

Navigation System

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 function
- Touch screen function
- Video input
- RGB video
- Vehicle signals
- Self test
- Configurations
- Vehicle configurations
- MOST ring function

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 center at the top of the screen for approximately 5 seconds and then press the navigation hard key (Discovery, Bottom Left - Range Rover, Top Right)
- 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 Screen

The hard key test is used to determine the function of the two switches integrated into the TSD. Pressing either of the buttons will turn the corresponding icon on the screen green if it is functioning correctly.

Touch Screen Test Screen

Entering the Touch screen test screen allows the technician to test the physical side of the touch screen. The technician can choose between checking the screen integrity and re-calibrating the screen. Using the Touch Switch Check button will display a blank screen. Touching the screen in any place will give a series of co-ordinates. If a faulty area of the screen is touched the co-ordinates will not display.

Re-calibrating the screen allows the technician to align the touch screen co-ordinates to the pressing of the screen. This is achieved by pressing a series of on screen targets as they are displayed.

Vehicle Signals

The vehicle signals screen displays inputs from other vehicle systems to the TSD. These signals include:

- Battery voltage
- Lights (on or off)
- Graphic illumination dimming duty
- Output audio allocation
- PCB temp

- Speed inhibit (on or off)
- MOST Fibre Optic Transceiver (FOT) temperature
- Parking brake position (electric park brake on or off)
- Backlight PWM duty
- Beep volume
- Beep tone

Video Input Test

This screen will allow the testing of video inputs that are connected to the TSD. This includes TV/DVD Rear Seat Entertainment (RSE) and television.

RGB Color Test

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

Self Test

The self test function displays any fault codes that are present for the TSD. The screen also displays the current state of the ignition switch and the battery voltage.

Two additional buttons in the screen allow the technician to clear the fault codes and to test the TSD.

Configurations

The configurations screen displays information about the TSD and the navigation module. Switching between the two components is achieved via the soft key at the top LH corner of the screen.

The information contained in the screens is as follow:

- Vehicle type
- Component serial number
- Component part number
- Component part level
- CPU/bootloader lever
- Main CPU application version
- Sub CPU software version
- Private CAN database version

Vehicle Configurations

Selecting the vehicle configurations option allows the technician to inspect the components installed to the vehicle entertainment system. There are four screens which can be navigated through via the next and previous buttons.

MOST Test

The MOST test screen displays information about the MOST signals being sent around the MOST ring. Using any part of the audio system will bring up the MOST message on the screen. This can be used to help diagnose MOST related faults.

Navigation Module Diagnostics

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

- Navigation info
- Parts info
- Manual check
- Self check

Each area has a sub level of menus to access further information.

The built in diagnostics are accessed as follows:

- Once the system is powered up enter the navigation system via the navigation hard key

- Agree to the disclaimer screen
- Enter the navigation home menu
- Press and hold the TSD in the center at the top of the screen
- A 'Diag PIN Entry' box will appear, type in the access code 753

Once this code has been accepted the on screen diagnostics menu will be displayed. The menu has the following options:

- Navigation info
- Manual check
- Parts info
- Self check

Navigation Info

The navigation info menu has three sub menus:

- Vehicle signals
- GPS information
- Reset position

Parts Info

Parts info displays information on the system component and software versions.

Manual Check

The manual check menu enables the technician to complete the following self tests:

- Navigation RGB screen test
- Microphone input level test
- Voice output test

Self Check

Self check runs an internal check on the navigation module and displays any fault codes on the TSD.

Inspection and Verification

- 1 . Verify the customer concern.
- 2 . Visually inspect for obvious electrical faults.

Electrical
<ul style="list-style-type: none"> ● Battery ● Fuses Central and Battery Junction Boxes Megafuses ● Wiring harness ● Damaged, loose or corroded connectors ● Touch Screen Display (TSD) ● GPS antenna ● Navigation module ● 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)

- 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 . Use the approved diagnostic system or a scan tool to retrieve any DTCs before moving onto the DTC index.



Make sure that all DTCs are cleared following rectification.

Make sure that all DTCs are cleared following rectification.

Symptom Chart

Symptom	Possible Cause	Action
Lost satellite reception	<ul style="list-style-type: none"> Vehicle not in clear view of satellites GPS antenna circuit: short circuit to ground, short circuit to power, high resistance GPS antenna failure Navigation module failure Antenna is disconnected 	<p>NOTE : Time taken to lock on to satellites can be several minutes after ignition status is switched to 'ON'</p> <p>It is possible for the GPS antenna to lose satellite reception in hilly or tree-lined areas, built-up areas, in multi-storey car parks, tunnels or during heavy rain or thunderstorms. Check for DTCs indicating an antenna or navigation module fault.</p>
Touch screen display (TSD) displays a high temperature message and shuts down	<ul style="list-style-type: none"> MOST fibre optic transceiver (FOT) over-temperature FOT temperature greater than 85°C 	Check MOST FOT temperature in TSD diagnostics, vehicle signals. Once the temperature is reduced the system will resume normal operation. If the system does not resume normal operation, check for DTCs indicating an information and entertainment system fault.
Touch screen display (TSD) displays a low temperature message and shuts down	<ul style="list-style-type: none"> TSD too cold TSD temperature less than -25°C 	Check MOST FOT temperature in TSD diagnostics, vehicle signals. Once the temperature is increased the system will resume normal operation. If the system does not resume normal operation, check for DTCs indicating an information and entertainment system fault.
Blank screen	<ul style="list-style-type: none"> Temperature in passenger compartment too low Condensation in passenger compartment Electrical harness open/short circuit, disconnected Component failure 	GO to Pinpoint Test G830887p1 .
No display on navigation screen (screen does not change)	<ul style="list-style-type: none"> Electrical harness open/short circuit, disconnected Component failure 	GO to Pinpoint Test G830887p2 .
Hard switches do not respond	<ul style="list-style-type: none"> Component failure Switch failure 	GO to Pinpoint Test G830887p3 .
Radio screen will not display (Range Rover Only)	<ul style="list-style-type: none"> Component failure Switch failure 	GO to Pinpoint Test G830887p4 .
CD screen will not display (Range Rover Only)	<ul style="list-style-type: none"> Component failure Switch failure 	GO to Pinpoint Test G830887p5 .
TV/DVD screen will not display	<ul style="list-style-type: none"> Component failure Switch failure 	GO to Pinpoint Test G830887p6 .
AUX. screen will not display (Range Rover Only)	<ul style="list-style-type: none"> Component failure Switch failure 	GO to Pinpoint Test G830887p7 .
	<ul style="list-style-type: none"> Electrical harness 	

Display screen will not switch to low light	<ul style="list-style-type: none"> open/short circuit, disconnected ● Component failure 	GO to Pinpoint Test G830887p8.
Noise interferes on each screen and the colors are abnormal	<ul style="list-style-type: none"> ● Electrical harness open/short circuit, disconnected ● Component failure 	GO to Pinpoint Test G830887p9.
Disturbance on screen (synchronization abnormal)	<ul style="list-style-type: none"> ● Electrical harness open/short circuit, disconnected ● Component failure 	GO to Pinpoint Test G830887p10.
Screen color is abnormal	<ul style="list-style-type: none"> ● Electrical harness open/short circuit, disconnected ● Component failure 	GO to Pinpoint Test G830887p11.
Map disc will not insert/eject	<ul style="list-style-type: none"> ● Electrical harness open/short circuit, disconnected ● Component failure ● Map disc failure 	GO to Pinpoint Test G830887p12.
Touch switches do not respond	<ul style="list-style-type: none"> ● Electrical harness open/short circuit, disconnected ● Component failure 	GO to Pinpoint Test G830887p13.
Considerable deviation between displayed vehicle position and actual position	<ul style="list-style-type: none"> ● Electrical harness open/short circuit, disconnected ● Component failure 	GO to Pinpoint Test G830887p14.
GPS mark does not appear	<ul style="list-style-type: none"> ● Electrical harness open/short circuit, disconnected ● Component failure ● No reception from satellite 	GO to Pinpoint Test G830887p15.
No sound	<ul style="list-style-type: none"> ● Electrical harness open/short circuit, disconnected ● Component failure ● Incorrect system settings 	GO to Pinpoint Test G830887p16.
No voice recognition	<ul style="list-style-type: none"> ● Electrical harness open/short circuit, disconnected ● Component failure ● No map disc inserted 	GO to Pinpoint Test G830887p17.
Vehicle current position mark turns on its own	<ul style="list-style-type: none"> ● Electrical harness open/short circuit, disconnected ● Component failure 	GO to Pinpoint Test G830887p18.
Vehicle position does not update	<ul style="list-style-type: none"> ● Map disc contaminated/damaged ● Electrical harness open/short circuit, disconnected ● Component failure 	GO to Pinpoint Test G830887p19.

Route calculations cannot be performed	<ul style="list-style-type: none"> Map disc contaminated/damaged Electrical harness open/short circuit, disconnected Component failure 	GO to Pinpoint Test G830887p20 .
Map display is incomplete	<ul style="list-style-type: none"> Map disc contaminated/damaged Electrical harness open/short circuit, disconnected Component failure 	GO to Pinpoint Test G830887p21 .
Vehicle position mark moves in the opposite direction to the direction of travel	<ul style="list-style-type: none"> Electrical harness open/short circuit, disconnected Component failure 	GO to Pinpoint Test G830887p22 .
Cannot make or receive calls with the bluetooth telephone - cannot connect to the vehicle	<ul style="list-style-type: none"> Incompatible bluetooth telephone Incorrect initial connection settings Electrical harness open/short circuit, disconnected Component failure 	GO to Pinpoint Test G830887p23 .
'NAVIGATION NOT INSTALLED' message displayed	<ul style="list-style-type: none"> No power or ground to navigation module Private CAN failure 	Refer to the electrical circuit diagrams and check navigation module power and grounds, and private CAN circuit
'NO NAVIGATION AVAILABLE' message displayed	<ul style="list-style-type: none"> GVIFF fault Electrical harness short, open circuit 	Carry out GVIFF checks, refer to the electrical circuit diagrams and check electrical harness for short, open circuit

DTC index

NOTE :

If the control module 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.

NOTE :

Generic scan tools may not read the codes listed, or may read only five digit codes. Match the five digits from the scan tool to the first five digits of the seven digit code listed to identify the fault (the last two digits give additional information read by the manufacturer approved diagnostic system).

NOTE :

When performing electrical voltage or resistance tests, always use a digital multimeter (DMM) accurate to three decimal places, and with an up-to-date calibration certificate. When testing resistance, always take the resistance of the DMM leads into account.

NOTE :

Check and rectify basic faults before beginning diagnostic routines involving pinpoint tests.

NOTE :

Inspect connectors for signs of water ingress, and pins for damage and/or corrosion.

NOTE :

If DTCs are recorded and, after performing the pinpoint tests, a fault is not present, an intermittent concern may be the cause. Always check for loose connections and corroded terminals.

DTC	Description	Possible Cause	Action
B100E25	Video Input "A"	<ul style="list-style-type: none"> Input not connected (green connector) TV/DVD malfunction 	Check the TV/DVD is connected (green connector). Check TV/DVD system for DTCs
B101025	Video Input "C"	<ul style="list-style-type: none"> Input not connected Camera malfunction 	Check that the camera is connected and operates correctly
B1A0049	Control module	<ul style="list-style-type: none"> Touch screen display (TSD) internal electrical failure (can be set in more than one module) Amplifier internal electrical failure (can be set in more than one module) 	Check the power and ground circuits to the module. Refer to the electrical guides. Refer to the warranty policy and procedures manual if a module is suspect. Check and install a new front touch screen display as required, refer to the new module/component installation note at the top of the DTC Index
B1A8911	Satellite Antenna	<p>NOTE : Navigation diagnostics Self Check code 80-3B</p> <ul style="list-style-type: none"> GPS antenna circuit - short to ground GPS antenna failure Navigation module failure 	Check for correct installation of GPS antenna. Refer to the electrical circuit diagrams and check GPS antenna circuit for short to ground. Check GPS antenna, install a new antenna as required. Check and install a new navigation module as required, refer to the new module/component installation note at the top of the DTC Index
B1A8913	Satellite Antenna	<p>NOTE : Navigation diagnostics Self Check code 80-3A</p> <ul style="list-style-type: none"> Global positioning system (GPS) antenna high resistance The co-axial connector can also set this code GPS antenna failure 	Check for correct installation of GPS antenna. Refer to the electrical circuit diagrams and check GPS antenna circuit for open circuit. Check GPS antenna, install a new antenna as required
		<p>NOTE : Navigation</p>	

B1B0049	Sub-Module 'A'	<p>diagnostics Self Check code 80-11, 58-02, 08-42, 08-43</p> <ul style="list-style-type: none"> • Navigation module internal failure 	<p>Check for excessive temperature and for the correct installation of the navigation module. Install a new navigation module as required, refer to the new module/component installation note at the top of this DTC Index</p>
B1D6249	Sub-Module 'B'	<p>NOTE : Navigation diagnostics Self Check code 32-4B</p> <ul style="list-style-type: none"> • Vehicle information and communication system (VICS) module internal electrical failure 	<p>Check the power and ground circuits to the module. Refer to the electrical guides. Check and install a new VICS module as required, refer to the new module/component installation note at the top of the DTC Index. Refer to the warranty policy and procedures manual if a module is suspect.</p>
B1D6287	Sub-Module 'B'	<p>NOTE : Navigation diagnostics Self Check code 32-30</p> <ul style="list-style-type: none"> • Vehicle information and communication system (VICS) module circuit - short to ground • VICS module circuit - short to power • VICS module circuit - high resistance • VICS module disconnected • VICS module failure 	<p>Refer to the electrical circuit diagrams and check VICS module circuits for short to ground, power, open circuit. Check and install a new VICS module as required, refer to the new module/component installation note at the top of the DTC Index. Configure the system using the approved diagnostic system.</p>
U1A0087	Medium Speed CAN	<p>NOTE : Navigation diagnostics Self Check code 01-50, 01-51, 30-28, 30-D2</p> <p>NOTE : 'NAVIGATION NOT INSTALLED' message is displayed</p>	<p>Check the system connections at the display and the navigation module. Refer to the electrical circuit diagrams and check CAN private network for short, open circuit. Carry out CAN network integrity tests using the manufacturer approved diagnostic system.</p>

	Communication Bus	<ul style="list-style-type: none"> • Navigation module disconnected • CAN fault between NAV module and TSD private CAN circuit • Private CAN circuit - short to ground, power, open circuit 	Refer to the Network Communications section of the workshop manual.
U1A0131	Communication Link	<p>NOTE : 'NO NAVIGATION AVAILABLE' message is displayed</p> <ul style="list-style-type: none"> • Navigation module - touch screen display (TSD), gigabit video interface (GVIF) fault • GVIF disconnected • GVIF - short to ground, power, open circuit 	Check for correct connection of GVIF circuit connectors. Refer to the electrical circuit diagrams and check the multi-media module GVIF circuits for short to ground, power, open circuit
U200531	Vehicle Speed	<ul style="list-style-type: none"> • Vehicle speed signal circuit between ABS and navigation system module - short, open circuit 	Check 'SPD PULSE COUNT' in navigation diagnostics, vehicle signals screen. If count remains at zero, refer to the electrical guides and check vehicle speed signal circuit between the ABS module and navigation system module for short to ground, power or open circuit.
U300068	Control Module	<p>NOTE : Navigation diagnostics Self Check code 30-76</p> <ul style="list-style-type: none"> • Touch screen display (TSD) MOST fibre optic transceiver, over-temperature (greater than 85°C) • MOST transceiver over-temperature 	An over-temperature message is displayed on the TSD before the information and entertainment system shuts down. Once the temperature is reduced the system will resume normal operation. If the system does not resume normal operation, check for DTCs indicating an information and entertainment fault. Refer to the electrical guides and check the power and ground circuits to the component. Check the MOST circuit. Carry out the general MOST test. Refer to the Network Communications section of the workshop manual and in the approved diagnostic system. Refer to the warranty policy and procedures manual if a module is suspect.

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.

PINPOINT TEST G830887p1 : BLANK SCREEN TESTS

G830887t1 : BLANK SCREEN TESTS

1. Check screen switch is not OFF.

- **Is the screen turned OFF?**

-> **Yes**

Turn screen switch 'ON'. Re-test vehicle.

-> **No**

GO to Pinpoint Test [G830887t2](#).

G830887t2 : PASSENGER COMPARTMENT TEMPERATURE CHECK

1. Check the passenger compartment temperature is not below -20°C.

- **Is the passenger compartment below -20°C?**

-> **Yes**

Raise the temperature in the passenger compartment. Re-test vehicle.

-> **No**

GO to Pinpoint Test [G830887t3](#).

G830887t3 : PASSENGER COMPARTMENT CONDENSATION CHECK

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 Pinpoint Test [G830887t4](#).

G830887t4 : AUDIO POWER BUTTON CHECK (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 Pinpoint Test [G830887t5](#).

G830887t5 : NAVIGATION SCREEN CHECK

1. Check to see if only the navigation screen is blank.

- **Is only the navigation screen blank?**

-> **Yes**

GO to Pinpoint Test [G830887p2](#).

-> **No**

GO to Pinpoint Test [G830887t7](#).

G830887t7 : AUDIO SCREEN CHECK (RANGE ROVER ONLY)

1. Check to see if only the audio screen is blank.

- **Is only the audio screen blank?**

-> **Yes**

GO to Pinpoint Test [G830887p5](#).

-> **No**

GO to Pinpoint Test [G830887t8](#).

G830887t8 : TV/DVD CHECK

1. Check to see if only the TV/DVD is blank.

- **Is only the TV/DVD screen blank?**

-> **Yes**

GO to Pinpoint Test [G830887p6](#).

-> **No**

GO to Pinpoint Test [G830887t10](#).

G830887t10 : HARNESS/CONNECTOR CHECKS

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**

Install a new display screen. **module**

PINPOINT TEST G830887p2 : NO DISPLAY ON NAVIGATION SCREEN (SCREEN DOES NOT CHANGE) TESTS

G830887t11 : SOFT KEY TEST

1. Check the navigation system soft key operation.

- **Is operation normal when operating the soft key test?**

-> **Yes**

GO to Pinpoint Test [G830887t12](#).

-> **No**

GO to Pinpoint Test [G830887p13](#).

G830887t12 : HARD KEY TEST

1. Check the navigation system hard key operation.

- **Is operation normal when pressing the navigation hard key?**

-> **Yes**

GO to Pinpoint Test [G830887t13](#).

-> **No**

GO to Pinpoint Test [G830887p3](#).

G830887t13 : DISPLAYED MESSAGE CHECK

1. Check for displayed messages.

- **Are the 'No picture signal input', 'Navigation not installed' or 'No navigation available' messages being displayed?**

-> **Yes**

GO to Pinpoint Test [G830887t14](#).

-> **No**

GO to Pinpoint Test [G830887p1](#).

G830887t14 : NAVIGATION MODULE POWER AND GROUND CHECKS

1. Refer to electrical circuit diagrams and check integrity of power and ground wiring harness and connectors to navigation module.

- **Was a fault identified with the navigation module power and ground harness or connections?**

-> **Yes**

Rectify the fault and re-test the vehicle.

-> **No**

GO to Pinpoint Test [G830887t15](#).

G830887t15 : HARNESS/CONNECTOR CHECKS

1. Refer to the electrical circuit diagrams and check integrity of navigation module to display screen private CAN and GVIF harness and connections.

- **Was a fault identified with the navigation module to display screen harness or connections?**

-> **Yes**

Rectify the fault and re-test the vehicle.

-> **No**

Install a new navigation module. **module**

PINPOINT TEST G830887p3 : HARD SWITCHES DO NOT RESPOND

G830887t16 : 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 Pinpoint Test [G830887t17](#).

G830887t17 : DISPLAY DIAGNOSTICS CHECK

1. Check to see if the display diagnostics can be displayed.

- **Can the display diagnostics be displayed?**

-> **Yes**

GO to Pinpoint Test [G830887t18](#).

-> **No**

GO to Pinpoint Test [G830887p1](#).

and GO to Pinpoint Test [G830887p13](#).

G830887t18 : 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**

System operation is normal.

-> **No**

Install a new display screen. **module**

PINPOINT TEST G830887p4 : RADIO SCREEN WILL NOT DISPLAY (RANGE ROVER ONLY)

G830887t19 : AUDIO HARD SWITCH TEST

1. Check operation of audio hard switch.

- **Does the audio screen display when the audio hard switch is pressed?**

-> **Yes**

GO to Pinpoint Test [G830887t20](#).

-> **No**

Carry out hard switch tests. GO to Pinpoint Test [G830887p3](#).

G830887t20 : AUDIO VIDEO SOFT KEY TEST

1. Check operation of the audio video soft key.

- **Does the audio screen display when the audio video soft key on the 'Home Menu' screen is activated?**

-> **Yes**

GO to Pinpoint Test [G830887t21](#).

-> **No**

Carry out touch switch tests. GO to Pinpoint Test [G830887p13](#).

G830887t21 : RADIO SOFT KEY TEST

1. Check operation of the radio soft key.

- Does the radio soft key respond when touched?

-> **Yes**

Check the Integrated Head Unit (IHU).

-> **No**

Switch ignition status to OFF and wait thirty seconds for the display power LED to extinguish, then set ignition status to auxiliary. If fault still evident after re-test, check the Integrated Head Unit (IHU).

PINPOINT TEST G830887p5 : CD SCREEN WILL NOT DISPLAY (RANGE ROVER ONLY)

G830887t22 : CD CHANGER CHECK

1. Check to see if a CD changer is installed.

- Is a CD changer installed?

-> **Yes**

GO to Pinpoint Test [G830887t23](#).

-> **No**

Normal operation, CD screen will not be displayed when there is no CD changer installed.

G830887t23 : AUDIO OPERATION SWITCH CHECK

1. Check the operation of the audio operation switch.

- Does the audio screen display when the audio operation switch is pressed?

-> **Yes**

GO to Pinpoint Test [G830887t24](#).

-> **No**

Carry out hard switch tests. GO to Pinpoint Test [G830887p3](#).

G830887t24 : AUDIO VIDEO SOFT KEY TEST

1. Check operation of the audio video soft key.

- Does the audio screen display when the audio video soft key on the 'Home Menu' screen is activated?

-> **Yes**

GO to Pinpoint Test [G830887t25](#).

-> **No**

Carry out touch switch tests. GO to Pinpoint Test [G830887p13](#).

G830887t25 : CD SOFT KEY TEST

1. Check operation of the CD soft key.

- Does the CD soft key respond when touched?

-> **Yes**

Check the Integrated Head Unit (IHU).

-> **No**

Switch ignition status to OFF and wait thirty seconds for the display power LED to extinguish, then set ignition status to auxiliary. If fault still evident after re-test, check the Integrated Head Unit (IHU).

PINPOINT TEST G830887p6 : TV/DVD SCREEN WILL NOT DISPLAY

G830887t26 : TV/DVD CHECK

1. Check to see if TV/DVD is installed.

- **Is TV/DVD installed?**

-> **Yes**

GO to Pinpoint Test [G830887t27](#).

-> **No**

Normal operation, TV/DVD screen will not be displayed when there is no TV/DVD installed.

G830887t27 : AUDIO OPERATION HARD KEY TEST (RANGE ROVER ONLY)

1. Check the operation of the audio hard key.

- **Does the audio screen display when the audio hard key is pressed?**

-> **Yes**

GO to Pinpoint Test [G830887t28](#).

-> **No**

Carry out hard switch tests. GO to Pinpoint Test [G830887p3](#).

G830887t28 : AUDIO VIDEO SOFT KEY TEST (RANGE ROVER ONLY)

1. Check operation of the audio video soft key.

- **Does the audio screen display when the audio video soft key on the 'Home Menu' screen is activated?**

-> **Yes**

GO to Pinpoint Test [G830887t29](#).

-> **No**

Carry out touch switch tests. GO to Pinpoint Test [G830887p13](#).

G830887t29 : TV/DVD SOFT KEY TEST

1. Check operation of the TV/DVD soft key.

- **Does the TV/DVD soft key respond when touched?**

-> **Yes**

Check the Integrated Head Unit (IHU).

-> **No**

Switch ignition status to OFF and wait thirty seconds for the display power LED to extinguish, then set ignition status to auxiliary. If fault still evident after re-test, check the Integrated Head Unit (IHU).

PINPOINT TEST G830887p7 : AUX. SCREEN WILL NOT DISPLAY

G830887t30 : AUDIO OPERATION SWITCH CHECK

1. Check the operation of the audio operation switch.

- Does the audio screen display when the audio operation switch is pressed?

-> Yes

GO to Pinpoint Test [G830887t28](#).

-> No

Carry out hard switch tests. GO to Pinpoint Test [G830887p3](#).

G830887t31 : AUDIO VIDEO SOFT KEY TEST

1. Check operation of the audio video soft key.

- Does the audio screen display when the audio video soft key on the 'Home Menu' screen is activated?

-> Yes

GO to Pinpoint Test [G830887t29](#).

-> No

Carry out touch switch tests. GO to Pinpoint Test [G830887p13](#).

G830887t32 : TV/DVD SOFT KEY TEST

1. Check operation of the TV/DVD soft key.

- Does the TV/DVD soft key respond when touched?

-> Yes

Check the Integrated Head Unit (IHU).

-> No

Switch ignition status to OFF and wait thirty seconds for the display power LED to extinguish, then set ignition status to auxiliary. If fault still evident after re-test, check the Integrated Head Unit (IHU).

PINPOINT TEST G830887p8 : DISPLAY SCREEN WILL NOT SWITCH TO LOW LIGHT

G830887t33 : 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 Pinpoint Test [G830887t34](#).

G830887t34 : VEHICLE LIGHT SWITCH TESTS

1. Check to see if display screen switches to low light when the vehicle light switch is pressed.

- Does the display screen switch to low light when the vehicle light switch is pressed?

-> **Yes**

Operation is normal.

-> **No**

GO to Pinpoint Test [G830887t36](#).

G830887t36 : 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**

Range Rover Only - Install a new display screen. **module** Discovery/Range Rover Sport - Check CAN network between instrument cluster and display screen. If no fault evident, install a new instrument cluster. **module**

PINPOINT TEST G830887p9 : NOISE INTERFERES ON EACH SCREEN AND THE COLORS ARE ABNORMAL

G830887t37 : 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**

GO to Pinpoint Test [G830887t38](#).

-> **No**

Check and rectify the vehicle wiring harness and connectors.

G830887t38 : CONTRAST CHECK

1. Check to see if the screen color is normal when the screen setting (contrast) is re-ret to the default values.

- **Is the screen color normal with the default values?**

-> **Yes**

Normal operation.

-> **No**

GO to Pinpoint Test [G830887t39](#).

G830887t39 : 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 Pinpoint Test [G830887t40](#).

G830887t40 : ADDITIONAL SCREEN CHECKS

1. Check all other screens.

- **Are all other screens beside the navigation display screen normal?**

-> **Yes**

Go to screen color is abnormal. GO to Pinpoint Test [G830887p11](#).

-> **No**

GO to Pinpoint Test [G830887t41](#).

G830887t41 : RGB COLOR TEST

1. Carry out the display diagnostics RGB color test.

- **Are the results of the display diagnostics RGB test normal?**

-> **Yes**

Normal operation.

-> **No**

GO to Pinpoint Test [G830887p11](#).

PINPOINT TEST G830887p10 : DISTURBANCE ON SCREEN (SYNCHRONIZATION ABNORMAL)

G830887t42 : AUDIO SCREEN SYNCHRONIZATION CHECK (RANGE ROVER ONLY)

1. Check the audio screen synchronization.

- **Is the audio screen synchronization normal?**

-> **Yes**

GO to Pinpoint Test [G830887t44](#).

-> **No**

Check the integrated head unit and connections.

G830887t44 : NAVIGATION SCREEN SYNCHRONIZATION CHECK

1. Check the navigation screen (map screen) synchronization.

- **Is the navigation screen (map screen) synchronization normal?**

-> **Yes**

GO to Pinpoint Test [G830887t46](#).

-> **No**

Check the GVIF circuits between the navigation module and display screen.

G830887t45 : WIRING HARNESS AND CONNECTOR CHECKS

1. Check the integrity of the display screen wiring harness and connections.

- **Was a fault identified with the display screen wiring harness or connections?**

-> **Yes**

Rectify the fault and re-test.

-> **No**

GO to Pinpoint Test [G830887t46](#).

G830887t46 : TV/DVD SCREEN SYNCHRONIZATION CHECK

1. Check the TV screen synchronization.

- **Is the TV screen synchronization normal?**

-> **Yes**

GO to Pinpoint Test [G830887t48](#).

-> **No**

GO to Pinpoint Test [G830887t47](#).

G830887t47 : CHECK TV/DVD SETTINGS

1. Check TV settings are to the correct TV standards for the country.

- **Are the TV settings to the correct TV standards for the country?**

-> **Yes**

Check TV tuner module and/or DVD module.

-> **No**

Re-set TV settings and re-test vehicle.

G830887t48 : REAR VIEW CAMERA SCREEN SYNCHRONIZATION CHECK

1. Check the rear view camera screen synchronization.

- **Is the rear view camera screen synchronization normal?**

-> **Yes**

Normal operation, re-test vehicle.

-> **No**

Check the integrity of the rear view camera.

PINPOINT TEST G830887p11 : SCREEN COLOR IS ABNORMAL

G830887t49 : NAVIGATION SYSTEM DISPLAY MODULE RGB COLOR TEST

1. Carry out the display diagnostics RGB color test.

- **Are the results of the display diagnostics RGB test normal?**

-> **Yes**

GO to Pinpoint Test [G830887p9](#).

-> **No**

GO to Pinpoint Test [G830887t50](#).

G830887t50 : CONTRAST SETTING CHECKS

1. Re-set the contrast settings to the default values.

- **Is the color normal after re-setting contrast to default values?**

-> **Yes**

Normal operation, re-test vehicle.

-> **No**

Install a new display screen. **module**

G830887t51 : NAVIGATION MODULE RGB COLOR TEST

1. Carry out the navigation module diagnostics RGB color bar test.

- **Is the color normal during the diagnostic color bar test?**

-> **Yes**

Normal operation.

-> **No**

GO to Pinpoint Test [G830887t52](#).

G830887t52 : NAVIGATION MODULE POWER AND GROUND CHECKS

1. Refer to the electrical circuit diagrams and check the navigation module power and ground circuits.

- **Has a fault been identified with the navigation module power or grounds?**

-> **Yes**

Rectify the fault and re-test vehicle.

-> **No**

GO to Pinpoint Test [G830887t53](#).

G830887t53 : HARNESS/CONNECTOR CHECKS

1. Refer to the electrical circuit diagrams and check integrity of navigation module to display screen harness and connections.

- **Was a fault identified with the navigation module to display screen harness or connections?**

-> **Yes**

Rectify the fault and re-test the vehicle.

-> **No**

Install a new navigation module. **module**

PINPOINT TEST G830887p12 : MAP DISC WILL NOT INSERT/EJECT

G830887t54 : MAP DISC CHECK

1. Check to see if there is a map disc inserted into the navigation module. 2. Check map disc for contamination, deformation, cracks, scratches or non-genuine disc.

- **Has a fault been identified with the map disc?**

-> **Yes**

Replace the map disc.

-> **No**

GO to Pinpoint Test [G830887t55](#).

G830887t55 : HARNESS/CONNECTOR CHECKS

1. Refer to the electrical circuit diagrams and check integrity of navigation module power and ground supply harness and connections.

- **Has a fault been identified with the navigation module power and ground supply harness or connections?**

-> **Yes**

Rectify the fault and re-test the vehicle.

-> **No**

Install a new navigation module. **module**

PINPOINT TEST G830887p13 : TOUCH SWITCHES DO NOT RESPOND

G830887t56 : START CALIBRATION ROUTINE

1. Carry out the start calibration routine from the display diagnostics touch switch test.

- **Is normal operation resumed after correction?**

-> **Yes**

Normal operation.

-> **No**

GO to Pinpoint Test [G830887t57](#).

G830887t57 : TOUCH SWITCH TEST

1. Carry out the touch switch test in the display diagnostics.

- **Are the touch switches not responding on the navigation screen only?**

-> **Yes**

GO to Pinpoint Test [G830887t58](#).

-> **No**

Install a new display screen. **module**

G830887t58 : HARNESS/CONNECTOR CHECKS

1. Refer to the electrical circuit diagrams and check integrity of navigation module to display screen harness and connections.

- **Has a fault been identified with the navigation module to display screen harness or connections?**

-> **Yes**

Rectify the fault and re-test the vehicle.

-> **No**

Install a new navigation module. **module**

PINPOINT TEST G830887p14 : CONSIDERABLE DEVIATION BETWEEN DISPLAYED VEHICLE POSITION AND ACTUAL POSITION

G830887t59 : GPS MARK DISPLAY CHECK

1. Check to see if GPS mark is displayed.

- **Is the GPS mark displayed on the display screen?**

-> **Yes**

GO to Pinpoint Test [G830887t60](#).

-> **No**

Refer to GPS mark does not appear diagnosis. GO to Pinpoint Test [G830887p15](#).

G830887t60 : LOCATION CHECK

1. Check for symptom occurring in particular locations - parallel roads, elevated roads, loop roads, parking centers (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**

GO to Pinpoint Test [G830887t61](#).

G830887t61 : DISTANCE CORRECTION CHECK

1. Check to see if distance correction is being performed.

- **Is distance correction being performed?**

-> **Yes**

Monitor the condition until distance correction is complete (drive for over 10km/6.2 miles)

-> **No**

GO to Pinpoint Test [G830887t62](#).

G830887t62 : DIAGNOSTIC CODE CHECK

1. Check navigation diagnostic codes.

- **Is logical address '80' being displayed?**

-> **Yes**

Check the GPS antenna circuit for short, open circuit. Check and install GPS antenna and navigation module as required, refer to the new module/component installation note at the top of the Pinpoint Test section.

-> **No**

GO to Pinpoint Test [G830887t63](#).

G830887t63 : VEHICLE SIGNAL INSPECTION

1. Check the vehicle speed signal (SPD) during the vehicle signal inspection test.

- **Is the SPD signal normal?**

-> **Yes**

GO to Pinpoint Test [G830887t64](#).

-> **No**

Refer to the electrical circuit diagrams and check the integrity of the wiring harness and connectors to the navigation module.

G830887t64 : REVERSE SIGNAL CHECKS

1. Check navigation diagnostics, vehicle signals screen, to see if REV: ON is indicated when the gear shift lever is in the REV position.

- **Is REV: ON indicated?**

-> **Yes**

GO to Pinpoint Test [G830887t65](#).

-> **No**

Refer to the electrical circuit diagrams and check the integrity of the wiring harness and connectors, and CAN circuit, to the navigation module.

G830887t65 : TIRE CHECK

1. Check to see if new tires have recently been installed.

- **Have new tires been recently installed?**

-> **Yes**

Perform automatic correction by pressing 'various settings' on the menu screen, then 'navigation correction' and 'distance correction'. Drive vehicle at 10-20km/h to confirm.

-> **No**

Correct the current location, and drive for a while with GPS mark displayed to monitor conditions. If fault still apparent, GO to Pinpoint Test [G830887p15](#).

PINPOINT TEST G830887p15 : GPS MARK DOES NOT APPEAR

G830887t67 : 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 Pinpoint Test [G830887t66](#).

-> **No**

GO to Pinpoint Test [G830887t68](#).

G830887t66 : RETRO-INSTALL INSTALLATIONS RF CHECK

1. Turn power supply (including back-up power) to OFF status.

- **Is the GPS mark displayed?**

-> **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 Pinpoint Test [G830887t68](#).

G830887t68 : SATELLITE RECEPTION CHECKS

1. Check to see if a 'P' or 'T' is displayed in the 'ST' 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**

GO to Pinpoint Test [G830887t69](#).

G830887t69 : NAVIGATION DIAGNOSTICS SELF CHECK CODES

1. Perform the navigation diagnostics 'Self Check'.

- **Are either of the codes 80-3A or 80-3B displayed?**

-> **Yes**

GO to Pinpoint Test [G830887t70](#).

-> **No**

If the code 80-11 is displayed or no 80-XX code is logged, install a new navigation module. **module**

G830887t70 : GPS ANTENNA REPLACEMENT

1. Install a new GPS antenna.

- **Is reception possible after the GPS antenna has been replaced?**

-> **Yes**

Fault has been rectified.

-> **No**

Refer to the electrical circuit wiring diagrams and check the integrity of the wiring harness and connectors to the GPS antenna.

PINPOINT TEST G830887p16 : NO SOUND

G830887t71 : SOUND OUTPUT CHECK

1. Check sound output across all systems.

- **Is there no sound output across all systems?**

-> **Yes**

GO to Pinpoint Test [G830887t72](#).

-> **No**

GO to Pinpoint Test [G830887t73](#).

G830887t72 : 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**

Refer to the electrical circuit diagrams and check integrity of amplifier and speaker wiring harness and connections. Check the Integrated Head Unit (IHU).

G830887t73 : ONLY VOICE GUIDANCE DOES NOT OUTPUT

1. Check that only voice guidance does not output.

- **Is there no output only from the voice guidance?**

-> **Yes**

GO to Pinpoint Test [G830887t77](#).

-> **No**

GO to Pinpoint Test [G830887t76](#).

G830887t77 : NAVIGATION VOLUME SETTING

1. Check to see if the navigation system volume setting is too low.

- **Is the navigation volume setting too low?**

-> **Yes**

Increase the navigation volume level and re-test the vehicle.

-> **No**

GO to Pinpoint Test [G830887t74](#).

G830887t74 : VOICE GUIDANCE

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 Pinpoint Test [G830887t75](#).

G830887t75 : 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 and check the Integrated Head Unit (IHU).

G830887t76 : 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**

Carry out the 'No voice recognition' diagnostics. GO to Pinpoint Test [G830887p17](#).

-> **No**

GO to Pinpoint Test [G830887t79](#).

G830887t79 : ONLY CD DOES NOT OUTPUT

1. Check to see if only the CD does not output.

- **Does only the CD not output?**

-> **Yes**

If the playtime is advancing, check the Integrated Head Unit (IHU). If the playtime is not advancing, press Start/Play.

-> **No**

GO to Pinpoint Test [G830887t80](#).

G830887t80 : ONLY THE RADIO DOES NOT OUTPUT

1. Check to see if only the radio does not output.

- **Does only the radio not output?**

-> **Yes**

Check the Integrated Head Unit (IHU).

-> **No**

GO to Pinpoint Test [G830887t81](#).

G830887t81 : ONLY TV SOUND DOES NOT OUTPUT

1. Check to see if only the TV sound does not output.

- **Does only the TV sound not output?**

-> **Yes**

Check the Integrated Head Unit (IHU).

-> **No**

GO to Pinpoint Test [G830887t82](#).

G830887t82 : ONLY TELEPHONE SOUND DOES NOT OUTPUT

1. Check to see if only the telephone sound does not output.

- **Does only the telephone sound not output?**

-> **Yes**

Check the Integrated Head Unit (IHU). For additional information. GO to Pinpoint Test [G830887p23](#).

-> **No**

Check the Integrated Head Unit (IHU).

PINPOINT TEST G830887p17 : NO VOICE RECOGNITION

G830887t78 : MAP DISC CHECK

1. Check to see if the map disc is inserted.

- **Is the map disc inserted?**

-> **Yes**

GO to Pinpoint Test [G830887t83](#).

-> **No**

Insert the map disc.

G830887t83 : 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 Pinpoint Test [G830887t85](#).

-> **No**

GO to Pinpoint Test [G830887t84](#).

G830887t84 : 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 the Integrated Head Unit (IHU).

-> **No**

Install a new Integrated Head Unit (IHU), or Ignition Gateway Module.

G830887t85 : 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 Pinpoint Test [G830887t9](#).

G830887t9 : MICROPHONE TEST

1. Check to see if the microphone level changes when speaking into the microphone during test in navigation diagnostics, manual checks, microphone test.

- **Does the microphone level change when talking after pressing the PTT switch?**

-> **Yes**

System operation is normal, (advise change in manner of speech, as incorrect recognition is occurring).

-> **No**

Refer to the electrical circuit diagrams and check integrity of microphone circuit GO to Pinpoint Test [G830887t86](#).
. If no fault is evident, suspect the microphone, check and install a new microphone as required.

G830887t86 : HARNESS/CONNECTOR CHECKS

1. Refer to the electrical circuit diagrams and check integrity of navigation module to display screen harness and connections.

- **Has a fault been identified with the navigation module to display screen harness or connections?**

-> **Yes**

Rectify the fault and re-test the vehicle.

-> **No**

Install a new navigation module. **module**

PINPOINT TEST G830887p18 : VEHICLE CURRENT POSITION MARK TURNS ON ITS OWN

G830887t87 : 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**

GO to Pinpoint Test [G830887t88](#).

G830887t88 : VEHICLES CURRENT POSITION MARK TURNS ON ITS OWN

1. Check for logged fault codes in navigation diagnostics.

- **Is the fault code 58-02 (Gyro system) logged?**

-> **Yes**

Install a new navigation module. **module**

-> **No**

GO to Pinpoint Test [G830887t89](#).

G830887t89 : VEHICLES CURRENT POSITION MARK TURNS ON ITS OWN

1. Check for logged fault codes in navigation diagnostics.

- **Is the fault code 58-03 (vehicle speed system) logged?**

-> **Yes**

Take measures in accordance with navigation DTC index.

-> **No**

Install a new navigation module. **module**

PINPOINT TEST G830887p19 : VEHICLE POSITION DOES NOT UPDATE

G830887t90 : VEHICLE POSITION DOES NOT UPDATE

1. Check the GPS mark display.

- **Does the GPS mark display?**

-> **Yes**

GO to Pinpoint Test [G830887t91](#).

-> **No**

Carry out the GPS mark display diagnostics. GO to Pinpoint Test [G830887p15](#).

G830887t91 : VEHICLE POSITION DOES NOT UPDATE

1. Check the map screen scroll function.

- **Can the map screen be touched scrolled?**

-> **Yes**

GO to Pinpoint Test [G830887t92](#).

-> **No**

Check the condition of the map disc (scratches, contamination, deformation, cracks, non-genuine disc etc.).

G830887t92 : VEHICLE POSITION DOES NOT UPDATE

1. Go to vehicle signal check screen in display diagnostics.

- **Is the vehicle speed input correctly? Note: MOST and navigation system module speeds are approximately the same.**

-> **Yes**

Suspect the navigation module. Refer to the new module/component installation note at the top of this section.

-> **No**

GO to Pinpoint Test [G830887t93](#).

G830887t93 : HARNESS/CONNECTOR CHECKS

1. Refer to the electrical circuit diagrams and check integrity of navigation module harness and connections.

- **Has a fault been identified with the navigation module harness or connections?**

-> **Yes**

Rectify the fault and re-test the vehicle.

-> **No**

Install a new navigation module. **module**

PINPOINT TEST G830887p20 : ROUTE CALCULATIONS CANNOT BE PERFORMED

G830887t94 : ROUTE CALCULATIONS CANNOT BE PERFORMED

1. Check to see if route calculations are possible when the current location is correct and a different destination is set.

- **Are route calculations possible?**

-> **Yes**

GO to Pinpoint Test [G830887t95](#).

-> **No**

Check the condition of the map disc (scratches, contamination, deformation, cracks, non-genuine disc etc.).

G830887t95 : ROUTE CALCULATIONS CANNOT BE PERFORMED

1. Check to see if a point of interest search can be performed.

- **Can a point of interest search can be performed?**

-> **Yes**

GO to Pinpoint Test [G830887t96](#).

-> **No**

Check the condition of the map disc (scratches, contamination, deformation, cracks, non-genuine disc etc.).

G830887t96 : ROUTE CALCULATIONS CANNOT BE PERFORMED

1. Check to see if the map screen can be touch scrolled.

- **Can the map screen be touched scrolled?**

-> **Yes**

Check the condition of the map disc (scratches, contamination, deformation, cracks etc.). If no fault is evident, suspect the

navigation module. Refer to the new module/component installation note at the top of this section.

-> **No**

Check the condition of the map disc (scratches, contamination, deformation, cracks, non-genuine disc etc.).

PINPOINT TEST G830887p21 : MAP DISPLAY IS INCOMPLETE

G830887t97 : 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**

Check the condition of the map disc (scratches, contamination, deformation, cracks, non-genuine disc etc.).

-> **No**

GO to Pinpoint Test [G830887t98](#).

G830887t98 : 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 Pinpoint Test [G830887t99](#).

-> **No**

Check the condition of the map disc (scratches, contamination, deformation, cracks, non-genuine disc etc.).

G830887t99 : 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**

GO to Pinpoint Test [G830887t100](#).

-> **No**

Check the condition of the map disc (scratches, contamination, deformation, cracks, non-genuine disc etc.).

G830887t100 : MAP DISPLAY IS INCOMPLETE

1. Replace the map disc and re-test vehicle.

- **Is the fault still apparent?**

-> **Yes**

Suspect the navigation module. Refer to the new module/component installation note at the top of this section.

-> **No**

Normal operation.

PINPOINT TEST G830887p22 : VEHICLE POSITION MARK MOVES IN THE OPPOSITE DIRECTION TO THE DIRECTION OF TRAVEL

G830887t101 : REAR VIEW CAMERA DISPLAY CHECK

1. Check to see if the rear view camera is operational when reverse gear is selected.

- **Is the rear view camera operational when reverse gear is selected?**

-> **Yes**

GO to Pinpoint Test [G830887t102](#).

-> **No**

Refer to the electrical circuit diagrams and check integrity of back monitor display wiring harness and connectors. Check the Integrated Head Unit (IHU).

G830887t102 : REV 'ON' SIGNAL CHECK

1. Carry out the vehicle signal check in navigation diagnostics.

- **Is the REV 'ON' signal displayed correctly when the gear shift selector is in reverse?**

-> **Yes**

GO to Pinpoint Test [G830887t103](#).

-> **No**

Refer to electrical circuit diagrams and check integrity of navigation system wiring harness and connectors. If fault still evident, suspect the navigation module. Refer to the new module/component installation note at the top of this section.

G830887t103 : HARNESS/CONNECTOR CHECKS

1. Refer to the electrical circuit diagrams and check integrity of navigation module harness and connections.

- **Has a fault been identified with the navigation module harness or connections?**

-> **Yes**

Rectify the fault and re-test the vehicle.

-> **No**

Check the Integrated Head Unit (IHU).

PINPOINT TEST G830887p23 : CANNOT MAKE OR RECEIVE CALLS WITH THE BLUETOOTH TELEPHONE - CANNOT CONNECT TO THE VEHICLE

G830887t104 : DISPLAY CHECK (RANGE ROVER ONLY)

1. Press the telephone button.

- **Is 'Telephone not connected' displayed on the screen?**

-> **Yes**

GO to Pinpoint Test [G830887t105](#).

-> **No**

GO to Pinpoint Test [G830887t110](#).

G830887t105 : BLUETOOTH COMPATIBILITY CHECK

1. Check to see if the telephone handset is Bluetooth compatible.

- **Is the telephone handset Bluetooth compatible?**

-> **Yes**

GO to Pinpoint Test [G830887t106](#).

-> **No**

Use a Bluetooth compatible telephone handset.

G830887t106 : HANDSET POWER CHECK

1. Check to see if the handset is switched 'ON'.

- **Is the telephone handset switched 'ON'?**

-> **Yes**

GO to Pinpoint Test [G830887t107](#).

-> **No**

Switch handset 'ON' and re-test.

G830887t107 : 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 Pinpoint Test [G830887t108](#).

-> **No**

Perform the initial connection settings.

G830887t108 : 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 Pinpoint Test [G830887t109](#).

-> **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.

G830887t109 : HANDSET COMMUNICATION CHECK

1. Switch the Bluetooth telephone handset 'OFF' then back 'ON' again.

- **Does the telephone handset recognize the in-vehicle system?**

-> **Yes**

Check the Integrated Head Unit (IHU).

-> **No**

Suspect the telephone module. Refer to the new module/component installation note at the top of this procedure.

G830887t110 : HANDSET COMMUNICATION CHECK

1. Check to see if the telephone is within communications range.

- **Is the telephone within a 10 meter range of the bluetooth telephone module?**

-> **Yes**

GO to Pinpoint Test [G830887t111](#).

-> **No**

Move the telephone handset to within a 10 meter range of the bluetooth telephone module.

G830887t111 : 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 the Integrated Head Unit (IHU).

-> **No**

Replace the telephone handset.