

DTC	P0604	Internal Control Module Random Access Memory (RAM) Error
DTC	P0606	ECM / PCM Processor
DTC	P0607	Control Module Performance
DTC	P0657	Actuator Supply Voltage Circuit / Open

DESCRIPTION

ES

The ECM continuously monitors its own internal memory status, internal circuits, and output signals transmitted to the throttle actuator. This self-check insures that the ECM is functioning properly. If any malfunction is detected, the ECM sets the appropriate DTC and illuminates the MIL.

The ECM memory status is diagnosed by internal mirroring of the main CPU and the sub CPU to detect Random Access Memory (RAM) errors. The two CPUs also perform continuous mutual monitoring. The ECM illuminates the MIL and sets a DTC if: 1) outputs from the two CPUs are different or deviate from the standards, 2) the signals sent to the throttle actuator deviate from the standards, 3) a malfunction is found in the throttle actuator supply voltage, and 4) any other ECM malfunction is found.

DTC No.	DTC Detection Conditions	Trouble Areas
P0604 P0606 P0607 P0657	ECM internal error (1 trip detection logic)	ECM

MONITOR STRATEGY

Related DTCs	P0604: ECM RAM error P0606: ECM range check P0607: ECM CPU malfunction P0657: ETCS power supply
Required Sensors/Components (Main)	ECM
Required Sensors/Components (Related)	-
Frequency of Operation	Once per driving cycle: P0657 Continuous: P0604, P0606, P0607
Duration	P0604: 6 times or more P0606, P0607 and P0657: Within 1 second
MIL Operation	Immediate
Sequence of Operation	None

TYPICAL ENABLING CONDITIONS

Monitor runs whenever following DTCs not present	None
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TYPICAL MALFUNCTION THRESHOLDS

ECM RAM errors (P0604):

RAM mirror check	fail
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ECM CPU range check (P0606):

Either of following conditions met:	-
Difference between throttle valve position of main CPU and throttle valve position of sub CPU	0.3 V or more
Difference between accelerator pedal position of main CPU and accelerator pedal position of sub CPU	0.3 V or more

ECM CPU malfunction (P0607):

Either A or B met	-
A. Following conditions met	
CPU reset	1 time or more
Learned TP - learned APP	0.4 V or more
Throttle actuator	OFF
B. CPU reset	2 times or more

Electronic throttle control system power supply function of ECM malfunctions (P0657):

ETCS (Electronic Throttle Control System) power supply when ignition switch turned ON	7 V or more
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INSPECTION PROCEDURE

Read freeze frame data using an intelligent tester. Freeze frame data record the engine condition when malfunctions are detected. When troubleshooting, freeze frame data can help determine if the vehicle was moving or stationary, if the engine was warmed up or not, if the air-fuel ratio was lean or rich, and other data, from the time the malfunction occurred.

ES

1 CHECK ANY OTHER DTCS OUTPUT (IN ADDITION TO DTC P0604/P0606/P0607/P0657)

- (a) Connect an intelligent tester to the DLC3.
- (b) Turn the ignition switch ON.
- (c) Turn the tester ON.
- (d) Enter the following menus: DIAGNOSIS / ENHANCED II / DTC INFO / CURRENT CODES.
- (e) Read the DTC.

Result

Display (DTC Output)	Proceed To
P0604, P0606, P0607, P0657	A
No output DTC	B

B  **GO TO DTC CHART (See page ES-57)**

A 

REPLACE ECM (See page ES-446)