

NHS52S_{xx}_EVK

ASSEMBLY, PROGRAMMING, TESTING
AND PACKAGING

V1.0

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SECURE CONNECTIONS
FOR A SMARTER WORLD

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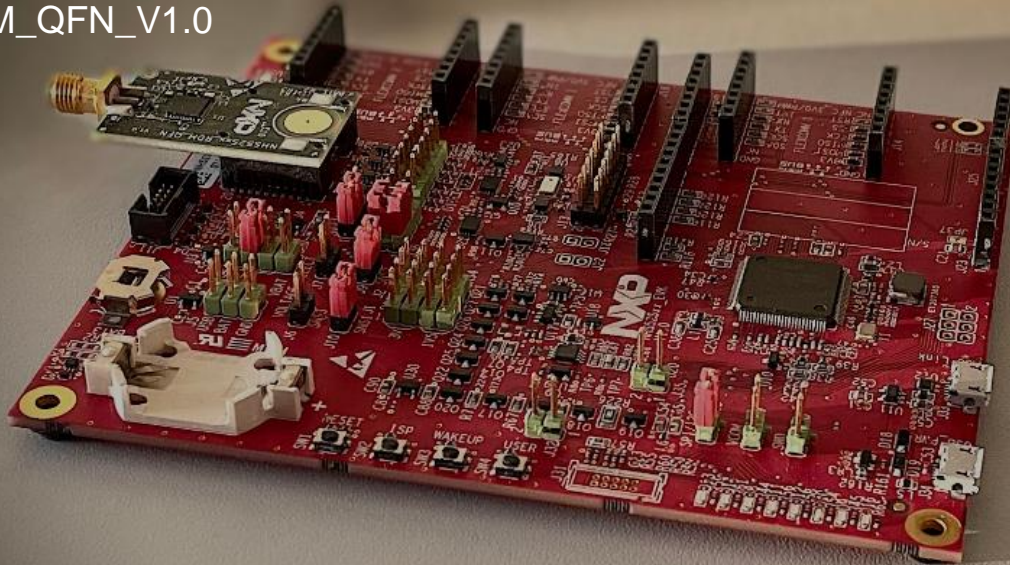




Assembly

BOARDS

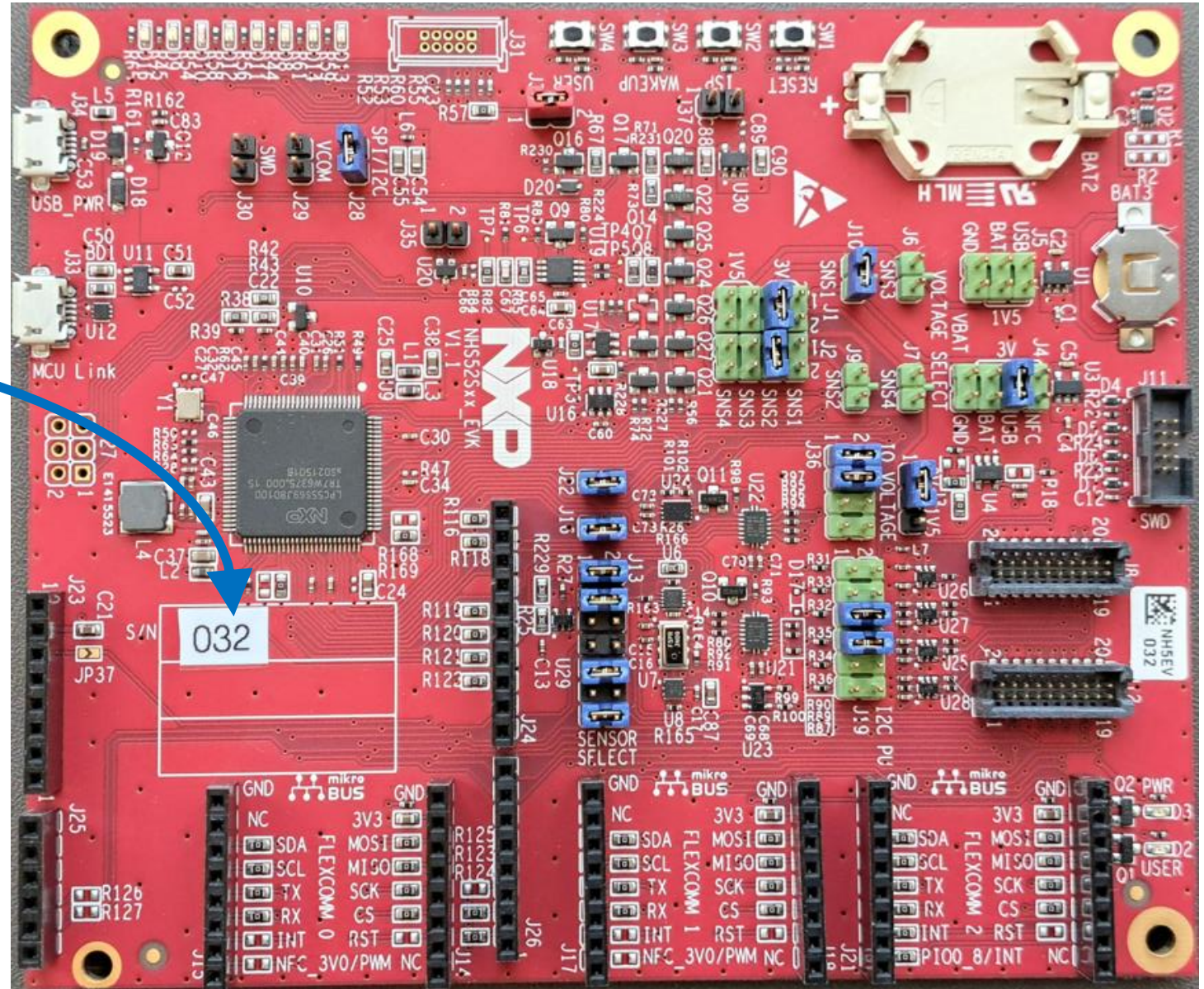
NHS52Sxx_RDM_QFN_V1.0



NHS52Sxx_EVK_V1.1

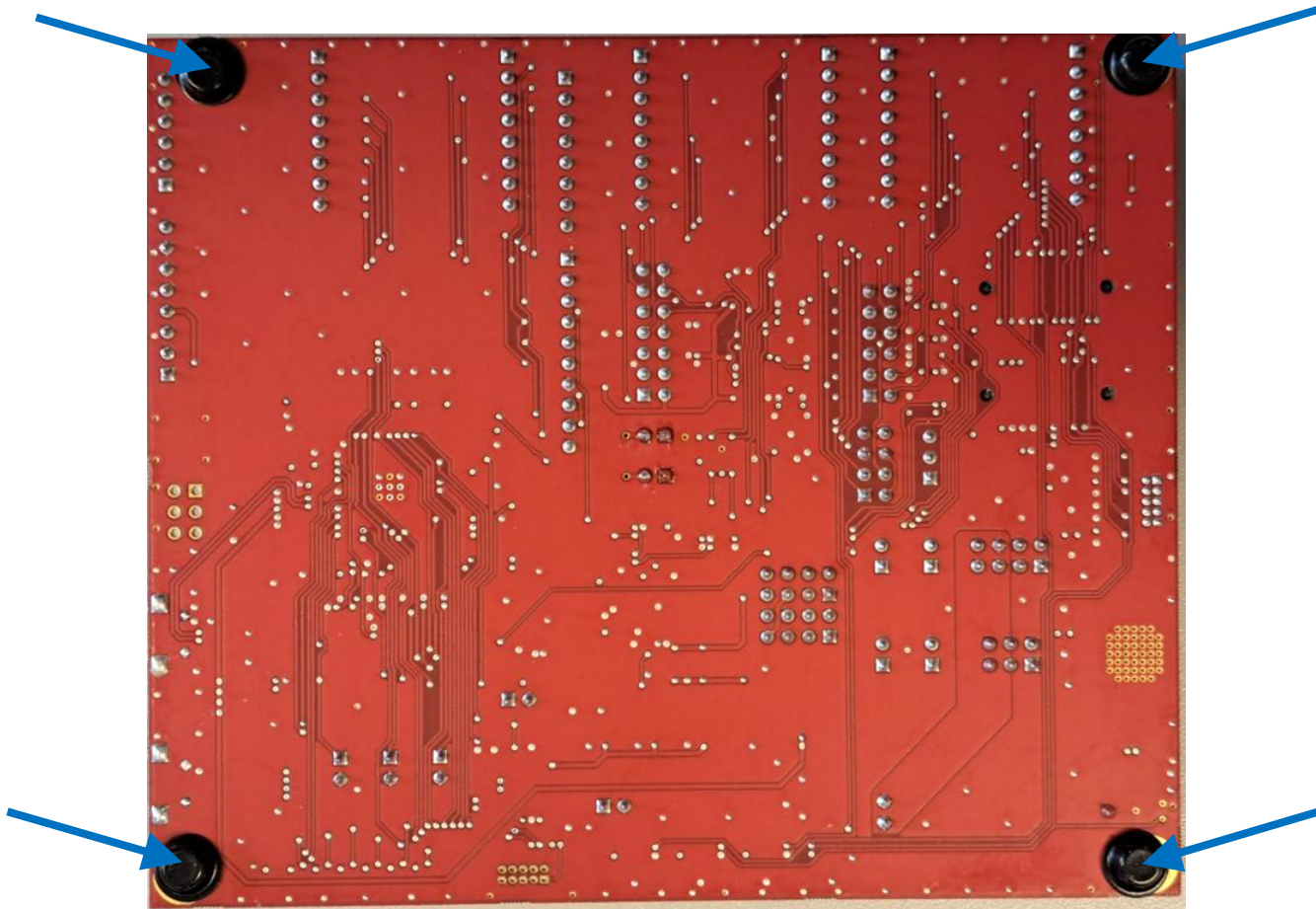
NHS52SXX_EVK_V1.1 TOP

- NHS52Sxx_EVK_V1.1
 - Stick S/N label
 - Add jumpers
 - J28, J1, J2, J10, J4, J3, J36 (2x), J19 (2x), J22, J16, J13 (4)
 - J32: use a different colour, jumper is removed during testing of the board.
 - No batteries are installed



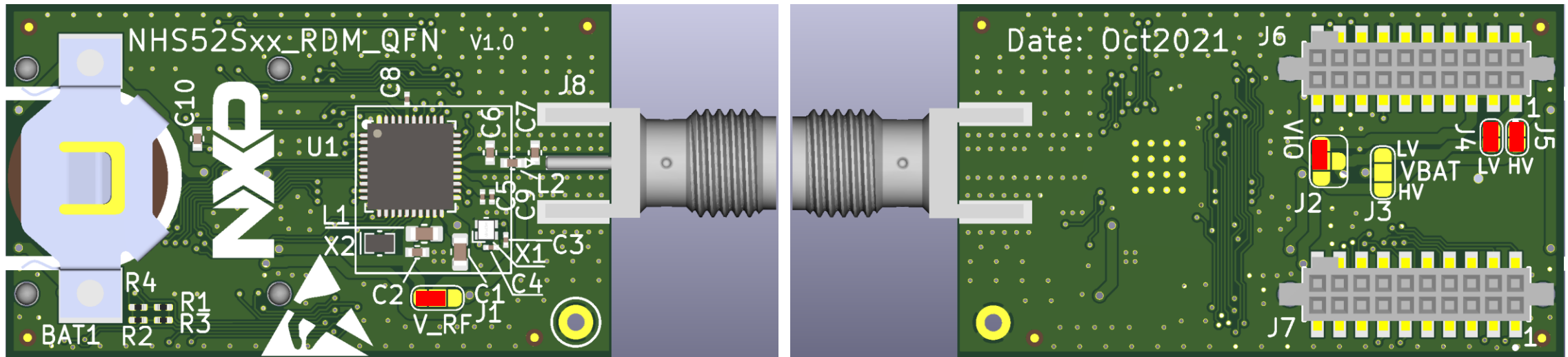
NHS52SXX_EVK_V1.1 - BOTTOM

- 4 board feed should be added in each corner (MPN: SJ5076, Digikey: 3M156065-ND)



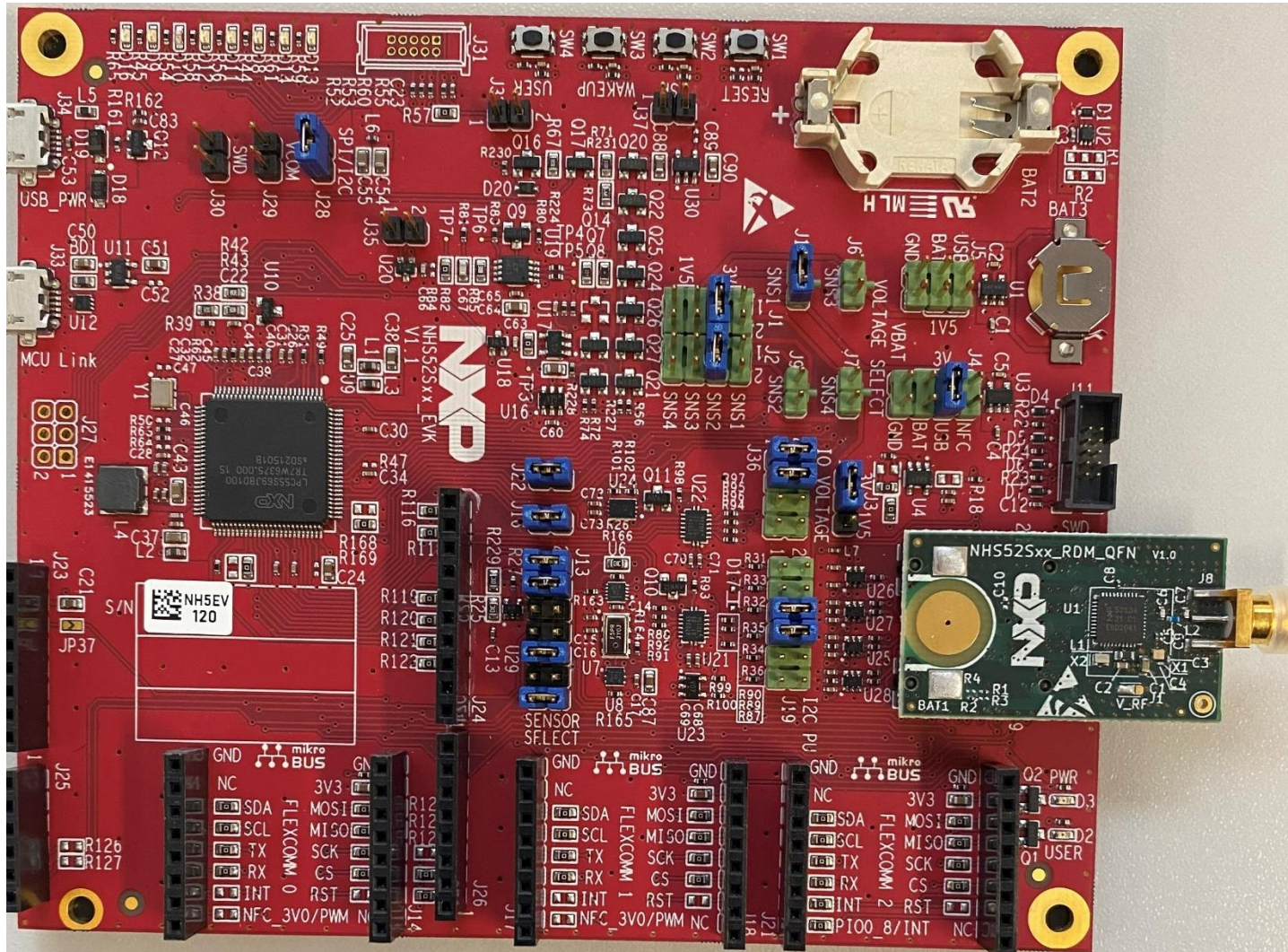
NHS5200_RDM_QFN

- Close the solder jumpers, 1 on top (J1), 3 on bottom (J2, J4 and J5)



BOARD STACKING

- Plug NHS52Sxx_RDM_QFN_V1.0 board on NHS52Sxx_EVK_V1.1

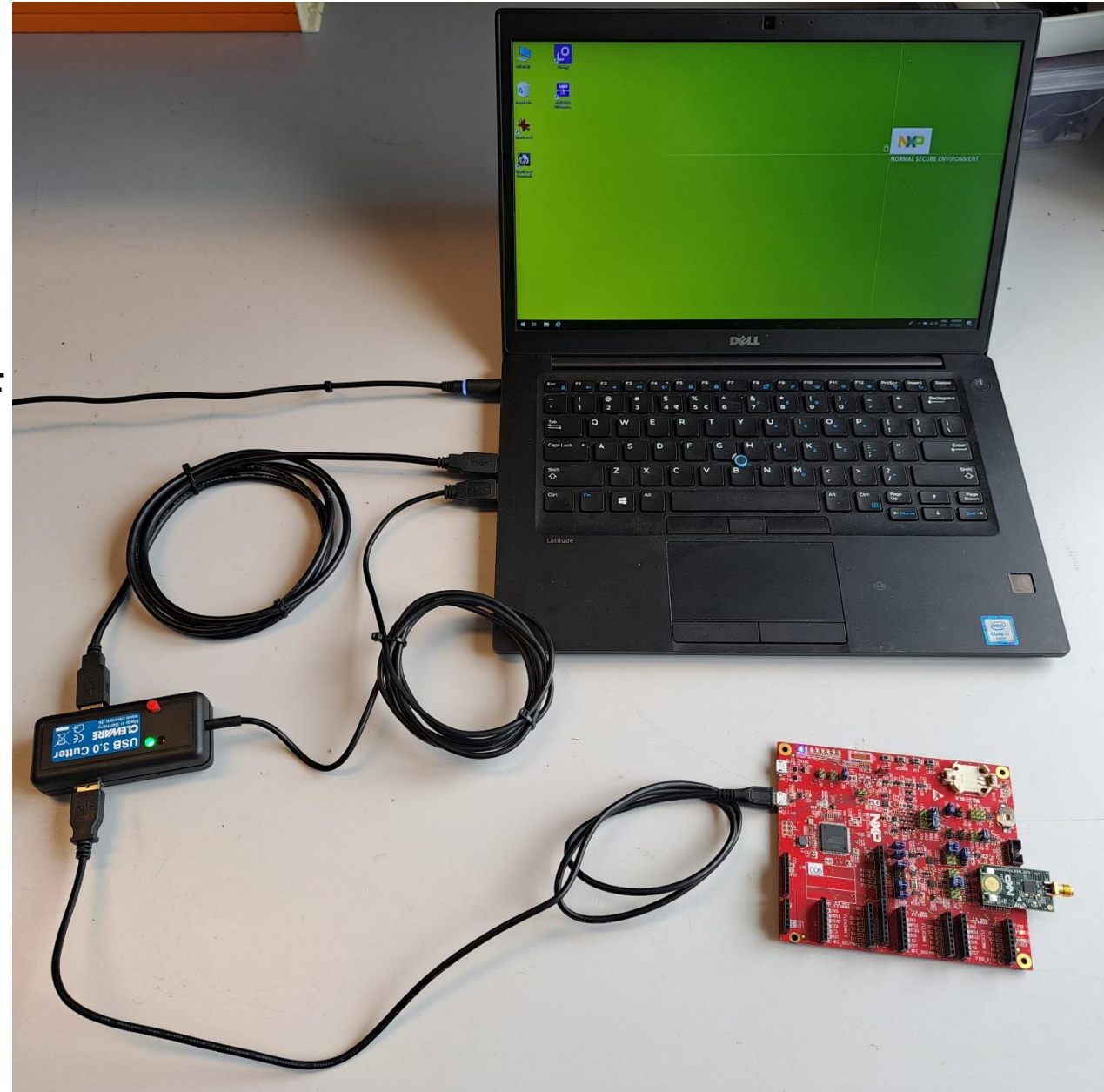




Programming & Testing

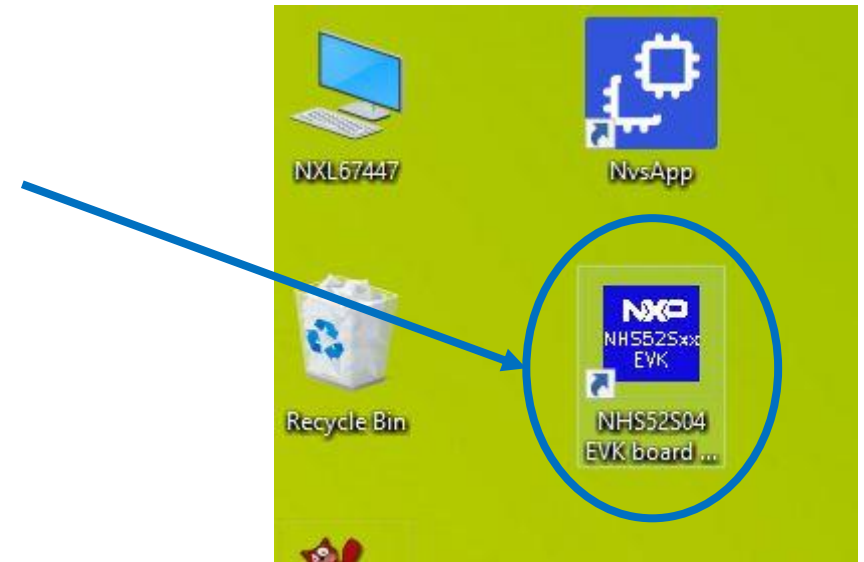
TEST SETUP

- Connect the “*USB 3.0 cutter*” to laptop using 2 USB cables.
 - The “*USB 3.0 cutter*” switch ON/OFF the power to the EVK board.
- Connect EVK board to “*USB 3.0 cutter*”



RUNNING THE TEST

- Launch the program “NHS52S04 EVK Board test program”, click on the icon on the desktop.



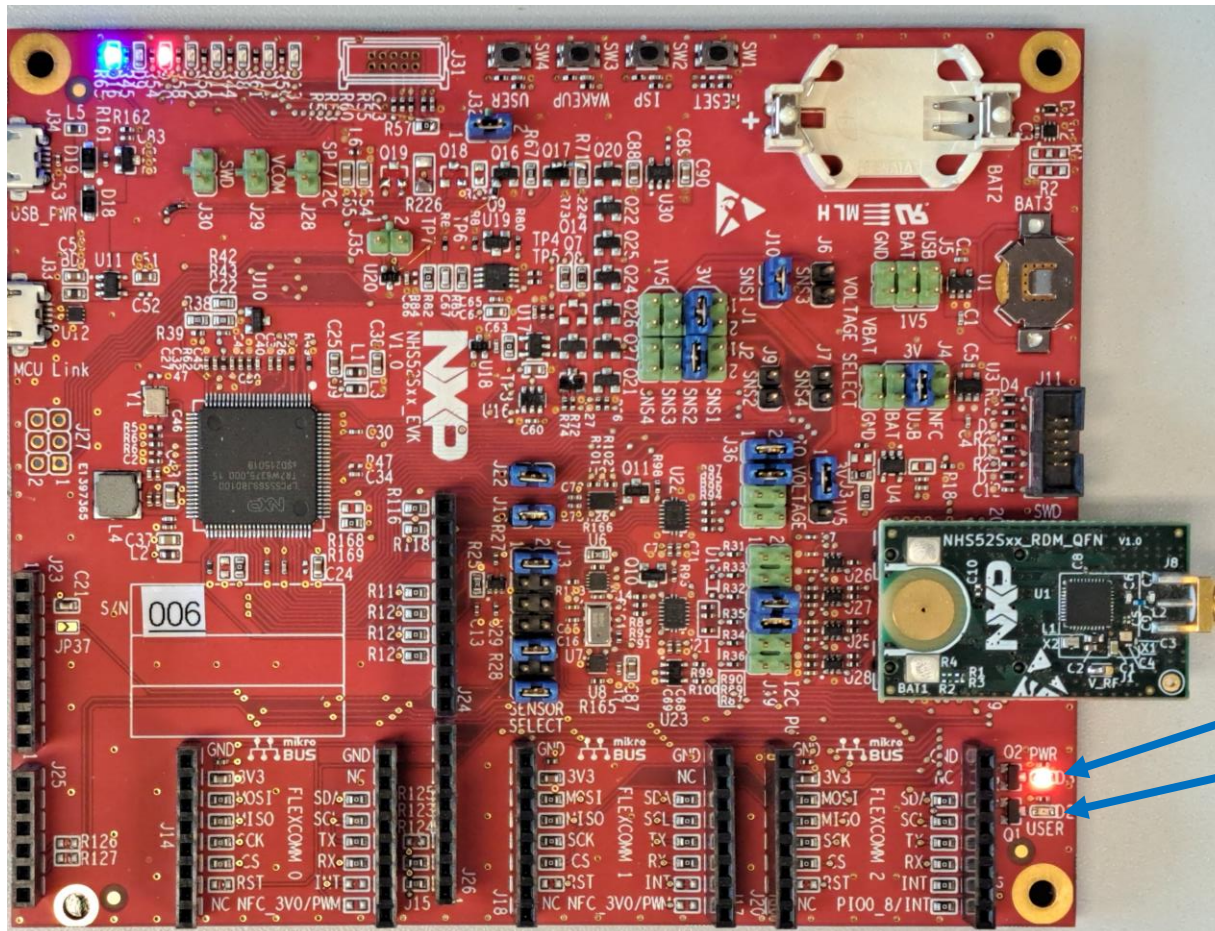
- Follow the steps on screen:
 - Enter EVK serial number
 - Enter RDM serial number

NHS52S04 EVK board test program

```
C:\Users\Assemblies\Documents\NHS52S04_EVK\python>python board_test_program.py
Enter EVK serial number: 006
Enter RDM serial number: 034
```


RUNNING THE TEST (2)

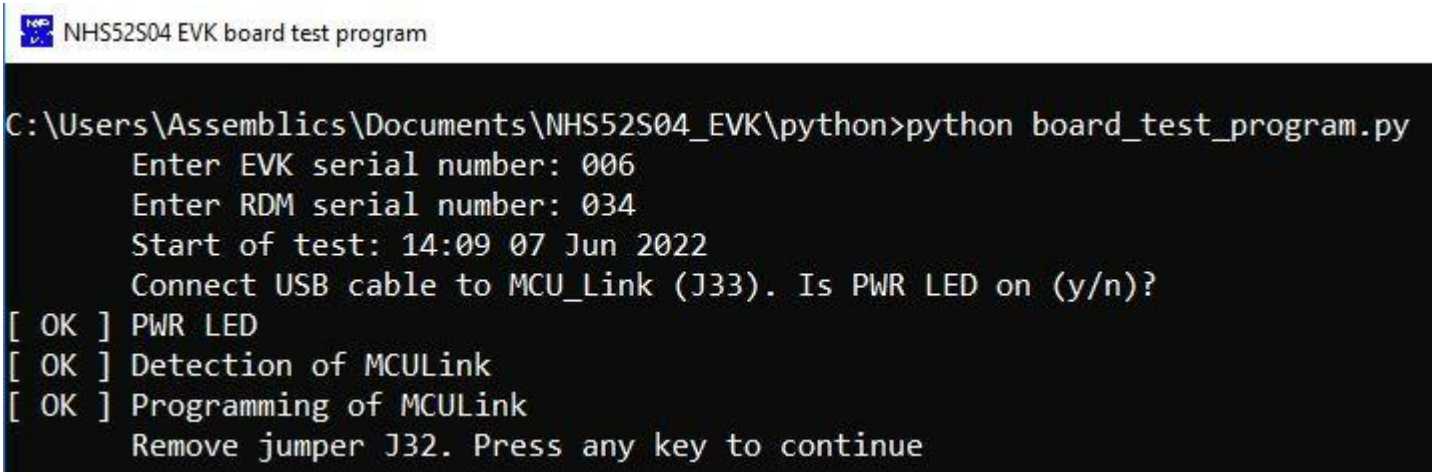
- Make sure USB cable is plugged into the USB port 'MCU Link'.
- Continue with the steps on screen.



PWR LED
USER LED

RUNNING THE TEST (2)

- After 'Programming of MCULink' remove jumper J32.



```
NXP NHS52S04 EVK board test program

C:\Users\Assemblies\Documents\NHS52S04_EVK\python>python board_test_program.py
    Enter EVK serial number: 006
    Enter RDM serial number: 034
    Start of test: 14:09 07 Jun 2022
    Connect USB cable to MCU_Link (J33). Is PWR LED on (y/n)?
[ OK ] PWR LED
[ OK ] Detection of MCULink
[ OK ] Programming of MCULink
    Remove jumper J32. Press any key to continue
```


RUNNING THE TEST (3)

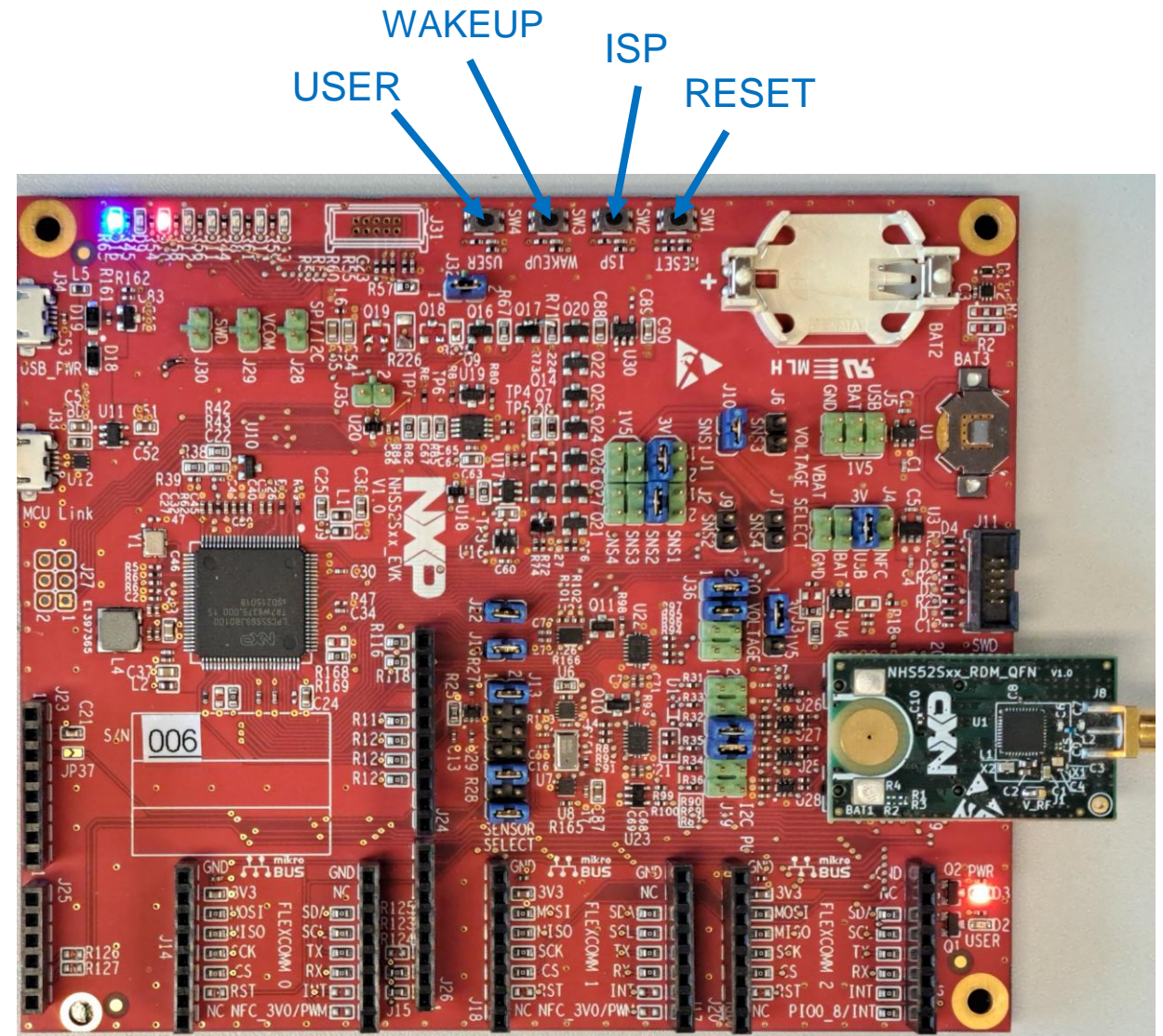
- The script on laptop starts now with programming the NHS52Sxx_RDM_QFN board. This will take some time (± 10 seconds)

```
NHS52S04 EVK board test program

C:\Users\Assemblies\Documents\NHS52S04_EVK\python>python board_test_program.py
    Enter EVK serial number: 006
    Enter RDM serial number: 034
    Start of test: 14:21 07 Jun 2022
    Connect USB cable to MCU_Link (J33). Is PWR LED on (y/n)?
[ OK ] PWR LED
[ OK ] Detection of MCULink
[ OK ] Programming of MCULink
    Remove jumper J32. Press any key to continue
[ OK ] Detection of MCULink serial port
#   Interface   Id           Description
-----
0   PyOCD       RQFQCSKDG2MA  NXP Semiconductors MCU-LINK on-board (r0C3) CMSIS-DAP V2.250
Try to open debug probe
Debug probe opened
Try to close debug probe
Debug probe closed
Erasing 2 sector(s), from 0x0 until 0x3fff
Padding image with 4 bytes to align with phrase of 16
Programming binary of 0x3b20 bytes to address 0x0
```

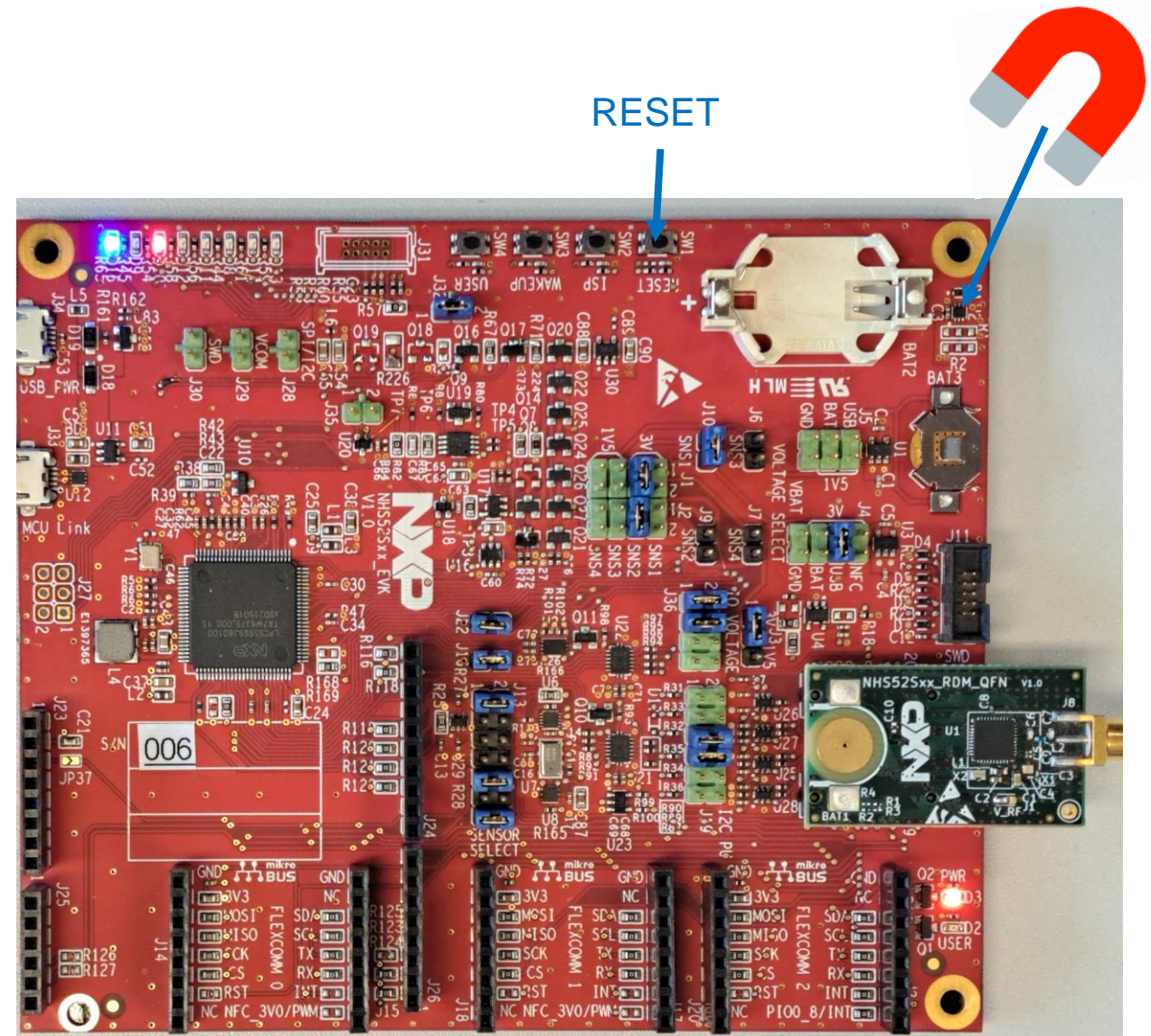
RUNNING THE TEST (4)

- Continue with the test:
 - Verify if the USER LED is on
 - Test the 3 tact switches: USER, WAKEUP and ISP.



RUNNING THE TEST (5)

- Continue with the test:
 - Test the Magnetic switch: bring a small magnet close to U2
 - Test the latest tact switch: RESET.



COMPLETE THE TEST

- Verify if all test passes: confirm “Overall board status” = “OK”

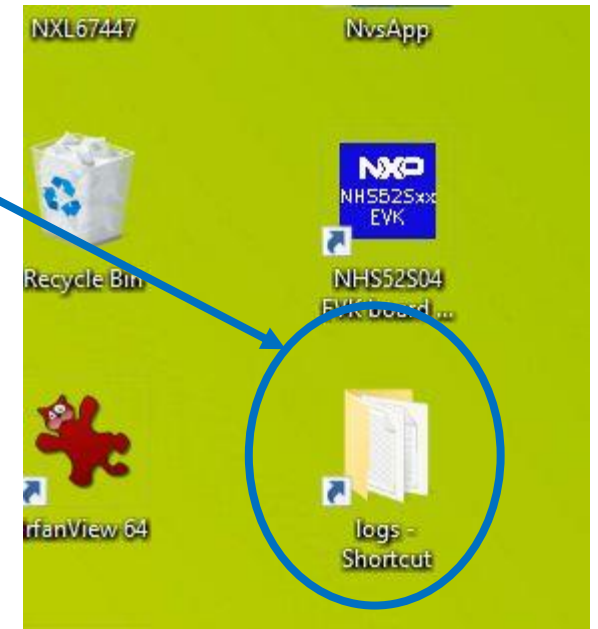
```
[ OK ] ISP button test
      Move magnet close to sensor. May take up to 10s before detected (25s)
[ OK ] Magnetometer test
      Eeprom data: 0x6 0x0 0x65 0x4c 0x9f 0x62
[ OK ] Read temperature sensor's eeprom
      Press reset button (7s))
[ OK ] Reset button
      Writing RDM serial number
[ OK ] RDM serial number written to flash
      Writing test results
[ OK ] Test results written to eeprom
#   Interface   Id           Description
-----
 0   PyOCD      ZMWOWXBRU4RYK  NXP Semiconductors MCU-LINK on-board (r0C3) CMSIS-DAP V2.250
Try to open debug probe
Debug probe opened
Try to close debug probe
Debug probe closed
Erasing 1 sector(s), from 0x0 until 0x1fff
Padding image with 12 bytes to align with phrase of 16
Programming binary of 0x16e0 bytes to address 0x0
[ OK ] NHS programming (bin/default_app.bin)
[ OK ] Overall board status
      Do you want to test another board (y/n)?
```




Wrap up

COLLECTING LOG DATA

- Test results are logged in the folder
C:\Users\Assemblics\Documents\NHS52S04_EVK\python\logs.
 - Open the directory. A shortcut is available on the desktop.
 - Copy all files and send them to NXP.





Packaging

MECHANICAL BOM

Item	Quantity	Description	MPN	Mouser	Digikey	Farnell code	Note
1	1	NHS52Sxx_EVK_V1.1				-	
2	1	NHS52Sxx_RDM_QFN				-	
3	4	Bumper / Feet, Adhesive, 3 mm, 8 mm, Round, Black	SJ5076	517-SJ-5076-BLACK	3M156065-ND		One sheet contains 56 bumps
4	14	Jumpers 2.54mm, Blue	M7583-05			3226079	
5	1	µUSB cable	MC000948			2468266	
6	1	Bubble pastic	SCB16				Rajapak
7	1	Box for packaging	BOR17				Rajapak
8	1	FCC label					
9	1	NXP label					
10	1	Whip Antenna, 2.4GHz to 2.4835GHz, 2 VSWR, 2dBi Gain, Linear Polarisation, SMA Connector	AEACAC025009-S2400			2886238	

NXP LABEL

- NXP template



- Date to be changed

1T	AOAB240901
9D	2409
30P	NHS52SXX-EVK
1P	935454262598
32T	0170
31T	BEG
31P	NA/NA
Q	1
Country of Or...	BELGIUM

NXP SEMICONDUCTORS

Country of Origin **BELGIUM**

(33T) PUID: **0YBEAOAB240901**



(1T) LOT: **AOAB240901**



(32T) ORIG **O170**

(31T) PMC **--BEG**

(31P)

(9D) DATE: **2409**



MSL **NA/NA**



(Q) QTY: **1**



(30P) TYPE: **NHS52SXX-EVK**



(1P) CODENO: **9354 542 62598**



EU RoHS Exempt



BOX CONTENT:



NHS52SXX-EVK
in bubble bag

BT antenna

USB cable

BOX LABELS:



- FCC label

- NXP label



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