Last Modified: 7-13-2007		1.6 J
Service Category: Audio/Visual/Telematics	**Section:** Navigation/Multi Info Display	
Model Year: 2008	**Model:** ES350	**Doc ID:** RM000001YZ300BX
Title: NAVIGATION: NAVIGATION SYSTEM: Vehicle Speed Signal Circuit between Navigation ECU and Multi-Display (2008 ES350)		

Vehicle Speed Signal Circuit between Navigation ECU and Multi-Display

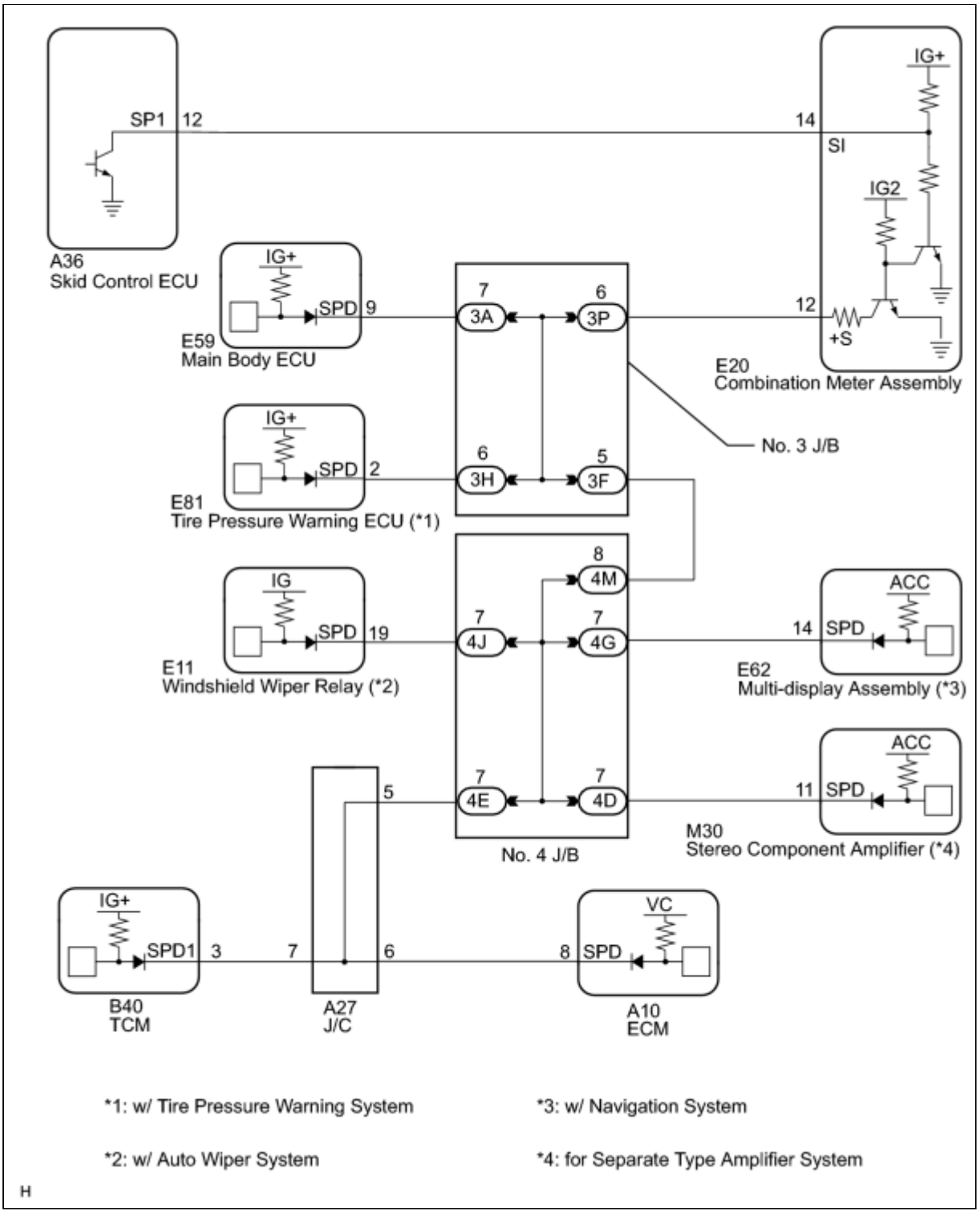
DESCRIPTION

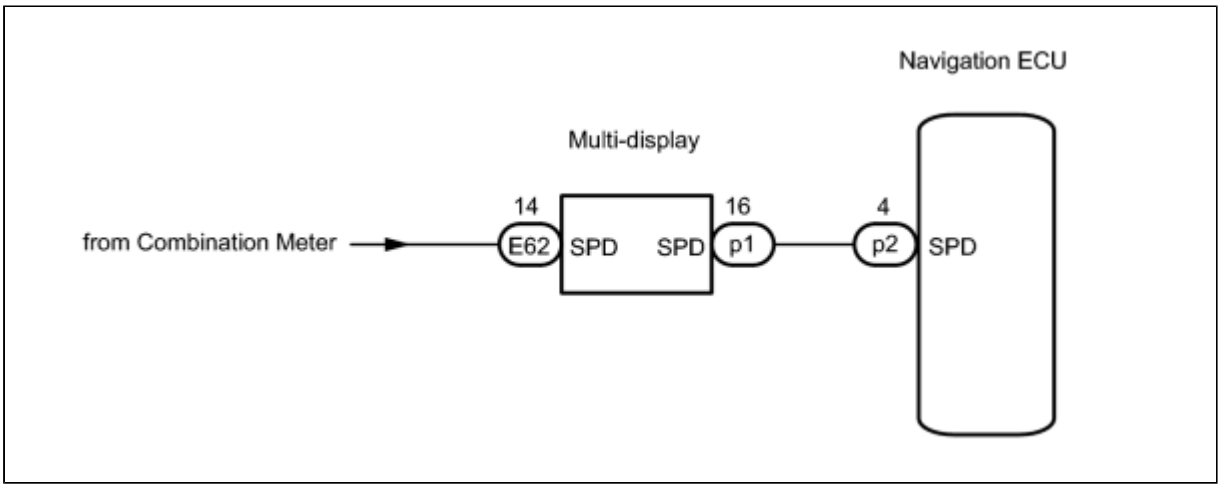
The navigation ECU receives a vehicle speed signal from the multi-display and information about the GPS antenna, and then adjusts vehicle position.

HINT:

- A voltage of 12 V or 5 V is output from each ECU and then input to the combination meter. The signal is changed to a pulse signal at the transistor in the combination meter. Each ECU controls the respective system based on the pulse signal.
- If a short occurs in an ECU, all systems in the diagram below will not operate normally.

WIRING DIAGRAM

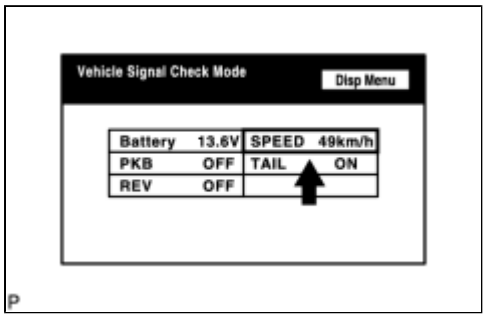

SP1
12
A36
Skid Control ECU
IG+
SPD
9
E59
Main Body ECU
7
3A
6
3P
14
SI
IG+
IG2
12
+S
E20
Combination Meter Assembly
No. 3 J/B
IG+
SPD
2
E81
Tire Pressure Warning ECU (*1)
6
3H
5
3F
8
4M
IG
SPD
19
E11
Windshield Wiper Relay (*2)
7
4J
7
4G
ACC
14
SPD
E62
Multi-display Assembly (*3)
ACC
7
4E
7
4D
11
SPD
M30
Stereo Component Amplifier (*4)
No. 4 J/B
5
IG+
SPD1
3
7
6
8
SPD
VC
B40
TCM
A27
J/C
A10
ECM
*1: w/ Tire Pressure Warning System
*3: w/ Navigation System
*2: w/ Auto Wiper System
*4: for Separate Type Amplifier System
H


Navigation ECU
Multi-display
from Combination Meter
14
E62
SPD
SPD
16
p1
4
p2
SPD

INSPECTION PROCEDURE

PROCEDURE

1.	CHECK VEHICLE SIGNAL (DISPLAY CHECK MODE)



(a) Enter the "Display Check Mode (Vehicle Signal Check)" INFO .

(b) While driving, compare the "Speed" indicator to the reading on the speedometer. Check if these readings are almost the same.

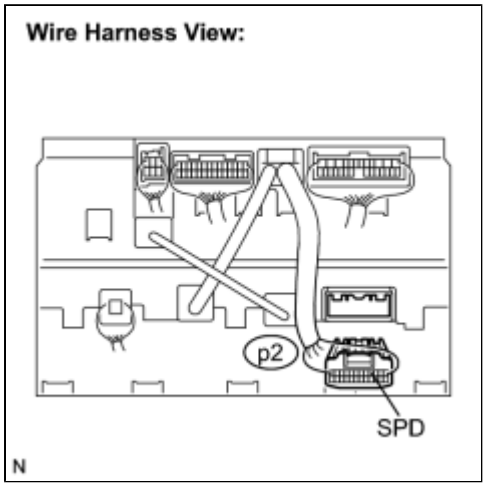
OK:

The readings are almost the same.

NG ▶ **GO TO "VEHICLE SPEED SIGNAL CIRCUIT BETWEEN MULTI-DISPLAY AND COMBINATION METER"**

OK ▼

2.	INSPECT NAVIGATION ECU



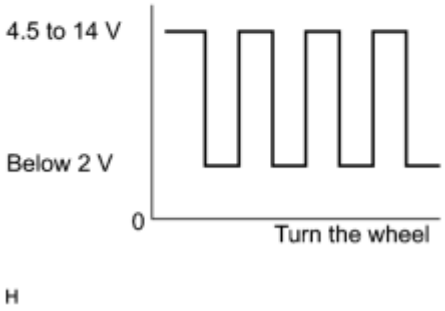
(a) Disconnect the navigation ECU connector p2.

(b) Measure voltage.

(1) Jack up either one of the drive wheels.

(2) Move the shift lever to the neutral position.

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



H

(4) Measure the voltage between terminal SPD of the navigation ECU and body ground when the drive wheels are turned slowly.

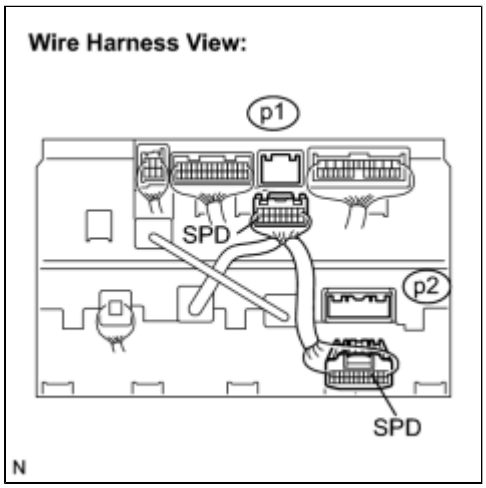
OK:

Voltage pulses as shown in the illustration.

OK ▶ **REPLACE NAVIGATION ECU**

NG ▼

3.	CHECK HARNESS AND CONNECTOR (NAVIGATION ECU - MULTI-DISPLAY)



(a) Disconnect the multi-display connector p1 and navigation ECU connector p2.

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

Standard resistance:

TESTER CONNECTION	CONDITION	SPECIFIED CONDITION
SPD - SPD	Always	Below 1 Ω
SPD - Body ground	Always	10 kΩ or higher

NG ▶ **REPAIR OR REPLACE HARNESS OR CONNECTOR**

OK ▶ **REPLACE MULTI-DISPLAY**