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

MONITOR DESCRIPTION

The ECM continuously monitors it's internal memory status, internal circuits, and output signals to the throttle actuator. This self−check insures that the ECM is functioning properly. If any malfunction is detected, the ECM will set the appropriate DTC and illuminate 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 sets a DTC if: 1) outputs from the 2 CPUs are different and deviate from the standards, 2) the signals 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 Condition	Trouble Area
P0604 P0606 P0607 P0657	ECM internal error (1 trip detection logic)	ECM

MONITOR STRATEGY

Related DTCs	P0604: RAM Error P0606: CPU Malfunction P0607: ECM CPU Malfunction P0657: ETCS Power Supply
Required sensors / components (Main)	ECM
Required sensors / components (Related)	−
Frequency of operation	Continuous
Duration	Within 1 seconds
MIL operation	Immediate
Sequence operation	None

TYPICAL ENABLING CONDITIONS

The monitor will run whenever these DTCs are not present	See page 05−507

TYPICAL MALFUNCTION THRESHOLDS

RAM Error:

RAM	RAM check failure

CPU Malfunction:

Either of the following condition is met:	Condition 1 or 2
1. Difference between TP of main CPU and TP of sub CPU	0.3 V or more
2. Difference between APP of main CPU and APP of sub CPU	0.3 V or more

CPU Malfunction:

Either of the following condition is met:	Condition 1 or 2
1. All of the following conditions are met:	Condition (a), (b) and (c)
(a) CPU reset	1 time or more
(b) Difference between TP and APP learned	0.4 V or more
(c) Electronic throttle actuator	OFF
2. CPU reset	2 times or more

ETCS Power Supply:

ETCS power supply when ignition switch OFF to ON	7 V or more

INSPECTION PROCEDURE

HINT:

Read freeze frame data using the hand−held tester or the OBD II scan tool. Freeze frame data records the engine conditions when a malfunction is detected. When troubleshooting, freeze frame data can help determine if the vehicle was running or stopped, 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.

REPLACE ECM (See page 10−25)