


|   |               |                             |
|---|---------------|-----------------------------|
|  | GROUP<br>ELE  | MODEL<br>2021MY<br>Rio (SC) |
|   | NUMBER<br>240 | DATE<br>May 2021            |

## TECHNICAL SERVICE BULLETIN

**SUBJECT: SERVICE ACTION: FRONT CAMERA LOGIC IMPROVEMENT FOR DTC 160649 (SA475)**

This bulletin provides the procedure to update the software logic of the Front Camera system on some 2021MY Rio (SC) vehicles produced from December 22, 2020 through March 29, 2021 to correct an out-of range fault signal that will disable the supplemental Forward Collision Avoidance (FCA), if equipped, Lane Departure Warning (LDW), Lane Following Assist (LFA), Lane Keep Assist (LKA), Driver Attention Warning (DAW) and High Beam Assist (HBA) systems. If this occurs, several warning messages/lights may display/turn ON and a chime sound are generated to ensure the customer is aware of the malfunction related to DTC C160649. This out-of-range fault signal does not affect the vehicle's steering or braking functions. To correct this concern, apply the improved logic to the Front Camera (FR CMR) 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 2 of this bulletin. Before conducting the procedure, verify that the vehicle is included in the list of affected VINs.

**DTC Description:  
C160649 Internal Failure (software error)**



**\* 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 SA475.**

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

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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

552. SC FRONT CAMERA (LKA/LFA) DTC JUDGMENT LOGIC IMPROVEMENT (C1606)


### ★ NOTICE

- Confirm a **fully charged battery** with 12.3 volts or higher is necessary or the use of 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 done with the ignition key in the 'ON' position unless otherwise stated.
- 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**

### ❗ 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.

### ROM ID INFORMATION TABLE:

#### Upgrade Event #552

| Model | System | IMMO  | ECU P/No.   |             | ROM ID   |      |
|-------|--------|--|-------------|-------------|----------|------|
|       |        |  | Previous    | New         | Previous | New  |
| SC    | FR_CMR | Yes  | 99211 H8010 | 99211 H8020 | 1.06     | 1.00 |

*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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**\* 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**

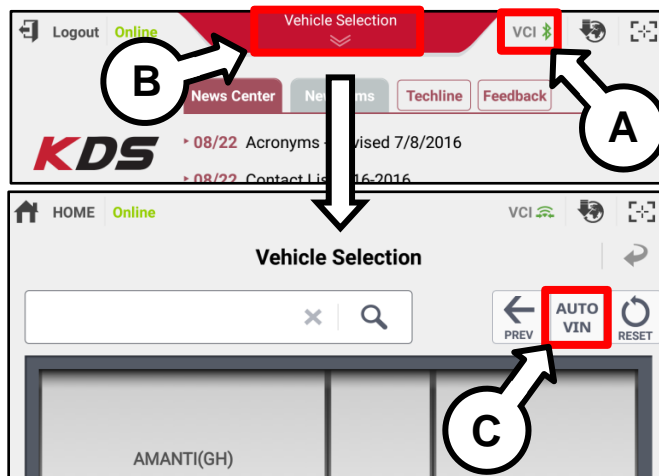
The ECU upgrade function on KDS operates wirelessly. It is not necessary to perform the upgrade via USB cable.



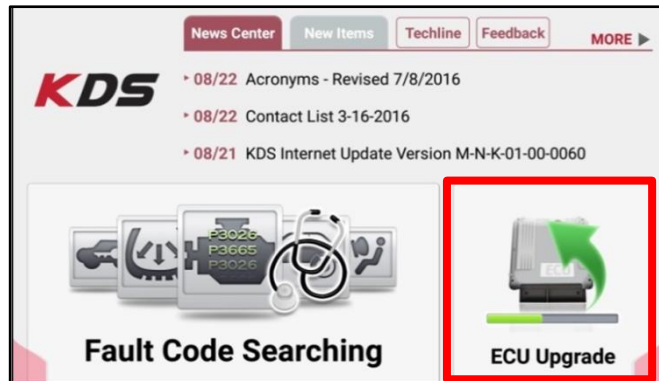
2. With the ignition ON, turn ON the KDS tablet. Select **KDS** from the home screen.



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



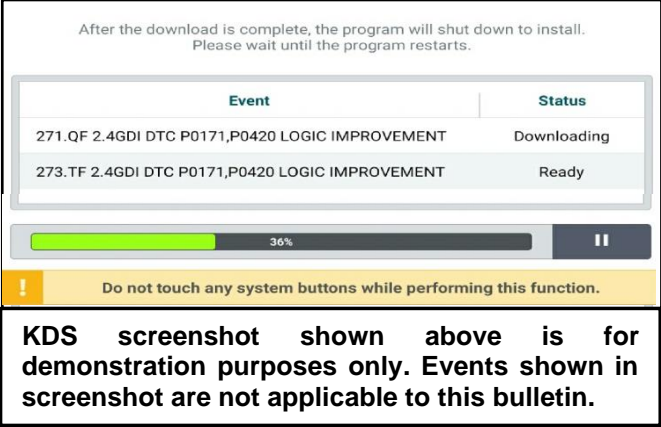
4. Select **ECU Upgrade**.



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- The KDS will check the server for recently uploaded Events and then automatically download **Upgrade Event #552**.

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



- Select **Auto Mode**.

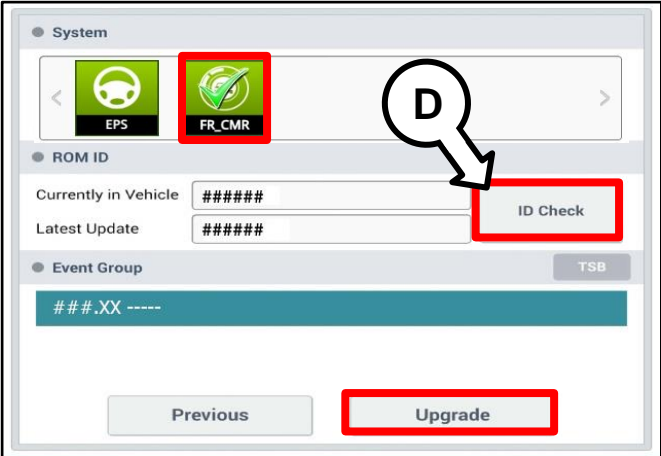
**CAUTION**  
 Do NOT attempt to perform a Manual Mode upgrade UNLESS Auto Mode fails. Always follow the instructions given on the KDS in either Auto or Manual mode.



- Select the **FR\_CMR** system under the System selection menu.

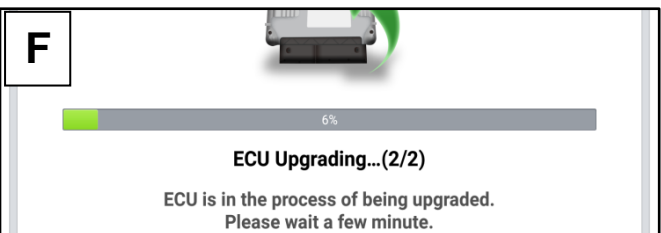
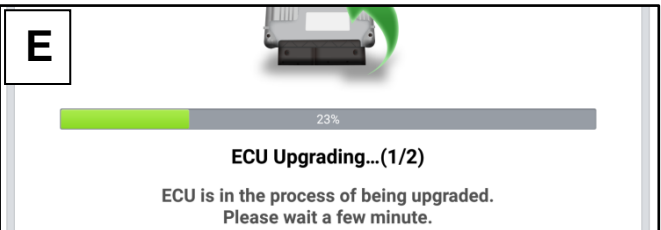
Touch **ID Check** (D) and confirm that the latest update is available.

Select **Upgrade Event #552**, 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:

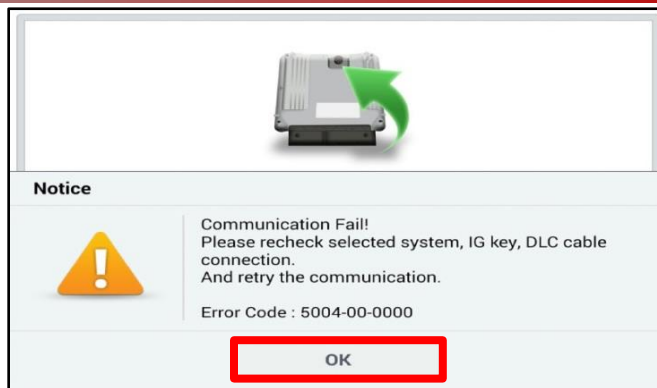
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9. If a “Communication Fail” screen appears, verify that the VCI-II and KDS are communicating properly. Touch **OK** and restart the procedure from step 4.

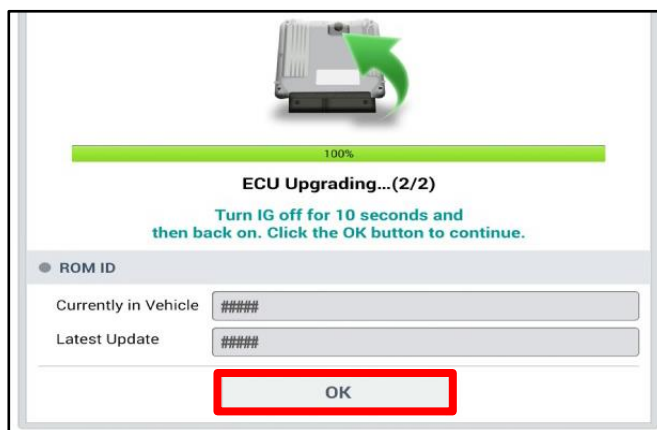
### \* NOTICE

**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.**

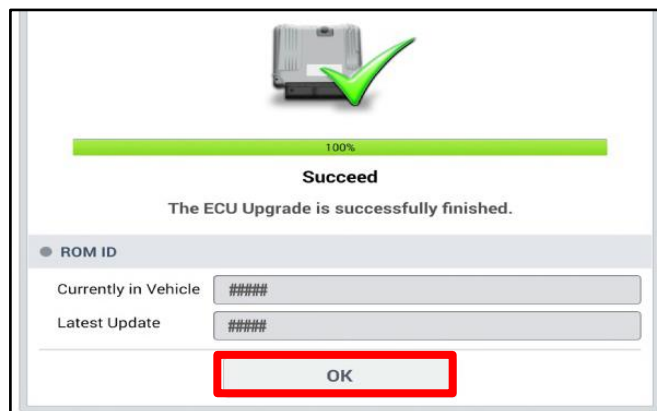
1. When instructed on the KDS, turn the ignition **OFF** for ten (10) seconds then back on. Touch **OK** to continue.



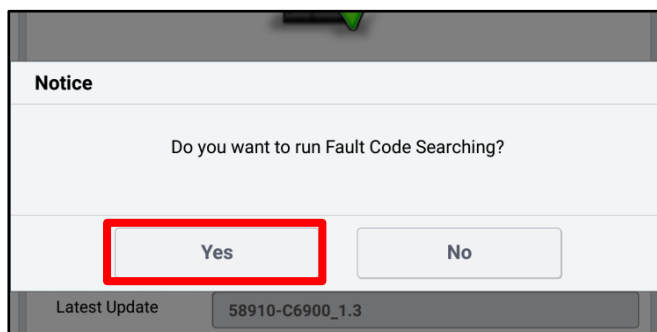
1. Once the upgrade is complete, touch **OK** to finalize the procedure.



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



1. Start the engine to confirm proper  
3. 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 |
|-------------------------|----------|
| SC FR_CMR : 99211-H8010 | 0108     |

1. Within the ECU Upgrade screen displayed, select **Manual Mode**.
2. Select the **Engine** system under the System selection menu. Select **Upgrade Event #552** and select **Upgrade** to continue.
3. Select the appropriate control unit part number with reference to the ROM ID Information Table on page 2, 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               |
|----------|-------------------------------------|
| Rio (SC) | December 22, 2020 to March 29, 2021 |

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          | 99211 H8010 | 0    | (SA475)<br>Front Camera Logic Improvement | 210M06R0      | 0.3<br>M/H | N/A             | 0    |

**\* NOTICE**

VIN inquiry data for this repair is provided for tracking purposes only. Kia retailers should reference SA475 when accessing the WebDCS system.

