INSTRUCTION TO SERVICE

ITS: 61234	January 1, 2025
SECTION:	260-BATTERY COMPARTMENT
WRITTEN BY:	Ilan Kizner
SUBJECT:	ABS Batteries Software update procedure
SUMMARY:	The following ITS will provide an update to the current ABS software in the field and will include the following software hotfix: 1. Changes to fault set parameters to reduce nuisance Thermistor faults. 2. Correction to charge current limit with faulted thermistor. 3. Shunt MIA: Fault clears without a power reset, if fault no longer present. 4. 40A current limit: Unable to test: specific issue is not repeatable

ITS61234

THIS ITS DOCUMENT SHOULD BE RETAINED AND REFERRED TO FOR FUTURE MAINTENANCE UNTIL THE NEW FLYER PARTS AND/OR SERVICE MANUAL IS UPDATED TO REFLECT WORK DONE AS A RESULT OF THIS DOCUMENT. ENSURE THAT THIS DOCUMENT IS AVAILABLE FOR PARTS AND MAINTENANCE STAFF GOING FORWARD.

Contents

⚠ WARNING: **Only trained personnel shall supervise and perform High Voltage system testing, checkout and troubleshooting. Two personnel (one called the Checker & the other called Monitor/Recorder) shall perform Checkout Procedures, together, to ensure safety of themselves, others nearby & for the protection of vehicle & property. Refresher training shall be provided to these personnel on a regular basis and when new systems are to be checked by them. The training of the personnel shall consist of:**

1. SAFETY PROCEDURE

1.1. Turn the master run switch to the off position and wait 5 minutes before proceeding.
1.2. Turn the 12/24V battery disconnect and HV Interlock switch to the “OFF” position.
1.3. Lock and tag the electrical system of the bus out and retain the key. See Figure 1.
1.4. Install a Lockout/Tagout Steering wheel cover as require.

☞ ***NOTE:*** ***Refer to the Lockout/Tagout Procedure in section 1 of your Preventive Maintenance Manual or section 9 of your Service manual for additional information.***

☞ ***NOTE:*** ***Use commercially available lock out equipment and tags being sure to follow any local laws or workplace procedures.***

☞ ***NOTE:*** ***Refer to New Flyer High Voltage Safety Guidelines and Procedures Document 532295 when completing installation or service work on high voltage power cables.***

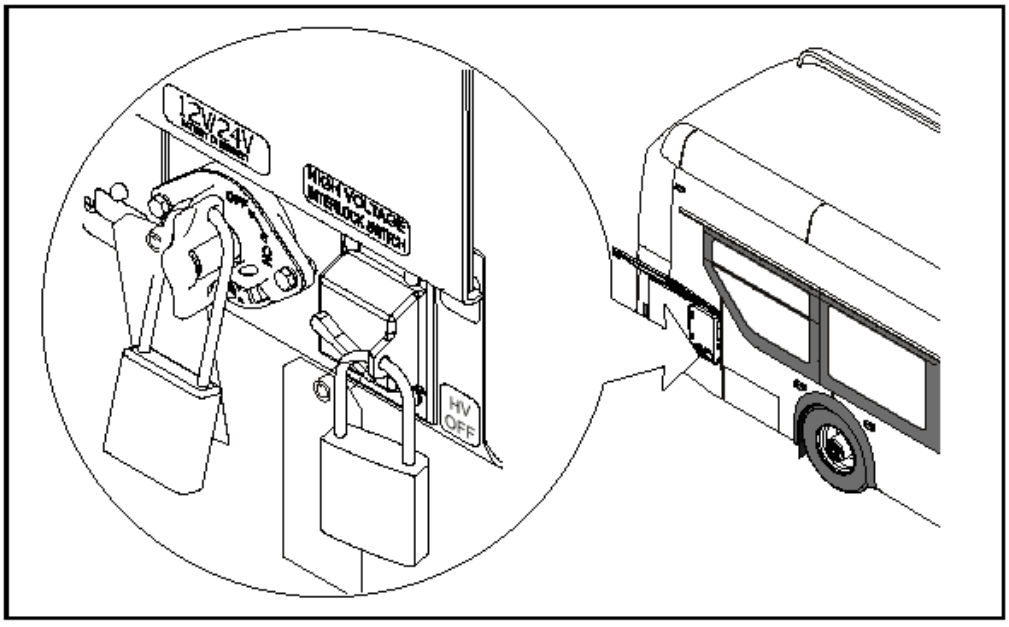

Figure 1- Lockout tagout location reference

2. Rework – ABS Battery software flashing requirements.

2.1. Tools Needed:

A. Laptop w/ Peak drivers installed.

B. PEAK-CAN Tool w/ 9-Pin diagnostic interface.

C. Vector CAN Logger

2.2. Software Needed:

A. Vector Logger Suite

B. Vector CANalyzer v8.5 (or newer).

2.3. ABS software verification:

Before performing this procedure, please follow Appendix A to verify the version in the batteries matches what is loaded to 290-645U, if not please proceed with flashing procedure.

3. ABS software Flashing Procedure

3.1. Turn MRS ON, **DO NOT** enter HV.

3.2. Connect laptop to the EBUS DIAG on Channel 2 using a Peak CAN Tool.

3.3. Please reach out to the RPSM and request the link to the ABS folder. RPSM should have access to a OneDrive folder provided by TSS.

3.4. Navigate to the client folder: [NF PN FOLDER] -> client Open string_number.txt

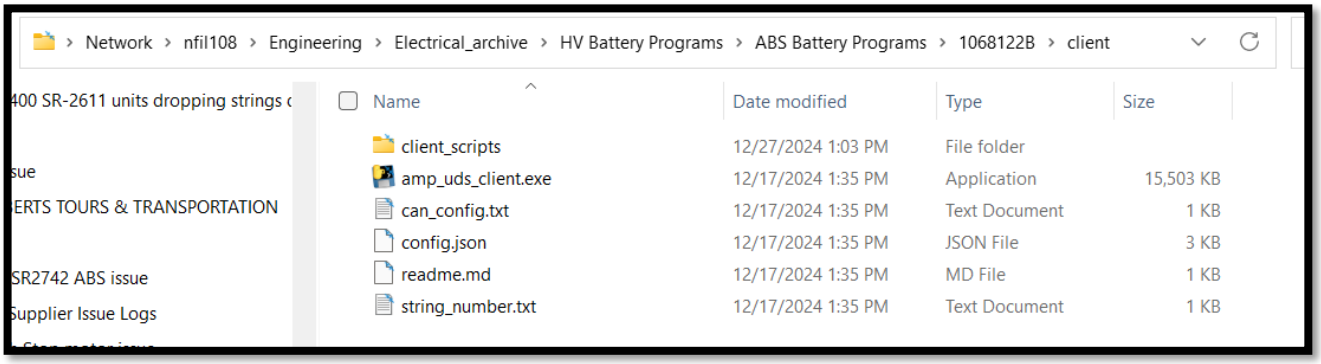

Figure 2 - ABS Battery client folder

3.5. Change the string number to the desired ABS ESS to be updated:

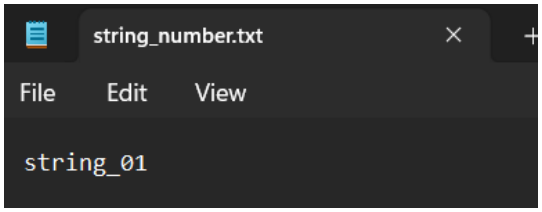

Figure 3 - String_number as shown in the file

3.6. Save file and close.

3.7. Navigate to the client software folder: HV_NF_V_08… -> client -> client_scripts

3.8. Run abs_hv_mute_all.bat.

4. Run abs_hv_program_cal.bat and wait until finished.

4.1. This step is complete when the prompt reads “done downloading app”.

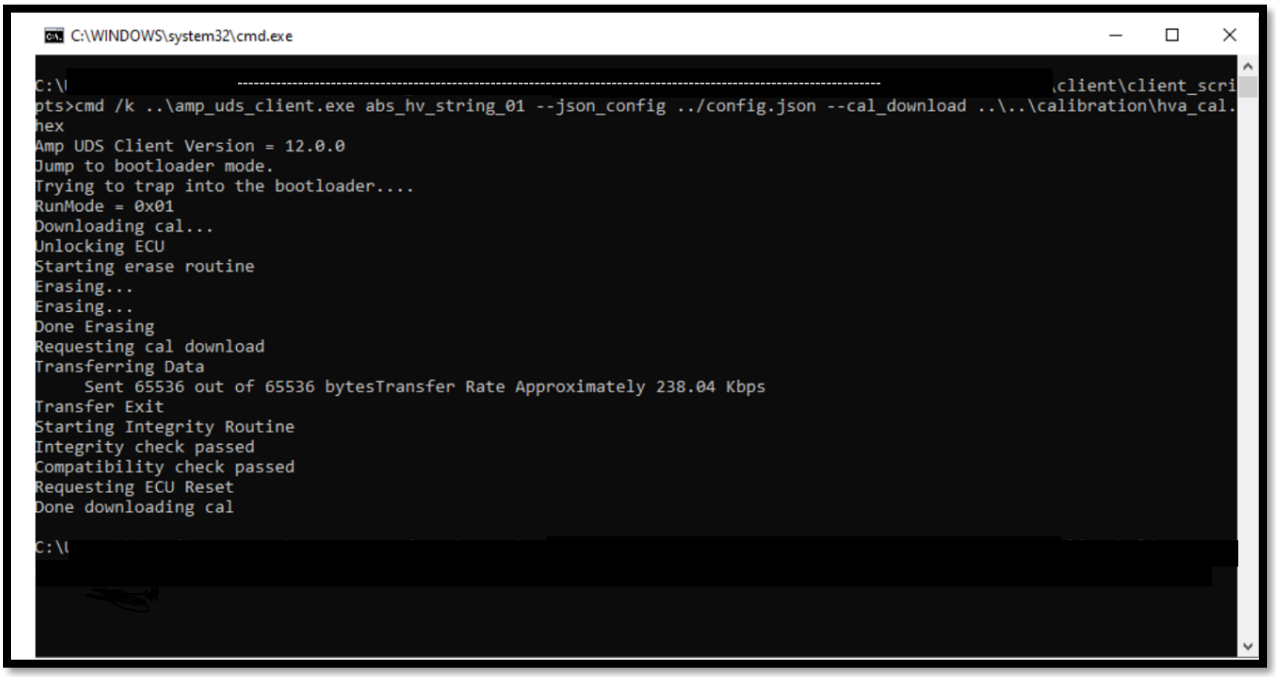

Figure 4 - CMD window

4.2. Close window.

4.3. Proceed to next step.

4.4. Run abs_hv_program_app_gamma_4_5_jb.bat and wait until finished.

This step is complete when the prompt reads “done downloading app”.

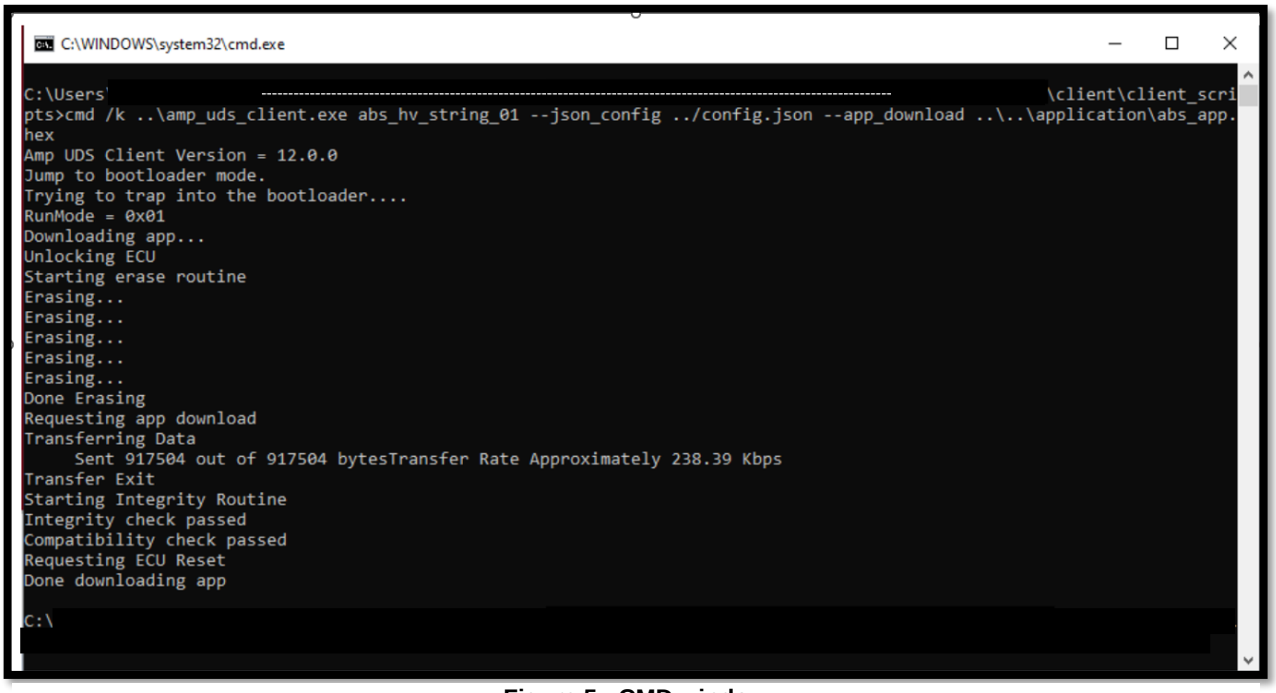

Figure 5 - CMD window

4.5. Close window.

4.6. Repeat steps 2 thru 9 for all strings on bus.

4.7. Run abs_hv_unmute_all.bat **AFTER** all strings have been updated.

4.8. Turn MRS_OFF

4.9. Wait 1 minute after MRS OFF, then cycle 24V Power to reset ABS ESS (knife).

4.10. Turn MRS ON – Verify no persistent faults/telltales from ABS ESS SW update process.

4.11. Flashing procedure complete.

Appendix A – Software verification

To verify what software is already loaded to the ABS battery system, perform the following steps:

1. Connect a Vector CAN Data Logger to the port on the vehicle that monitors the ESS.
2. Turn MRS (T15) to the ON position.
3. Wait approximately 5 minutes, to ensure the ESS has time to fully wake up.
4. Turn the MRS (T15) to the OFF position.
5. Disconnect the CAN logger from the vehicle.
6. Export the log using Vector Logger Suite.
7. Launch CANalyzer and open “ABS_Config.cfg” (this is provided by ZEP Engineering)
8. Import the log into CANalyzer.
9. Run the log.
10. Search the ABS Software Version part number in the BOM under option group 290-645U
11. In the CANalyzer Trace window search for a signal named HVESP01_Version_X (X will depend on the string you are looking at).
12. Ensure the correct Software version matches what is loaded to the BoM.

Note: Please refer to TSS group for any assistance with reading the CANalyzer Log

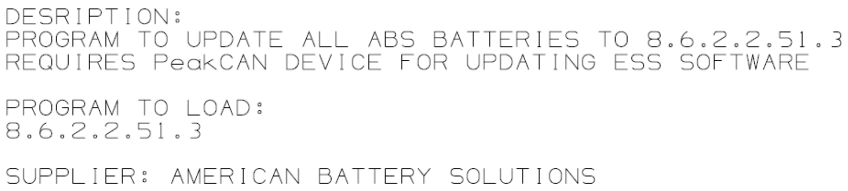

Figure 6 - Example of vendor part number from drawing.

BATT_HwVerApp	8
BATT_SwVerMajorApp	6
BATT_SwVerMinorApp	2
BATT_SwVerSubMinorApp	2
BATT_SwVerAbsCusApp	51
BATT_SwVerAbsIntApp	3

Figure 7 - Example of BATT_SWVer signals in CANalyzer

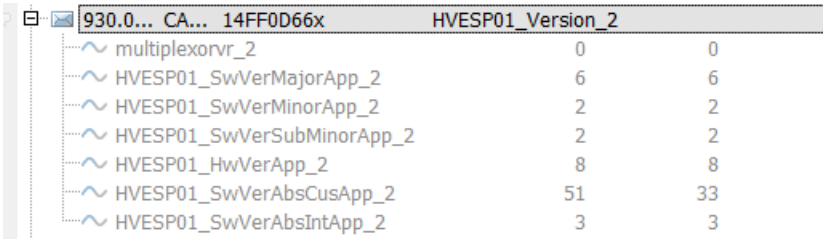

Figure 8 - Example of the Signals shown in the trace window for String 2 (HVESP01_Version_2)

LABOUR ESTIMATE				
	Operation	Number of Technician(s)	Hours	Labor Time T X HR
1	Rework – ABS software flashing	1	1	1

PARTS REQUIRED					
Item	Part Number	Description	Qty. per Coach	Units	Notes