# **Technical Support Guide**

**Subaru SD Card Navigation System** 





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Subaru SD Card Navigation System

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# 1. Introduction to the Subaru SD Card Navigation System

# Overview to the Subaru SD Card Navigation System

# **Applicable Models**

Vehicle	ID	SUBARU No.	SD Part No.	Map Version
12MY IMPREZA	FM601US	86271FJ600	86283FJ600	
12MY IMPREZA STI	FW602US	86271FG600	86283FG600	2010 Q3
12MY FORESTER	FP606US	86271SC600	86283SC600	
13MY BRZ	FA601US	86271CA620	86283CA620	
13MY IMPREZA / XV CROSSTREK	FM612US	86271FJ610	86283FJ610	
13MY IMPREZA STI	FW602US	86271FG620	86283FG620	0044.00
13MY FORESTER	FP606US	86271SC620	86283SC620	2011 Q3
14MY FORESTER (w/ Aha)	FF605US	86271SG600	0620200600	
14MY FORESTER (w/ Aha, w/ H/K AMP)	FF615US	86271SG610	86283SG600	
14MY FORESTER (w/ Aha)	FF605US	86271SG620	000000000	
14MY FORESTER (w/ Aha, w/ H/K AMP)	FF615US	86271SG630	86283SG620	
14MY IMPREZA / XV CROSSTREK (w/ Aha)	FM622US	86271FJ620	86283FJ620	2012 Q3
14MY IMPREZA STI (w/ Aha)	FW602US	86271FG630	86283FG630	
14MY BRZ (w/ Aha)	FA632US	86271CA630	86283CA630	

# Head Unit and SD Card Combination

Please verify that the corresponding SD Card is inserted based on the table above.

SD card must be returned with any exchange unit core.



# Overview to the Subaru SD Card Navigation System

# Up to 11MY

#### 12MY and later





IMPREZA / XV CROSSTREK / IMPREZA STI / FORESTER / BRZ

# **Summary of Features**

		DVD Navigation	SD Card Navigation
	Display	7-inch VGA	6.1-inch WQVGA
	Deck	DVD	CD
	Traffic information	-	XM-Traffic
	Satellite radio	Option	XM
AV	iPod/iPhone control	Option	Yes
AV	HD Radio	-	Yes *1
	Aha Radio	-	Yes *2
	SD Picture	-	Yes
	SMS/Email read out	-	Yes
	Voice recognition	-	Yes (3 languages)
	Motorway service information	-	Yes
	Green route search	-	Yes
Navi	3D Junction display	-	Yes
	Voice recognition	-	Yes (3 languages)
	Map Web download	-	Yes
Other	Rear view camera	Option	Option

<sup>\*1</sup> HD Radio service available in USA only (as of May 2013)

<sup>\*2</sup> Aha Radio is not available for 12-13MY system.

# 1. Introduction to the Subaru SD Card Navigation System

#### **Hardware**

#### **EJECT** button

Press to eject the DISC.

#### **POWER / VOL button**

Press and Release: Audio Power ON or OFF.

Rotating: Adjust the volume.

**CD** slot



#### SD memory card slot

(Starting from top)

#### **AUDIO** button

Press to use the audio or hands-free function. Press for 1 second or more to adjust the picture quality or screen brightness.

#### **Voice Control button**

Press to use the voice recognition control.

#### **MAP** button

Press to display the navigation screen.

# **Screen Layout**



Audio source change

Basic control of audio function

Control of navigation function





# 1. Introduction to the Subaru SD Card Navigation System

#### **Software**



The main unit functions are:

- (1) Audio
- (2) Navigation
- (3) Information

# (1) Audio function



Audio select button

In addition to radio and CDs, the system can also play other sources such as iPods, iPhones, USB and Bluetooth Audio devices.

Sound quality can also be adjusted using the operation screen.

# (2) Navigation function



Navigation menu button

Apart from the easy-to-view screen guides, other features offered include detailed location information displays, a variety of adjustable guide maps, and simple route changes.

Properties such as map colors can be customized as desired.

# (3) Information function



In addition to display settings, other settings such as wallpapers are also possible.

#### **Audio Functions**

# HD radio, XM, Aha

#### Integrated HD Radio, XM and Aha

HD Radio, XM Tuner Control





HD Radio service available in USA only (as of May 2013)

XM Traffic Information





XM is paid service and subscription is required

Aha Radio





Smartphone with Data service is required for Aha functions.

Aha Radio is not available for 12-13MY System

#### **Voice Control**

# Operate without looking away while driving



Voice Control	Change source	Audio control	Destination search	Hands-free dial	iPod select songs	USB select folder
function	Yes	Yes	Yes	Yes	Yes	Yes

## 1. Introduction to the Subaru SD Card Navigation System

#### **Audio Functions**

#### Movie



#### <USB memory>

Max data size: 8GB

Class: USB mass storage class



\*Compressed video file is supported for USB only.

#### <Read and play condition>

Max picture resolution size: 720\*576 pixel

Max layers of directory: 8 layers

Max number of folders (overall): 3000 Max number of files (overall): 9999

#### <Video format>

DivX	WMV	MP4
Yes	Yes	Yes

# <Reference> Audio Format

MP3	WMA
Yes	Yes

<sup>\*</sup>Playback is dependent on the specific version of the file format.

#### **SD Picture**



#### <SD card>

Max data size: 64GB SD card class: ALL

- \*Slide show supports SD card only.
- \*Slide show cannot be displayed while Navi Mode is active
- \*Some SD Cards functions above may not be supported based on SD Card manufacturer specifications.

#### <Features>

4 slideshow effects Automatic resizing Setting as Opening screen

#### <Read and play condition>

Format: JPEG

Max picture data size: 10MB Max layers of directory: 8 layers Max number of files (overall): 500

#### <Limitation while driving>

The picture slide show will stop once start driving and the last picture will be displayed on the screen.

#### Caution:

Do not add photo data on Map SD Card. It may damage the software file. Always use a different SD card to store photo data.

# **Navigation Functions**

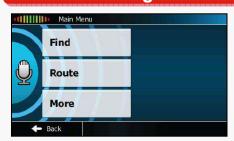
#### **3D Junction Display**





When approaching an expressway exit or a complicated intersection, the map switches to a 3D display.

#### **Voice Recognition**



By using the voice control system, the destination can be set by speaking voice commands. This enables you to use functions that are usually inaccessible while driving.

#### **Motorway**





Highway service area information is useful for a long drive.

#### **Green Route**



The Green route function enables the search for routes that reduce fuel consumption and CO2 emissions.

#### **Altitude Reading**



The function shows the altitude of the road currently being driven and measured by the GPS receiver. The minimum of 4 acquired satellites is required to establish Altitude. With 3 or less acquired satellites, "- -" may be displayed on the navigation screen.

# 1. Introduction to the Subaru SD Card Navigation System

#### **Other Functions**

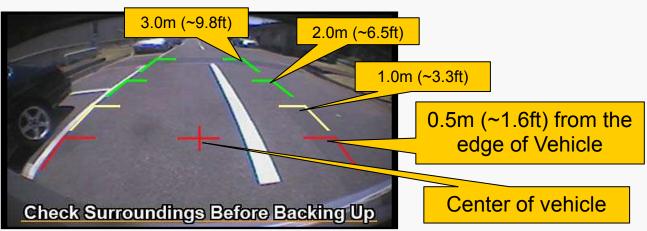
#### Rear view camera (if applicable)



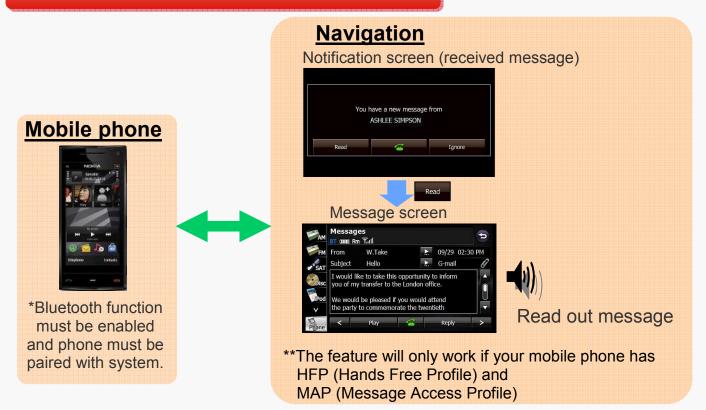


# Visual guidance line





#### Read out SMS/Email

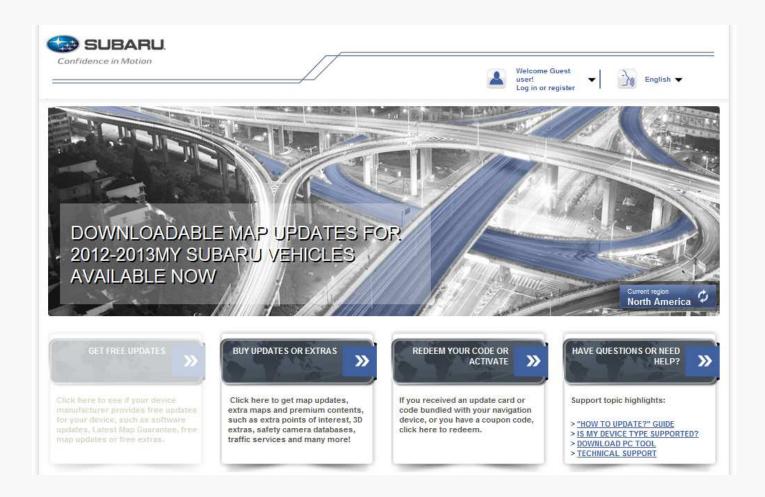


## **Map Update**

#### **NAVTEQ Map Update Service**

NAVTEQ, acquired by Nokia provides Map Update Service for SD Card Navigation System. Please visit the website and make sure which map version is currently available.

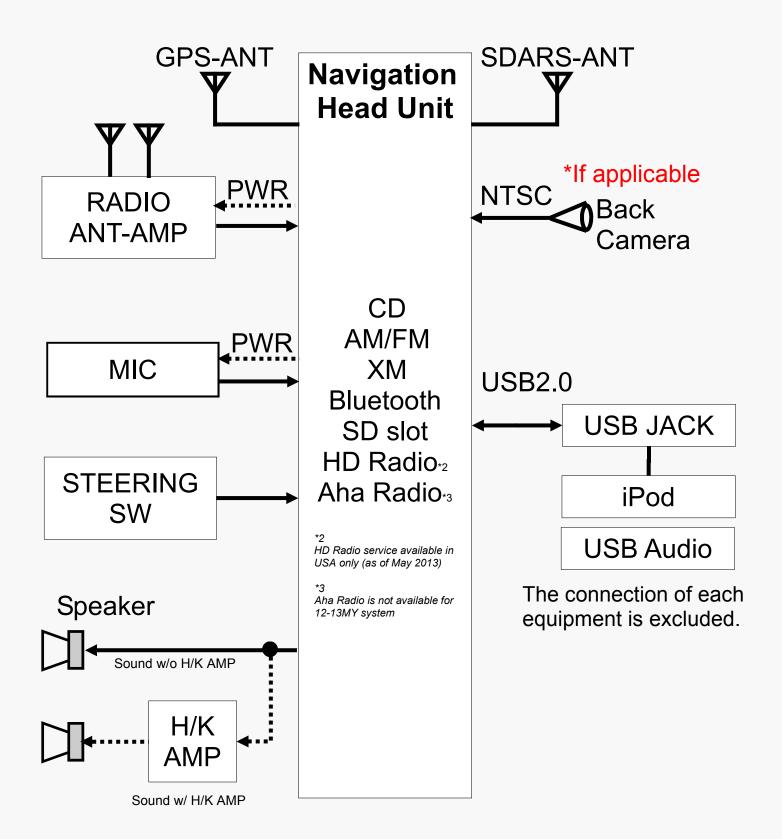
https://subaru-aus.naviextras.com/



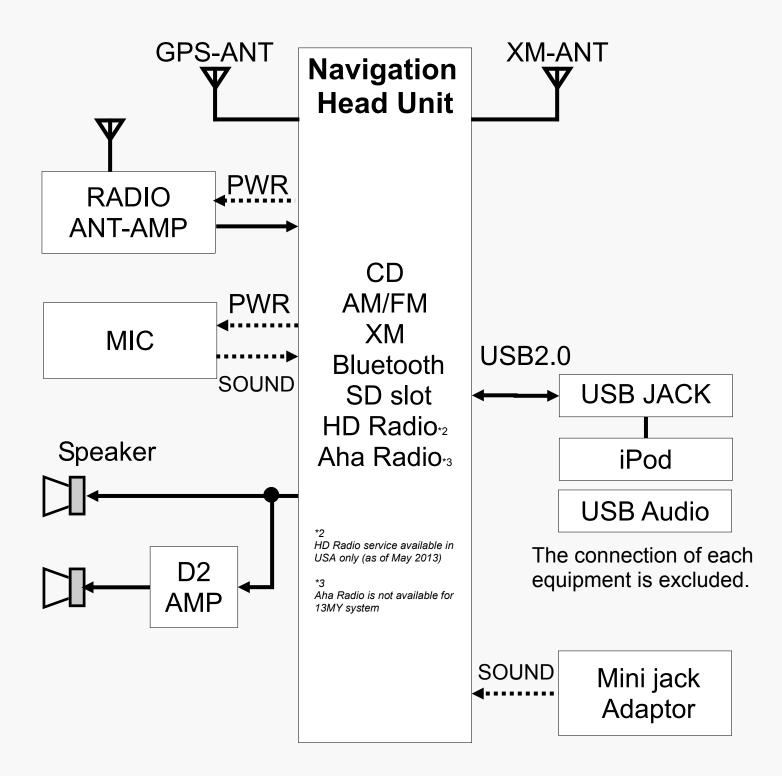
#### Map Update Support:

If you can't find the answer to your question or for advice on the map inside Navigation System, please contact NAVTEQ via website or call NAVTEQ at 1-888-628-6277 Monday through Friday, 9am - 8pm Eastern Time. NAVTEQ will respond to your inquiry within 72 hours.

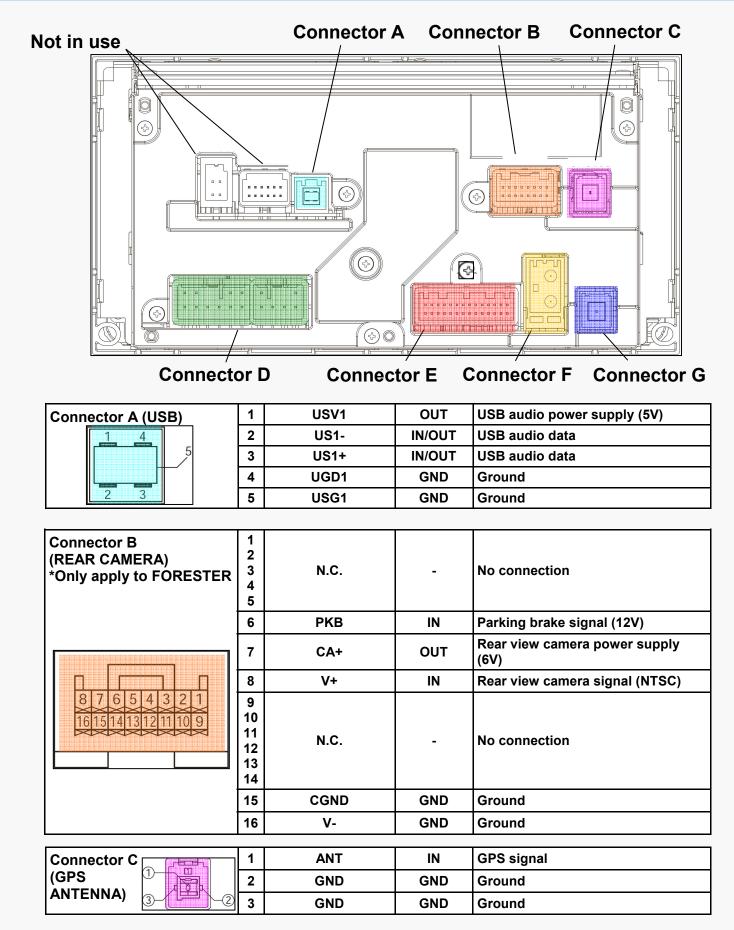
# System Diagram For IMPREZA / IMPREZA STI / FORESTER



# **System Diagram For BRZ**



# **Connectors and Pin Layout of the Navigation System**



# **Connectors and Pin Layout of the Navigation System**

0	1	FR+	ОПТ	Audio signal (Front Right)
Connector D (POWER INPUT/			<b> </b>	· · · · · · · · · · · · · · · · · · ·
SIGNAL OUTPUT)	2	FL+	OUT	Audio signal (Front Left)
GIGITAL GOTT GT)	3	ACC	IN	ACC power supply
	4	BU+B	IN	Back-up power supply
	5	FR-	OUT	Audio signal (Front Right)
	6	FL-	OUT	Audio signal (Front Left)
	7	GND	GND	Ground
	8	ANT+	OUT	Antenna amplifier power supply (12V)
4     3       10     9       8     7       6     5       16     15       14     13	9	AMP+	OUT	Amplifier signal (*only apply to BRZ)
	10	ILL+	IN	Illumination signal (12V)
	11	RR+	OUT	Audio signal (Rear Right)
	12	RL+	OUT	Audio signal (Rear Left)
	13	RR-	OUT	Audio signal (Rear Right)
	14	SLD2	GND	Shield Ground
	15	ILL-	IN	Illumination signal
	16	RL-	OUT	Audio signal (Rear Left)
		1		
Connector E	1	N.C.	-	No connection
(ST-SW, MIC etc)	2	REV	IN	Reverse signal (12V)
	3	BRIGHT	IN	
	4	MACC	OUT	Mic power supply (5V)
	5	MIN+	IN	Mic signal
	6	SNS2	IN	V.R. switch & Mic detection
	7 8	N.C.	_	No connection
	9 10			
	11	AGND	GND	Ground for VTR detection
14131211110 9 8 7 6 5 4 3 2 1 2827262524232221201918171615	12 13 14 15	N.C.	-	No connection
	16			
	17	SPD	IN	Vehicle speed signal
	18	SGND	GND	Ground for Mic detection
	19	MIN-	IN	Mic signal
	20 21	N.C. SW1	- IN	No connection Steering switch signal
	22	SW2	IN	Steering switch signal
	23	SWG	GND	Ground for Steering switch
			CIAD	<u> </u>
	24	(SW3)	-	No connection
	25	ADPG	IN	VTR detection signal
	26	VAR+	IN	VTR signal (Right)
	27	VA-	GND	Grounf for VTR signal
	28	VAR-	IN	VTR signal (Left)

# **Connectors and Pin Layout of the Navigation System**

Connector F (RADIO ANTENNA)	1	SUB-ANT-IN	IN	Radio signal (Sub) (*only apply to IMPREZA / IMPREZA STI / FORESTER)
ARTERIVA) 3	2	SUB-ANT-GND	IN	Ground for Radio signal (Sub) (*only apply to IMPREZA / IMPREZA STI / FORESTER)
	3	MAIN-ANT-IN	IN	Radio signal (Main)
	4	MAIN-ANT-GND	GND	Ground for Radio signal (Main)
	5	N.C.	-	No connection

Connector G		XM SIG	IN	XM signal
(XM ANTENNA) 2 2 3	•	XM ANT+B	OUT	XM signal power supply
	2	GND	GND	Ground
	3	GND	GND	Ground

## **Specification of Line Diagnostics**

#### 1. Overview

Line Diagnostics can check the connectivity of equipment, car signals, receiving stations (radio) and adjust camera settings.

#### 2. How to enter Line Diagnostic mode

2-1. Enter the Diagnostic mode

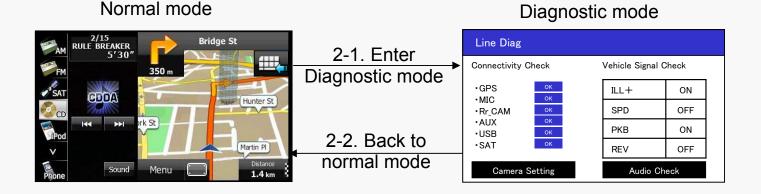
#### Procedure:

- 1. Turn off audio by pressing "PWR/VOL" button.
- 2. While pressing both buttons (a) and (b), press and hold the button (c) for more than 3 seconds.



#### 2-2. Exit the diagnostic mode

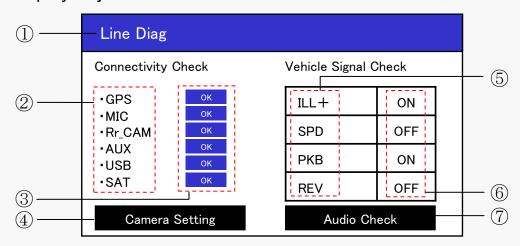
Press and hold the button (a) for more than 3 seconds, or turning the ignition switch from ACC OFF to ON position.



# **Specification of Line Diagnostics**

#### 3. Display Layout and Explanation

#### 3-1. Top Display Layout

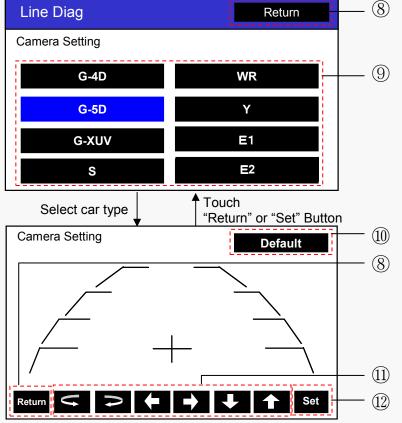


No	Explanation
1	Main title [White] after check [Black] under check
2	Connected Devices
3	Results of Connectivity Check

No	Explanation
4	Enter Camera Setting
(5)	Contents of Vehicle Signal Check
6	Results of Vehicle Signal Check
7	Enter Audio Check

#### 3-2. Enter "Camera Setting"

If you touch "Camera Setting" button, the screen changes to "Camera Setting" mode.



# No Explanation 8 Return to Previous Screen 9 Selection of Car Type Initialization of Maker Line Adjustment 1 Marker Line Adjustment Finalization of Marker Line Adjustment

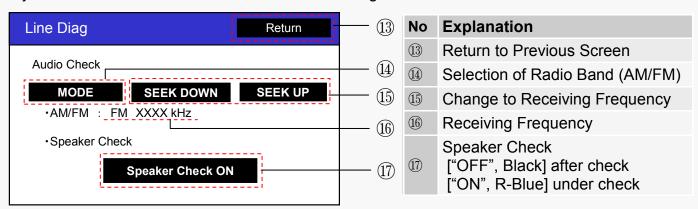
#### Note:

For detailed procedure to adjust the camera, refer to STIS. Please select the Service Manual and refer to the Navigation System under the Entertainment Section (ET).

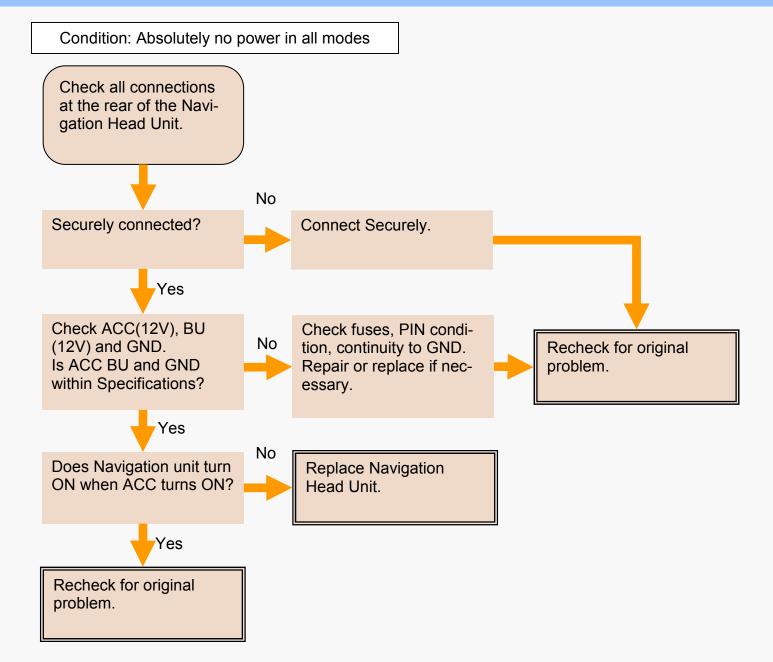
# **Specification of Line Diagnostics**

#### 3-3. Enter "Audio Check"

If you touch "Audio Check" button, the screen changes to "Audio Check" mode.

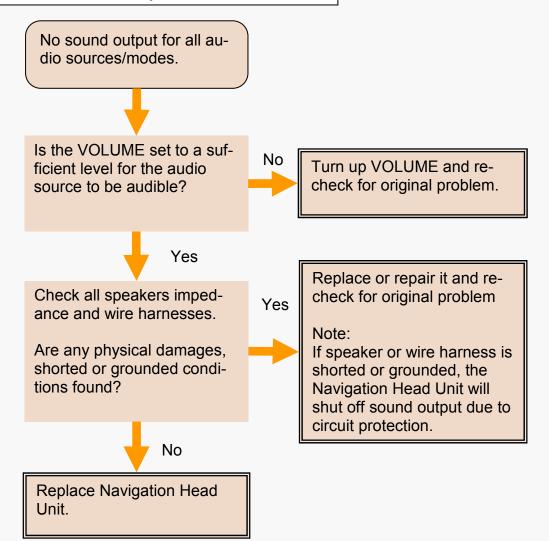


## **NO POWER**



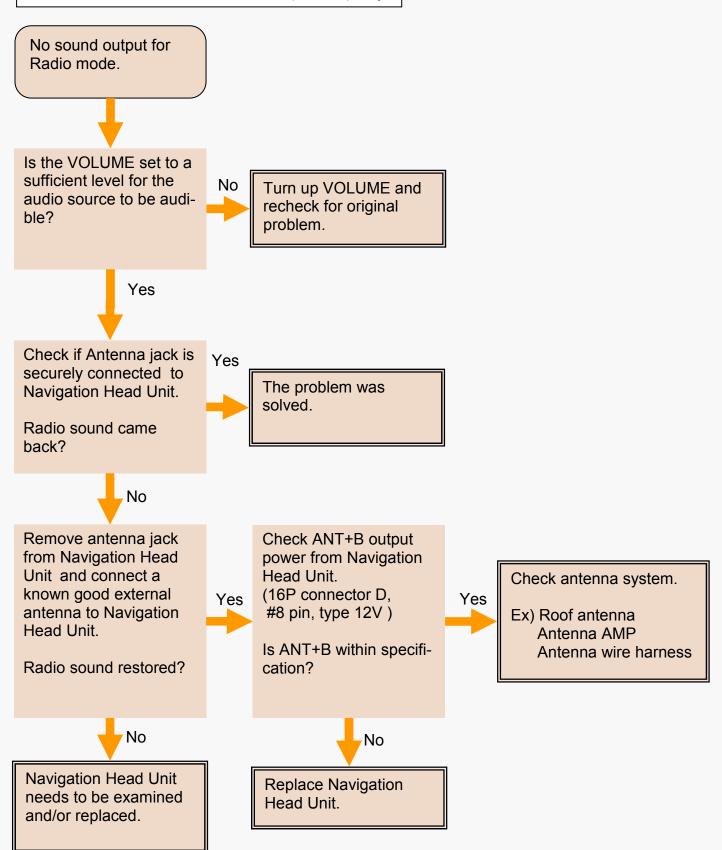
# **NO SOUND (All modes)**

Condition: Absolutely no sound on all modes

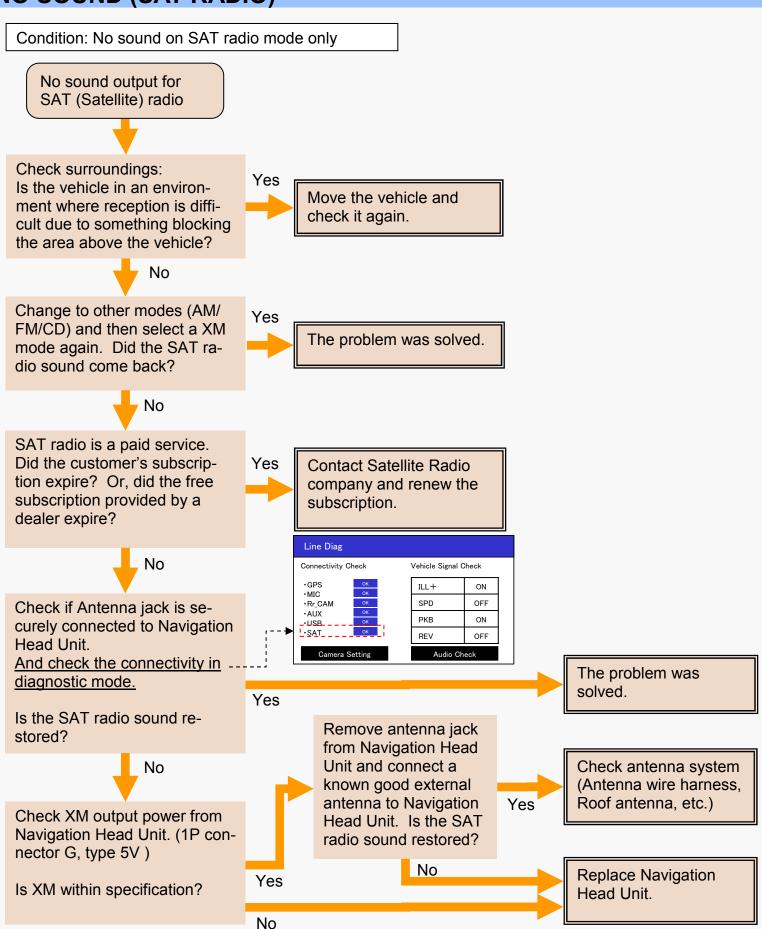


# NO SOUND (AM/FM)

Condition: No sound on Radio mode (AM/FM) only



### **NO SOUND (SAT RADIO)**

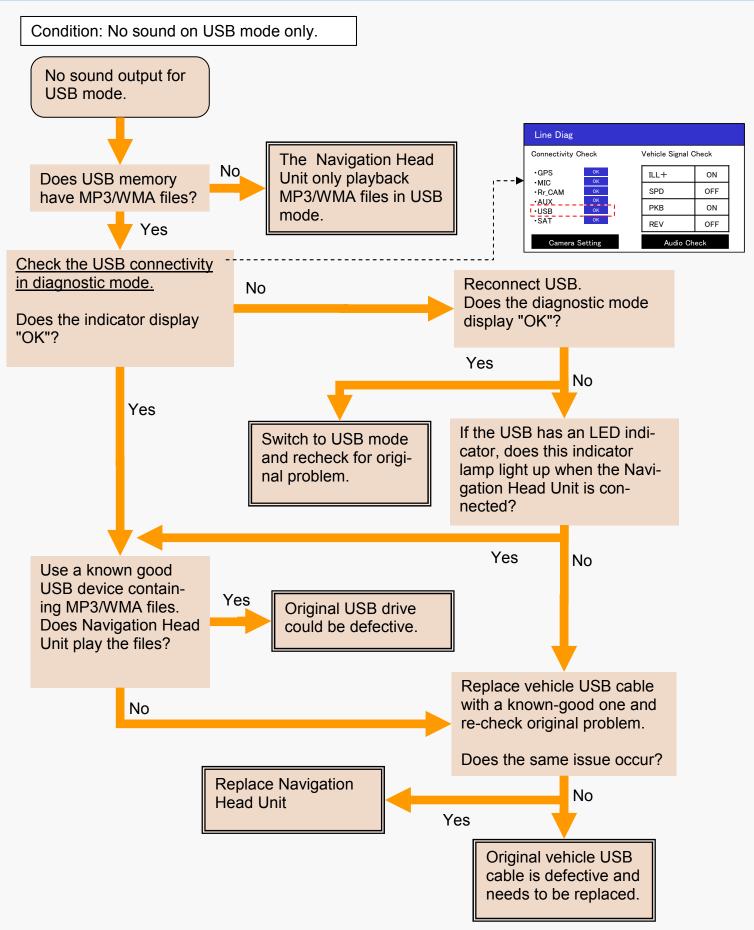


26

# NO SOUND (CD)

Condition: No sound on CD mode only No sound output for CD mode. Does the Navigation Is there any foreign object No Yes **Replace Navigation** Head Unit accept and (ex. label) in the CD slot? **Head Unit** eject audio CD discs correctly? Yes No Yes Re-install Navigation Is Navigation Head Unit No Head Unit properly and installed property? re-check for original problem. Navigation Head Unit cannot playback files Yes Is CD-R/RW being Are CDDA/MP3/WMA No other than CDDA/MP3/ used? files recorded to CD-R/ WMA. RW? Re-check for original problem with a proper No test disc. Yes Check to make sure Insert and playback a that original CD-R disc Yes known-good, commeris not excessively cially available audio scratched/warped and CD(CDDA). re-check for original No Replace Navigation **Head Unit** 

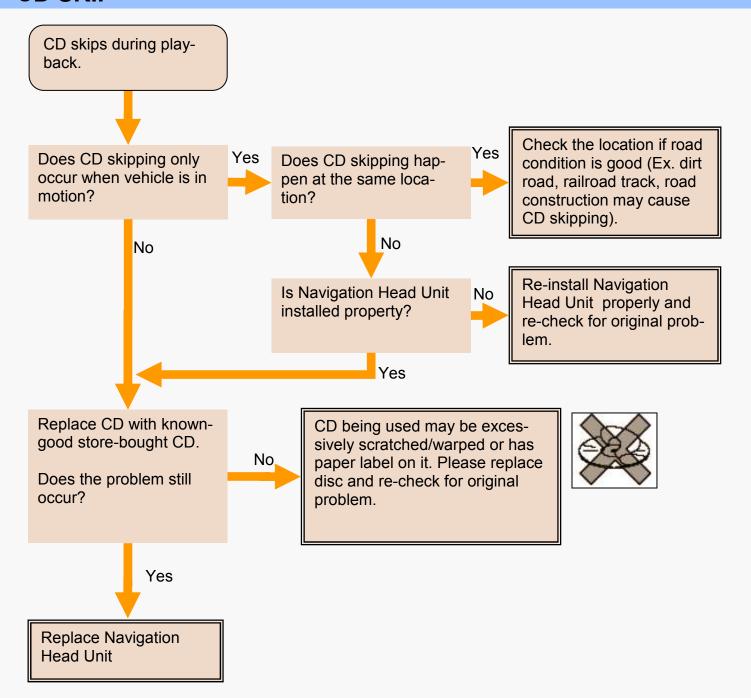
# NO SOUND (USB)



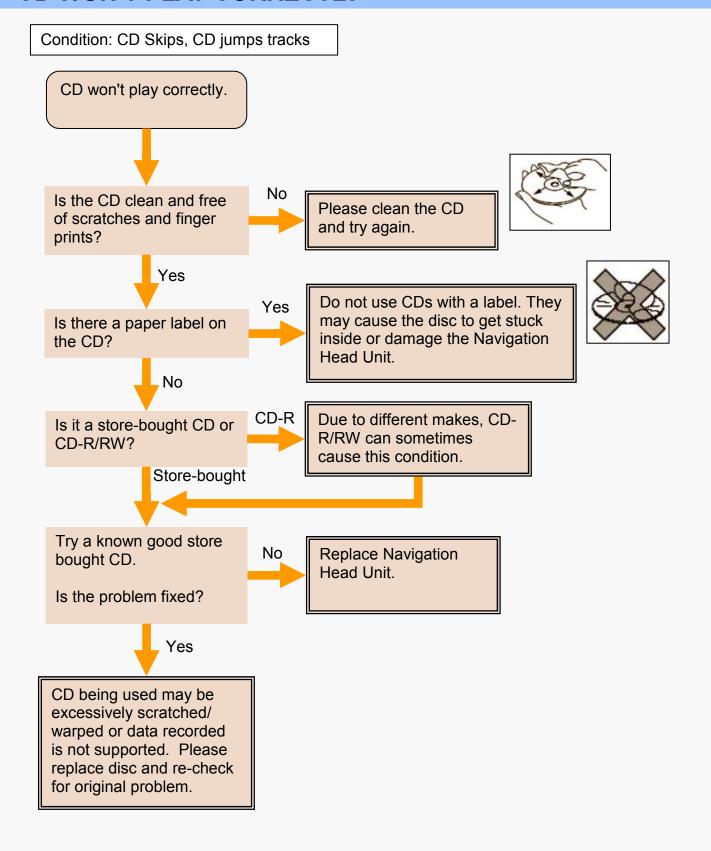
# NO SOUND (iPod)

Condition: No sound only iPod mode Is the iPod compatible? No See page 91 Q48 for a Non supported iPod list of compatible Apple may not work. Line Diag products, for the latest Connectivity Check Vehicle Signal Check updates see Subaru.com. ILL+ SPD OFF ·Rr\_CAM ·AUX ·USB PKB ON Yes REV OFF Check the USB connectivity in diagnostic mode since iPod No Reconnect iPod cable. will be connected to USB port. Does the diagnostic mode display "OK"? Does the indicator display "OK"? Yes Yes No Switch to iPod mode and recheck for original problem. Remove the iPod device and Examine customer's iPod. check to see if iPod works by No itself. Use a known good iPod device containing music files and re-Does iPod play without concheck for original problem. nect to Navigation Head Unit? Replace vehicle iPod cable Yes with a known-good one and re-check original problem. Does the same issue occur? Replace Navigation Yes **Head Unit** No Original vehicle iPod cable is defective and needs to be replaced.

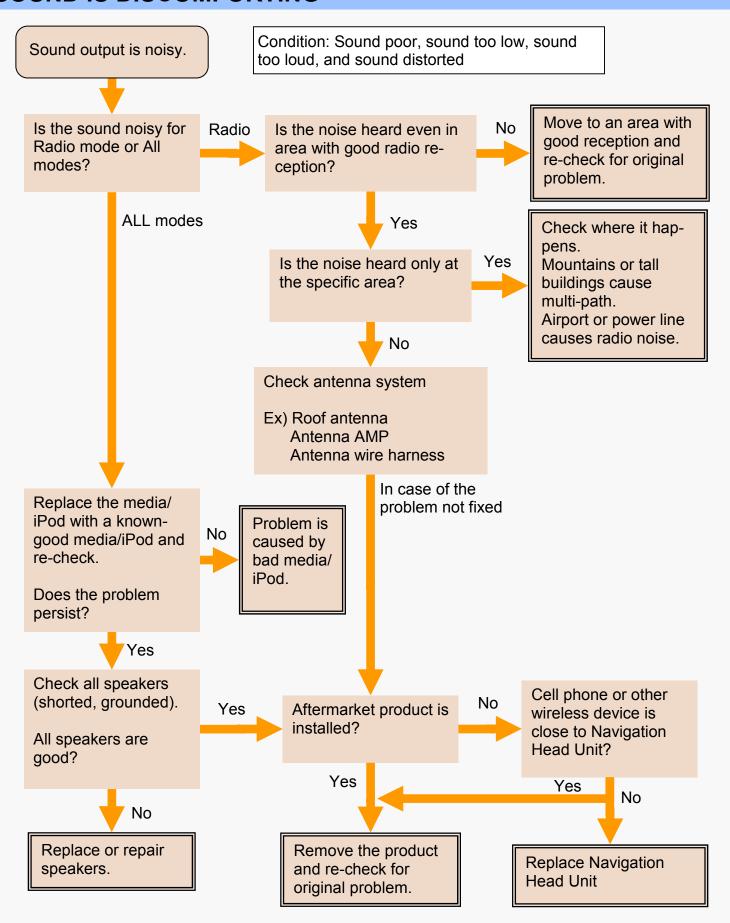
#### **CD SKIP**



#### **CD WON'T PLAY CORRECTLY**

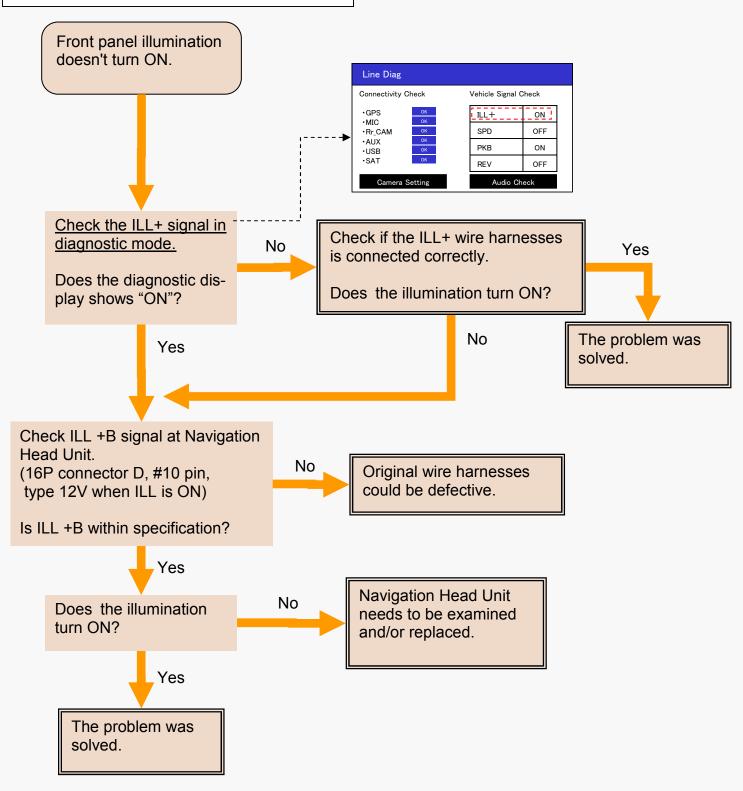


#### **SOUND IS DISCOMFORTING**



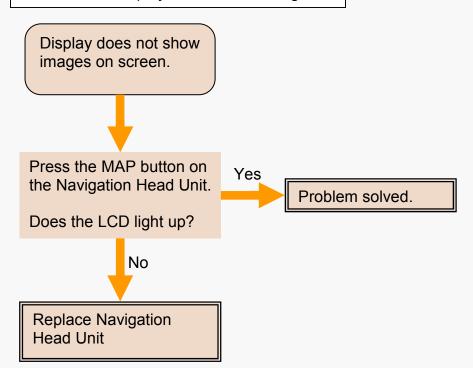
## **NO ILLUMINATION**

Condition: No front panel button illumination



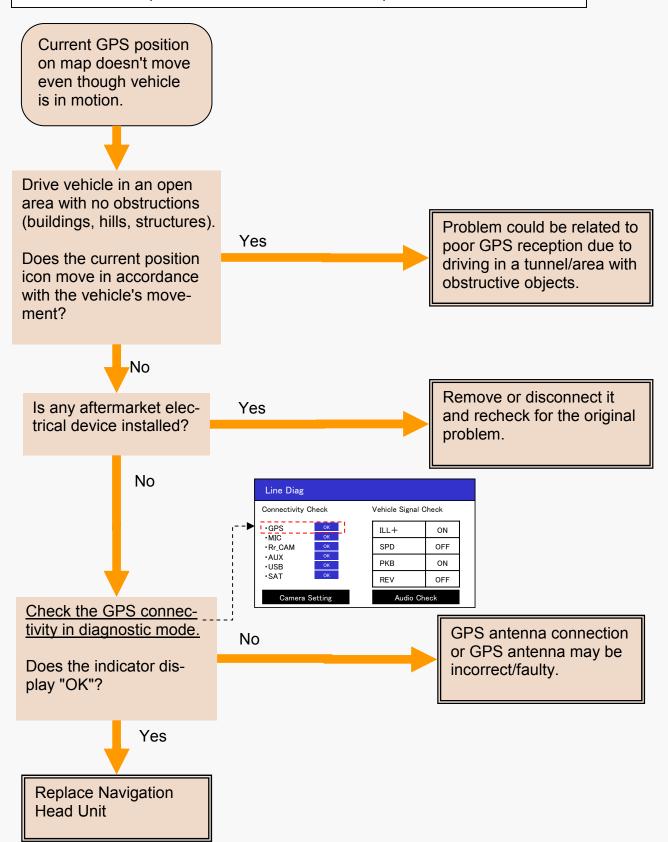
# **NO DISPLAY**

Condition: No display, no screen backlight



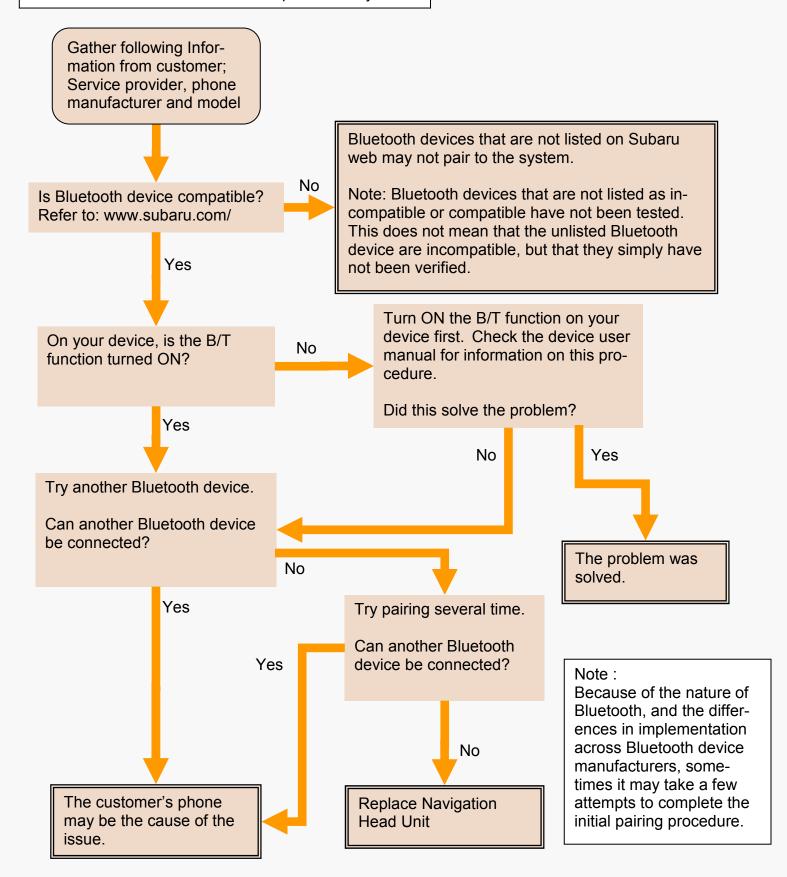
#### **CURRENT GPS POSITION DOES NOT MOVE**

Condition: Vehicle position icon inaccurate, Vehicle position icon doesn't move

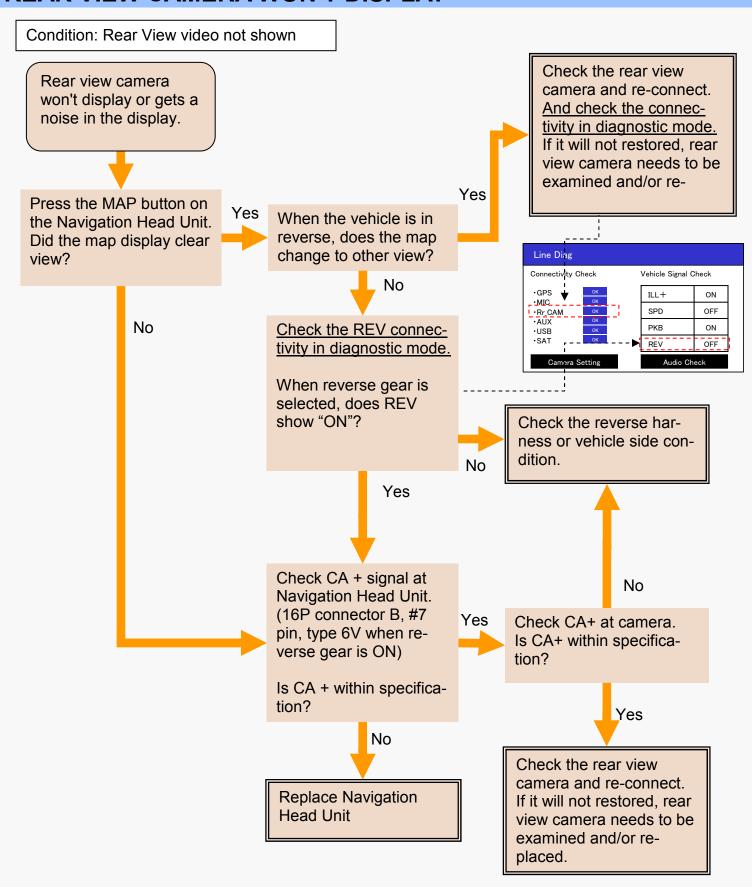


#### **BLUETOOTH DOES NOT WORK**

Condition: Bluetooth device will not pair to the system



#### **REAR VIEW CAMERA WON'T DISPLAY**



## **AHA RADIO - Caution Message (1)**

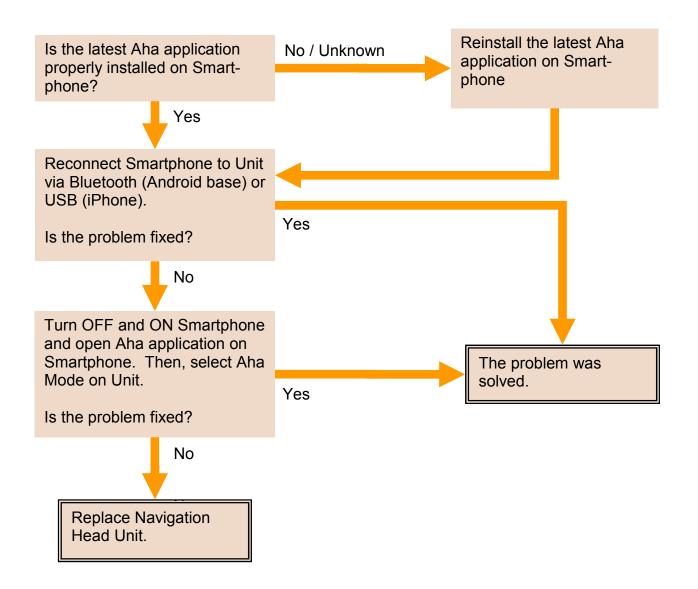
#### Caution Message:

Please make sure the Aha app is running on your mobile device.

Note: Aha Radio is not available for 12-13MY system

#### Symptoms:

- Aha application shuts down by itself
- Unable to enter Aha Mode



## **AHA RADIO - Caution Message (2)**

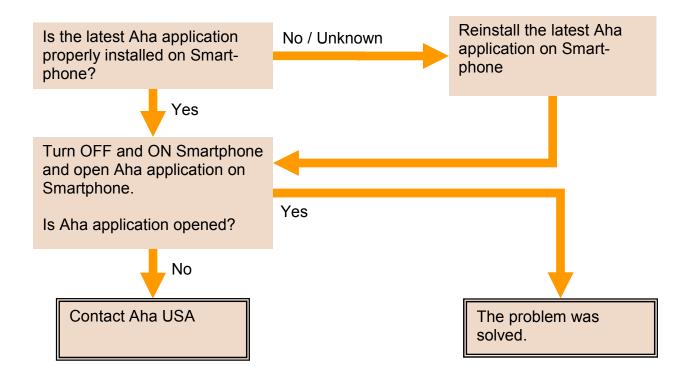
Caution Message:

Please update your Aha application.

Note: Aha Radio is not available for 12-13MY system

Symptom:

Unable to enter Aha Mode



## **AHA RADIO - Caution Message (3)**

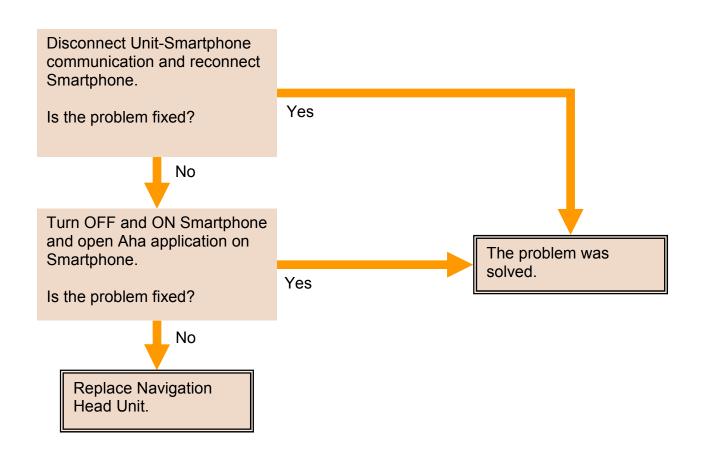
#### Caution Message:

# Please reconnect mobile device.

Note: Aha Radio is not available for 12-13MY system

#### Symptom:

Unable to enter Aha Mode on vehicle Navigation Head Unit



## **AHA RADIO - Caution Message (4)**

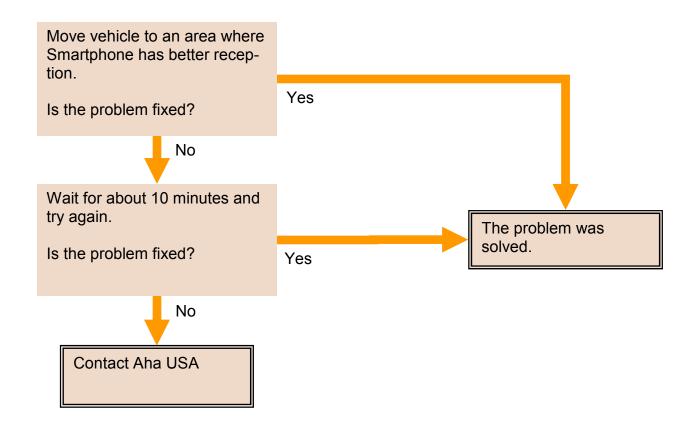
#### Caution Message:

## Poor wireless reception.

Note: Aha Radio is not available for 12-13MY system

#### Symptoms:

- Programs are not played on vehicle Navigation Head Unit
- Images are not shown on vehicle Navigation Head Unit



## **AHA RADIO - Caution Message (5)**

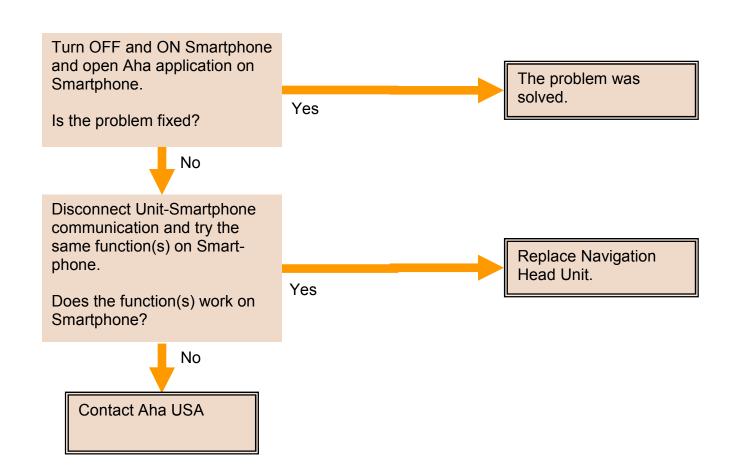
#### Caution Message:

## Entry not recognized.

Note: Aha Radio is not available for 12-13MY system

#### Symptom:

All Aha Mode functions on vehicle Navigation Head Unit do not work



## **AHA RADIO - Caution Message (6)**

#### Caution Message:

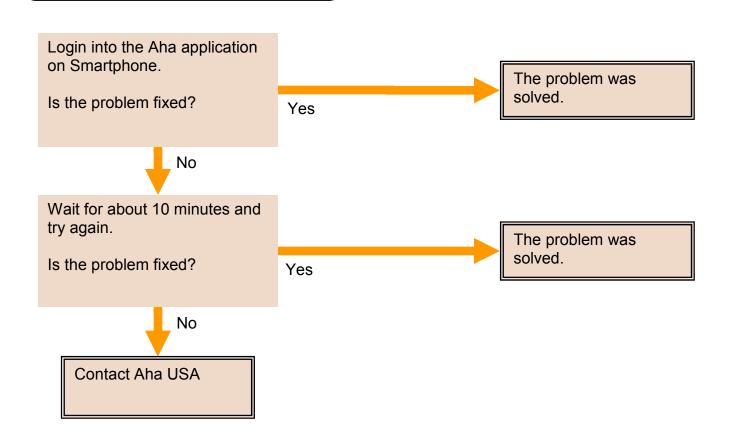
# Please login to the Aha app on the mobile device.

Note:

Aha Radio is not available for 12-13MY system

#### Symptom:

Unable to enter Aha Mode on vehicle Navigation Head Unit



## **AHA RADIO - Caution Message (7)**

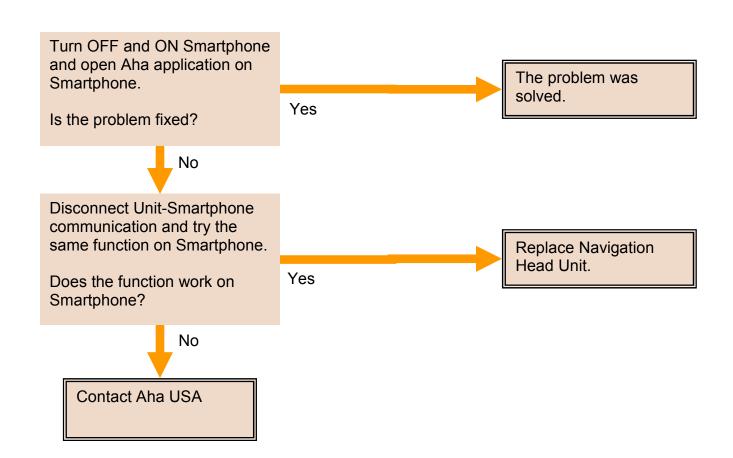
#### Caution Message:

## The station list cannot be acquired.

Note: Aha Radio is not available for 12-13MY system

#### Symptom:

Aha Radio Station List is not shown on vehicle Navigation Head Unit



## **AHA RADIO - Caution Message (8)**

#### Caution Message:

### The content cannot be acquired. Aha Radio is not available for 12-13MY system Symptom: Aha Radio Content is not shown on vehicle Navigation Head Unit Press (Refresh button) on Unit. The problem was solved. Yes Is the problem fixed? No Turn OFF and ON Smartphone and open Aha application on The problem was Smartphone. solved. Yes Is the problem fixed? No Disconnect Unit-Smartphone communication and try the **Replace Navigation** same function on Smartphone. Head Unit. Yes Does the function work on Smart phone? No 🗿 aha 😵 Hungry Contact Aha USA Restaurant Food Information

Refresh button

## **AHA RADIO - Caution Message (9)**

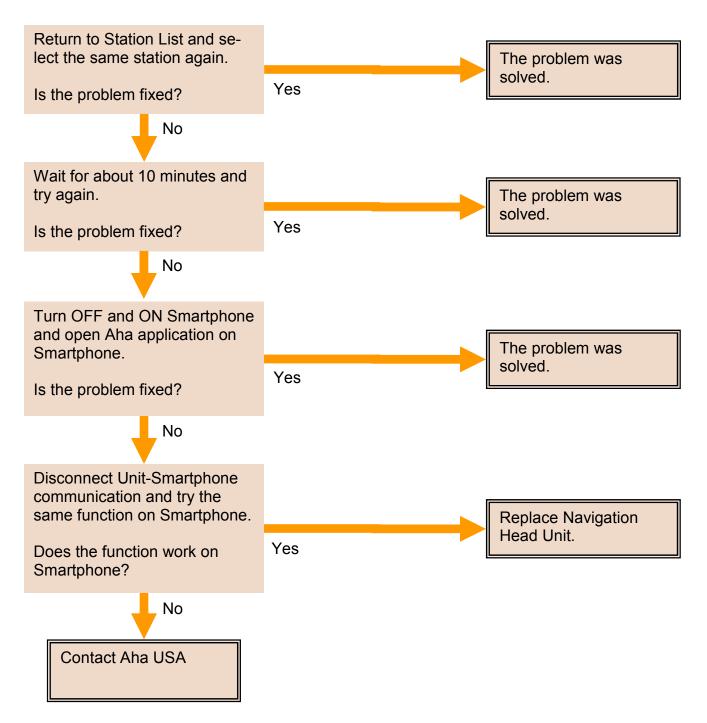
#### Caution Message:

## Information acquisition error.

Note: Aha Radio is not available for 12-13MY system

#### Symptom:

Aha Radio Icons or Logos are not shown on vehicle Navigation Head Unit



## **AHA RADIO - Caution Message (10)**

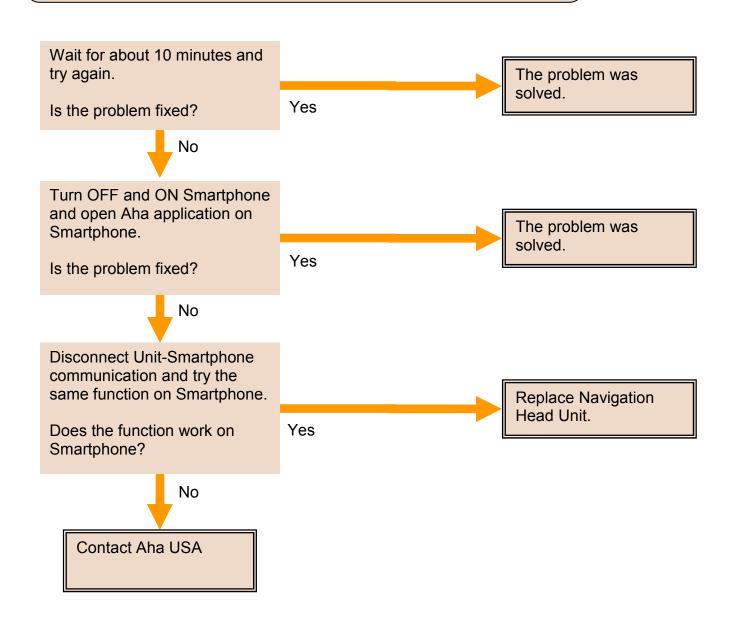
#### Caution Message:

#### Action not available.

Note: Aha Radio is not available for 12-13MY system

#### Symptom:

- All Aha Mode functions do not work on vehicle Navigation Head Unit
- Forward/Reverse functions do not work on vehicle Navigation Head Unit



## **AHA RADIO - Caution Message (11)**

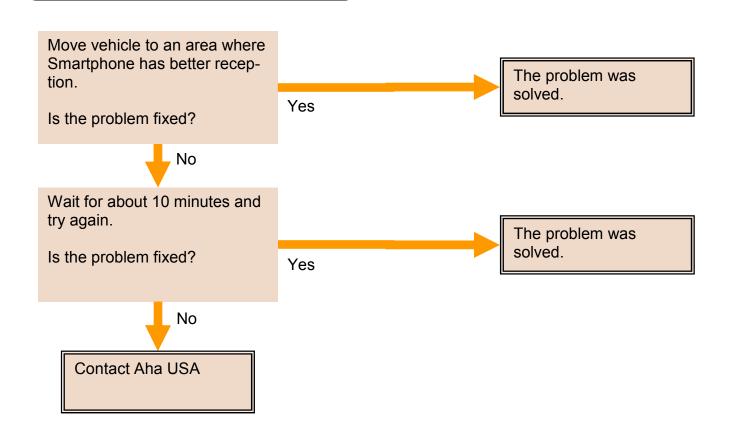
#### Caution Message:

# **Aha Server Error - Please check connection or reception.**

Note:

Aha Radio is not available for 12-13MY system

#### Symptom:



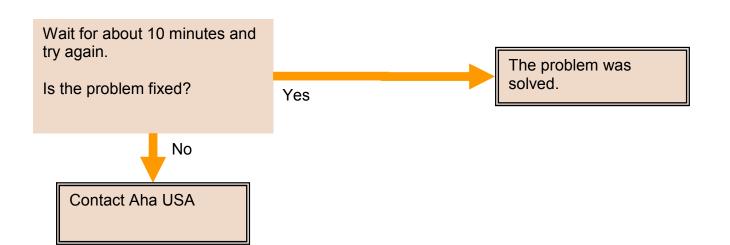
## **AHA RADIO - Caution Message (12)**

#### Caution Message:

## Aha Server Down - Please try again later.

Note:
Aha Radio is not available for 12-13MY system

#### Symptom:



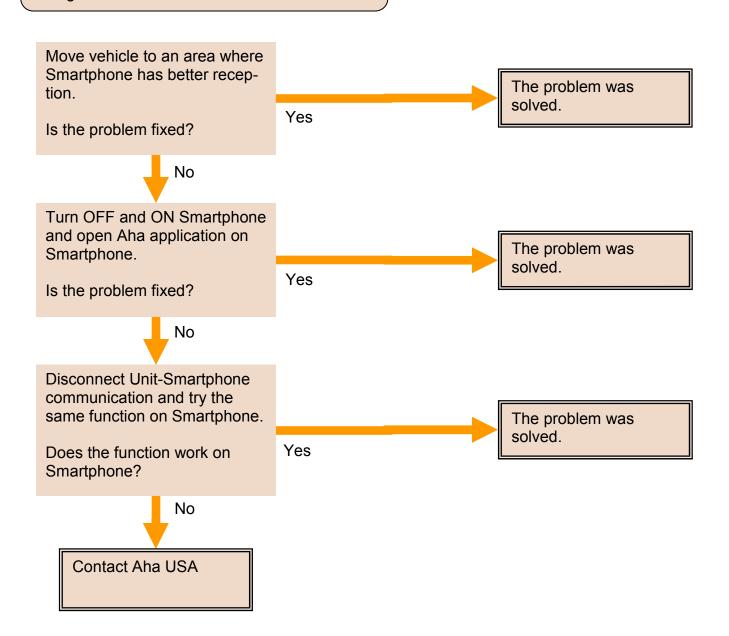
## **AHA RADIO - Caution Message (13)**

#### Caution Message:

# **Aha Station Contents Not Available - Please Try Again Later.**

Note: Aha Radio is not available for 12-13MY system

#### Symptom:



## **AHA RADIO - Caution Message (14)**

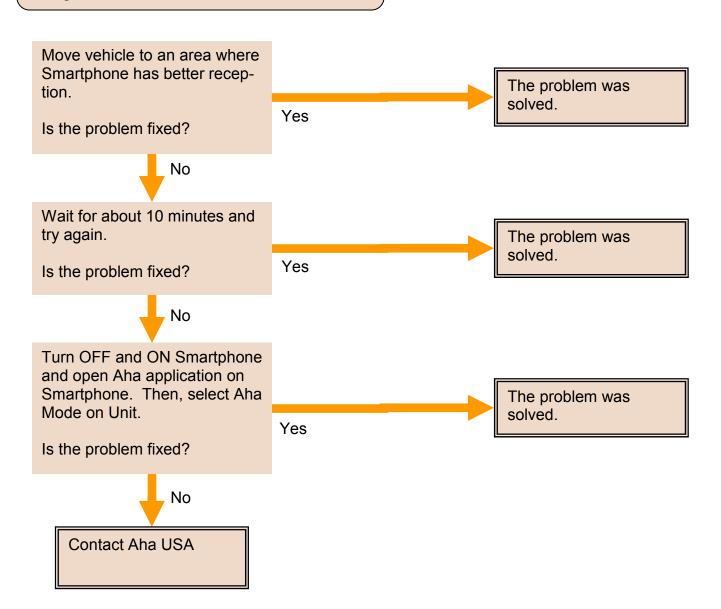
#### Caution Message:

# **Aha Communication Error - Please Check Owner's Manual.**

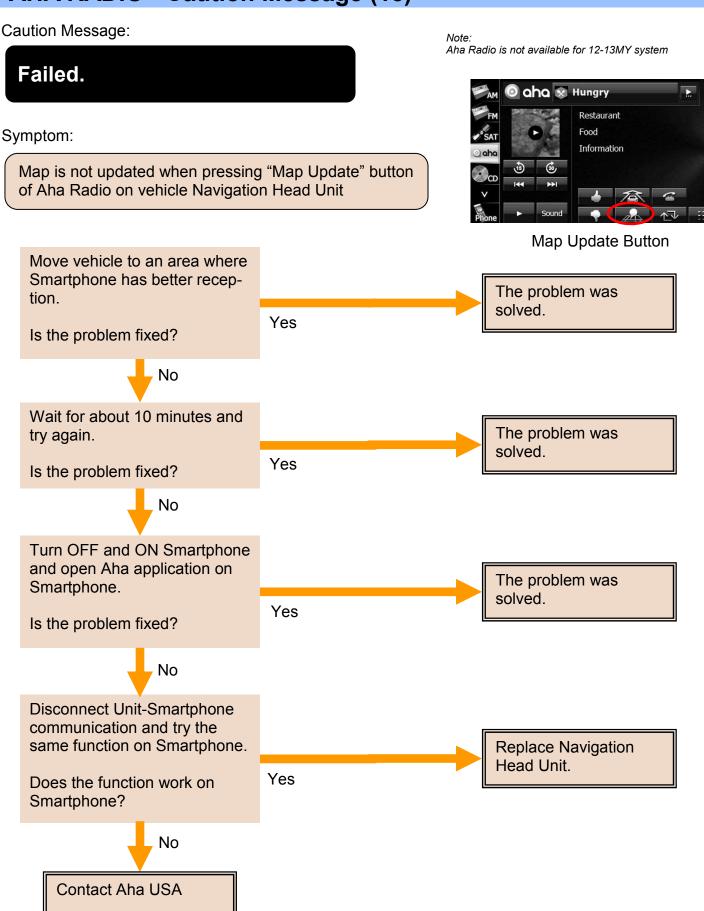
Note:

Aha Radio is not available for 12-13MY system

#### Symptom:



## **AHA RADIO - Caution Message (15)**



## **AHA RADIO - Caution Message (16)**

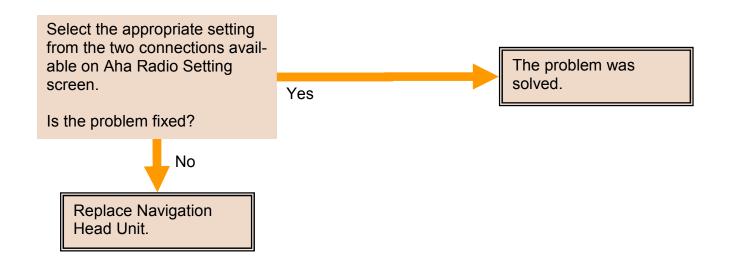
#### Caution Message:

Please select the type of connection in 'Aha Radio Setting'.

Note:
Aha Radio is not available for 12-13MY system

#### Condition:

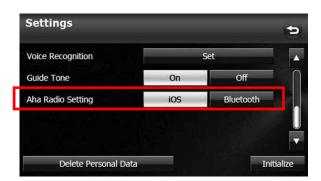
Android device is connected via Bluetooth and iPhone (iOS) is connected via USB



#### How to change "Aha Radio Setting":



1. Press "INFO" and select "Settings"



2. Select "iOS" or "Bluetooth"

## **AHA RADIO - Caution Message (17)**

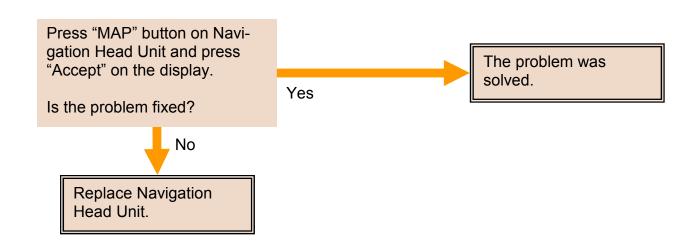
#### Caution Message:

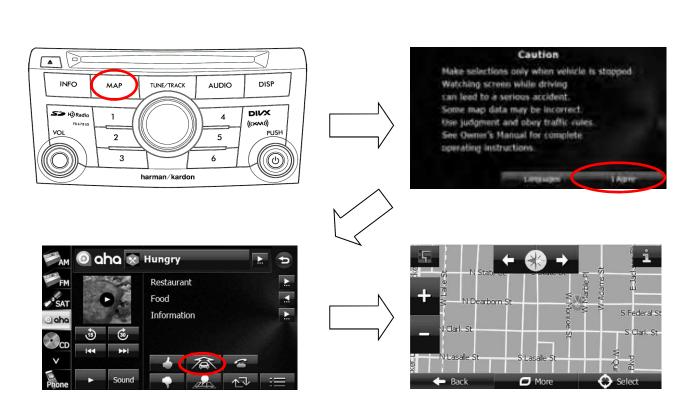
To use this function, you must agree to the terms and condition on the 'caution' screen.

Note: Aha Radio is not available for 12-13MY system

#### Symptom:

Map is not shown when pressing button





## **AHA RADIO - Caution Message (18)**

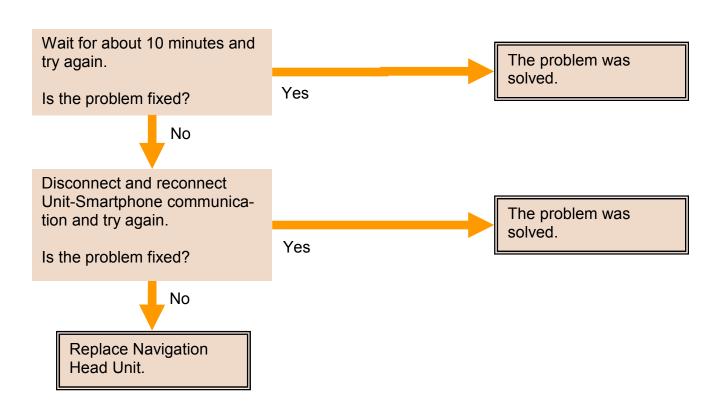
#### Caution Message:

'Aha Radio Setting' change failed. Please try again later.

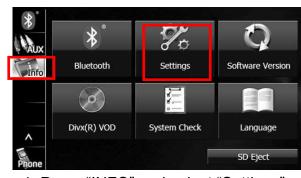
Note: Aha Radio is not available for 12-13MY system

#### Symptom:

Aha Radio Setting on vehicle Navigation Head Unit cannot be changed



#### How to change "Aha Radio Setting":



1. Press "INFO" and select "Settings"



2. Select "iOS" or "Bluetooth"

## **AHA RADIO - Caution Message (19)**

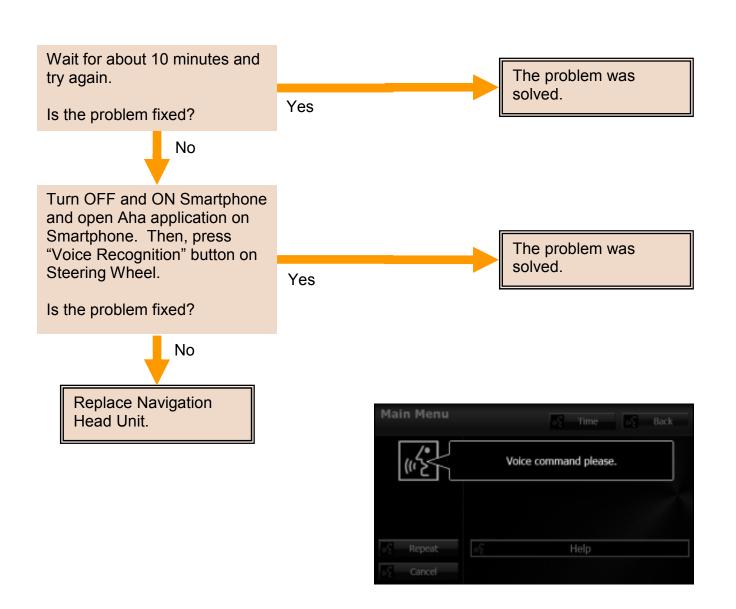
#### Caution Message:

# External device has been connected. Voice recognition mode off.

Note: Aha Radio is not available for 12-13MY system

#### Symptom:

Voice Recognition Mode has turned OFF by itself



## **AHA RADIO - Caution Message (20)**

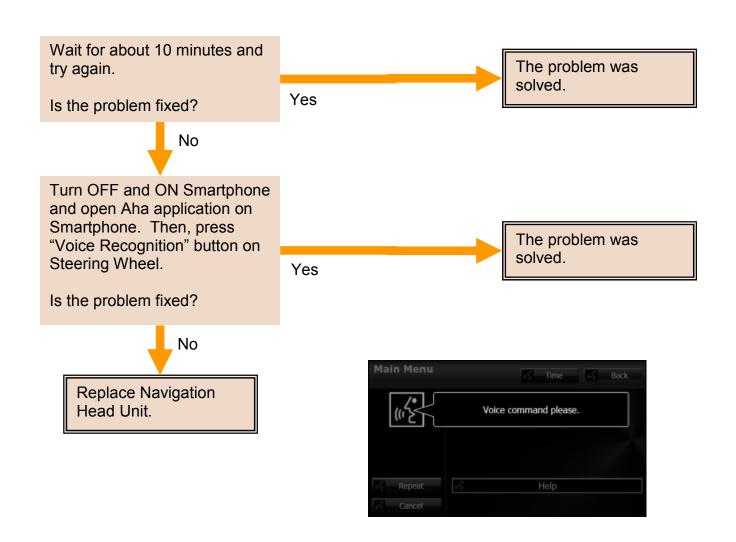
Caution Message:

Connection with Aha app is not completed. Please try again later.

Note: Aha Radio is not available for 12-13MY system

#### Symptom:

Voice Recognition Mode does not work for Aha Radio



## **MEMO**

## 3. Supplemental Information

## **Subaru Technical Service Bulletins**

#### **Outline**

The following is a list of Subaru Technical Service Bulletins (TSB) that may contain additional helpful information.

TSB No: 15-155-12 TSB No: 15-158-12

## **Subaru Technical Service Bulletins**

## **MEMO**

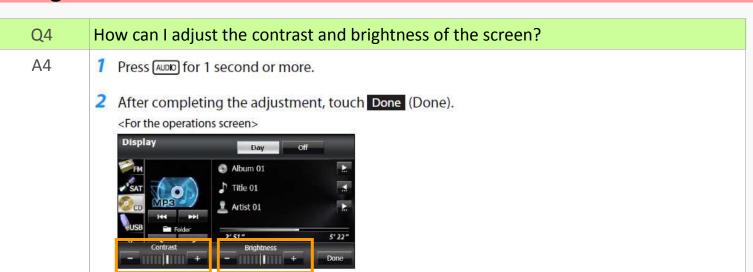
#### How can I eject the SD card? Q1 A1 Press (AUDIO). 4 After checking the caution screen, touch Yes (Yes). · This screen does not appear if the card is not the specified SD Touch Info. memory card. If Info is not displayed, touch V. Touch SD Eject (SD Eject). Navigation function is inoperable. Is the unit's dedicated SD card pulled out? When not using the slide show function, please ensure that the unit's dedicated SD card is inserted. \* Software Version Bluetooth 5 When "Please eject SD card." appears, remove the SD Divx(R) VOD memory card. SD Eject · Press in the SD memory card until you hear it "click", let go of the card, and then pull it straight out. Please eject SD card. What if I eject the MAP SD card while using the Navigation system? Q2

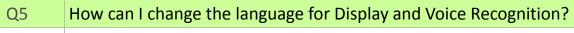
- A2 You can corrupt the MAP data file and navigation system may stop working. Please do not eject the MAP SD card while navigating.
- Q3 How do I know if my Navigation unit is receiving GPS signals?
- 1. Touch "Menu" on MAP screen **A3**



2. GPS signal is shown on top right corner of the display. Signal strength is indicated by the number of dot. More dots, stronger GPS reception.







A5 1. Press AUDIO, 2. Touch "Info"

**A6** 

3. Touch "Language"



4. Select a language



## My navigation voice guidance volume is too low. How can I adjust the volume?

1. Touch and on MAP screen



2. Adjust the volume with the slider



**A8** 

## **Navigation**

Q7 Can I review my entire driving route in simulation?

A7 Yes.

- 1. Set your destination
- 2. Touch "Menu" on MAP screen
- 3. Touch "My Route"
- 4. Touch "More"



5. Scroll down the list and touch "Simulate Navigation"



Q8 I live in the high elevation area, does the unit provide altitude information?

Yes. The altitude is measured using GPS signals and displayed at the bottom right

corner of the display.



#### Q9 What is the "data field" on the MAP screen and can I customize the "data field"?

The data field provides you the information of current time, altitude of your location, distance to the destination, time left to the destination and estimated arrival time. The information in the data field can be customized by touching and holding the "data field" area.

You can select up to 3 data field from below:

- Time
- Altitude
- Distance
- Time Left
- Arrival Time

Distance, Time Left and Arrival Time are available only when the destination is set .



The minimum of 4 acquired satellites is required to establish Altitude. With 3 or less acquired satellites, "--" may be displayed on the navigation screen.



"data field" area

#### Q10 What types of MAP views are available?

A10 Three types of MAP views are available (2D North Up, 2D Heading Up and 3D) How to change the MAP view.

- 1. Touch "Menu" on MAP screen
- 2. Touch "More..."
- 3. Touch "Settings"
- 4. Scroll down and touch "MAP Settings"
- 5. Touch "View Mode"

#### Q11 How can I set my home as a destination?

A11

- 1. Touch "Menu" on MAP screen
- 2. Touch "Find"
- 3. Touch "Find Address"
- 4. Enter "State", "City", "Street" and "House Number" of home address and touch "Done"
- 5. Touch "More"



6. Touch "Add to Favorites"



7. Enter "HOME" using keyboard and touch "Done"



#### Note:

Your HOME is registered under "Favorites" Please confirm if your Home is in Favorites.

1. Touch an on Map screen



2. Touch "Favorites"



Q12	I want to use the Navigation system to go back to home. How can I do?
A12	Please make sure your home has been added to the "Favorites."  If not, refer to Question 11.
	If your home is set to the "Favorites", follow the procedure below.  1. Press "MAP"  2. Touch "Menu" on MAP screen  3. Touch "Find"  4. Touch "Favorites"  5. Touch "HOME"  6. Touch "Next"  7. Touch "Go"

#### Q13 What is the Quick Menu?

Frequently used buttons and functions during navigation operation are displayed on the Quick Menu and you can customize the buttons in the Quick Menu.

How to open the Quick Menu.

1. Touch on MAP screen





#### Quick Menu



How to customize the Quick Menu

- 1. Press "MAP"
- 2. Touch "Menu" on MAP screen
- 3. Touch "More..."
- 4. Touch "Settings"
- 5. Touch "Customize Quick Menu"

# Q14 Can I access the "Quick Menu" while driving? A14 Yes.

Q15	What is the "Route Planning Methods"?
A15	"Route Planning Methods" provide you options to search the route to the destinations.

Q16	What "Route Planning Methods" are available?
A16	4 Route Planning Methods are available (Fast, Green, Short and Easy).
	<ul> <li>Fast (Fast):         Searches all roads for the quickest route following the speed limits of the roads.     </li> <li>Green (Green):         Searches for the route that conserves the most energy, taking into account the merits of "Fast" and "Short".     </li> </ul>
	<ul> <li>Short (Short):</li> <li>Searches for the shortest distance in all possible routes.</li> <li>Easy (Easy):</li> <li>Searches for a route that is easiest to drive, with few right and left turns.</li> <li>Using this option, the program allows you to avoid combinations of smaller roads and to take the expressway.</li> </ul>

#### 3. FAQ

## **Navigation**

# A17 1. Touch "Menu" on MAP screen 2. Touch "More" 3. Touch "Settings" 4. Touch "Route Settings" 5. Touch "Route Planning Method" 6. Select one from "Fast" "Green" "Short" and "Easy"

#### Q18 How can I find my current location/position?

A18 1. Touch and on MAP screen



2. Touch "Where Am I?"



#### Where Am I?



#### Q19 How can I locate emergency services (Hospital, Police etc) near me?

A19

1. Touch and on MAP screen



2. Touch "Where Am I?"



3. Touch "Help Nearby"



4. Select one of categories



#### Q20 What kind of navigation methods are available to the destination?

A20 Address, Places (POI), Map, Favorites and History.



#### Q21 How can I change "Route Planning Method" while entering the destination?

A21 1. Touch "More" before touching "Go!"



2. Touch "Route Alternatives"



3. Select one from "Route Alternatives"



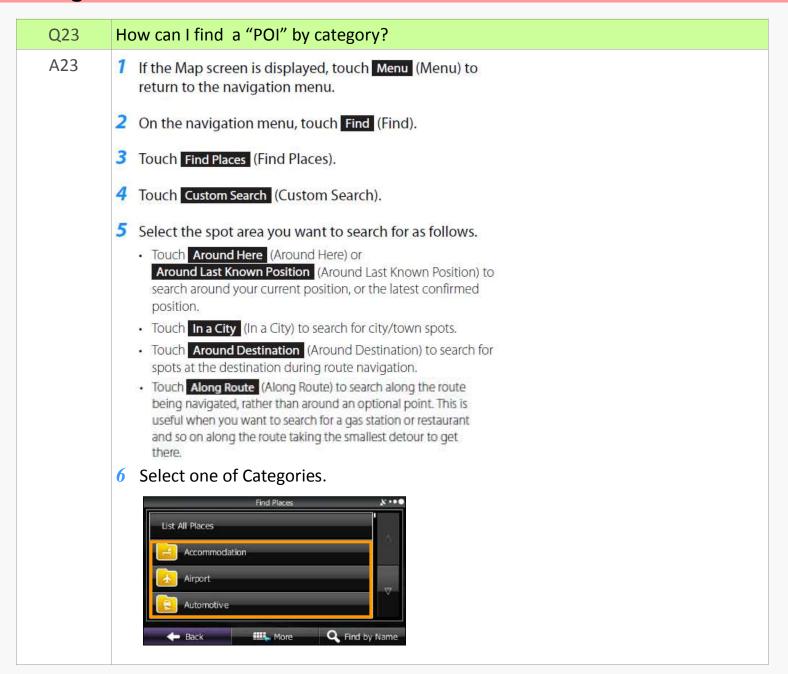
"Route Alternatives"

#### Q22 How can I change my destination while driving?

While driving, the destination can be changed by using the Voice control function.

- 1. Press "Voice Control Button (either on the unit or steering control
- 2. Say "Navigation"
- 3. Say "Find"

New destination can be set by Address, Places, Favorites or History and then continuously follow the voice control guidance .



Q24	How many "POI" categories are available?
A24	18 categories are available. (Accommodation, Airport, Automotive, Business, Café or Bar, Community, Favorites, Finance, Gas Station, Leisure, Marine, Medical, Parking, Restaurant, Shopping, Sports, Transport and Truck)

#### Q25 How can I cancel my destination?

A25

1. Touch and on MAP screen



2. Touch "Cancel Route"



#### Q26 How do I delete the History of destination (previous destination)?

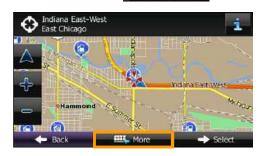
A26

- 1. Touch "Menu" on MAP screen
- 2. Touch "Find"
- 3. Touch "History"
- 4. Touch "More"
- 5. Touch "Delete All"

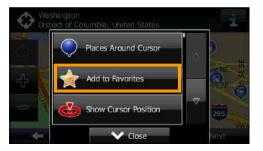
#### Q27 How can I add a destination to "Favorites"?

A27

- 1. Set a destination
- 2. Touch "More"



3. Touch "Add to Favorites"



- 4. Enter the name of Favorite with keyboard
- 5. Touch "Done"

#### Q28 How can I rename a "Favorite"?

A28

1. Touch on MAP screen



2. Touch "Favorites"



- 3. Select one you want to change the name
- 4. Touch



- 5. Touch "More" More
- 6. Touch "Rename Favorite"

## Q29 Can I set the destination by Voice Control while driving?

A29 Yes.

#### Q30 How can I access previously used destinations?

A30

- 1. Touch "Menu" on MAP screen
- 2. Touch "Find"
- 3. Touch "History"

#### Q31 How can I see the entire trip route?

A31

Touch Menu (Menu) on the Map screen.



2 Touch My Route (My Route) on the navigation

3 Touch Overview (Overview). The entire route currently being navigated is displayed on the map along with detailed information and buttons.



#### 3. FAQ

#### **Navigation**

Q32	What maps are pre-loaded in the MAP SD card?
A32	US (50 states, District of Columbia & Puerto Rico), Canada (13 Provinces).
Q33	Does the route guidance consider traffic conditions?
A33	Yes. Real time traffic information is provided by XM Traffic with XM subscription.
Q34	How do I change the language for Voice Guidance?
A34	<ol> <li>Touch "Menu" on MAP screen</li> <li>Touch "More"</li> <li>Touch "Settings"</li> <li>Touch "Sound and Warnings"</li> <li>Touch "Voice Language"</li> <li>Select one language</li> </ol>
Q35	Can I use the Navigation while the MAP SD card is removed?
A35	No, as navigation information is stored in the MAP SD card. But after the MAP is displayed on screen, you can use the Navigation without the MAP SD card until ACC turns OFF.
Q36	Why does the Altitude reading show ""?
A36	The function shows the altitude of the road currently being driven and measured by the GPS receiver. The minimum of 4 acquired satellites is required to establish Altitude. With 3 or less acquired satellites, "" may be displayed on the navigation screen.

#### Q37 How can we get detailed GPS information?

GPS Info can be set on Quick Menu. Frequently used buttons and functions used during navigation can be selected and displayed on Quick Menu.

#### Set GPS Info on Quick Menu:







2. Touch "More"



3. Touch "Settings"



4. Touch "Customize Quick Menu"



5. Select and touch unnecessary item



6. Select "GPA Info"



7. Now "GPS Info" is added on Quick Menu

#### Open GPS Info:



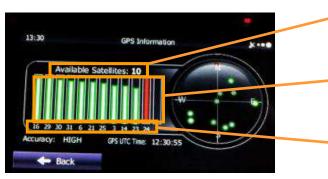
1. Press "MAP" on the unit



2. Touch the Quick Menu icon



3. Touch "GPS Info"



**GPS Information Screen** 

Number of satellites currently acquired (positioned)

Satellite conditions

Green = Good reception

Red = Poor reception

Satellite number

#### Note:

4 or more satellites are needed for 3D positioning.

- Which Bluetooth phones are compatible with the Navigation unit? Q1 A phone compatibility list is available at Subaru Website. **A1** http://www.subaru.com/engineering/multimedia-electronics.html
  - What should I do first to use the Bluetooth hands-free function with the Navigation Q2 unit? How can I register my phone to the Navigation unit?
  - A2 1. Check if your phone is compatible with Navigation unit from Subaru Website at http://www.subaru.com/engineering/multimedia-electronics.html
    - 2. Register your phone to the Navigation unit by following procedure below
    - Press (AUDIO).
    - 2 Touch Info .
      - If Info is not displayed, touch V.
    - 3 Touch Bluetooth .



Touch Registered Devices (Registered Devices) 7 When the registration is complete, "Connection



5 Touch Add New (Add New).



- 6 Operate the cell phone to enter the passcode (passkey) of the unit.
  - The name of the unit is CAR MULTIMEDIA.
  - The initial setting for the passcode (passkey) is 0000.
  - Operate the cell phone while the Registered Devices screen is displayed.

<Registered Devices screen>



- Completed" appears.
  - The cell phone registration is complete.

#### NOTE

- If the registration fails, "Connection failed" appears on the screen. If this happens, perform the registration operation again.
- · For details of operations on the cell phone, see the cell phone's instruction
- · When processing a Bluetooth connection, the Bluetooth Audio may skip.

- Q3 How many cell phones can be registered to the Navigation unit?

  A3 Up to 5 phones.
  - When multiple phones are registered to the Navigation unit, which phone will be connected first when the Navigation unit turns ON?
  - A4 The order of connection precedence is 1 to 5.



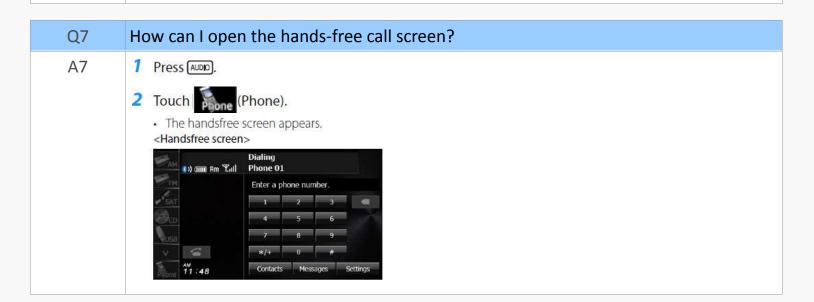
The system tries to connect to the first registered phone. If the first registered phone is not present or phone Bluetooth is disabled, the second phone will be connected. If the second phone is not present or it's Bluetooth is disabled, the third phone will be connected.

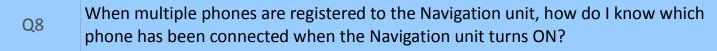
#### Q5 What Bluetooth Specifications and Profiles are supported by the Navigation unit?

Supported Bluetooth Specifications

- Bluetooth Specification Ver. 1.1 or higher (Ver. 2.0 + EDR or higher is recommended)
- Supported Profiles
  - HFP (Hands Free Profile) Ver. 1.0
  - OPP (Object Push Profile) Ver. 1.1
  - DUN (Dial-up Networking Profile) Ver. 1.1
  - SYNC (Synchronization Profile)
  - PBAP (Phone Book Access Profile)
  - MAP (Message Access Profile)

#### How can I find out the signal strength level of my Bluetooth phone with the unit? Q6 **A6** (1) (2) (3) (4) Dialing Bluetooth signal quality icon Phone 01 Displays the Bluetooth connection status of a cell phone. When a Bluetooth connection is established, "\( \)" and reception level Enter a phone number. are displayed. A Bluetooth communication antenna is embedded in the car display. If a Bluetooth-enabled cell phone is used in the following locations or conditions, the Bluetooth connection status display may turn gray or Bluetooth connection may not be possible. - When the cell phone is hidden from the display (when the cell phone is behind or under a seat or in the glove box or console box). - When the cell phone is touching or covered by a metal object. Bluetooth signal icon (1)To use a Bluetooth-enabled cell phone, move the phone to a location where the blue display appears. (2)Battery level indicator · When setting the cell phone to power saving mode, the Bluetooth connection may be automatically disconnected. If this happens, switch off the (3)Roaming area icon power saving mode of the cell phone. Reception indicator (4)





**A8** 

1 On the handsfree screen, touch Settings (Settings).



2 Touch Connection (Connection).



**3** The Bluetooth mark is displayed for cell phones with an active Bluetooth connection.



### How can I select my phone if another phone has been connected when the Navigation unit turns ON?

A9

1 On the handsfree screen, touch Settings (Settings).



2 Touch Connection (Connection).



- 3 Select the cell phone that you want to connect.
  - The Bluetooth mark is displayed for cell phones with an active Bluetooth connection.



- 4 Touch Connect (Connect).
- 5 When the connection is complete, "Connection Completed" appears.

Q10	What methods are available to make a call?
A10	<ul> <li>You can make a call</li> <li>By entering a phone number</li> <li>From call history (Outgoing Calls &amp; Incoming Calls)</li> <li>From Phonebook</li> <li>From Speed Dial</li> </ul>

# A11 How many "Outgoing and Incoming Call Histories" are stored to Navigation unit? The incoming and outgoing call histories can each store 10 calls for each registered cell phone. In the incoming call history, 5 missed calls and 5 other calls can be stored. When 10 calls are stored (5 missed incoming calls and 5 other calls), the oldest call is deleted from the history at the next call.

#### Q12 How can I transfer my phone book to the Navigation unit?

After the registration is completed, "Do you want to transfer the phone book from your mobile?" appears and then, touch "Yes"

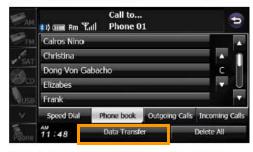
or

A12

1 On the handsfree screen, touch Contacts (Contacts).



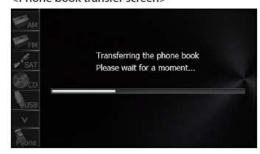
2 Touch Phone book (Phone book).



3 Touch Data Transfer (Data Transfer).

- 4 When the phone book transfer screen appears, operate the cell phone to transfer the phone book data.
  - Perform the transfer operation on the cell phone while the phone book transfer screen is displayed.
  - When the transfer is in progress, wait until the transfer completed message appears.
  - When the transfer is complete, the transfer completed message appears.

<Phone book transfer screen>



Q13	How many phone contacts can be transferred to the Navigation unit?
A13	Up to 1000 persons can be transferred for each registered phone.

During phonebook transfer what happens if more than 5 numbers are registered to one person in the phone book of the cell phone?

A14 The top 4 numbers will be transferred to the unit in the order of "Mobile", "Home", "Work", and "Other."

#### Q15 How can I delete my phone that was registered to the Navigation unit?

A15

- 1 Press (AUDIO).
- 2 Touch Info .
  - If Info is not displayed, touch V.
- 3 Touch Bluetooth .



4 Touch Registered Devices (Registered Devices)



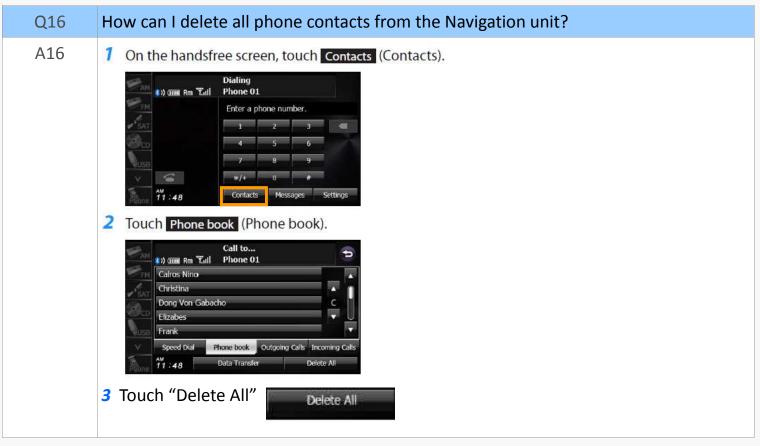
5 Select the cell phone that you want to delete.

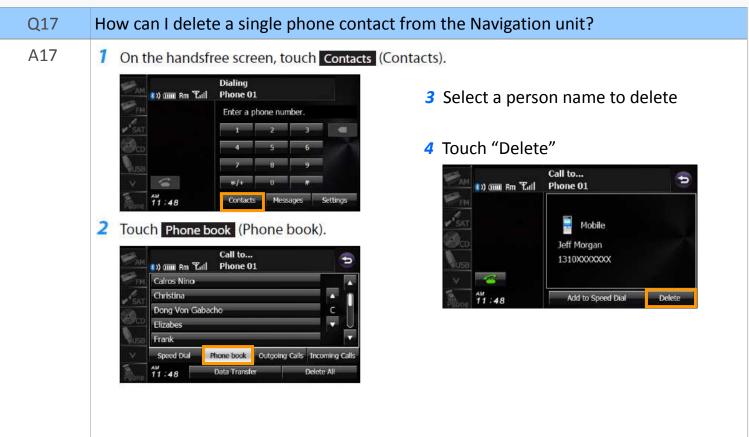


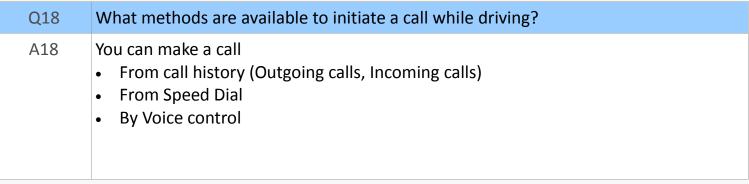
- Touch Delete (Delete).
  - "Are you sure to delete the entry?" appears on the screen. Touch
     Yes (Yes) or No (No).
  - After touching "Yes", when the deletion is complete, "Completed" appears.
  - · The cell phone deletion is complete.

#### NOTE

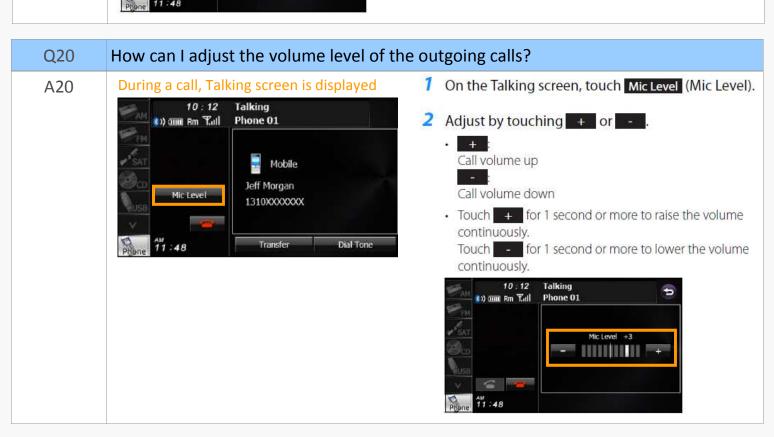
When a cell phone registration is deleted, the outgoing call history, incoming call history and phone book data that are saved in the unit are also deleted.







# A19 You can receive incoming calls when any source mode is selected. When a call arrives, the Incoming call screen appears automatically. When you hear the ringtone, touch You are connected and able to talk. Touch to hang up and refuse the incoming call. Incoming call screen> Mobile Jeff Morgan 1310xxxxxxx



#### Q21 How can I switch a call between private and hands-free mode? A21 When using a Bluetooth cell phone, you can transfer calls between the unit and the cell phone. The call is switched from a handsfree call to a cell phone call, or from a cell phone call to a handsfree call. Touch Transfer (Transfer). Touch Transfer (Transfer) again to switch to a handsfree call. 10:12 Phone 01 3) (IIII Rm Tall Mobile Jeff Morgan Mic Level 1310XXXXXXX Dial Tone

Q22	Can I switch a call between private and hands-free mode while driving?
A22	No.

#### Is a "call waiting" function available? **Q23** A23 Yes. If a call arrives from another phone while you are already talking, you can put the current call on temporary hold by using the Talking screen and receive the new incoming call. When you hear the ringtone, touch 6 on the Talking screen. You can put the current call on hold and connect to the new To end call waiting, touch \_\_\_\_\_\_. When call waiting ends, the phone connects to the call that was put on hold and you can continue the previous call. During call waiting, touch again to switch between the callers. Incoming call \*)) (iiiii Rm Tail Phone 01 Mobile Jeff Morgan 1310XXXXXXX NOTE If a call waiting contract has not been setup for the cell phone itself, you cannot use the call waiting function.

Q24	Will the Hands-free call be automatically transferred to the cell phone when the vehicle turns off?
A24	Yes.

Q25	Can a phone call be transferred to the hands-free call when the vehicle turns on?
A25	Yes.

#### Q26 How can I set my Navigation unit to answer a hands-free call automatically?

A26

1 On the handsfree screen, touch Settings (Settings).



2 On the phone Settings screen, you can perform the following settings by touching the setting buttons for each item.

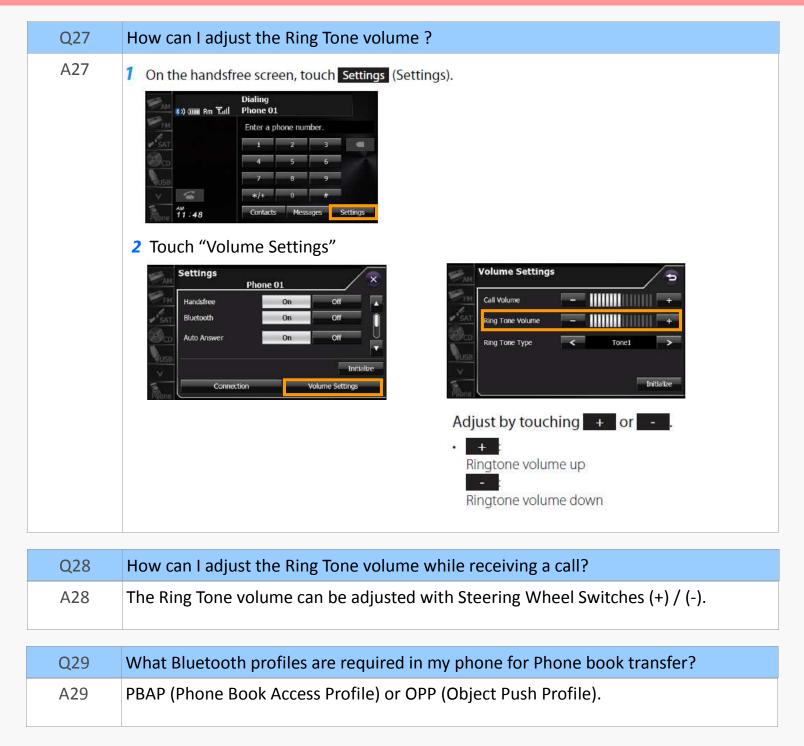
<Phone Settings screen (page 1)>



#### **Auto Answer setting**

Start the call automatically 5 seconds after the arrival of an incoming call.

Touch On (On) or Off (Off).



#### Q30 How can I register "Speed Dial" numbers?

A30

On the phone book screen, touch the data item that you want to register.



- If 2 or more telephone numbers are registered for the selected person (name or telephone number), the telephone number selection screen appears. Touch the telephone number that you want to register.
- Touch Add to Speed Dial (Add to Speed Dial).



- 3 Touch the number in the Speed Dial list where you want to register the telephone number.
  - "Speed Dial Saved." appears and the Speed Dial registration is complete.



# Q31 How many "Speed Dial" numbers can be registered? A31 Up to 10.

#### Q32 How can I change the passcode (passkey)?

A32

You can change the passcode (passkey) for cell phone registration to any number with 4 to 8 digits.

- 1 Press (AUDIO).
- 2 Touch Info .
  - If Info is not displayed, touch V.
- 3 Touch Bluetooth .



4 Touch Passcode Settings (Passcode Settings).



- 5 Enter a number by touching 1 digit at a time, and enter a number with 4 to 8 digits.
  - If you make a mistake, touch to delete 1 digit at a time.
     Touch for 1 second or more to delete the digits continuously.



6 Touch Done (Done).

Q33	What Bluetooth profiles are required to use the Message function?
A33	<ul> <li>HFP (Hands-free Profile) Ver.1.0 or later (Conformed Ver.1.5)</li> <li>MAP (Message Access Profile)</li> </ul>

# Q34 What types of messages can be received on the Navigation unit? A34 • SMS (Short Message Service) • MMS (Multimedia Message Service) • E-mail

#### Q35 How can I see messages received?

A35

1 On the handsfree screen, touch Messages (Messages).

The Messages screen appears.



#### <Messages screen>



Q36	How can I delete my messages?
A36	You cannot delete messages using the unit. When 50 messages are stored, the oldest message will be deleted from the account list.

#### Q37 How can I check my messages? A37 On the Messages screen, touch the message that you want to check. Messages 🗱 🕠 👊 Rm 🖫 🖽 01/29 11:04 AM Message 01 01/29 11:03 AM Message 02 01/29 11:02 AM Message 03 01/29 11:01 AM Message 04 01/29 10:58 AM Message 05 Account 01 Account 02 Account 03 <MMS and e-mail details screen> <SMS details screen> Messages Messages s)) ann Rm Tall 3) (IIII Rm Tall ► 01/29 11:04 AM From Message 01 ≥ 01/29 11:04 AM From Subject No subject Gmail Hello. This is John. I am waiting at hotel lobby. Hello. This is John. I am waiting at hotel lobby. Attached file icon Advance to the next message. If there is telephone number data in the address, you can touch to call the number. Return to the previous message. Play (Play): Return to the Messages screen. Perform audio playback of the message.

#### Q38 Can I open attached file on the message?

Display the message reply screen.

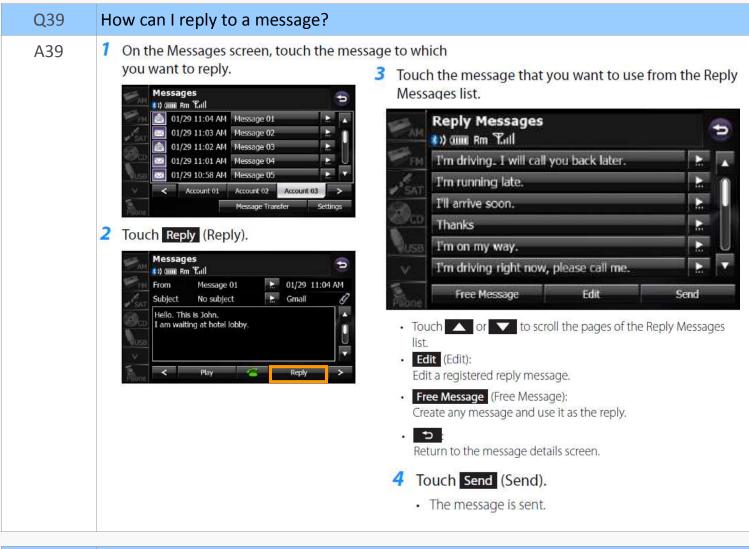
Reply (Reply):

A38

No. When a file is attached with the message, the icon is displayed, but the contents of the attached files cannot be opened. Attachment may be viewed on your cell phone.

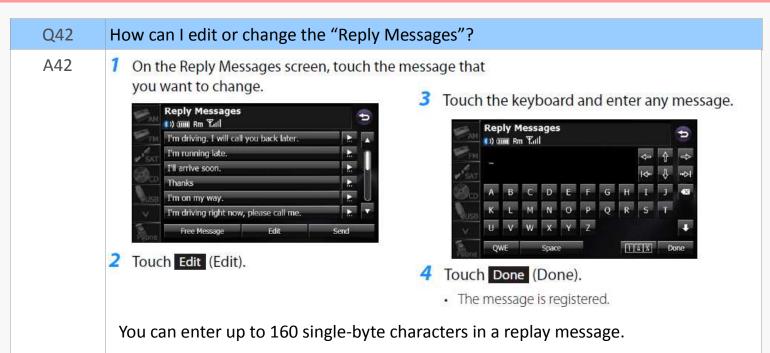


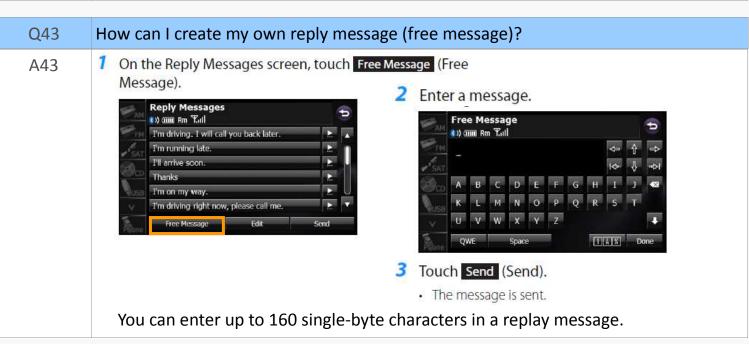
Attached file icon

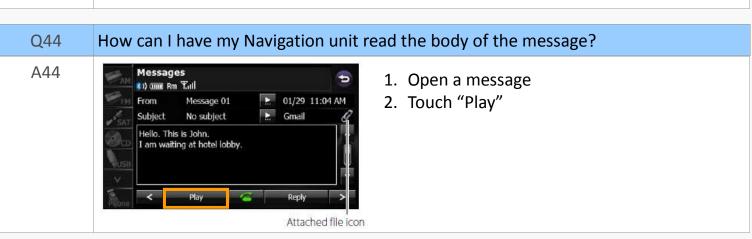




Q41	Can I reply to the message using one of default "Reply Messages" while driving?
A41	Yes, but you need to reply before closing the message. Once it's closed, all messages cannot be accessed while driving.





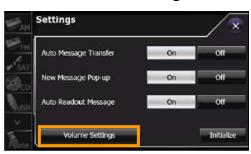


#### How can I adjust the volume level of message read by the Navigation unit? Q45 A45

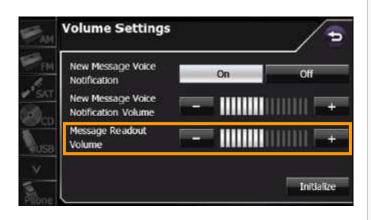
1 On the Messages screen, touch Settings (Settings).



Touch "Volume Settings"



3 Adjust "Message Readout Volume"



#### Can I set or configure the "Phone Settings" for each registered phone? Q46

A46 Yes.

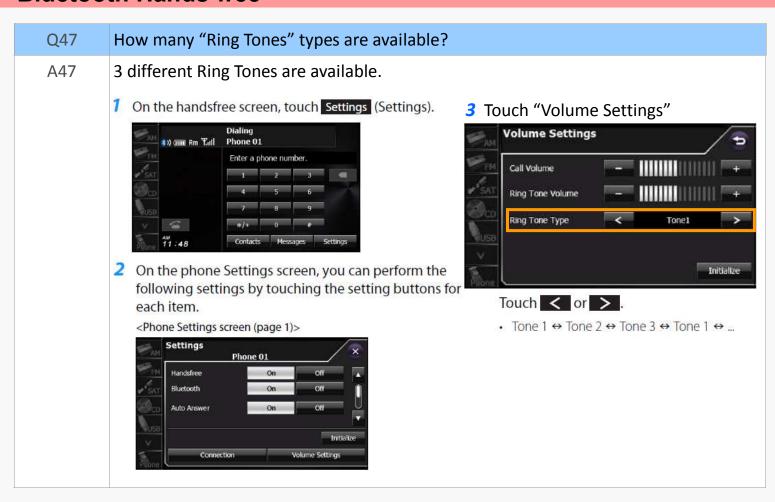
<Phone Settings screen (page 1)>



<Phone Settings screen (page 2)>

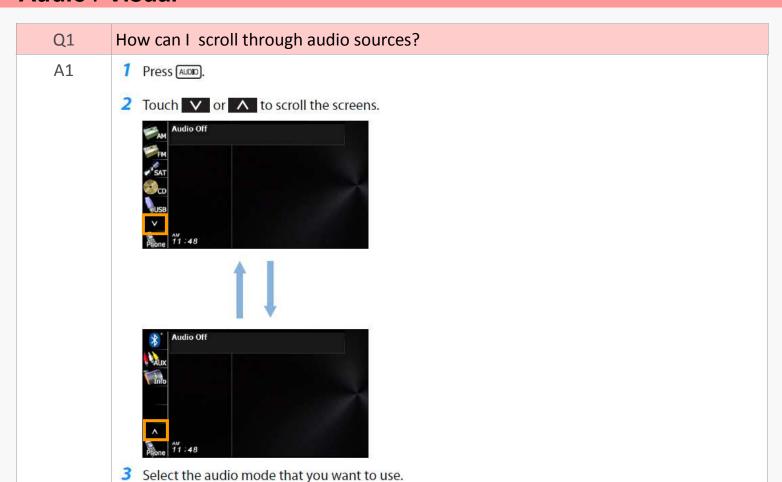


Item	Function
Handsfree	Set the handsfree function to on or off.
Bluetooth	Set the Bluetooth function to on or off.
Auto Answer	Set automatic call acceptance.
Auto Connect	Set automatic connection between a registered cell phone and the unit.
Auto Phonebook	Automatically transfer the phone book to the unit
Transfer	when a cell phone is registered.



Q48	Can I reply to the received TEXT message by Speech (speech-to-text)?
A48	No. The unit does not have speech-to-text capability.

#### **Audio / Visual**



#### Q2 How can I adjust the Sound Quality?

A2 Touch Sound (Sound) on any of the audio operations screens.



2 Touch "Adjust" in EQ Settings

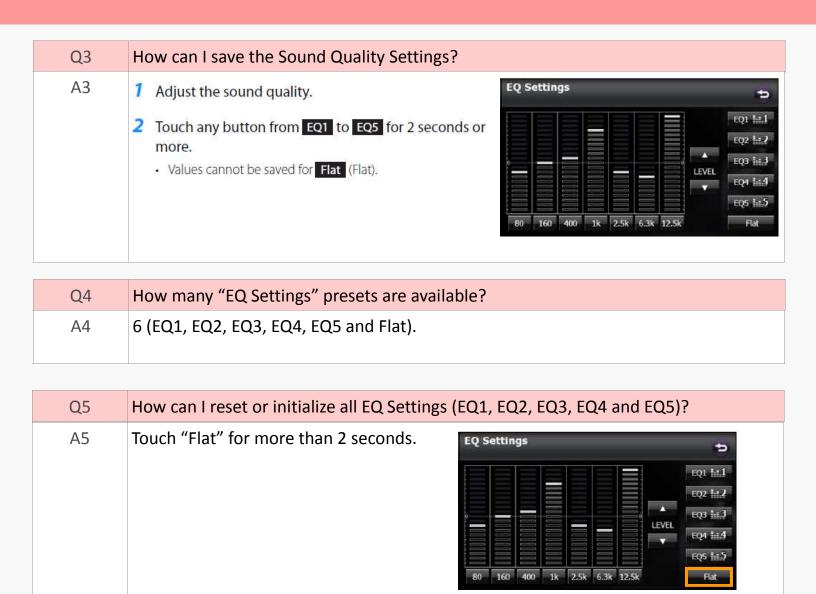


3 Touch the sound band you want to adjust



Touch △ or ▼.

- When you touch and hold, the value changes continuously but stops at the center value. Touch or again to restart.
- · You can also adjust to the desired level by touching the screen.
- The maximum adjustment is +10 and the minimum adjustment is -10.
- To reset the sound quality, touch Flat (Flat).
- After completing the adjustment, touch to save the adjusted settings and return to the previous screen.



#### **Audio / Visual**

#### Q6 How can I adjust the audio balance?

A6

1 Touch Sound (Sound) on any of the audio operations screens.



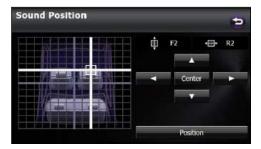
2 Touch "Sound Position"



3 Touch "Fader/Balance"



4 Touch the balance point you want to use



- You can also adjust to the desired balance by touching the screen.
- Touch Center (Center) to cancel the Fader/Balance setting and return to the center value.
- After completing the adjustment, touch to save the adjusted settings and return to the Sound Settings screen.

#### Q7 How can I set the volume level for each audio source?

A7

1 Touch Sound (Sound) on any of the audio operations screens.



2 Touch or + in SVC.

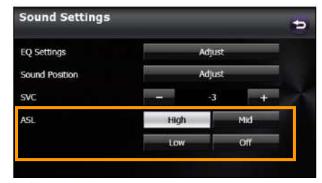


You can set a volume difference for each audio mode. The differences between the volume of the FM mode in the initial setting (initial value: 19), which is used as reference, and the volume levels set for each audio mode are saved.

After completing the adjustment, touch to save the adjusted settings and return to the previous screen.

#### Q8 What is the ASL?

A8 The Automatic Sound Levelizer (ASL) function detects the noise level inside the vehicle as it changes according to the driving speed and road conditions, and automatically increases the audio volume when the noise increases.



- High (High):
   Set the sensitivity for detecting noise inside the vehicle to High.
- Mid (Mid):
   Set the sensitivity for detecting noise inside the vehicle to Mid.
- Low (Low):
   Set the sensitivity for detecting noise inside the vehicle to Low.
- Off (Off): Cancel the ASL setting.

A9

A11

#### **Audio / Visual**

#### Q9 What is HD Radio?

HD Radio, which original stood for "Hybrid Digital", is the trademark for iBiquity's inband on-channel (IBOC) digital radio technology used by AM and FM radio stations to transmit audio and data via digital signal in conjunction with their analog signals.



Note: HD Radio service available in USA only (as of May 2013)

Digital, CD-quality sound. HD Radio Technology enables local radio stations to broadcast a clean digital signal. AM sounds like today's FM and FM sounds like a CD.

Q10 Which radio station transmits radio program in HD mode?

A10 Check the information from the HD Radio website at <a href="http://www.hdradio.com/">http://www.hdradio.com/</a>.

#### Q11 How can I listen to HD Radio?

1. Find AM or FM station that broadcasts HD Radio from http://www.hdradio.com/

2. Tune to the station



#### Manual selection

Touch ▶► or <

. |

Move up 1 step.

**4** 

Move down 1 step.

#### Auto tuning

Touch ▶ or ★ for 1 second or more.

 The tuner moves automatically to the station closest to the frequency currently displayed on the screen and stops. To cancel auto tuning while it is operating, touch the button again.

3. Touch "HD Radio"



Indicator

- ON (indicator lit):
  - Audio is output according to the HD Radio setting and reception quality.

OFF (indicator off):

Audio is output in analog regardless of the HD Radio setting or reception quality.

Touch HD Radio (HD Radio) to switch between ON and OFF.

#### Q12 How can I tell if the HD radio is broadcasting in "digital" mode?

A12 Once the digital signal is received, "Digital" is displayed.



#### Q13 How can I manually store radio stations as presets?

- A13 Select the station that you want to save using manual tuning or auto tuning.
  - 2 Touch the preset button that you want to use for 2 seconds or more.
    - The selected station is saved and displayed on the preset button.



#### Q14 How can I store radio stations automatically into the preset buttons?

A14 1 Touch Settings (Settings).



2 Touch Auto.P (Auto.P) for 2 seconds or more.



#### **Audio / Visual**

Q15	How many AM/FM radio stations can be stored as presets?
A15	6 stations each for FM1, 2 and 3 and 6 stations for AM (Total: 24 stations).

#### Q16 How does "Tag" work?

A16

## iTunes Tagging

iTunes<sup>®</sup> Tagging provides you the opportunity to discover a wide range of content and the means to "tag" that content for later review and purchase from the iTunesR Store. Also refer to the Apple Automotive specifications for implementing iTunes<sup>®</sup> Tagging.

If tag information exists for the track being broadcast, you can acquire the track's tag information.

#### Touch Tag (Tag).

- If an iPod is connected, the tag information is transferred to the iPod,
- If an iPod is not connected, maximum 50 Tags will be stored in the HD Radio tuner. It is transferred to iPod at the time of iPod connection on the next time and is deleted from Tuner.



## Q17 What is "Sub Ch"? A17 In FM radio mode only

In FM radio mode only, you can receive a sub channel broadcast if one exists for the currently broadcasting station.

#### Touch Sub Ch (Sub Ch).

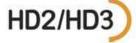
- The sub channel changes each time you touch the screen.
- The current channel and the number of sub-channel reception is displayed at the upper right of the screen.

The current channel



The number of subchannel reception

NOTE



FM stations can provide additional digital-only audio programing on HD2/HD3 Channels.

#### **Audio / Visual**

Q18	Can I receive SAT (XM) for free?	
A18	No. SAT (XM) radio has to be subscribed.	
Q19	I cannot get some of the XM channels. Why?	
A19	A19 Invalid channels and non-subscribed channels cannot be received.	

#### Q20 How can I select a SAT channel?

A20 There are 4 ways to select a SAT channel (Preset, Channel, Direct and Category).

#### Preset



- 1. Touch "Preset"
- 2. Touch a preset button

#### Direct



- 1. Touch "Direct"
- 2. Enter a channel number
- 3. Touch "Done"

#### Channel



- 1. Touch "Channel"
- 2. Touch a channel

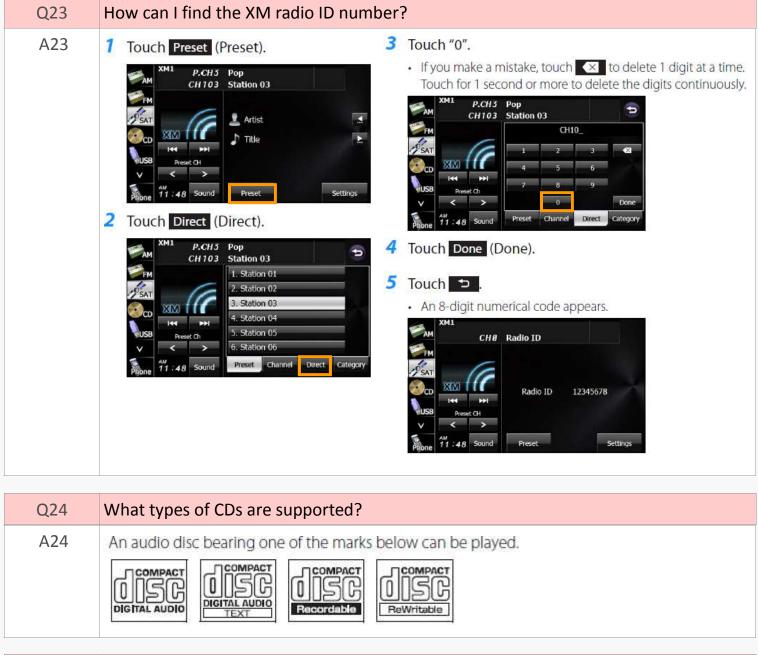
#### Category

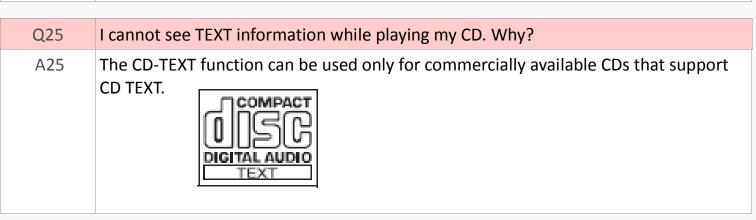


- 1. Touch "Category"
- 2. Touch a category

How can I store SAT radio channels? Q21 A21 1 Select the channel that you want to save. Touch Preset (Preset). 3 Touch Preset (Preset). P.CH3 Pop P.CH3 Pop CH103 Station 03 Station 03 CH103 Hip-Hop and R&B News, Talk, NPR Artist Pop Rock Sports Traffic & Weather Preset Channel Direct Settings 4 Touch the preset button that you want to use for 2 seconds or more. The selected channel is saved and displayed on the preset • To manually set additional channels for the remaining preset channels, repeat this procedure for each channel. How many SAT channels can be stored into the preset memory buttons? Q22 Save up 6 stations each for XM1, XM2 and XM3. (Total of 18 stations) A22

#### **Audio / Visual**





Q26	Does the system play MP3/WMA files on CD-R/CD-RW?	
A26	Yes.	
Q27	What is the recommended bit rate and sampling frequency of MP3/WMA files on CD-R/CD-RW?	
A27	<ul> <li>Bit rate: 128kbps</li> <li>Sampling frequency: 44.1KHz</li> </ul>	

A28 Once the USB memory is connected to the USB port correctly?

A28 Once the USB memory is connected to the USB port and recognized by the system, the USB icon will be highlighted.



Q29	What audio formats are supported by the system for the USB audio playback?	
A29	MP3/ WMA .	

Q30 A30	Which USB flash memory is supported (specification requirement)?		
	<ul> <li>Supported file formats:</li> <li>FAT 32</li> </ul>	Supported capacities:     16 MB to 8 GB	
	<ul> <li>Supported audio formats: MP3/WMA/WAV</li> </ul>	<ul> <li>Compatibility: USB1.0/1.1/2.0 (maximum transfer speed is same as USB 2.0)</li> </ul>	
	<ul> <li>Maximum current:</li> <li>1.0 A</li> </ul>	<ul> <li>Mass memory support: Supports USB mass storage class.</li> </ul>	
		<ul> <li>Does not support USB hubs or multi card readers.</li> </ul>	

#### **Audio / Visual**

#### Q31 How can I listen to the music stored in the USB flash memory?

A31

- 1 Connect a USB memory that contains music files to the USB connector.
- Press (AUDIO).
- 3 Touch USB (USB).
  - The playback starts.



4 Select a Folder

Touch < or > .

. <

Return to the previous folder and play the first file in the folder.

>

Advance to the next folder and play the first file in the folder.

5 Touch a music file to play



#### Q32 Can I watch video stored in the USB memory while driving?

No. In order to watch video contents, the vehicle must be stopped and the parking brake applied.

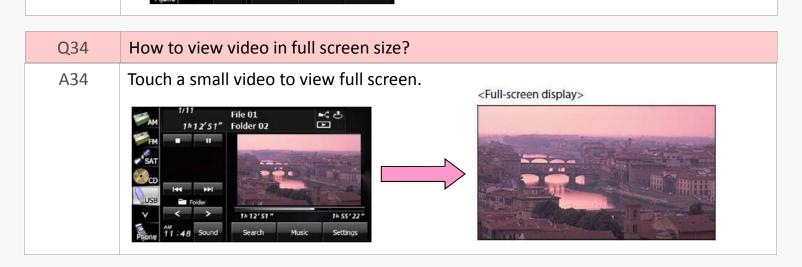
If the source is switched to USB video while the vehicle is in motion, only audio can be heard.

#### Q33 How can I watch a USB video contents? A33 Connect a USB memory that contains video files to the USB connector. Press AUDIO. 3 Touch USB (USB). The playback starts. · Touch the video to show it in a full-screen display. To display the operation buttons (touch buttons) again, touch the full-screen display. File 01 1112'51" Note:

14 55' 22"

1412'51"

You can watch a USB video only if you have stopped your vehicle and applied the parking brake to ensure safety and turned the ignition switch to ON or ACC ON.



A36

#### **Audio / Visual**

#### Q35 How can I change the subtitle language of the USB video playback?

A35 If the video file stores multiple subtitle languages, you can change the subtitle language that is used.

1 Touch Settings (Settings).



2 Touch Subtitle (Subtitle).



- 3 Touch Change Subtitle (Change Subtitle).
  - Each time you touch Change Subtitle (Change Subtitle), the subtitle number changes, and the subtitle languages recorded on the video file change in sequence.
  - Touch Subtitle Off (Subtitle Off) to play without displaying subtitles on the screen.



#### Q36 How can I change the audio language of the USB video playback?

If the video file stores multiple audio languages, you can change the audio language that is used.

1 Touch Settings (Settings).



2 Touch Audio .



Touch Change Audio (Change Audio).

 Each time you touch Change Audio (Change Audio), the audio number changes, and the audio languages recorded on the video file change in sequence.



#### Q37 How can I change the aspect ratio of the USB video playback?

A37

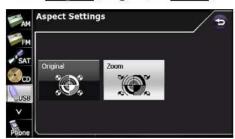
1 Touch Settings (Settings).



2 Touch Aspect (Aspect).



3 Touch Original (Original) or Zoom (Zoom).



- Original (Original):
   Display the video in its original size.
- Zoom (Zoom):
  Expand the video until its vertical or horizontal dimension reaches the maximum size. (For DivX image files, the image is enlarged to 4.5 times its original size.)

#### Q38 How can I display the DIVX VOD (Video On Demand) registration code?

**A38** 

To play DivX VOD (Video On Demand) content, first register this unit with the content provider. To register, the DivX VOD registration code is required.

You can display the DivX® Video On Demand registration code.

1 Touch Info.

If Info is not displayed, touch



- 2 Touch DivX(R) VOD (DivX(R) VOD).
  - · The DivX(R) VOD Set Up screen appears.



3 Touch Register (Register).



Touch OK (OK) to return to the Info screen.



# 3. FAQ

### **Audio / Visual**

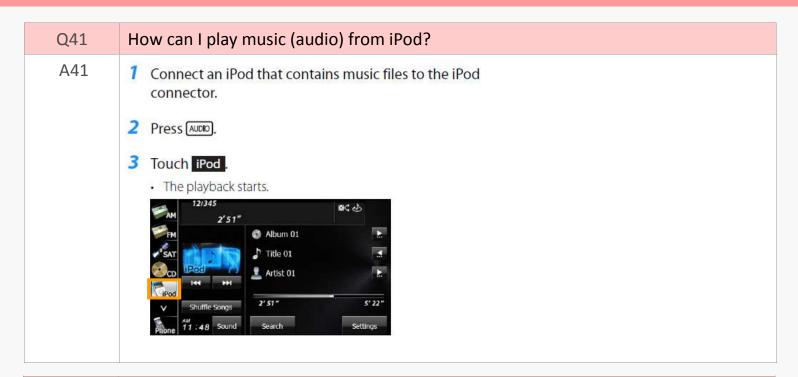
Q39 What video formats are supported for USB video playback?  A39 DivX, Div, AVI, WMV, MP4, M4V.  Q40 What is the maximum resolution and frame rate of the video files for USB video play back?  A40 720x480 (30 frame/second), 720x576 (25 frame rate / second).  If the video resolution and frame rate do not meet the specification, "Video resolution not supported" or "Video Framerate not supported" is displayed and video will not be played.  AVI_TEST_4_avi Properties    Width   720 pixels   Audio   Property   Value   Property   Pro		
What is the maximum resolution and frame rate of the video files for USB video play back?  A40 720x480 (30 frame/second), 720x576 (25 frame rate / second).  If the video resolution and frame rate do not meet the specification, "Video resolution not supported" or "Video Framerate not supported" is displayed and video will not be played.  AVI_IEST_4.avi Properties    Width   720 pixels   18   18   18   18   18   18   18   1	Q39	What video formats are supported for USB video playback?
back?  720x480 (30 frame/second), 720x576 (25 frame rate / second).  If the video resolution and frame rate do not meet the specification, "Video resolution not supported" or "Video Framerate not supported" is displayed and video will not be played.  AVI_TEST_4.avi Properties    Width   720 pixels   Height   540 pixels   Audio   Duration   0:00:29   Bit Rate   128kbps   Audio format   MPEG Layer-3   Wideo sample size   24 bit   262kbps   Video sample size   24 bit   Video sample size   Video sample size   24 bit   Video sample size   Video	A39	DivX, Div, AVI, WMV, MP4, M4V .
back?  720x480 (30 frame/second), 720x576 (25 frame rate / second).  If the video resolution and frame rate do not meet the specification, "Video resolution not supported" or "Video Framerate not supported" is displayed and video will not be played.  AVI_TEST_4.avi Properties    Width   720 pixels   Height   540 pixels   Audio   Duration   0:00:29   Bit Rate   128kbps   Audio format   MPEG Layer-3   Wideo sample size   24 bit   262kbps   Video sample size   24 bit   Video sample size   Video sample size   24 bit   Video sample size   Video		
If the video resolution and frame rate do not meet the specification, "Video resolution not supported" or "Video Framerate not supported" is displayed and video will not be played.  AVI_TEST_4.avi Properties    Width   720 pixels   Height   540 pixels     Height   540 pixels   Audio   Prame rate   128kbps   Audio format   MPEG Layer-3     Video   Prame rate   25 frames/second   Data rate   2162kbps   Video sample size   24 bit   24	Q40	What is the maximum resolution and frame rate of the video files for USB video play-back?
tion not supported" or "Video Framerate not supported" is displayed and video will not be played.  AVI_TEST_4.avi Properties    Property   Value   Image   Width   720 pixels   Height   540 pixels     Audio   Duration   0:00:29   Bit Rate   128kbps   Audio   Audio   Audio   Audio   Audio   Audio   Audio   Audio   Audio   Prame rate   25 frames/second   Data rate   2162kbps   Video sample size   24 bit	A40	720x480 (30 frame/second), 720x576 (25 frame rate / second).
Property   Value   Image   Width   720 pixels   Height   540 pixels   Audio   Duration   0:00:29   Bit Rate   126kbps   Audio format   MPEG Layer-3   Wideo   Data rate   2162kbps   Data rate   2162kbps   Wideo sample size   24 bit   Data rate   24 bit   Data rate   25 frames/second   Data rate   2162kbps   Wideo sample size   24 bit   Data rate   24 bit   Data rate   25 frames/second   Data rate   2162kbps   Data rate   24 bit   Data rate   24		tion not supported" or "Video Framerate not supported" is displayed and
Property Value  Image  Width 720 pixels Height 540 pixels  Audio  Duration 0:00:29 Bit Rate 128kbps Audio format MPEG Layer-3  Video  Frame rate 25 frames/second Data rate 2162kbps Video sample size 24 bit		
□ Duration       0:00:29         □ Bit Rate       128kbps         ■ Audio format       MPEG Layer-3         Video         □ Frame rate       25 frames/second         □ Data rate       2162kbps         □ Video sample size       24 bit		Property Value Image  Width 720 pixels
Trame rate 25 frames/second  Data rate 2162kbps Video sample size 24 bit		☐ Duration 0:00:29 ☐ Bit Rate 128kbps
Data rate 2162kbps  Di Video sample size 24 bit		Video
		Data rate 2162kbps Video sample size 24 bit

OK

<< Simple

Apply

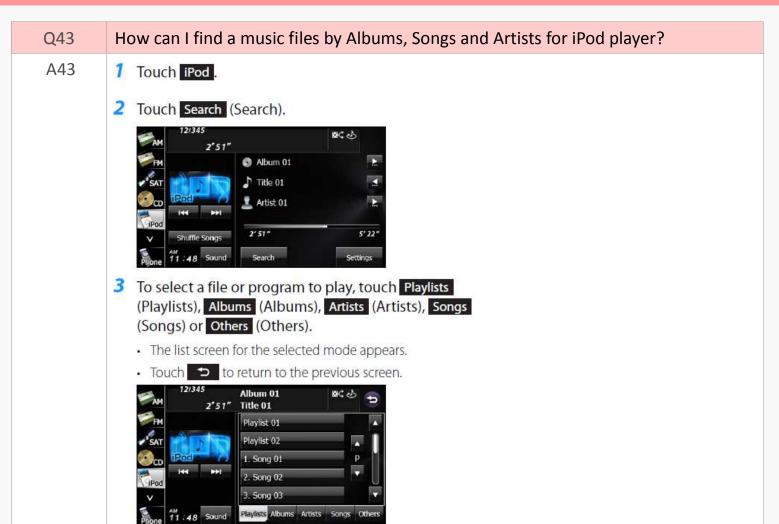
Cancel

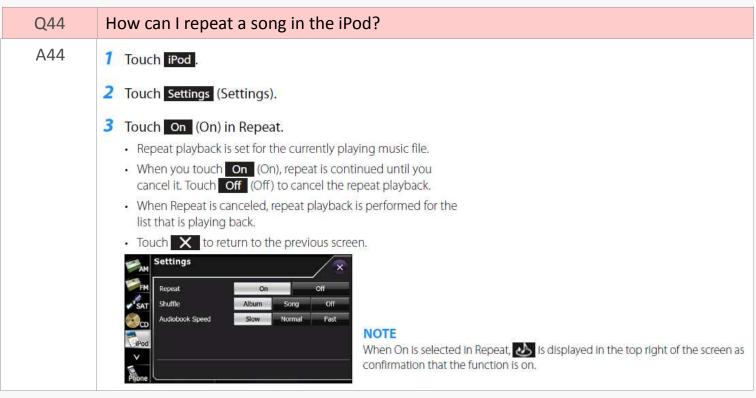


#### Q42 How do I know if the connected iPod is recognized by the Navigation unit?

Once your iPod is connected to the USB port and recognized by the Navigation unit, iPod icon will be highlighted.







#### Q45 How can I play music randomly with iPod?

#### A45 Playing files from the current list randomly

- 1 Touch iPod.
- 2 Touch Settings (Settings).
- 3 Touch Song (Song) in Shuffle.
  - When you touch Song (Song), random playback is continued until you cancel it. Touch Off (Off) to cancel random playback.
  - Touch X to return to the previous screen.



#### NOTE

When the list random function is selected, is displayed in the top right of the screen as confirmation that the function is on.

#### Playing albums randomly

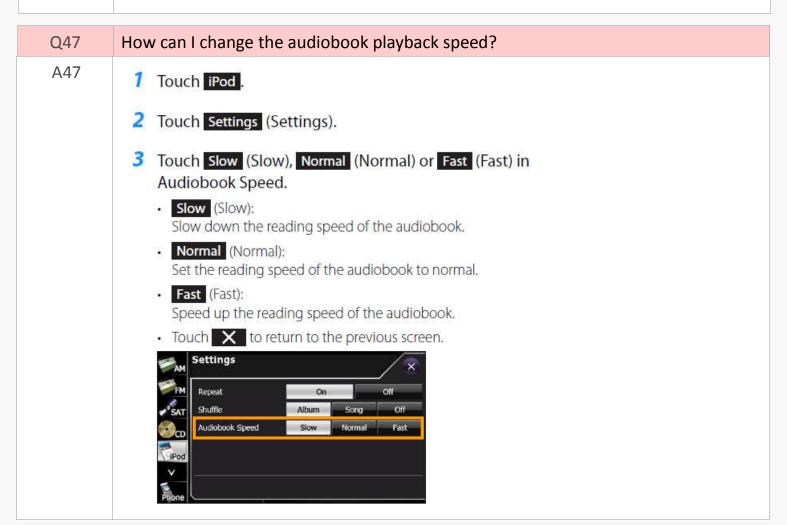
You can play albums randomly. Note that the music files within the albums are played in order from the first.

- 7 Touch iPod .
- 2 Touch Settings (Settings).
- 3 Touch Album (Album) in Shuffle.
  - When you touch Album (Album), random playback is continued until you cancel it. Touch Off (Off) to cancel random playback.
  - Touch X to return to the previous screen.

#### NOTE

When the album random function is selected, is displayed in the top right of the screen as confirmation that the function is on.

#### How can I play songs in "Shuffle Songs" mode with iPod? Q46 A46 You can play all the music files randomly. Touch iPod. Touch Shuffle Songs (Shuffle Songs). · When you touch Shuffle Songs (Shuffle Songs), random playback is continued until you cancel it. Album 01 Title 01 Artist 01 2' 51" 5" 22" Search When the all random function is selected, K is displayed in the top right of the screen as confirmation that the function is on.



48	Time	Generation	Firmware version or OS	
	Type IPod	5G	1.3	
iPod nano	750 000000 1990	1G	1.3.1	
	2G	1.1.3		
		3G	1.1.3	
		4G	1.0.4	
		5G	1.0.2	
	iPod classic	1G	1.1.2	
	IFOG Classic	2G (120 GB)	2.0.1	
		2009 (160 GB)	2.0.4	
	iPod touch	1G	IOS 3.1.3	
	IFOG LOUCIT	2G	105 3.1.3 105 4	
		Late 2009 (8 GB/16 GB)	105 4	
	iPhone	Late 2009 (32 GB/64 GB)	1OS 4	
		3G	IOS 3.1.3	
		1G (iPhone)	IOS 4	
	irrione	2G (iPhone 3G)	IOS 4	
		3G (iPhone 3GS)	1OS 4	
		iPhone 4	1OS 4	
19	Can pictures	or photography from the	e iPod be displayed on the Navigation	on uni
19	Pictures sto	red on the iPod cannot be	e shown on the display.	
50	Are Podcast	s supported in iPod mode	??	
50	Yes, but it may operate differently.			
51	Can I charge	my iPod with the Navigat	tion unit?	

# What profiles are required to listen to Bluetooth Audio? A2DP (Advanced Audio Distribution Profile) Ver. 1.0 or higher AVRCP (Audio/Visual Remote Control Profile) Ver.1.0 or higher (Ver. 1.4 or higher is recommended) NOTE The available functions may vary depending on the type of Bluetooth audio device.

# Q53 How many Bluetooth Audio devices can be registered to the Navigation unit? A53 Up to 5 devices.

#### Q54 How can I register my Bluetooth portable device to the Navigation unit?

A54

- 1 Press (AUDIO).
- 2 Touch Info.
  - If Info is not displayed, touch 🗸 .
- 3 Touch Bluetooth .



4 Touch Registered Devices (Registreted Devices).



5 Touch Add New (Add New).



- Operate the portable device to enter the passcode (passkey) of the unit.
  - · The name of the unit is CAR MULTIMEDIA.
  - The initial setting for the passcode (passkey) is 0000.
  - Operate the portable device while the Registered Devices screen is displayed.
  - <Registered Devices screen>



- 7 When the registration is complete, "Connection Completed" appears.
  - · The portable device registration is complete.
  - After the registration completed message is displayed, "Connection established successfully!" appears.

#### Q55 How can I connect my Bluetooth Audio device to the Navigation unit?

#### **A55**

You can connect portable devices that are registered on the unit.

- Make the preparations necessary for connecting to the unit, for example by setting the portable device's Bluetooth standby to On.
   For details of operations on the portable device, see the portable device's instruction manual.
- 1 Press (AUDIO).
- 2 Touch Info .
  - If Info is not displayed, touch V.
- 3 Touch Bluetooth .



5 Select the portable device that you want to connect.

 The Bluetooth mark is displayed for portable devices with an active Bluetooth connection.



Touch Connect (Connect).

· The connection screen appears.

4 Touch Connect Portable Player (Connect Portable Player).



- When the connection is complete, "Connection Completed" appears.
  - The connection between the portable device and the unit is complete.

#### NOTE

- If the connection fails, "Connection failed." appears on the screen. If this
  happens, perform the connection operation again.
- Connection is not possible if no portable devices are registered.
- On the Connect Portable Player screen, touch Add New (Add New) to register a portable device.

Q56	Q56 How can I play Bluetooth Audio?	
A56	Before playing Bluetooth Audio, please make sure your Bluetooth device has been registered and connected.  1 Press (AUDIC). 2 Touch  The playback starts on the connected portable device.  Talle of the playback does not start when you touch play button on the portable device.  Album, Title, and Artist name may not be displayed depending on the portable device type.	
Q57	Why iTunes downloaded music won't play in USB audio player?	
A57	USB audio player only supports MP3 and WMA music files and won't support AAC file from iTunes store.	
Q58	Can I play DVD movies?	
A58	No, unit won't play DVD movies, however video contents (DivX, Div, AVI, WMV, MP4, M4V) can be played using USB flash memory.	

# **MEMO**

#### **Others**

#### Q1 How can I play a picture Slide Show?

#### A1

Before inserting an SD memory card that contains image data, touch SD Eject (SD Eject) and remove the map SD card.

- Insert a different SD memory card that contains image data.
- 2 Display the picture operations screen.



#### Caution:

Do not add photo data on Map SD Card. It may damage the software file. Always use a different SD card to store photo data.

- Menu (Menu): You can display a picture list or set a slide show.
- Display the previous image.
  - **>>**

Display the next image.

- (or ):
  The slide show starts. Touch to stop the slide show.
- Start-up Screen (Start-up Screen):
   Register the displayed image data as the "Customized" opening screen setting.

#### Q2 How can I replace the Subaru Opening Screen with my own picture?

A2 You can register image data (1 picture only) imported from an SD memory card as the "Customized" opening screen setting.

- Insert an SD memory card that contains the image data.
- Display the image that you want to set and touch Start-up Screen (Start-up Screen).



- 3 "Are you sure to overwrite the start-up screen?" appears on the screen. Touch Yes (Yes).
  - The picture is registered as the "Customized" opening screen setting.

Q3	Do I lose the Subaru Opening screen once it is replaced with my own picture?
A3	No. You can select either the Subaru logo (default) or your picture as the Opening Screen.  1. Press "Audio" 2. Touch "Info" 3. Touch "Settings" In start up Screen, you can select "Customized (your picture)" or "Initialize (Subaru logo)"
Q4	Which picture format is required for a picture Slide Show?
A4	.jpg
Q5	What is the maximum number of pictures and image size allowed for a picture Slide Show?
A5	Up to 500 pictures and 10MB or less per file .
Q6	Can I watch a picture Slide Show while driving?
A6	No.
Q7	Can I view pictures that are stored on CD-R / DVD-R with the Navigation unit?
A7	No.

#### **Others**

#### How can I set or adjust the clock? Q8

Current time can be adjusted automatically using GPS signals or manually. **8**A



Touch Set (Set) in Time Zone.



- 1 On the Info screen, touch Settings (Settings). 3 Touch On (On) or Off (Off) in Auto Time Zone.
  - Touch On (On) in Auto Time Zone to set the time zone automatically.
  - When Auto Time Zone is "Off", touch or + in Manual Time Zone to adjust the time zone manually.
  - Touch + for 1 second or more to raise the time continuously.
    - Touch for 1 second or more to lower the time continuously.
  - · After configuring the setting, touch Done (Done) to save the setting and return to the previous screen.



#### How can I turn off the "Guide Tone (Beep)"? Q9

You can set the sound for button operations to on or off. A9

1 On the Info screen, touch Settings (Settings).



- 2 Touch On (On) or Off (Off) in Guide Tone.
  - If Guide Tone is not displayed, touch to change the page.
  - · When Guide Tone is set to "Off", button operations do not emit a sound.



#### Q10 What "Personal Data" will be deleted by touching "Delete Personal Data" button?

# You can delete the data items that you registered and return them to the factory default value.

#### Deleted personal data items

Item	Deleted data
Navigation	<ul> <li>Navigation settings</li> <li>Map display setting</li> <li>Route learning function</li> <li>Indication setting of facilities</li> <li>Current position</li> </ul>
Settings	Clock setting Language Setting Guide tone setting Skin pattern setting, Opening screen setting (including data registered in "Customized") Screen settings Day/night view changeover setting Voice recognition setting (including song data and phone book data) Display settings for the "SD Eject" caution screen
General audio	<ul><li>Volume setting</li><li>Sound quality setting</li><li>Screen setting</li></ul>
Radio	<ul><li>AM/FM/SAT preset channels</li><li>Parental Lock setting</li></ul>
Bluetooth audio	<ul> <li>Bluetooth audio registered data</li> <li>Settings and edited items related to Bluetooth audio</li> </ul>
Handsfree	<ul> <li>Phone book data</li> <li>Outgoing call history and incoming call history</li> <li>Speed Dial data</li> <li>Bluetooth phone registered data</li> <li>Unread messages and read messages</li> <li>Reply Messages list</li> <li>Settings and edited items related to handsfree messages</li> </ul>

#### How to delete personal data

- 1 Touch Info.
  - If the Navigation screen is displayed, change to the Multi screen or Audio operations screen before performing this operation.
  - If Info is not displayed, touch 🗸 .
- 2 Touch Settings (Settings).



3 Touch Delete Personal Data (Delete Personal Data).



- 4 Touch Delete (Delete).
  - Touch Do Not Delete (Do Not Delete) to cancel the Delete Personal Data.



5 Touch Yes (Yes).



#### NOTE

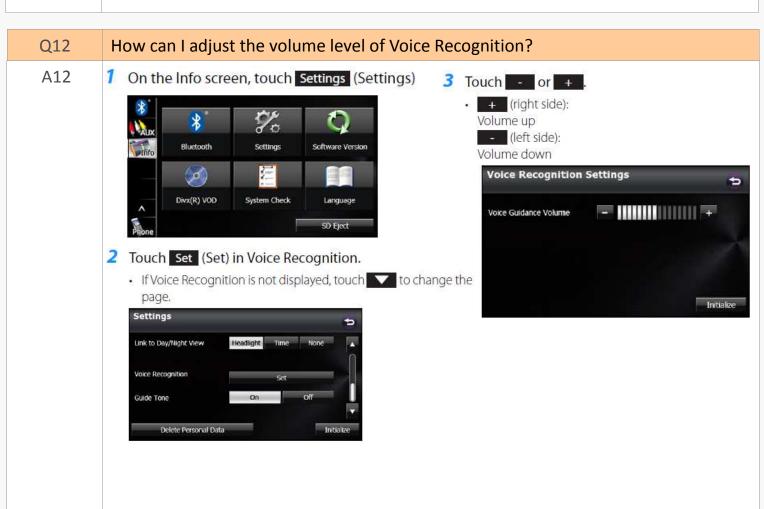
Once the information (data) is initialized (deleted), it cannot be restored. Be very careful when performing initialization.

#### **Others**

#### What items will be initialized by touching the "Initialize" button?

A11 Settings of Skin Pattern, Start Up Screen, Clock, Time Display, Time Zone, Link to Day/ Night View, Voice Recognition and Guide Tone will be reset to the factory default.





Q13	How can I check the Software (Navigation & Audio) version?
A13	<ol> <li>Press "Audio"</li> <li>Touch "Info"</li> <li>Touch "Software version"</li> </ol>

# 3. Touch "Software version" How can I check the system conditions (GPS, Parking Brake, Reverse signals)? 1. Press "Audio" 2. Touch "Info" 3. Touch "System Check" System Check GPS 4 Parking Brake On Reverse Off

Q15	Can I make a back-up copy of the MAP SD card and restore the content to another SD card?
A15	No. Back up is not authorized and is not possible.

# 4. Glossary

# [A] - [M]

#### [ Alphabetical Order ]

Term	Definition
Aha	Aha is a comprehensive "automotive grade" cloud platform, providing automotive manufacturers a single integration point to bring the widest range of current and future Web infotainment content safely into their vehicles.
	venicles.
AUX	AUX (Auxiliary input port) is an analog audio connector, which has a 3.5mm audio jack.
Bluetooth (B/T)	Bluetooth is a high-speed wireless data communication system that uses the 2.4 GHz frequency band prescribed by the Bluetooth SIG (Special Interest Group), with communication at a speed of up to 1 Mbps. Bluetooth is a trademark owned by Bluetooth SIG, Inc.
Copy-control CD Label Gate CD	This refers to music data that is encoded to prevent saving, alteration, or storing of music data on a computer or other electronic device.  Copy Control CDs and Label Gate CDs are labeled with the following symbol.  Before using, be sure to refer to information that comes with the product.
DivX	DivX is a brand name of products created by DivX, Inc., including the DivX Codec which has become popular due to its ability to compress lengthy video segments into small sizes while maintaining relatively high visual quality.
Green route	Searches for the route that conserves the most energy, taking into account the merits of "Fast" and "Short".
GPS (Global Positioning System)	GPS is positioning system that utilizes satellites traveling at high speed along a 21,000 km orbit. These satellites emit electromagnetic waves that allow the longitude, latitude and height of a given position to be identified.
HD radio	HD Radio, which originally stood for "Hybrid Digital", is the trademark for iBiquity's in-band on-channel (IBOC) digital radio technology used by AM and FM radio stations to transmit audio and data via a digital signal in conjunction with their analog signals.  Note: HD Radio service available in USA only (as of May 2013)
iPhone	iPhone is a smartphone designed and marketed by Apple.
iPod	iPod is a portable media player designed and marketed by Apple.
MP3	MP3 is short for MPEG Audio Layer 3, and is a standard format for audio compression technology.  MP3 compresses sound data to eliminate sounds that are outside the range of human hearing, allowing the original file to be compressed to 1/10th their size.

# [N] - [S]

Term	Definition		
Navigation System	Navigation system is capable of containing map data, determining a vehicle's location and providing suggested direction.		
NAVTEQ	Navteq is a Chicago, Illinois-based provider of Geographic Information Systems data and is a dominant company in providing the base electronic navigable maps. The company is a wholly owned subsidiary of Nokia but operates independently.		
MP4	MP4(MPEG-4) is a multimedia container format standard specified as a part of MPEG-4.		
PKB-SIGNAL (Parking Brake- Signal)	This is a signal that activates when the parking brake is on.		
Positioning	Vehicle position can be obtained when information is received from 3 or more GPS satellites.		
REV-SIGNAL (Reverse-Signal)	This is a signal that activates when the shift lever is put into Reverse.		
Satellite radio	Satellite radio is an analogue or digital radio signal that is relayed through one or more satellites and thus can be received in a much wider geographical area than terrestrial FM radio stations.		
SD	SD (Secure Digital) is a non-volatile memory card format developed by the SD Card Association for use in portable devices.		
SMS	SMS (Short Message Service) is a text messaging service component of phone, web, or mobile communication systems, using standardized communications protocols that allow the exchange of short text messages between fixed line or mobile phone devices.		
SPD-SIGNAL (Speed-Signal)	This indicates the vehicle speed pulse signal generated by movement of the vehicle.		
SACD (Super Audio CD)	A high-quality audio disc standard that utilizes the DSD (Direct Stream Digital) format. This format enables digital recording in a form extremely similar to analog waves of the original.		

# 4. Glossary

# [U] - [number]

Term	Definition
USB (Universal Serial Bus)	USB is a specification to establish communication between devices and a host controller. USB flash drive consists of a flash memory storage device integrated with a USB 1.1 or 2.0 interface.
WMA (Windows Media Audio)	WMA is an audio data compression technology developed by Microsoft.
WMV (Windows Media Video)	WMV is a video data compression technology developed by Microsoft.
XM	XM Satellite Radio is one of two satellite radio services in the United States and Canada, operated by Sirius XM Radio.
2-dimensional and 3-dimensional posi- tioning	GPS calculates position based on a three-point system. Distance from the first satellite is first calculated, and then current position is calculated using information received from three satellites. Even if signals are received from 3 GPS satellites, only latitude and longitude can be measured, giving 2-dimensional positioning. This results in lower accuracy. When information can be obtained from 4 satellites, latitude, longitude, and height measurements can be obtained for 3-dimensional positioning. This is more accurate than 2D positioning, and results in a decreased occurrence of vehicle positioning errors.

