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| 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 ensures 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 | ECM |

MONITOR STRATEGY

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

TYPICAL ENABLING CONDITIONS

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| The monitor will run whenever these DTCs are not present | See page 05-377 |
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TYPICAL MALFUNCTION THRESHOLDS

RAM Error P0604:

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| RAM | RAM check failure |
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CPU Malfunction P0606:

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| 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 |

ECM Range Check P0607:

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| Either of the following conditions is met: | Condition 1 or 2 |
| 1. All of the following conditions are met: | Conditions (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 P0657:

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| ETCS power supply when ignition switch turns from OFF to ON | 7 V or more |
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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.

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| REPLACE ECM (See page 10-24) |
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