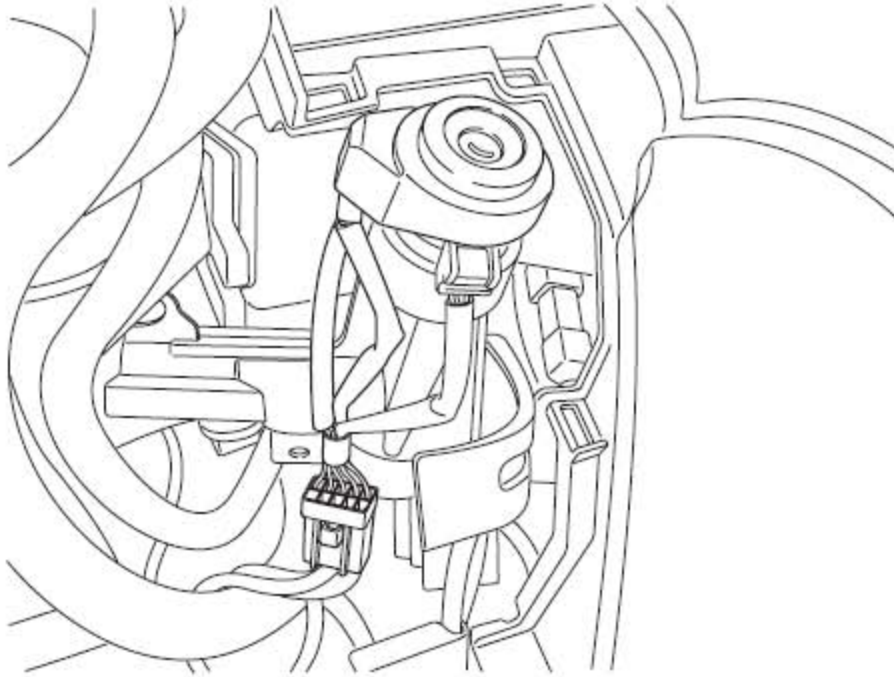


P1691 ANTENNA COIL ERROR

COMPONENT LOCATION



GENERAL DESCRIPTION

This wireless communication runs on RF (Radio frequency of 125 kHz). The SMARTRA is mounted at the ignition lock close to the antenna coil for RF transmission and receiving. The RF signal from the transponder received by the antenna coil is converted into messages for serial communication by the SMARTRA device. And the received messages from the EMS are converted into an RF signal, which is transmitted, to the transponder by the antenna.

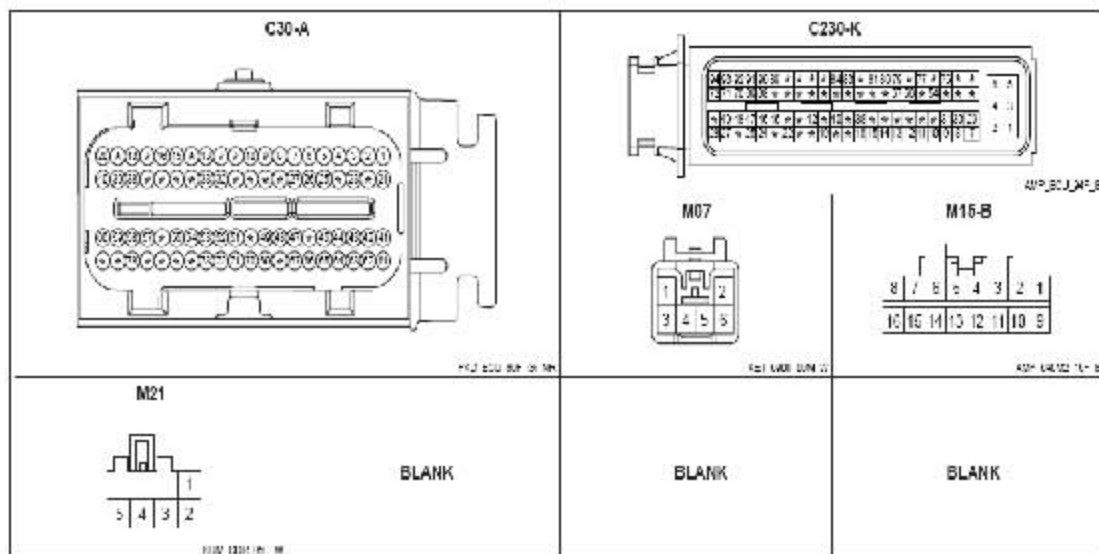
DTC DESCRIPTION

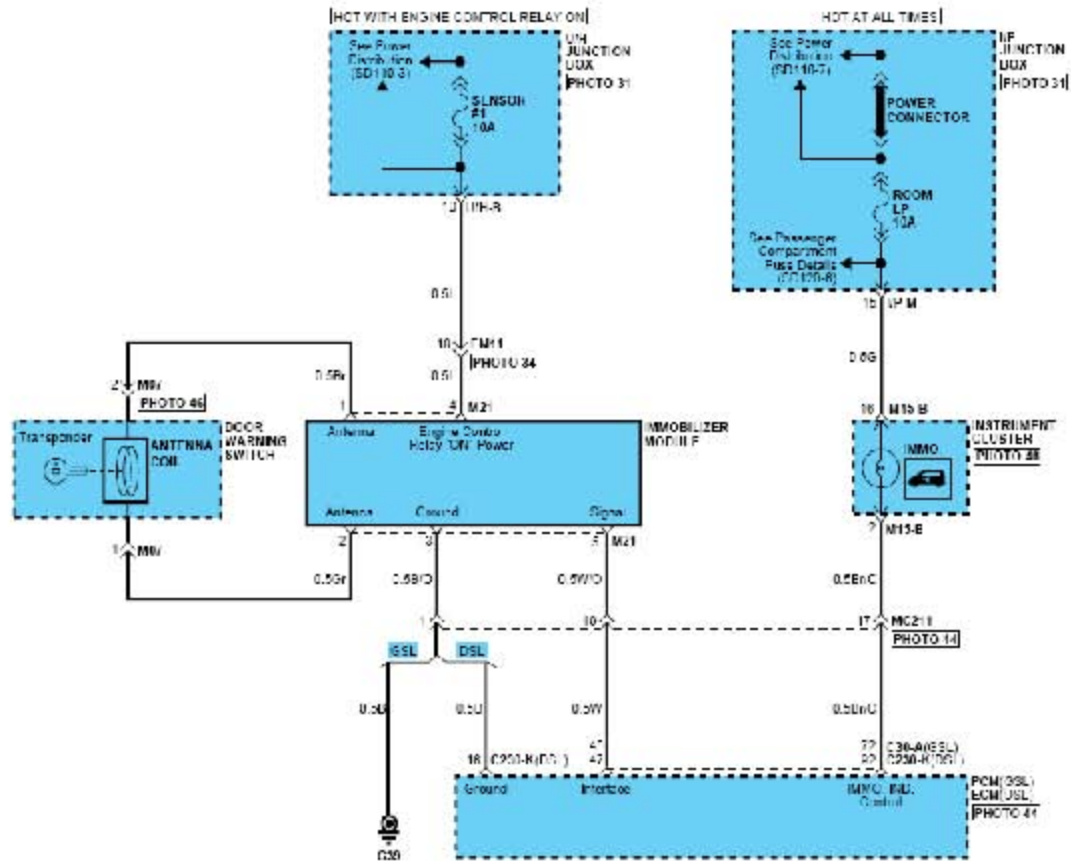
The ECM sets DTC P1691 if there's any fault in immobilizer antenna coil.

DTC DETECTING CONDITION

Item	Detecting Condition	Possible cause
DTC Strategy		<ul style="list-style-type: none"> • Open Circuit in antenna coil • Short Circuit in antenna coil • Faulty antenna coil
Enable Conditions	• IG ON (On Registering TP Procedure)	
Threshold value		
Diagnostic Time		
Fail Safe		

SCHEMATIC DIAGRAM





MONITOR DTC STATUS

- 1). Connect scantool to Data Link Connector(DLC).
- 2). Ignition "ON" & engine "OFF".
- 3). Monitor the "KEY STATUS" and "ECU STATUS" Parameter on the Scantool.

Specification : 'LEARN'

1.1 CURRENT DATA	
01. NO. OF LEARNT KEY	1
02. ECU STATUS	LEARNT
03. KEY STATUS	LEARNT

FIX
SCRN
FULL
PART
GRPH
HELP

Fig 1

Fig 1) The current data in abnormal state

4). Are "KEY STATUS" and "ECU STATUS" Parameter within specifications?

YES

Check connectors for looseness, poor connection, bending, corrosion, contamination, deterioration, or damage. Repair or replace as necessary and then go to "Verification of Vehicle Repair" procedure.

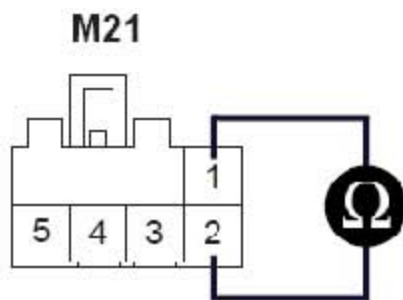
NO

Go to "Inspection & Repair" procedure.

COMPONENT INSPECTION

- 1). Check coil antenna
 - A) Ignition "OFF"
 - B) Disconnect SMARTRA.
 - C) Measure resistance between terminal "1" and "2" of SMARTRA.

Specification : Approx 8.5



1. Coil antenna
2. Coil antenna
3. Ground
4. Power
5. Signal

D) Is the measured resistance within specifications?

YES

Go to "Check SMARTRA" procedure.

NO

Check for open or short in antenna coil. Repair as necessary and go to "Verification of Vehicle Repair" procedure.

2). Check SMARTRA

A) IGN "ON" & Engine "OFF"

B) Neutralize ECM and Register transponder key by scantool.

C) Are Neutralizing and Registering completed normally?

YES

Check connectors for looseness, poor connection, bending, corrosion, contamination, deterioration, or damage. Repair or replace as necessary and then go to "Verification of Vehicle Repair" procedure.

NO

Substitute with a known-good SMARTRA and check for proper operation. If the problem is corrected, replace SMARTRA and then go to "Verification of Vehicle Repair" procedure.

VERIFICATION OF VEHICLE REPAIR

After a repair, it is essential to verify that the fault has been corrected.

- 1). Connect scantool and select "Diagnostic Trouble Codes(DTCs)" mode and then clear DTC.
- 2). Operate the vehicle and monitor the DTC on the scantool.
- 3). Are any DTCs present?

YES

Go to the applicable troubleshooting procedure.

NO

System is performing to specification at this time.