

# **APPLICATION NOTE FOR THE CS7000 M17**

The CS7000 M17 can have both the M17 protocol and the DMR protocol but not at the same time. This application note shows how to convert the radio to the other protocol. The DMR protocol also includes the Analog Protocol. The method to convert is slightly different dependent on which protocol you want to convert to.

## **Summary of Converting from the DMR to M17 Protocol**

1. Erase microprocessor the flash memory in the radio using the DfuSeDemo program
2. Transfer the openrtx\_cs7000.dfu program to the radio using the DfuSeDemo program.

## **Converting from the DMR to M17 Protocol**

You need the following programs and hardware:

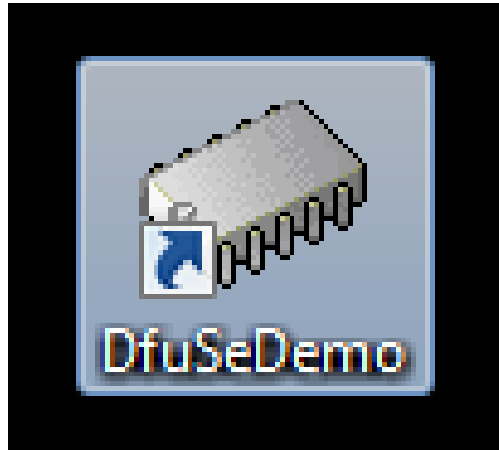
CS7000 M17 radio

Programming cable

DfuSeDemo program

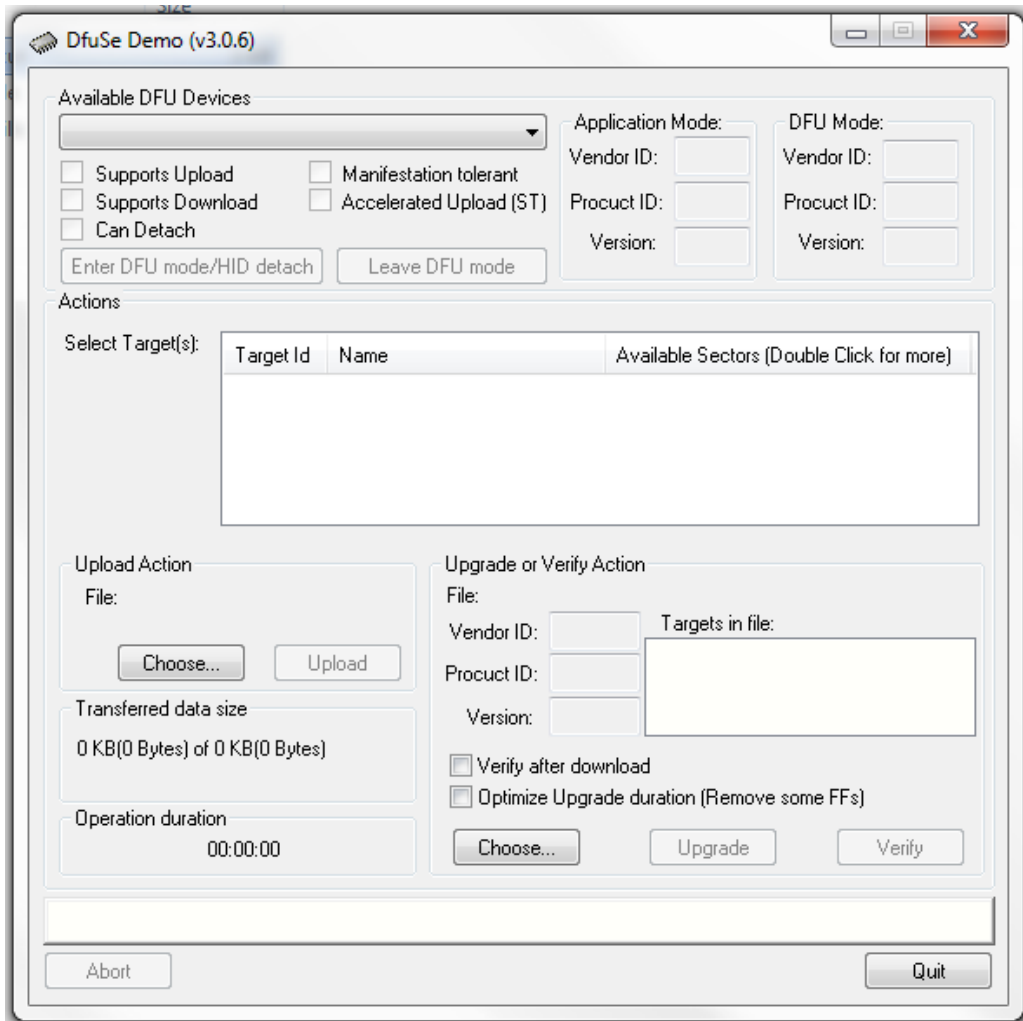
openrtx\_cs7000.dfu program

1. If you have not already done it, install the DFuSeDemo Program on your PC. If done properly you should have the following shortcut on your PC.

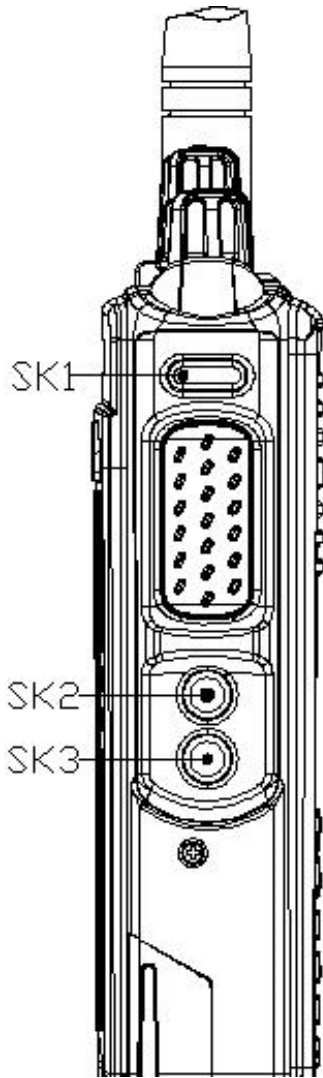


2. Attach one end of the programming cable to the radio and the other end to the USB port of the computer.

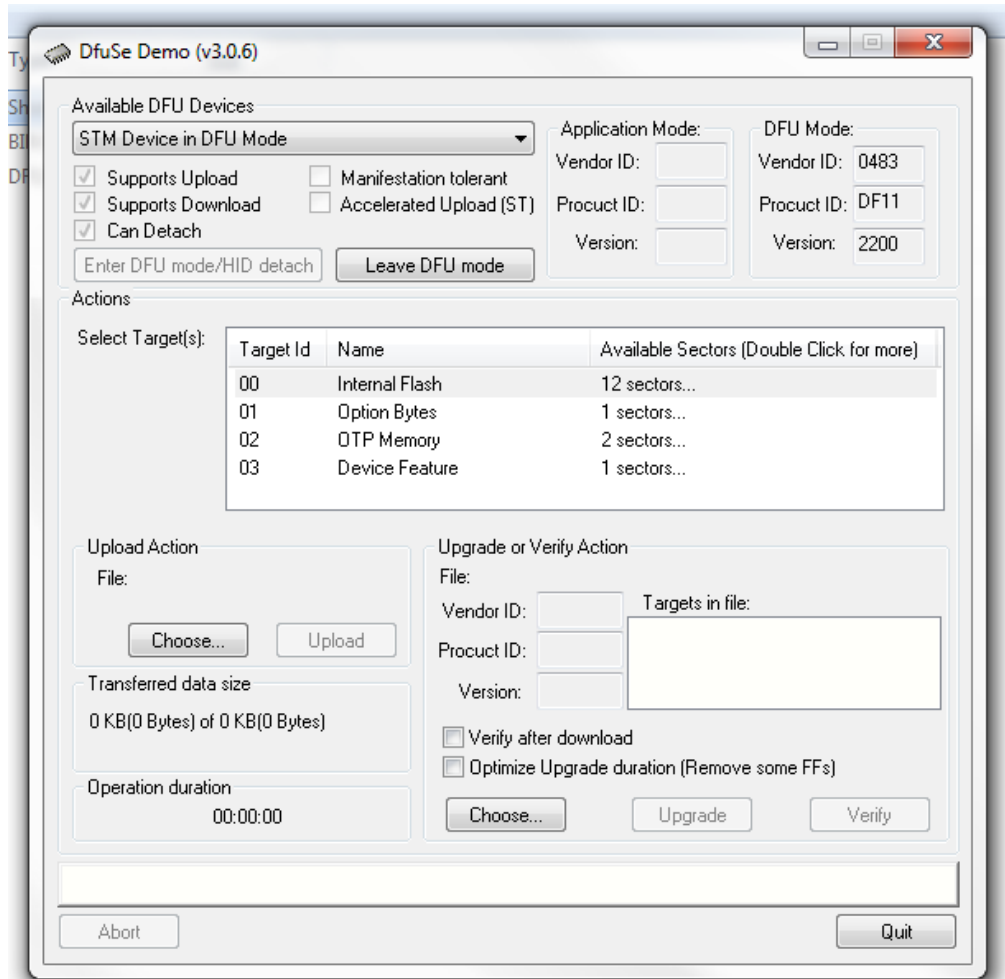
3. Run the DFuSeDemo program and you should get the following Screen:



4. Below is a picture of the radio buttons:

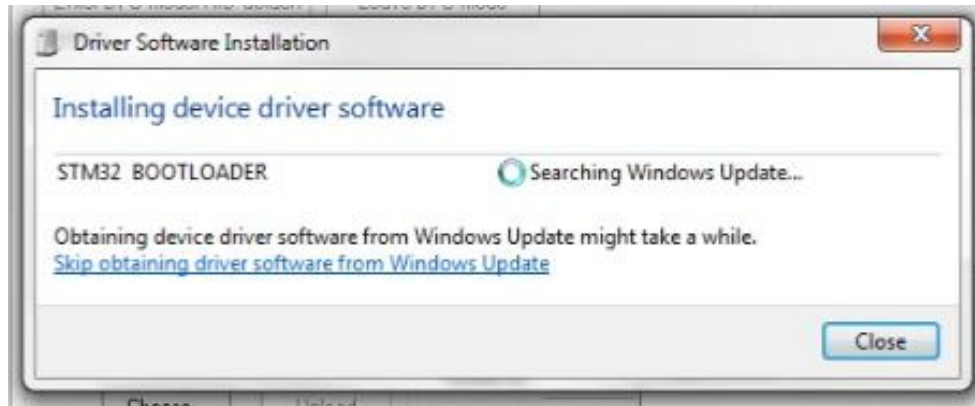


Press SK1 and while pressed turn on the radio. Your computer screen should look like the following:



This screen might take a while to come up as the computer is looking for a driver.

While the computer is trying to find the driver, you get the following message on the bottom right side of the computer screen:

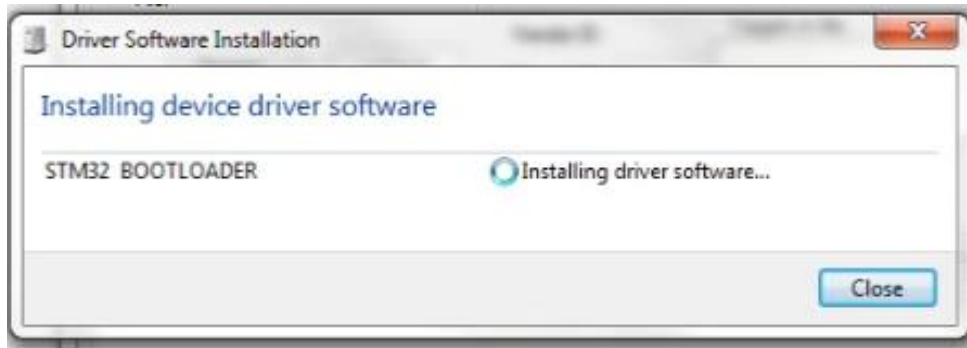


To speed up the process of finding a driver, click on the link that says "Skip obtaining driver software from Windows Update".

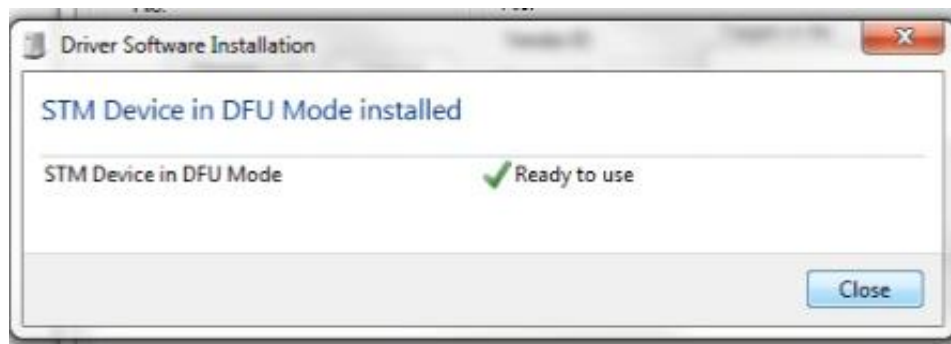
You then get the following screen:



Pressing the Yes button gets you the following screen:

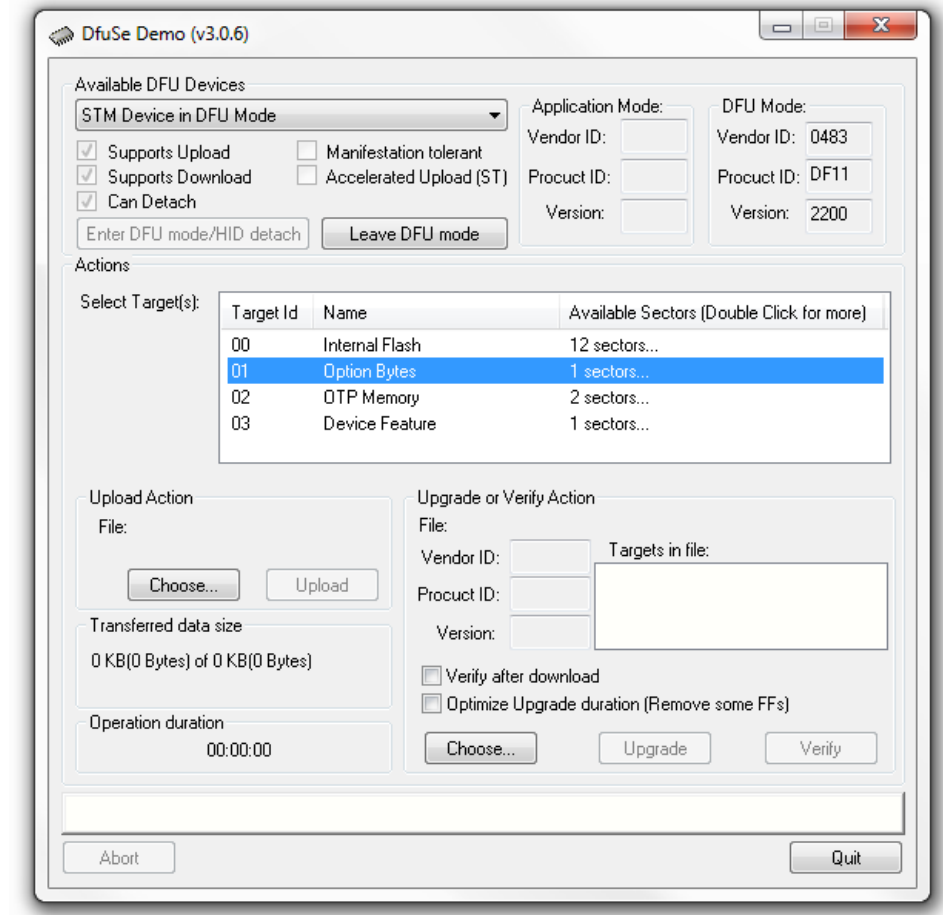


After it has found what it is looking for you get the following screen:



Press the close button and now you get the screen as was shown at the beginning of this step.

5. Highlight the option button as shown below and then double click on the highlighted portion.

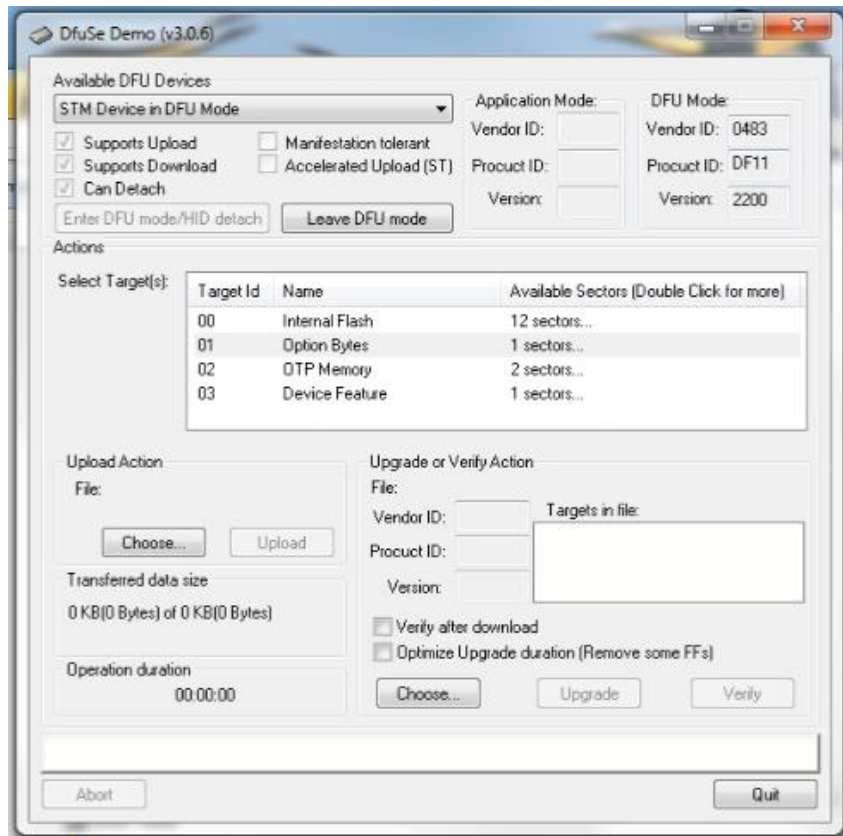


You get the following screen and you then press the Yes button.

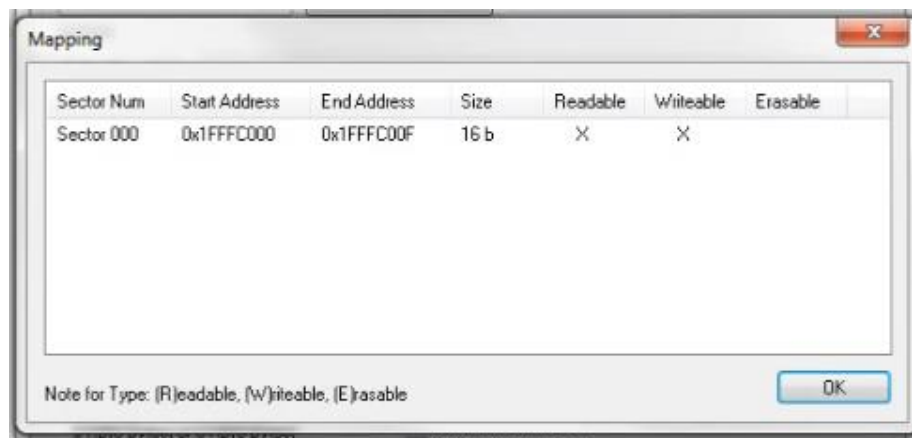




The screen now goes back to

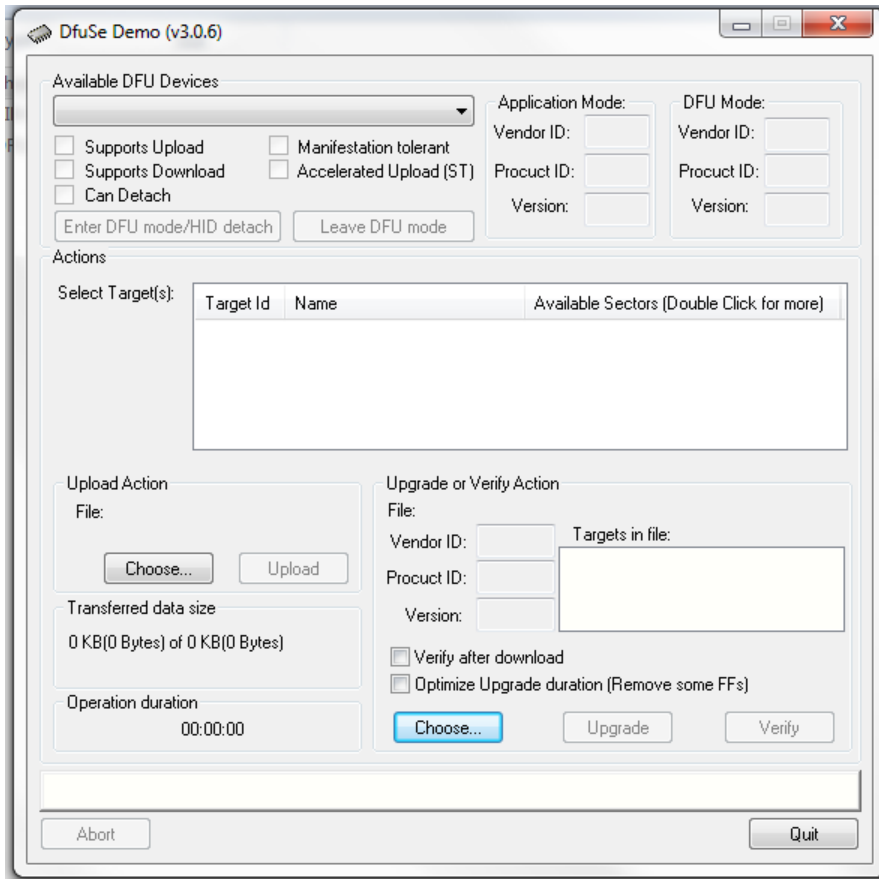


You now wait about a minute and you will then get the following screen. During the wait, the screen might blink once.

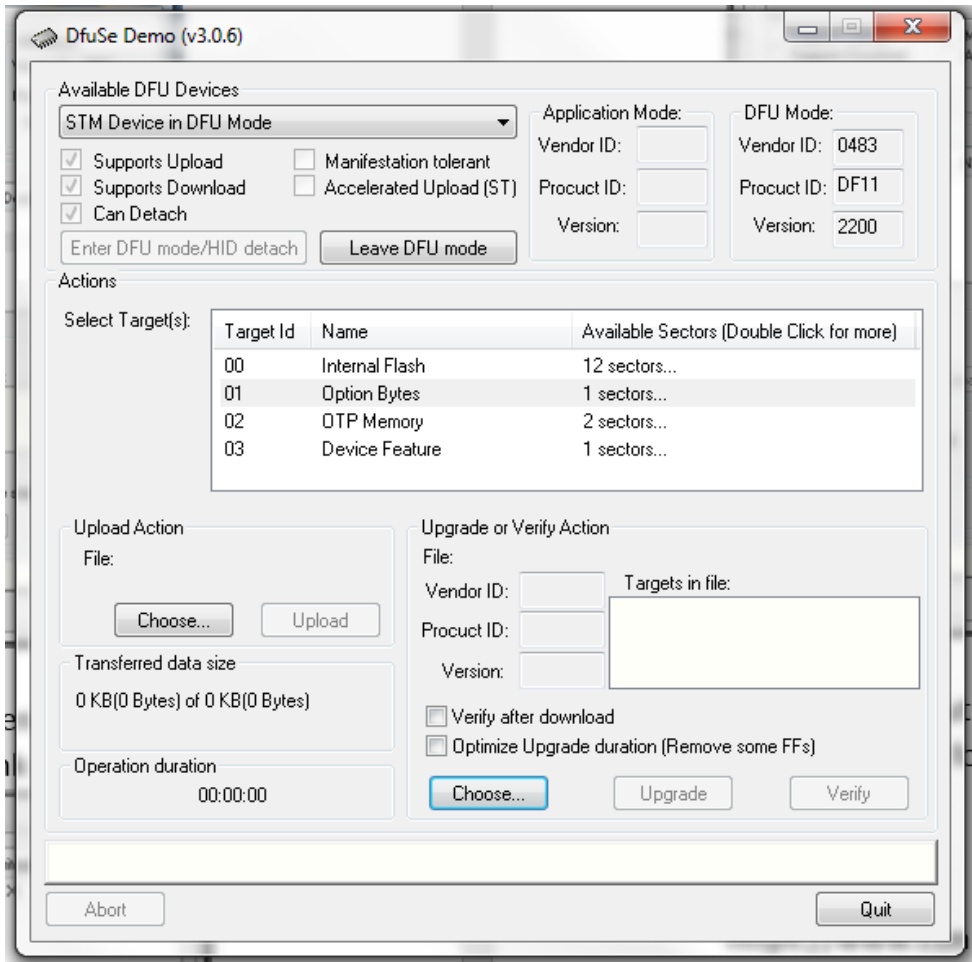


Press the OK button and you are now finished with this step.

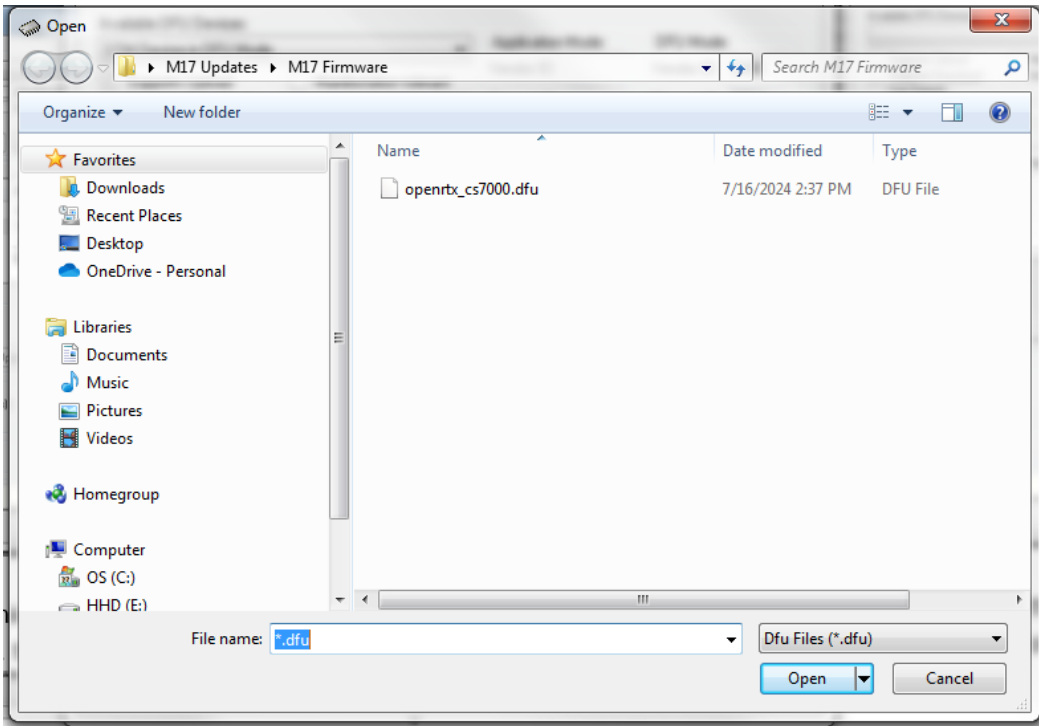
6. Turn off the radio and the screen should look as follows:



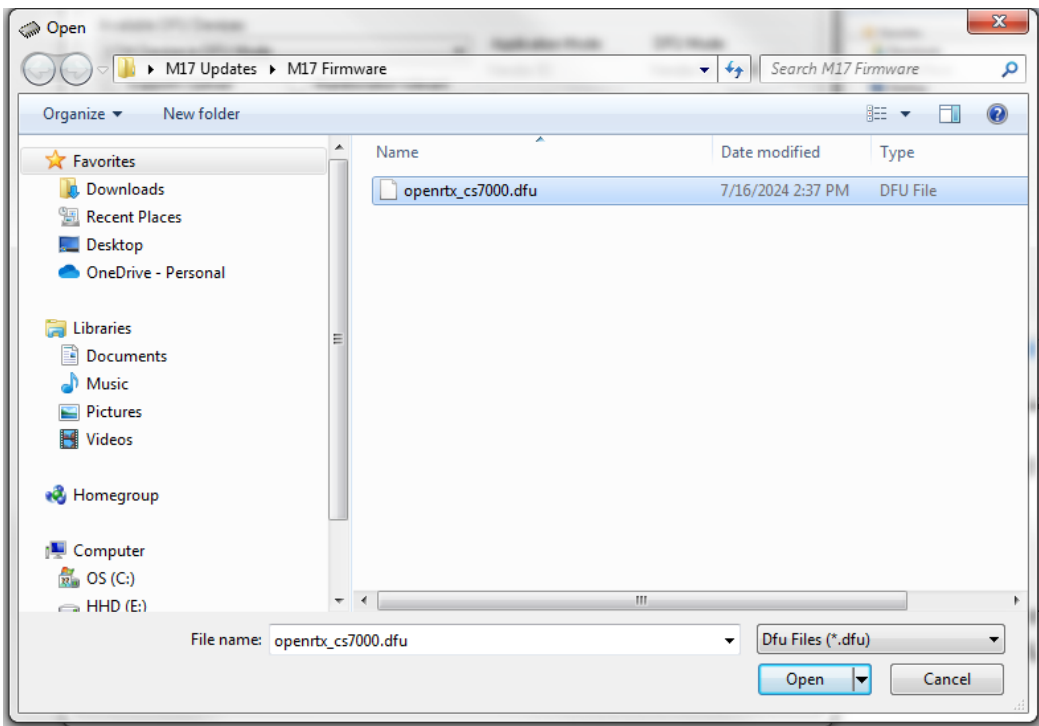
Press the SK1 button and while it is pressed turn on the radio and the screen is as follows:



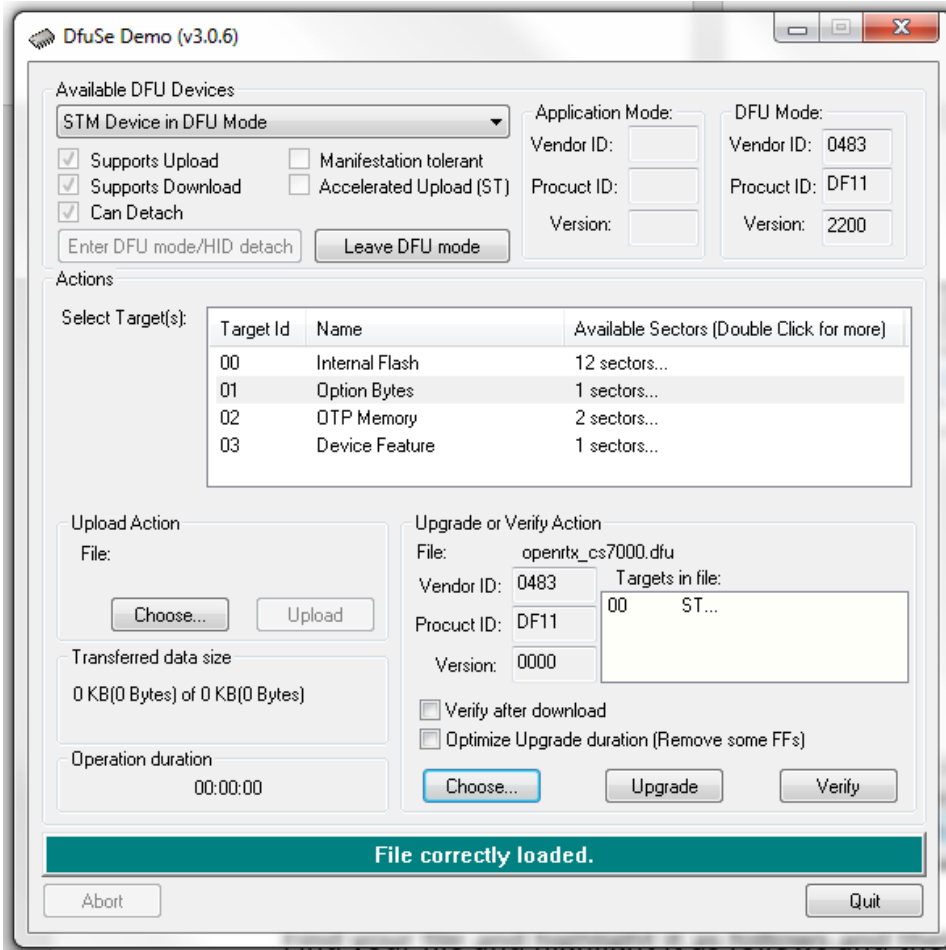
Press the choose button and you get the following screen.



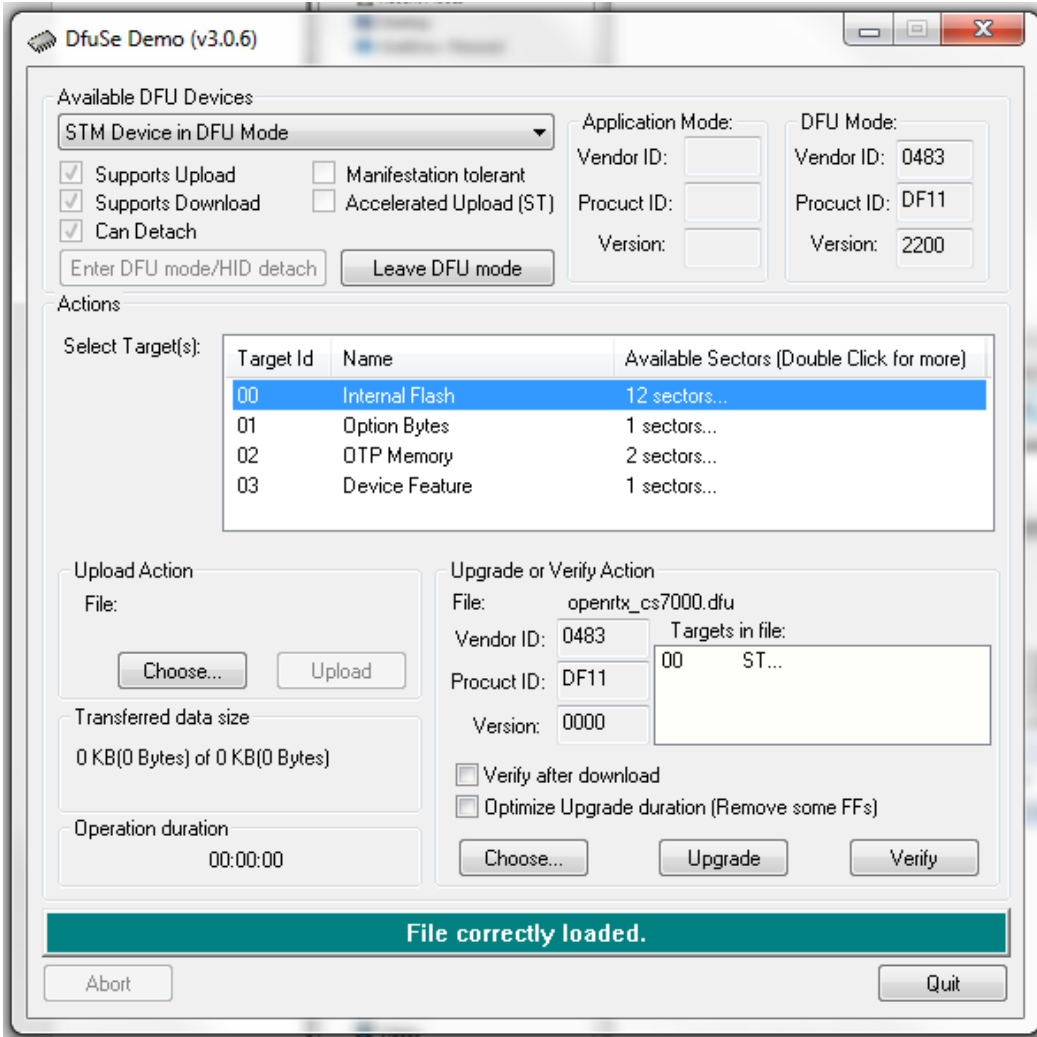
Find your file and highlight it as follows and then press the Open button.



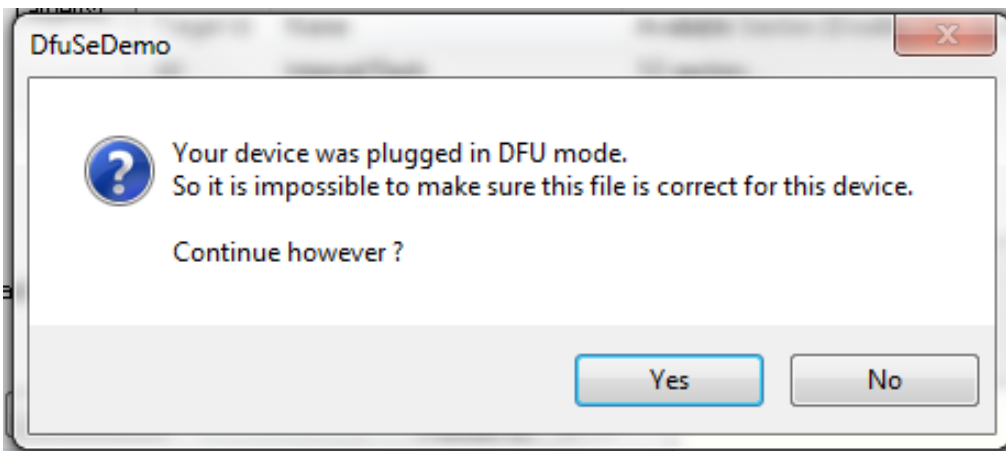
You get the screen below.



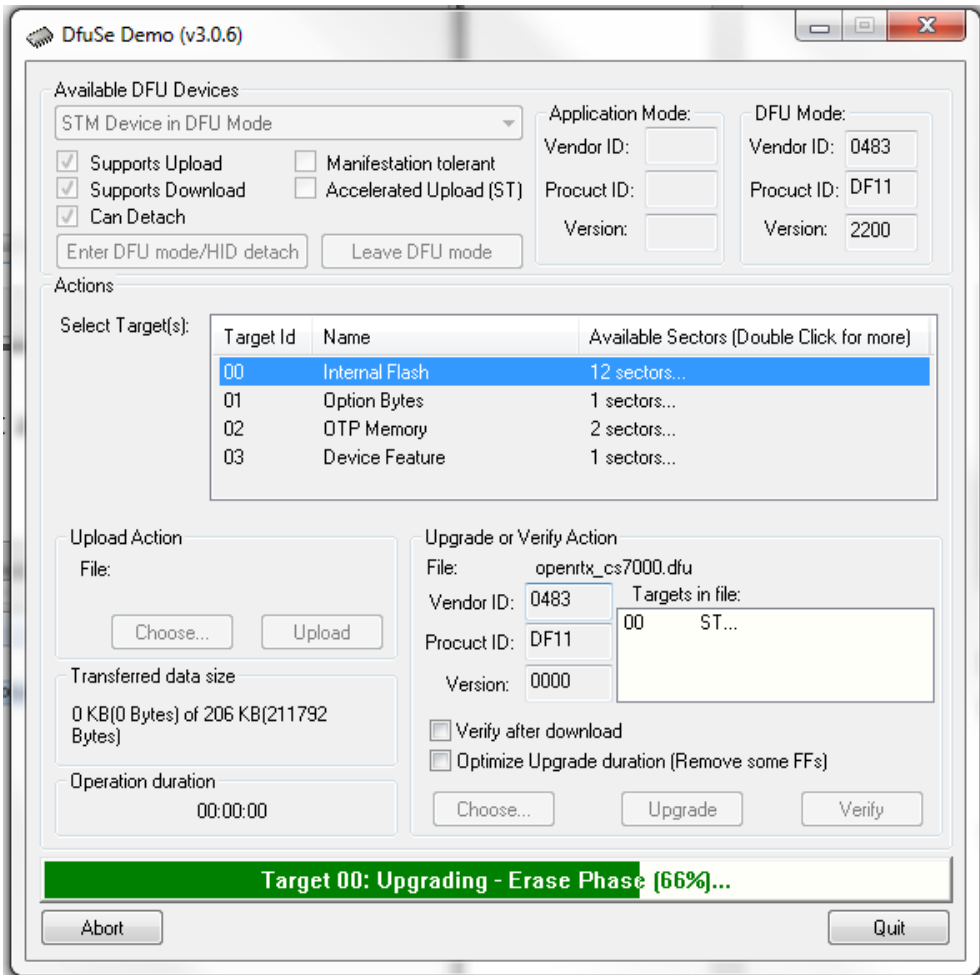
Now highlight the Internal Flash as shown below and press the Upgrade button.



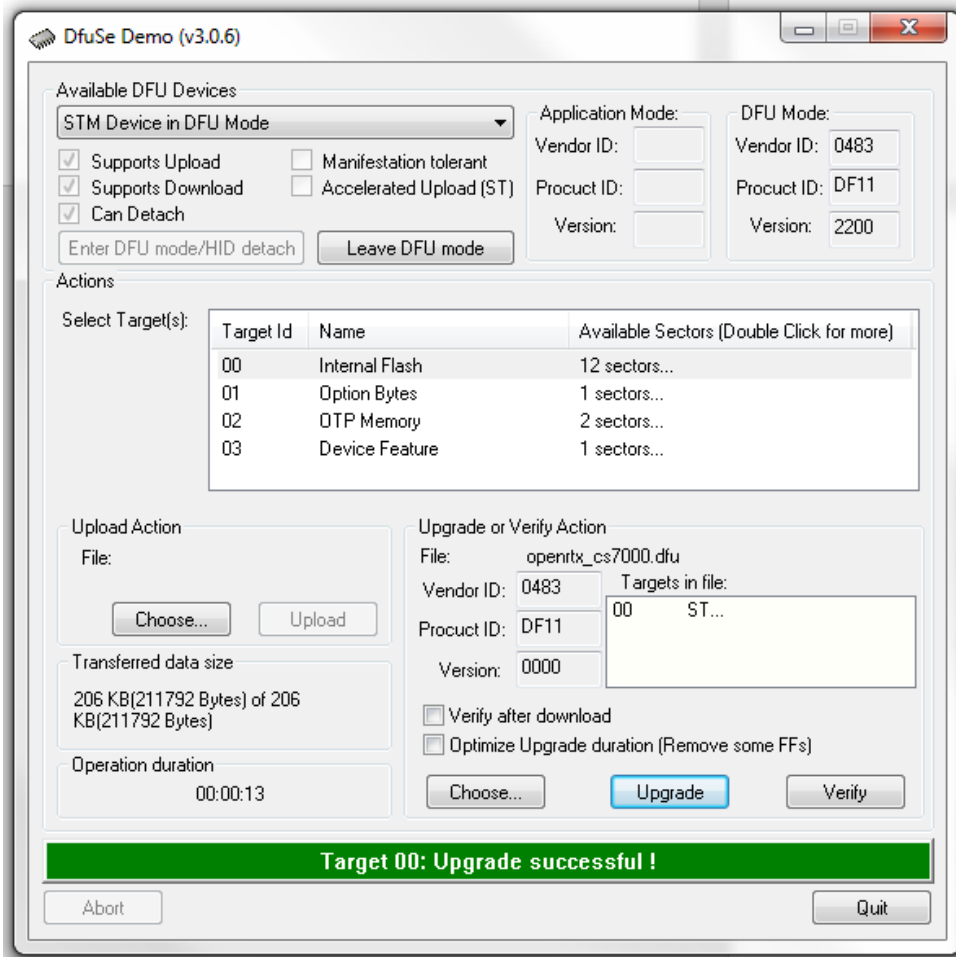
You will get the following warning.



Press the Yes button and you will get the following:



After a few seconds you will get the following screen:



You are now finished. Turn off the radio and turn it on again and you will get the following two screens.



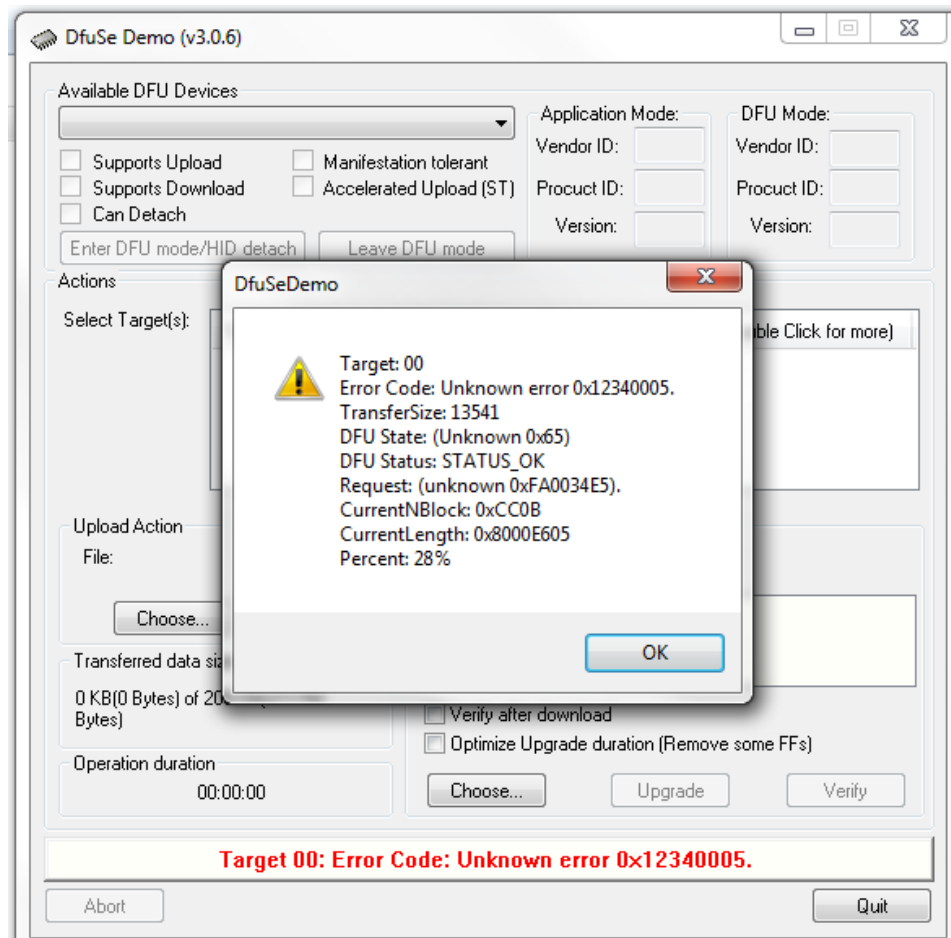




If you would like to see a video of how this is done, please go to the following link. While this video was for unbricking the CS800D, the technique is the same.

<https://www.connectsystems.com/products/top/radios/CS800D/Unbrick%20Part%203.mp4>

If you try updating the firmware without first erasing the flash memory in the microprocessor, you might get an error message as shown below.

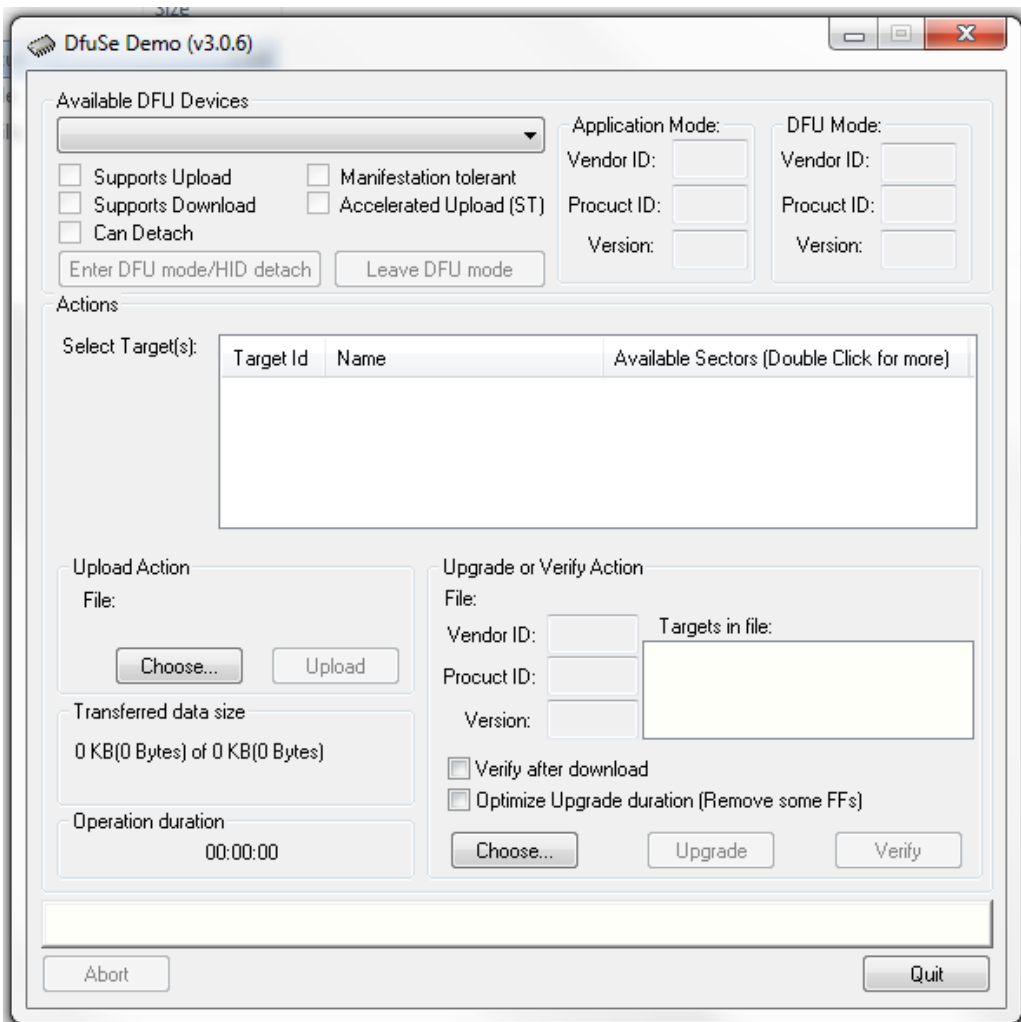


If that happens, try reloading the DMR bootloader and start from the beginning.

**Installing the driver for the DfuSeDemo program manually**

## Installing the driver for the DfuSeDemo program manually

If after Pressing SK1 and while pressed turning on the radio you get the following screen, you might need to manually install the driver.



Normally, this program if it needs a driver, finds it over the internet and gives you an option to install a local driver. Some operating systems do not seem to get the driver. If that is your situation, you should install the driver manually.

On your computer, go to the following directory:

C:\Program Files (x86)\STMicroelectronics\Software\DfuSe v3.0.6\Bin\Driver

If you go there you should see the following:

Name	Date modified	Type	Size
Win7	1/11/2021 7:09 PM	File folder	
Win8	1/11/2021 7:09 PM	File folder	
Win8.1	1/11/2021 7:09 PM	File folder	
Win10	1/11/2021 7:09 PM	File folder	
version.txt	6/11/2018 12:53 AM	Text Document	4 KB

Now you have to match your windows version to your computer. I would expect Windows 10 to work with Windows 11.

Go into the folder matching your operating system and then go into the folder matching the type of operating system.

Name	Date modified	Type	Size
x64	1/11/2021 7:09 PM	File folder	
x86	1/11/2021 7:09 PM	File folder	
DFU_Win7_x86x64_v3.0.4.0_LogoVerificati...	7/10/2012 6:35 PM	Adobe Acrobat D...	132 KB

If you go into the x64 bit folder you get the following:

Name	Date modified	Type	Size
x64	1/11/2021 7:09 PM	File folder	
dpinst_amd64.exe	2/8/2010 10:36 PM	Application	1,026 KB
sttube.cat	7/10/2012 6:38 AM	Security Catalog	9 KB
STtube.inf	7/9/2012 11:02 PM	Setup Information	10 KB

Run the dpinst\_amd64.exe program to install the driver.

If you go into the x86 folder you get the following:

Name	Date modified	Type	Size
x86	1/11/2021 7:09 PM	File folder	
dpinst_x86.exe	2/8/2010 9:59 PM	Application	901 KB
sttube.cat	7/10/2012 6:38 AM	Security Catalog	9 KB
STtube.inf	7/9/2012 11:02 PM	Setup Information	10 KB

Run the dpinst\_x86.exe program to install the driver.

The Windows 10 folder is an exception. When you go into the folder you get the following:

Name	Date modified	Type	Size
x64	1/11/2021 7:09 PM	File folder	
x86	1/11/2021 7:09 PM	File folder	
dpinst_amd64.exe	2/8/2010 10:36 PM	Application	1,026 KB
dpinst_x86.exe	2/8/2010 9:59 PM	Application	901 KB
sttube.cat	4/27/2018 6:38 AM	Security Catalog	11 KB
STtube.inf	4/27/2018 3:31 AM	Setup Information	13 KB

Both programs are here so run what is appropriate for your computer.