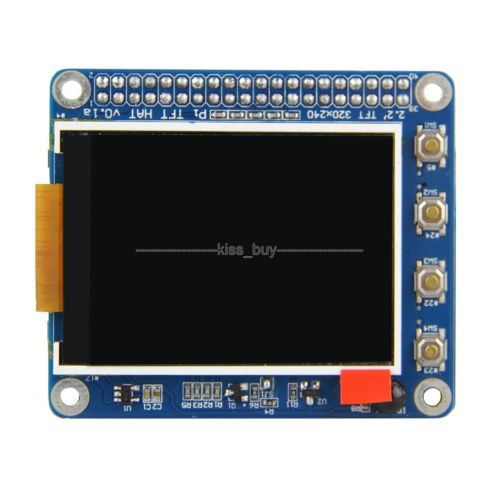
Generic 2.2” TFT Screen w/buttons and IR INFORMATION

Or What I learned about the Chinese TFT Screens for Raspberry PI 2 and 3

1st Here is the screen I bought from eBay:



<http://www.ebay.com/itm/182253837372?_trksid=p2060353.m2749.l2649&ssPageName=STRK%3AMEBIDX%3AIT>

| 2.2"TFT Screen LCD Display HAT 320x240 for Raspberry Pi 3/2 w/Buttons IR Sensor  Features:  This auction is for a 2.2 inch screen with buttons and IR function for Raspberry Pi 3 and 2 Model B.  Details:  Screen sizing 2.2 inch and supporting a 320x240 resolution with high PPI, being small but able to provide a fine image.  Size: 65mm×56.5mm, standard as a Raspberry Pi HAT board.  Multi-button design: 6 buttons, meeting different demands for buttons from various users  With an Infrared receiver.  Quick-responding technical support for free.  Introduction:  The 2.2 inch screen is a standard Raspberry Pi HAT (hardware attached on top). It supports a 320x240 resolution with high PPI.  Though small, it can display any images clearly. With the 6 buttons on the board, you can define their functions by yourself. And an  Infrared receiver is equipped so you can control the screen remotely. |
| --- |

* Like Most cheap things, there isn’t documentation provided, and you have to search
* Also like most cheap things there is a lot of just plain miss leading information.

The key to this display appears to be the fact that it has IR on it. Once I searched “w/IR” I was able to find the same display being sold by Sunfounder (for a liTTYe bit more then you can find on eBay).

<https://www.sunfounder.com/sf-2-2-tftscreen.html>

Sunfounder provides a Raspberry PI Image and a/or a Python script for setting up the LCD.

(Plus information on how to get the buttons working/IR working)

<http://wiki.sunfounder.cc/index.php?title=2.2_Inch_TFT_Screen_Display_Extension_Board>

Their image is based on Raspbian Jessie, and the current OS is Raspbian Pixie

So If you already have a working install (which I did) use the python script to add the needed files and information to your install.

<https://s3.amazonaws.com/sunfounder/Raspberry/images/2.2LCD-Show/pitft_setup.tar.gz>

1st thing I learned even the instructions are not quite right. You need to run the python script from the CLI (command line), and as ROOT (sudo).

I answered all the question with the default entries or “y” for yes.

The system rebooted, and the screen (after a liTTYe while) did start to display, and even displayed the “X” server (Thou, my screen is a liTTYe small to use the GUI effectively).

What was a disappoint was it shut the HDMI off and I didn’t get a GUI on it.

But by hitting “CTRL-ALT-F2”, “CTRL-ALT-F4”, and “CTRL-ALT-F6” I was able to get to the command line.

\*It was at this point I shutdown the system, unplugged the display, and hoped that it would switch back to HDMI - it did not \*

I was still able to get to TTY2,TTY4 and TTY6 - so I could fix the issue from the command line.

Once again I started to google the problem - and once again I can across many people who had the same problem, and a dozen different answers.

Finally I came across this post on Stackexchange

<https://raspberrypi.stackexchange.com/questions/2169/how-do-i-force-the-raspberry-pi-to-turn-on-hdmi>

This answer is what worked:

| Although this question is very old, I would like to post my answer that I found recently. I am running Raspberry PI 2 Model B with 2.8 PiTFT capactive display. Once I figured out how to get my pitft display to work with Raspberry PI, I could not get Raspberry PI to switch over to HDMI output no matter what I did. Then, I came across this information, which worked for me.  There's two ways to do it. In older Pi installs, use the fb0 framebuffer when you want to display stuff on the HDMI/TV display, for example: FRAMEBUFFER=/dev/fb0 startx will use the HDMI/TV framebuffer for X windows instead of the PiTFT  On Jessie Pi installs, run **sudo nano /usr/share/X11/xorg.conf.d/99-fbdev.conf** to edit the configuration file and make sure it contains: Copy Code  Section "Device"  Identifier "display"  Driver "fbdev"  Option "fbdev" "/dev/fb0"  EndSection  change the Option "fbdev" "/dev/fb0" line to Option "fbdev" "/dev/fb1" if you want the xdisplay on the PiTFT or fb1 to fb0 for HDMI output.  **Update:** If don't see the code above in the file, then simply copy and paste what is shown in this answer at the bottom of that file. If you can't find **99-fbdev.conf** file in that folder, then there is probably another file with different name like **10-evdev.conf** in the same folder which you will have to modify to make it work as described above.   | [share](https://raspberrypi.stackexchange.com/a/51709)[improve this answer](https://raspberrypi.stackexchange.com/posts/51709/edit) | [edited Jan 16 at 19:36](https://raspberrypi.stackexchange.com/posts/51709/revisions) | answered Jul 25 '16 at 14:40    [ThN](https://raspberrypi.stackexchange.com/users/37947/thn) | | --- | --- | --- | |
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|  |

The file in /usr/share/X11/xorg.conf.d/ did not exist, and I had to create it.

I didn’t make any other changes or anything to any of the other config files.

Rebooted the system, and sure enough I had X running on the HDMI again.

The TFT screen did boot, but came to a blank screen with a flashing cursor.

\*\* What I learned \*\*

1 It seems TTY1 is on the TFT screen, but linked to X running on the HDMI (in other words what you do in that session seems to have direct effect on X)

2 TTY2, TTY4, TTY6 appear to work on the HDMI

3 “CTRL-ALT-F7” is the X screen on HDMI

4. TTY3, TTY5 appear to work on the TFT screen

5. If you try to start X from TTY1,TTY3,TTY5 the system locks up and displays a bunch of error messages. Which is fine, X on that small screen was not great anyway.

Information on Adafruits 2.2” PiTFT HAT 320x240 Display

It appears to be a different hat, I did not try the setup or instructions but thought someone might need this information

<https://learn.adafruit.com/adafruit-2-2-pitft-hat-320-240-primary-display-for-raspberry-pi>

Update: Jun 6 2017

I needed to rotate the TFT screen 180 degrees, googled the problem, but didn’t find anything for my screen, although the pictures on both eBay and Sunfounder site show it with the display rotated.

I came across this github for a different screen:

<https://github.com/swkim01/waveshare-dtoverlays>

And in the documentation I found this:

4.) Specify this overlay file in your /boot/config.txt

dtoverlay=waveshare32b

or

dtoverlay=waveshare35a

You can configure some parameters of the lcd module like this:

dtoverlay=waveshare32b:rotate=270  
dtoverlay=waveshare35a:rotate=90,swapxy=1

The key appears to be the “:” in the dtoverlay command.

\*Also the install screen installed the dtoverlay for the pitft28-resitive display, and installed it wrong so it wasn’t rotated either.\*

\*This appears to be correct for my display (from a Adafruit 3.5” pitft display):

The rotate= variable tells the driver to rotate the screen0 90 180 or 270 degrees.

0 is portrait, with the bottom near theUSB jacks

90 is landscape, with the bottom of the screen near the headphone jack

180 is portrait, with the top near the USB jacks

270 is landscape, with the top of the screen near the headphone jack.

You can change this file withnano and reboot to make the change stick.

Also - This document may contain information on how to display videos, and images on the screen. (It’s for a different display so except some things to be different, and I haven’t tried anything yet)

<https://cdn-learn.adafruit.com/downloads/pdf/adafruit-pitft-3-dot-5-touch-screen-for-raspberry-pi.pdf>

*Updated: Nov 7, 2017*

HOW TO USE THE FRAMEBUFFER:

Taken from: <https://github.com/notro/fbtft/wiki/Framebuffer-use> and <https://github.com/notro/fbtft-spindle/wiki/FBTFT-image>

What worked for me:

**mplayer**

WIDTH is the display width.

*scale* is used because the movie is larger than most small displays. -3 means keep aspect ratio and calculate height.

apt-get install -y mplayer  
wget http://fredrik.hubbe.net/plugger/test.mpg  
  
mplayer -nolirc -vo fbdev2:/dev/fb1 -vf scale=WIDTH:-3 test.mpg

This does not work for jessie anymore. mplayer was replaced with mplayer2 missing fbdev support. Workaround for this is using SDL

sudo SDL\_VIDEODRIVER=fbcon SDL\_FBDEV=/dev/fb1 mplayer -vo sdl -framedrop test.mpg

# **Image viewer**

apt-get -y install fbi  
wget http://art110.wikispaces.com/file/view/Mystery-100x100.jpg/30649064/Mystery-100x100.jpg  
  
sudo fbi -d /dev/fb1 -T 1 -noverbose -a Mystery-100x100.jpg

Displaying TEXT

This blog post has code that displays the time rotated on the display - however it did cause an error and exit, I haven’t looked into what or how it’s does it (or why it errors)

<http://harizanov.com/2013/02/using-my-1-8-tft-as-a-raspberry-pi-status-display/>

It might contain how to display text to the TFT screen thou.