

FT5212 Vapor Rear Plug Doors Abbreviated Checklist Certification

Technical writer name
Devanand

Manual section 02

Part Description	Part Number	QTY
-	-	-

Nb hours Level 1 0.75 hr

MQR 7621-2396

Disposal of parts		
Removed parts are:		When the retained check box is checked, the parts must be retained and returned in accordance with the usual warranty procedure to be reimbursed.
Discarded	Retained	
-	-	

Client	Order	Road numbers	VIN	QTY	Lang.	Customer	Target market	Plant	Engine Config	Model	NR	R1
New York City Transit New York - NYCT	LC79	9624 9628	L82L3M9777783 L82L0M9777787	5	E	NYCT	US	PLB	TD	40	x	
New York City Transit New York - NYCT	LC79	9636 9637	L82LXM9777795 L82L1M9777796	2	E	NYCT	US	PLB	TD	40	x	
New York City Transit New York - NYCT	LC79	9639 9639	L82L5M9777798 L82L5M9777798	1	E	NYCT	US	PLB	TD	40	x	
New York City Transit New York - NYCT	LC79	9644 9644	L82L5M9777803 L82L5M9777803	1	E	NYCT	US	PLB	TD	40	x	
New York City Transit New York - NYCT	LC79	9648 9648	L82L2M9777807 L82L2M9777807	1	E	NYCT	US	PLB	TD	40	x	
New York City Transit New York - NYCT	LC79	9650 9650	L82L6M9777809 L82L6M9777809	1	E	NYCT	US	PLB	TD	40	x	
New York City Transit New York - NYCT	LC79	9652 9654	L82L4M9777811 L82L8M9777813	3	E	NYCT	US	PLB	TD	40	x	
New York City Transit New York - NYCT	LC79	9656 9674	L82L1M9777815 L82L3M9777833	19	E	NYCT	US	PLB	TD	40	x	
New York City Transit New York - NYCT	LC79	9676 9676	L82L7M9777835 L82L7M9777835	1	E	NYCT	US	PLB	TD	40	x	
New York City Transit New York - NYCT	LC79	9678 9678	L82L0M9777837 L82L0M9777837	1	E	NYCT	US	PLB	TD	40	x	
New York City Transit New York - NYCT	LC79	9680 9680	L82L4M9777839 L82L4M9777839	1	E	NYCT	US	PLB	TD	40	x	
New York City Transit New York - NYCT	LC79	9682 9683	L82L2M9777841 L82L4M9777842	2	E	NYCT	US	PLB	TD	40	x	
New York City Transit New York - NYCT	LC79	9691 9691	L82L3M9777850 L82L3M9777850	1	E	NYCT	US	PLB	TD	40	x	
New York City Transit New York - NYCT	LC79	9694 9694	L82L9M9777853 L82L9M9777853	1	E	NYCT	US	PLB	TD	40	x	
New York City Transit New York - NYCT	LC79	9698 9702	L82L6M9777857 L82L8M9777861	5	E	NYCT	US	PLB	TD	40	x	
New York City Transit New York - NYCT	LC79	9707 9707	L82L7M9777866 L82L7M9777866	1	E	NYCT	US	PLB	TD	40	x	
New York City Transit New York - NYCT	LC79	9710 9715	L82L2M9777869 L82L8M9777875	6	E	NYCT	US	PLB	TD	40	x	
New York City Transit New York - NYCT	LC79	9717 9721	L82L1M9777877 L82L3M9777881	5	E	NYCT	US	PLB	TD	40	x	
New York City Transit New York - NYCT	LC79	9723 9724	L82L7M9777883 L82L9M9777884	2	E	NYCT	US	PLB	TD	40	x	
New York City Transit New York - NYCT	LC79	9727 9728	L82L4M9777887 L82L6M9777888	2	E	NYCT	US	PLB	TD	40	x	
New York City Transit New York - NYCT	LC79	9730 9736	L82L4M9777890 L82L9M9777903	7	E	NYCT	US	PLB	TD	40	x	
New York City Transit New York - NYCT	LC79	9738 9740	L82L2M9777905 L82L6M9777907	3	E	NYCT	US	PLB	TD	40	x	
New York City Transit New York - NYCT	LC79	9742 9742	L82LXM9777909 L82LXM9777909	1	E	NYCT	US	PLB	TD	40	x	
New York City Transit New York - NYCT	LC79	9745 9746	L82LXM9777912 L82L1M9777913	2	E	NYCT	US	PLB	TD	40	x	
New York City Transit New York - NYCT	LC79	9748 9780	L82L5M9777915 L82L7M9777950	33	E	NYCT	US	PLB	TD	40	x	
New York City Transit New York - NYCT	LC79	9782 9784	L82L0M9777952 L82L4M9777954	3	E	NYCT	US	PLB	TD	40	x	
New York City Transit New York - NYCT	LD64	9787 9787	L82L8M9777956 L82L8M9777956	1	E	NYCT	US	PLB	TD	40	x	
New York City Transit New York - NYCT	LD64	9796 9796	L82L4M9777971 L82L4M9777971	1	E	NYCT	US	PLB	TD	40	x	
New York City Transit New York - NYCT	LD64	9800 9800	L82L1M9777975 L82L1M9777975	1	E	NYCT	US	PLB	TD	40	x	
New York City Transit New York - NYCT	LD64	9802 9803	L82L5M9777977 L82L7M9777978	2	E	NYCT	US	PLB	TD	40	x	
New York City Transit New York - NYCT	LD64	9805 9806	L82L5M9777980 L82L7M9777981	2	E	NYCT	US	PLB	TD	40	x	
New York City Transit New York - NYCT	LD64	9810 9810	L82LXM9777991 L82LXM9777991	1	E	NYCT	US	PLB	TD	40	x	
New York City Transit New York - NYCT	LD64	9812 9812	L82L3M9777993 L82L3M9777993	1	E	NYCT	US	PLB	TD	40	x	
New York City Transit New York - NYCT	LD64	9829 9832	L82L4M9778022 L82LXM9778025	4	E	NYCT	US	PLB	TD	40	x	

Jean-Nicolas Fournier

Digitally signed by Jean-Nicolas Fournier
 DN: cn=Jean-Nicolas Fournier, o=Nova Bus,
 email=jean-nicolas.fournier@volvo.com, c=CA
 Date: 2021.11.09 12:08:28 -05'00'

New York City Transit New York - NYCT	LD64	9841	9841	L82L6M9778040	L82L6M9778040	1	E	NYCT	US	PLB	TD	40	x	
New York City Transit New York - NYCT	LD64	9844	9844	L82L1M9778043	L82L1M9778043	1	E	NYCT	US	PLB	TD	40	x	

Service Instruction – Abbreviated Certification Checklist

QJ 7621-2396 - Vapor Rear Plug Door Opens While Driving

GENERAL INFORMATION

Revision History	Rev	Date	By
QJ 7621-2396 FT5212 Service Instruction Initial Release	NR	2021-11-12	Michel St-Onge
FT5212 Instruction Revised for New vDEC & VBEA Releases	01	2021-11-16	Michel St-Onge
FT5212 Instruction Revised to Include References to MRDI Rev. B	02	2021-11-18	Michel St-Onge
FT5212 Instruction Revised to Update References to MRDI Rev. C	03	2021-11-19	Michel St-Onge
FT5212 Instruction Revised to Update vDEC Diag. & VBEA Screenshots	04	2021-11-21	Michel St-Onge

Orders Affected / Effectivity	Road Numbers	Customer	Qty
LC79 (B40666 - 275 LFS 40-ft Diesel-Electric Hybrid Buses)	See FT5212	NYCT	110
LD64 (B40666 - 275 LFS 40-ft Diesel-Electric Hybrid Buses)	See FT5212	NYCT	15

SYSTEM and PARTS

System Names	- Electrical: RF4 panel (panel 79) assembly wiring for added wire - Software: Nova VBEA multiplex (FB logic) + VBI vDEC (OEM firmware)
Options	- Electrical: 416079.560, 416079.00015 - Software: 416503.C79, 416503.D64
Drawings	- Electrical: N63079560 Rev. B, N63179560 Rev. C, NH63079H004 Rev. F - Software: None
Parts	- Electrical: N63079560, N63179560 - Software: FB_NYC4HE_M_02, FB_NYC4HE_M_03 (logic components / FB packages)

Reasons for Modification / Background:

Implementation of a hardwired, active high, door open control signal between the VBEA multiplex system and the vDEC rear door controller to replace the original J1939 network door open control signal.

To prevent /eliminate the reported sporadic / unexpected rear door opening events, Nova Bus and VBI also need to respectively update the VBEA multiplex system software and the vDEC firmware to ensure that the rear door open request signal no longer remains latched as it previously was, under some rare unanticipated circumstances.

Cause of Failure:

VBEA multiplex software logic and redundancy / handshaking / error handling loopholes with vDEC door control module appear to be the root cause of the reported sporadic / unexpected rear door opening events.

BILL OF MATERIALS

ITEM	QTY	PART NO	REV	DESCRIPTION	REPLACES PART N°
LEVEL 1					
LEVEL 2					

	Type	Time
SRT	Access	5 min.
	Installation	40 min.

SPECIAL INSTRUCTION / IMPORTANTE NOTICE

No	Tools Needed:
1	Laptop PC running the Volvo application & MaidCom communication software (VBEA multiplex connection) + VBI vDEC diagnostic software & compatible USB virtual COM port driver (vDEC connection software)
2	Standard USB 2.0 A-B cable, 10-ft length (vDEC connection cable)

Important Notice:

Before returning any bus into revenue service, ALL of the following actions MUST be completed.

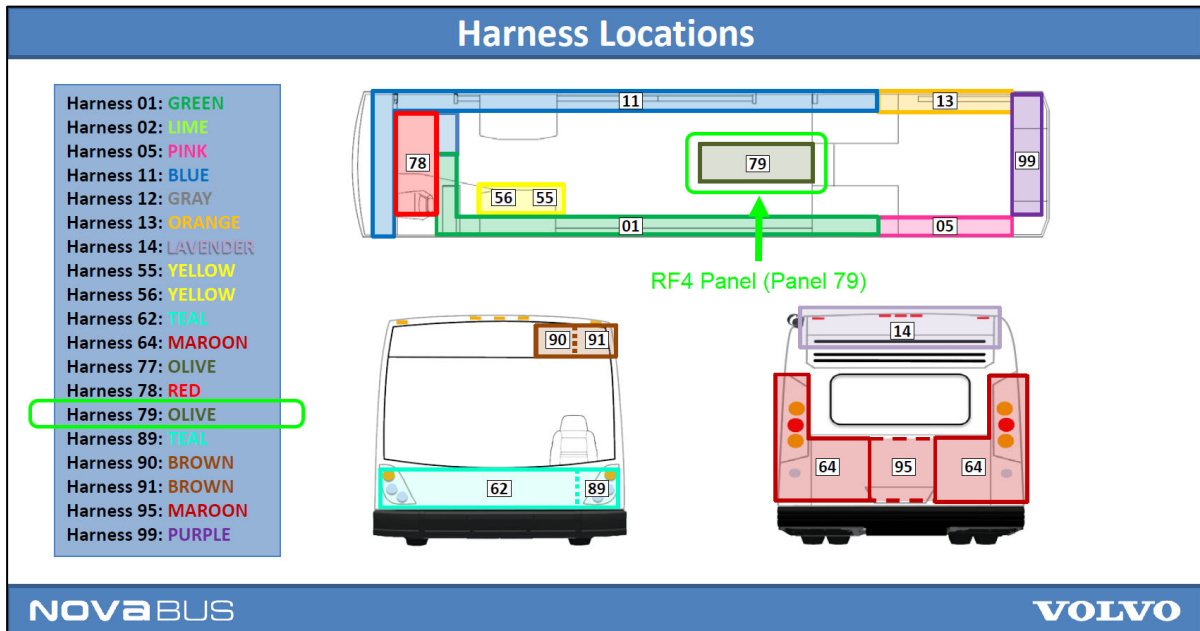
1. Install wire kit **N632001060** (Nova Bus FT5208 field campaign).
2. Reprogram the VBI vDEC module with **V3.05.07** or more recent firmware version (VBI campaign).
3. Reprogram the Nova VBEA multiplex system software with the following or more recent packages (Nova Bus FT5211 field campaign):
 - 3.1. **FB_NYC4HE_M_02 rev. J** for **LC79** buses.
 - 3.2. **FB_NYC4HE_M_03 rev. C** for **LD64** buses.
4. Perform a final validation test using the abbreviated certification checklist (Nova Bus FT5212 field campaign, this campaign).

DESCRIPTION / WORK INSTRUCTION

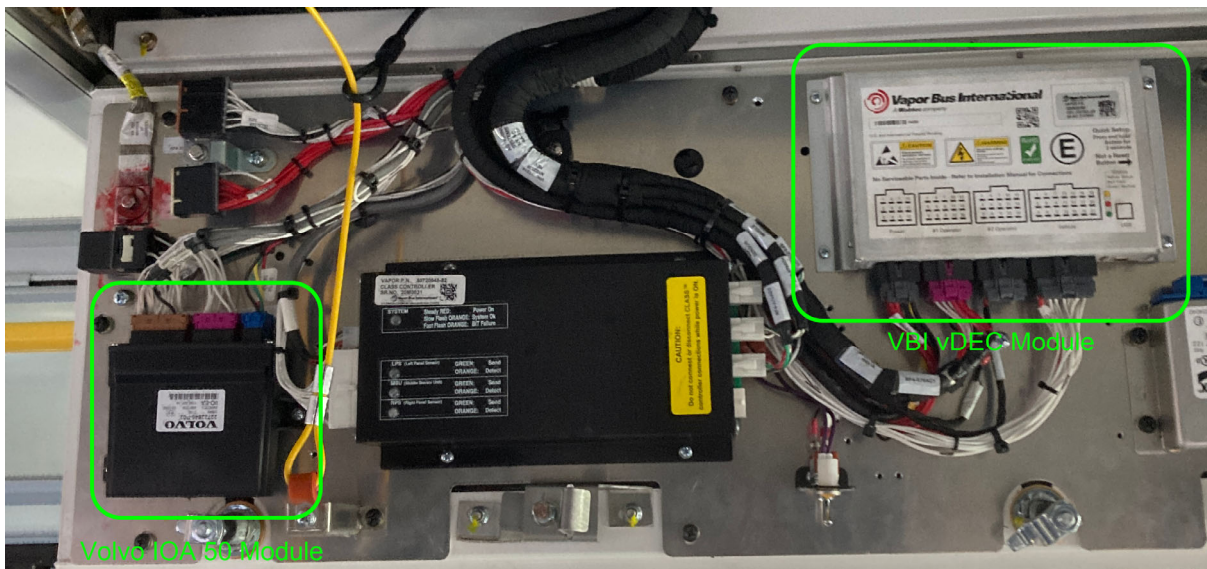
Step # 1:

Locate and access the RF4 panel to check if the N632001060 wire kit is present and properly installed, as specified in the FT5208 service instruction.

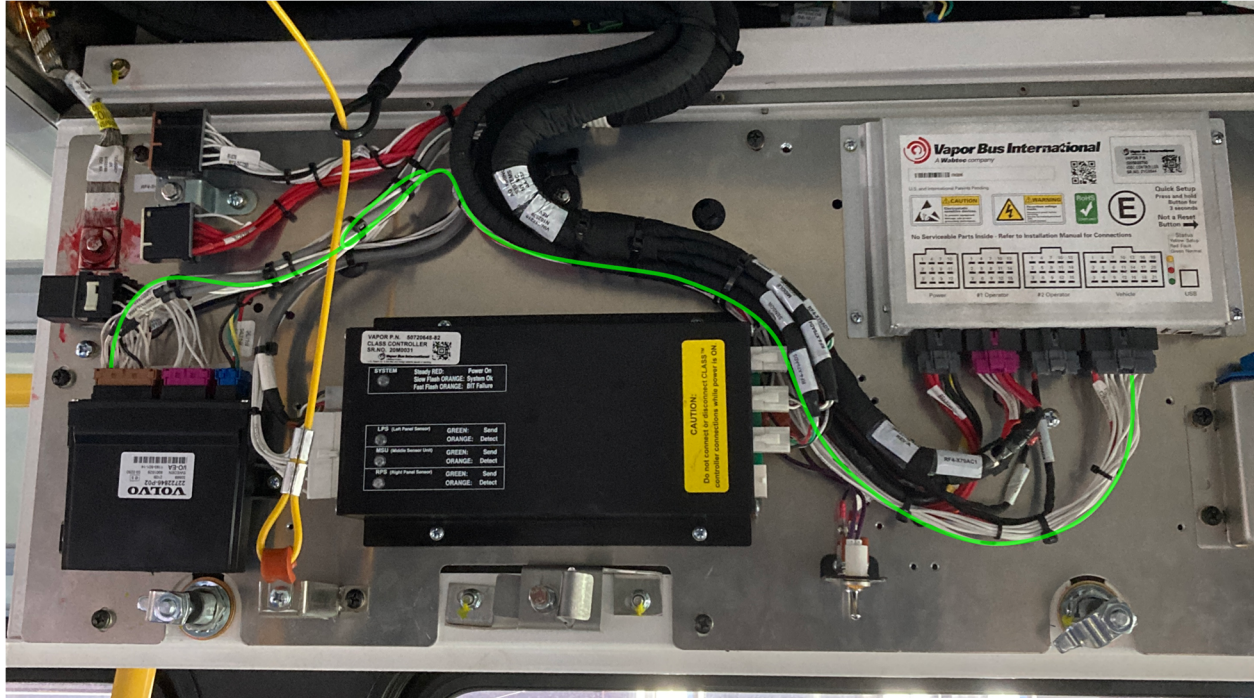
Locate and Access RF4 Panel (Panel 79 & Harness 79):



Locate the Volvo IOA 50 and VBI vDEC Modules Inside RF4 Panel:



Check if the N632001060 Wire Kit is Properly Installed (Routed, Secured & Connected at Both Ends)
→ Wire 79-167 Connected From vDEC Pin 14 (RF4-X79AC3/14) to IOA 50 Pin 13 (RF4-X79H1/13):



Step # 2:

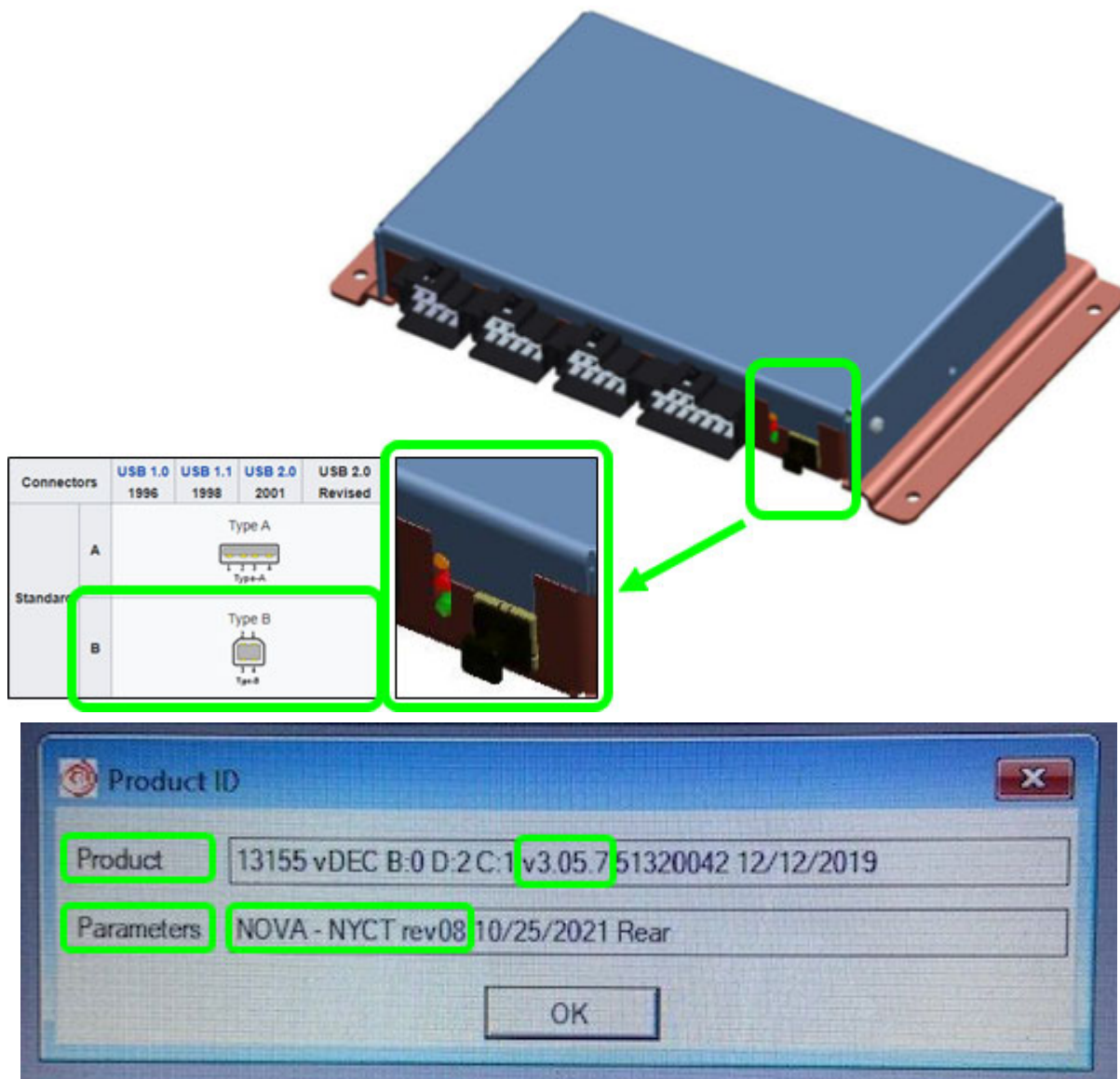
While in the RF4 panel, locate the vDEC module USB port (on module lower right corner, next to status LEDs) and connect it with a USB 2.0 A-B cable to a laptop PC running the VBI vDEC V3.12.2 diagnostic software.

Refer to VBI Technical Bulletin “TB08-03-376 – Vapor Dual Electric Controller (vDEC) Diagnostic Program Guide for Version 3” for details on how to install the vDEC diagnostic software and to setup the USB Virtual COM Port (VCP) serial communication interface driver on the laptop PC.

If the USB-to-serial communication interface setup is completed and the connection is successful, the “Product ID” dialog box should appear on the laptop screen upon launching the vDEC diagnostic software and the vDEC firmware version ID should be displayed within the “Product” field of this dialog box.

Check if the version ID **v3.05.7** (or greater) and the appropriate formalized parameters file name are being displayed in the “Product” and “Parameters” fields to confirm that the vDEC firmware was properly updated.

Connect the Laptop PC with USB Cable to the vDEC Module to Check if Firmware Version is v3.05.7:



Step # 3:

Access the Volvo multiplex system "Master ID" DB9 connector located inside the driver overhead left console and connect it with a serial-to-USB cable to a laptop PC running the Volvo application software.

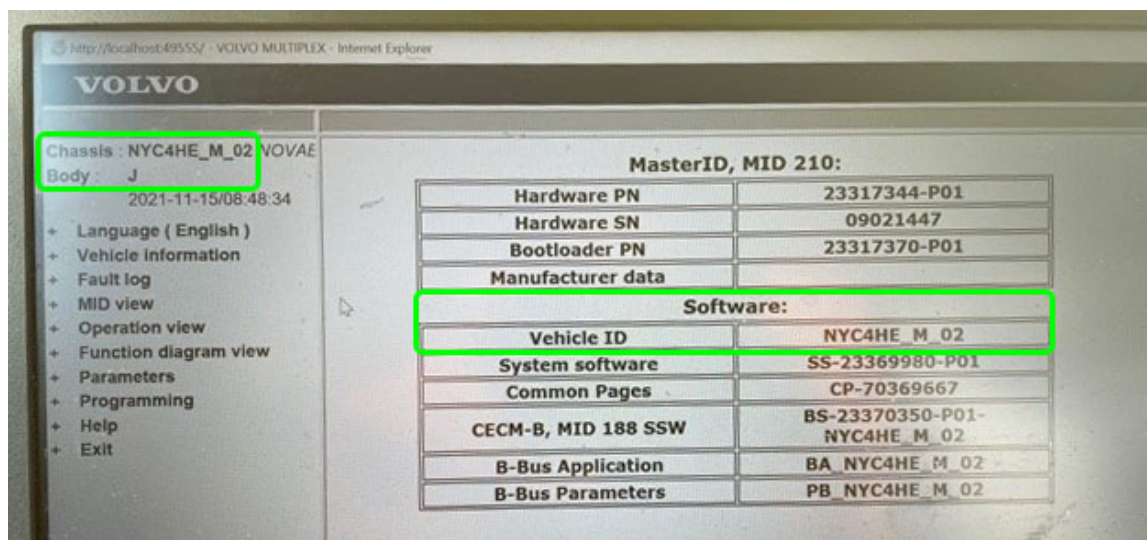
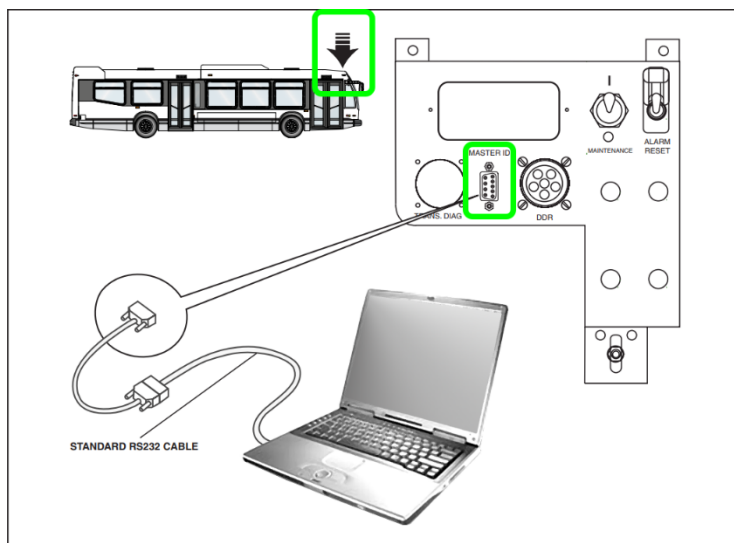
Refer to section 16-601.41 of the Nova Maintenance Manual for details on how to use the Volvo application software and to setup the USB Virtual COM Port (VCP) serial communication interface driver on the laptop PC.

If the USB-to-serial communication interface setup is completed and the connection is successful, the VBEA software Full Body (FB) package version and revision should be displayed in Volvo's application main screen.

Check if the appropriate FB software package version and revision information is displayed as follows by the Volvo application software to confirm that the VBEA multiplex system software was properly updated.

- FB_NYC4HE_M_02 rev. J for LC79 buses.
- FB_NYC4HE_M_03 rev. C for LD64 buses.

Connect the Laptop PC to the Master ID Connector to Check the VBEA Software Version and Revision:



Step # 4:

Once the 3 previous steps are successfully completed, proceed to perform this final certification / validation test procedure by executing the applicable checklist test plan instructions specified below.

Test results are to be recorded in an Excel file specific to each tested bus to track and testify that all needed verifications and validation tests were successfully passed before returning the bus into revenue service.

Execute the Applicable Certification Checklist Test Plan and Record the Test Results (Excel Reports)

- **Complete Checklist** (Test Plan Scenario Applicable to **First-Of** LC79 & LD64 Campaign Buses):



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FT5212 Complete Ct

- **Abbreviated Checklist** (Test Plan Scenario Applicable to **Following** LC79 & LD64 Campaign Buses):



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- **MRDI (TSB 88-382, dated 11/9/2021) Annotated Copy** applicable to FT5212 Abbreviated Checklist:



MRDI 88-382 Nova
Electric Doors 20211