# **UPDATING THE FIRMWARE IN THE CS-BFD**

This document goes into painstaking details on how to update the firmware in the CS-BFD. For those of you who are familiar with computers, most of this will be an overkill. These instructions assume your radio is bricked. We have another set of instructions that show how to do the same thing if your CS-BFD is not bricked.

1. Remove the five Philip head screws holding the back cover on and you should see the following:



You will notice there are four jumper blocks.

The four-pin jumper block that does not have a jumper on is used for firmware debugging.

The jumper block closest to external power jack is used to determine the source of its power. If the jumper is between the center pin and the pin closest to the top of the display, then the power is derived from the radio. If the jumper is between the center pin and the bottom of the display, then the power is derived from an external power supply.

The jumper block that is closes to the middle of the board and located near the square inductor is used to supply power to the keyboard backlight. If the jumper is between the middle pin and the pin closest to the power supply jumper block, then the backlight for the keys are always on. If the jumper

The jumper block closest to the four-pin jumper block is used to set the computer in boot mode. If the jumper is between the center pin and the pin closest to the four-pin jumper, then the computer is in boot mode. If the jumper is between the center pin and the bottom of the bottom of the display, then the computer is in normal mode. 2. Make a directory on your computer called Dfuse. For those who are more advanced, the name is not important. You can share these programs with directories that already exist.



3. Load the program called en.stsw-stm32080.zip into that directory. That program can be found by doing a google search of "ST Dfuse" and getting the information directly from the source or by loading it from <u>www.connectsystems.com</u> website and finding it in the Software pulldown menu under the CS-BFD heading.



#### 4. Unzip that directory

![](_page_4_Picture_1.jpeg)

You now have the following programs:

- DfuSe\_Demo\_V3.0.6\_Setup.exe. This is the actual program you will use.
- Readme.txt. This is an explanation of this program
- SLA0044.txt. This is the license agreement for using this program
- Version.txt. This is an internal document that shows features that were added to the latest versions of software.

5. Download the latest firmware for the CS-BFD that should be located in the same area as the DfuSe\_Demo\_V3.0.6\_Setup.exe and put it in the same directory. You should get a directory that looks similar to the directory shown below.

				_		~
						x
↓ Dfuse →			✓ <sup>4</sup> → Search Dfuse			٩
Organize   Include in library   Share with	Slide show Burn New fold	ler		:≡ ▼		?
★ Favorites	Name	Date	Туре	Size	Tags	
Downloads	CS-BFD Version 1.00.01.dfu	10/23/2018 12:55 PM	DFU File	148 KB		
ConeDrive	DfuSe_Demo_V3.0.6_Setup.exe	6/10/2018 4:45 PM	Application	18,821 KB		
📃 Recent Places	📄 en.stsw-stm32080.zip	10/26/2018 9:36 AM	Compressed (zipp	18,171 KB		
🧮 Desktop	readme.txt	6/10/2018 4:08 PM	Text Document	3 KB		
Oreative Cloud Files	SLA0044.txt	6/10/2018 3:41 PM	Text Document	5 KB		
	version.txt	6/10/2018 3:38 PM	Text Document	6 KB		
<ul> <li>□ Libraries</li> <li>□ Documents</li> <li>□ Music</li> <li>□ New Library</li> <li>□ Pictures</li> <li>□ Videos</li> <li>○ Homegroup</li> <li>○ Conputer</li> <li>○ S (C:)</li> <li>□ Removable Disk (E:)</li> <li>○ Network</li> </ul>						
6 items State: 🕉 Shared	(	111				4

6. Highlight the executable program as shown below and then double click it to run it.

						x
OOO Job Dfuse >		•	Search Dfuse			٩
Organize ▼ 💼 Open Share with ▼ E-mai	I Burn New folder					0
☆ Favorites	Name	Date	Туре	Size	Tags	
🗼 Downloads	CS-BFD_Version_1.00.01.dfu	10/23/2018 12:55 PM	DFU File	148 KB		
🐔 OneDrive	DfuSe_Demo_V3.0.6_Setup.exe	6/10/2018 4:45 PM	Application	18,821 KB		
🕮 Recent Places	🜗 en.stsw-stm32080.zip	10/26/2018 9:36 AM	Compressed (zipp	18,171 KB		
📃 Desktop	readme.txt	6/10/2018 4:08 PM	Text Document	3 KB		
Oreative Cloud Files	SLA0044.txt	6/10/2018 3:41 PM	Text Document	5 KB		
	version.txt	6/10/2018 3:38 PM	Text Document	6 KB		
<ul> <li>☐ Libraries</li> <li>☐ Documents</li> <li>→ Music</li> <li>☐ New Library</li> <li>☐ Pictures</li> <li>☑ Videos</li> <li>☑ Homegroup</li> <li>☑ Computer</li> <li>④ OS (C:)</li> <li>— Removable Disk (E:)</li> </ul>						
🙀 Network	۲					4
DfuSe_Demo_V3.0.6_Setup.exe St Application Date modif	ate: 33 Shared S ied: 6/10/2018 4:45 PM Date creat	ize: 18.3 MB ed: 6/10/2018 4:49 PM	Shared with: Homegrou	ib		

7. You will get to the following screen as shown below. Press the "Next" key.

![](_page_7_Picture_1.jpeg)

8. Fill in the User Name. That is your name. Then your organization. If you have nothing to put there use the name "Ham". Then press the next key.

Bulle v3.0.6 - InstallShield Wizard			x
Customer Information			1
Please enter your information.			
User Name:		_	
Jerry Wanger			
Organization:		_	
Connect Systems Inc			
InstallShield			
	< Back N	lext >	Cancel

9. You now get the following screen. You have a choice to press the Back key to modify what you just entered, the Cancel key to abort from this program, or the Next key to continue installing the program. Press the Next key to continue installing the program.

Ready to Install the P	ogram			
The wizard is ready to b	egin installation.			C
If you want to review o exit the wizard.	change any of y	our installation s	ettings, click Back.	Click Cancel to
Current Settings:				
Setup Type:				
Typical				
Destination Folder:				
C: \Program Files (x	36)\STMicroelectro	onics\Software\		
User Information:				
Name: Jerry Wang	er			
Company: Connect	Systems Inc			
l tallShield				
	ſ			

## **10.** You will then start with the following screen.

🖞 DfuSe v3	.0.6 - InstallShield Wizard
Installing The prog	gram features you selected are being installed.
P	Please wait while the InstallShield Wizard installs DfuSe v3.0.6. This may take several minutes.
	Status:
InstallShield -	
	< Back Next > Cancel

11. If you get the following screen or something similar, press the Yes key as there is nothing wrong with this program.

😨 User Account Control	
Do you want unknown put	to allow the following program from an plisher to make changes to this computer?
Program name:	C:\Users\Jerry\AppData\Local\Downloaded Installations\{20FC2A17-23DD-4B5C-A8C4-4\DfuSe v3.0.6.msi
Publisher: File origin:	Unknown Hard drive on this computer
Show details	Yes No
PAGE AND	Change when these notifications appear

12. You will get the following screen when everything is finished. Press the Finish key.

InstallShield Wizard Completed
The InstallShield Wizard has successfully installed DfuSe v3.0.6. Click Finish to exit the wizard.
✓ Launch the program

13. You now have the following screen as shown below. If the program has been installed before, find the shortcut and double click on it. You will get the same screen.

OfuSe Demo (v3.0.6)   Available DFU Devices   Supports Upload   Supports Download   Can Detach   Enter DFU mode/HID detach   Le	Application Mode: Vendor ID: Vendor ID: Version: Version:	DFU Mode: Vendor ID: Procuct ID: Version:
Select Target(s): Target Id Name	Available Sectors (D	ouble Click for more)
Upload Action File: Choose Upload Transferred data size 0 KB(0 Bytes) of 0 KB(0 Bytes) Operation duration 00:00:00	Upgrade or Verify Action File: Vendor ID: Procuct ID: Version: Verify after download Optimize Upgrade duration (Remove Choose Upgrade	some FFs)
Abort		Quit

- 14. Plug one end of the special USB cable that came with the unit into the USB2 port of the CS-BFD and the other end into your USB port of your computer. The difference between a standard USB cable and the special USB cable is the power connection in the special USB cable is not there. Only three of the wires are used.
- 15. Attach the CAT5 cable from the display port of the radio to the Primary port of the CS-BFD. Turn on the radio by pressing the power key for ten seconds. Because the CS-BFD is bricked, the display might not turn on.
- 16. Remove the CAT 5 cable and the display should now be turned off if it is not off already.
- 17. Put the Boot Mode jumper into the Boot mode and then plug the CAT 5 cable back in the Primary port of the CS-BFD.

# **18.** The computer screen should now look like the following:

STM Device in DF Supports Uploa Supports Dowr Can Detach Enter DFU mode/ Actions	U Mode ad Annifesta nload Accelerat HID detach Leave	▼ ation tolerant ted Upload (ST) DFU mode	Application Mode: Vendor ID: Procuct ID: Version:	DFU Mode: Vendor ID: 0483 Procuct ID: DF11 Version: 2200
Select l'arget(s):	Target Id     Name       00     Internal FI       01     Option By       02     OTP Mem       03     Device Fe	ash tes hory eature	Available Sect 12 sectors 1 sectors 2 sectors 1 sectors	ors (Double Click for more)
Upload Action File: Transferred data : 0 KB(0 Bytes) of ( Operation duration 0	Upload size D KB(0 Bytes) n 0:00:00	Upgrade or V File: Vendor ID: Procuct ID: Version: Verify afte Optimize I Choose	erify Action Targets in Prodownload Upgrade duration (Ren Upgrade	n file: nove some FFs) le Verify

- 19. Check the "verify after download" check box.
- 20. Press the Choose key under the "Optimize Upgrade duration (Remove some FFs)" check box. You should get the following screen:

🥡 Open						X
U Libraries	Documents			-	✓ 4y Search Documents	٩
Organize 🔻 New folde	ſ				# <b>•</b> [	10
★ Favorites ↓ Downloads	Documents library Includes: 2 locations				Arrange by: Folder 🔻	
ConeDrive	Name	Date modified	Туре	Size	A	
E Recent Places	퉬 Outlook Files	8/30/2018 9:45 AM	File folder			
Creative Cloud Fi	🌗 Bluetooth Exchange Folder	8/23/2018 11:17 AM	File folder			
ereative cloud 11	퉬 IAR Embedded Workbench	4/6/2018 10:47 AM	File folder			
E Libraries	퉬 HRDLLC	11/9/2017 7:23 AM	File folder		5	
Documents	퉬 Icom	8/15/2017 1:17 PM	File folder		= Select	t a file to eview.
A Music	퉬 Fax	4/11/2017 4:42 PM	File folder			
New Library	퉬 Scanned Documents	4/11/2017 4:39 PM	File folder			
Pictures	퉬 BFDX	9/12/2016 8:39 AM	File folder			
Videos	퉬 CS7000 PROTOTYPE	4/8/2016 3:27 PM	File folder		_	
	퉬 Downloaded Installations	4/8/2016 11:27 AM	File folder			
🔞 Homegroup	퉬 Nuhertz	3/10/2016 11:08 AM	File folder			
	) CS7000 DESIGN	1/25/2016 1:26 PM	File folder			
🖳 Computer 🔹	퉬 WebsiteMatrix	1/18/2016 4:51 PM	File folder		τ.	
File na	ime: <mark>1.dfu</mark>				<ul> <li>✓ Dfu Files (*.dfu)</li> <li>Open</li> <li>Cana</li> </ul>	▼ cel

21. Locate the file you downloaded earlier that represents the new firmware for the CS-BFD. The file name should be "CS-BFD\_Version\_1.00.01.dfu or something similar. Highlight the file and then double click on it. The screen should now look like the following:

STM Device in DF	U Mode		•	Арр	lication Mode:	DFU Mode:
<ul> <li>Supports Uploa</li> <li>Supports Down</li> <li>Can Detach</li> <li>Enter DFU mode/</li> </ul>	ad Inload I	Manifesta Accelerati	tion tolerant ed Upload (ST) DFU mode	Veno Proc Ve	dor ID: uct ID: ersion:	Vendor ID: 0483 Procuct ID: DF11 Version: 2200
ctions						
Select Target(s):	Target Id	Name			Available Sec	ctors (Double Click for more
	00 01 02 03	Internal Fla Option Byt OTP Mem Device Fe	ash es ory ature		12 sectors 1 sectors 2 sectors 1 sectors	
Upload Action File:			Upgrade or V File:	CS-BF	ction D_Version_1.0 Targets	00.01.dfu in file:
Choose	. U	bload	Procuct ID:	0000	00	ST
Transferred data	size		Version:	0000		
O KB(O Bytes) of Operation duratio	0 KB(0 Bytes) n m·nn·nn		Verify aft	er dowi Upgrad	nload de duration (Re	emove some FFs) Ide Verifu
		Fi	e correctly	load	ed	

## 22. Press the Upgrade button and you get the following screen:

Available DFU De	vices		- Application Mode	· DELL Mode:
STM Device in D	FU Mode	•	Application Mode	Vender ID: 0402
Supports Upla	oad 📃 Manifes	tation tolerant	vendor ID:	Vendor ID: 0463
Supports Dow	vnload 📃 Acceler	ated Upload (ST)	Procuct ID:	Procuct ID: DF11
V Lan Detach		- DELL	Version:	Version: 2200
Enter DFU mode	/HID detacn	/e DFU mode		
Actions				
Select Largetick	amo			nore)
DiuseD	enio	Page 1	10.000	
	Continue howeve	e to make sure tł er ?	his file is correct fo	or this device.
Uploa File:	Continue howeve	e to make sure th	his file is correct fo	No
Uploa File:	Continue howeve	e to make sure th er ? Version:	Yes	No
Uploa File: Transferred data 0 KB(0 Bytes) of	Continue howeve Continue howeve size 0 KB(0 Bytes)	e to make sure th er ? Version:	Yes	No
Uploa File: Transferred data 0 KB(0 Bytes) of	Continue howeve Continue howeve size 0 KB(0 Bytes)	e to make sure th er ? Version: Verify afte Optimize	Ves 0000 er download Upgrade duration (R	In this device.
Uploa File: Transferred data 0 KB(0 Bytes) of Operation durati	So it is impossible Continue howeve size 0 KB(0 Bytes)	e to make sure th er ? Version: Verify afte Optimize	Yes 0000 Upgrade duration (R	emove some FFs)
Uploa File: Transferred data 0 KB(0 Bytes) of Operation duratio	So it is impossible Continue howeve i size 0 KB(0 Bytes) on 00:00:00	e to make sure th er ? Version: Verify afte Optimize Choose	Ves 0000 er download Upgrade duration (R	emove some FFs) ade

#### 23. Press the Yes button and in a few seconds, you get the following:

STM Device in DE				App	lication Mode:	- DELL Mode		
STM Device in DFU Mode 🔹 👻				Xender ID:		Vender ID:	Vender ID: 0492	
<ul> <li>Supports Uploa</li> <li>Supports Down</li> <li>Supports Down</li> </ul>	Manifesta Accelerat	tion tolerant ed Upload (ST)	Procuct ID:		Procuct ID:	Procuct ID: DF11		
Enter DFU mode/HID detach			DFU mode	Version:		Version:	2200	
lations								
Select Target(s):	Target Id Name			Available Sectors (Double Click for more)				
	00	Internal FI	ash		12 sectors			
	01	Option Bytes			1 sectors			
	02	OTP Mem	iory		2 sectors			
	03	Device Fe	ature		1 sectors			
Upland Antion			- Upgrada er ) (	lorifu A.	otion			
File:			File:	e: CS-BED Version 1.00.01.dfu				
1.10.			Vendor ID:	0483	Targets in	file:		
Choose				0000	00S	T		
			Product ID:	0000	_			
I ransferred data size			Version:	0000				
147 KB(151002 Bytes) of 147 KB(151002 Bytes)			🔽 Verifu afb	er dow	nload			
VD(101002 Bytes	-j		Optimize	Upgrad	de duration (Rem	iove some FFs)		
Operation duratio	n							
00:00:14			Choose		Upgrad		/erify	
		Tarde	t 00: Verify s	SUCCE	essful !			

Press the Quit key and you are now finished.

24. Move the Boot mode jumper back to the normal mode.

25. Remove the special USB cable and turn off the power supply attached to the radio for at least five seconds. Turn on the power supply attached to the radio and then press the power button on the CS-BFD until the screen turns on. You are now ready to use the radio and the CS-BFD.