

ROADSTER

FIRMWARE UPDATER QUICK GUIDE

ROADSTER
Firmware Update Quick Guide

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1 Introduction

1.1 Purpose

This document is provided to serve as a quick guide for how to update Roadster firmware using tools provided in the Roadster Diagnostic Software. Follow service.tesla.com/roadster for instructions on installing the Roadster Diagnostic Software.

1.2 Scope

This document is intended for Roadster enthusiasts with a strong aptitude for and experience with vehicle repair and maintenance. It is intended to be clear, accurate and current, but not exhaustive. It will not cover detailed aspects such as the acceptance or validation procedures, nor the technical environment. Should you need further and complete information about these topics, please refer to the reference documents, mentioned in this document.

1.3 General Principles

The information provided in this document is being provided as a courtesy to Roadster enthusiasts and was created during the design phase of Roadster for research and development. It is not manufacturer reference or repair and maintenance material and may not accurately reflect the actual production models or parts sold. If using this information, it is the user's responsibility to ensure that all laws and safety protocols are followed as Tesla does not provide any warranties on any work done by non-Tesla personnel whether or not the information provided here is used. It should also be understood that if parts are made or designed, or new repairs or procedures are created based on this information, Tesla will not be responsible for them, and they will not be genuine Tesla parts or accessories or Tesla-approved procedures.

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2 Supported Firmware Versions

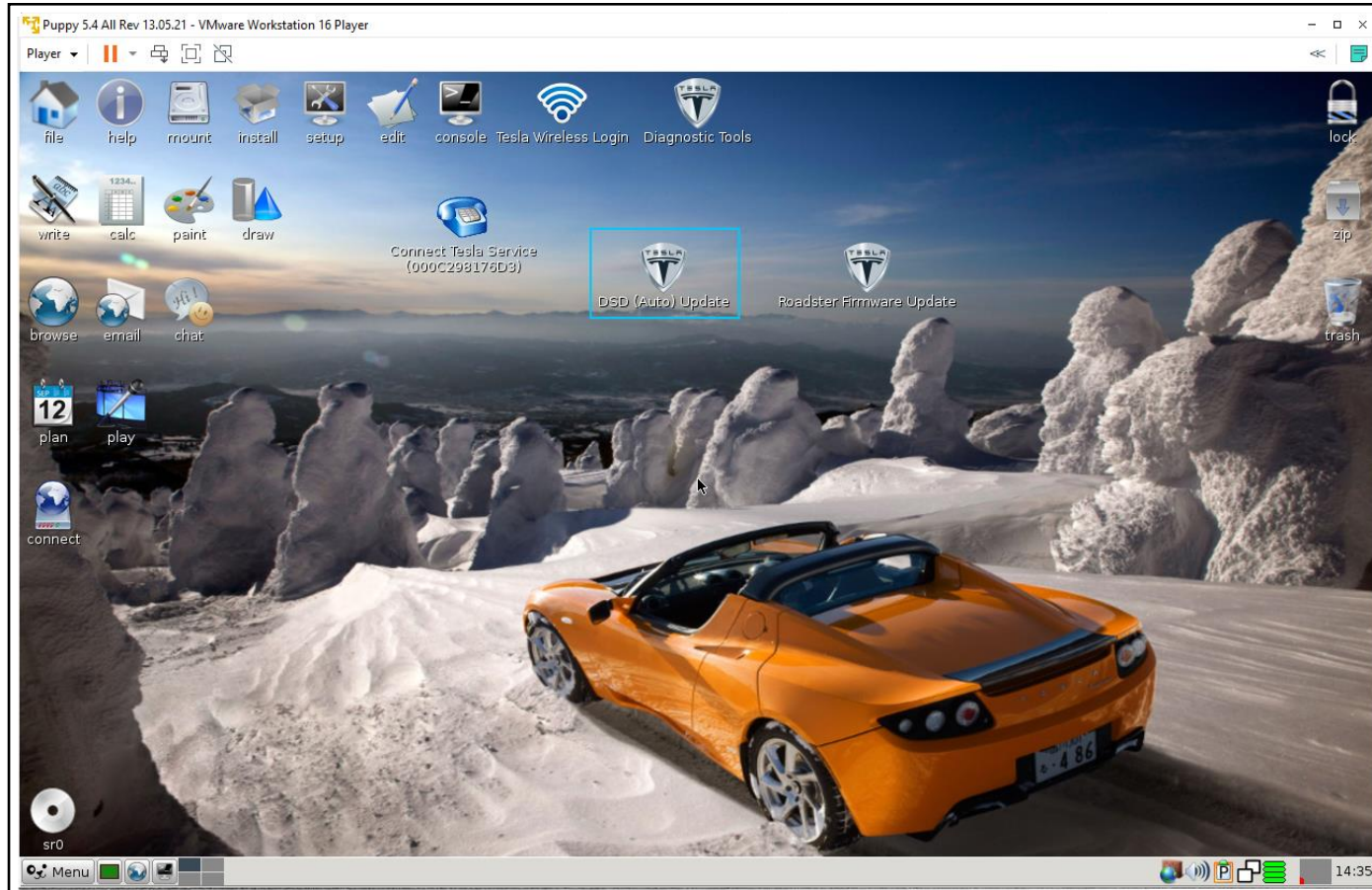
Model	Release	Notes	TPN: Battery Hardware
Roadster 1.5	3.6.12	1.5 Powertrain > 1st Gen	6001116 6003973
Roadster 1.6	3.8.2	1.X Powertrain with 3.X Upgrade > 1st Gen	1073052-00-A 1076092-00-A
Roadster 1.6	3.10.0	1.X Powertrain with 3.X Upgrade > 2nd Gen	1076092-00-B
Roadster 1.X	3.9.0	1.5 Powertrain > 2nd Gen	1566914-00-A
Roadster 2.X	4.7.2	2.X Powertrain > 1st Gen	6003532 6004995
Roadster 2.X	4.8.0	2.X Battery Powertrain > 2nd GenAlter	1566911-00-A
Roadster 3.X	5.1.2	2.X Powertrain with 3.X Upgrade > 1st Gen	1055804-00-A
Roadster 3.X	5.2.0	2.X Powertrain with 3.X Upgrade > 2nd Gen	1055804-00-B

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3 Download Service Device (DSD) Updater

The Download Service Device (DSD) Update tool is used to automatically update Roadster firmware to a specific supported firmware version depending on the Model. The update includes an automatic update of all modules in the vehicle.



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3.1 How to use DSD Updater

1. Double-click on the “DSD (Auto) Update” application to open the FW Updater window.

- **Note**

Scanning will stop the Vehicle Management System (VMS).

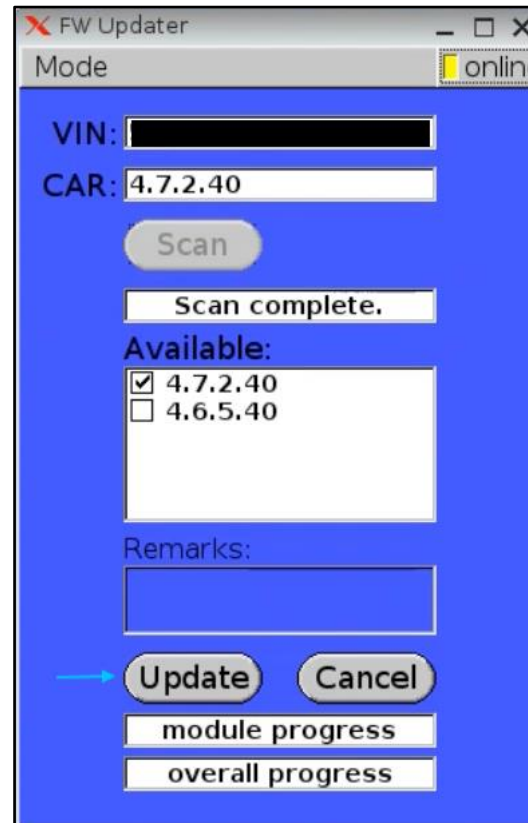
2. On the FW updater window, select “SCAN”:



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3. Press the "UPDATE" button to proceed:



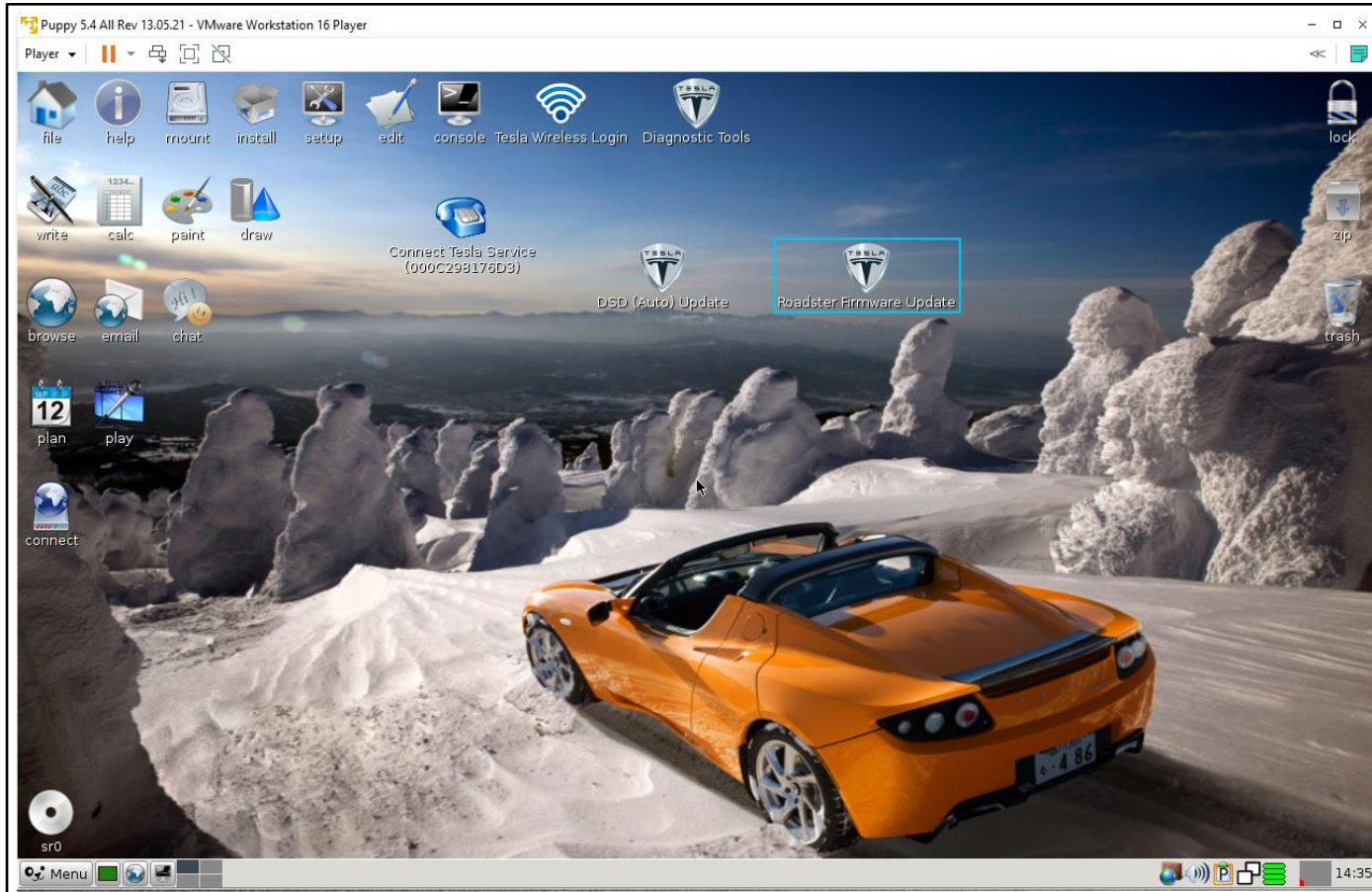
4. Confirm all systems are updated. The FW Updater window will display "Reboot complete.".

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4 Roadster Firmware Update

In some cases, the DSD update tool will be unable to successfully update all modules. The Roadster Firmware Update tool is used as a secondary to the DSD updater to manually update modules. The instructions below describe an example where the Battery Safety Monitor (BSM) did not successfully update.



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4.1 How to use Roadster Firmware Update

1. Perform a scan using Roadster Firmware Update. The BSM field may display as empty.

Download Service Device

Firmware | Comm Status | Factory

Firmware to Download: 5.2.0 : vehicle-firmware-5.2.0.43

Firmware in Car: vehicle-firmware-5.2.0.43

Version	ID	Component	Version	ID	Component
15.6.0	R4	<input type="checkbox"/> vms	15.6.0	R4	
2.8.0	R4	<input type="checkbox"/> vmsio	2.8.0	R4	
2.6.0	R4	<input type="checkbox"/> linux	2.6.0	R4	
1.66.0	R1	<input type="checkbox"/> bsm		R1	
1.43.0	R2	<input type="checkbox"/> csb	1.43.0	R2	
1.21.0	R2	<input type="checkbox"/> hmb 1	1.21.0	R2	
3.48.0	R3	<input type="checkbox"/> swp	3.48.0	R3	
3.22.0		<input type="checkbox"/> vds	3.22.0	R00	
4.83.1	R42	<input type="checkbox"/> dmc			
4.16.0	R40	<input type="checkbox"/> pm			
		<input type="checkbox"/> dfc			
2.0.1	R4	<input type="checkbox"/> tcm			
6.28.0	R3	<input type="checkbox"/> hvac			
A-AE		<input type="checkbox"/> ip			
1.3.0		<input type="checkbox"/> cpld			
2.19.0	R3	<input type="checkbox"/> sh			

Scan **Download**

req_version:tcm :1: 2.0.1 : 0.0.0 : TCM-R4 :
req_version:pm :1: 4.16.0 : 0.0.0 : PM-R40 :

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2. Check the “bsm” box and click “Download”. After BSM is downloaded, the ‘R1’ field under “Firmware in Car” will populate:

Download Service Device

Firmware | Comm Status | Factory

Firmware to Download: : 5.2.0 : vehicle-firmware-5.2.0.43

Firmware in Car: vehicle-firmware-5.2.0.43

Version	IR	Component	Version	IR	Component
15.6.0	IR4	<input type="checkbox"/> vms	15.6.0	IR4	
2.8.0	IR4	<input type="checkbox"/> vmsio	2.8.0	IR4	
2.6.0	IR4	<input type="checkbox"/> linux	2.6.0	IR4	
1.66.0	IR1	<input checked="" type="checkbox"/> bsm		IR1	
1.43.0	IR2	<input type="checkbox"/> csb	1.43.0	IR2	
1.21.0	IR2	<input type="checkbox"/> lbmb 1	1.21.0	IR2	
3.48.0	IR3	<input type="checkbox"/> swp	3.48.0	IR3	
3.22.0		<input type="checkbox"/> vds	3.22.0	IR00	
4.83.1	IR42	<input type="checkbox"/> dmc			
4.16.0	IR40	<input type="checkbox"/> pm			
		<input type="checkbox"/> dfc			
2.0.1	IR4	<input type="checkbox"/> tcm			
6.28.0	IR3	<input type="checkbox"/> hvac			
A-AE		<input type="checkbox"/> ip			
1.3.0		<input type="checkbox"/> cpld			
2.19.0	IR3	<input type="checkbox"/> sh			

Scan **Download**

req_version:tcm :1: 2.0.1 : 0.0.0 : TCM-R4 :
req_version:pm :1: 4.16.0 : 0.0.0 : PM-R40 :

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Download Service Device

Firmware Comm Status Factory

Firmware to Download : 5.2.0 : vehicle-firmware-5.2.0.43

Firmware in Car : vehicle-firmware-5.2.0.43

15.6.0	IR4	<input type="checkbox"/> vms	IR4	15.6.0
2.8.0	IR4	<input type="checkbox"/> vmsio	IR4	2.8.0
2.6.0	IR4	<input type="checkbox"/> linux	IR4	2.6.0
1.66.0	IR1	<input type="checkbox"/> bsm	IR1	1.66.0
1.43.0	IR2	<input type="checkbox"/> csb	IR2	1.43.0
1.21.0	IR2	<input type="checkbox"/> hmb 1	IR2	1.21.0
3.48.0	IR3	<input type="checkbox"/> swp	IR3	3.48.0
3.22.0		<input type="checkbox"/> vds	IR00	3.22.0
4.83.1	IR42	<input type="checkbox"/> dmc		
4.16.0	IR40	<input type="checkbox"/> pm		
		<input type="checkbox"/> dfc		
2.0.1	IR4	<input type="checkbox"/> tcm		
6.28.0	IR3	<input type="checkbox"/> hvac		
A-AE		<input type="checkbox"/> ip		
1.3.0		<input type="checkbox"/> cpId		
2.19.0	IR3	<input type="checkbox"/> sh		

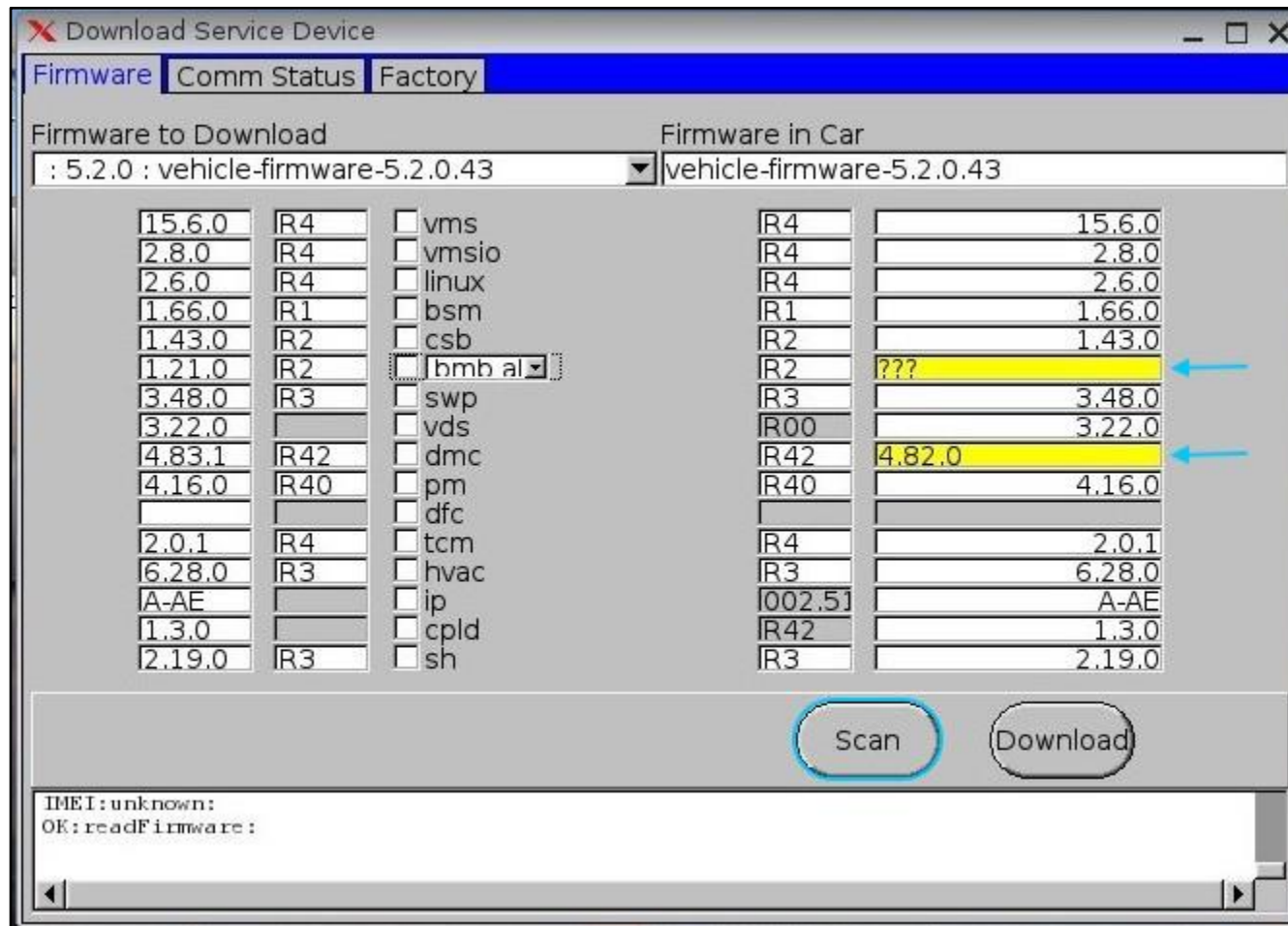
Scan Download

cur_version:vehicle-firmware-5.2.0.43:
OK:flashFirmware:

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3. Perform another scan to detect any additional modules that may require an update:



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4. Perform a firmware update to any additional modules by clicking "Download":

Download Service Device

Firmware | Comm Status | Factory

Firmware to Download: : 5.2.0 : vehicle-firmware-5.2.0.43

Firmware in Car: vehicle-firmware-5.2.0.43

Firmware to Download	Firmware in Car
15.6.0 IR4	IR4 15.6.0
2.8.0 IR4	IR4 2.8.0
2.6.0 IR4	IR4 2.6.0
1.66.0 IR1	IR1 1.66.0
1.43.0 IR2	IR2 1.43.0
1.21.0 IR2	IR2 ???
3.48.0 IR3	IR3 3.48.0
3.22.0	IR00 3.22.0
4.83.1 IR42	IR42 4.82.0
4.16.0 IR40	IR40 4.16.0
2.0.1 IR4	IR4 2.0.1
6.28.0 IR3	IR3 6.28.0
A-AE	002.51 A-AE
1.3.0	IR42 1.3.0
2.19.0 IR3	IR3 2.19.0

☐ vms
☐ vmsio
☐ linux
☐ bsm
☐ csb
☒ hmb al
☐ swp
☐ vds
☒ dmc
☐ pm
☐ dfc
☐ tcm
☐ hvac
☐ ip
☐ cpld
☐ sh

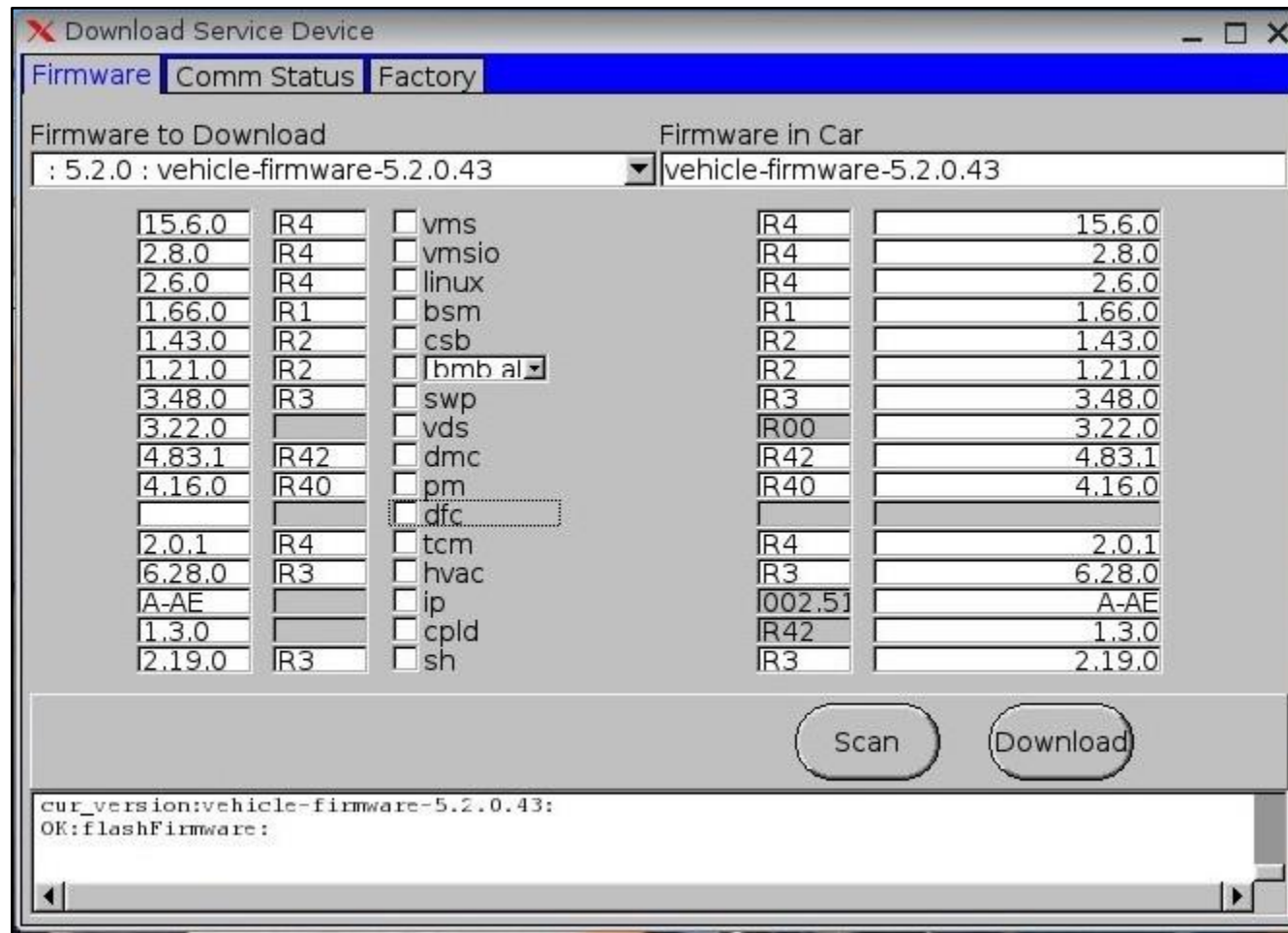
Scan Download

IMEI: unknown:
OK: readFirmware:

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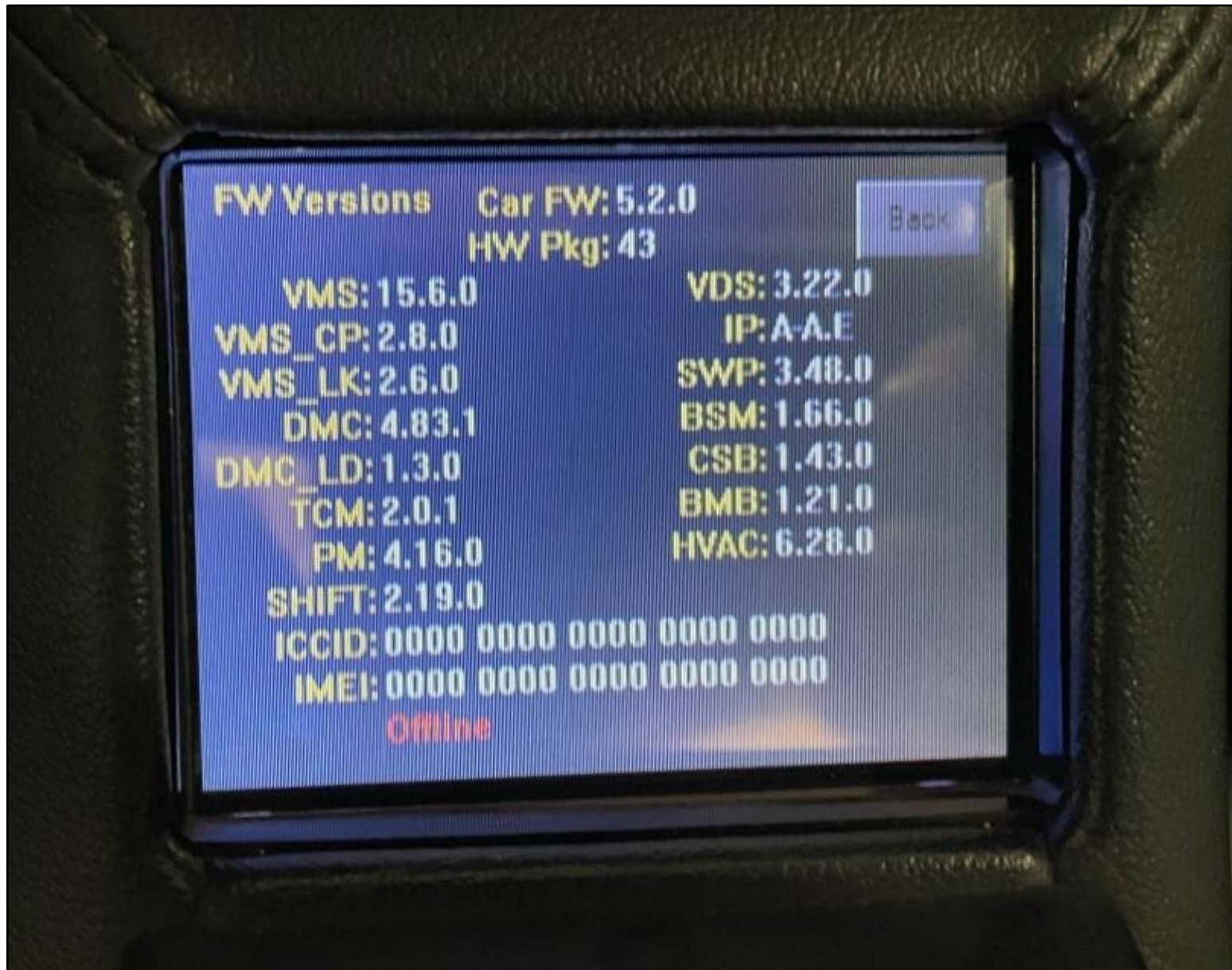
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5. Verify the firmware update was successful by performing another scan and checking the vehicle User Interface (UI):



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5 Additional Information

5.1 Acronyms, Abbreviations

Value	Definition
BSM	Battery Safety Monitor
DSD	Download Service Device

5.2 Reference Documents

Title	Description
Roadster Diagnostic Software Installation Guide	service.tesla.com/roadster

5.3 Contact Information

Title	Description