ATTENTION:

GENERAL MANAGER ❏
PARTS MANAGER ❏
CLAIMS PERSONNEL ❏
SERVICE MANAGER ❏

IMPORTANT - All Service Personnel Should Read and Initial in the boxes provided, right.

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QUALITY DRIVEN® SERVICE

SERVICE BULLETIN

APPLICABILITY:	2020 Outback & Legacy	**NUMBER:** 15-270-20R
SUBJECT:	FOTA (Firmware Over-The-Air) Reprogramming for DENSO Gen 4 Audio / Navigation Infotainment Systems	**DATE:** 8/19/2020 **REVISED:** 10/11/2021

INTRODUCTION:

This bulletin provides instruction for use of a new reprogramming procedure to optimize the Denso Gen 4 Audio and Navigation system utilized in the models listed above. Firmware-over-the-air (FOTA) is a process where remote devices can receive updates to their operating firmware. This process has become second nature with smartphones, tablets and many other connected devices. FOTA for automotive infotainment systems was designed with an emphasis on customer convenience. FOTA updates provide regular enhancements along with software patches as needed to enhance the customer experience. The convenience factor comes not only with the supply of regular updates and the enhancements they provide, but through customer control of when these updates are downloaded and installed. The only requirement is a secure Wi-Fi connection through a home network or the use of a secure Wi-Fi hotspot to create a connection to the update server. Once connected, customers can easily obtain and install any available FOTA update to their infotainment system. This bulletin will focus on FOTA for Denso Gen 4 audio systems (MID) and audio-navigation systems (HIGH) which utilize the 11.6-inch touch-screen display. Models with 7-inch dual screen display (Base) are not FOTA capable.

This bulletin outlines the procedure for performing FOTA updates successfully. These procedures involve:

- Assisting customers with FOTA -related concerns if they have been unsuccessful in performing the FOTA by themselves. (Possible vehicle or system concern.) *

- Performing the FOTA update for customers who are not comfortable or need assistance with performing it themselves but have requested the Retailer install it*

- Updating the firmware using a USB flash drive by following the steps outlined in TSB 15-261-20R "Reprogramming File Availability for Optimization of Gen 4 Denso CP1 Infotainment Systems" when FOTA cannot be performed due to the setup difficulties*.

* NOTE: If a customer is simply requesting help with how to perform FOTA, NEVER share a copy of this bulletin. Instead, provide a copy of the appropriate customer instructions for FOTA available on Subarunet: Service Operations & Technical > Forms/Downloads page. See **Appendix A** later in this bulletin for more information.

Continued...

It is **VERY IMPORTANT** to read and understand this information completely **before** proceeding.

NOTES:

- **REMINDER:** FOTA is available for MID and HIGH (Navi) systems with 11.6-inch display only.

- The currently available FOTA firmware version is not the same version available to Retailers for USB updating use. However, a system updated using FOTA can be further updated by using the USB update procedure. For additional details clarifying the scope of FOTA updates, review the 20MY Legacy/Outback Owner's Manual Supplement's additional information for the Center Information Display. The information is also be downloadable from: https://www.subaru.com/owners/index.html See **Appendix B** below for more information.

- FOTA updates are for the system firmware ONLY. Map updates are a separate function which the customer may update on their own by using either USB download or Map Over the Air Update (MOTA). Go to: subaru-maps.com for more information.

Reference photos of each system faceplate are supplied below:

SERVICE PROCEDURE / INFORMATION:

REMINDER: Customer satisfaction and retention starts with performing quality repairs.

The FOTA update process involves downloading and installing the update firmware therefore, time duration depends on signal strength and transfer rate performance. During installation, the infotainment system's functionality will be restricted.

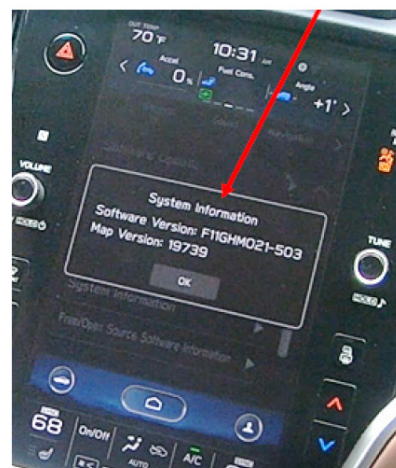*Continued...*

Set-Up Instructions and CAUTIONS:

- Move the vehicle to an outside location where the engine can be safely started and kept idling during the update process.

- Never idle the vehicle in a closed space such as a garage, even if the garage door is kept open.

- Once the vehicle is in a safe location, be sure the vehicle is in Park (CVT) or Neutral (MT) and the parking brake is fully engaged.

- Open one or more windows to ensure fresh air is available.

- **Stay with the vehicle** until the update is completed.

- We suggest adjusting the climate controls to your desired settings in case they become unavailable during the update process.

- Unplug any devices, chargers, cables or other USB drives from the vehicle's USB and power ports.

VERY IMPORTANT: Before proceeding with the updating procedure, the currently installed version ID MUST be confirmed (Firmware Version Check) by following the steps below:

1) After starting the engine and system boot-up completes, from the HOME screen, touch the Settings button.

2) Press the **General** button. Use the down arrow to scroll to **System Information** then press to display the System Information / Version information.

<div align="right">Continued...</div>

The examples below identify the head unit model and the last 6 digits 9xxx-xxx) signify the software version number. Examples:

• F11G<u>H</u>Mxxx-xxx (**<u>HIGH</u>** model software)

• F11G<u>M</u>Mxxx-xxx (**<u>MID</u>** model software)

If the software version number is **020-501, 020-502 or 021-503** proceed to **STEP 2** below. If the software version is **020-704, 021-704 or 022-504 <u>STOP</u>** as the unit already has the latest software version installed. Proceed to the WARRANTY / CLAIM INFORMATION section of the TSB and process a claim for Version Check Only.

FOTA REPROGRAMMING PROCEDURE

Step 1- Connect the vehicle Subaru to an active, secure Wi-Fi connection:

•   You can use one of two Wi-Fi sources:

    1. The retailer's secure Wi-Fi (if it reaches the vehicle)
   **2.** A cellphone's Wi-Fi hotspot (if the phone and data plan are capable).

NOTE: This update uses at least 100MB of data so, choose a Wi-Fi connection with no data restrictions. Wi-Fi connections requiring acceptance or login to a web page (such as a coffee shop or hotel) cannot be used.

•   To connect to the preferred Wi-Fi source, follow these steps:

   **1.** Go to **Settings** on vehicle display screen.
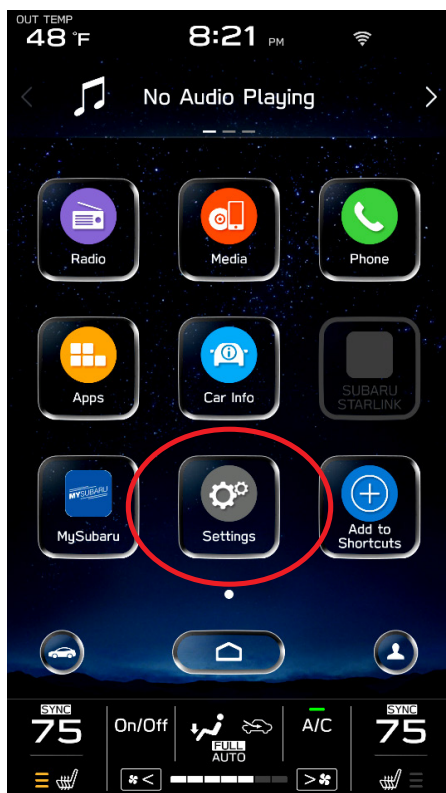
2. Select **General**.

3. Select **Wi-Fi**.

4. Ensure Wi-Fi is turned on and then select **Available Wi-Fi Networks**.
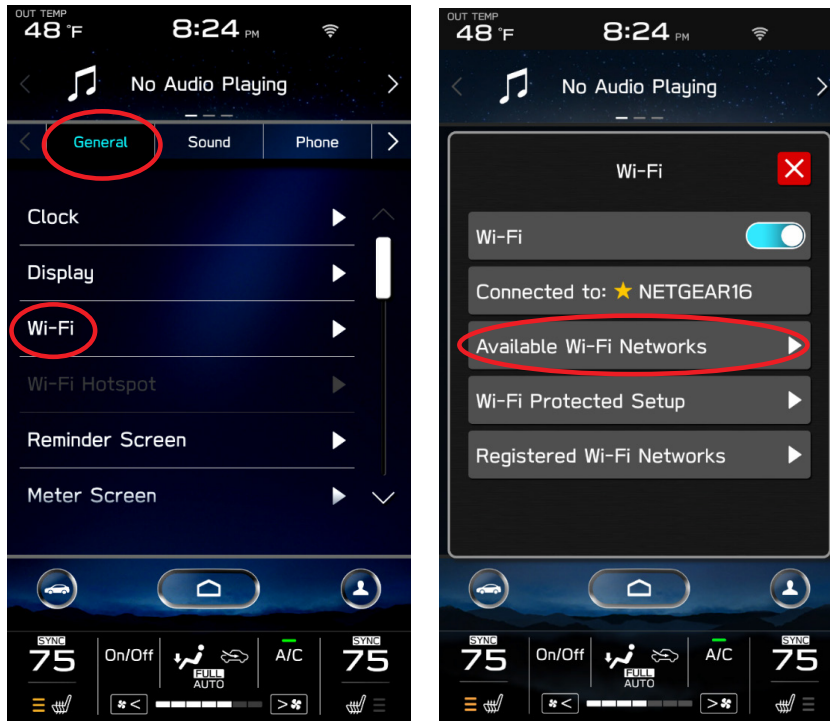
5. Select the Wi-Fi network of choice (and enter the password if required).

NOTE: Take note of the Wi-Fi signal strength in the top right corner of the screen. If only 1-2 bars are displayed with the selected network, download speeds will likely be slow. Choose a stronger network if possible or move the vehicle closer to the Wi-Fi source.
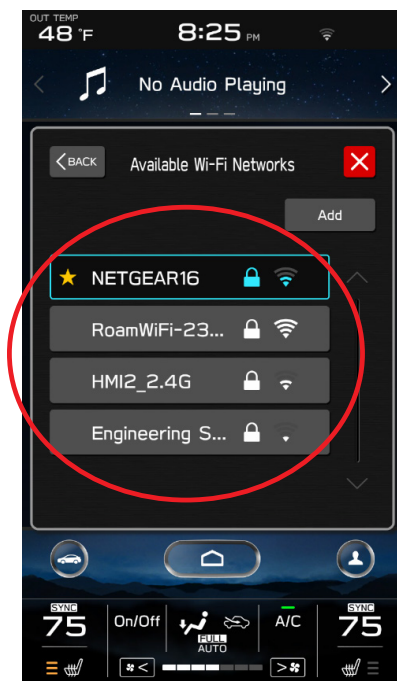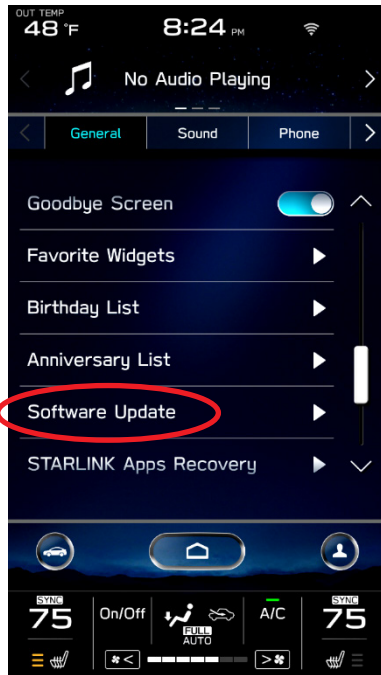

NOTE: See **Appendix C** for troubleshooting tips in case an error is displayed.
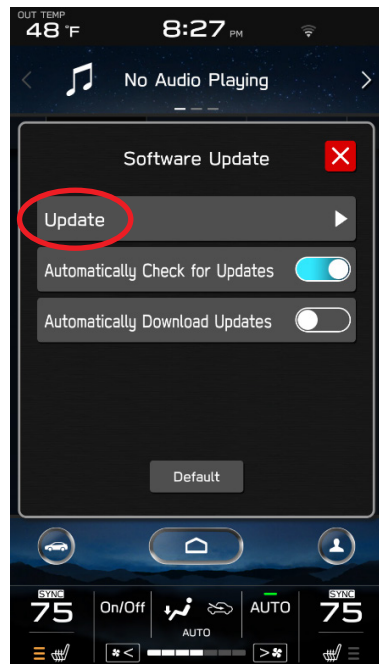
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STEP 2– DOWNLOADING AND INSTALLING UPDATES

1. Next, update the STARLINK system.

2. Go back to the **General** screen under **Settings**,
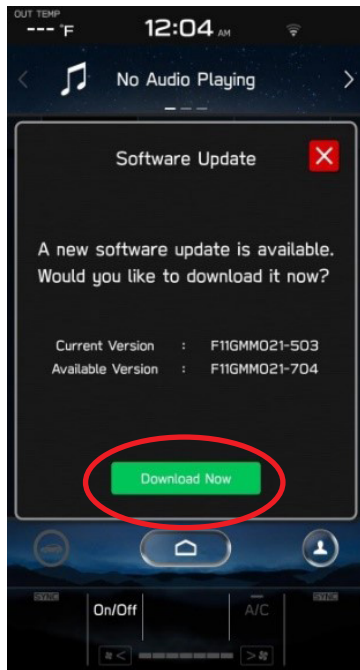
3. Scroll down and select **Software Update**.

> **NOTE:** At this point, the user can choose to enable "**Automatically Check for Updates**" and "**Automatically Download Updates**" so in the future, the vehicle will advise the customer when an update is available.
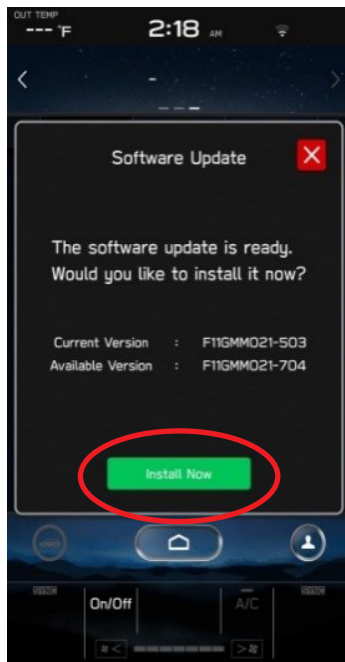
4. For this update procedure, select **Update**.

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5. If an update is available, select **Download Now**.

Once the download is complete, **it is recommended to adjust the climate controls to the desired settings** in case they become unavailable during the update process.

6. When ready, select **Install Now**.

7. The install process can take up to 30 minutes.

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IMPORTANT: Once complete, the below pop up will be displayed. Press OK then, switch the vehicle OFF, exit the vehicle, lock all doors including the rear gate (if equipped) and **move the key fob away from the vehicle at least 10 feet to enable affected systems to go to sleep. WAIT AT LEAST 5 MINUTES before proceeding to 8. below.**
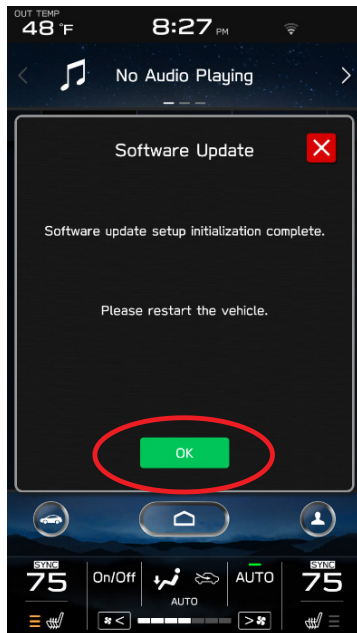
8. After 5 minutes, restart the vehicle. A "**software update complete**" message should be displayed signifying the successful update is now complete. If this message is not displayed, try switch the car OFF again and waiting another 5 minutes before restarting.
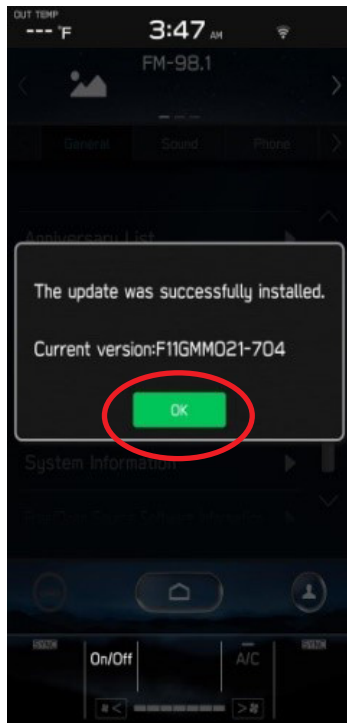
9. Switch the engine OFF then open the driver's door to turn the system off and complete the procedure.

NOTE: See **Appendix C** below for troubleshooting tips if any errors are encountered.

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WARRANTY / CLAIM INFORMATION:

For vehicles within the Basic New Car Limited Warranty period or covered by an active Subaru Added Security Gold plan, this repair may be submitted using the following claim information:

| Labor Description	Labor Operation #	Labor Time	Fail Code
DENSO CP1 VERSION CHECK ONLY	A031-178	0.2	ZTZ-48 (MID)
DENSO CP1 FOTA / USB UPDATE	A031-173	0.6	ZTZ-48 (HIGH)

IMPORTANT REMINDERS:

• SOA strongly discourages the printing and/or local storage of service information as previously released information and electronic publications may be updated at any time.

• Always check for any open recalls or campaigns anytime a vehicle is in for servicing.

• Always refer to STIS for the latest service information before performing any repairs.

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Appendix A

Links to Customer self-install instructions for FOTA Customer Instructions will be added to the Subarunet Service Operations & Technical > Forms/Downloads page when they become available. Once the links are available and to enhance customer satisfaction, consider providing customers with a copy of the appropriate instructions for their specific system along with access to the retailer's secure customer Wi-Fi network. Doing so will enable customers to try performing the FOTA update on their own while at the retailer.
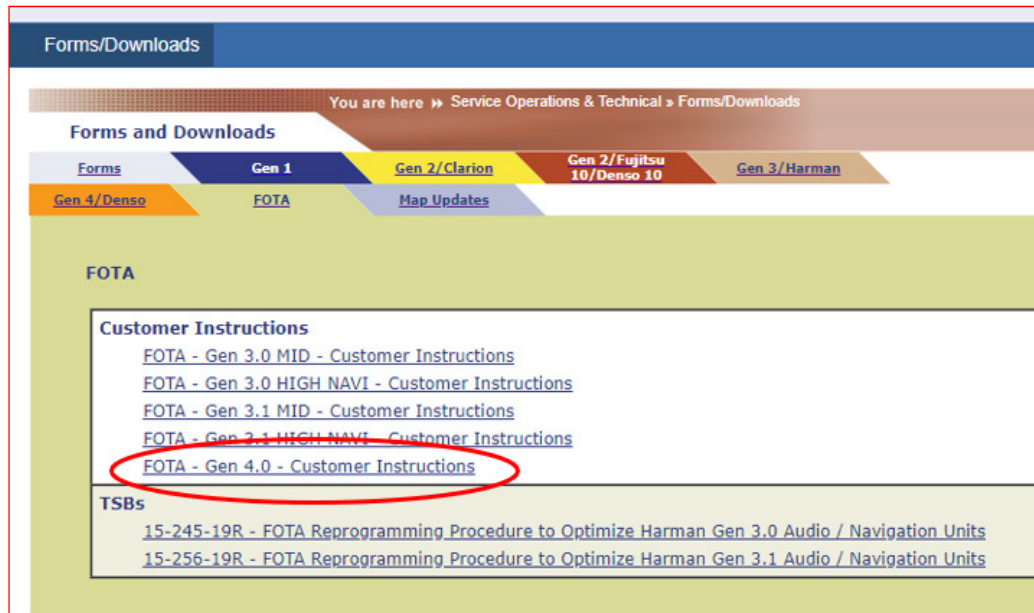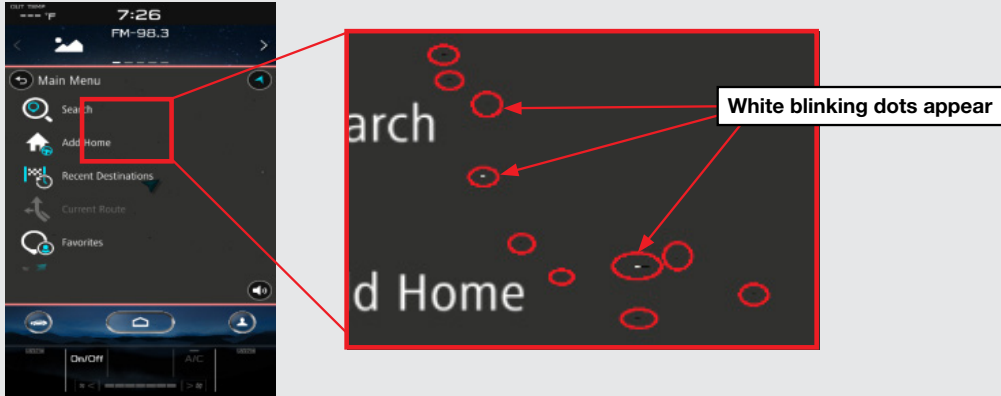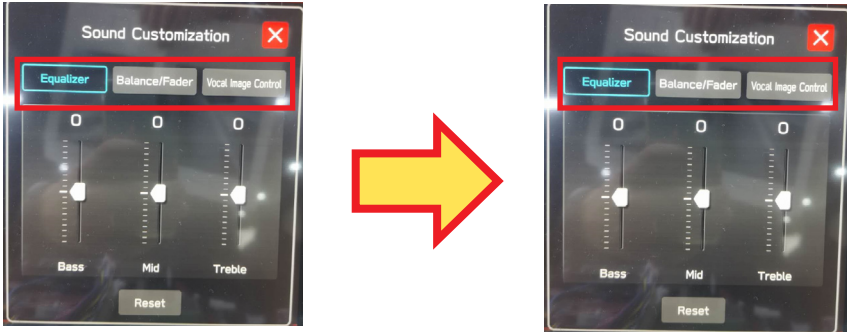

REMINDER: Retailers performing these updates are to follow the Service Procedures outlined in this bulletin ONLY. Always follow the applicable service procedures as outlined in this and other Service Bulletins. The additional steps and requirements supplied in Service Bulletins support a Subaru Technician's proper diagnosis and repair of any customer concern.
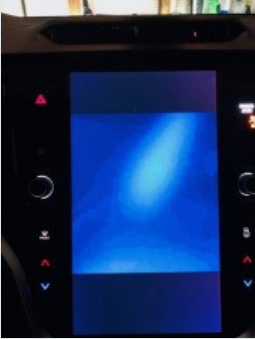
Appendix B

The currently available FOTA software version is not the same version available to Retailers for USB updating use. However, the system which has been updated via the FOTA can be further updated using USB update. To clarify the differences, both the USB contents and FOTA contents are described together in the list below. USB update is including all items and those items included only in the USB (but not in the FOTA) updates are described as "USB ONLY."

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List of Conditions, Symptoms and improvements Addressed By Version. 2.0
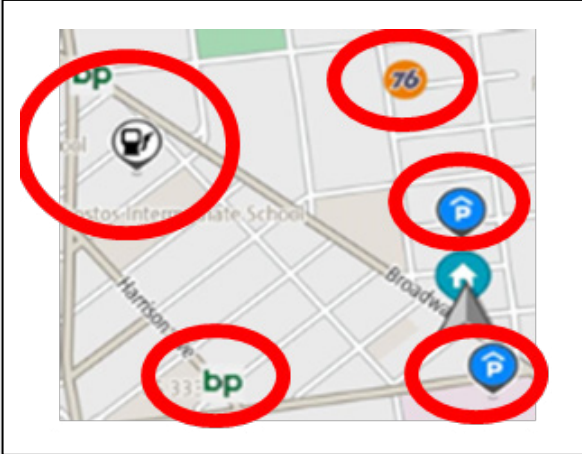
No.	Symptom to be improved	FOTA
1	Several minutes after Engine start, Center Information Display (CID) reboots itself	Yes
2	After extended usage, white blinking dots appear on the display. 	USB ONLY
3	The screen freezes or becomes blank (black screen,) after a CD is inserted. This symptom occurs when a CD with over 99 characters of Artist Name Data is used.	Yes
4	CID is rebooted. In case the system was shut down with the SMX being selected as an audio source previously, the CID is rebooted after the next start up.	Yes
5	SXM does not resume playing instantly. In case the system was shut down with the SMX being selected as an audio source previously, the SMX does not play instantly after the next start up. (It takes more than 20 seconds until the SMX resumes after the opening screen has appeared, whereas it takes approx. 5 seconds normally.)	Yes
6	Radio station does not resume playing. In case the system was shut down with the Radio being selected as an audio source previously, the sound does not come back at the next start up. Once the audio source is changed to SXM, the SXM plays normally but, if it is changed back to the Radio, the sound does not still come back.	Yes
7	Equalizer setting returns to default setting. After ignition switch is turned Off and ON, the equalizer returns to default setting. 	Yes

Continued...

8	The media source cannot be changed. Even if the \<Radio\> or the \<Media\> is selected, the media source does not change. Also, voice recognition stops functioning at the same time. It occurs when the volume setting is continuously changed during the specific process of booting the CID.	USB ONLY
9	Navigation screen goes blank (black screen) after disclaimer display. In case the system was shut down with the Navigation map being displayed, the Navigation goes to blank (black screen) soon after the disclaimer has been displayed.	Yes
10	CID repeats rebooting. After setting a destination on the Navigation system, the CID repeats rebooting.	Yes
11	CID rebooting while using CarPlay. Using Pandora App via CarPlay, the CID is rebooted.	Yes
12	Bluetooth cannot be reestablished (on certain smart phones.) With Android Auto the Bluetooth connection cannot be reestablished automatically once it is disconnected (depending on smartphone device.)	Yes
13	CarPlay connection cannot be established. When connecting iPhone via USB, "CarPlay Unavailable" is displayed and the CarPlay does work.	Yes
14	HOME screen goes to blank When the screen is switched from Camera mode to HOME, no item is displayed (as shown in the photo.) 	USB ONLY
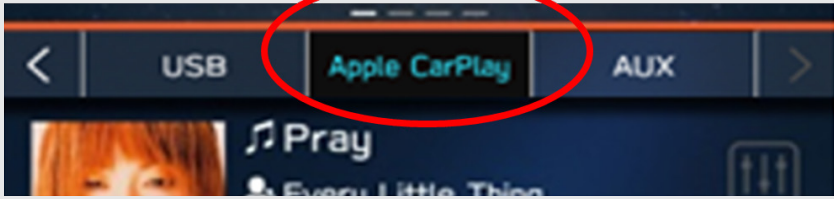
List of New Functions and Improvements Included In Version 2.0

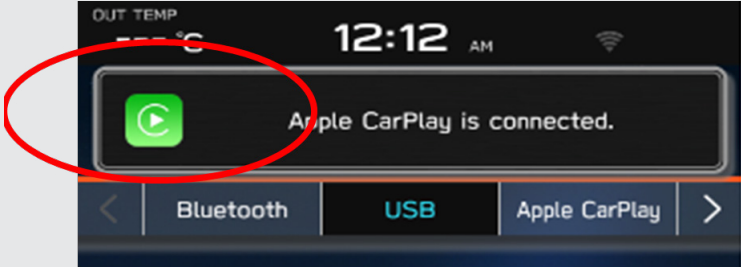| No.	New Function / Improvement:	FOTA
1	The last time customized map orientation setting is memorized even with ignition off/on. Once the customer changes the orientation setting of the map, the system automatically resumes the setting even after the ignition has been turned off/on.	Yes

Continued...

2	Pin display of POI is available. 	Yes
3	In the 2D and 3D HU display mode, the own vehicle position icon on the Navigation map is easier to be recognized. Icon size: 9mm(0.35in) <instead of 7mm(0.28in)> Icon color: Dark blue <instead of Blue> Icon position (with route guidance): The icon stays at the same position as that without route guidance. The position is located 9mm(0.35in) higher than that of previous version. Icon position (without route guidance): The icon stays at the same position as that with route guidance whereas the previous version icon was displayed lower position than that with route guidance.	Yes
4	ISS (Auto start stop) button is moved to upper layer in the Car Setting menu. By touching the "Car Setting" icon, Auto Start Stop setting menu and the Cruise Control Acceleration Characteristics selection menu can be accessed immediately, whereas the previous version needed to select "Others" in the Car Setting screen to access these menus. 	USB ONLY

Continued...

5	HVAC control buttons of base grade are displayed larger and easy to see. 		USB ONLY
6	Time zone and Summertime are automatically selected. Default setting of clock setting is Auto (Time zone is changed according to the vehicle location, and the Summertime is automatically set according to the calendar)		Yes
No.	**New functions and improvement**		**FOTA**
7	Direct selection of clock setting. Clock setting can be selected by touching the clock display in the status bar.		Yes
8	Hold displaying Album Art even with vehicle in motion. The Album Art that is displayed whenever music is played on the audio system keeps displaying even after the vehicle is in motion (the speed signal is inputted.)		Yes
9	CarPlay screen is extended to full screen. CarPlay screen is expanded from half size (horizontal) to full screen (vertical.) 		Yes
10	Add new CarPlay or Android Auto tab to Music screen When using CarPlay or Android Auto, "CarPlay" or "Android Auto" tab will appear on the Media tab bar. By selecting this tab, music data and metadata can be browsed. 		Yes

Continued...

11	<Turn by Turn> is added to information and meter. When using route guidance with CarPlay navigation, <Turn by Turn> descriptions will be displayed both in the Information bar of CID and in the MID located in the center of the combination meters.	Yes
12	Direct select CarPlay button is available in the Information bar. Buy touching the CarPlay button located in the upper part of CID, the CarPlay menu can be accessed easily. 	Yes
13	CarPlay connection status can be retained even after Ignition off/on. In case the system was shut down with the CarPlay being connected previously, the system automatically resumes the connection at the next start up.	Yes
14	Improvement in the <Siri> Voice Recognition The starting of <Siri> Voice Recognition function can be ready faster.	USB ONLY
15	Gracenote database update Up to Nov 2019 database	USB ONLY
16	1. Sirius XM Smart Favorites menu has been removed from SiriusXM Settings 2. Going forward, the first 10 set Sirius XM presets are now smart favorites by default 3. Smart favorite channel has "star" added to the preset button	USB ONLY

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Appendix C

TROUBLESHOOTING:

1. **What if a secure Wi-Fi connection cannot be established?**

   Tips:

   a. Go back to **Step 1** instructions in this document and confirm correct information is being used for the following items:

      i. Wi-Fi device name (SSID)
      ii. Wi-Fi password

   b. Confirm user has not reached the maximum allowance for the number of connected devices
   c. Confirm Wi-Fi signal is strong
   d. Confirm other devices can be connected to the Wi-Fi network being used.

2. **What if the server response error message below displays when downloading the update?**

   Tips:

   a. Check the internet connection to ensure it is active and shows full signal strength.
   b. Try moving the vehicle closer to the WiFi source or if not possible, try a different WiFi connection such as a mobile hotspot.

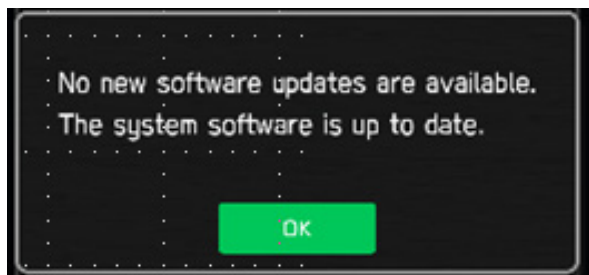3. **What if the below "Connection failed" error message appears before downloading the update?**

   Tips:

   a. Follow Tips from Item 1 above.
   b. Change "Wi-Fi" to Off then back to On. This setting is found under the General tab on "Settings" screen.

4. **What if the system says the system is up to date when checking for updates?**

Tips:

a. Go to Settings, General, System Information. If the version shows <mark>F11GMM021-704</mark>, or, if the last six digits are any of the following: 020-704, 021-704 or 022-504, the system is already up to date.

b. If this version is not shown, ensure the clock time is correct.

5. **What if the "Progress Bar" does not progress for a long time after selecting "Download" or the screen shows the "Connect to Wi-Fi" pop-up when downloading?**
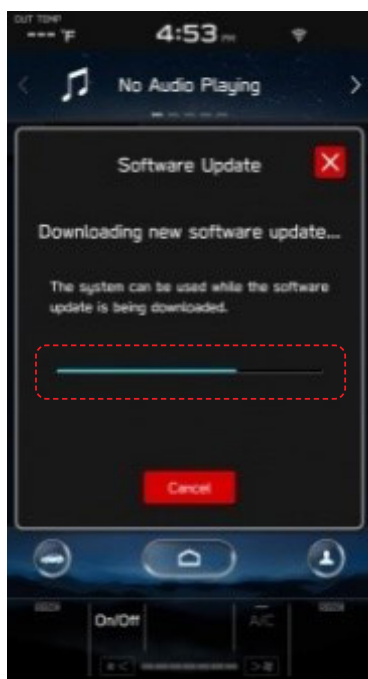
Tip:

a. Reconnect to Wi-Fi device by following the instructions provided in **Step 1** above.