Corrupted info page on the nRF24LE1

The early versions of nrfprobe and nRFGo Studio had a bug where the info page of the nRF24LE1 could be corrupted during programming. The info page can also be deleted by an ERASE PAGE or ERASE ALL command sent over the ISP interface, and when developing custom programming solutions it is important to store the content of the info page before erasing the flash so that it can be written back afterwards.

When an nRF24LE1 has had its info page corrupted it will usually be impossible to debug or run code on it and the only way to get the chip working again is to restore the info page to a set of default values.

With default info page settings the chip will not work optimally, and for instance current consumption and ADC accuracy might run out of spec.
It will still be possible to use all the functionality of the device and continue development on it.

NB! This will never happen on the nRF24LU1+ device, and the procedure described in this document should not be run on an nRF24LU1+ module!

The default settings procedure can be run both on nRFgo Development kit modules installed directly in the nRFgo Motherboard, or on external boards/modules through the ISP interface. The procedure is a bit different though, and the two cases will be separated in the rest of this document. Chapter 1.1 and 2.1 is relevant for nRFgo Development kit modules. Refer to chapter 1.2 and 2.2 for using the ISP interface with external modules.

1 How to test if the info page is corrupted:

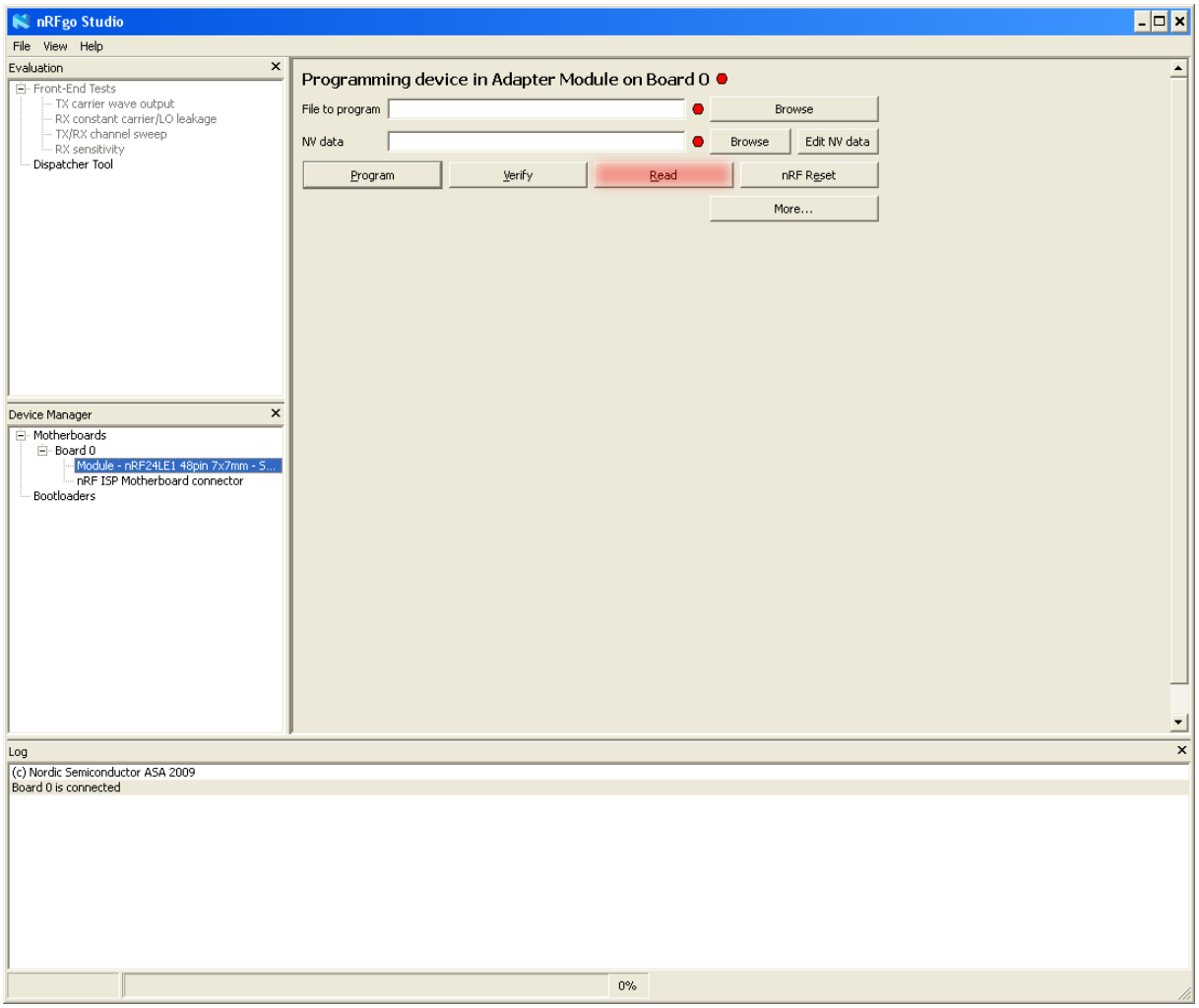
Before restoring the info page of a module the status of the info page should be verified to avoid resetting a module with a working info page.

Also make sure you have all the latest software installed before proceeding:
http://www.nordicsemi.com/update/index.php

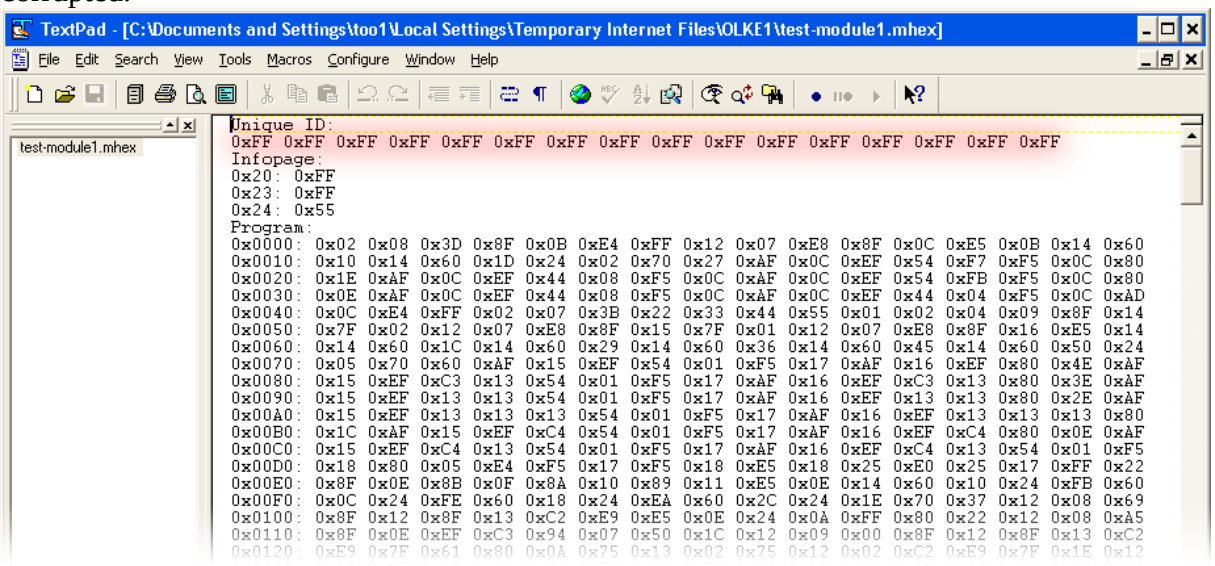
1.1 Read the flash on an nRFgo module:

1. Put the module to be tested in an nRFGo Starter Kit and power it up.
2. Start nRFGo Studio
3. Select the module in the device manager

4. Press the “Read” button and save out the flash content of the module.

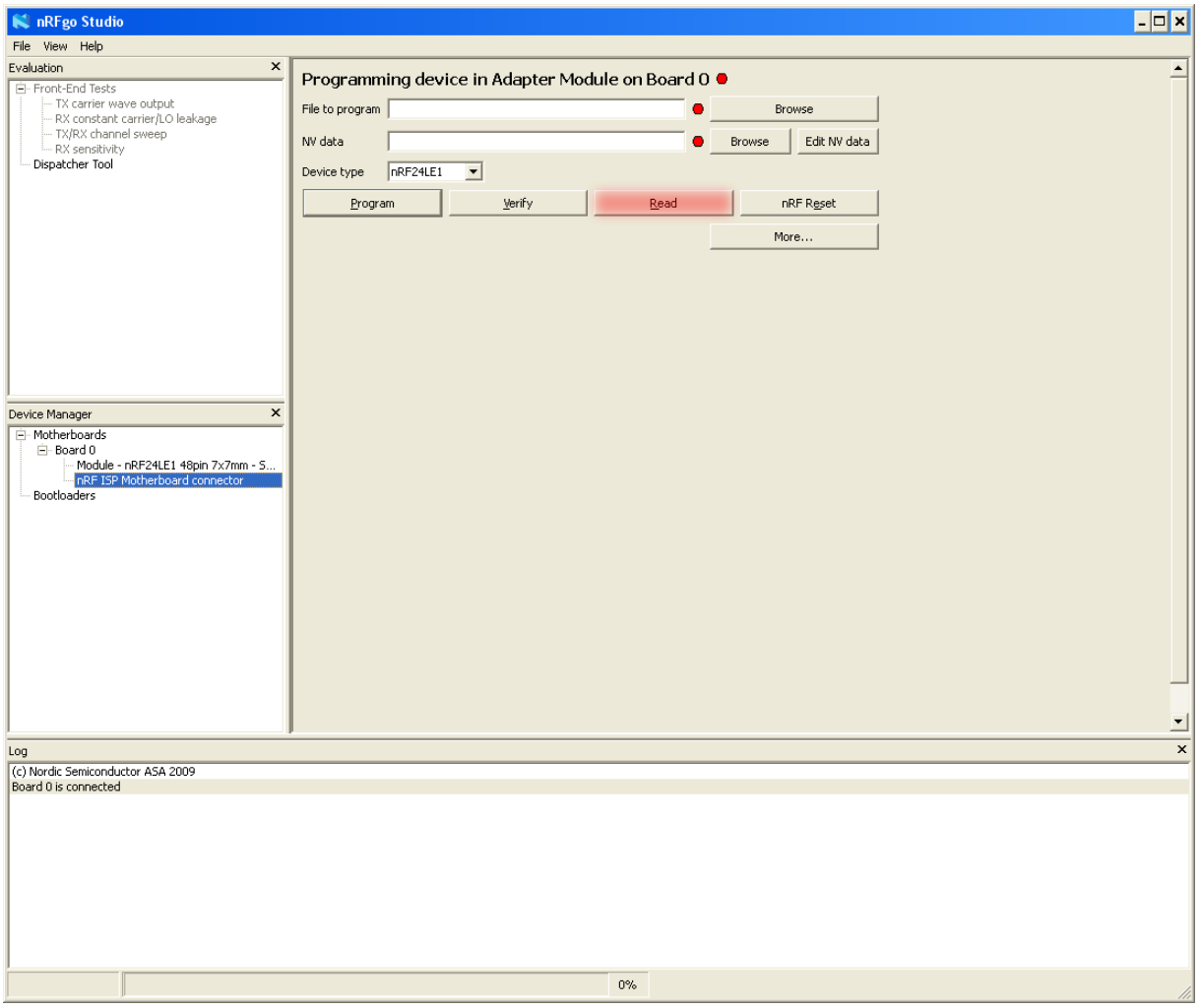


5. Open the file in a text editor.
6. Watch the bytes in the “Unique ID” field. If they are all 0xFF, the info page is corrupted.



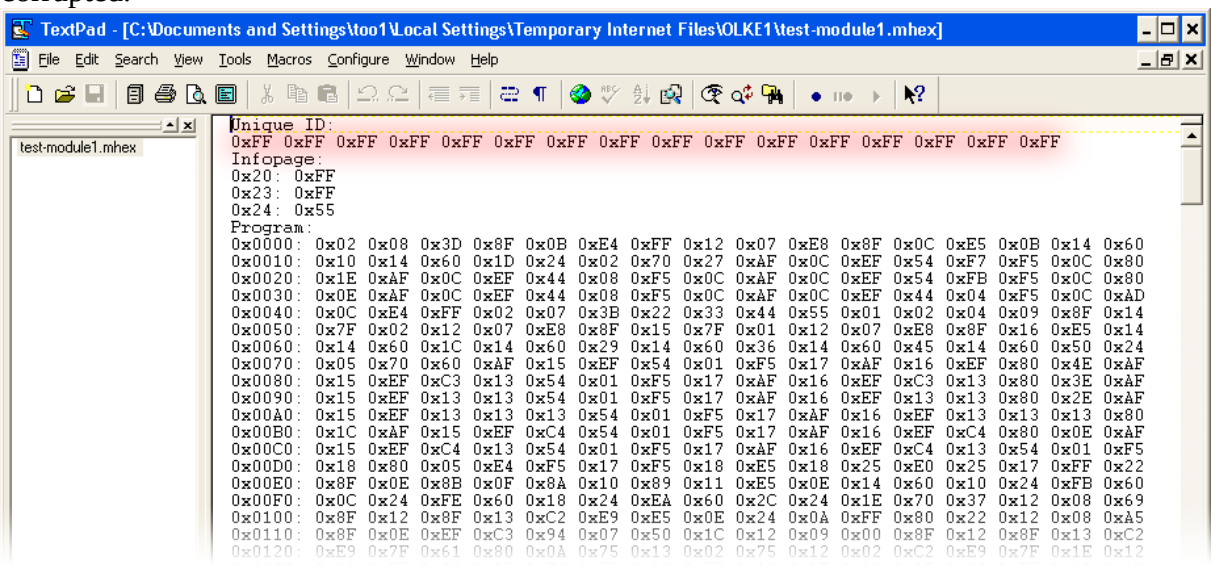
1.2 Read the flash over the nRF ISP connector:

1. Connect your external board/module to the nRF ISP connector on the nRFgo Motherboard, and power up both of them. Keep in mind that power supply to the external board is not provided through the ISP connection.
2. Start nRFgo Studio.
3. Select the “nRF ISP Motherboard connector” in the device manager in nRFgo Studio.
4. Press the “Read” button and save out the flash content of the external board.



5. Open the file in a text editor.

6. Watch the bytes in the “Unique ID” field. If they are all 0xFF, the info page is corrupted.



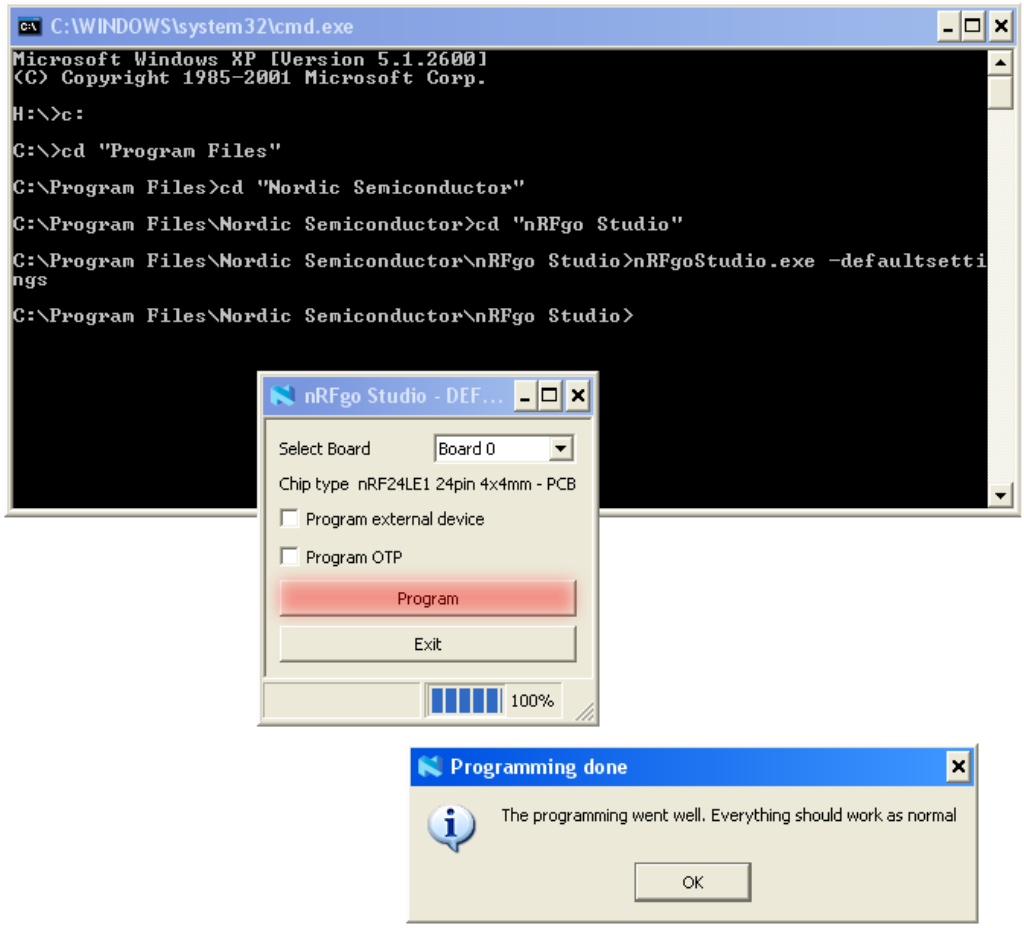
2 How to restore a corrupted info page:

If the info page was found corrupt restore it using the following procedure:

2.1 Restore the info page on an nRFgo Module:

1. Close any instances of nRFGo Studio currently running.
2. Put the module to be restored in an nRFGo Starter Kit and power it up.
3. Open the Windows command line.
4. Navigate to the nRFGo Studio install directory. By default: “c:\program files\nordic semiconductor\nrfgostudio\”
5. Run “nrfgostudio.exe –defaultsettings”

6. A small window should appear:

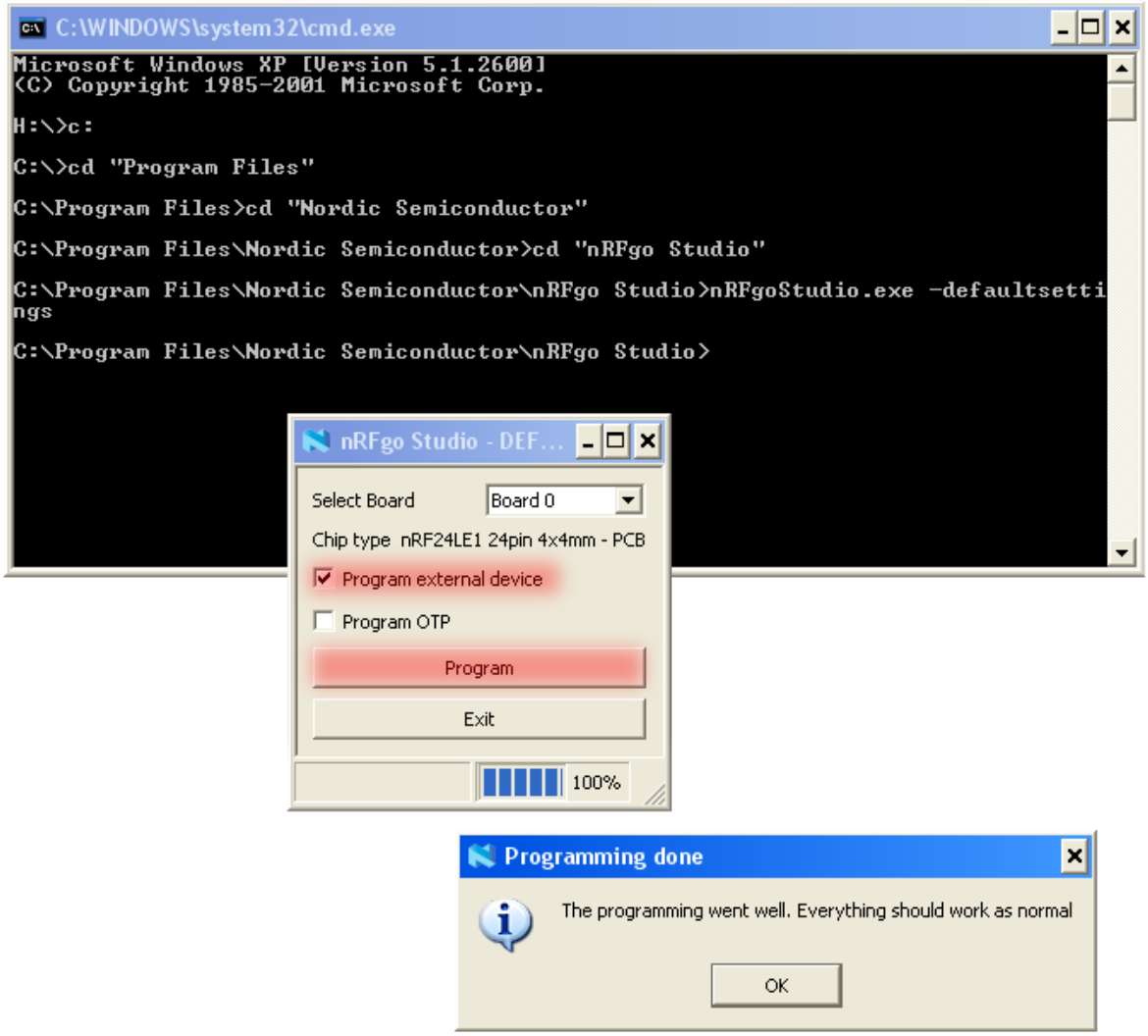


7. Select the right board in the list and press “Program”.
8. If everything works you should get the “Programming done” message seen in the picture above.

2.2 Restore the info page on an external board/module over the nRF ISP connector

1. Close any instances of nRFgo Studio currently running.
2. Connect your external board/module to the nRF ISP connector on the nRFgo Motherboard, and power up both of them. Keep in mind that power supply to the external board is not provided through the ISP connection and must be provided elsewhere.
3. Open the Windows command line.
4. Navigate to the nRFGo Studio install directory. By default: “c:\program files\nordic semiconductor\nrfgostudio\”
5. Run “nrfgostudio.exe –defaultsettings”

6. A small window should appear:



7. Select the right board in the list.
8. Enable “Program external device” and press “Program”.
9. If everything works you should get the “Programming done” message seen in the picture above.

Try using the module again. It should now be possible to program and debug it.