



GROUP	MODEL
ENG	2022MY Sorento (MQ4a) Telluride (ON)
NUMBER	DATE
232 (Rev 1, 12/20/2021)	December 2021

TECHNICAL SERVICE BULLETIN

SUBJECT:

SERVICE ACTION: ACCELERATION LOGIC IMPROVEMENT (ECU & TCU) (SA490)

NOTICE

This bulletin has been revised to include additional information. New/revised sections of this bulletin are indicated by a black bar in the margin area.

This bulletin provides the procedure to update the software logic of the Engine Control Unit (ECU) and Transmission Control Unit (TCU) on some 2022MY Sorento (MQ4a) vehicles and Telluride (ON) vehicles produced in the date ranges listed below, which may exhibit rough shift and hesitation during acceleration. Follow the procedure outlined in this publication to apply the improved logic to **both** the 'ENGINE' and 'A/T' systems using the KDS ECU Upgrade function as described in this bulletin. Kia is requesting the completion of this Service Action on all affected vehicles in dealer stock, prior to delivery. For confirmation that the latest reflash has been applied to a vehicle you are working on, verify the ROM ID using the table on page 3 of this bulletin.

Model	Engine	Production Date Range
Sorento (MQ4a)	Theta 2.5L-T	August 11, 2021 to November 29, 2021
	Theta 2.5L	September 8, 2021 to December 7, 2021
Telluride (ON)	3.8L GDI	June 8, 2021 to November 4, 2021

NOTICE

A Service Action is a repair program without customer notification that is performed during the warranty period. Any dealer requesting to perform this repair outside the warranty period will require DPSM approval.

Repair status for a VIN is provided on WebDCS (Service → Warranty Coverage → Warranty Coverage Inquiry → Campaign Information). Not completed Recall / Service Action reports are available on WebDCS (Consumer Affairs → Not Completed Recall → Recall VIN → Select Report), which includes a list of affected vehicles.

This issue number is SA490.

ECU Upgrade Procedure:

To correct this condition, the ECU and TCU should be reprogrammed using the KDS download, as described in this bulletin.

Upgrade Event Name
582. MQ4a THETA 2.5TGDI 8DCT ACCELERATION LOGIC IMPROVEMENT (ECU)
583. MQ4a THETA 2.5TGDI 8DCT ACCELERATION LOGIC IMPROVEMENT (TCU)
584. ON LAMBDA 3.8GDI 8AT ACCELERATION LOGIC IMPROVEMENT (ECU)
585. ON LAMBDA 3.8GDI 8AT ACCELERATION LOGIC IMPROVEMENT (TCU)
590. MQ4a THETA 2.5 8AT GEAR SHIFT LOGIC IMPROVEMENT (ECU)
591. MQ4a THETA 2.5 8AT GEAR SHIFT LOGIC IMPROVEMENT (TCU)


NOTICE

- Confirm a fully charged battery (12.3 volts or higher is necessary) is used or utilize a fully charged jump starter box connected to the battery.
- **Ensure the KDS is sufficiently charged at 60% or higher prior to reflash.**
- All ECU upgrades must be performed with the ignition set to the 'ON' position unless otherwise stated.
- **Damaged VCI II units should not be used and promptly replaced.**
- Be careful not to disconnect the VCI-II connected to the vehicle during the ECU upgrade procedure.
- **DO NOT start the engine during ECU upgrade.**
- DO NOT turn the ignition key 'OFF' or interrupt the power supply during ECU upgrade.
- **When the ECU upgrade is completed, turn the ignition 'OFF' and wait 10 seconds before starting the engine.**
- ONLY use approved ECU upgrade software designated for the correct application.

IMPORTANT

It is recommended to ALWAYS check the Electronic Parts Catalog (EPC) to locate the ECU Part Number respective to Auto/Manual Mode ROM IDs. DO NOT reference the parts label affixed to the ECU.

NOTICE


Before attempting an ECU upgrade on any Kia model, make sure to first determine whether the applicable model is equipped with an immobilizer  security system. Failure to follow proper procedures may cause the PCM to become inoperative after the upgrade and any claims associated with this repair may be subject to chargeback.

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ECU ROM ID INFORMATION TABLE:**Upgrade Event #582 (MQ4a)**

Model	TM	SYS	Previous		New	
			ECU PN	ROM ID	ECU PN	ROM ID
MQ4a (Theta 2.5L-T)	8DCT	ENGINE	39121 2SMN5	MQDWN5TMD3XXXJ1A	39121 2SMN7	MQDWN5TMD3XXXJ1B
			39131 2SMN5	MQDWN5TSD3XXXJ1A	39131 2SMN7	MQDWN5TSD3XXXJ1B
			39121 2SMN6	MQDWN5TMD3TXXJ1A	39121 2SMN8	MQDWN5TMD3TXXJ1B
			39131 2SMN6	MQDWN5TSD3TXXJ1A	39131 2SMN8	MQDWN5TSD3TXXJ1B

Upgrade Event #584 (ON)

Model	TM	SYS	IMMO 	Previous		New	
				ECU PN	ROM ID	ECU PN	ROM ID
ON (Lambda 3.8L GDI)	8AT	ENGINE	Yes	39122 3LNN2	ONNN8GMS_S1A	39122 3LNN2	ONNN8GMS_S1B
			No	39132 3LNN2	ONNN8GSS_S1A	39132 3LNN2	ONNN8GSS_S1B

Upgrade Event #590 (MQ4a)

Model	TM	SYS	IMMO 	Previous		New	
				ECU PN	ROM ID	ECU PN	ROM ID
MQ4a (Theta 2.5L)	8AT	ENGINE	Yes	39120 2SMN2	MADWN5GMFXXXXK5A MADWN5GMFXXXXK5B	39120 2SMN4	MADWN5GMFXXXXL5B
				39120 2SMN4	MADWN5GMFXXXXL5A		
				39120 2SMN3	MADWN5GMGXXXXK5A MADWN5GMGXXXXK5B		
			39120 2SMN5	MADWN5GMGXXXXL5A			
			No	39120 2SMM2	MADWN5GSFXXXXK5A MADWN5GSFXXXXK5B	39120 2SMM4	MADWN5GSFXXXXL5B
				39120 2SMM4	MADWN5GSFXXXXL5A		
39120 2SMM3	MADWN5GSGXXXXK5A MADWN5GSGXXXXK5B	39120 2SMM5		MADWN5GSGXXXXL5B			
39120 2SMM5	MADWN5GSGXXXXL5A						

To verify the vehicle is affected, be sure to check the Calibration Identification of the vehicle's ECU ROM ID and reference the Information Table as necessary.



TCU ROM ID INFORMATION TABLE:**Upgrade Event #583 (MQ4a)**

Model	TM	SYS	Misc	ECU P/No.	ROM ID	
					Previous	New
MQ4a (Theta 2.5L-T)	8DCT	A/T	SBC	954A1 2N180	WMQ4T25XXX700NM0 WMQ4T25XXX700NS0 WMQ4T25XXX700NS1 WMQ4T25XXX720NS2 WMQ4T25XXX720NS3 WMQ4T25XXX720NS4 WMQ4T25XXX730NS5 WMQ4T25XXX800NS6	WMQ4T25XXX800NS7

Upgrade Event #585 (ON)

Model	TM	SYS	Misc	ECU P/No.	ROM ID	
					Previous	New
ON (Lambda 3.8L GDI)	8AT	A/T	2WD, SBC	95441 4GBA0	TON2G38NB0 TON2G38NB1 TON2G38NB2 TON2G38NB3 TON2G38NB4	TON2G38NB5
			4WD, SBC	95441 4GBB0	TON4G38NB0 TON4G38NB1 TON4G38NB2 TON4G38NB3 TON4G38NB4	TON4G38NB5

Upgrade Event #591 (MQ4a)

Model	TM	SYS	Misc	Previous		New		
				ECU PN	ROM ID	ECU PN	ROM ID	
MQ4a (Theta 2.5L)	8AT	A/T	2WD	39120 2SMNO	TMQ4G25X2XSCONS1	39120 2SMN4	TMQ4G25X2XSCONS3	
				39120 2SMMO				
				39120 2SMN2	TMQ4G25X2XSCONS2			39120 2SMM4
			39120 2SMM2					
			4WD	39120 2SMN1	TMQ4G25X4XSCONS1	39120 2SMN5		TMQ4G25X4XSCONS3
				39120 2SMM1				
39120 2SMN3	TMQ4G25X4XSCONS2	39120 2SMM5						
39120 2SMM3								

To verify the vehicle is affected, be sure to check the Calibration Identification of the vehicle's ECU ROM ID and reference the Information Table as necessary.

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NOTICE

Prior to performing the ECU upgrade, be sure to check that the KDS is fully charged.

1. Connect the VCI-II to the OBD-II connector, located under the driver's side of the instrument panel.

NOTICE

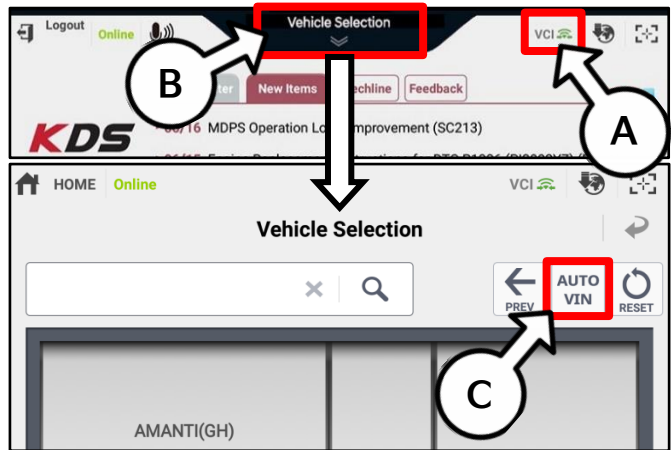
The ECU upgrade function on KDS operates wirelessly. It is not necessary to perform the upgrade via USB cable.



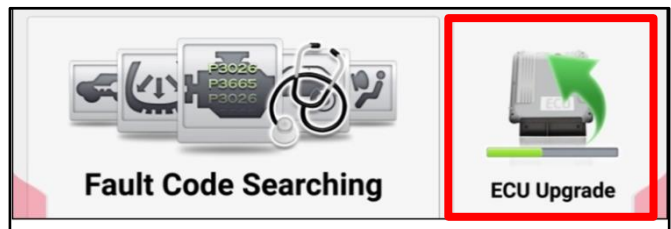
2. With the ignition ON, turn ON the KDS tablet. Select 'KDS' from the home screen.



3. Confirm communication with VCI (A) and then configure the vehicle (B) using the 'AUTO VIN' (C) feature.



4. Select 'ECU Upgrade'.



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- The KDS will check the server for recently uploaded Events and then automatically download ECU Upgrade Event #582 (MQ4a Turbo) or #590 (MQ4a non-Turbo) or #584 (ON) AND TCU Upgrade Event #583 (MQ4a Turbo) or #591 (MQ4a non-Turbo) or #585 (ON).

NOTICE

The vehicle must be identified in Vehicle Selection to download an Event for that vehicle.

After the download is complete, the program will shut down to install. Please wait until the program restarts.

Event	Status
271.QF 2.4GDI DTC P0171,P0420 LOGIC IMPROVEMENT	Downloading
273.TF 2.4GDI DTC P0171,P0420 LOGIC IMPROVEMENT	Ready

36%

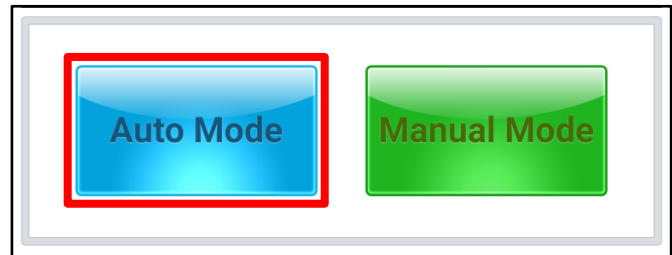
Do not touch any system buttons while performing this function.

KDS screenshot shown above is for demonstration purposes only. Events shown in screenshot are not applicable to this bulletin.

- Select Auto Mode.

CAUTION

Do NOT attempt to perform a Manual Mode upgrade UNLESS Auto Mode fails. Always follow the instructions given on the KDS in either Auto or Manual mode.



- Select the ENGINE and A/T systems under the System selection menu. Touch ID Check (D) and confirm that the latest update is available.

Select ECU Upgrade Event #582 (MQ4a Turbo) or #590 (MQ4a non-Turbo) or #584 (ON) AND TCU Upgrade Event #583 (MQ4a Turbo) or #591 (MQ4a non-Turbo) or #585 (ON), and select Upgrade to continue.

IMPORTANT

Each vehicle must have both upgrades performed: Engine and A/T.

- The ECU upgrade will begin and the progress of the upgrade will appear on the bar graph. Upgrade part (1/2) (E) will download the upgrade event to the VCI-II. Upgrade part (2/2) (F) will upgrade the ECU.

CAUTION

Do not touch the system buttons (like 'Back', 'Home', 'etc.') while performing ECU Upgrade.

E

23%

ECU Upgrading...(1/2)

ECU is in the process of being upgraded. Please wait a few minute.

F

6%

ECU Upgrading...(2/2)

ECU is in the process of being upgraded. Please wait a few minute.

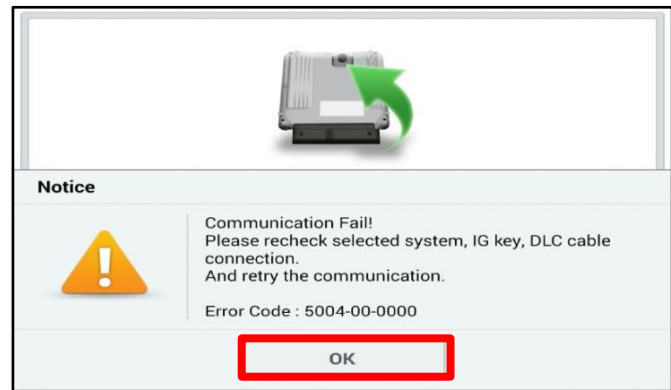


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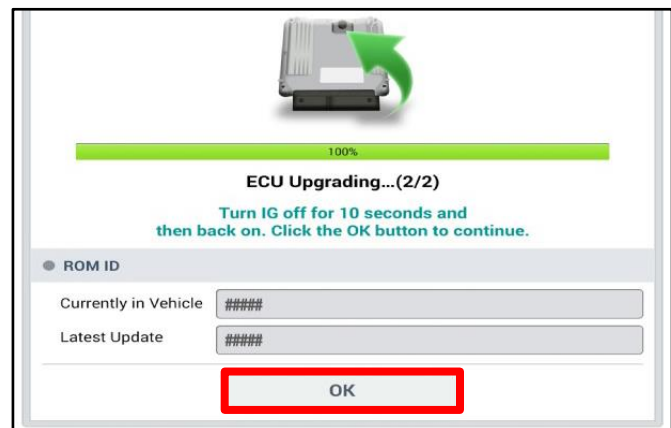
9. If a "Communication Fail" screen appears, verify that the VCI-II and KDS are communicating properly. Select 'OK' and restart the procedure from step 4.

 **NOTICE**

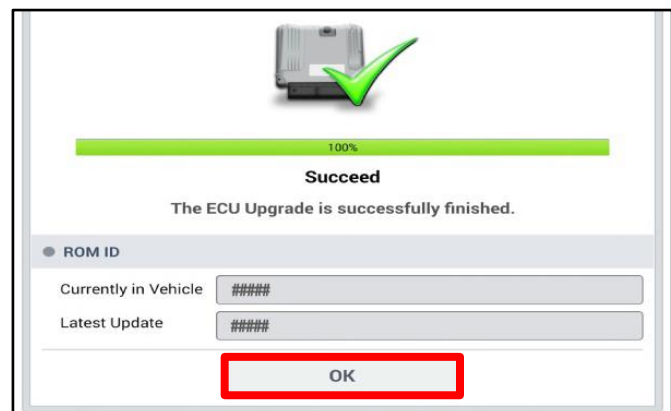
If an error notice continues to appear or if the upgrade cannot be performed, DO NOT disconnect the KDS/VCI-II. Contact GIT America Help Desk at (888) 542-4371 or Techline.



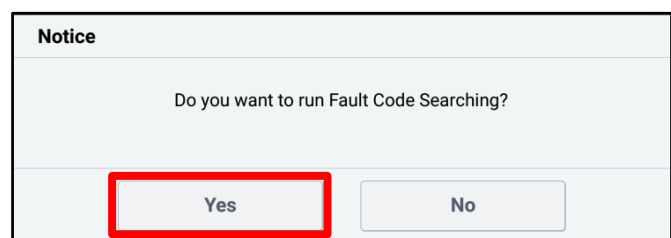
10. When instructed on the KDS, turn the ignition OFF for ten (10) seconds then back on. Select 'OK' to continue.



11. Once the upgrade is complete, select 'OK' to finalize the procedure.



12. When prompted, select 'YES' to check for Diagnostic Trouble Codes (DTC) and erase any DTCs stored such as EPS, ESC, and TPMS that may have been set during the upgrade.



13. Start the engine to confirm normal operation of the vehicle.

Manual Upgrade Procedure:**NOTICE**

The manual upgrade should ONLY be performed if the automatic upgrade fails.

If the automatic upgrade fails, turn the ignition 'OFF' for about 10 seconds then place it back in the 'ON' position to reset the control unit BEFORE performing manual upgrade.

See table below for 'Manual Mode' passwords.

Manual Mode ECU Upgrade Passwords

Menu	Password
MQ4 Theta 2.5TGDI 8DCT (ECU): 39121-2SMN5	2125
MQ4 Theta 2.5TGDI 8DCT (ECU): 39131-2SMN5	3125
MQ4 Theta 2.5TGDI 8DCT (ECU): 39121-2SMN6	2126
MQ4 Theta 2.5TGDI 8DCT (ECU): 39131-2SMN6	3126
MQ4 Theta 2.5TGDI 8DCT (TCU): 954A1-2N180	2232
MQ4a Theta 2.5 8AT +IMMO/SMK (ECU) : 39120-2SMN2/N4	9001
MQ4a Theta 2.5 8AT +IMMO/SMK (ECU) : 39120-2SMN3/N5	9002
MQ4a Theta 2.5 8AT -IMMO (ECU) : 39120-2SMM2/M4	9003
MQ4a Theta 2.5 8AT -IMMO (ECU) : 39120-2SMM3/M5	9004
MQ4a Theta 2.5 8AT 2WD (TCU) : 39120-2SMN0/M0/MN2/M2	5203
MQ4a Theta 2.5 8AT 4WD (TCU) : 39120-2SMN1/M1/MN3/M3	5403
ON LAMBDA 3.8GDI 8AT +IMMO/SMK (ECU): 39122-3LNN2	2232
ON LAMBDA 3.8GDI 8AT -IMMO (ECU): 39132-3LNN3	3233
ON LAMBDA 3.8GDI 8AT 2WD (TCU): 95441-4GBA0	4140
ON LAMBDA 3.8GDI 8AT 4WD (TCU): 95441-4GBB0	4141

1. Within the ECU Upgrade screen displayed, select **Manual Mode**.
2. Select the **ENGINE** or **A/T** system under the System selection menu. Select **ECU Upgrade Event #582 (MQ4a Turbo) or #590 (MQ4a non-Turbo) or #584 (ON) AND TCU Upgrade Event #583 (MQ4a Turbo) or #591 (MQ4a non-Turbo) or #585 (ON)**, and select **Upgrade** to continue.
3. Select the appropriate control unit part number with reference to the ROM ID Information Table on page 3, and select **OK**.
4. Enter the appropriate password from the Manual Mode password table above and select **OK**.
5. The upgrade will begin and the progress of the upgrade will appear on the bar graph.
6. When instructed on the KDS, turn the ignition **OFF** for ten (10) seconds then back on. Select **OK**.
7. Once the upgrade is complete, select **OK** to finalize the procedure.
8. When prompted, select **YES** to check for Diagnostic Trouble Codes (DTC) and erase any DTCs stored such as EPS, ESC, and TPMS that may have been set during the upgrade.
9. Start the engine to confirm proper operation of the vehicle.

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AFFECTED VEHICLE RANGE:

Model	Engine	Production Date Range
Sorento (MQ4a)	Theta 2.5L-T	August 11, 2021 to November 29, 2021
	Theta 2.5L	September 8, 2021 to December 7, 2021
Telluride (ON)	3.8L GDI	June 8, 2021 to November 4, 2021

REQUIRED TOOL:

Tool Name	Figure	Comments
KDS		Kia Diagnostic System

WARRANTY INFORMATION:

N Code: N99 C Code: C99

Model	Claim Type	Causal P/N	Qty.	Repair Description	Labor Op Code	Op Time	Replacement P/N	Qty.
MQ4a (2.5L-T)	V	39121 2SMN6	0	(SA490) ECU & TCU Logic Improvement	210A26R0	0.4 M/H	N/A	0
MQ4a (2.5L)		39121 2SMN6			210A26R2			
ON		39122 3LNN2			210A26R1			

NOTICE

VIN inquiry data for this repair is provided for tracking purposes only. Kia retailers should reference SA490 when accessing the WebDCS system.

