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## Prius Gen 3 Radio Head Unit Replace project.











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## Upgrade your car

There is no denying that with a new multifunctional car radio installed in your car, you will enjoy a lot of convenience and enjoyment in your car all the way. If you are fed up with your factory radio due to its single functions, you can consider replacing it with a new multifunctional car radio. To install a new car radio, you can turn to this detailed installation guide for help.

### Investigation phase

In this case I have an EU market Toyota Prius 2011 model navigation and with intelligent parking system. Because the navigation system maps are outdated and replacing them is expensive, I started to look for a different solution. After reading a few articles about android car radio's I decided that I would like to replace my radio with an android unit.



*Figure 1 Before and after installation*

There a lot of web shops where you can buy Android radio's which will fit in the prius. I decided that I wanted a radio unit that looks al lot like the old one. The picture 1 shows what I mean, the old en new units have the same setup.

My first impression was that you take out the old one and put in the new and al things work. But soon a found out that's not the case. The web shops advertised with rear camera's, external microphones, GPS G4 DAB+ antenna's, steering wheel buttons support, that all have to be mounted somewhere in your car. So, I started sending requests for information. The EU web shops where the best in giving clear understandable answers. And most Chinees shops did not understand the questions. The answers where inconsistence if I would be able to use the steering wheel buttons, the existing rear camera, microphone and antennas became a gamble. So be prepared to make your own modifications to get all the things working. The Chinees are the once who produce these systems and sell them through AliExpress the cheapest way. I tested a few companies on AliExpress to find out if communication would work. Sadocom was a company that responded quickly and understood my questions better than other companies.

I toke the advice of Sadocom a bought this set:

- [Carplay 4GB+64G 4G LTE DSP 9" Android 11.0](#) Car DVD Player 8 core left right car radio autoradio GPS For Toyota PRIUS 2009-2013
- [CANBUS BOX](#) universal for Toyota
- Extra:
  - Bluetooth ELM327 Bluetooth OBD2 Vehicle Testing Instrument
  - The Digital Audio Broadcasting ( DAB+) only for ownice series car radio



Figur 2 After the Sadocom Unit

The canbus box would be needed for the connection to the steering wheel buttons according to the advice of Sadocom.

And as extra I added DAB+ radio because in the EU we have this digital radio which gives high quality radio sound. And the OBD2 just for fun the read extra information of the car.

## Before you start

Tips about the installation:

1. Please disconnect the power before the installation.
2. Please prepare a lever and a screwdriver before the removal and the installation.
3. Please keep all the separate parts from the car. Please take great care of the dashboard to avoid scratching it during its detachment and installation. Please keep handy any parts from the car and make use of all the original screws from the car as much as possible. so each related part of the unit can be fixed securely.
4. For your convenience, here's the recommended tools for removal and installation from Seicane, please check for more details: <http://www.seicane.com/car-dvd-dismantling-device-srd-400>
5. The following pictures show the list of objects you will be using in the project.



Figur 3 Old OEM Unit B9016 With IPA

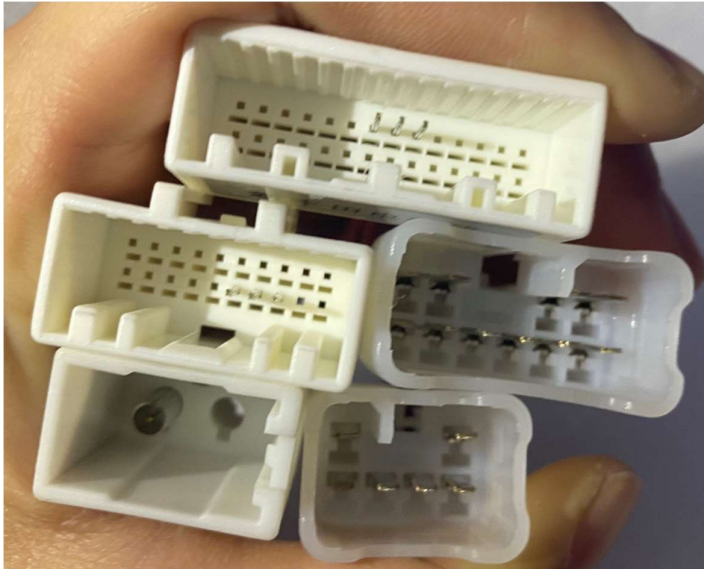


Figur 4 New Sadacom Android 11 Unit



Figure 5 This harness connects the Toyota connectors to the android DIN connector.(Without canbus box support)





Figuur 6 This is the harness needed for this model.



Figuur 7 Complete cable set with harness that supports a canbus.box



*Figure 8 Only the 4 connectors will be needed the 5e with 28 pins is not used.*

## Toyota Prius car radio removal instructions

1. Remove the shift panel right of the steering wheel. The panel simply pulls free of the dash with medium force from a trim pry tool.



Remove the shift panel right of the steering wheel. The panel simply pulls free of the dash with medium force from a trim pry tool

2. Remove the dash panel below the radio. Grab the panel by the right edge and pull with significant force to detach the plastic pin that holds the panel in place. Grab the bottom edge of the panel and pull it from the dash.



Remove the dash panel below the radio. Grab the panel by the right edge and pull with significant force to detach the plastic pin that holds the panel in place. Grab the bottom edge of the panel and pull it from the dash

3. Remove the vent panel to the right of the radio as you did the left panel. It is only connected with clips that can be pulled free with moderate force.



Remove the vent panel to the right of the radio as you did the left panel. It is only connected with clips that can be pulled free with moderate force

4 Disconnect the wiring.



Disconnect the wiring

5. Remove the radio by removing the four screws near the corners of the radio mounting bracket with a Phillips-head screwdriver.



Pull the radio toward you slowly

Pull the radio from its dock and pull the wire groups from the back of the radio. Grab the groups by the white plastic wire binders, not the wires themselves.



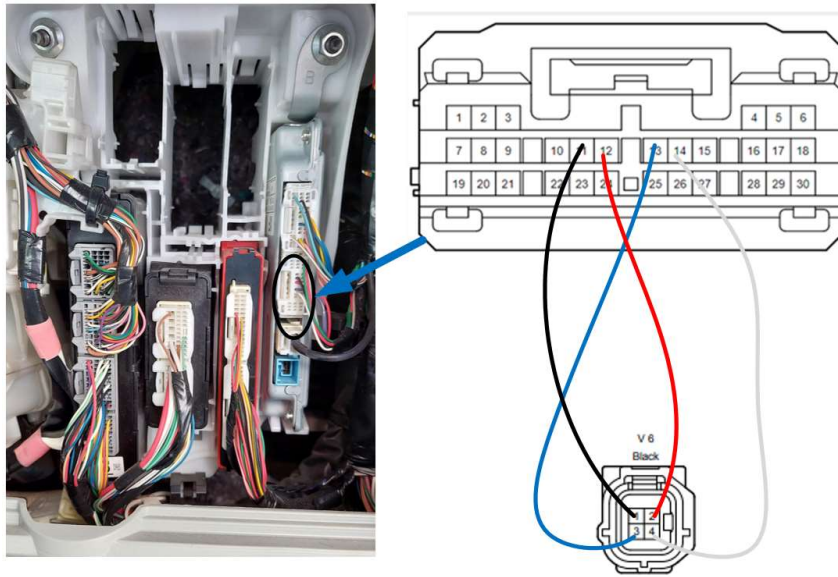
Pull the radio from its dock and pull the wire groups from the back of the radio. Grab the groups by the white plastic wire binders, not the wires themselves

## Toyota Prius modification instructions

This next part is about reuse the existing camera, connecting a extranal microphone, use the canbus box via OBD2 connector and Steering wheel buttons.

### Parking assist camera

This OEM unit does not have an analog video signal from the rear camera. This signal is connected to the Intelligent Parking Assist Unit which is located under the glove compartment.



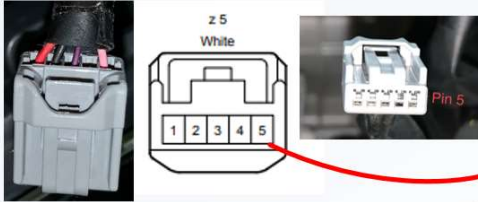
Figur 9 The cables from the back of the car to the front of the car on the IPA unit

To reuse the existing rear camera, you need to build your own harness for that. The next picture shows the design for that.

Modified wiring to use OEM camera on Android Head Unit

Toyota Prius 2011 head unit B9016  
With intelligent Parking Assit Unit

Reverse gear signal PIN 5 connector  
of the OEM Unit B9016



From the back end of the car the camera wired end here on the IPA unit connector.  
Use these wires to connect this solution to



GND



To rear camera connector  
on Android Head Unit



camera connector  
In the back of the car

Figure 10 Re use OEM camera design

The camera runs on 6 Volts. The 7806 voltage regulator creates the 6 volts. The 4 wires need to be disconnected from the original connector on to a new connector. The advice is to use male female connector combination on the 4 wires. So that you always can reconnect the original situation. The voltage regulator and the 4 pin connector can be placed in this area. From her you need to have two cables going up to the compartment of the radio unit. One is the video signal and the other the power. The power will be delivered from the reverse gear signal.

### Antenna's placement

You will have antenna's for GPS, 4G Mobile network and optional DAB+ Radio which have to be mounted in the car. The OEM FM antenna is the only antenna that will be reused. For the placement of the other antenna's it recommended to place them right of the windshield as shown in the next picture.

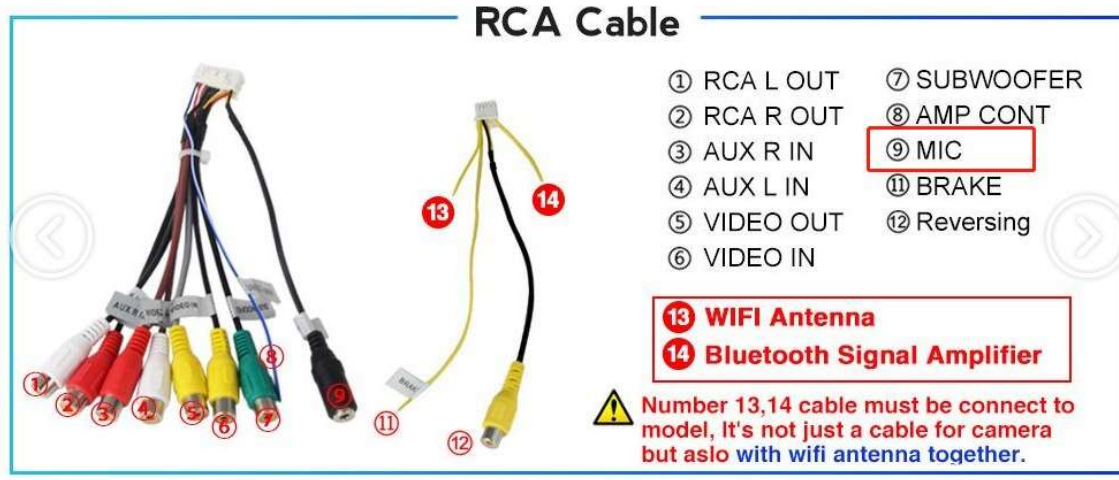


Figuur 11 See this video <https://www.youtube.com/watch?v=K7n5u3NOZco>



The Microphone.

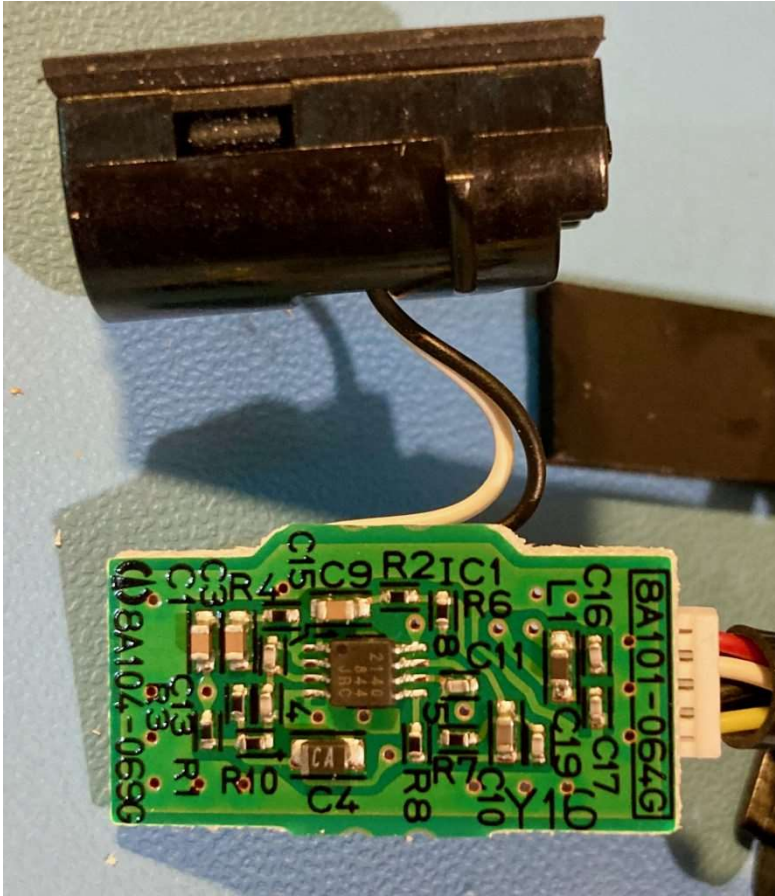
The android head unit's have built-in a Microphone but this is often does not picking up enough volume. So, the best solution here is to use an external Microphone. The audio harness of the android unit has also a connector for the microphone.



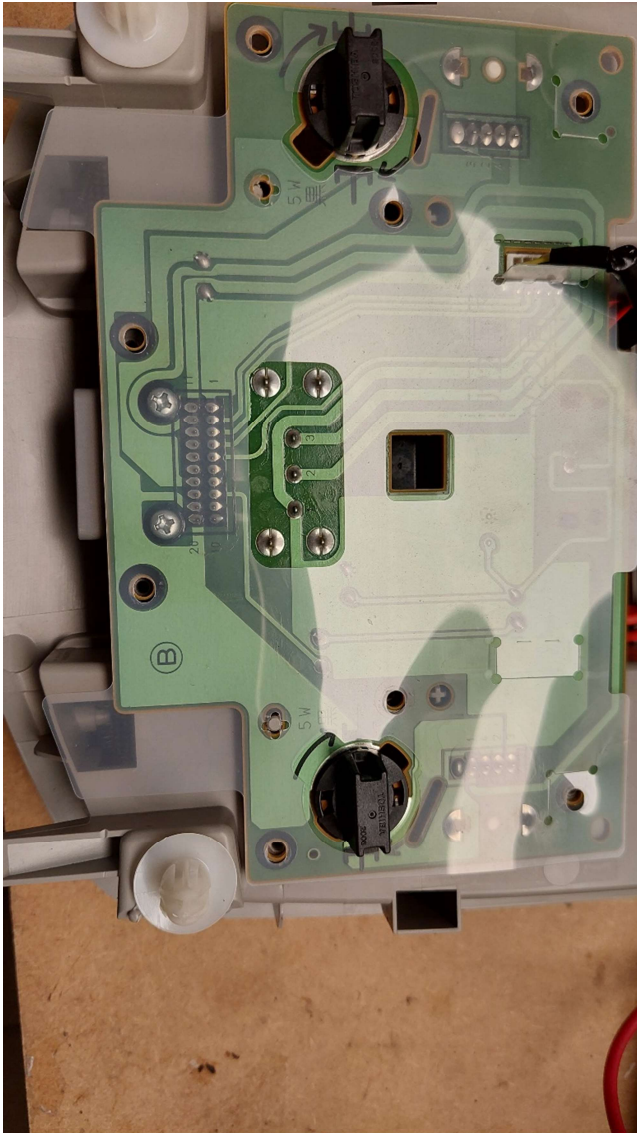
See this video about where the oem microphone is located



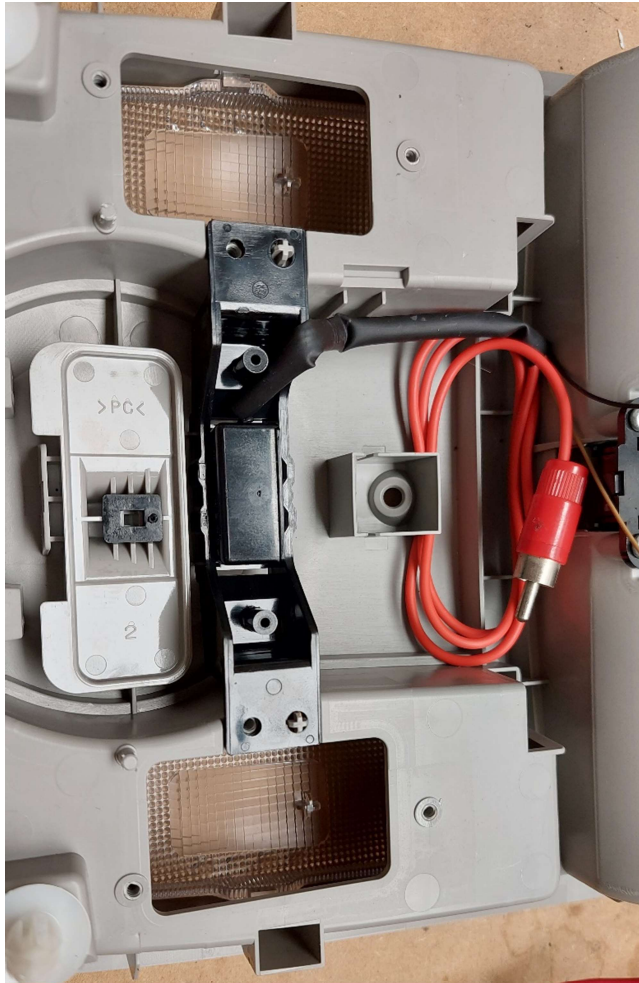
Figur 12 External mic besides the old mic <https://www.youtube.com/watch?v=uMUUtiJG7LE>



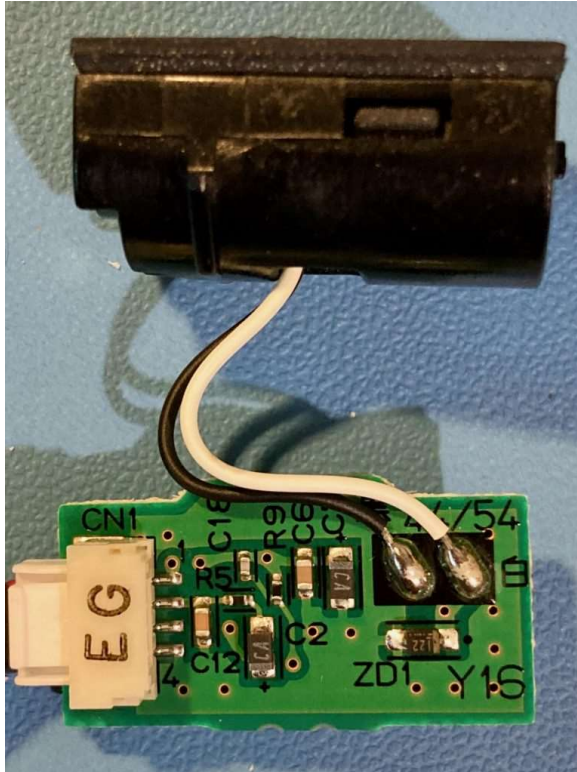
The oem Toyota prius Microphone is located in the middle of the unit shown in the previous picture.



You have to screw of the circuit board and then you find a black unit in the middle.

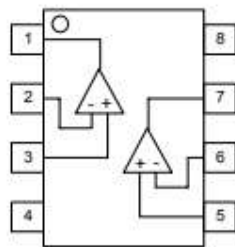


This black unit contains the Microphone and an amplifier. When you look up the amplifier chip on this board you will discover that this board needs about 5Volts to operate.



**NJM2140R**

■ **PIN CONFIGURATION**



**PIN FUNCTION**

1.A	OUTPUT
2.A	-INPUT
3.A	+INPUT
4.V	V+
5.B	+INPUT
6.B	-INPUT
7.B	OUTPUT
8.V	V+

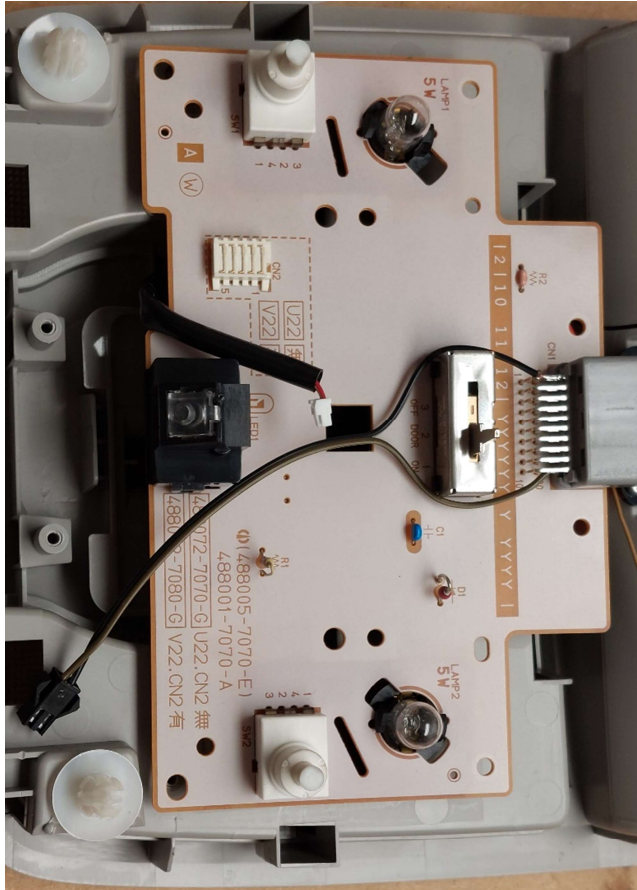
**NJM2140R/RB1**

The small 4 pin connector has the following pin specification:

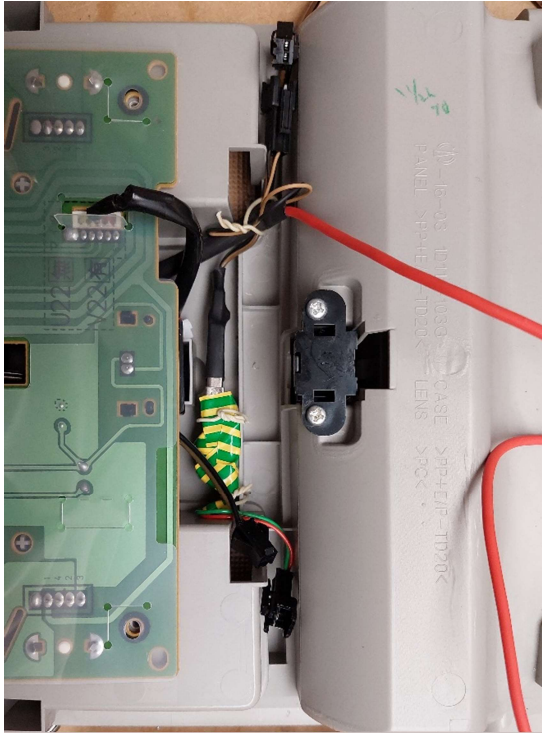
- 1. V+ Red (5V)
- 2. MC+ White
- 3. GND Black
- 4. MC- Yellow

On pin 2 and 4 we connect an audio cable which will be connected to the microphone input of the android unit. The link in the video shows how to lead that cable from this over the head unit to the android unit.

To power the microphone unit, we need to convert 12V to 5V. To do this we will use a cigarette lighter car USB charger adapter. To make this adapter even smaller we will dismantle it and use only the circuit board. Then we use pin1 and 20 of the connector on the main circuit board to make a connection to the 12 volts for the converter unit.



The 5V of the converter unit will go to pin 1 and 3 of the microphone unit. The converter will fit in the open space of the over the head unit. Which you see in the next picture. The converter circuit board is taped in some isolation tape to give it some protection.



When all is done using connectors it easy to put the whole unit back into it's place.

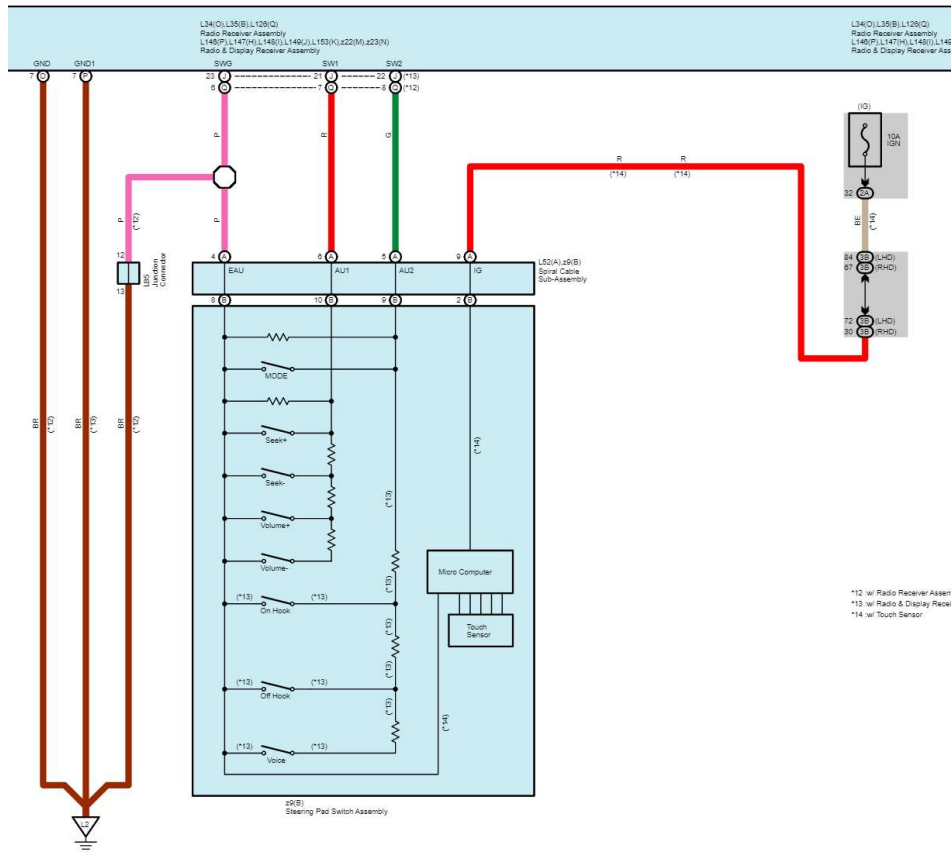


The Toyota microphone with the amplifier has a good noise canceling construction. And delivers the right volume for the microphone.



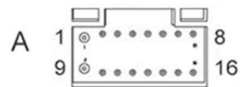
## Steering wheel buttons.

This unit has a 20 pin connector which has PIN's 6, 7 and 8 connected to the steering wheel panel.



Figur 13 Steering wheel buttons wiring.

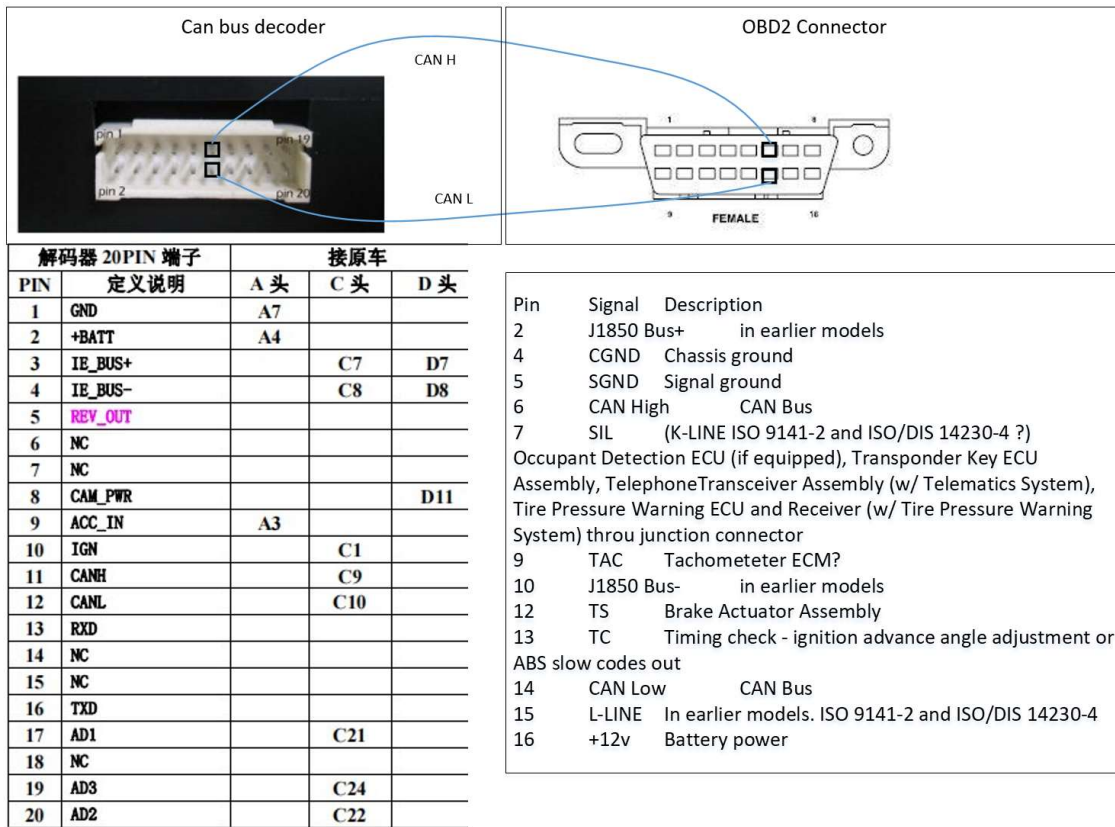
The 20 pin connector on the harness should connect this. But if the harness has no 20 pin connector. You should make your custom harness to connect to the Android head unit on PIN 4 and 11. So 6 goes to GND and 7 to 4 and 8 to 11.



- |                            |                           |
|----------------------------|---------------------------|
| 1. GND                     | 9. 12V B+                 |
| 2. ACC                     | 10.Lamp Detect            |
| 3. Camera Detect           | 11.SWC2                   |
| 4. SWC1                    | 12.Radio Antenna Power    |
| 5. Speaker front right (-) | 13.Speaker Rear right (-) |
| 6. Speaker front right (+) | 14.Speaker Rear left(+)   |
| 7. Speaker front left (-)  | 15.Speaker Rear right (+) |
| 8. Speaker front left (+)  | 16.Speaker Rear right (-) |

## Can Bus Box

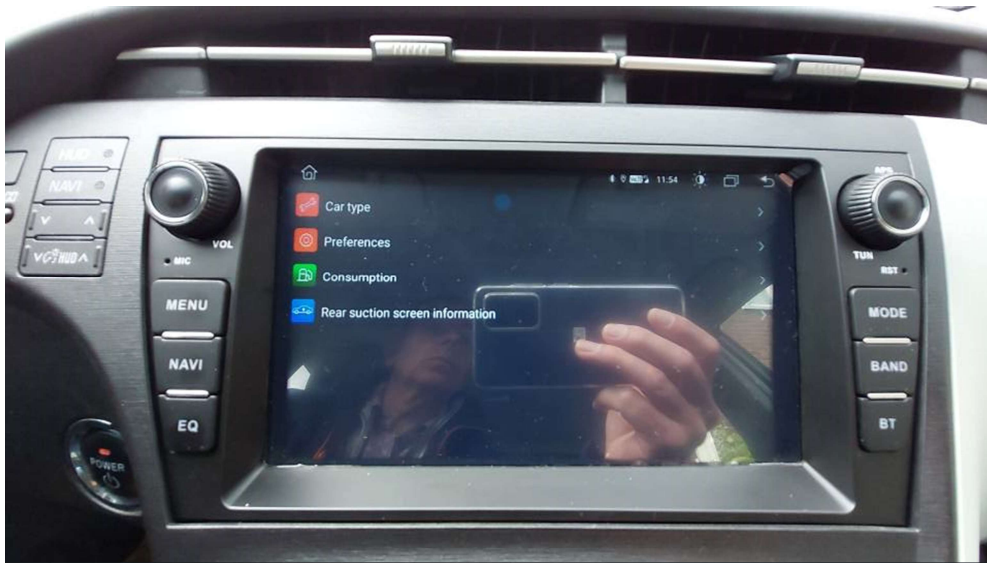
This prius radio has no canbus signals on the 20 pin connector. Connecting the canbus box is therefore a challenge. Which I solved to connect it to the OBD2 connector.



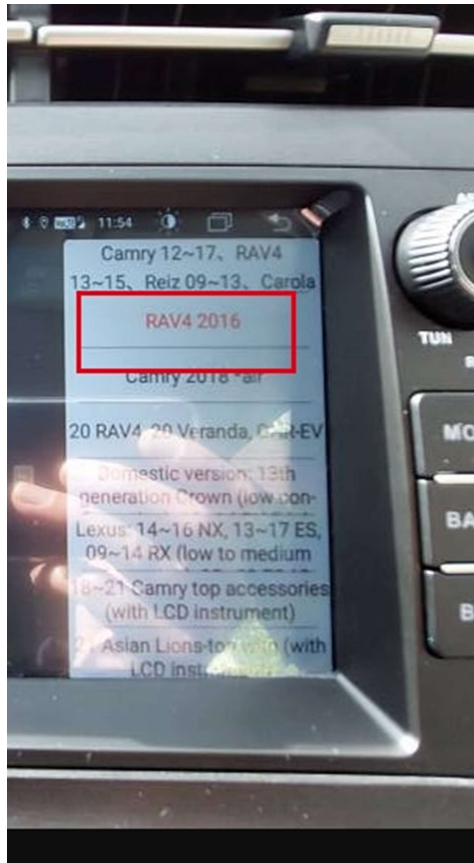
Figur 14 Can bus to OBD2 wiring



Figur 15 General Toyota Can Bus decoder



Figur 16 Car settings menu

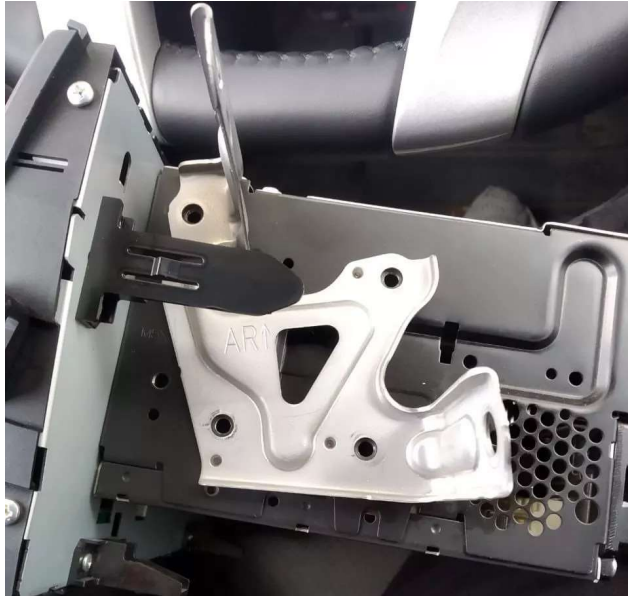


Figur 17 Choose RAV4 2016

## Installing the new radio

Mount the brackets

To be able to place the unit in same way as the old unit you need to take the brackets of the old unit and screw them on the side plates of the new unit.



*Figuur 18 Remove brackets from old unit*



*Figuur 19 On the new unit*



*Figuur 20 Right side*



*Figuur 21 Left Side*

Connect the harnesses to the back of the new Sadocom car radio.



*Figuur 22 All cables plugged in the new radio*

Now you have all the external devices placed you are ready to connect the new Sadocom radio. Connect the **Sadocom** car radio to your original car radio's plugs.

Test new radio

Reconnect the power of the car, now you are ready to test the radio if it works.

Turn on the new Sadocom radio to have a careful check if everything works well. If it doesn't, please check whether all the cables are connected correctly.

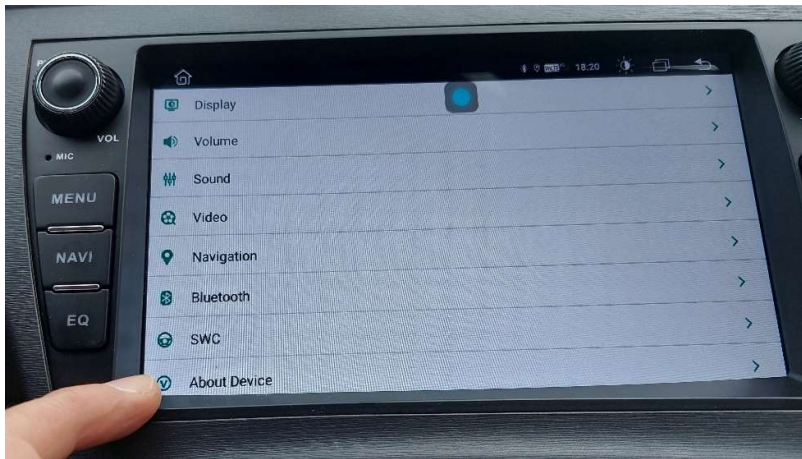
After everything works you can put the new Sadocom radio into the dash. Put everything into their original place.

## Some useful adjustments and tips

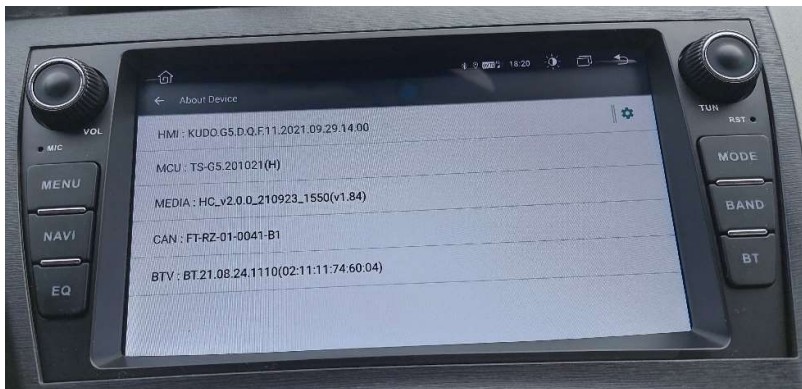
In my case Microphone volume, back car camera and other things where not working as I would like them to work. So after some investigation and asking questions I found solutions than you might benefit from as well.

### Factory settings

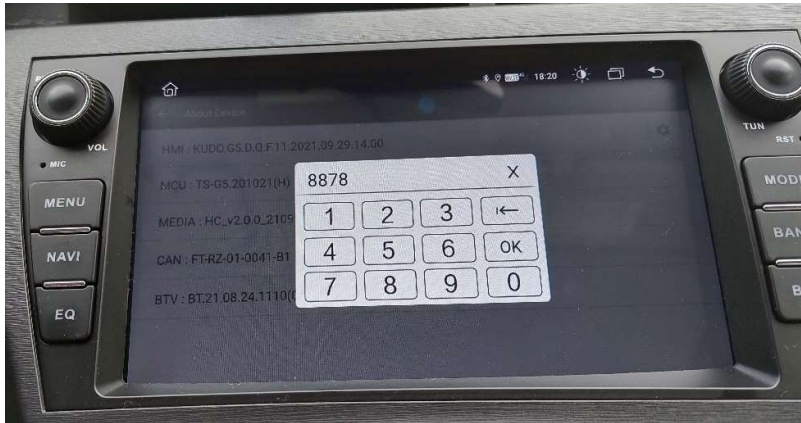
To get into more advanced settings you have to go to the settings menu about device



Then in the next menu select the gear icon



This pops up a PIN code input window.



Enter 8878 and this gives access to the firmware settings.

### Canbus settings

My canbus unit translates into the hood always to be open. To correct this you can change it in the canbus factory or firmware settings.



### Audio Volume settings

If the microphone volume has to be adjusted you can do this in the volume menu with the BT mic gain setting.

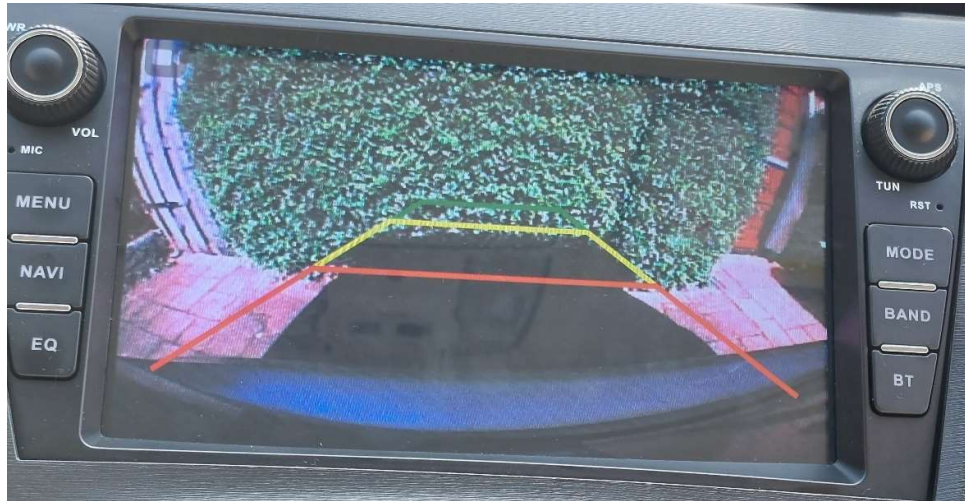




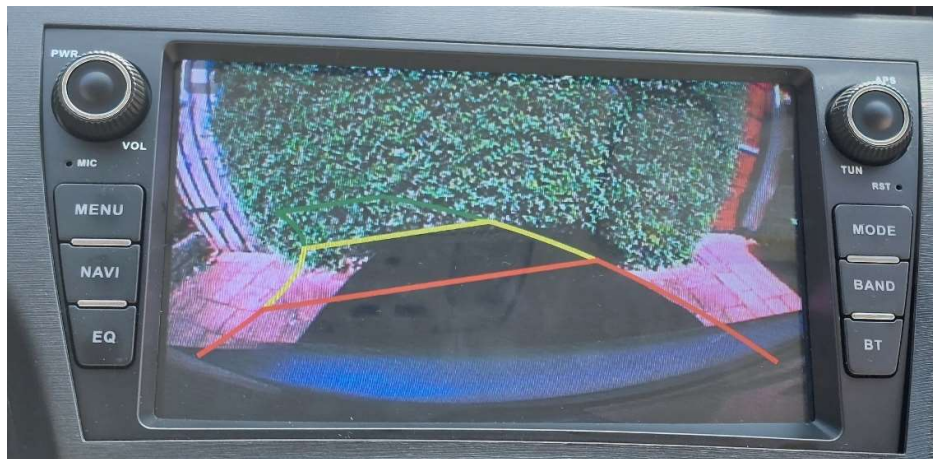
## Backcar Camera settings

In this menu you can change the line type, line position you see in the backup camera view.



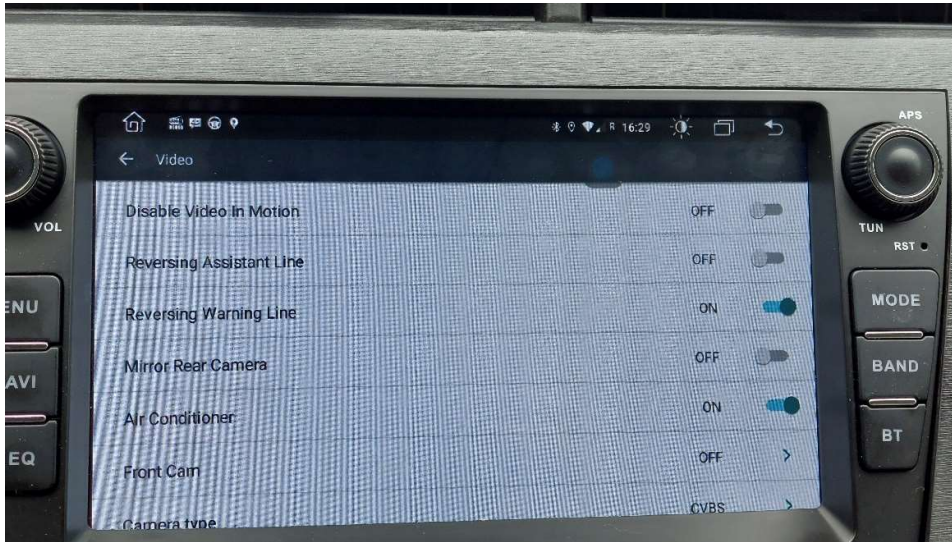


The lines will bend according to the steering you do



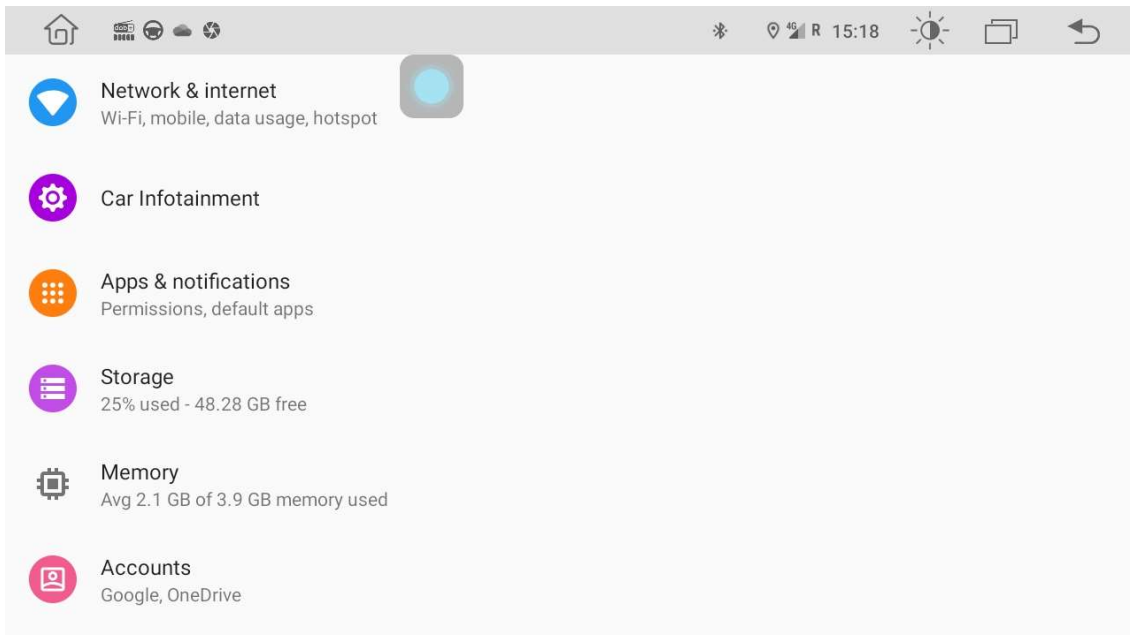
If you find this behavior annoying like I did you can either disconnect the canbus or change the following settings.

In the normal settings menu so not the factory or firmware settings. Go to video settings and Disable Reversing Assistant line and enable the Reversing Warning Line

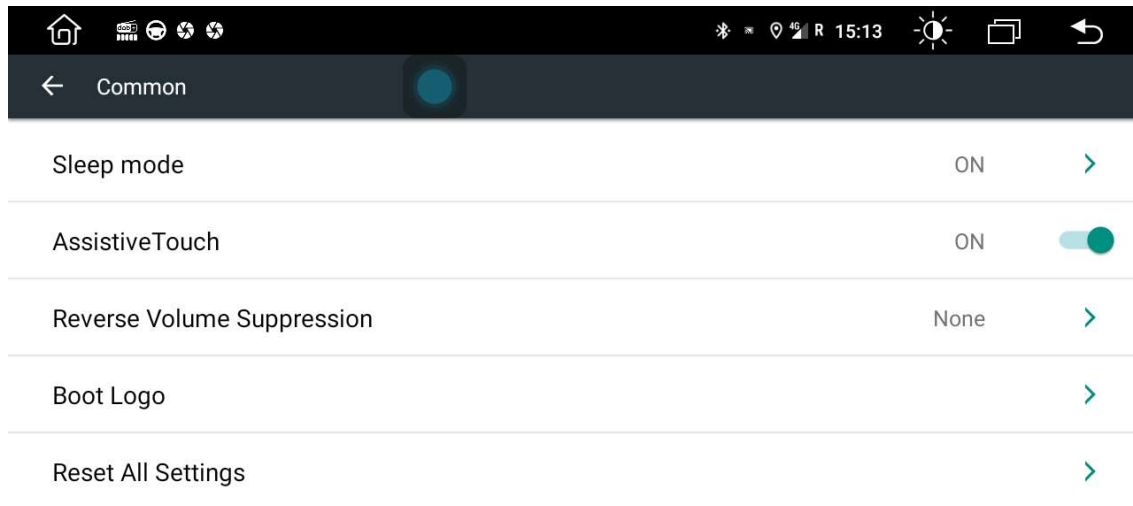


### Faster startup

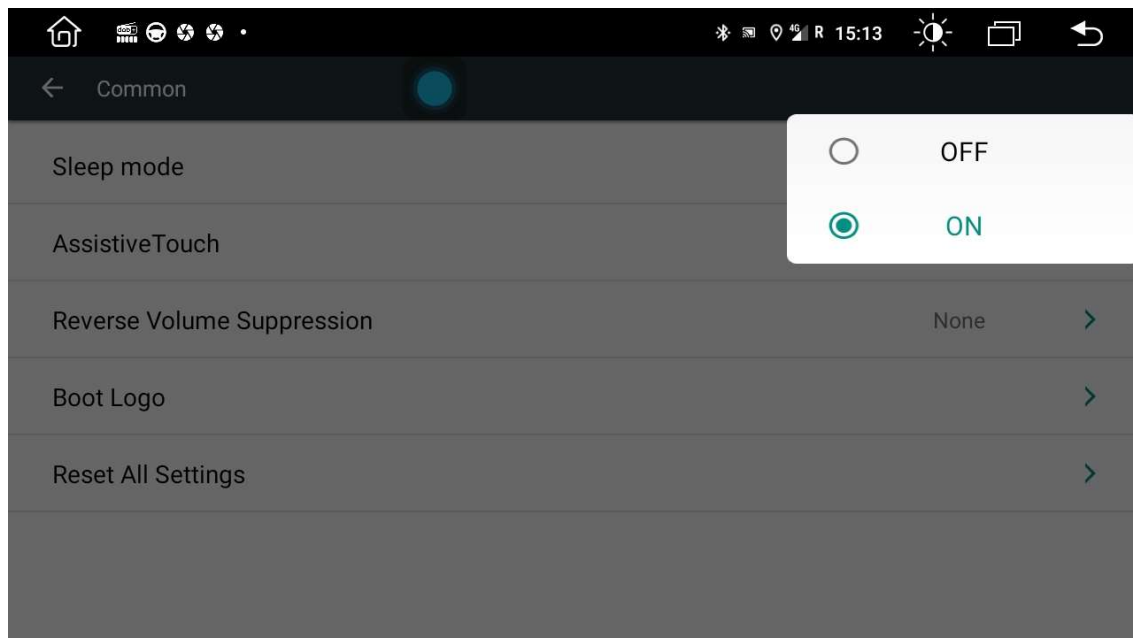
At first usage a noticed that android did a bootup like when you power off your smartphone. Therefore, the startup time was not direct. And that's not wat you want for example if you want to drive backwards after stepping in your car and then have to wait several minutes. To change this behavior, you go into settings.



choose Car Infotainment



Select sleep mode

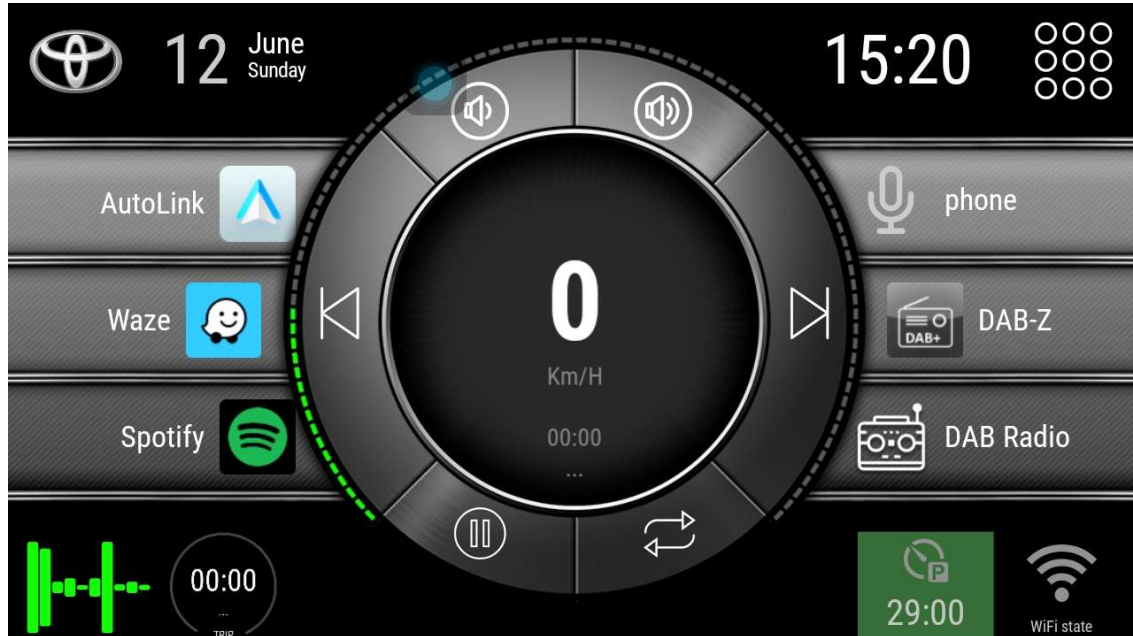


Now the unit will be in a standby mode just like a smartphone. And the startup is almost immediately.

### Different GUI

So, I use Waze for navigation, Spotify to listen my favorite music and I added via USB a DAB+ digital radio receiver. With the standard UI it is not possible to put these apps on the home screen. This screen shows big buttons with MP3 Music player, FM radio and more. To be able to customize the

home screen you can install a different home app. In my case I selected CarWebGuru,



Here you can select different themes and put icons of apps on the main screen. To set CarWebGuru as the default Home app you need to go into the settings menu apps defaults.

## Good luck with new radio

Wish the above installation steps can be helpful for you.

This amazing car radio, upgraded to the pure stable Android 11.0 operation system and a powerful 8-core 1.5 GHz RK-PX5 A53 processor Sadocom 4GB 64GB, is up-to-date enough to be the best replacement for your factory radio in your car.

You don't have to worry about getting lost any longer with this car radio installed in your car. According to turn-by-turn directions and voice prompts provided by the high-accuracy worldwide real-time GPS navigation system, you will easily and quickly know your current locations and accurately navigate to your desired destinations.

Through the Bluetooth connection between your Bluetooth-enabled mobile phone and this car radio, you can make, receive, reject and mute Bluetooth hands-free calls as well as freely listen to your favorite music streaming from your phone music playlists with keeping your hands on the steering wheel and your eyes on the road ahead, which add a lot of convenience and joyfulness to your driving.

Wish you like this unit and good luck to you!

Next I added the manual for you 😊

## User Operation Manual

On the next pages you will find the user operation manual as provided by supplier

### Disclaimer

For your safety, it is advisable to not watch video or operate the machine when you are driving. While driving, please adjust the volume to the optimum level. Before operating the machine, you are advisable to read carefully and understand the safety instructions and warning signals stated in the manual. Keep the manual in the reach for future reference.

1. Firstly, please ensure safety on the road.
2. In difficulty operating the machine, please stop the car safely before you operate the machine.
3. Keep the machine out of reach from children to prevent unnecessary injury or damage to the machine.
4. While using the GPS navigation, please adhere to the traffic rules.
5. Please do not operate the machine at restricted areas such as petrol station, wine refinery, strong electromagnetic obstruction area to prevent danger.
6. Please do not install, maintain or repair the machine on your own with the power on. It is very dangerous to install and repair the machine by personnel without proper professional installation training and experience on electronic device and automobile parts.
7. Please do not install or store the machine, especially LED display screen directly under the sunlight or hazardous substances. During installation, please ensure no direct contact with the air-conditioner's ventilation duct. This will cause damage to the machine, the car or injury to the human body.
8. Please do not use sharp object to scratch or press the display screen vigorously as this may damage the screen.
9. Please do not expose the machine under humid weather or direct contact with liquid to prevent fire or lighting.
10. The machine can only support one 12mm CD at a time. Please do not insert 8mm CD or other objects into the machine.

## i) Basic Operation Setting

### 1. Power On / Off the machine

- When ACC is connected, press the power button on the front panel to switch on the machine
- Press the power button on the front panel to switch on machine. Turnoff the engine and unplug the car key to switch off.

### 2. Volume Adjustment

Press "🔊+ 🔊-" on the front panel (some models with volume control VOL+/VOL- button on the front panel) to adjust the volume of the machine.

### 3. Mute Control

Press the left volume button to display volume bar on the display screen. Press the media volume to MUTE.

### 4. Backlight Control

Adjust the backlight at Display Setting under Car Settings.

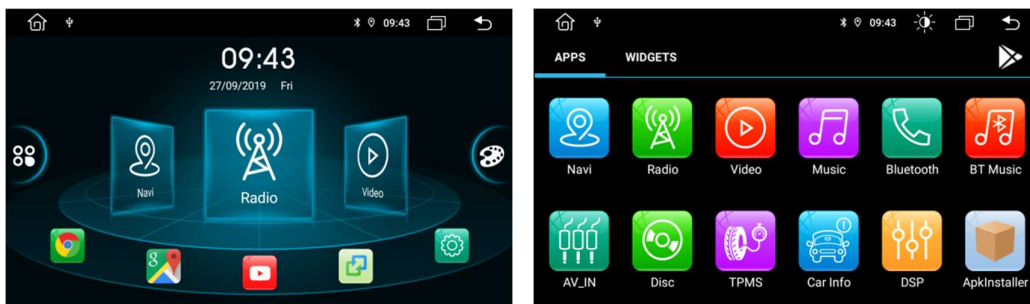
### 5. Camera

The screen will be automatically switched to rear view sight when the car is at reverse position.

### 6. Playback Source Selection

At front panel, press Application to view Radio, Music, Video, USB play, TV (optional) or AVIN mode and options.

At homepage, touch APP icon to enter application interface. Please view the detailed operation manual of respective functions at the subsequent chapters. Slide left or right to switch between different home pages.



### 7. Playback Mode and Position Memory

When you reboot the machine, the system will resume to the earlier mode prior to shutdown.


For radio, it will resume to the radio channel prior to shutdown.

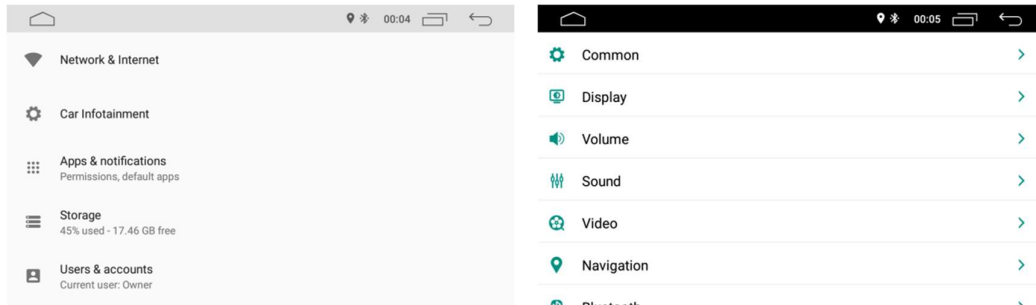
For music or video, it will resume playing the last song or video prior to shutdown.




## ii) Settings




Touch the icon “” on the front panel to enter Settings interface. Select the corresponding option to enter the corresponding settings option. Move the options bar up and down to find the desired settings.



- ◆ **Note:**  
Direction of ON and OFF mode under setting interface .

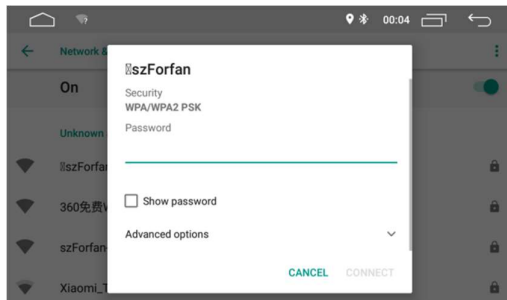
[  ] ON mode

[  ] OFF mode

### 1. Network & Internet

#### 1.1 Wi-Fi Connection

Go to settings then Wi-Fi to ensure Wi-Fi is switched on to connect to the internet.



As per the above picture, search for your desired Wi-Fi hotspot. Complete the Wi-Fi connection by inserting the password and touch Connect.

You may change the language type, language input and type of keyboard in this interface.

#### 1.2 More

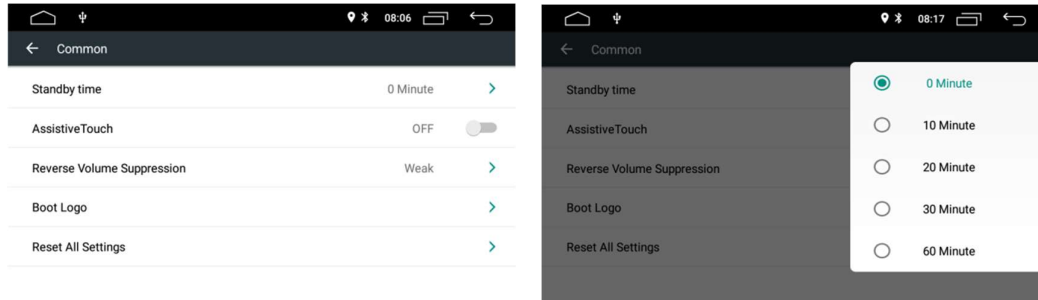
Setting of personal hotspot and VPN is allowed.

## 2. Car Infotainment

### 2.1 General Settings

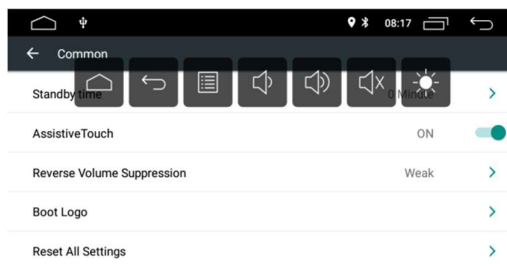
#### ✧ Standby Time

The standby time are 0 minute, 0 minutes, 20 minutes, 30 minutes, 60 minutes respectively. Standby time can be adjusted in accordance to desire.



#### ✧ Touch Assist

User can choose to on or off the touch assist. The touch assist has 7 most commonly used options and is displayed on top of the screen at the interface where it provides the user easy maneuver of the machine.

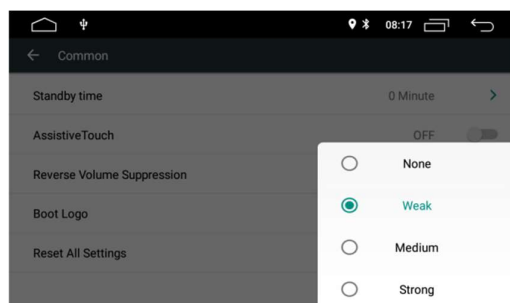


#### ✧ Reverse Volume Control

To adjust the volume while at the reverse position, select Reverse Volume Suppression.

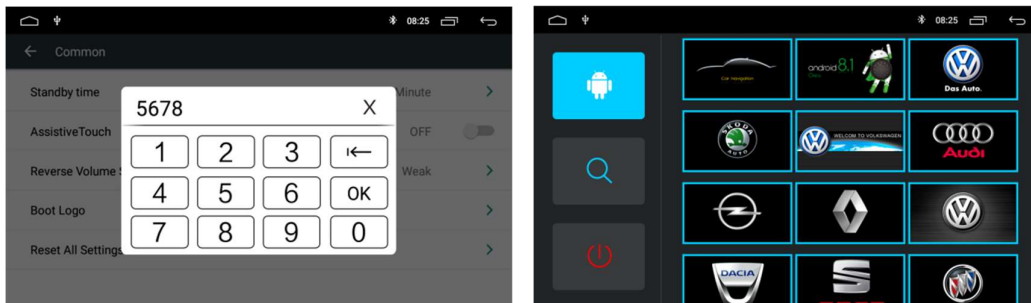
There are four options available namely None, Weak, Medium and Strong.

- ✧ Selecting None means there will not be any changes to the current defaulted volume.
- Selecting Strong means lowering down the reverse volume at most.



#### ✧ Boot Logo

Touch the boot logo, key in the password (5678) at the popup dialog to enter boot menu.

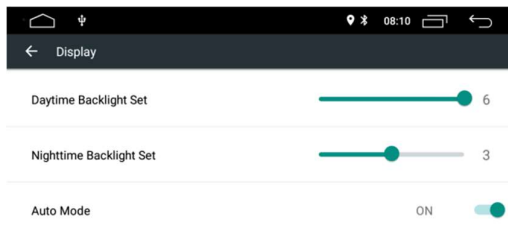


#### ✧ Restore Factory Setting

Touch Restore Factory Setting, at the popup dialog, select confirm. When the machine restarts, the system will restore to factory settings. All your settings will be removed.

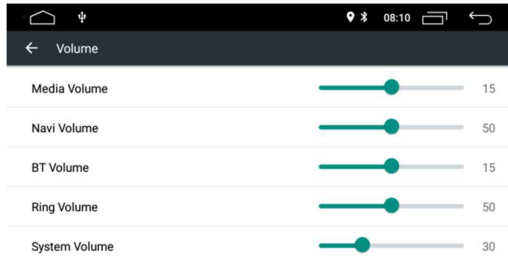
### 2.2 Display Setting

Adjust the display brightness of the background for different timing of daytime and nighttime



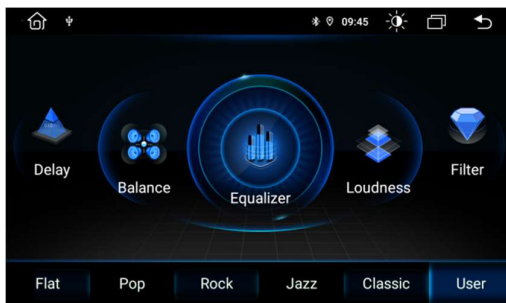
### 2.3 Volume Option

Volume options for respective systems can be adjusted in accordance to desire.




### 2.4 Sound Effect

Enter sound effect interface by touching "Sound Effect" to access different sound effect modes.



#### ✧ Balance Setting

Touch four arrows to adjust the 4 speakers volume to control the sound effect. The 4 speakers volume is consistent when the black dot is right at the center. Touch the restore icon “” at the bottom to restore the defaulted balance setting.

✧ Loudness Setting

Sliding to the left or right to adjust the loudness. The higher the loudness, the higher the low frequency value of the sound. Please adjust the loudness reasonably to avoid loss of frequency signal.

## 2.5 Video Option



✧ Video in Motion

Slide button to the right to enable or disable the video in motion option.

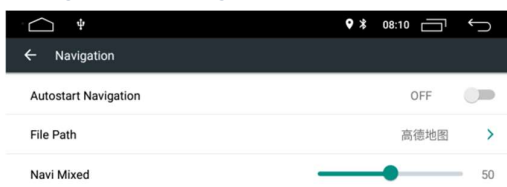
If video in motion is disabled, user cannot watch video and view picture while the car is in motion.

◆ Note: Recommend to enable this option for your safety.

✧ Reversal Warning Line

The camera of some car models may not have reversal-warning line. By enabling this option, user is able to see the distance to warning line at the display during reverse.

## 2.6 Navigation Setting



✧ Autostart Navigation

User can set autostart of navigation upon booting.

✧ Navigation Application Option

User may insert pre-installed navigation application to pair with the navigation button.

- ✧ The system will automatically display all installed applications and you may touch to select the application of your choice.

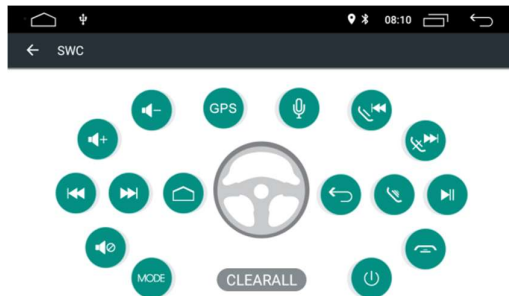
- ✧ Navi Mixed  
Slide to the left or right to adjust the Navi Mixed volume.

## 2.7 Bluetooth Setting



- ✧ Name of Device  
Display the Bluetooth name of the machine
- ✧ Auto Connect  
By enabling this option, the machine will auto search and auto connect to the last connected device.
- ✧ Auto Answer  
By enabling this option, the machine will auto answer all incoming calls using bluetooth.

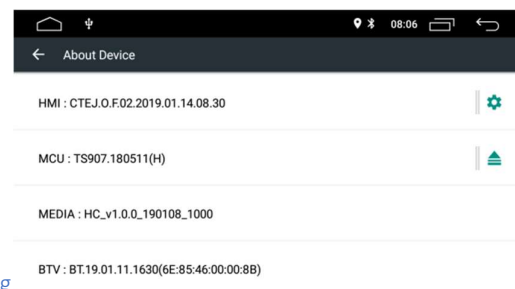
## 2.8 Maneuver Control



Please follow the steps below to set the features of the control buttons on your steering wheel.

- To delete all, select "CLEARALL".
- Press the desired control button on your steering.
- Touch the corresponding feature of the control button on the touchscreen.
- When the control button changes to blue colour that means the setting is successful.
- Repeat step 2 - 4 to complete all the control button setting.

## 2.9 Version Information



pag

### iii) Application

#### 1. Navigation

##### GPS Satellite Navigation Operation

The invention of GPS navigation has brought to the convenience of travelling today. By using the GPS positioning and electronic navigation map, user can reach the destination faster and more efficiently. To navigate accurately, both the GPS positioning and navigation map are equally important. The GPS provides precise positioning and fast calculating speed while the navigation map provides huge information, data and route planning.

##### 1.1 Navigation Map Data

User may copy the navigation map data into the internal SD card. Before copying the data, user is to ensure there is sufficient storage space in the internal SD card. If the storage space is insufficient, please delete the unnecessary / unwanted data. The copying and deleting of data can be done through defaulted ES File Explorer.

1.2 The data of some navigation applications can be stored externally in SD card or USB drive.

##### ◆ Note

Some navigation application defaulted its route planning on the map and may not support storage in external SD Card and USB Drive.

##### 1.3 Installation of APK Navigation Application

Before navigation, please install APK Navigation Application and ensure the APK navigation map is correctly installed.

##### 1.4 Navigation Activation


- ✧ Upon successful installation of APK Navigation Application, there will be a corresponding icon on the homepage. Touch the icon to launch the application.
- ✧ User can also go to "Car Setting" > "Navigation Setting">"Navigation Application Option" to link the navigation button and application. Upon linkage, user may press the "Navigation Button" to start the navigation directly.

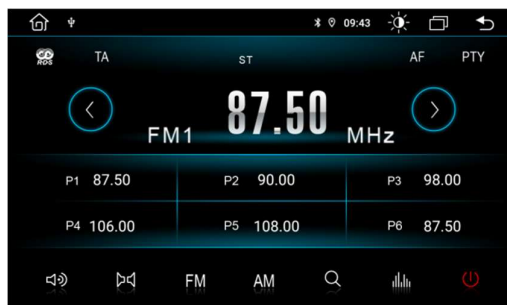
##### 1.5 Navigation Application Operation

Please refer to the corresponding operation manual for details in navigation application.



#### 2. Radio




Touch the radio icon“” on the main interface to enter radio mode. You may also touch the radio icon at the application page.



## 2.1 Radio Channel Search


Use the arrow icon “”, “” at the radio interface to search for band channels. When a channel is found, the search will stop automatically and the radio will start playing.


2.2 Media volume “” Slide to the left and right to adjust the media volume. Touch media volume to mute.


## 2.3 Band Search .

Touch band search to select : FM1,FM2,FM3 ; AM1,AM2.

## 2.4 Automatic Channel Search

- When you touch this icon “” at the radio interface, the system will automatically search from low frequency to high frequency until it finds channel with the strongest signal.
- To stop the search, touch the icon again.

2.5 Sound settings “”。

2.6 Off radio “”。

## 2.7 Preset Radio Channel

Each band can store up to 6 r123

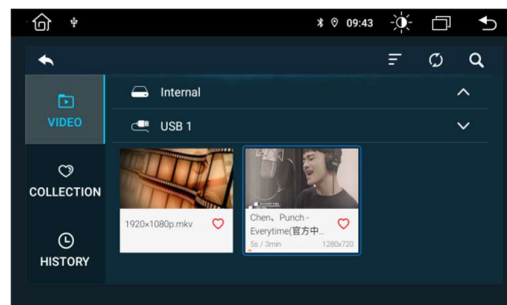
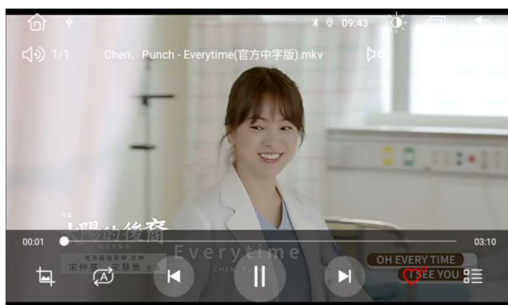
radio channels. The system can store 24 radio channels (18 FM channels and 6 AM channels).

## 2.8 Preset Radio Channel Manually

Long press preset radio channel button (1-6) for about 2 seconds to save the current radio channel.

## 3. Video

Touch the music video icon at the main interface. It supports flash internal storage card, music and video stored in USB drive, ape, flac and other formats.



### 3.1 Video Player Interface


Screen playback ratio “”, Loop playback “”。


Touch “”, “” to switch between video, Touch to play “” or pause the video.



Collection “”, File list “” .

### 3.2 Folders and listing

To refresh video listing, touch video icon followed by the refresh button “”. User can also access to the video folder by selecting other menu, thereafter playing the video of selection.

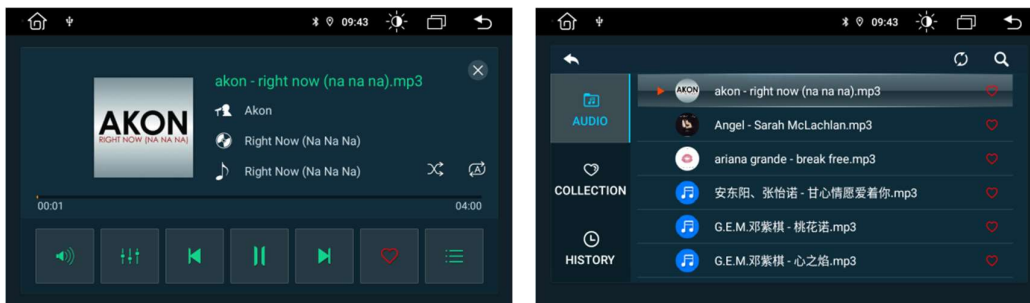
Touch the “” button to search current video folder.

3.3 video display””,Favorite vidros””,History piay””.



## 4. Music

### 4.1 Cover Display

The machine supports MP3 cover display. If the song comes with cover data and information, it will be shown on the cover display as per below.





### 4.2 Repeat and Shuffle




Touch “” to enable and disable shuffling of songs. Touch “” to switch on the repeat mode. To repeat the current song →To repeat all songs.

4-3 Volume “”, Sound “”, Touch “”, ”to switch between Music, Touch to play  or pause the Music.Collection “”, File list “” .

### 4.4 Folders and listing


To refresh video listing, touch video icon followed by the refresh button “”. User can also access to the video folder by selecting other menu, thereafter playing the video of selection.

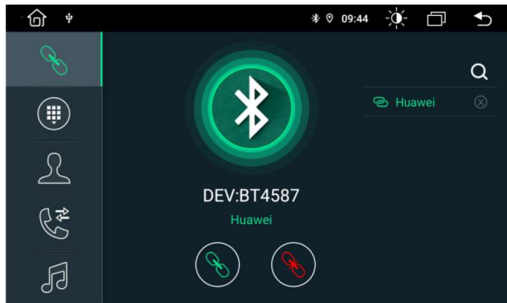
Touch the “” button to search current video folder.

4.5 Audio display””,Favorite vidros””,History piay””.

## 5. Bluetooth



Bluetooth's hands-free function enables you to call safely while driving.

On the front panel, touch  to enter bluetooth setting as shown below.

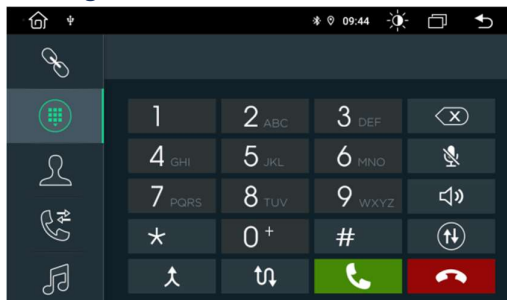



### 5.1 Pairing the machine with mobile phones



- To activate the bluetooth hands-free function, pair your mobile phone with the machine in the first place.
- Turn on bluetooth and bluetooth device search function on your mobile phone
- Search for the name of the machine. For example: BT6091.
- You are required to key in the corresponding PIN number i.e. 0000 on your mobile phone to connect to the machine.
- Once connected, a "CONNECTED" sign will appear on the screen.


If the mobile phone has been already paired with the machine, user can touch  directly to connect to the bluetooth in the next connection. User may also touch  to disconnect.

### 5.2 Making Phone Calls

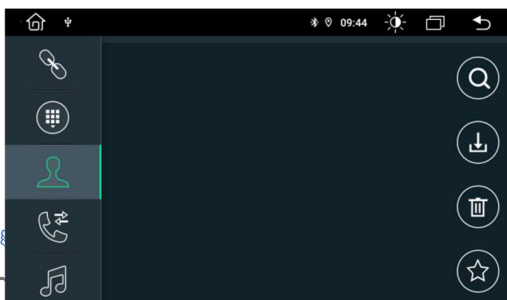



Upon establishing the bluetooth connection, user can dial directly on the phone or key in telephone numbers on the dial pad. Touch  to delete the incorrect number entered.

When you entered the telephone number, press  to call or  to hang off.

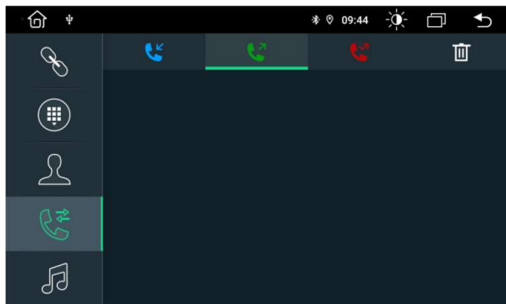
During conversation, user can touch  on the screen to switch between private mode and loud speaker.

### 5.3 Syncing Contacts



The machine supports syncing of contacts from mobile phone to the machine. Once bluetooth is connected, touch “” to download the contacts. Once download is completed, name of the contact will be synced and shown on the display screen during phone call. For quick access to the contacts, the contact book supports name search begins with first alphabet.

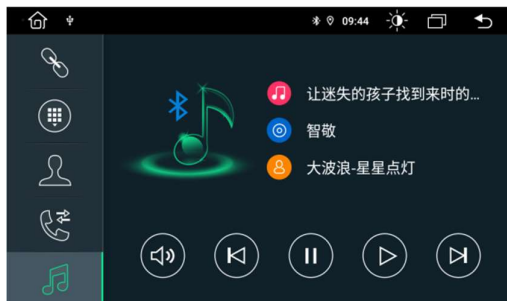
#### 5.4 Call History



Call history shows outgoing call, incoming call and missed call. User can perform call or delete in call history.


#### 5.5 Bluetooth Music

This machine supports bluetooth music playing. User can play music on the mobile phone and transfer it to the loud speaker of the machine via bluetooth. It also supports simplified controls such as "Previous", "Next", "Pause" and "Play".



Due to bluetooth compatibility, the machine may not support all phone models. Please contact us should you encounter problems connecting to the bluetooth.

## 6. AVIN Input Support

This machine supports AV (Line Audio / CVBS Audio) input. Connect external AV systems to the machine via AV cable. Touch AVIN“” at the main interface to switch to AV input mode.

## 7. Display Screen Instructions

### 7.1 Notes

- ✧ Do not expose the display screen directly under the sunlight or heat for a long period of time to prevent damage to the LCD screen.
- ✧ Do not expose the display screen directly under sunlight when it is not in use.
- ✧ The display screen should be used within the temperature ranges as per below:
  - a) Operating temperature range : -10°C~+50°C
  - b) Storage temperature range : -20°C~+80°C

The LCD screen is a full frontal display for better viewing experience in the car. Please do not press the LCD screen vigorously to prevent damage. Except coordinating the touch panel functions, please touch the LCD screen gently to prevent scratch or dust.

Shall not interfere with the installation of airbags and other safety features or devices in the vehicles.

### 7.2 About LCD

- ✧ Small black dots or bright dots may appear on the LCD screen. This is not a defect but merely the specification of LCD.
- ✧ If in use in cold areas, the LCD screen may be dimmer after power on but the brightness will be adjusted to normal after a short while.
- ✧ If exposed directly under sunlight, user may be difficult to see the LCD screen due to reflection.

### 7.3 Maintaining the LCD screen

- ✧ Please off the power before cleaning the LCD screen. Wipe the screen with soft fabric to prevent scratch on the surface.
- ✧ Please do not use wet towel, benzene, and chemical related cleaners to clean the LCD screen.

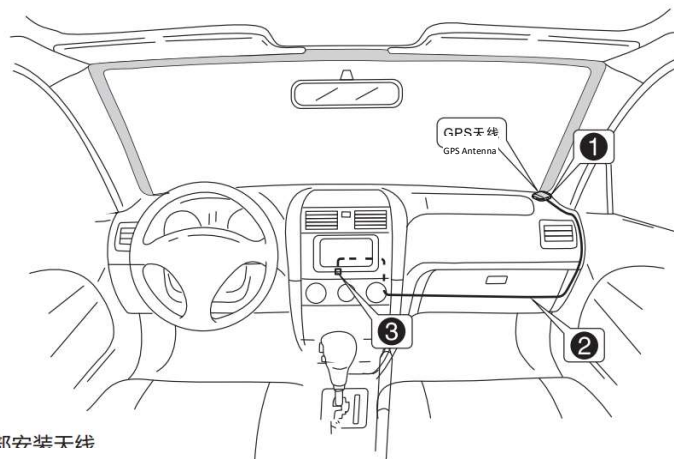
## 8. Installation of Antenna

Recommend installing the GPS antenna on dashboard or rear shelf. The antenna should be installed on leveled surface facing the sky to prevent blockage of radio waves as little as possible. Vehicle equipped with tempered glass or tint may weaken the receiving signal of the GPS antenna. Thus, recommend installing the antenna outside of the vehicle.

### 8.1 GPS Installation Guide

- Before affixing the GPS antenna, please ensure using the suitable cleaner to clean the designated surface. After cleaning, tear off the back of the tape and press to place the GPS antenna.
- Remove the side cover, move the cable through the storage box until it reaches the control panel of the machine. The cable needs to be fixed with a cable tie.

Connect the GPS antenna's plug to the machine



#### ◆ Notes

- Please ensure the system power is off when connecting to the GPS antenna.
- Please do not shorten or extend the GPS cable. Altering the length of the cable may result in short circuit or malfunction that may damage the product.
- The antenna should be installed on a leveled surface where radio waves will be blocked as little as possible, otherwise it will affect the accuracy of navigation.
- Please do not interfere the GPS antenna with steering wheel or gear lever, as it may be dangerous.

#### iv) Troubleshooting Guide

If you encounter the problems below, please refer to this troubleshooting guide for quick solution. If the problems persist, it is advisable to contact the professional or visiting the customer service centre for further assistance. Please do not dismantle the machine without proper advice.

Issues	Cause	Action (Reference)
Unable to power on	The car key is not inserted or ACC is not turned on	Insert the car key and turn on the ACC
	The power cord is not connected	Connect the power cord correctly
	The fuse is damaged	Replace the similar fuse
Inresponsive touch screen	The system may be multi tasking (i.e.navigation). Please wait for a moment. If the problem persists, please contact customer service centre for assistance.	
No rear view image	No reverse camera is installed.	Install the reverse camera and plug in to the CCD socket.
	Reverse camera type does not match	Replace the reverse camera.
Rear view appears during reverse position even when system is not booted. Power button is null	This is part of the safety feature where the rear view function is preset for safety priority.	Power on to boot the system after resuming from the reverse position to normal.
No GPS signal	GPS antenna is not connected	Connect the GPS antenna correctly
	The car may be at the GPS signal blind spot.	Drive for a distance to check GPS signal. If the problem persists, please contact customer service for assistance.
Positioning and navigation failed upon power on	Blind spot of the navigation map. Some remote areas or routes may not be covered in the map.	Please contact the customer service to update the map
Unable to locate the destination routes	Firstly, please ensure correct spelling of the destination followed by trying possible names of the destination. If still unable to search, the destination may not be updated in our database.	
Navigation routes are far	The navigation system sets a route to your destination by applying certain built-in rules to the map data. Besides, distance, the navigation system will take into consideration of the road grade, traffic rules, flyover, highway, main road and others to ensure the driver in reaching the destination soonest possible.	
Blank on the map	May be due to scale setting. Try to zoom in and out to adjust the map display. If the problem persists, it may be due to loss of GPS signal. Please reset the destination or select a new landmark.	