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Other Languages:	NONE	**Author:**	Charles Schroeder
Viewed:	1422		

Less Info

Title: Programming Procedure for Center Panel Switch Packs

Applies To: LT, RH, HV, MV, 2018+ Lonestar, 2021+ HX

CHANGE LOG

Please refer to the change log text box below for recent changes to this article:

02/03/2021 - Added notes for supporting BCM software level, Data Version 324 or higher is required.
01/29/2021 - Updated steps to show programming to Kernel 24 or Higher. DLB programming functionality for the swtich pack software has been restored. Note updated to reflect this. Previous note removed.
07/31/2020 - Added additional notes for resetting the switch packs, and a note that programming functionality has been removed from DLB at this time.
07/07/2020 - Adjusting coding for visibility. No content changes.
06/22/2020 - Initial Article Release.

DESCRIPTION

To resolve an issue where the functionality of one switch pack may flip with another switch pack, the programming procedures for the center panel switch packs have changed. The modules will no longer be plug and play. Programming is required if you add or replace a switch pack, or if you want to update the old switch pack programming to the new programming. Programming the switch pack software is a stand-alone programming function in DLB. **The switch pack programming is not covered and will not occur following IK0800550 - Multi Module Programming Information for In-Cab Modules.** You will need to program and assign the source address to the switch pack modules for them to function properly. Review the scenarios below to determine which path to follow. All switch packs must have the same kernel. **The Body Control Module (BCM) software must be at Data Version 324 or higher to support programming the switch pack software.**

NOTE:

If a vehicle is down and cannot be programmed, unplug the #1 switch pack for 30 seconds. Then plug it back in. This will force all switch packs modules to perform a source address claim at their current software level, and will restore functionality. Disconnecting the batteries will also work to force the switch pack modules to perform a new source address claim.

Example of What Happens to Switch Pack Source Addresses

NOTE:

11/17/2020 - New switch pack software has been released. The programming functionality in DLB has been restored.

NOTE:

Moving switch locations and updating the switch pack software are not the same thing.

Moving Switch Location Using DLB	Updating Switch Pack Software (Kernel) Using DLB
	Updating the software in the switch pack base, which controls how the switch pack module operates, including module source address. 
• Changing the switch location is a function in DLB • It changes the switch configuration in the BCM, and the BCM alone controls this functionality • You are not programming any part of the actual switch pack when this action is performed	• Programming software (Kernel) within the switch pack base is a function in DLB • This is not related to moving switch locations • The procedure to update the switch pack base software (Kernel) is what is covered in this iKNow article

SYMPTOMS

Diagnostic Trouble Codes & Dashboard Indicator Lights:

- **Faults will vary based on switch content and configuration. Some possible faults are listed.**

DTC/Light	Description
33 - SPN 516527 FMI 13	Switch Configuration Mismatch
33 - SPN 516528 FMI 13	Switch Configuration Mismatch
33 - SPN 687 FMI 2	Forward Rear Diff Lock Switch Error
33 - SPN 691 FMI 2	Power Divider Lock Switch Error
33 - SPN 986 FMI 2	Engine Fan Switch Error

Customer Observations or Concerns:

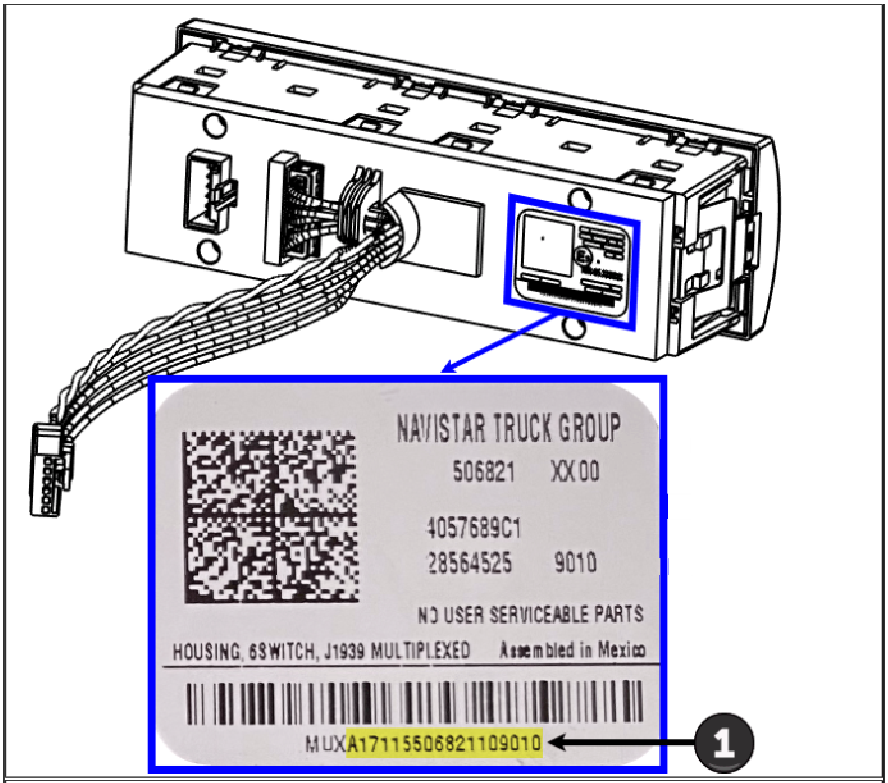
- Switch pack switches are flashing red
- Switches may operate a function of a different switch pack.
  - Example: A switch in the #1 switch pack may operate as the switch directly below it in the #2 switch pack

SPECIAL TOOLS / SOFTWARE

Tool Description	Tool Number	Comments	Instructions
Diamond Logic® Builder		EZ-Tech Software	

SERVICE PARTS INFORMATION

Kit Description	Part Number	Quantity Required	Notes
Housing, Switch, 6 Package DIN Multiplex	4057689C3	If needed	



1. Switch pack serial number

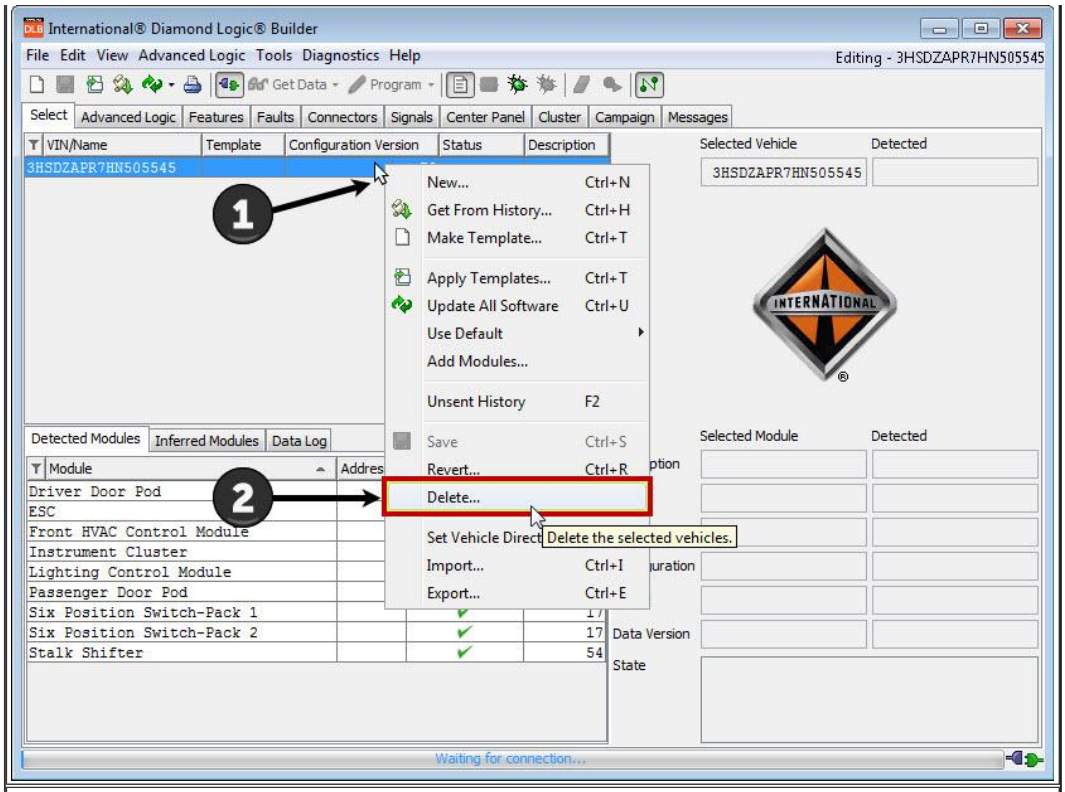
DIAGNOSTIC STEPS

Check the kernel version of the parts that are currently installed in the vehicle, and the kernel of the new part if you are replacing a switch pack.

Part 1 - Check existing switch pack software in vehicle

1. Open DLB and delete the VIN from the vehicle you are planning to connect to if present

Figure 1 - Delete VIN from DLB

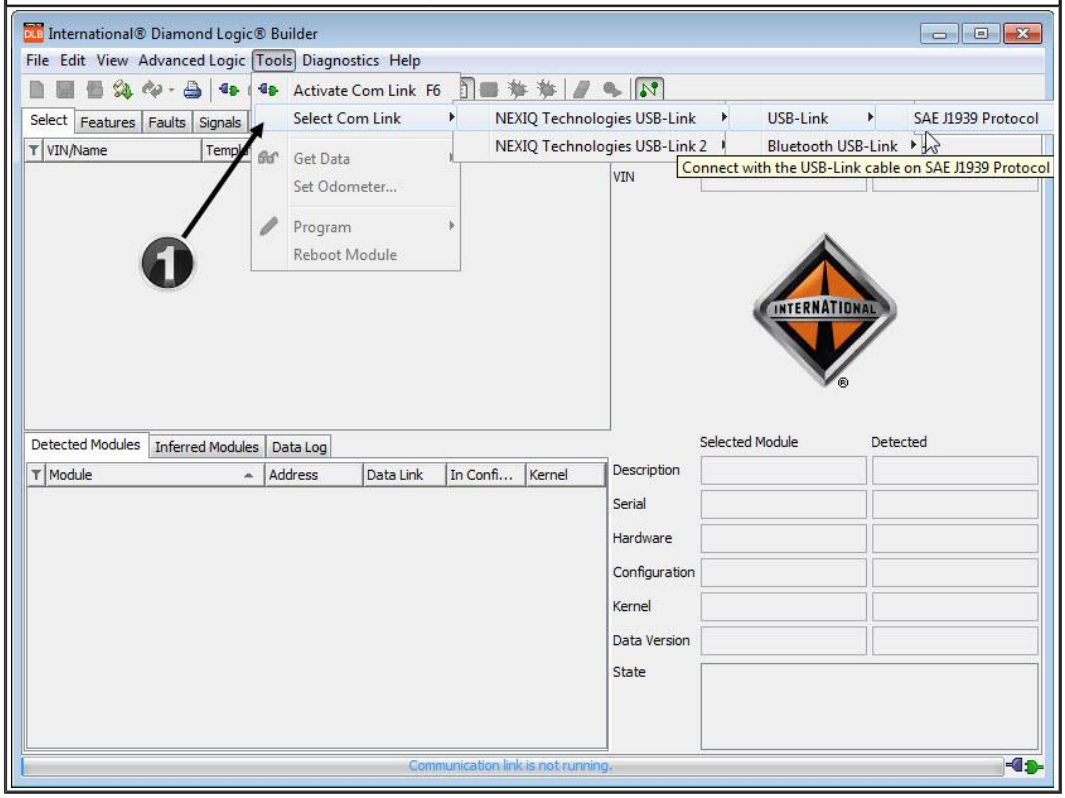


To delete the VIN from DLB:

1. Right click on the VIN you wish to delete
2. Navigate down and select "Delete..." as sown in Figure 1

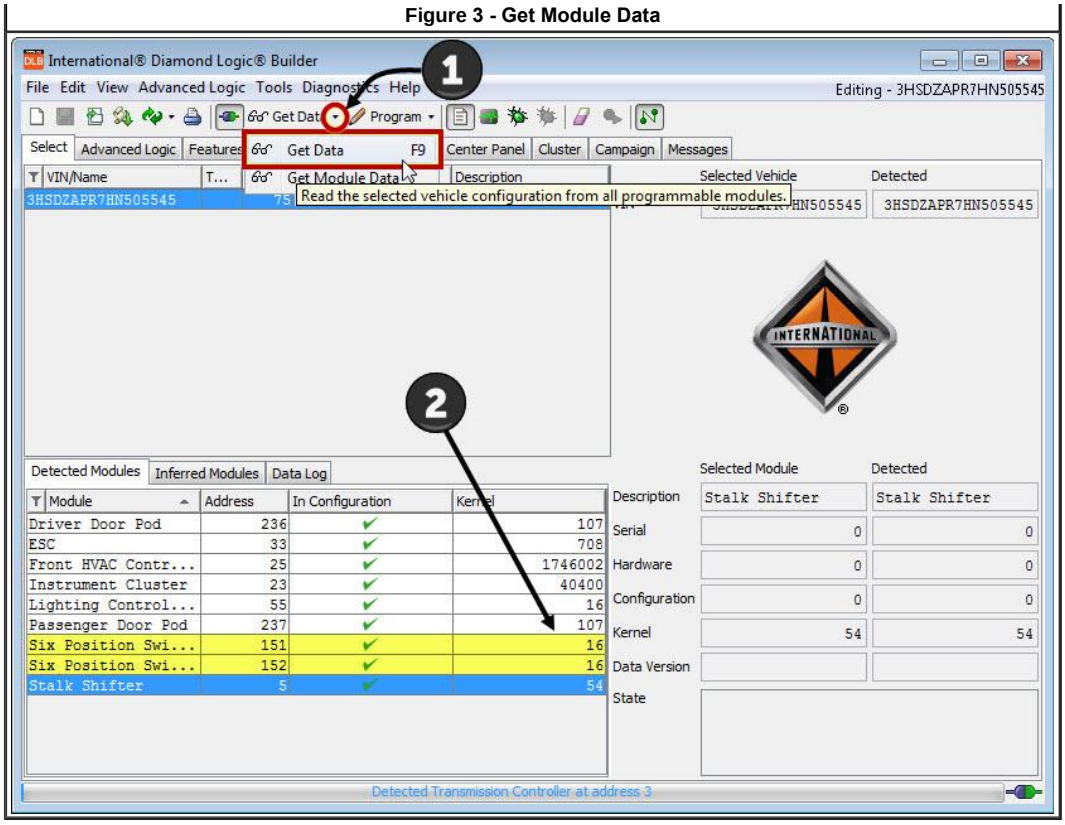
2. Select the communication device you are using

Figure 2 - Select Com Link



3. Use the "Get Data" function in DLB to ensure the module data you are seeing is accurate. The key must be ON.

Figure 3 - Get Module Data



4. Note which kernel is being displayed for the Six Position Switch-Packs
   - 23 or 17 or lower (Kernel 23 is identical to Kernel 17) - These Kernels are subject to the complaint of switch packs "flipping" or switches operating other features.
   - 24 or higher

Part 2 - Check replacement part switch pack software that you will be installing in the vehicle (if applicable)

1. Unplug the #1 switch pack
2. Plug the replacement part into the truck harness
3. Leave the remaining switch packs unplugged
   - There will only be the single replacement part plugged into the truck harness
4. Unplug the pigtail from the last switch pack, and plug the pigtail of the replacement part back into the truck harness (yellow and green wires).
5. Connect with DLB and get the module data and check the kernel displayed
   - 23 or 17 or lower (Kernel 23 is identical to Kernel 17) - These Kernels are subject to the complaint of switch packs "flipping" or switches operating other features.
   - 24 or higher

Determine the Programming Path to Follow	
Updating modules from 23 or 17 or lower (no parts being replaced, or service part is also at 23 or 17 or lower)	Replacing switch pack - Truck switch packs are at 23 or 17 (or lower) - Replacement part is at 24 (or higher)
Replacing switch pack - Truck switch packs are at 24 (or higher) - Replacement part is at 23 or 17 or lower	Replacing switch pack - Truck switch packs are at 24 (or higher) - Replacement part is at 24 (or higher)

NOTE:

The Body Control Module (BCM) software must be at Data Version 324 or higher to support programming the switch pack software.

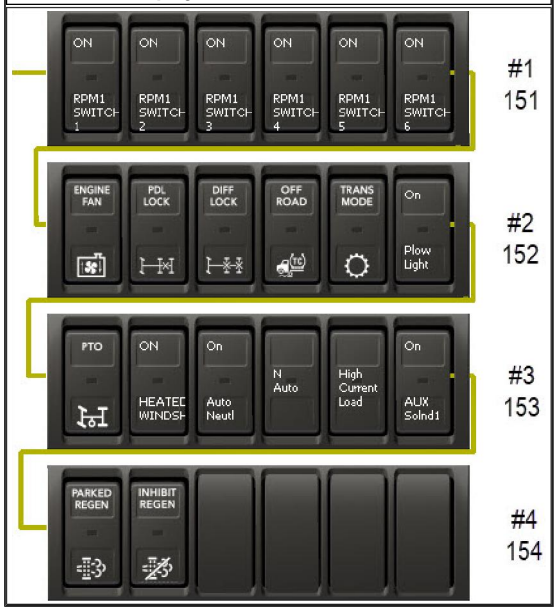
Overview of the Switch Pack Software Kernels		
Switch Pack Software Kernel	**Concern**	**Initial Corrective Software**
17 or lower	Switch pack source address issue. (Switch Packs flipping, switches operating other features)	Kernel 22
22	Software bugs, VIN fault codes	Kernel 24
23	Switch pack source address issue. (Switch Packs flipping, switches operating other features)	Kernel 24

	Kernel 23 replaced 22 and is an exact copy of 17	

NOTE:

If you are adding a switch pack to a vehicle, you will fall under one of the paths listed above. Instead of replacing any parts, you will be adding an additional switch pack. That is, you will still need to determine the Kernel in the switch pack you are adding to the vehicle, and the Kernel in the switch pack(s) currently installed in the vehicle.

Switch Packs and Source Addresses as Displayed in DLB Center Panel Tab



REPAIR STEP(S)

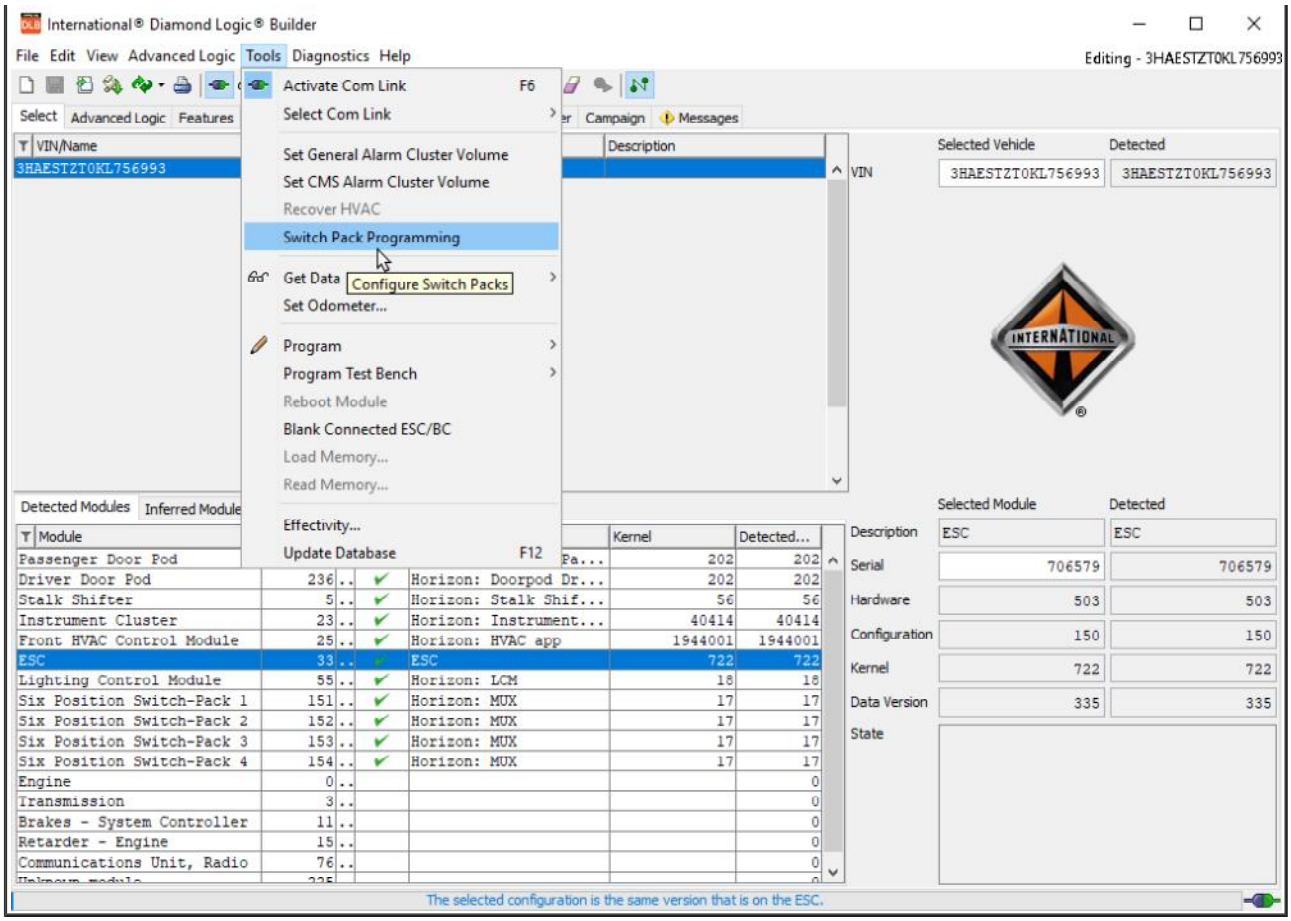
Updating modules at Kernel 23, or 17 or lower (no parts being replaced, or service part is also at 23 or 17 or lower):

1. If a switch pack is being replaced, move the switches over to the new switch pack, and plug the switch pack into its proper location in the vehicle.
   - All switch packs should now be functional, and all kernel versions should be 23, or 17 or lower.
2. Key ON.
3. Navigate to the tools menu and select "Switch Pack Programming" as shown in Figure 4 below.

   NOTE:

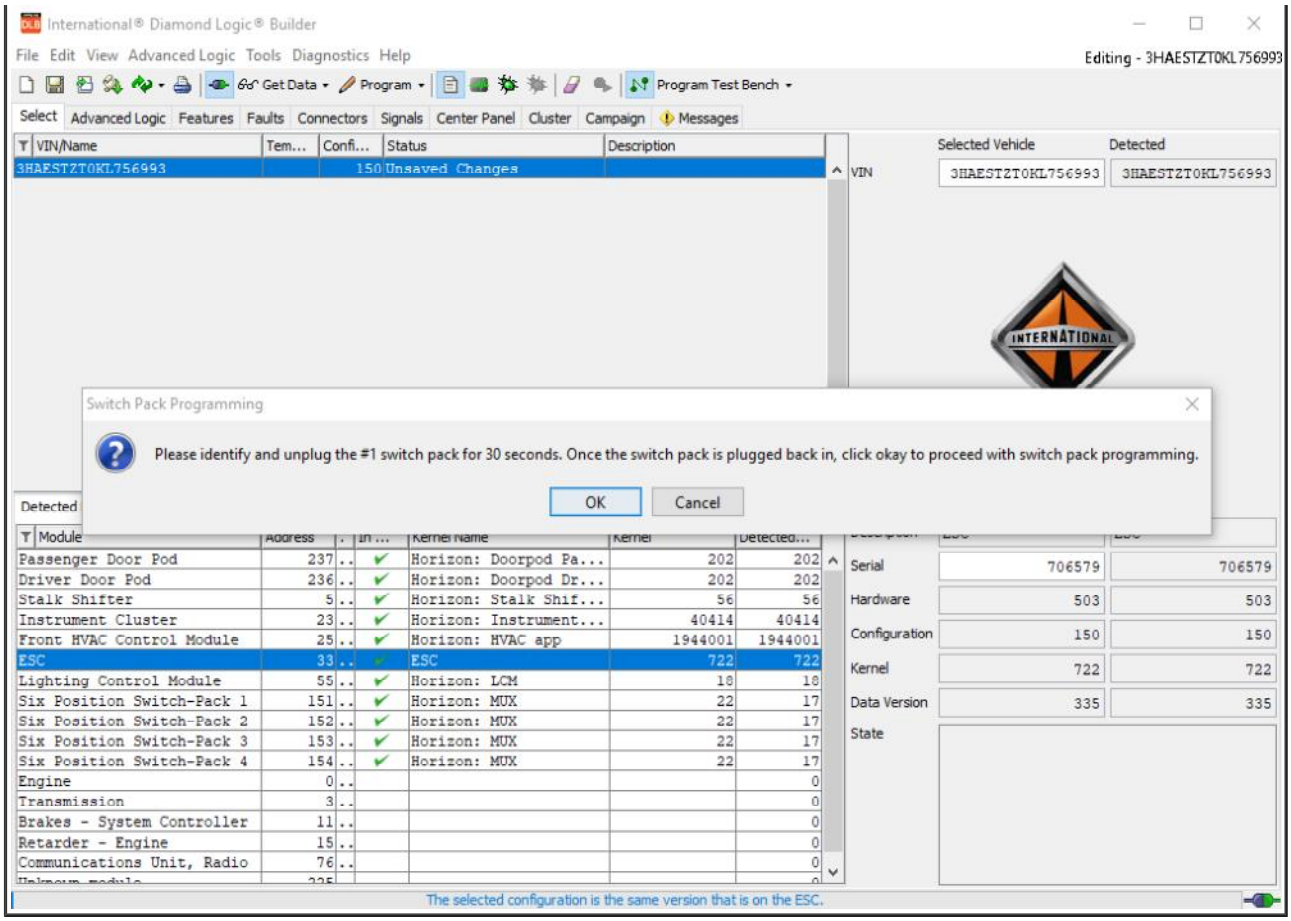
   The BCM may need to be updated before you can update the switch pack software. If a BCM update is required, DLB will detect this and prompt you to exit switch pack programming and update the BCM first. You will need to return to switch pack programming once the BCM has been updated. If a BCM update is not required, DLB will continue with switch pack programming.

Figure 4 - Switch Pack Programming



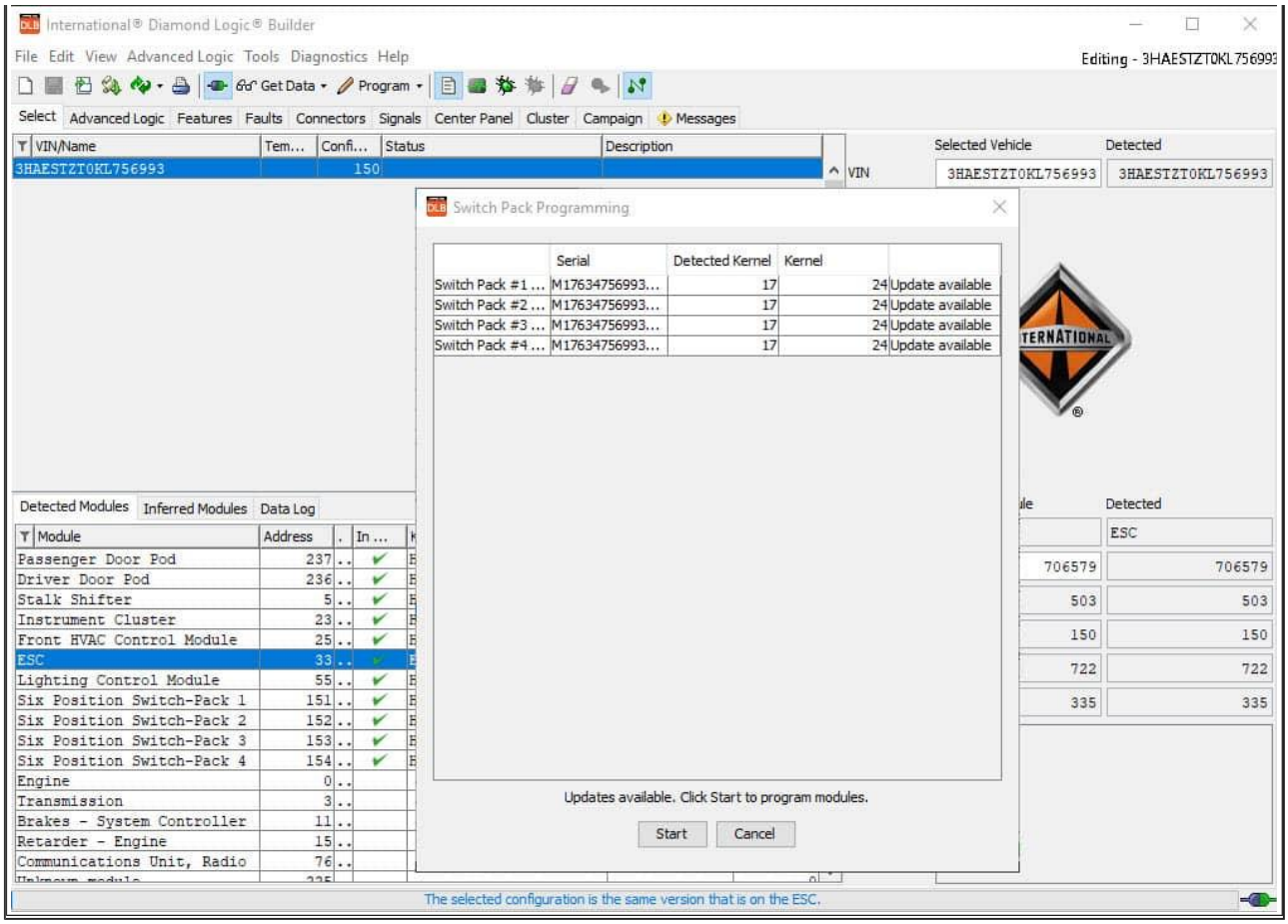
4. To start the programming process, you are asked to unplug the #1 switch pack. This will force the switch packs to perform a source address claim.
   - This step is not required if the vehicle is equipped with only one switch pack.

Figure 5 - Unplug #1 Switch Pack



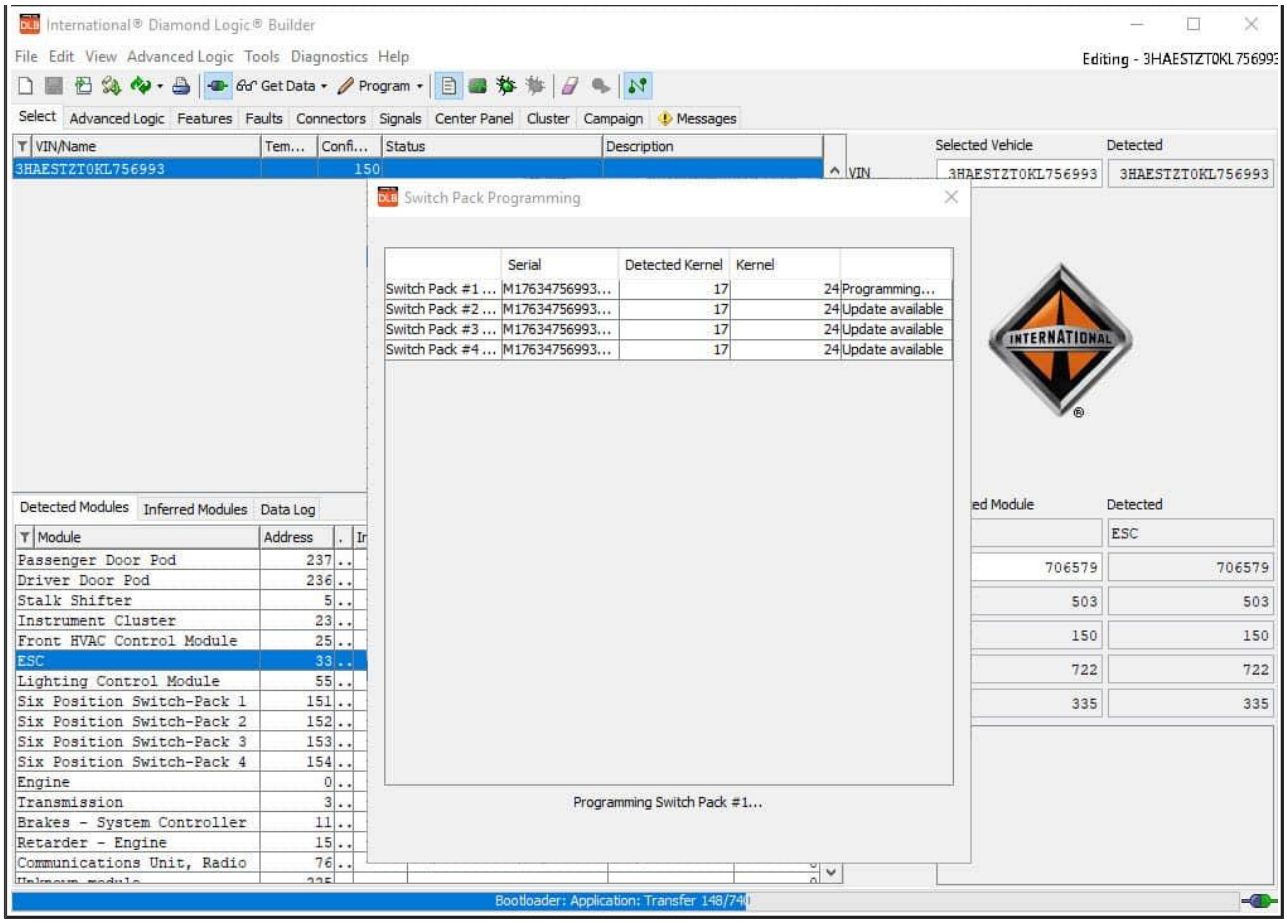
5. To initiate programming click start as shown in Figure 6.

Figure 6 - Update Available



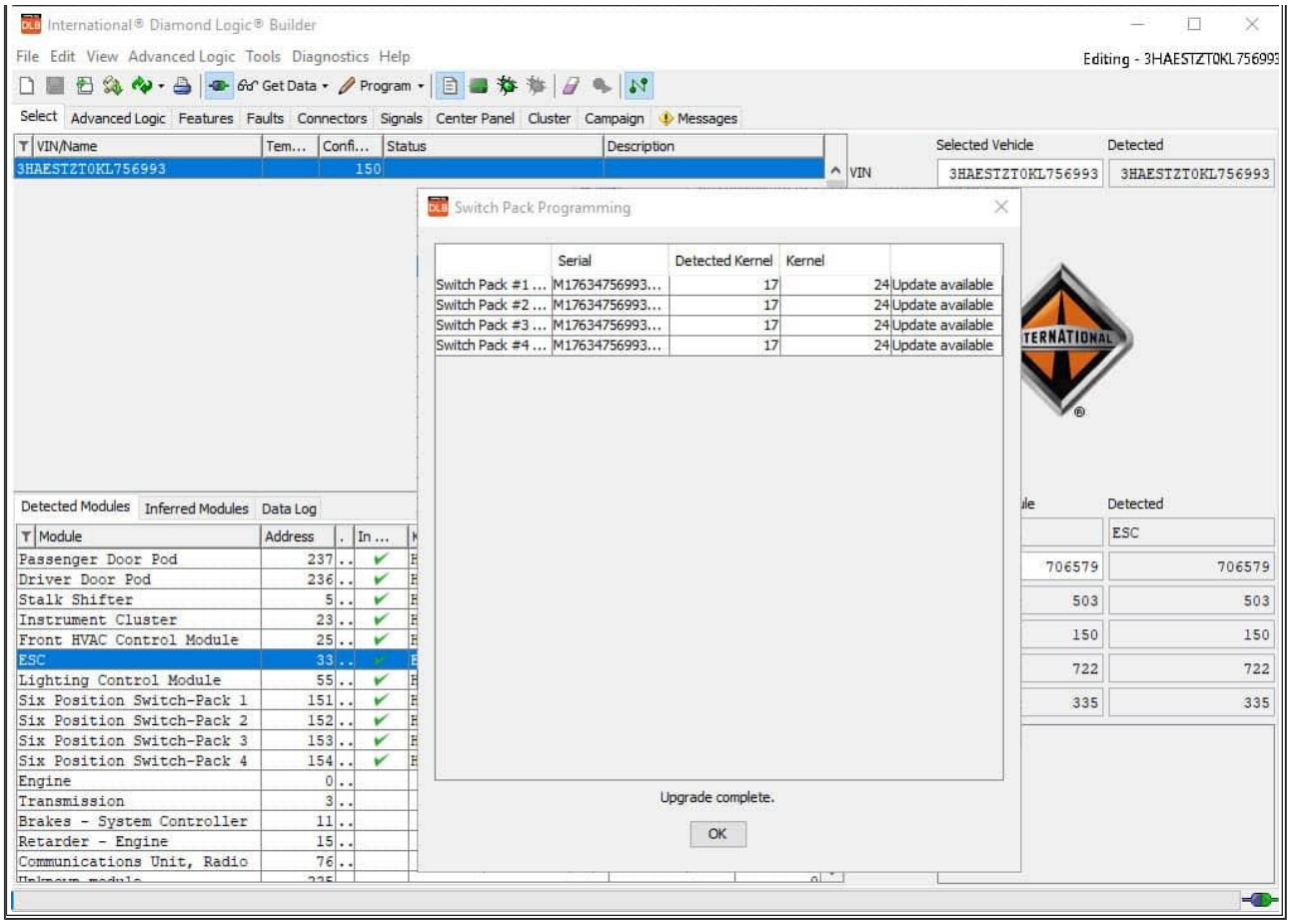
6. Status bar indicating programming progress while the switch packs program. All switch packs will be programmed automatically. Each switch pack will take approx. 5 1/2 minutes to complete.

Figure 7 - Update In Progress



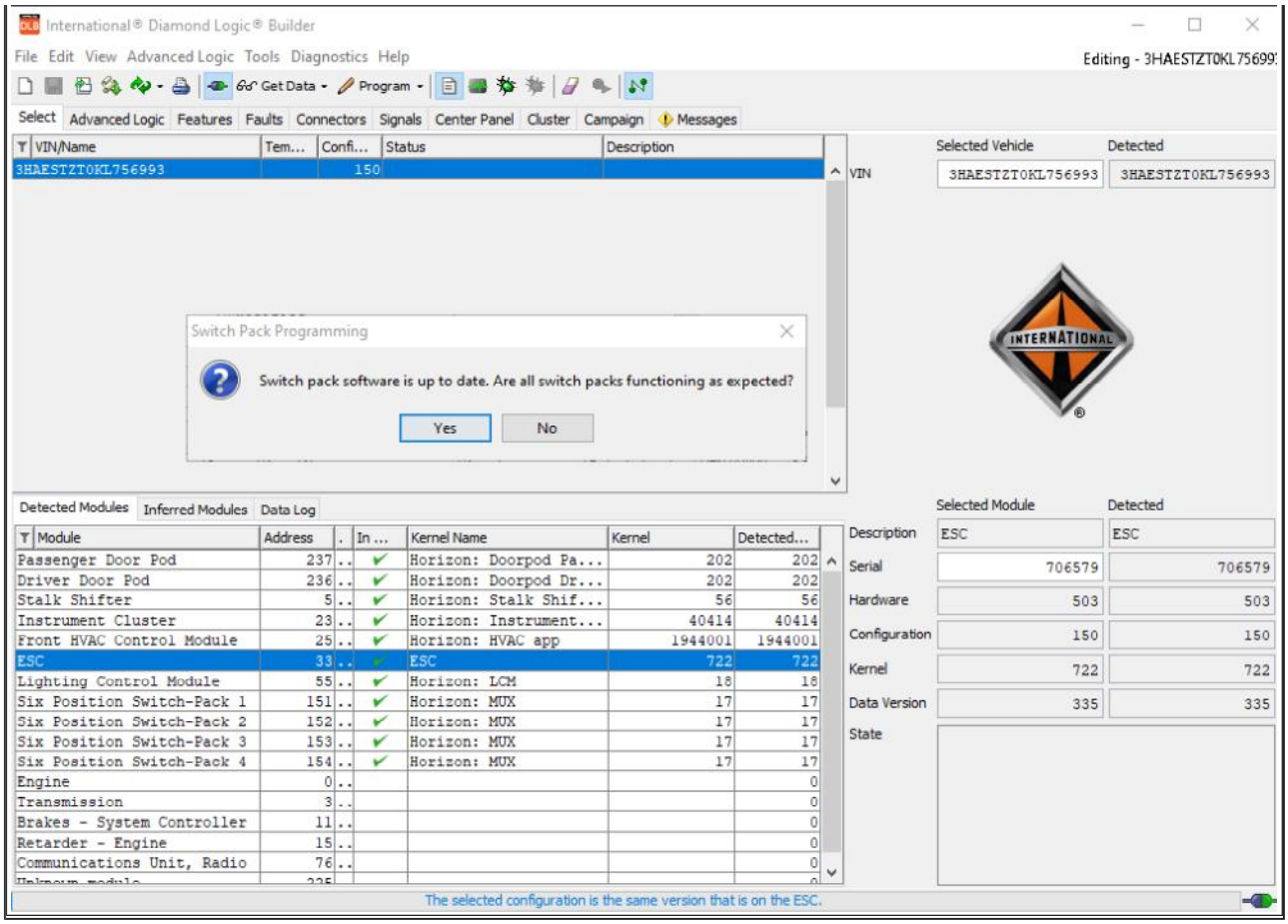
7. Once the update is complete you will be notified as shown in Figure 8.

Figure 8 - Update Complete



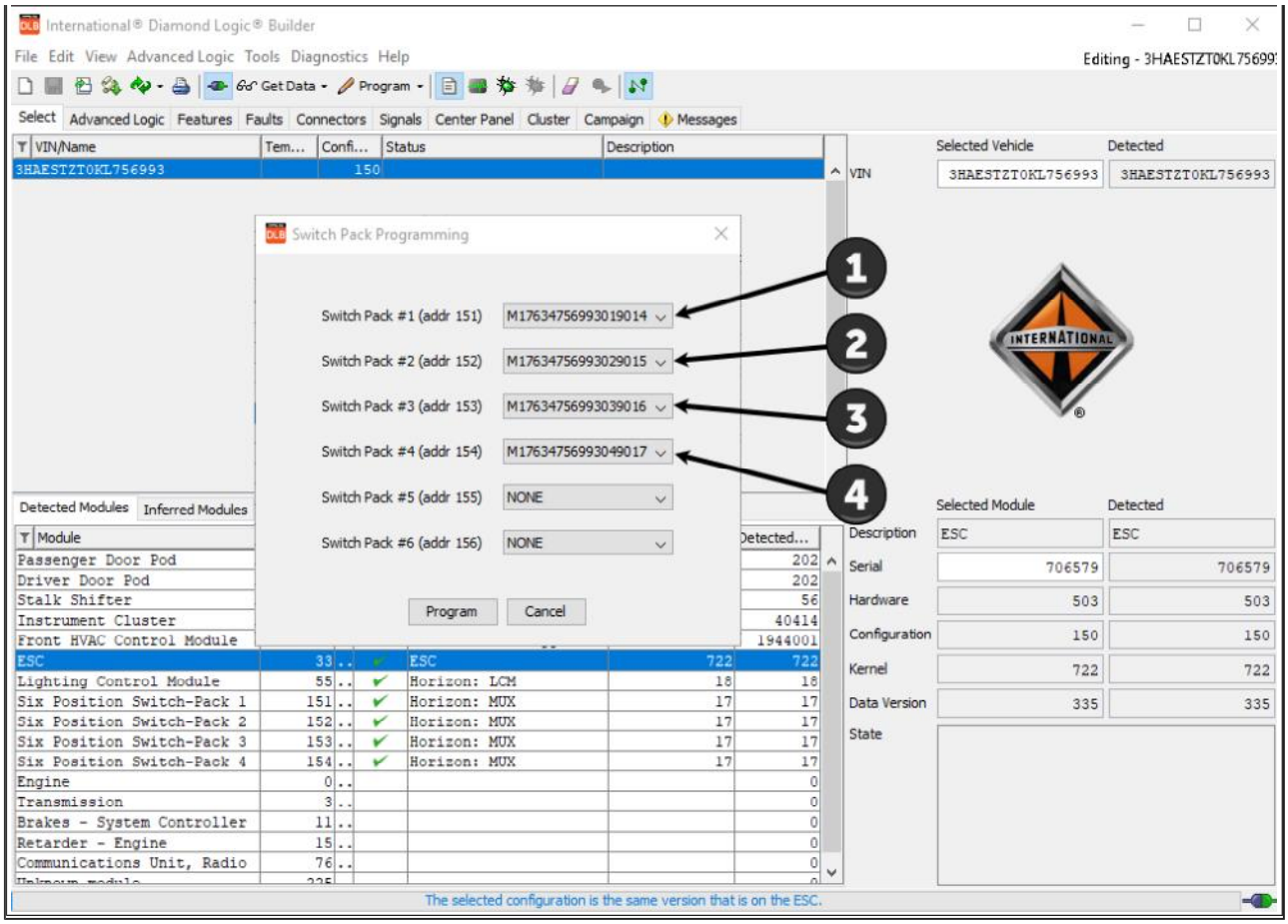
8. Figure 9 below is a prompt to check operation of each switch pack. This will help ensure the switch packs were at the proper source address before programming was performed
   - Clicking Yes - Programming is now complete, no further action is required.
   - Clicking No - You will be given a dialogue box to manually set the source addresses based on the module serial number.

Figure 9 - Prompt For Functionality



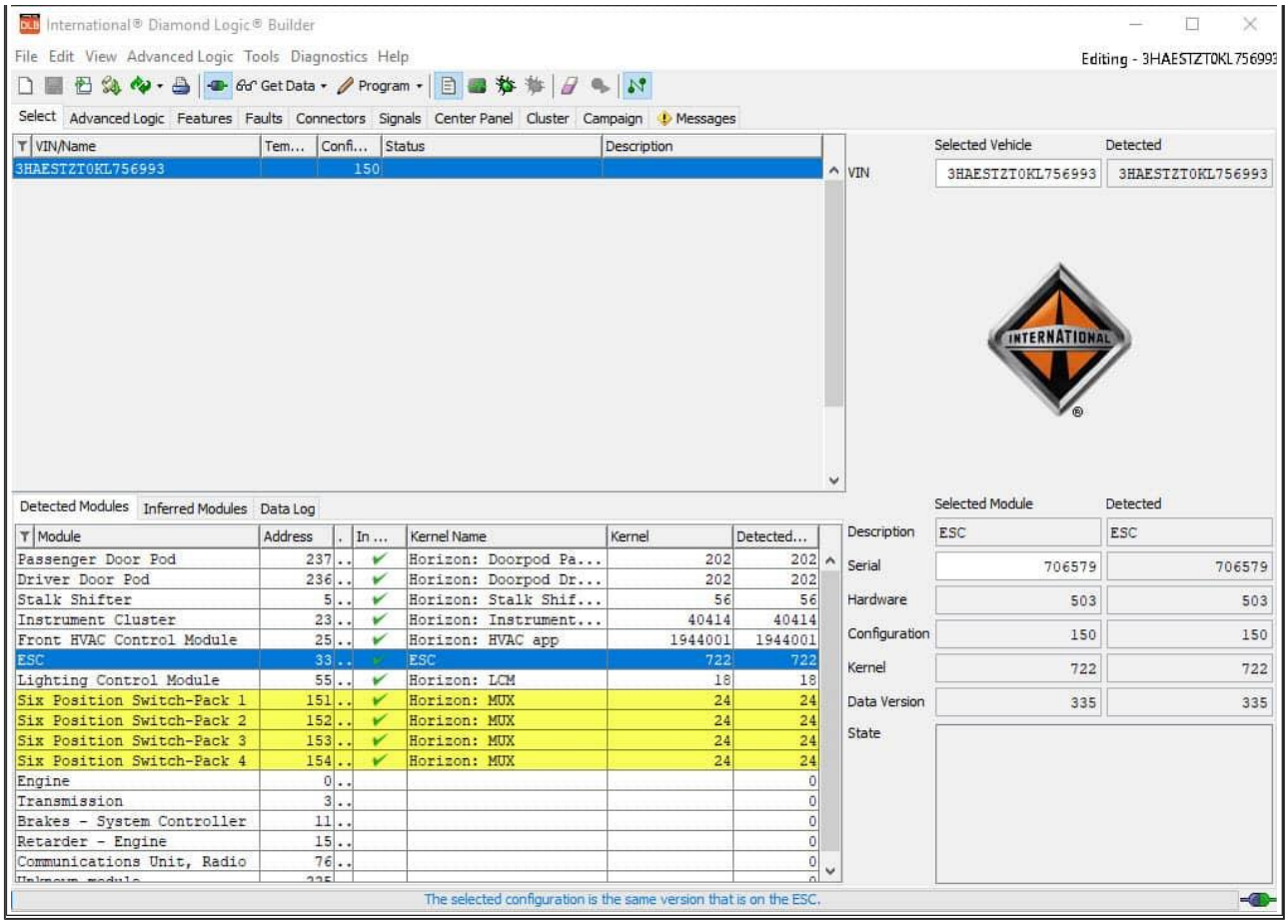
9. Manually set the source address. Use the drop down menu to assign a switch pack serial number to the proper source address.
   - Figure 10 shows an example of 4 switch packs, Each switch pack will have a drop down showing all 4 serial numbers. Choose the correct serial number for each location, and click program.

Figure 10 - Switch Packs NOT Functioning Properly - Manually Set Switch Pack Source Address



10. Programming is complete. All switch packs are showing they have been updated to Kernel 24.

Figure 11 - Programming complete



11. Verify one switch from each switch pack operates the correct feature as assigned.

(Return to Menu)

Replacing switch pack - Truck switch packs are at 23 or 17 or lower - Replacement part is at 24 (or higher)

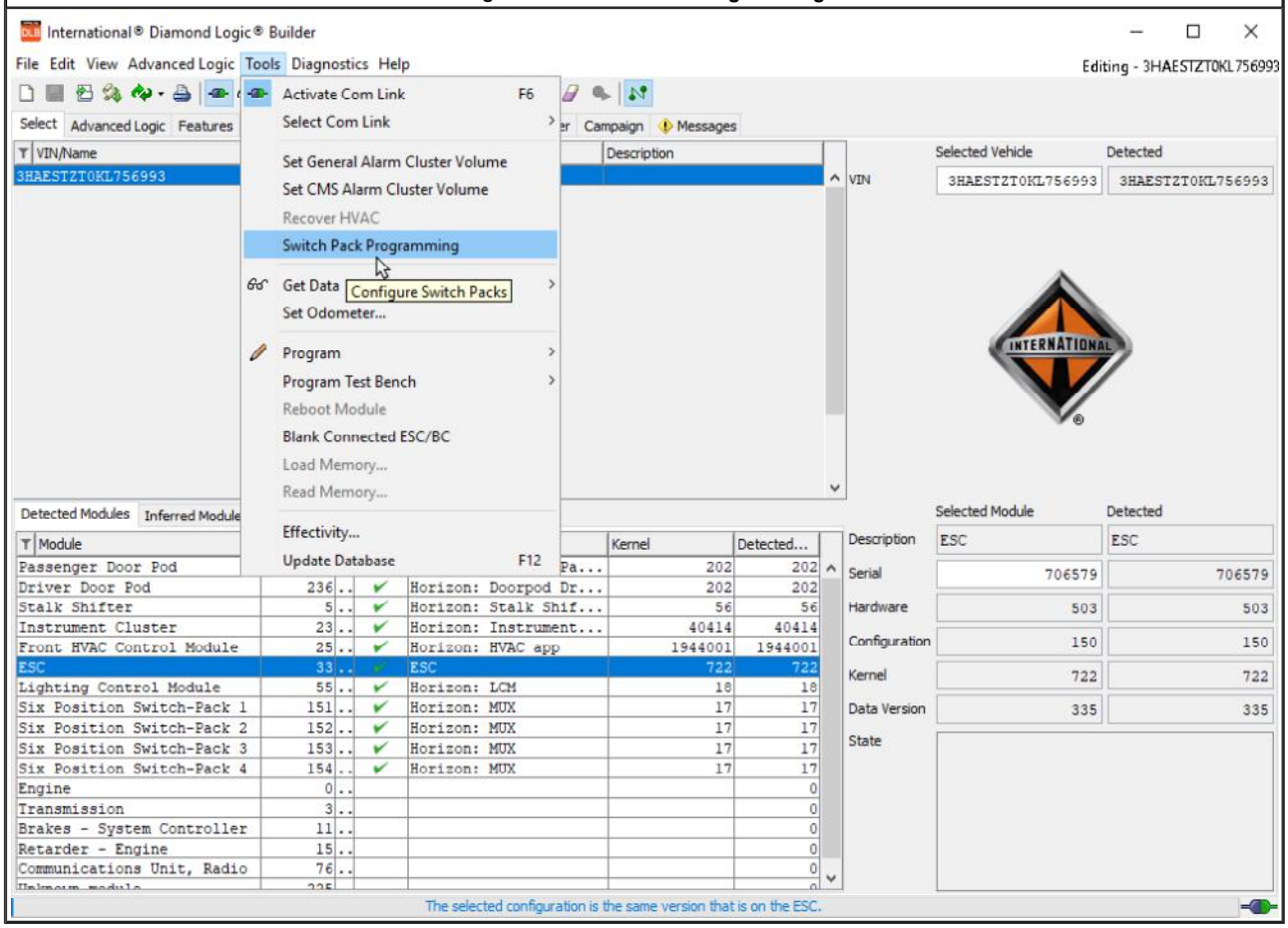
All switch packs need to be at the same Kernel in order to function properly. This section will provide instructions on how to update the switch packs in the vehicle before installing the replacement part.

1. Record the serial numbers of the switch packs in the vehicle, as well as the serial number for the new switch pack that will be installed, and their location
    - You do not need the serial number of the faulty switch pack that is being replaced
    - Record the location (or source address) with the serial number together. Example: #1 - S/N M20000000181011039, #2 - S/N M20000000181011040, #3 - S/N M2000000018101103941
    - To complete the upgrade and installation you will need to know the location and serial number to manually set the source address using DLB
    - The replacement switch pack will only display the last 3 digits of the serial number.
2. Key OFF.
3. Remove the faulty switch pack.
4. Any switch packs that are below the removed switch pack will need to be plugged in, so the daisy chain of switch packs is not broken.
    - Example: Vehicle has 4 switch packs. #2 switch pack is being replaced.
    - Remove #2 switch pack.
    - The #3 switch pack will need to be plugged into the #1 switch pack (All 3 remaining switch packs are now plugged into each other - 1,3,4).
5. Key ON.
6. Navigate to the tools menu and select "Switch Pack Programming" as shown in Figure 12 below.

NOTE:

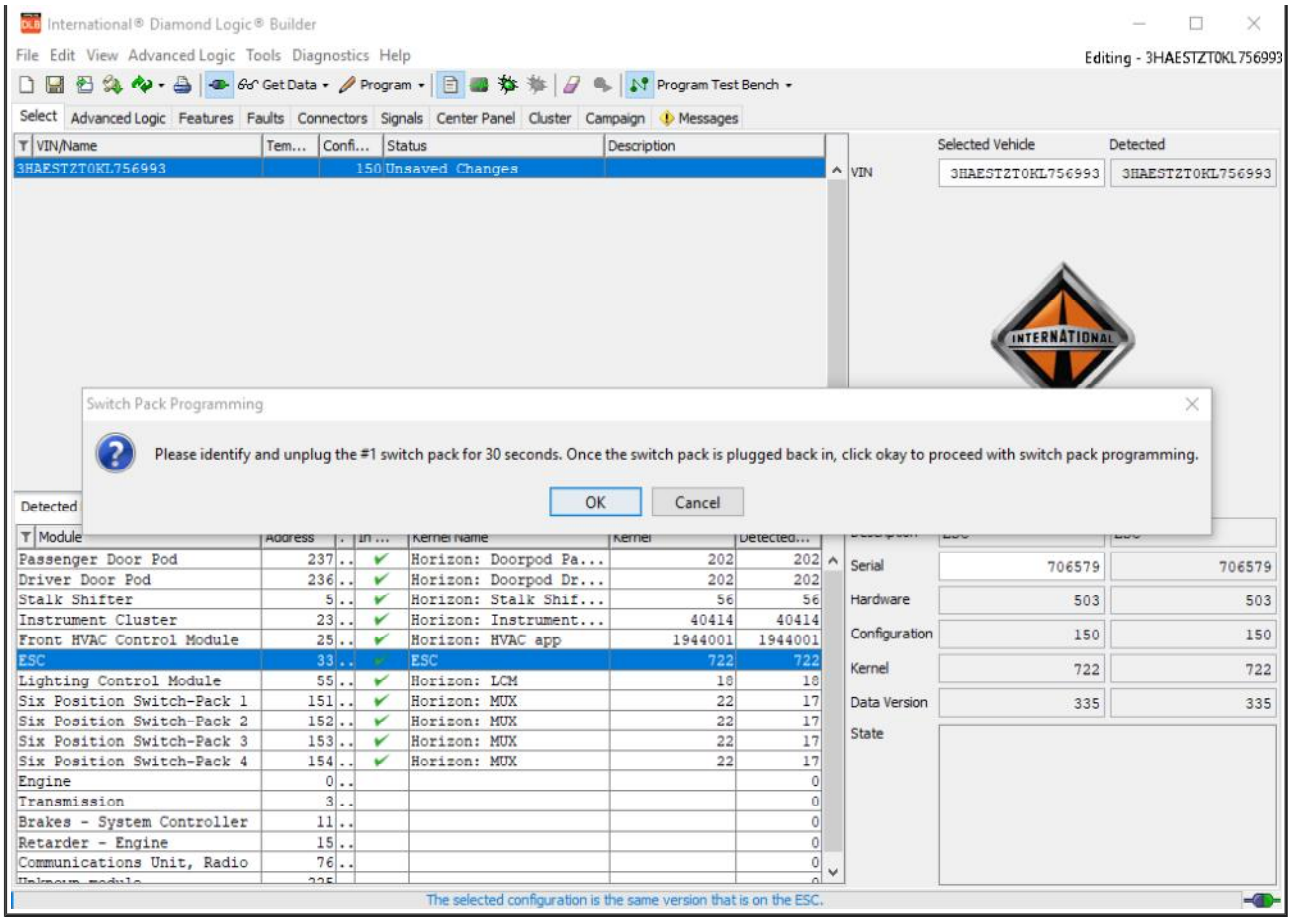
The BCM may need to be updated before you can update the switch pack software. If a BCM update is required, DLB will detect this and prompt you to exit switch pack programming and update the BCM first. You will need to return to switch pack programming once the BCM has been updated. If a BCM update is not required, DLB will continue with switch pack programming.

Figure 12 - Switch Pack Programming



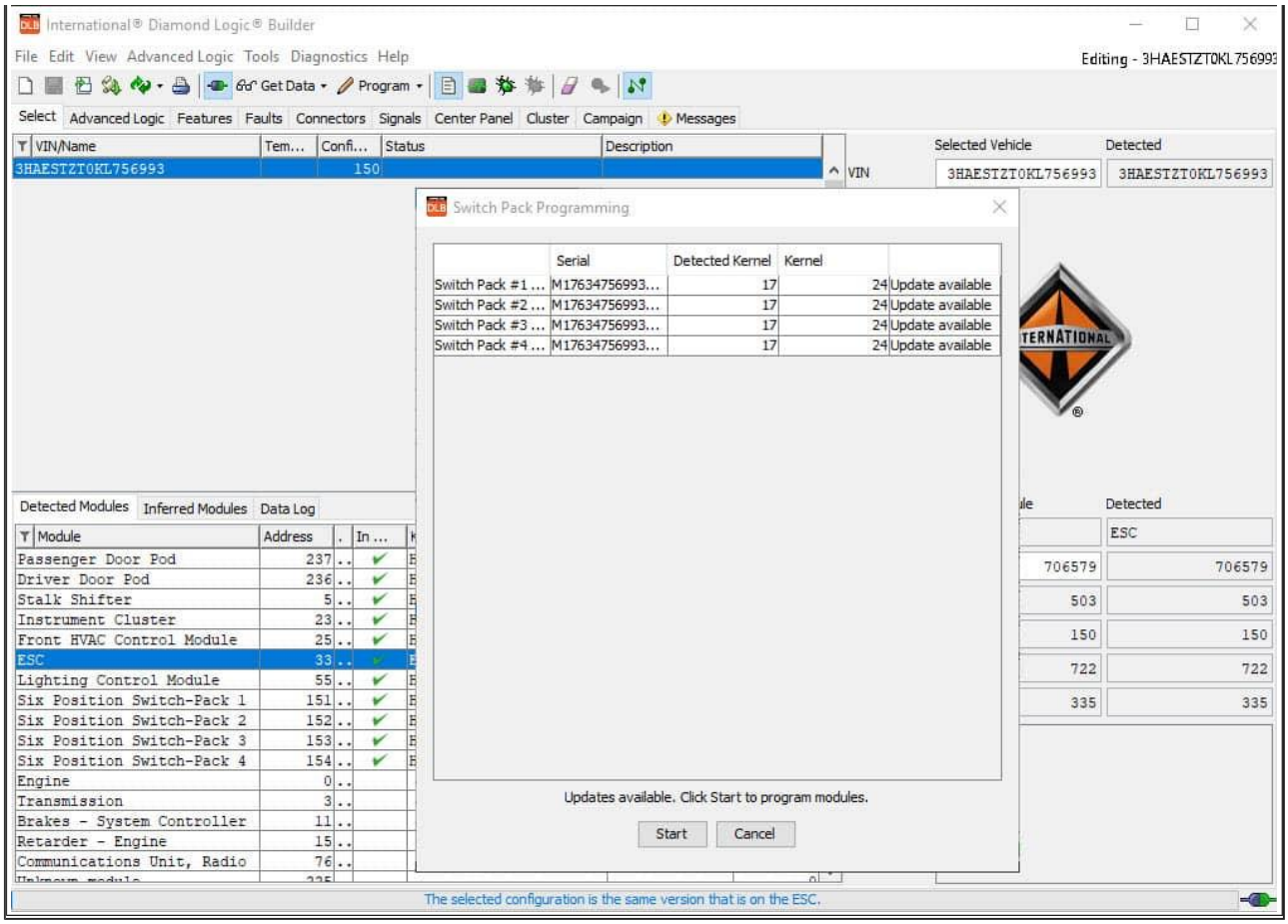
7. To start the programming process, you are asked to unplug the #1 switch pack. This will force the switch packs to perform a source address claim.
   - This step is not required if the vehicle is equipped with only one switch pack.

Figure 13 - Unplug #1 Switch Pack



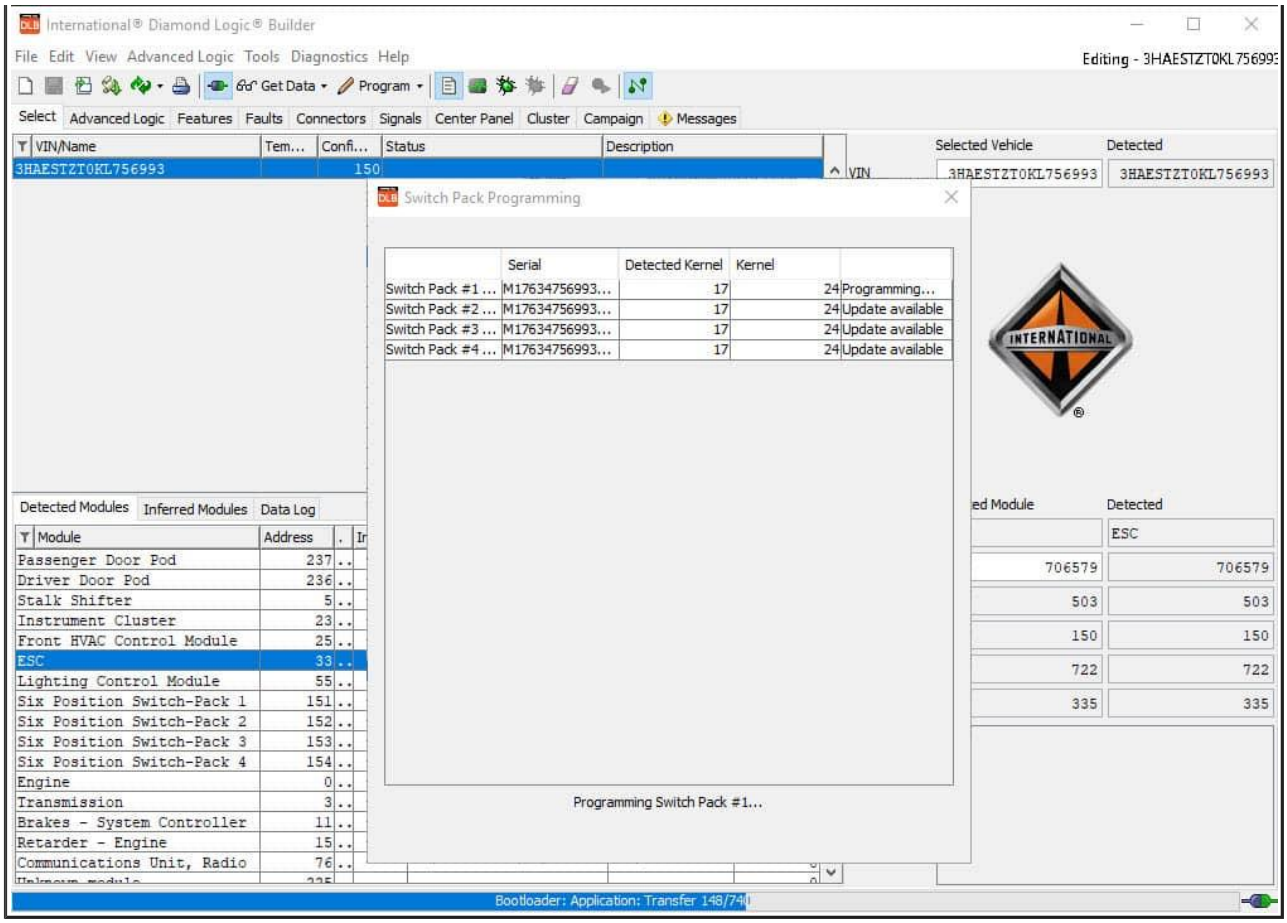
8. To initiate programming click start as shown in Figure 14

Figure 14 - Update Available



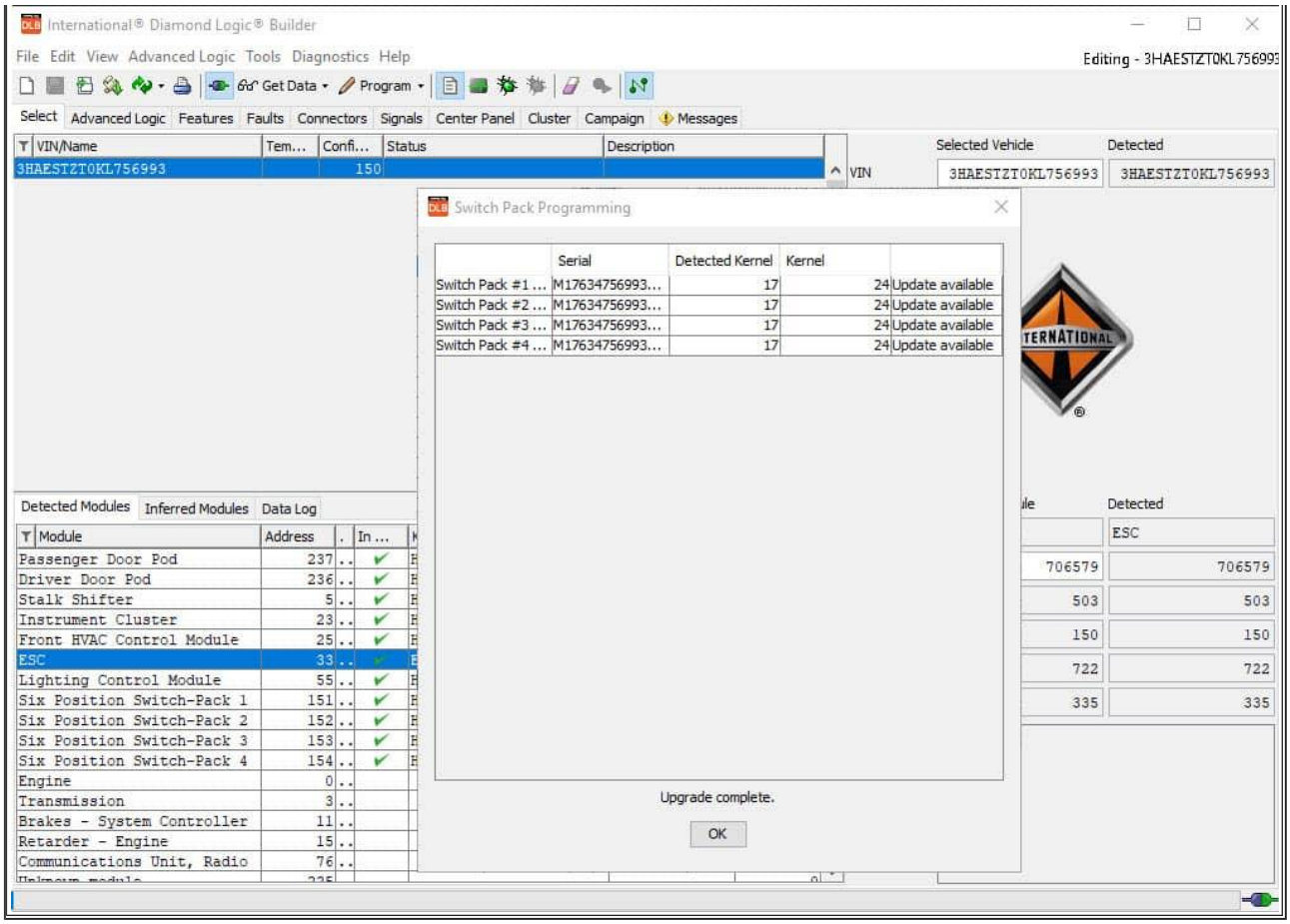
9. Status bar indicating programming progress while the switch packs program. All switch packs will be programmed automatically. Each switch pack will take approx. 5 1/2 minutes to complete.

Figure 15 - Update In Progress



10. Once the update is complete you will be notified as shown in Figure 16.

Figure 16 - Update Complete



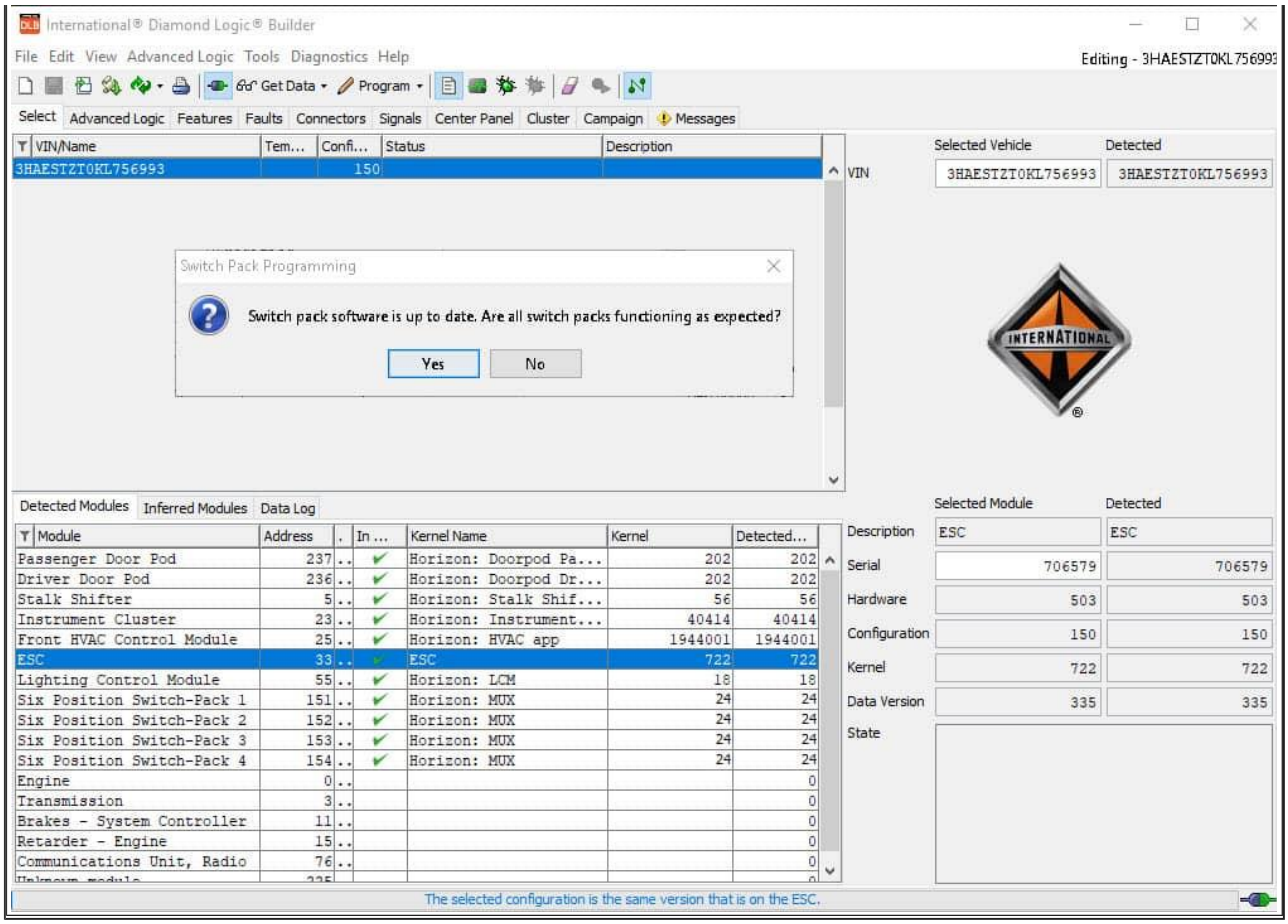
11. Key OFF.
12. Install all the switch packs, including the new service part into their proper location in the vehicle.
    - All switch packs are installed in the vehicle, and all switch packs are now at Kernel 24.
13. Key ON.

NOTE:

Switch packs may be flashing red, and the replacement part may be non-responsive. This is normal until you manually set the source address.

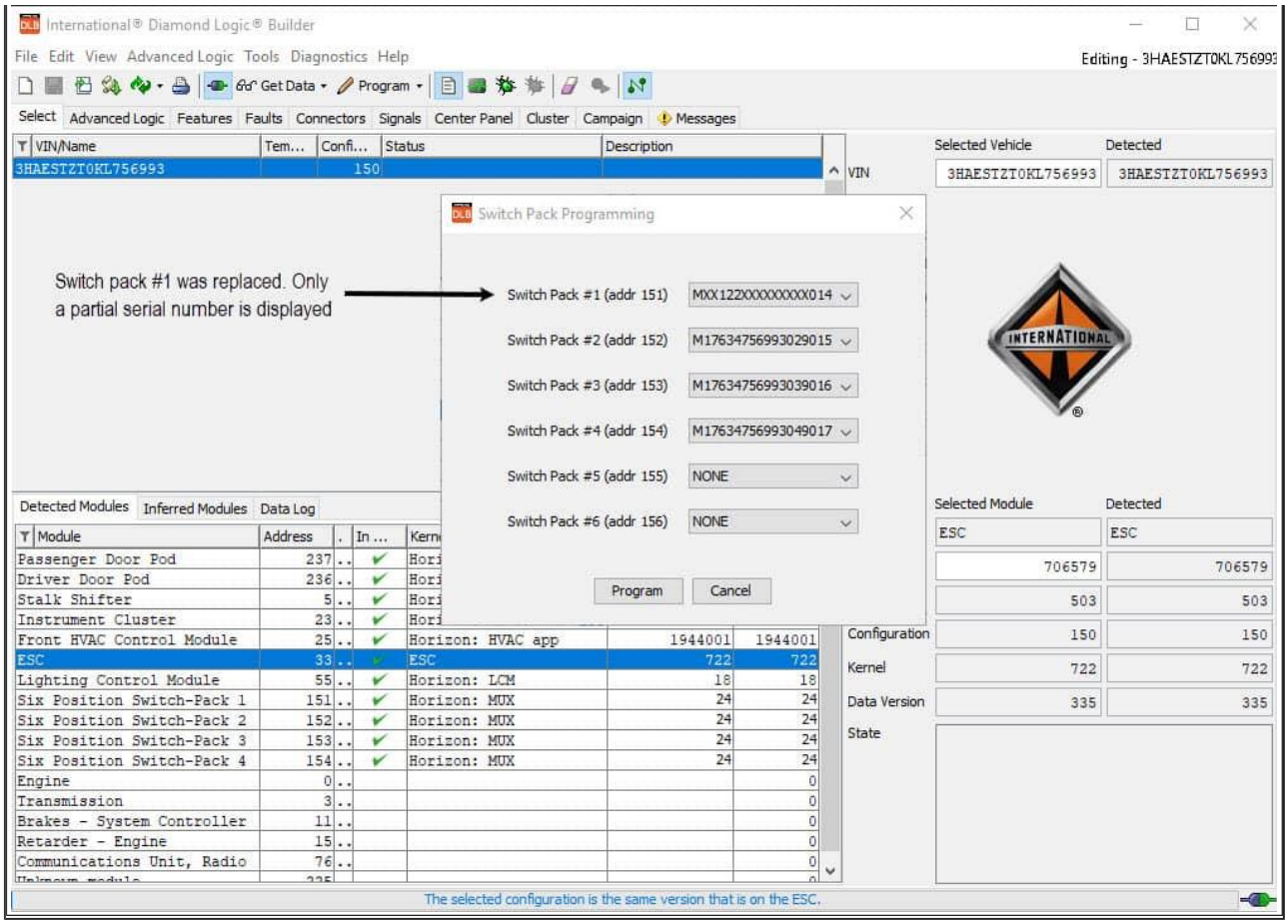
14. Navigate back to the tools menu and select "Switch Pack Programming".
15. You will receive the pop up message shown. Select NO. This will allow you to manually set the source addresses.

Figure 17 - Select NO to manually set the source address



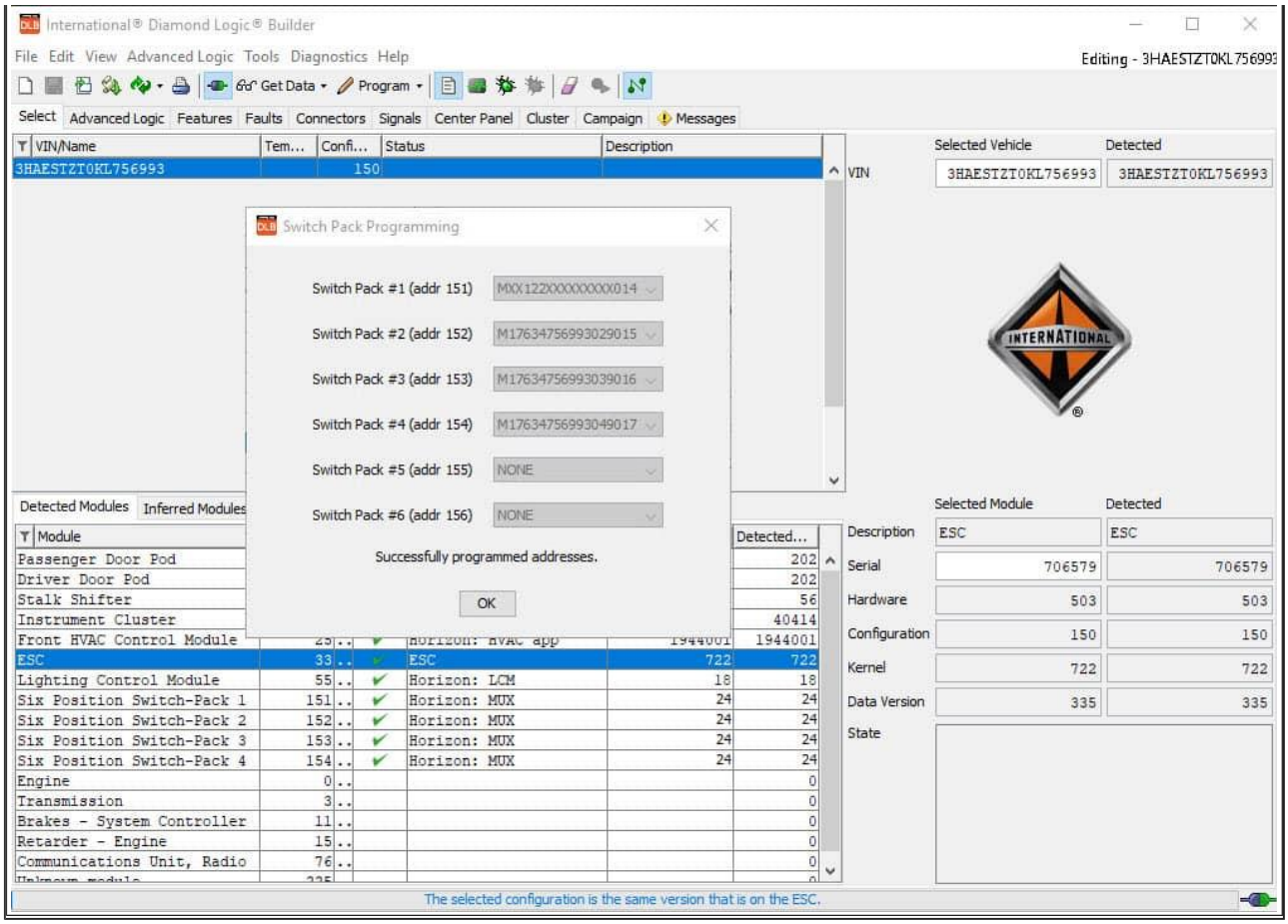
16. Set the switch pack source addresses based on their serial number and location in vehicle. Click Program.

Figure 18 - Manually set source address



17. Source address programming complete.

Figure 19 - Source Address Programmed Successfully



18. Verify one switch from each switch pack operates the correct feature as assigned.

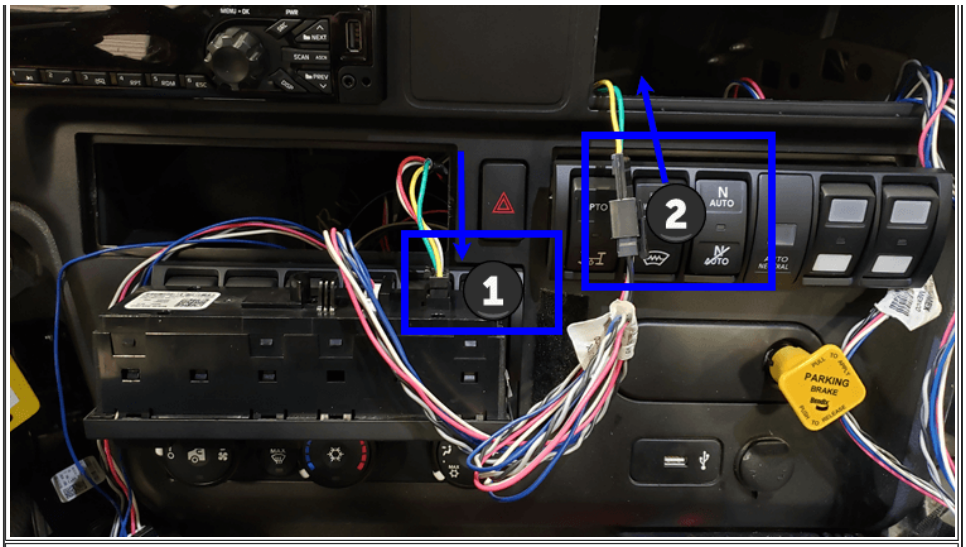
(Return to Menu)

Replacing switch pack - Truck switch packs are at 24 - Replacement part is at 17

All switch packs need to be at the same Kernel in order to function properly. This section will provide instructions on how to update the switch packs in the vehicle before installing the replacement part.

1. Record the serial numbers of the switch packs in the vehicle, as well as the serial number for the new switch pack that will be installed, and their location
    - You do not need the serial number of the faulty switch pack that is being replaced
    - Record the location (or source address) with the serial number together. Example: #1 - S/N M20000000181011039, #2 - S/N M20000000181011040, #3 - S/N M20000000181011041
    - To complete the upgrade and installation you will need to know the location and serial number to manually set the source address using DLB
2. Key OFF.
3. Unplug the #1 switch pack
4. Plug the replacement switch pack into the #1 location.
5. Unplug the switch pack pigtail of the last switch pack in the chain from the IP harness
6. Plug the pigtail of the #1 switch pack into the connector going back to the IP harness
    - The replacement switch pack, in the #1 location is now the only switch pack plugged in.
    - The in and out harness should be plugged in to the data link backbone is not broken.

Figure 20 - Single Switch Pack Plugged In



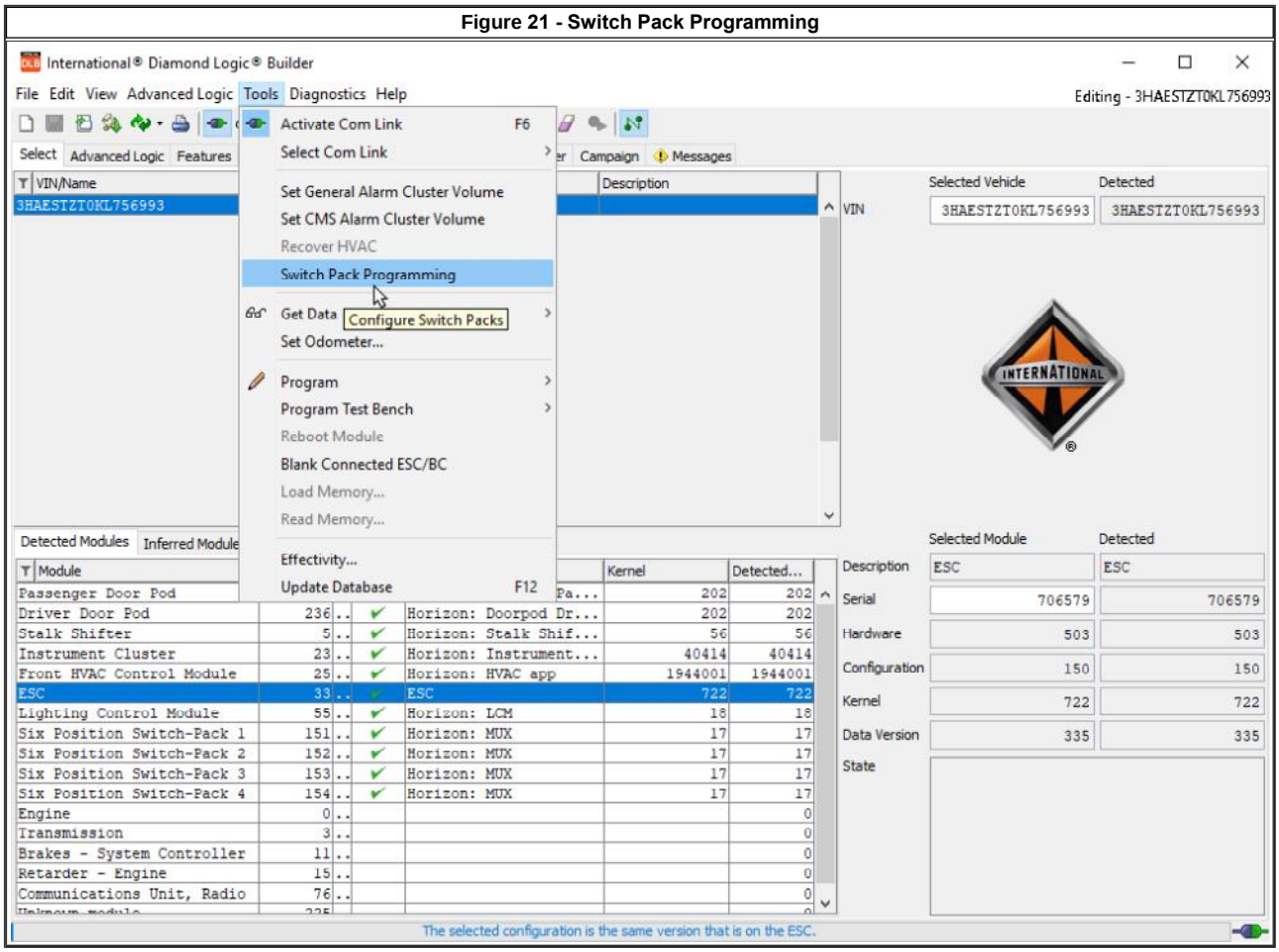
1. Power ground and data link wiring coming in from the IP harness
2. Switch pack pigtail plugged into the data link going back to the IP harness

7. Key ON.
8. Navigate to the tools menu and select "Switch Pack Programming" as shown in Figure 21 below.

NOTE:

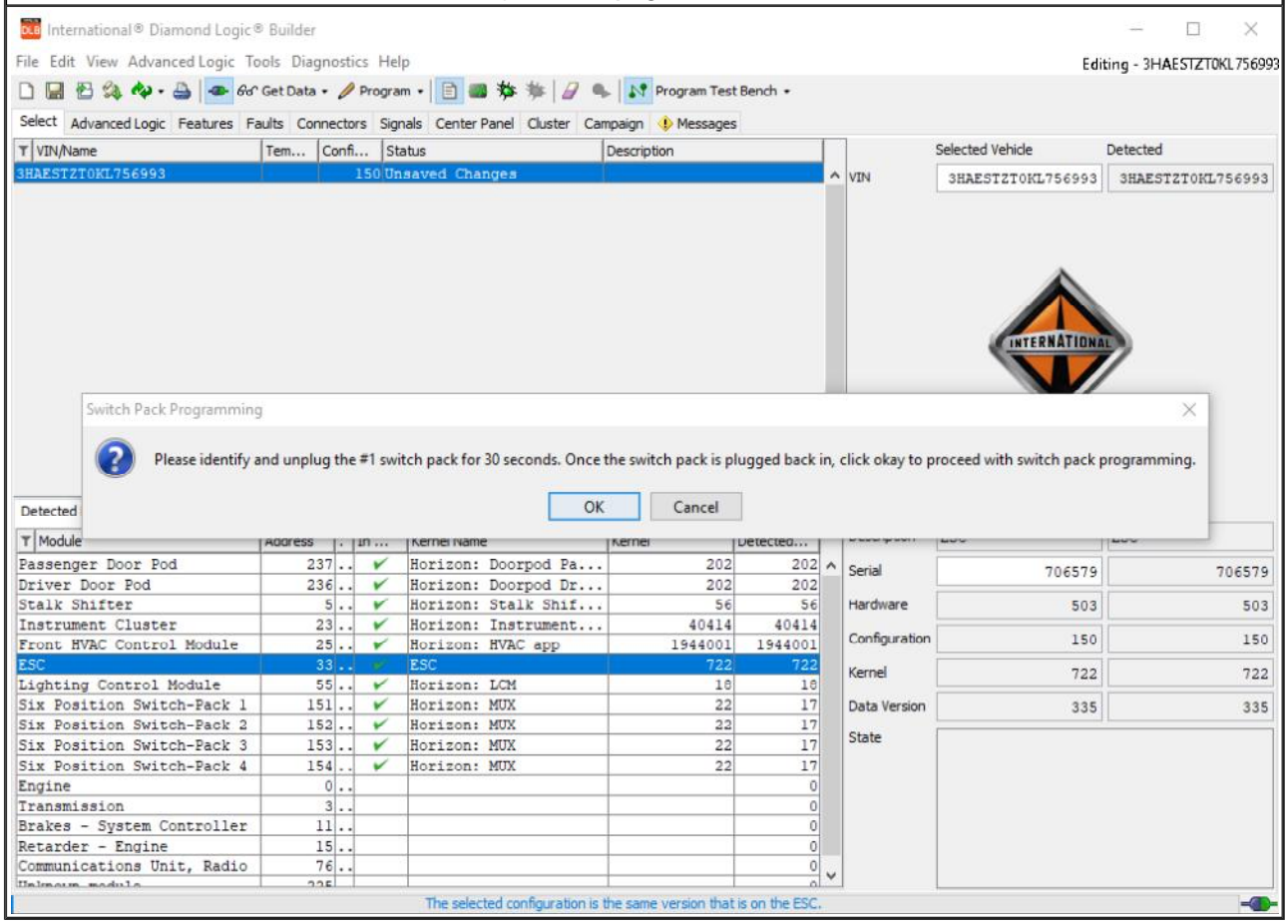
The BCM may need to be updated before you can update the switch pack software. If a BCM update is required, DLB will detect this and prompt you to exit switch pack programming and update the BCM first. You will need to return to switch pack programming once the BCM has been updated. If a BCM update is not required, DLB will continue with switch pack programming.

Figure 21 - Switch Pack Programming



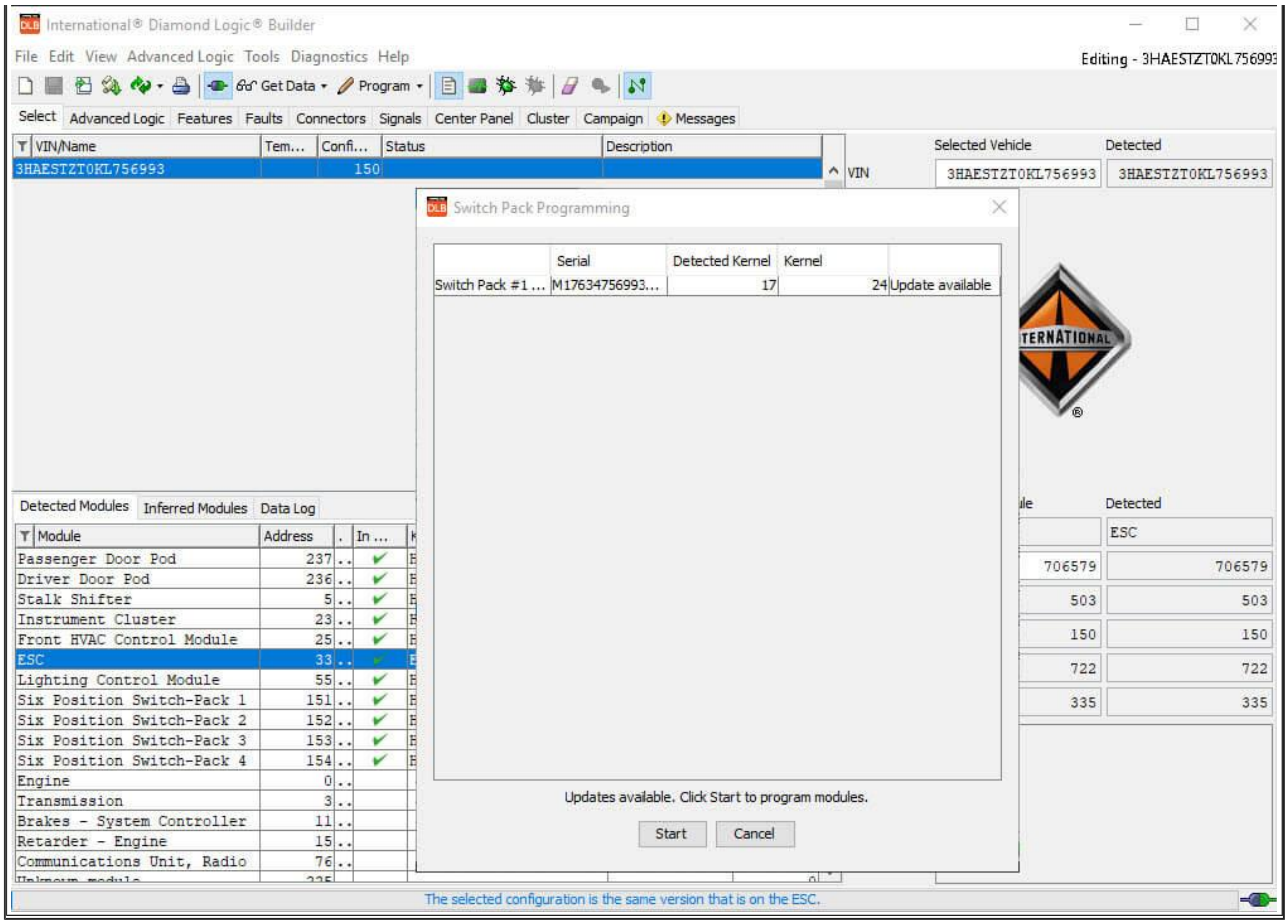
9. To start the programming process, you are asked to unplug the #1 switch pack. This step is not required as you only have a single switch pack plugged in. Click okay to continue.

Figure 22 - Unplug #1 Switch Pack



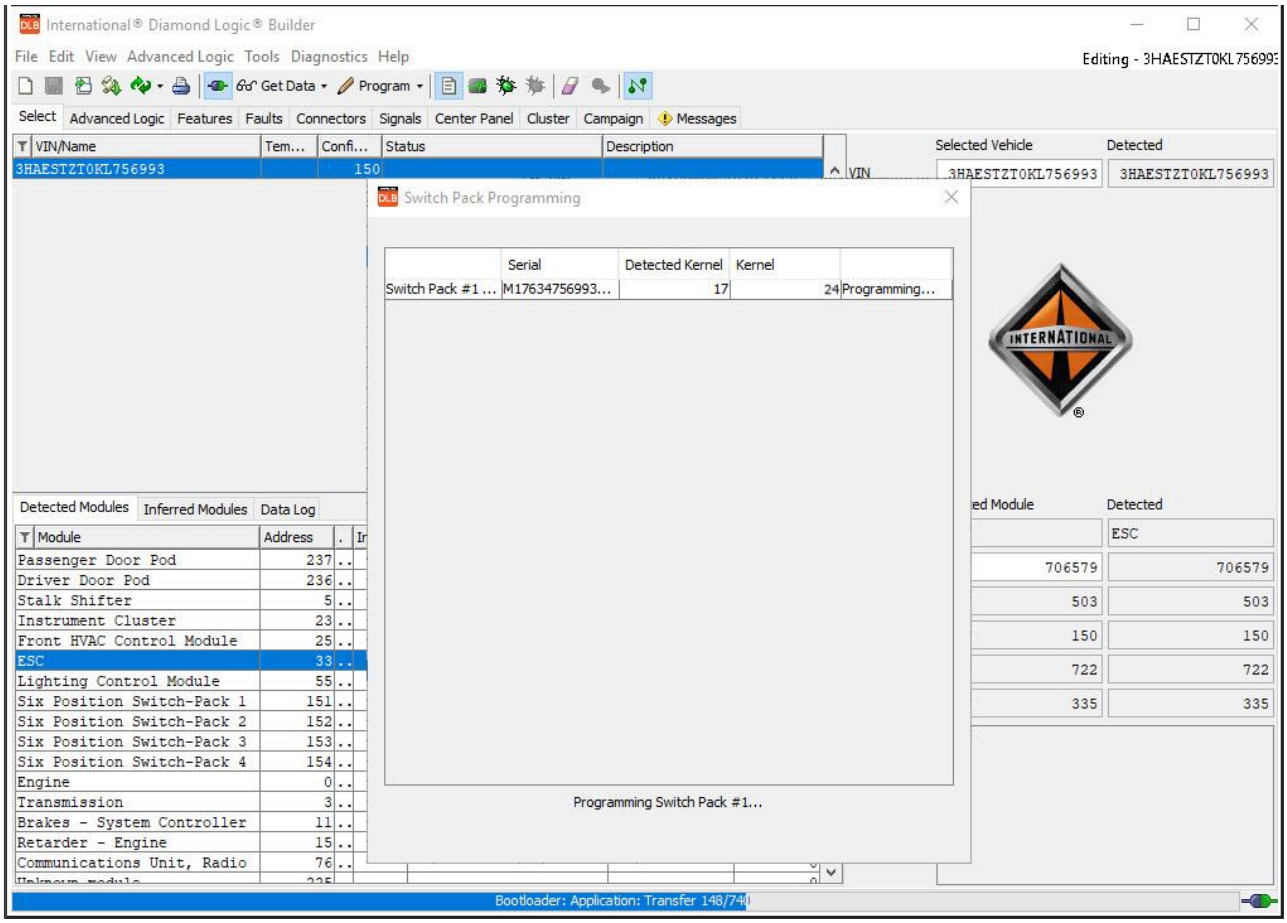
10. To initiate programming click start as shown in Figure 23.

Figure 23 - Update Available



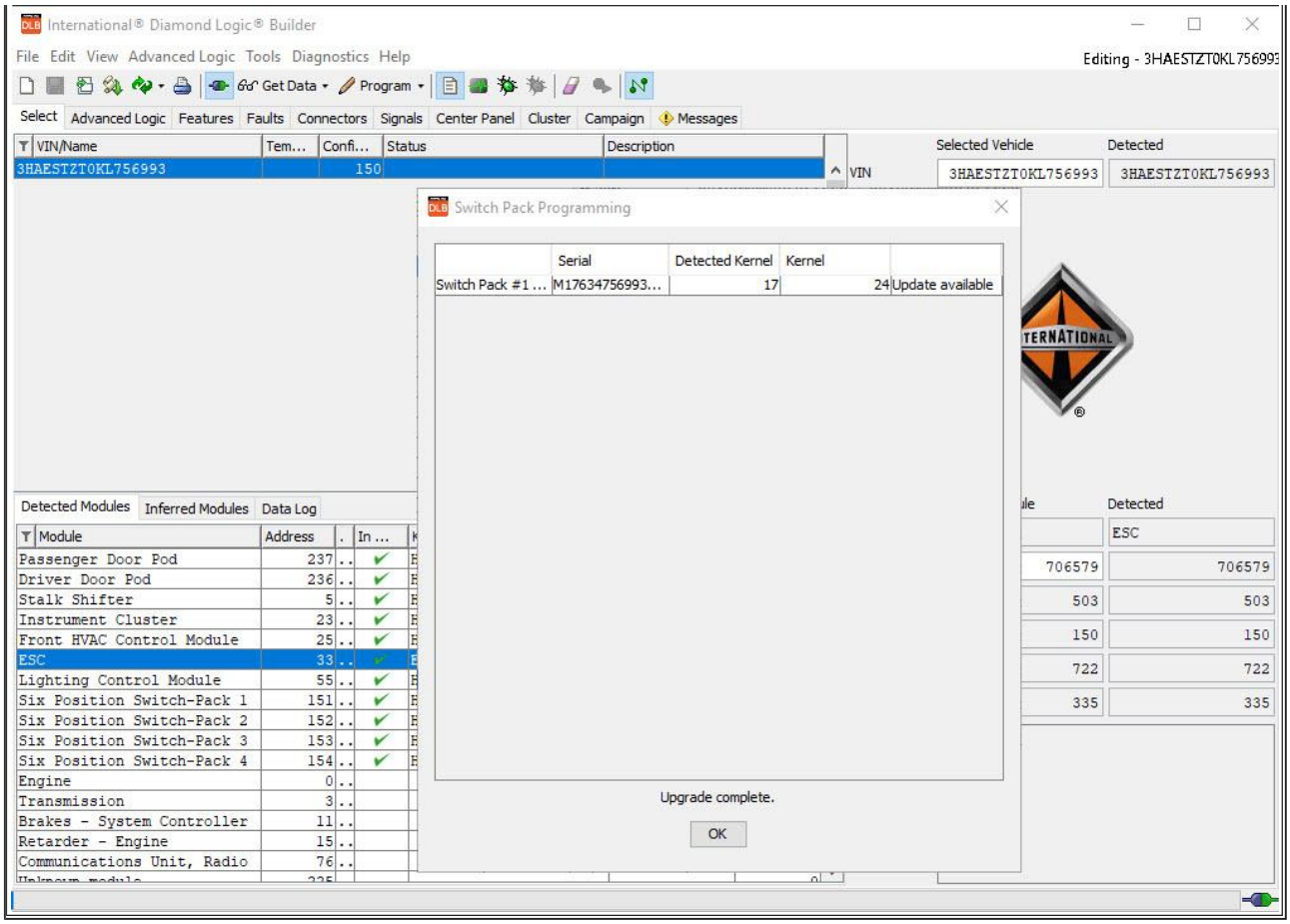
11. Status bar indicating programming progress while the switch pack programs. The switch pack will take approx. 5 1/2 minutes to complete programming.

Figure 24 - Update In Progress



12. Once the update is complete you will be notified as shown in Figure 25.

Figure 25 - Update Complete



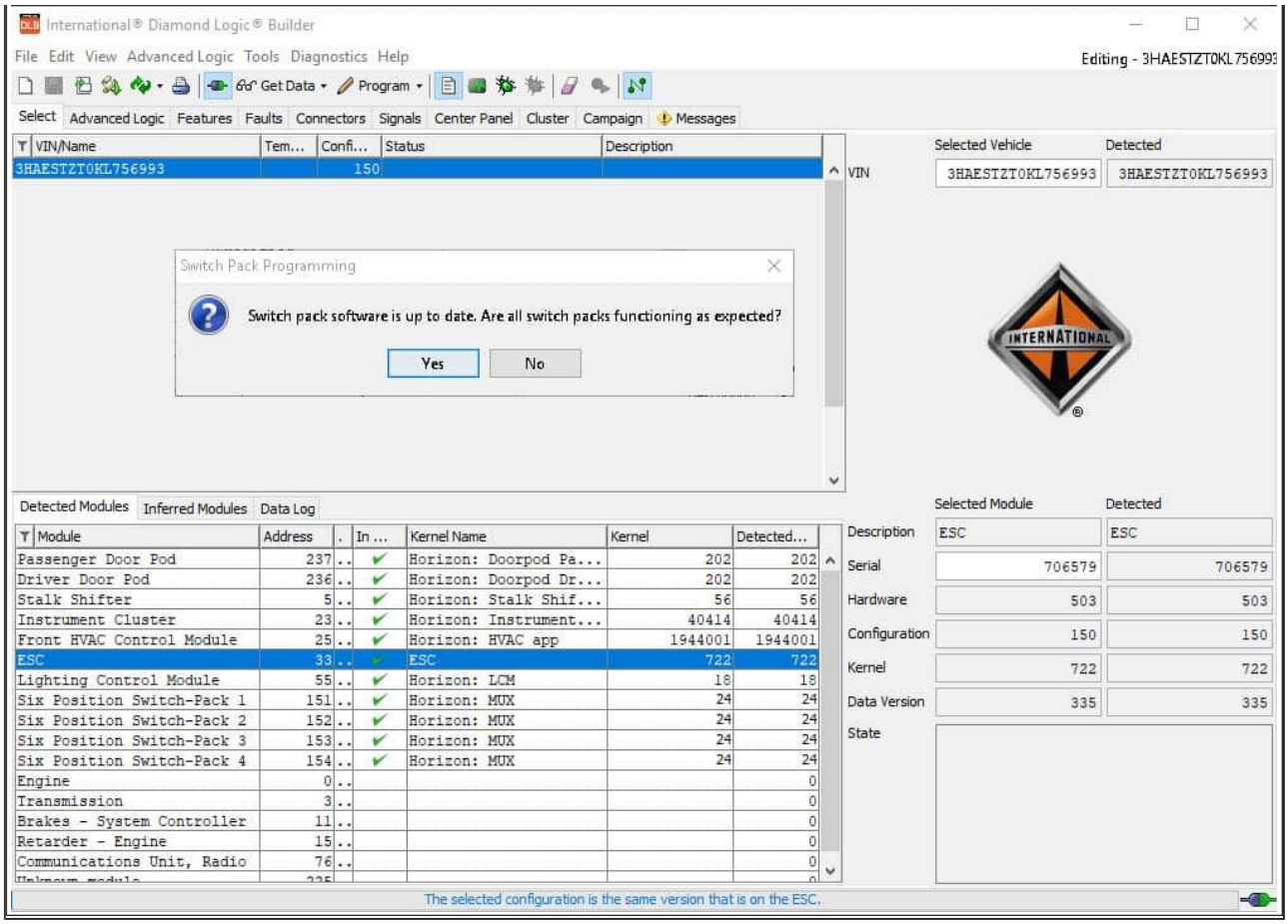
13. Key OFF.
14. Install all the switch packs, including the new service part into their proper location in the vehicle.
    - All switch packs are installed in the vehicle, and all switch packs are now at Kernel 24 (or higher)
15. Key ON.

NOTE:

Switch packs may be flashing red, and the replacement part may be non-responsive. This is normal until you manually set the source address.

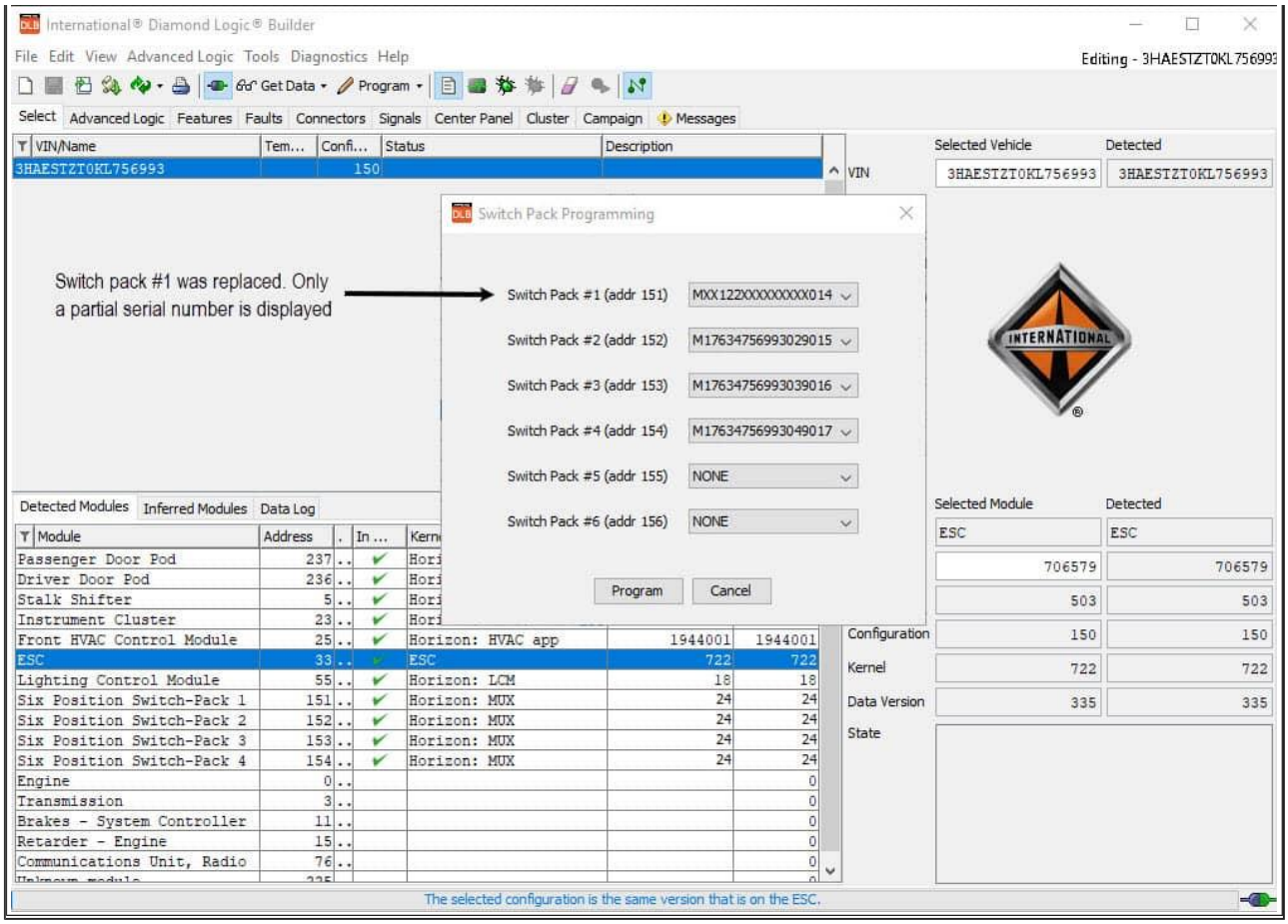
16. Navigate to the tools menu and select "Switch Pack Programming".
17. You will receive the pop up message shown. Select NO. This will allow you to manually set the source addresses.

Figure 26 - Select NO to manually set the source address



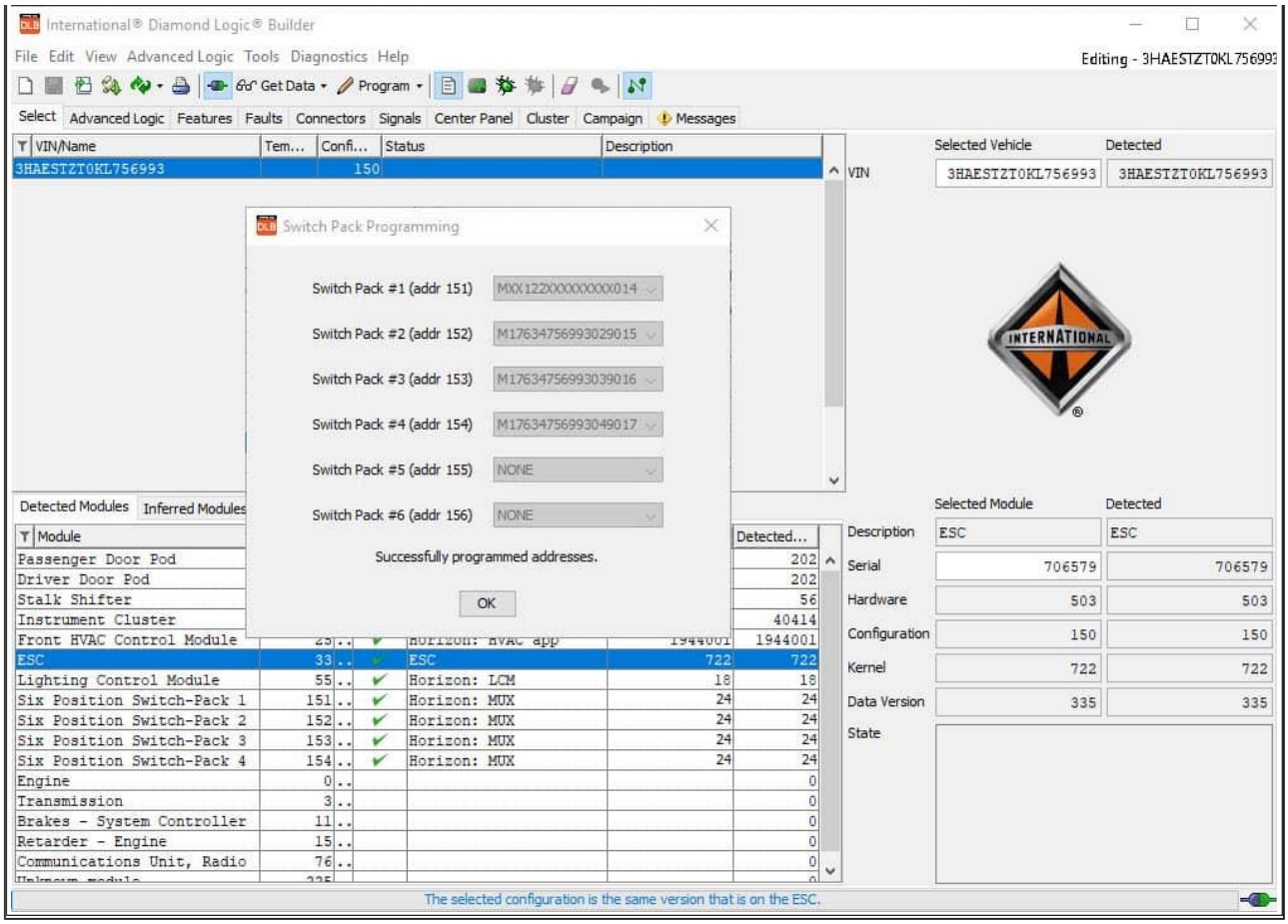
18. Set the switch pack source addresses based on their serial number and location in vehicle. Click Program.

Figure 27 - Manually set source address



19. Source address programming complete.

Figure 28 - Source Address Programmed Successfully



20. Verify one switch from each switch pack operates the correct feature as assigned.

(Return to Menu)

Replacing switch pack - Truck switch packs are at 24 - Replacement part is at 24

All switch packs are at the desired Kernel level. This section will provide instructions on how to install the replacement part and manually set the source address.

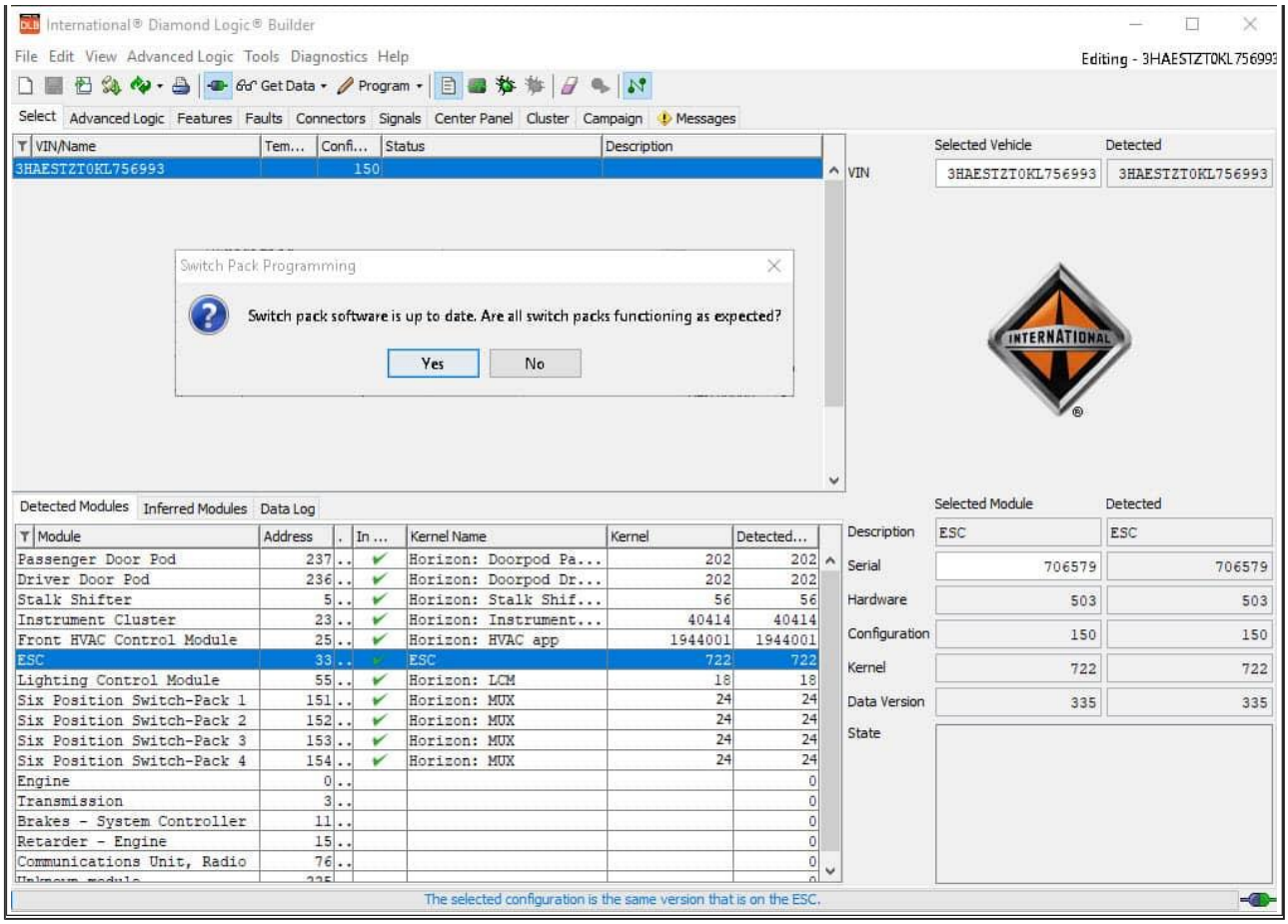
1. Record the serial number from the service part that will be installed.
2. Key OFF.
3. Install the service part into its location in the truck. (All switch packs should be plugged in).
4. Key ON.

NOTE:

Switch packs may be flashing red, and the replacement part may be non-responsive. This is normal until you manually set the source address.

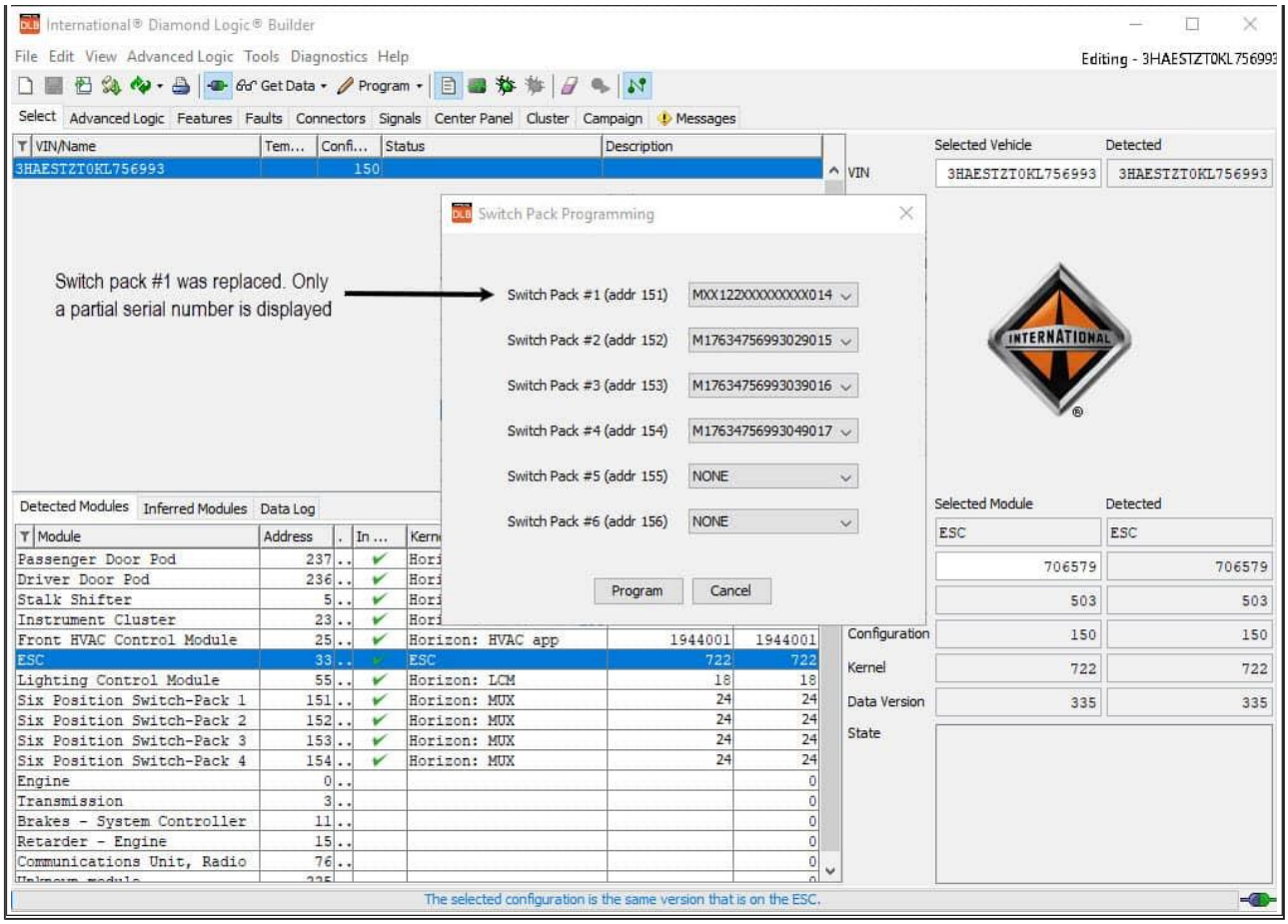
5. Navigate back to the tools menu and select "Switch Pack Programming".
6. You will receive the pop up message shown. Select NO. This will allow you to manually set the source addresses.

Figure 29 - Select NO to manually set the source address



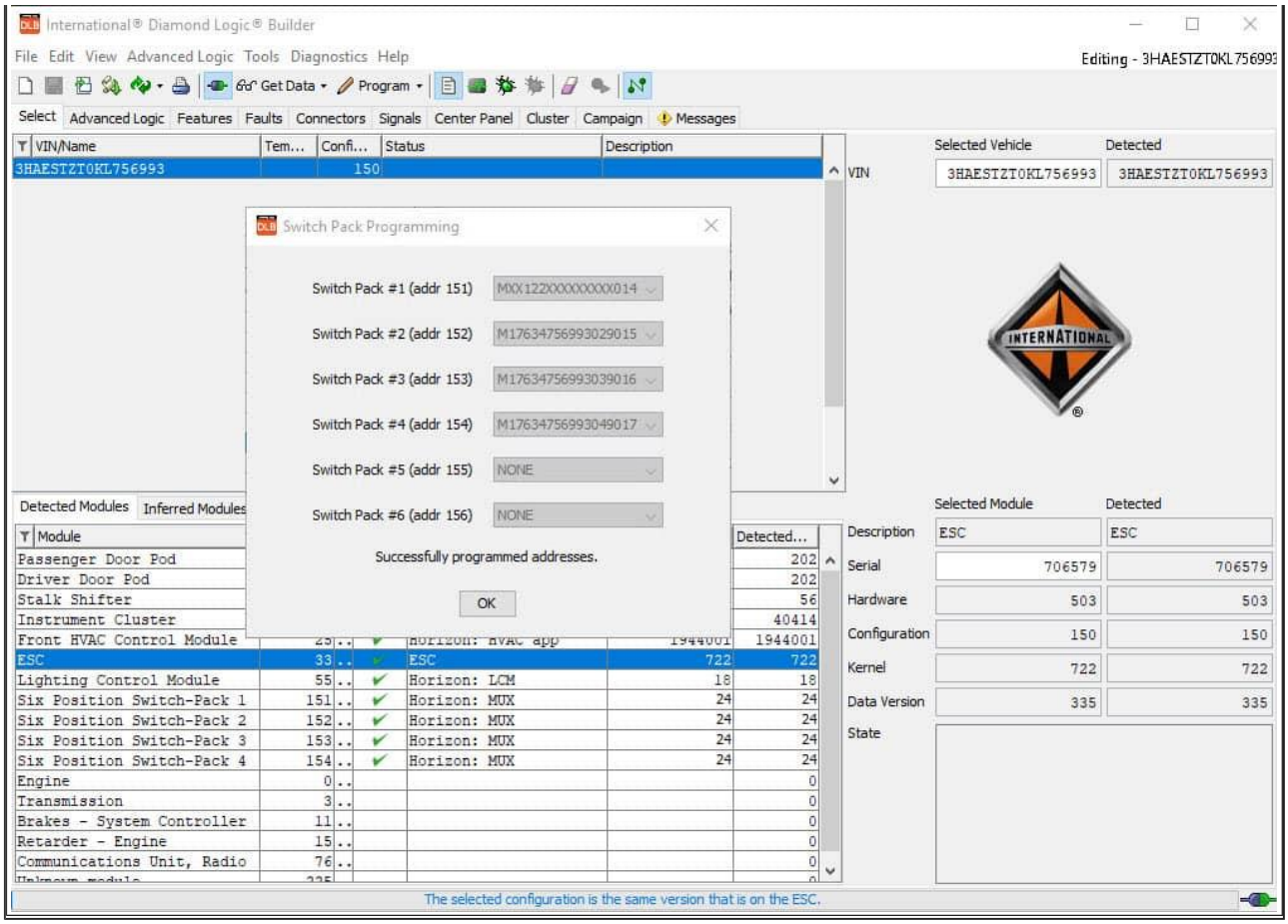
7. Set the switch pack source addresses based on their serial number and location in vehicle. Click Program.

Figure 30 - Manually set source address



8. Source address programming complete.

Figure 31 - Source Address Programmed Successfully



9. Verify one switch from each switch pack operates the correct feature as assigned.

(Return to Menu)

WARRANTY INFORMATION

Warranty Claim Coding:

Refer to the Warranty Coding Manual for Group and Noun Codes.

Standard Repair Time(s):

Refer to the SRT Manual for Repair Times

OTHER RESOURCES

Master Service Information Site

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Feedback Information

Viewed: 1421
Helpful: 17
Not Helpful: 0

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