	GROUP ELE	MODEL 2016-2017MY Soul (PS EV)
	NUMBER 203	DATE July 2020

## TECHNICAL SERVICE BULLETIN

**SUBJECT: SERVICE ACTION: BMS/FATC OPERATION LOGIC IMPROVEMENT WHILE BATTERY CHARGING (SA427)**

This bulletin provides the procedure to upgrade the Battery Management System (BMS) and Full Auto Temperature Control (FATC) software on some 2016-2017MY Soul (PS EV) vehicles, produced from May 21, 2015 through August 29, 2017, in order to improve air conditioning operation while the battery is charging. To correct this concern, apply the improved logic to the following two (2) systems: BMS and FATC 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 3 of this bulletin. Before conducting the procedure, verify the vehicle is included in the list of affected VINs.



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 SA427.**

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

SUBJECT:

## SERVICE ACTION: BMS/FATC OPERATION LOGIC IMPROVEMENT WHILE BATTERY CHARGING (SA427)

### ECU Upgrade Procedure:


To correct the condition noted on page 1, the BMS and FATC should be reprogrammed using the KDS download, as described in this bulletin.

Upgrade Event Name
501. PS EV FATC OPERATION LOGIC IMPROVEMENT WHILE BATTERY CHARGING (BMS)
502. PS EV FATC OPERATION LOGIC IMPROVEMENT WHILE BATTERY CHARGING (FATC)

### ★ NOTICE

- A fully charged battery is necessary before ECU upgrade can take place. It is recommended that a battery charger is used in ECU mode during reflashing or the use of a fully charged jump starter box connected to the battery.
- DO NOT connect any other battery charger to the vehicle during ECU upgrade.
- Ensure the KDS or GDS is sufficiently charged 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.

### ★ 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. 

### ★ NOTICE

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.

SUBJECT:

## SERVICE ACTION: BMS/FATC OPERATION LOGIC IMPROVEMENT WHILE BATTERY CHARGING (SA427)

### \* NOTICE

**Both BMS and FATC systems require software upgrades. Note the current ROM ID(s) in the vehicle, in the event that automatic upgrade fails and manual upgrade is required. (Recommendation) Check the battery SOH (State of health) in service data and write it down on the R.O, in order to analyze EV vehicle status.**

#### ROM ID INFORMATION TABLE:

##### Upgrade Event #501 (BMS)

Model	MY	Type	Hi-Volt. Batt. ECU P/N.	BMS ECU P/No.	ROM ID	
					Previous	New
PS (EV)	16-17MY	Elevated Temp.	37510-E4050	37513-E4050	4440	5000
					4460	5100
	Non- Heating	37510-E4000	37513-E4000	4480	5200	
				4500	5300	
17MY	Elevated Temp.	37510-E4250	37513-E4050	4800	5400	
				4900	5500	
PS (EV)	17MY	Non- Heating	37510-E4200	37513-E4000	4442	5002
					4462	5102
PS (EV)	17MY	Non- Heating	37510-E4200	37513-E4000	4482	5202
					4502	5302
PS (EV)	17MY	Non- Heating	37510-E4200	37513-E4000	4802	5402
					4902	5502

#### ROM ID INFORMATION TABLE:

##### Upgrade Event #502 (FATC)

Model	EM	TM	ECU P/No.	ROM ID	
				Previous	New
PS (EV)	16MY		97250-E4000, 97250-E4010, 97250-E4100, 97250-E4110, 97250-E4020, 97250-E4030,, 97250-E4040, 97250-E4050, 97250-E4060, 97250-E4070, 97250-E4080, 97250-E4090, 97250-E4360, 97250-E4370, 97250-E4380, 97250-E4390, 97250-E4200, 97250-E4210, 97250-E4220, 97250-E4230	08 07	11
	17MY		97250-E4001, 97250-E4011, 97250-E4101, 97250-E4111, 97250-E4121, 97250-E4131, 97250-E4021, 97250-E4031, 97250-E4041, 97250-E4051, 97250-E4022, 97250-E4032, 97250-E4042, 97250-E4052, 97250-E4061, 97250-E4071, 97250-E4081, 97250-E4091, 97250-E4361, 97250-E4371, 97250-E4381, 97250-E4391, 97250-E4201, 97250-E4211, 97250-E4221, 97250-E4231, 97250-E4241, 97250-E4251, 97250-E4601, 97250-E4611, 97250-E4621, 97250-E4631	09	12

**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.**



SUBJECT:

SERVICE ACTION: BMS/FATC OPERATION LOGIC IMPROVEMENT WHILE BATTERY CHARGING (SA427)

**\* 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**

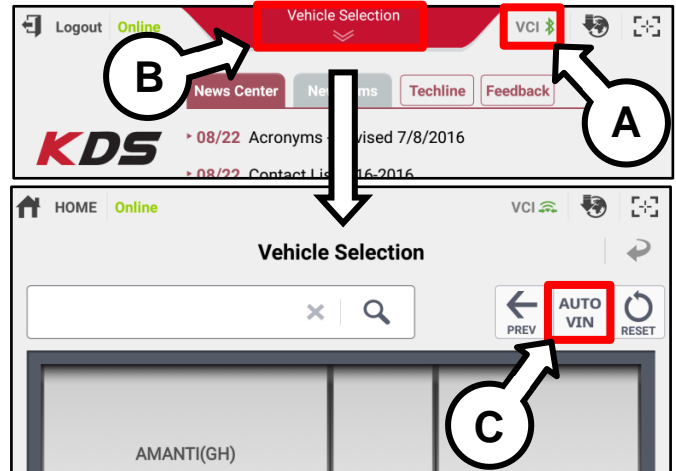
The ECU upgrade function on KDS operates wirelessly. It is not necessary to perform the upgrade via USB cable.



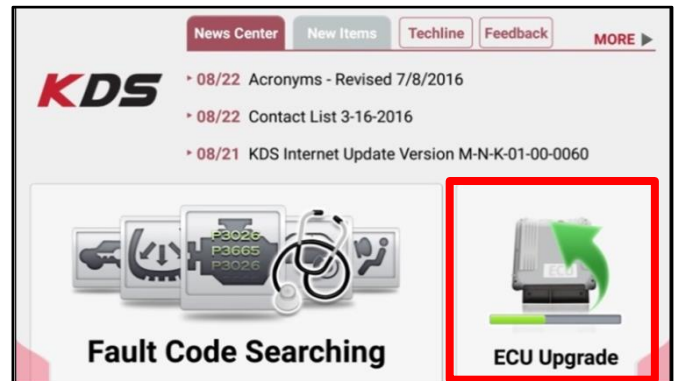
2. With the ignition ON, turn ON the KDS tablet. Select **KDS** from the home screen.



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



4. Select **ECU Upgrade**.



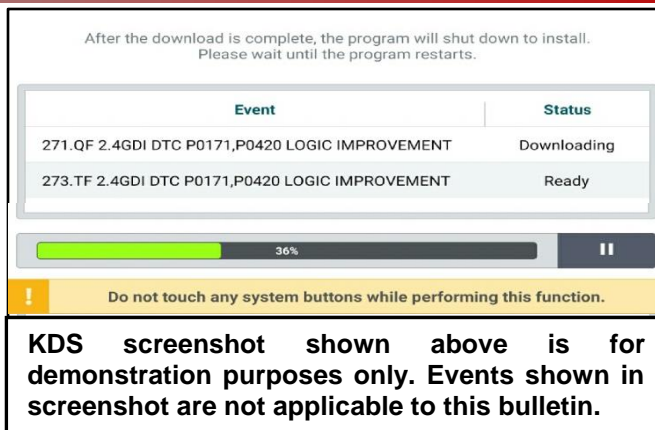
SUBJECT:

## SERVICE ACTION: BMS/FATC OPERATION LOGIC IMPROVEMENT WHILE BATTERY CHARGING (SA427)

- The KDS will check the server for recently uploaded Events and then automatically download **Upgrade Event #501 (BMS) and #502 (FATC)**.

### \* NOTICE

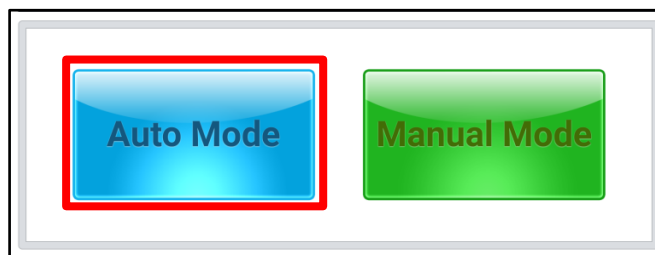
The vehicle must be identified in Vehicle Selection to download an Event for that vehicle.



- Select Auto Mode.

### ! CAUTION

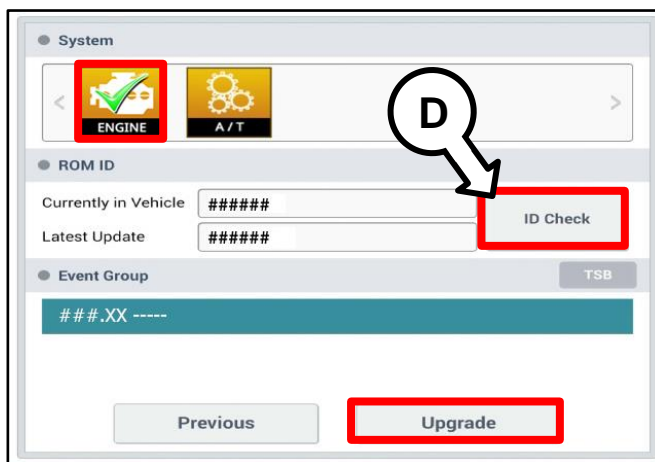
Do NOT attempt to perform a Manual Mode upgrade UNLESS Auto Mode fails. Always follow the instructions given on the KDS in either Auto or Manual mode.



- Select the BMS/FATC system under the System selection menu.

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

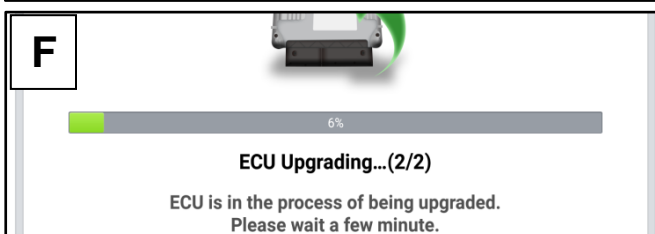
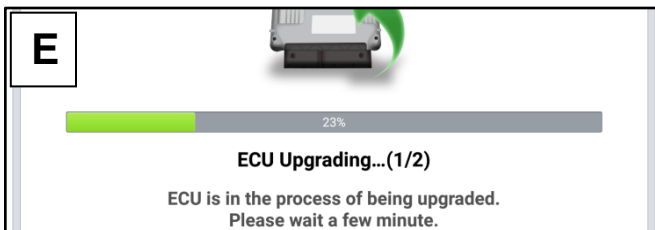
Select **Upgrade Event #501 and #502** and select **Upgrade** to continue.



- 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

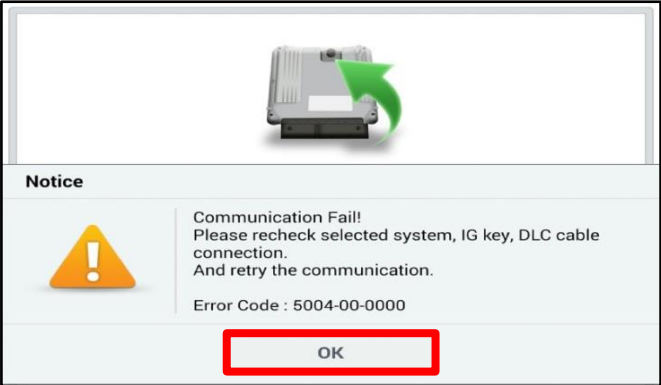
Do not touch the system buttons (like 'Back', 'Home', 'etc.')

 while performing ECU Upgrade.


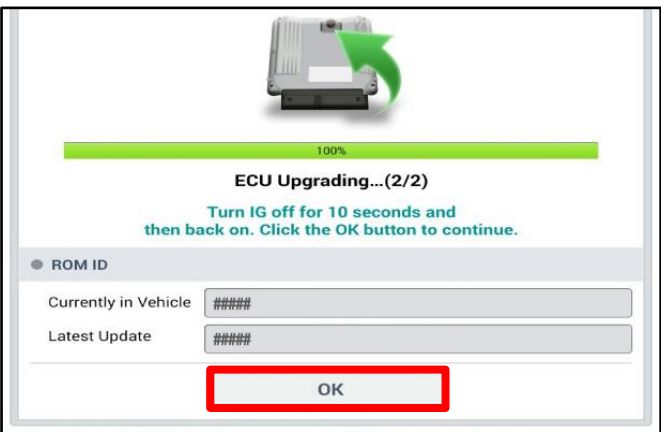
**SUBJECT: SERVICE ACTION: BMS/FATC OPERATION LOGIC IMPROVEMENT WHILE BATTERY CHARGING (SA427)**

- 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.

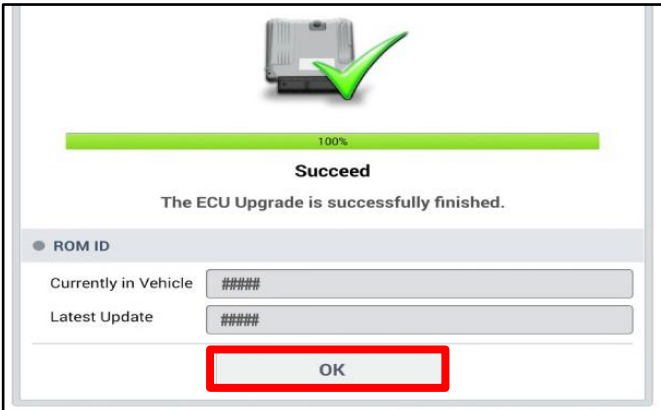
**\* NOTICE**  
 If an error notice continues to appear or if the upgrade cannot be performed, **DO NOT** disconnect the KDS/VCI-II. Contact **GIT America Help Desk** at (888) 542-4371 or Techline.



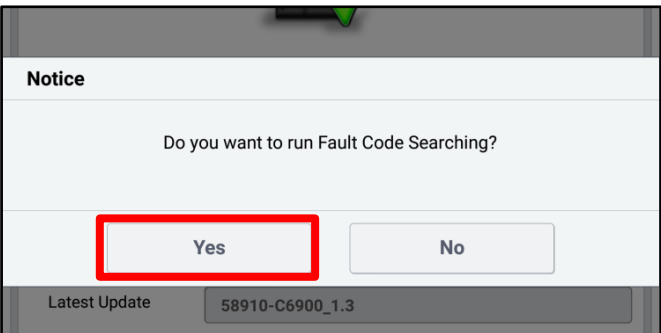
- When instructed on the KDS, turn the ignition **OFF** for ten (10) seconds then back on. Touch **OK** to continue.



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



- 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.



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



SUBJECT:

## SERVICE ACTION: BMS/FATC OPERATION LOGIC IMPROVEMENT WHILE BATTERY CHARGING (SA427)

### 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 EV BMS : 37513-E4050 (4440/460/480/500/800/900, 5000/100/200/300/400/500)	4050
PS EV BMS : 37513-E4050 (5700)	4051
PS EV BMS : 37513-E4000 (4442/462/482/502/802/902, 5002/102/202/302/402/502)	4000
PS EV BMS : 37513-E4000 (5702)	4001
PS EV FATC (17MY) : 97250-E4001~E4631 (09)	7250
PS EV FATC (16MY) : 97250-E4000~E4230 (07~08)	7251

1. Within the ECU Upgrade screen displayed, select **Manual Mode**.
2. Select the BMS and FATC system(s) under the System selection menu. Select **Upgrade Event #501 (BMS) and #502 (FATC)** and select **Upgrade** to continue.
3. Select the appropriate control unit part number with reference to the ROM ID Information Table on page 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. 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.



SUBJECT:

**SERVICE ACTION: BMS/FATC OPERATION LOGIC  
IMPROVEMENT WHILE BATTERY CHARGING (SA427)**

## AFFECTED VEHICLE RANGE:

Model	Production Date Range
Soul (PS EV)	May 21, 2015 to August 29, 2017

## 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	37513 E4050	0	(SA427) BMS and FATC Logic Improvement	200042R0	0.3 M/H	N/A	0

**\* NOTICE**

**VIN inquiry data for this repair is provided for tracking purposes only. Kia retailers should reference SA427 when accessing the WebDCS system.**