



GDS - Vehicle S/W Management

Ver. 07. 06. 2006





ECU Upgrade



Vehicle S/W Management

Module: A-05-001 (p.01)

Auto / Manual Mode and CAUTIONS before ECU Upgrade

ECU upgrading (reprogramming) can be done in Auto or Manual mode.

Manual Mode

Manual mode is used whenever it is necessary to force an ECU upgrade. It shows all the events for the selected control module. The User can select each event for the control module to force update. Password input stage, that is not in Auto mode, is included.



Figure 1. ECU Upgrade - Auto/Manual Mode



The following information should be reviewed prior to performing an ECU upgrade:

- Do not start the engine or turn the ignition key OFF during an ECU upgrade. These actions may damage the ECU.
- The battery should be in a good state of charge prior to beginning an ECU upgrade.
- Confirm the correct selection before performing a manual ECU upgrade.
- Do not perform an ECU upgrade without first reviewing the applicable TSB or Campaign.
- Use the correct vehicle DLC and DLC cable when performing an ECU upgrade.
- If the ECU upgrade is needed for a part change, user should upgrade the ECU after changing that part.
- After finishing the ECU upgrade, user should confirm the new ROM ID.
- ECU upgrades cannot be performed using wireless; connect the USB cable between the PC and VCI prior to selecting the "ECU Upgrade" function.

Auto Mode Upgrade

Control module selection and Preparation of upgrade

When "Auto Mode" is selected the control modules appear below the "Auto Mode" menu. Control modules will be listed on the left menu when a control module has an event to be updated.

However, control modules with no event items for a selected vehicle will not be listed. Therefore, if there is no event for a selected vehicle, no control module will appear.

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	Preparation Diagnosis Vehicle S/W Management Repair	IT
🚦 VCI : USB On 🚪 VMI : On 👘	Internet On. VIN ELANTRA(XD) / 2004 / G 2.0 DOHC System ENGINE / G 2.0 DOHC Search Prt Sc 6	1
Vehicle S/W Management 🖙	ECU Upgrade	_
ECU Upgrade	Current ROM ID Current ROM ID Upgrade Event == Select event ==	
TSB 🏷 Manual Mode		
	Preparation	
	1) To connect the DLC(Data Link Cable) of VCI to the OBD-II connector of Vehicle side.	
	2) To turn on the VCI	
ID Register	3) Click the [OKJ button, if you are ready.	
Option Treatment		
Data Treatment		
Inspection / Test		
Shop DTC Manual Guide TSB	Case Analysis ETM DTC Current Actuation Flight Record DVOM Oscilloscope Simulation ECU Fault Code Knowledge Interne	

Figure 2. Auto Mode - Control Module selection and preparation

ROM ID Reading

Select control module to be upgraded, and configure setting for communication between VCI and vehicle as shown in [figure 2]: VCI ON, DLC cable setting, etc. If the preparation for ROM ID reading is finished press "OK" button to read ROM ID from a control module as shown in [Figure 2]. ROM ID will be read repeatedly as shown in [Figure 3], and when ROM ID reading is finished, current ROM ID of selected control module will appear on the "Current ROM ID" item as shown in [Figure 4].



Figure 3. Auto Mode - ROM ID Reading - Processing

"Upgrade Event" item compares with current ROM ID, and lists events to be upgraded.



Figure 4. Auto Mode - ROM ID Reading - Result

Event Selection

Select an event when events for a control module are listed on the "Upgrade Event" section. When the event is selected, ROM ID for the event will be shown on the "Latest ROM ID" section as shown in [Figure 5].

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	Preparation Diagnosis Vehicle S/W Management Repair & Log Off @ EXIT
🍯 VCI : USB On 🚪 VMI : On	Internet On VIN ELANTRA(XD) / 2004 / G 2.0 DOHC System ENGINE / G 2.0 DOHC Search Prt Sc @
Vehicle S/W Management 🕬	ECU Upgrade
ECU Upgrade	Current ROM ID K0C120T0 CUPgrade Event 57. XD 2.0 CVVT 1->2 SHIFT FEEL
🥪 Manuai Mode	Event selection Ta click the TSB and know well the contents of ound
	1. To click the TSD and know wentile contents of event.
	2. To click the upgrade button for the ECU upgrade. According to the message, you should follow it.
ID Register	
Option Treatment	
Data Treatment	
Inspection / Test	
Shop DTC TSE	3 Case Analysis ETM DTC Current Actuation Flight Record DVOM Occiloscope Smuletion ECU Upgrade Searching Feedback Update

Figure 5. Auto Mode - Event Selection

When the "Update" button is clicked, confirm the selection as shown below.



Figure 6. Auto Mode - Upgrade confirm - No TSB

If there is a corresponding TSB for selected event, "TSB" button appears on the popup window as shown in [Figure 7]. Selection of TSB button to upgrade with the verification is recommended.

For some events, the DLC cable for the ROM ID Reading and the DLC cable for ECU upgrade can be different. Therefore, user must follow the instructions on the screen carefully when processing the upgrade.



Figure 7. Auto Mode - Upgrade confirm - TSB Check

Upgrade execution and cautions for processing

• Upgrade execution

By clicking "OK" button on the popup window shown in Figure 6 and Figure 7, ECU upgrade process is run automatically as shown in [figure 8].



Figure 8. Auto Mode - Upgrade execution - Processing

• Cautions for processing

The time required to complete an upgrade will vary. Menus and buttons are all disabled during the upgrade process.



Following instructions should be kept during the upgrade process, or else ECU could be damaged.

- Do not start the engine or turn the ignition key OFF.
- Do not operate any vehicle accessories during the upgrade process.
- Do not disconnect the VCI during the upgrade process.
- Do not turn the PC OFF during the upgrade process.
- Do not use any other programs on the PC during the upgrade process.
- Review the TSB (Technical Service Bulletin) before upgrade, as upgrade procedures can be different for each event.

If an error occurs during the upgrade process, mode changes automatically to the (manual mode). It is possible to force upgrade in error mode (manual mode).

Upgrade Completion

When the upgrade is completed, completion message and ROM ID appear on the screen as shown in [Figure 9]. Click "Ok" button after the final check whether ROM ID on the popup window is identical to the latest ROM ID.

After ECU upgrade is complete, check for and erase any DTCs set during the upgrade event(s). Verify normal ECU operation as needed.



Figure 9. Auto Mode - Upgrade completion

Manual Mode Upgrade

Control module selection and Preparation of upgrade

To upgrade ECU in error mode (manual mode), select "Manual Mode" in the left side of the ECU upgrade page.

When Manual mode is selected control modules appear below the "Manual Mode" menu. It even forces to upgrade current ROM ID to a previous version of ROM ID. However, control modules with no event items for a selected vehicle will not be listed. Therefore, if there is no event for a selected vehicle, no control module will appear.

🎒 ++ GDS ++ - Microsoft Interne	st Explorer	
	Preparation Diagnosis Vehicle S/W Management Repair	🔒 Log Off 🛛 EXIT
VCI : USB On 🚪 VMI : On	Internet On ELANTRA(XD) / 2004 / G 2.0 DOHC System ENGINE / G 2.0 DOHC	Search Prt Sc 🕼
Vehicle S/W Management	ECU Upgrade	
ECU Upgrade	Current ROM ID	
Auto Mode	Upgrade Event == Select event ==	
Manual Mode		
AUTOMATIC TRANSAXLE		
	Preparation	
	1) To connect the DLC(Data Link Cable) of VCI to the OBD-II connector of Vehicle side.	
	2) To turn on the VCI	
	3) Select the Upgrade Event, if you are ready.	
ID Register		
Option Treatment		
Data Treatment		
Inspection / Test		
Shop DTC TSE	3 Case ETM DTC Current Actuation Flight DVOM Oscilloscope Simulation ECU pgrade Searchin	e Knowledge Internet G Feedback Update

Figure 10. Manual Mode - Control module selection and preparation

Event Selection and Password Input



Select the appropriate upgrade event and system as shown.

Figure 11. Manual Mode - Event selection

Enter the appropriate password after selecting an upgrade event.

Information	
Password	
	OK Cancel

Figure 12. Manual Mode - Upgrade confirm and password input - No TSB

If there is a corresponding TSB for selected event, "TSB" button appears on the popup window as shown in [Figure 7]. Selection of "TSB" button to upgrade with the verification is recommended.

For some events, the DLC cable for the ROM ID Reading and the DLC cable for ECU upgrade can be different. Therefore, user must follow the instructions on the screen carefully when processing the upgrade.

Input password on the popup window shown in [Figure 12] and [Figure 13]. ECU upgrade will proceed when "OK" button is clicked.

Information			
Password			J
ОК	Cancel	TSB	

Figure 13. Manual Mode - Upgrade confirm and password input - TSB Check

Upgrade execution and cautions for processing

• Upgrade execution

By clicking "OK" button on the popup window shown in [Figure 12] and [Figure 13], the ECU upgrade will proceed as shown in [Figure 14].



Figure 14. Manual Mode - Upgrade execution - Processing

• Cautions for processing

Time taken for the upgrade process can be from several to several ten minutes according to control module and event. Menus and buttons are all disabled during the upgrade process. Following instructions should be kept during the upgrade process, or else ECU could be damaged.



• Do not disconnect the VCI during the upgrade process.

- Do not turn the PC OFF during the upgrade process.
- Do not use any other programs on the PC during the upgrade process.
- Review the TSB (Technical Service Bulletin) before upgrade, as upgrade procedures can be different for each event.

Upgrade Completion

When upgrade is completed, completion message and ROM ID after the ECU upgrade appear on the screen as shown in [Figure 15]. Click "Ok" button after the final check whether ROM ID on the popup window is identical to the latest ROM ID.

After ECU upgrade is complete, check for and erase any DTCs set during the upgrade event(s). Verify normal ECU operation as needed.



Figure 15. Manual Mode-Upgrade completion



Additional functions (ECU specific) are supported under "Vehicle S/W" management.

++ GDS ++ - Microsoft Internel	t Explorer	
GD) Mar	Preparation Diagnosis Vehicle SW Management Repair	e Log Off IT EDIT
🛊 VCI-USB On 🍯 VVI- On	ELANTRA(XD)/2004/G2.0 DOHC System ENGINE/G2.0 DOHC	Search PrtSc 🚱
Vehide S/W Management 🕬		
ECU Upgrade	ID Register	
ID Register	O System Identification	
System Identification Read VIN Write VIN	• Read VIN	
	O Write VIN	
	Data Treatment	
	Resetting Adaptive Values	
	Version Configuration	
	Inspection / Test	
	Readiness Test	
	CEvap.Leakage Test	
Option Treatment		
Data Treatment		
Inspection / Test		
Shop Manual Guide TSB	Case ETM DTC Current Aduation Flight DVOM Declarage Struktion ECU Fa	at Code Knowledge Internet enting Freedom Update

Figure 1. Initial page of Vehicle S/W Management (Engine)



Figure 2. Initial page of Vehicle S/W Management (Auto T/M)

System Identification

System Identification shows the ROM ID of the current ECU.



Figure 3. System Identification

Read VIN

The "Read VIN" function will display the VIN for the current ECU. Note that this function is currently supported for Engine ECUs on 2005 and later models.







Figure 5. Read VIN - Processing





Write VIN

The "Write VIN" function is used to enter the VIN into a new Engine ECU. This function can only be performed ONCE on an ECU. Incorrect VIN entry and partial VIN entry conditions cannot be changed. This function is not supported on 2004MY or earlier vehicles.



Figure 7. Write VIN - Initial Page

Write VIN	
	[WRITE VIN MODE] THIS FUNCTION IS USED TO WIRTE THE VIN INTO THE ECMIS MEMORY. A NEW ECM REQUIRES THAT THIS FUNCTION BE PERFORMED FOLLOWING INSTALLATION FAILURE TO PERFORM THIS FUNCTION WILL RESULT IN ML ILLUMINATION WITH DTC P0630. AFTER CONFIRMING THE WRITTEN VIN, ECU WILL ERASE THE FAULT CODE AND MIL. PRESS [OK] BUTTON, IF YOU ARE READY.

Figure 8. Write VIN - Processing

Write VIN	
	[WRITE VIN MODE] THIS FUNCTION IS USED TO WIRTE THE VIN INTO THE ECM'S MEMORY. A NEW ECM REQUIRES THAT THIS FUNCTION BE PERFORMED FOLLOWING INSTALLATION. FAILURE TO PERFORM THIS FUNCTION WILL RESULT IN MIL ILLUMINATION WITH DTC P0630. AFTER CONFIRMING THE WRITTEN VIN, ECU WILL ERASE THE FAULT CODE AND MIL. [CONDITION] : IG ON(ENGINE OFF) PRESS [OK] BUTTON, IF YOU START. VIN :
	Ok Cancel

Figure 9. Write VIN - Input Condition

Write VIN	
	[WRITE VIN MODE] THIS FUNCTION IS USED TO WIRTE THE VIN INTO THE ECM'S MEMORY. A NEW ECM REQUIRES THAT THIS FUNCTION BE PERFORMED FOLLOWING INSTALLATION. FAILURE TO PERFORM THIS FUNCTION WILL RESULT IN MIL ILLUMINATION WITH DTC P0630. AFTER CONFIRMING THE WRITTEN VIN, ECU WILL ERASE THE FAULT CODE AND MIL. [CONDITION] : IG ONKENGINE OFF) PRESS [OK] BUTTON, AFTER TYPING THE NUMBER. VIN :
	Ok

Figure 10. Write VIN - Input VIN

Write VIN	
	[WRITE VIN MODE] THIS FUNCTION IS USED TO WIRTE THE VIN INTO THE ECM'S MEMORY. A NEW ECM REQUIRES THAT THIS FUNCTION BE PERFORMED FOLLOWING INSTALLATION. FAILURE TO PERFORM THIS FUNCTION WILL RESULT IN ML ILLUMINATION WITH DTC P0630. AFTER CONFIRMING THE WRITTEN VIN, ECU WILL ERASE THE FAULT CODE AND MIL. [CONDITION] : IG ONKENGINE OFF) PRESS [OK] BUTTON, AFTER TYPING THE NUMBER. VIN : K M H D N 4 6 D 6 5 U 0 4 8 7 4 7
	Ok Cancel

Figure 11. Write VIN - Input VIN Complete



The "Option Treatment" function is used to adjust functionality on supported ECUs.

User Option		
6 100 120 140 7 20 200 180 7 20 200 240 8 0 240 240	TTEM AUTO DOOR LOCK STATUS : ARM/DISARM BY KEY(+RK) : HORN ANSWER BACK(+RK) : [DATA WRITE] 1. SELECT THE ITEM PUT TO USE MOUSI 2. SELECT THE VALUE IN COMBO BOX 3. PRESS [OK] BUTTON	VALUE 40 DISABLE ENABLE
	Ok	Cancel

Figure 1. User Option Initial page



The "Resetting Adaptive Values" function is used to reset adaptive learn data on specific ECUs.



Figure 1. Resetting Adaptive Values - Before Reset



Figure 2. Resetting Adaptive Values – Message Box



Figure 3. Resetting Adaptive Values – Test Complete

Version Configuration

The "Version Configuration" function is used on supported engine ECUs to configure for transaxle and ABS ECU options.



Figure 4. Version Configuration - Initial Page



Figure 5. Version Configuration - Message Box



Figure 6. Version Configuration – Test Complete



Readiness Test

The "Readiness Test" function indicates whether or not a specific test is supported, and whether or not that test is completed.



Figure 1. Readiness Test - Supporting List



Figure 2. Readiness Test - Complete

Evap. (Evaporative emission) Leakage Test

The "EVAP Leakage Test" mode is used on supported engine ECUs to force an EVAP leak test to perform. The availability of current data during an EVAP test depends on the ECU. The vehicle conditions must be set as indicated; tests may not run or may provide false results if conditions are incorrect.



Figure 3. Evap Leakage Test - Ready

Evap.Leakage Test	
	0.6 FUEL T.P. -0.01 psi -0.6 100 FUEL VOL. 0.0% 0 FUEL VOL : Fuel Tank Level Evalution Obtained by Gradient Method TEST STATE : PROCESSING TEST TIME : 16 sec
	Cancel

Figure 4. Evap. Leakage Test – Operation



Figure 5. Evap. Leakage Test – Error



Figure 6. Evap. Leakage Test - Complete

Monitoring Test



Figure 7. Monitoring Test Result

Readiness Test		
Readiness Test	[READINESS TEST] THE PURPOSE OF THIS SERVICE IS TO ALLOW, TO SYSTEM STATUS INFORMATION. MISFIRE MONITORING FUEL SYSTEM MONITORING COMPREHENSIVE COMPONENT MONITORING CATALYST MONITORING HEATED CATALYST MONITORING EVAP. SYSTEM MONITORING SECONDARY AIR SYSTEM MONITORING A/C SYSTEM REFRIGERANT MONITORING OXYGEN SENSOR MONITORING OXYGEN SENSOR MONITORING EGR SYSTEM MONITORING	ACCESS SUPPORTED SUPPORTED SUPPORTED NOT SUPP. SUPPORTED NOT SUPP. SUPPORTED SUPPORTED SUPPORTED SUPPORTED NOT SUPP.
	PRESS [OK]BUTTON, IF YOU READY	
	Ok	

Figure 8. Readiness Test - 1

Readiness Test		
	[READINESS TEST] THE PURPOSE OF THIS SERVICE IS TO ALLOW TO SYSTEM STATUS INFORMATION.	ACCESS
and the second sec	FUEL SYSTEM MONITORING	
	COMPREHENSIVE COMPONENT MONITORING	COMPLETE
- Monitoring Test Results	CATALYST MONITORING	NOT CMPLTD
	HEATED CATALYST MONITORING	NOT APPLIC
Readiness Test	EVAP. SYSTEM MONITORING	NOT CMPLTD
HO2S Monitoring Test	SECONDARY AIR SYSTEM MONITORING	NOT APPLIC
Those wonitering rest	A/C SYSTEM REFRIGERANT MONITORING	NOT APPLIC
	OXYGEN SENSOR MONITORING	NOT CMPLTD
	UXYGEN SENSUR HEATER MUNITURING	NOT ADDUC
	EGR STSTEM MONITORING	
	PRESS [OK]BUTTONIE YOU READY	
· · · · · · · · · · · · · · · · · · ·	Ok	

Figure 9. Readiness Test - 2





OBD Monitoring Test	
Monitoring Test Results Readiness Test HO2S Monitoring Test BDD Monitoring Test	[OBD-II MONITORING TEST] THE PURPOSE OF THIS SERVICE IS TO ALLOW TO ACCESS TO RESULTS FOR ON-BOARD DIAGNOSTIC MONITORING TESTS OF SPECIFIC COMPONENTS OR SYSTEM THAT ARE NOT CONTINUOUSLY MONITORED. 1.CATALYST MONITORING 2.HO2S MONITORING 3.EVAP EMISSION MONITORING 4.THERMOSTAT MONITORING 5.HO2S HEATER(S2) 6.HO2S MONITORING(S1) 7.ECT RATIONALITY SOME OF THE MONITORING RESULTS MAY BE INACCURATE. PRESS THE LEFT MENU OF RESULT, IF YOU WANT TO CHECK THE RESULTS.
	Ok

Figure 11. OBD Monitoring Test

Catalyst Monitoring	
OBD Monitoring Test OBD Monitoring Test OBD Monitoring Catalyst Monitoring HO2S Monitoring Evap.Emission Monito Thermostat Monitorir HO2S Heater(S2) HO2S Heater(S1) ECT Rationality	[CATALYST MONITORING] CID : CATALYST SYSTEM EFFICIENCY(B1) RESULT : PASS DATA : 0.000 LIMT : 0.074 POSSIBLE MALFUNCTION CAUSES : CATALYST CONVERTER MALFUNCTION CID : CATALYST SYSTEM EFFICIENCY(B2) RESULT : PASS DATA : 0.000 LIMT : 0.074 POSSIBLE MALFUNCTION CAUSES : CATALYST CONVERTER MALFUNCTION SOME OF THE MONITORING RESULTS MAY BE INACCURATE. PRESS [OK]BUTTON AFTER CHECKING.
	Ok





Figure 13. HO2S Monitoring - 1

HO2S Monitoring	
OBD Monitoring Test OBD Monitoring Test OBD Monitoring Catalyst Monitoring OBD Monitori	[HO2S MONITORING] CID : L->R TIME(B1S1) RESULT : PASS DATA : 2560 SEC LIMT : 2.940 SEC POSSIBLE MALFUNCTION CAUSES : L->R SW TIME MALFUNCTION CID : R->L TIME(B1S1) RESULT : PASS DATA : 638.976 SEC LIMT : 1276.958 SEC POSSIBLE MALFUNCTION CAUSES : R->L SW TIME MALFUNCTION CID : LEAN FREQUENCY RESP(B2S1) RESULT : PASS DATA : 0.000 SEC LIMT : 1.248 SEC POSSIBLE MALFUNCTION CAUSES : LEAN FREQUENCY RESPONSE MALFUNCTION
	Prev Next Cancel

Figure 14. HO2S Monitoring - 2



Figure 15. HO2S Monitoring - 3

H02S Monitoring	
OBD Monitoring Test Gatalyst Monitoring HO2S Monitoring Evap.Emission Monito Thermostat Monitorin HO2S Heater(S2) HO2S Heater(S1) ECT Rationality	[HO2S MONITORING] CID : R->L TIME(B2S1) RESULT : PASS DATA : 0.000 SEC LIMT : 0.640 SEC POSSIBLE MALFUNCTION CAUSES : R->L SW TIME MALFUNCTION SOME OF THE MONITORING RESULTS MAY BE INACCURATE PRESS [OK]BUTTON AFTER CHECKING.
	Prev Ok





Figure 17. Evap. Emission Monitoring - 1

Evap.Emission Monitoring	
OBD Monitoring Test OBD Monitoring Test Oatalyst Monitoring HO2S Monitoring Evap Emission Monito Thermostat Monitorir HO2S Heater(S2) HO2S Heater(S1) ECT Rationality	[EVAP.EMISSION MONITORING] CID : CPV STUCK RESULT : PASS DATA : -0.000 hPa LIMT : -2.000 hPa POSSIBLE MALFUNCTION CAUSES : CANISTER PURGE VALVE MECH.STUCK CID : TANK PS INT RESULT : PASS DATA : -0.000 hPa LIMT : 0.500 hPa POSSIBLE MALFUNCTION CAUSES : FUEL TANK PRESSURE SENSOR SIGNAL INTERMITTNET CID : TANK PS CONST. RESULT : PASS DATA : 0.019 V LIMT : 0.015 V POSSIBLE MALFUNCTION CAUSES : FUEL TANK PRESSURE SIGNAL CONSTANT
	Prev Ok

