



PROTERRA



TECHNICAL SERVICE BULLETIN

ISSUE DATE:	10-12-2021
SERVICE BULLETIN SUBJECT:	Limited Body Controller Software Update
VINs or MODELS AFFECTED:	Service Specified Buses
COMPLETE BY:	Next Service Opportunity
SERVICE BULLETIN #:	SC-21-142
LABOR OPERATION CODE:	EN48Z

NOTICE! It is expected that this process will require 1 hour per bus. Please schedule appropriately to minimize vehicle downtime.

LIMITED BODY CONTROLLER SOFTWARE UPDATE

Retrofit Description:

This procedure updates the body controller software to the latest version. It corrects a bug on the dash screen and adds a new tire sensor configuration process.



Summary of Software Changes

Improvements

- Edited the "EP_bo_RHSC_AutoKneelWhenDoorsOpen" feature that allows the bus to automatically kneel when the doors are fully open and recover when closed.

New Feature

- Edited logic for Eeprom "EP_bo_DWPC_SeperateStopRequestSignalsITS". This feature Separated ADA stop request and standard stop request into two isolated signals for ITS vendor of SFMTA.

Bugs

- Re-assigned "both doors open" signal for BCT's ITS supplier from mux output 1.2 connector E pin 6 to pin 8. This output had previously been assigned for a horn relay that LADOT and SCVTA2 uses for a driver seat sensor option. Relaxed the tolerance of the accelerator pedal sensor rationality diagnostic to align with hardware specifications.
- The "EP_bo_DOOR_EntranceLightingEnabled" configuration was disabled on accident in V6.0.0 release and wasn't forcing the lights on high brightness when the doors opened. The Eeprom is now re-enabled and works as originally designed.

Tools Required:

- Laptop Computer
- Nexiq USB-Link 2

Programs Required:

- Proterra Diagnostics Tool

Software Files Required / Preparation



IMPORTANT! NEVER access the software from the USB memory device, ALWAYS copy the software files to your computer hard drive and access the software from this location. Secure the bus with the Vehicle Master Disconnect in the rear ON.

Component	Part Number	Version
Body Controller	059802	6.10.2

It is recommended that you copy the entire "service bulletin files" folder to your local machine in order to more effectively keep track of the software versions you are deploying:

<\\bus.local\\files\\Engineering\\Service Bulletins\\Service Bulletin Files for SC-21-142\\>

Service Bulletin Execution

1. Update the Body Controller using the process in [Appendix A](#)

BODY SOFTWARE UPDATE PROCEDURE

Description

This document contains the necessary information to update the Body Controller on a Proterra Vehicle. This controller provides the control algorithms for body functionality on 800V models. This covers the control logic relating to driver inputs and display, stop requests, doors, interior and exterior lighting, and ramp control.

Tools/Programs Required

Tools Required:

- Laptop Computer
- Nexiq USB-Link 2

Programs Required:

- Proterra Diagnostics Tool

Software Files Required / Preparation

To program the body controller, you will need a *.ZR32A_A data file. This file contains the necessary firmware files and a baseline configuration to provide an operational bus body. The bus may need to be configured to match customer specific functionality after programming.

If the vehicle has already been configured, the Proterra Diagnostics Tool will attempt to automatically carry the configuration information forward into the new software version.

If needed, configuration information is contained in the released customer configuration documentation. Ensure that you also have the configuration definition for the customer's vehicle.



IMPORTANT! NEVER access the software from the USB memory device or network drive, ALWAYS copy the software files to your computer hard drive and access the software from this location.

Preparing the Vehicle to be Programmed

When programming a vehicle, it is critical that the low voltage batteries remain connected throughout the process. Ensure that the LV batteries are fully charged before starting the process. If they are low you can use the vehicle to recharge them by turning on high voltage, or you can place the bus on a low voltage charger for the duration of the process.

Connecting to the Vehicle

This process will guide the user to connect to the vehicle with the Proterra Diagnostics Tool.

1. Power up and login to the Proterra-Supplied laptop or a comparable PC that has the Proterra Diagnostics Tool software installed with a valid license.
2. Turn **ON** the 12/24V rear Vehicle Master Disconnect located at the curbside rear charge port access panel.



Vehicle Master Disconnect

3. Connect the Nexiq USB Link2 device to the laptop and to the OBDII Diagnostic Port located in the Street-Side wheel well box.



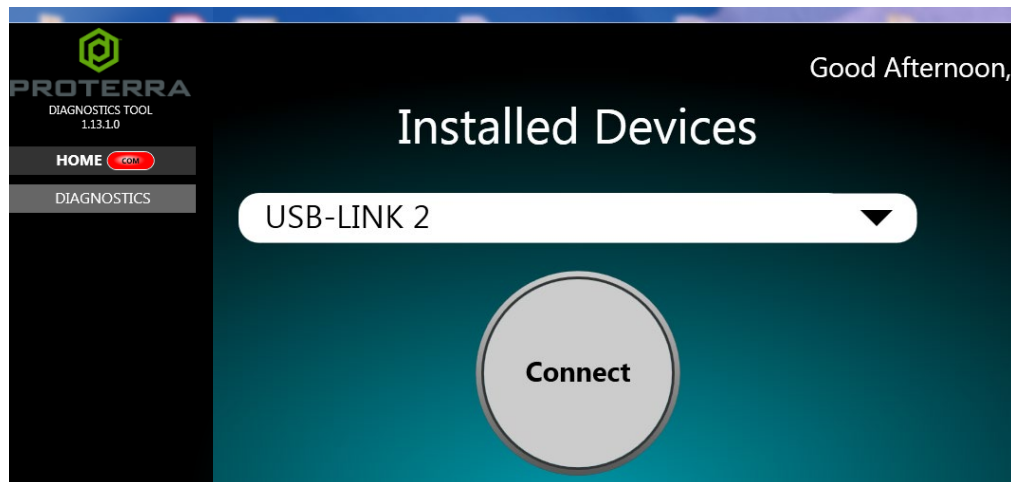
4. Turn the Driver's Master Switch to the **ACC** position.



5. On the laptop, double-click on the Proterra Diagnostics Tool software icon to start the software.



6. When the program opens, read and click OK for the high voltage safety prompt.
7. On the Home tab, select the appropriate device from the drop down and click "Connect".

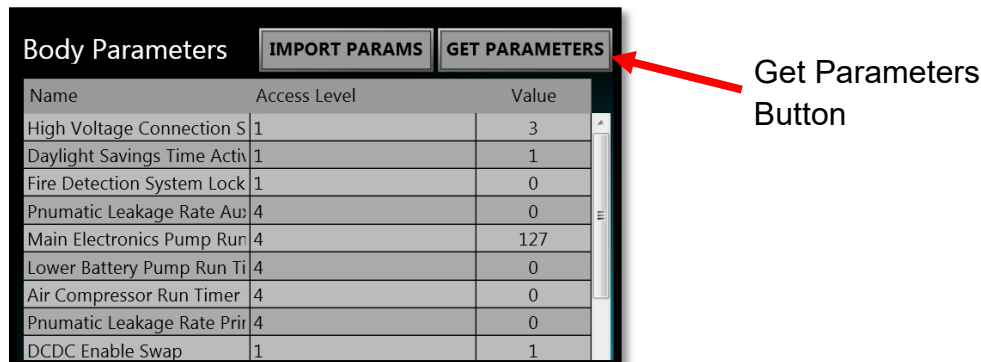


8. Once the Proterra Diagnostics Tool has connected to the vehicle, you will have a VIN number and connection status displayed on the home screen, and tabs available to navigate. If you don't, double check that the low voltage batteries are connected and that the Nexiq tool is plugged in.

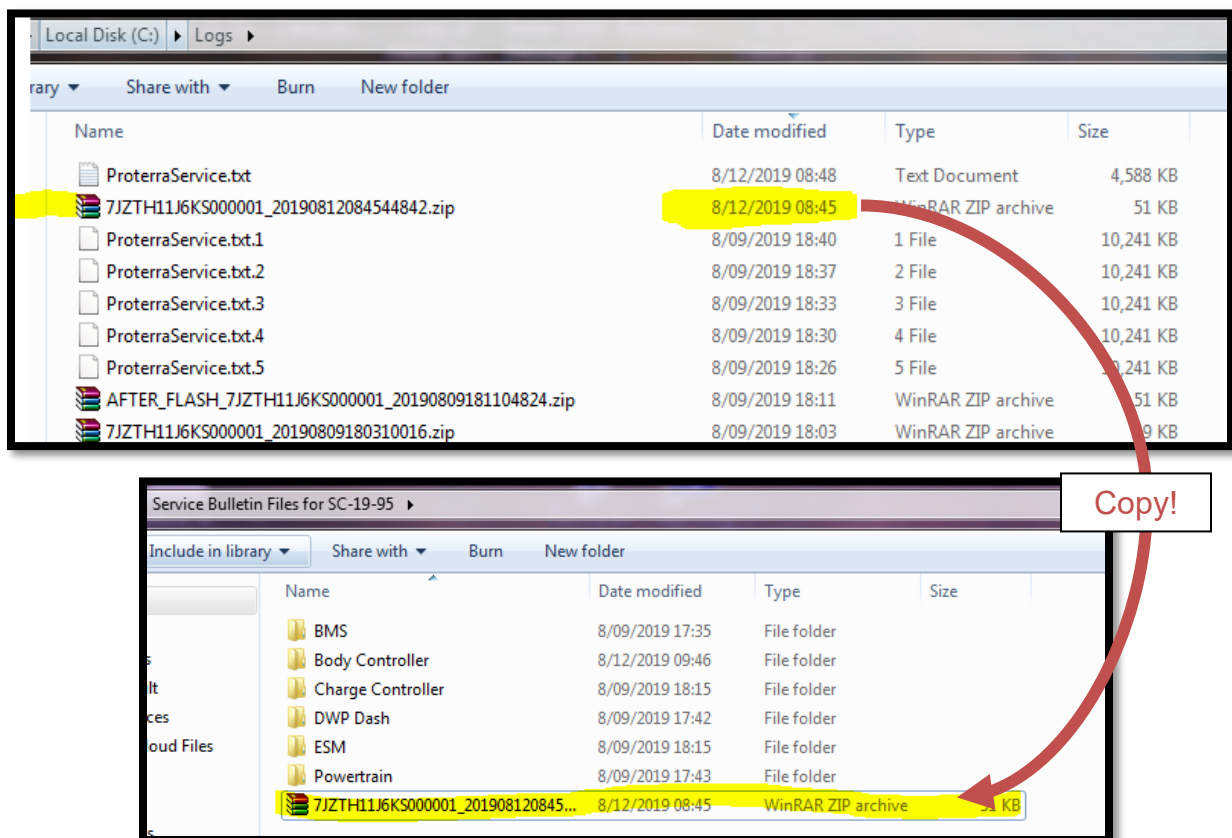
Download and Store Existing Parameters

Sometimes you might want to download and store the customer specific parameters from the vehicle. This can be useful when comparing two vehicles that are behaving differently, or if you are replacing the ZR32A controller on a vehicle.

1. After the first vehicle has been completed and verified, disconnect the Proterra Diagnostics Tool and then re-connect.
2. Navigate to the Configuration tab and click the “Get Parameters” button. This will download the latest parameter set to the “C:\Logs” folder on your machine.



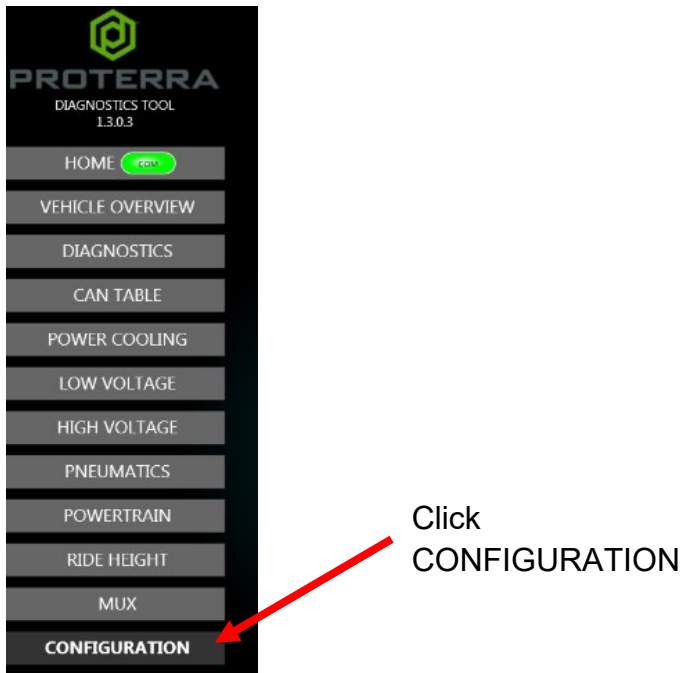
3. In windows file explorer, navigate to the C:\Logs folder. Copy the latest downloaded *.zip file to a folder for the specific customer and vehicle.



4. Do not rename the file as the tool will follow the naming convention when reloading the file.

Update Using the Proterra Diagnostic Tool

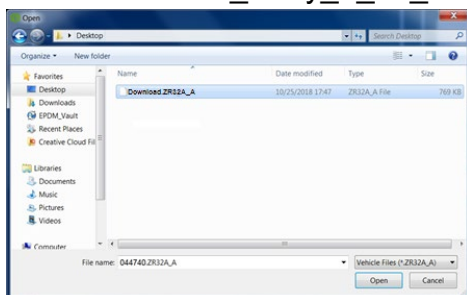
1. Navigate to the CONFIGURATION tab in the left menu.



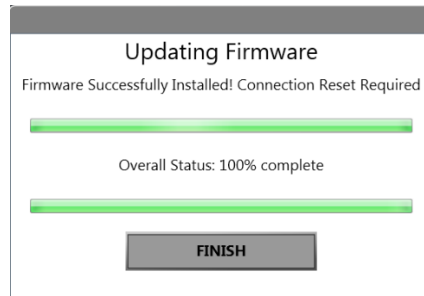
2. If this is a replacement controller, select the “SET VIN” and program the controller to match the vehicle VIN, then proceed to step 3. If not proceed to step 3.
3. Select the option for Body Firmware “START FLASH”.



4. In the pop-up window, select the software flash file to load to the controller. The correct file is named “059802_Body_6_10_2.”



5. The Programming window will come up and will take a few minutes to complete. The process will flash 5 different files to the controller.
6. After the controller is updated the tool will automatically try to copy over the original configuration into the new software. Since there is a possibility that configuration options change it is important to check the configuration after restarting the vehicle.



7. Once the process has finished, cycle power to the bus by moving the driver master switch back to the off position before continuing.
8. Return the bus to service.