

TO: Service Locations

FROM: Service Systems Development

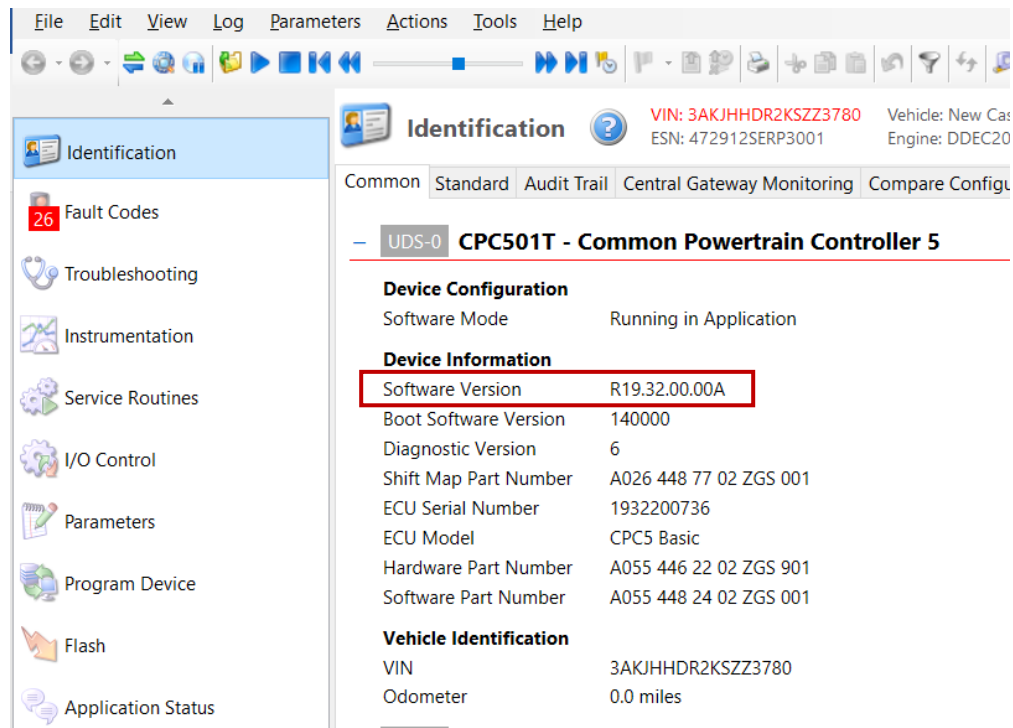
SUBJECT: **Detroit™ CPC501T GHG21 Only:**  
**Updating Bootloader Using DL version 8.14 and higher**

## ISSUE

On Detroit™ powertrain equipped Cascadia's, built in 2020, it may be necessary to complete an additional step in the programming process when updating the CPC501T software.

## REQUIRED ACTION

1. Connect DiagnosticLink® version 8.14 with Service Pack 2 or higher. On the Identification Tab, check the CPC501T software level. If the software level is R19.32.00.00A or later, no special programming steps are necessary. If the CPC5 software level is **NOT at a MINIMUM** software level of R19.32.00.00A, continue to step 2.



The screenshot shows the DiagnosticLink software interface. The 'Identification' tab is selected in the left sidebar. The main window displays the 'Identification' section for a vehicle with VIN 3AKJHHR2KSZZ3780 and ESN 472912SERP3001. The 'UDS-0 CPC501T - Common Powertrain Controller 5' section is expanded, showing the following information:

Device Configuration	
Software Mode	Running in Application

Device Information	
Software Version	R19.32.00.00A
Boot Software Version	140000
Diagnostic Version	6
Shift Map Part Number	A026 448 77 02 ZGS 001
ECU Serial Number	1932200736
ECU Model	CPC5 Basic
Hardware Part Number	A055 446 22 02 ZGS 901
Software Part Number	A055 448 24 02 ZGS 001

Vehicle Identification	
VIN	3AKJHHR2KSZZ3780
Odometer	0.0 miles

2. Choose Program Device “select Add”. (note the last digits of the CPC5 Hardware Part Number are 001. Also make note of VIN/ESN which is manually entered in a later step)

Program Device DiagnosticLink  
Unit Software Datasets Diagnostic descriptions → Connected unit

Pending requests for server data

1FUJHHR2MLMA5080 - 47291050750753 - 2021 Freightliner New Cascadia 126 Sleeper Cab

Request Equipment Data Download

Enter the identity of the equipment you wish to program.

Vehicle Identification  VIN  PIN

1FUJHHR2MLMA5080

Engine Serial Number (Unit Number)

47291050750753

Device controllers for this equipment

Controller	Hardware Part Number
CPC501T	A0554462202-001

3. Choose “Connect to Server” to download unit data, and select “Connected unit”. Then select “Next”.

Program Device DiagnosticLink  
Unit Software Datasets Diagnostic descriptions → Connected unit

2021 Freightliner New Cascadia 126 Day Cab 6 x 4 Truck-Tractor  
VIN: 1FUJHLDV7MLMD4090

Downloaded unit data

1FUJHLDV7MLMD4090 - 471928S0760998 - 2021 Freightliner New Cascadia 126 Day Cab

Unit data last downloaded today at 11:24.  
Powertrain status: OK  
Chassis status: OK

Program Device 2021 Freightliner New Cascadia 126 Day Cab 6 x 4 Truck-Tractor  
VIN: 1FUJHLDV7MLMD4090

Gather server data Select operation Program device → Unit data management

Downloaded unit data for connected unit

1FUJHLDV7MLMD4090 - 471928S0760998 - 2021 Freightliner New Cascadia 126 Day Cab  
Unit data last downloaded today at 11:24.  
Powertrain status: OK  
Chassis status: OK

⚠ There are not enough devices connected to determine if the detected identification information is correct.

Please verify the unit identity:  
 1FUJHLDV7MLMD4090 - 471928S0760998 - 2021 Freightliner New Cascadia 126 Day Cab - the primary connected device identity - Unit data last downloaded today at 11:24.  
 Enter identity information - manually enter unit identity.

Next Refresh data from server

4. Select "CPC5", then "Update Device Software". Select the V14.00.00 option which is the new bootloader software
5. Hover over the V14 choice until a message displays stating that additional programming is needed. Once displayed, select "Next" button.

Program Device 2021 Freightliner New Cascadia 126 Day Cab 6 x 4 Truck-Tractor  
VIN: 1FUJHLDV7MLMD4090

Gather server data Select operation Program device

1FUJHLDV7MLMD4090 - 471928S0760998 - 2021 Freightliner New Cascadia 126 Day Cab  
Unit data last downloaded today at 11:24.  
Powertrain status: OK  
Chassis status: OK

Select the device to program

CPC5011 - Common Powertrain Controller 5 - OK

Select the reprogramming operation you wish to take place

Update Device Software

Select the firmware to apply to the device

V14.00.00 - 0554480302\_001 - CPC5 R19.32 bootloader: MY2020

Back Next

- 6. After selecting the “Next” button, the below incompatible software message will appear. This is normal behavior. Select the “OK” button.

Compatibility Information

The selected software is not compatible with other connected devices, please update them as necessary after reprogramming is complete.

VIN: 1FUJHHR2MLMA5080 ESN: 47291050750CPC

**Target Device**

Device	Hardware	Software
CPC501T	A0554462202-001	V14.00.00

**Compatible Set #1**

Device	Hardware Options	Hardware Change	Software Options
MCM21T	A0014465835-001, A0014465835-002, A0024460935-002		6.8.0.1
ACM21T	A0004464654-002, A0004464654-003, A0004464654-004, A0004465954-000, A0004465954-001, A0004465954-002, A0004465954-003, A0004465954-004, A0004465954-005, A0004469454-003, A0004469454-004, A0004469754-001, A0004469754-002, A0004469754-003		7.60.2.0

**Compatible Set #2**

Device	Hardware Options	Hardware Change	Software Options
MCM21T	A0014465835-001, A0014465835-002, A0024460935-002		6.8.0.1
ACM21T	A0004464654-002, A0004464654-003, A0004464654-004, A0004465954-000, A0004465954-001, A0004465954-002, A0004465954-003, A0004465954-004, A0004465954-005, A0004469454-003, A0004469454-004, A0004469754-001, A0004469754-002, A0004469754-003		7.60.2.0

Print... Copy **OK**

- 7. Verify the CPC501T software that is being programmed is V14.00.00. Then select the “Start” button.

Program Device 2021 Freightliner New Cascadia 126 Day Cab 6 x 4 Truck-Tractor VIN: 1FUJHLDV7MLMD4090 DiagnosticLink

Gather server data Select operation Program device

1FUJHLDV7MLMD4090 - 47192850760998 - 2021 Freightliner New Cascadia 126 Day Cab

Unit data last downloaded today at 11:24.  
Powertrain status: OK  
Chassis status: OK

Please review the information shown. If this is correct, click the Start button

CPC501T - Common Powertrain Controller 5

Operation	Update Device Software	Existing Settings	Target
Configuration	Current	Target	
Software	A0554481802-001 (R19.11.00.00A)	A0554480302-001 (V14.00.00)	
SHR Map Part Number	A0264488202-002	A055444999-999	
Identification	Current	Target	
Vehicle Identification Number	1FUJHLDV7MLMD4090	1FUJHLDV7MLMD4090	
Hardware			
ECU Serial Number	1928000157		
Hardware Part Number	A0554462202-001		

Back Next **Start**

- 8. Programming will fail at the Flash Firmware step “Data Implausible – reconnect in boot mode”. **THIS IS NORMAL** and means the boot software has been loaded

Program Device DiagnosticLink

Gather server data Select operation Program device

1FUJHLDV7MLMD4090 - 47192850760998 - 2021 Freightliner New Cascadia 126 Day Cab

Unit data last downloaded today at 11:24.  
Powertrain status: OK  
Chassis status: OK

Error: The programming operation failed - to retry, click the Start button

CPC501T - Common Powertrain Controller 5

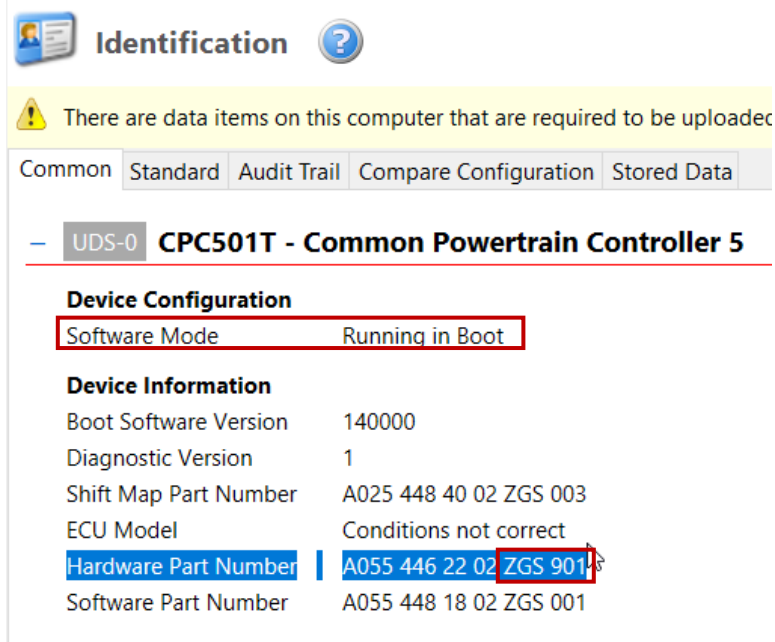
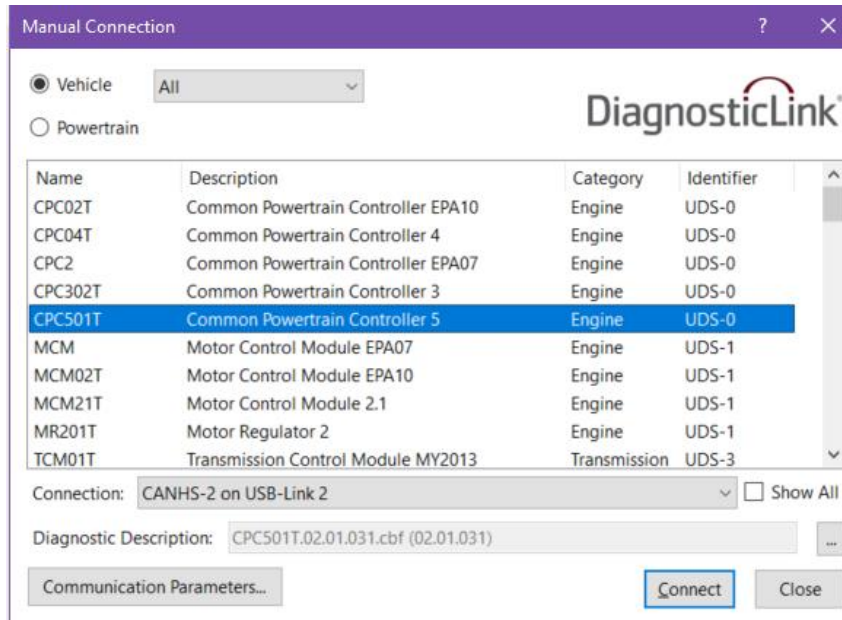
Flash Firmware: Data implausible - reconnect in boot mode

Operation	Update Device Software	Existing Settings	Target
Configuration	Current	Target	
Software	A0554481802-001	A0554480302-001 (V14.00.00)	
SHR Map Part Number	A0264488202-002	A055444999-999	
Identification	Current	Target	
Vehicle Identification Number	1FUJHLDV7MLMD4090	1FUJHLDV7MLMD4090	
Hardware			
ECU Serial Number	1928000157		
Hardware Part Number	A0554462202-001		

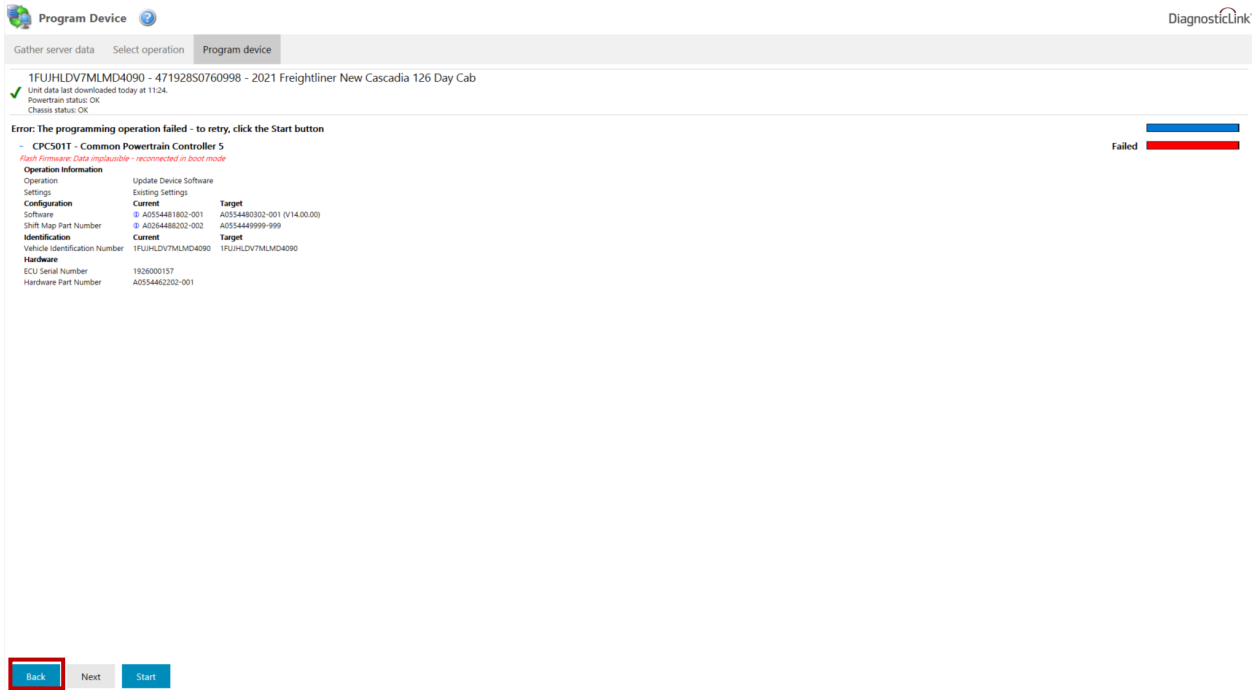
Back Next **Start**

9. Navigate back to the "Identification" screen and you will see CPC501T is "Running in Boot". This is the expected result. Also note that the Hardware Part Number changed from ZGS 001 to ZGS 901.

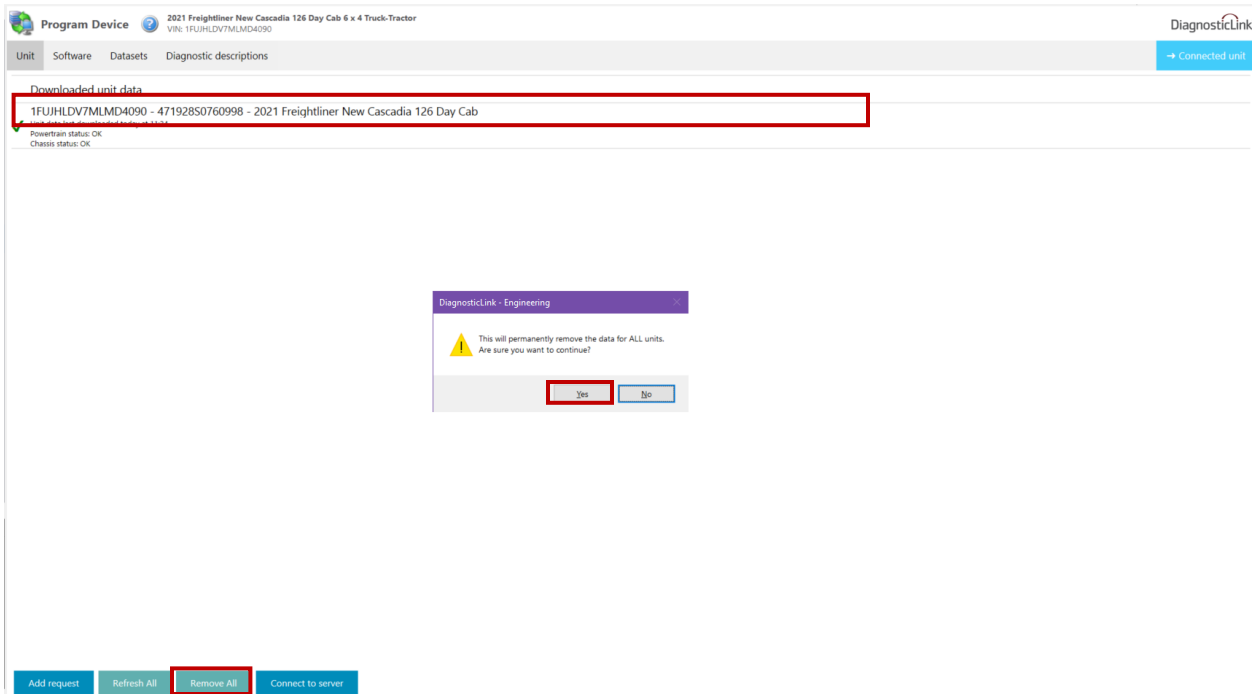
Note: If CPC501T does not connect automatically, it may be necessary to connect manually under "File", "Connect" "... CPC501T".



10. Return to the “Program Device” tab and select the “Back” button to return to the main programming screen



11. Select the VIN, then select the “Remove All” button and then the “Yes” button.



12. Select the “Add” button and then manually re-enter the VIN and ESN. Then select the “OK” button.

Program Device DiagnosticLink  
Unit Software Datasets Diagnostic descriptions → Connected unit

Pending requests for server data

1FUJHHR2MLMA5080 - 47291050750753 - 2021 Freightliner New Cascadia 126 Sleeper Cab

Request Equipment Data Download

Enter the identity of the equipment you wish to program.

Vehicle Identification  VIN  PIN

1FUJHHR2MLMA5080

Engine Serial Number (Unit Number)

47291050750753

Device controllers for this equipment

Add Remove

Device	Hardware Part Number
CPC501T	A0554462202-001

Clear All OK Cancel

Add request Refresh All Remove All Connect to server

13. Choose “Connect to Server” to download unit data, and select “Connected unit”. Then select “Next” button.

Program Device DiagnosticLink  
Unit Software Datasets Diagnostic descriptions → Connected unit

2021 Freightliner New Cascadia 126 Day Cab 6 x 4 Truck-Tractor  
VIN: 1FUJHLDV7MLMD4090

Downloaded unit data

1FUJHLDV7MLMD4090 - 471928S0760998 - 2021 Freightliner New Cascadia 126 Day Cab

Unit data last downloaded today at 11:24  
Powertrain status: OK  
Chassis status: OK

Add request Refresh All Remove All Connect to server

Program Device 2021 Freightliner New Cascadia 126 Day Cab 6 x 4 Truck-Tractor  
VIN: 1FUJHLDV7MLMD4090

Gather server data Select operation Program device → Unit data management

Downloaded unit data for connected unit

1FUJHLDV7MLMD4090 - 471928S0760998 - 2021 Freightliner New Cascadia 126 Day Cab  
Unit data last downloaded today at 11:24  
Powertrain status: OK  
Chassis status: OK

⚠ There are not enough devices connected to determine if the detected identification information is correct.

Please verify the unit identity:  
⊗ 1FUJHLDV7MLMD4090 - 471928S0760998 - 2021 Freightliner New Cascadia 126 Day Cab - the primary connected device identity - Unit data last downloaded today at 11:24  
⊖ Enter identity information - manually enter unit identity

Next Refresh data from server

14. Highlight CPC501T then select “Update Device Software” version R20.31.00.00A and choose “Next”.

Program Device 2021 Freightliner New Cascadia 126 Day Cab 6 x 4 Truck-Tractor  
VIN: 1FUJHLDV7MLMD4090

Gather server data Select operation Program device

1FUJHLDV7MLMD4090 - 471928S0760998 - 2021 Freightliner New Cascadia 126 Day Cab  
Unit data last downloaded today at 11:24  
Powertrain status: OK  
Chassis status: OK

Select the device to program

⊕ CPC501T - Common Powertrain Controller 5 - OK

Select the reprogramming operation you wish to take place  
⊖ Update Device Software

Select the firmware to apply to the device  
⊕ R20.31.00.00A - 0504482602\_001 - 2021.00.00A

Back Next

15. Verify CPC501T software is R20.31.00.00A and select "Start" to begin programing

Program Device 2021 Freightliner New Cascadia 126 Day Cab 6 x 4 Truck-Tractor VIN: 1FUJHLDV7MLMD4090 DiagnosticLink

Gather server data Select operation Program device

1FUJHLDV7MLMD4090 - 471928S0760998 - 2021 Freightliner New Cascadia 126 Day Cab  
Unit data last downloaded today at 11:24.  
Powertrain status: OK  
Chassis status: OK

Please review the information shown. If this is correct, click the Start button

- CPC501T - Common Powertrain Controller 5

Operation Information

Operation	Update Device Software
Settings	Existing Settings

Configuration	Current	Target
Software	A0554482602-001 (R20.31.00.00A)	A0554482602-001 (R20.31.00.00A)
SWB Map Part Number	A0554482602-002	A0554482602-002 (CPC5_30_3_140_GHG017_07131)

Identification	Current	Target
Vehicle Identification Number	1FUJHLDV7MLMD4090	1FUJHLDV7MLMD4090

Hardware

ECU Serial Number	1926000157
Hardware Part Number	A0554482602-901

Back Next Start

16. After programming, return to the "Identification" tab and verify CPC501T R19.32.00.00A software is successfully installed.

Common	Standard	Audit Trail	Compare Configuration	Stored Data
- UDS-0 <b>CPC501T - Common Powertrain Controller 5</b>				
<b>Device Configuration</b>				
Software Mode	Running in Application			
<b>Device Information</b>				
Software Version	R20.31.00.00A			
Boot Software Version	140000			
Diagnostic Version	8			
Shift Map Part Number	A026 448 82 02 ZGS 002			
ECU Serial Number	1926000157			
ECU Model	CPC5 Basic			
Hardware Part Number	A055 446 22 02 ZGS 901			
Software Part Number	A055 448 26 02 ZGS 001			
<b>Vehicle Identification</b>				
VIN	1FUJHLDV7MLMD4090			
Odometer	2680.0 miles			

## CONTACT INFORMATION

Please contact the Detroit Diesel Customer Support Center at 800-445-1980 or email [csc@daimler.com](mailto:csc@daimler.com) if you have any questions.