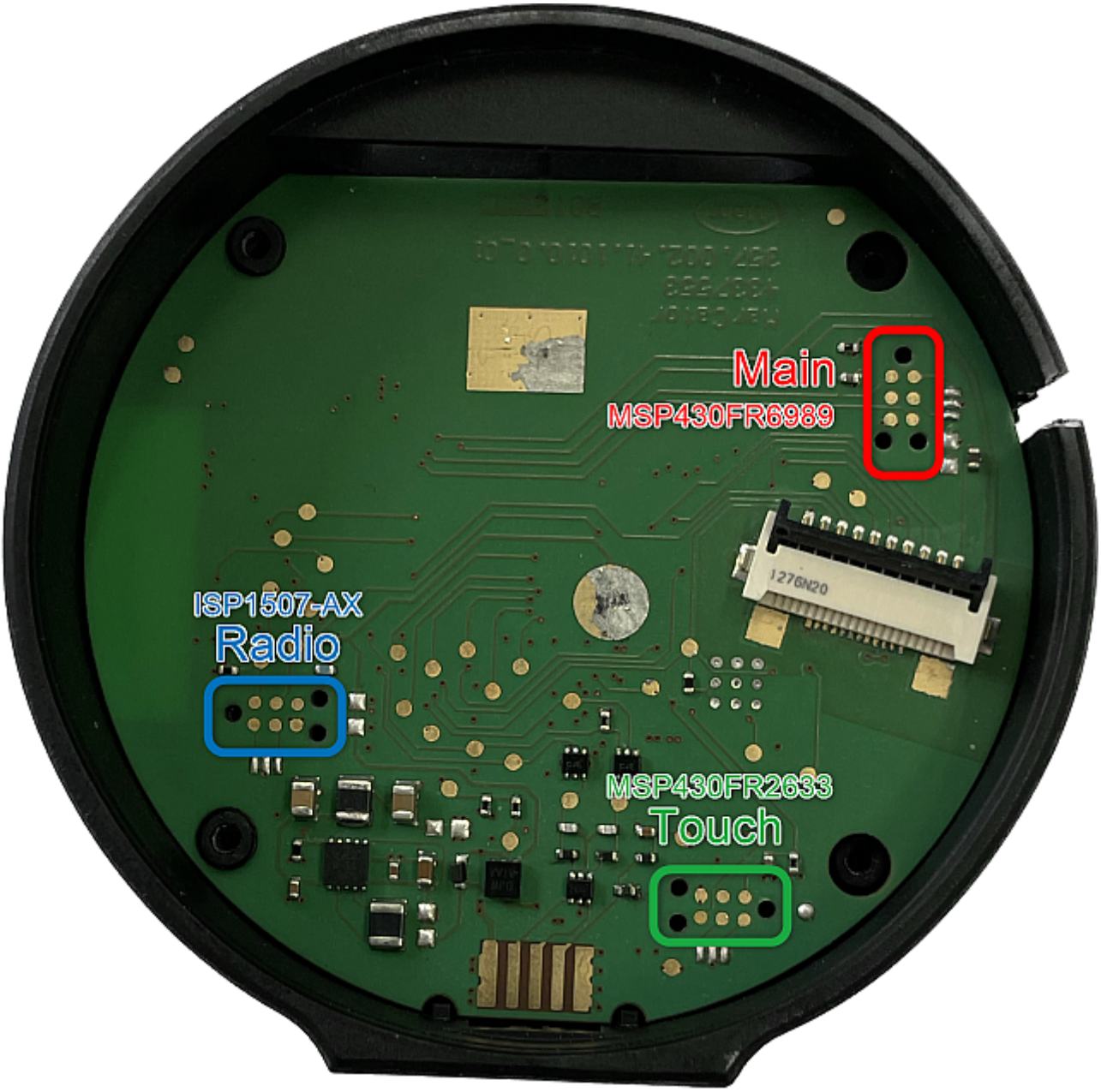
1. Programming interfaces:



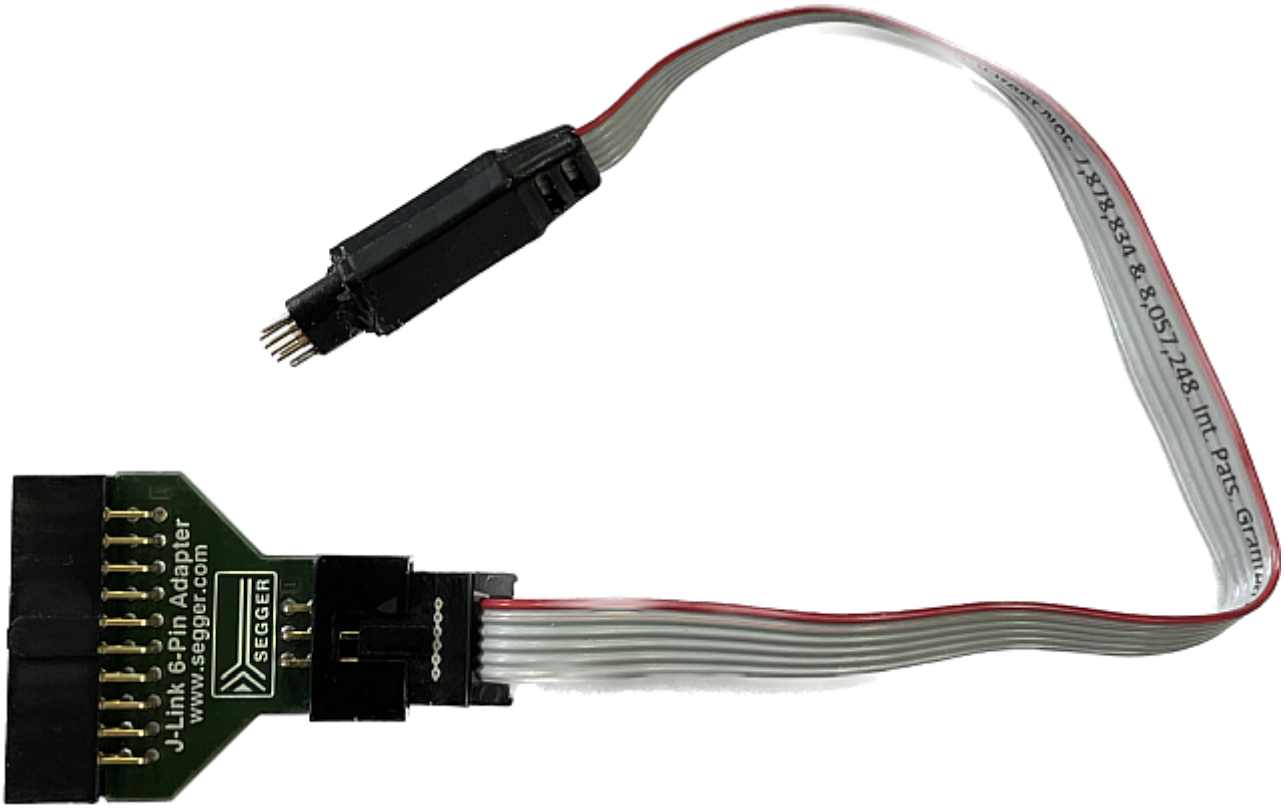
2. Programming tools:

2.1. MSP430 programmer: MSP-FETFlash

2.2. MSP430 Flashing cable: Tag-connector MSP430:

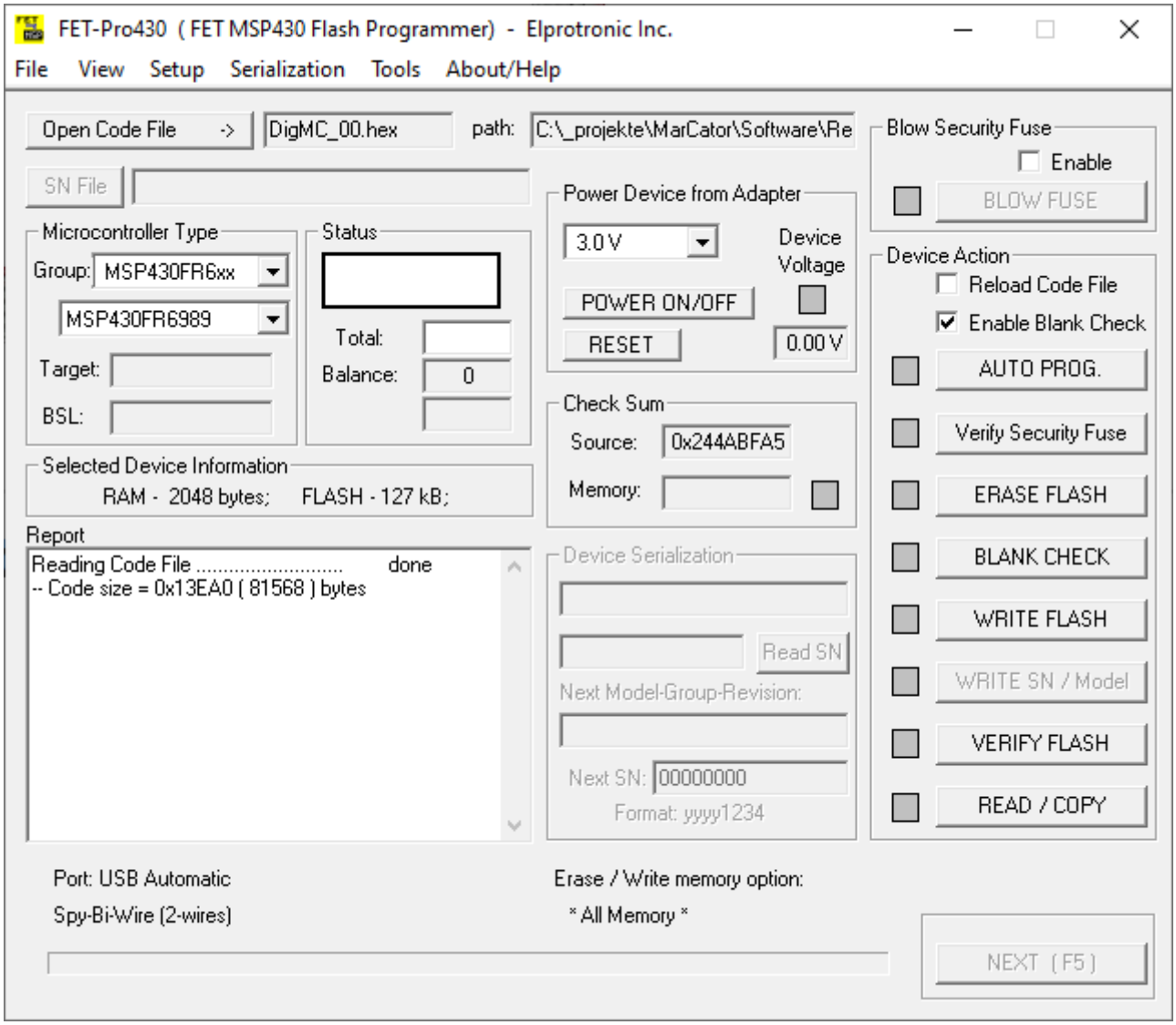
2.3. ISP1507 flashing tool: Segger J-link:

2.4. ISP1507 flashing cable with adapter:



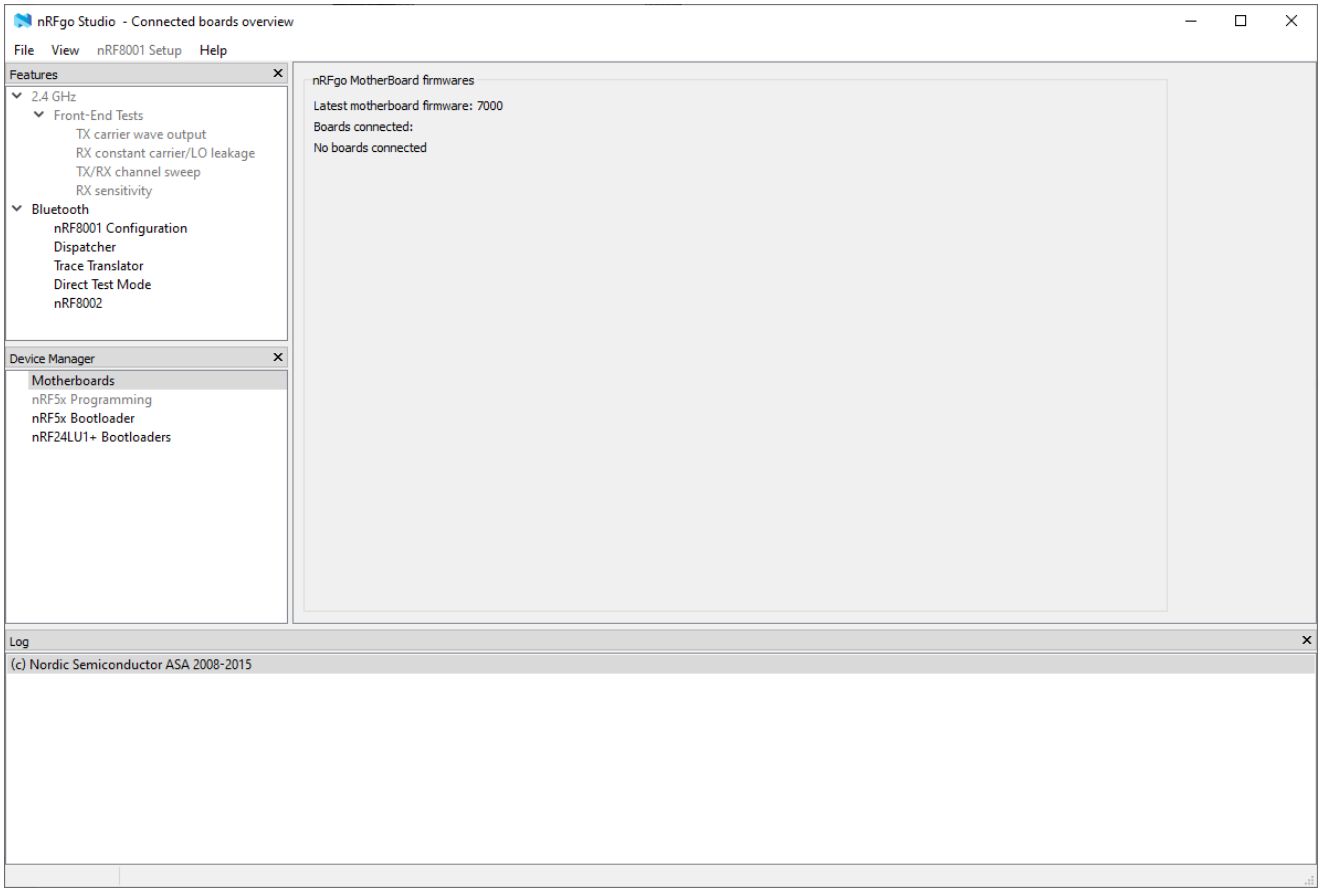
3. Programming software:

3.1. FET-Pro430 `https://www.elprotronic.com/products/fet-pro-430-std` licence needed



3.2. nRFgo Studio `https://nsscprodmedia.blob.core.windows.net/prod/software-and-other-`

`downloads/desktop-software/nrf-go-studio/sw/nrfgostudiowin321212installer.msi`



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4. Firmware

4.1. Main chip FW: `DigMC_011.hex`
4.2. Touch Chip FW: `Touch_MarCator_01.hex`
4.3. Radio Chip FW: `ANT_s212_nrf52_4.0.2.hex` & `nrf52832_xxaa_2000wi.hex`

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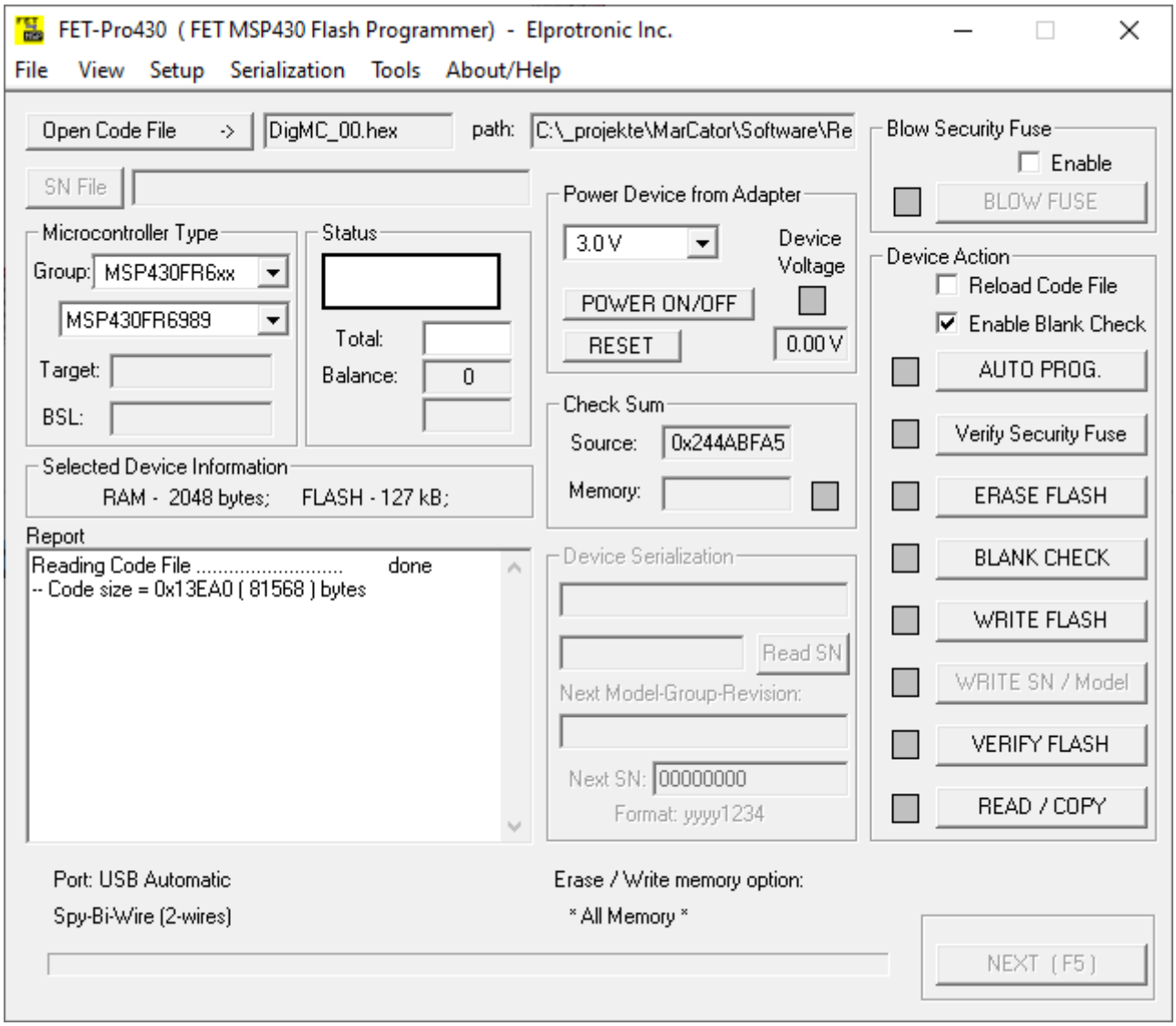
5. Flashing Main chip:

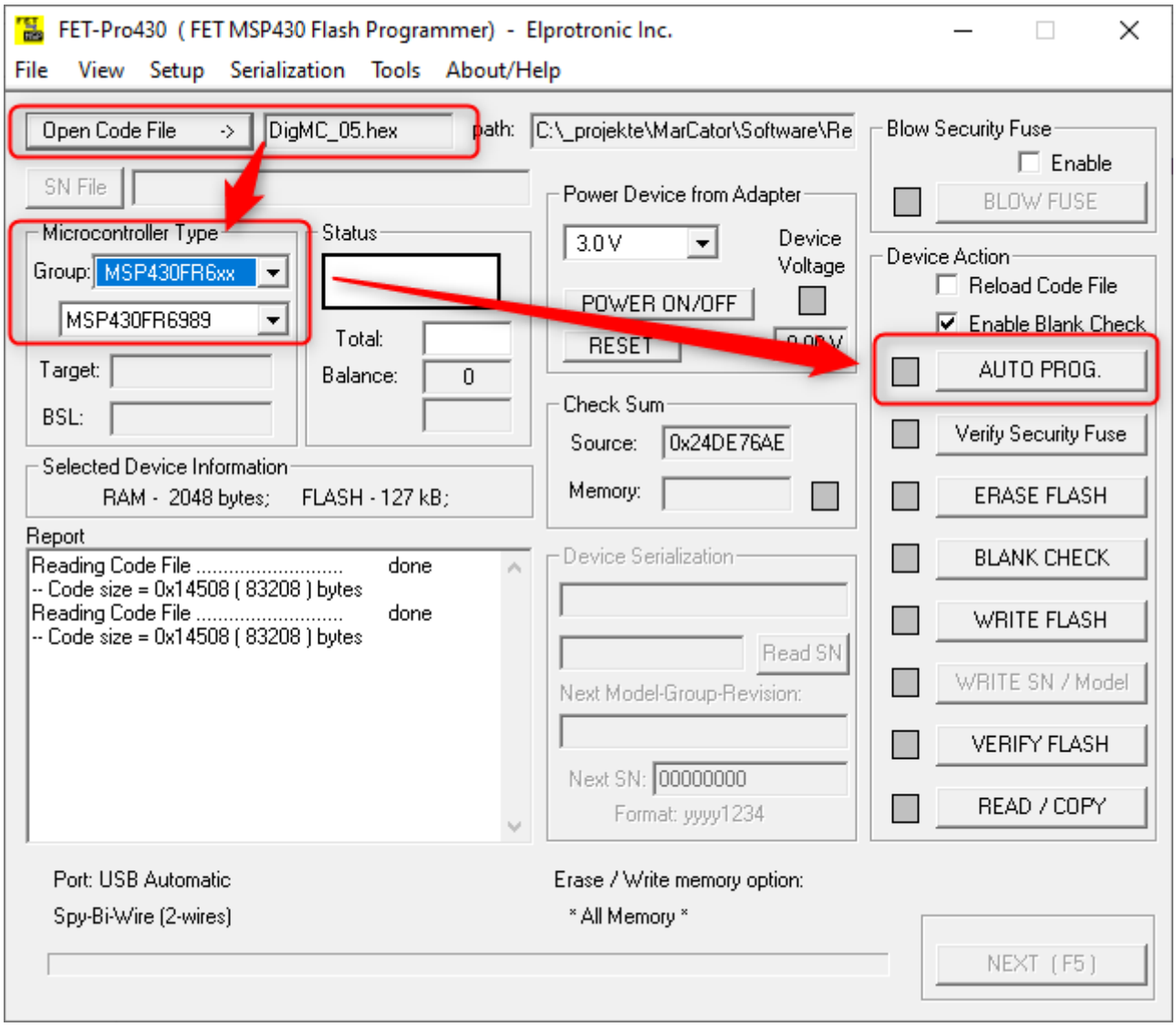
5.1. Connect MSP-FETFlash (2.1) with cable (2.2).
5.2. Open FET-Pro430 (3.1.)

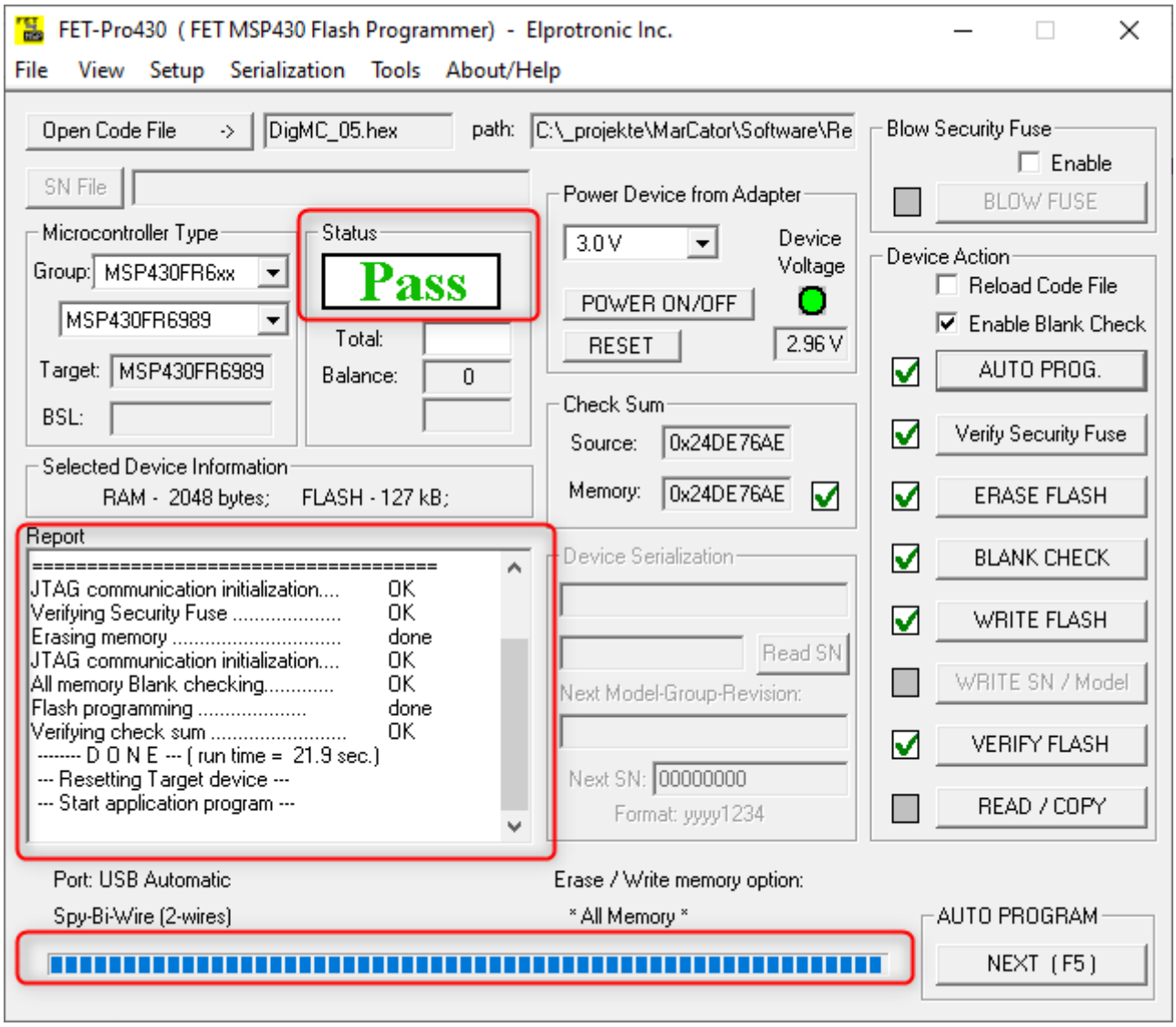


5.3. Select FW file: `DigMC_05.hex` (4.1.)

5.4. Select Microcontroller type: `MSP430FR6989`

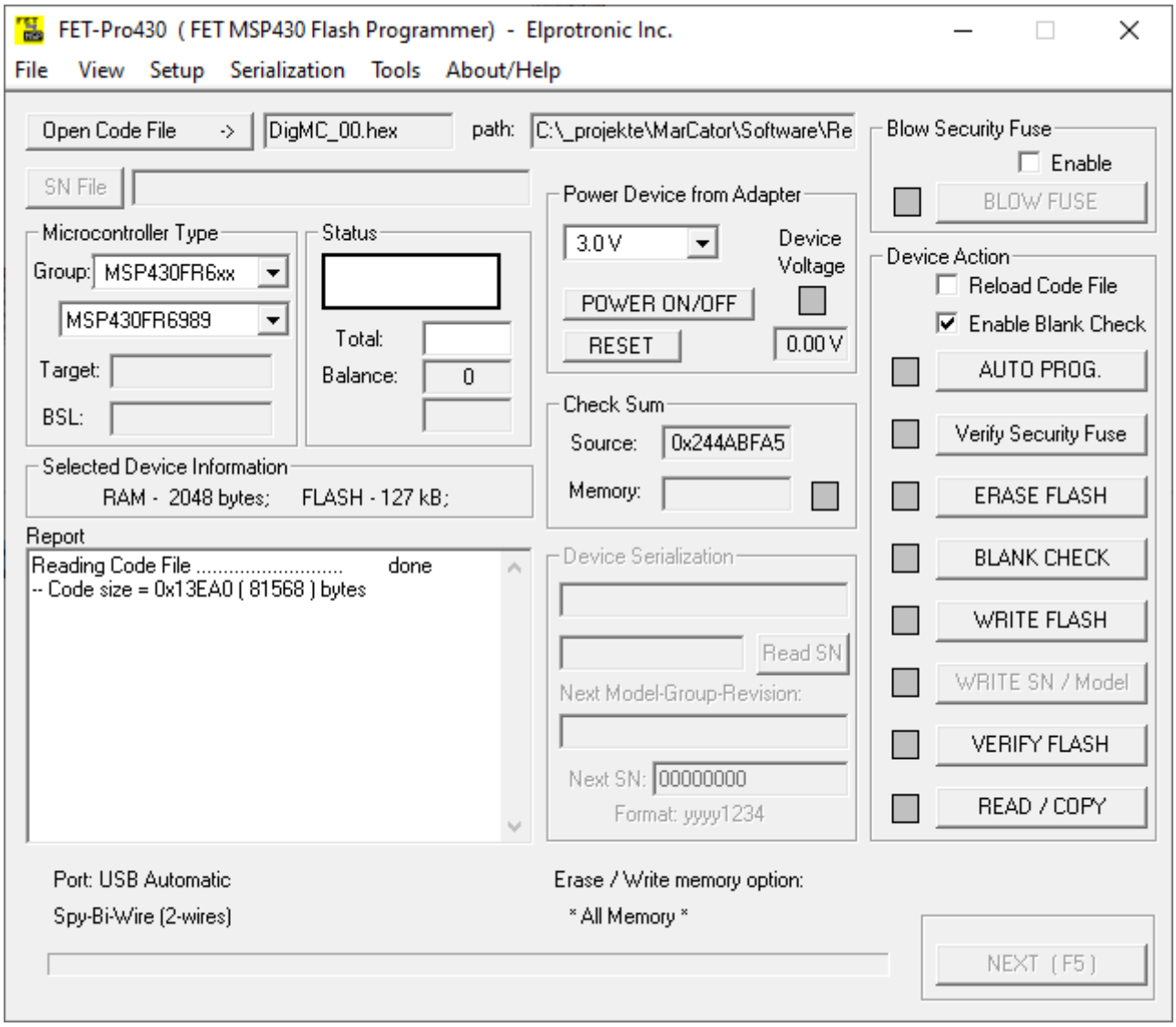
5.5. Press `AUTO PROG.` :


FET-Pro430 (FET MSP430 Flash Programmer) - Elprotronic Inc.
File View Setup Serialization Tools About/Help
Open Code File ->
DigMC_05.hex
path:
C:_projekte\MarCator\Software\Re
SN File
Microcontroller Type
Group:
MSP430FR6xx
MSP430FR6989
Target:
BSL:
Status
Total:
Balance:
0
Power Device from Adapter
3.0 V
Device Voltage
POWER ON/OFF
RESET
Check Sum
Source:
0x24DE76AE
Memory:
Selected Device Information
RAM - 2048 bytes; FLASH - 127 kB;
Report
Reading Code File ..... done
-- Code size = 0x14508 (83208) bytes
Reading Code File ..... done
-- Code size = 0x14508 (83208) bytes
Device Serialization
Read SN
Next Model-Group-Revision:
Next SN:
00000000
Format: yyyy1234
Blow Security Fuse
Enable
BLOW FUSE
Device Action
Reload Code File
Enable Blank Check
AUTO PROG.
Verify Security Fuse
ERASE FLASH
BLANK CHECK
WRITE FLASH
WRITE SN / Model
VERIFY FLASH
READ / COPY
Port: USB Automatic
Spy-Bi-Wire (2-wires)
Erase / Write memory option:
* All Memory *
NEXT (F5)



6. Flashing Touch chip:

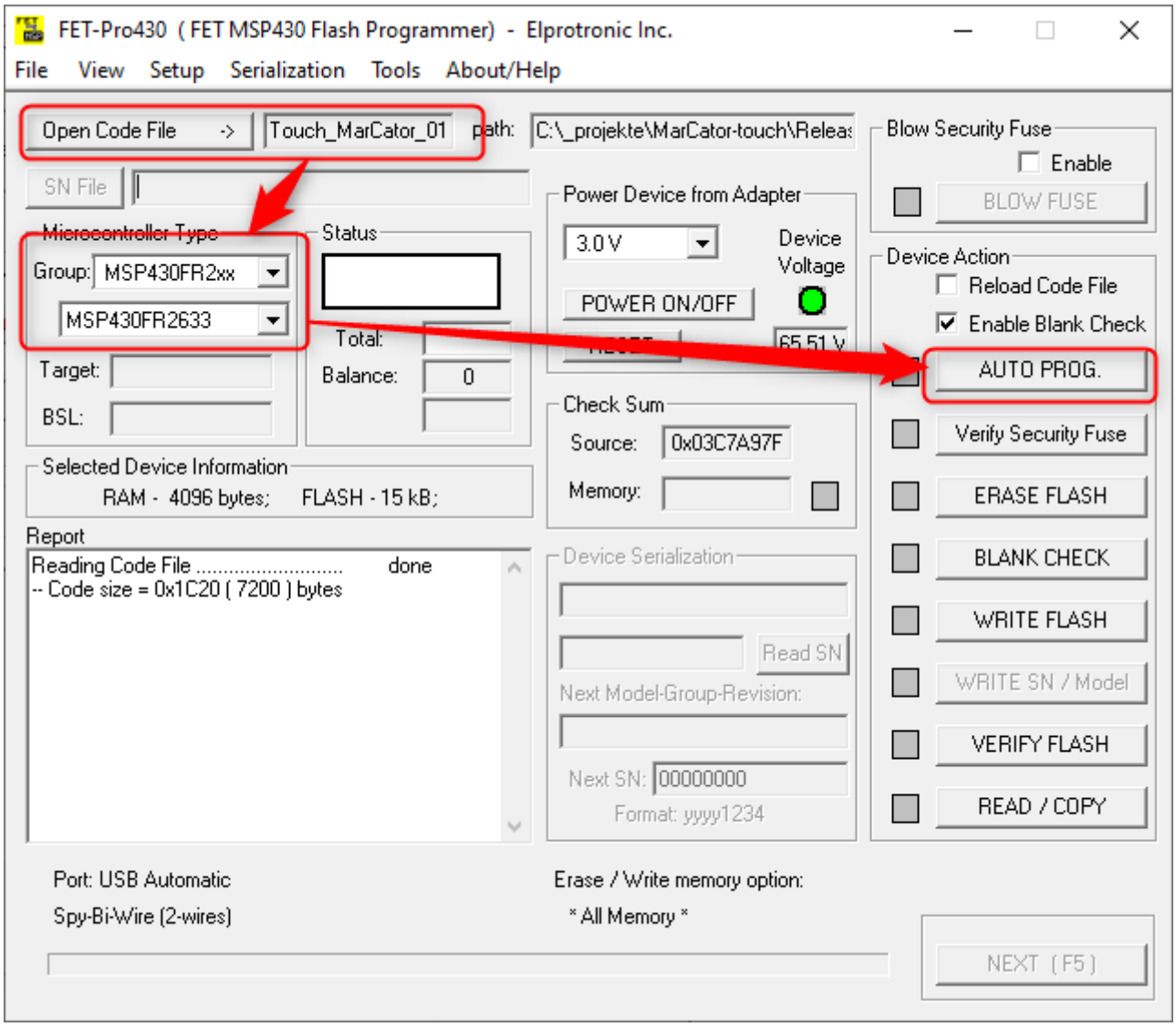
6.1. Connect MSP-FETFlash (2.1) with cable (2.2).
6.2. Open FET-Pro430 (3.1.)

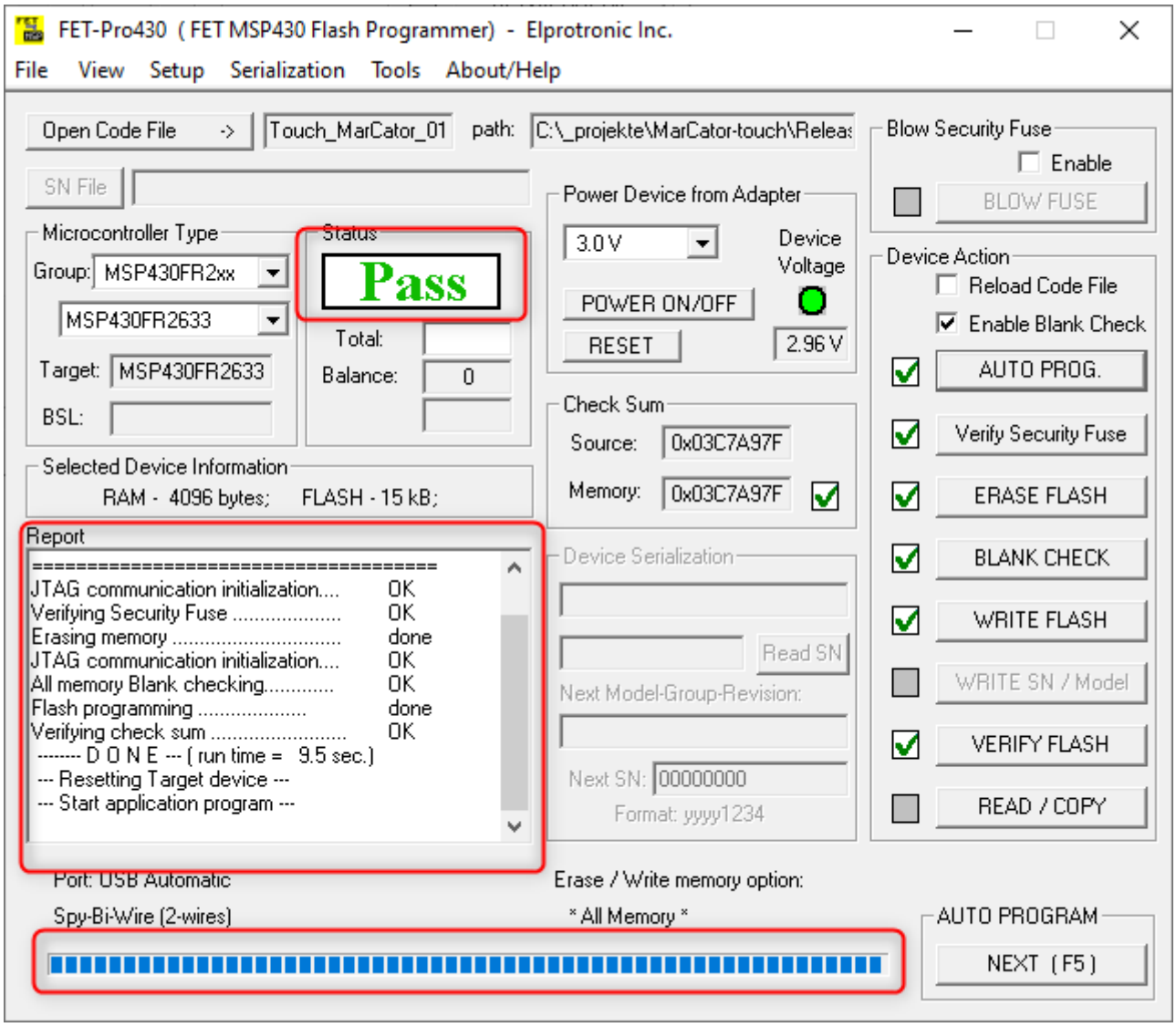


6.3. Select FW file: `Touch_MarCator_01.hex` (4.2.)

6.4. Select Microcontroller type: `MSP430FR2633`

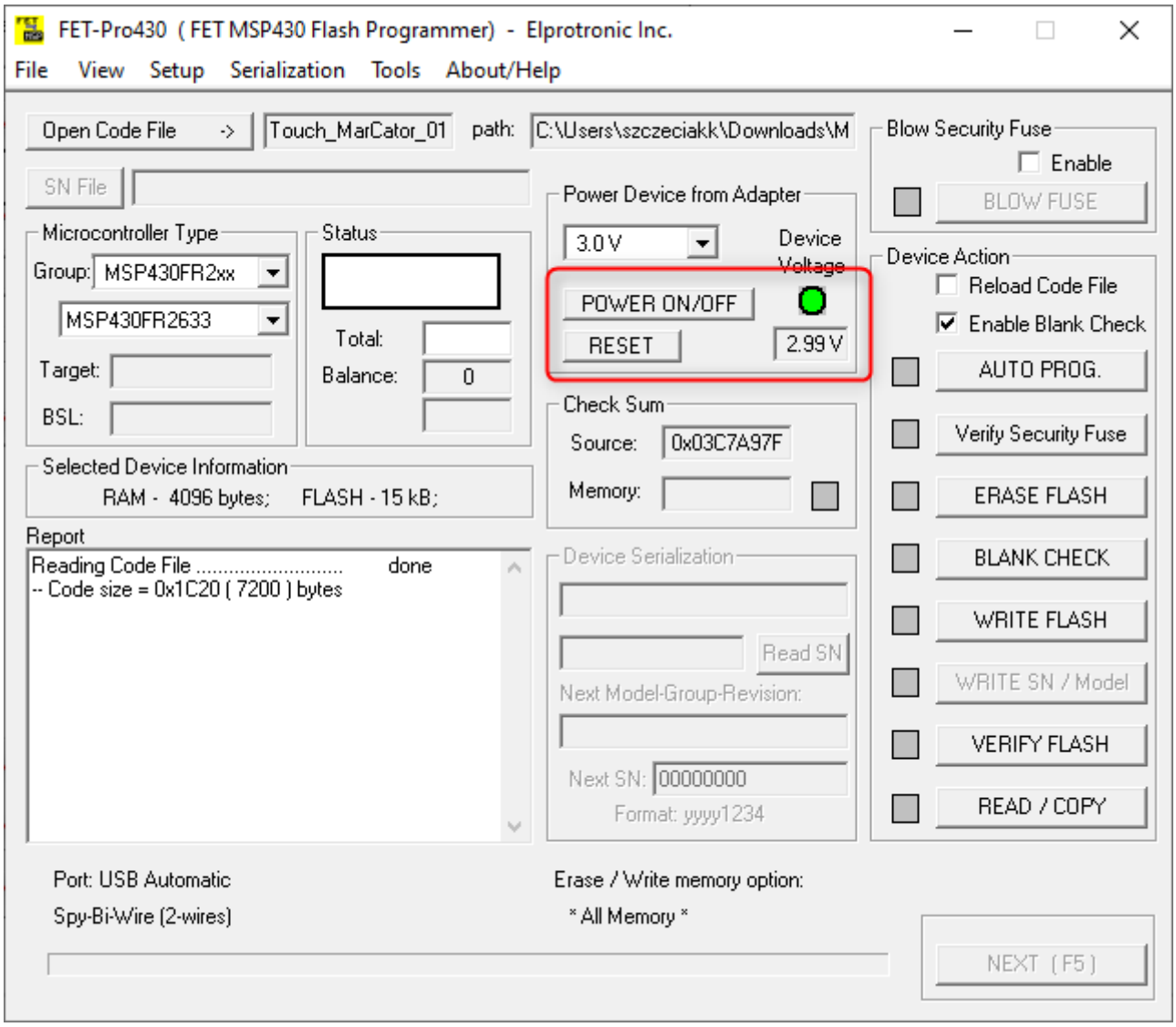
6.5. Press `AUTO PROG.` :


FET-Pro430 (FET MSP430 Flash Programmer) - Elprotronic Inc.
File
View
Setup
Serialization
Tools
About/Help
Open Code File ->
Touch_MarCator_01
path:
C:_projekte\MarCator-touch\Releas
SN File
Microcontroller Type
Group:
MSP430FR2xx
MSP430FR2633
Target:
BSL:
Status
Total:
Balance:
0
Power Device from Adapter
3.0 V
Device Voltage
POWER ON/OFF
65.51 V
Check Sum
Source:
0x03C7A97F
Memory:
Selected Device Information
RAM - 4096 bytes; FLASH - 15 kB;
Report
Reading Code File ..... done
-- Code size = 0x1C20 (7200) bytes
Device Serialization
Read SN
Next Model-Group-Revision:
Next SN:
00000000
Format: yyyy1234
Blow Security Fuse
Enable
BLOW FUSE
Device Action
Reload Code File
Enable Blank Check
AUTO PROG.
Verify Security Fuse
ERASE FLASH
BLANK CHECK
WRITE FLASH
WRITE SN / Model
VERIFY FLASH
READ / COPY
Port: USB Automatic
Spy-Bi-Wire (2-wires)
Erase / Write memory option:
* All Memory *
NEXT (F5)

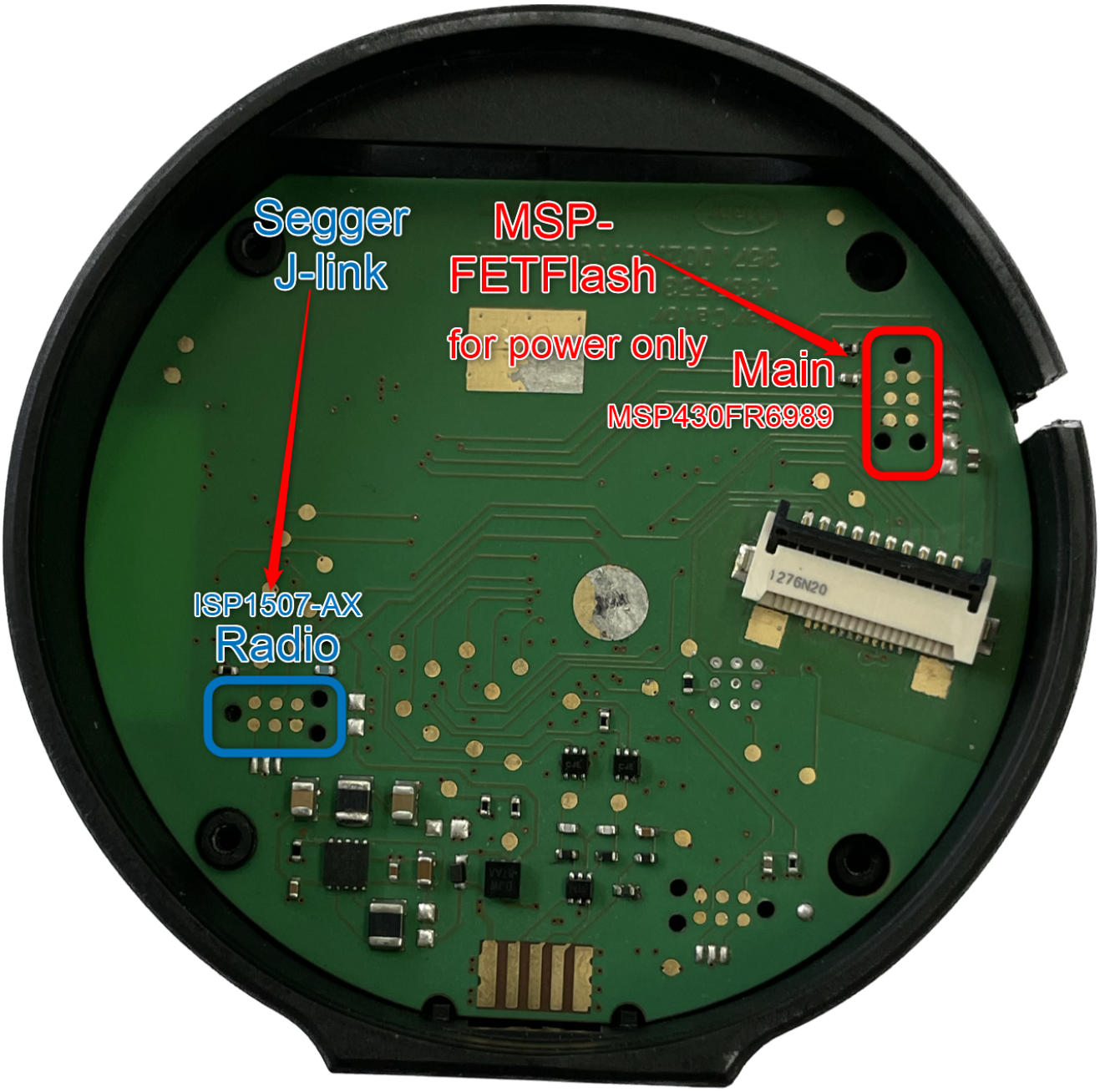


7. Flashing Radio chip

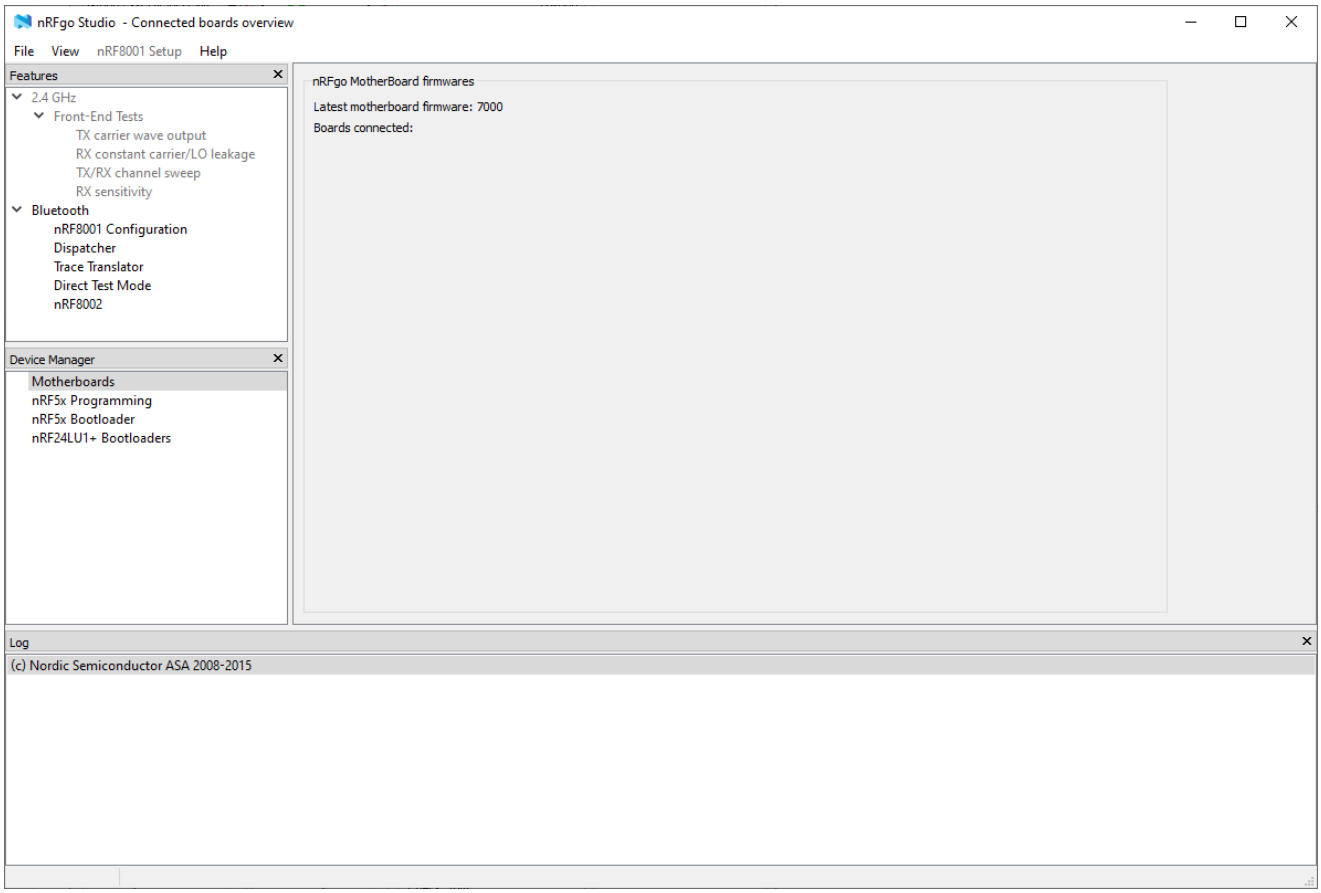
7.1. Connect MSP-FETFlash (2.1) with cable (2.2). with main chip and keep connected (for power supply only)



7.2. Connect Segger J-Link (2.3) with cable (2.4).

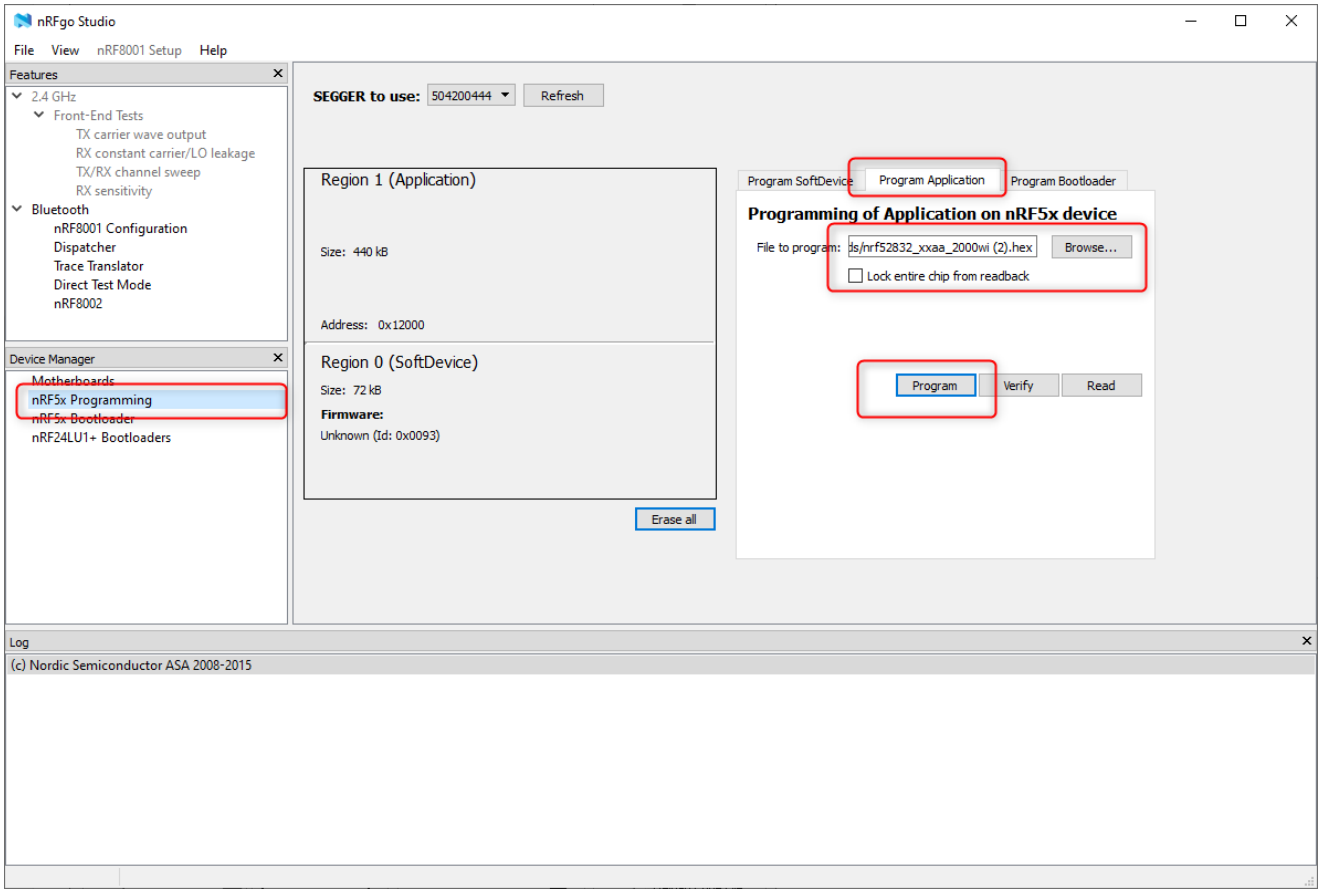


7.3. Open nRF-Studio go (3.2.)

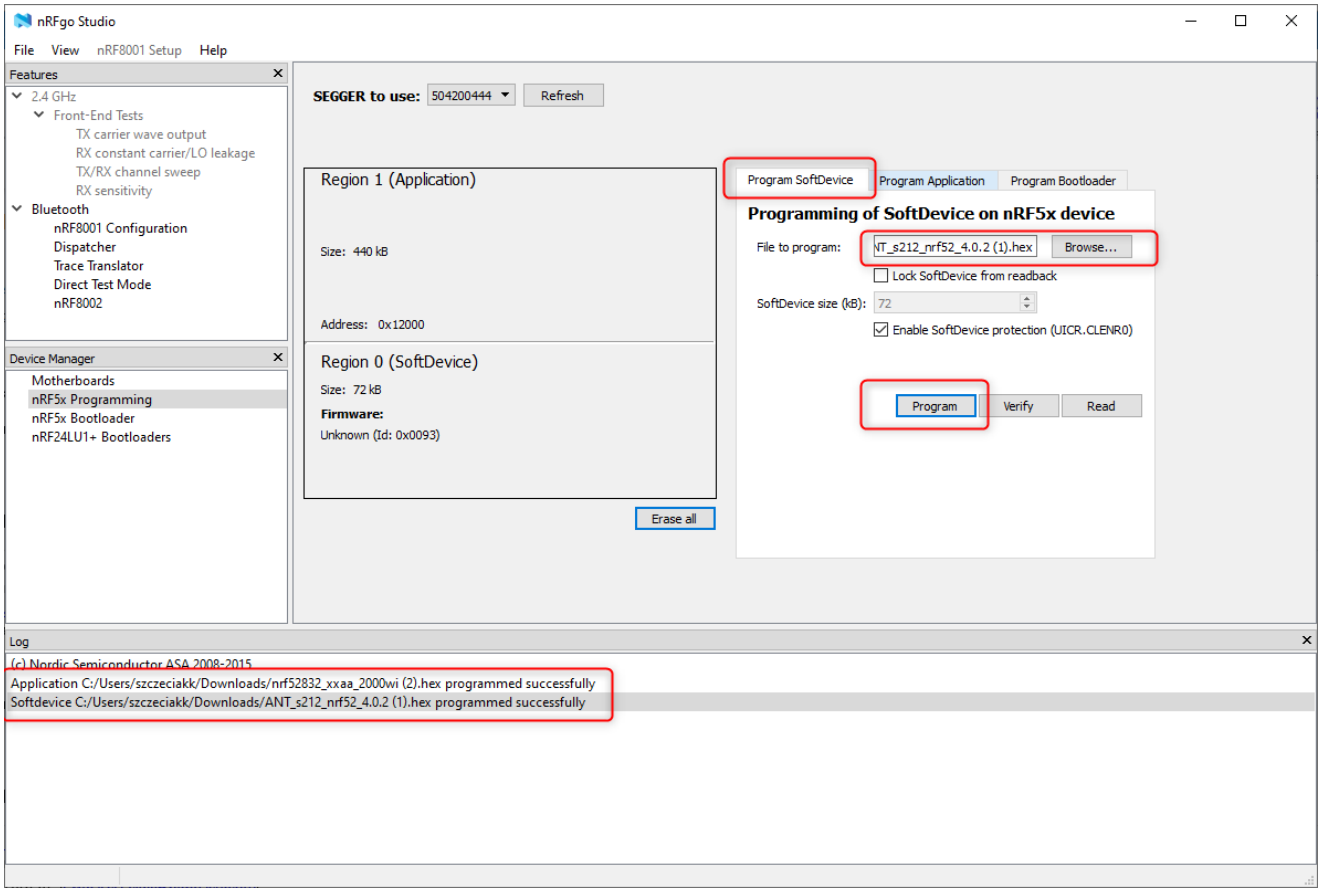


7.4. Select nRF5x Programming

7.5. Select `Program application` and application FW: nrf52832_xxaa_2000wi.hex (4.3.). Press Programm:



7.6. Select `Program SoftDevice` and select `ANT_s212_nrf52_4.0.2.hex`. Press Programm:



7.7. Toubleshooting:

- If radio chip cannot be found: reset Main Chip in FET-Pro430: `Power ON/OFF`