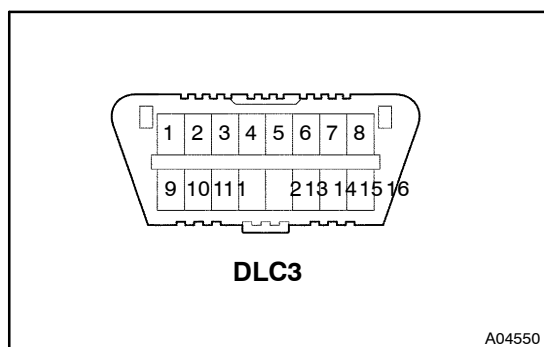


PRE-CHECK

1. DIAGNOSIS SYSTEM

(a) Description

ECM controls the function of immobiliser on this vehicle. Data of the immobiliser or DTC can be read from DLC3 of the vehicle. When a trouble occurs on immobiliser, MIL does not light up but DTC inspection is performed. Therefore when there seems to be a trouble on immobiliser, use hand –held tester or SST to check and trouble-shoot it.



(b) Inspect the DLC3.

The vehicle's ECM uses ISO 9 – 141–2 for communication. The terminal arrangement of DLC3 complies with SAEJ1962 and matches the ISO 9 – 141–2 format.

Tester connection	condition	Specified condition
7 (Bus ⊕ Line) – 5 (Signal ground)	During communication	Pulse generation
4 (Chassis Ground) – Body	Always	1 Ω or less
5 (Signal Ground) – Body	Always	1 Ω or less
16 (B+) – Body	Always	9 – 14 V

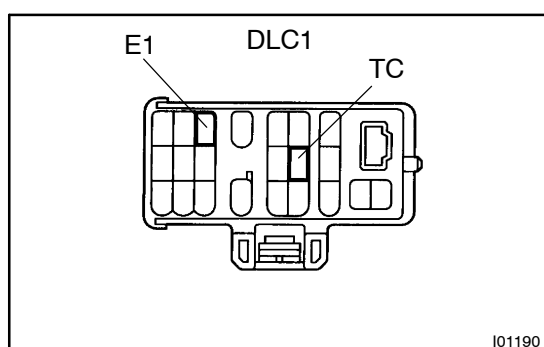
HINT:

If your display shows "UNABLE TO CONNECT TO VEHICLE" when you have connected the cable of hand –held tester to DLC3, turned the ignition switch ON and operated the hand –held tester, there is a problem on the vehicle side or tool side.

- If communication is normal when the tool is connected to another vehicle, inspect DLC3 on the original vehicle.
- If communication is still not possible when the tool is connected to another vehicle, the problem is probably in the tool itself, so consult the Service Department listed in the tool's instruction manual.

2. INSPECT DIAGNOSIS

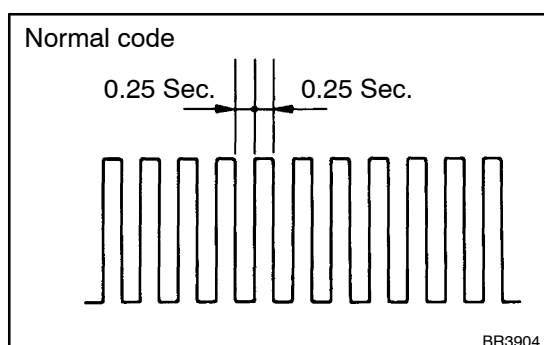
- (a) Check the DTC (Using hand-held tester).
- (1) Prepare hand-held tester.
 - (2) Connect hand-held tester to DLC3 under the instrument panel lower pad.
 - (3) Turn the ignition switch ON and turn hand-held tester switch ON.
 - (4) Use hand-held tester to check the DTCs. and "Snap-shot function" which records the monitor data (For operating instructions, see the hand-held tester instruction book.).
 - (5) [See page DI-885](#) to confirm the details of the DTCs.



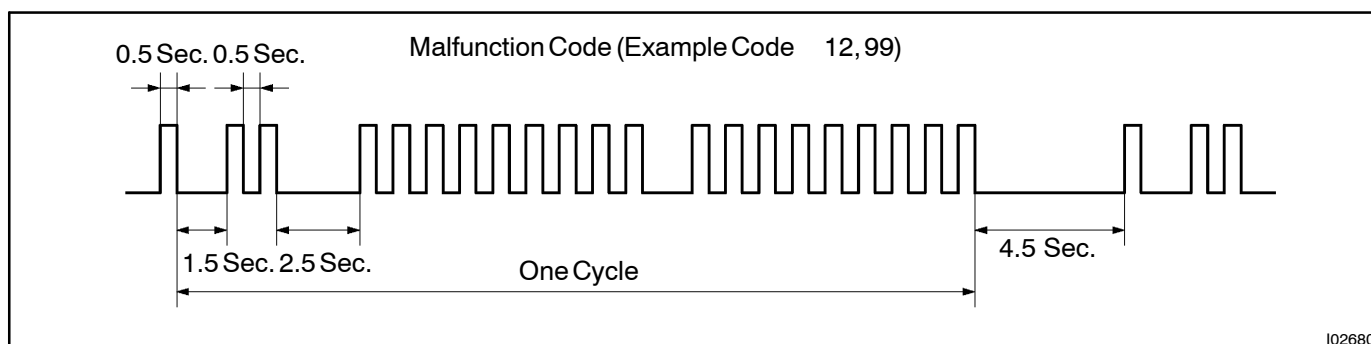
- (b) Check the DTC (Using diagnosis check wire).
- (1) Turn ignition switch ON.
 - (2) Using SST, connect between terminals 11 (TC) and 3 (E1) of DLC 1.
SST09843 –18020
 - (3) Read the diagnostic trouble code from malfunction indicator lamp.

HINT:

- If a diagnostic trouble code is not output, check the TC terminal circuit.
- ECM controls the immobiliser function on this vehicle, DTC is out put with engine data.



- As an example, the blinking patterns for codes; normal, 12 and 99 are shown in the charts.



(4) When DTC "99" is output, there is a trouble of immobiliser. Start troubleshooting referring to PROBLEM SYMPTOMS TABLE.

(5) After completing the check, disconnect terminals 11 (TC) and 3 (E 1) and turn off the display.

HINT:

In the event of 2 or more malfunction codes, indication will begin from the smaller numbered code and continue in order to the larger.

(c) Clear the DTC.

The following operations will erase the DTCs and freeze frame data.

- (1) Operating the hand –held tester to erase the codes (See the hand –held tester instruction book for operating instructions.).
- (2) Disconnecting the battery terminals or EFI fuse.

3. CHECK HAND –HELD TESTER

(a) ECU DATA MONITOR

(1) Make a judgement of good or bad and find out a malfunctioning part by the data monitor.

Standard:

TRANSPONDER KEY ECU

Item	Condition	Specified Condition
IMMOBILISER	Ignition switch ON → When key is not inserted in the ignition switch cylinder	UNSET/SET
MASTER KEY	Ignition switch ON with master key → Pull out key from ignition switch cylinder	CORRESP/WRONG
SUB KEY	Ignition switch ON with sub –key → Pull out key from ignition switch cylinder	CORRESP/WRONG
REGIST MAS CODE	–	0 – 3
REGIST SUB CODE	–	0 – 1
KEY SW	Ignition switch ON → Without key	ON/OFF
IG SW	Ignition switch ON → OFF	ON/OFF

(b) ACTIVE TEST

(1) Make a judgement of good or bad and find out a malfunctioning part by the active test.

Standard:

TRANSPONDER KEY ECU

Item	Operation
SECURITY INDIC	ON / OFF