
Instructions

Programming the CCS charging port

Translation of the document

Editor

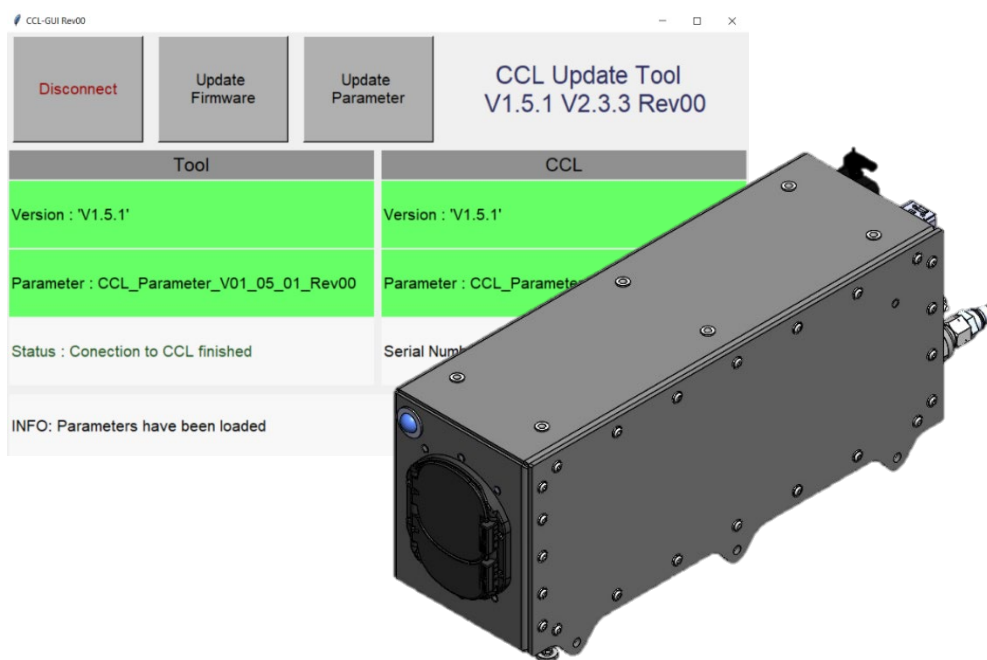
Designwerk Technologies AG

www.designwerk.com

Member of the Volvo Group

Applicability

The update described in these instructions applies to the CCS charging port V3.0. How a CCS charging port V3.0 can be recognized is described on the next two pages.



Estimated time

Estimated time for the work described in these instructions: 15 min

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1 Safety regulations and information

The following documents are available for download on the Designwerk service portal:

	Safety instructions and warnings	DW_009SIH000
	Designwerk Imprint	DW_009BAIIPM
	Designwerk Foreword	DW_009BAIVWT
	Update VCU	DW_VOC009ALTVCU

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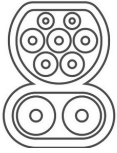
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2 Determine whether the charging port can be programmed

This chapter describes ways in which the charging port V3.0 can be recognised. The procedure in chapters 2.1 and 2.2 is generally recommended.

2.1 Is the CSS type 2 charging port available?

Programming is only possible if a CCS type 2 charging port (DC charging port with the two large pins at the bottom) is installed.

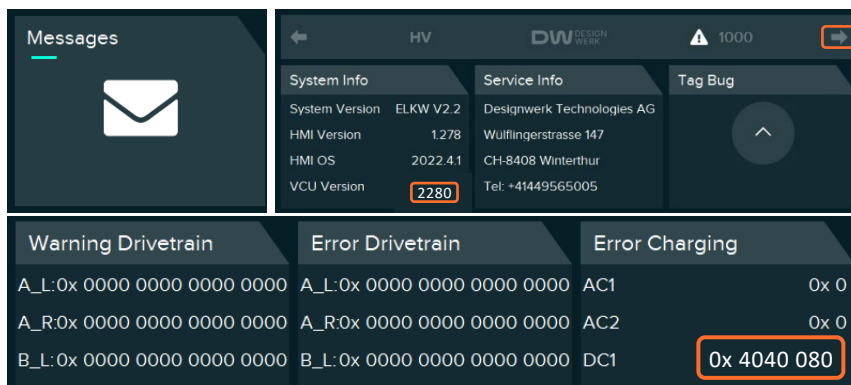


2.2 Read the software version on the HMI (recommended)

From VCU version 2282 and higher, the charge controller version can be read on the HMI, see image below. If the VCU still has an older software version, it is recommended that you first update the VCU in accordance with the instructions VCU update (available on the DW service portal). If this is not possible, continue with step 3.

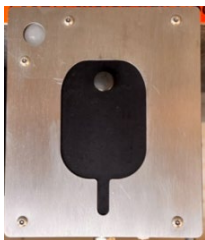
Press the charge stop button on the "Charge" page. This wakes up the charge controller for 20 seconds and the software status can be read on the "Messages ...Error Charging" page.

- 0x 0 VCU software version less than 2282 or two AC type 2 charging installed
- 0x 40 Older charge controller installed, no further step necessary.
- 0x 80 The charge controller is programmable to display the version
Wait 5 s or press the charge stop button again.
- 0x 1010 080 Program according to these instructions.
- 0x 2020 080 Program according to these instructions.
- 0x 3030 080 Program according to these instructions.
- 0x FFFF 080 Program according to these instructions.
- 0x 4040 080 Already programmed, no further step necessary



2.3 Recognize charging port version based on the hardware

The CCS charging port V2.X cannot be programmed if the charging port does not have any of the features below, see chapter 2.4.



Flap for sliding



Black ring around the LED



Serial No at the charging port: CCS_V2

2.4 Recognize charging port version from the VIN list

From vehicle 144 and newer, the CCS charging port can **always** be programmed if it is installed. During repairs, older vehicles with CCS charging port V2.X are sometimes equipped with a CCS charging port V3.0 and can then also be programmed. Therefore, in case of doubt, it is always recommended to recognize the charging controller via the HMI as described in point 2.2. If you are unsure, please contact Designwerk.

The vehicle number can be found on the type plate in the passenger door.

DW	
Designwerk Products AG Wülflingerstrasse 147, 8408 Winterthur Switzerland	
Full electric truck	
No.: E-LKW V2.2 999	
Vin: YV2RTY0AXPB*****	
Type: Designwerk HC 4x2T	
Battery: 2 x 170 kWh	Date of manufacture: Feb 2024
Entspricht Artikel 10B 96/53/EG - 2000 kg	

List of the VINs that can/can't be programmed.

Model	DW vehicle number	VIN (Vehicle Identification Number)
DW E-truck V2.1 with Volvo chassis that can be programmed	001	YV2XZX0A3EA753664

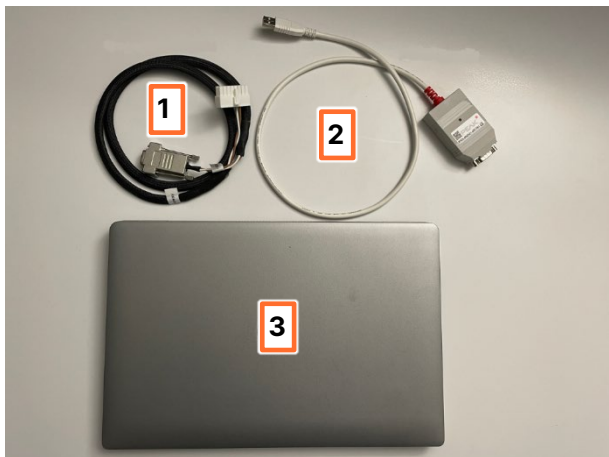
Model	DW vehicle number	VIN (Vehicle Identification Number)
DW E-truck V2.2 with Volvo chassis that can be programmed	021	YV2XTY0A0LB306983
	050	YV2X9J0A6MB332334
	052	YV2X9J0A4MB328265
	066	YV2RTW0A7MB334441
	067	YV2X9J0C6MB340676
	079	YV2RTY0AXMB354159
	105	YV2RTY0A7NB377495
	106	YV2RTY0A4NB377115
	107	YV2RTY0A3NB377459
	123	YV2XTY0K0NA300473
	124	YV2RTY0C4NB383031
	125	YV2XTY0A3NB381258
	128	YV2RTY0C9NB380853
	142	YV2XTY0F5NA304005
	144	YV2RTY0C1NB379339
	...	...
		All other vehicles can be programmed
DW E-Truck V2.2 with Daimler chassis that cannot be programmed . All vehicles with CCS charging port that are not listed here can be programmed.	055	W1T9560331V265441
	056	W1T9560311V270301

2.5 Material required

The VCU service cable (DW- NR 107599) and the CCL/CMS service cable (DW-NR 132725) look very similar. If the wrong cable is used, programming will not work.



The CCL/CMS service cable (DW-NR 132725) has been part of the DW programming case since February 2025. If the case is older and the cable is missing, it can be ordered via parts@designwerk.com.



1	CCL/CMS service cable DW-No.: 132725	2	PCAN dongle DW no.: 501730
3	Laptop		

3 Safety regulations and information

3.1 Designwerk service portal

The following documents are available for download on the Designwerk service portal:

 Safety instructions and warnings	DW_Safety instructions
 List of abbreviations	DW_List of abbreviations
 Designwerk Imprint	DW_Imprint

4 Introduction

This document describes how to program new firmware for the CCS charging port V3.0. Programming must always be carried out on two control units (CMS and CCL).

4.1 Purpose of the document

The programming procedure is explained step by step in this document.

When programming is complete, an e-mail with the serial numbers and parameter revisions must be sent to support@designwerk.com, otherwise the work cannot be remunerated.

5 Access to the CCS Chargeport Programming Tool and preparation



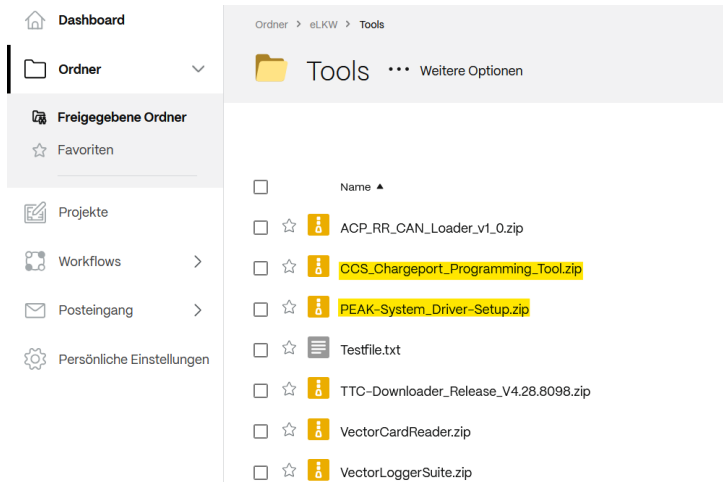
The steps in this chapter only need to be carried out the first time you use the CCS Chargeport Programming Tool - referred to below as the Programming Tool for short.

5.1 Access to the programming tool

The programming tool can be obtained from the ShareFile.

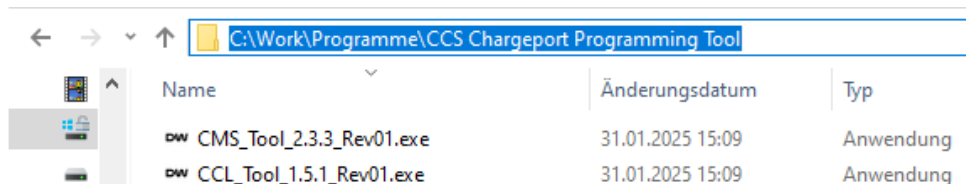
Link: <https://designwerkproductsag.sharefile.com/>

Path: Folder > ShareFile > eLKW > Tools > CCS_Chargeport_Programming_Tool.zip



The programming tool does not need to be installed on the computer. It works most reliably if it is not located on a network drive. It is recommended that you create the following folder and save the two programming tools there.

C:\Work\Program Files\CCS Chargeport Programming Tool



5.2 Installing the driver

The PCAN driver (driver for the PCAN dongle) is required to use the programming tool. This is the same driver that is also required for the VCU update with the TTC downloader.



If the TTC downloader is already in use, the driver no longer needs to be installed.

If necessary, the driver can be obtained from the ShareFile

Link: <https://designwerkproductsag.sharefile.com/>

Path: Folder > ShareFile > eLKW > Tools > PEAK-System_Driver-Setup.zip

5.3 Test without access to the Designwerk truck

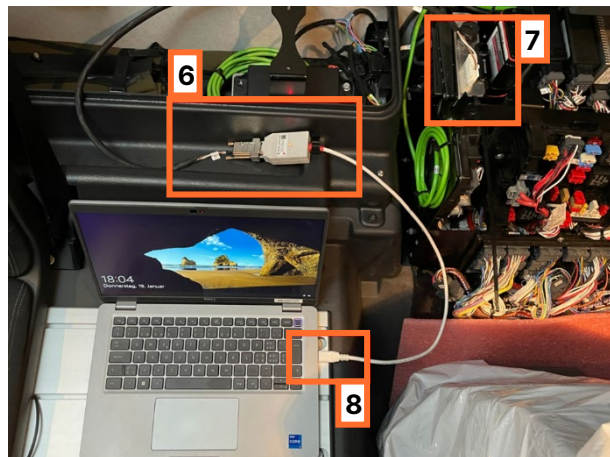
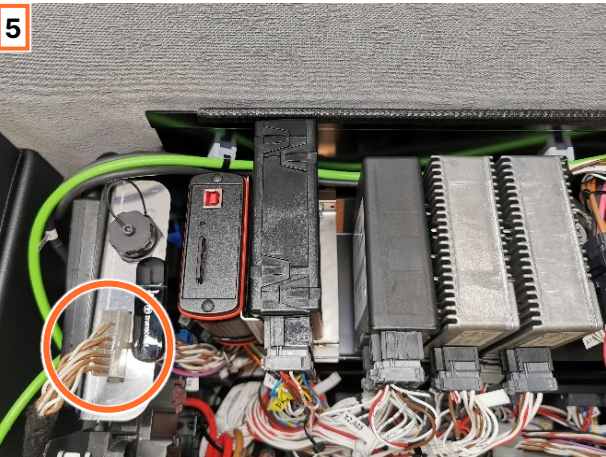
If the Programming Tool has been downloaded, it can also be ensured without a truck that the installation of the driver has worked and that the Programming Tool can successfully establish a connection to the PCAN-Dongle. See also:

Chapter 7.2.2 Connection to the PCAN dongle successful, no connection to the charging port

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5.4 Position of the CAN interfaces according to vehicle type and connections



1	Mid Cab V2.1 passenger footwell	2	High Cab center console
3	Mid Cab V2.2 center console	4	Low cab E-compartment
5	Low Cab CAN connected to interface	6	PCAN dongle to CCL/CMS service cable
7	CCL/CMS service cable to Designwerk CAN interface	8	Example image PCAN dongle on laptop

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5.5 Explanation of the colors in the info fields in the programming tool

The current status is displayed in different colors in the info fields.

The firmware version/parameter version stored in the programming tool is shown on the left and the version installed on the control unit (CMS/CCL) is shown on the right.

Green: The firmware or parameter revision already corresponds to the version stored in the programming tool. No action required.

Yellow: Firmware or parameter update required.

Example: Firmware OK. Parameters still need to be programmed.

Available on Tool	Installed on CCL
Firmware : 'V1.5.1'	Firmware : 'V1.5.1'
Parameter : CCL_Parameter_V01_05_01_Rev00	Parameter : Unknown

Red: Version of the programming tool is too old.

A newer version is already installed on the CCS charging port ex works. The programming tool is out of date. If possible, download the latest version from the ShareFile

Available on Tool	Installed on CMS
Firmware : 'V2.3.3'	Firmware : 'V2.8.0'

Version of Tool Outdated

There is a newer firmware version on the CCL than provided with this tool check availability of a newer tool

OK

6 Programming

Establish connections and programming mode:



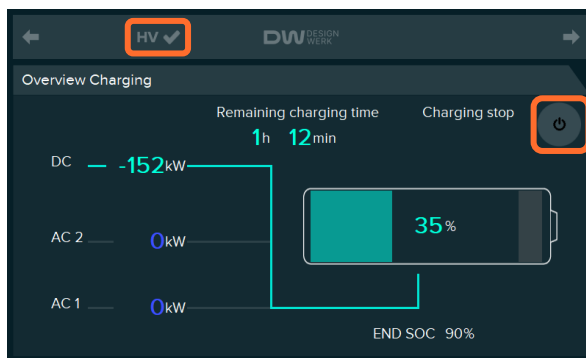
- Ensure that the preparation steps in chapter 5 have been completed.
- Check that the version of the programming tool corresponds to the latest available revision on the ShareFile. The tool version can be seen in the file name.

- 1 Connect the PCAN dongle to the CCL/CMS service cable (6).
- 2 Plug the CCL/CMS service cable into the Designwerk CAN interface (7).
- 3 Connect the PCAN dongle to the laptop (8).
- 4 Ensure 24 V power supply, i.e. switch on ignition and HV or connect an external 24 V charger to the LV battery/charging point.



- The laptop must not be connected to the laptop charging cable, otherwise the laptop will ground the entire vehicle and may be damaged.
- Ensure that the vehicle is not being charged either DC or AC. It must also be ensured during the update that nobody plugs the vehicle in for charging.
- If the 24 V power supply is interrupted during the programming process, the charging controller may be damaged and the entire charging port must be replaced.

- 5 Press the charging stop button 8 times in succession at intervals of one second. This switches the CCS charge controller to programming mode.



HMI V1 E-LKW 2.2 HMI V0 E-LKW V2.1

6.1 Programming firmware and parameters (CMS)

- 1 Start the CMS Programming Tool.



The revision may differ from the image below. Always use the latest revision of the ShareFile. The tool version can be seen in the file name.

DW 01_CMS_Tool_2.3.3_Rev01.exe

- 2 Click on **Connect** and give the tool approx. 10s to establish the connection
If the programming tool does not connect, see chapter 7.2 Troubleshooting.
Enter the PIN (2468) to establish the connection to the CMS.

- 3 Always carry out the firmware update first, followed by the parameter update.

Click on **Update firmware**.

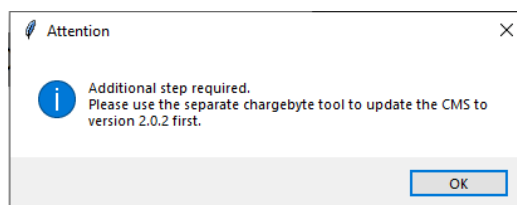
Check according to the image that the firmware update has been successfully loaded. The version of the tool matches the version on the control unit. The line turns green.

Tool	CMS
Version : 'V2.3.3'	Version : 'V2.3.3'
Parameter : CMS_Parameter_V02_03_03_Rev00	Parameter : Unknown
Status : Connection to CMS finished	Serial Number : 0001524613
INFO: Firmware has been installed	

Possible additional step, only for a few vehicles:

Some vehicles have a very old firmware version installed.

If the following message appears, **stop here** and continue as described in the section 7.1 Updating the old CMS firmware version . As soon as this has been done, the CMS must be updated to the latest version using the programming tool as in this step.



- 4 Then carry out the parameter update.

Check that the parameters have been loaded.

Parameter : CMS_Parameter_V02_03_03_Rev00	Parameter : CMS_Parameter_V02_03_03_Rev00
Status : Connection to CMS finished	Serial Number : 0001524613
INFO: Parameters have been loaded	

- 5 For reporting to Designwerk, note the parameter version and serial number, see template in chapter 6.3 Reporting.



The parameter version can be copied to the clipboard by pressing the right mouse button or read out in Programming_Log.txt.



- 6 Click on **Disconnect** and close the program.

6.2 Programming firmware and parameters (CCL)

The procedure for the CCL is the same as for the CMS.



- Ensure that the preparation steps in chapter 5 have been completed.
- Check that the version of the programming tool corresponds to the latest available revision on the ShareFile.

1 Start the CCL Programming Tool.



The revision may differ from the image below.
Always use the latest revision of the ShareFile.

DW 02_CCL_Tool_1.5.1_Rev01.exe

2 Click on **Connect** and give the tool approx. 10s to establish the connection.

If the programming tool does not connect, see chapter 7.2 Troubleshooting.

Enter the PIN (2468) to establish the connection to the CCL.

3 Always carry out the firmware update first, followed by the parameter update.

Click on **Update firmware**.

Check according to the image that the firmware update has been successfully loaded.
The version of the tool matches the version on the control unit.
The line turns green.

Tool	CCL
Version : 'V1.5.1'	Version : 'V1.5.1'
Parameter : CCL_Parameter_V01_05_01_Rev00	Parameter : Unknown
Status : Connection to CCL finished	Serial Number : 1945036
INFO: Firmware has been installed	

4 Then click **Update parameters** to perform the parameter update.

Check that the parameters have been loaded.

Parameter : CCL_Parameter_V01_05_01_Rev00	Parameter : CCL_Parameter_V01_05_01_Rev00
Status : Connection to CCL finished	Serial Number : 1945036
INFO: Parameters have been loaded	

5 Send reporting to Designwerk according to the template in chapter 6.3 Reporting

The parameter revision and the serial number must be transmitted.



The parameter version and the serial number can be copied to the clipboard by pressing the right mouse button or read out in Programming_Log.txt.

Parameter : CCL_Parameter_V01_05_01_Rev00
Copy

6 Click on **Disconnect** and close the program

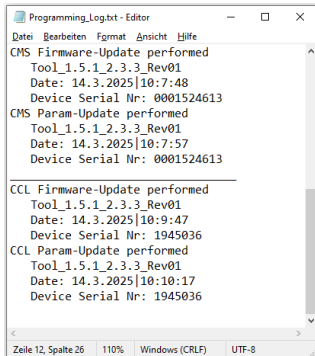
6.3 Reporting

Write an email to support@designwerk.com with the parameter statuses according to the "Confirmation of completed campaigns" from the service portal. The reporting is part of the campaign. The work can only be invoiced if the reporting has been done. For each programming process, a log is created in the folder where the programming tool is saved or, if available, supplemented.

The log can be copied into the "Confirmation of completed campaigns" form. Use the date and time to ensure that the correct section of the log has been copied.

The log always consists of two CMS and two CCL entries, see images below.

The Campaign number/P-number to be noted is P00641.



Bestätigung über durchgeführte Kampagnen

Kampagnennummer/ P-Nummer:	P00641
Designwerkpartner:	Musterwerkstatt
Fahrzeughalter:	Muster Transporte AG
VIN:	YV2XTY0A0LB123456
Kilometerstand:	100'000
Bemerkungen:	CMS Firmware-Update performed Tool_1.5.1_2.3.3_Rev01 Date: 13.3.2025 17:12:0 Device Serial Nr: 0000627783 CMS Param-Update performed Tool_1.5.1_2.3.3_Rev01 Date: 13.3.2025 17:12:11 Device Serial Nr: 0000627783 CCL Firmware-Update performed Tool_1.5.1_2.3.3_Rev01 Date: 13.3.2025 17:14:27 Device Serial Nr: 728674 CCL Param-Update performed Tool_1.5.1_2.3.3_Rev01 Date: 13.3.2025 17:14:40 Device Serial Nr: 728674
Durchgeführt durch:	Max Mustermech
Durchgeführt am:	13.3.2025

Die Bestätigung kann über folgenden [Link](#) per Mail an uns versendet werden. Wir bitten Sie zusätzlich die Kampagnennummer im Betreff zu erwähnen.

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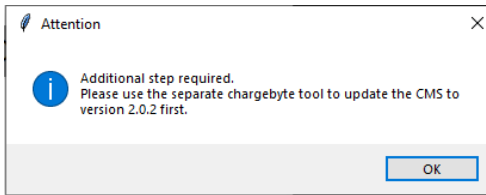
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7 Appendix

7.1 Upgrade old CMS firmware version



This part of the instructions only needs to be carried out if the following message appears when updating the CMS.



The Chargebyte_tool_CMS_1.x_to2.x.zip tool can be obtained from the ShareFile.

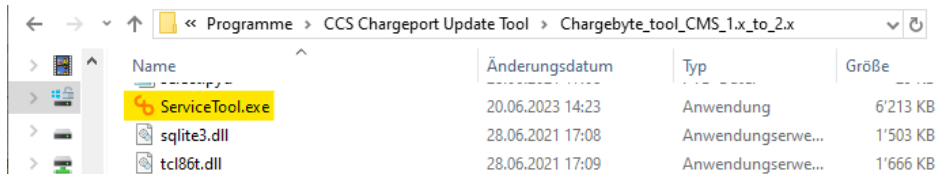
Link: <https://designwerkproductsag.sharefile.com/>

Path: Folder > ShareFile > eLKW > Tools > Chargebyte_tool_CMS_1.x_to2.x.zip

Download the tool from the ShareFile, unzip it and place it in the Programming Tool folder. It is recommended to use the following folder structure.

C:\Work\Program Files\CCS Chargeport Update Tool\Chargebyte_tool_CMS_1.x_to_2.x.

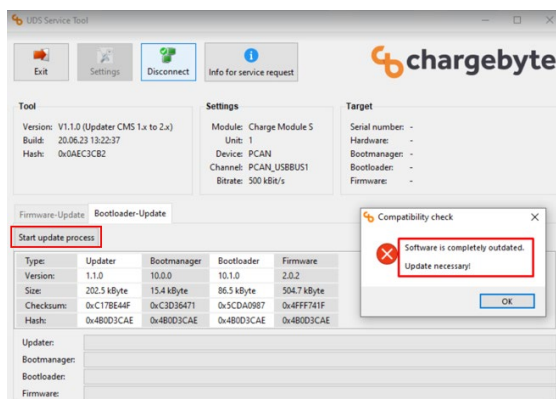
- 1 Establish the connection to the vehicle as described in the chapter 6 .
Connect the cable and click the charge stop button on the HMI 8 times.
- 2 Start ServiceTool.exe.



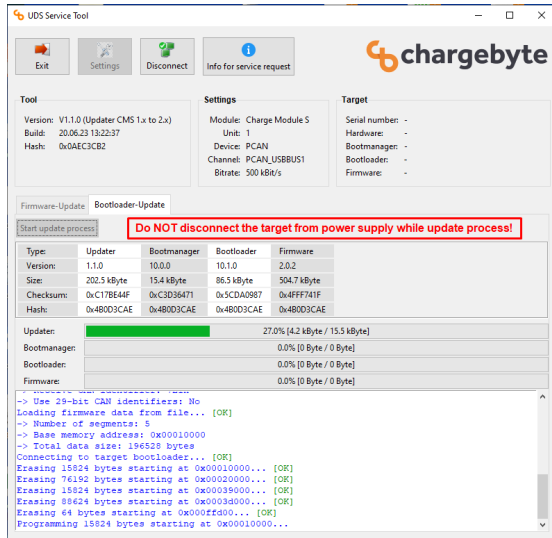
- 3 Click on **Connect**.

A message appears.

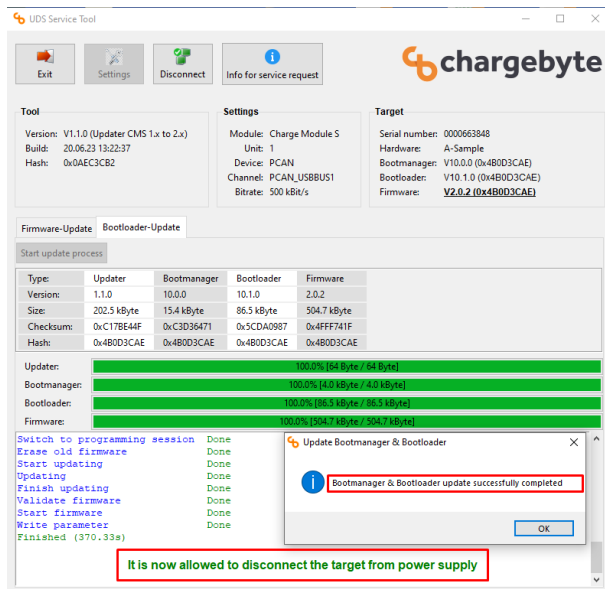
- 4 Confirm the message by clicking on **OK** and click on **Start update process**.



5 Wait until the bootloader update is complete.



6 Confirm the corresponding message by clicking **OK**.



Click on **Disconnect** and then on **Exit**.

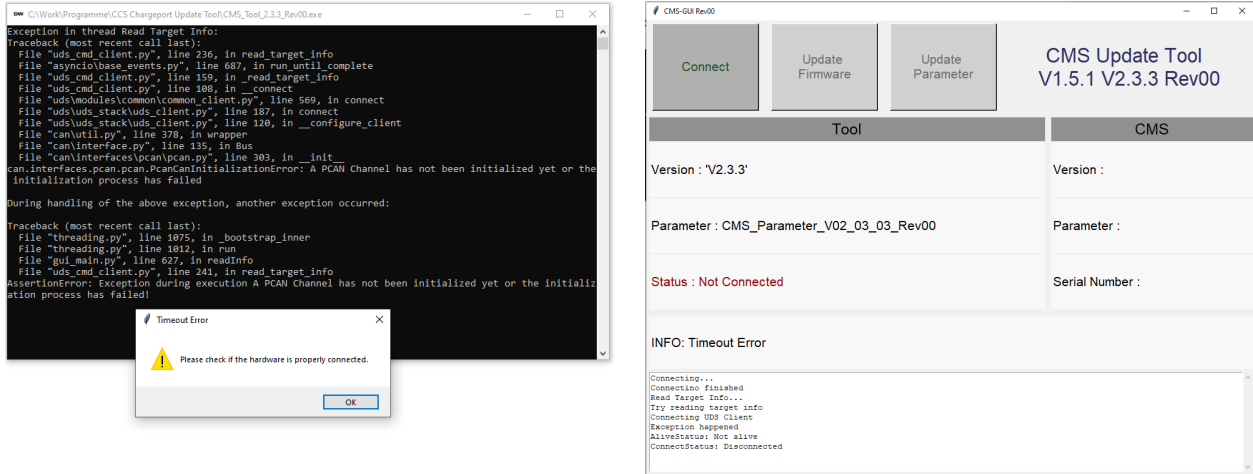
7 The instructions can now be continued at chapter 6.1 (Firmware and parameter programming (CMS)). The CMS firmware has to be updated now.

7.2 Troubleshooting

Known error patterns and their solutions are described below.

7.2.1 No connection to the P CAN dongle

If the PCAN-Dongle is not connected or is not recognized, the following messages are visible in the console.



Remedial measures:

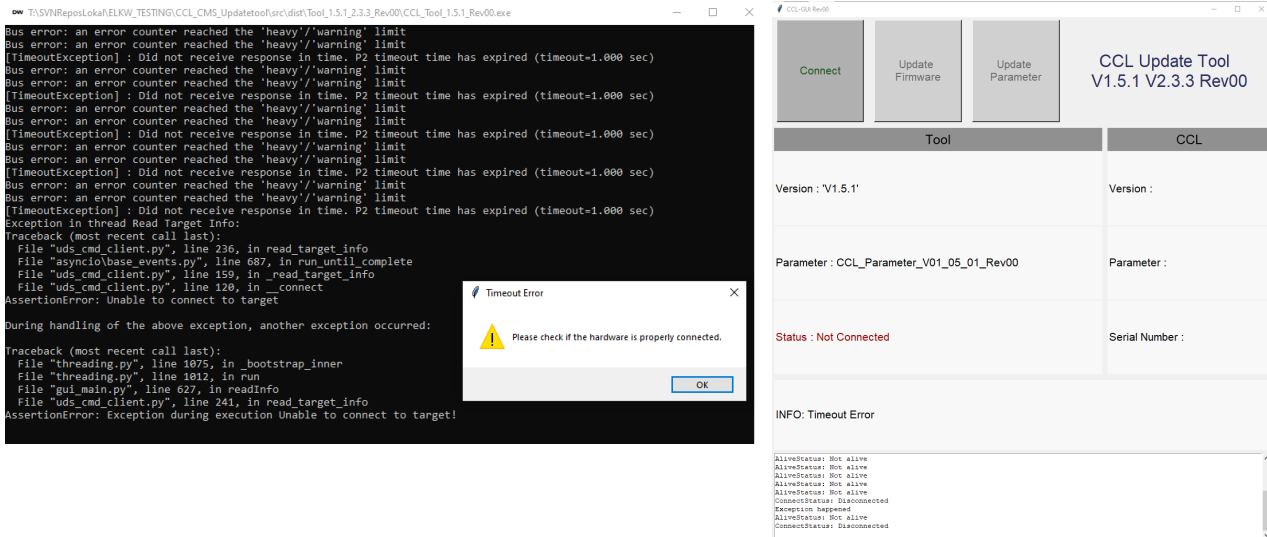
- 1 Install the driver for the PCAN-Dongle, if this has not already been done.
- 2 Restart the computer.
- 3 Start the TTC downloader and connect the VCU service cable (DW no. 107599) to the DW CAN interface. Establish the connection according to the instructions for updating the VCU (DW_VOC009ALTVCU) in the Service Portal.
- 4 If the connection establishment with the TTC Downloader works, the PCAN-Driver is installed correctly. If the connection setup does not work, the driver must be installed correctly.

7.2.2 Connection to the PCAN dongle successful, no connection to the charging port

If no connection to the charging port can be established, error messages are displayed in the black console. If the warning mentioned below appears, the computer can successfully establish a connection to the PCAN-Dongle, but the connection to the charging port has not yet worked. If no truck is connected, everything is fine. The PCAN-Driver is installed correctly and the Programming Tool can communicate with the PCAN-Dongle.

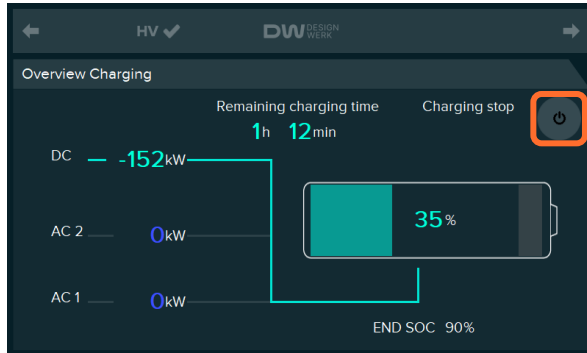
Bus error: an error counter reached the 'heavy'/'warning' limit

[TimeoutException] : Did not receive response in time. P2 timeout time has expired (timeout=1.000 sec)

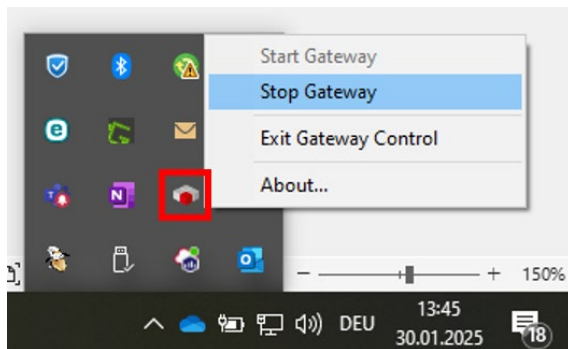


7.2.3 Remedial measures if the connection to the charging port does not work

- 1 Refer to pages 2 and 3 to check whether the CCS charging port can be programmed at all.
- 2 Ensure that the correct cable is used (CCL/CMS service cable DW-NR: 132725).
- 3 Ensure that the PCAN dongle is correctly connected to the PC and the CAN interface.
- 4 Press the charge stop button on the HMI again at least 8 times, and after each press wait 1 second after each press. Then click on **Connect** directly.
In some cases, the procedure must be repeated.



If the connection cannot be established on computers with a Codesys installation, the Codesys gateway must be stopped. This applies to Designwerk-internal computers.



- 5 Restart the computer.

The TTC downloader uses the same driver and the PCAN dongle. Therefore, start the TTC downloader and connect the VCU service cable (DW no. 107599) to the CAN interface. Establish connection according to the instructions Update VCU (DW_VOC009ALTVCU) in the service portal.

If the connection establishment with the TTC Downloader works, the PCAN-Driver is installed correctly. If the connection setup does not work, the driver must be installed again.