

Information and Entertainment System - General Information - Cellular Phone

Diagnosis and Testing

Principle of Operation

For a detailed description of the Cellular phone system and operation, refer to the relevant Diagnosis and Testing section of the workshop manual. REFER to:

Audio System (415-01 Audio Unit, Description and Operation),
[Antenna](#) (415-02 Antenna, Description and Operation),
 Speakers (415-03 Speakers, Description and Operation),
 Video System (415-07 Video System, Description and Operation).

Inspection and Verification



CAUTION: Diagnosis by substitution from a donor vehicle is **NOT** acceptable. Substitution of control modules does not guarantee confirmation of a fault and may also cause additional faults in the vehicle being checked and/or the donor vehicle.

- **NOTE:** Check and rectify basic faults before beginning diagnostic routines involving pinpoint tests.

1. Verify the customer concern.
2. Visually inspect for obvious signs of mechanical or electrical damage.

Visual Inspection

Mechanical	Electrical
• Check all information and entertainment system modules • Speakers • Switch(s) stuck or damaged • Touch screen display	• Fuses • Electrical harnesses • Harness connectors • Battery condition, state of charge

3. If an obvious cause for an observed or reported concern is found, correct the cause (if possible) before proceeding to the next step.
4. If the cause is not visually evident, refer to the Symptom Chart below, alternatively check for Diagnostic Trouble Codes (DTCs) and refer to the DTC Index.

Symptom Chart

Symptom	Action
Unable to pair	• GO to Pinpoint Test A.
Not Auto Connecting	• GO to Pinpoint Test B.
Poor Quality Audio	• GO to Pinpoint Test C.
No Audio to 3rd Party	• GO to Pinpoint Test D.
No Audio from 3rd Party	• GO to Pinpoint Test E.
No Audio	• GO to Pinpoint Test F.

DTC Index

For a list of Diagnostic Trouble Codes (DTCs) that could be logged on this vehicle, please refer to Section 100-00. REFER to: [Diagnostic Trouble Code \(DTC\) Index - DTC: Bluetooth Module - High Line \(TEL\)](#) (100-00 General Information, Description and Operation).

Pinpoint Tests

PINPOINT TEST A : UNABLE TO PAIR	
TEST CONDITIONS	DETAILS/RESULTS/ACTIONS
A1: 'NO PHONE FITTED' DISPLAY	
• NOTE: Prior to continuing with any diagnosis, ensure that the Customer telephone and level of software is included on the JLR approved list, the telephone battery is fully charged and in a serviceable condition, the bluetooth function is activated and the telephone handset is placed within the vehicle cabin area.	
1	Carry out checks to determine if 'No Phone Fitted' is shown on vehicle display.
	Is 'No Phone Fitted' displayed?
	Yes GO to A2.
	No Locate the connected telephone and if not Customer telephone, disconnect from the system.
A2: TELEPHONE BLUETOOTH DEVICE SEARCH	

	1 Carry out Bluetooth device search using Customer handset.
	Is 'Land Rover' identified in Bluetooth device list?
	Yes Select device from list, then continue with diagnosis. GO to A3.
	No Carry out further Bluetooth device search, to a maximum of 4 times, waiting approximately 20 seconds between searches. If 'Land Rover' still not identified in Bluetooth device list, set ignition status to OFF, wait approximately 30 seconds and set ignition status to ON. Carry out further Bluetooth device search, to a maximum of 4 times, waiting approximately 20 seconds between searches. If 'Land Rover' still not identified in Bluetooth device list, contact your local in market support for further assistance.

A3: TELEPHONE HANDSET ERROR

	1 Check for any error shown on the telephone handset when 'Land Rover' is selected from the Bluetooth device list.
	Was an error immediately shown on the telephone handset?
	Yes Wait approximately 10 seconds then re-attempt selection, to a maximum of 4 times, waiting approximately 10 seconds between each attempt. If error still being displayed, contact your local in market support for assistance.
	No Enter PIN '2121' then continue with diagnosis. GO to A4.

A4: PIN ENTRY STATUS

	1 Check for successful PIN entry.
	Was PIN entry successful?
	Yes GO to A5.
	No Wait approximately 10 seconds then re-attempt PIN entry, to a maximum of 4 times, waiting approximately 10 seconds between each attempt. If PIN entry is still un-successful, contact your local in market support for assistance.

A5: 'NO PHONE FITTED' DISPLAY

	1 Carry out checks to determine if 'No Phone Fitted' is still shown on vehicle display.
	Is 'No Phone Fitted' still displayed?
	Yes From the telephone handset, select the connect option for the 'Land Rover' device identified in the Bluetooth device list. If 'No Phone Fitted' is still displayed, suspect a telephone handset fault. Carry out Pinpoint test again using known good telephone handset.
	No The telephone is paired and connected to the system. No further action is required for this symptom.

PINPOINT TEST B : NOT AUTOMATICALLY CONNECTING

TEST CONDITIONS	DETAILS/RESULTS/ACTIONS
B1: CUSTOMER TELEPHONE IN POSITION 1	
• NOTE: Prior to continuing with any diagnosis, ensure that the Customer telephone and level of software is included on the JLR approved list, the telephone battery is fully charged and in a serviceable condition, the bluetooth and auto connect functions are activated and the telephone handset is placed within the vehicle cabin area.	
	1 Carry out checks to determine if the Customer telephone is in position 1 in the Bluetooth Module device list.
	Is the Customer telephone in position 1?
	Yes GO to B2.
	No Advise Customer that delays in connection will occur if telephone is not listed in position 1.
B2: BLUETOOTH CONNECTION	
	1 Carry out checks to determine if Bluetooth connection to the vehicle has been achieved.
	Has Bluetooth connection to the vehicle been achieved?
	Yes No further action is required for this symptom.
	No GO to B3.
B3: 'NO PHONE FITTED' DISPLAY	
	1 Carry out checks to determine if 'Land Rover' is shown in the Customer Bluetooth telephone device display.
	Is 'Land Rover' identified in the Customer Bluetooth device list?
	Yes Select the device to connect then follow pairing instructions.
	No Carry out the 'Unable to Pair' Pinpoint Test. GO to A.

PINPOINT TEST C : POOR QUALITY AUDIO

TEST CONDITIONS	DETAILS/RESULTS/ACTIONS
C1: SIGNAL STRENGTH	
• NOTE: Prior to continuing with any diagnosis, ensure that the Customer telephone and level of software is included on the JLR approved list, the telephone battery is fully charged and in a serviceable condition, the telephone is placed within the vehicle cabin area and is connected to the vehicle via bluetooth.	
	1 Check the signal strength displayed on the telephone handset.
	Are at least two signal strength bars shown on the telephone handset display?
	Yes GO to C2.
	No Suspect GSM Network issue. This can explain intermittent audio and dropped calls, and the inability to initiate calls.

C2: POOR AUDIO FROM THIRD PARTY ONLY	
	1 Establish from Customer feedback/symptom if there is poor audio from the Third Party only.
	Is the poor audio from the Third Party only? Yes Suspect GSM Network issue. This can explain intermittent audio and dropped calls, and the inability to initiate calls. No GO to C3.
C3: POOR AUDIO TO THIRD PARTY ONLY	
	1 Establish from Customer feedback/symptom if there is poor audio to the Third Party only.
	Is the poor audio to the Third Party only? Yes Check and install a new microphone as necessary. No GO to C4.
C4: POOR AUDIO WITH VEHICLE STATIONARY	
	1 Establish from Customer feedback/symptom if there is poor audio when the vehicle is stationary only.
	Is the poor audio when the vehicle is stationary only? Yes Check and install a new microphone as necessary. No GO to C5.
C5: THIRD PARTY MOVING VEHICLE	
	1 Establish from Customer feedback/symptom if the Third Party is in a moving vehicle.
	Is the Third Party in a moving vehicle? Yes There are limitations to the way the system can improve audio, and in this situation it is not possible to determine the source of the audio degradation. No GO to C6.
C6: CUSTOMER HEARING ECHO	
	1 Establish from Customer feedback/symptom if the Customer is hearing an echo.
	Is the Customer hearing an echo? Yes Echo from the Third Party is not vehicle failure, it is the Third Party set-up. No further action is required for this symptom. No Contact your local in market support for assistance.

PINPOINT TEST D : NO AUDIO TO THIRD PARTY

TEST CONDITIONS	DETAILS/RESULTS/ACTIONS
D1: MICROPHONE DIAGNOSTIC TROUBLE CODES (DTCs)	
• NOTE: Prior to continuing with any diagnosis, ensure that the Customer telephone and level of software is included on the JLR approved list, the telephone battery is fully charged and in a serviceable condition, the telephone is placed within the vehicle cabin area and is connected to the vehicle via bluetooth.	
	1 Using the Manufacturer approved diagnostic system, check for any logged microphone DTCs in Audio Front Control module.
	Is DTC B1D79-01 logged? Yes Carry out diagnosis of electrical failure as advised in Action column of DTC Index. No Contact your local in market support for assistance.

PINPOINT TEST E : NO AUDIO FROM THIRD PARTY

TEST CONDITIONS	DETAILS/RESULTS/ACTIONS
E1: 'IN CALL' DISPLAY	
• NOTE: Prior to continuing with any diagnosis, ensure that the Customer telephone and level of software is included on the JLR approved list, the telephone battery is fully charged and in a serviceable condition, the telephone is placed within the vehicle cabin area and is connected to the vehicle via bluetooth.	
	1 Carry out checks to determine if 'In Call' is shown on the vehicle display.
	Is vehicle display showing 'In Call'? Yes Contact your local in market support for assistance. No Call has ended. No further action is required for this symptom.

PINPOINT TEST F : NO AUDIO

TEST CONDITIONS	DETAILS/RESULTS/ACTIONS
F1: AUDIO FROM THIRD PARTY	
• NOTE: Prior to continuing with any diagnosis, ensure that the Customer telephone and level of software is included on the JLR approved list, the telephone battery is fully charged and in a serviceable condition, the telephone is placed within the vehicle cabin area and is connected to the vehicle via bluetooth.	
	1 Establish from Customer feedback/symptom if there is Audio from the Third Party.
	Is there Audio from the Third Party? Yes GO to F2. No Refer to the 'No Audio From Third Party' Pinpoint test. GO to E.

F2: AUDIO TO THIRD PARTY

	1 Establish from Customer feedback/symptom if there is Audio to the Third Party. Is there Audio to the Third Party? Yes GO to F3. No Refer to the 'No Audio To Third Party' Pinpoint test. GO to D.
F3: CD OR RADIO AUDIO	
	1 Establish from Customer feedback/symptom if there is Audio from the CD or Radio. Is there Audio from the CD or Radio? Yes GO to F4. No Suspect MOST ring fault, refer to electrical circuit diagrams and check/rectify MOST ring as necessary.
F4: TELEPHONE HANDSET AUDIO	
	1 Establish from Customer feedback/symptom if there is Audio from the telephone handset. Is there Audio from the telephone handset? Yes Ensure vehicle is parked. Disconnect and reconnect handset. If issue not resolved, contact your local in market support for assistance. No Contact you local in market support for assistance.

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Information and Entertainment System - General Information - Information and Entertainment System

Diagnosis and Testing

Principles of Operation

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Audio System (415-01 Audio Unit, Description and Operation),
[Antenna](#) (415-02 Antenna, Description and Operation),
 Speakers (415-03 Speakers, Description and Operation),
 Video System (415-07 Video System, Description and Operation).

Inspection and Verification



CAUTION: Diagnosis by substitution from a donor vehicle is **NOT** acceptable. Substitution of control modules does not guarantee confirmation of a fault and may also cause additional faults in the vehicle being checked and/or the donor vehicle.

- **NOTE:** Check and rectify basic faults before beginning diagnostic routines involving pinpoint tests.

1. 1. Verify the customer concern.
2. 2. Visually inspect for obvious signs of mechanical or electrical damage.

Visual Inspection

Mechanical	Electrical
● Check all information and entertainment system modules ● Compact disc player jammed, not loading ● Scratched/dirty compact discs ● Speakers ● Switch(s) stuck or damaged	● Fuses ● Electrical harnesses ● Harness connectors ● Battery condition, state of charge

3. 3. If an obvious cause for an observed or reported concern is found, correct the cause (if possible) before proceeding to the next step.
4. 4. If the cause is not visually evident, verify the symptom and refer to the Symptom Chart, alternatively check for Diagnostic Trouble Codes (DTCs) and refer to the DTC Index.

Satellite Digital Audio Radio Service (SDARS) Diagnosis

The following information is intended to aid in the diagnosis of basic faults with the satellite radio system.

The diagnostic trouble codes are the main source of information in diagnosing other than basic faults.

There are five conditions which may affect the available channels:

A: No signal available

The signal is not reaching the module.

The vehicle must have clear line of sight to a satellite, which means being outside and having no blockages between the vehicle and the satellite.

- **NOTE:** If the vehicle is outside America, this is the only condition which will be possible.

B: More than 6 months without subscribing

There is a 6 month free period of channel 184 being broadcast to allow testing of the system.

After this period, no channels can be received, and an **unsubscribed** message will be displayed.

C: Less than 6 months without subscribing

This will allow the vehicle to receive channel 184 only, all other channels will display **unsubscribed**.

D: Subscribed to the family package

All channels should be audible, but adult content channels will be blocked, and the message **unsubscribed** will be shown on these channels.

E: Subscribed to the full package

All channels should be available, with the exception of some pay channels.

In this case, the message **unsubscribed** will be shown on these channels.

System testing

Tune to channel 184 (this is usually the default channel for all presets).

Select the direct channel input feature by pressing the "#" key.

This will allow the audio to be routed to the speakers if condition C, D or E exist.

If condition B exists, a subscription will have to be made.

1. **1.** Are other systems affected?

- The most common symptom would be the loss of audio from other entertainment features, although the display sticking on the logo screen is a good indicator of a MOST issue.
- If other systems **are** affected, check the entertainment circuits for loose or broken connectors, etc. Refer to the electrical guides.

2. **2.** If only the satellite radio system is affected, retrieve the DTCs from the module using the approved diagnostic system or a scan tool.

Symptom Chart

Display	Symptom	Possible Causes	Action
No signal or Acquiring signal	No channels available	● Antenna connections	Check for DTCs. Check the connections from the module to the antenna and the antenna to the harness. Rectify as necessary.
	No audio	● MOST connection	Check for DTCs. Check the function of other audio system components. Check the connections to other MOST components.
Unsubscribed	No channels available	● The free period has expired	Carry out the checks above.
Weather/Emergency	No audio on CD or other component	● Other audio component may be faulty	Check for DTCs. Check the function of other audio system components.

DTC Index

For a list of Diagnostic Trouble Codes (DTCs) that could be logged on this vehicle, please refer to Section 100-00. REFER to: (100-00 General Information)

[Diagnostic Trouble Code \(DTC\) Index - DTC: Audio Amplifier Module \(AAM\)](#) (Description and Operation),
[Diagnostic Trouble Code \(DTC\) Index - DTC: Audio Front Control Module - High Line \(ACM\)](#) (Description and Operation),
[Diagnostic Trouble Code \(DTC\) Index - DTC: Audio Front Control Module - Low Line \(ACM\)](#) (Description and Operation),
[Diagnostic Trouble Code \(DTC\) Index - DTC: Bluetooth Module - High Line \(TEL\)](#) (Description and Operation),
[Diagnostic Trouble Code \(DTC\) Index - DTC: Digital Audio Broadcast Module \(DABM\)](#) (Description and Operation),
[Diagnostic Trouble Code \(DTC\) Index - DTC: Digital Audio Control Module C \(DACMC\)](#) (Description and Operation),
[Diagnostic Trouble Code \(DTC\) Index - DTC: Front Entertainment Module \(FEM\)](#) (Description and Operation),
[Diagnostic Trouble Code \(DTC\) Index - DTC: Image Processing Module B \(IPMB\)](#) (Description and Operation),
[Diagnostic Trouble Code \(DTC\) Index - DTC: Portable Audio Interface Module \(APIM\)](#) (Description and Operation),
[Diagnostic Trouble Code \(DTC\) Index - DTC: Rear Entertainment Module \(REM\)](#) (Description and Operation),
[Diagnostic Trouble Code \(DTC\) Index - DTC: Satellite Digital Audio Radio System Module \(SARM\)](#) (Description and Operation),
[Diagnostic Trouble Code \(DTC\) Index - DTC: Television Control Module \(TVM\)](#) (Description and Operation).

Information and Entertainment System - General Information - Navigation System

Diagnosis and Testing

Principles of Operation

Inspection and Verification

1. **1.** Verify the customer concern.
2. **2.** Visually inspect for obvious signs of mechanical or electrical damage.
3. **3.** If an obvious cause for an observed or reported concern is found, correct the cause (if possible) before proceeding to the next step
4. **4.** If the cause is not visually evident, verify the symptom and refer to the Symptom Chart.

Principles of Operation

The information in this section is intended to help with basic diagnosis of the navigation system.

For a detailed description of the Navigation System, refer to the relevant Description and Operation section in the Workshop Manual.

Touch Screen Display (TSD) and Navigation Diagnostics

The TSD and the navigation module both have built in self tests that allow the technician to diagnose fault conditions. Fault codes and diagnostics can also be retrieved/achieved using the manufacturer approved diagnostic system.

TSD Diagnostics

The TSD has in built diagnostics to aid the diagnosis of system faults. The diagnostics allow the technician to interrogate the following:

- Hard Key Test
- Touch Switch Test
- DTC Information
- Vehicle Configurations
- Configurations
- Vehicle Signals
- Video Inputs Test
- Self Test
- MOST Test
- Colour bar
- Loading
- HDD information
- Vehicle information
- Microphone
- Voice output check

The built in diagnostics are accessed as follows:

- Once the system is powered up enter the 'Home' menu page
- Press and hold the TSD in the centre at the top of the screen for approximately 5 seconds and then press and hold the TSD at the top left corner of the screen for approximately 5 seconds.
- A 'Diag PIN Entry' box will appear' Type in the access code 753
- Once this code has been accepted the Diagnostic Menu screen will be displayed

Hard Key Test

The hard key test is used to check the operation of the hard switches.

If switch operation is normal, the switch colour on the screen will change when a hard switch is pressed. (Power switch operation cannot be checked on this screen.)

Touch Switch Test

The touch switch test calibrates the touch switch coordinates and checks touch switch operation.

Start Calibration - Calibrates the switch coordinates. Calibrate the coordinates by touching each of the "+" marks in the four corners of the screen.

- **NOTE: Do not touch any locations other than the "+" marks. (Touching other locations may invalidate the calibration.)**

Touch Switch Check - Checks for deviation in the coordinates. Check the coordinates of the touched location by verifying the displayed values. Touch and hold "press here" to return to the previous screen. If there is a large deviation in the coordinates, calibrate the touch switch using the "Start Calibration" function.

DTC Information

Search for the meaning of the displayed DTC.

Vehicle Configurations

Display the status of each vehicle system.

Speed Lock Configuration - Display the status of compulsory navigation settings (setting status of switches that cannot be operated) when driving.

Configurations

Display primary system information.

Vehicle Signals

Display the status of vehicle signals inputted to the Touch Screen Display (TSD). These signals include:

- Lights (on or off)
- Ambient light sensor voltage
- Backlight dimming duty
- Graphic illumination dimming duty
- Vehicle speed, GPS speed, MOST km/h
- Battery voltage
- Reverse gear / Parking brake position (electric park brake on or off)
- Speed inhibit
- MOST Fibre Optic Transceiver (FOT) temperature
- Output audio allocation

Video Inputs Test

This screen will allow the testing of video inputs that are connected to the Touch Screen Display (TSD). These include:

- Companion camera
- Rear view / Proximity camera
- TV/DVD

Self Test

Performs system self-diagnosis and displays the diagnostic results.

If an abnormality is present, a DTC is displayed.

MOST Test

Display the MOST connection status, and reception/transmission messages related to MOST.

"Mpr" displays the number of MOST devices existing on MOST. When "0" or "1" is displayed, communication is not possible.

Colour bar

This function allows the technician to test the colours generated by the TSD. A second screen displays six solid colours, selecting the colour will fill the screen with the chosen colour and pressing the TSD again will revert back to the colour test screen.

Loading

Update the navigation program.

For details on the update method, refer to the "Navigation Update Tool" operation manual.

HDD information

Display information on the Hard Disc Drive (HDD).

SMART test (Self-Monitoring Analysis and Reporting Technology) is initiated from this screen

Vehicle information

Display information on the vehicle.

- Car configuration - Displays information on vehicle environment settings.
 - Unit (distance) - Units of distance
 - Unit (time) - Units of time
 - Language - Displayed language
 - Fuel information - Remaining fuel quantity
 - Mileage information - Vehicle mileage display
 - Time information - Current time display
 - Override information - Status of switch operation inhibitions (Setting status of switches that cannot be operated.)
- GPS information - Display GPS related information.
 - Received position - Displays the latitude and longitude (displayed in degrees, minutes, and seconds) for the position information calculated by GPS.
 - Map matched position - Displays the latitude and longitude (displayed in degrees, minutes, and seconds) for the position information being used for map matching.
 - Satellites - Number of acquired satellites.
 - Current address - Address of the current location.
 - Satellite Information - Displays satellite information for up to 12 GPS satellite search targets.
 - Measurement HDOP - Positioning accuracy.
 - Status - Positioning status.
 - Date - Displays the current date and time in the following order: day, month, year, hour, minute, second. The

- year is displayed using the four-digit western calendar; time is displayed in Greenwich Mean Time (GMT).
- Vehicle sensor - Display vehicle signals inputted to the Touch Screen Display (TSD).
 - REV - Reverse signal status.
 - Speed - Current vehicle speed.
 - Speed pulse count - Speed pulse count value.
 - Distance calibration - Learning information for distance calibration.
 - Voltage/Offset - Gyro sensor output voltage value/voltage correction value.
 - Relative bearing - Relative bearing (0° when navigation is started.)
 - Gyro sense - Learning value for gyro sensitivity.
 - Reset - Resets the gyro sensor relative bearing value.
- RDS-TMC information - Display RDS-TMC related information.
 - Date/time (GMT) - Date and time for the TMC signal.
 - Frequency - TMC signal frequency.
 - PI code - Personal identification code for the broadcast station.
 - PS name - Broadcast station name.
 - Country code - Database country code.
 - LTN - Database location number (location table number.)
 - Service ID - Service provider identification number.
 - Air data - TMC data.

Microphone

Check the volume for the voice recognition microphone inputted to the Touch Screen Display (TSD). These include:

- PTT switch status - Checks the PTT switch connection. When the PTT switch is pressed, a signal will be outputted, and the indicator displays in green.
- Microphone input level judging - If a sampling of the user's voice command is at or above the threshold value, the indicator displays in blue.
- Microphone level - Displays the microphone input level.

Voice output check

Check the audio output.

- ON (Normal) - Outputs ADPCM voice (1 kHz sine wave) for five seconds.
- ON (Max) - Outputs ADPCM voice (maximum 1 kHz sine wave) for five seconds.

Inspection and Verification

1. Verify the customer concern.
2. Visually inspect for obvious signs of damage, water ingress and system integrity.
3. If an obvious cause for an observed or reported concern is found, correct the cause (if possible) before proceeding to the next step.
4. If the cause is not visually evident, check for Diagnostic Trouble Codes (DTCs) and refer to the DTC Index.

Visual Inspection

	Electrical
- Battery - Fuses - Central and Battery Junction Boxes - Megafuses - Wiring harness - Damaged, loose or corroded connectors - Touch Screen Display (TSD) - GPS antenna - TV antenna - Satellite antenna - FM antenna - Companion camera - Rear view camera - Microphone - Accessory USB Unit (AUU) - Steering wheel controls - Clock spring - Integrated Head Unit (IHU) - Audio amplifier - Anti-lock Brake System (ABS) module - Wheel speed sensors - Vehicle Information and Communication System (VICS Japan only) receiver - VICS beacon antenna (Japan only) - Controller Area Network (CAN) circuits - Media Oriented System Transport (MOST) system - Gigabit Video Interface (GVIF) - Central Junction Box (CJB) - Terrain Response - Mobile Telephone	

Symptom Chart

Symptom	Possible Cause	Action
Black screen (navigation and audio screens do not	Temperature in passenger	GO to Pinpoint Test A.

Symptom	Possible Cause	Action
display.)	- compartment too low - Condensation in passenger compartment - Electrical harness open/short circuit, dis-connected - Component failure	
The navigation screen does not display, even when the "NAVIGATION" button is pressed (screen does not change.)	- Electrical harness open/short circuit, dis-connected - Component failure	GO to Pinpoint Test B.
The hard switches do not respond.	- Component failure - Switch failure	GO to Pinpoint Test C.
The audio screen cannot be operated (does not display.)	- Media Oriented System Transport (MOST) system - Electrical harness open/short circuit, dis-connected	GO to Pinpoint Test D.
The screen does not dim.	- Electrical harness open/short circuit, dis-connected - Component failure	GO to Pinpoint Test E.
Noise on the screen, screen colour is abnormal.	- Electrical harness open/short circuit, dis-connected - Component failure	GO to Pinpoint Test F.
The touch switches do not respond.	- Electrical harness open/short circuit, dis-connected - Component failure	GO to Pinpoint Test G.
There is considerable deviation between the displayed vehicle position and the actual position.	- Electrical harness open/short circuit, dis-connected - Component failure	GO to Pinpoint Test H.
The GPS no reception mark does not disappear.	- Electrical harness open/short circuit, dis-connected - Component failure - No reception from satellite	GO to Pinpoint Test I.
No sound is emitted.	- Electrical harness open/short circuit, dis-connected - Component failure - Incorrect system settings	GO to Pinpoint Test J.
There is no navigation voice guidance.	- Volume level set too low - The amplifier and speakers are incorrectly connected	GO to Pinpoint Test K.
Voice recognition does not function.	- Electrical harness open/short circuit, dis-connected - Component failure	GO to Pinpoint Test L.
The vehicle position rotates randomly.	- Electrical harness open/short circuit, dis-connected - Component failure - Vehicle on a turntable in a parking building	GO to Pinpoint Test M.
The vehicle mark display is unstable.	- Electrical harness open/short circuit, dis-connected - Component failure - No reception from satellite	GO to Pinpoint Test N.
The vehicle position does not update.	- HDD contaminated/damaged - Electrical harness open/short circuit, dis-connected - Component failure	GO to Pinpoint Test O.
The map display is incomplete.	- HDD contaminated/damaged - Electrical harness open/short circuit, dis-connected - Component failure	GO to Pinpoint Test P.
Calls cannot be received or placed with Bluetooth; Bluetooth cannot connect with the vehicle.	- Incompatible bluetooth telephone - Incorrect initial connection settings - Electrical harness open/short circuit, dis-connected - Component failure	GO to Pinpoint Test Q.
The map cannot be updated.	Refer to the "Navigation Update Tool" operation manual	Refer to the "Navigation Update Tool" operation manual

Symptom	Possible Cause	Action
An error screen displays on the navigation screen.	Access to the map data has not been granted	GO to Pinpoint Test R.
The dual view cannot be switched.	- Incorrect car configuration data received - Media Oriented System Transport (MOST) system - Component failure	GO to Pinpoint Test S.

Pinpoint Tests

• NOTE: If the control module or a component is suspect and the vehicle remains under manufacturer warranty, refer to the Warranty Policy and Procedures manual (section B1.2), or determine if any prior approval Program is in operation, prior to the installation of a new module/component.

• NOTE: The built in diagnostics are accessed as follows:

- 1. With the vehicle at rest, place the Ignition switch "ON", or start the engine.
- 2. Press and hold the TSD in the centre at the top of the screen for approximately 5 seconds and then press and hold the TSD at the top left corner of the screen for approximately 5 seconds.
- 3. A 'Diag PIN Entry' box will appear' Type in the access code 753.
- 4. Once this code has been accepted the Diagnostic Menu screen will be displayed.

PINPOINT TEST A : BLACK SCREEN (NAVIGATION AND AUDIO SCREENS DO NOT DISPLAY.)	
TEST CONDITIONS	DETAILS/RESULTS/ACTIONS
A1: THE SCREEN SAVER FUNCTION WORKS	
	1 Check the screen saver function works.
	Does the screen saver function work?
	Yes Operation is normal.
	No Proceed to the next step. GO to A2.
A2: THE DISPLAY BACKLIGHT EMITS LIGHT	
	1 Check the display backlight emits light.
	Does the display backlight emits light?
	Yes Proceed to the next step.
	No GO to A12.
A3: THE SCREEN IS TURNED OFF	
	1 Check the screen is not turned off.
	Do the navigation and audio screens display when the screen is turned on?
	Yes Operation is normal.
	No GO to A4.
A4: THE VEHICLE INTERIOR TEMPERATURE IS -20°C OR LESS	
	1 Check the cabin internal temperature.
	Is the cabin internal temperature -20°C or lower?
	Yes Raise the cabin internal temperature, re-test the vehicle.
	No GO to A5.
A5: CONDENSATION IS FORMING INSIDE THE VEHICLE	
	1 Check for condensation occurring inside the passenger compartment.
	Is condensation occurring inside the passenger compartment?
	Yes Dry out the passenger compartment, re-test the vehicle.
	No GO to A6.
A6: THE LED FOR THE POWER SUPPLY BUTTON IS FLASHING. (RANGE ROVER ONLY)	
	1 Check the status of the audio power button LED.
	Is the audio power button flashing?
	Yes Carry out MOST Ring diagnostics to locate fault.
	No GO to A7.
A7: ONLY THE NAVIGATION SCREEN OR AUDIO SCREEN IS BLACK	
	1 Check to see if only the navigation screen is blank.
	Is only the navigation screen blank?
	Yes Check and install a new Touch Screen Display (TSD) as required. Refer to the new module/component installation note at top of DTC Index.
	No GO to A8.
A8: ONLY THE BACK MONITOR SCREEN IS BLACK	
	1 Check to see if only the audio screen is blank.

	Is only the audio screen blank? Yes Proceed to the next step. No GO to A10.
A9: AFTER INITIATING THE "VIDEO INPUT TEST" DIAGNOSIS, VIDEO CAN BE DISPLAYED	
	1 Carry out the "Video Input Test" diagnosis' (PIN code 753).
	Are the results of the "Video Input Test" diagnosis' normal? Yes Re-check the system. No Refer to the electrical circuit diagrams and check the cameras control module.
A10: ONLY THE TV SCREEN IS BLACK	
	1 Check to see if only the TV screen is black.
	Is only the TV screen blank? Yes Proceed to the next step. No GO to A12.
A11: AFTER INITIATING THE "VIDEO INPUT TEST" DIAGNOSIS, VIDEO CAN BE DISPLAYED	
	1 Carry out the "Video Input Test" diagnosis' (PIN code 753).
	Are the results of the "Video Input Test" diagnosis' normal? Yes Re-check the system. No Refer to the electrical circuit diagrams and check the TV control module.
A12: THE CONNECTIONS BETWEEN THE VISUAL NAVIGATION AND POWER SUPPLY WIRING HARNESS AND CONNECTORS ARE CORRECT	
	1 Check the display and power supply harness, power, auxiliary and ground circuits, for short, open circuits and are correctly connected.
	Was a fault identified with the display and power supply harness, power auxiliary and ground connections? Yes Rectify the fault and re-test the vehicle. No Check and install a new Touch Screen Display (TSD) as required. Refer to the new module/component installation note at top of DTC Index.

PINPOINT TEST B : THE NAVIGATION MAP SCREEN DOES NOT DISPLAY, EVEN WHEN THE "NAVIGATION" BUTTON IS PRESSED (SCREEN DOES NOT CHANGE.)

• NOTE: When re-confirming the symptoms after inspecting the wiring harness/connector, turn the ignition status to OFF, wait for the Audio power button LED on the display to turn OFF, then turn the ignition status to ON and run the diagnosis again from the beginning.

TEST CONDITIONS	DETAILS/RESULTS/ACTIONS
B1: NO RESPONSE TO PRESSING NAVIGATION MENU	
	• NOTE: 15 minutes are required for the program to update. If the ignition is accidentally turned OFF, turn the ignition ON again, and wait for 15 minutes.
	1 Check that the ignition was not turned 'OFF' during a navigation software update.
	Was the ignition turned 'OFF' during a navigation software update? Yes Wait for 15 minutes with the ignition ON. Then turn the ignition to OFF then ignition ON. No Refer to electrical circuit diagrams and check integrity of navigation system wiring harness and connectors. GO to B2.
B2: NO RESPONSE TO PRESSING NAVIGATION MENU	
	1 Wait for 15 minutes with the ignition ON. Then turn the ignition to OFF then ignition ON.
	Does the navigation screen displays when the "NAVIGATION" button is pressed. Yes Operation is normal. No Check and install a new Touch Screen Display (TSD) as required. Refer to the new module/component installation note at top of DTC Index.

PINPOINT TEST C : THE HARD SWITCHES DO NOT RESPOND.

TEST CONDITIONS	DETAILS/RESULTS/ACTIONS
C1: CHECK FOR FOREIGN OBJECTS	
	1 Check for foreign objects near to the button.
	Are there any foreign objects close to the button causing it to be pressed? Yes Remove foreign objects and re-test vehicle. No GO to C2.
C2: DISPLAY DIAGNOSTICS CHECK	
	1 Check to see if the display diagnostics can be displayed.

	Can the display diagnostics be displayed? Yes Proceed to the next step. No Check and install a new Touch Screen Display (TSD) as required. Refer to the new module/component installation note at top of DTC Index.
C3: HARD KEY TEST	
	1 Carry out the display diagnostics hard key test.
	Is the operation normal when carrying out the display diagnostics hard key test? Yes Operation is normal. No Check and install a new Touch Screen Display (TSD) as required. Refer to the new module/component installation note at top of DTC Index.

PINPOINT TEST D : THE AUDIO SCREEN CANNOT BE OPERATED (DOES NOT DISPLAY.)

TEST CONDITIONS	DETAILS/RESULTS/ACTIONS
D1: CD CHANGER CHECK	
	1 Check to see if a CD changer is installed.
	Is a CD changer installed? Yes Proceed to the next step. No Normal operation, CD screen will not be displayed when there is no CD changer installed.
D2: THE AUDIO SCREEN DISPLAYS WHEN THE "AUDIO VIDEO" HARD SWITCH IS PRESSED.	
	1 The audio screen displays when the "AUDIO VIDEO" hard switch is pressed.
	Does the audio screen displays when the "AUDIO VIDEO" hard switch is pressed? Yes Proceed to the next step. No Refer to the hard switches do not respond diagnosis.
D3: THE AUDIO SCREEN DISPLAYS WHEN "AUDIO VIDEO" ON THE "HOME MENU" IS PRESSED.	
	1 The audio screen displays when "Audio Video" on the "Home Menu" is pressed.
	Does the audio screen displays when "Audio Video" on the "Home Menu" is pressed? Yes Proceed to the next step. No Refer to the touch switches do not respond diagnosis.
D4: EACH SWITCH (AM FM, CD, IPOD/USB, TV/DVD.) ON THE AUDIO SCREEN RESPONDS.	
	1 Each switch (AM FM, CD, iPod/USB, TV/DVD.) on the audio screen responds.
	Does each switch (AM FM, CD, iPod/USB, TV/DVD.) on the audio screen respond? Yes Carry out MOST Ring diagnostics to locate fault. No GO to D5.
D5: THE IGNITION IS TURNED FROM IGNITION ON TO OFF, AND AFTER WAITING FOR APPROXIMATELY 30 SECONDS, THE TOUCH SCREEN DISPLAY (TSD) POWER SUPPLY LED WENT OUT. WHEN THE IGNITION IS TURNED TO ON, THE AUDIO SCREEN CAN BE OPERATED.	
	1 The ignition is turned from Ignition ON to OFF, and after waiting for approximately 30 seconds, the Touch Screen Display (TSD) power supply LED went out.
	When the ignition is turned to ON, can the audio screen be operated? Yes Operation is normal. No Carry out MOST Ring diagnostics to locate fault.

PINPOINT TEST E : THE SCREEN DOES NOT DIM.

TEST CONDITIONS	DETAILS/RESULTS/ACTIONS
E1: CHECK FOR FOREIGN OBJECTS	
	1 Check for foreign objects adhered to the display light sensor. ● Range Rover - Top right of display ● Discovery/Range Rover Sport - Instrument panel
	Are there any foreign objects adhered to the display light sensor? Yes Remove foreign objects and re-test vehicle. No GO to E2.
E2: DISPLAY LIGHT SENSOR CHECK	
	1 Check to see if display screen switches to low light when sensor is covered.
	Does the display screen switch to low light when the sensor is covered? Yes Operation is normal. No GO to E3.
E3: VEHICLE LIGHT SWITCH TESTS	
	1 Check to see if display screen switches to low light when the vehicle light switch is pressed.

	2 When the vehicle exterior lights are switched on, check diagnostic menu "Vehicle Signals" lights on the diagnostics screen is "ON."
	Does the display screen switch to low light when the vehicle light switch is pressed? Yes Operation is normal. No Check and install a new Touch Screen Display (TSD) as required. Refer to the new module/component installation note at top of DTC Index.

PINPOINT TEST F : NOISE ON THE SCREEN; SCREEN COLOUR IS ABNORMAL.

TEST CONDITIONS	DETAILS/RESULTS/ACTIONS
F1: DISPLAY POWER AND GROUND CHECKS	
	1 Refer to electrical circuit diagrams and check battery power and power ON relay voltage, and ground resistance.
	Is the battery power and power ON relay voltage between 10.5 and 16 volts, and continuity to ground? Yes Proceed to the next step. No Check and rectify the vehicle wiring harness and connectors.
F2: CONTRAST CHECK	
	1 Check to see if the screen colour is normal when the screen setting (contrast) is re-ret to the default values.
	Is the screen colour normal with the default values? Yes Operation is normal. No GO to F3.
F3: CABIN INTERNAL TEMPERATURE CHECK	
	1 Check the cabin internal temperature.
	Is the cabin internal temperature -20°C or lower? Yes Raise the cabin internal temperature and re-test. No GO to F4.
F4: ADDITIONAL SCREEN CHECKS	
	1 Check all other screens.
	Are all other screens beside the navigation display screen normal? Yes Check and install a new Touch Screen Display (TSD) as required. Refer to the new module/component installation note at top of DTC Index. No GO to F5.
F5: COLOUR BAR CHECK	
	1 Carry out the display diagnostics colour bar check test.
	Are the results of the display diagnostics colour bar check normal? Yes Operation is normal. No Check and install a new Touch Screen Display (TSD) as required. Refer to the new module/component installation note at top of DTC Index.

PINPOINT TEST G : THE TOUCH SWITCHES DO NOT RESPOND.

TEST CONDITIONS	DETAILS/RESULTS/ACTIONS
G1: TOUCH SWITCH TEST	
	1 The touch switches not responding on the navigation screen only
	Are the touch switches not responding on the navigation screen only? Yes Proceed to the next step. No Check and install a new Touch Screen Display (TSD) as required. Refer to the new module/component installation note at top of DTC Index.
G2: TOUCH SWITCH CHECK	
	1 Carry out the touch switch check in the display diagnostics.
	Are the results of the display diagnostics touch switch check normal? Yes Check the symptoms again. Operation is normal. No GO to G3.
G3: START CALIBRATION ROUTINE	
	1 Carry out the start calibration routine from the display diagnostics touch switch test.
	Is normal operation resumed after correction? Yes Operation is normal. No Check and install a new Touch Screen Display (TSD) as required. Refer to the new module/component installation note at top of DTC Index.

PINPOINT TEST H : THERE IS CONSIDERABLE DEVIATION BETWEEN THE DISPLAYED VEHICLE

POSITION AND THE ACTUAL POSITION.

TEST CONDITIONS	DETAILS/RESULTS/ACTIONS
H1: GPS MARK DISPLAY CHECK	
	1 The GPS no reception mark is displayed.
	Is the GPS no reception mark displayed on the display screen? Yes Refer to GPS no reception mark does not disappear diagnosis. No GO to H2.
H2: LOCATION CHECK	
	1 Check for symptom occurring in particular locations - parallel roads, elevated roads, loop roads, parking centres (buildings) etc.
	Does the symptom occur in a particular location? Yes In places where the vehicle position is hard to specify, the vehicle position may be matched incorrectly and result in position discrepancies. Additionally, a new road layout will mean the Gyro does not match the map position. No Proceed to the next step.
H3: DISTANCE CALIBRATION CHECK	
• NOTE: Refer to diagnostic menu "Vehicle Sensor" – Distance Calibration, this value should be approximately 200mm, a large deviation from this value indicates a speed signal fault or incorrect wheel size.	
	1 Check to see if distance calibration is being performed.
	Is distance calibration being performed? Yes Monitor the condition until distance calibration is complete (drive for over 10km/6.2 miles) No GO to H4.
H4: VEHICLE SIGNAL INSPECTION	
	1 Check vehicle sensor display screen, from vehicle information diagnostics menu for the following: vehicle speed signal, REV: ON is indicated when the gear shift lever is in the REV position and gyro sensor input status are normal.
	Are the vehicle speed signal, REV signal, and gyro sensor input status normal? Yes GO to H5. No Refer to the electrical circuit diagrams and check the integrity of the wiring harness and connectors, and CAN circuit, to the Touch Screen Display (TSD).
H5: TIRE CHECK	
	1 Check to see if new tires have recently been installed.
	Have new tires been recently installed? Yes From the navigation map screen, enter the navigation menu, select navigation setup then select calibration, press 'Distance' then drive the vehicle for 10 to 20 km. Operation will return to normal after performing distance calibration and driving the vehicle for 10 to 20 km. No Adjust the current location, and after the GPS no signal mark has disappeared, drive the vehicle for a while to monitor conditions.

PINPOINT TEST I : THE GPS NO RECEPTION MARK DOES NOT DISAPPEAR.

- **NOTE:** Move the vehicle to an open area, radio waves from satellites may not be received inside buildings.
- **NOTE:** Correct the vehicle cursor to the current location.

TEST CONDITIONS	DETAILS/RESULTS/ACTIONS
I1: RETRO-INSTALL INSTALLATIONS CHECK	
	1 Check to see if there are any retro-install installations (anti-theft, radar, etc.)
	Are there any retro-install installations? Yes GO to I2. No GO to I3.
I2: RETRO-INSTALL INSTALLATIONS RF CHECK	
	1 Turn power supply (including back-up power) to OFF status.
	Does the GPS no reception mark disappear? Yes GPS reception may deteriorate when devices receiving radio waves are retro-installed. Alter the position of the retro-install device, and re-test vehicle. No GO to I4.
I3: SATELLITE RECEPTION CHECKS	
	1 Check to see if a 'P' or 'T' is displayed in the 'STS' column of the navigation diagnostics GPS information screen after 10 minutes have passed.
	Is a 'P' or a 'T' displayed? Yes Wait for reception of another satellite so that position calculation can be performed. No Refer to the electrical circuit wiring diagrams and check the integrity of the wiring harness and connectors to the GPS antenna. Proceed to the next step.
I4: GPS ANTENNA REPLACEMENT	

	1 Install a new GPS antenna.
	Does the GPS no signal mark disappears when the GPS antenna is replaced. Yes Fault has been rectified. No Check and install a new Touch Screen Display (TSD) as required. Refer to the new module/component installation note at top of DTC Index.

PINPOINT TEST J : NO SOUND IS EMITTED.

TEST CONDITIONS	DETAILS/RESULTS/ACTIONS
J1: SOUND OUTPUT CHECK	
	1 Check sound output across all systems.
	Is there no sound output across all systems? Yes GO to J2. No GO to J3.
J2: VOLUME LEVEL CHECK	
	1 Check the volume level is not set too low.
	Is the volume level set too low? Yes Increase the volume level and re-test vehicle. No GO to J3.
J3: INTEGRITY OF AMPLIFIER AND SPEAKER WIRING.	
	1 The amplifier and speaker wiring harnesses are correctly connected.
	Are the amplifier and speaker wiring harnesses correctly connected? Yes Check the MOST devices. GO to J4. No Refer to the electrical circuit diagrams and check integrity of amplifier and speaker wiring harness and connections.
J4: ONLY VOICE RECOGNITION DOES NOT OUTPUT	
	1 Check to see if only voice recognition does not output.
	Is there no output only from the voice recognition? Yes GO to J5. No Proceed to step 8.
J5: VOICE GUIDANCE	
	1 Check the volume level for voice guidance is not set too low.
	Is the volume level for voice guidance set too low? Yes Increase the volume level and re-test vehicle. No GO to J6.
J6: VOICE GUIDANCE SETTINGS	
	1 Check to see if the voice guidance is set to 'OFF' in the navigation settings.
	Is the voice guidance set to 'OFF' in the navigation settings? Yes Set to 'ON' and re-test the vehicle. No GO to J7.
J7: ADDITIONAL ITEMS	
	1 Check to see if the following items apply. • There is no destination set • There is no movement along the route
	Do the two items apply? Yes Normal operation, confirm customer symptom and re-test vehicle. No Check MOST connection at the Touch Screen Display (TSD), check the MOST devices.Proceed to the next step.
J8: ONLY VOICE RECOGNITION DOES NOT OUTPUT	
	1 Check to see if only voice recognition does not output.
	Is there no output only from the voice recognition? Yes Refer to the there is no navigation voice guidance diagnosis. No GO to J9.
J9: SOUND IS ONLY ABSENT WHEN USING THE AUDIO SYSTEM OR TELEPHONE.	
	1 Check to see if sound is only absent when using the audio system or telephone.
	Does only the audio system or telephone sound not output? Yes Check MOST connection at the Touch Screen Display (TSD), check the MOST devices. No Refer to the electrical circuit diagrams and check integrity of wiring harness and connections.

PINPOINT TEST K : THERE IS NO NAVIGATION VOICE GUIDANCE.	
TEST CONDITIONS	DETAILS/RESULTS/ACTIONS
K1: SOUND MISSING AUDIO SYSTEM ONLY	
	1 Sound is only absent from the audio system (CD, radio.)
	Is sound only absent from the audio system (CD, radio.)? Yes GO to K4. No Proceed to the next step.
K2: VOICE MISSING NAVIGATION SYSTEM ONLY	
	1 Voice is only absent from the navigation system.
	Is voice only absent from the navigation system? Yes GO to K3. No GO to K3.
K3: NAVIGATION VOICE GUIDANCE CANNOT BE HEARD	
	1 Operate the navigation replay switch and raise the volume.
	Can navigation voice guidance be heard after pressing the navigation replay switch, and raising the volume? Yes Operation is normal. No Check and install a new Touch Screen Display (TSD) as required. Refer to the new module/component installation note at top of DTC Index.
K4: INTEGRITY OF AMPLIFIER AND SPEAKER WIRING.	
	1 The amplifier and speaker wiring harnesses are correctly connected.
	Are the amplifier and speaker wiring harnesses correctly connected? Yes GO to K5. No Refer to the electrical circuit diagrams and check integrity of amplifier and speaker wiring harness and connections.
K5: VOLUME LEVEL CHECK	
	1 Check the volume level is not set too low.
	Is the volume level set too low? No Increase the volume level and re-test vehicle. No Refer to the electrical circuit diagrams and check integrity of complete audio system.

PINPOINT TEST L : VOICE RECOGNITION DOES NOT FUNCTION.	
TEST CONDITIONS	DETAILS/RESULTS/ACTIONS
L1: AUDIO SOUND IS MUTED WHEN PTT SWITCH IS DEPRESSED	
	1 Check to see if the audio sound is muted when the PTT switch is depressed.
	Is the audio sound muted? Yes GO to L3. No GO to L2.
L2: PTT SWITCH STATUS	
	1 Check to see if the PTT switch status is ok in the navigation diagnostics, manual check, microphone test.
	Is the PTT switch status, in navigation diagnostics, ok? Yes Check MOST connection at the Touch Screen Display (TSD), check the MOST devices. No Replace the MOST master, or the gateway module.
L3: TALK BACK	
	1 Check to see if there is talk back when other voice recognition demands are executed.
	Is there talk back? Yes System operation is normal, (advise change in manner of speech, as incorrect recognition is occurring). No GO to L4.
L4: HARNESS/CONNECTOR CHECKS	
	1 Refer to the electrical circuit diagrams and check integrity of Touch Screen Display (TSD) harness and connections.
	Has a fault been identified with the Touch Screen Display (TSD) harness or connections? Yes Rectify the fault and re-test the vehicle. No Check and install a new Touch Screen Display (TSD) as required. Refer to the new module/component installation note at top of DTC Index.

PINPOINT TEST M : THE VEHICLE POSITION ROTATES RANDOMLY.
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TEST CONDITIONS	DETAILS/RESULTS/ACTIONS
M1: VEHICLES CURRENT POSITION MARK TURNS ON ITS OWN	
	1 Determine if the ignition status was turned to Auxiliary or On, while the vehicle was on a turntable in a parking building etc. Was ignition status set to Auxiliary or On? Yes The angular speed of the vehicle at the time of the ignition status change will be logged as the standard value. To re-set the standard value, turn ignition status to 'OFF' then to 'Auxiliary' or 'On' with the vehicle stationary. Re-test the vehicle. No Check and install a new Touch Screen Display (TSD) as required. Refer to the new module/component installation note at top of DTC Index.

PINPOINT TEST N : THE VEHICLE MARK DISPLAY IS UNSTABLE.

TEST CONDITIONS	DETAILS/RESULTS/ACTIONS
N1: VEHICLE SPEED SIGNAL	
	1 The vehicle speed signal is being properly inputted under "Vehicle Sensor" on the "Vehicle information" diagnostics screen. Is the vehicle speed input correctly? Note: MOST and navigation system module speeds are approximately the same. Yes GO to N2. No Carry out MOST ring circuit checks. Check the Anti-Lock Brake System Module for related DTCs and refer to the relevant DTC Index. Carry out network integrity tests using the manufacturer approved diagnostic system. Refer to electrical circuit diagrams and check CAN circuits if required. Repair wiring harness as required. Rectify the fault and re-test the vehicle.
N2: CHECK NUMBER OF SATELLITES	
	1 "0" is displayed in the "Satellites" column under "GPS Information" (on the "Vehicle information" diagnostics screen.) Is the number of satellites displayed on the screen 0? Yes Refer to GPS no reception mark does not disappear diagnosis. No GO to N3.
N3: CHECK IF SYMPTOMS ARE OCCURRING IN PARTICULAR LOCATIONS	
	1 Confirm if the 'car current position not stable' symptom is occurring in particular locations. Is the 'car current position not stable' symptom occurring in particular locations? Yes System operation is normal. Signal reflections from buildings or a particular location may be responsible. No Refer to GPS no reception mark does not disappear diagnosis.

PINPOINT TEST O : THE VEHICLE POSITION DOES NOT UPDATE.

TEST CONDITIONS	DETAILS/RESULTS/ACTIONS
O1: VEHICLE POSITION DOES NOT UPDATE	
	1 Check the GPS no reception mark. Has the GPS no reception mark disappeared? Yes GO to O2. No Refer to GPS no reception mark does not disappear diagnosis.
O2: VEHICLE POSITION DOES NOT UPDATE	
	1 Check the map screen scroll function. Can the map screen be touched scrolled? Yes GO to O3. No Initiate the "SMART test" on the "HDD information" diagnostics screen.
O3: VEHICLE POSITION DOES NOT UPDATE	
	1 The vehicle speed signal is being properly inputted under "Vehicle Sensor" on the "Vehicle information" diagnostics screen. Is the vehicle speed input correctly? Note: MOST and navigation system module speeds are approximately the same. Yes Check and install a new Touch Screen Display (TSD) as required. Refer to the new module/component installation note at top of DTC Index. No Carry out MOST ring circuit checks. Check the Anti-Lock Brake System Module for related DTCs and refer to the relevant DTC Index. Carry out network integrity tests using the manufacturer approved diagnostic system. Refer to electrical circuit diagrams and check CAN circuits if required. Repair wiring harness as required. Rectify the fault and re-test the vehicle.

PINPOINT TEST P : THE MAP DISPLAY IS INCOMPLETE.

TEST CONDITIONS	DETAILS/RESULTS/ACTIONS
P1: MAP DISPLAY IS INCOMPLETE	

	1 Check to see if the map screen displays correctly when it is touch scrolled.
	Does the map screen display correctly when it is touch scrolled? Yes GO to P2. No Initiate the "SMART test" on the "HDD information" diagnostics screen.
P2: MAP DISPLAY IS INCOMPLETE	
	1 Check to see if the map screen scale can be reduced.
	Can the map screen scale be reduced? Yes GO to P3. No Initiate the "SMART test" on the "HDD information" diagnostics screen.
P3: MAP DISPLAY IS INCOMPLETE	
	1 Check to see if a point of interest search can be performed.
	Can a point of interest search be performed? Yes Check and install a new Touch Screen Display (TSD) as required. Refer to the new module/component installation note at top of DTC Index. No Initiate the "SMART test" on the "HDD information" diagnostics screen.

PINPOINT TEST Q : CALLS CANNOT BE RECEIVED OR PLACED WITH BLUETOOTH; BLUETOOTH CANNOT CONNECT WITH THE VEHICLE.

TEST CONDITIONS	DETAILS/RESULTS/ACTIONS
Q1: DISPLAY CHECK	
	1 Press the telephone button.
	Is 'Telephone not connected' displayed on the screen? Yes GO to Q2. No Proceed to step 7.
Q2: BLUETOOTH COMPATIBILITY CHECK	
	1 Check to see if the telephone handset is Bluetooth compatible.
	Is the telephone handset Bluetooth compatible? Yes GO to Q3. No Use a Bluetooth compatible telephone handset.
Q3: HANDSET POWER CHECK	
	1 Check to see if the handset is switched 'ON'.
	Is the telephone handset switched 'ON'? Yes GO to Q4. No Switch handset 'ON' and re-test.
Q4: INITIAL CONNECTION SETTINGS	
	1 Check to see if the initial connection settings to the in-vehicle system have been performed.
	Have the initial connection settings to the in-vehicle system been performed? Yes GO to Q5. No Perform the initial connection settings.
Q5: HANDSET COMMUNICATION CHECK	
	1 Check to see if the telephone handset recognizes the in-vehicle system.
	Does the telephone handset recognize the in-vehicle system? Yes GO to Q6. No Re-test using a different Bluetooth compatible telephone handset. If the fault is still evident, suspect the telephone module. Refer to the new module/component installation note at the top of this procedure.
Q6: HANDSET COMMUNICATION CHECK	
	1 Switch the Bluetooth telephone handset 'OFF' then back 'ON' again.
	Does the telephone handset recognize the in-vehicle system? Yes Operation is normal. No Suspect the telephone module. Refer to the new module/component installation note at the top of this procedure.
Q7: HANDSET COMMUNICATION CHECK	
	1 Check to see if the telephone is within communications range.
	Is the telephone within a 10 metre range of the bluetooth telephone module? Yes GO to Q8. No Move the telephone handset to within a 10 metre range of the bluetooth telephone module.
Q8: HANDSET COMMUNICATION CHECK	
	1 Check to see if when transmitting, the telephone handset is also receiving.

	When transmitting, is the telephone handset also receiving? Yes Check MOST connection at the Touch Screen Display (TSD), check the MOST devices. No Replace the telephone handset.
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PINPOINT TEST R : AN ERROR SCREEN DISPLAYS ON THE NAVIGATION SCREEN.

TEST CONDITIONS	DETAILS/RESULTS/ACTIONS
R1: MAP DATA CANNOT BE READ	
	1 Access to the map data has not been granted.
	Has new Touch Screen Display (TSD) been installed? Yes Initiate the "Map Lock routine." No Check that a valid activation code for the particular map version installed is available and is being used, it may be necessary to purchase a new activation code from Navteq. If the activation code is valid but map cannot be activated, check and install a new Touch Screen Display (TSD) as required. Refer to the new module/component installation note at top of DTC Index. Initiate the "Map Lock routine."

PINPOINT TEST S : THE DUAL VIEW CANNOT BE SWITCHED.

• NOTE: Prior to troubleshooting, verify that the vehicle and the Touch Screen Display (TSD) are compatible with Dual Directional View.

TEST CONDITIONS	DETAILS/RESULTS/ACTIONS
S1: AUDIO VIDEO HARD SWITCH CHECK	
	1 The audio screen displays when the "AUDIO VIDEO" hard switch is pressed.
	Does the audio screen displays when the "AUDIO VIDEO" hard switch is pressed? Yes GO to S2. No Refer to the hard switches do not respond diagnosis.
S2: AUDIO SOURCE	
	1 TV or DVD is the audio source.
	Does TV or DVD display? Yes GO to S3. No Switch the audio source to TV or DVD and carry out diagnosis again.
S3: VIDEO AND SOUND CORRECTLY DISPLAYED	
	1 Video with sound is displayed on the passenger side from the audio screen after the "AUDIO VIDEO" hard switch is pressed.
	Is video with sound displayed on the passenger side from the audio screen after the "AUDIO VIDEO" hard switch is pressed? Yes Operation is normal. No GO to S4.
S4: VIDEO AND SOUND INCORRECTLY DISPLAYED	
	1 Video with sound is incorrectly displayed on the passenger side from the audio screen after the "AUDIO VIDEO" hard switch is pressed
	Is video with sound incorrectly displayed on the passenger side from the audio screen after the "AUDIO VIDEO" hard switch is pressed? Yes Refer to the black screen (navigation and audio screens do not display) diagnosis. No GO to S5.
S5: VEHICLE CONFIGURATION	
	1 The following set values are present on the "Vehicle Configuration" diagnostics screen. ● HLDF = Dual view ● HLDF is fitted ● Hand of Drive is correct for vehicle being tested
	Are values present on the "Vehicle Configuration" diagnostics screen. Yes Check and install a new Touch Screen Display (TSD) as required. Refer to the new module/component installation note at top of DTC Index. No Contact dealer technical support to assist in re-configuring the Car Configuration File (CCF) using the manufacturers approved diagnostic system. Clear the DTC, switch off the ignition and allow sufficient time for the infotainment relay to power down. Check MOST connection at the Touch Screen Display (TSD), check the MOST devices.

DTC Index

For a complete list of all Diagnostic Trouble Codes (DTCs) that could be logged on this vehicle, please refer to Section 100-00.

REFER to: [Diagnostic Trouble Code \(DTC\) Index - DTC: Navigation Control Module \(NAV\)](#) (100-00 General Information, Description and Operation).

