

Raspberry Pi radio player with touchscreen

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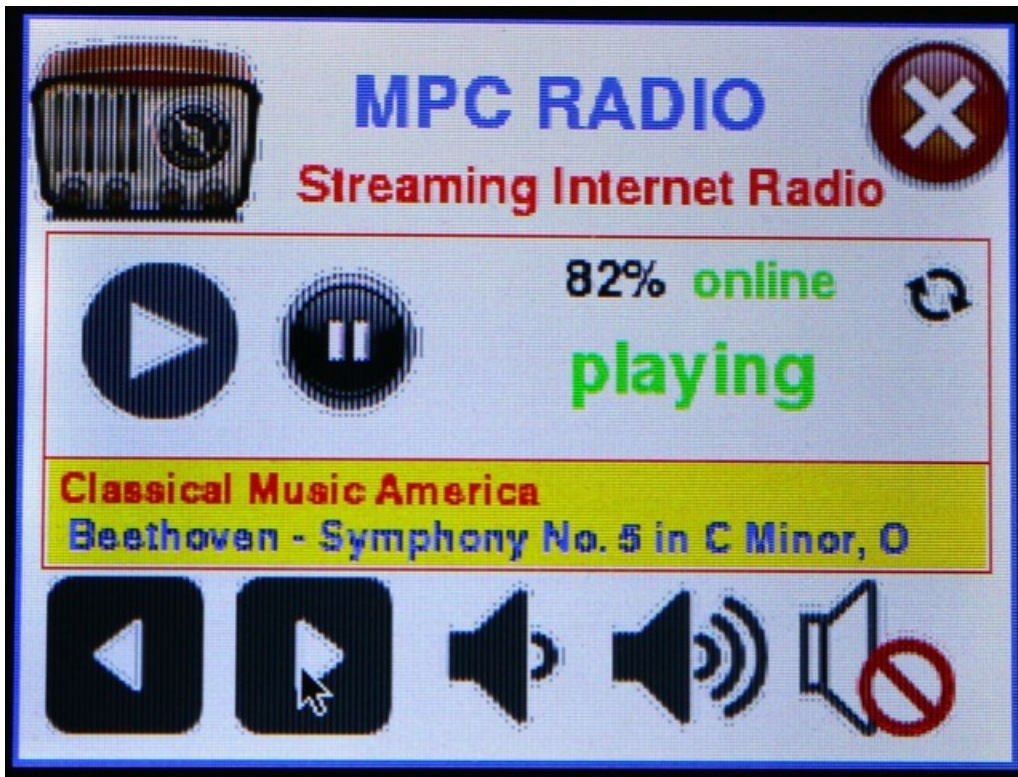
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Overview

Make your very own touchscreen-controller Pi Radio Player! With an ever increasing number of internet radio stations available this project combines the versatility of the Raspberry Pi and the PiTFT 2.8" touchscreen TFTdisplay. A custom display interface lets you control volume, station, and see what's currently playing.



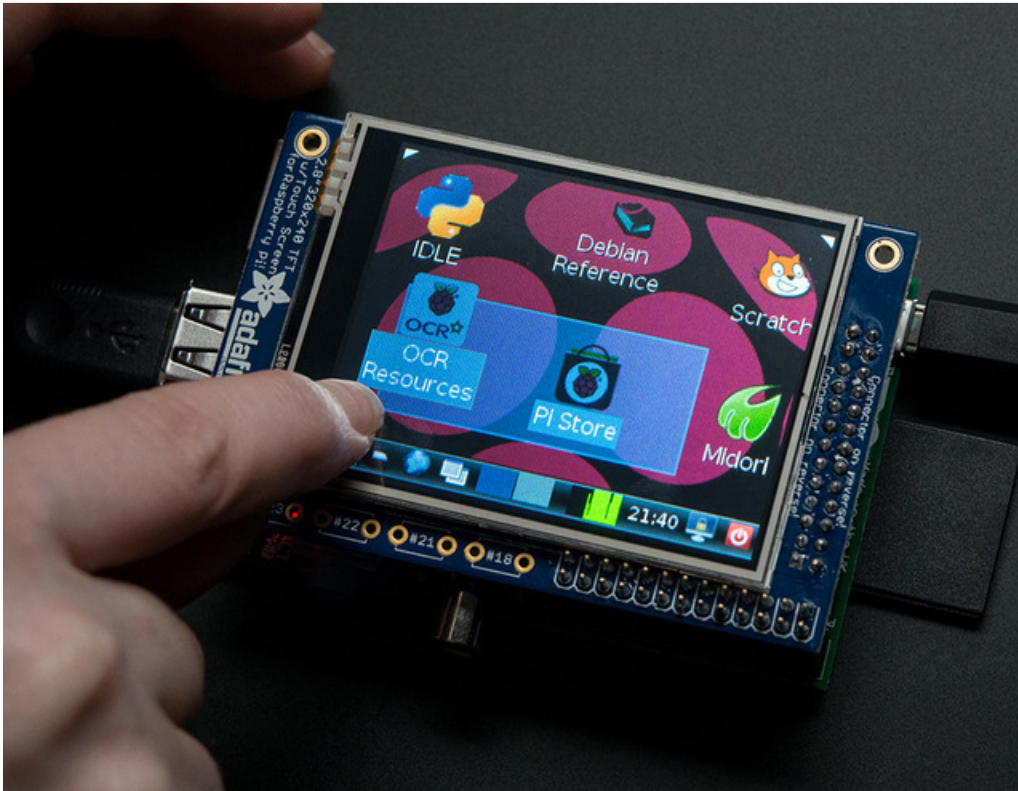
This project is a good one for people who have a little bit of Raspberry Pi experience since there's quite a few steps, but its worth it!

Project steps

1. Build the PiTFT 320x240 2.8" touchscreen display (this may not be necessary if your PiTFT is pre-assembled)
2. Calibrate the touchscreen display
3. Install Music Player Daemon (MPD) and Music Player Client (MPC) on the Raspberry Pi
4. Find and add internet radio stations to mpc
5. Download radioplayer source code
6. Enjoy streaming internet radio on your desk

All the setup and calibration steps for the PiTFT display must be completed.

Preparing the Raspberry Pi



If your Adafruit PiTFT 2.8" Touchscreen display came as a kit you will need to complete the instructions to assemble the screen. [Check out the PiTFT Tutorial for more details \(https://adafru.it/dDK\)](https://adafru.it/dDK)

Download & burn the PiTFT image or use an existing Raspbian setup and install the easy-setup script. Basically, get the PiTFT setup working first!

If you want to calibrate the screen, check out the detailed calibration steps here (<https://adafru.it/dD2>)



I found that for the most effective use of the touchscreen it was necessary to carry out the manual calibration of the touchscreen.

Installing the Music Player Daemon

By this stage you will now have a Raspberry Pi with a touch screen display. If you used the Easy Install Image you should now have access to the console via the touch screen display.

[Additional instructions on using the console \(https://adafru.it/dIZ\)](https://adafru.it/dIZ)

At this stage it is worth checking that your Raspberry Pi is up to date before continuing.

```
sudo apt-get update
```

Now we can install **mpc** and **mpd** - the **music player client** and 'daemon' background controller - and add some radio stations to your play list.

The example stations listed below are BBC channels from the UK, but look around for your own favorite types of music!

```
sudo apt-get install mpd mpc
mpc add http://bbcmedia.ic.llnwd.net/stream/bbcmedia_intl_lc_radio1_p?s=1365376033&e=1365390433&h=a0fef58
mpc add http://bbcmedia.ic.llnwd.net/stream/bbcmedia_intl_lc_radio2_p?s=1365376067&e=1365390467&h=d43dc8a
mpc add http://bbcmedia.ic.llnwd.net/stream/bbcmedia_intl_lc_radio3_p?s=1365376123&e=1365390523&h=d53cf2a
mpc add http://bbcmedia.ic.llnwd.net/stream/bbcmedia_intl_lc_radio4_p?s=1365376126&e=1365390526&h=ed9a064
mpc add http://bbcmedia.ic.llnwd.net/stream/bbcmedia_intl_lc_5live_p?s=1365376271&e=1365390671&h=e0d82133
```

You can now check that **mpc** is working by starting a radiostation. Don't forget to plug in your headphones!

```
mpc play
```

A note on playlists

A copy of your playlist can be saved with the command

```
mpc save my_playlist
```

The playlist is saved in **/var/lib/mpd/playlists/**

The playlist can be hand-edited with

```
sudo nano /var/lib/mpd/playlists/my_playlist
```

Once edited the playlist can be loaded back into mpc with

```
mpc load /var/lib/mpd/playlists/my_playlist
```

I have a number of playlists saved in **/var/lib/mpd/playlists** with different genres depending on my mood

Installing Radioplayer

The Radioplayer front end software has been written in Python using Pygame and is specific for the TFT 320x240 2.8" screen. However, it is relatively simple to adapt the code to work in a window.

<https://adafru.it/dTc>

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Download the Python code and icons from the link above. Extract the files onto a memory stick and copy into a folder onto the Raspberry Pi. (Or you can place it in the SD card directory on your home computer, the files will be in `/boot` when the SD card is booted on the Pi)

I save mine into a folder called **pi-radio**

Ensure that all the icons and python code is saved into the folder `/home/pi/pi-radio`

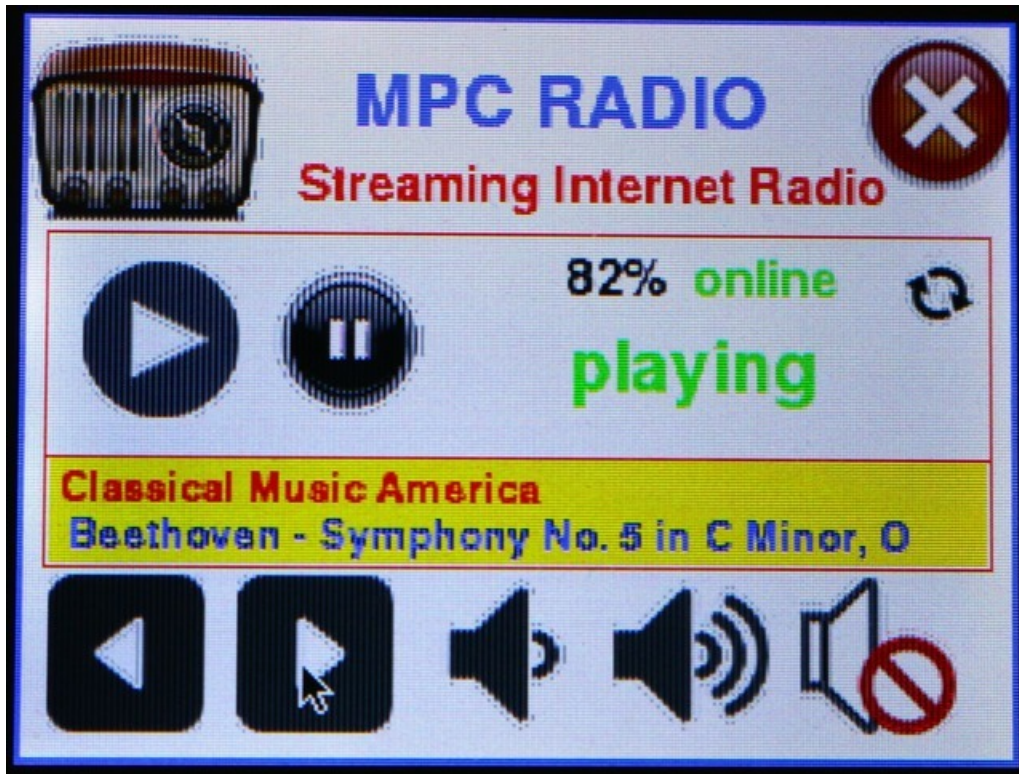
At this stage everything should be ready to go!

Test it out by running:

```
cd /home/pi/pi-radio
sudo python radioplayer.py
```

About Radioplayer

The interface has been deliberately kept simple so that it can be operated with your fingers rather than a stylus.



Play - starts mpc on the current playlist

Pause - stops mpc on the current playlist

Volume down - reduces volume

Volume up - increases volume

Mute - volume set to zero

Refresh - stops player, starts player again and refreshes the screen.

Exit - closes radioplayer interface but keeps mpc playing

Station Info

The station information is extracted from the output of

```
mpc status
```

Many stations use a common format of

Station name : Track name/information

The Station name is displayed on the first line of the display.

The Track name is displayed on the second line of the display.

If there is no track name a message of "**No additional Info**" is displayed.