	GROUP ENG	MODEL 2012~2013MY Rio (UB) w/1.6 GDi 2012MY~2013MY Soul (AM) w/1.6 GDi
	NUMBER 146	DATE March 2015

TECHNICAL SERVICE BULLETIN

SUBJECT:	ECM UPGRADE – RIO, SOUL MIL ON WITH DTC(S) P0456/P0461/P050A/P2188/P2192/P0128/P0326/P0441

This bulletin provides information related to the ECM software upgrade for some 2012~2013MY Rio (UB) and some 2012~2013 Soul (AM) vehicles which may experience a malfunction indicator lamp (MIL) illuminated with the Electronic Control Module (ECM) system-related DTCs; P0456, P0461, P050A, P2188, P2192, P0128, P0326, P0441. To correct this condition, the ECM should be reprogrammed using the GDS download as described in this bulletin. Before performing this procedure, verify the VIN falls within the production ranges by consulting the table on page 10. For confirmation that the latest reflash has been done to a vehicle you are working on, verify ROM ID using the tables in this TSB.

P0456: Evaporative Emission System-Leak detected (very small leak)
P0461: Fuel Level Sensor Circuit Range/Performance
P050A: Cold Start Idle Air Control System Performance
P2188: System too rich at idle (Bank 1)
P2192: System too rich at higher load (Bank 1)
P0128: Thermostat (Temp. below Thermostat Regulating Temp.)
P0326: Knock Sensor 1 Circuit Range/ Performance (Bank 1)
P0441: Evaporative Emission System Incorrect Purge Flow

★ NOTICE

DO NOT replace any parts related to the DTCs mentioned above unless proven to be the cause for the DTC AFTER the reflash has been performed. First perform the reflash as described in this bulletin, and verify that no DTC(s) will re-set. Should a DTC re-set after the reflash, diagnose according to KGIS. Parts replacement in conjunction with this TSB may be subject to Mandatory Parts Return and returned parts will be tested by KMA. Unnecessarily replaced parts will be subject to chargeback.

File Under: <Engine>

Circulate To: ☒ **General Manager**   ☒ **Service Manager**   ☒ **Parts Manager**

☒ **Service Advisor(s)**   ☒ **Technician(s)**   ☒ **Body Shop Manager**   ☒ **Fleet Repair**

SUBJECT:	ECM UPGRADE – RIO, SOUL MIL ON WITH DTC(S) P0456/P0461/P050A/P2188/P2192/P0128/P0326/P0441

ECM Upgrade Procedure:

To correct this condition, the ECM should be reprogrammed using the GDS download, as described in this bulletin.

UPGRADE EVENT NAME
238.UB 1.6GDI KNOCKING IMPROVEMENT
239.AM 1.6GDI KNOCKING IMPROVEMENT

★ NOTICE

- **A fully charged battery is necessary before ECM upgrade can take place. It is recommended that the Midtronics GR8-1299 system be used in ECM mode during charging. DO NOT connect any other battery charger to the vehicle during ECM upgrade.**
- **All ECM upgrades must be done with the ignition key in the 'ON' position.**
- **Be careful not to disconnect any cables connected to the vehicle or GDS during the ECM upgrade procedure.**
- **DO NOT start the engine during ECM upgrade.**
- **DO NOT turn the ignition key 'OFF' or interrupt the power supply during ECM upgrade.**
- **When the ECM upgrade is completed, turn the ignition 'OFF' and wait 10 seconds before starting the engine.**
- **ONLY use approved ECM upgrade software designated for the correct model, year.**

⚠ CAUTION

Before attempting an ECM 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.

SUBJECT:

ECM UPGRADE – RIO, SOUL MIL ON WITH DTC(S)
P0456/P0461/P050A/P2188/P2192/P0128/P0326/P0441

ROM ID INFORMATION TABLES :

Upgrade event #238 (UB)

MODEL	T/M	ISG	IMMO	ECU P/NO	ROM ID	
					PREVIOUS	NEW
UB 1.6 GDI	M/T	No (-)	No (-)	39110 2BDL0 39110 2BDN0	GGUB BNU6ES00600 GGUB BNU6ES01600 GGUB BNU6ES02600 GGUB BNU6ES03600 GGUB BNU6ES0060A GGUB BNU6ES016A0 GGUB DNU6ES00600 GGUB DNU6ES01600 GGUB DNU6ES02600 GGUB DNU6ES03600 GGUB DNU6ES04600 GGUB DNU6ES05600 GGUB DNU6ES06600	**GGUB ENU6EF01600**
	A/T	No (-)	Yes (+) 🖐	39110 2BDM0 39110 2BDP0	GGUB BNU6FS00600 GGUB BNU6FS01600 GGUB BNU6FS02600 GGUB BNU6FS03600 GGUB BNU6FS0060A GGUB BNU6FS016A0 GGUB DNU6FS00600 GGUB DNU6FS01600 GGUB DNU6FS02600 GGUB DNU6FS03600 GGUB DNU6FS04600 GGUB DNU6FS05600 GGUB DNU6FS06600	**GGUB ENU6FF01600**
		No (-)	No (-)	39110 2BDL5 39110 2BDA7	GGUB BNU6PS00C00 GGUB BNU6PS01C00 GGUB BNU6PS02C00 GGUB BNU6PS03C00 GGUB BNU6PS04C00 GGUB BNU6PS00C0A GGUB BNU6PS01CA0 GGUB DNU6PS00C00 GGUB DNU6PS01C00 GGUB DNU6PS02C00 GGUB DNU6PS03C00 GGUB DNU6PS04C00 GGUB DNU6PS05C00 GGUB DNU6PS06C00	**GGUB ENU6PF01C00**
		No (-)	Yes (+) 🖐	39110 2BDM5 39110 2BDB7	GGUB BNU6QS00C00 GGUB BNU6QS01C00 GGUB BNU6QS02C00 GGUB BNU6QS03C00 GGUB BNU6QS04C00 GGUB BNU6QS00C0A GGUB BNU6QS01CA0 GGUB DNU6QS00C00 GGUB DNU6QS01C00 GGUB DNU6QS02C00 GGUB DNU6QS03C00 GGUB DNU6QS04C00 GGUB DNU6QS05C00 GGUB DNU6QS06C00	**GGUB ENU6QF01C00**

SUBJECT:	ECM UPGRADE – RIO, SOUL MIL ON WITH DTC(S) P0456/P0461/P050A/P2188/P2192/P0128/P0326/P0441

Upgrade Event #238 (Cont'd):

	Yes (+)	No (-)	39110 2BDL8 39110 2BDC7	GIUB BNU6PS00C00 GIUB BNU6PS01C00 GIUB BNU6PS02C00 GIUB BNU6PS03C00 GIUB BNU6PS04C00 GIUB BNU6PS00C0A GIUB BNU6PS01CA0 GIUB BNU6PS02CA0 GIUB DNU6PS00C00 GIUB DNU6PS01C00 GIUB DNU6PS02C00 GIUB DNU6PS03C00 GIUB DNU6PS04C00 GIUB DNU6PS05C00 GIUB DNU6PS06C00 GIUB DNU6PS07C00 GIUB DNU6PS08C00	**GIUB ENU6PF01C00**
	Yes (+)	Yes (+) 🚗	39110 2BDM8 39110 2BDD7	GIUB BNU6QS00C00 GIUB BNU6QS01C00 GIUB BNU6QS02C00 GIUB BNU6QS03C00 GIUB BNU6QS04C00 GIUB BNU6QS00C0A GIUB BNU6QS01CA0 GIUB BNU6QS02CA0 GIUB DNU6QS00C00 GIUB DNU6QS01C00 GIUB DNU6QS02C00 GIUB DNU6QS03C00 GIUB DNU6QS04C00 GIUB DNU6QS05C00 GIUB DNU6QS06C00 GIUB DNU6QS07C00 GIUB DNU6QS08C00	**GIUB ENU6QF01C00**
	Yes (+)	No (-)	39110 2BDE7	GIUB DNU6PSG0C00 GIUB DNU6PSG1C00 GIUB DNU6PSG2C00 GIUB DNU6PSG3C00 GIUB DNU6PSG4C00 GIUB DNU6PSG5C00 GIUB DNU6PSG6C00 GIUB DNU6PSG7C00 GIUB DNU6PSG8C00	**GIUB DNU6PFG9C00**
	Yes (+)	Yes (+) 🚗	39110 2BDF7	GIUB DNU6QSG0C00 GIUB DNU6QSG1C00 GIUB DNU6QSG2C00 GIUB DNU6QSG3C00 GIUB DNU6QSG4C00 GIUB DNU6QSG5C00 GIUB DNU6QSG6C00 GIUB DNU6QSG7C00 GIUB DNU6QSG8C00	**GIUB DNU6QFG9C00**

SUBJECT: ECM UPGRADE – RIO, SOUL MIL ON WITH DTC(S) P0456/P0461/P050A/P2188/P2192/P0128/P0326/P0441

Upgrade event #239 (AM)

MODEL	T/M	IMMO	ISG	ECM P/N	ROM ID	
					PREVIOUS	NEW
AM 1.6GDI	M/T	No (-)	No (-)	39110 2BCG0￼39110 2BCJ0	GGAM BNU6ES00600￼GGAM BNU6ES01600￼GGAM BNU6ES02600￼GGAM BNU6ES03600￼GGAM BNU6ES04600￼GGAM BNU6ES05600￼GGAM BNU6ES06600￼GGAM BNU6ES07600￼GGAM BNU6ES08600￼GGAM DNU6ES00600￼GGAM DNU6ES01600￼GGAM DNU6ES02600￼GGAM DNU6ES03600￼GGAM DNU6ES04600￼GGAM DNU6ES05600	**GGAM DNU6EF05600**
		No (-)	Yes (+) 🖐	39110 2BCH0￼39110 2BCK0	GGAM BNU6FS00600￼GGAM BNU6FS01600￼GGAM BNU6FS02600￼GGAM BNU6FS03600￼GGAM BNU6FS04600￼GGAM BNU6FS05600￼GGAM BNU6FS06600￼GGAM BNU6FS07600￼GGAM BNU6FS08600￼GGAM DNU6FS00600￼GGAM DNU6FS01600￼GGAM DNU6FS02600￼GGAM DNU6FS03600￼GGAM DNU6FS04600￼GGAM DNU6FS05600	**GGAM DNU6FF05600**
	A/T	No (-)	No (-)	39110 2BCG5￼39110 2BCG2￼39110 2BCC1	GGAM BNU6PS00C00￼GGAM BNU6PS01C00￼GGAM BNU6PS02C00￼GGAM BNU6PS03C00￼GGAM BNU6PS04C00￼GGAM BNU6PS05C00￼GGAM BNU6PS06C00￼GGAM BNU6PS07C00￼GGAM BNU6PS08C00￼GGAM DNU6PS00C00￼GGAM DNU6PS01C00￼GGAM DNU6PS02C00￼GGAM DNU6PS03C00￼GGAM DNU6PS04C00￼GGAM DNU6PS05C00￼GGAM DNU6PS06C00￼GGAM DNU6PS07C00	**GGAM DNU6PF07C00**
		No (-)	Yes (+) 🖐	39110 2BCH5￼39110 2BCH2￼39110 2BCD1	GGAM BNU6QS00C00￼GGAM BNU6QS01C00￼GGAM BNU6QS02C00￼GGAM BNU6QS03C00￼GGAM BNU6QS04C00￼GGAM BNU6QS05C00￼GGAM BNU6QS06C00￼GGAM BNU6QS07C00￼GGAM BNU6QS08C00￼GGAM DNU6QS00C00￼GGAM DNU6QS01C00	**GGAM DNU6QF07C00**

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Upgrade Event #239 (Cont'd):

					GGAM DNU6QS02C00 GGAMDNU6QS03C00 GGAM DNU6QS04C00 GGAM DNU6QS05C00 GGAM DNU6QS06C00 GGAM DNU6QS07C00	

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.

1. Connect the power supply cable to the GDS.

> **★ NOTICE**
>
> **If attempting to perform the ECM upgrade with the power supply cable disconnected from the GDS, be sure to check that the GDS is fully charged before ECM upgrade. If the GDS is not fully charged, failure to perform the ECM upgrade may occur. Therefore, it is strongly recommended that the power supply connector be connected to the GDS.**
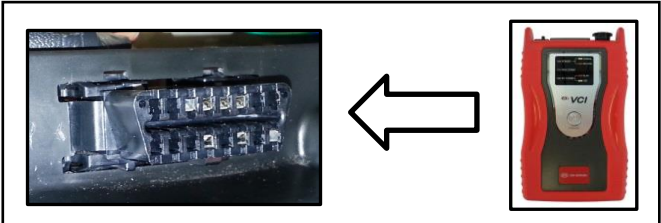
2. Connect the USB cable between the VCI and the GDS.

> **★ NOTICE**
>
> **When performing the ECM upgrade using the GDS, wireless communication between the VCI and GDS is not available. Therefore, be sure to connect the USB cable between the VCI and the GDS.**

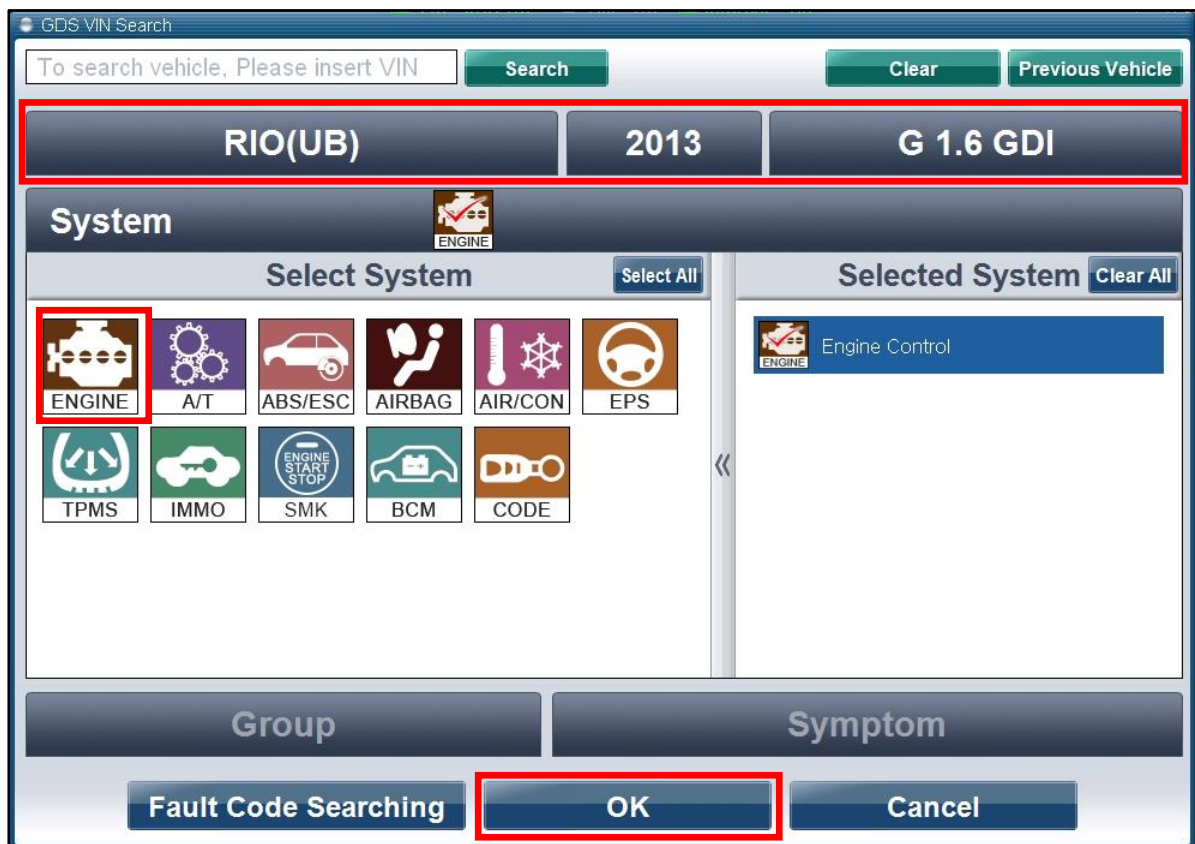3. Connect the Main 16-pin DLC cable (GHDM – 241000) to the VCI.

4. Connect the Main 16-pin DLC cable (GHDM – 241000) to the OBD-II connector, located under the driver's side of the instrument panel.

5. With the ignition key ON, turn ON the VCI and GDS. Access the GDS vehicle identification number (VIN) screen and configure the vehicle using the **VIN AUTO DETECT** Function.
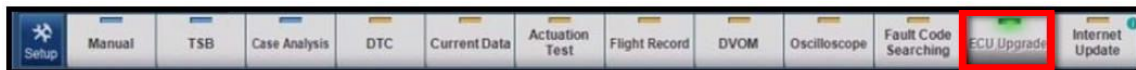
SUBJECT:

ECM UPGRADE – RIO, SOUL MIL ON WITH DTC(S) P0456/P0461/P050A/P2188/P2192/P0128/P0326/P0441

6. Select **ENGINE** system and click **OK**.

Display screen above is for demonstration only purposes and will vary depending on model.

7. Select **ECU Upgrade** from the bottom right-hand corner. Next select **Auto Mode**, and then **Engine**. Perform the ECM upgrade in accordance with normal GDS ECM upgrade procedures.

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> ⚠️ **CAUTION**
>
> **Before attempting an ECM 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**
>
> **Do NOT attempt to perform a Manual Mode upgrade unless Auto Mode fails. Always follow the instructions given on the GDS in either Auto or Manual mode. See table for Manual Mode passwords.**

* MANUAL MODE ECM UPGRADE PASSWORDS:

* Do NOT perform Manual Mode ECM upgrade unless Auto Mode fails.

Upgrade event #238 Rio (UB)

MY	MENU	PASSWORD
UB 1.6GDI	UB 1.6GDI MT -ISG -IMMO : 39110-2BDL0/N0	1020
	UB 1.6GDI MT -ISG +IMMO/SMK : 39110-2BDM0/P0	1021
	UB 1.6GDI AT -ISG -IMMO : 39110-2BDL5/A7	1027
	UB 1.6GDI AT -ISG +IMMO/SMK : 39110-2BDM5/B7	1028
	UB 1.6GDI AT +ISG -IMMO : 39110-2BDL8/C7	1029
	UB 1.6GDI AT +ISG +IMMO/SMK : 39110-2BDM8/D7	1030
	UB 1.6GDI AT +ISG -IMMO : 39110-2BDE7	1031
	UB 1.6GDI AT +ISG +IMMO/SMK : 39110-2BDF7	1032

Upgrade event #239 Soul (AM)

MY	MENU	PASSWORD
AM 1.6GDI	AM 1.6GDI MT -ISG -IMMO : 39110-2BCG0/J0	1020
	AM 1.6GDI MT -ISG +IMMO/SMK : 39110-2BCHO/K0	1021
	AM 1.6GDI AT -ISG -IMMO : 39110-2BCG5/G2/C1	1022
	AM 1.6GDI AT -ISG +IMMO/SMK : 39110-2BCH5/H2/D	1023

SUBJECT: ECM UPGRADE – RIO, SOUL MIL ON WITH DTC(S) P0456/P0461/P050A/P2188/P2192/P0128/P0326/P0441

1. Within the ECM Upgrade screen, select **Manual Mode** in the left column, select **Engine** and then select **Upgrade Event #238** or **Upgrade Event #239**. Select the appropriate control unit part number by referring to the ROM ID Information Tables on Pages 3~6, and click **OK**.

2. Enter the appropriate password from the tables on Page 8, and click **OK**.

3. Upgrade will begin and the progress of the upgrade will appear on the bar graph.

4. When the GDS reports that the ECM upgrade has been successfully completed, click **OK**, turn OFF the ignition key, and wait at least 10 seconds before attempting to start the engine.

5. Check for Diagnostic Trouble Codes using the GDS and erase any DTCs stored such as EPS, ESC, and TPMS that may have been set during reprogramming.

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

SUBJECT:	ECM UPGRADE – RIO, SOUL MIL ON WITH DTC(S) P0456/P0461/P050A/P2188/P2192/P0128/P0326/P0441

AFFECTED VEHICLE PRODUCTION RANGE:

Model	MY	DTC	Production Date Range
Rio (UB)	2012~2013	P0456	From Job #1 to May 7, 2012
Soul (AM)	2012		
Rio (UB)	2012~2013	P0461	From Job #1 to Nov. 25, 2012
Soul (AM)			From Job #1 to Nov. 1, 2012
Rio (UB)	2012	P050A	From Job #1 to Mar 26 ,2012
Soul (AM)			
Rio (UB)	2012~2013	P2188 P2192	From Job #1 to Nov 24, 2012
Soul (AM)			From July 13,2011 to Nov 2, 2011
Rio (UB)	2012	P0128	From Job #1 to Dec 31, 2011
Soul (AM)			From July 13, 2011 to Dec 31, 2011
Rio (UB)	2012	P0326	All
Soul (AM)	2013		
Rio (UB)	2012	P0441	All
Soul (AM)	2013		

WARRANTY CLAIM INFORMATION:

Claim Type	Causal P/N	Qty	N Code	C Code	Repair Description	Labor Op Code	Time	Related Parts	Qty
W	39110 2BDE7 (UB) 39110 2BCG0 (AM)	0	I3T	ZZ3	(ENG 146) ECM Upgrade	39100F10	0.3 M/H	N/A	0

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