Overview

The OTA (over the air) nanoDFU is a friendly "device firmware update" tool, you don't need any cable to connect to your device, just need a smart phone and update over the air.

Dual Bank Flash Layout

The nanoDFU bootloader uses the "Dual-Bank" memory layout, except that the memory region from 0x3C000~0x40000 has been reserved for the DFU bootloader, and application data is written below the bootloader instead of at the end of the flash.
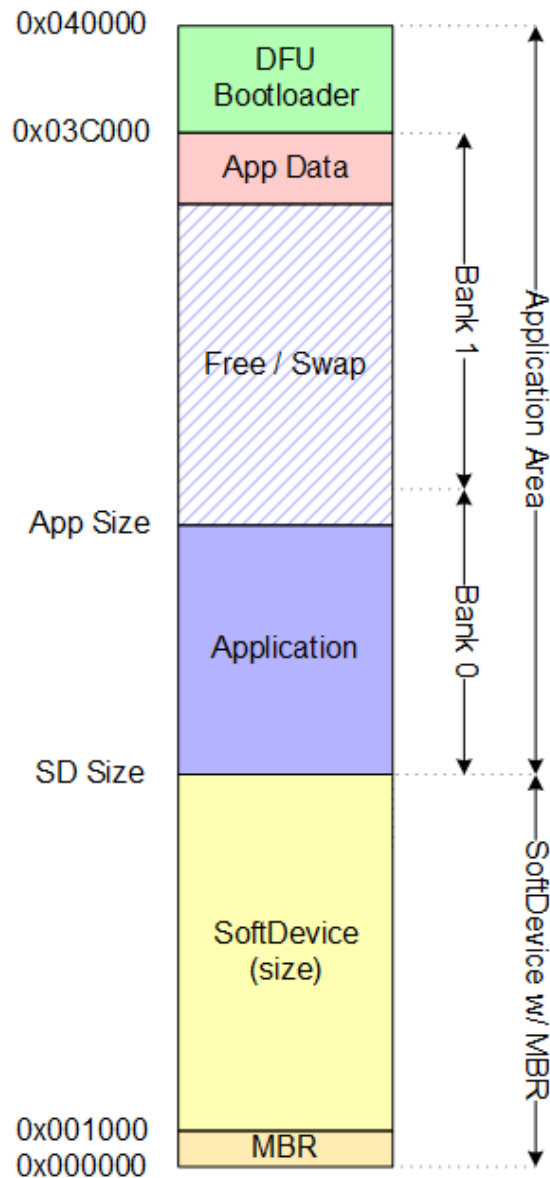

Figure 1: Memory Layout of 256KB nano51822 module using dual bank memory scheme.

Note

1. Application start address is 0x00016000 and refers to SoftDevice S110 v7.x.

2. App Data Size is fixed with 8KB in uCXpresso.NRF frameowork.

3. Max. Application F/W Size = 256K - 88K (SD) – 16K (BL) – 8K (App Data) = 144KB

DFU Active Pin

The uCXpresso.NRF framework provides the DFU pin on P0.0 with internal PULL-UP, the device will be entered to DFU mode when DFU pin is LOW.

When DFU pin is LOW

| Power OFF -> ON	Reset	Weakup from System Off	In Application Mode
Force to DFU Mode	Force to DFU mode	No Effect[1]	Over 3 seconds to DFU

1. in DFU v141202 and later.

What tools I need for OTA-DFU ?

For Android : The "nRF Toolbox" and "nRF Master Control Panel" are necessary.

For iOS: The "nRF Toolbox" is enough.

How can I known the device in DFU mode already ?

When you pressed the DFU pin to LOW over 3 seconds, the device name will become to the "nanoDFU" and show in scanning of nRF Master Control Panel.
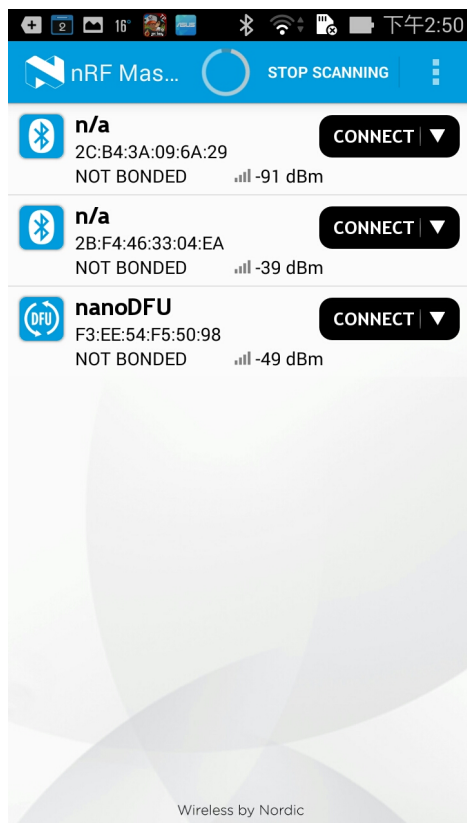
DFU Mode Timeout:

The DFU mode will be backed to Application mode when DFU timeout over 5 minutes.

DFU Firmware Number & Version:

nanoDFU-D8_v141202.hex

D8: Dual-Bank with 8KB Application reserved data area.

v141202 : version build at 2014/12/02

Note:

In uCXpresso.NRF v1.0.2 and later, the DFU pin have to press over 3 seconds then will enter to the DFU mode from the Application mode.