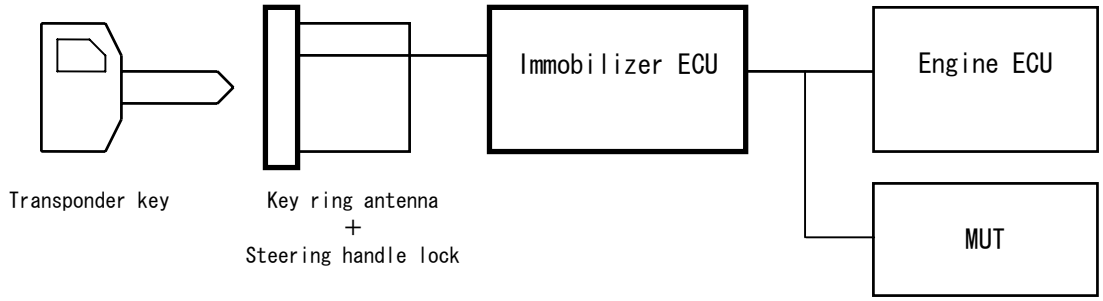
Immobilizer ECU User's Manual

1. General

The immobilizer system is an electronic anti-theft system. This system prevents the engine from unauthorized starting such as hot-wiring, etc. The engine would not start until the ID code registered in the ignition key coincides with the code registered in the immobilizer ECU on the vehicle.



Major components and functions

Name	Function
Transponder	・Sends ID code to the immobilizer ECU via key ring antenna.
Key ring antenna	・Supplies power and sends / receives data to and from the transponder by means of electromagnetic coupling
Immobilizer ECU	・Receives the ID code from the transponder and compares it with the code registered in the immobilizer ECU. ・Sends the condition code to the engine ECU.
Engine ECU	[Functions related to the immobilizer system] ・Receives the condition code from the immobilizer ECU and operates to prepare / prohibit the start of the engine.

Handling precaution

(1) When starting the engine, keep metal objects (iron, etc.), electric equipment (cellular phone, electric razor, etc.) and other immobilizer keys away from the steering handle lock.

(2) Never damage the plastic key bow with a knife or fill transponder or similar articles inside.

2. System operation

(1) Operation start

When the ignition key is turned to the ON position, battery power is supplied to the immobilizer ECU. And at this time, the engine ECU sends request code to the immobilizer ECU.

(2) Sending to the transponder (Immobilizer ECU to Transponder)

When the request code is received from the engine ECU, the immobilizer ECU sends electromagnetic wave to the transponder via key ring antenna to supply power and send data to the transponder by means of electromagnetic coupling.

(3) Sending ID code (Transponder to Immobilizer ECU)

The transponder sends the ID code to the immobilizer ECU via the key ring antenna.

(4) Comparison of ID code

The ID code sent from the transponder is compared with the ID code registered in the immobilizer ECU.

(5) Sending condition code (Immobilizer ECU to Engine ECU)

After ID code comparison, the immobilizer ECU sends the condition code to the engine ECU. This condition code is comprised of the comparison result of ID code (ID code coincident / not coincident, no ID code receiving).

(6) Receiving condition code

When the engine ECU receives the normal code which contains "ID code coincident", it becomes ready for start. In the case a code different from this is received, it prohibits engine start.

(7) Engine start

After receiving the normal condition code, the engine can be started by turning the ignition key to the START position.

Note:

(1) Transponder ID code registration to the immobilizer ECU is performed using the MUT. The transponder key has individual ID code and a maximum of 8 types of codes (8 keys) can be registered to the immobilizer ECU.

(2) The immobilizer ECU is provided with a self-diagnosis function, which enables condition checking by the use of MUT.