TECHNICAL SERVICE BULLETIN

SUBJECT: SERVICE ACTION: 2.4L SHIFT QUALITY & WAKE-UP LOGIC IMPROVEMENT (SA316B)

This bulletin provides the procedure to improve the logic of the Electronic Control Unit (ECU) and Transmission Control Unit (TCU) on some 2018MY Optima (JFa) 2.4L, produced from April 18, 2017 through September 7, 2017, and some 2017MY Sorento (UMa) 2.4L vehicles, produced from September 18, 2017 through November 16, 2017, which may experience an extended crank and/or a shift quality concern, such as a hard downshift, upshift, and/or shift delay. To correct this concern, apply the improved logic to the ECU and TCU using the KDS ECU Upgrade function as described in this bulletin. For confirmation that the latest reflash has been applied to a vehicle you are working on, verify the ROM ID using the table on pages 2-3 of this bulletin. Kia is requesting the completion of this Service Action on all affected vehicles in dealer stock, prior to delivery. Before conducting the procedure, verify that the vehicle is included in the list of affected VINs.

NOTE: This TSB does not apply to 2.0T-GDI equipped Optima (JFa) vehicles. For 2.0T-GDI equipped Optima (JFa) vehicles, refer to TSB TRA071A/SA315A regarding Shift Quality Logic Improvement (TCU only).

Kia Diagnostic System (KDS)

★ 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 SA316B.

Circulate To:	☒ General Manager	☒ Service Manager	☒ Parts Manager
☒ Service Advisors	☒ Technicians	☒ Body Shop Manager	☐ Fleet Repair

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ECU Upgrade Procedure:

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

Upgrade Event Name
350.JFA 2.4 ECU ENGINE START LOGIC IMPROVEMENT
*351.JFA 2.0/2.4 TCU GEAR SHIFT LOGIC IMPROVEMENT
353.UMA 2.4L TCU GEAR SHIFT LOGIC IMPROVEMENT
359.UMA 2.4L ECU ENGINE START LOGIC IMPREVEMENT

*Upgrade Event 351 applies to both Optima (JFa) 2.0T and 2.4L TCUs. This bulletin only applies to 2.4L. Refer to TSB TRA071A/SA315A for 2.0T vehicles.

★ NOTICE

- **A fully charged battery is necessary before ECU upgrade can take place. It is recommended that the Midtronics GR8-1299 system be used in ECU mode during charging. DO NOT connect any other battery charger to the vehicle during ECU upgrade.**
- **All ECU upgrades must be done with the ignition key in the 'ON' position.**
- **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 model, year.**

★ NOTICE

Before attempting an ECU upgrade on any Kia model, make sure to first determine whether the particular 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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ROM ID INFORMATION TABLE:

Upgrade Event #350 (JFa ECU)

Model	EM	TM	IMMO	ECU P/No.	ROM ID	
					Previous	**New**
JFa	2.4L ULEV	AT	Yes (+) 🚗	39108-2GGC7	JFAINC4ERD11 JFAINC4ERDAA JFAINC4ERDAB	JFAINC4ERD5A
			No (-)	39108-2GGC2	JFAINC4EMD11 JFAINC4EMDAA JFAINC4EMDAB	JFAINC4EMD5A
	2.4L SULEV		Yes (+) 🚗	39108-2GGD7	JFAINS4ERD11 JFAINS4ERDAA JFAINS4ERDAB	JFAINS4ERD5A
			No (-)	39108-2GGD2	JFAINS4EMD11 JFAINS4EMDAA JFAINS4EMDAB	JFAINS4EMD5A

Upgrade Event #351 (JFa TCU)

Model	EM	TM	TCU P/No.	ROM ID	
				Previous	**New**
JFa	2.4L ULEV	AT	39108-2GGC2 39108-2GGC7	TJF0G24NSC TJF0G24NSD	TJF0G24NSE
	2.4L SULEV		39108-2GGD2 39108-2GGD7	TJF0G24SSC TJF0G24SSD	TJF0G24SSE

Upgrade Event #353 (UMa TCU)

Model	EM	TM	TCU P/No.	ROM ID	
				Previous	**New**
UMa	2.4L ULEV	AT	39100-2GGF3 39100-2GGF8	TUM2G24NB3 TUM2G24NB4	TUM2G24NB5
	2.4L SULEV		39100-2GGH3 39100-2GGH8	TUM4G24NB3 TUM4G24NB4	TUM4G24NB5

Upgrade Event #359 (UMa ECU)

Model	EM	TM	IMMO	ECU P/No.	ROM ID	
					Previous	**New**
UMa	2.4L ULEV	AT	Yes (+) 🚗	39100-2GGF8 39100-2GGH8	UMAINC4ERA6A UMAINC4ERA7A UMAINC4ERA7B UMAINC4ERD5A	UMAINC4ERD5B
	2.4L SULEV		No (-)	39100-2GGF3 39100-2GGH3	UMAINC4EMA6A UMAINC4EMA7A UMAINC4EMA7B UMAINC4EMD5A	UMAINC4EMD5B

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

> ## ★ NOTICE
>
> **Prior to performing the ECU upgrade, be sure to check that the KDS is fully charged.**

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1. Connect the VCI-II to the OBD-II connector, located under the driver's side of the instrument panel.
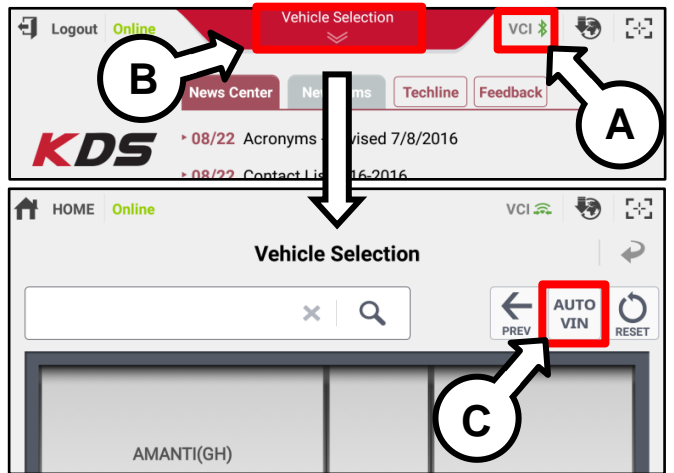
> *** NOTICE**
>
> **The ECU upgrade function on KDS operates wirelessly. It is not necessary to perform the upgrade via USB cable.**
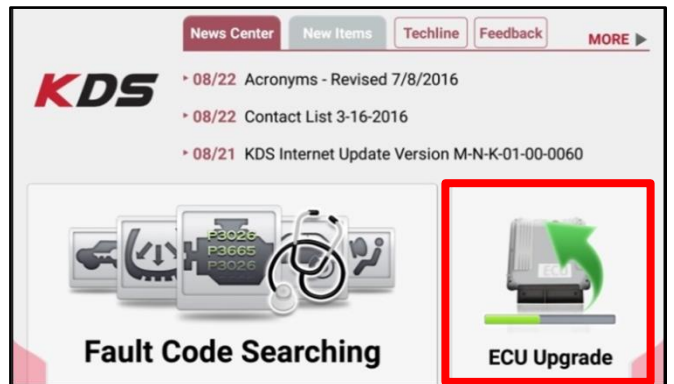
2. With the ignition ON, turn ON the KDS tablet. Select **KDS** from the home screen.

3. Confirm communication with VCI (A) and then configure the vehicle (B) using the **AUTO VIN** (C) feature.
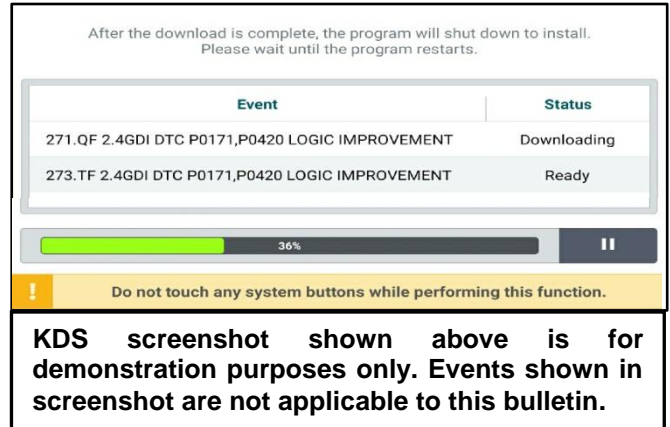
4. Select **ECU Upgrade**.

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5. The KDS will check the server for recently uploaded Events and then automatically download **Upgrade Event #350 and #351 for (JFa) or #353 and #359 for (UMa).**
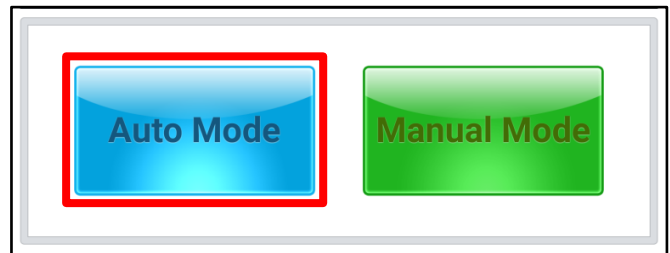
> ★ **NOTICE**
>
> **The vehicle must be identified in Vehicle Selection to download an Event for that vehicle.**

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.

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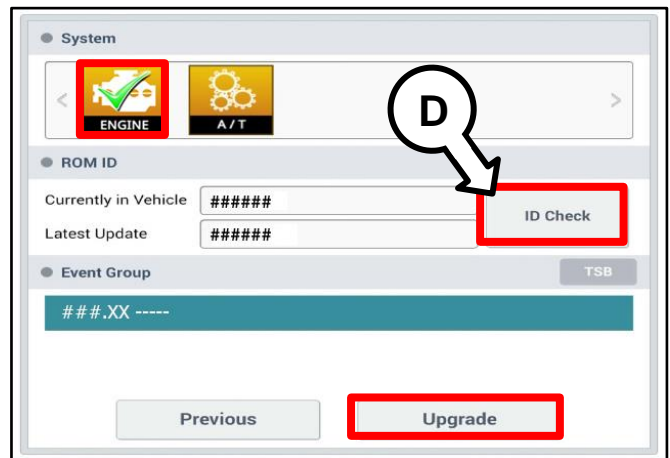
> ⚠ **CAUTION**
>
> **Do NOT attempt to perform a Manual Mode upgrade UNLESS Auto Mode fails. Always follow the instructions given on the KDS in either Auto or Manual mode.**

Auto Mode   Manual Mode

7. Select the **Engine** system under the System selection menu.

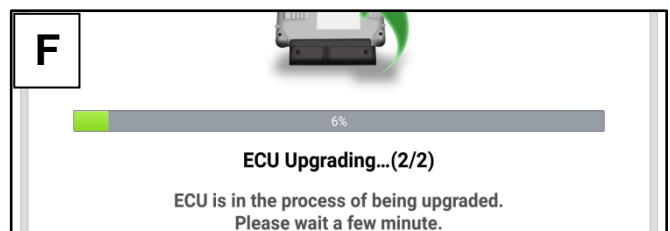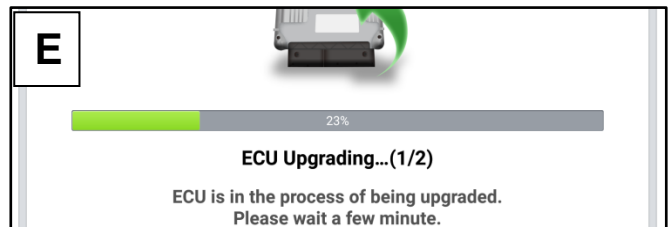   Touch **ID Check** (D) and confirm that the latest update is available.

   Select **Upgrade Event #350 (JFa) or #359 for (UMa)** and select **Upgrade** to continue.

● System

ENGINE   A/T   **D**

● ROM ID

Currently in Vehicle ######
Latest Update ######   ID Check

● Event Group   TSB

###.XX -----

Previous   Upgrade

8. 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.
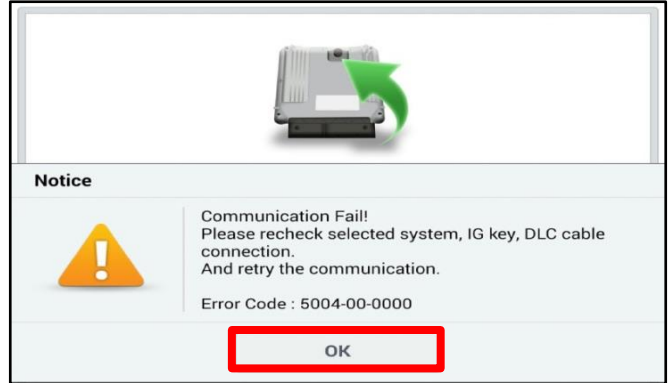
> ⚠ **CAUTION**
>
> **Do not touch the system buttons (like 'Back', 'Home', 'etc.') while performing ECU Upgrade.**

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)

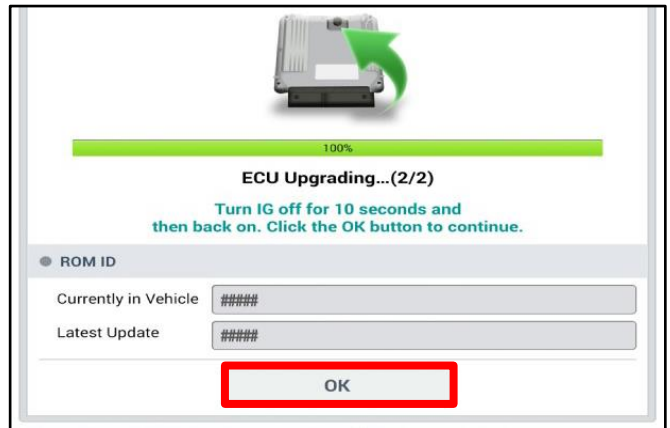ECU is in the process of being upgraded. Please wait a few minute.

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9. If a "Communication Fail" screen appears, verify that the VCI-II and KDS are communicating properly. Touch **OK** and restart the procedure from step 4.
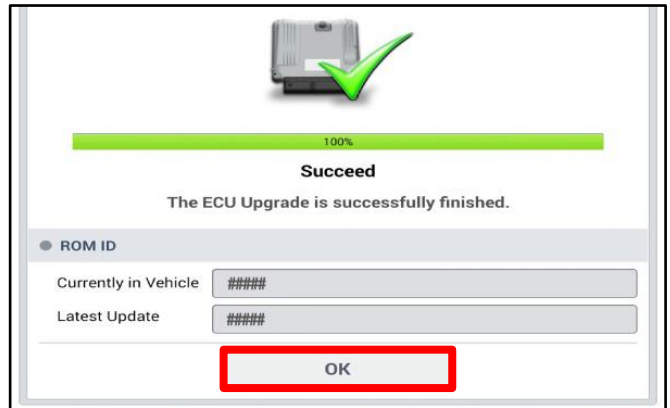
> ★ **NOTICE**
>
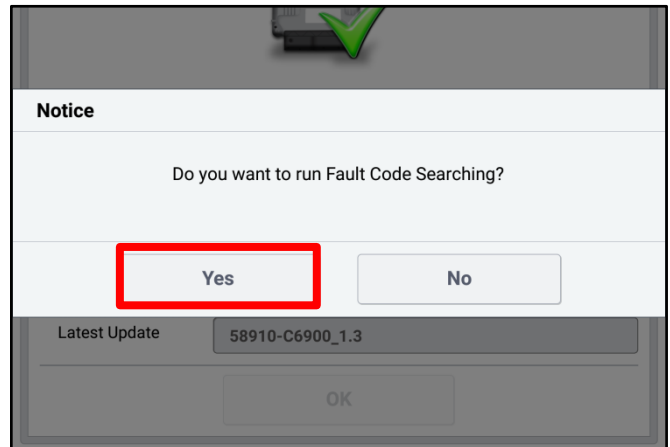> **If an error notice continues to appear or if the upgrade cannot be performed, contact Techline or GIT America Help Desk.**

Notice

⚠ Communication Fail!
Please recheck selected system, IG key, DLC cable connection.
And retry the communication.

Error Code : 5004-00-0000

OK

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

100%

ECU Upgrading...(2/2)

Turn IG off for 10 seconds and then back on. Click the OK button to continue.

● ROM ID

| Currently in Vehicle | #### |
| Latest Update | #### |

OK

11. Once the upgrade is complete, touch **OK** to finalize the procedure.

100%

Succeed

The ECU Upgrade is successfully finished.

● ROM ID

| Currently in Vehicle | #### |
| Latest Update | #### |

OK

12. When prompted, select No for the Diagnostic Trouble Codes (DTC) check, then return to the KDS Home Page.

Notice

Do you want to run Fault Code Searching?

Yes   No
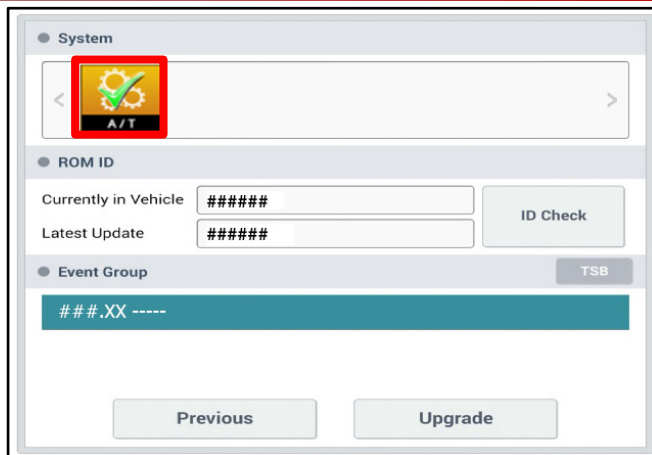
Latest Update   58910-C6900_1.3

OK

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13. Repeat steps 4-11 and perform **Upgrade Event #351 (JFa) or #359 (UMa)** with the **A/T** system selected under the System selection menu.

   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.

14. Start the engine to confirm proper 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

Event	Model	System	Menu	Password
350	JFa	ECU	JFa 2.4GDI ULEV -IMMO : 39108-2GGC2	0822
			JFa 2.4GDI ULEV +IMMO/SMK : 39108-2GGC7 🔄	0827
			JFa 2.4GDI SULEV -IMMO : 39108-2GGD2	0823
			JFa 2.4GDI SULEV +IMMO/SMK : 39108-2GGD7 🔄	0828
351		TCU	JFA 2.4GDI ULEV : 39108-2GGC2/C7	8227
			JFA 2.4GDI SULEV : 39108-2GGD2/D7	8228
353	UMA 2.4	TCU	UMA 2.4 GDI 2WD : 39100-2GGF3/F8	0238
			UMA 2.4 GDI 4WD : 39100-2GGH3/H8	0239
			UMA 2.0TGDI 2WD : 39100-2GTC3/C8	0240
			UMA 2.0TGDI 4WD : 39100-2GTD3/D8	0241
359		ECU	UMa 2.4GDI ULEV -IMMO : 39100-2GGF3/H3	0233
			UMa 2.4GDI ULEV +IMMO/SMK : 39100-2GGF8/H8 🔄	0288

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1. Within the ECU Upgrade screen displayed, select **Manual Mode**.

2. Select the **Engine** system under the System selection menu. Select **Upgrade Event #350 (JFa) or #359 (UMa)** and select **Upgrade** to continue.

3. Select the appropriate control unit part number with reference to the ROM ID Information Table on page 2-3, 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. Touch **OK** to continue.

7. Once the upgrade is complete, touch **OK** to finalize the procedure.

8. When prompted, select **No** for the Diagnostic Trouble Codes (DTC) check, then return to the KDS Home Page.

9. Repeat steps 1-7 and perform **Upgrade Event #351 (JFa) or #353 (UMa)** with the **A/T** system selected under the System selection menu.

10. 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.

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

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AFFECTED VEHICLE RANGE:

Model	Production Date Range
Optima (JFa)	April 18, 2017 through September 7, 2017
Sorento (UMa)	September 18, 2017 through November 16, 2017

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.
JFa 2.4L	V	39108 2GGC2	0	(SA316B) 2.4L ECU & TCU Logic Improvement	170A56R0	0.4 M/H	N/A	0
UMa 2.4L		39108 2GGC2						

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★ NOTICE
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VIN inquiry data for this repair is provided for tracking purposes only. Kia retailers should reference <u>SA316B</u> when accessing the WebDCS system.