CHECKING MONITOR STATUS

The purpose of the monitor result (mode 06) is to allow access to the results for on-board diagnostic monitoring tests of specific components/systems that are not continuously monitored. Examples are catalyst, evaporative emission (EVAP) and thermostat.

The monitor result allows the intelligent tester to display the monitor status, test value, minimum test value and maximum test limit. These data are displayed after the vehicle has been driven to run the monitor.

When the test value is not between the minimum test limit and maximum test limit, the ECM (PCM) interprets this as a malfunction. When the component is not malfunctioning, if the difference of the test value and test limit is very small, the component will malfunction in the near future. Perform the following instructions to view the monitor status. Although these instructions refer to the Lexus/Toyota diagnostic tester, it can be checked using a generic OBD II scan tool. Refer to your scan tool operator's manual for specific procedures.

1. PERFORM MONITOR DRIVE PATTERN

(a) Connect the intelligent tester to the DLC3.

(b) Turn the ignition switch and intelligent tester ON.

(c) Clear the DTCs (see page ES-37).

(d) Run the vehicle in accordance with the applicable drive pattern described in READINESS MONITOR DRIVE PATTERN (see page ES-23). DO NOT turn the ignition switch OFF.

NOTICE:

The test results will be lost if the ignition switch is turned OFF.

2. ACCESS MONITOR RESULT

(a) Select from the intelligent tester menus: DIAGNOSIS / ENHANCED OBD II / MONITOR INFO and MONITOR RESULT. The monitor status appears after the component name.

- INCMP: The component has not been monitored yet.
- PASS: The component is functioning normally.
- FAIL: The component is malfunctioning.

(b) Confirm that the component is either PASS or FAIL.

(c) Select the component and press ENTER. The accuracy test value appears if the monitor status is either PASS or FAIL.

3. CHECK COMPONENT STATUS

(a) Compare the test value with the minimum test limit (MIN) and maximum test limit (MAX).

(b) If the test value is between the minimum test limit and maximum test limit, the component is functioning normally. If not, the component is malfunctioning. The test value is usually significantly higher or lower than the test limits. If the test value is on the borderline of the test limits, the component will malfunction in the near future.
HINT:
The monitor result might on rare occasions be PASS even if the malfunction indicator lamp (MIL) is illuminated. This indicates the system malfunctioned on a previous driving cycle. This might be caused by an intermittent problem.

4. MONITOR RESULT INFORMATION

If you use a generic scan tool, multiply the test value by the scaling value listed below.

(a) Front Heated Oxygen Sensor

Bank 1 Sensor 1

Monitor ID	Test ID	Scaling	Unit	Description of Test Value
$01	$03	Multiply by 0.001	V	Criteria of Lean sensor. O2S is Lean when voltage is lower than this value
$01	$04	Multiply by 0.001	V	Criteria of Rich sensor. O2S is Rich when voltage is higher than this value
$01	$05	Multiply by 0.001	Seconds	Rich - Lean switch time
$01	$06	Multiply by 0.001	Seconds	Lean - Rich switch time
$01	$07	Multiply by 0.005	V	Minimum sensor voltage
$01	$08	Multiply by 0.005	V	Maximum sensor voltage
$01	$81	Multiply by 0.001	Seconds	Duration while sensor voltage stuck Lean or Rich

(b) Rear Heated Oxygen Sensor

Bank 1 Sensor 2

MID	TID	Scaling	Unit	Description
$02	$05	Multiply by 0.001	Seconds	Rich - Lean switch time
$02	$06	Multiply by 0.001	Seconds	Lean - Rich switch time
$02	$07	Multiply by 0.001	V	Minimum sensor voltage
$02	$08	Multiply by 0.001	V	Maximum sensor voltage
$02	$8A	Multiply by 1	Time	Frequency of sensor switching
$02	$8B	Multiply by 0.001	Seconds	0.35 to 0.2 V sensor switch time
$02	$8D	Multiply by 0.001	Seconds	Duration that sensor voltage drops to 0.2 V during fuel cut

(c) Catalyst

Bank 1

MID	TID	Scaling	Unit	Description
$21	$A1	Multiply by 0.0003	No dimension	Locus length ratio of O2S sensor 1 and sensor 2
$21	$A2	Multiply by 0.0003	No dimension	Voltage area ratio of O2S sensor 1 and sensor 2

MID	TID	Scaling	Unit	Description
$21	$A3	Multiply by 0.0003	No dimension	Locus length ratio of O2S sensor 1 and sensor 2
$21	$A4	Multiply by 0.0003	No dimension	O2S frequency ratio of sensor 2 and sensor 1
$21	$A5	Multiply by 0.0003	No dimension	Locus length ratio of O2S sensor 1 and sensor 2
$21	$A6	Multiply by 0.0003	No dimension	Voltage area ratio of O2S sensor 1 and sensor 2

(d) EVAP (Key-off Type)

MID	TID	Scaling	Unit	Description
$3D	$C9	Multiply by 0.01	kPa	Test value for small leak (P0456)
$3D	$CA	Multiply by 0.01	kPa	Test value for gross leak (P0455)
$3D	$CB	Multiply by 0.01	kPa	Test value for leak detection pump stuck OFF (P2401)
$3D	$CD	Multiply by 0.01	kPa	Test value for leak detection pump stuck ON (P2402)
$3D	$CE	Multiply by 0.01	kPa	Test value for vent valve stuck OFF (P2420)
$3D	$CF	Multiply by 0.01	kPa	Test value for vent valve stuck ON (P2419)
$3D	$D0	Multiply by 0.01	kPa	Test value for reference orifice low flow (P043E)
$3D	$D1	Multiply by 0.01	kPa	Test value for reference orifice high flow (P043F)
$3D	$D4	Multiply by 0.01	kPa	Test value for purge VSV stuck closed (P0441)
$3D	$D5	Multiply by 0.01	kPa	Test value for purge VSV stuck open (P0441)
$3D	$D7	Multiply by 0.01	kPa	Test value for purge flow insufficient (P0441)

(e) Oxygen Sensor Heater

Bank 1 Sensor 1

MID	TID	Scaling	Unit	Description
$41	$90	Multiply by 0.001	A	Maximum sensor heater current

Bank 1 Sensor 2

MID	TID	Scaling	Unit	Description
$42	$90	Multiply by 0.001	A	Maximum sensor heater current

(f) Misfire - All Cylinders

MID	TID	Scaling	Unit	Description
$A1	$0B	Multiply by 1	Time	Exponential Weighted Moving Average (EWMA) misfire counts for last 10 driving cycles - Total
$A1	$0C	Multiply by 1	Time	Misfire counts for last driving cycle and current driving cycle - Total

(g) Misfire - Cylinder 1

MID	TID	Scaling	Unit	Description
$A2	$0B	Multiply by 1	Time	EWMA misfire counts for last 10 driving cycles - Total
$A2	$0C	Multiply by 1	Time	Misfire counts for last driving cycle and current driving cycle - Total

(h) Misfire - Cylinder 2

MID	TID	Scaling	Unit	Description
$A3	$0B	Multiply by 1	Time	EWMA misfire counts for last 10 driving cycles - Total
$A3	$0C	Multiply by 1	Time	Misfire counts for last driving cycle and current driving cycle - Total

(i) Misfire - Cylinder 3

MID	TID	Scaling	Unit	Description
$A4	$0B	Multiply by 1	Time	EWMA misfire counts for last 10 driving cycles - Total
$A4	$0C	Multiply by 1	Time	Misfire counts for last driving cycle and current driving cycle - Total

(j) Misfire - Cylinder 4

MID	TID	Scaling	Unit	Description
$A5	$0B	Multiply by 1	Time	EWMA misfire counts for last 10 driving cycles - Total
$A5	$0C	Multiply by 1	Time	Misfire counts for last driving cycle and current driving cycle - Total

(k) Thermostat

MID	TID	Scaling	Unit	Description
$E1	$E8	Multiply by 0.1	°C	ECT sensor output when estimated ECT reaches malfunction criteria