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# **Technical Service Bulletin**

GROUP	NUMBER
CAMPAIGN	22-01-021H
DATE	MODEL(S)
FEBRUARY, 2022	Tucson (NX4), Tucson (NX4A), Tucson Hybrid (NX4 HEV), Tucson Plugin (NX4 PHEV)

### SUBJECT:

LANE KEEP ASSIST SOFTWARE UPDATE (SERVICE CAMPAIGN T7X)

# **\*** IMPORTANT

### \*\*\*\*\*Dealer Stock ONLY\*\*\*\*\*

Dealers must perform this Service Campaign on all affected vehicles prior to customer retail delivery.

When a vehicle arrives at the Service Department, access the "Vehicle Information" screen via WEBDCS to identify open Campaign/Recalls.

**Description:** This bulletin provides information related to Lane Keep Assist (LKA) software update, logic revision for Tucson (NX4, NX4A, NX4 HEV, NX4 PHEV) vehicles. Update will reduce sensitivity of LKA warning and misrecognition of missing lanes when entering the interstate.

**Applicable Vehicles:** Certain 2022MY Tucson (NX4), 2022MY Tucson (NX4A), 2022MY Tucson Hybrid (NX4 HEV), 2022MY Tucson Plug-in (NX4 PHEV).

## Warranty Information:

Model	Op. Code	Operation	Op. Time	Causal Part	Nature Code	Cause Code
Tucson (NX4A)	20D003R3			99211-N9200		
Tuson (NX4), Tucson Hybrid/Tucson Plug-in (NX4 HEV/NX4 PHEV)	20D003R2	LKA UPGRADE	0.4 M/H	99211-N9100	ІЗТ	ZZ3

#### LANE KEEP ASSIST LOGIC IMPROVEMENT PROCEDURE

# NOTICE

## Check if the vehicle's software version is affected:

• Check the current version of the ICU ROM ID and compare it to the ROM ID information table listed below before attempting to perform the software update.

# NOTICE

#### If any test shows "Failed":

- Check for DTC in all modules and erase any DTC.
- Turn off the ignition and GDS. Turn on the ignition and GDS and perform the test.
- Attempt Capacitive Discharge and re-attempt the Event.

#### GDS Information:

EVENT INFORMATION			
MODEL	EVENT DESCRIPTION		
Tucson (NX4/NX4A/NX4 HEV/NX4 PHEV)	"795.NX4, NX4 HEV/PHEV, NX4A, NX4AT LKA LOGIC IMPROVEMENT"		

#### **ROM ID Information Table:**

MODEL	OI	LD	NEW		
MODEL	P/NO	ROM ID	P/NO	ROM ID	
NX4/NX4A/NX4 HEV/NX4 PHEV	99211-N9000	1.03		1.00	
	99211-N9100	1.00/1.01			
	99211-N9200	1.00/1.01	99211-N9240		
	99211-N9210	1.00			
	99211-N9220	1.00			

#### SERVICE PROCEDURE:

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### Cautions During Control Unit Upgrade

- Confirm the vehicle's battery is above 12 volts. If the vehicle has been in storage for days, run the engine to assure an adequate battery charge state for reliable upgrade results.
- Turn off all lamps (Do not leave head lamp switch in auto mode) and all accessories (heater, A/C, blower, radio, seat warmer, defroster, etc.); do not allow the battery to be discharged during upgrade.
- Perform upgrade with the ignition switch in the ON position.
- Be careful not to disconnect any cables connected to the vehicle or scan tool during upgrade.
- Do not start the engine during upgrade.
- Do not turn off the ignition switch during upgrade.
- Do not touch the systems buttons (like 'BACK', 'HOME', 'etc.') while performing upgrade.

# CONTROL UNIT UPGRADE PROCEDURE USING THE GDS-Mobile

## 1. GDS (Global Diagnostic System)-Mobile INSTALLATION PROCEDURE

 Connect the VCI-II into the vehicle's DLC connector under the driver side instrument panel and check to turn the VCI-II on.

> Before starting the update, make certain that the battery of the Table PC is sufficiently charged.

# NOTICE

ECU upgrade function on GDS-Mobile is basically operating in wireless communication and Wi-Fi direct. Also, it's possible to be performing via USB cable between Tablet PC and VCI-II.



#### 2. AUTOMATIC UPGRADE PROCEDURE USING THE GDS-MOBILE

1. Select ECU Upgrade on the initial screen after entering the vehicle information.

#### Select Auto Mode.

# NOTICE

Read the "Information" and tab ID check.

ECU Upgrade 🖴 TUCSON PHEV(NX4 PHEV) > 2022 > G 1.6 T-GDI PHEV **Auto Mode Manual Mode** Information CAUTION 1. DO NOT start the engine and DO NOT turn the ignition key to the OFF position during the ECU upgrade. 2. Ensure that the battery is fully charged BEFORE beginning ECU upgrade. 3. Confirm the target vehicle/system BEFORE performing a manual/error mode ECU upgrade. 4. Review the applicable TSB/procedure before performing an ECU upgrade. 5. Make certain that the proper connector mentioned in the related TSB is used. 6. Ensure that any applicable components are replaced BEFORE performing the ECU upgrade. 7. Confirm the new ROM ID after performing an ECU upgrade. 8. Do not disconnect the communication with vehicle during upgrading the ECU!! A TUCSON PHEV(NX4 PHEV) > 2022 > G 1.6 T-GDI PHEV System ENGINE FR\_CMR ROM ID Currently in Vehicle Event Group

Previous

Upgrade

2. From the System, select **FR\_CMR**.

ROM ID will generate after selecting FR\_CMR.

#### 3. Select ID Check.

The GDS-Mobile will read the current ROM ID in vehicle and check the newest upgrade event.

Choose – "795.NX4, NX4 HEV/PHEV, NX4A, NX4AT LKA LOGIC IMPROVEMENT".

Select Upgrade.

- The vehicle battery voltage is checked to make sure it is at least 12 volts to ensure reliable upgrade results. Click OK if the results indicate voltage is OK.
  - NOTICE

If battery voltage is below 12 voltages as below, click BACK and then run the engine to assure an adequate battery charge state for reliable upgrade results.

5. Pop-up may generate to check "Current ROM ID". Select **OK** and continue with update.

🛱 TUCSON PHEV(N)	(4 PHEV) > 2022 > G 1.6	T-GDI PHEV	
System			
	FR_CMR		>
ROM ID			
Currently in Vehicle	99211-N9100_1.01		ID Check
Latest Update	99211-N9**0_1.00		ID CHECK
Event Group			тѕв
795. NX4, N	X4 HEV/PHEV, NX4a, NX4A ENT (PORT)	T LKA LOGIC	/
PI	revious	Upgrade	
Notice			•
	Warning! lower Battery Vo BATTERY VOLTAGE: 11.5	oltage.	
	ОК		

Information		P
▲	Be sure to check and remember the "Current before conduct upgrade, just in case manual ECU upgrade would be again. Current ROM ID : 99211-N9100_1.01	t ROM ID" performed
	ОК	

6. Upgrade (1/2) will begin, and the progress of the upgrade will appear on the bar graph. Upgrade (1/2) will occur until 100% is reached on the bar graph.

ECU Upgrading...(1/2) ECU is in the process of being upgraded. Please wait a few minute. **ROM ID** Currently in Vehicle 99211-N9100\_1.01 Latest Update 99211-N9\*\*0\_1.00 ECU Upgrade E TUCSON PHEV(NX4 PHEV) > 2022 > G 1.6 T-GDI PHEV 795. NX4, NX4 HEV/PHEV, NX4a, NX4AT LKA LOGIC IMPROVEMENT (PORT) ECU Upgrading...(2/2) ECU is in the process of being upgraded. Please wait a few minute. **ROM ID** Currently in Vehicle 99211-N9100\_1.01 Latest Update 99211-N9\*\*0\_1.00 OK

ECU Upgrade

🖴 TUCSON PHEV(NX4 PHEV) 🗦 2022 🗦 G 1.6 T-GDI PHEV

795. NX4, NX4 HEV/PHEV, NX4a, NX4AT LKA LOGIC IMPROVEMENT (PORT)

7. Upgrade (2/2) will begin, and the progress of the upgrade will appear in the bar graph.

Upgrade (2/2) will occur until 100% is reached on the bar graph.

After progress bar reaches 100%, turn the ignition key off for 10 seconds. Turn the ignition back to the on position, and then click OK to continue according to information displayed on the screen.

8. When upgrade reaches 100%, Tablet will direct Technician to "Turn IG off for 10 seconds and then back on. Click the OK button to continue."

	ECU Upgrade	₽
	PHEV) > 2022 > G 1.6 T-GDI PHEV	
🗐 795. NX4, NX4 HEV/P	HEV, NX4a, NX4AT LKA LOGIC IMPROVEMENT (PORT)	
	<b>00:1</b>	2
	100%	)
	ECU Upgrading(2/2)	
then ba	Turn IG off for 10 seconds and ack on. Click the OK button to continue.	
ROM ID		
Currently in Vehicle		
Latest Update	99211-N9**0_1.00	
	ОК	
		-
	ECU Upgrade	₽
	ECU Upgrade PHEV) > 2022 > G 1.6 T-GDI PHEV	2
😂 TUCSON PHEV(NX4 ह∏ 795. NX4, NX4 HEV/P	ECU Upgrade PHEV) > 2022 > G 1.6 T-GDI PHEV HEV, NX4a, NX4AT LKA LOGIC IMPROVEMENT (PORT)	•
😅 TUCSON PHEV(NX4	ECU Upgrade PHEV) > 2022 > G 1.6 T-GDI PHEV HEV, NX4a, NX4AT LKA LOGIC IMPROVEMENT (PORT)	
🚘 TUCSON PHEV(NX4	ECU Upgrade PHEV) > 2022 > G 1.6 T-GDI PHEV HEV, NX4a, NX4AT LKA LOGIC IMPROVEMENT (PORT)	•
E TUCSON PHEV(NX4	ECU Upgrade PHEV) > 2022 > G 1.6 T-GDI PHEV HEV, NX4a, NX4AT LKA LOGIC IMPROVEMENT (PORT) IOO% Succeed Upgrade has successfully completed	•
S TUCSON PHEV(NX4 ☐ 795. NX4, NX4 HEV/P The EC	ECU Upgrade PHEV) > 2022 > G 1.6 T-GDI PHEV HEV, NX4a, NX4AT LKA LOGIC IMPROVEMENT (PORT) UD% Succeed J Upgrade has successfully completed.	2
TUCSON PHEV(NX4	ECU Upgrade PHEV) > 2022 > G 1.6 T-GDI PHEV HEV, NX4a, NX4AT LKA LOGIC IMPROVEMENT (PORT) IOO% Succeed J Upgrade has successfully completed.	~
TUCSON PHEV(NX4 TUCSON PHEV(NX4 795. NX4, NX4 HEV/P The ECU ROM ID Currently in Vehicle	ECU Upgrade PHEV) > 2022 > G 1.6 T-GDI PHEV HEV, NX4a, NX4AT LKA LOGIC IMPROVEMENT (PORT) 100% Succeed J Upgrade has successfully completed. 99211-N9240_1.00	
TUCSON PHEV(NX4 T95. NX4, NX4 HEV/P The ECU OROM ID Currently in Vehicle Latest Update	ECU Upgrade PHEV) > 2022 > G 1.6 T-GDI PHEV HEV, NX4a, NX4AT LKA LOGIC IMPROVEMENT (PORT)	

9. Click **OK** on the final screen, which indicates upgrade is complete.

10. Check if any incidental Diagnostic Trouble Codes (DTC) have been created by the upgrade and clear the DTC(s) present.



11. Start the engine to confirm proper operation of the vehicle.

#### 3. MANUAL UPGRADE PROCEDURE USING THE GDS-MOBILE

### NOTE:

- The manual upgrade should be performed only when the automatic upgrade fails.
- If automatic upgrade fails, turn the ignition key off for about 10 seconds, place it back in the on position to reset the control unit before performing manual upgrade.
- 1. Within the upgrade screen, select Manual Mode, then select upgrade event.

ECU Upgrade				
🖴 TUCSON(NX4) 🔌 2022 🔌 G 2.5 GDI THETA III				
Auto Mode	Manual Mode			
Information	Event List			
• CAUTION				
1. DO NOT start the engine and DO NOT during the ECU upgrade	turn the ignition key to the OFF position			
2. Ensure that the battery is fully charged E	BEFORE beginning ECU upgrade.			
3. Confirm the target vehicle/system BE	FORE performing a manual/error mode			
ECU upgrade.				
<ol> <li>Review the applicable TSB/procedure be</li> <li>Make certain that the proper connector</li> </ol>	erore performing an ECU upgrade. mentioned in the related TSB is used			
6. Ensure that any applicable component	ts are replaced BEFORE performing the			
ECU upgrade.				
7. Confirm the new ROM ID after performin	ng an ECU upgrade.			
<ol><li>Do not disconnect the communication v</li></ol>	vith vehicle during upgrading the ECU!!			

2. From the System, select **FR\_CMR**.

ROM ID will generate after selecting FR\_CMR.

Select Upgrade.



3. Enter the password from the below table then click OK. #795

Menu	Password
NX4(HEV), NX4a, NX4 AT LKA 99211-N9240	0429

4. The vehicle battery voltage is checked to make sure it is at least 12 volts to ensure reliable upgrade results. Click OK if the results indicate voltage is OK.

# NOTICE

If battery voltage is below 12 voltages as below, click BACK and then run the engine to assure an adequate battery charge state for reliable upgrade results.



5. Pop-up may generate to check "Current ROM ID". Select **OK** and continue with update.



5. Upgrade (1/2) will begin, and the progress of the upgrade will appear on the bar graph. Upgrade (1/2) will occur until 100% is reached on the bar graph.

	ECU Upgrade	₽
🖴 TUCSON PHEV(NX4	PHEV) > 2022 > G 1.6 T-GDI PHEV	
🗐 795. NX4, NX4 HEV/P	HEV, NX4a, NX4AT LKA LOGIC IMPROVEMENT (PORT)	
	ECU Upgrading(1/2)	
ECU	is in the process of being upgraded. Please wait a few minute.	
ROM ID		
Currently in Vehicle		
Latest Update	99211-N9**0_1.00	
	ОК	

6. Upgrade (2/2) will begin, and the progress of the upgrade will appear in the bar graph.

Upgrade (2/2) will occur until 100% is reached on the bar graph.

After progress bar reaches 100%, turn the ignition key off for 10 seconds. Turn the key back to the on position, and then click OK to continue according to information displayed on the screen.

7. When upgrade reaches 100%, Tablet will direct Technician to "Turn IG off for 10 seconds and then back on. Click the OK button to continue."

	ECU Upgrade	~
🖴 TUCSON PHEV(NX4	PHEV) > 2022 > G 1.6 T-GDI PHEV	
🗐 795. NX4, NX4 HEV/P	HEV, NX4a, NX4AT LKA LOGIC IMPROVEMENT (PORT)	
	63	
	ECU Upgrading(2/2)	
ECU	is in the process of being upgraded. Please wait a few minute.	
ROM ID		
Currently in Vehicle		
Latest Update	99211-N9**0_1.00	
	ОК	_
	ECU Upgrade	P
🛱 TUCSON PHEV(NX4	I PHEV) > 2022 > G 1.6 T-GDI PHEV	
🗐 795. NX4, NX4 HEV/P	HEV, NX4a, NX4AT LKA LOGIC IMPROVEMENT (PORT)	
	00.1	
		2
	100%	2
	100% ECU Upgrading(2/2)	2
then ba	100% ECU Upgrading(2/2) Turn IG off for 10 seconds and ack on. Click the OK button to continue.	2
then ba	10% ECU Upgrading(2/2) Turn IG off for 10 seconds and fock on. Click the OK button to continue.	2
then ba ROM ID Currently in Vehicle	100% ECU Upgrading(2/2) Turn IG off for 10 seconds and ack on. Click the OK button to continue.	2
then ba •ROM ID Currently in Vehicle Latest Update	100%         ECU Upgrading(2/2)         Turn IG off for 10 seconds and ack on. Click the OK button to continue.         99211-N9**0_1.00	2

8. Click OK on the final screen, which indicates upgrade is complete.

	ECU	Upgrade		₽
🖴 TUCSON PHEV(NX4	PHEV) > 202	2 》 G 1.6 T-GDI	PHEV	
🗐 795. NX4, NX4 HEV/P	HEV, NX4a, NX4A	T LKA LOGIC IMPR	ROVEMENT (PORT)	
	Su	cceed		
The EC	Upgrade has	successfully c	ompleted.	
30011 ID				
C C C C C C C C C C C C C C C C C C C				
Currently in Vehicle	99211-N924	0_1.00		
Latest Update	99211-N9**(	0_1.00		
		ок		
	PHEV) > 202	2 > G 1.6 T-GDI	PHEV	
795. NX4, NX4 HEV/PI	HEV, NX4a, NX4A	T LKA LOGIC IMPF	ROVEMENT (PORT)	
	L			
Notice				
Do ye	ou want to run	Fault Code Sea	rching?	
Y	'es		No	
Latest Update	99211-N9**(	0_1.00		

9. Check if any incidental Diagnostic Trouble Codes (DTC) have been created by the upgrade and clear the DTC(s) present.

10. Start the engine to confirm proper operation of the vehicle.