

HPSDRProgrammer_web

HPSDRProgrammer_web is a cross platform command command line program with most the functionality of the HPSPDRProgrammer but as a local web server program. It can be used to:

- Detecting the network connected to your computer
- Detecting HPSPDR board(s) on one of your networks
- Changing the IPv4 address of your HPSPDR board.
- Or specifying the address to come from DHCP
- Erasing and Programming firmware into the FPGA of your HPSPDR Board by talking with the previous firmware.

The program will run on Linux, MacOS and Windows and can run on amd64, 386, arm architectures.

I did most of the development on the Linux 64 platform so that is the most thoroughly tested platform.

I will demonstrate the use of the program and describe platform differences we will start with Linux.

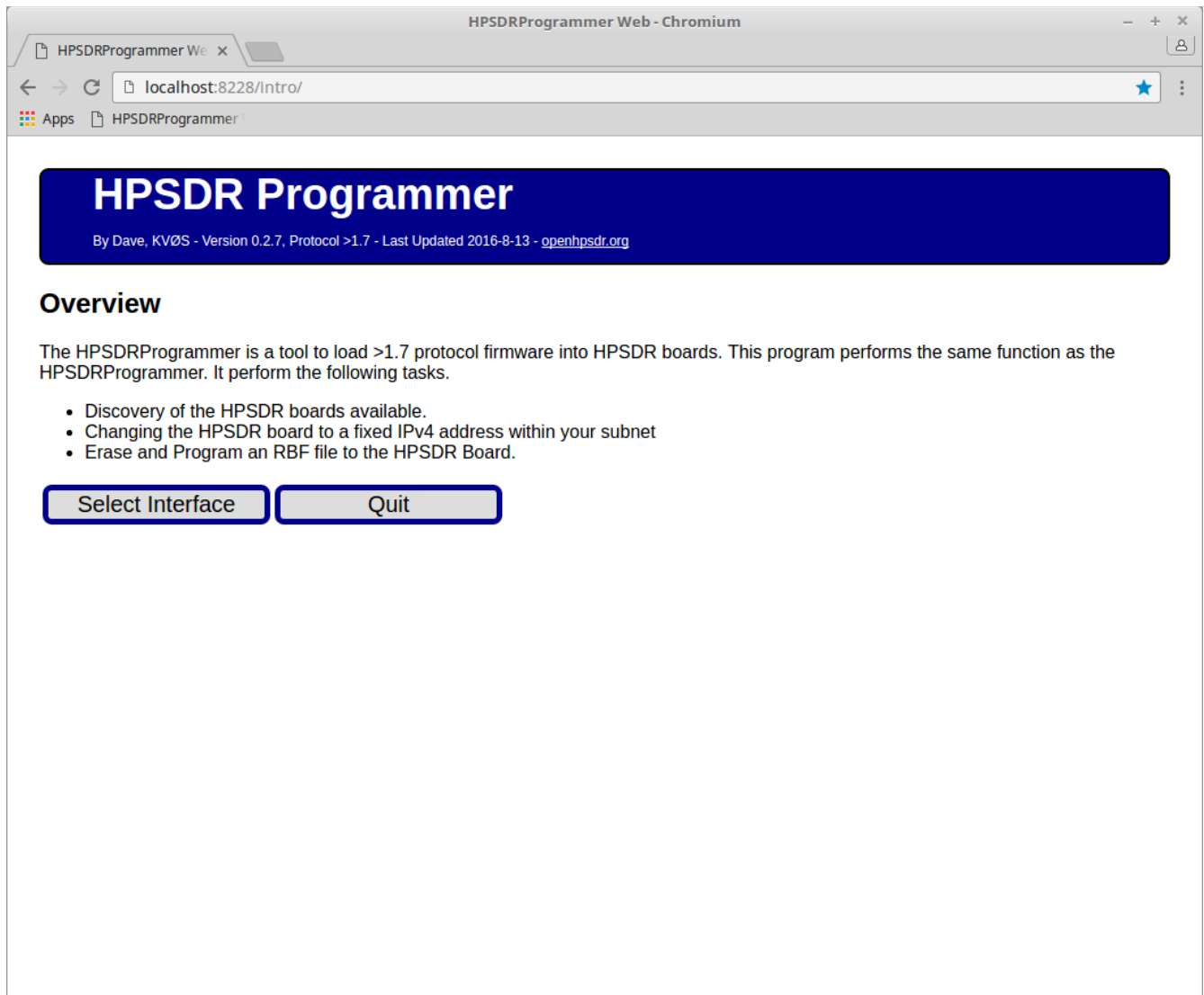
At the command prompt represented here as the "\$" we type the name of the program in the directory where you put the executable file. Note that on Linux you need to put the path to the program using "." to indicate the current working directory.
To start we just type the program name.

```
$ ./HPSPDRProgrammer_web
2016/08/14 14:18:04 For a list of commands use --help

2016/08/14 14:18:04 RBF directory /home/dlarsen/Downloads/HPSPDRfiles/
2016/08/14 14:18:04 Listening ...
2016/08/14 14:18:04 Point your web browser to: http://localhost:8228/intro/
```

If we point our web browser to this address we will see the following screen. I am using the Chromium web browser.

HPSDRProgrammer_web



Next we select the select interface button and we see.

HPSPDRProgrammer Web - Chromium

localhost:8228/nic?nic=nic

HPSPDR Programmer

By Dave, KVØS - Version 0.2.7, Protocol >1.7 - Last Updated 2016-8-13 - openhpsdr.org

Network Interfaces

Please select the interface to perform a Discovery

Index: (Network) (MAC) (IPV4) (IPV6)

1:	lo ()	(127.0.0.1)	(::1)
2:	enp9s7	(00:60:97:98:72:c2)	() ()
3:	enp0s20	(00:1f:c6:7e:52:de)	(192.168.1.10) (fe80::a67d:e56b:c779:7811)

Selected Network interface

1: lo ()

Select

Quit

In the first box we have a pull down list the interfaces on this computer.

In this case we have lo which is a loopback, enp9s7 which is ethernet 0 and enp0s20 which is ethernet 1.

HPSDRProgrammer Web - Chromium

HPSDRProgrammer Web x

localhost:8228/nic?nic=nic

Apps HPSPDRProgrammer

HPSPDR Programmer

By Dave, KVØS - Version 0.2.7, Protocol >1.7 - Last Updated 2016-8-13 - openhpsdr.org

Network Interfaces

Please select the interface to perform a Discovery

Index: (Network) (MAC) (IPV4) (IPV6)

- 1: lo () (127.0.0.1) (::1)
- 2: enp9s7 (00:60:97:98:72:c2) () ()
- 3: enp0s20 (00:1f:c6:7e:52:de) (192.168.1.10) (fe80::a67d:e56b:c779:7811)

Selected Network interface

3: enp0s20 (00:1f:c6:7e:52:de) ▾

Select

Quit

HPSDRProgrammer_web

HPSDRProgrammer Web - Chromium

HPSDRProgrammer Web x

localhost:8228/board/?index=3&select=nic

Apps HPSPDRProgrammer

HPSPDR Programmer

By Dave, KVØS - Version 0.2.7, Protocol >1.7 - Last Updated 2016-8-13 - openhpsdr.org

Computer

Computer: (00:1f:c6:7e:52:de)
OS: linux (amd64) 4 CPU(s)
User: Dave Larsen (dlarsen) /home/dlarsen
IPV4: 192.168.1.10
IPV6: fe80::a67d:e56b:c779:7811

Radios

Please select from these available Radios

HERMES: (0:4:a3:64:25:95) (192.168.1.26:1024)

Selected Network interface: 3: enp0s20 (00:1f:c6:7e:52:de)

Select HPSPDR Board

none none Select

We have found a Hermes board. We next select the Hermes board.

HPSDRProgrammer Web - Chromium

HPSDRProgrammer Web x

localhost:8228/board/?index=3&select=nic

Apps HPSPDRProgrammer

HPSPDR Programmer

By Dave, KVØS - Version 0.2.7, Protocol >1.7 - Last Updated 2016-8-13 - openhpsdr.org

Computer

Computer: (00:1f:c6:7e:52:de)
OS: linux (amd64) 4 CPU(s)
User: Dave Larsen (dlarsen) /home/dlarsen
IPV4: 192.168.1.10
IPV6: fe80::a67d:e56b:c779:7811

Radios

Please select from these available Radios

HERMES: (0:4:a3:64:25:95) (192.168.1.26:1024)

Selected Network interface: 3: enp0s20 (00:1f:c6:7e:52:de)

Select HPSPDR Board

HERMES (0:4:a3:64:25:95) ▾

Select

The screenshot shows a web browser window titled "HPSPDRProgrammer Web - Chromium". The address bar displays the URL: `localhost:8228/board/?board=0%3A4%3Aa3%3A64%3A25%3A95&index=3&boardtype=none`. The page content is as follows:

HPSPDR Programmer

By Dave, KVØS - Version 0.2.7, Protocol >1.7 - Last Updated 2016-8-13 - openhpsdr.org

Computer

Computer: (00:1f:c6:7e:52:de)
OS: linux (amd64) 4 CPU(s)
User: Dave Larsen (dlarsen) /home/dlarsen
IPv4: 192.168.1.10
IPv6: fe80::a67d:e56b:c779:7811

Radios

Please select from these available Radios

HERMES: (0:4:a3:64:25:95) (192.168.1.26:1024)

Selected Network interface: 3: enp0s20 (00:1f:c6:7e:52:de)

HERMES (0:4:a3:64:25:95) [Select]

Select HPSPDR Board

Board: HERMES
Board Mac: 0:4:a3:64:25:95
Board Address: 192.168.1.26:1024
Board Status: not running
Protocol: 2.9
Firmware: 10.0
Receivers: 2
Frequency Input: Phase_word

[Change IP] [Program] [Quit]

This is the discovered HPSPDR radio. At this point we can either change the fixed IP address or program the board with new firmware.

First we will change the fixed IP address by pressing the Change IP button.

HPSDRProgrammer_web

HPSPDRProgrammer Web - Chromium

localhost:8228/setip/?Index=3&board=0%3A4%3Aa3%3A64%3A25%3A95&baddress=192.168.1.26%3A1024&setip=setip

HPSPDR Programmer

By Dave, KVØS - Version 0.2.7, Protocol >1.7 - Last Updated 2016-8-13 - openhpsdr.org

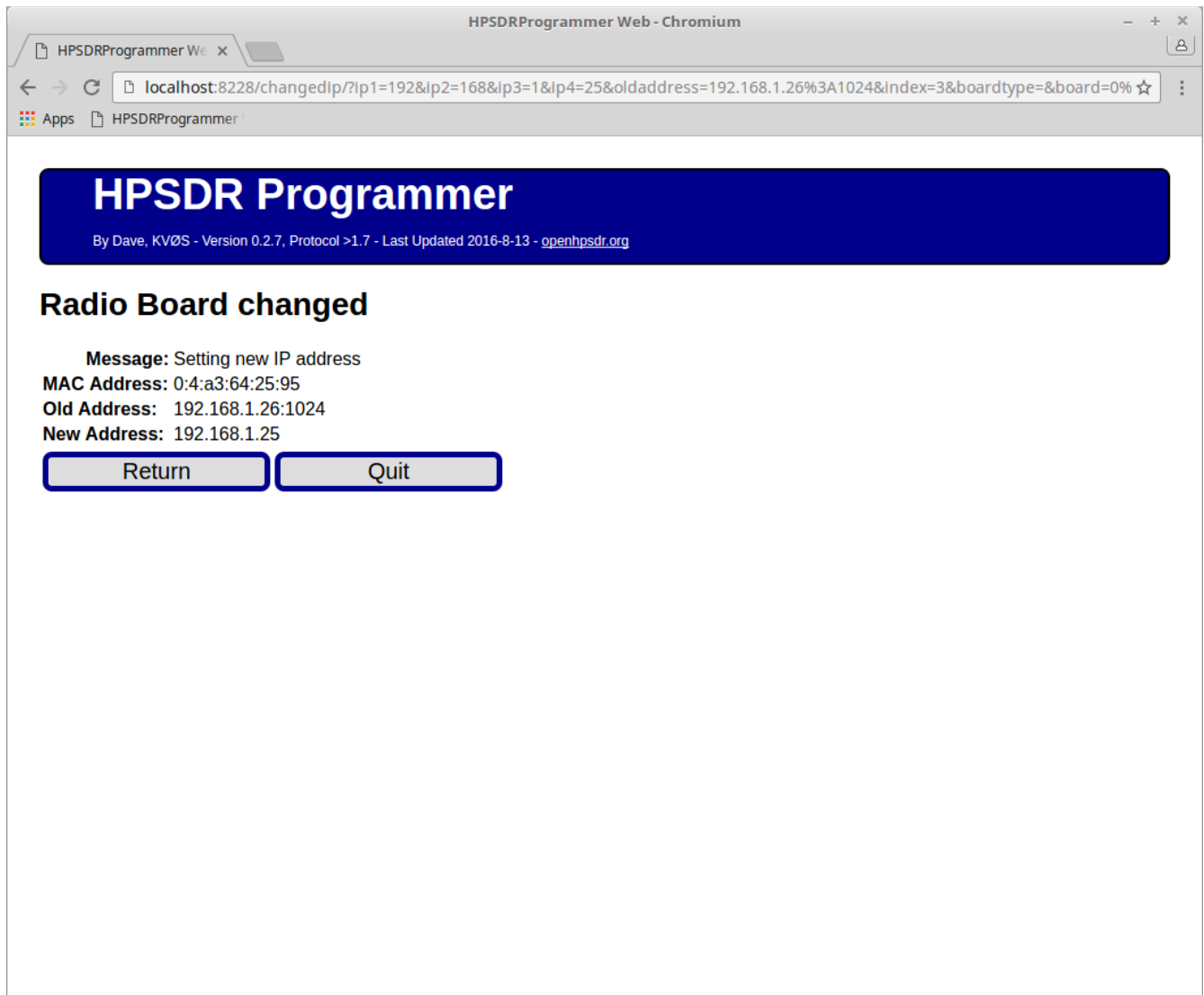
Change IP Interfaces

Please select the interface to perform a Change to the IP address.

192 168 1 26 Set IP DHCP Quit

This is the change IP screen with the current IP address preloaded. We are going to change the last number of the IPV4 to 25. and then press Set IP button. If you want to revert back to a DHCP address from either your router or the radio select the DHCP button.

HPSDRProgrammer_web



After pressing the set IP button we get a report of what has been done. We will now press the Return button, which takes us to an earlier point in the process.

HPSDRProgrammer_web

HPSDRProgrammer Web - Chromium

HPSDRProgrammer Web x

localhost:8228/nic/?return=return

Apps HPSPDRProgrammer

HPSPDR Programmer

By Dave, KVØS - Version 0.2.7, Protocol >1.7 - Last Updated 2016-8-13 - openhpsdr.org

Network Interfaces

Please select the interface to perform a Discovery

Index: (Network) (MAC) (IPV4) (IPV6)

1: lo () (127.0.0.1) (::1)

2: enp9s7 (00:60:97:98:72:c2) () ()

3: enp0s20 (00:1f:c6:7e:52:de) (192.168.1.10) (fe80::a67d:e56b:c779:7811)

Selected Network interface

1: lo ()

Select

Quit

You need to select the interface again.

HPSDRProgrammer Web - Chromium

HPSDRProgrammer Web x

localhost:8228/board/?index=3&select=nic

Apps HPSPDRProgrammer

HPSPDR Programmer

By Dave, KVØS - Version 0.2.7, Protocol >1.7 - Last Updated 2016-8-13 - openhpsdr.org

Computer

Computer: (00:1f:c6:7e:52:de)
OS: linux (amd64) 4 CPU(s)
User: Dave Larsen (dlarsen) /home/dlarsen
IPV4: 192.168.1.10
IPV6: fe80::a67d:e56b:c779:7811

Radios

Please select from these available Radios

HERMES: (0:4:a3:64:25:95) (192.168.1.26:1024)

Selected Network interface: 3: enp0s20 (00:1f:c6:7e:52:de)

Select HPSPDR Board

HERMES (0:4:a3:64:25:95) ▾

Select

And then select the radio board again.

HPSDRProgrammer_web

HPSDRProgrammer Web - Chromium

localhost:8228/board/?board=0%3A4%3Aa3%3A64%3A25%3A95&index=3&boardtype=none

Apps HPSPDRProgrammer

HPSPDR Programmer

By Dave, KVØS - Version 0.2.7, Protocol >1.7 - Last Updated 2016-8-13 - openhpsdr.org

Computer

Computer: (00:1f:c6:7e:52:de)
OS: linux (amd64) 4 CPU(s)
User: Dave Larsen (dlarsen) /home/dlarsen
IPv4: 192.168.1.10
IPv6: fe80::a67d:e56b:c779:7811

Radios

Please select from these available Radios

HERMES: (0:4:a3:64:25:95) (192.168.1.26:1024)

Selected Network interface: 3: enp0s20 (00:1f:c6:7e:52:de)

HERMES (0:4:a3:64:25:95) Select

Select HPSPDR Board

Board: HERMES
Board Mac: 0:4:a3:64:25:95
Board Address: 192.168.1.26:1024
Board Status: not running
Protocol: 2.9
Firmware: 10.0
Receivers: 2
Frequency Input: Phase_word

Change IP Program Quit

The HPSPDRProgrammer_web can change the firmware if the old firmware is UDP enabled. Here is an example of updating the firmware on the Hermes board.

HPSPDRProgrammer Web - Chromium

HPSPDRProgrammer Web x

localhost:8228/prog/?Index=3&boardtype=HERMES&board=0%3A4%3Aa3%3A64%3A25%3A95&program=program

Apps HPSPDRProgrammer

HPSPDR Programmer

By Dave, KVØS - Version 0.2.7, Protocol >1.7 - Last Updated 2016-8-13 - openhpsdr.org

Program Interfaces

Please select the interface to perform a Board Program

Get the latest RBF file from the repository
[HERMES](#)

Select a file:

Choose File Hermes_16_bit_14_Aug.rbf

Upload

At this point you need to select the new firmware. In the future after beta testing the link will take you to the web location for the correct firmware for your radio. Or if you have downloaded it from a website previously you can press the choose file button to select the firmware.

Next you have to upload the firmware. This is a security feature of web browsers that the firmware must be copied to a standard to allow the web server to access. The default location is HOME/Downloads/HPSPDRfiles we do this as most web browser can write to the Downloads directory.

HPSDRProgrammer_web

HPSPDRProgrammer Web - Chromium

HPSPDRProgrammer Web x

localhost:8228/upload/

Apps HPSPDRProgrammer

HPSPDR Programmer

By Dave, KVØS - Version 0.2.7, Protocol >1.7 - Last Updated 2016-8-13 - openhpsdr.org

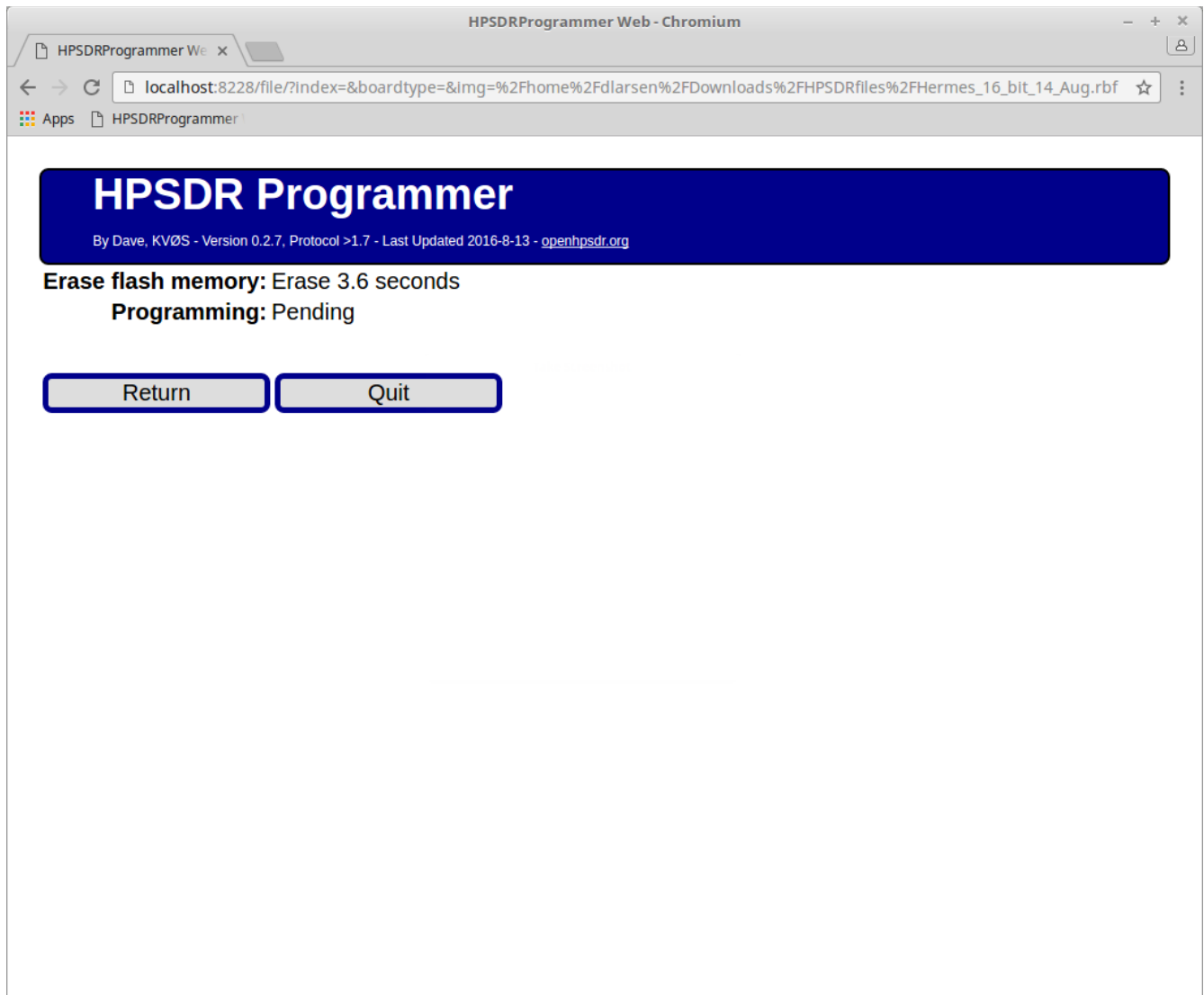
Firmware File Information

Found rbf file: /home/dlarsen/Downloads/HPSPDRfiles/Hermes_16_bit_14_Aug.rbf
Size rbf file: 554487
Size rbf in memory: 554496
Packets: 2166

Program

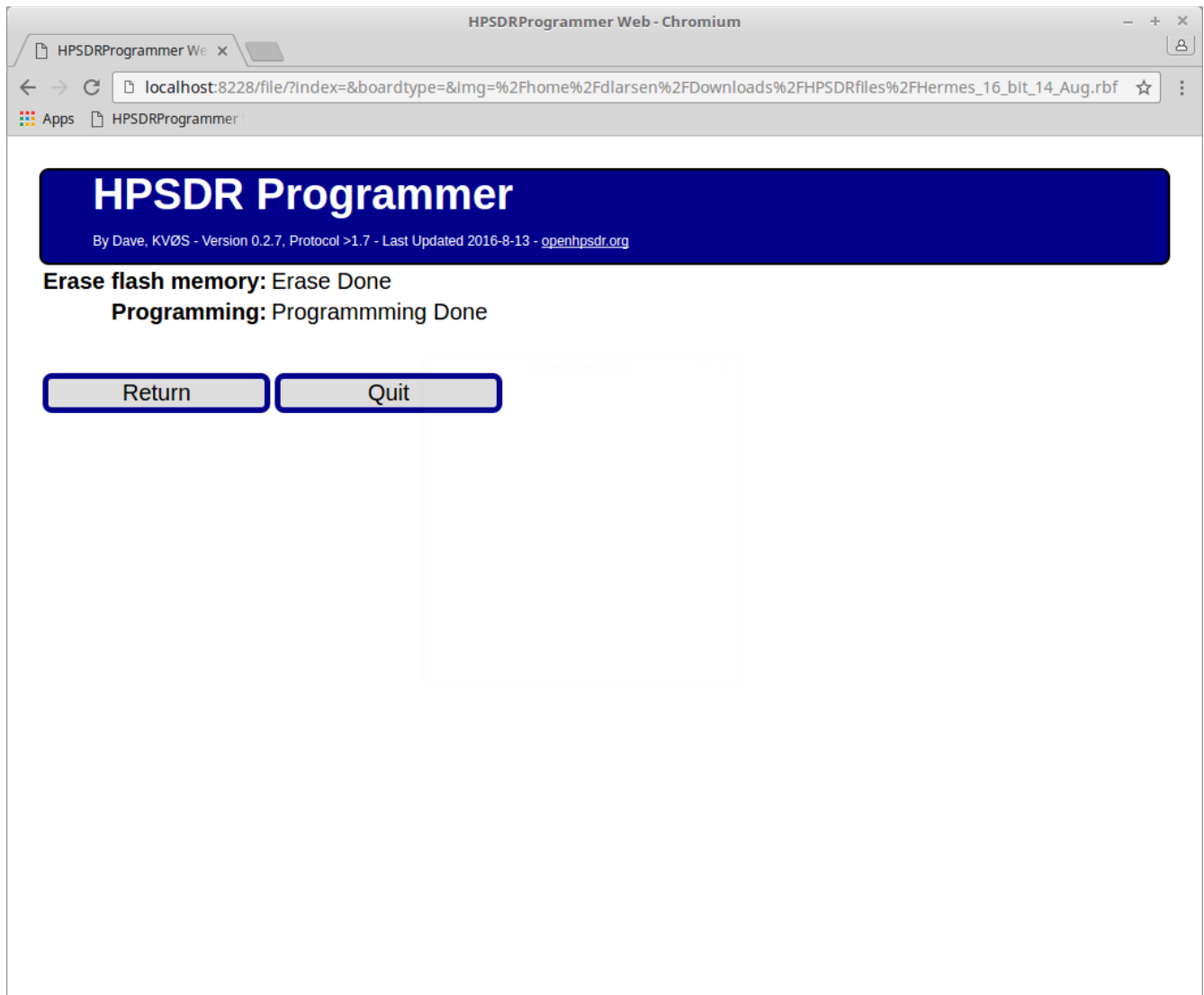
This web page report the file statistics including the location on your hard disk, the file size, the RBF memory size and the number of packets that will be sent in the programming process.

HPSDRProgrammer_web



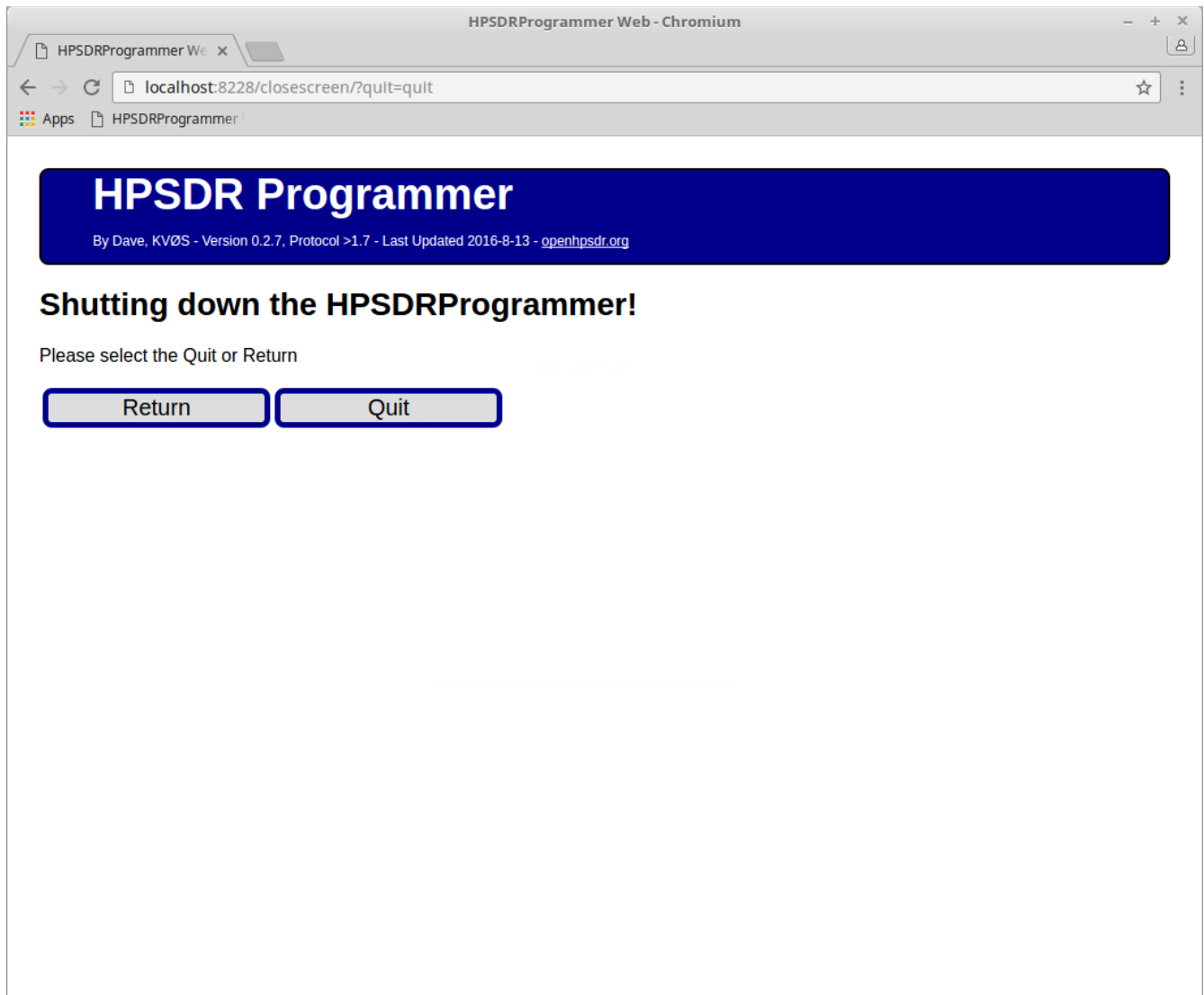
The HPSPDRProgrammer_web uses websockets to provide real time feedback on the erasing and programming progress. Here we are part way into the erasing process and programming has not started yet.

HPSDRProgrammer_web



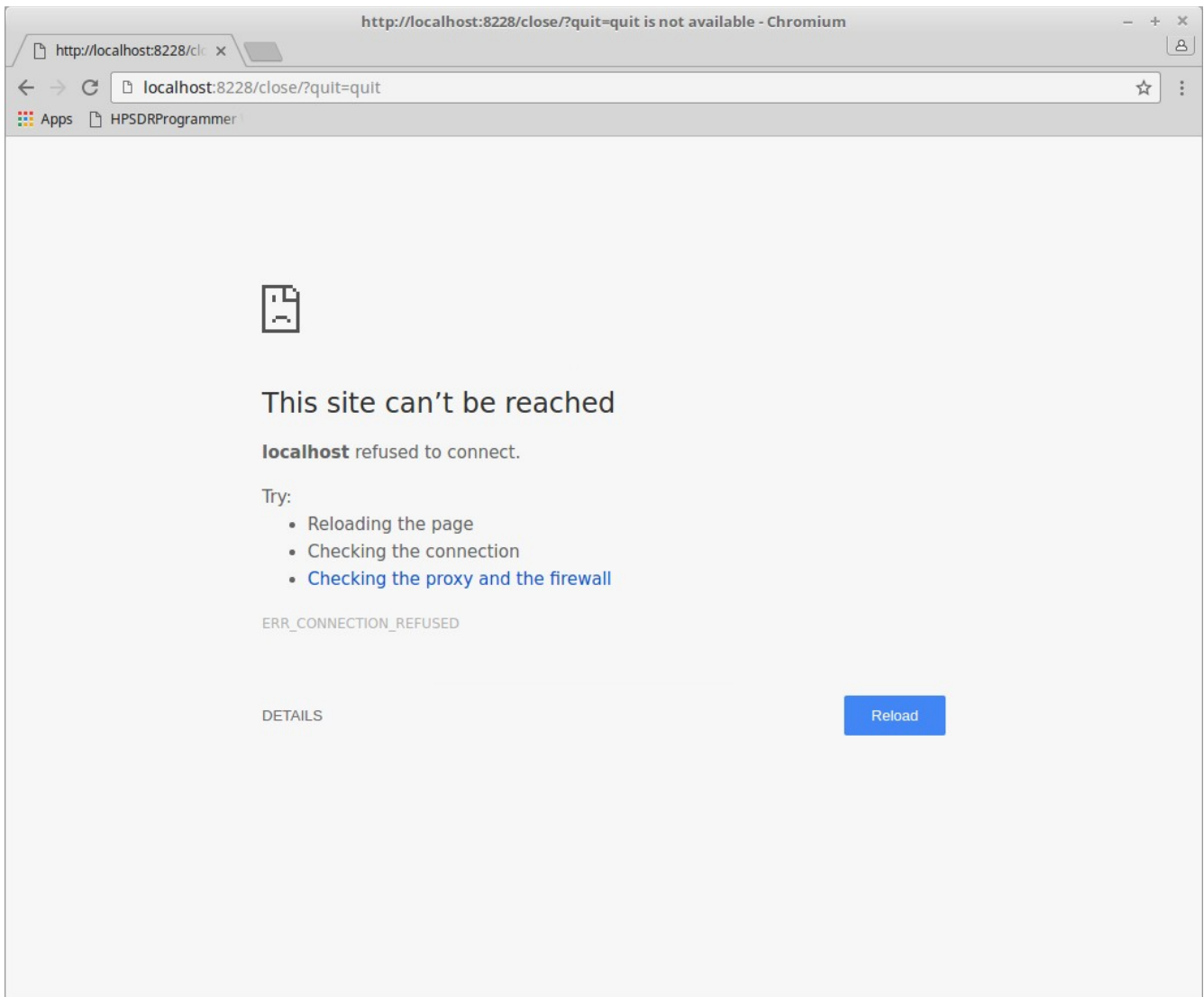
This would be the completion of the updating of the firmware.

Next you can return and program another radio or set the IP address. If you quite the web browser now it will continue to run until you turn the machine off. You could go back to the command line where you start the program and kill the program usually (ctrl C) or you can simply press the quit button.



After pressing the Quit button you will get this warning message you can return at this point of stop the webserver with the Quit button.

HPSDRProgrammer_web



If you press the quit button again the webserver will stop and the web browser will have some message of site can't be reached.