

## Firmware Update

From time to time Vescent will issue new releases of firmware for the SLICE products. Below are instructions on upgrading the SLICE firmware. Please follow these instructions carefully.



For SLICE-QT firmware versions 1.38 and lower, updating the firmware will reset all stored parameters (PID loop parameters, etc.). Before beginning a firmware update, manually record all settings for all channels. Versions 1.50 and higher will automatically store this information.

1. Create the following folder on your PC  
**C:\Vescent\SLICE\UPGRADE**
2. Copy the latest Upgrade Package from the ftp website (email [sales \[at\] vescent \[dot\] com](mailto:sales@vescent.com) for latest firmware and GUI revisions).
3. Unzip the Upgrade Package into the folder created in step 1. There will be at least three files in the zip file.
  1. One will be named SystemController-x-x.dfu where **x-x** will be the version number of the firmware.
  2. One will be named SystemController-x-x.hex where **x-x** will be the version number of the firmware.
  3. The other file(s) will be named 90-0000m-upgrade-x-x.hex  
Where :  
**m** is the model number of the ICE2 card in the SLICE (1 = QTC, 4 = DCC, 5 = DHV)  
**x-x** is the version number of the firmware.  
**NOTE: DO NOT RENAME THESE FILES!!**
4. Extract the **SLICE\_Firmware\_Updater-x-xx-WIN.exe** file from the **SLICE\_Firmware\_Upgrade\_Utility-x-xx-WIN.zip** file to the location of your choice on your PC
5. Connect a USB cable (type B) from the back of the SLICE unit to your PC
6. Power On the SLICE



**NOTE:** Make sure that only one SLICE Device is connected to the PC during the upgrade.

7. Open Windows File Explorer and navigate to the folder where the **SLICE\_Firmware\_Updater-x-xx-WIN.exe** file was placed earlier



Please follow firmware update instructions carefully.

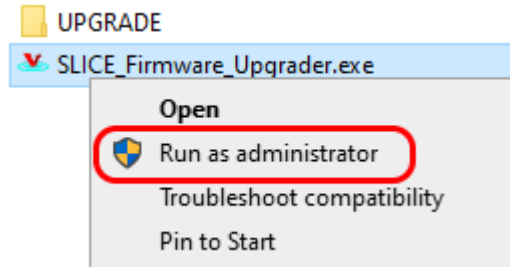
During the upgrade, do not turn off, disconnect, or unplug the SLICE.

8. Launch the **SLICE\_Firmware\_Upgrader-x-xx-WIN.exe** application.



**Note:** The first time the upgrade utility is run, it needs to install a driver library to communicate with the SLICE in the Upgrade Mode.

Therefore, the **SLICE\_Firmware\_Upgrader-x-xx-WIN.exe** application must be launched as **administrator**.



Subsequent operation of the **SLICE\_Firmware\_Upgrader-x-xx-WIN.exe** application can be launched in regular user mode by simply double clicking on the filename in Windows File Explorer.

9. Follow the prompts in **SLICE\_Firmware\_Upgrader-x-xx-WIN** application to complete the upgrade process.
  1. Verify that the upgrade files are placed in the **C:\Vescent\SLICE\UPGRADE** folder and press Any Key to continue.

```
***** Vescent SLICE FIRMWARE UPGRADE UTILITY VER 1.10 *****

This program will update the firmware in the Vescent SLICE product.
Upgrade files:
  SystemController-x-xx.dfu or SystemController-x-xx.hex
  90-000xx-upgrade-x-xx.hex
must be placed in the
  C:/Vescent/SLICE/UPGRADE/
directory before continuing with the update.

DO NOT RENAME THESE FILES!

The SLICE must be POWERED ON and connected to this PC with the USB cable.

The SLICE will restart multiple times during this process.
wait until this program completes before attempting to use the SLICE.

*****
Press any key to continue or 'Q' to Exit
```

2. The Upgrader will scan the com ports on the PC to find the attached SLICE device.  
Depending on the current firmware in the SLICE, it may present the following instruction screen.

```

C:\Vescent\SLICE\SLICE_Firmware_Updater.exe
Press any key to continue or 'Q' to Exit
Discovered Port \\.\COM1
Sending Value: #Version
Discovered Port \\.\COM3
Sending Value: #Version
SLICE device found on \\.\COM3
System Controller Firmware Version 1.176

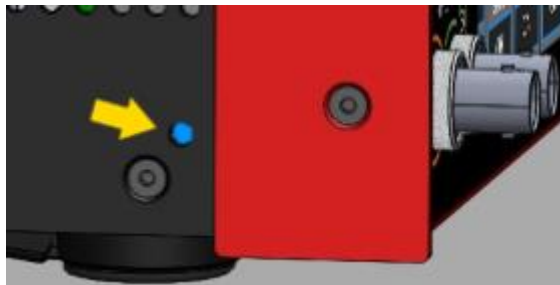
Sending Value: #MODEL
Found Model QTC
11 1 176 1 50 0 0

C:/Vescent/SLICE/UPGRADE/90-00001-upgrade-1-50.hex
C:/Vescent/SLICE/UPGRADE/SystemController-1-176_QTC_Legacy5.dfu
*****
1) Power off the SLICE
2) Depress and hold the blue button in the hole on the left side of the SLICE
3) While holding the button, power on the SLICE
4) When the SLICE is powered on and has a completely
   white screen, release the blue button
*****
5) Press Any Key to continue 'Q' to exit

```

**Before continuing:**

- i Power off the SLICE
- ii Depress and hold the blue button on in the hole on the left side of the SLICE



- iii While holding the button, power on the SLICE
  - iv When the SLICE is powered on and has a completely white screen, release the blue button.
  - v Press Any Key to continue the process
3. Driver Installation (Only occurs on the first upgrade performed a particular PC):  
If this screen message appears, press Any Key to exit. Power Cycle the SLICE and restart the **SLICE\_Firmware\_Updater-x-xx-WIN.exe** application in Administrator Mode.

```

C:\Vescent\SLICE\SLICE_Firmware_Updater-1-10-WIN.exe
*****
Press any key to continue or 'Q' to Exit
Discovered Port \\.\COM1
Sending Value: #Version
Discovered Port \\.\COM3
Sending Value: #Version
SLICE device found on \\.\COM3
System Controller Firmware Version 2.2

Sending Value: #MODEL
Found Model QTC
11 2 2 2 27 0 0

C:/Vescent/SLICE/UPGRADE/90-00001-upgrade-2-27.hex
Sending Value: #_DFU
Scanning Devices
....
Driver Installation is Needed.

Please power cycle the SLICE and re-launch this Upgrader in Administrator Mode.

Press any key to Exit

```

10. Once the driver is installed, the upgrade will continue.

1. The System Controller firmware will be upgraded First

**DO NOT turn off power on the SLICE or touch the touchscreen during this process.**

```
C:\Vescent\SLICE\SLICE_Firmware_Updater-1-10-WIN.exe
erasing sector 0008 @: 0x08080000 done
erasing sector 0009 @: 0x080a0000 done
erasing sector 0010 @: 0x080c0000 done
erasing sector 0011 @: 0x080e0000 done
erasing sector 0012 @: 0x08100000 done
erasing sector 0013 @: 0x08104000 done
erasing sector 0014 @: 0x08108000 done
erasing sector 0015 @: 0x0810c000 done
erasing sector 0016 @: 0x08110000 done
erasing sector 0017 @: 0x08120000 done
erasing sector 0018 @: 0x08140000 done
Flash page/sector erase command correctly executed.
Note: if flash sector is protected, it will not be erased.

Memory Programming ...
Opening and parsing file: SLICE_SystemController-2-2_LegacyQT.hex
File      : SLICE_SystemController-2-2_LegacyQT.hex
Size      : 1359568 Bytes
Address   : 0x08000000

Erasing memory corresponding to segment 0:
Download in Progress: 34%
```



**NOTE: Some Windows 10 PCs may exhibit behavior that will require additional steps.**

- i If prompted to do so, unplug then replug the USB cable.

```
C:\Vescent\SLICE\SLICE_Firmware_Updater-1-10-WIN.exe
Sending Value: #MODEL
Found Model QTC
11 2 2 2 27 0 0
C:/Vescent/SLICE/UPGRADE/90-00001-upgrade-2-27.hex
Sending Value: #_DFU
Scanning Devices
.....

***** PLEASE FOLLOW THESE INSTRUCTIONS CAREFULLY *****

1) DO NOT power cycle the QTC
2) Momentarily disconnect the USB cable from the QTC
3) Reconnect the USB cable to the QTC
4) After performing steps 1 - 3, Press Any Key to continue 'Q' to exit

*****
```

- ii If prompted to do so, power cycle the SLICE

```
C:\Vescent\SLICE\SLICE_Firmware_Updater-1-10-WIN.exe
C:\Users\JOE~1\LUP\AppData\Local\Temp\_MEI158322\STM32_Programmer_CLI.exe -c port=USB1 -vb 1 -s
-----
STM32CubeProgrammer v2.7.0
-----

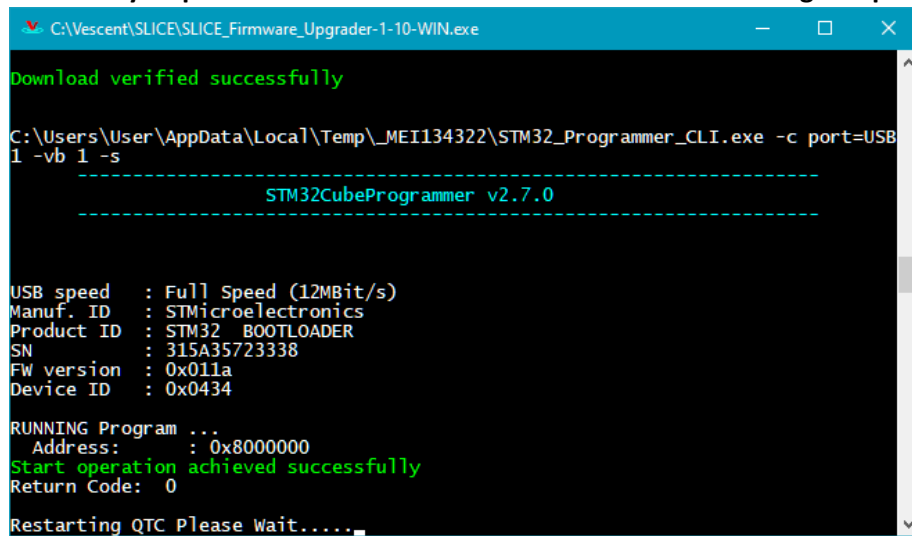
USB speed : Full Speed (12MBit/s)
Manuf. ID : STMMicroelectronics
Product ID : STM32 BOOTLOADER
SN : 315A35723338
FW version : 0x011a
Device ID : 0x0434
Return Code: 3221225477

***** PLEASE FOLLOW THESE INSTRUCTIONS CAREFULLY *****

1) Power Cycle the QTC
2) Wait until the Vescent Splash Screen appears on the display
3) Press Any Key to continue 'Q' to exit

*****
```

- When the System Controller Firmware upgrade finishes, the SLICE will Reboot.  
**DO NOT cycle power on the SLICE or touch the touchscreen during this process.**



```
C:\Vescent\SLICE\SLICE_Firmware_Updater-1-10-WIN.exe

Download verified successfully

C:\Users\User\AppData\Local\Temp\_MEI134322\STM32_Programmer_CLI.exe -c port=USB
1 -vb 1 -s

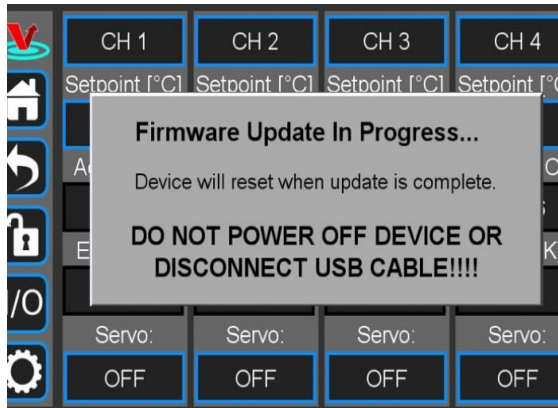
-----
STM32CubeProgrammer v2.7.0
-----

USB speed   : Full Speed (12MBit/s)
Manuf. ID   : STMicroelectronics
Product ID  : STM32 BOOTLOADER
SN          : 315A35723338
FW version  : 0x011a
Device ID   : 0x0434

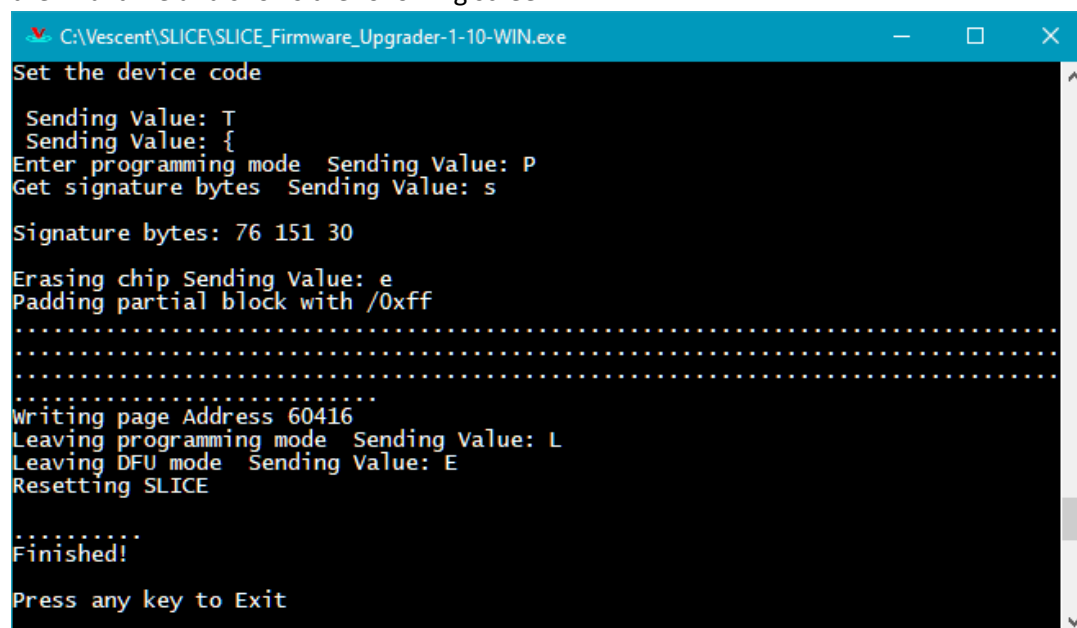
RUNNING Program ...
Address:     : 0x8000000
Start operation achieved successfully
Return Code: 0

Restarting QTC Please Wait.....
```

During this half of the process, the following message will appear on the SLICE touchscreen.



11. The Upgrade is finished when the **SLICE\_Firmware\_Upgrader-x-xx-WIN** application restarts the device for the final time and shows the following screen

A screenshot of a Windows command prompt window titled "C:\Vescent\SLICE\SLICE\_Firmware\_Upgrader-1-10-WIN.exe". The window has a black background with white text. The text shows the following sequence of operations: "Set the device code", "Sending Value: T", "Sending Value: {", "Enter programming mode Sending Value: P", "Get signature bytes Sending Value: s", "Signature bytes: 76 151 30", "Erasing chip Sending Value: e", "Padding partial block with /0xff", followed by several lines of dots, "Writing page Address 60416", "Leaving programming mode Sending Value: L", "Leaving DFU mode Sending Value: E", "Resetting SLICE", another line of dots, "Finished!", and "Press any key to Exit".

```
C:\Vescent\SLICE\SLICE_Firmware_Upgrader-1-10-WIN.exe
Set the device code
Sending Value: T
Sending Value: {
Enter programming mode Sending Value: P
Get signature bytes Sending Value: s
Signature bytes: 76 151 30
Erasing chip Sending Value: e
Padding partial block with /0xff
.....
.....
.....
Writing page Address 60416
Leaving programming mode Sending Value: L
Leaving DFU mode Sending Value: E
Resetting SLICE
.....
Finished!
Press any key to Exit
```

12. Troubleshooting:

Some USB ports will not work with the upgrade utility. If the upgrader repeatedly fails, try connect it directly to a USB port on the PC bypassing any hubs or docking stations.