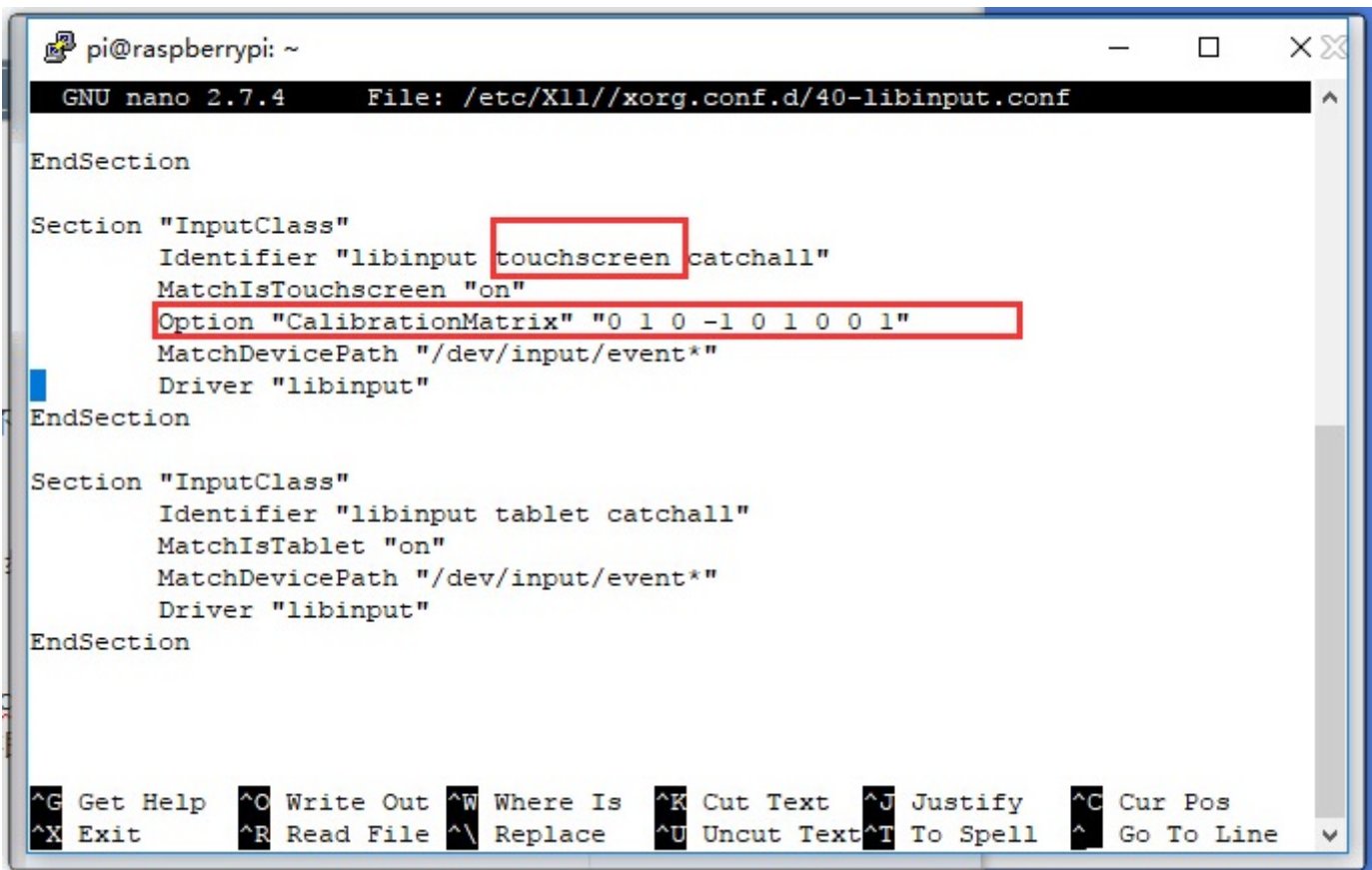
4.Edit this file.

```
sudo nano /etc/X11/xorg.conf.d/40-libinput.conf
```

Find the part of the touchscreen, add the following statement inside, and then save the file.

```
Option "CalibrationMatrix" "0 1 0 -1 0 1 0 0 1"
```

Similar to the picture below:

5. save and reboot your Pi

```
sudo reboot
```

After completing these steps. The LCD could rotate 90 degrees both display and touch function.

Note:

90 degree: Option "CalibrationMatrix" "0 1 0 -1 0 1 0 0 1"

180 degree: Option "CalibrationMatrix" "-1 0 1 0 -1 1 0 0 1"

270 degree: Option "CalibrationMatrix" "0 -1 1 1 0 0 0 0 1"

Backlight adjustment on Raspbian OS

- 1. Download the 7HP Raspberry Pi backlight adjustment file and unzip it to any directory on the Raspberry Pi system.

- 2. Enter the corresponding directory of this file in the terminal and run the command as follows:

```
 ./7HP_Backlight -b  X        # X range is 0~10, 0 is the darkest, 10 is the
brightest
```

For example:

```
 ./7HP_Backlight -b  3
```

Working with Jetson Nano

To work with Jetson Nano Developer Kit, you don't need to make software configuration.

1) Connect the TOUCH interface of the LCD to the USB interface of Jetson Nano.

2) Connect the HDMI interface of the LCD to the HDMI interface of the Jetson Nano and then power on the Jetson Nano. After about 5 seconds, you can see the LCD display normally. If you need to output sound, you can insert a 3.5mm earphones to the HP audio output interface.

Note:

1) If the LCD flickers, it may be due to insufficient power supply of the Jetson Nano's USB interface. It can be solved normally after connecting to an external 5V/2A power supply through the DC interface of the LCD.

2) When the HP audio interface is in use, it may be necessary to set the sound output settings in the system.

Resources

Software

- Panasonic SDFormatter
- Win32DiskImager
- PuTTY

3D Drawing

- 7HP CAPQLED 3D Drawing

External guides

- Woring with Volumio

FAQ

Question:

What should I do if I connect to the PC with LCD and it cannot display normally?

[Collapse] **Answer:**

- Make sure that the HDMI interface of the PC can output normally.
- The PC only connects to this LCD as a monitor without others.
- You should connect the touch cable first and then the HDMI cable.
- Some PC need to be restarted to make the 7inch HDMI LCD display normally.

Note: The PC must use a windows system.

Anti-Piracy

Since the first-generation Raspberry Pi released, Waveshare has been working on designing, developing, and producing various fantastic touch LCDs for the Pi. Unfortunately, there are quite a few pirated/knock-off products in the market. They're usually some poor copies of our early hardware revisions, and comes with none support service.

To avoid becoming a victim of pirated products, please pay attention to the following features when purchasing:
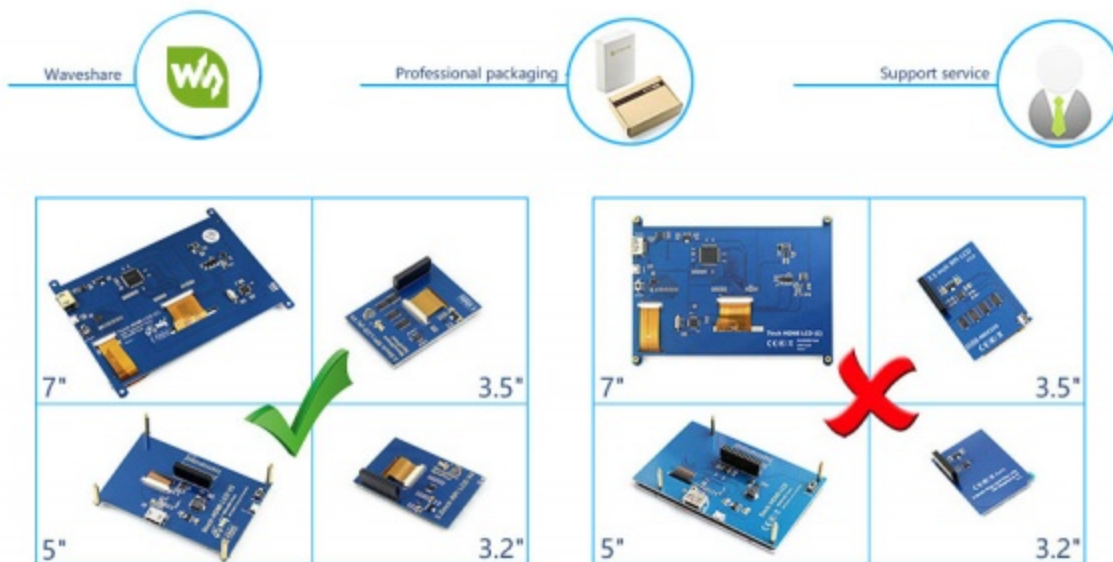
(Click to enlarge)

Beware of knock-offs

Please note that we've found some poor copies of this item in the market. They are usually made of inferior materials and shipped without any testing.

You might be wondering if the one you're watching or you've purchased in other non-official stores is original, feel free to contact us.