

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 its 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 RAM (Random Access Memory) 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 Detecting Condition	Trouble Area
P0604 P0606 P0607 P0657	ECM malfunction	• ECM

MONITOR STRATEGY

Related DTCs	P0604	Random access memory (RAM) error
	P0606	CPU malfunction
	P0607	ECM range check
	P0657	ETCS power supply
Required sensors/components	ECM	
Frequency of operation	Continuous	
Duration	Within 1 sec.	
MIL operation	Immediate	
Sequence of operation	None	

TYPICAL ENABLING CONDITIONS

The monitor will run whenever these DTCs are not present	See page DI-18
The typical enabling condition is not available	—

TYPICAL MALFUNCTION THRESHOLDS

Detection Criteria	Threshold
P0604:	
RAM	RAM check fail
P0606:	
Either of the following conditions 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
P0607:	
Either of the following conditions 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
P0657:	
ECTS power supply when ignition switch OFF to ON	7 V or more

INSPECTION PROCEDURE

HINT:

Read freeze frame data using the hand-held tester. 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, as well as other data from the time when a malfunction occurred.

Replace ECM (See page [SF-66](#)).