Quick Start Guide: Post Installation Setup
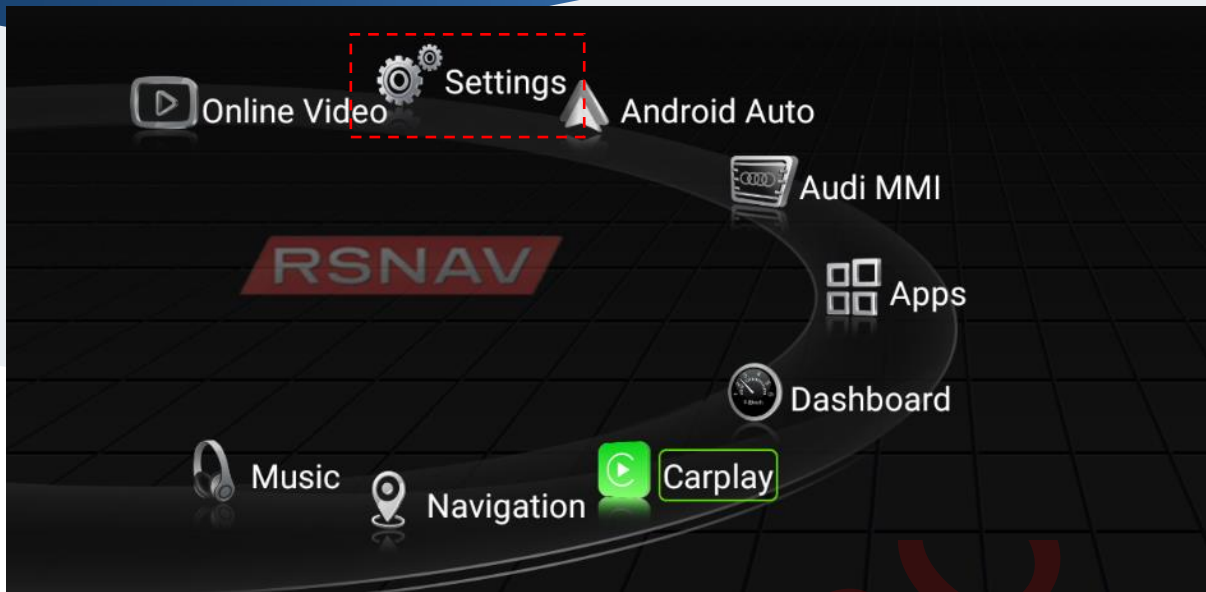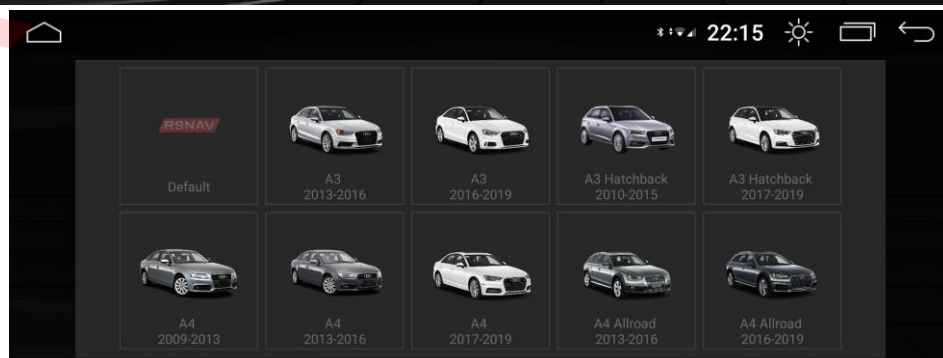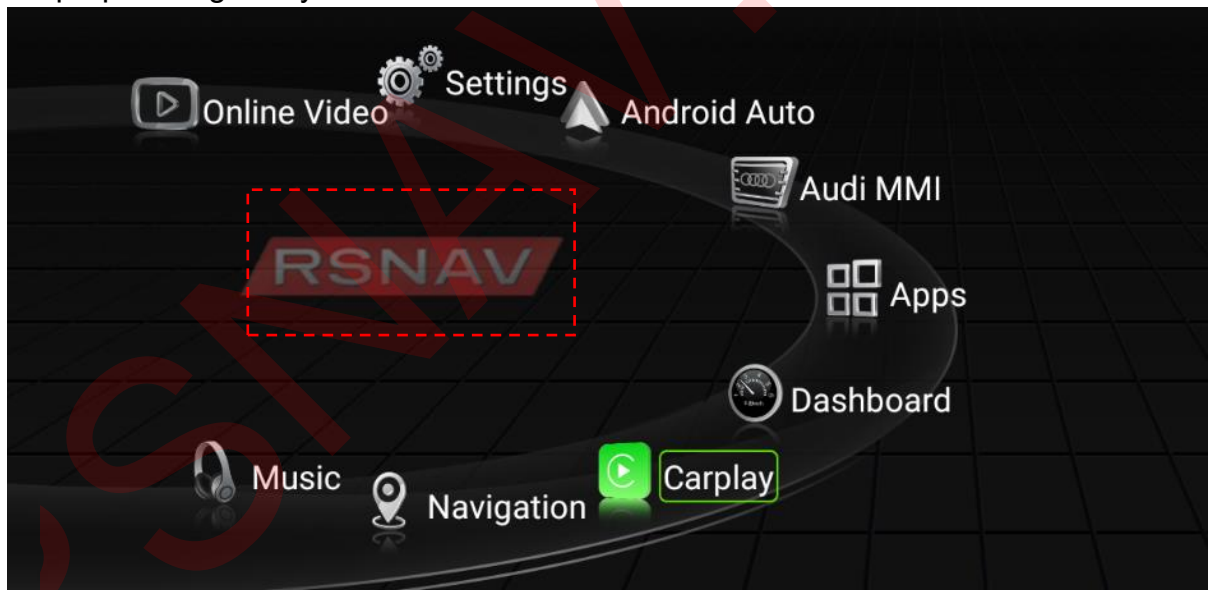

A. Go to 'Settings'→'System'→'Factory Settings' →Password '1314' → Car model **Choose right car model for your vehicle**.

B. Press RSNAV logo and hold until a car image gallery appears and select proper image for your vehicle.

C. Some main menu icons(marked below + Video)are customizable.
Press and hold the icon until a app gallery popup appears.

Choose a desired app to associate with the icon. Click once for execute the app.
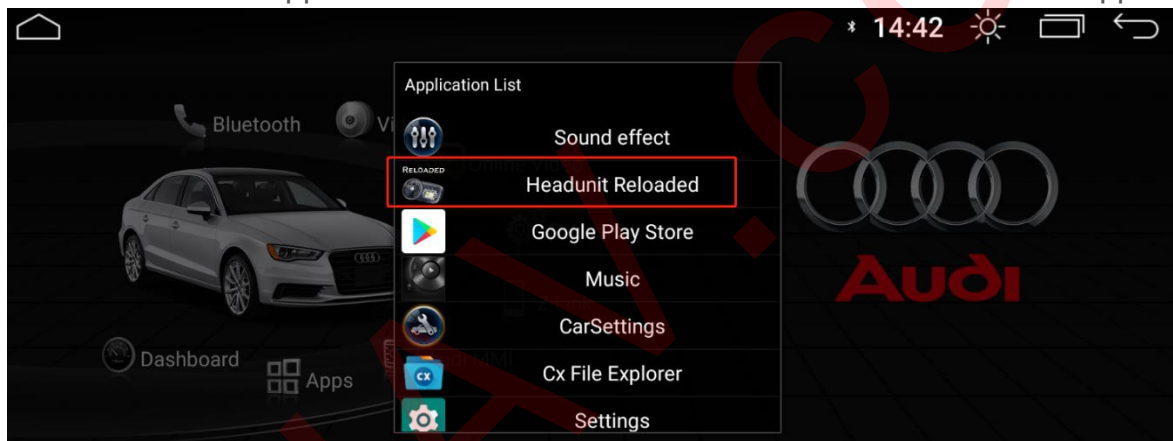
User Manual

1. Main User Interface

 Home button: bring the interface back to the main user interface.

 Light Off: Turn on a black background screensaver with simple digital clock.

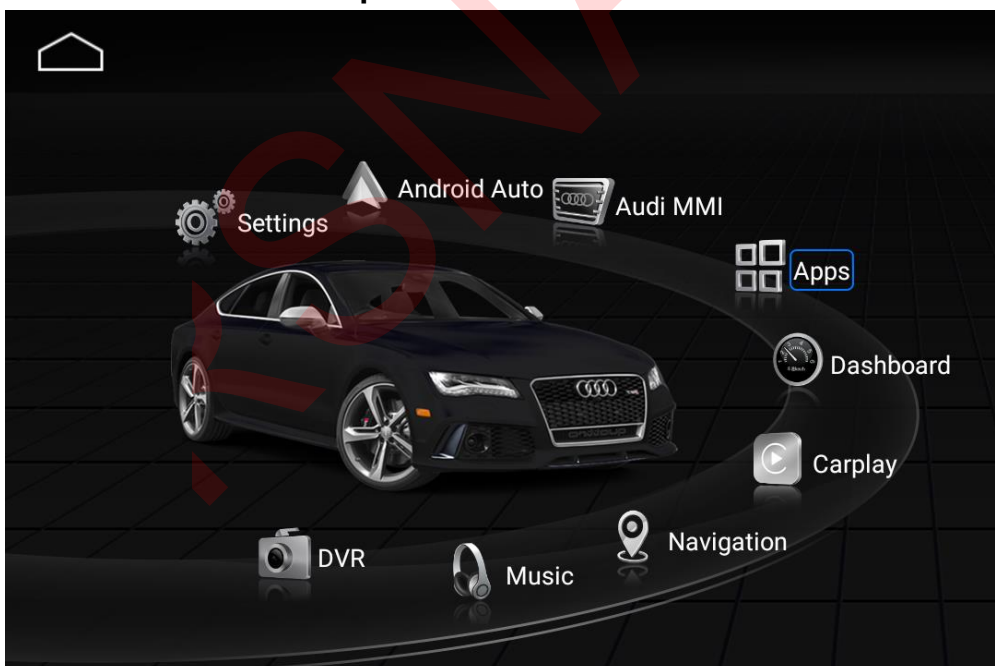 **Recent apps: Show recently used apps. Also, used for split screen feature**

 Back button: bring the app/interface back to previous activity.

A. Function icon explanation

- **Settings: S3 device related settings – also known as Car Settings under Apps.**
  Android Auto: Runs Android Auto receiver service – a.k.a 'Headunit Reloaded',
 **Customizable.**

- **Audi MMI: Show Audi factory interface. Access factory radio, Sirius XM, oil gauge here.**
- **Dashboard: Virtual dashboard displaying RPM, Speed, Fuel Capacity, Outside temp.**
- **CarPlay: Runs Apple Carplay receiver service – a.k.a 'Z-Link'**
- **Navigation: Runs navigation app of your choice. This icon starts Google Maps in 'Driving mode' by default if Google Maps is assigned. Customizable.**
- **Music: Runs music player app of your choice. Customizable**
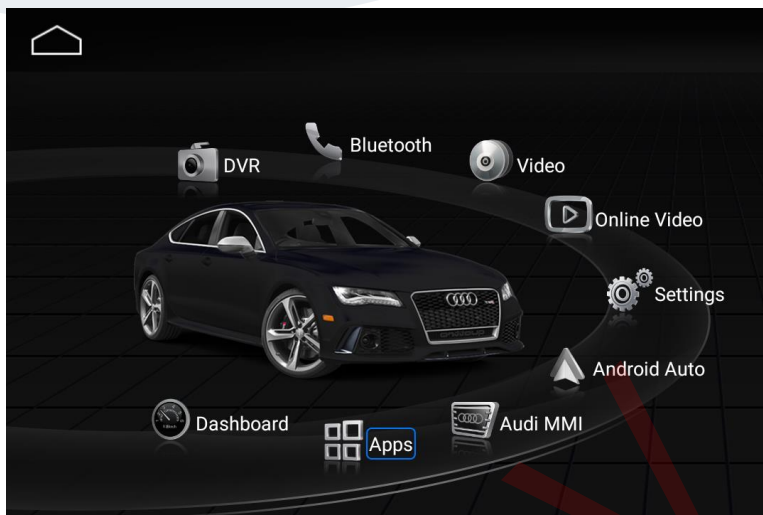
- **Bluetooth: Runs RSNAV Bluetooth app if set for Android under the settings. It will run Audi original Bluetooth interface if set for Audi under the settings.**
- **Video: Runs video player app of your choice. Customizable.**
- **Online Video: Runs online streaming service of your choice. Intended for YouTube. Customizable.**
- **DVR: Runs front camera video display if set for CVBS, AHD in settings. Runs ADAS app if set for ADAS under settings. ADAS feature requires 'USB ADAS Dashcam'(sold separately).**
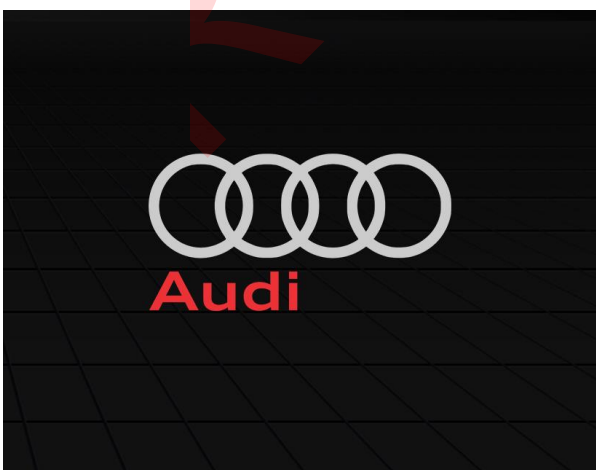
This area is not in use for now. In future, RSNAV is planning to allow Android widgets are running in this area.

B. Swipe down menu.
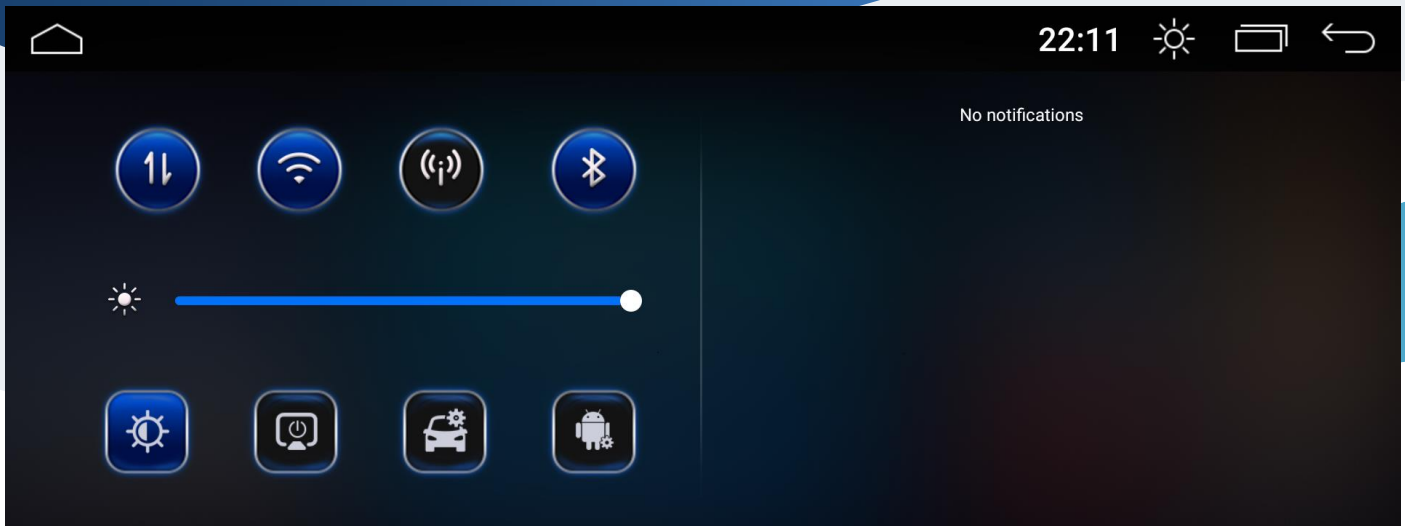
This menu will appear if you swipe your finger from the top of the screen to the bottom in most apps. Notification area is reserved for apps to alert your attention.

Cellular Data On/Off toggle: Turns on/off the internal modem. (mobile data)

Wi-Fi On/Off toggle: Turns on and off the Wi-Fi.

Hotspot On/Off toggle: Turns on and off the Hotspot created by S3 device.

Bluetooth On/Off toggle: Turns on and off RSNAV S3 Bluetooth, not effective on Audi original Bluetooth interface.

Brightness Control Bar: Controls backlight intensity.

Brightness override: Turn the backlight on maximum value regardless of your headlight status. Useful in cloudy day situation.

Screen turn-off: Runs black screen saver with simple digital clock.

Car Settings: Runs Car Settings for RSNAV device.

Android Settings: Runs Android System Settings.

2. Car Settings

Various configuration and settings are available at this app. It is important to make your setting exact for your car model or configuration.

A. Audio

- **Volume: DISABLED. NOT IN USE. INEFFECTIVE. Android Volume setting is fixed at 100%**
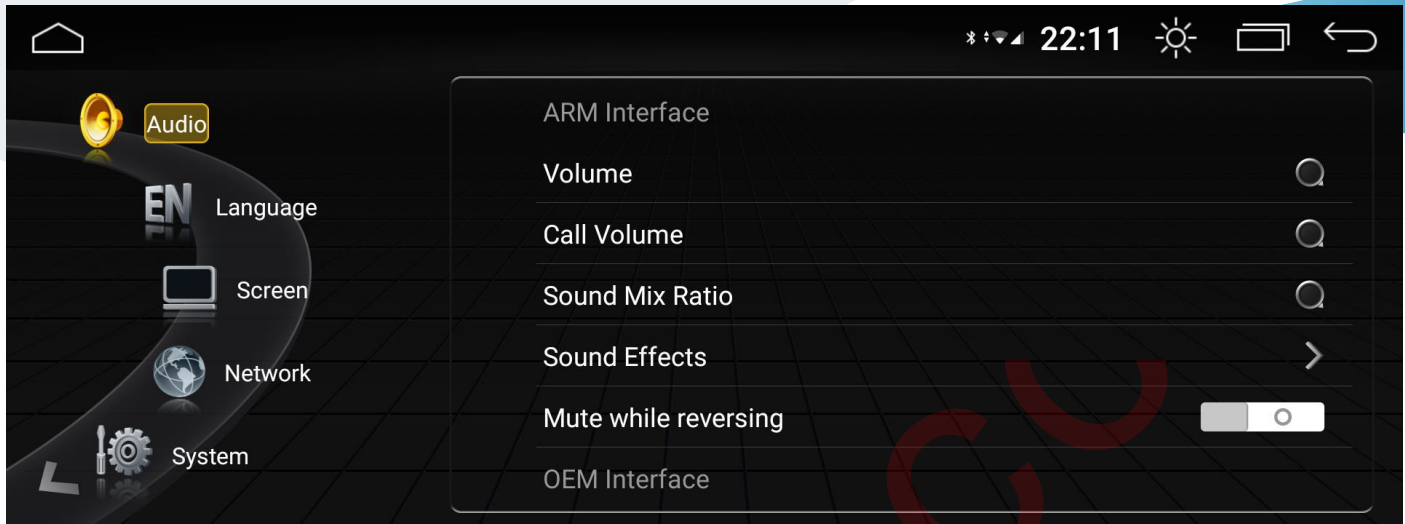- **Call Volume: Adjusts handsfree call volume. If too loud, you may experience call echo issue. (Your caller will hear themselves too much).**
- **Sound Mix Ratio: Adjusts volume ratio between the centre speaker and the reset of the speaker. The centre speaker is reserved for handsfree and navigation guidance announcement. Adjust desired value to equalize the volume discrepancy between center speaker and factory radio/Sirius XM/factory Bluetooth.**
- **Sound Effects: See Sound Effects app.**
- **Mute while reversing: Enable/Disable all sound mute while in reverse. For aftermarket 360 camera system or aftermarket side view camera system, disable this feature to prevent frequent interruption.**
- **GPS volume(under OEM interface): Control the volume of centre speaker when used for handsfree and navigation guidance announcement.**

B. Language

You can select user interface language. More language will be available in future update.

C. Screen

Regulates default screen brightness or turn the screen off until touched again. Even in the brightest setting, when headlight comes on, the backlight will be dimmer by 15%. To prevent this, activate the Brightness Override on the swipe down menu.

D. Network
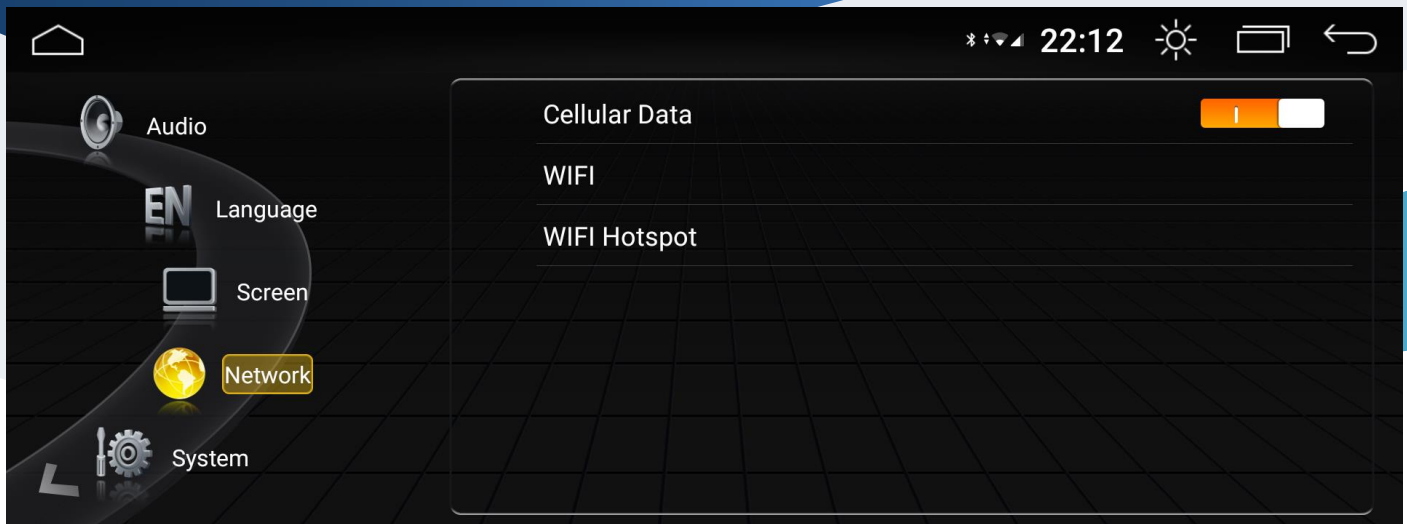
- **Cellular Data toggle: Turn on/off the mobile data feature.**
- **Wi-Fi: Open Android native Wi-Fi menu.**
- **Wi-Fi: Open Android native Hotspot menu.**

E. System

a) System information

GPU(8844) Version: AD450_HD_103

MCU Version: 46_02_2020.08.21.14.1

System Version: SC60A_02.12.05.02.01.20200822142929.01

USB Update

MCU Update

Displays system software version information.

- **USB Update: Perform the system software (Android) update. The update zip archive must be in following path: USB Drive/update/update_AD4500_XX.zip ('XX' is sub-model number)**
- **MCU update: Perform the microcontroller firmware update. This affects display, sound, CANBUS function of the device. The mce update file must be in following path: USB Drive/update/mcuupdate/mcuUpdate_AD4500_XX.mce**

   b) Factory Setting

   To access the factory settings, enter '1314' and press ok.

   If 1314 password is not working, then the system is busy working in background. Try again later.
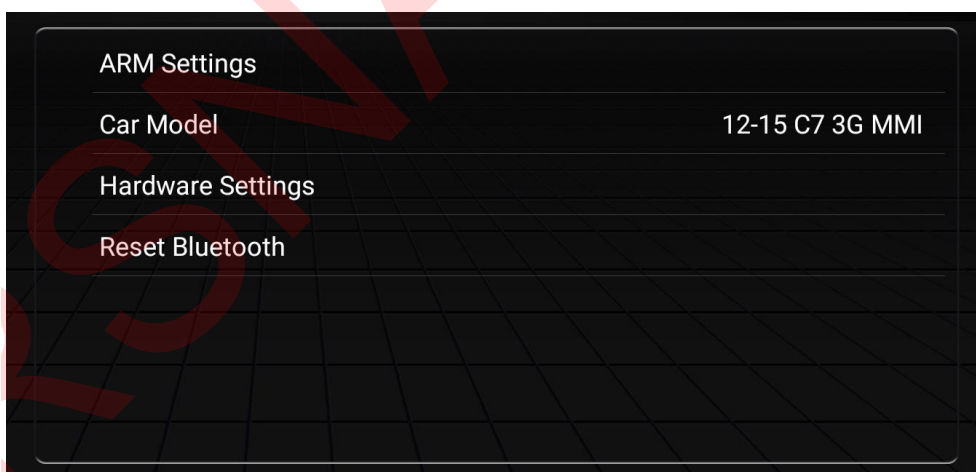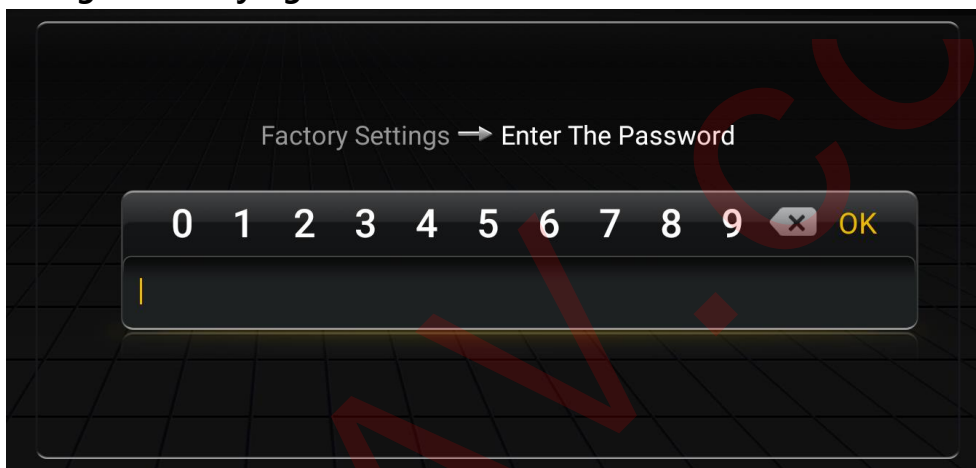
- **ARM Settings: Android function related settings.**
- **Car Model: Very Important to select the exact model for your car model and model year.**
- **Hardware Settings: Hardware function related settings.**
- **Reset Bluetooth: Reset the RSNAV S3 Bluetooth module to factory default.**

(1) ARM Settings

Home Screen Car Image Setup	Disable
Debug mode(USB OTG OFF)	
Bluetooth	Android
Climate Control Type	Dual
AUX switching method(B9 only)	manual
AUX function switch	
DVR Setup	AHD

- **Home Screen Car Image Setup: NOT IN USE.**

- **Debug mode (USB OTG OFF): There is USB debug port hidden inside RSNAV S3 device. To access the USB debug port, you need to open the casing. If this mode is enabled, then USB ADB feature will function, but all the other regular USB feature will be disabled. Reserved for Android developers.**

- **Bluetooth: Android/Audi. If set for Audi, then system will automatically switch into Audi Bluetooth interface whenever there is requested to use Bluetooth function.**

- **Climate Control Type: Single/Dual. In Single mode, displays air climate control overlay only in driver side.**

- **AUX switching mode (experimental for B9): Automatic/Manual. When in automatic, the system decides when to take over your sound system over external media input in your MMI's media tab. For example, you are listening to factory radio, but if you run Spotify in Android mode, then the system will automatically switch into External Media Input in your MMI instead of doing it manually. However, this feature is experimental and may not work as intended.**

- **AUX function switch: Lets passthrough AMI aux port device to send the sound directly to MMI head unit, but may not work properly.**

- **DVR setup: AHD/CVBS/ADAS/NONE**

  If set for AHD or CVBS, will show the video feed from auxiliary video input.

  If set for ADAS, then will launch ADAS app for USB ADAS Camera.

  If set for none, it will do nothing.

(2) Car Model

12-15 C7 RMC

16-18 C7 MIB2

09-12 B8 3G BNAV

13-18 B8.5 3G BNAV

12-15 C7 3G MMI ✓

10-11 Audi Q7 3G MMI

2013+ B8 3G MMI HN+

10-11 Audi Q7 3G MMI

2013+ B8 3G MMI HN+

10-11 C6 3G MMI HNAV

Audi A3 8V MIB2 Hi-res

Audi A3 8V RMC

Q3 PQ35 3G MMI

Q3 PQ35 RMC

B9 MIB High-res

B9 MIB low-res

09-12 B8 3G MMI HNAV

09-12 B8 Concert/Symphony

Reserved 3

2013+ B8.5 Concert/Symphony

Reserved 2

Reserved 1

It is important to select right car model, model year of your car. It does not mean that one hardware supports all car models. E.g. Concert/Symphony B8 model is vastly different from 3G MMI models. It is generally allowed to switch between previous and next model year(09-12 to 13+) if and only if MMI console does not work or climate control overlay is not working, but do not select different car model's profile. This may result system crashing. If system hangs in scrambled screen. Perform the hard reset by pressing reset hole with sharp object.

Unless the device is damaged, the device will boot into Android normally for 5 minutes. If the screen stays scrambled, then disconnect the LVDS cable and perform the hard reset again. Within the 5 minutes, you must select the right profile for your car, otherwise the system will go into sleep.

(3) Hardware Settings

OEM Display Area	half screen
Nav. Sound Mix	Enable
TW8836 debug mode	Disable
Turn-Light Signal for 360 Degree System	Disable
Climate Control type	Dual
Parking View button	Disable
AUO-en	Disable

- **OEM Display Area: Half/Full:** If set in half, the aspect ratio of Audi factory interface will be kept. If set in full, the Audi factory interface will be shown in stretched to fill the display.

- **Nav. Sound Mix: Enable/Disable.** If disabled, then Centre speaker no longer works for handsfree/navigation guidance announcement.

- **TW8836 debug mode:** Reserved for hardware engineers. If enabled system may act erratically.

- **Turn-light signal for 360 Degree System:** If enabled, whenever a positive current detected through the 360 labelled detection wire, the system will automatically trigger the reverse view. This feature is useful for aftermarket 360-degree surround view system or aftermarket side view camera system that can signal RSNAV device when your turn lights are on.

- **Climate Control Type: Dual/Single.** This option allows RSNAV system to recognize your air conditioning system configuration.

- **Parking View button (Experimental):** NOT RECOMMENDED TO ENABLE IT. It is designed to switch the reverse view mode when the Parking view button is pressed. But for most of the time it would work erratically. For example, if this feature is enabled, then the system will not switch from Reverse view to Android regardless of your operation or switching gear until you exceed 20km/h or your speed is over the Audi parking system disconnection threshold. RSNAV will continue to work this feature to work as expected.

- **AUO-en: Factory Reserved. Do Not Switch.**

Start-up Interface	Android
System power off time	After 10 minutes
Passenger Door Count	4 doors
Steering Wheel Button(Android)	Enable
Measurment Unit	Km/H,°C
Driver Position	LEFT
Parking Guide Lines	On

- **Start-up Interface: Android/Audi. If selected Audi, it will show Audi factory interface by default at ignition. Then Android is accessible when Android Booting is complete in background and you touch the screen.**
- **System power off time: Immediately after ACC off/5min/10min/30min**
  Prevents the system to be turned off for prescribed time value after your Engine is turned off. Prolonged turn off delay time may stress your battery more.
- **Passenger Door Count: 2/4 doors. Provides the information to RSNAV device if your car is 2 doors or 4 doors.**
- **Steering Wheel Button (Android): If enabled, Steering Wheel Buttons will work both Android and Audi Instrument Cluster. RSNAV device cannot prevent steering buttons working on instrument cluster. If you want to preserve your steering wheel buttons for Audi feature, leave it disabled.**
- **Measurement Unit: Changes system default measurement unit's system wide except third party Android App. As of late August, 2020, MPH and °F value are not correct to the actual value. This will be fixed after global travel ban gets lifted.**
- **Driver Position: Left/Right. If your door information displayed is opposite to the actual, then change driver position here to correct.**
- **Parking Guidelines: On/Off. If Off, the dynamic parking guideline overlay will be removed from your aftermarket reverse view. Useful if you are using different parking aid system.**

- **Reverse view mirroring: if Enabled, then the image of reverse video port of RSNAV will be shown in mirrored.**
- **DVR view mirroring: if Enabled, then DVR video feed will be shown mirrored.**
- **Reverse view flipping: Turn the aftermarket video feed of reverse view in 180 degrees.**
- **DVR view flipping: Turn the auxiliary video feed in 180 degrees.**
- **Dual Clutch Support Mode: After RSNAV device installation, if you are getting Sports Differential Fault and/or ABS fault, then Enable this option.**
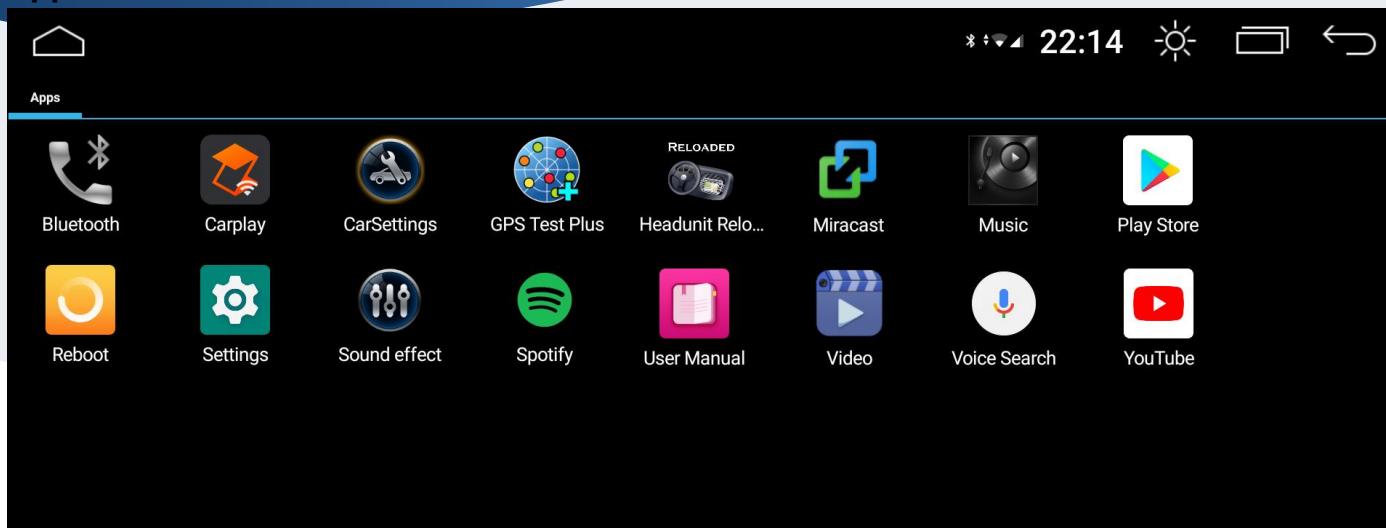
(4) Reset Bluetooth
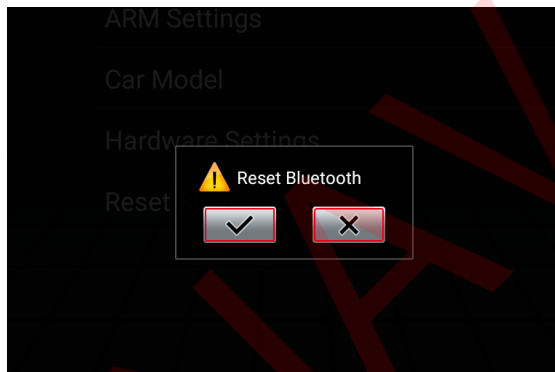
Resets RSNAV Bluetooth module. Perform when you have Bluetooth connection issue.

c) Restore Factory Setting

This erase all your personal data and turn back the system into factory pre-shipping default. Some preinstalled apps maybe permanently lost. Password to perform this action is '1314'.

3. Apps

This is the application gallery where all installed apps appear.

- **Bluetooth:** Runs RSNAV Bluetooth App
- **Carplay**: Runs Z-link for CarPlay receiver feature.
- **CarSettings:** Runs Car Settings.
- GPS Test Plus: Useful tool for GPS signal strength test. If GPS signal is not good, the system will keep displaying wrong time.
- **Headunit Reloaded:** Runs Android Auto receiver feature.
- **Miracast:** Support mirroring of your mobile phone in RSNAV screen. Formerly, EasyConnected by Yilian Software Company.
- Music: Basic music player that can play music files from USB, Internal storage, and SD card.
- **Play Store:** App marketplace that you can dowanload/purchase Android apps.
- Reboot: Restart the system.
- **Settings:** Android 9.0 system settings. Wi-Fi, Hotspot, Mobile Data, Time and System display language and much more settings are available here. Bluetooth function is limited, however, to ensure the its capability to music receiver and Carplay receiver. Generally, you can not connect RSNAV device to different Bluetooth music receiver to stream music from RSNAV device to another. Bluetooth tethering is NOT supported as well as Bluetooth serial communication is disabled to ensure enough data room for CarPlay feature. For OBD II BT dongle, RSNAV will advise compatible ELM327 OBD II dongle in future. As of late August 2020, OBD II BT support is under developing.

- **Sound effect:** 13 Band Sound Equalizer App that controls RSNAV hardware digital sound processor (DSP).

- **Spotify:** Popular music steaming service.
- **User Manual:** Shows this manual.
- **Video:** Basic video player that can play video files from USB, Internal storage, and SD card
- **Voice Search:** Generic Shortcut for Google voice command. This is system app without significant feature but installed as part of core Android service. To use this service as well as Google Voice Assistant, install following apps from Play Store.
    - The 'Google' App
    - Google Assistant
    - Google Text to Speech
- YouTube: Popular video streaming service.

**4. Useful tips for using Apple CarPlay and Android Auto**
- Using Wireless CarPlay

    The integrated Wireless CarPlay service for S3 device is provided via **Z-link** app. A paid License Version of Z-link app comes with S3 RSNAV system. Pair your iPhone's Bluetooth to GOCSDK(Password: 0000) and run Z-link (or Carplay from main menu) and follow the instruction from the app.
    With given basic license of Z-Link, the app is not allowing 'wired' CarPlay service. It may be activated in future.

- Using Android Auto

    Integrated wired, wireless Android Auto service is provided via 'Headunit Reloaded' app. A paid License Version of Headunit Reloaded app comes with S3 RSNAV system. To learn how to use it or more about it please, google 'Headunit Reloaded' or contact the app provider.
    For Wireless Android Auto, please follow the instruction from the official XDA thread of 'Headunit Reloaded'. As of the late August, 2020, there is no more convenient way to use Wireless Android Auto other than the official instruction, but it may improve as Google decided to open Wireless Android Auto feature for all brands and makers in future(News as of late August, 2020).

Android Auto Hardware Key Information
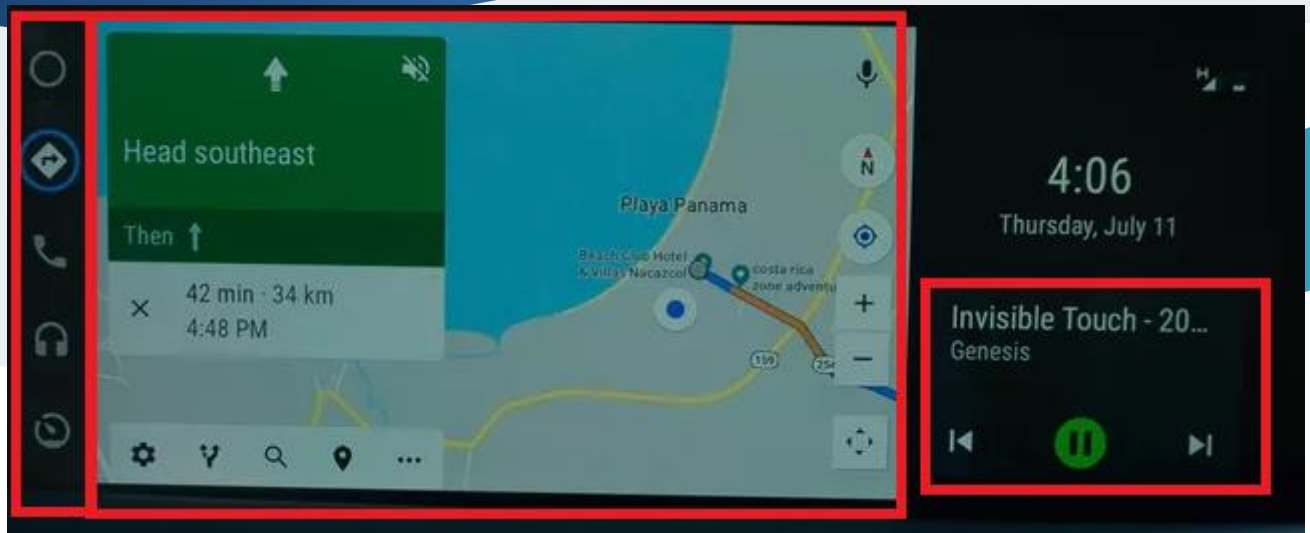
Android Auto has 3-layer Interface in principal.

By rotating the rotary knob (green arrows) you can move around the icons only in the same layer.

To jump between layers, use lower soft keys marked with **blue directional arrows** above.

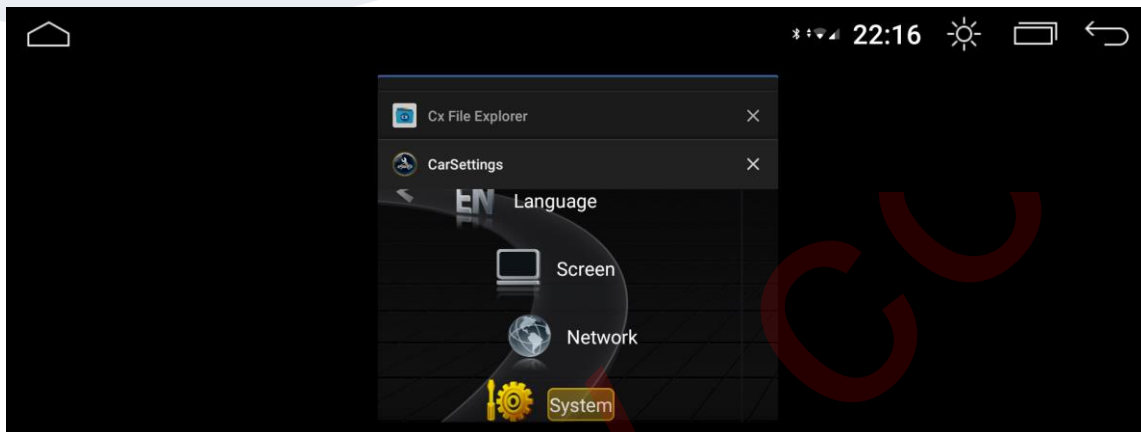'A' button is for Google Voice Assist.

'B' button is forced toggle between night map/day map mode.
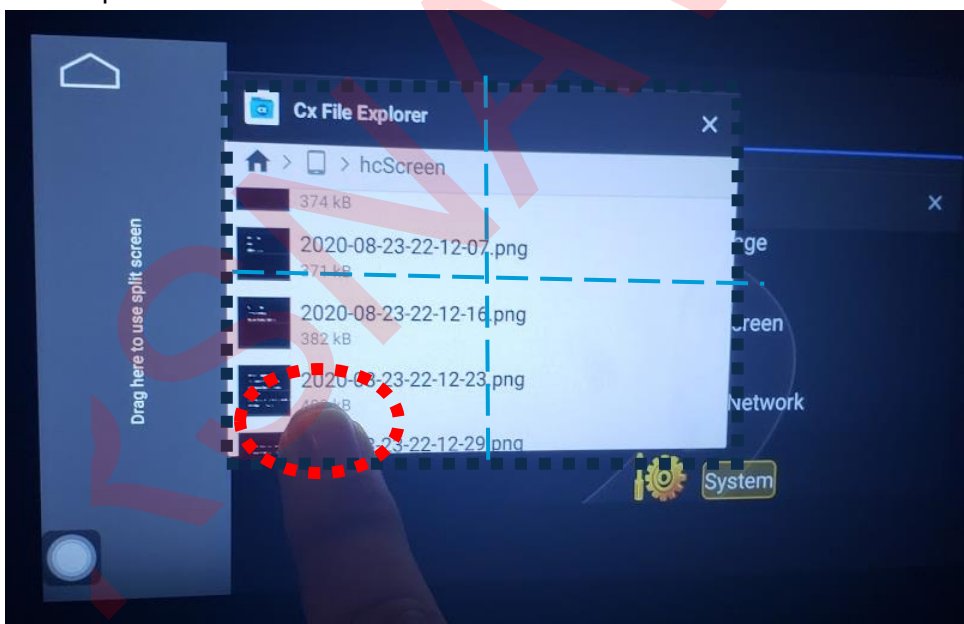
5. Using split screen

Split screen feature is NOT available for all apps. The feature must be supported by the app. If an app is not working in split screen, please contact the app developer.

Steps:

A. ▭ Press this button on the screen.

B. List of the recently used app will appear. Choose the app that you want to place the left side of the screen.

C. **Press and hold the left lower corner of the app like red circled above** while moving the window to the left until 'Drag here to use split screen' message appears. If the message does not appear, try another area of the left lower corner.
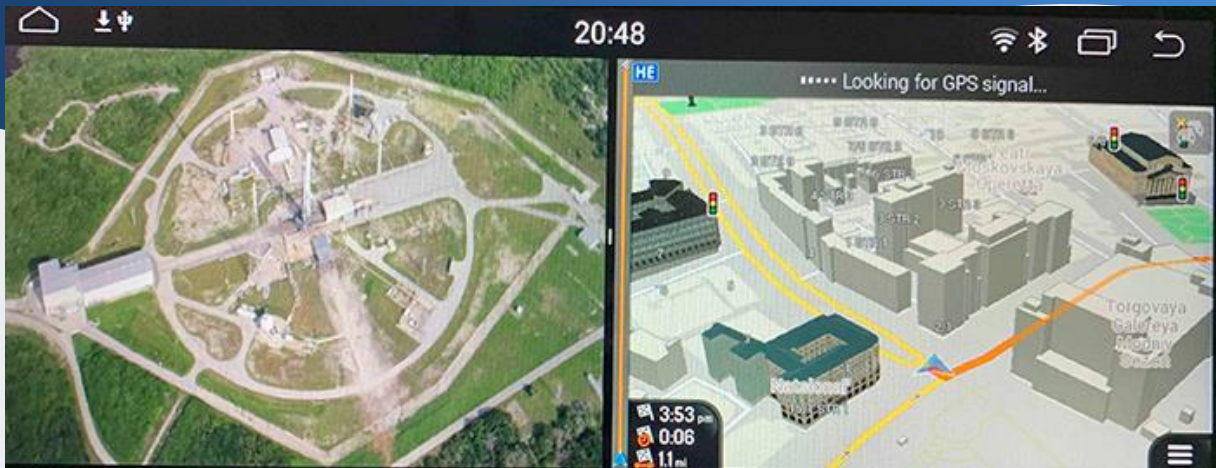
D. Once your desired app is placed on the left side, choose another app you want to display in the right side. If the app is not running, choose our app gallery and run the app. The chosen app will run in split screen on the right.

6. Sound Equalizer optimization

Generally, Audi Sound System(Including premium systems) are bass oriented. RSNAV is tuned to be FLAT, thus you may feel the sound less colorful.

Due to Audi Amp's characteristic and it is generally not good combination with any aftermarket DSP, it is recommended that:

- **Increase 30, 50, 80Hz band by one step above**
- **Decrease 16K, 12K, 8KHz Band by one step below.**
- **If your speaker is making static noise when high pitch sound is playing, decrease Higher band up to 5Khz Band until the noise is gone.**

7. Known Issues with third party hardware/software

**Samsung phones and Bluetooth Music Streaming Quality:**
Bluetooth music streaming quality from your Samsung phone may be degraded occasionally. If that happens, **you need to unpair all unnecessary Bluetooth device paired to your Samsung Phone and reboot your Phone multiple times. Also, try disable the Dolby Atmos in your phone.**
It is ongoing problem with Samsung Galaxy 9 with Android 10. It seems Samsung modified BT stack and when there are multiple BT devices connected with Samsung phone, searching BT devices, or paired with BT BLE type devices, the phone arbitrarily degrades the bit pool size for music streaming. RSNAV S3 is set for minimum bitpool 40, and maximum bitpool 64. This well exceeds 328kb/s threshold of Android system, but Samsung Phones occasionally override the minimum bitpool, and goes down below 229 kb/s or bitpool 37. Thus, when bitpool is degraded you will hear crackle, a smaller stereo effect and an unpleasant «clatter» of vocals at high frequencies.
It is known issue to Samsung Engineers, but it seems they are indifferent about it. Indeed, most MP3 files are 192kb/s so 229 kb/s seems reasonable, but in Bluetooth music streaming, that is not sufficient for some golden ears.

OnePlus phones and Android Auto video Quality:
You may experience horrible graphic quality in Android Auto with OnePlus phones. It is also ongoing problem with Android 10 OnePlus 7 Pro. It seems there is problem with OnePlus's video encoder, but the detail is unknown.
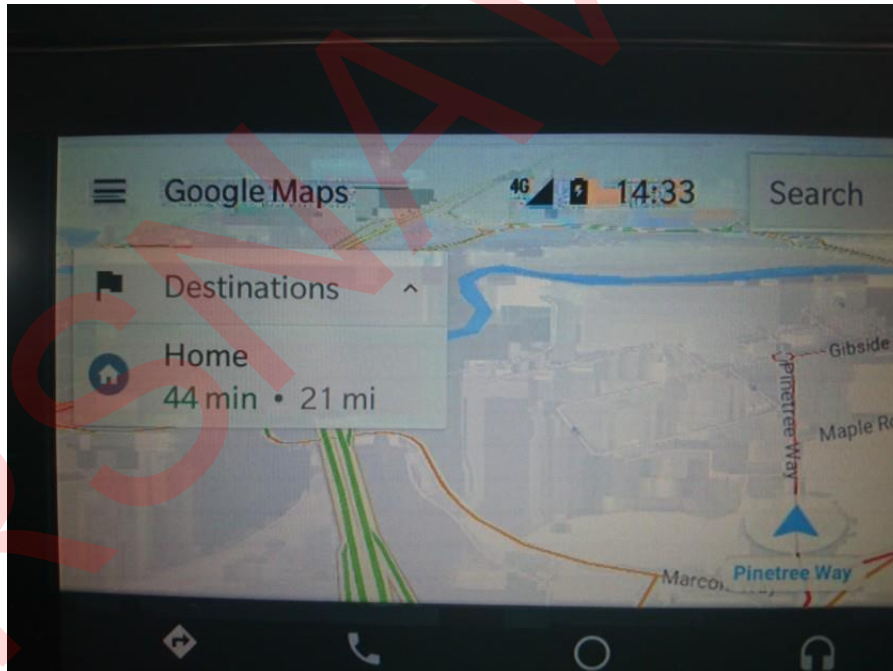
RSNAV S3 can decode 1920 x 1080-pixel media stream @ 60fps and it is downscaled to the native resolution of the display. RSNAV will display up to 160 dpi setting of Android Auto map size without any problem. Thus, it is not RSNAV S3's decoder problem. The same happens with RSNAV standalone interface and OnePlus phones.