



## Technical Service BULLETIN

December 22, 2006

Title:

### ECM CALIBRATION UPDATE: PERFORMANCE ENHANCEMENT DURING ENGINE WARM-UP

Models:

'06 RAV4 (2AZ-FE)

ENGINE  
EG061-06

**Introduction** To enhance acceleration under “cold start” conditions, the Engine Control Module/ECM (SAE term: Powertrain Control Module/PCM) calibration has been revised. Please use the following procedure to update the transmission calibration.

**NOTE:**

- Version 14.0a or later Diagnostic Tester software is required to perform this procedure.
- Before proceeding, verify the ECM (PCM) calibration has NOT been updated by checking for the Authorized Modifications Label (shown in step 1 of the Repair Procedure).

**Applicable  
Vehicles**

- 2006 model year **RAV4** vehicles equipped with **2AZ-FE engine** and **4-speed automatic transmission**.

**Parts  
Information**

DRIVETRAIN	PREVIOUS PART NUMBER	CURRENT PART NUMBER	PART NAME	QTY
4x2	89661-42###	89661-42E51	Computer, Engine Control (ECM/PCM)	1
4x4	89661-42###	89661-42E61		1
All	N/A	00451-00001-LBL	Authorized Modifications Label	1

**NOTE:**

- The ECM (PCM) should NOT be replaced as part of the repair procedure.
- Authorized Modification Labels may be ordered in packages of 25 from the Materials Distribution Center (MDC) through Dealer Daily Dealer Support Materials System, or by calling the MDC at 1-800-622-2033.

**Warranty  
Information**

OP CODE	DESCRIPTION	TIME	OFP	T1	T2
EG5051	Recalibrate ECM (PCM) Engine & Transmission	0.7	89661-42### 89661-42###	26	99



**Applicable Warranty\*:**

This repair is covered under the Toyota Federal Emissions Warranty. This warranty is in effect for 96 months or 80,000 miles, whichever occurs first, from the vehicle's in-service date.

\* Warranty application is limited to correction of a problem based upon a customer's specific complaint.



**Required  
SSTs**

ITEM NO.	SPECIAL SERVICE TOOLS (SSTs)	PART NUMBER	QTY	DRW**
1	<b>Toyota Diagnostic Tester Kit*</b> NOTE: <ul style="list-style-type: none"> <li>All components from this kit/set are required.</li> <li>12 Megabyte Diagnostic Tester Program Card (P/N 01002593–005) with version 14.0a Software (or later) is required.</li> </ul> 	TOY220036	1	9
2	<b>CAN Interface Module Kit*</b> NOTE: <ul style="list-style-type: none"> <li>All components from this kit/set are required.</li> </ul> 	01002744	1	9

\* Essential SSTs.

\*\* Drawer number in SST Storage System.

**NOTE:**

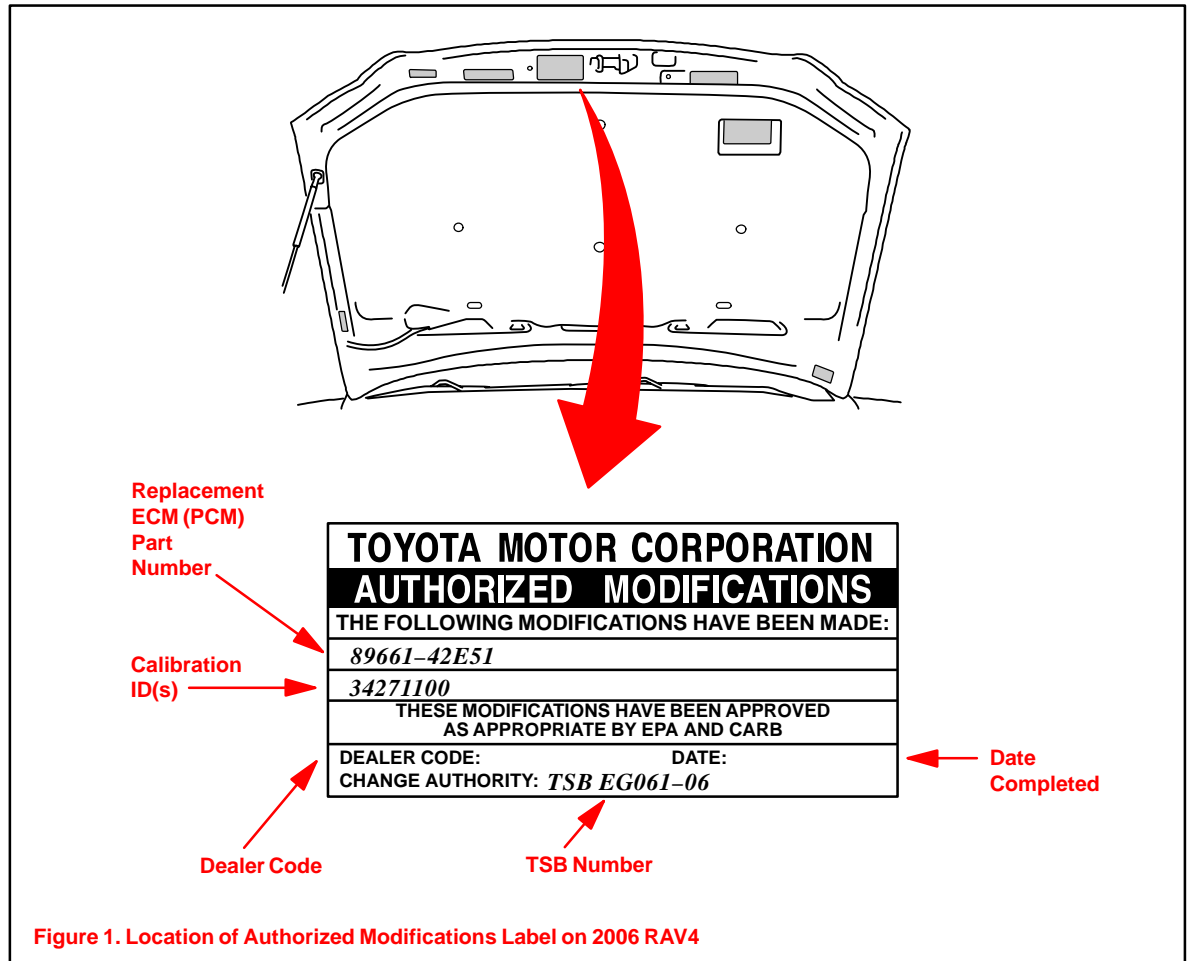
**Additional Diagnostic Tester Kits, CAN Interface Modules, Program Cards, or other SSTs may be ordered by calling SPX/OTC at 1-800-933-8335.**

**Calibration  
Identification  
Chart**

MODEL YEAR	MODEL	ENGINE	DRIVETRAIN	PREVIOUS CALIBRATION ID	NEW CALIBRATION ID	VDS
2006	RAV4	2AZ-FE	4X2	34248000 34248100 34271000	34271100	ZD31V ZD32V ZD33V ZD34V ZD35V
			4X4	34249000 34249100 34272000	34272100	BD31V BD32V BD33V BD34V BD35V

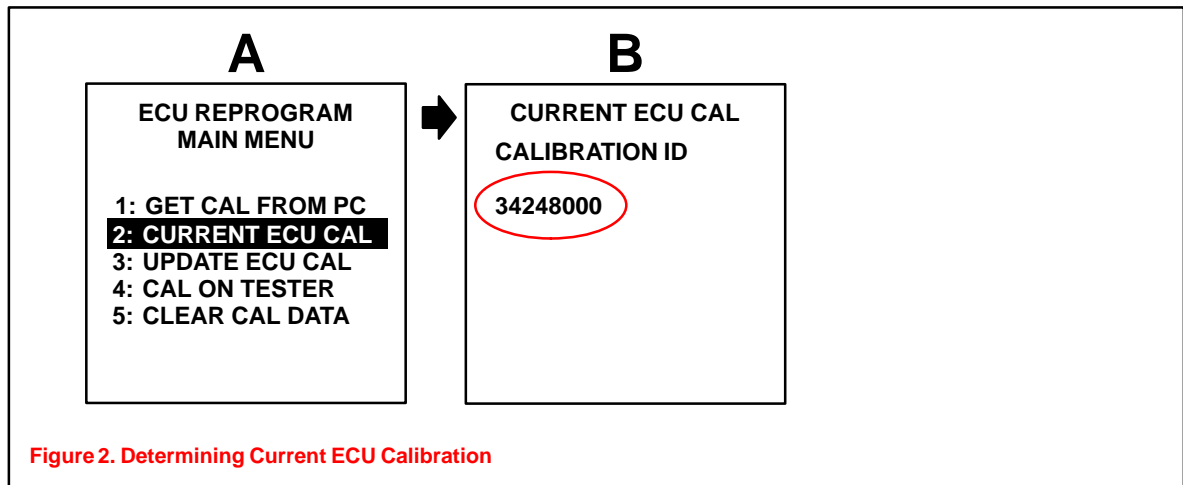
**Repair  
Procedure**

1. Check for the Authorized Modifications Label affixed to the vehicle in the location shown in Figure 1. Confirm if the ECM (PCM) calibration has been updated. If the calibration listed is NOT the latest ECM (PCM) calibration — go to step 2.



**Repair  
Procedure**  
(Continued)

2. Connect the Diagnostic Tester to the vehicle and select CURRENT ECU CAL from the ECU REPROGRAM MAIN MENU. Determine the vehicle's current ECU calibrations (see Figure 2).
  - The sample screen prints seen below are the 14.0a software version and may differ from subsequent software versions.



**NOTE:**

- If the Calibration ID matches the “Previous Calibration ID” as shown in the Calibration Identification Chart in this TSB, proceed with flash reprogramming.
- If the Calibration ID matches the “New Calibration ID” as shown in the Calibration Identification Chart, this vehicle has already been programmed. Refer to the Technical Information System (TIS) for diagnostic procedures applicable to any stored DTCs.

3. If the ECU calibration ID is NOT the same as the “New Calibration ID” listed previously, proceed to Flash Reprogram ECM (PCM).

**4. Flash Reprogram ECM (PCM)**

**NOTE:**

A battery charger **MUST** be connected to the battery and set at a medium charge setting during the Flash Reprogram procedure in order to maintain battery voltage above 11.4 volts and prevent damage to the ECM (PCM).

Follow the procedures outlined in TSB No. SS002-01, “*ECU Flash Reprogramming Process*,” and flash the ECM (PCM) with the NEW calibration file update.

**NOTE:**

If the “Check Engine” light is ON when the ignition is turned back ON to begin the reprogramming process, a scan tool cable problem exists. Refer to TSB No. SS004-01, “*ECU Flash Reprogramming Error Message*.”

5. Start the engine and warm it up to normal operating temperature before test-driving.

**Repair  
Procedure**  
(Continued)

6. Test-drive vehicle to confirm proper vehicle operation and to complete the ECM learning process.
  - A. Complete the first ECM learning process:

Allow the vehicle to accelerate 5 times while maintaining steady accelerator pedal angle (approximately 25 degrees) during the transmission upshifts.
  - B. Complete the second ECM learning process:

Moderately accelerate engine until vehicle speed is over 45 mph and transmission has completed all shifts including torque converter lockup.
7. Enter the required information on the Authorized Modifications Label and affix it to the vehicle at the location shown in Figure 1. The Authorized Modifications Label is available through the MDC, P/N 00451–00001–LBL.
8. Calibration update is complete.