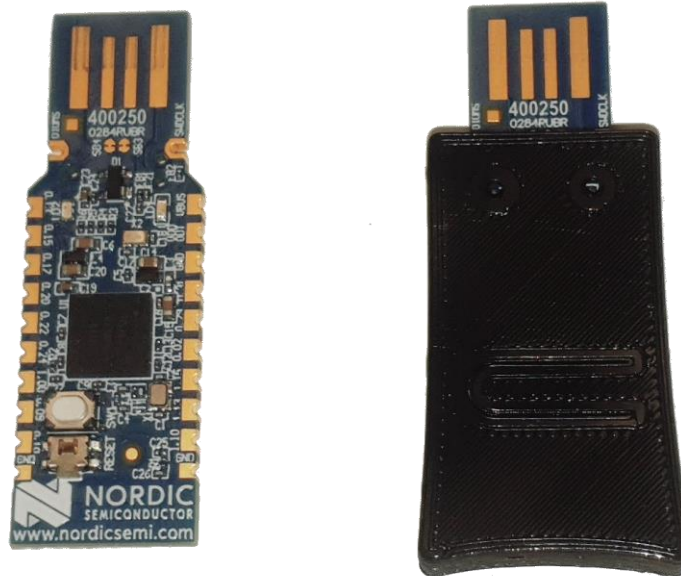


StretchSense USB Dongle Setup Guide

Created: 20190926
Last Updated: 20190926
Last Updated By: TG
Authors: TG, AD
Revision: 1



USB Dongle Setup Guide



REVISION 1



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Version Control

Revision	Date	Notes
1	2019.09.26	Initial version

1.0 Introduction

This guide is for programming your USB Dongle and wirelessly pairing the dongle with a StretchSense MoCap or MoCap Pro glove.

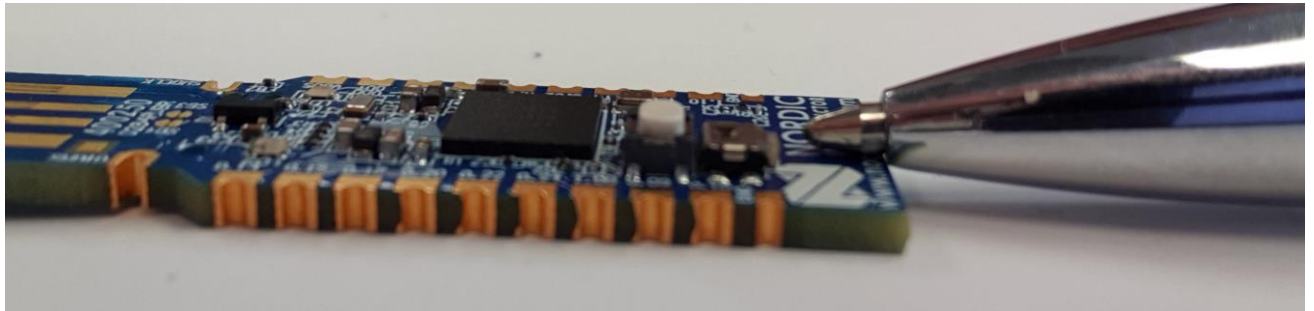
1.1 Prerequisites

1. **nRF USB dongle (US\$10, 1 per glove)**
<https://www.digikey.com/product-detail/en/nordic-semiconductor-asa/NRF52840-DONGLE/1490-1073-ND/9491124>
2. **nRFConnect desktop application (free download)**
<https://www.nordicsemi.com/Software-and-Tools/Development-Tools/nRF-Connect-for-desktop/Download#infotabs>
3. **Programming files (provided by StretchSense)**
 - a. StretchSenseUSBBLEdongle.hex
 - b. s140_nrf52_6.1.0_softdevice.hex

2.0 USB Dongle Setup

2.1 Programming USB Dongle

1. Install nRFConnect
2. Open nRFConnect and install nRFConnect Programmer from within nRF connect
3. Plug in USB dongle. This will automatically be assigned a COM port on your computer
4. Press the reset button on the USB dongle. A red LED will begin to pulse slowly on the USB dongle to indicate it is ready for programming. The reset button is mounted sideways and the travel is parallel to the surface of the pcb.

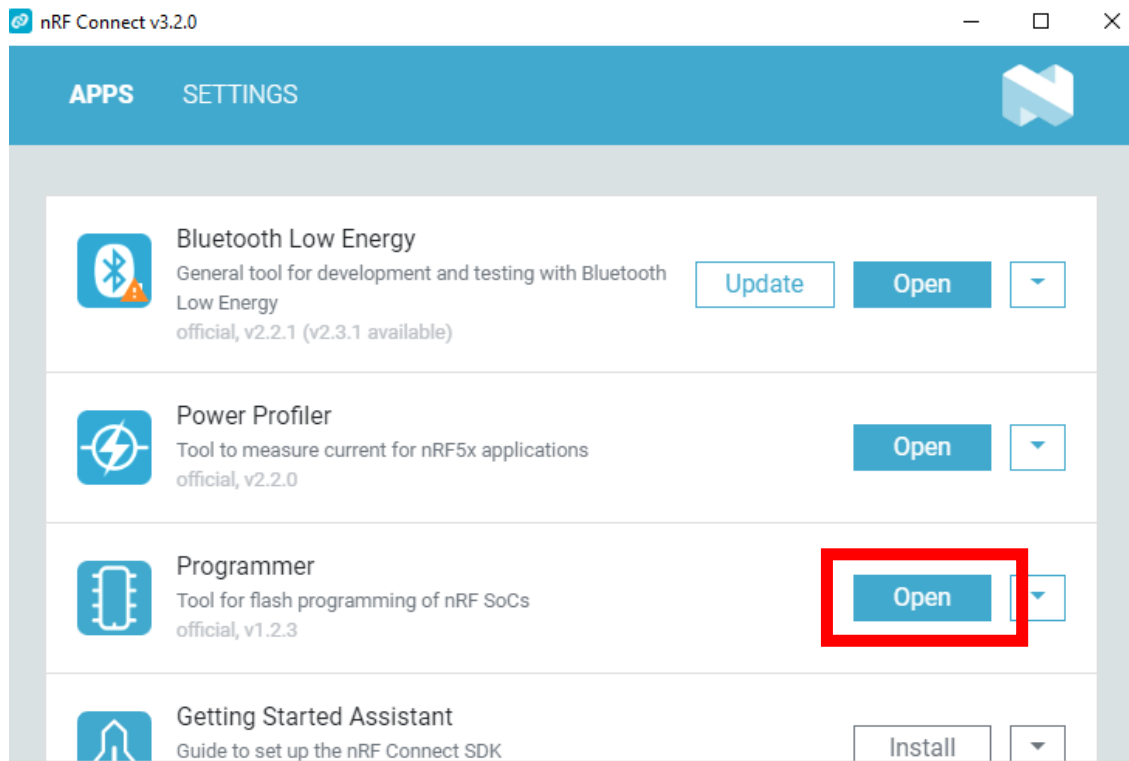


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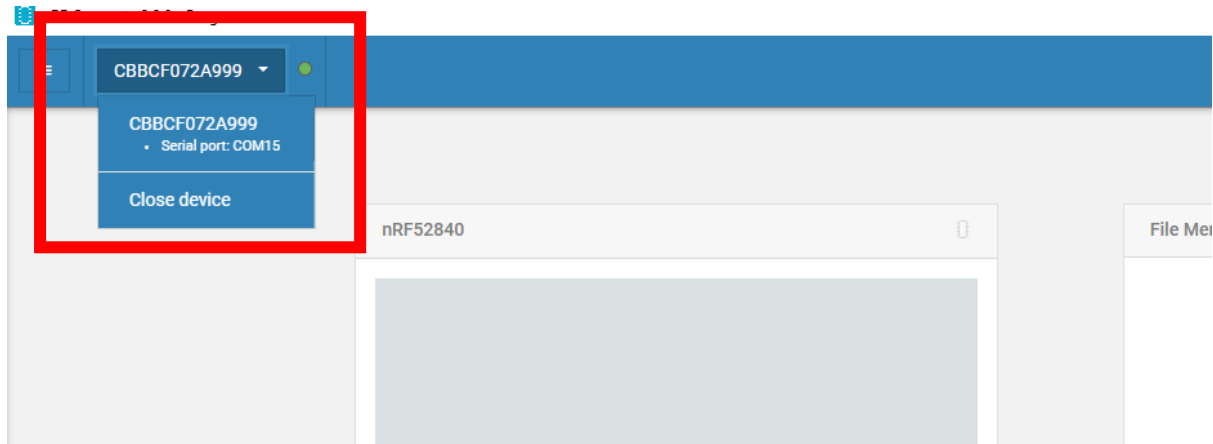
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5. Open nrfConnect Programmer



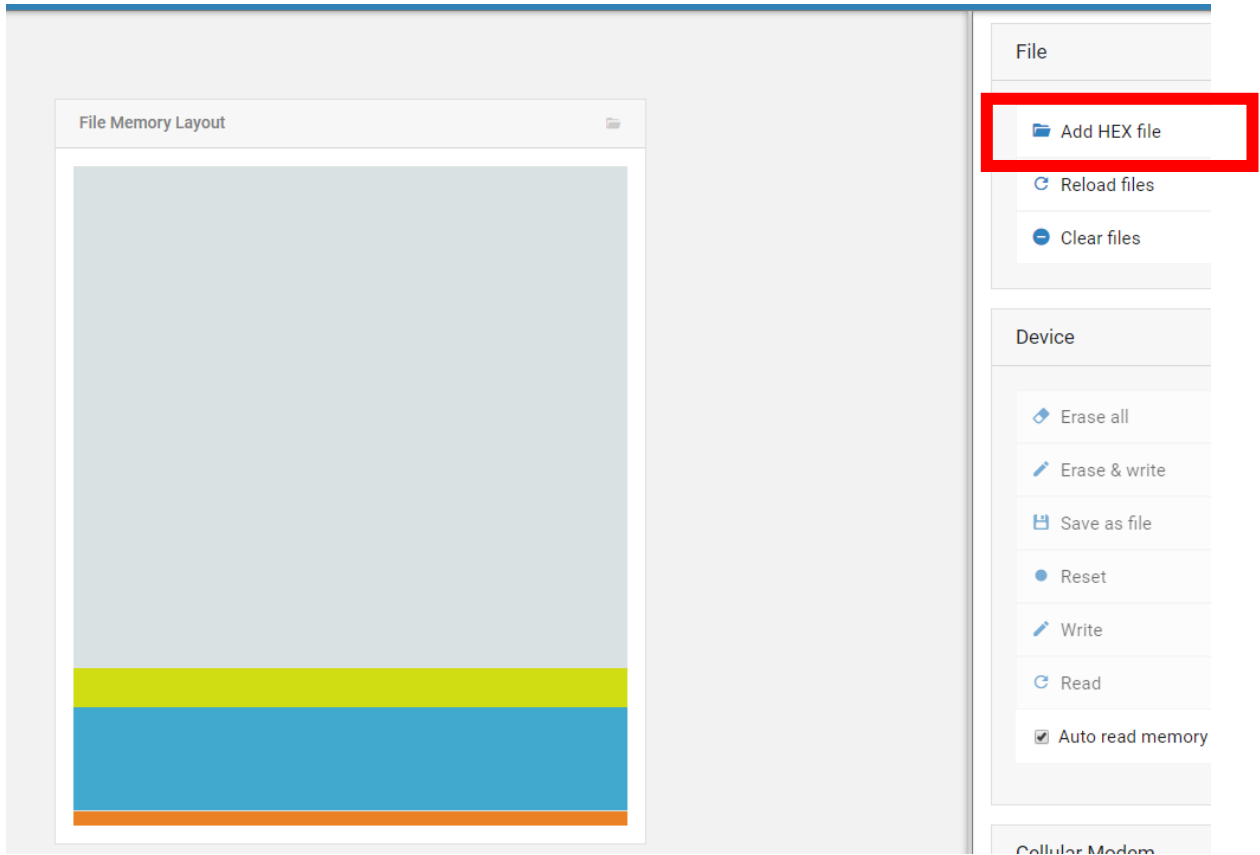
6. Select COM port of the USB dongle under the select device tab



7. Use the **Add HEX file** to add both the StretchSenseUSBBLEdongle.hex and s140_nrf52_6.1.0_softdevice.hex.

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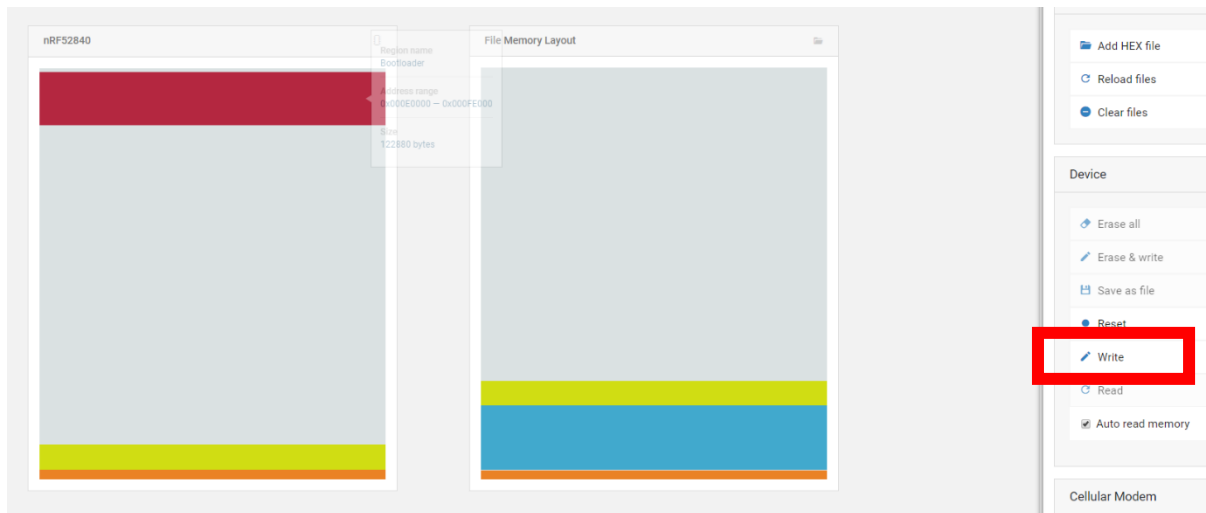
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8. Press the **Write** button to send code to USB dongle (this will take a few seconds)



9. If successful the red LED on the USB dongle will now be a solid red.

3.0 Connecting the USB Dongle to a MoCap or MoCap Pro Glove

3.1 Pairing the USB Dongle with a Glove

1. Plug the USB dongle into a spare USB port. The LED will be a solid red to indicate it is ready for pairing.
2. Power on your glove, and move glove next to the USB dongle.
 - a. The USB will scan for and connect to StretchSense sensing circuits in the direct proximity to the USB dongle (<30cm distance)
3. The LED on the USB dongle will turn solid Green when it has found and paired with a glove.
4. After a few seconds the LED will turn solid Blue which means the connection is established and data is streaming from the glove to the USB dongle.
5. (Next time you power on the USB it will scan for and connect to the paired glove).

3.2 Unpairing the USB Dongle and Re-pairing with a New Glove

If a glove is already paired with the USB dongle, the USB dongle will not establish a new connection until the previous pairing is removed.

1. Plug USB dongle into a spare USB port. The LED should be solid green or blue. If the LED is solid red, the USB dongle has already been unpaired and you can re-pair by following the instructions in the previous section.
2. Press and hold the white button on the top of the USB dongle for 10 seconds.
3. The LED on the USB dongle will turn back to solid red and is ready to pair with a new glove.

4.0 Using USB data

Once connected and paired the USB dongle will appear as a COM port and data will be streamed to this port. See **StretchSense USB Communications Guide** for USB data format and available commands.



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