Data Link Adapter Guide

This guide provides references to recommended hardware options that can be used as a USB-CAN interface, also referred to as a Data Link Adapter (DLA), to connect the controller to a development system.

Background Info:

All CM and VMM controllers support diagnostics and software downloads over CAN. Before using the controller, install the appropriate software tools onto your PC.

Installing the Software Tools:

The following software tools are required:

- **USB-CAN Interface:** This device acts as the interface between the PC and the CAN bus. See list of supported devices in Recommended Interfaces section of this document.

- **Flash Loader:** Software tool that transfers compiled application software from the PC to the controller.

Installing the Flash Loader:

Flash Loader does not need to be installed. All you need is the executable **FlashLoader.exe**.

FlashLoader.exe is found within the SDK files. Contact your Parker Account Representative if you cannot find the file.

Downloading the Application Software using the Flash Loader:

The Flash Loader transfers application software files that were created using the Software Development Kit (SDK), from your PC to the controller.

This section assumes a Vansco Software File (VSF) is available and ready to be transferred to the controller using Flash Loader. Parker provides a VSF with every controller.

Note: For more information about writing software for the controller

using the SDK, contact your Parker Account Representative.

- **If you are creating a custom application**, the provided VSF is a simple example application that can be transferred to the controller to ensure the product works. Refer to the supplied SDK information on how to create a custom application.
- **If you are not creating a custom application**, the provided VSF file is the actual application that Parker has written for your controller.

To transfer the VSF file to the controller:

1. Connect the controller to the Controller I/O board using the development harness for the target controller.

2. Connect the Controller I/O board CAN connection to the USB-CAN Interface.

3. Connect the Controller I/O board power to a power supply.

4. If no external CAN termination is used, make sure the that Controller I/O board DIP switch 1 is in the ON position.

5. Power up the Controller I/O board.

6. Wake up control module using digital wake up input. Typically this is switch 1 on the Controller I/O board but may be different depending on the target controller.

7. Open **FlashLoader.exe**.

   The *Flash Loader* screen opens, showing a box on the left that lists every module on the J1939 network that supports the J1939.

   Note: Additional modules may appear in the modules list, as they also support J1939. Although these "extra" modules support J1939, they won't always support downloading over J1939 with Flash Loader.
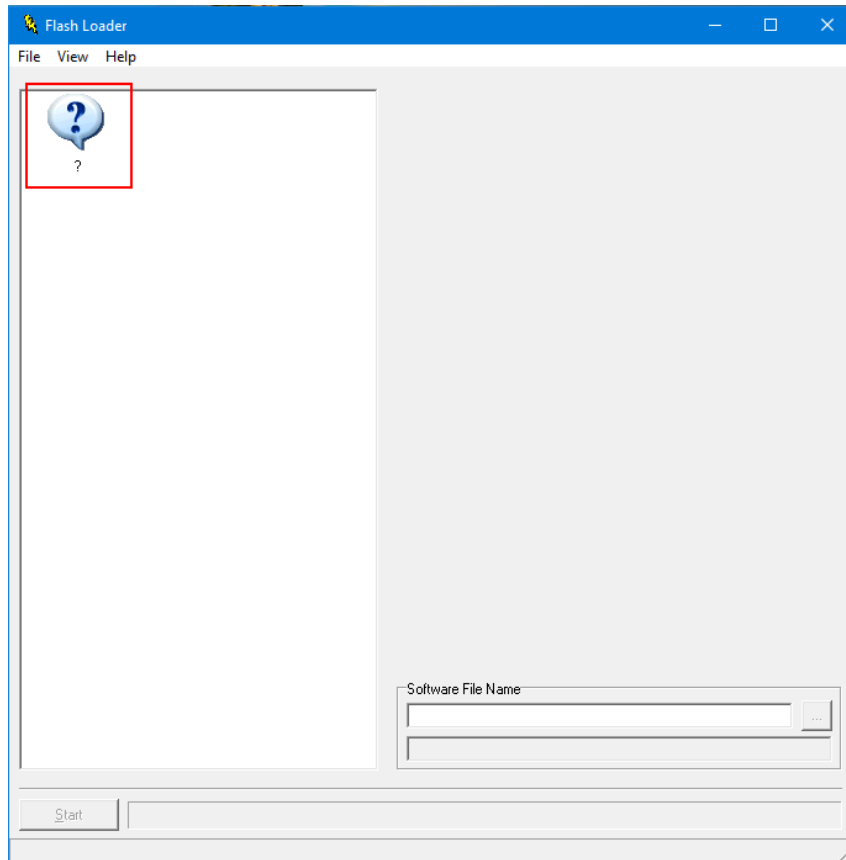
8. From the modules list, select your specific **controller model**.
   Once selected, the information on the right side of the flashloader window should populate and look similar to the view below. It is important to note the Source Address field to confirm the correct device is selected. If this is a unprogrammed controller, this address will typically be 0xFD.
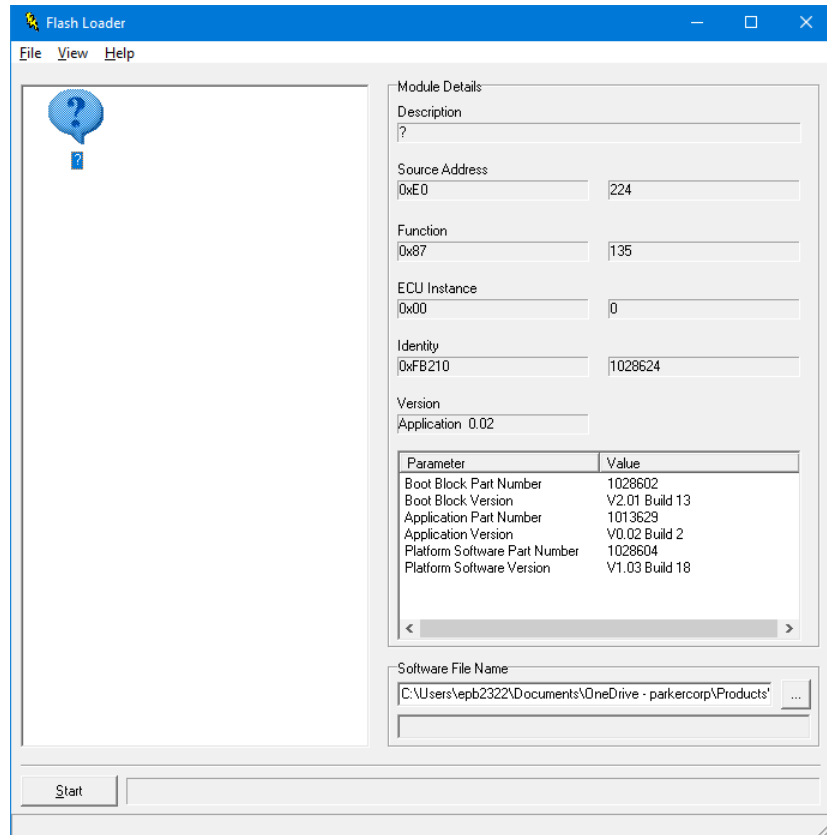
9. From the **Software File Name** list, user the triple dot button to select your VSF file.

10. Once you have selected the correct vsf file, click **Start**.

- Flashloader will set the controller into reprogram mode, erase the application flash area, and then download the application file to the controller. Once complete, a confirmation screen opens.
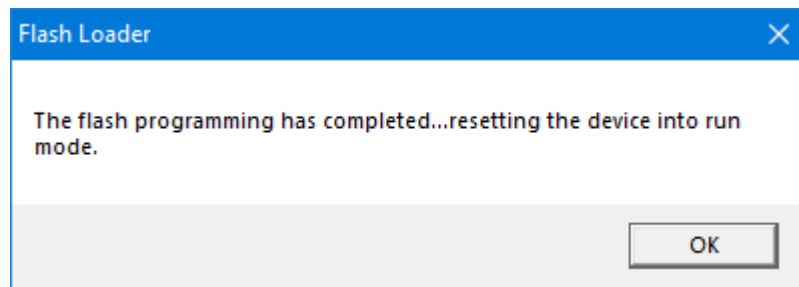
- If the download fails, typically it is one of the following reasons:
- The application file is not valid for the targeted controller.
- The CAN bus is noisy, missing termination, or the busload is too high.
- The controller lost power or voltage supply is too low.
- There are multiple devices on the bus with the same source address.

Recommended Interfaces:

- Parker DLA (obsolete) - Parker's USB Data Link Adapter (USB-DLA) is an adapter that provides a link between two different data networks or protocols. (https://ph.parker.com/us/en/usb-dla-data-link-adapter/0779a06ecd)
- Parker Vehicle System Gateway (PVSG) - The PVSG provides routing and gateway interfacing between communication ports (https://ph.parker.com/us/en/gateway-module-parker-vehicle-system-gateway)
- NEXIQ USB Link- Widely used vehicle communications interface adapter (www.nexiq.com)
  - USB-Link
  - USB-Link 2

Contact Parker for information about supported DLA interfaces.