VEHICLE POSITION DEVIATES FROM THE ROUTE MAP [CAR-NAVIGATION SYSTEM]

id0903e8100200

Possible DTC	The vehicle position on the map screen deviates from the actual vehicle position.
POSSIBLE CAUSE	• GPS antenna malfunction • Car-navigation unit malfunction • Audio unit malfunction • Poor GPS antenna connection • Poor reception due to object obstructing GPS antenna • Poor connection of vehicle wiring harness (vehicle signal) connector, bad pins. • Open or short circuit in vehicle wiring harness (vehicle signal)

Diagnostic Procedure

Step	Inspection		Action
1	**VERIFY GPS ANTENNA RECEPTION CONDITION** • Stop the vehicle and leave it idling for 5 min in an area with clear visibility (no buildings or trees surrounding). • Does the GPS mark display at the top left area of the map screen?	Yes	Go to Step 3.
		No	Go to the next step.
2	**VERIFY IF GPS ANTENNA RECEPTION IS OBSTRUCTED** • Is there an object on the dashboard which is interfering with GPS reception (such as devices installed by customer after installation)?	Yes	After explaining to the customer that device installed by the customer on the dashboard after the installation is interfering with GPS reception, remove the device. After servicing, go to the next step.
		No	Go to the next step.
3	**VERIFY THE GPS ANTENNA RECEPTION SIGNAL** • Launch the audio unit diagnostic assist function. (See DIAGNOSTIC ASSIST FUNCTION [AUDIO].) • Select diagnostic assist code 15 vehicle NAVI signal verification. • Is NAVI GPS ANT NG displayed?	Yes	Go to the next step.
		No	Go to Step 5.
4	**VERIFY VEHICLE SPEED SIGNAL** • Verify SPEED on the vehicle NAVI signal verification screen. • Is the vehicle speed displayed when the vehicle is driven?	Yes	Replace the car-navigation unit. (See CAR-NAVIGATION UNIT REMOVAL/ INSTALLATION.)
		No	Go to Step 10.
5	**VERIFY GPS ANTENNA CONNECTOR CONDITION** • Switch the ignition off. • Disconnect the negative battery cable. (See NEGATIVE BATTERY CABLE DISCONNECTION/CONNECTION [SKYACTIV-G 2.0, SKYACTIV-G 2.5].) (See NEGATIVE BATTERY CABLE DISCONNECTION/CONNECTION [SKYACTIV-G 2.0, SKYACTIV-G 2.5 (WITHOUT i-stop)].) (See NEGATIVE BATTERY CABLE DISCONNECTION/CONNECTION [SKYACTIV-D 2.2].) • Disconnect the GPS antenna connector. • Inspect the connector and terminals (connection condition, corrosion, damage, pin disconnection). • Are the connectors and terminals normal?	Yes	Go to the next step.
		No	Repair or replace the pins, connectors.
6	**VERIFY CAR-NAVIGATION UNIT CONNECTOR CONDITION** • Disconnect the car-navigation unit connector. • Inspect the connector and terminals (connection condition, corrosion, damage, pin disconnection). • Are the connectors and terminals normal?	Yes	Go to the next step.
		No	Repair or replace the pins, connectors.

Step	Inspection		Action
7	**INSPECT FOR SHORT TO GROUND IN WIRING HARNESS BETWEEN GPS ANTENNA AND CAR-NAVIGATION UNIT** • Inspect for continuity between the following terminals (vehicle wiring harness side) and body ground. — GPS antenna terminal A • Is there continuity?	Yes	Repair or replace the wiring harness, then go to Step 10.
		No	Go to the next step.
8	**INSPECT FOR OPEN CIRCUIT IN WIRING HARNESS BETWEEN GPS ANTENNA AND CAR-NAVIGATION UNIT** • Inspect the wiring harness between the following terminals (vehicle wiring harness side) for continuity. — GPS antenna terminal A and car-navigation unit terminal B (2-pin) • Is there continuity?	Yes	Go to the next step.
		No	Repair or replace the wiring harness, then go to Step 10.
9	**INSPECT FOR SHORT TO POWER SUPPLY IN WIRING HARNESS BETWEEN GPS ANTENNA AND CAR-NAVIGATION UNIT** • Connect the negative battery cable. (See NEGATIVE BATTERY CABLE DISCONNECTION/CONNECTION [SKYACTIV-G 2.0, SKYACTIV-G 2.5].) (See NEGATIVE BATTERY CABLE DISCONNECTION/CONNECTION [SKYACTIV-G 2.0, SKYACTIV-G 2.5 (WITHOUT i-stop)].) (See NEGATIVE BATTERY CABLE DISCONNECTION/CONNECTION [SKYACTIV-D 2.2].) • Switch the ignition ON (engine off or on). • Measure the voltage at the following terminals (vehicle wiring harness side). — GPS antenna terminal A • Is the voltage 0 V?	Yes	Replace the GPS antenna. (See GLOBAL POSITIONING SYSTEM (GPS) ANTENNA REMOVAL/INSTALLATION.)
		No	Repair or replace the wiring harness, then go to the next step.
10	**INSPECT VEHICLE SPEED SIGNAL** • Jack up the vehicle and drive at low speed. • Measure the voltage at the following audio unit (24-pin) terminal. — Vehicle speed signal (terminal 1I) • Is the terminal voltage **approx. 2.5 V** (average)? **Note** • The vehicle speed signal repeatedly pulses between **approx. 0 V** and **approx. 5 V**.	Yes	Replace the audio unit. (See AUDIO UNIT REMOVAL/INSTALLATION.)
		No	Replace the vehicle speed signal wiring harness.