



TECHNICAL SERVICE BULLETIN

Classification:	Reference:	Date:
EL23-016A	NTB23-075A	April 23, 2024

HV BATTERY DTCS STORED IN THE BMS

This bulletin has been amended. See AMENDMENT HISTORY on the last page.
Please discard previous versions of this bulletin.

APPLIED VEHICLES: 2023 ARIYA (FE0)
APPLIED DATES: Built on or before January 20, 2023

IF YOU CONFIRM

One or more of the following DTCS are stored in the **HV BATTERY** or **High Voltage Battery 2** in the BMS (Battery Management System):

- DTC P1B01-62 for "Cell voltage circuit" is stored as PAST and does **not** return as CURRENT when erased,
- OR**
- DTCS P1B30-11, P1B39-11, P1B3A-11, P1B3B-11, P1B31-11 to P1B36-11; all for "Module temperature sensor",
- AND/OR**
- DTCS P1B60-12, P1B69-12, P1B6A-12, P1B6B-12, P1B61-12 to P1B68-12; all for "Cell voltage circuit".

ACTION

Follow the **SERVICE PROCEDURE** in this bulletin to reprogram the **HV BATTERY** and **HIGH VOLTAGE BATTERY 2**.

IMPORTANT: The purpose of **ACTION** (above) is to give you a quick idea of the work you will be performing. You **MUST** closely follow the entire **SERVICE PROCEDURE** as it contains information that is essential to successfully completing this repair.

Bulletins are intended for use by qualified technicians, not 'do-it-yourselfers'. Qualified technicians are properly trained individuals who have the equipment, tools, safety instruction, and know-how to do a job properly and safely. **NOTE:** If you believe that a described condition may apply to a particular vehicle, **DO NOT** assume that it does. See your Nissan dealer to determine if this applies to your vehicle.

SERVICE PROCEDURE

Reprogram the HV BATTERY and HIGH VOLTAGE BATTERY 2

IMPORTANT: Before starting, make sure:

- ASSIST on the CONSULT PC has been synchronized (updated) to the current date.
- All CONSULT-4 software updates (if any) have been installed.
- Connect the CONSULT PC to the Internet via Wi-Fi.

HINT: If Wi-Fi connection is not sufficient or is unstable, data may not download correctly during the reprogramming procedure.

NOTICE

- Connect a battery maintainer or smart charger set to reflash mode or a similar setting. If the vehicle battery voltage drops below 12.0V or rises above 13.5V during reprogramming, the BMS may be damaged.
- Be sure to turn OFF all vehicle electrical loads (e.g. A/C, headlamps, audio). If a vehicle electrical load remains ON, the BMS may be damaged.
- Be sure to connect the AC Adapter. If the CONSULT PC battery voltage drops during reprogramming, the process will be interrupted and the BMS may be damaged.
- Turn OFF all external Bluetooth® devices (e.g., cell phones, printers, etc.) within range of the CONSULT PC and the VI. If Bluetooth® signal waves are within range of the CONSULT PC or VI during reprogramming, reprogramming may be interrupted and the BMS may be damaged.
- During the reprogramming process, you will receive some errors. These errors are expected. Please follow all of the steps in this procedure to successfully complete the reprogramming process.

1. Make sure the vehicle is OFF.
2. Turn the vehicle IGN ON.
3. Confirm there is a blinking green light on the dash.
4. Hold the vehicle's start button down for 10 seconds.
 - This will temporarily disable the high voltage (HV) system.
5. Confirm that the green light has stopped blinking and is now OFF.
6. Turn the vehicle IGN ON (start button to ON).

7. Connect the VI3 to the vehicle.
8. Turn the hazard lamps to ON.
9. Start CONSULT-4 on the CONSULT PC.
10. If prompted, select **USA/CANADA Dealers** from the drop-down menu, and then select **OK**.
11. Login using your NNAnet credentials.

IMPORTANT: If not prompted to enter your username and password, the CONSULT PC may not be connected to Wi-Fi. Close CONSULT-4, confirm the CONSULT PC is connected to Wi-Fi, and then reopen CONSULT-4.
12. Wait for the VI3 to be recognized.
 - Green VI3 symbol with check mark in the middle (Figure 1).
13. Ensure that the vehicle's 12 volt battery voltage stays between 12-13.5V (Figure 1).
14. Check to see if there are currently any DTCs.
 - DTCs not listed on page 1 are not covered by this bulletin. For unlisted DTCs, see the ESM for further diagnostic information.

HINT: Having a battery charger ON, with the vehicle ON, may trigger a warning or DTCs which can be ignored (example P0560-22).
15. Select **Vehicle reprogramming**.

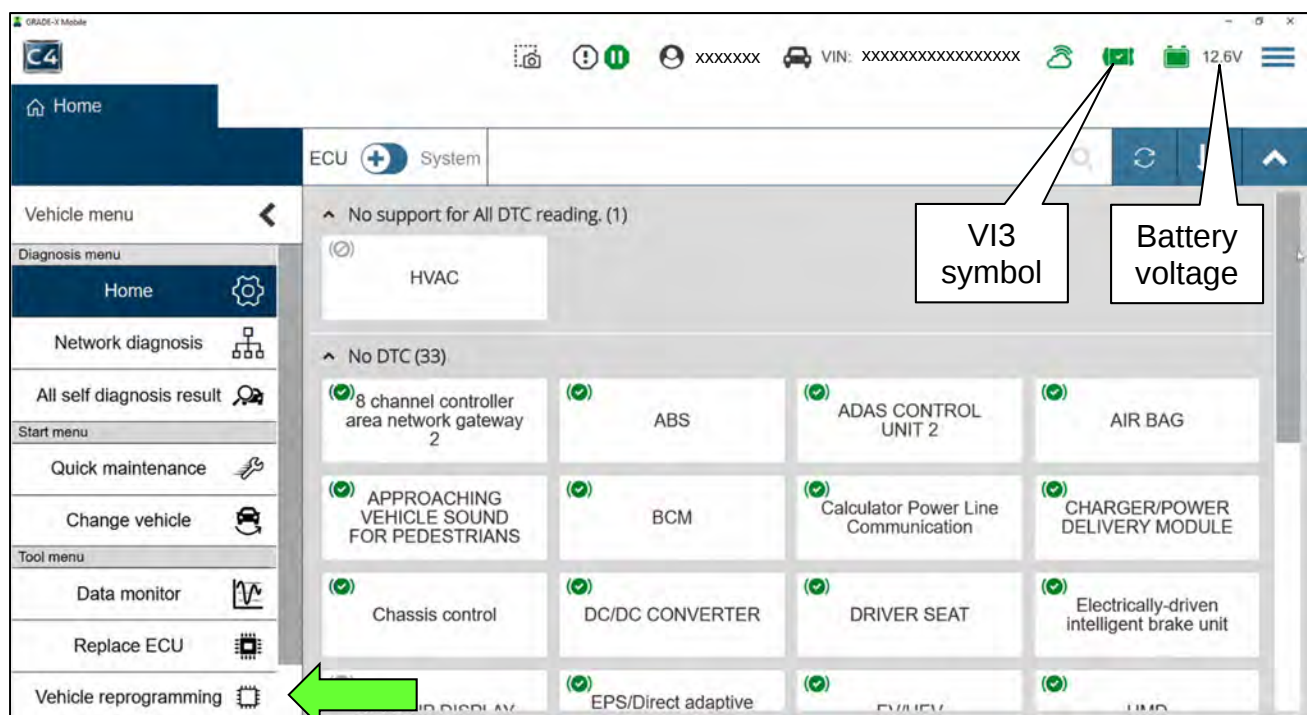


Figure 1

16. Scroll down until you see **HV BATTERY** listed (Figure 2).

17. Select the green arrow to the right of **HV BATTERY**, where shown in Figure 2.

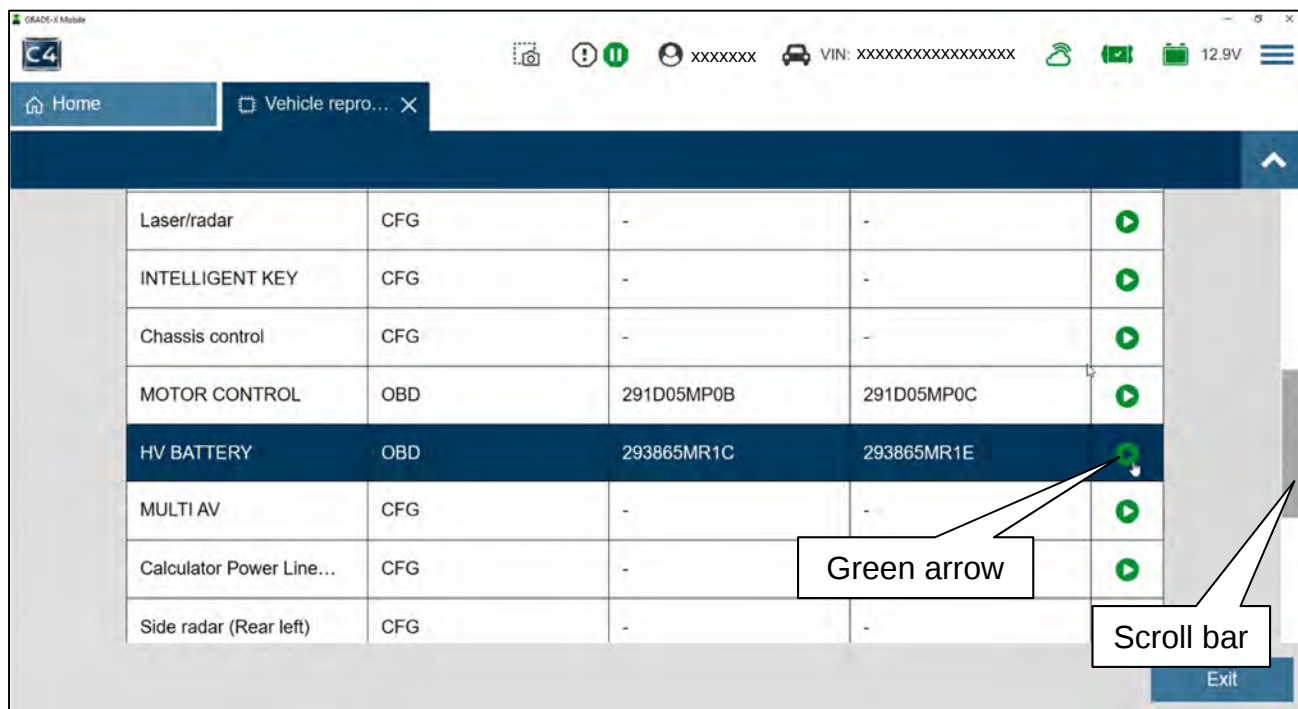


Figure 2

18. Select the **X** in the bottom right corner.

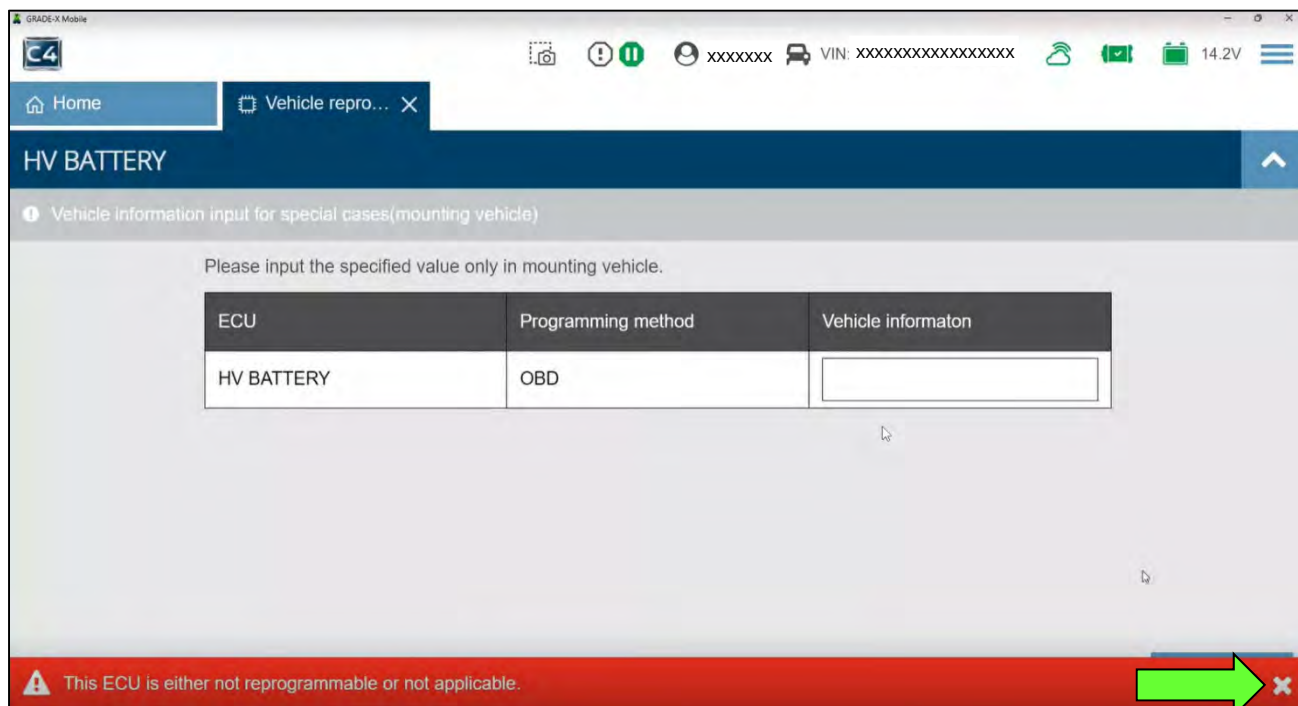


Figure 3

19. Select **Next**.

GRADE-X Mobile

Home Vehicle repro... X

HV BATTERY

Vehicle information input for special cases(mounting vehicle)

Please input the specified value only in mounting vehicle.

ECU	Programming method	Vehicle informaton
HV BATTERY	OBD	

Next

Figure 4

20. Select **Next** again.

GRADE-X Mobile

Home Vehicle repro... X

HV BATTERY

Vehicle information input for special cases(mounting vehicle)

In normal operation, please touch "Next" without inputting anything in vehicle information.

ECU	Programming method	Vehicle informaton
High Voltage Battery 2	OBD	

Next

Figure 5

21. Verify the vehicle **VIN** is correct, and then select **Next**.

IMPORTANT: If both “HV BATTERY” and “High Voltage Battery 2” are not displayed, an unstable Wi-Fi connection may be present (refer to **IMPORTANT** statement on page 2).

Confirm programming data

Vehicle name		VIN			
ARIYA		XXXXXXXXXXXXXXXXXX			

ECU	Programming method	Current part number	Part number after programming	Programming time (min.)	
HV BATTERY	OBD	293865MR1C	293865MR1E	5	Download
High Voltage Battery 2	OBD	293B35MR1B	293B35MR1C	5	Download

Next

Figure 6

22. Wait for all three (3) progress bars to fill to 100%, and then select **Next**.

IMPORTANT: If both “HV BATTERY” and “High Voltage Battery 2” progress bars do not complete, refer to **IMPORTANT** statement on page 2, and then select the **X** next to “Vehicle repro” (Figure 7) and restart the reprogramming at step 15 on page 3.

Vehicle repro... X

HV BATTERY

Data download

HV BATTERY (OBD) - Downloading in progress, please wait... 100%

High Voltage Battery 2 (OBD) - Downloading in progress, please wait... 100%

Progress - 100%

Next

Figure 7

23. Verify the vehicle's 12 volt battery voltage is between 12.0V and 13.5V.
 - Adjust the battery charger as needed.
24. When 12V, or greater, is displayed in the "Value" field (Figure 8) and the green check mark appears, select **Next**.

HINT: Raise or lower the 12 volt battery's voltage until the check appears.
25. After the required conditions are met, select **Next**.

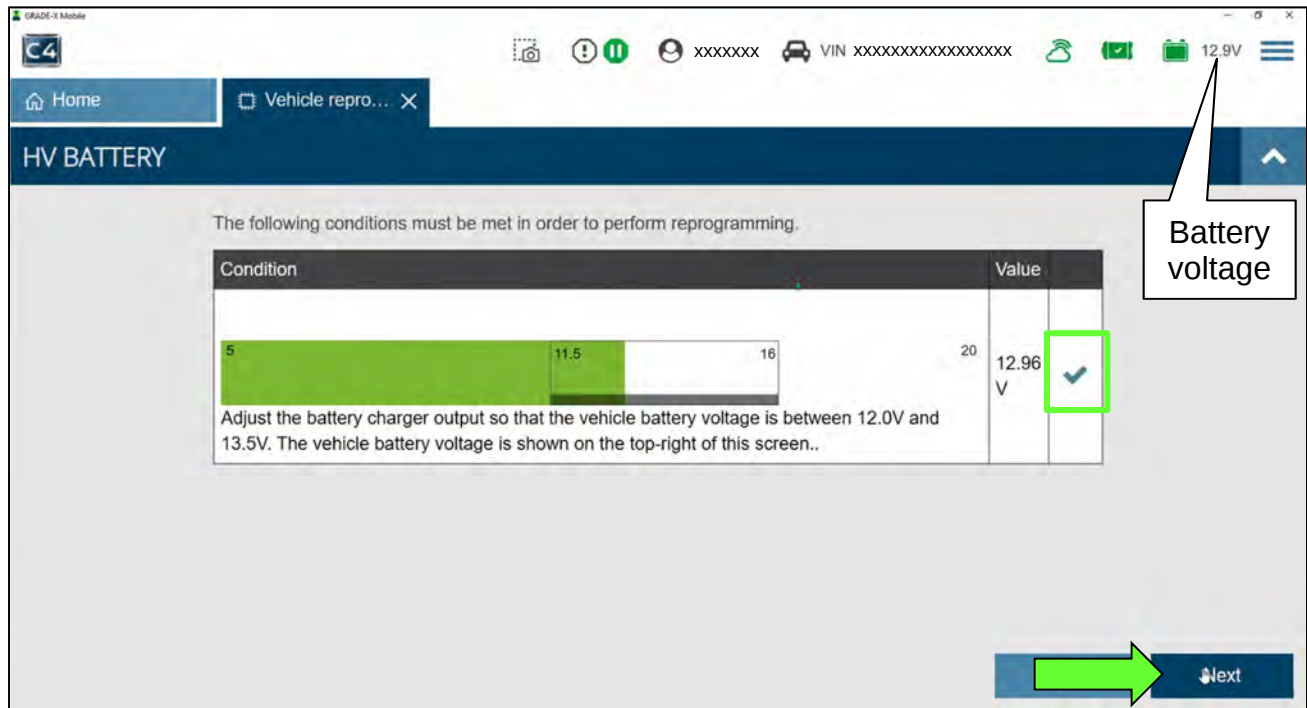


Figure 8

26. When the screen in Figure 9 is displayed, select **Next**.

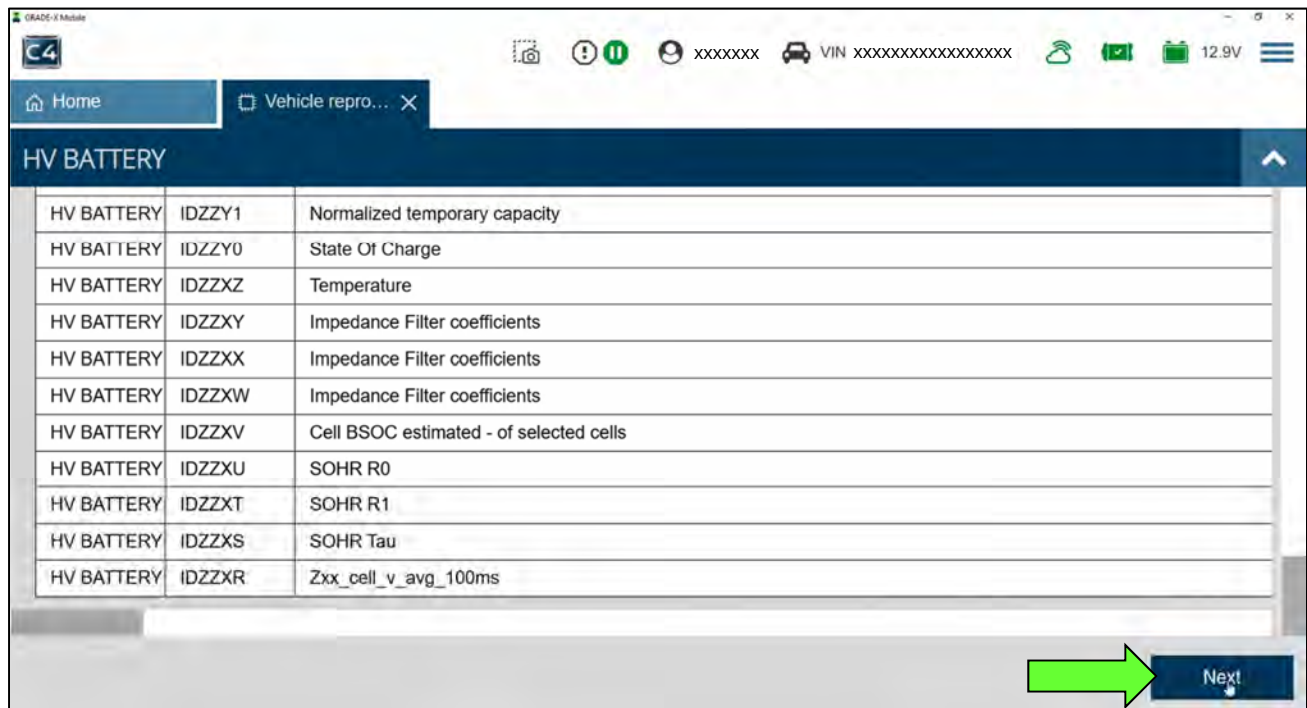


Figure 9

27. Did “Reprogramming error” display (Figure 10)?

YES: Select **Yes**, and then proceed to step 28.

IMPORTANT: Do not disconnect the VI3 or shut down CONSULT-4 if reprogramming does not complete. If the screen in Figure 10 displays, reprogramming did not complete.

NO: Skip to step 44 on page 16 to continue with reprogramming.

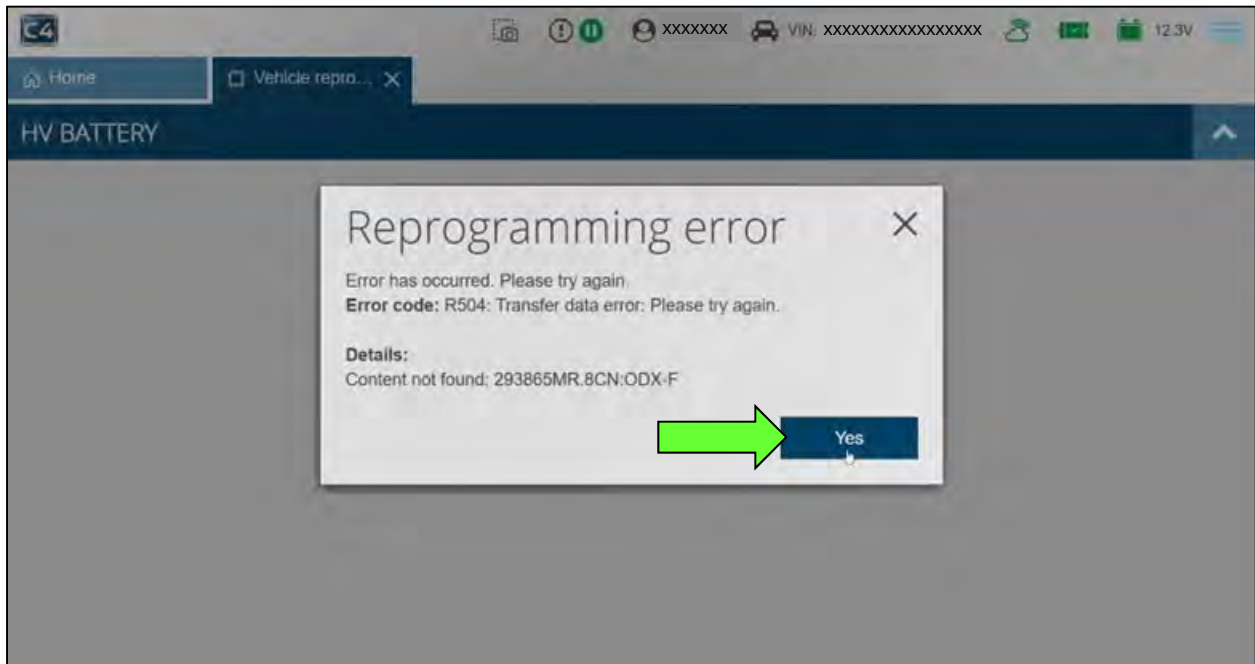


Figure 10

28. Select **Yes** again.

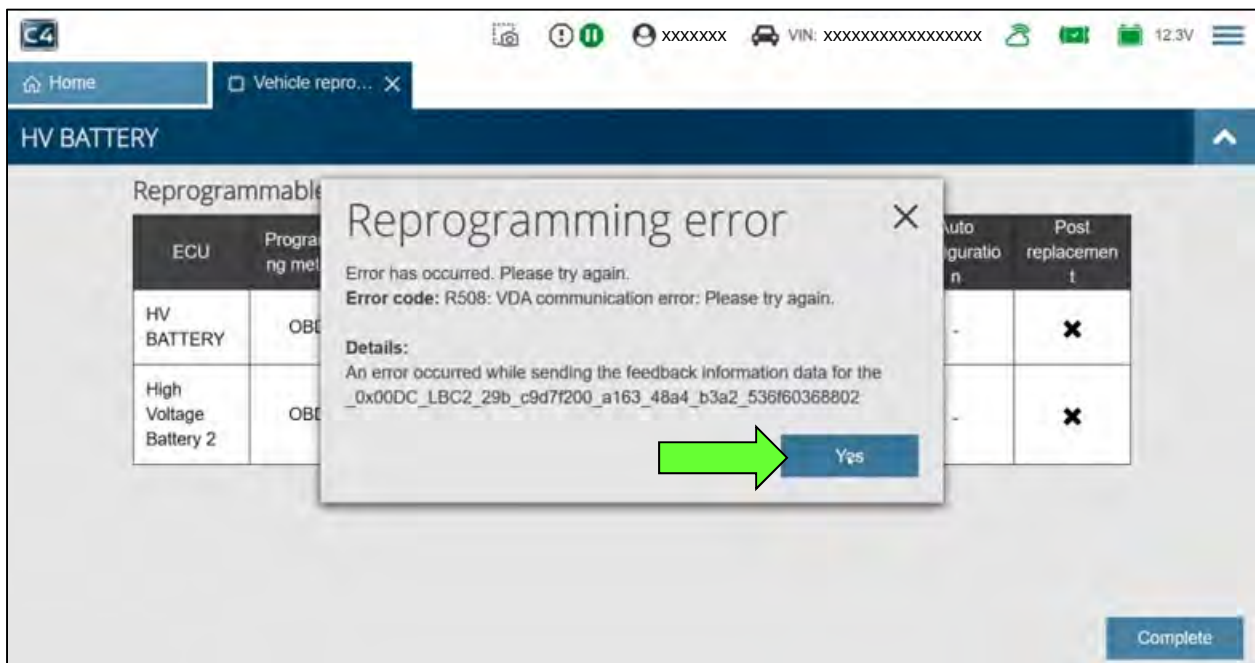


Figure 11

29. Select **Complete**.

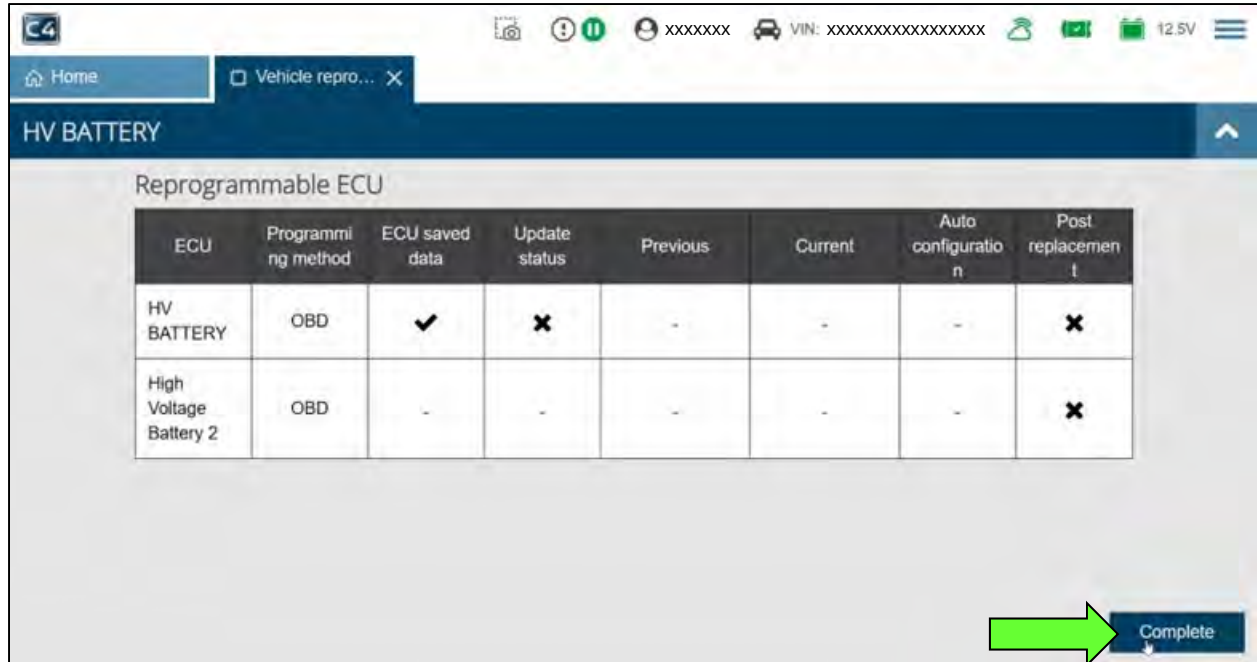


Figure 12

BMS Unit Recovery

Do not disconnect the VI3 or shut down CONSULT-4 if reprogramming does not complete.

30. Confirm that the following conditions are met:

- Check battery voltage (12.0 - 13.5 V)
- External Bluetooth® devices are OFF
- All electrical loads are OFF (e.g. A/C, headlamps, audio)
- CONSULT PC A/C adapter is plugged in
- Transmission is in Park

31. Allow system to complete self-diagnosis.

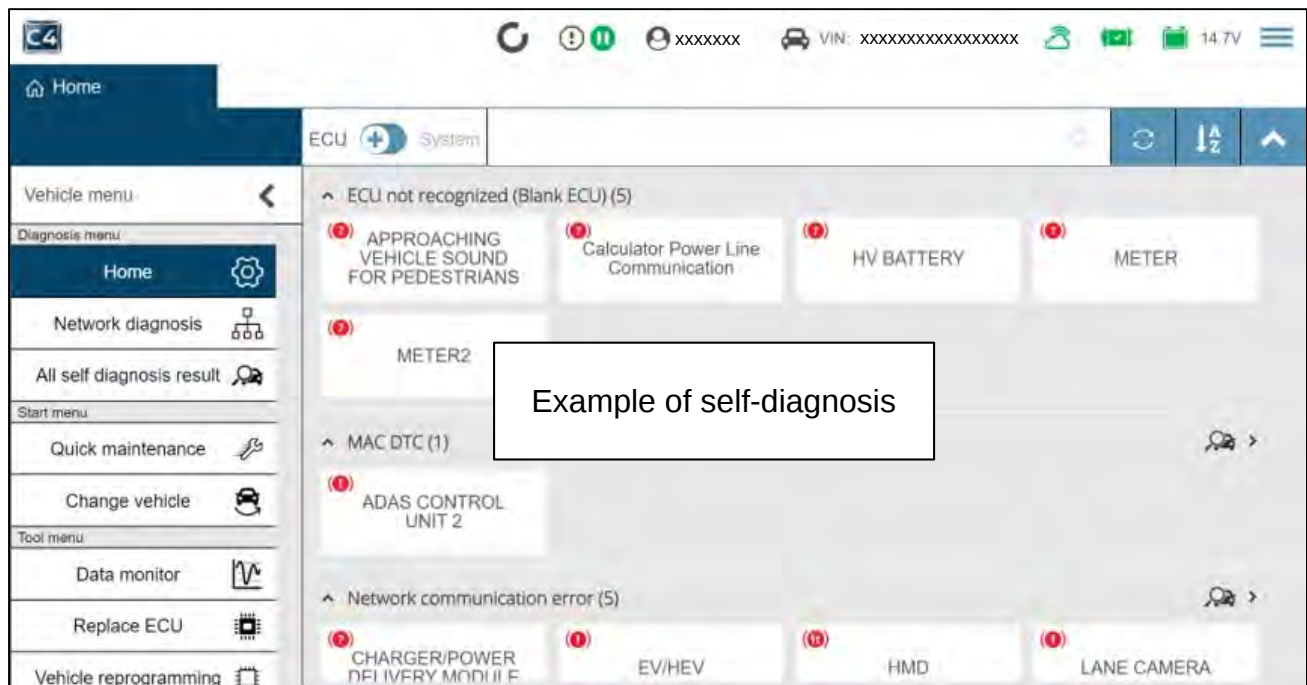


Figure 13

32. Select **Replace ECU**.

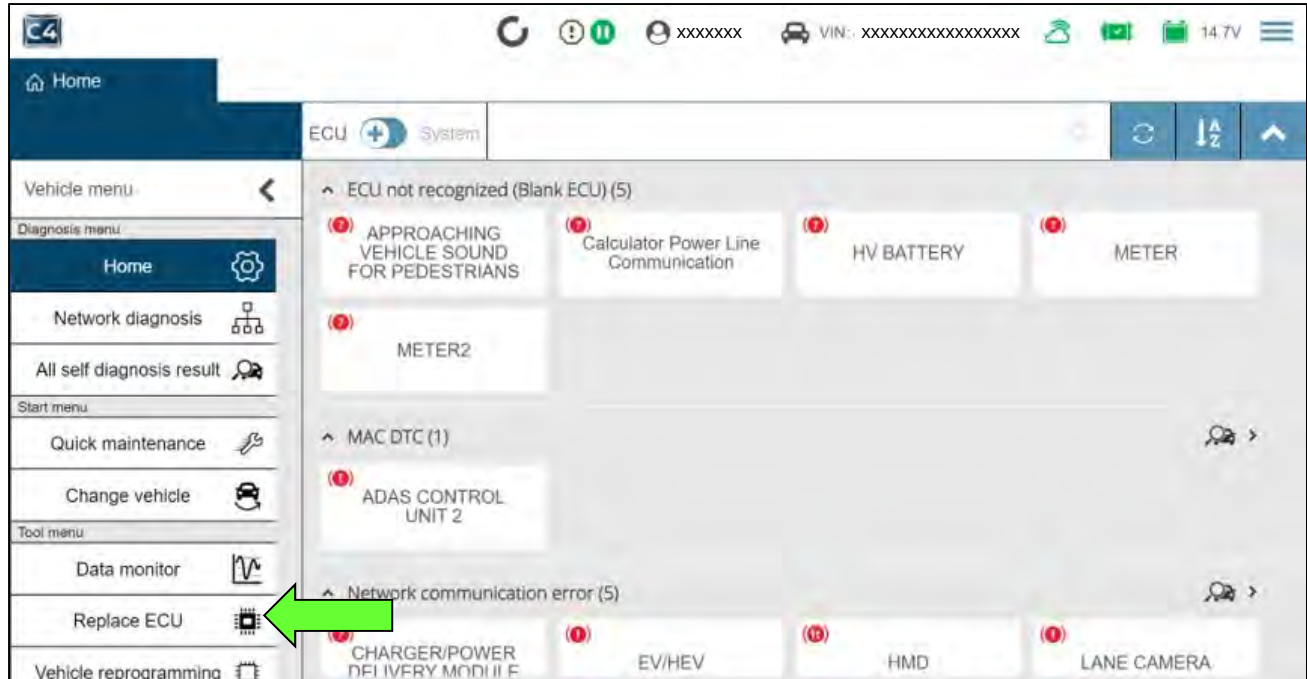


Figure 14

33. Select **HV BATTERY**.

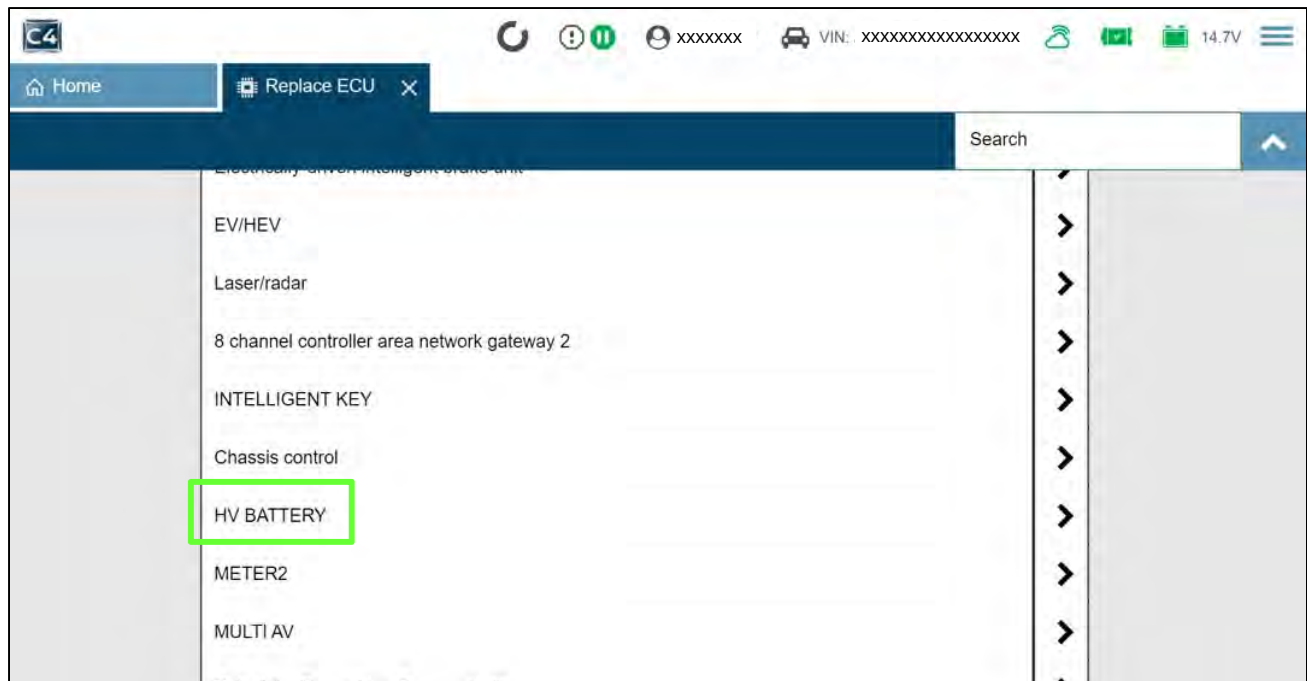


Figure 15

34. Select **Continue**.

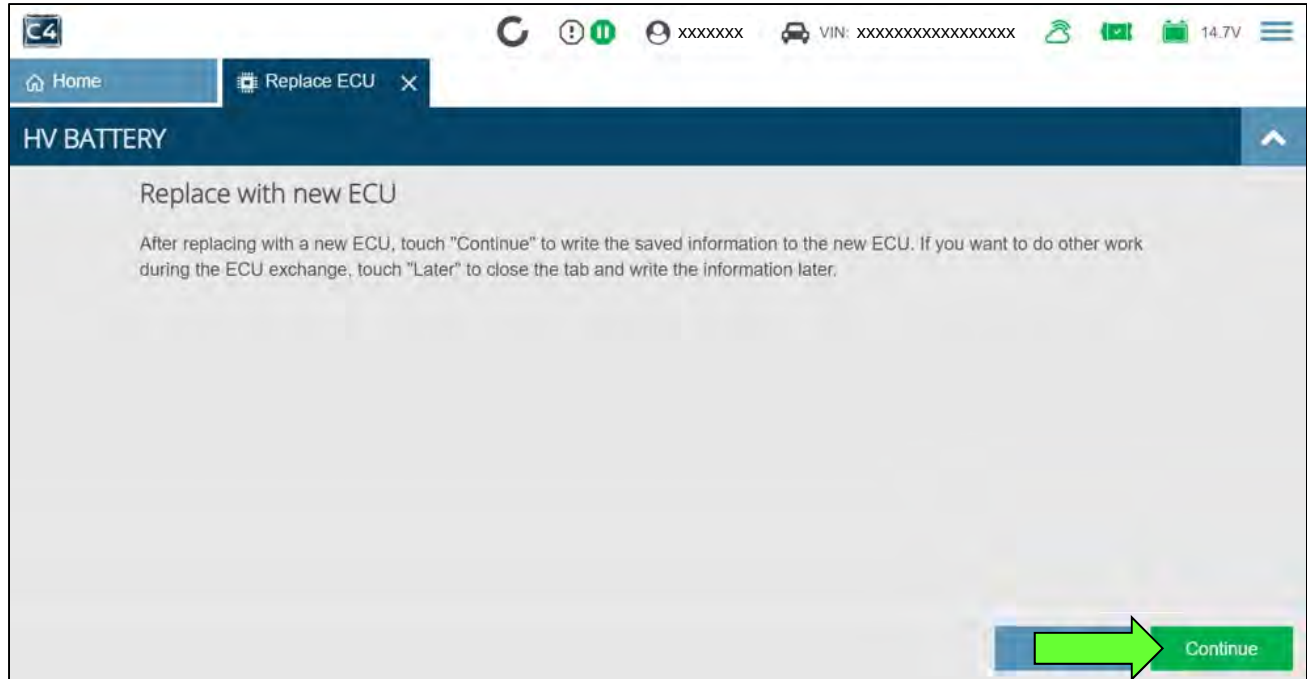


Figure 16

35. Select **Next**.

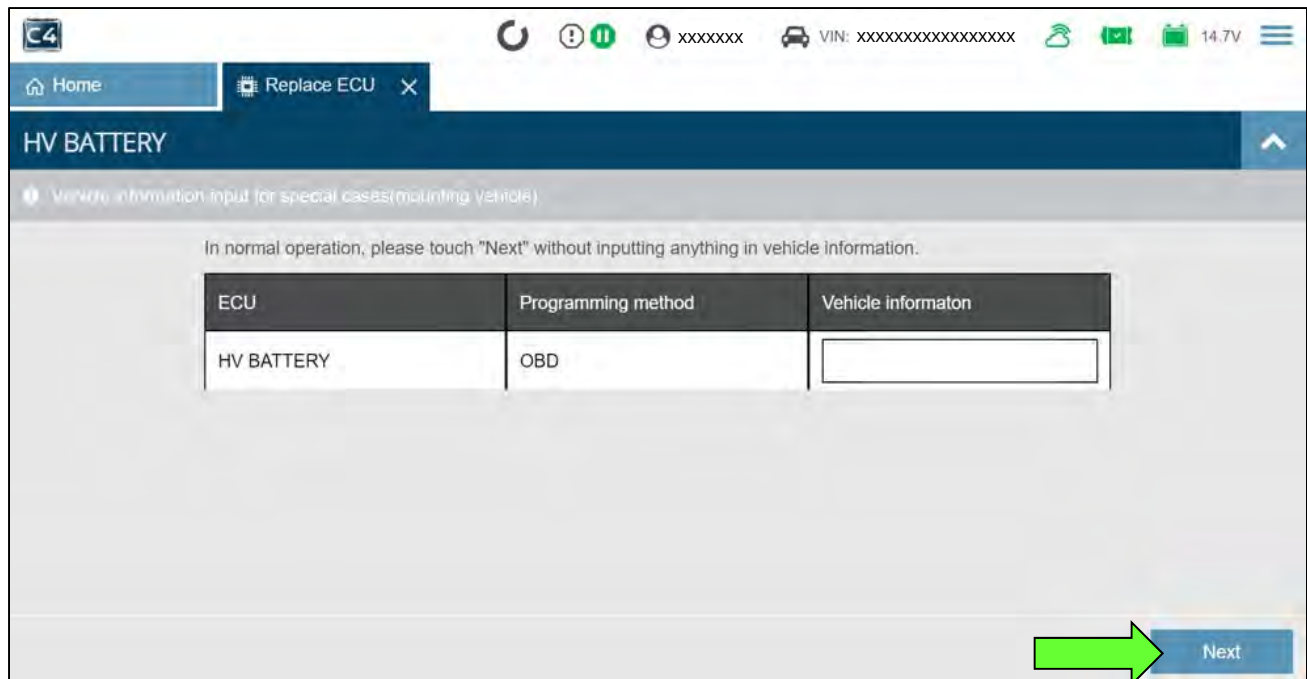


Figure 17

36. Select **Next** again.

Home Replace ECU X

HV BATTERY

Vehicle information input for special cases (mounting vehicle)

In normal operation, please touch "Next" without inputting anything in vehicle information.

ECU	Programming method	Vehicle information
High Voltage Battery 2	OBD	

Next

Figure 18

37. Select **Next** a third time.

Home Replace ECU X

HV BATTERY

Confirm programming data

Vehicle name	VIN
ARIYA	JN1AF0BA4PM405891

ECU	Programming method	Current part number	Part number after programming	Programming time (min.)	
HV BATTERY	OBD	293A00776R	293865MR1E	5	Download
High Voltage Battery 2	OBD	293A012345	293B35MR1C	5	Download

Next

Figure 19

38. Wait for all three (3) progress bars to fill to 100%, and then select **Next**.

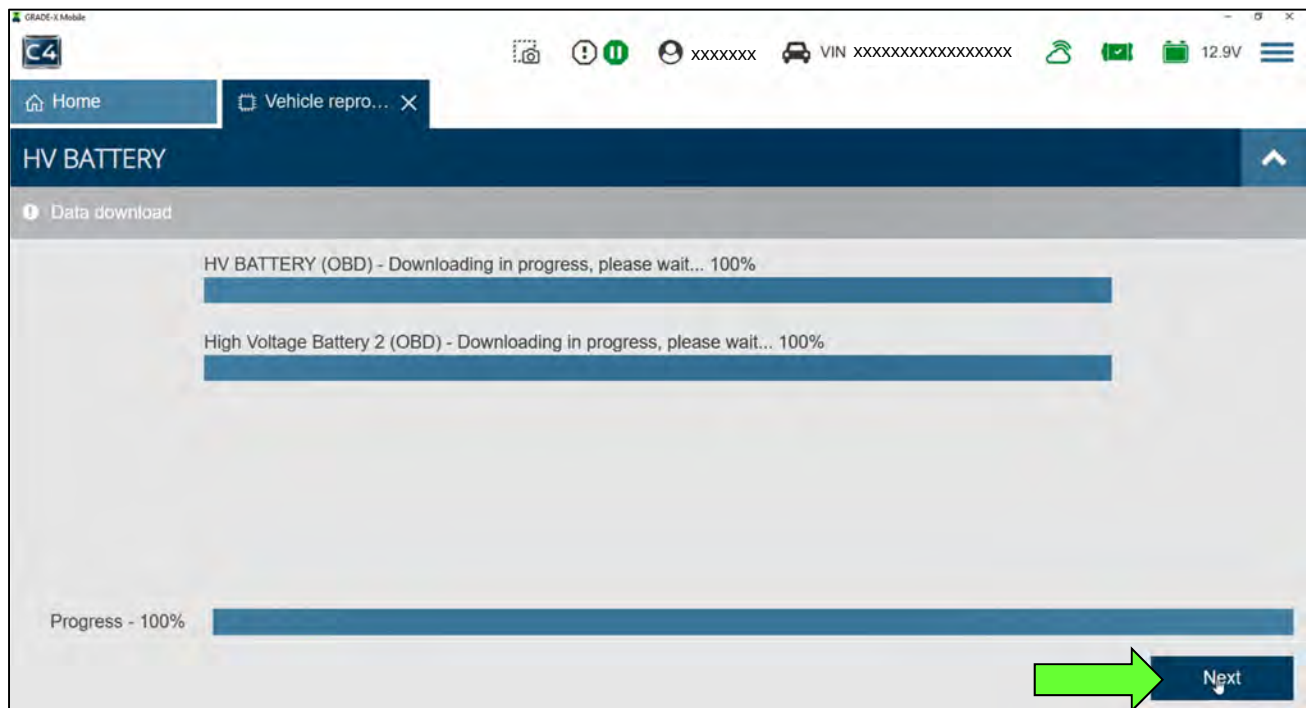


Figure 20

39. Verify the vehicle's 12 volt battery voltage is between 12.0V and 13.5V.

- Adjust the battery charger as needed.

40. When 12V, or greater, is displayed in the "Value" field (Figure 21) and the green check mark appears, select Next.

HINT: Raise or lower the 12 volt battery's voltage until the check appears.

41. After the required conditions are met, select **Next**.

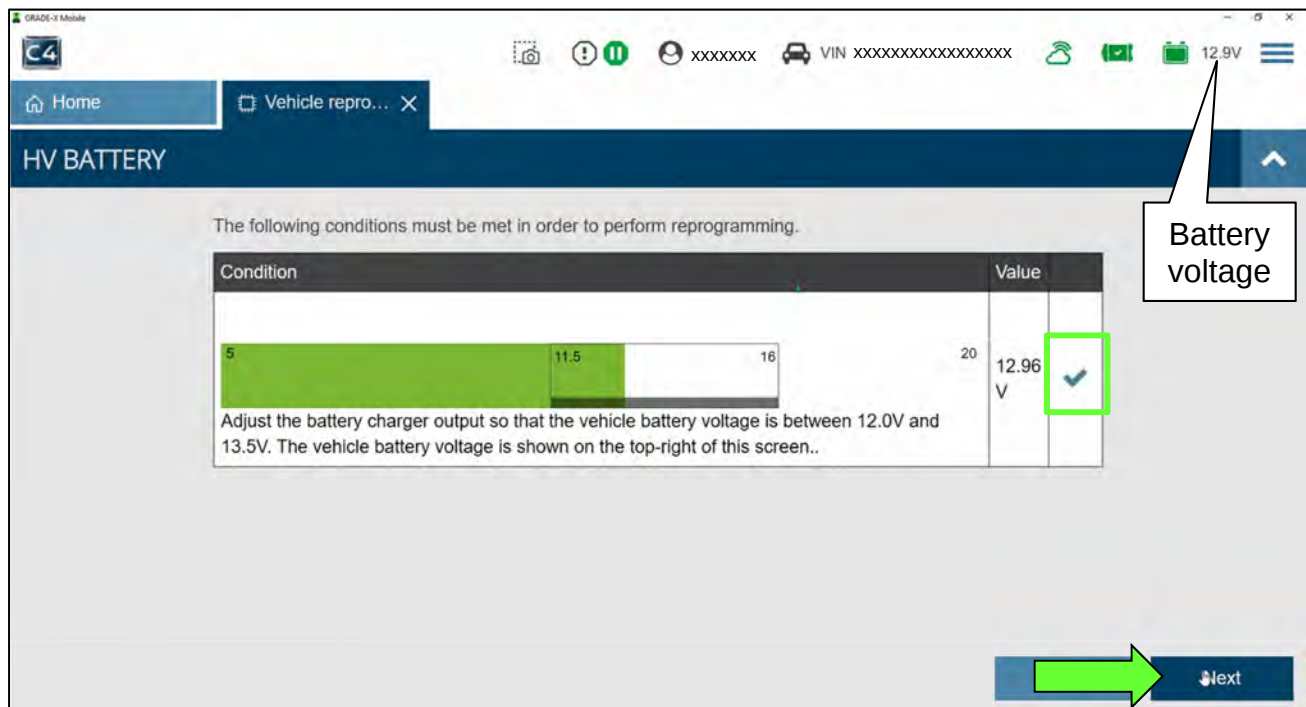


Figure 21

42. Wait for the **In Progress** bar to fill to 100%.

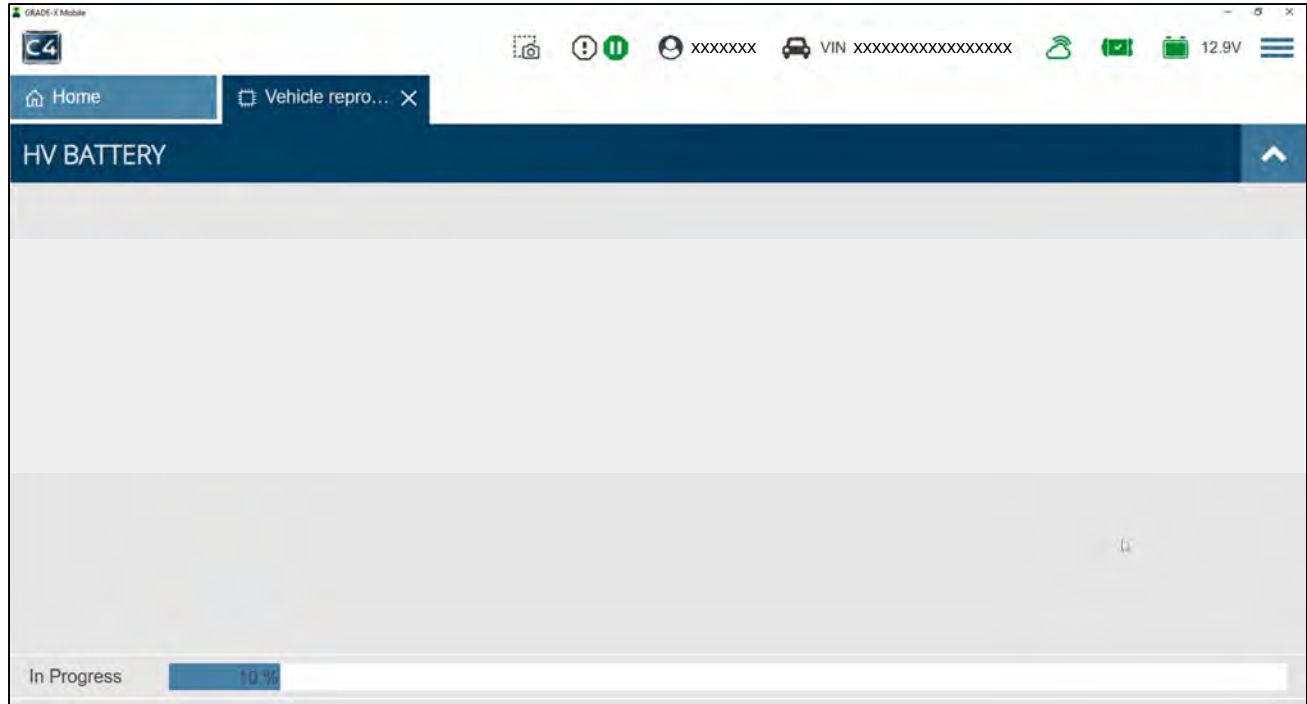


Figure 22

43. When the screen in Figure 23 is displayed, select **Next**.

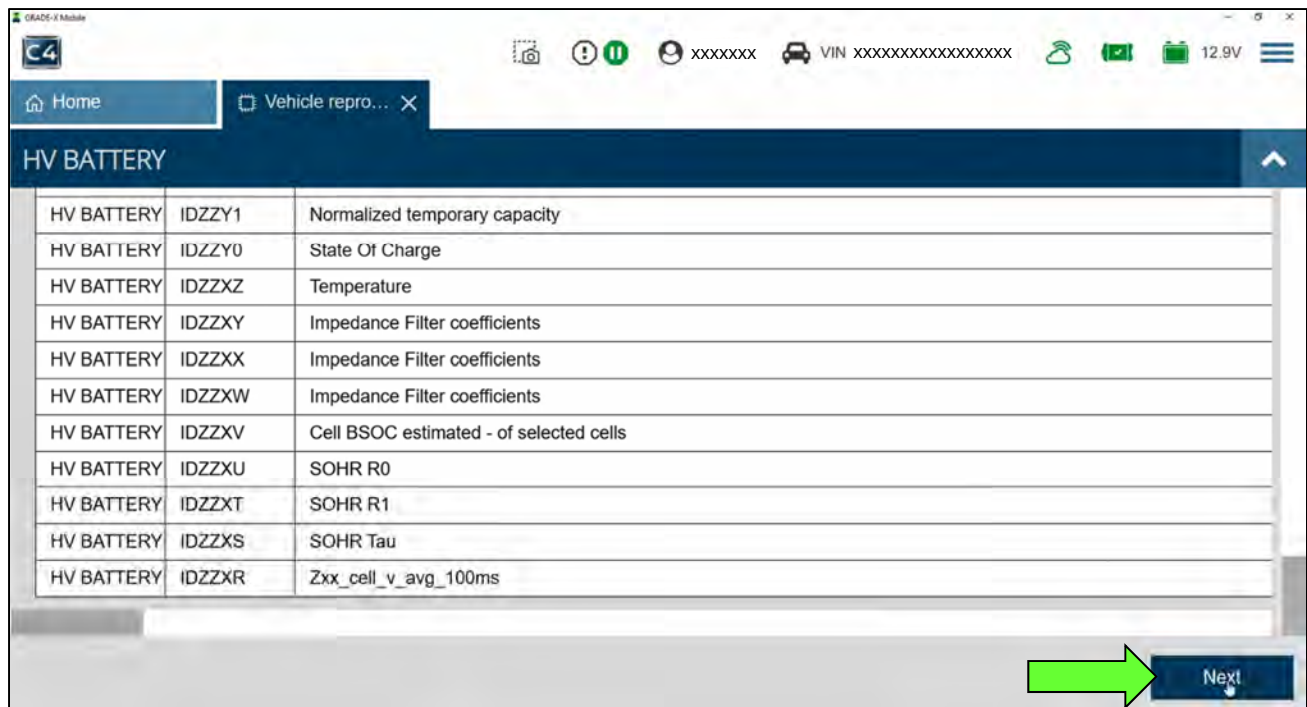


Figure 23

44. Wait for the progress bar to fill to 100%.

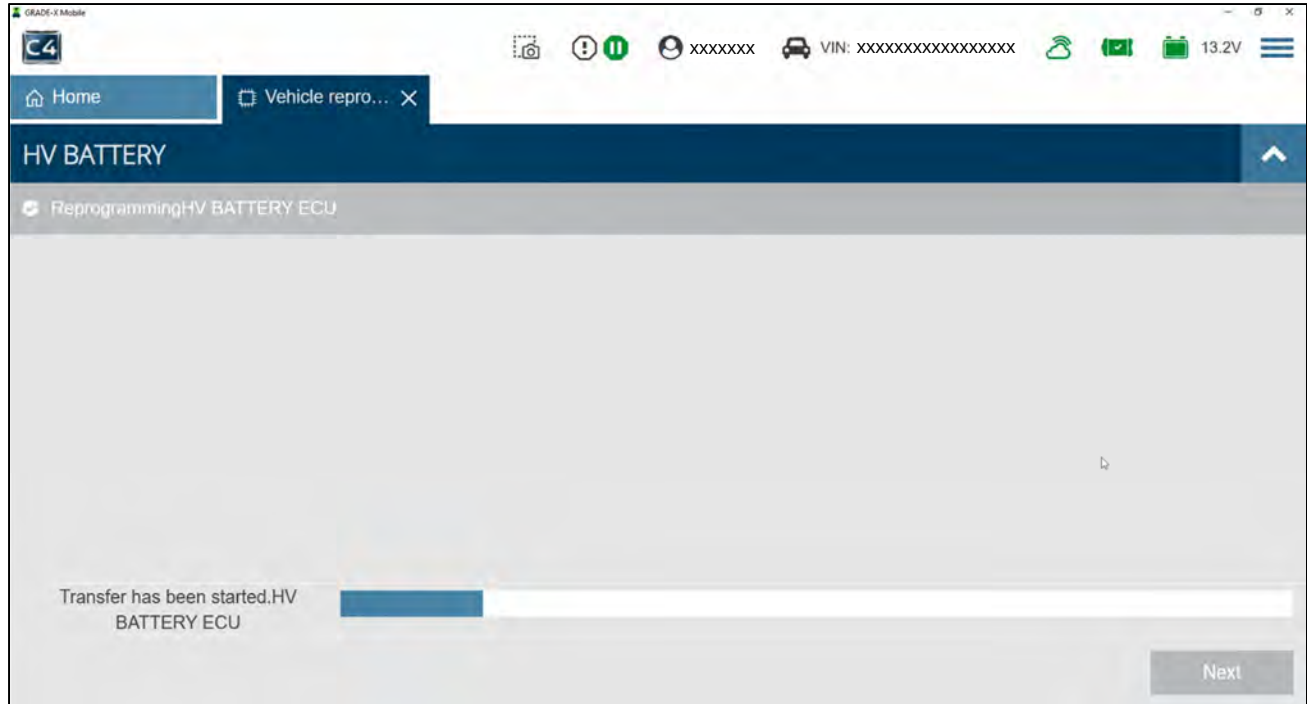


Figure 24

45. When the screen in Figure 25 is displayed, select **START**.

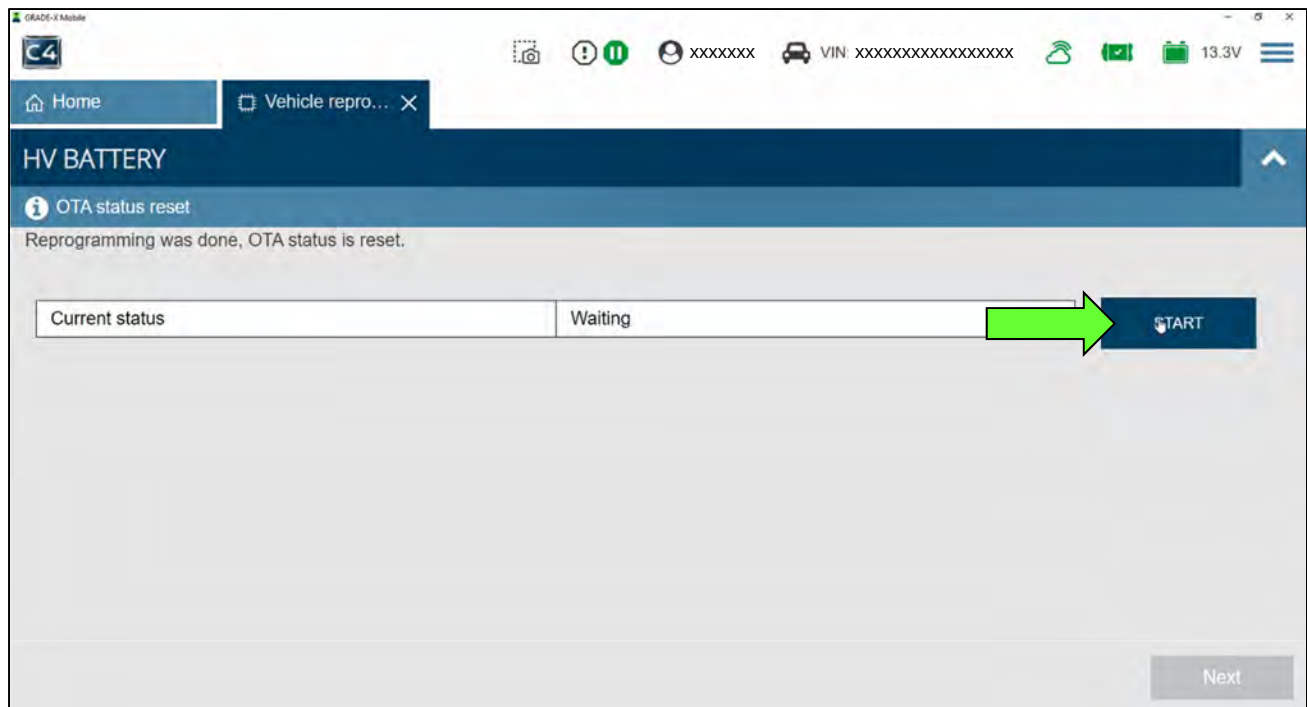


Figure 25

46. Confirm that **Current status** has changed to “Completed”, and then select **Next**.

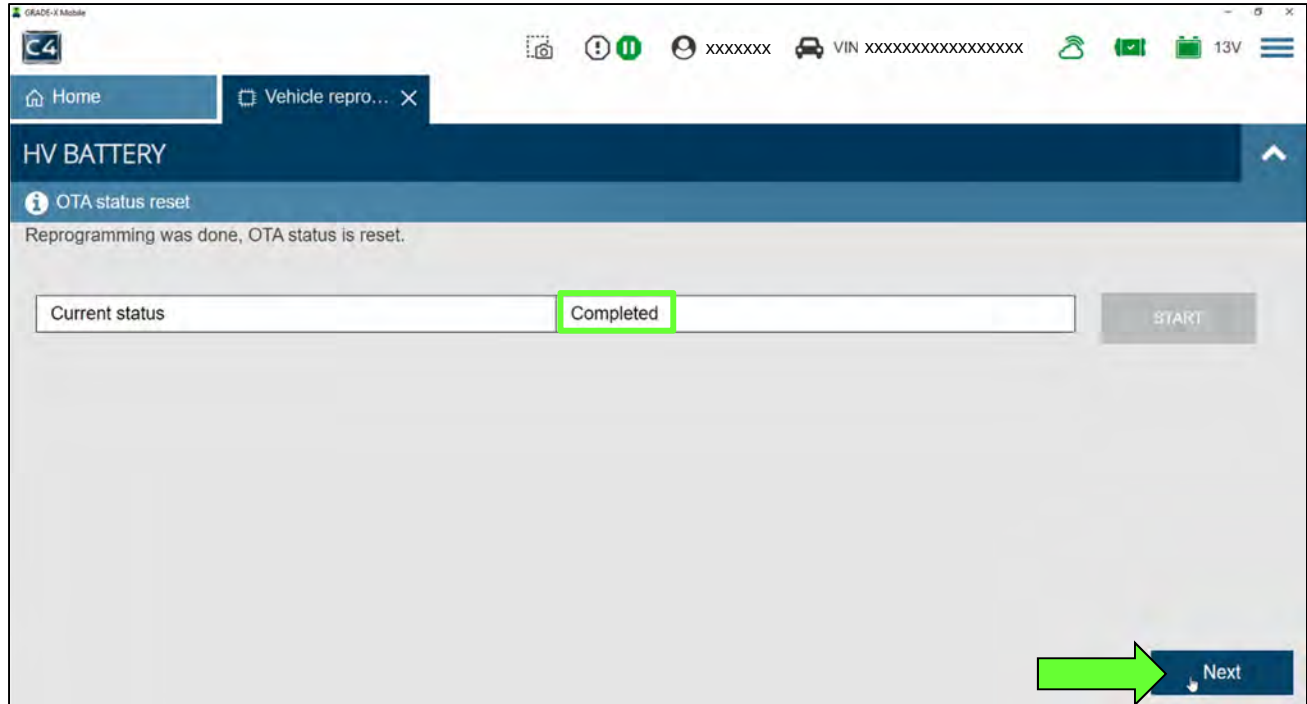


Figure 26

47. Confirm that the **IGN SW** status is “On” and has a **Waiting time** of “300” (seconds).
HINT: This is equal to 5 minutes.

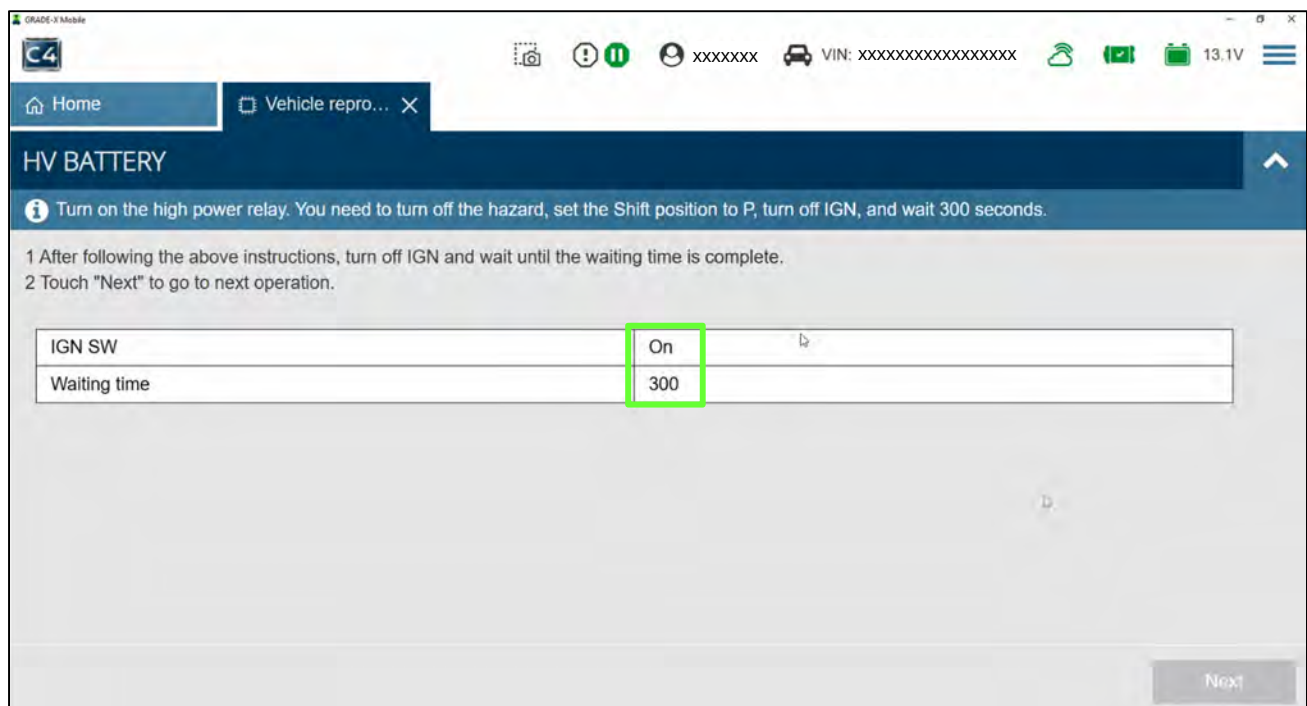


Figure 27

48. Turn the hazard lamps OFF.
49. Confirm that the vehicle is in Park (P), and then turn the vehicle IGN to OFF.
50. Verify the **IGN SW** status is now “Off” (Figure 28).
 - **Waiting time** should now count down automatically. Wait until count reaches “0”.

The screenshot shows the GRADE-X Mobile app interface. At the top, there's a status bar with icons for camera, info, pause, user, VIN, connectivity, and battery level (13.4V). Below this is a navigation bar with 'Home' and 'Vehicle repro...' tabs. The main header is 'HV BATTERY'. A blue banner contains instructions: 'Turn on the high power relay. You need to turn off the hazard, set the Shift position to P, turn off IGN, and wait 300 seconds.' Below this, two numbered steps are listed: '1 After following the above instructions, turn off IGN and wait until the waiting time is complete.' and '2 Touch "Next" to go to next operation.' A table displays the current status: 'IGN SW' is 'Off' (highlighted with a green box) and 'Waiting time' is '278'. A 'Next' button is visible at the bottom right.

IGN SW	Off
Waiting time	278

Figure 28

51. When **Waiting time** reaches “0”, select **Next**.

The screenshot shows the GRADE-X Mobile app interface, similar to Figure 28. The status bar now shows a battery level of 13.6V. The 'Waiting time' in the table has changed to '0' (highlighted with a green box). A large green arrow points to the 'Next' button at the bottom right, which is now highlighted in blue.

IGN SW	Off
Waiting time	0

Figure 29

52. Turn the vehicle ON, and then select **Next**.

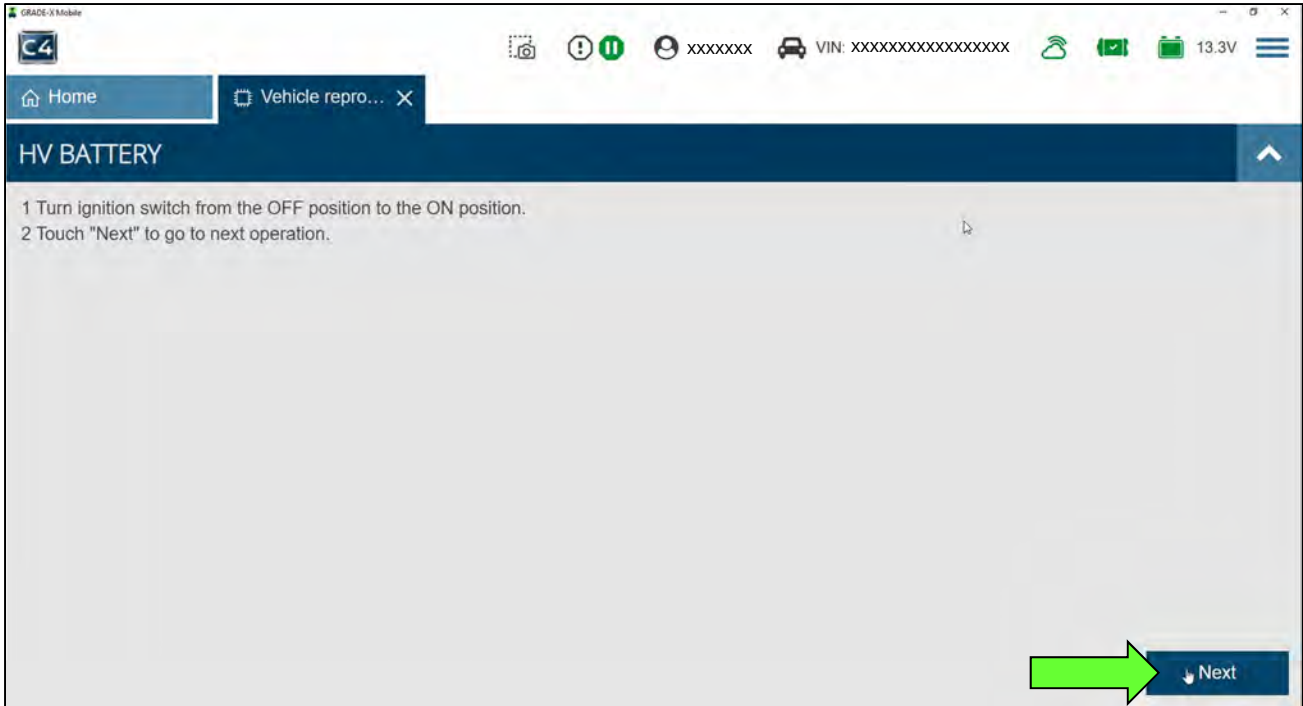


Figure 30

53. When the screen in Figure 31 is displayed, select **Next**.

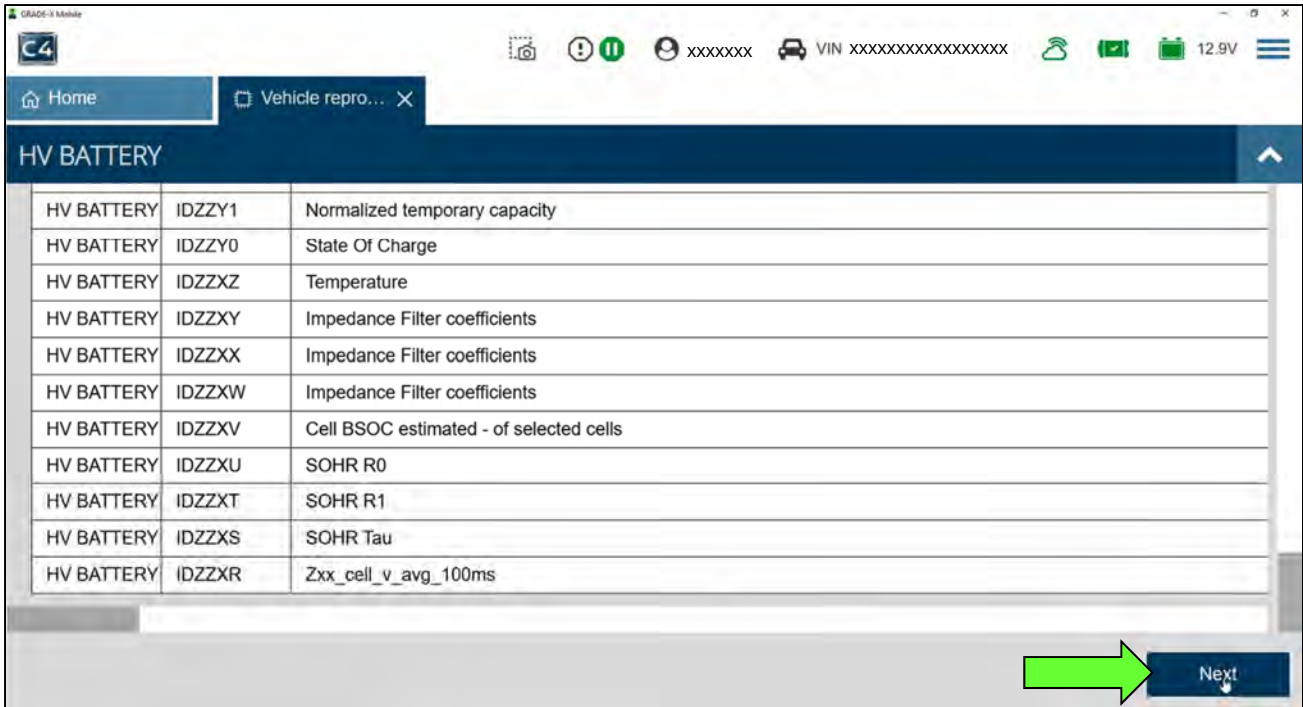


Figure 31

[illegible]

Figure 32

The screenshot shows the C4 software interface. At the top, there's a status bar with various icons and text: 'C4', a camera icon, a warning icon, a user icon labeled 'XXXXXX', a car icon labeled 'VIN XXXXXXXXXXXXXXXXXXXX', a battery icon labeled '13.1V', and a menu icon. Below this is a navigation bar with 'Home' and 'Vehicle repro...' tabs. The main area has a dark blue header 'HV BATTERY' and a sub-header 'ReprogrammingHigh Voltage Battery 2 ECU'. The main content area is mostly empty, with a small progress bar at the bottom left labeled 'Checking ECU status...High Voltage Battery 2 ECU' and a 'Next' button at the bottom right.

Figure 33

56. When the screen in Figure 34 is displayed, select **START**.

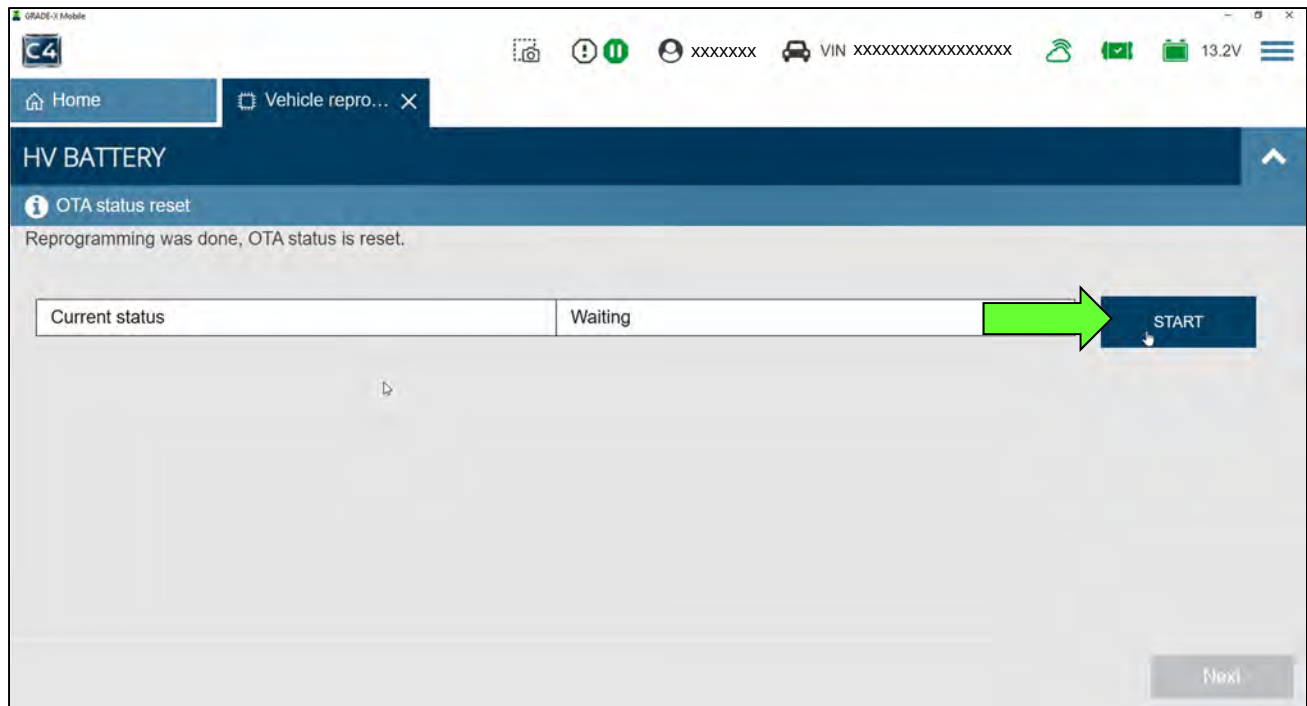


Figure 34

57. Once **Current status** has changed to "Completed", select **Next**.

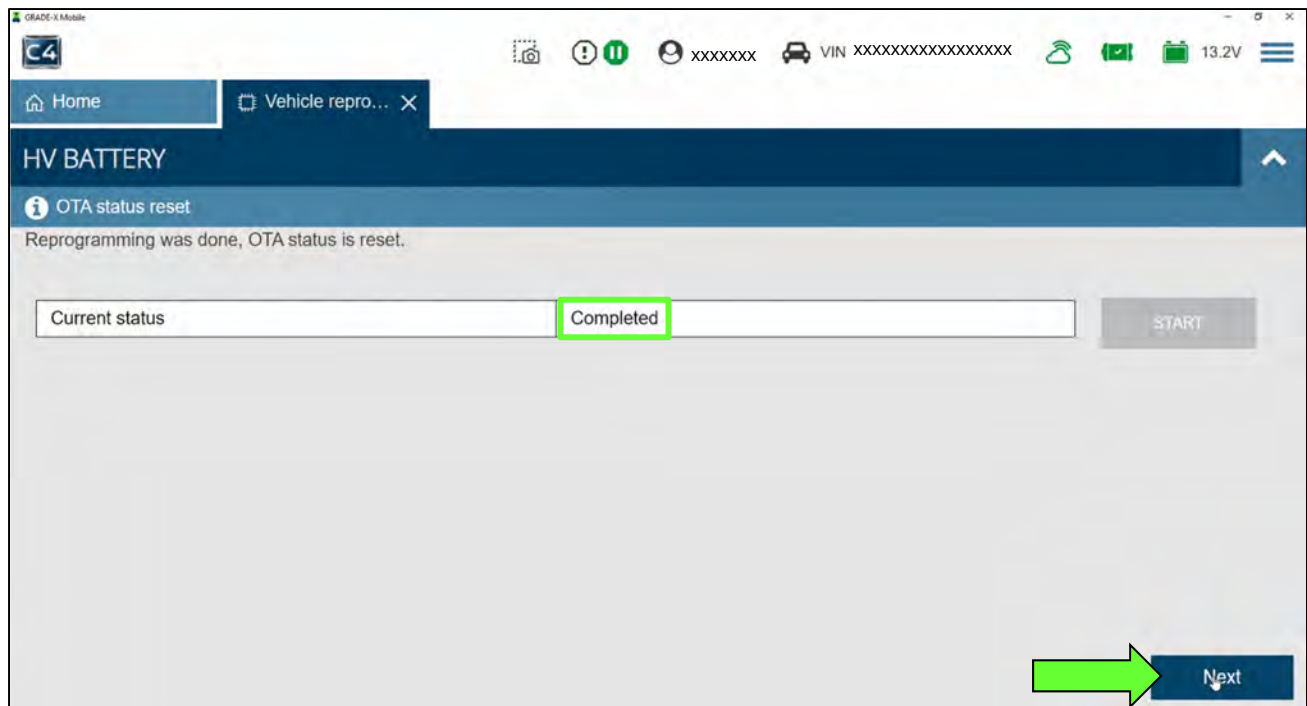


Figure 35

58. Verify the **IGN SW** status is “On”.

HINT: The vehicle should still be in Park (**P**) with the hazards OFF.

The screenshot shows the GRADE-X Mobile app interface. At the top, there's a status bar with various icons and a battery level of 13.2V. Below the status bar, there's a navigation bar with 'Home' and 'Vehicle repro...' options. The main screen is titled 'HV BATTERY'. A blue banner at the top of the main screen contains instructions: 'Turn on the high power relay. You need to turn off the hazard, set the Shift position to P, turn off IGN, and wait 300 seconds.' Below this, there are two numbered steps: '1 After following the above instructions, turn off IGN and wait until the waiting time is complete.' and '2 Touch "Next" to go to next operation.' A table displays the current status: 'IGN SW' is 'On' and 'Waiting time' is '300'. A 'Next' button is visible at the bottom right.

IGN SW	On
Waiting time	300

Figure 36

59. Turn the vehicle IGN to OFF, and then verify the **IGN SW** status is now “Off”.

- **Waiting time** should now count down automatically. Wait until count reaches “0”.

The screenshot shows the GRADE-X Mobile app interface, similar to Figure 36. The status bar at the top shows a battery level of 13.4V. The 'HV BATTERY' screen displays the same instructions and steps. The table now shows: 'IGN SW' is 'Off' and 'Waiting time' is '268'. The 'Next' button remains at the bottom right.

IGN SW	Off
Waiting time	268

Figure 37

60. When **Waiting time** reaches “0”, select **Next**.

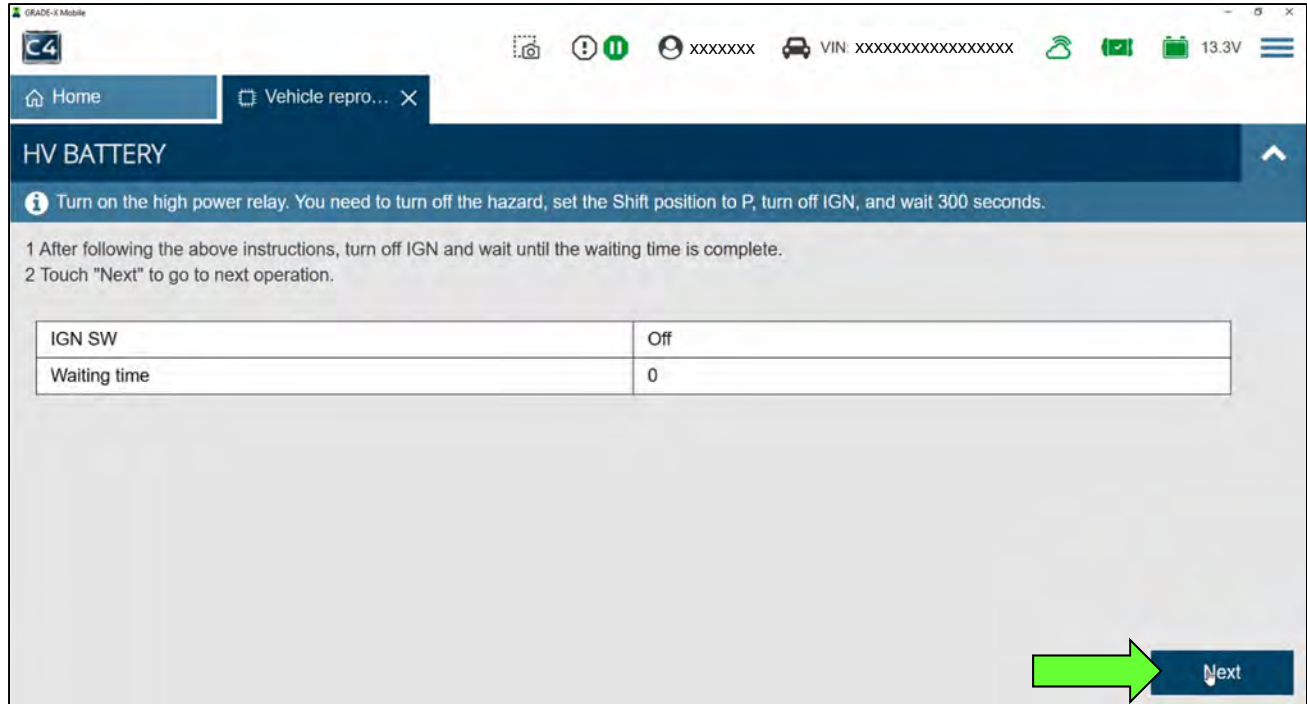


Figure 38

61. When the screen in Figure 39 is displayed, select **Next**.

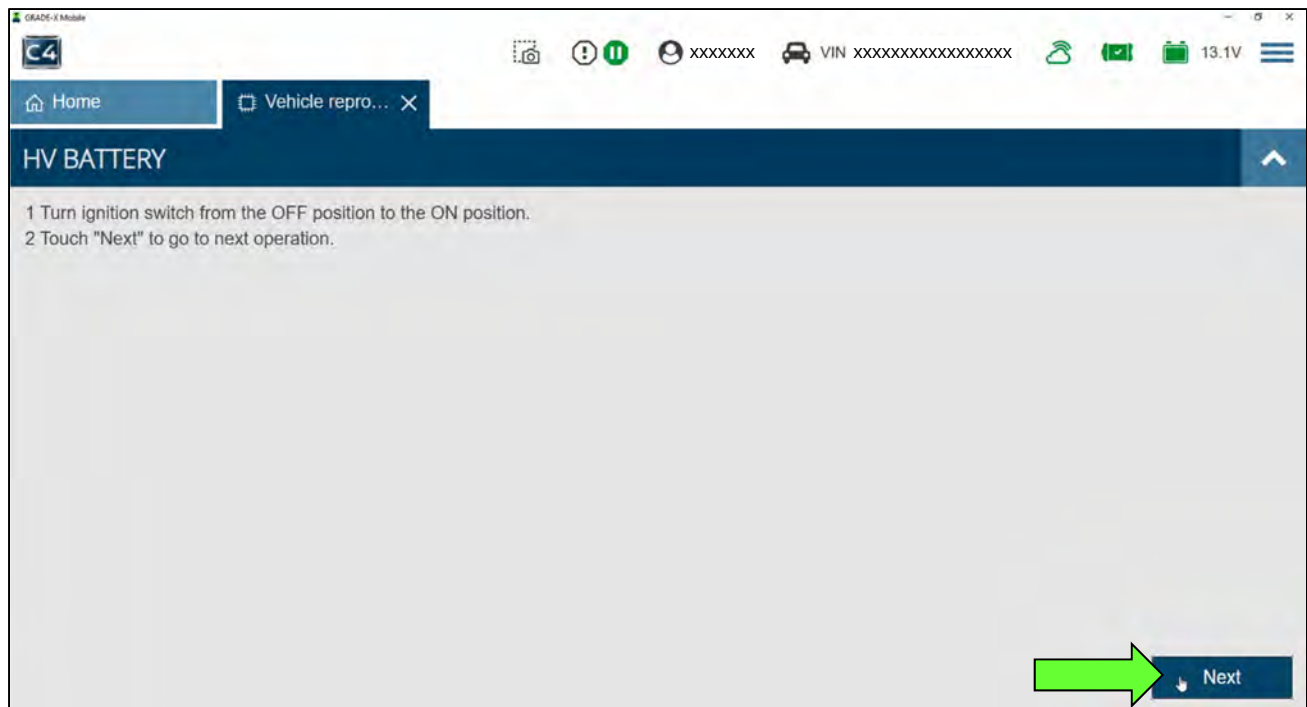
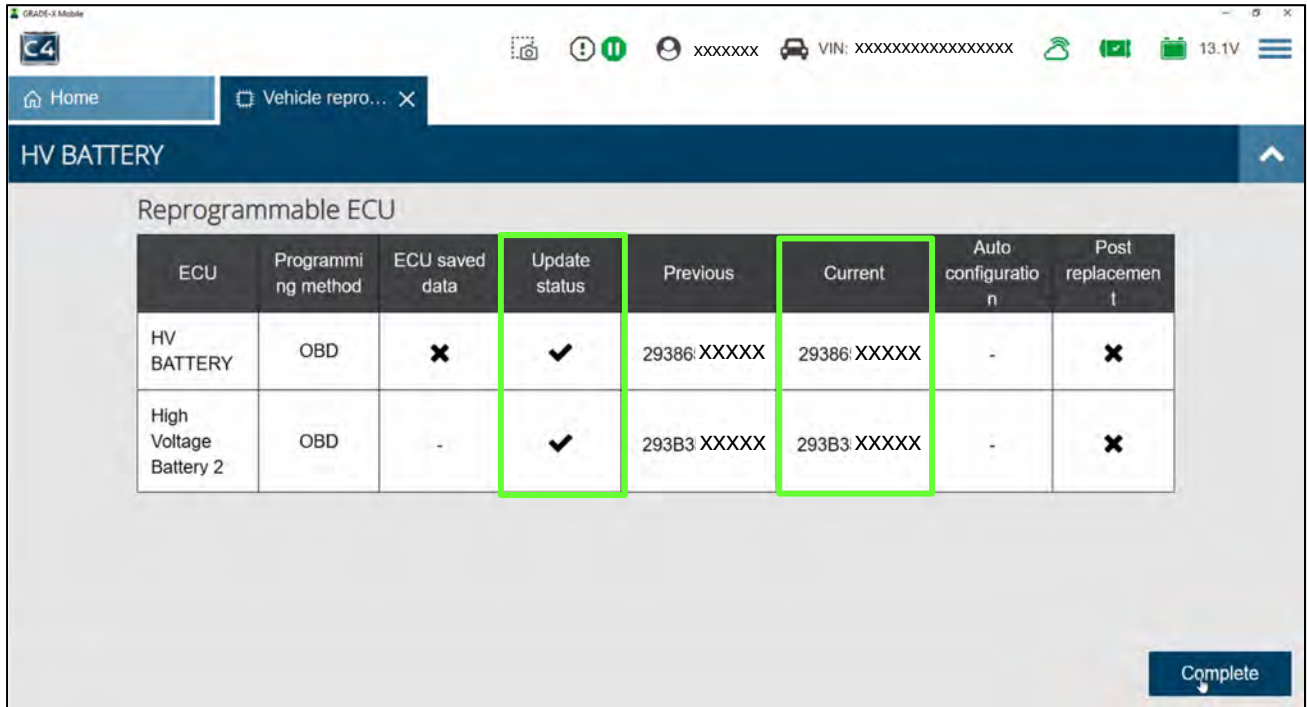


Figure 39

62. Verify that **Update status** has “check marks” for the **HV BATTERY** and the **High Voltage Battery 2** (Figure 40).
63. Verify that the **Current** part numbers are different than the **Previous** part numbers.
 - If either of the “Current” part numbers have not changed, select **Home**, and then restart the reprogramming procedure from step 15 on page 3.



The screenshot shows the C4 software interface with the 'HV BATTERY' tab selected. A table titled 'Reprogrammable ECU' displays the status of two ECUs: 'HV BATTERY' and 'High Voltage Battery 2'. The 'Update status' and 'Current' columns are highlighted with green boxes. The 'Update status' column shows checkmarks for both ECUs, and the 'Current' column shows part numbers that are different from the 'Previous' column.

ECU	Programming method	ECU saved data	Update status	Previous	Current	Auto configuration	Post replacement
HV BATTERY	OBD	✗	✓	29386:XXXXX	29386:XXXXX	-	✗
High Voltage Battery 2	OBD	-	✓	293B3:XXXXX	293B3:XXXXX	-	✗

A 'Complete' button is located at the bottom right of the interface.

Figure 40

64. Select the drop down menu icon, and then select **Print**.
 - Attach the printed confirmation to the repair order.

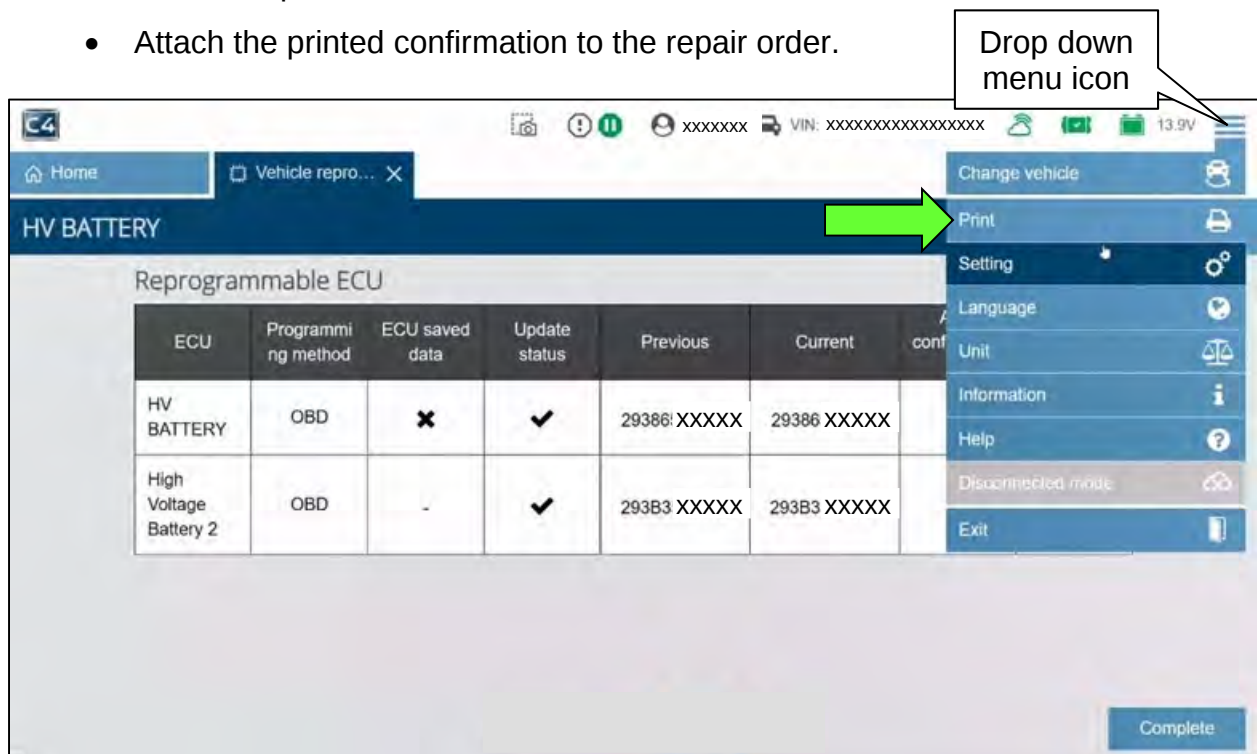


Figure 41

65. Select **Complete**.

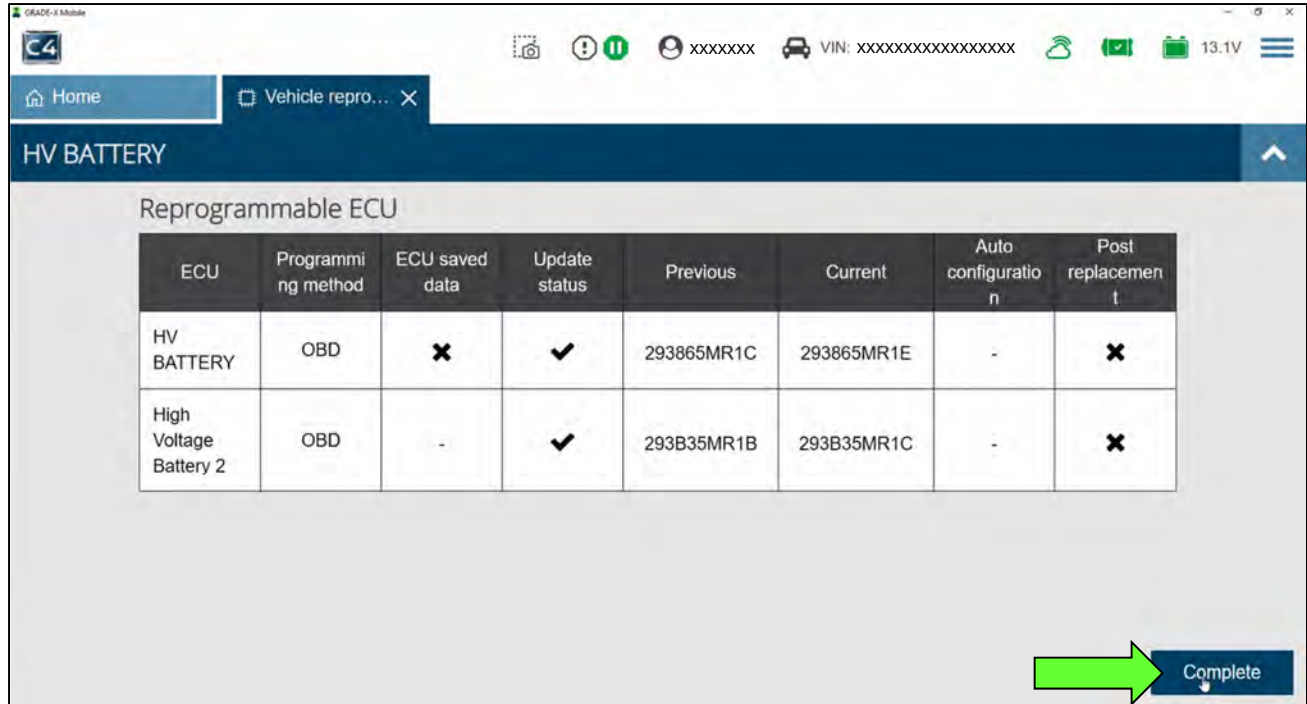


Figure 42

66. Turn the vehicle IGN to OFF.

67. Disconnect the VI3 from the vehicle.

IMPORTANT: The remainder of the procedure will not complete if this step is not followed.

68. Remove the battery charger from the vehicle's 12 volt battery, and then close the hood.

69. Close all doors, and then lock the vehicle with the key fob.

70. Wait at least 5 minutes.

IMPORTANT: Do not to disturb the vehicle during this time period to ensure the vehicle goes into sleep mode.

71. Turn the vehicle IGN ON and reconnect the VI3 to the vehicle.
72. Confirm if any Past DTCs are present.

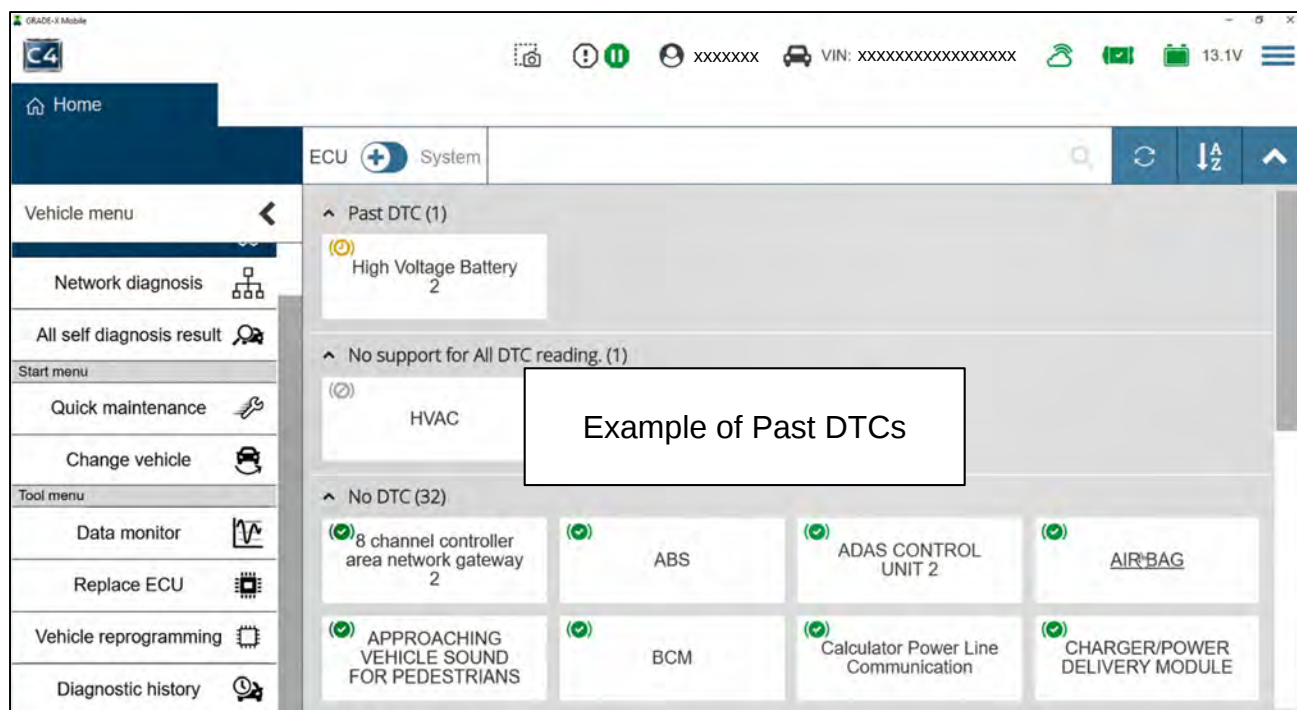


Figure 43

73. If a DTC(s) is present, perform “Erase all DTC” as follows:
 - a. Select **All self diagnosis result**.

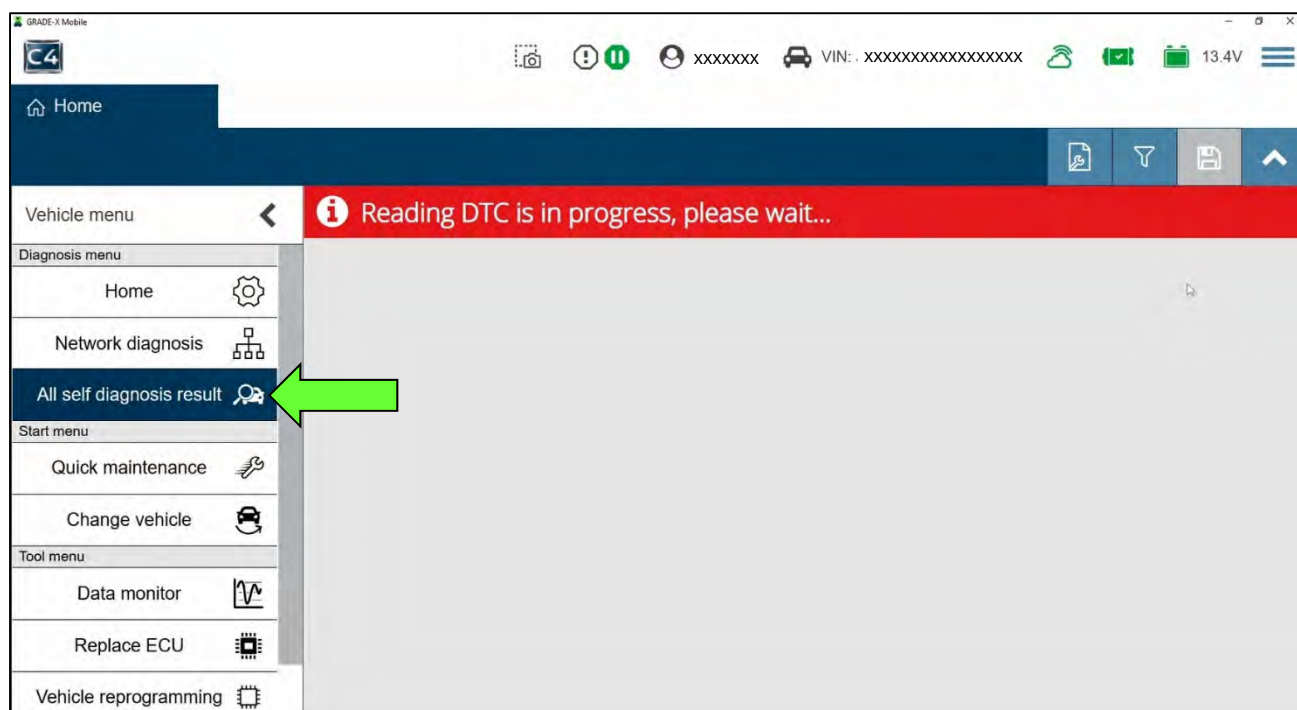


Figure 44

b. Select the “Erase DTC” icon shown in Figure 45.

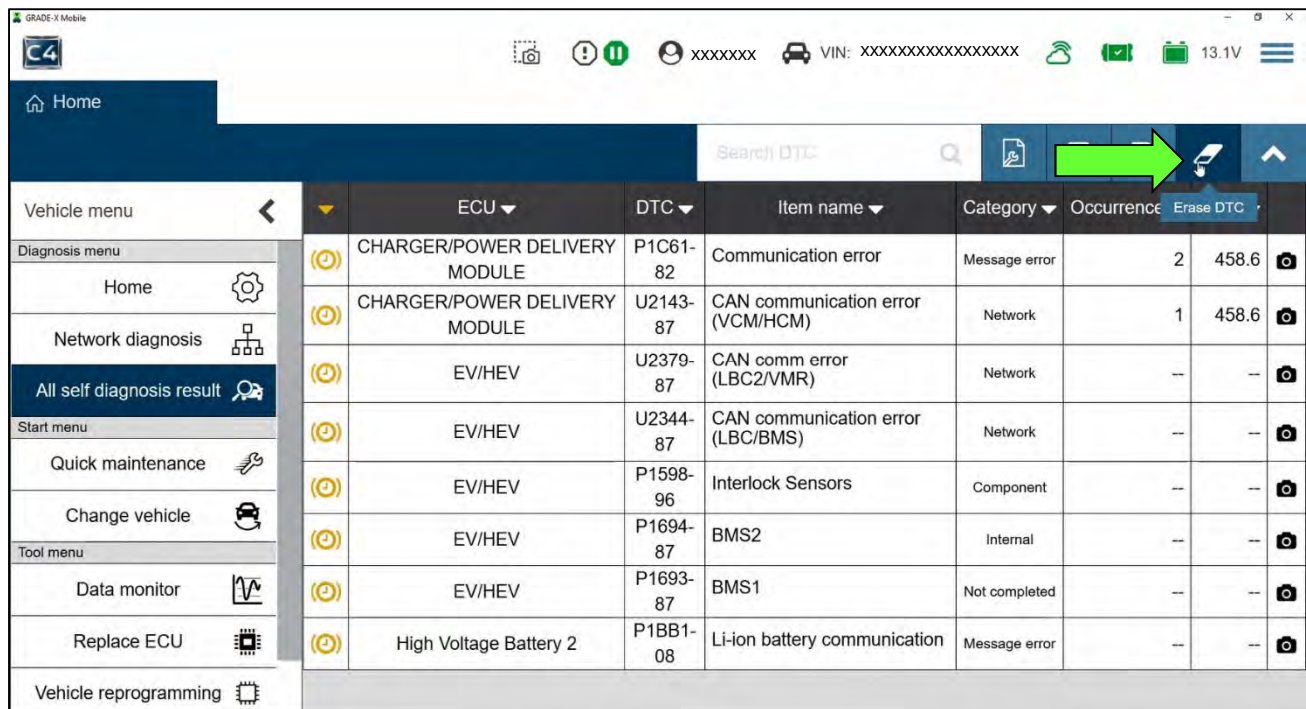


Figure 45

c. Select **Yes**.

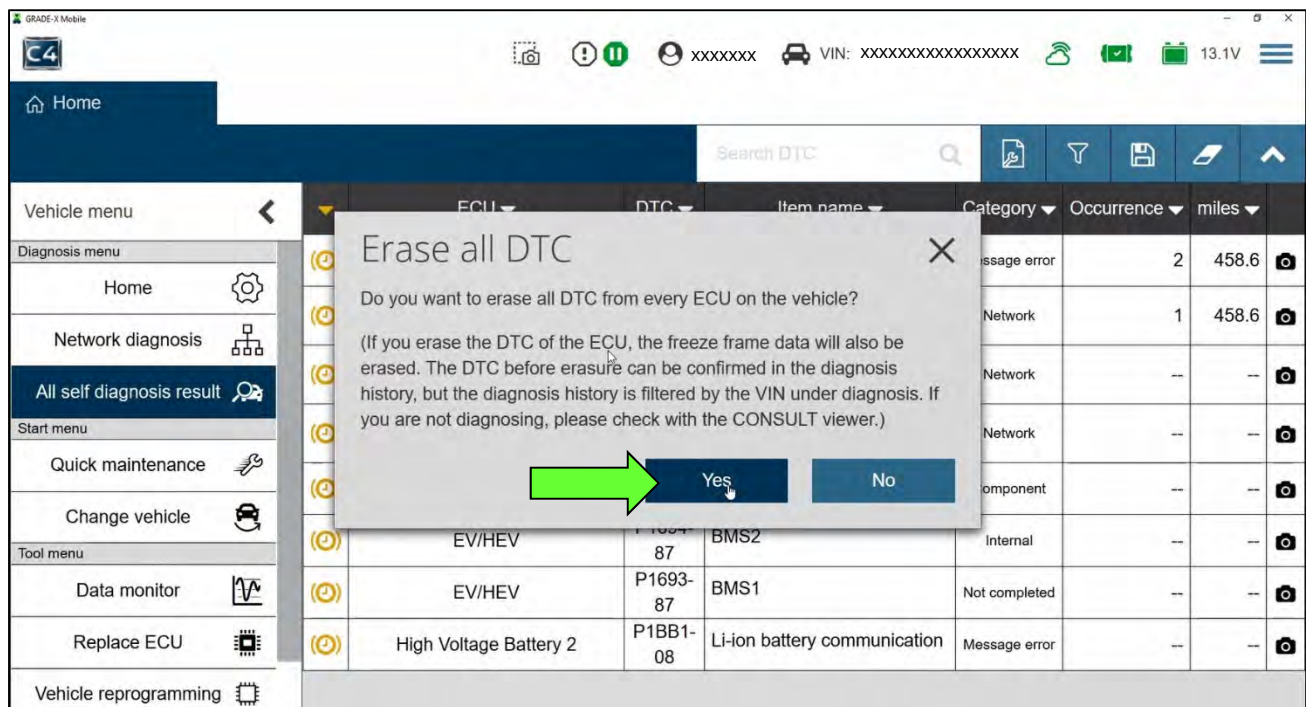


Figure 46

- d. Select **Home** and wait for the system diagnosis to complete. Confirm that all DTCs have been erased.
 - o Any remaining DTCs, other than those listed on page 1, are not covered by this bulletin. For unlisted DTCs see the ESM for further diagnostic information.

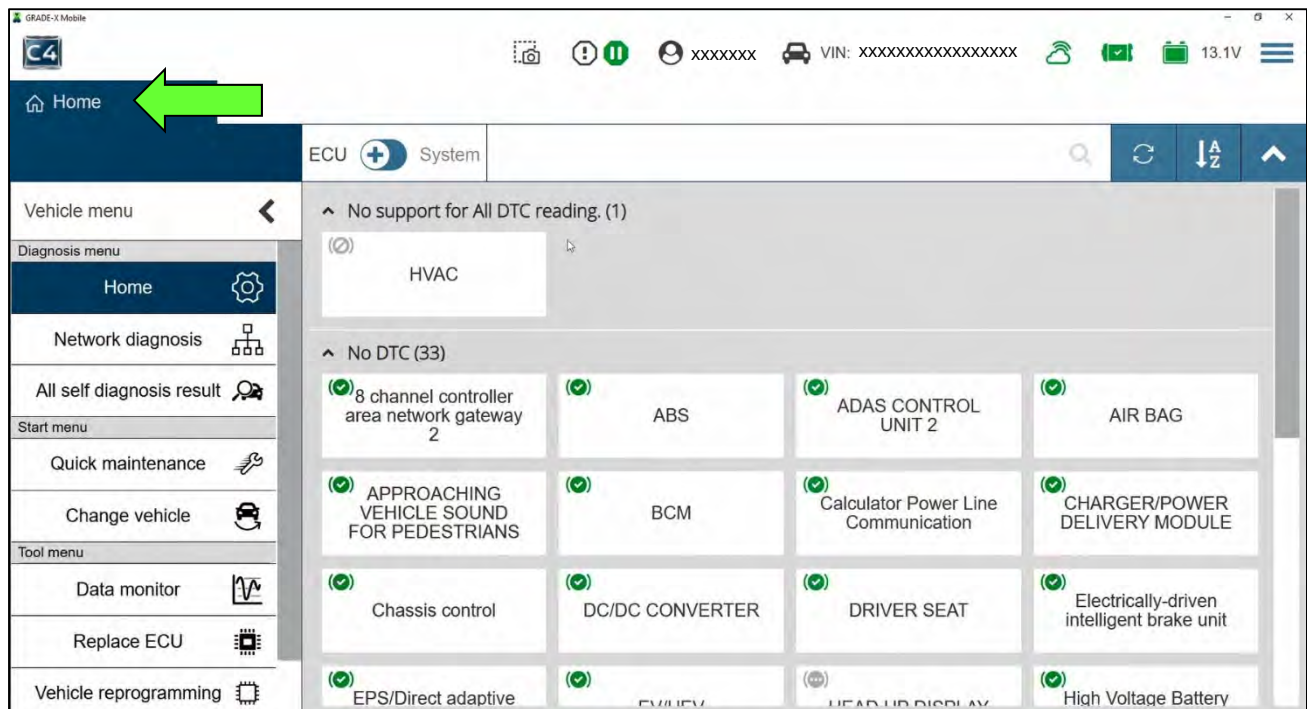


Figure 47

74. Disconnect the VI3 from the vehicle.
75. Confirm that the vehicle is operating correctly.
 - For all other concerns not listed in this bulletin, refer to the ESM for further diagnostic information.

CLAIMS INFORMATION

Submit a Primary Part (PP) type line claim using the following claims coding:

DESCRIPTION	PFP	OP CODE	SYM	DIA	FRT
Reprogram Battery Management System (BMS)	(1)	JX1RAA	ZE	32	1.1

- (1) Reference the electronic parts catalog and use the Battery Controller Assy (293A0-*****) as the Primary Failed Part (**PFP**).

AMENDMENT HISTORY

PUBLISHED DATE	REFERENCE	DESCRIPTION
November 15, 2023	NTB23-075	Original bulletin published
April 23, 2024	NTB23-075A	IF YOU CONFIRM revised

