



5inch HDMI LCD (G)

User Manual



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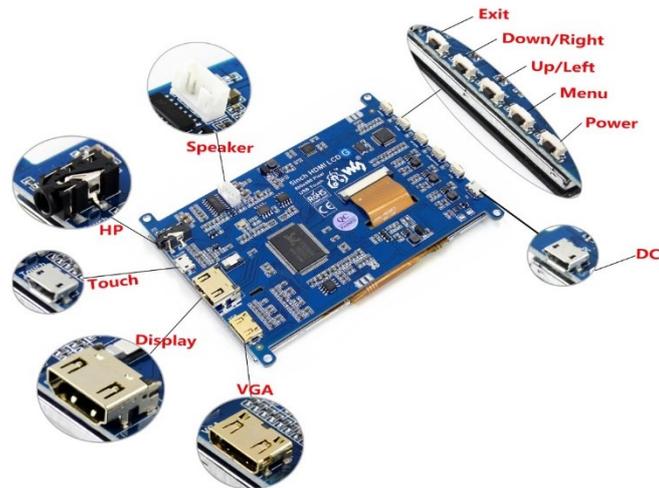
FEATURES

- Size: 5inch
- Hardware Resolution: 800x480
- Software Resolution: Up to 1920x1080
- Supports popular game consoles like Microsoft XBOX360, Sony PS4, and Nintendo Switch, etc.
- Touch: USB interface (Resistive touch control)

With Raspberry Pi: Supports Raspbian, Ubuntu, WIN 10 IOT. Single touch and driver free

With Computer: Supports Windows 10/8.1/8/7. Five-point touch and driver free
- Display: HDMI, VGA ([specific cable](#) is required and should be purchased separately)
- Audio: 3.5mm audio jack, speaker connector, supports HDMI audio output

HARDWARE



- **VGA:** Display interface for VGA input. ([specific cable](#))
- **Display:** Display interface for HDMI input
- **Touch:** Touch interface (Touch and Power interface of LCD)
- **HP:** 3.5mm audio jack
- **Speaker:** Speaker interface, should be connected to [5W Speaker](#).
- **Buttons:**
 - Power:** Open/Close the backlight
 - Menu:** Open the OSD Menu, work as OK as well
 - Up/Left:** Direction button
 - Down/Right:** Direction button
 - Exit:** Exit and return
- **DC:** External power interface of LCD, can be connect to 5V power supply

USAGE

This LCD features HDMI and VGA interfaces for display, USB interface for touch. Could work as a touchscreen of Raspberry Pi and some mini PC. It could also work with Windows computer.

WORKING WITH PC

Here the PC we mention is common PC. (With some mini PC the LCD may work improperly.) Generally, PC could recognize the resolution of LCD automatically, so we don't need to set it as we do for Raspberry Pi.

CONNECTION

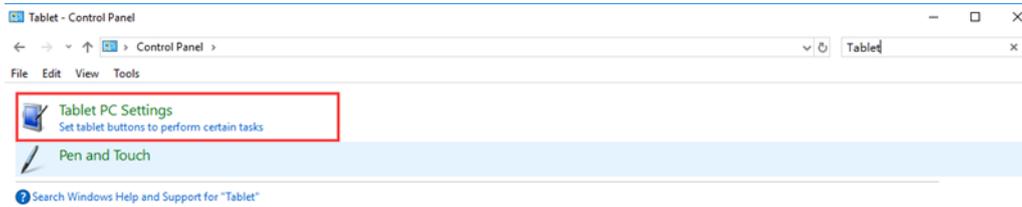
1. Connect the Touch interface of LCD to USB port of PC
2. **HDMI:** Connect the HDMI interface of LCD to HDMI port of PC
VGA: Connect the VGA-HDMI ([specific cable](#)) cable, and use a VGA cable to connect it to VGA interface of PC
3. Sometimes you may need to connect the DC interface of LCD to external power supply for enough power.
4. Power on your PC. (If you connect the LCD when the PC is working, and the display don't display as expect, please restart your PC).

Note: You must first connect the USB cable (for touch or power) before the HDMI cable.

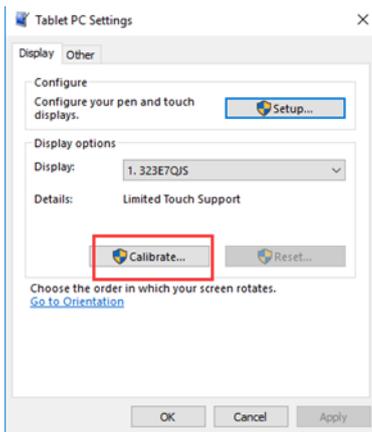
CALIBRATION ON WINDOWS 10

If you need to calibrate the LCD when working with win 10 PC, you can follow this instruction.

1. Search **Tablet PC Settings** on **Control Panel**.



2. Open the **Tablet PC Settings** tool and choose **Calibrate...**

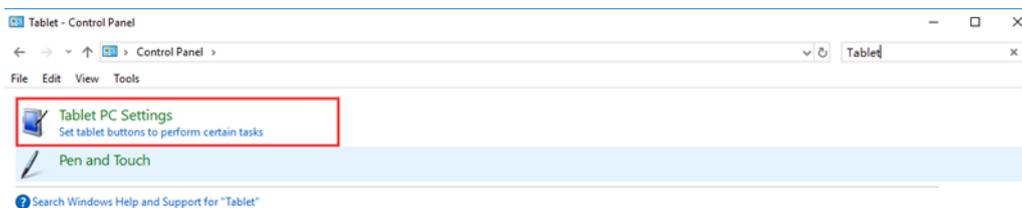


3. Finish the calibration following prompt

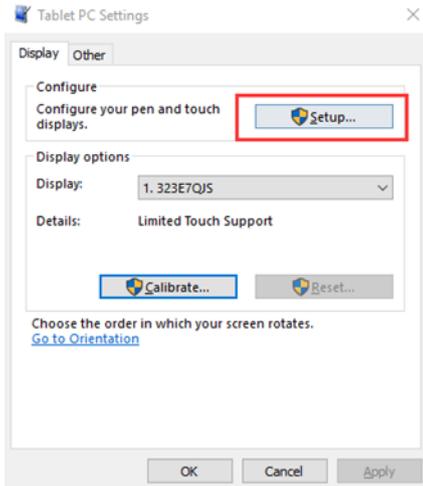
TOUCH SCREEN SETTING

When you connect a touchscreen to PC, the touch is available for main display no matter the touchscreen is set as main display or second display or other. You can configure it to control second or others screen in win 10 PC as below.

1. Search **Tablet PC Settings** on **Control Panel**



2. Open the **Tablet PC Settings** and **Choose Setup...**



3. Then all the screen which connected to PC will become white and prompt is show in the main display.

Touch this screen to identify it as the touchscreen. If this is not the Tablet PC screen, press Enter to move to the next screen. To close the toll, press Esc.

4. As example, we want to let the touchscreen to control the second display. So we press Enter to skip the main display.
5. After step 4. You will find that the prompt is showed at the second display and the main display became white. Now you can touch the center of touchscreen.
6. The prompt will skip to the third display as same. Or if there are only two display the configuration will finish.
7. After the configuration you can find that the touchscreen now controls the second display now.

Note: If you connect two touchscreens to PC, you can use this method to make both touchscreen work at two different display.

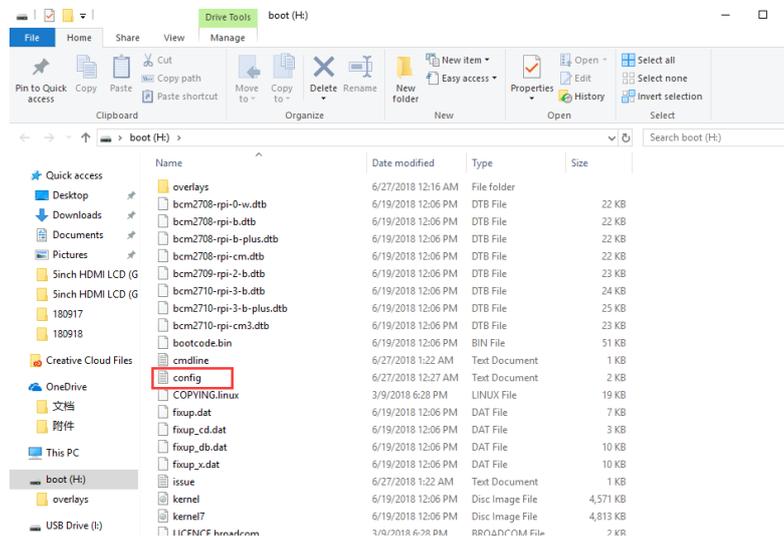
WORKING WITH RASPBERRY PI

Note: The LCD can work with Raspbian, Ubuntu, WIN10 IOT and so on. With some OS may cannot work properly. If you cannot confirm if your OS is supported, you can contact us and provide the image, we could test it for you if possible.

SETTING

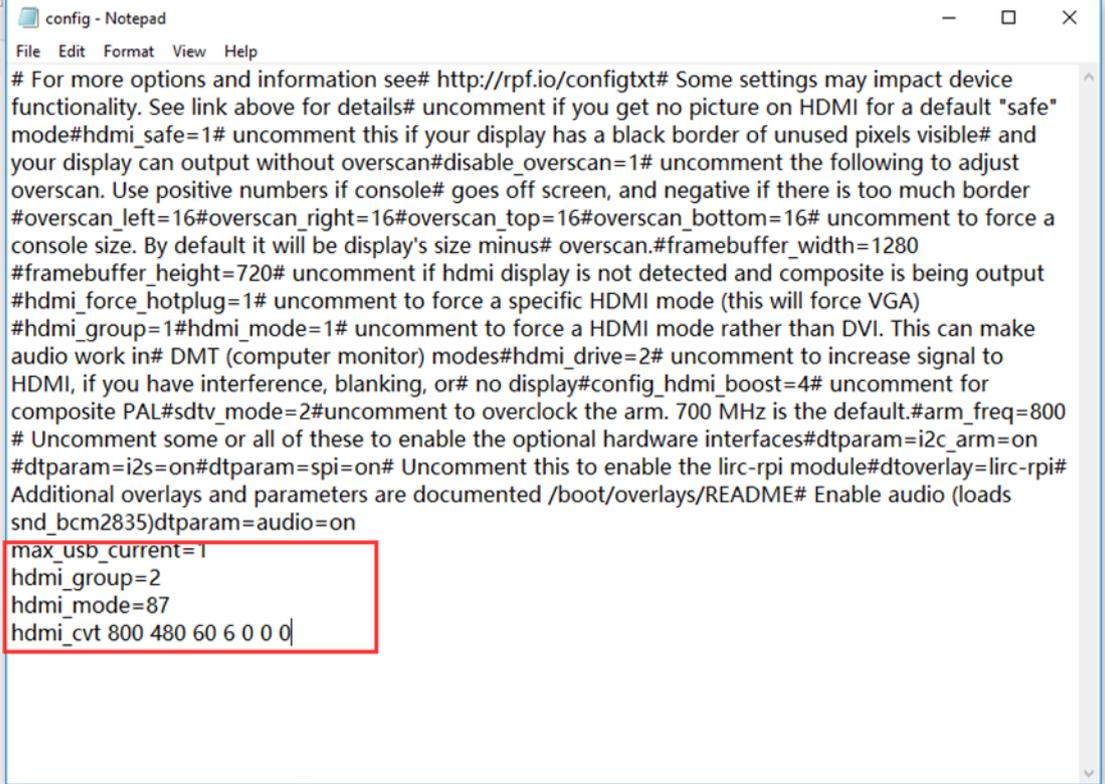
Before connecting the LCD, you need to configure your OS (we take Raspbian as example), otherwise the LCD cannot work properly, even damage the LCD.

1. Insert the TF card (with the Raspbian installed) to your PC with card reader
2. Open the config.txt file on the boot directory of the TF card



3. Append these statements to the config file. We recommend you to copy these lines directly instead of type it to avoid typos. Especially the last line.

```
max_usb_current=1
hdmi_group=2
hdmi_mode=87
hdmi_cvt 800 480 60 6 0 0 0
```



```
config - Notepad
File Edit Format View Help
# For more options and information see# http://rpf.io/configtxt# Some settings may impact device
functionality. See link above for details# uncomment if you get no picture on HDMI for a default "safe"
mode#hdmi_safe=1# uncomment this if your display has a black border of unused pixels visible# and
your display can output without overscan#disable_overscan=1# uncomment the following to adjust
overscan. Use positive numbers if console# goes off screen, and negative if there is too much border
#overscan_left=16#overscan_right=16#overscan_top=16#overscan_bottom=16# uncomment to force a
console size. By default it will be display's size minus# overscan.#framebuffer_width=1280
#framebuffer_height=720# uncomment if hdmi display is not detected and composite is being output
#hdmi_force_hotplug=1# uncomment to force a specific HDMI mode (this will force VGA)
#hdmi_group=1#hdmi_mode=1# uncomment to force a HDMI mode rather than DVI. This can make
audio work in# DMT (computer monitor) modes#hdmi_drive=2# uncomment to increase signal to
HDMI, if you have interference, blanking, or# no display#config_hdmi_boost=4# uncomment for
composite PAL#sdtv_mode=2#uncomment to overclock the arm. 700 MHz is the default.#arm_freq=800
# Uncomment some or all of these to enable the optional hardware interfaces#dtparam=i2c_arm=on
#dtparam=i2s=on#dtparam=spi=on# Uncomment this to enable the lirc-rpi module#dtoverlay=lirc-rpi#
Additional overlays and parameters are documented /boot/overlays/README# Enable audio (loads
snd_bcm2835)dtparam=audio=on
max_usb_current=1
hdmi_group=2
hdmi_mode=87
hdmi_cvt 800 480 60 6 0 0 0
```

4. Save then insert the TF card to Raspberry Pi

CONNECTION

1. Connect the Touch interface of LCD to one USB port of Raspberry Pi
2. Connect the Display interface of LCD to HDMI interface of Raspberry Pi
3. Sometimes the USB port of the Raspberry Pi couldn't supply enough power for LCD and will cause the Pi failed to booting. In this case, you need to connect an external power adapter (5V/2A) to the DC port of the LCD
4. Power on your Raspberry Pi, Then the display will light on and display the desktop of Raspbian.

CALIBRATOION ON RASPBIAN

This is resistive touch control LCD, so maybe you need to calibrator for accurately touch. If you find the touch is not accurate as you want, you can try to calibrate it.

1. Connect your Pi to network and install the Xserver

1. `sudo apt-get install xinput-calibrator`
2. `sudo apt-get install xserver-xorg-input-evdev`
3. `sudo cp -rf /usr/share/X11/xorg.conf.d/10-evdev.conf /usr/share/X11/xorg.conf.d/45-evdev.conf`
4. `sudo reboot`

2. Open the tool on Menu->Preferences->Calibrate Touchscreen. And finish the calibration following prompt.

3. After finishing the calibration, you will get a set of calibration values. You need to save these values

```

pi@raspberrypi ~
Doing dynamic recalibration:
  Setting calibration data: 151, 3918, 151, 3995
  --> Making the calibration permanent <--
  copy the snippet below into '/etc/X11/xorg.conf.d/99-calibration.conf' (/usr/
  hare/X11/xorg.conf.d/ in some distro's)
Section "InputClass"
  Identifier      "calibration"
  MatchProduct   "WaveShare WS170120"
  Option "Calibration" "151 3918 151 3995"
  Option "SwapAxes"  "0"
EndSection
pi@raspberrypi:~$ Section "InputClass"
-bash: Section: command not found
pi@raspberrypi:~$ Identifier "calibration"
-bash: Identifier: command not found

```

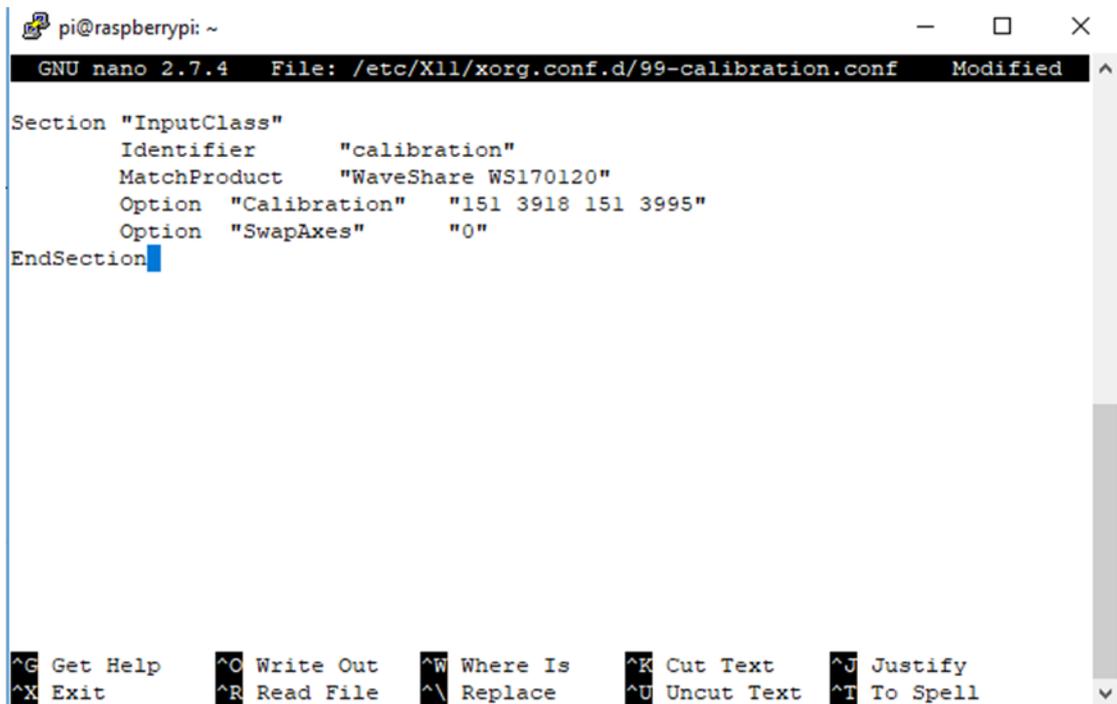
4. Create a directory **xorg.conf.d** first

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

5. Create a file 99-calibration.conf to put the calibration values

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

6. Save the values as below. (You need to follow steps above to get the calibration values as below but not just copy this)



```
pi@raspberrypi: ~
GNU nano 2.7.4 File: /etc/X11/xorg.conf.d/99-calibration.conf Modified

Section "InputClass"
    Identifier      "calibration"
    MatchProduct    "WaveShare WS170120"
    Option "Calibration" "151 3918 151 3995"
    Option "SwapAxes" "0"
EndSection

^G Get Help      ^O Write Out    ^W Where Is    ^K Cut Text    ^J Justify
^X Exit          ^R Read File    ^\ Replace     ^U Uncut Text  ^T To Spell
```

ROTATION

Display rotating

To change the display orientation, you can just to modify the config.txt file.

Append this statement to the file:

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

Touch rotating

The setting above just to change the orientation of display, and the touch could not change as the display, so we need to let the touch rotate as display. There are two method you can refer to.

- [touch-rotating-for-waveshare-lcd-modify](#)
- [re-compile-raspbian-kernel-for-touch](#)

WORKING WITH BB BLACK

BB Black will auto setting the resolution according to screen connected.

1. Connect Touch interface of LCD to USB port of BB Black
2. Connect Display interface of LCD to HDMI port of BB Black by micro HDMI-HDMI cable
3. Power on your BB Black

Note: Make sure you didn' t disable video output of BB Black or the LCD cannot display normally

FAQ

1. If 5inch HDMI LCD (G) supports xxx OS

We only test that: for Raspberry Pi, supports Raspbian, Ubuntu Mate, WIN 10 IoT.

For general desktop computer, supports Windows 10/8.1/8/7. If you want to know if other OS could be supported as well, you can contact us and provide your image and setting measure, we could test for you if possible

2. If 5inch HDMI LCD (G) compatible with xxx board or PC?

The devices we test are Raspberry Pi, BB Black, Desktop computer.

3. Why the touch of 5inch HDMI LCD (G) cannot work?

There are two USB interface on LCD, one is Touch and another is DC. DC port is used just for external power. Make sure you have connected the Touch interface to your PC or Raspberry Pi. Or use other USB cable for a try

4. What is the operating temperature of 5inch HDMI LCD (G)

0°C-70°C

5. Why are there scratch on screen?

The screen will be covered with protected plastic film, please remove it when you use. We test the screen before delivery. The scratch may be caused by testing and carrying