



GROUP <b>ENG</b>	MODEL <b>2020-2021MY Soul (SK3) 2021MY Seltos (SP2)</b>
NUMBER <b>227</b>	DATE <b>February 2021</b>

## TECHNICAL SERVICE BULLETIN

**SUBJECT: SERVICE ACTION: MIL ON DTC P0605 AND/OR P2181  
ECM LOGIC IMPROVEMENT (SA463)**

This bulletin provides the procedure to improve the logic of the Engine Control Module (ECM) on some 2020-2021MY Soul (SK3) vehicles produced from November 24, 2018 through January 4, 2021 and 2021MY Seltos (SP2) vehicles produced from November 20, 2019 through January 12, 2021, equipped with NU 2.0L ATK engines, which may exhibit engine poor starting related DTC P0605 and/or thermostat related DTC P2181. To correct this concern. Follow the flowchart on page 2, then perform the Coolant Discharge procedure using KDS (for DTC P2181) if applicable, and/or apply the improved logic to the Engine 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 page 8 of this bulletin. Before conducting the procedure, verify that the vehicle is included in the list of affected VINs.

**DTC P0605: Internal Control Module Read Only Memory (ROM) Error  
DTC P2181: Thermostat Continuous Monitor Error**



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.**

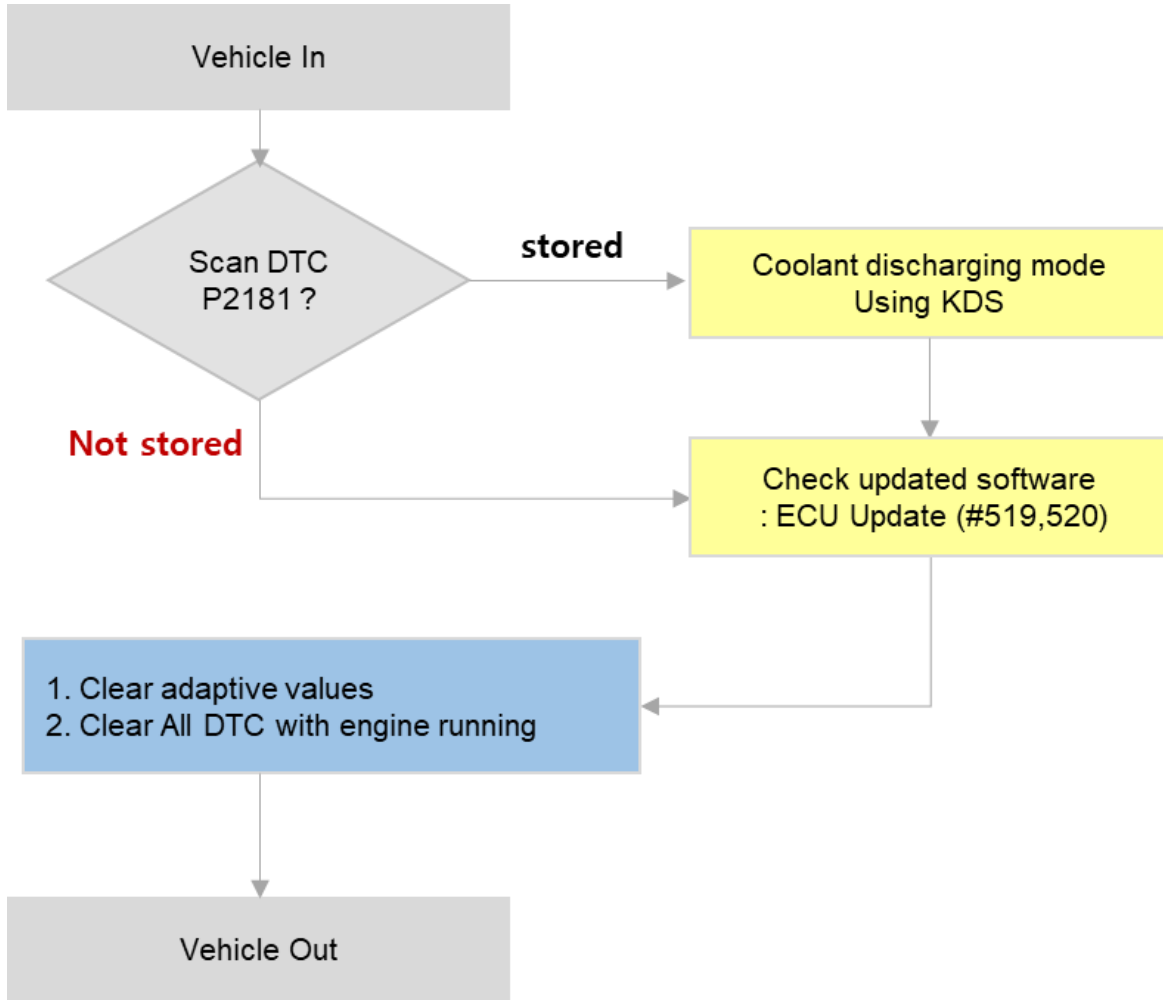
**Repair status for a VIN is provided on WebDCS (Service → Warranty Coverage → Warranty Coverage Inquiry → Campaign Information). Not completed Recall / Service Action reports are available on WebDCS (Consumer Affairs → Not Completed Recall → Recall VIN → Select Report), which includes a list of affected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

**This issue number is SA463.**

Printed TSB copy is for reference only; information may be updated at any time.  
Always refer to KGIS for the latest information.

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

**Service Procedure Flowchart:**



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**Coolant Discharging Mode Procedure:**

- **NOTE:** If DTC P2181 has been stored, follow the procedure outlined below.
- **If DTC P2181 is not stored**, go directly to the 'ECU Upgrade Procedure' on page 7.

Required Conditions needed before starting the Coolant Discharging Mode Procedure	
1.	Transmission: Park (P) position / Parking Brake: ON
2.	Engine: Idling
3.	Vehicle speed: 0 mph
4.	Heater: OFF
5.	Conduct procedure indoors to raise temperature of coolant <b>NOTE: If necessary, conduct vehicle soaking to lower the vehicle temperature</b>

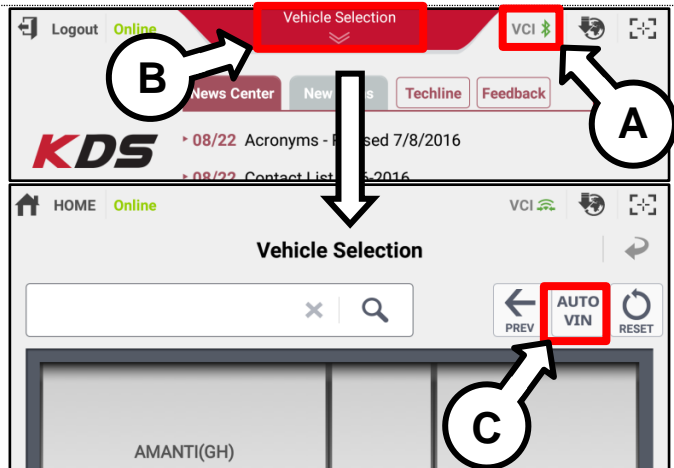
1. Connect the VCI-II to the OBD-II connector, located under the driver's side of the instrument panel.



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



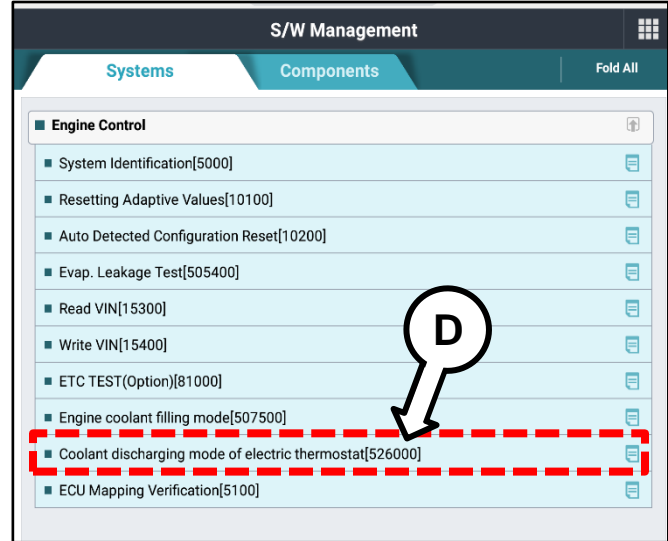
3. Confirm communication with VCI (A) and then configure the vehicle (B) using the **AUTO VIN** (C) feature.



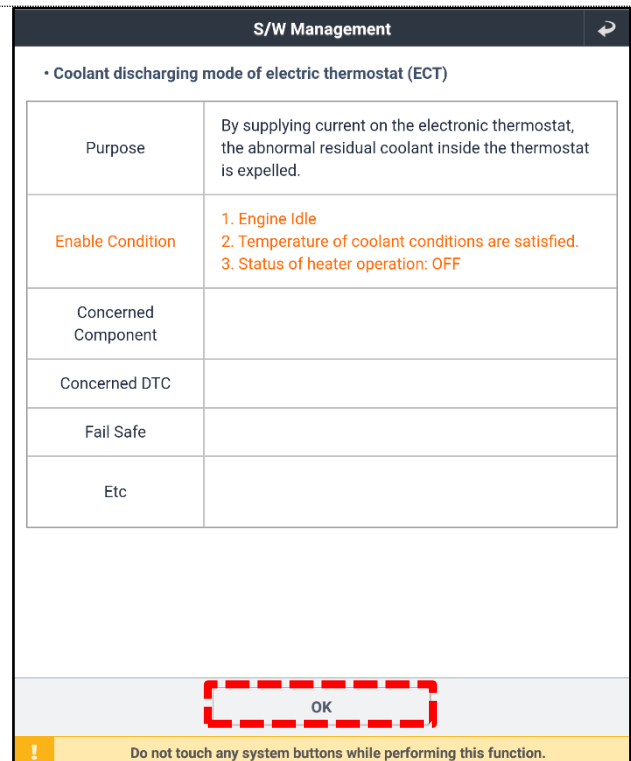
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2. From the Systems / Engine Control menu, select 'Coolant Discharging Mode of Electric Thermostat' (D).

**\* NOTICE**  
The KDS screenshot(s) shown are from a 2021MY Seltos (SP2). Your screens may be displayed slightly different.



3. Select 'OK'.



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4. Confirm the following conditions listed below are present, then select 'OK'.

1.	Transmission: Park (P) position / Parking Brake: ON
2.	Engine: Idling
3.	Coolant temperature: 32 - 78°F
4.	Vehicle speed: 0 mph
5.	Heater: OFF
6.	Conduct procedure indoors to raise temperature of coolant

**NOTE:** If necessary, conduct vehicle soaking to lower vehicle temperature.

**S/W Management**

■ Coolant discharging mode of electric thermostat

● [ Coolant discharging mode of electric thermostat (ECT) ]

By supplying current on the electronic thermostat, the abnormal residual coolant inside the thermostat is expelled.

●[Condition]

1. Transmission : P position / Parking brake: Operating
2. Engine : Idling
3. Temperature of coolant : 0~30°C(32~86°F)
4. Vehicle speed : 0 km/h
5. Status of heater operation : OFF
6. Carry out indoors for raising the temperature of coolant

[OK] button: Proceed with the function  
[Read] button: Check the current temperature of coolant  
[Cancel] button: End the function

OK Read Cancel

! Do not touch any system buttons while performing this function.

5. Wait for 180 seconds (3 minutes).

**S/W Management**

■ Coolant discharging mode of electric thermostat

● [ Coolant discharging mode of electric thermostat (ECT) ]

ECT has entered into the coolant discharging mode.

[Cancel] button: Stop the function

Current temperature of coolant : 32.0 F

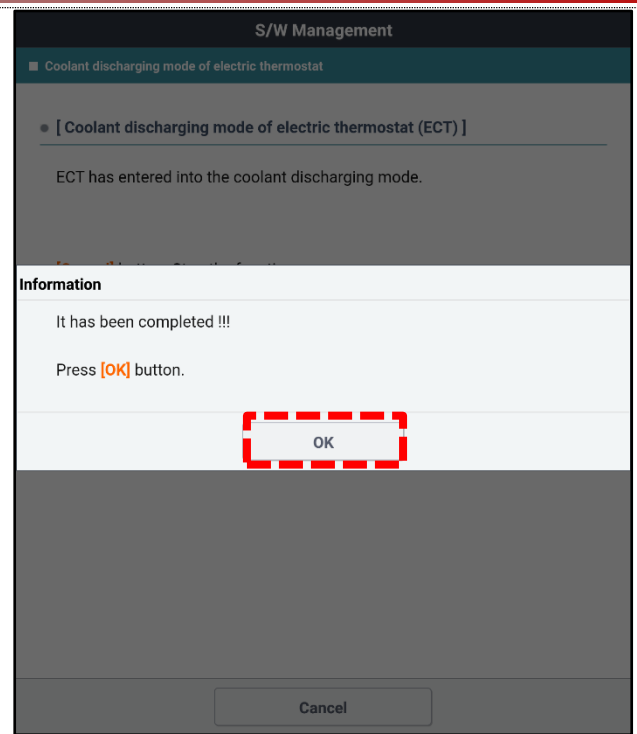
Remaining time : 179 second(s)

Cancel



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6. When the procedure is completed select **'OK'**.



7. Proceed to **'ECU Upgrade Procedure'** on page 7.



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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
519. SK3 NU 2.0ATK ENGINE MIL ON DTC JUDGMENT LOGIC IMPROVEMENT
520. SP2 NU 2.0ATK ENGINE MIL ON DTC JUDGMENT LOGIC IMPROVEMENT


### \* NOTICE

- **A fully charged battery is necessary before the ECU upgrade can take place. It is recommended that a battery charger is used in ECU mode during the reflash or the use of a fully charged jump starter box connected to the battery.**
- Ensure the KDS or GDS is sufficiently charged at 50% or higher prior to reflash.
- 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 and model year.**

### ❗ 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 #519 (SK3)**

Model	MY	TM	IMMO 	ECU P/No.	ROM ID	
					Previous	New
SK3 (Nu 2.0L ATK)	2020	CVT	Yes	39171 2ELC0	SKASP2KS6B0A	SKASP2KF6B7A
			No	39173 2ELC0	SKASP2JS6B0A	SKASP2JF6B7A
		6MT	Yes	39171 2ELD0	SKAUP2AS6B0A	SKAUP2AF6B7A
			No	39173 2ELD0	SKAUP2US6B0A	SKAUP2UF6B7A
	2021	CVT	Yes	39171 2ELC1	SKBSP2KS6B2A	SKBSP2KS6B7A
			No	39173 2ELC1	SKBSP2JS6B2A	SKBSP2JS6B7A
		6MT	Yes	39171 2ELD1	SKBUP2AS6B2A	SKBUP2CS6B7A
			No	39173 2ELD1	SKBUP2US6B2A	SKBUP2VS6B7A

**Upgrade Event #520 (SP2)**

Model	MY	TM	IMMO 	ECU P/No.	ROM ID	
					Previous	New
SP2 (Nu 2.0L ATK)	2020	CVT	Yes	39171 2EPT0 39171 2EPV0	SPAUP2KS6D2A	SPAUP2KS6D5A
			No	39173 2EPT0 39173 2EPV0	SPAUP2JS6D2A	SPAUP2JS6D5A

**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.**

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

**\* NOTICE**

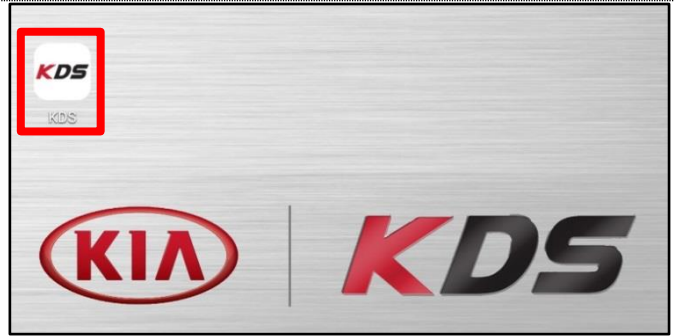
**The ECU upgrade function on KDS operates wirelessly. It is not necessary to perform the upgrade via USB cable.**



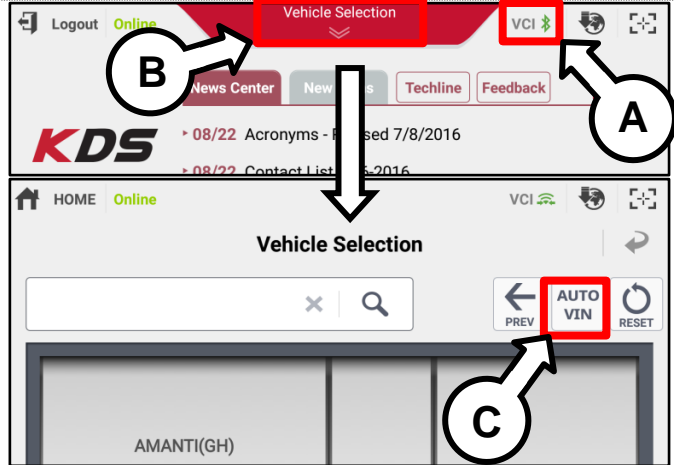


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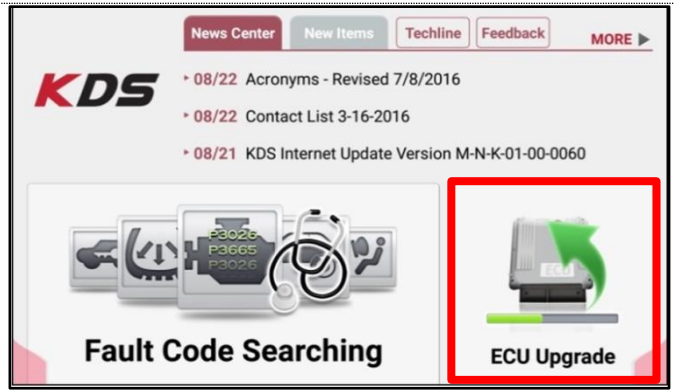
2. With the ignition ON, turn ON the KDS tablet. Select **KDS** from the home screen.



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



4. Select **ECU Upgrade**.



5. The KDS will check the server for recently uploaded Events and then automatically download **Upgrade Event #519 (SK3) or #520 (SP2)**.

**\* 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

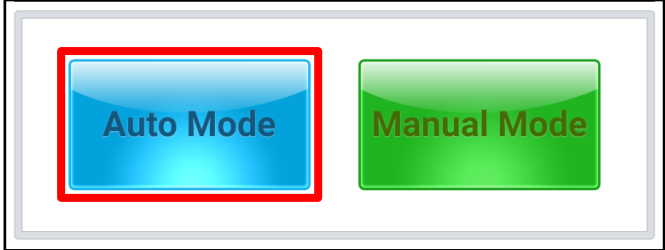
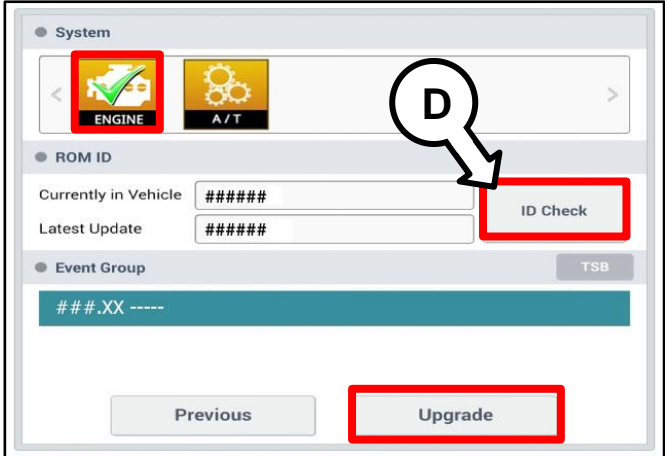
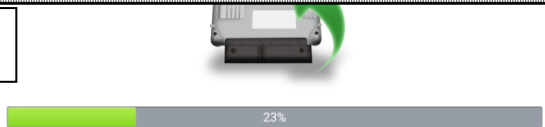
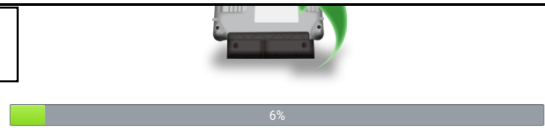
36%

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.**



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<p>6.</p>	<p>Select <b>Auto Mode</b>.</p> <div style="border: 1px solid black; padding: 5px; margin-top: 10px;"> <p style="background-color: yellow; display: inline-block; padding: 2px 5px;"><b>CAUTION</b></p> <p><b>Do NOT attempt to perform a Manual Mode upgrade <u>UNLESS Auto Mode fails</u>. Always follow the instructions given on the KDS in either Auto or Manual mode.</b></p> </div>	
<p>7.</p>	<p>Select the <b>Engine</b> system under the System selection menu.</p> <p>Touch <b>ID Check (D)</b> and confirm that the latest update is available.</p> <p>Select <b>Upgrade Event #519 (SK3)</b> <u>or #520 (SP2)</u> and select <b>Upgrade</b> to continue.</p>	
<p>8.</p>	<p>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.</p> <div style="border: 1px solid black; padding: 5px; margin-top: 10px;"> <p style="background-color: yellow; display: inline-block; padding: 2px 5px;"><b>CAUTION</b></p> <p><b>Do not touch the system buttons (like 'Back', 'Home', 'etc.')</b> while performing ECU Upgrade.</p> </div>	<div style="border: 1px solid black; padding: 5px; margin-bottom: 5px;"> <p style="font-size: 24px; font-weight: bold; border: 1px solid black; display: inline-block; padding: 2px 5px;">E</p>  <p style="text-align: center;"><b>ECU Upgrading...(1/2)</b> ECU is in the process of being upgraded. Please wait a few minute.</p> </div> <div style="border: 1px solid black; padding: 5px;"> <p style="font-size: 24px; font-weight: bold; border: 1px solid black; display: inline-block; padding: 2px 5px;">F</p>  <p style="text-align: center;"><b>ECU Upgrading...(2/2)</b> ECU is in the process of being upgraded. Please wait a few minute.</p> </div>



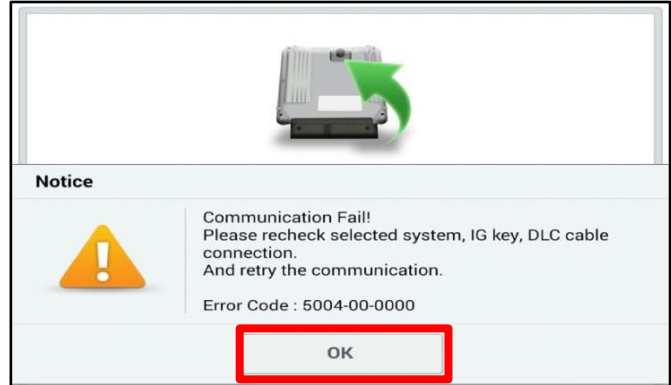
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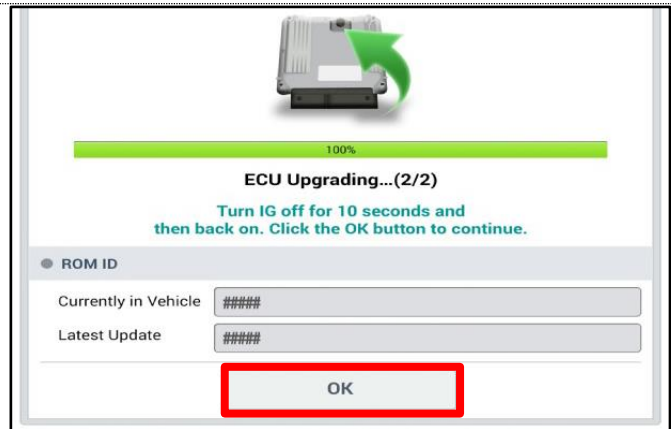
9. If a "Communication Fail" screen appears, verify that the VCI-II and KDS are communicating properly. Touch **OK** and restart the procedure from step 4.

**\* NOTICE**

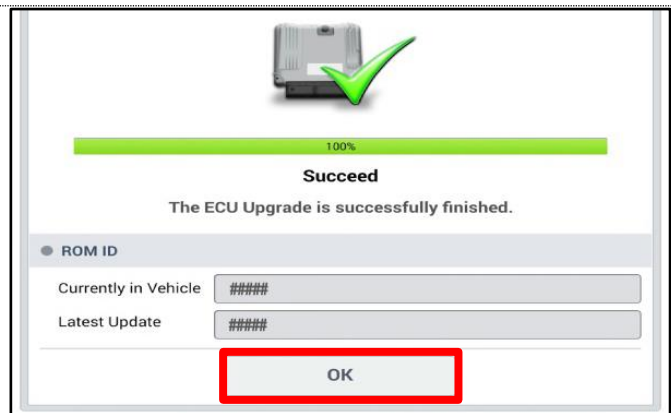
If an error notice continues to appear or if the upgrade cannot be performed, DO NOT disconnect the KDS/VCI-II. Contact GIT America Help Desk at (888) 542-4371 or Techline.



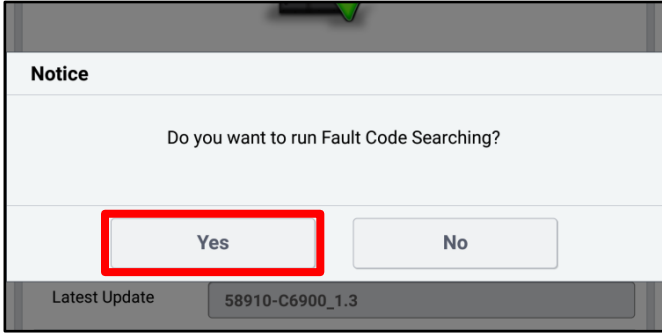
10. When instructed on the KDS, turn the ignition **OFF** for ten (10) seconds then back on. Touch **OK** to continue.



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



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<p>12.</p>	<p>When prompted, select <b>YES</b> 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.</p>	
<p>13.</p>	<p>Start the engine to confirm proper operation of the vehicle.</p>	



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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**

No.	Menu	Password
#519 (SK3)	SK3 Nu 2.0 ATK CVT +IMMO/SMK (20MY): 39171-2ELC0	5191
	SK3 Nu 2.0 ATK CVT -IMMO (20MY): 39173-2ELC0	5192
	SK3 Nu 2.0 ATK 6MT +IMMO/SMK (20MY): 39171-2ELD0	5193
	SK3 Nu 2.0 ATK 6MT -IMMO (20MY): 39173-2ELD0	5194
	SK3 Nu 2.0 ATK CVT +IMMO/SMK (21MY): 39171-2ELC1	5195
	SK3 Nu 2.0 ATK CVT -IMMO (21MY): 39173-2ELC1	5196
	SK3 Nu 2.0 ATK 6MT +IMMO/SMK (21MY): 39171-2ELD1	5197
	SK3 Nu 2.0 ATK 6MT -IMMO (21MY): 39173-2ELD1	5198
#520 (SP2)	SP2 Nu 2.0 ATK CVT +IMMO/SMK (20MY): 39171-2EPT0/V0	5201
	SP2 Nu 2.0 ATK CVT -IMMO (20MY): 39173-2EPT0/V0	5202

1. Within the ECU Upgrade screen displayed, select **Manual Mode**.
2. Select the **Engine** system under the System selection menu. Select **Upgrade Event #519 (SK3) or #520 (SP2)** and select **Upgrade** to continue.
3. Select the appropriate control unit part number with reference to the ROM ID Information Table on page 8, 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 **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 (SK3)	November 24, 2018 to January 4, 2021
Seltos (SP2)	November 20, 2019 to January 12, 2021

## 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.
ALL	V	39171 2EPT0	0	(SA463) KDS Additional Function and ECM Logic Improvement	210005R0	0.4 M/H	N/A	0
				(SA463) ECM Logic Improvement	210005R1	0.3 M/H		

**\* NOTICE**

VIN inquiry data for this repair is provided for tracking purposes only. Kia retailers should reference **SA463** when accessing the WebDCS system.

