| **SUBJECT:** | HIGH VOLTAGE BATTERY SOFTWARE UPDATE AND INSPECTION (RECALL CAMPAIGN 196) |
|---|---|

### ★ IMPORTANT

**\*\*\*\*\*Dealer Stock and Retail Vehicles\*\*\*\*\***

Dealers must perform this Recall Campaign on all affected vehicles prior to customer retail delivery and whenever an affected vehicle is in the shop for any maintenance or repair.

When a vehicle arrives at the Service Department, access Hyundai Motor America's "Vehicle Information Screen (VIS)" screen via WEBDCS to identify open Campaigns.

**Description:** The battery system in certain 2019-2020MY Kona Electric vehicles may be faulty and/or contain software that may need to be updated. These conditions may increase the risk of an electrical short circuit. Follow the procedure to update the specified ECU modules. An inspection is required after the software updates are completed to determine if additional repairs are necessary.

**Applicable Vehicles:** Certain 2019-2020MY Kona Electric (OS EV)

**Warranty Information:**

| Model | Op. Code | Operation | Op. Time | Causal Part | Nature | Cause |
|---|---|---|---|---|---|---|
| Kona Electric (OS EV) | 01D076R0 | BMS & VCULDC UPDATE | 0.5 M/H | 375A0-K4000 | I11 | ZZ3 |
| | 01D076R3 | IGPM, MCU, BMS & VCULDC UPDATE | 1.1 M/H | 375A0-K4000 | I11 | ZZ3 |

**NOTE 1**: Submit Claim on Campaign Claim Entry Screen.

**NOTE 2**: If a part is found in need of replacement while performing this Recall Campaign and the affected part is still under warranty, submit a separate warranty claim using the same Repair Order. If the affected part is out of warranty, submit a Prior Approval Request for goodwill consideration prior to performing the work.

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

## Service Procedure:

1. Update the ECU software using the GDS for the following systems. Reference the GDS Information section for Event #.

   **Note**: If Campaign 960 has already been completed, a software update for (c) and (d) is not required since these systems were previously updated during Campaign 960.

   a) BMS (Battery Management System) **MANUAL MODE UPDATE ONLY. DO NOT USE AUTO UPDATE.**
   b) VCULDC (Vehicle Control Unit & Low DC-DC Converter)
   c) IGPM (Integrated Gateway Power Module)
   d) MCU (Motor Control Unit)

   Refer to TSB 15-GI-001 for the general GDS Mobile ECU update procedures.

> ### NOTICE
>
> Check VIS to determine if Campaign 960 has already been completed. If an attempt is made to update the **IGPM** and **MCU** on a vehicle that had Campaign 960 completed previously, the GDS will show that these two systems already have the latest software installed.
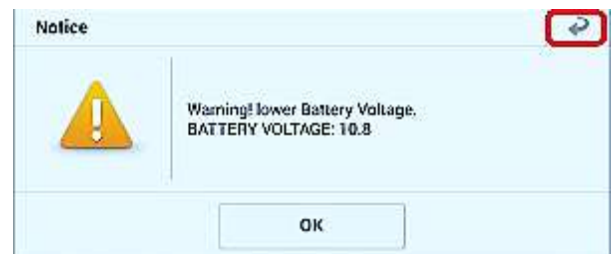
> ### ⚠ WARNING
>
> **THE 12V BATTERY VOLTAGE CHECK IS CRITICAL FOR THIS MULTI- ECU UPDATE AS IT COULD DRAW DOWN THE 12V BATTERY WHILE THE IGNITION IS ON.**
>
> **STOCK VEHICLES ARE PRONE TO LOW BATTTERY CONDITION. OPERATE A STOCK VEHICLE AT READY ON FOR 20 MINUTES PRIOR TO STARTING THE MULTI-ECU UPDATE.**
>
> **THIS WILL ENSURE 12V BATTERY WILL BE CHARGED TO AN ADEQUATE LEVEL, PREVENTING POTENTIAL UPDATE FAILURE OR CONTROLLER DAMAGE.**

> ### ⚠ WARNING
>
> **GDS Vehicle Battery Voltage Warning:**
>
> **If voltage is below 12 volts, then select Back and operate the vehicle in Ready mode for at least 20 minutes to ensure an adequate battery state of charge for reliable update results. Turn ignition back on, and then retry the ECU update again.**



Notice
Warning! lower Battery Voltage,
BATTERY VOLTAGE: 10.8
OK

2.  After successful completion of the applicable system updates, search all systems for DTC codes.

    If no DTC are found, the procedure is complete.

    If P1AA600 is found, additional repairs are needed. This TSB will be updated once a repair is available.

    If a DTC other than P1AA600 is found, perform the appropriate diagnostic service. Ensure no warning lights are present to complete the procedure.

**GDS Information:**

> ## NOTICE
>
> **Perform the BMS update #630 in Manual Mode only. DO NOT use Auto Update. Auto Update mode will report the latest software is installed when in reality it is not.**
>
> **#631, #590, and #592 should be performed in Auto Mode first.** If the ECM Update starts but then fails in Auto Mode, perform these updates in Manual Mode.

| Event # | Description |
|---|---|
| 630* *USE MANUAL MODE ONLY* | OS EV - HIGH VOLTAGE BATTERY MONITORING LOGIC APPLICATION(**BMS**) |
| 631* | OS EV - HIGH VOLTAGE BATTERY MONITORING LOGIC APPLICATION(**VCULDC**) |
| 590* | OS EV - HIGH VOLTAGE BATTERY MONITORING LOGIC APPLICATION(**MCU**) *Note: Not required if Campaign 960 is completed.* |
| 592* | OS EV - HIGH VOLTAGE BATTERY MONITORING LOGIC APPLICATION(**IGPM**) *Note: Not required if Campaign 960 is completed.* |

(*or later event if one is shown for each system)

## ROM ID INFORMATION TABLE:

**1) BMS**
BMS part number is located on the LH side of the high voltage battery underneath the vehicle.

| VEHICLE | SYSTEM | BMS P/No. | ROM ID | |
|---|---|---|---|---|
| | | | OLD | NEW |
| OS EV | BMS (Battery control) | 375A0-K4050 | 5300<br>5400<br>5500<br>5700<br>5800<br>5900<br>6000<br>6020<br>6040<br>6050<br>6060<br>6070 | 6080 |
| | | 375A0-K4000 | 5302<br>5402<br>5502<br>5702<br>5802<br>5902<br>6002<br>6022<br>6042<br>6052<br>6062<br>6072 | 6082 |
| | | 375A0-K4450 | 5304<br>5404<br>5504<br>5704<br>5804<br>5904<br>6004<br>6024<br>6044<br>6054<br>6064<br>6074 | 6084 |
| | | 375A0-K4400 | 5306<br>5406<br>5506<br>5706<br>5806<br>5906<br>6006<br>6026<br>6046<br>6056 | 6086 |

| | | | | |
|---|---|---|---|---|
| | | | 6066 6076 | |
| | | 375A0-K4051 | 6200 6220 6240 6540 6550 6560 6570 | 6580 |
| | | 375A0-K4001 | 6202 6222 6242 6542 6552 6562 6572 | 6582 |
| | | 375A0-K4451 | 6204 6224 6244 6544 6554 6564 6574 | 6584 |
| | | 375A0-K4401 | 6206 6226 6246 6546 6556 6566 6576 | 6586 |
| | | 375A0-K4052 | 6400 6500 6700 6730 6740 6770 | 6780 |
| | | 375A0-K4002 | 6402 6502 6702 6732 6742 6772 | 6782 |
| | | 375A0-K4452 | 6504 6734 6744 6774 | 6784 |
| | | 375A0-K4402 | 6506 6736 6746 6776 | 6786 |

**2) MCU**

| VEHICLE | SYSTEM | MCU P/NO. | ROM ID | |
|---|---|---|---|---|
| | | | OLD | NEW |
| OS EV | MCU | 36601-0E170 | EOSEJDL-MS0-D000<br>EOSEJDL-MS1-D000<br>EOSEKNLMS1-D000 | EOSEKNLMS2-D000 |

**3) VCULDC**

| VEHICLE | SYSTEM | VCULDC P/NO. | ROM ID | |
|---|---|---|---|---|
| | | | OLD | NEW |
| OS EV | VCULDC | 36601-0E170 | EOSEJNM-NS0-D000<br>EOSEJNM-NS1-D000<br>EOSEJNM-NS2-D000<br>EOSEKNM-NS3-D000<br>EOSEKNM-NS4-D000<br>EOSEKNM-NS5-D000 | EOSEKNM-NS7-D000 |

**4) IGPM**

| VEHICLE | SYSTEM | IGPM P/NO. | ROM ID | |
|---|---|---|---|---|
| | | | OLD | NEW |
| OS EV | IGPM | 91950-K4010<br>91950-K4020<br>91950-K4030<br>91950-K4040<br>91950-K4050<br>91950-K4060<br>91950-K4070<br>91950-K4080<br>91950-K4090<br>91950-K4100<br>91950-K4110<br>91950-K4120<br>91950-K4130<br>91950-K4140<br>91950-K4011<br>91950-K4021<br>91950-K4031<br>91950-K4041<br>91950-K4051<br>91950-K4061 | K401<br>K402<br>K403<br>K404<br>K405 | K406 |

| | | | | |
|---|---|---|---|---|
| | | 91950-K4071<br>91950-K4081<br>91950-K4091<br>91950-K4101<br>91950-K4111<br>91950-K4121<br>91950-K4131<br>91950-K4141 | K601<br>K602 | K603 |

## MANUAL MODE PASSWORD INFORMATION TABLE:

### #630 (BMS)

| MENU | P/W |
|------|-----|
| OS EV BMS 375A0-K4050 | **4050** |
| OS EV BMS 375A0-K4000 | **4000** |
| OS EV BMS 375A0-K4450 | **4450** |
| OS EV BMS 375A0-K4400 | **4400** |
| OS EV BMS 375A0-K4051 | **4051** |
| OS EV BMS 375A0-K4001 | **4001** |
| OS EV BMS 375A0-K4451 | **4451** |
| OS EV BMS 375A0-K4401 | **4401** |
| OS EV BMS 375A0-K4052 | **4052** |
| OS EV BMS 375A0-K4002 | **4002** |
| OS EV BMS 375A0-K4452 | **4452** |
| OS EV BMS 375A0-K4402 | **4402** |

### #590 (MCU)

| MENU | P/W |
|------|-----|
| OS EV MCU 36601-0E170 | **0170** |

### #631 (VCULDC)

| MENU | P/W |
|------|-----|
| OS EV VCULDC36601-0E170 | **0170** |

### #592 (IGPM)

| MENU | P/W |
|------|-----|
| OS EV IGPM 91950-K4010~K140, K4011~K141(ROM ID : K401/2/3/4/5) | **3000** |
| OS EV IGPM 91950-K4010~K140, K4011~K141(ROM ID : K601/2) | **3001** |