**Gauges Self-Diagnostic Function**

The gauge control module has a self-diagnostic function which consists of the following checks:

- The indicator drive circuit check.
- The switch input check.
- The beeper drive circuit check.
- The LCD/MID segment check.
- The gauge drive circuit check (engine coolant temperature gauge, fuel gauge, and tachometer (without multi-information display)).
- The communication line check (of the body controller area network (B-CAN) communication line and the fast controller area network (F-CAN) communication line between the gauges).

NOTE: Indicators are also controlled via the communication lines.

## Entering the Self-Diagnostic Function With the HDS

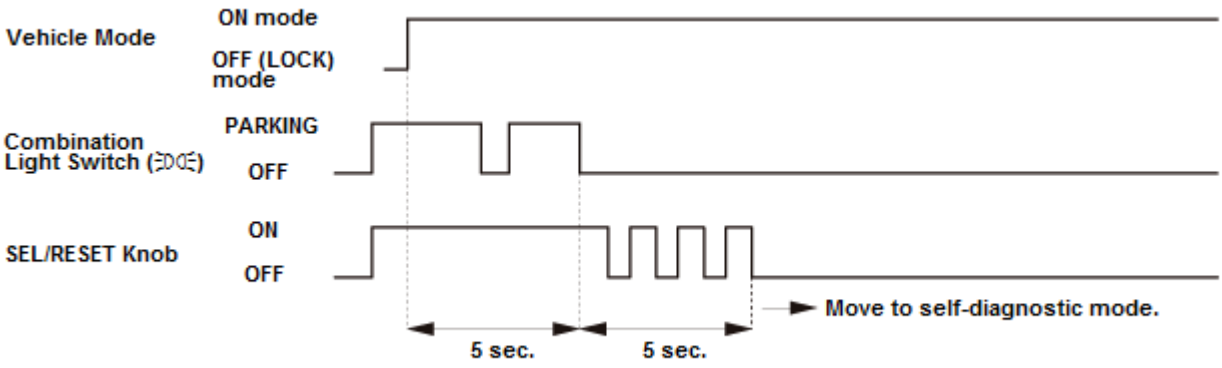
Using the HDS, select BODY ELECTRICAL, GAUGES, then FUNCTIONAL TESTS and do the self-diagnostic function.

## Entering the Self-Diagnostic Function (Manual Method)

Before doing the self-diagnostic function, make sure the No. A18 (10 A) fuse in the under-hood fuse/relay box and the No. B7 (10 A) fuse in the under-dash fuse/relay box are OK.

1. Push and hold the SEL/RESET knob.
2. Turn the combination light switch to the PARKING position (≡DOC≡).
3. Turn the vehicle to the ON mode.
4. Within 5 sec., turn the combination light switch to OFF, then to the PARKING position (≡DOC≡) and OFF again.
5. Within 5 sec., release the SEL/RESET knob, and then repeatedly push and release the knob three times.

   NOTE:
   - While in the self-diagnostic mode, the dashlights brightness controller operates normally.
   - While in the self-diagnostic mode, the SEL/RESET knob is used to start the Beeper Drive Circuit Test and the Gauge Drive Circuit Check.
   - If the vehicle speed exceeds 1.2 mph (2 km/h), or turn the vehicle to the OFF (LOCK) mode, the self-diagnostic mode ends.




## The Indicator Drive Circuit Check

When entering the self-diagnostic mode, the following indicators (if equipped) blink:
12 volt charging system indicator, ABS indicator, ACC activation indicator, ACC indicator, automatic brake hold indicator, automatic brake hold system indicator, brake system indicator (amber), brake system indicator (red), CMBS indicator, cruise control indicator, cruise main indicator, door and tailgate open indicator, ECON mode indicator, EPS indicator, fog light indicator, front seat belt reminder indicator, high beam indicator, integrated drive-mode indicators, left turn signal indicator, lights-on indicator, LKAS activation indicator, LKAS indicator, low fuel indicator, low oil pressure indicator, low tire pressure/TPMS indicator, maintenance minder indicator, malfunction indicator lamp (MIL), message indicator, press down brake indicator, REV indicator, RDM indicator, right turn signal indicator, security indicator, shift position indicator, SRS indicator, VSA indicator, VSA OFF indicator, and washer fluid level indicator.

## Switch Input Check

At the initial stage of the self-diagnostic function, the beeper sounds intermittently. The beeper sounds continuously when any of the following switch inputs are switched from OFF to ON:
ACC combination switch, audio remote-HFL switch, automatic brake hold switch, CMBS OFF switch, cruise control combination switch, ECON switch, integrated drive-mode switch, km/h, mph change knob, TPMS switch, and VSA OFF switch.

## The Beeper Drive Circuit Check

When entering the self-diagnostic mode, the beeper sounds five times.

## The LCD/MID Segment Check

Without multi-information display: When entering the self-diagnostic mode, all the segments blink five times.

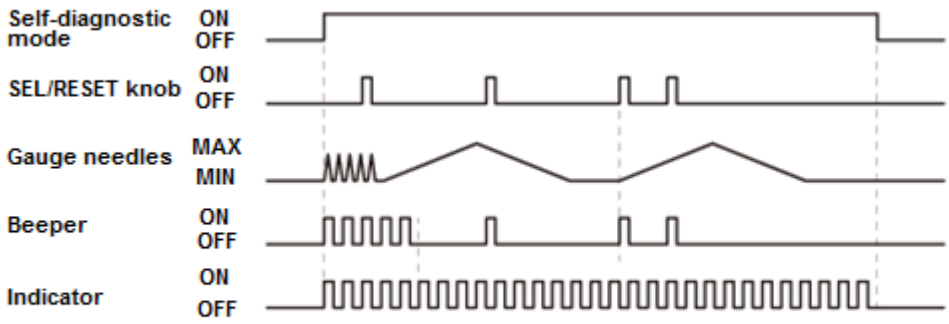
With multi-information display: When entering the self-diagnostic mode, the word "CHECKING NOW" shows on the multi-information display, and blinks five times.

## The Gauge Drive Circuit Check

When entering the self-diagnostic mode, the tachometer (without multi-information display), the fuel gauge, and the engine coolant temperature gauge sweep from the minimum position to the maximum position, then return to the minimum position.

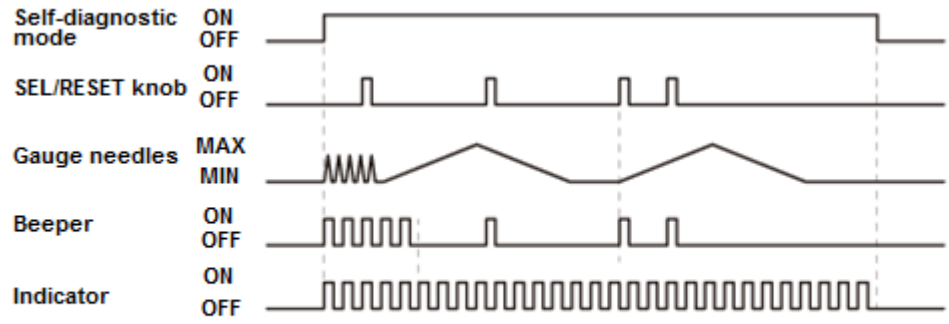
NOTE: After the beeper stops sounding and the gauge needles return to the minimum position, pushing the SEL/RESET knob starts the Beeper Drive Circuit Check (one beep) and the Gauge Drive Circuit Check again. The check cannot be started again until the gauge needles return to the minimum position.

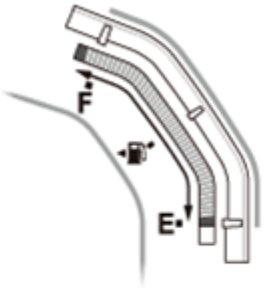
**Without Multi-Information Display**




The needles sweep from the minimum position to the maximum position, then return to the minimum position.

**With Multi-Information Display**

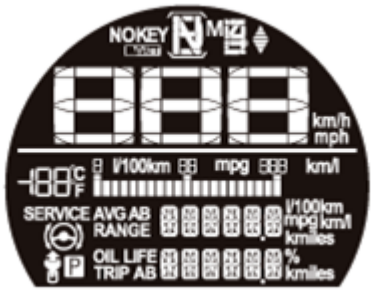



The needles sweep from the minimum position to the maximum position, then return to the minimum position.

## The Communication Line Check (Without multi-information display)

While in the self-diagnostic mode, the Communication Line Check starts after the LCD Segments Check.

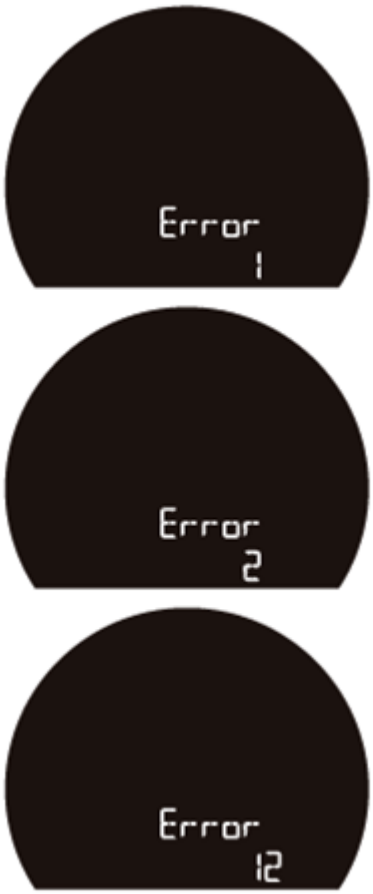



If the communication line is OK, all segments will be indicated on the information display. If there is a communication line error, the word "Error" will be indicated on the information display.

**Error Code List**

| Error code | Type of communication line(s) error |
|---|---|
| Error 1 | F-CAN communication |
| Error 2 | B-CAN communication |
| Error 12 | F-CAN and B-CAN communication |

**Indication Example**




- If Error 1 is indicated, there is a malfunction in the communication line between the F-CAN and the gauge control module. The B-CAN line is OK at this time. Check for DTCs in the F-CAN connected units and troubleshoot any DTCs.
- If Error 2 is indicated, there is a malfunction in the communication line between the B-CAN and the gauge control module. The F-CAN line is OK at this time. Check for DTCs in the B-CAN connected units and troubleshoot any DTCs.
- If Error 12 is indicated, there is a malfunction in the communication line between the gauge control module, the F-CAN, and the B-CAN. Check the DTCs in the F-CAN connected units and troubleshoot any DTCs.

## The Communication Line Check (With multi-information display)

While in the self-diagnostic mode, the Communication Line Check starts after the MID Segments Check.


If the communication line is OK, the word "OK" will be indicated on the multi-information display. If there is a communication line error, the word "ERROR" will be indicated on the multi-information display.

**Error Code List**

| Error code | Type of communication line(s) error |
|---|---|
| F-CAN･･･ERROR | F-CAN communication |
| B-CAN･･･ERROR | B-CAN communication |

**Indication Example**




- F-CAN･･･ERROR: There is a malfunction in the communication line between the gauge control module and F-CAN. Check for DTCs in the PCM, and troubleshoot the indicated DTCs.
- B-CAN･･･ERROR: There is a malfunction in the communication line between the gauge control module and B-CAN. Check for DTCs in the body electrical system and troubleshoot the indicated DTCs.

## Ending the Self-Diagnostic Function

Turn the vehicle to the OFF (LOCK) mode.

NOTE: If the vehicle speed exceeds 1.2 mph (2 km/h), the self-diagnostic function ends.

**Navigation System Diagnostic Mode**

NOTE:

- Check the vehicle 12 volt battery condition first.
- The screens detail indicated may change depending on equipment or specification.

## Start-Up Procedure and Diagnostic Menu

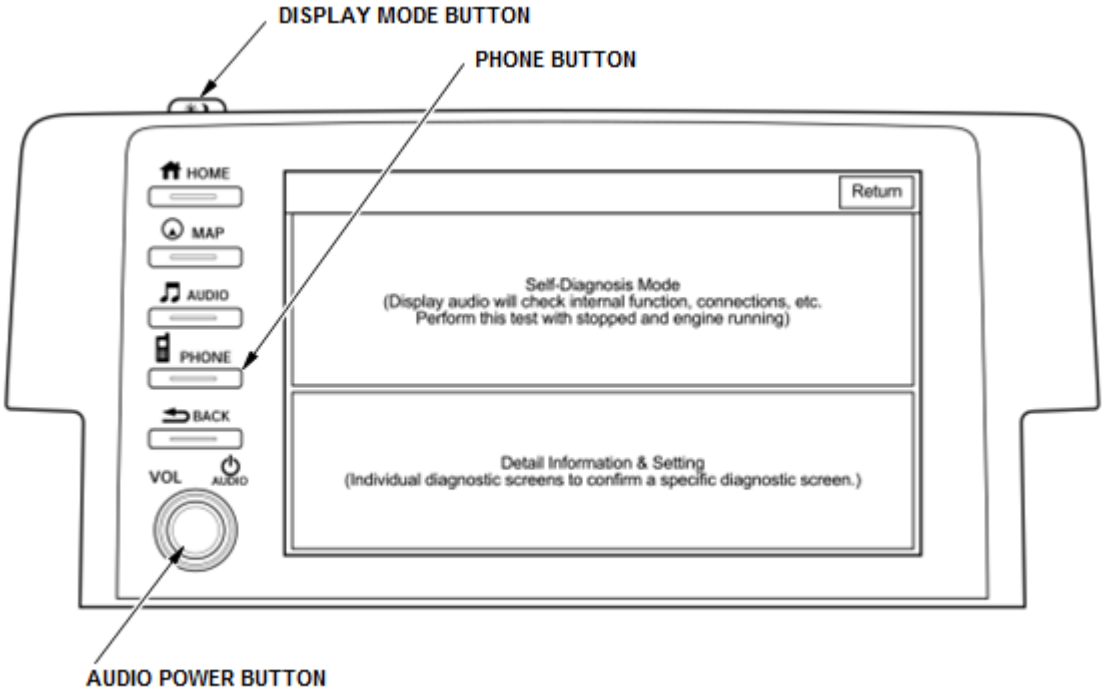
1. Turn the vehicle to the ON mode. If needed, start the engine.

2. Press and hold these buttons until the Select Diagnosis Items menu screen is displayed:

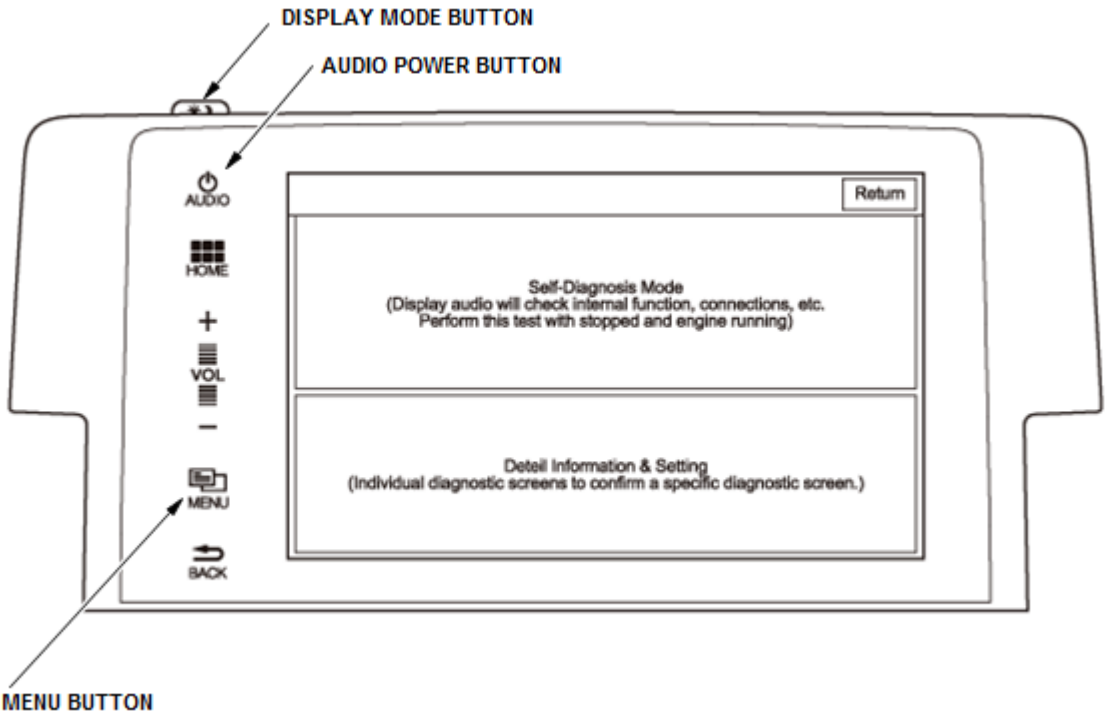
   - With volume knob: The PHONE button, DISPLAY MODE (☼ ☽) button, and the AUDIO POWER (⏻) button.
   - Without volume knob: The MENU button, DISPLAY MODE (☼ ☽) button, and the AUDIO POWER (⏻) button.

   Select the item you want to check:
   - Self-Diagnosis Mode (runs the automatic diagnosis of the audio/navigation system)
   - Detail Information & Setting (allows you to manually diagnose the audio/navigation system)

**Displaying Select Diagnosis Items Menu Screen (With Volume Knob)**

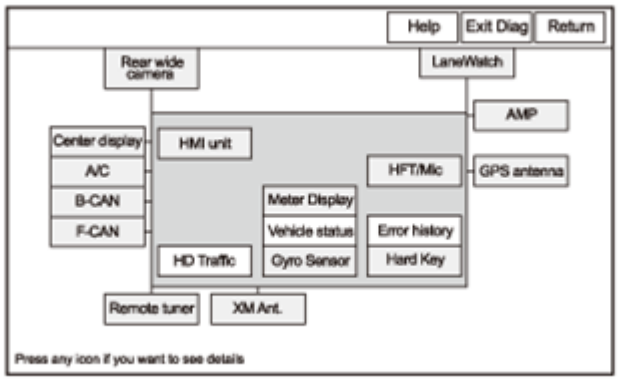



**Displaying Select Diagnosis Items Menu Screen (Without Volume Knob)**




## Self-Diagnosis Mode (System Links)

1. Select the Self-Diagnosis Mode from the Select Diagnosis Items menu. The message at the bottom of the screen flashes indicating “Diagnosis in progress...” , do not turn the vehicle to the OFF (LOCK) mode.




2. The diagnosis tests the following:
   - Most of the wires connecting the external navigation components shown in the block diagram.
   - The results from the various components shown in the block diagram.
   - The audio-navigation unit checks the microphone by listening to the “Pi Pi Pon” sound produced by the audio-navigation unit from the speakers when the diagnosis is started. This requires that the audio system be operating normally.

3. When the diagnosis finishes, the icons turn different colors based on their test status.

   NOTE: By selecting the Help icon, you can see a description for each color.

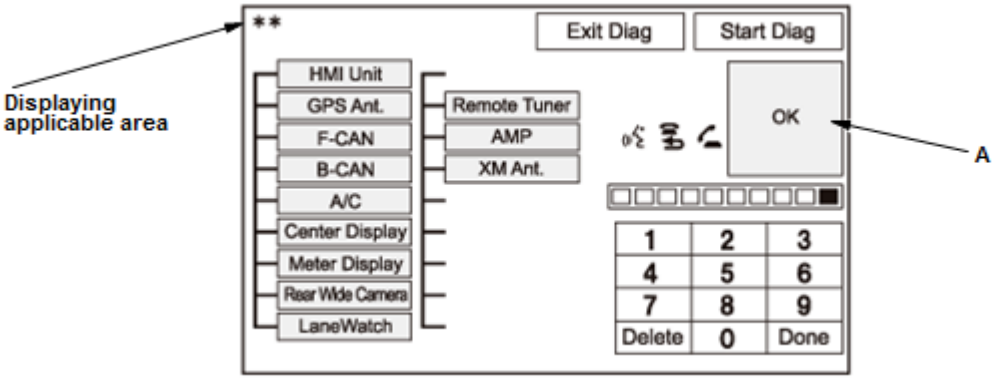
| Icon Colors | Description |
|---|---|
| Green | The system ran a diagnosis and the results are OK. |
| Red* | Errors that require replacement of hardware or harness. Examples are connection error or memory diagnosis errors. Select the red icon and check each diagnostic screen (refer to the description for diagnostic screens in the Unit Check). |
| Yellow | ● Errors that do not require hardware replacement, or the connection check is in the state which is not done. Such as leaving the vehicle in the ACCESSORY mode or because of a missing accessory.<br>● When the audio-navigation unit detects a failure, and stores DTC, the Error History icon turns yellow. |
| White | The diagnosis is running. The screen functions are locked out while the diagnosis runs. |
| Gray | ● The system cannot automatically check this function. You have to select the diagnosis item and manually do additional testing, like checking the audio-navigation unit buttons in the Hard Key test. When you complete the Hard Key test and return to the System Links screen, the gray icon turns green.<br>● The Vehicle Status icon anytime shows gray. |

*: The F-CAN icon and the B-CAN icon turns red when the vehicle is in the ACCESSORY mode. Check the System Links with the engine running, and if the F-CAN icon and the B-CAN icon turns green, the system is OK at this time.

4. Select the icon to see the details of that diagnostic function. The icon colors on the screen may not change until you exit and reenter the Self-Diagnosis mode. In some cases, you may have to restart the engine for the indication to change. After you repair the affected component or harness, repeat this diagnosis.

## Factory Diagnostic Screen In Line Diag and Linking

If the vehicle left the factory in the factory diagnostic mode, you will see this screen every time you turn the vehicle to the ON mode. Sometimes this screen also appears after you replace the audio-navigation unit with a new or remanufactured unit. Normally the factory does the steps necessary to verify proper operation and terminate the factory diagnosis. Until the proper confirmation sequence is done, the screen appears every time you turn the vehicle to the ON mode.




NOTE: The system cannot complete a full diagnosis unless vehicle is in the ON mode.

1. Select the Start Diag icon to check the connection between the audio-navigation unit and related components. When the connection diagnosis is in progress, the icon (A) indicates Detecting... , and each icon turns white. If the connection is OK, the icon turns green. If the connection is NG, the icon turns red. Check for connection between the audio-navigation unit and related unit on the failure connection line.

   NOTE: When the item is a variation equipment, the icon shows yellow, and it is not reflected in diagnosis.

2. If the connection diagnosis is finished, press the steering commander switch buttons (the TALK button, PICK-UP button, and the HANG-UP/BACK button) to check the HFL switch. As

each button is pressed, the corresponding icon on the display should turn green.

3. Press the TALK button, and within 5 seconds in a normal voice say “testing”. The Mic Level indicator on the screen should momentarily turn green.

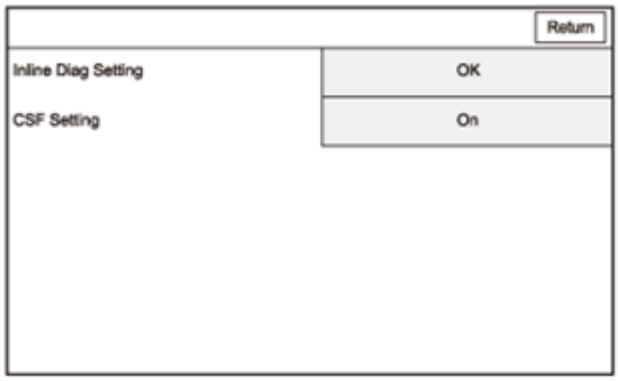
4. If all the diagnosis are OK, the icon (A) indicates OK. Select the Exit Diag icon to exit the diagnostic mode. The In Line Diag should not appear again.

## Forced Completing of In Line Diag and Linking

Follow these steps to prevent the screen from appearing in the future:

1. While displaying the In Line Diag screen, press and hold these buttons until the Select Diagnosis Items menu screen is displayed:
   - With volume knob: The PHONE button, DISPLAY MODE (☼ ☽) button, and the AUDIO POWER (⏻) button.
   - Without volume knob: The MENU button, DISPLAY MODE (☼ ☽) button, and the AUDIO POWER (⏻) button.

2. While displaying the Select Diagnosis Items menu screen, press and hold the HOME button until the In Line Diag setting screen is displayed.




3. Set the Inline Diag Setting to OK (complete). The system restarts and a normal start-up process occurs. The In Line Diag should not appear again.

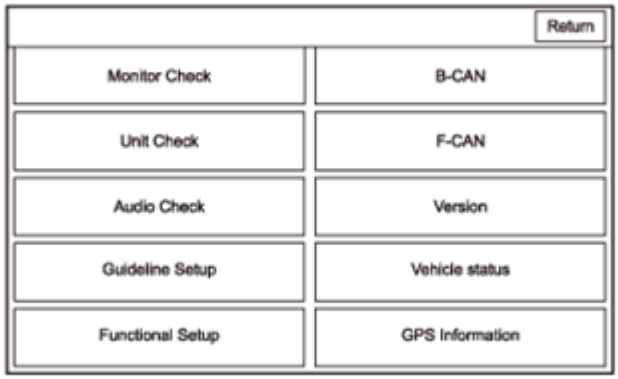
## Detail Information & Setting

This section allows you to run a specific diagnosis and allows additional setting choices for some screens that are not shown when touching an icon from the System Links screen.

Select the item you want to check, and the test begins. To return to the previous screen, select the Return icon.

- Monitor Check
- Unit Check
- Audio Check
- Guideline Setup
- Functional Setup
- B-CAN*
- F-CAN*
- Version
- Vehicle Status*
- GPS Information

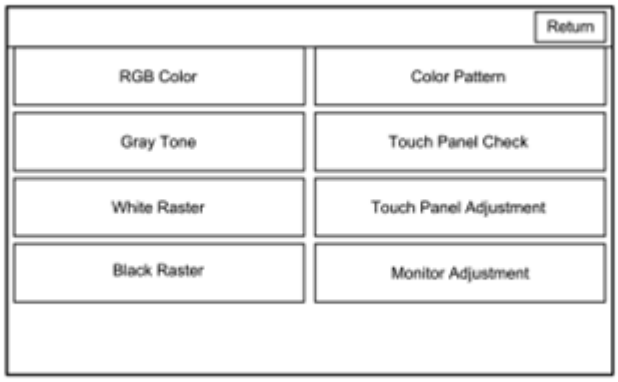
*: Refer to the Unit Check for details.




## Monitor Check

These screens allow you to troubleshoot the LCD display on the center display unit. Select the item you want to check, and follow the diagnostic instructions.

- RGB Color
- Gray Tone
- White Raster
- Black Raster
- Color Pattern
- Touch Panel Check
- Touch Panel Adjustment (not supported)
- Monitor Adjustment (with volume knob)

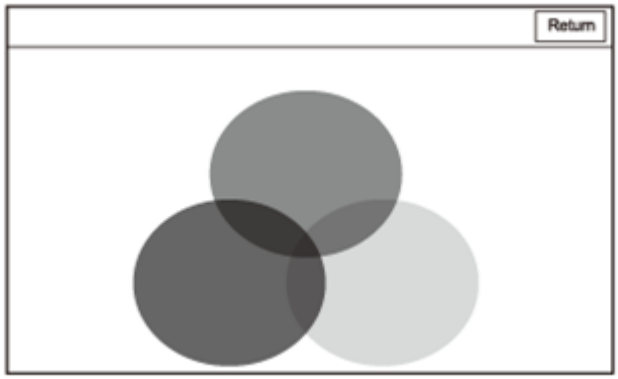



### RGB Color

NOTE: Displaying an anomaly in this diagnosis screen is not necessarily a failure.

This screen verifies that the display is receiving the video (R, G, B, and Composite sync) signals properly. The three primary colors should all appear without distortion. The combination of all three should produce a central white section. If any of the color circles are missing, replace the center display unit.

The diagnostic screen is displayed in full screen mode while pressing the HOME button.

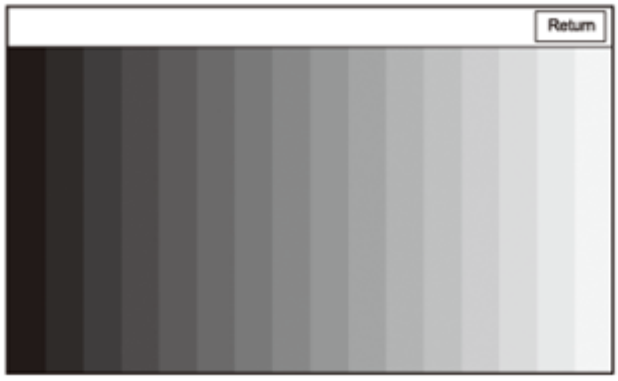



**Gray Tone**

NOTE: Displaying an anomaly in this diagnosis screen is not necessarily a failure.

This screen checks problems with contrast in 16 gradations. You should be able to see the changes from bar to bar across the scale. It is normal for the two bars on either side to appear the same.

The diagnostic screen is displayed in full screen mode while pressing the HOME button.

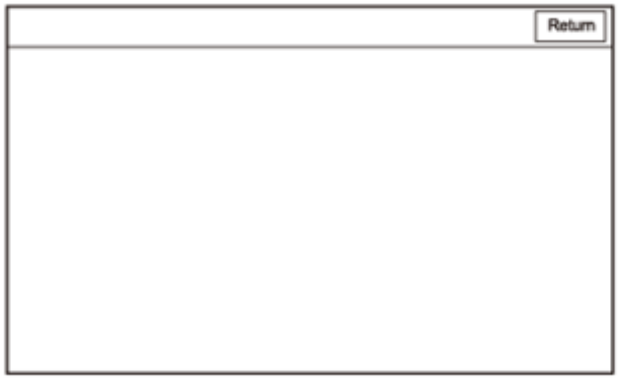



**White Raster**

NOTE: Displaying an anomaly in this diagnosis screen is not necessarily a failure.

This screen checks for pixels that may be dead (off). The entire display must be white.

The diagnostic screen is displayed in full screen mode while pressing the HOME button.


Return

**Black Raster**

NOTE: Displaying an anomaly in this diagnosis screen is not necessarily a failure.

This screen checks for pixels that may be stuck on. The entire display must be black.

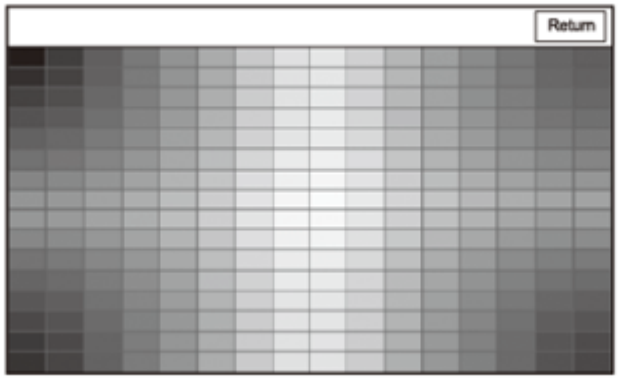
The diagnostic screen is displayed in full screen mode while pressing the HOME button.


**Color Pattern**

NOTE: Displaying an anomaly in this diagnosis screen is not necessarily a failure.

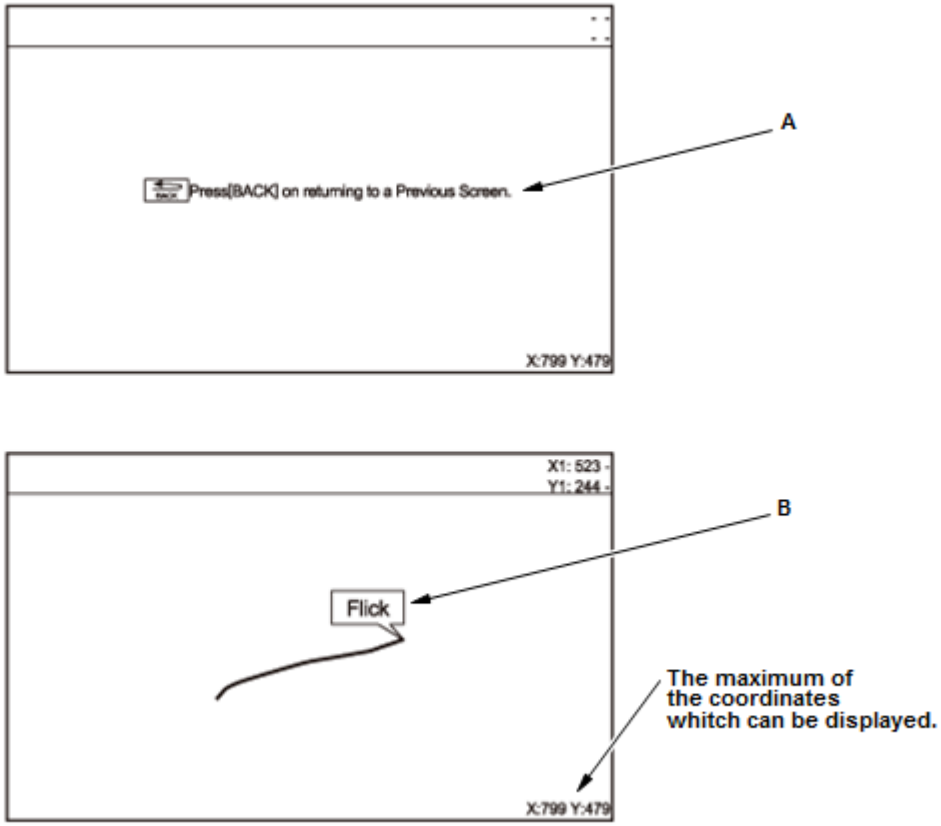
The screen shows the colors being used for the map and menu screens. This is for factory use only. To check the color signal, use the RGB Color diagnosis.

The diagnostic screen is displayed in full screen mode while pressing the HOME button.




**Touch Panel Check**

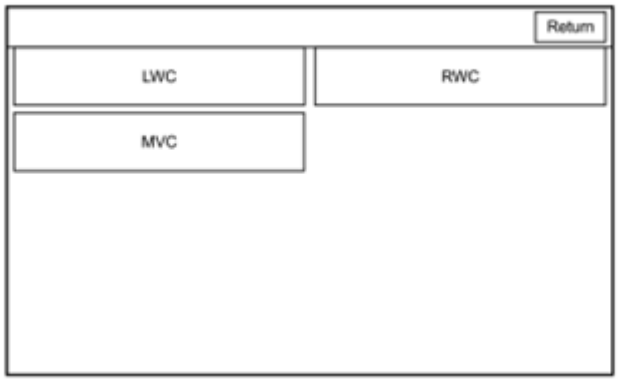
This check allows you to check the sensitivity of touch panel. If the screen is operated in the state while the telop (A) is displayed, the track changes to black, and the action name (Tap, Double tap, Pinch, Slide, and Flick) appears on the caption (B) for 5 seconds. The screen displays the coordinates of where the screen was touched. If the BACK button is pressed, the screen returns to the Monitor Check menu.




**Monitor Adjustment (With Volume Knob)**

These items adjusts screen settings (Brightness, Contrast, Black level, Color, and Tint) for the LaneWatch camera (LWC) image or the rearview camera (RWC) image. Select the item you want to adjust.

Select Return to exit the Monitor Adjustment screen.



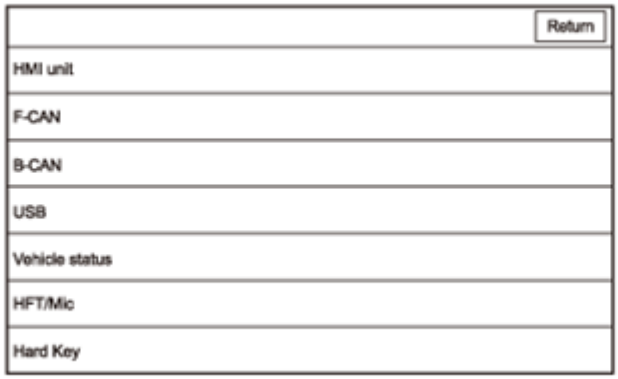

## Unit Check (Quick Check)

These screens allow you to diagnose the audio-navigation unit and related units. Some of the tests and screens that are displayed under the Unit Check are the same as the checks listed under the Detail Information & Setting.

To start the test, select the item you want to check.

NOTE: These items describe in indication order. Swipe the screen to check the next items.

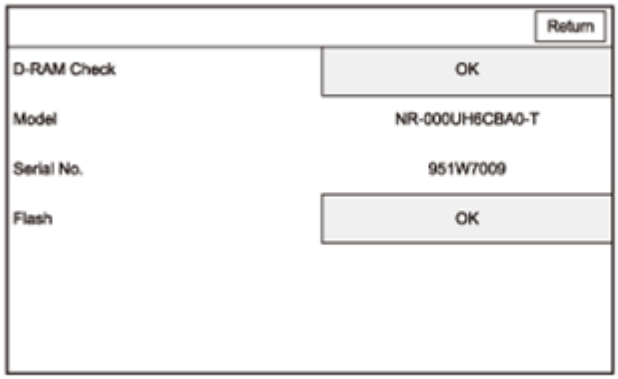
- HMI Unit
- F-CAN
- B-CAN
- USB
- Vehicle status
- HFT/Mic
- Hard Key
- Error history
- Rear wide camera
- LaneWatch
- Remote tuner
- AMP (with stereo amplifier)
- XM Ant. (with XM)
- Center display
- Meter Display
- GPS antenna
- HD Traffic (USA and Canada models)
- Gyro Sensor
- A/C
- Telematics Diag (not supported)




**HMI Unit**

This diagnosis checks for problems in the audio-navigation unit processor. When you start this diagnosis, the audio-navigation unit may freeze or delay up to a minute while the diagnosis runs.

- D-RAM: Displays the result of the access to the D-RAM (OK/NG). If NG, check for hard error codes.
- Model: Displays the audio-navigation unit manufacture's model number.
- Serial No. : Displays the audio-navigation unit serial number. That should be the same as the serial number found on the upper side of the audio-navigation unit.
- Flash: Displays the result of the access to the flash memory (OK/NG). If NG, replace the audio-navigation unit.



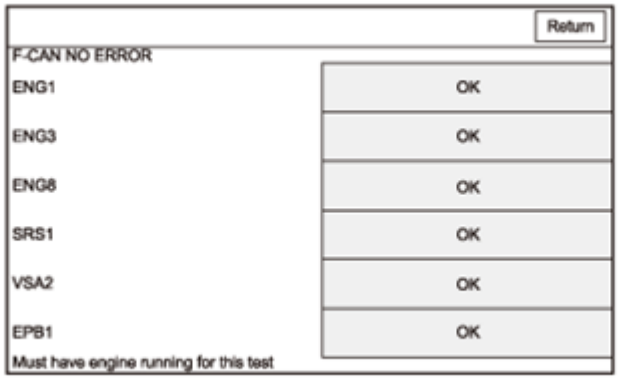

**F-CAN**

NOTE:

- This diagnosis must have the engine running.
- Swipe the screen to check the next items.

This diagnosis checks whether the audio-navigation unit has received specific F-CAN data. If F-CAN shows NO ERROR, an error is not detected between the F-CAN bus and the audio-navigation unit.

- If F-CAN shows RX ERROR, replace the audio-navigation unit.
- If F-CAN shows TIME OUT, There is a possibility that some items are NG (red icon). When all the items from each transmitting unit is NG, check for F-CAN DTCs with the HDS. If the DTCs not detected, check for continuity in the F-CAN lines between the audio-navigation unit and the transmitting unit.




**B-CAN**

NOTE:

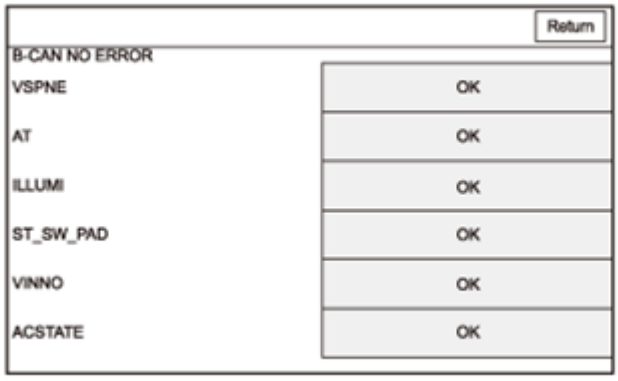
- This diagnosis must have the engine running.
- Swipe the screen to check the next items.

This diagnosis checks whether the audio-navigation unit has received specific B-CAN data. If B-CAN shows NO ERROR, an error is not detected between the B-CAN bus and the audio-navigation unit.

- If B-CAN shows RX ERROR, replace the audio-navigation unit.
- If B-CAN shows TIME OUT, There is a possibility that some items are NG (red icon). When all the items from each transmitting unit is NG, check for B-CAN DTCs with the HDS. If the

DTCs not detected, check for continuity in the B-CAN lines between the audio-navigation unit and the transmitting unit.

| Item | Transmitting Unit |
|---|---|
| VSPNE, AT, ILLUMI, ST_SW_PAD, VINNO, STRG_ANG, ODO_TRIP, TRICOM1 - 4, METER_RMD | Gauge control module |

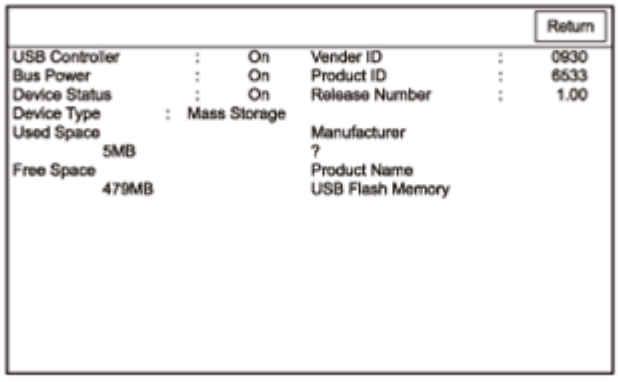



**USB**

This diagnosis displays the USB device status that is connected to the audio-navigation unit.

If the USB memory device is connected to USB port A or B, the screen displays the USB controller status, the Bus power status, and the device status.

When you connect a USB mass storage device, you can see the capacity used and the amount of free space available.




**Vehicle Status**

Use this screen to confirm that the audio-navigation unit is properly receiving input signals. The displayed value changes each time according to the state of input signal.

NOTE: These items describe in indication order. Swipe the screen to check the next items.

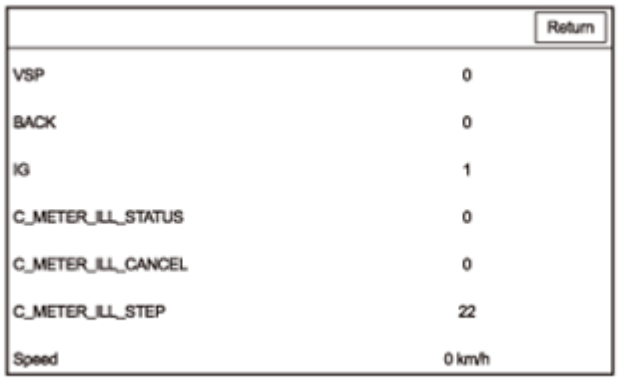
| Item | Input | Description |
|---|---|---|

| Item | Input | Description |
|---|---|---|
| VSP | VSP line | • 1: When the vehicle speed pulse is received from the TCM[*1] or the PCM[*2]<br>• 0: When the vehicle speed pulse is not received from the TCM[*1] or the PCM[*2] |

*1: CVT
*2: M/T
*3: 5-door

| Item | Input | Description |
|---|---|---|
| BACK | BACK LT line | ● 1: When the transmission is shifted to R position/mode<br>● 0: When the transmission is shifted to any position/mode other than R position/mode |
| IG | B-CAN lines | ● 1: When the vehicle is in the ON mode<br>● 0: When vehicle is in the ACCESSORY mode |
| C_METER_ILL_STATUS | B-CAN lines | ● 1: When parking lights, or headlights are on<br>● 0: When parking lights, or headlights are off |
| C_METER_ILL_CANCEL | B-CAN lines | ● 1: When the dashlights brightness control knob is more than 90 % brightness with the parking lights turned on<br>● 0: When the dashlights brightness control knob is less than 90 % brightness with the parking lights turned on |
| C_METER_ILL_STEP | B-CAN lines | With the parking lights on, use the dashlights brightness control knob to dim and brighten the gauge control module. The value changes from 1 (max low) to 22 (max high). |
| Speed | B-CAN lines | This item indicates the vehicle speed (km/h). |
| TV-PARK | PARK BUSY line*3 | ● 1: When the parking brake is applied<br>● 0: When the parking brake is not applied |
| NAVI-PARK | B-CAN lines | ● 1: When the parking brake is applied<br>● 0: When the parking brake is not applied |
| Current received VIN | B-CAN lines | This item indicates the VIN that are received from the PCM. |
| Initial registered VIN | B-CAN lines | This item indicates the initial registration VIN (10 is added to the beginning of indicated VIN) that is saved in the audio-navigation unit. |
| Last registered VIN | B-CAN lines | This item indicates the additional registration VIN (11 is added to the beginning of indicated VIN) when the audio-navigation unit is substituted into another vehicle, or when a PCM is substituted or replaced into this vehicle. |

*1: CVT
*2: M/T
*3: 5-door

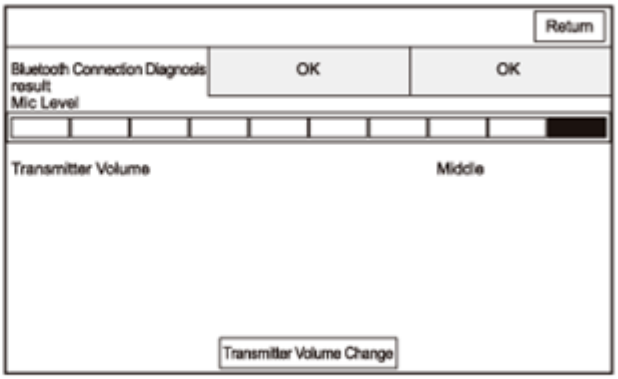



**HFT/Mic**

This diagnosis allows you to independently test the Bluetooth module and the microphone. The Bluetooth module is built into the audio-navigation unit. To properly check the microphones, make sure you are sitting in the driver's seat.

NOTE: Before this diagnosis, check the response of the TALK button on the audio remote-HFL switch by the Hard Key diagnosis.

- If the Bluetooth Connection Diagnosis shows NG, replace the audio-navigation unit.
- Press the TALK button, and within 5 seconds in a normal voice say “testing” toward the microphone in the roof console. The Mic Level indicator on the screen should momentarily turn green. The test is set to OK by indicating green more than 6 steps. If there is no Mic Level movement when you speak, go to Voice control does not work/respond troubleshooting.


If you select the Transmitter Volume Change icon, the transmitter volume can be selected from three selection (Large, Middle, Small).

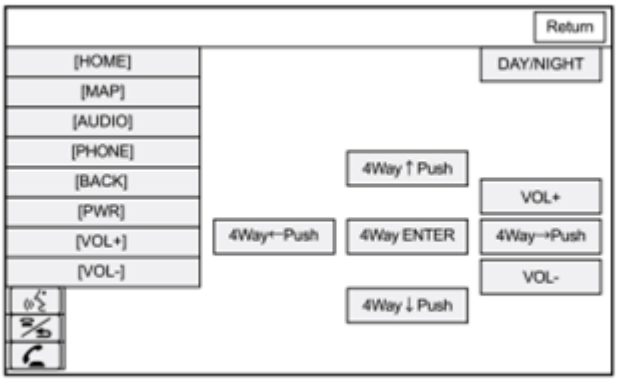

**Hard Key**

This diagnosis checks the center display unit hard button (DISPLAY MODE), face switches (AUDIO POWER, HOME, MENU, MAP, PHONE, AUDIO, VOL+, VOL-, BACK), and the audio remote-HFL switch. For this model, the audio remote-HFL switch buttons use the data bus via the gauge control module for communications.

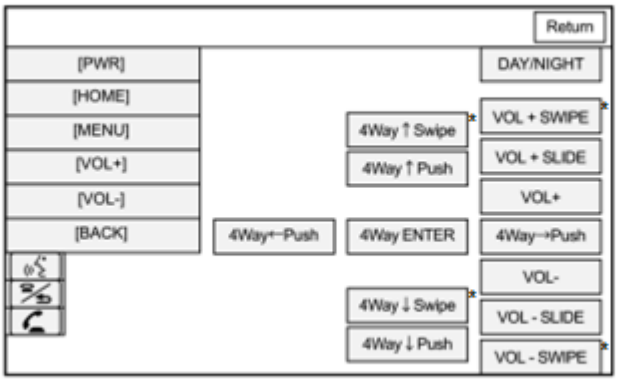
To complete the test, press each buttons. As each function is tested, the corresponding button on the display should highlight. If the test cannot be completed, the corresponding icon on the Hard Key menu screen shows red.

- If any button of the center display unit does not respond, replace the center display unit.
- If any button of the audio remote-HFL switch does not respond, replace the audio remote-HFL switch.
- If all buttons of the audio remote-HFL switch do not respond, go to Audio remote-HFL switch does not work properly (audio unit buttons work) troubleshooting.

**With Volume Knob**



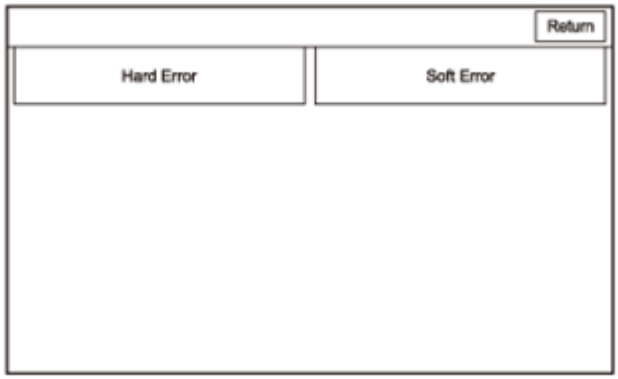

**Without Volume Knob**




***: With touch sensor**

**Error History**

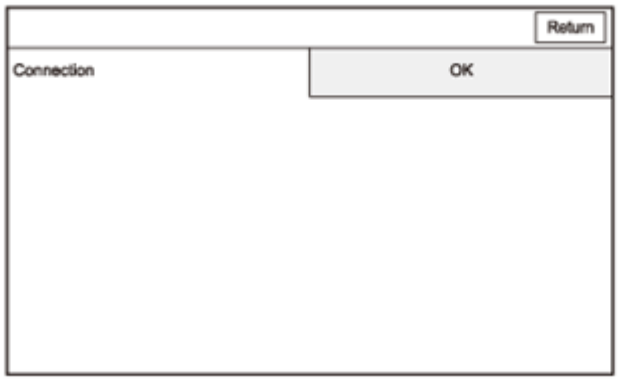
If you select Hard Error or Soft Error, you can see the error information. Refer to How to Check for Error History to use this diagnosis.



**Rear Wide Camera**

This diagnosis checks the rearview camera connection.

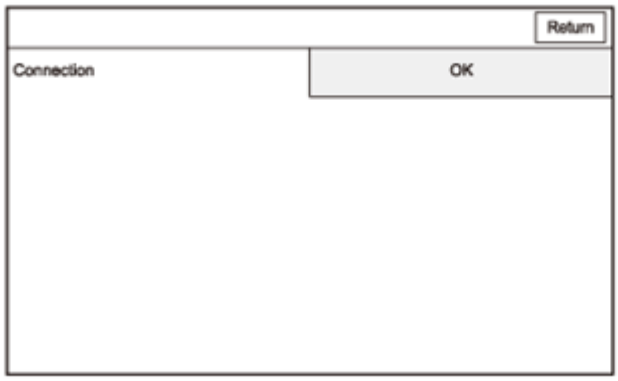
- If Connection shows NG, check for hard error codes.
- If Connection shows OK, press the HOME button to display the rearview camera image. To return to the previous screen, press the HOME button again.




**LaneWatch**

This diagnosis checks the LaneWatch camera connection.

- If Connection shows NG, check for hard error codes.
- If Connection shows OK, press the HOME button to display the LaneWatch camera image. To return to the previous screen, press the HOME button again.



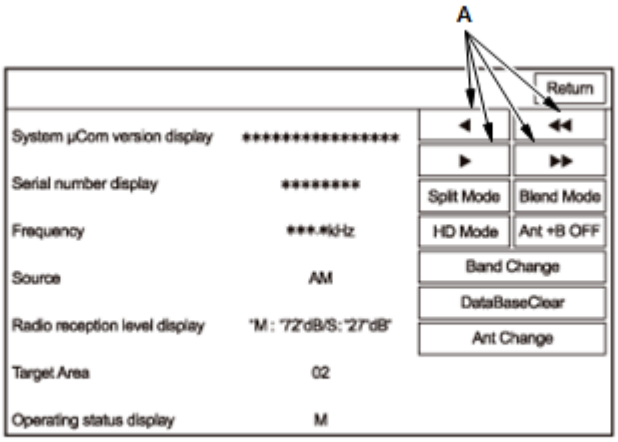

**Remote Tuner**

NOTE:

- For factory use only. Do not alter any settings unless directed.
- These items describe in indication order. Swipe the screen to check the next items.

This diagnosis displays the external AM/FM radio tuner (tuner unit) status.

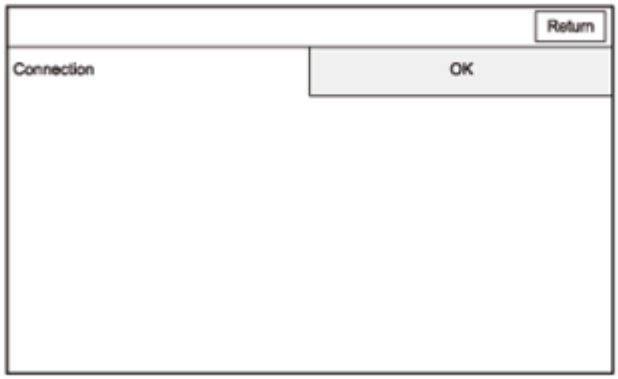
- System µcom version display: Displays the tuner unit processor version.
- Serial number display: Displays the tuner unit serial number. That should be the same as the serial number found on the upper side of the tuner unit.
- Frequency: Displays frequency of the radio station which is being received. Frequency can be changed by selecting each icon (A).
- Source can be changed in this order: AM→FM by selecting the Band Change icon.
- Radio reception level display: Displays radio reception level (dB). The AM/FM antenna power status can be changed to on or off by selecting the Ant +B OFF icon.
- Target Area: Displays the destination of the tuner unit at 2 digits.
- Operating status display: If the vehicle has diversity antenna, you can select the radio antenna function from M (Main), S (Sub), or P (Diversity).
- RDS BER display: Displays the RDS bit error ratio.
- SNR display: Displays the Sound/Noise ratio about the AM or FM.
- Preset: Displays number of radio station preset about the AM or FM.
- HD function: Displays the HD function is available (YES) or not available (NO).
- VOL: Displays the current volume level.
- Split Mode: Displays the split mode on or off. That can be changed by selecting the Split Mode icon.
- Blend Mode: Displays the blend mode which is being received. The blend mode can be changed to AUTO/ANALOG/DIGITAL by selecting the Blend Mode icon.
- HD Mode: Displays the HD mode status (ON: HD, OFF: analog) at frequency of the radio station which is being received. That can be changed by selecting the HD Mode icon.




**AMP (With Stereo Amplifier)**

This diagnosis checks the digital bus (RS485) connection between the audio-navigation unit and the stereo amplifier.

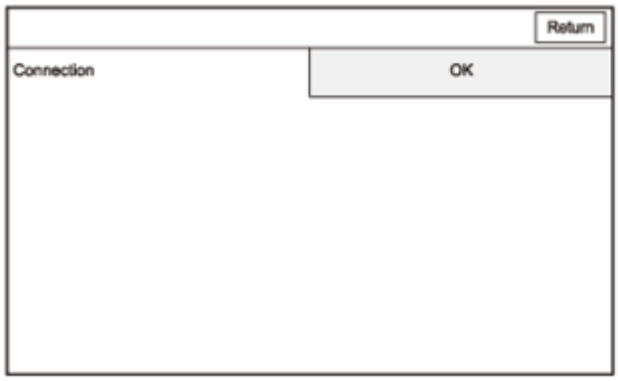
If Connection shows NG, go to No sound is heard from all the speakers (display is normal) troubleshooting.




**XM Ant. (With XM)**

This diagnosis checks the XM antenna connection between the audio-navigation unit and the roof antenna. The XM radio tuner is built into the audio-navigation unit.

If Connection shows NG, check for hard error codes.

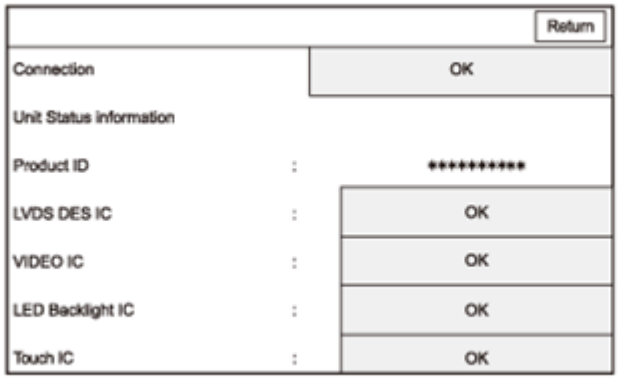



**Center Display**

These items describe in indication order. Swipe the screen to check the next items.

This diagnosis checks the digital bus (LVDS1) connection between the audio-navigation unit and the center display unit, and displays the center display unit status.

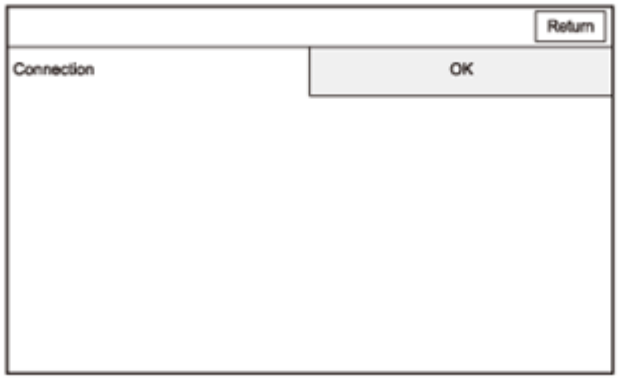
- Connection: Checks the digital bus (LVDS1) between the audio-navigation unit and the center display unit. This item should indicate OK.
- Unit Status Information: Indicates the center display unit processor status. If any of the status indicates NG, turn the vehicle to the OFF (LOCK) mode then the ON mode, and recheck the status. If the status still indicates NG, replace the center display unit.
- Unit Version Information: Displays the center display unit various version number.




**Meter Display**

This diagnosis checks the digital bus (LVDS2) between the audio-navigation unit and the gauge control module.

If Connection shows NG, go to The MID does not display the audio-navigation unit information troubleshooting.

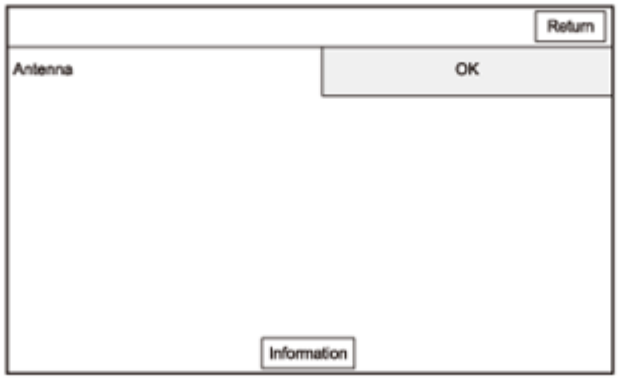



**GPS Antenna**

This diagnosis checks the GPS antenna connection.

If Antenna shows NG, the GPS antenna may be faulty. Check for hard error codes.

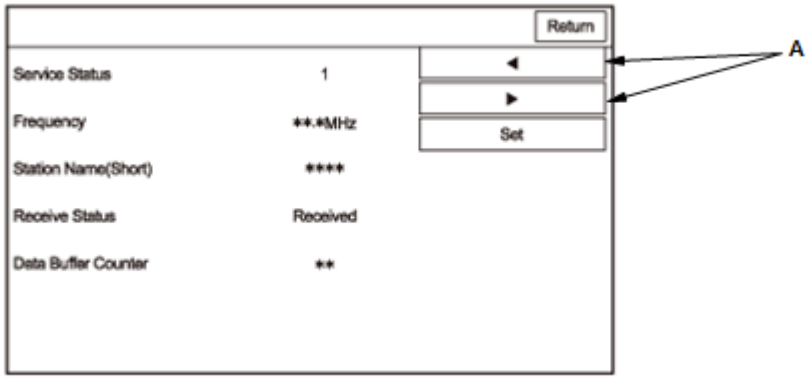
Select Information to see the GPS satellite details.


Return
Antenna
OK
Information

**HD Traffic (USA and Canada models)**

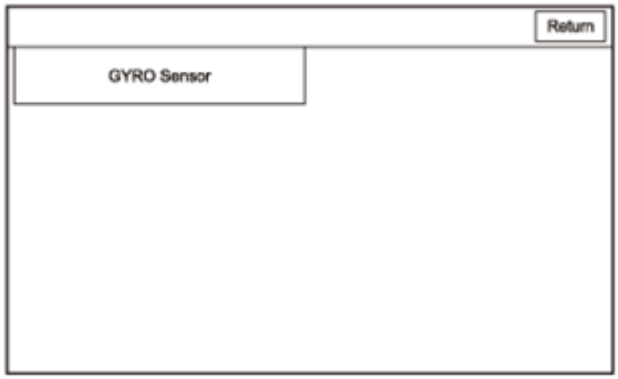
This diagnosis displays the HD traffic status.

- Service Status: Displays the HD traffic service status on (1) or off (except 1).
- Frequency can be changed by selecting each icon (A).
- Station Name: Displays the call sign of the receiving HD traffic station.
- Receive Status: Displays the reception status of HD traffic.
- Data Buffer Counter: If the unit receives the data from the HD traffic station, displays the number of buffering data.

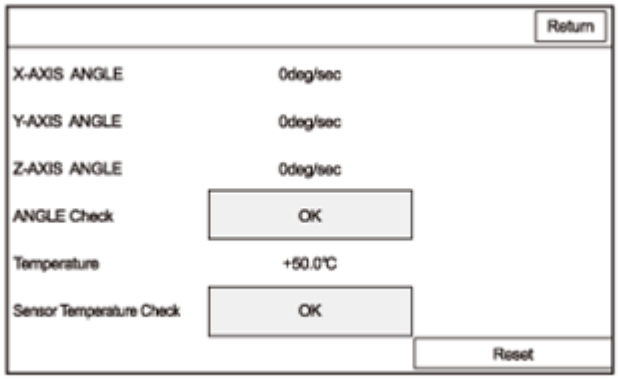



**Gyro Sensor**

This diagnosis checks the gyro sensor in the audio-navigation unit. This devices detect how the vehicle moves, and repositions the vehicle position icon on the map screen. Select the GYRO Sensor.



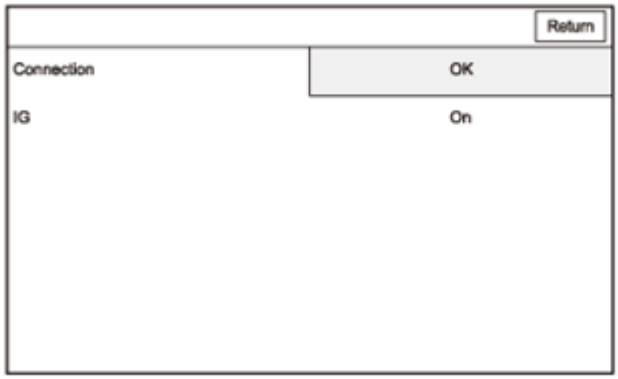

- X/Y/Z AXIS ANGLE: Indicates the angular speed of the gyro sensor.
- ANGLE Check: The audio-navigation unit checks if the angular speed is in range of threshold value.
- Temperature: Indicates the temperature of the gyro sensor.
- Sensor Temperature Check: The audio-navigation unit checks if the gyro sensor temperature is in range of threshold value.
- Reset: All values can be reset to the factory specification.




**A/C**

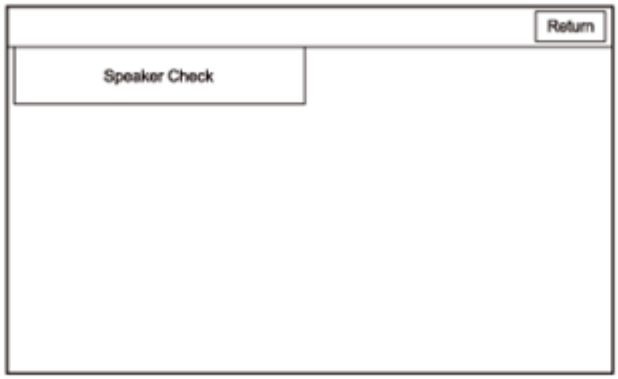
This diagnosis detects if the vehicle is in the ON mode using information provided over the F-CAN bus, then it tests the climate control signal via the B-CAN bus between the audio-navigation unit and the climate control unit. Make sure the engine is running for this test.

If Connection shows NG, check for hard error codes.




## Audio Check

These screens allow you to troubleshoot the audio function. Select the Speaker Check icon.



**Speaker Check**

NOTE:

- Make sure the audio system is off before this diagnosis.
- While doing the diagnosis, the fader and the balance positions are set to the center.

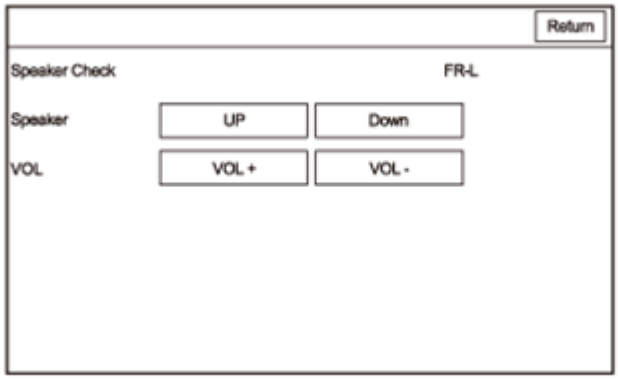
This diagnosis checks the audio speakers individually.

Select the UP icon or the Down icon to check speakers. A tone should sound from the speaker.

When you select the Up icon, the system checks the speakers in this order:
①→②→③→④→⑤→⑥→⑦→⑧→⑨→⑩→⑪→①
When you select the Down icon, the system checks the speakers in this order:
①→⑪→⑩→⑨→⑧→⑦→⑥→⑤→④→③→②→①

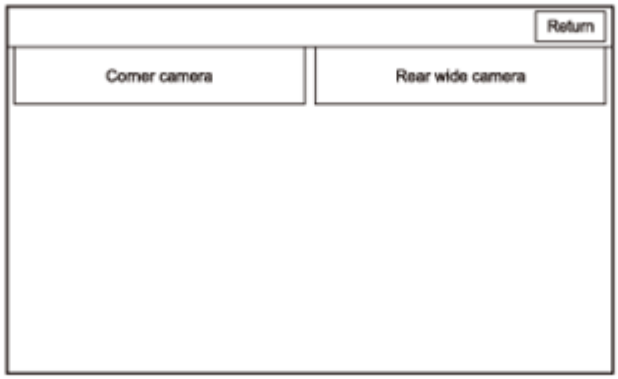
| | Display Message | Vehicle Test Condition |
|---|---|---|
| ① | FR-L | You should hear a tone from the driver's door speaker. |
| ② | FRTW-L | You should hear a tone from the left front tweeter. |
| ③ *1 | CNT1 | You should hear a tone from the front center speaker. |
| ④ | FR-R | You should hear a tone from the front passenger's door speaker. |
| ⑤ | FRTW-R | You should hear a tone from the right front tweeter. |
| ⑥ | RR2-R*1/RR1-R*2 | You should hear a tone from the right rear (door*3) speaker. |
| ⑦ | RR2TW-R*1/RR1TW-R*2 | You should hear a tone from the right rear (door*3) tweeter. |
| ⑧ *1 | SW1 | You should hear a tone from the subwoofer. |
| ⑨ | RR2-L*1/RR1-L*2 | You should hear a tone from the left rear (door*3) speaker. |
| ⑩ | RR2TW-L*1/RR1TW-L*2 | You should hear a tone from the left rear (door*3) tweeter. |
| ⑪ | ALL | You should hear a tone from all speakers. |

*1: With stereo amplifier
*2: Without stereo amplifier
*3: 5-door



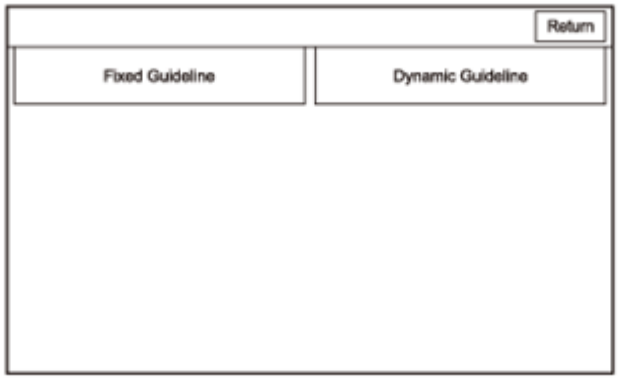

## Guideline Setup

These screens adjusts the rearview camera image guidelines. Select the Rear wide camera icon to adjust the guidelines.



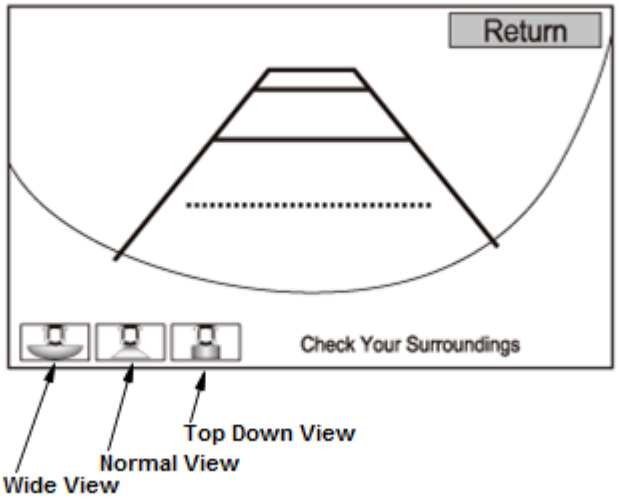

**Rear Wide Camera**

Select the item you want to adjust.



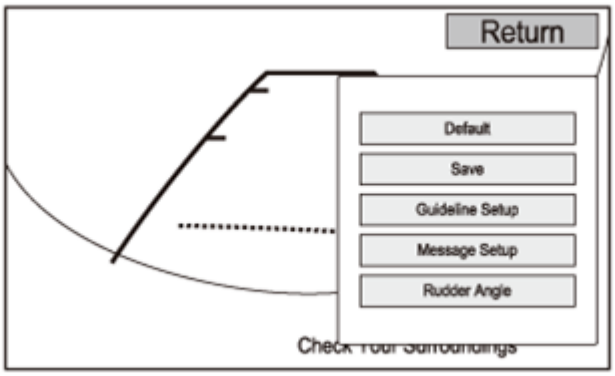

Select the view mode icons (Wide View, Normal View, Top Down View) you want to adjust.

NOTE: The Top Down View cannot be selected when the dynamic guideline is selected.




Press the PHONE button (with volume knob) or the MENU button (without volume knob) to display the submenu.

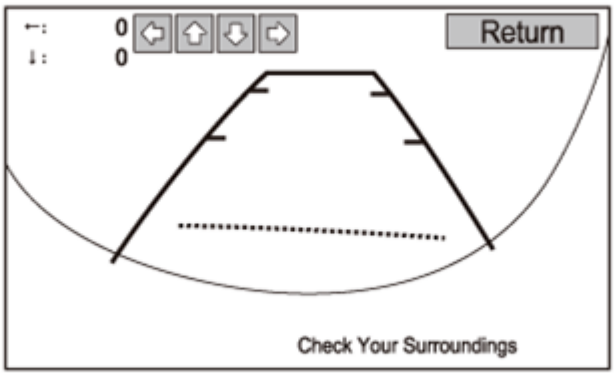
- Default: All guidelines can be reset to the factory specification.
- Save: Reflects the result of the guideline adjustment.
- Guideline Setup: Adjust the guideline.
- Message Setup: Adjust the caution message position.
- Rudder Angle: The steering angle which adjusts the position of the chosen guideline.




**Guideline Setup**

Touch each arrow icon to move the guidelines up/down or left/right. The screen displays the information about the adjusted distance and its direction.

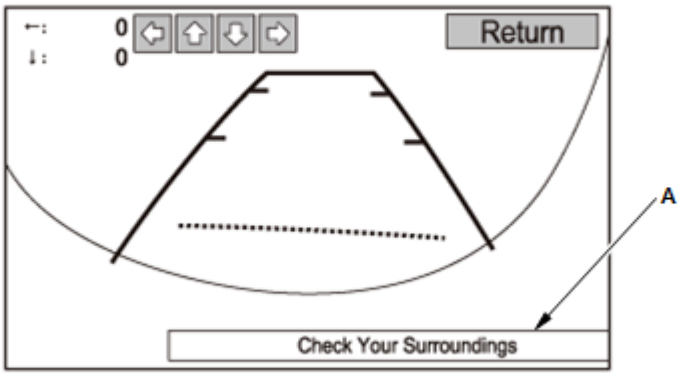
If you want to keep the setting, press the PHONE button (with volume knob) or the MENU button (without volume knob) to display the settings submenu. The audio-navigation unit saves the setting by selecting the Save icon on the settings submenu.




**Message Setup**

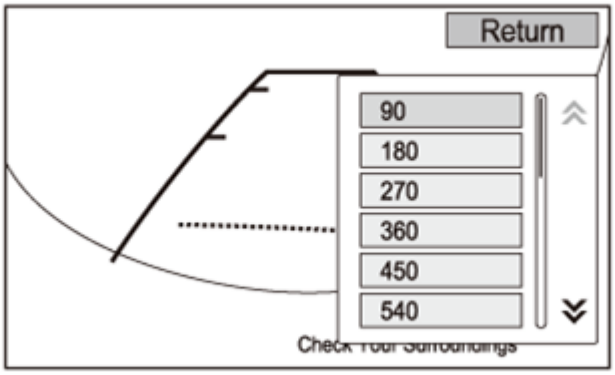
Touch each arrow to move the message (A) up/down or left/right.

If you want to keep the setting, press the PHONE button (with volume knob) or the MENU button (without volume knob) to display the settings submenu. The audio-navigation unit saves the setting by selecting the Save icon on the settings submenu.




**Rudder Angle**

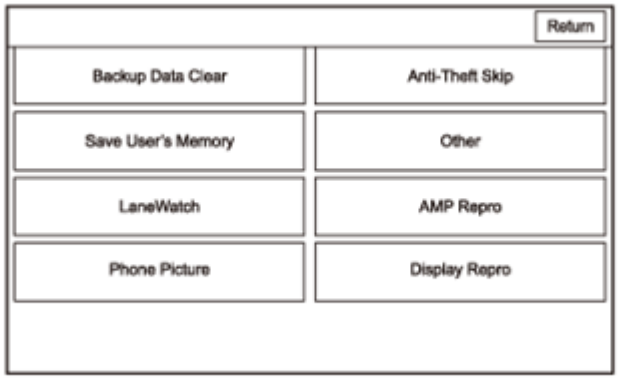
Select different steering angles (90° - Lock end) from the submenu, After selecting, do the Guideline Adjustment. The adjustment method for the guideline locations is the same as the Fixed Guideline.




## Functional Setup

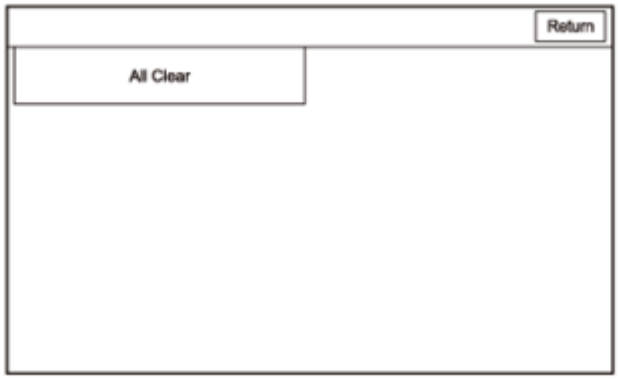
These screens allows for diagnosis and settings about functions of the audio-navigation unit. Select the item you want to check.

- Backup Data Clear
- Save Users Memory
- LaneWatch
- Phone Picture
- Anti-Theft Skip
- Other
- AMP Repro (factory use only)
- Display Repro (factory use only)




## Backup Data Clear

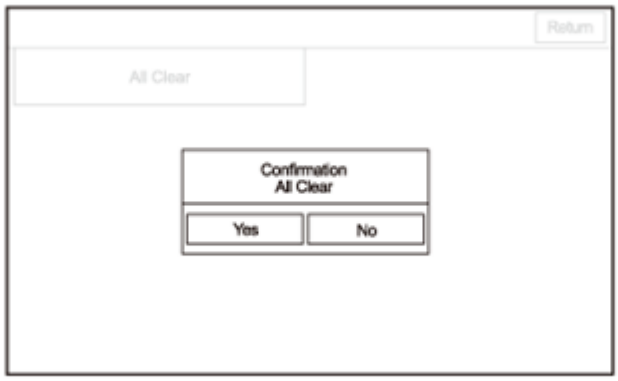
This screen initializes the back-up data in the audio-navigation unit. Select the All Clear icon.



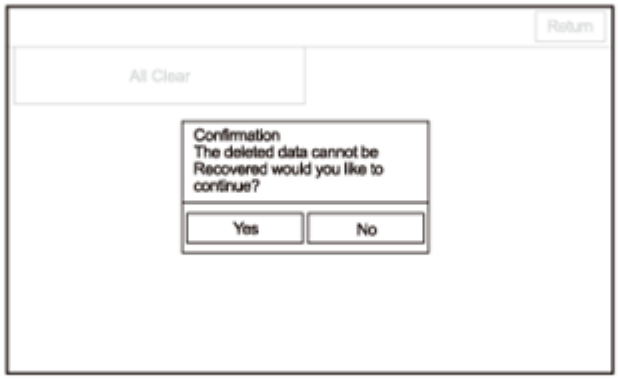

**All Clear**

The all clear function deletes the data in the audio-navigation unit, and restores it to the factory defaults. This function is equivalent to Memory Refresh in the System Settings Menu.

When selecting the All Clear icon, the confirmation screen appears.




When selecting the Yes icon, the second confirmation screen appears.




When selecting the Yes icon, the system restarts after performing the All Clear process. After the restart, a normal start-up process occurs.

## Save User's Memory

When replacing the audio-navigation unit, this function allows the technician to transfer the customer's personal data to the new audio-navigation unit. The transferred information includes their setup settings and personal addresses. The dealer inserts a USB device into USB port A or B, and then selects the Save Users Memory function. The two functions in this diagnostic screen are Export and Import. Export saves the customer's data to the USB device, and Import moves the USB device files to the new audio-navigation unit.

This function does not start until you connect a USB device to the USB port.


1. Select the Export icon to move the customer's data from the original audio-navigation unit to the USB device. Select the Yes icon on the Export User Data Confirmation screen. The process takes only a couple of seconds. The system stores .DAT files on the USB device.

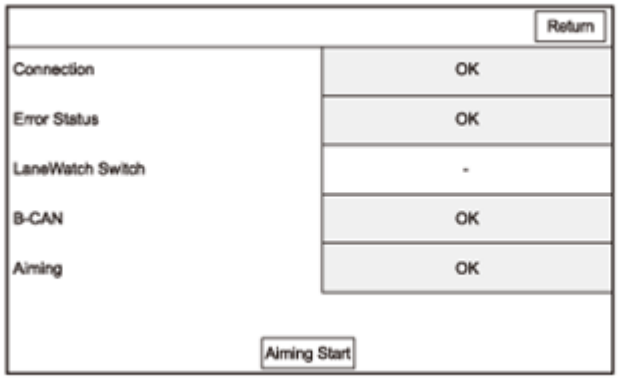
   NOTE: If the Export icon is grayed out, check the USB port.


2. After replacing the new audio-navigation unit, allow the system to boot up. Insert the USB device into USB port A or B and enter the Save Users Memory in the System Diagnostic Mode.
3. Select the Import icon to move the two files stored by the Export process from the USB device to the new audio-navigation unit. Select the Yes icon on the Import User Data Confirmation screen. When the transfer is finished (a few seconds) the system automatically reboots. After the system reboots, remove the USB device from the USB port.


## LaneWatch

This diagnosis checks the LaneWatch status.

- If Connection shows hyphen ( - ), check for hard error codes.
- Error Status: Indicates LaneWatch camera status OK or NG. If Error Status shows NG, replace the LaneWatch camera. When the LaneWatch camera is disconnected, the status shows hyphen ( - ).
- If Error Status shows OK, press the HOME button to display the LaneWatch camera image. To return to the previous screen, press the HOME button again.
- LaneWatch Switch: LaneWatch switch status on or off. When the LaneWatch switch is pressing, the status shows ON. When the LaneWatch switch is released, the status shows hyphen ( - ).
- B-CAN: Checks whether the audio-navigation unit has received specific B-CAN data from the body control module. If B-CAN shows NG, check for B-CAN DTCs with the HDS. If the DTCs are not detected, check for B-CAN lines continuity between the audio-navigation unit and the body control module.
- If Connection, Error Status, LaneWatch Switch, and B-CAN shows OK, the LaneWatch camera aiming procedure is available. If the LaneWatch camera need to aiming, refer to the How to Start LaneWatch Camera Aiming. When the aiming fails, Aiming shows NG.




### Phone Picture

This screen allows you to enable or disable the Show Contact Picture with On/Off.


### Anti-Theft Skip

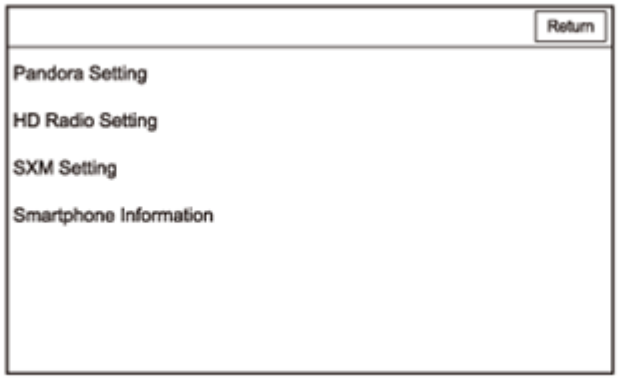
This selection can cancel the anti-theft mode temporarily (for 150 seconds).

The Anti-Theft Skip icon is grayed out when the anti-theft mode is already canceled.

### Other

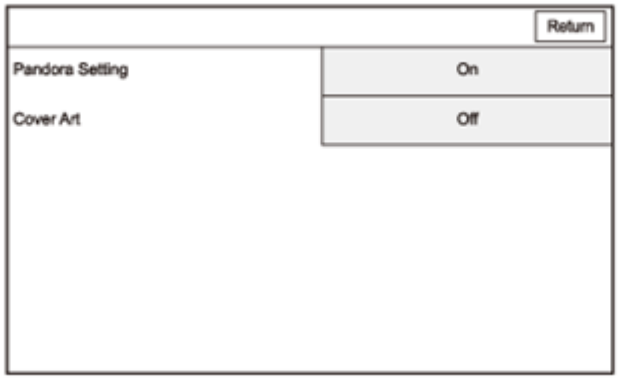
Select the item you want to check.

- Pandora Setting
- HD Radio Setting
- SXM Setting
- Smartphone Information



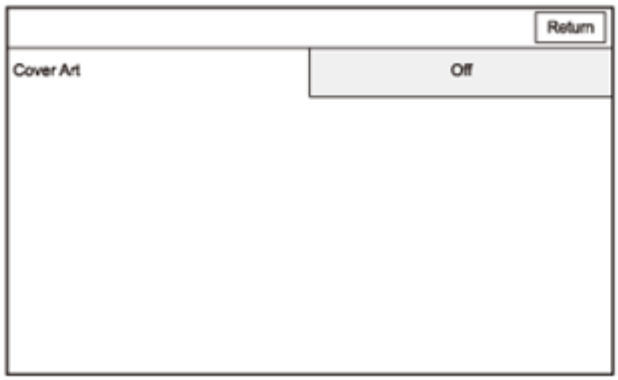

**Pandora Setting**

This screen allows you to restrict the Pandora function to the running vehicle. Refer to the Owner's Manual for more information about the Pandora setting function.



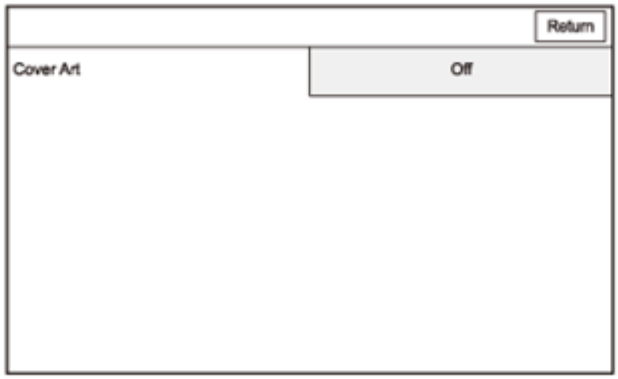

**HD Radio Setting**

This screen allows you to restrict the HD RADIO album art function to the running vehicle. Refer to the Owner's Manual for more information about the album art function.



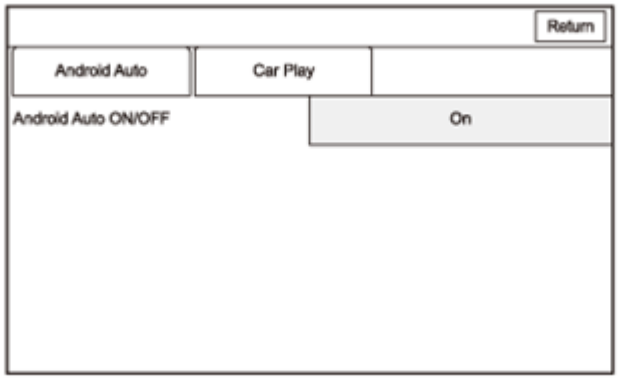
**SXM Setting**

This screen allows you to restrict the XM radio album art function to the running vehicle. Refer to the Owner's Manual for more information about the album art function.



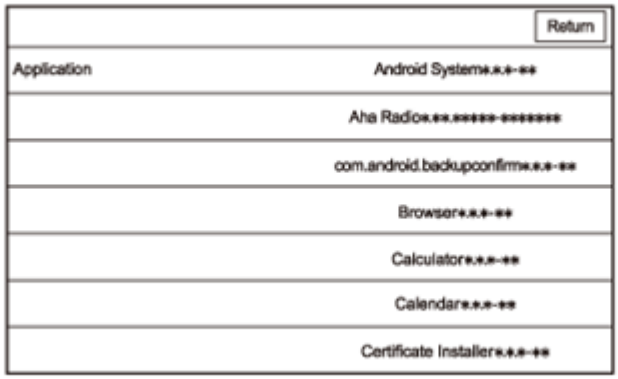

**Smartphone Information**

This screen allows you to enable or disable the function about smartphone connection.




## Version

This screen displays the current version information about each module in the audio-navigation unit.




## GPS Information

This screen shows the current status of GPS reception. The circular diagram shows the current location of the GPS satellites (yellow numbers) as they would appear in the sky. The outer circle represents the horizon (0 degrees elevation). The middle and inner circles represents 30 and 60 degrees respectively. The very center of the diagram (90 degrees elevation) is directly overhead. Nearby obstructions, like tall buildings will block satellites in that direction. That is why it is necessary to be in an open area to effectively troubleshoot GPS reception issues. The satellite numbers shown on the diagram while pressing the HOME button that correspond to the PRN (satellite ID number). There are always at least 24 active GPS satellites in orbit. Because satellites fail, and have to be removed from service, spares are always parked in orbit, ready to be activated. This is why the PRN can be greater than 24.

NOTE: When you use this screen for troubleshooting, park the vehicle outside, away from buildings, tall trees, and hightension wires for at least 10 minutes with the engine running.

- The Number of Satellites box shows the number of acquired satellites (maximum of 12). It should contain three or more icons.
- The Current Position shows latitude, longitude, and elevation (in feet). If there are less than four satellites, the elevation can be grossly inaccurate.
- The date/time field shows the current date and time that is received from the GPS satellite.