TECHNICAL SERVICE BULLETIN

SUBJECT: SERVICE ACTION: 1.6L GDI WITH MIL ON DTC P050A ECM LOGIC IMPROVEMENT (SA485)

This bulletin provides the procedure to update the software logic of the Engine Control Module (ECM) system on some 2014-2016MY Soul (PS) vehicles with Gamma 1.6L GDI engines, produced from August 29, 2013 through July 26, 2016, which may exhibit an MIL ON with DTC P050A (Cold Start Idle Air Control System Performance). Follow the procedure outlined in this publication to apply the improved logic to the 'ECM' system 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 3-4 of this bulletin.

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 SA485.**

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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
559. PS GAMMA 1.6GDI Knock Sensor Detection System (KSDS) ECU UPGRADE (14~16MY)

🗎 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 GDS 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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ROM ID INFORMATION TABLE:

Upgrade Event #559

Model	EM	TM	IMMO 🔑	ECU P/No.	ROM ID	
					Previous	New
PS 14MY	1.6L GDI (ULEV)	MT	Yes	39110 2BSG0	GGPS DNU6FS00600 GGPS DNU6FS01600 GGPS DNU6FF01600 GGPS DNU6FF02600 GGPS DNU6FF03600 GGPS DNU6FF04600 GGPS DNU6FK04600 GGPS DNU6FK14600 GGPS DNU6FK24600 GGPS DNU6FK34600	GGPS DNU6FK44600
			No	39110 2BSH0	GGPS DNU6ES00600 GGPS DNU6ES01600 GGPS DNU6EF01600 GGPS DNU6EF02600 GGPS DNU6EF03600 GGPS DNU6EF04600 GGPS DNU6EK04600 GGPS DNU6EK14600 GGPS DNU6EK24600 GGPS DNU6EK34600	GGPS DNU6EK44600
		AT	Yes	39110 2BSG5	GGPS DNU6QS00C00 GGPS DNU6QS01C00 GGPS DNU6QF01C00 GGPS DNU6QF02C00 GGPS DNU6QF03C00 GGPS DNU6QF04C00 GGPS DNU6QK04C00 GGPS DNU6QK14C00 GGPS DNU6QK24C00 GGPS DNU6QK34C00	GGPS DNU6QK44C00
			No	39110 2BSH5	GGPS DNU6PS00C00 GGPS DNU6PS01C00 GGPS DNU6PF01C00 GGPS DNU6PF02C00 GGPS DNU6PF03C00 GGPS DNU6PF04C00 GGPS DNU6PK04C00 GGPS DNU6PK14C00 GGPS DNU6PK24C00 GGPS DNU6PK34C00	GGPS DNU6PK44C00

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.

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Upgrade Event #559 (Continued)

Model	EM	TM	IMMO 🗝	ECU P/No.	ROM ID	
					Previous	New
PS 15-16MY	1.6L GDI (ULEV)	MT	Yes	39110 2BSG1 39110 2BSF3	GGPS FNU6FF02600 GGPS FNU6FF03600 GGPS FNU6FF04600 GGPS FNU6FS00600 GGPS FNU6FS01600 GGPS FNU6FS02600 GGPS GNU6FF01600 GGPS GNU6FF02600 GGPS GNU6FK02600 GGPS GNU6FK12600 GGPS GNU6FK22600 GGPS GNU6FK32600 GGPS GNU6FS00600 GGPS GNU6FS01600	GGPS GNU6FK42600
			No	39110 2BSH1 39110 2BSG3	GGPS FNU6EF02600 GGPS FNU6EF03600 GGPS FNU6EF04600 GGPS FNU6ES00600 GGPS FNU6ES01600 GGPS FNU6ES02600 GGPS GNU6EF01600 GGPS GNU6EF02600 GGPS GNU6EK02600 GGPS GNU6EK12600 GGPS GNU6EK22600 GGPS GNU6EK32600 GGPS GNU6ES00600 GGPS GNU6ES01600	GGPS GNU6EK42600
		AT	Yes	39110 2BSG6 39110 2BSG7 39110 2BSD8	GGPS FNU6QF02C00 GGPS FNU6QF03C00 GGPS FNU6QF04C00 GGPS FNU6QS00C00 GGPS FNU6QS01C00 GGPS FNU6QS02C00 GGPS GNU6QF01C00 GGPS GNU6QF02C00 GGPS GNU6QK02C00 GGPS GNU6QK03C00 GGPS GNU6QK12C00 GGPS GNU6QK22C00 GGPS GNU6QK32C00 GGPS GNU6QS00C00 GGPS GNU6QS01C00	GGPS GNU6QK42C00
			No	39110-2BSH6 39110-2BSH7 39110-2BSE8	GGPS FNU6PF02C00 GGPS FNU6PF03C00 GGPS FNU6PF04C00 GGPS FNU6PS00C00 GGPS FNU6PS01C00 GGPS FNU6PS02C00 GGPS GNU6PF01C00 GGPS GNU6PF02C00 GGPS GNU6PK02C00 GGPS GNU6PK03C00 GGPS GNU6PK12C00 GGPS GNU6PK22C00 GGPS GNU6PK32C00 GGPS GNU6PS00C00 GGPS GNU6PS01C00	GGPS GNU6PK42C00

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.

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ECM LOGIC IMPROVEMENT (SA485)

📄 **NOTICE**

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

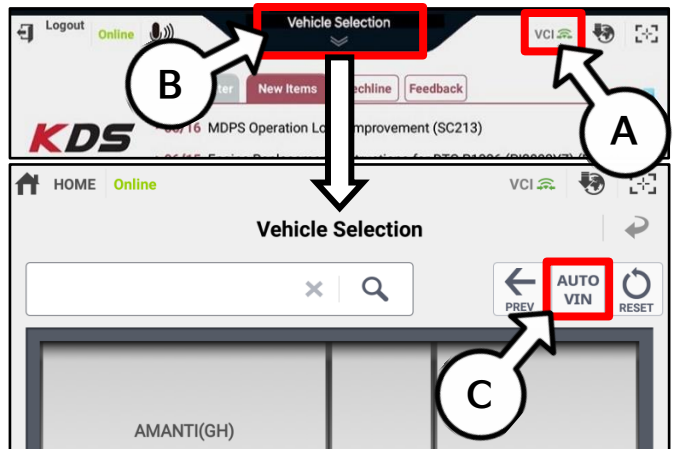1. Connect the VCI-II to the OBD-II connector, located under the driver's side of the instrument panel.

> 📄 **NOTICE**
>
> **The ECU upgrade function on KDS operates wirelessly. It is not necessary to perform the upgrade via USB cable.**
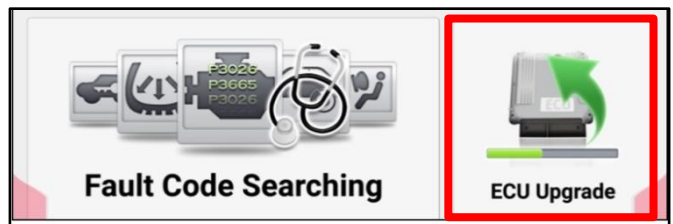
2. With the ignition **ON**, turn ON the KDS tablet. Select **'KDS'** from the home screen.

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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5. The KDS will check the server for recently uploaded Events and then automatically download **Upgrade Event #559**.

> 📄 **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 #559**, 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)

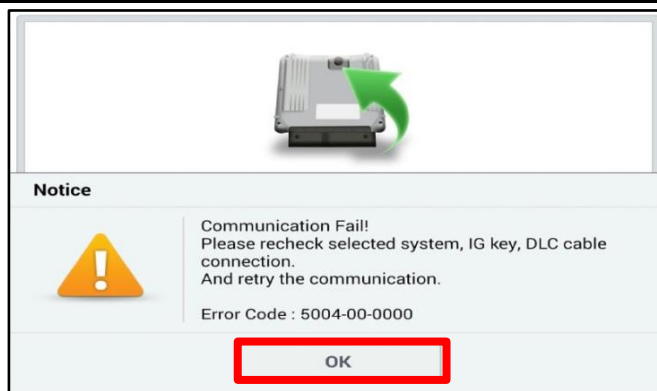ECU is in the process of being upgraded. Please wait a few minute.
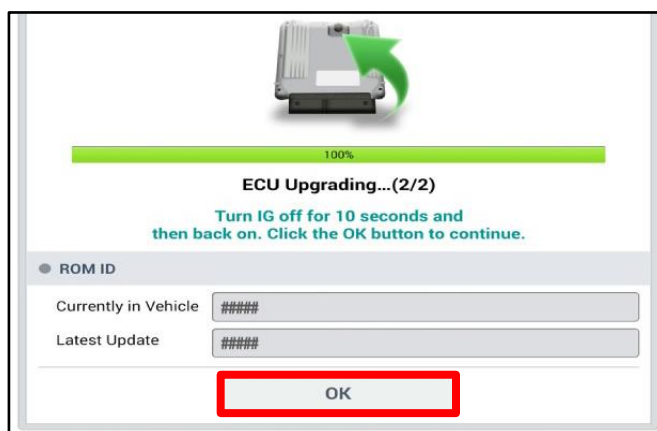
KIA

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.
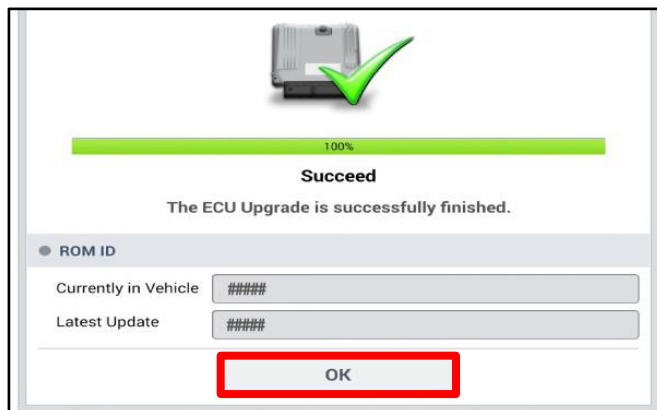
    📄 **NOTICE**

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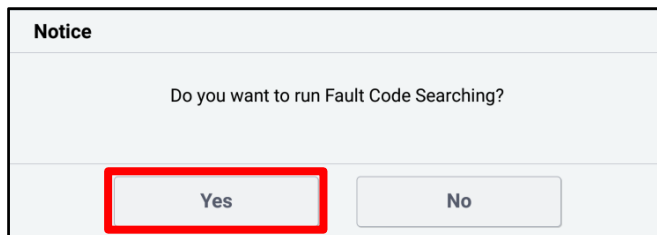
10. When instructed on the KDS, turn the ignition **OFF** for ten (10) seconds then back on. Select 'OK' to continue.

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.

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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
PS GAMMA 1.6GDI ULEV MT -ISG -IMMO (14MY) : 39110-2BSH0	3920
PS GAMMA 1.6GDI ULEV MT -ISG +IMMO/SMK (14MY) : 39110-2BSG0	9112
PS GAMMA 1.6GDI ULEV AT -ISG -IMMO (14MY) : 39110-2BSH5	3925
PS GAMMA 1.6GDI ULEV AT -ISG +IMMO/SMK (14MY) : 39110-2BSG5	1125
PS GAMMA 1.6GDI ULEV MT -ISG -IMMO (15~16MY) : 39110-2BSH1/G3	3923
PS GAMMA 1.6GDI ULEV MT -ISG +IMMO/SMK (15~16MY) : 39110-2BSG1/F3	1213
PS GAMMA 1.6GDI ULEV AT -ISG -IMMO (15~16MY) : 39110-2BSH6/H7/E8	3928
PS GAMMA 1.6GDI ULEV AT -ISG +IMMO/SMK (15~16MY) : 39110-2BSG6/G7/D8	2678

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

2. Select the **Engine** system under the System selection menu. Select **Upgrade Event #559** and select **Upgrade** to continue.

3. Select the appropriate control unit part number with reference to the ROM ID Information Table on pages 3-4, 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	Production Date Range
Soul (PS)	August 29, 2013 to July 26, 2016

REQUIRED TOOL:

Tool Name	Figure	Comments
KDS		Kia Diagnostic System

WARRANTY INFORMATION:

N Code: N99   C Code: C99

Claim Type	Causal P/N	Qty.	Repair Description	Labor Op Code	Op Time	Replacement P/N	Qty.
V	39110-2BSH0	0	(SA485) ECM Upgrade	210093R0	0.3 M/H	N/A	0

> 📄 **NOTICE**
>
> **VIN inquiry data for this repair is provided for tracking purposes only. Kia retailers should reference SA485 when accessing the WebDCS system.**

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