

## Instructions for setting up a darkice feed to a local Icecast server and to RadioReference.

Purchase a Raspberry Pi, Model B or B+. A model A would work but complicates the setup considerably as it has no ethernet port. You will also need an 8 gb SD card, power supply, usb sound card, audio cable, a set of earphones, and an ethernet cable.

Download my compressed SD card [image from google](#) and save it to your desktop or laptop computer. Extract the file using a utility such as [7-Zip](#) if using a Windows computer. If using a Mac computer simply right click on the compressed file and choose Extract. This will leave you with a file named something like darkice-icecast.img.

Now you are ready to image your SD card. Put your blank SD card into a card reader connected to your Windows or Mac computer. If using a Windows computer you will want a program called [Win32DiskImager](#) to put the image onto your SD card. If using a Mac, try a program called [PiWriter](#) (its sister program PiCloner was used to create this image.) This process may take a while (as in hours) so be patient. When complete, the SD card image is ready to go.

Put the imaged SD card into the card slot in the pi. Connect your ethernet cable to the ethernet port. Connect your usb sound card to the usb port. Plug a set of earphone or earbuds into the audio jack on the pi (not the jack on the sound card). Connect the micro USB power supply cable to the pi and then plug it in. Listen using the earphones/buds to hear the private IP address of the pi. It should be something like 192.168.XX.XXX. It speaks the IP address twice. Write it down. If you don't get it, unplug the pi, wait 15 seconds and plug it back in again. You should hear the IP address within a minute of plugging it in. (You can also obtain the IP address from the router if you have access to it).

Connect an active audio source to the mic or line in input on the usb sound card. A scanner locked onto the NOAA weather channel or an iPod playing music will work.

Go to another computer on the same network as the pi (connected to the same router), open a web browser. In the address bar type IPaddress:8000 and hit enter. Make sure that you use the IPaddress that you heard in the earbuds above (192.168.XX.XXX). This will open the Icecast webpage on the pi. Click on the M3U button to listen to the audio that you are streaming. You can now use this IceCast web page to adjust your volume levels and experiment with your audio. Close this web page. Any time that you wish to return to it simply type IPaddress:8000 in your web browser on the same network.

If you are using a Windows computer download a program called [puTTY](#) to use for remote access through SSH. Follow these [instructions](#) on how to set it up and use it.

If you are using a Mac, open your Terminal Application and follow these [instructions](#).  
The username is pi  
The password is darkice

## Instructions for setting up a darkice feed to a local Icecast server and to RadioReference.

Now you are operating your pi headless, i.e., no monitor, mouse or keyboard attached to the pi. If you have been successful to this point you will be at the Linux prompt:

```
pi@raspberrypi ~ $
```

Sign up to broadcast a feed to RadioReference. When approved you will receive your login credentials (Server, Port, MountPoint, and Password). These are also available on your Owner Management Page under the Technicals Tab.

At the Linux prompt type `sudo nano /etc/darkice.cfg`

```
pi@raspberrypi ~ $ sudo nano /etc/darkice.cfg
```

This will launch the nano text editor in Linux. Use your arrow keys to navigate. Move the cursor down to the line `#[icecast2-1]`. Starting at this line remove all the leading `#` from this line and the following lines except the last two.

```
[icecast2-1]
bitrateMode    = cbr      # constant bit rate
bitrate        = 16
format         = mp3      # format of the stream: mp3
quality        = .1       # quality of the stream sent to the server
lowpass        = 3000     # low pass filter to save bandwidth
server         = audioX.radioreference.com # host name of the server
port           = 80       # PORT FROM RADIOREFERENCE USUALLY 80
password       = XXXXXXXX # stream631 # source password to the
mountPoint     = XXXXXXXX #EMR1 # mount point of this stream on
name           = YOUR_FEED_NAME # name of the stream
description    = YOUR_FEED_DESCRIPTION # description of the stream
url            = http://localhost # URL related to the stream
genre          = Public Safety # genre of the stream
public         = yes       # advertise this stream?
#localDumpFile = recording.mp3 # local dump file
#fileAddDate   = yes
```

Now change the server, port, password, and mountPoint to your credentials from RadioReference. Do not put in the leading `/` on the mount point. Be careful to make no other changes.

To exit and save your changes: Control-X, Y to save changes, then enter to accept the file name.

Now you are ready to feed to RadioReference. If this is a feed that you are presently feeding from another computer, you will need to stop that feed before connecting this one.

Power cycle the pi and both the local Icecast feed and the RadioReference feed will start. If the RR feed does not start, check your configuration for the proper credentials.

**Instructions for setting up a darkice feed to a local Icecast server and to RadioReference.**

I have had good luck using the Line In jack on this [sound card](#). Some of my best audio comes from a [Baofeng UV-5R radio](#).