

HDMI 5B TFT Screen

General Calibration on HDMI 5B TFT Screen

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V1.2

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Application Note

Info	Content
Key words	RaspberryPi, 5''TFTscreen, calibration
Summary	General Calibration on HDMI 5B TFT Screen

Reversion History

Version	Date	Reason
V1.0	2016/5/18	Create documentation
V1.1	2016/6/6	Modify parameter about speed
V1.2	2016/7/6	Modify resolution config and calibrator settings



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1. Introduction

This HDMI 5B TFT Screen is available for those development board as following chart:

Raspberry Pi A
Raspberry Pi A+
Raspberry Pi B
Raspberry Pi B +
Raspberry Pi 2, Model B, 1GB RAM
Raspberry Pi 3, Model B, 1GB RAM
Raspberry Pi Zero

2. Principle

According to different people has different habits for using this screen, and different people has different pressure when they are pressing the Touchscreen, so you have to calibrate it before you using it.

3. Development Environment

Hardware Environment:

Raspberry Pi 3, Model B, 1GB RAM

Pi-HDMI-5B 5'' Resister Touchscreen

HDMI convertor

Wire cable

Software Environment:

OS Type: Raspbian

OS Version: 2016-05-27-raspbian-jessie

4. Calibration

You need to modify this configuration file in /boot/config.txt

Edit /boot/config.txt, add or modify the following entries:

```
hdmi_force_hotplug=1
```

```
hdmi_group=2
```

```
hdmi_mode=87
```

```
hdmi_cvt 800 480 60 6 0 0 0
```

```
dtparam=spi=on
```

```
device_tree=bcm2710-rpi-3-b.dtb #This must be fit for your Pi model.
```

```
dtoverlay=ads7846,penirq=22,speed=100000,xohms=150
```

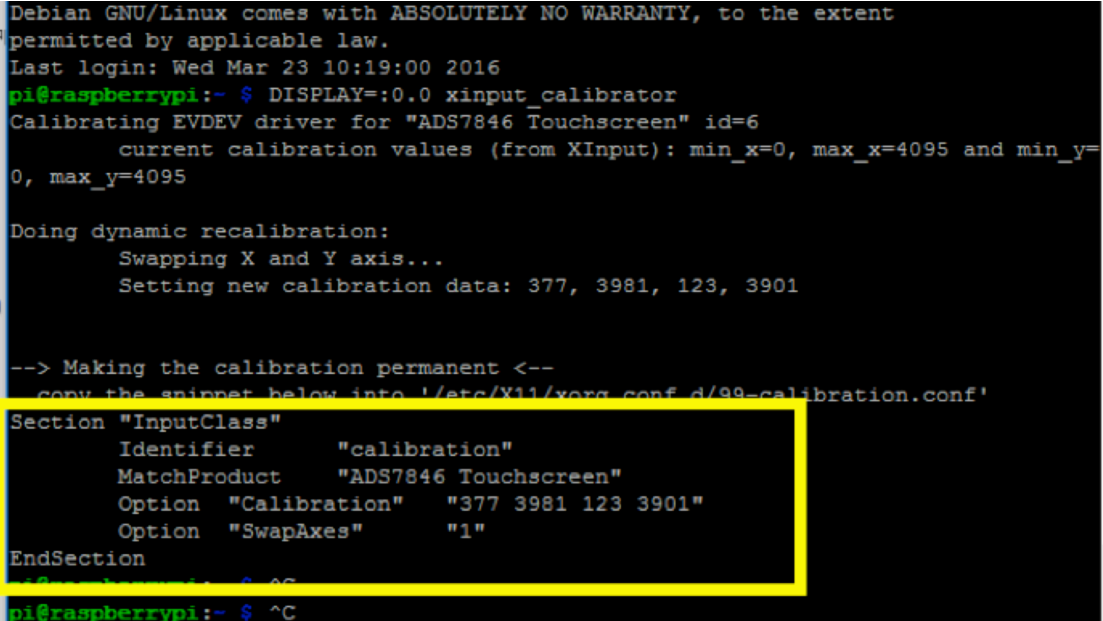
save and reboot your Pi.

After login, open a terminal after login and type this command to install several packages :

```
sudo apt-get -y install xinput libx11-dev libxext-dev x11proto-input-dev
evtest dh-autoreconf libts-bin
```

if you are using the **old version** of Raspbian, you do not have to download xinput_calibrator's source code and compile it. Just run xinput_calibrator and get the information that it feeds back and write it into this file:

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



```
Debian GNU/Linux comes with ABSOLUTELY NO WARRANTY, to the extent
permitted by applicable law.
Last login: Wed Mar 23 10:19:00 2016
pi@raspberrypi:~$ DISPLAY=:0.0 xinput_calibrator
Calibrating EVDEV driver for "ADS7846 Touchscreen" id=6
current calibration values (from XInput): min_x=0, max_x=4095 and min_y=
0, max_y=4095

Doing dynamic recalibration:
Swapping X and Y axis...
Setting new calibration data: 377, 3981, 123, 3901

--> Making the calibration permanent <--
copy the snippet below into /etc/X11/xorg.conf.d/99-calibration.conf'
Section "InputClass"
    Identifier      "calibration"
    MatchProduct    "ADS7846 Touchscreen"
    Option "Calibration" "377 3981 123 3901"
    Option "SwapAxes" "1"
EndSection
pi@raspberrypi:~$ ^C
```

If you are using the **newest version** of Raspbian, you should follow those steps below:

Download the xinput_calibrator source code from the link below:

```
cd ~ #go back to your own home directory
```

```
git clone https://github.com/tias/xinput\_calibrator
```

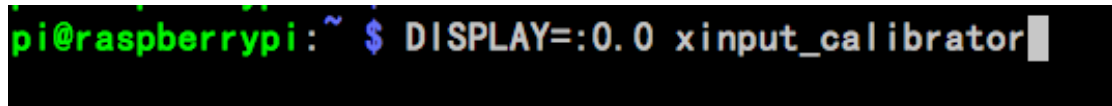
```
cd ~/xinput_calibrator
```

```
./autogen.sh && make && make install
```

it may take half an hour to download the source code, it's depend on the speed of your network environment.(you can take a break, have a cup of tea ☺)

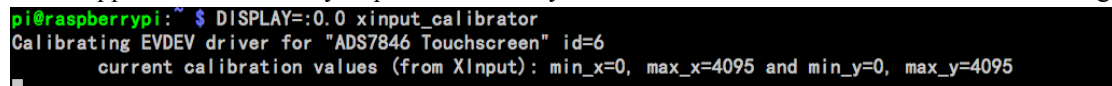
Use this command to start HDMI 5B TFT Screen calibration.

```
DISPLAY=:0.0 xinput_calibrator
```



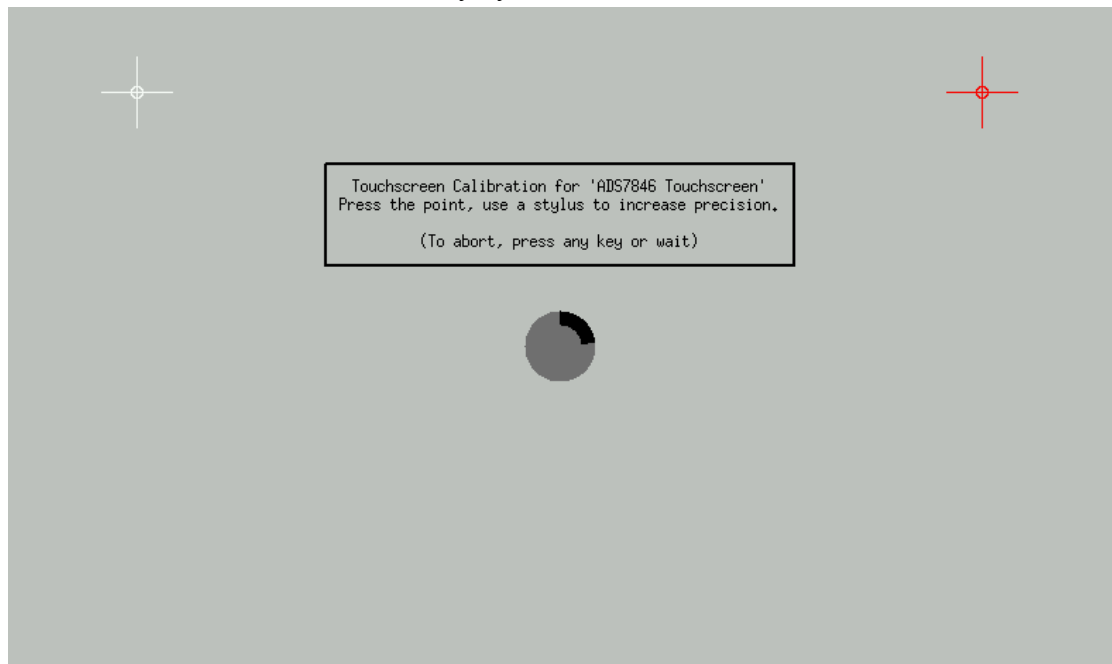
```
pi@raspberrypi:~$ DISPLAY=:0.0 xinput_calibrator
```

It will appear a feedback as you press enter and you can find that the Touchscreen start calibrating.



```
pi@raspberrypi:~$ DISPLAY=:0.0 xinput_calibrator
Calibrating EVDEV driver for "ADS7846 Touchscreen" id=6
current calibration values (from XInput): min_x=0, max_x=4095 and min_y=0, max_y=4095
```

You can press the point in the center of Red Cross to calibrate your Touchscreen when it appears in the four corner of the screen. You may try several times to calibrate as well.



during the calibration, it will count down 60s before your press the point, if you pass the count down, it will exit automatically.

It will exit when calibration is done too.

Create a file and input the calibration information into this file ,and save it `/etc/X11/xorg.conf.d/99-calibration.conf`


```
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Last login: Wed Mar 23 10:19:00 2016
pi@raspberrypi:~ $ DISPLAY=:0.0 xinput_calibrator
Calibrating EVDEV driver for "ADS7846 Touchscreen" id=6
    current calibration values (from XInput): min_x=0, max_x=4095 and min_y=
0, max_y=4095

Doing dynamic recalibration:
    Swapping X and Y axis...
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--> Making the calibration permanent <--
    copy the snippet below into ~/etc/X11/xorg.conf.d/99-calibration.conf'
Section "InputClass"
    Identifier      "calibration"
    MatchProduct   "ADS7846 Touchscreen"
    Option "Calibration" "377 3981 123 3901"
    Option "SwapAxes" "1"
EndSection
pi@raspberrypi:~ $ ^C
pi@raspberrypi:~ $ ^C
```

The data may differ. So you can modify it as your terminal's feedback.

Reboot your Pi after calibrating and have fun.



● Reference

Download images from:

<https://www.raspberrypi.org/downloads>

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<http://wiki.52pi.com>