ISSUE DATE:	11/10/2022
SERVICE BULLETIN SUBJECT:	800 Volt Limited Release Vehicle Controller Software Update
VINs or MODELS AFFECTED:	Service Specified Buses
COMPLETE BY:	Next Service Opportunity
SERVICE BULLETIN #:	SB-22-144
Labor Operation Code:	N/A

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

VEHICLE CONTROLLER SOFTWARE UPDATE

Description

This procedure describes the process for updating the Vehicle Controller software to the latest version.

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Tools/Programs Required

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
Vehicle Controller	063191	4.8.1

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-22-144\

Summary of Software Changes:

Vehicle Controller:

- Allows pre-conditioning during manual charging.
- Allows chiller operation during manual charging.

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VEHICLE SOFTWARE UPDATE PROCEDURE

Description

This document contains the necessary information to update the Proterra Vehicle Integration Controller. This controller provides the electrical integration of ancillary systems on 800V models. It owns the vehicle operational state control, startup and shutdown, steering, pneumatics, thermal management, and brake interlock controls.

Tools/Programs Required

Tools Required:

- Laptop Computer
- Nexiq USB-Link 2

Programs Required:

- Proterra Diagnostics Tool

Software Files Required / Preparation

It is recommended that you download any files local to your machine. To program the vehicle controller, you will need a *.hex data file. This file will contain memory address and data information that will be written to the controller in order to update the user code space. This will not update the boot loader or other firmware files.

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.

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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, use the vehicle to recharge them buy turning on high-voltage or place the bus on a low-voltage charger for the duration of the process.

Connecting to the Vehicle

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 streetside wheel well box.

4. Press and hold the streetside wheel well “Work Light” switch until the work lights turn on.

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

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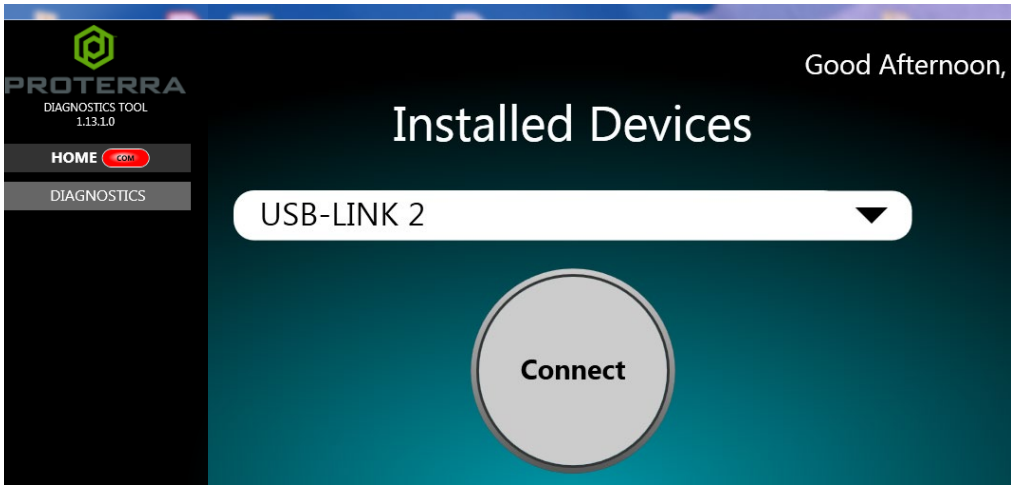
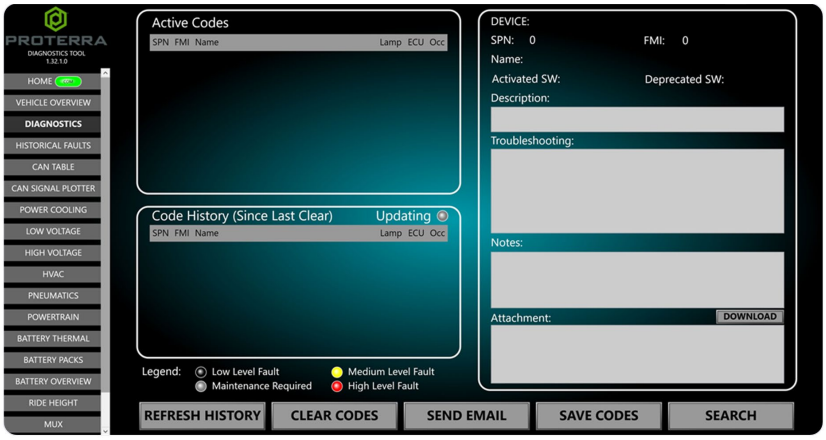
6. When the program opens, read and click “OK” for the high-voltage safety prompt.

7. On the Home tab, select the appropriate device from the drop down and click “Connect”.



8. Once the diagnostic tool has connected to the vehicle, a VIN number and connection status will be displayed on the Home screen, and tabs available to navigate. If you do not see the Home Screen, check that the low-voltage batteries are connected and that the Nexiq tool is plugged in.
   NOTE: 800V Proterra vehicles are equipped with an automatic battery disconnect that will protect the low-voltage batteries from a deep discharge.

9. Before beginning the programming process, check the bus for existing faults by clicking on the “Diagnostics” button below and make a note of any found.



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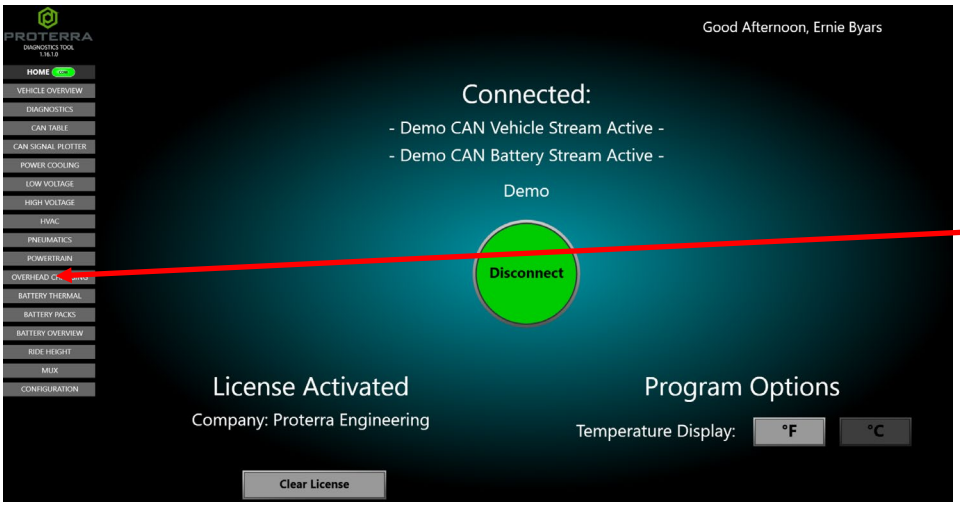
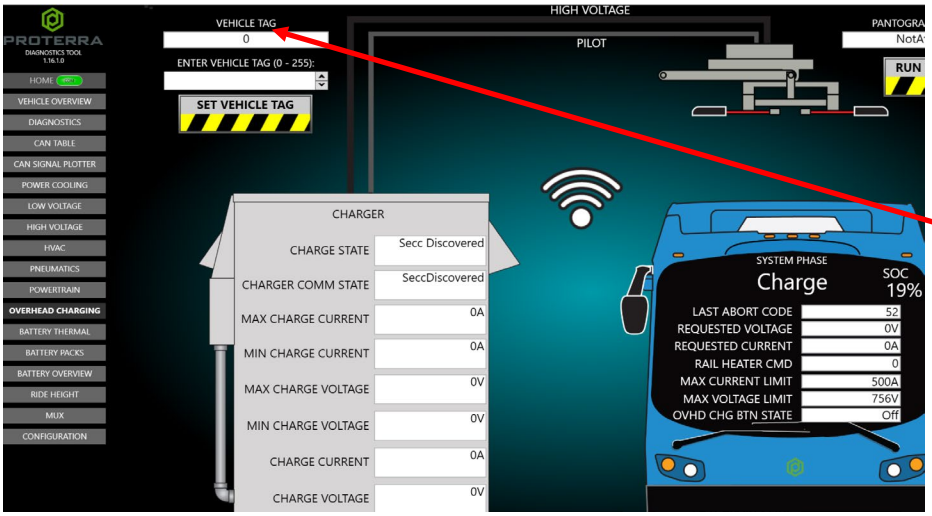
Update Using the Proterra Diagnostic Tool

1. Click on the “Overhead Charging” button on the left side of the screen.
   NOTE: If the bus that you are working on is not capable of overhead charging, skip to step 3 below.



Click “Overhead Charging”

2. Record the value displayed in the “Vehicle Tag” data field. This will be re-entered into the controller after the software update.



Record Vehicle Tag

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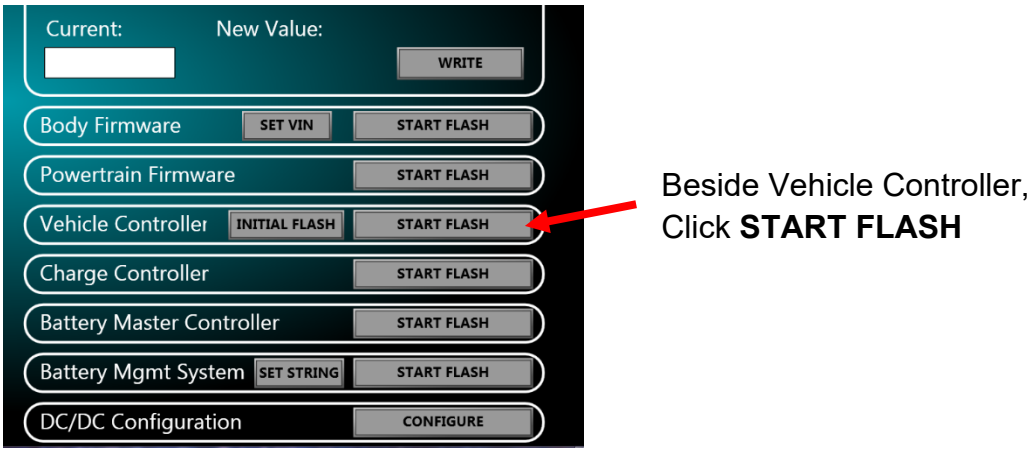
3. Navigate to the “Configuration” tab in the left menu.

4. Select the option for Vehicle Controller “Start Flash”.
   NOTICE: The “Initial Flash” button is only for offline programing of the Vehicle Controller with an Offline Programming Kit.



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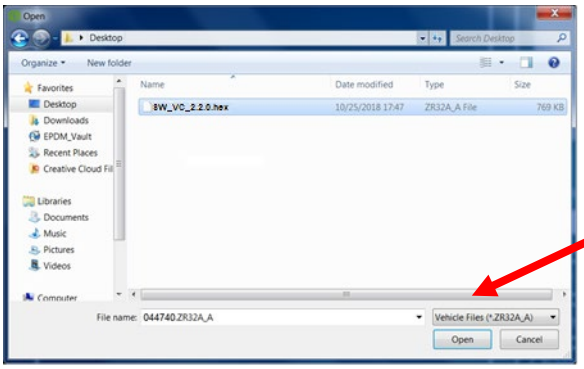
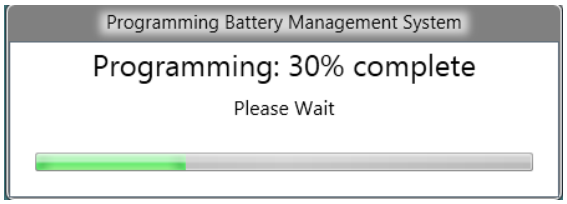
5. In the pop-up window, select the software flash file to load the controller. The correct file is named SW_VIC_4.8.1.



Select the file and Click “Open”

6. The Programming window will come up and may take a few minutes to complete.



7. After completing the software update, turn off the “Work Light” switch inside the streetside wheel well box.

8. Click on the “Overhead Charging” button on the left side of the screen.
NOTE: If the bus that you are working on is not capable of overhead charging, skip to step 10 below.

9. Turn OFF the 12/24V rear Vehicle Master Disconnect located behind the vehicle curbside rear charge port access panel, wait ten seconds, and then turn back to ON.

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10. Verify that the vehicle turns on with no faults and that it is capable of charging.

11. Return the vehicle to service.

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