Last Modified: 7-13-2007		1.7 C
Service Category: Vehicle Interior	**Section:** Supplemental Restraint Systems	
Model Year: 2008	**Model:** ES350	**Doc ID:** RM0000016WN011X
Title: SUPPLEMENTAL RESTRAINT SYSTEM: AIRBAG SYSTEM: B1650/32: Occupant Classification System Malfunction (2008 ES350)		

DTC	**B1650/32**	**Occupant Classification System Malfunction**

DESCRIPTION

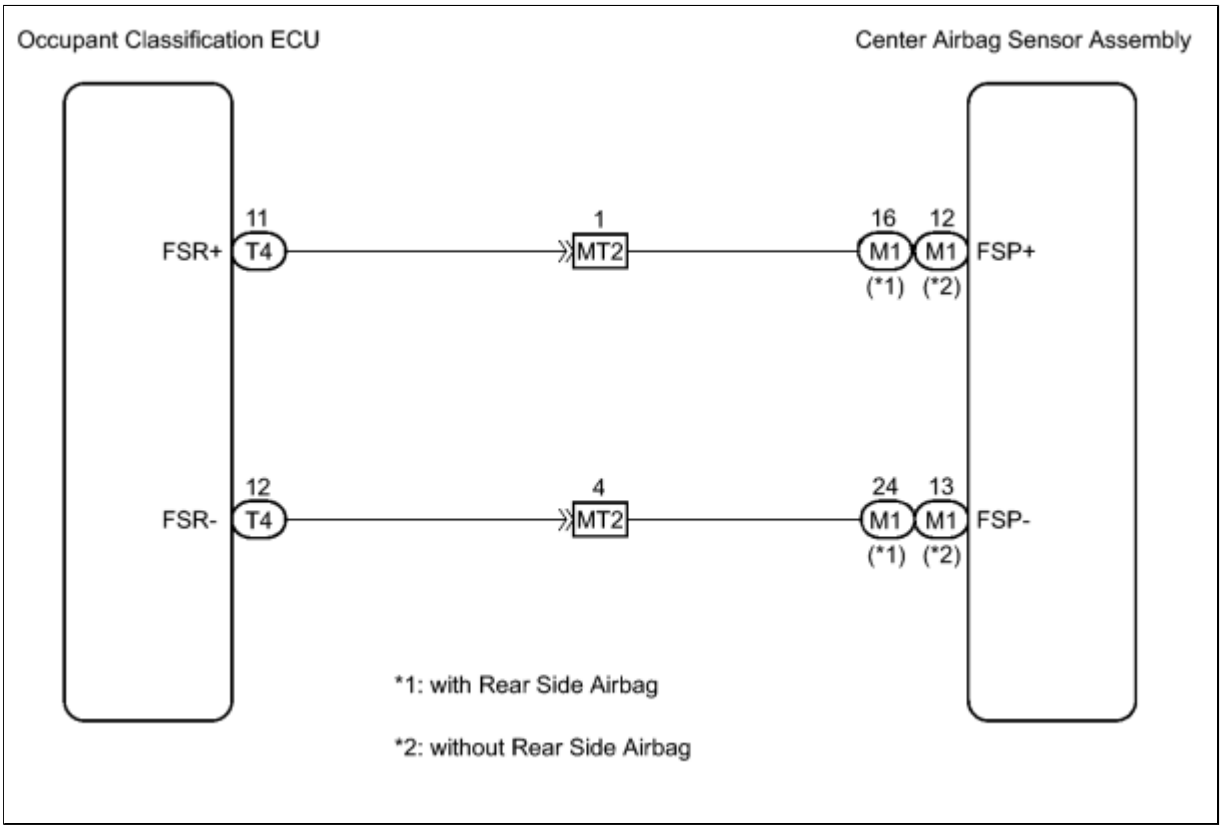
The occupant classification system circuit consists of the center airbag sensor assembly and the occupant classification system.

If the center airbag sensor assembly receives signals from the occupant classification ECU, it determines whether the front passenger airbag assembly, the front seat side airbag assembly RH and front seat outer belt assembly should be operated.

DTC B1650/32 is recorded when a malfunction is detected in the occupant classification system circuit.

DTC NO.	DTC DETECTING CONDITION	TROUBLE AREA
B1650/32	• Occupant classification system malfunction • The center airbag sensor assembly receives a line short circuit signal, an open circuit signal, a short circuit to ground signal or a short circuit to B+ signal in the occupant classification system circuit for 2 seconds. • Center airbag sensor assembly malfunction	• Floor wire No. 2 • Front seat wire RH • Occupant classification system • Center airbag sensor assembly

WIRING DIAGRAM



INSPECTION PROCEDURE

PROCEDURE

1.	CHECK DTC (OCCUPANT CLASSIFICATION ECU)

(a) Turn the engine switch on (IG), and wait for at least 10 seconds.

(b) Using Techstream, check the DTCs of the occupant classification ECU INFO .

OK:

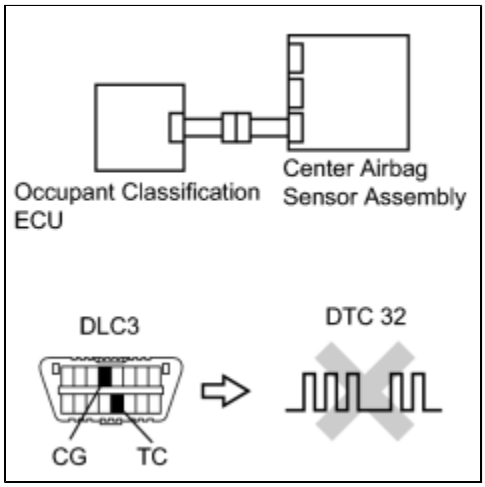
DTC is not output.

NG ▶ REPAIR CIRCUITS INDICATED BY OUTPUT DTCS

OK ▼

2.	CHECK DTC (CENTER AIRBAG SENSOR ASSEMBLY)

(a) Turn the engine switch on (IG), and wait for at least 60 seconds.



(b) Clear the DTCs stored in the memory INFO .

(c) Turn the engine switch off.

(d) Turn the engine switch on (IG), and wait for at least 60 seconds.

(e) Check the DTCs INFO .

OK:
DTC B1650/32 is not output.

HINT:

Codes other than DTC B1650/32 may be output at this time, but they are not related to this check.

OK ▶ **USE SIMULATION METHOD TO CHECK**

NG ▼

3.	CHECK CONNECTION OF CONNECTORS

(a) Turn the engine switch off.

(b) Disconnect the negative (-) terminal cable from the battery, and wait for at least 90 seconds.

(c) Check that the connectors are properly connected to the center airbag sensor assembly and the occupant classification ECU.

OK:
The connectors are properly connected.

NG ▶ **CONNECT CONNECTORS PROPERLY**

OK ▼

4.	CHECK CONNECTORS

(a) Disconnect the connectors from the center airbag sensor assembly and the occupant classification ECU.

(b) Check that the connectors (on the center airbag sensor assembly side and occupant classification ECU side) are not damaged.

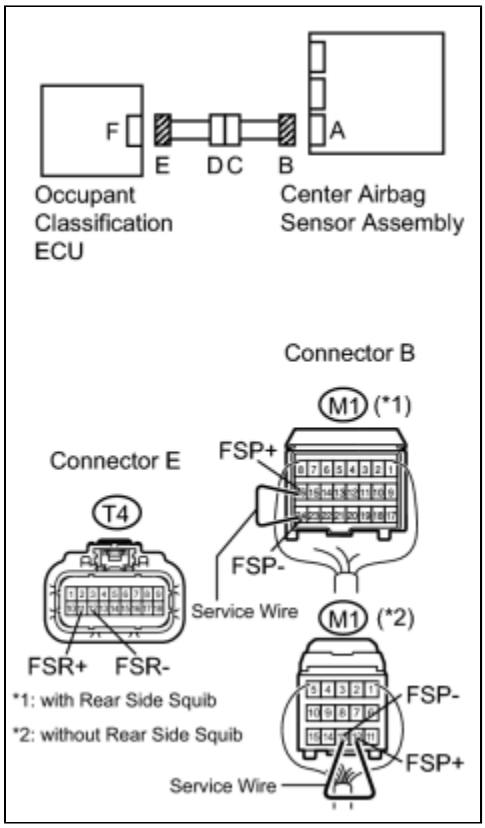
OK:

The connectors are not deformed or damaged.

NG ▶ REPAIR OR REPLACE WIRE HARNESS

OK ▼

5.	CHECK OCCUPANT CLASSIFICATION SYSTEM CIRCUIT (OPEN)



(a) with Rear side airbag:

Using a service wire, connect terminals 16 (FSP+) and 24 (FSP-) of connector B.

NOTICE:

Do not forcibly insert a service wire into the terminals of the connector when connecting the wire.

(b) without Rear side airbag:

Using a service wire, connect terminals 12 (FSP+) and 13 (FSP-) of connector B.

NOTICE:

Do not forcibly insert a service wire into the terminal of the connector when connecting the wire.

(c) Measure the resistance according to the value(s) in the table below.

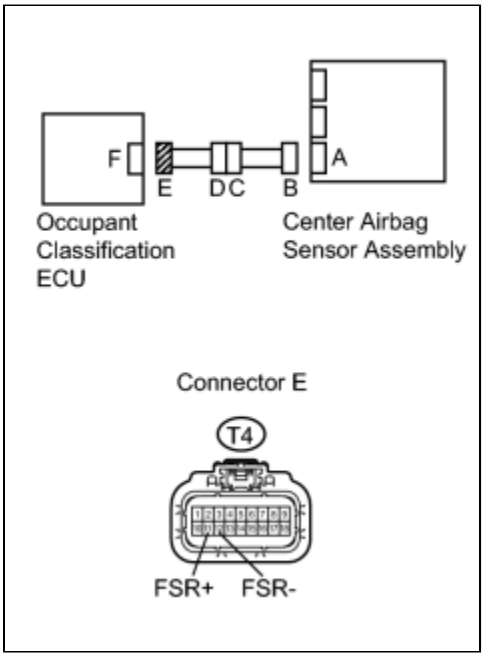
Standard resistance:

TESTER CONNECTION	CONDITION	SPECIFIED CONDITION
T4-11 (FSR+) - T4-12 (FSR-)	Always	Below 1 Ω

NG ▶ CHECK FLOOR WIRE NO. 2 (OPEN)

OK ▼

6.	CHECK OCCUPANT CLASSIFICATION SYSTEM CIRCUIT (SHORT)



(a) Disconnect the service wire from connector B.

(b) Measure the resistance according to the value(s) in the table below.

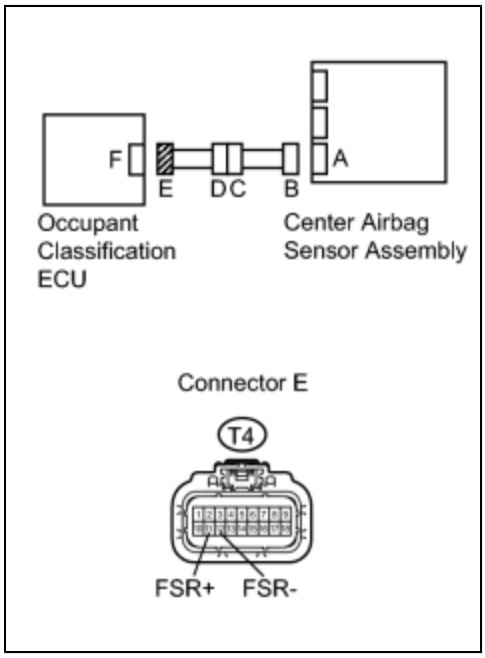
Standard resistance:

TESTER CONNECTION	CONDITION	SPECIFIED CONDITION
T4-11 (FSR+) - T4-12 (FSR-)	Always	1 MΩ or higher

NG ▶ CHECK FLOOR WIRE NO. 2 (SHORT)

OK ▼

7.	CHECK OCCUPANT CLASSIFICATION SYSTEM CIRCUIT (SHORT TO B+)



(a) Connect the negative (-) terminal cable to the battery, and wait for at least 2 seconds.

(b) Turn the engine switch on (IG).

(c) Measure the voltage according to the value(s) in the table below.

Standard voltage:

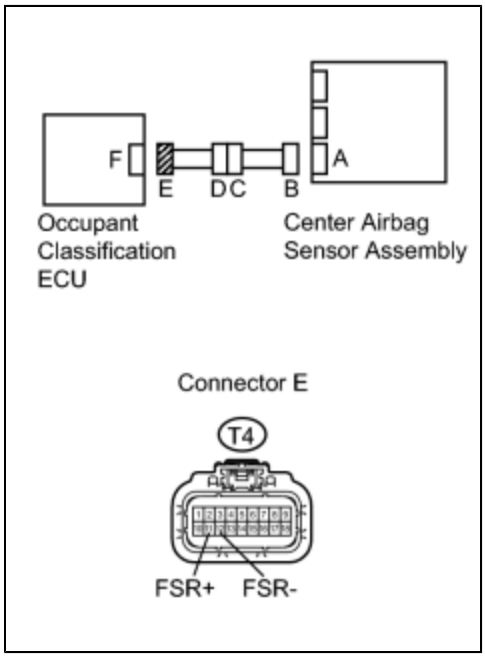
TESTER CONNECTION	CONDITION	SPECIFIED CONDITION
T4-11 (FSR+) - Body ground	Engine switch on (IG)	Below 1 V
T4-12 (FSR-) - Body ground	Engine switch on (IG)	Below 1 V

NG ▶ **CHECK FLOOR WIRE NO. 2 (SHORT TO B+)**

OK ▼

8.	CHECK OCCUPANT CLASSIFICATION SYSTEM CIRCUIT (SHORT TO GROUND)

(a) Turn the engine switch off.



(b) Disconnect the negative (-) terminal cable from the battery, and wait for at least 90 seconds.

(c) Measure the resistance according to the value(s) in the table below.

Standard resistance:

TESTER CONNECTION	CONDITION	SPECIFIED CONDITION
T4-11 (FSR+) - Body ground	Always	1 MΩ or higher
T4-12 (FSR-) - Body ground	Always	1 MΩ or higher

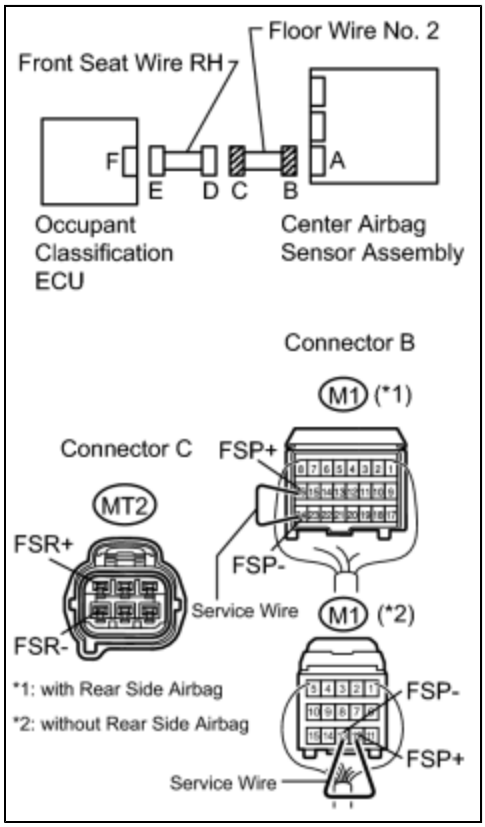
HINT:After replacing the center airbag sensor assembly, check for DTCs of the center airbag sensor assembly. If the DTC B1650/32 is detected, replace the occupant classification ECU INFO **and perform "zero point calibration" and "sensitivity check" of the occupant classification system** INFO **.**

NG ▶ **CHECK FLOOR WIRE NO. 2 (SHORT TO GROUND)**

OK ▶ **REPLACE CENTER AIRBAG SENSOR ASSEMBLY**

9.	CHECK FLOOR WIRE NO. 2 (OPEN)

(a) Disconnect the front seat wire RH connector from the floor wire No. 2.



HINT:

The service wire has already been inserted into connector B.

(b) Measure the resistance according to the value(s) in the table below.

Standard resistance:

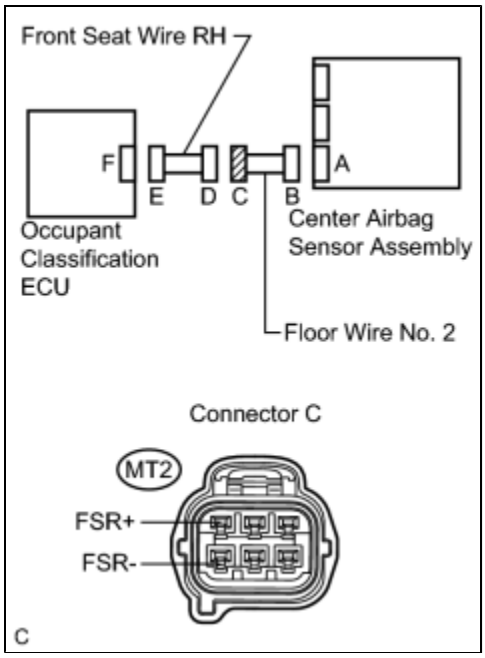
TESTER CONNECTION	CONDITION	SPECIFIED CONDITION
MT2-1 (FSR+) - MT2-4 (FSR-)	Always	Below 1 Ω

NG ▶ **REPAIR OR REPLACE FLOOR WIRE NO. 2**

OK ▶ **REPAIR OR REPLACE FRONT SEAT WIRE RH**

10.	CHECK FLOOR WIRE NO. 2 (SHORT)

(a) Disconnect the front seat wire RH connector from the floor wire No. 2.



(b) Measure the resistance according to the value(s) in the table below.

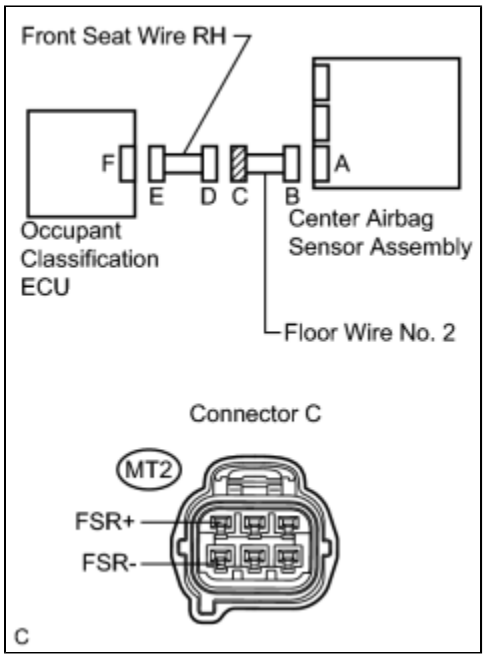
Standard resistance:

TESTER CONNECTION	CONDITION	SPECIFIED CONDITION
MT2-1 (FSR+) - MT2-4 (FSR-)	Always	1 MΩ or higher

NG ▶ **REPAIR OR REPLACE FLOOR WIRE NO. 2**

OK ▶ **REPAIR OR REPLACE FRONT SEAT WIRE RH**

11.	CHECK FLOOR WIRE NO. 2 (SHORT TO B+)



(a) Turn the engine switch off.

(b) Disconnect the negative (-) terminal cable from the battery, and wait for at least 90 seconds.

(c) Disconnect the front seat wire RH connector from the floor wire No. 2.

(d) Connect the negative (-) terminal cable to the battery, and wait for at least 2 seconds.

(e) Turn the engine switch on (IG).

(f) Measure the voltage according to the value(s) in the table below.

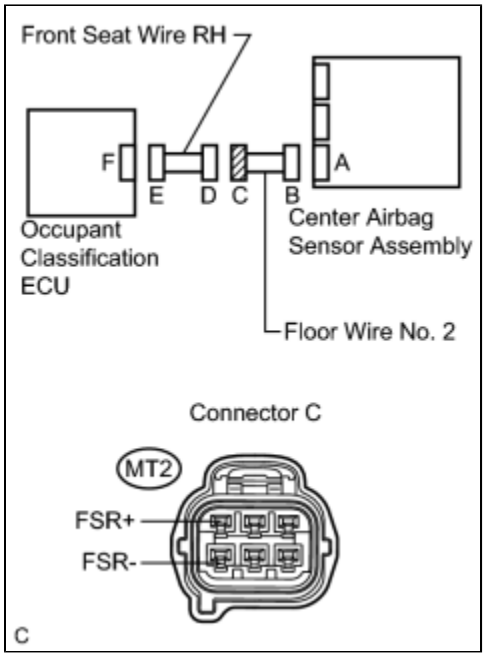
Standard voltage:

TESTER CONNECTION	CONDITION	SPECIFIED CONDITION
MT2-1 (FSR+) - Body ground	Engine switch on (IG)	Below 1 V
MT2-4 (FSR-) - Body ground	Engine switch on (IG)	Below 1 V

NG ▶ **REPAIR OR REPLACE FLOOR WIRE NO. 2**

OK ▶ **REPAIR OR REPLACE FRONT SEAT WIRE RH**

12.	CHECK FLOOR WIRE NO. 2 (SHORT TO GROUND)



(a) Disconnect the front seat wire RH connector from the floor wire No. 2.

(b) Measure the resistance according to the value(s) in the table below.

Standard resistance:

TESTER CONNECTION	CONDITION	SPECIFIED CONDITION
MT2-1 (FSR+) - Body ground	Always	1 MΩ or higher
MT2-4 (FSR-) - Body ground	Always	1 MΩ or higher

NG ▶ **REPAIR OR REPLACE FLOOR WIRE NO. 2**

OK ▶ REPAIR OR REPLACE FRONT SEAT WIRE RH