



HYUNDAI

Technical Service Bulletin

GROUP	NUMBER
ENGINE MECHANICAL	26-EM-003H
DATE	MODEL(S)
FEBRUARY 2026	SONATA (DN8/DN8A)

SUBJECT: INTEGRATED THERMAL MANAGEMENT (ITM) REPLACEMENT & ECM/TCU SOFTWARE UPDATE – DTCS P218100, P2181F0, P2181F1

★ IMPORTANT

This field action requires justification in the form of a customer concern, and a confirmed case for the related symptom outlined in the TSB, prior to any repair work. If justification requirements are not met, any submitted claims are subject to debit. 8 / 80,000 Emissions Warranty applies. See Warranty Information section for more details.

Description: Some Sonata (DN8, DN8A) vehicles may have DTCs P218100, P2181F0, and/or P2181F1 (Cooling System Performance) set in the Engine Control Module, resulting in an illuminated Check Engine warning lamp. Follow the procedure in this TSB to replace the Integrated Thermal Management (ITM) module and update both the Engine Control Module (ECM) and Transmission Control Module (TCM) if applicable. Follow the flowchart in this TSB to update the appropriate modules.

Applicable Vehicles:

Model Year	Model	Engine	Production Dates
2021 – 2023	Sonata (DN8)	2.5T, 2.5L GDI	02/08/2021 – 10/23/2023
2020 – 2022	Sonata (DN8A)		10/22/2019 – 02/14/2022

Parts Information:

Model	Part Name	Part Number	Figure	Quantity
Sonata (DN8)	Control Assy – Coolant Temperature	25600-2S650QQH		1
Sonata (DN8A)	Control Assy – Coolant Temperature	25600-2S600QQH		
Sonata (DN8, DN8A)	O-Ring	25462-2S000		2
Sonata (DN8, DN8A)	Pink Antifreeze/Coolant	00232-19098		

NOTE: Do **NOT** use **100%** full strength antifreeze. Prepare coolant mixed with distilled/filtered water to refill the cooling system (**35-50%** antifreeze, diluted with distilled/filtered water).

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

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SST Information:

Tool Name	Tool Number	Figure	Ordering Information
VCI 3	G0VHNNN06		Website: https://hyundaiesentialtools.com/ Email: Hyundaitools@snapon.com Phone: 1-855-763-9199 Hours: 7 AM – 7 PM CST
VCI 2	G1XDDMN001		

NOTE: VCI 2 (P/N G1XDDMN001) can **NO** longer be ordered.

GDS Information:

Model	System	Event Number*	Description
Sonata (DN8, DN8A)	Engine	1244	DN8/DN8A 2.5TGDI P2181 IMPROVEMENT
		1262	DN8(a) THETA3 2.5 GDI P2181 IMPROVEMENT
	AT	1075	DN8 THETA3 2.5GDI TCU S/W Improvement for ISG Logic Improvement
		1077	DN8a THETA3 2.5GDI TCU S/W Improvement for ISG Logic Improvement

(*or use a later available event listed in the GDS **Engine** or **AT** Update screen if one is available.)

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Model	Op. Code	Operation	Op. Time	Causal Part	Nature Code	Cause Code
Sonata (DN8)	50D070R0	THETA III T-GDI ITM Replacement & ECM Software Update	1.8 M/H	39110-2S037	L31	ZZ4
	50D070R1	THETA III GDI ITM Replacement, ECM & TCU Software Update (ISG Option & Certain 2020-2022MY)	2.2 M/H	39110-2S037		
	50D070R2	THETA III GDI ITM Replacement & ECM Software Update (NO ISG Option, TCM is latest software, and 2022-2023MY)	1.9 M/H	39110-2S037		
Sonata (DN8A)	50D070R6	THETA III T-GDI ITM Replacement & ECU Software Update	1.8 M/H	39111-2S071		
	50D070R7	THETA III GDI ITM Replacement, ECM & TCU Software Update (ISG Option & 2020-2022MY)	2.2 M/H	39111-2S071		
	50D070R8	THETA III GDI ITM Replacement & ECM Software Update (NO ISG Option, TCM is latest software, and 2022-2023MY)	1.9 M/H	39111-2S071		

NOTE 1: Submit claim on Claim Entry Screen as “Campaign” type.

NOTE 2: 8 / 80,000 Emissions Warranty applies to the part(s) and repair procedure(s) outlined in this TSB. Prior to beginning any repair work, ensure the part(s) associated with the repair procedure are within NVLW, observing mileage and Warranty Start Date or date of first use. If the subject part(s) are out of warranty coverage, the dealer has the option to submit a PA Request for goodwill consideration on a case-by-case basis.

NOTE 3: If any part(s) not subject to this TSB are found in need of replacement while performing the repair procedure, and the affected part(s) are still under warranty, the dealer may submit a separate claim using the same repair order. If the part(s) not subject to this TSB are out of warranty coverage, the dealer has the option to submit a PA Request for goodwill consideration on a case-by-case basis.

NOTE 4: This TSB includes repair justification in the form of automatically uploaded DTC(s) via GDS e-Report at the time of diagnosis. To ensure adherence to the Digital Documentation Policy before claim submission, DTC history can be reviewed via the e-Report function within the GDS. Additionally, required photos include a capture of the ECU Update “Success” screen for the associated update events.

NOTE 5: The incident parts are subject to callback through the normal Warranty Technical Center (WTC) parts return process. **Claim is subject to debit if the part is not returned.**

NOTE 6: For proper engine operation, ITM replacement must be completed before the ECU updates.

NOTE 7: Engine Control Module software update is required in all applications. The Transmission Control Module software update is only required for the 2.5L GDI vehicles equipped with ISG.

SUBJECT:INTEGRATED THERMAL MANAGEMENT (ITM) REPLACEMENT & ECM/TCU
SOFTWARE UPDATE – DTCS P218100, P2181F0, P2181F1**Service Procedure:****DIGITAL DOCUMENTATION**

This TSB includes repair justification in the form of automatically uploaded DTC(s) via GDS e-Report at the time of diagnosis. To ensure adherence to the Digital Documentation Policy before claim submission, DTC history can be reviewed via the e-Report function within the GDS. Additionally, required photos include a capture of the ECU Update “Success” screen for the associated update events.

NOTICE

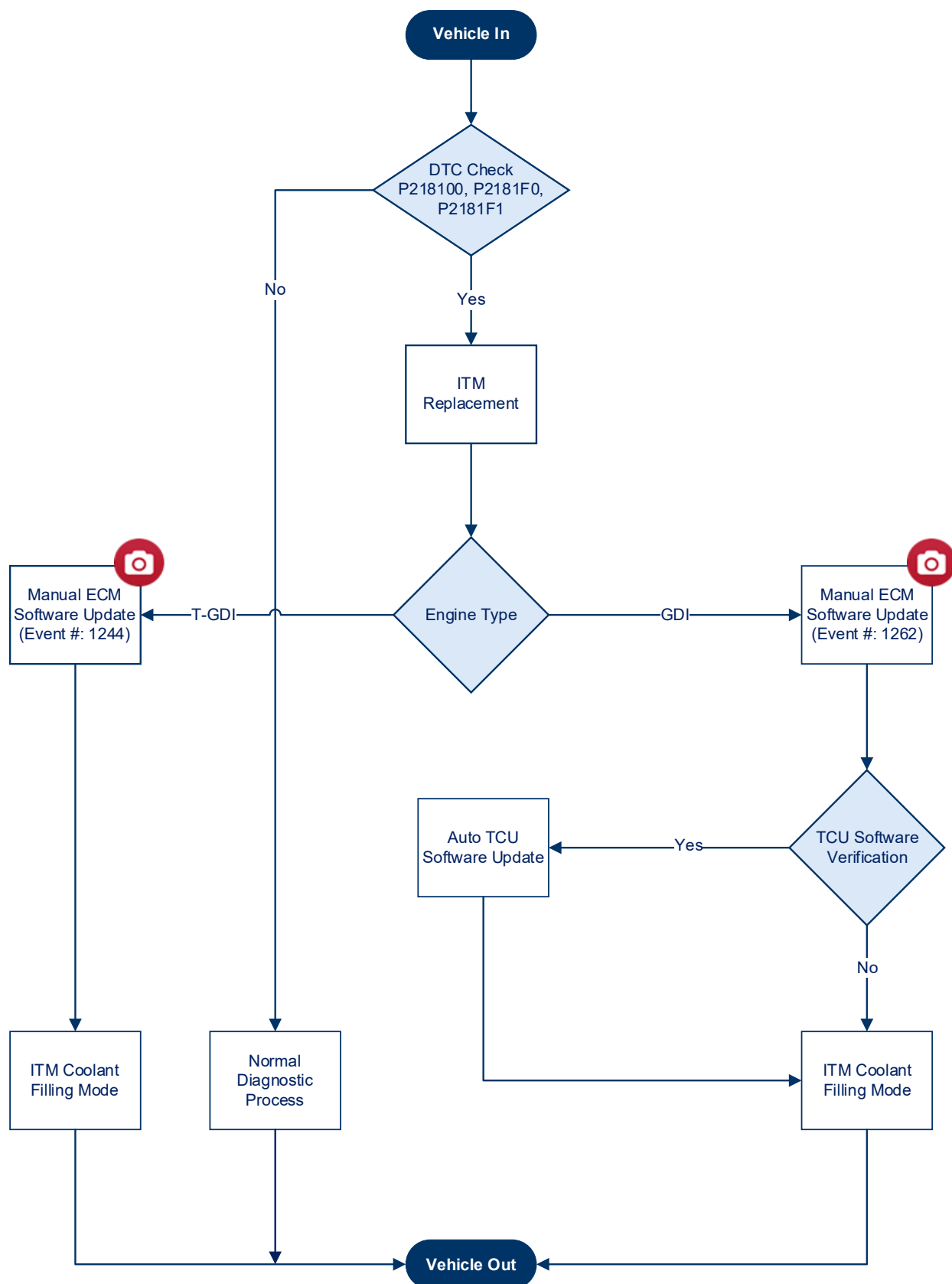
Applying the recommended torque to all fasteners is essential to reduce potential issues from occurring after the service procedure.

**Information**

This TSB **ONLY** applies if GDS fault code searching results identify DTCs P218100, P2181F0, and/or P2181F1.

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SUBJECT:**INTEGRATED THERMAL MANAGEMENT (ITM) REPLACEMENT & ECM/TCU SOFTWARE UPDATE – DTCS P218100, P2181F0, P2181F1****Flowchart:**

SUBJECT:**INTEGRATED THERMAL MANAGEMENT (ITM) REPLACEMENT & ECM/TCU
SOFTWARE UPDATE – DTCS P218100, P2181F0, P2181F1****DTC Check**

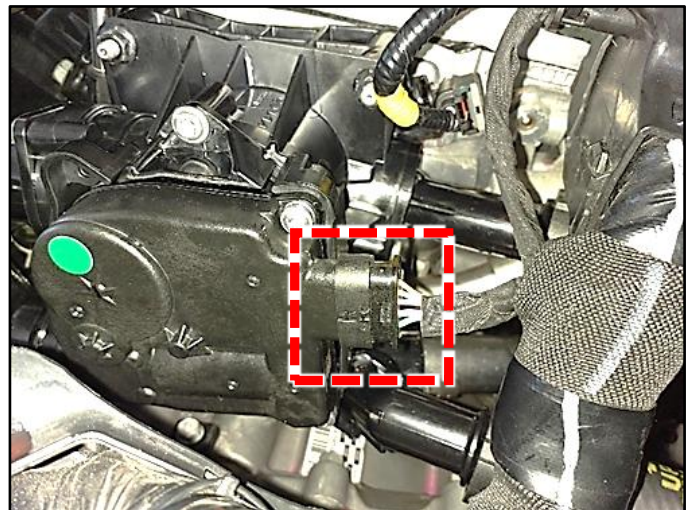
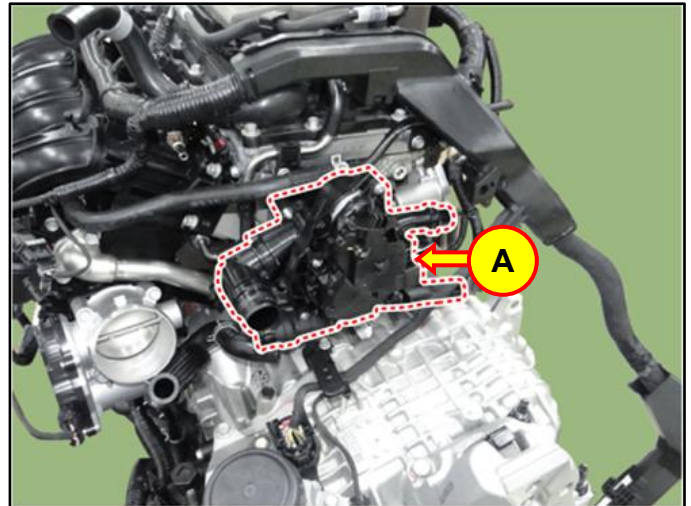
1. Use GDS to scan for **DTCs P218100, P2181F0, and P2181F1** (Cooling System Performance):
 - If DTCs are **NOT** detected, then this TSB does **NOT** apply. Follow the normal diagnostic process.
 - If DTCs are detected, then proceed to the **ITM Replacement** procedure.

ITM Replacement

2. Replace the ITM (A) by referring to the shop manual.
 - **Engine Mechanical System > Cooling System > Integrated Thermal Management Module (ITM) > Repair procedures**
3. Reinstall parts in the reverse order of the removal process.

**Information**

The ITM design inverts the connector's orientation.



SUBJECT:**INTEGRATED THERMAL MANAGEMENT (ITM) REPLACEMENT & ECM/TCU
SOFTWARE UPDATE – DTCS P218100, P2181F0, P2181F1****Service Procedure:****NOTICE**

Initially perform the **ECM update** in **Manual Mode** and **TCU update** in **Auto Mode** (if applicable).

NOTICE

Ensure the vehicle's battery charge is **above 11.0 Volts** and the tablet's battery charge is **above 30%** before performing a software update to avoid the update from failing.

**Information**

- Turn **OFF** all lamps (do **NOT** leave head lamp switch in auto mode) and all accessories.
- Perform update with the ignition switch in the **ON** position.
- Do **NOT** disconnect any cables connected to the vehicle or scan tool during update.
- Do **NOT** start the engine during update.
- Do **NOT** turn **OFF** the ignition switch during update.

Manual Mode Password:

Event	ECM Menu	Password
1244 (T-GDI)	DN8(a) ITM TGDI ECU 39111-2S071 (G2X)	2071
	DN8(a) ITM TGDI ECU 39111-2S071 (J0A)	1702
	DN8(a) ITM TGDI ECU 39111-2S076	2076
	DN8(a) ITM TGDI ECU 39111-2S077	2077
1262 (GDI)	DN8 THETA3 2.5 GDI ECU 39110-2S037	2037
	DN8 THETA3 2.5 GDI ECU 39110-2S038	2038
	DN8 THETA3 2.5 GDI ECU 39110-2S039/278	2039
	DN8 THETA3 2.5 GDI ECU 39110-2S040/279	2040
	DN8 THETA3 2.5 GDI ECU 39110-2S041	2041
	DN8 THETA3 2.5 GDI ECU 39110-2S042	2042
	DN8a THETA3 2.5 GDI ECU 39101-2SDA0	5556
	DN8a THETA3 2.5 GDI ECU 39101-2SDB0	5476
	DN8a THETA3 2.5 GDI ECU 39103-2SDE0/G0/H0	5253
	DN8a THETA3 2.5 GDI ECU 39104-2SDF0	1873
	DN8a THETA3 2.5 GDI ECU 39100-2SDJ0/L0	9710
	DN8a THETA3 2.5 GDI ECU 39100-2SDK0/M0	3895

SUBJECT:**INTEGRATED THERMAL MANAGEMENT (ITM) REPLACEMENT & ECM/TCU
SOFTWARE UPDATE – DTCS P218100, P2181F0, P2181F1****ECM Update Procedure****i Information**

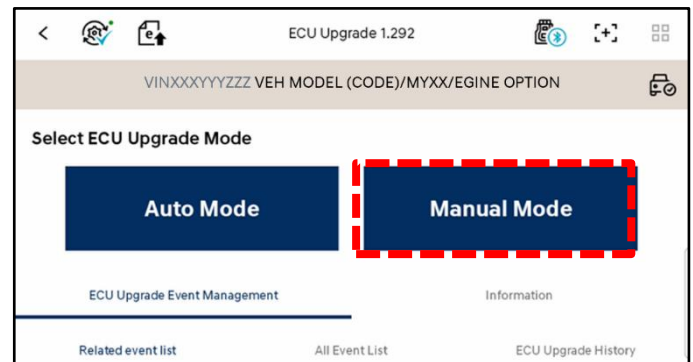
Perform the **ECM** software update in **Manual Mode** based on the engine type:

- **T-GDI:** Use **Event 1244**.
- **GDI:** Use **Event 1262**

1. Perform the **ECM** update in **Manual Mode**.

i Information

Refer to **TSB # 25-GI-011H**, “**ECU Update Procedure for Tablet-Based GDS-Smart**”, for additional information.



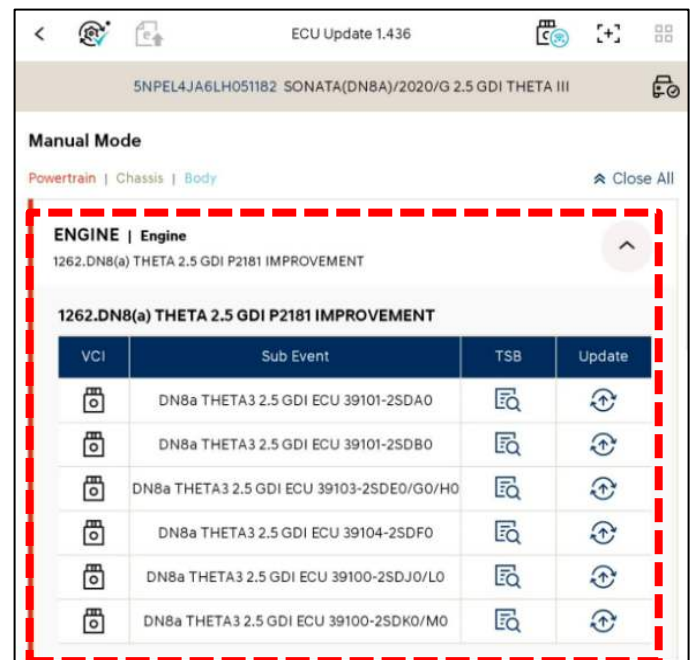
2. Verify the ROM ID by selecting the **ENGINE** system to scan the vehicle's current ROM ID.

NOTICE

Check the current ROM ID version and compare it to the [ROM ID Information](#) table before attempting to perform the software update.

NOTICE

If the update fails, remove the power connector from the in-cabin fuse box for at least **5 seconds**. Reassemble and retry the update.

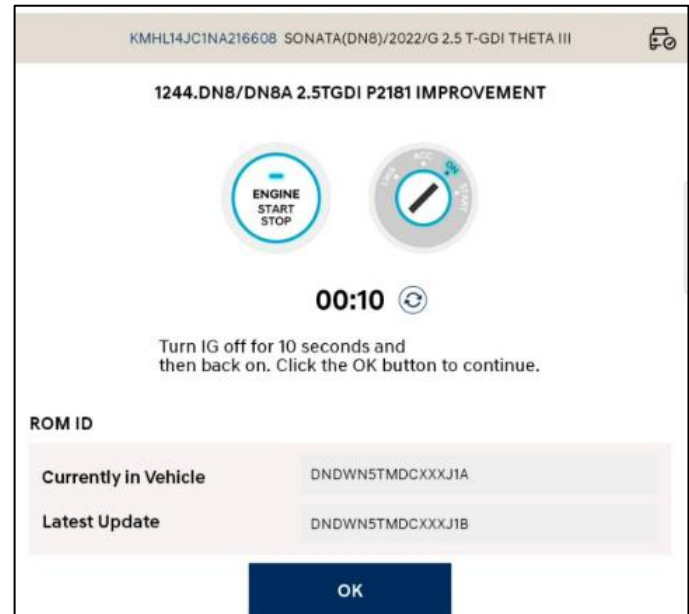


SUBJECT:**INTEGRATED THERMAL MANAGEMENT (ITM) REPLACEMENT & ECM/TCU
SOFTWARE UPDATE – DTCS P218100, P2181F0, P2181F1**

3. After the ECU update process shows 100% complete, follow the prompts on the screen to cycle the ignition **OFF** for at least **10 seconds** to reset the control unit (certain models may take up to **30 seconds**).

i Information

Use the **Refresh** button to reset the timer.



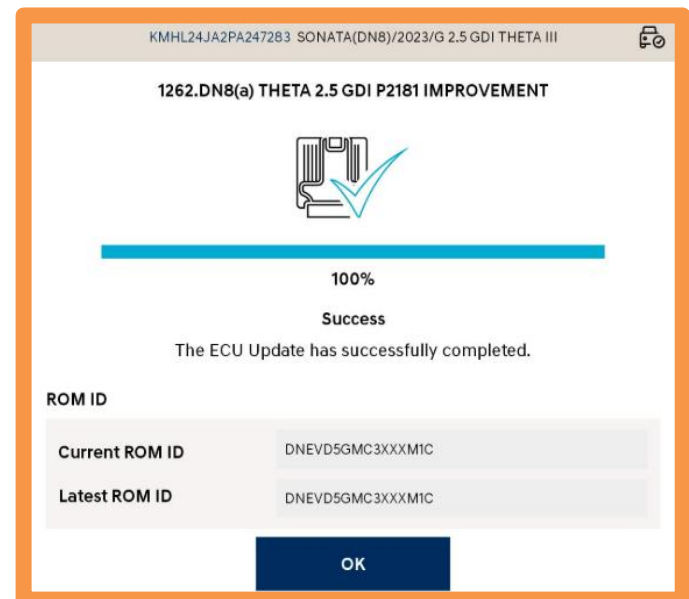
4.

**DIGITAL
DOCUMENTATION**

Using the tablet or GDS screen capture function, take a screenshot of the ECU Update “Success” result screen.

Upload the photo to STUI.

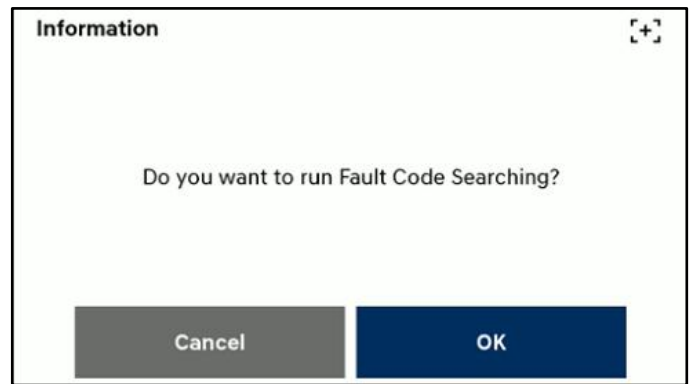
NOTE: The VIN/Date/Time/Mileage photo imprint is **NOT** required for GDS screenshots.



5. Verify the engine type:
- **T-GDI** (Event 1244), go to the **next step**.
 - **GDI** (Event 1262), go to the **TCU Update** procedure.

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SOFTWARE UPDATE – DTCS P218100, P2181F0, P2181F1**

6. Perform an **All Systems Fault Code** search and erase DTC history that had incidentally occurred from the ECU update.



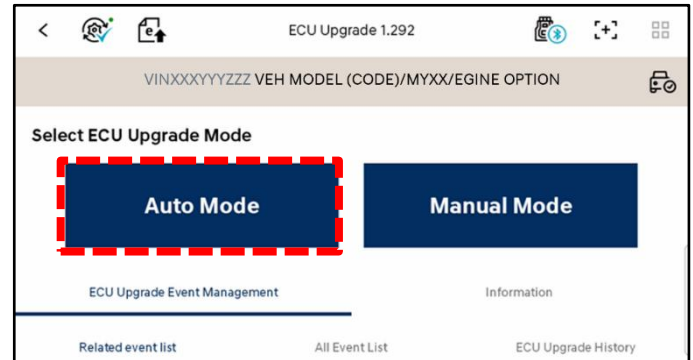
7. Proceed to the **ITM Coolant Filling Mode** procedure on **page 13**.

SUBJECT:**INTEGRATED THERMAL MANAGEMENT (ITM) REPLACEMENT & ECM/TCU
SOFTWARE UPDATE – DTCS P218100, P2181F0, P2181F1****TCU Update Procedure**

1. Use GDS to check for **TCU** update in Auto Mode:
 - If is **NOT** available, go to the **ITM Coolant Filling Mode** procedure.
 - If update is available, go to the **next step**.
2. Perform the **TCU** update in **Auto Mode**.

**Information**

Refer to **TSB # 25-GI-011H**, “**ECU Update Procedure for Tablet-Based GDS-Smart**”, for additional information.



3. Verify the ROM ID by selecting the **TCU** system to scan the vehicle's current ROM ID.

NOTICE

Check the current ROM ID version and compare it to the [ROM ID Information](#) table before attempting to perform the software update.

NOTICE

If the update fails, remove the power connector from the in-cabin fuse box for at least **5 seconds**. Reassemble and retry the update.



SUBJECT:**INTEGRATED THERMAL MANAGEMENT (ITM) REPLACEMENT & ECM/TCU
SOFTWARE UPDATE – DTCS P218100, P2181F0, P2181F1**

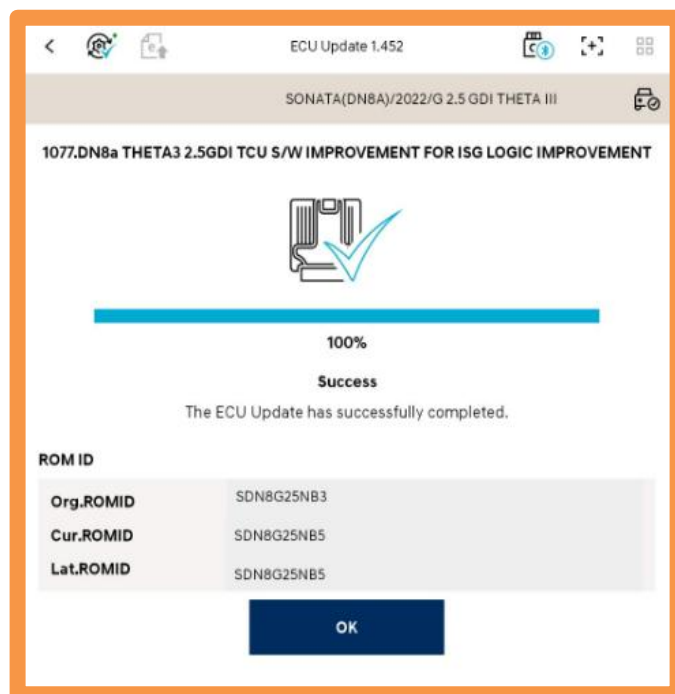
5.

**DIGITAL
DOCUMENTATION**

Using the tablet or GDS screen capture function, take a screenshot of the ECU Update “Success” result screen.

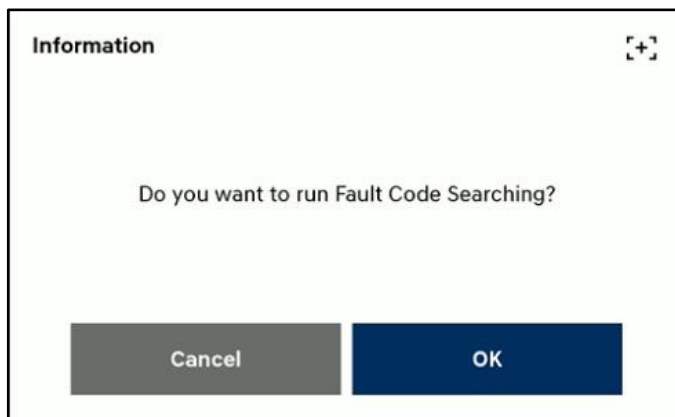
Upload the photo to STUI.

NOTE: The VIN/Date/Time/Mileage photo imprint is **NOT** required for GDS screenshots.



6.

Perform an **All Systems Fault Code** search and erase DTC history that had incidentally occurred from the ECU update.

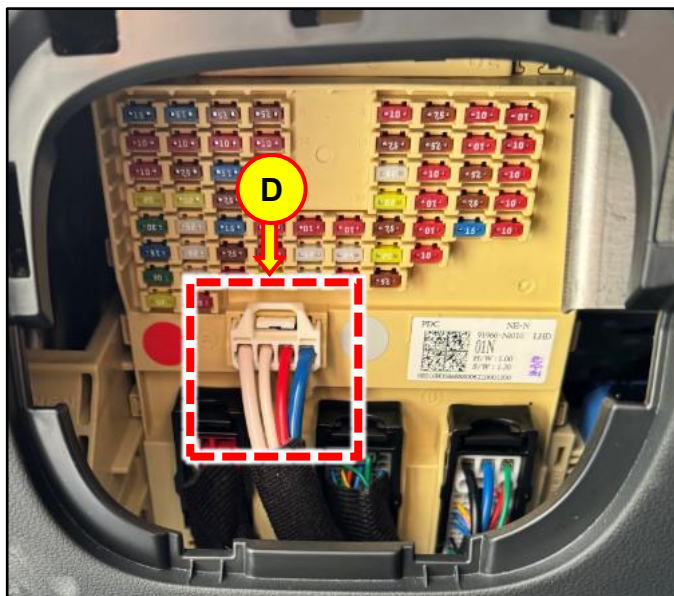


7.

Disconnect the power connector (D) of the indoor fuse box, wait at least **5 seconds**, then reconnect it.

**Information**

Alternatively, disconnect the negative (–) **12V** battery terminal, wait at least **5 seconds**, then reconnect it.



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SOFTWARE UPDATE – DTCS P218100, P2181F0, P2181F1

ITM Coolant Filling Mode

1. Use GDS to perform the **Integrated Thermal Module Coolant Filling Mode**.

Refer to the shop manual:

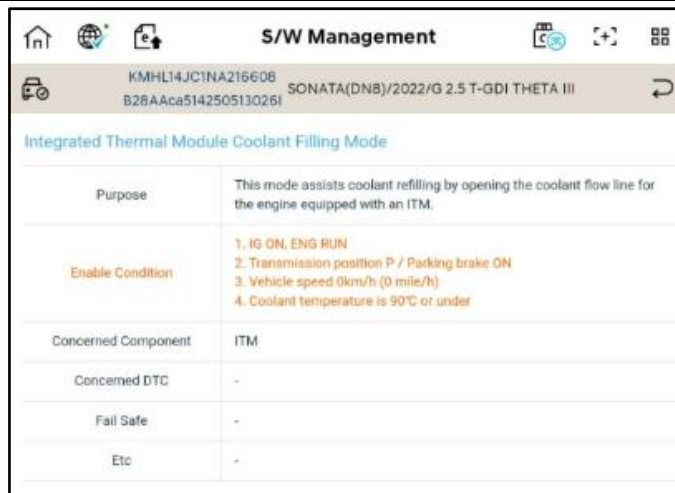
- **Engine Mechanical System > Cooling System > Coolant > Repair procedures**

⚠ WARNING

Do **NOT** remove the radiator cap when the engine is hot. Serious scalding could be caused by high-pressured, hot fluid to escape from the radiator.

NOTICE

Failure to follow the ITM bleeding procedure under **S/W Management** in GDS may result in air pockets and overheating of the engine.



2. Start the vehicle to confirm correct operation.
3. The service procedure is now complete.

TCU Manual Mode Passwords:

Event	Menu	Password
1075	DN8 THETA3 2.5 GDI 8AT ISG 39110-2S038/040/279/072	5241
1077	DN8A THETA3 2.5 GDI 8AT ISG 39102-2SDB0/F0/H0/K0/M0	

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ROM ID Information:

Model	MY	Event	System	ECU Part Number	ROM ID	
					Current	Latest
Sonata (DN8A)	2021	1244	ECU	39111-2S071	DNBWN5TMDCXXXG2A DNBWN5TMDCXXXG2B DNBWN5TMDCXXXG2C DNBWN5TMDCXXXG2D DNBWN5TMDCXXXG2E	DNBWN5TMDCXXXG2F
	2021			39111-2S071	DNBWN5TMDCXXXJ0A	DNBWN5TMDCXXXJ0B
	2022			39111-2S076	DNDWN5TMDCXXXJ1A	DNDWN5TMDCXXXJ1B
	2023			39111-2S077	DNEWD5TMDCXXXM0A	DNEWD5TMDCXXXM0B
Sonata (DN8)	2021	1262		39110-2S037	DNCVD5GMCCXXXG2A DNCVD5GMCCXXXG2B DNCVD5GMCCXXXG2C	DNCVD5GMCCXXXL8A
	2022			39110-2S039	DNDVD5GMCCXXXJ1A DNDVD5GMCCXXXJ1B DNDVD5GMCCXXXJ1C	DNDVD5GMCCXXXL8C
				2022	39110-2S278	
	2022 ISG			39110-2S040	DNDVD5GMC3XXXJ1A DNDVD5GMC3XXXJ1B DNDVD5GMC3XXXJ1C	DNDVD5GMC3XXXL8C
				39110-2S279	DNDVD5GMC3XXXL5A DNDVD5GMC3XXXL5B DNDVD5GMC3XXXL8A DNDVD5GMC3XXXL8B	
	2023			39110-2S041	DNEVD5GMCCXXXM0A DNEVD5GMCCXXXM1A DNEVD5GMCCXXXM1B	DNEVD5GMCCXXXM1C
	2023 ISG			39110-2S042	DNEVD5GMC3XXXM0A DNEVD5GMC3XXXM1A DNEVD5GMC3XXXM1B	DNEVD5GMC3XXXM1C

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Model	MY	Event	System	ECU Part Number	ROM ID	
					Current	Latest
Sonata (DN8A)	2020	1262	ECU	39101-2SDA0	DNBVN5GMCCXXXDBB DNBVN5GMCCXXXDCA DNBVN5GMCCXXXG2F DNBVN5GMCCXXXG2G DNBVN5GMCCXXXG2H	DNBVN5GMCCXXXL8A
	2020 ISG			39102-2SDB0	DNBVN5GMC3XXXDBB DNBVN5GMC3XXXDCA DNBVN5GMC3XXXG2F DNBVN5GMC3XXXG2G DNBVN5GMC3XXXG2H	DNBVN5GMC3XXXL8A
	2021			39103-2SDE0	DNCVN5GMCCXXXF0A DNCVN5GMCCXXXG2F DNCVN5GMCCXXXG2G DNCVN5GMCCXXXG2H	DNCVN5GMCCXXXL8A
				39100-2SDG0	DNCVN5GMCCXXXG2A DNCVN5GMCCXXXG2B DNCVN5GMCCXXXG2C DNCVN5GMCCXXXG2D	
	2021 ISG			39100-2SDH0	DNCVN5GMC3XXXG2A DNCVN5GMC3XXXG2B DNCVN5GMC3XXXG2C DNCVN5GMC3XXXG2D	
				39104-2SDF0	DNCVN5GMC3XXXF0A DNCVN5GMC3XXXG2F DNCVN5GMC3XXXG2G DNCVN5GMC3XXXG2H	DNCVN5GMC3XXXL8A
	2022			39100-2SDJ0	DNDVN5GMCCXXXJ1A DNDVN5GMCCXXXJ1B DNDVN5GMCCXXXJ1C	DNDVN5GMCCXXXL8C
	2022			39100-2SDL0	DNDVN5GMCCXXXL5A DNDVN5GMCCXXXL5B DNDVN5GMCCXXXL8A DNDVN5GMCCXXXL8B	
	2022 ISG			39100-2SDK0	DNDVN5GMC3XXXJ1A DNDVN5GMC3XXXJ1B DNDVN5GMC3XXXJ1C	DNDVN5GMC3XXXL8C
	2022 ISG			39100-2SDM0	DNDVN5GMC3XXXL5A DNDVN5GMC3XXXL5B DNDVN5GMC3XXXL8A DNDVN5GMC3XXXL8B	

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Model	MY	Event	System	ECU Part Number	ROM ID		
					Current	Latest	
Sonata (DN8)	2021	1075	TCU	39110-2S038	SDN8G25NB2	SDN8G25NB5	
	2022			39110-2S040	SDN8G25NB2		
	2023			39110-2S279	SDN8G25NB3 SDN8G25NB4		
Sonata (DN8A)	2020	1077		39102-2SDB0	SDN8G25NB0 SDN8G25NB1		SDN8G25NB5
	2021			39104-2SDF0	SDN8G25NB0 SDN8G25NB1 SDN8G25NB2		
				39100-2SDH0			
	2022			39100-2SDK0	SDN8G25NB2 SDN8G25NB3 SDN8G25NB4		
				39100-2SDM0			