



Self Study Program 890153

Volkswagen MIB II Infotainment System

Design and Function

Version 2



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Always check Technical Bulletins and the latest electronic repair information for information that may supersede any information included in this booklet.

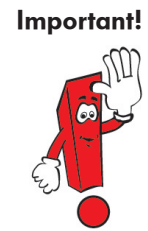
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This Self-Study Program provides information regarding the design and function of new models. This Self-Study Program is not a Repair Manual. This information will not be updated.

For maintenance and repair procedures, always refer to the latest electronic service information.





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Progress

Volkswagen of America introduced the MIB (Modularer Infotainment Baukasten or Modular Infotainment System) generation of radios in the 2015 Golf models. These systems continued the progression to enhance the information and entertainment systems in Volkswagen vehicles.

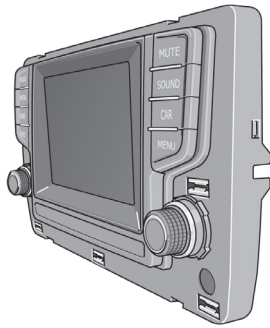
For 2016 models, except for Touareg and Eos, Volkswagen continues to enhance the Infotainment systems with the introduction of the MIB II. The MIB II systems look similar to the original MIB systems, but have faster processing and more capabilities. This SSP will introduce you to the benefits of the MIB II systems.



MIB II Versions

MIB I vs MIB II Configuration

The MIB I radios were only available in the North American Region for the Golf VII vehicles, particular to the MQB vehicle design. The configurations of these were relatively identical, with a G683 Front Information Display Control Head for the user interface, and the J794 Control Module for Information Electronics located inside of the glove box.



G683 Front Information Display Control Head

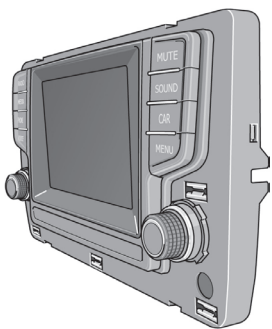


J794 Control Module for Information Electronics

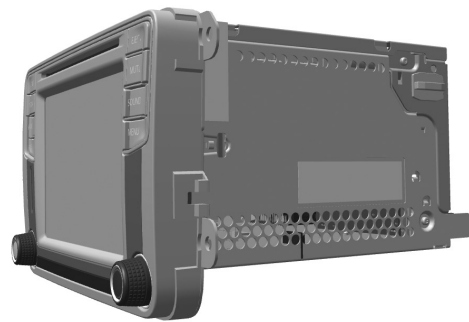
MIB II Configurations

The MIB II radio will have two different configurations for the North American Market, even though the capabilities and specifications will be the same. Vehicles built on the MQB platform will receive the same hardware configurations as the MIB I systems. However, vehicles that are not yet built on the MQB platform will have:

- A double-DIN configuration without a separate J794
- SD and CD/DVD slots in the radio face
- No Car button on the radio face. Any Car functions are performed using the MFI and/or buttons on the glove box



MIB II for MQB



Non-MQB MIB II

North American MIB II Versions

There are four versions of the MIB II for the North American market:

- Composition Color
- Composition Media
- Discover Media
- Discover Pro

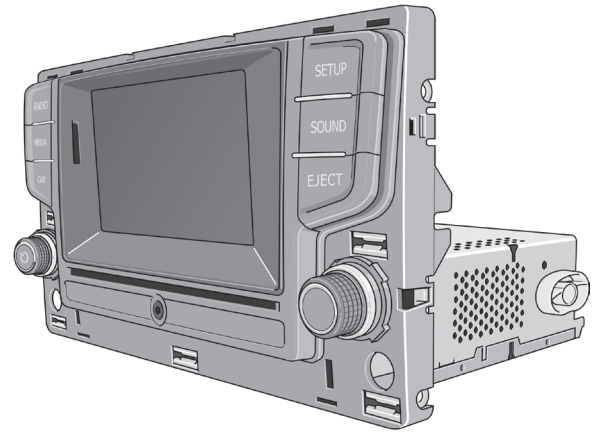
Even though all versions have very similar functions, not all versions have exactly the same features and capabilities. They vary slightly between vehicle platforms, depending the capabilities of each vehicle platform.

MIB II Versions

Composition Color

Technical Features

- 5-inch color resistive touchscreen
- Six side keys for functions
- Single-disc, MP3 compatible CD player
- Eight speakers (4 X 20 Watt output)
- AUX-IN and SD card slot in radio face
- One USB input that operates like an AUX-IN input, but provides charging capability
- Bluetooth with audio capability (HFP, A2DP, PBAP, AVRCP)
- Static display of photo files using SD card (JPEG and PNG)
- Double tuner with phase diversity for radio signal reception
- Not compatible with Car-Net features
- No hard drive storage for music or image files



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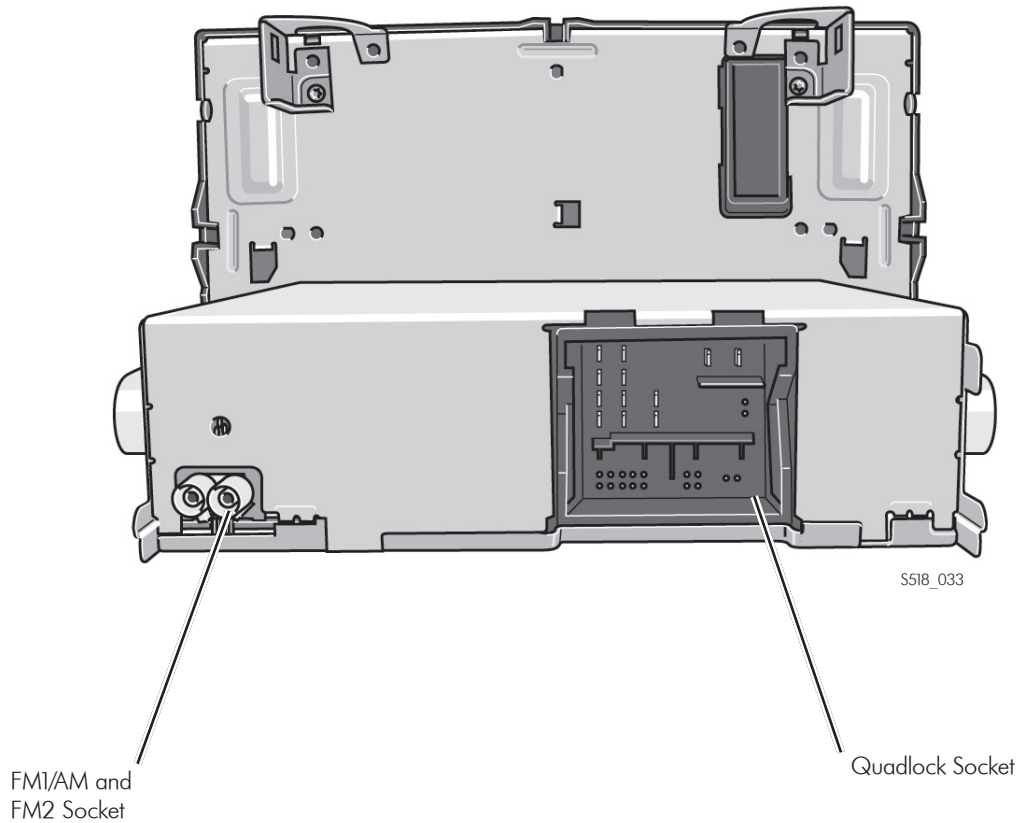
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Electrical Connections

The electrical connections are on the back of the housing and only accessible when the unit has been removed.

The polarity-protected connections sockets are:

- Quadlock socket for power, speakers, etc
- FM1/AM socket
- FM2 socket



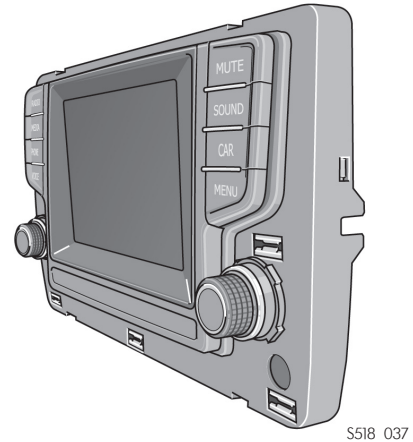
MIB II Versions

Composition Media

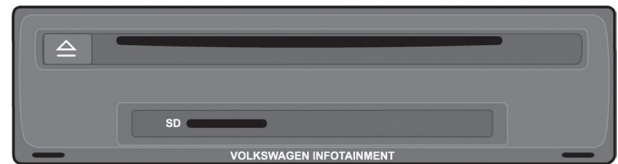
Technical Features

All functions of the Composition Color plus:

- 6.5 or 6.33-inch capacitive touchscreen with proximity sensors, depending on model
- Swipe and zoom gesture capability
- Golf models have (1) SD and (1) CD input in glove box. All other versions have (1) SD and (1) CD in the face of the MIB unit
- Golf models will have the CAR hard key on the face of the MIB unit. Other models will access CAR menus using the MFI
- 1 smartphone-compatible USB port.
 - This port is backwards compatible and will charge and import media from iPods, MP3 devices, etc. using the device's USB cable. It operates like the MDI in previous vehicles.
 - iPods and other media devices are not integrated into App-Connect and can be accessed through the Media hardkey
 - More USB ports may be available depending on model and trim
- Eight side keys for functions. Hardkeys may vary between MQB and non-MQB units
- Compatible with Car-Net App-Connect, Security and Service features. MQB models offer the ThinkBlue Trainer for eco-tips



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MIB II Versions

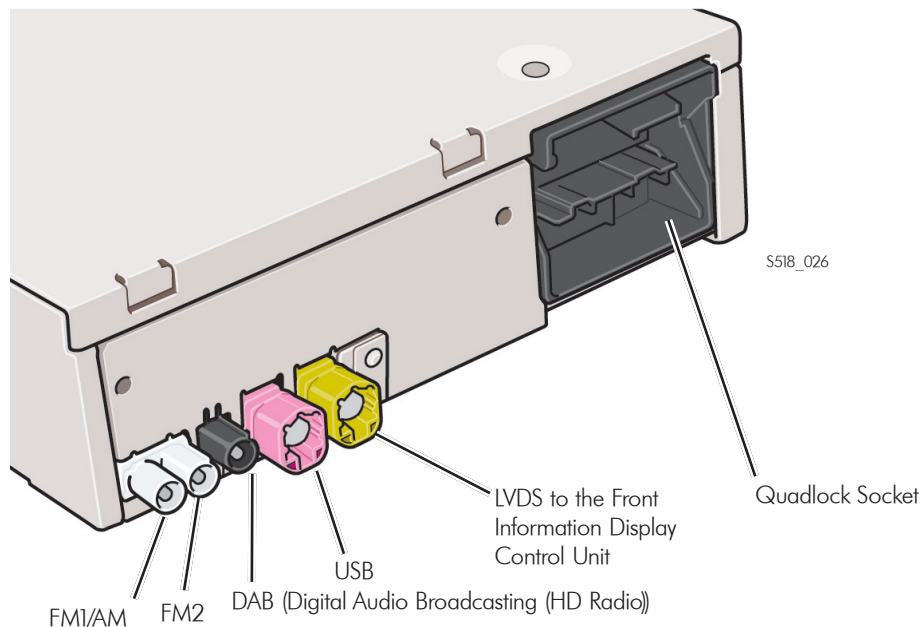
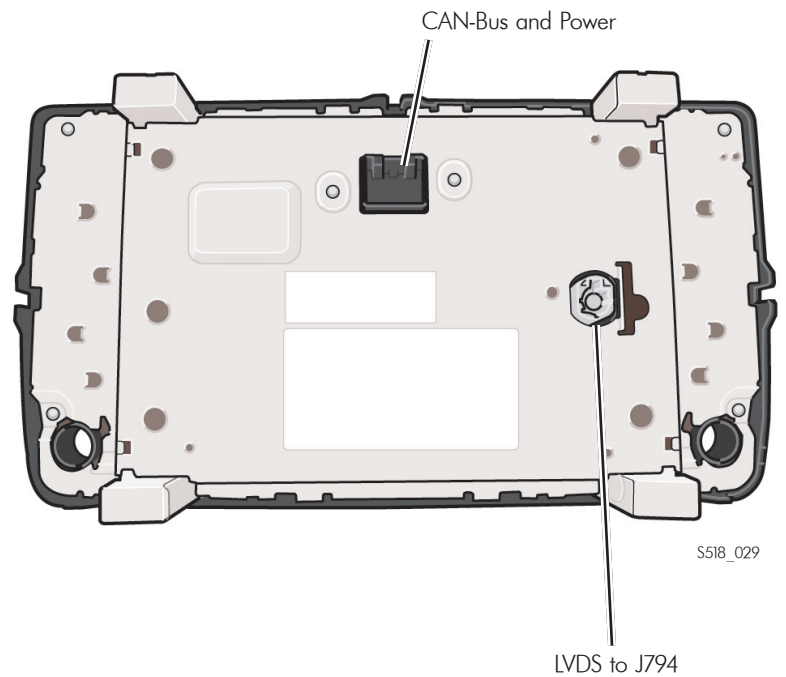
Electrical Connections

Operating and Display Unit

- Low Voltage Differential Signal (LVDS) to J794, the Information Electronics Control Module
- CAN-Bus and power supply connection

J794 Control Module for Information Electronics

- FM1/AM/FM2
- DAB (optional)
- USB
- Connection for the Front Information Display Control Unit
- Quadlock



NOTE!
MIB II units may have different configurations between MQB and non-MQB platforms. See Page 2 of this SSP for more information

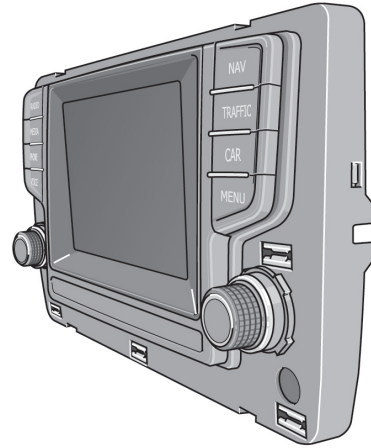
MIB II Versions

Discover Media

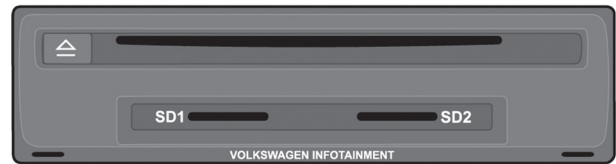
Technical Features

All functions of the Composition Media plus:

- Navigation module with 2D/3D map display
- Navigation can be entered in a single string of text instead of needing to enter state, city and street first
- Three routes can be calculated:
 - Shortest time
 - Shortest distance
 - Economical
- Speed limit display
- Dynamic route guidance (four years no charge, using Sirius Traffic)
- Sirius Travel Link
- Preset Point of Interests (POIs)
- Completely Car-Net compatible:
 - App-Connect
 - Guide and Inform
 - Security and Service
- Golf models have two SD card inputs and a CD input in glove box. All other versions have SD and CD slots in the face of the MIB unit
 - Either SD input can be used for navigation data



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MIB II Versions

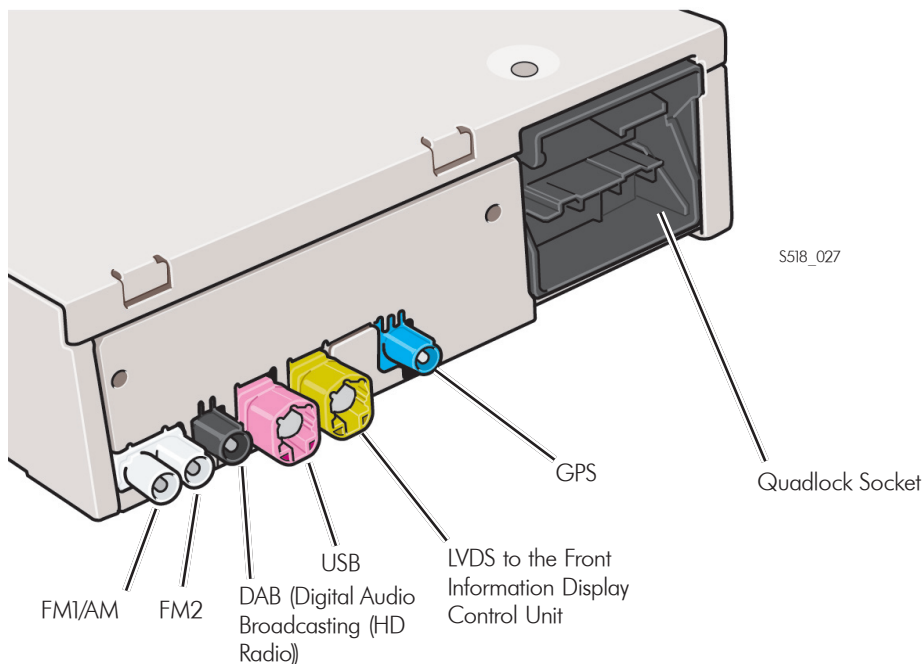
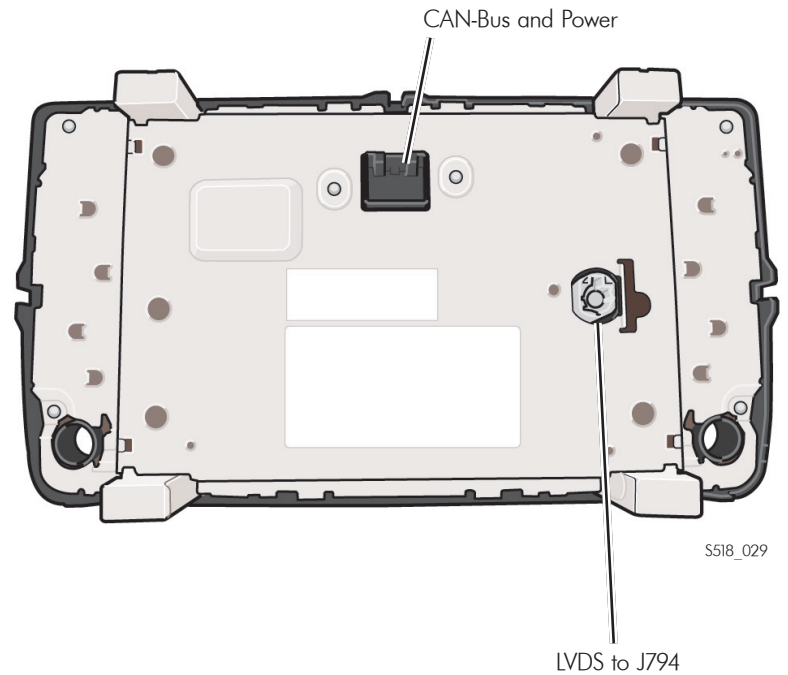
Electrical Connections

Operating and Display Unit

- Low Voltage Differential Signal (LVDS) to J794, the Information Electronics Control Module
- CAN-Bus and power supply connection

J794 Control Module for Information Electronics

- FM1/AM/FM2
- DAB (optional)
- USB
- Connection for the Front Information Display Control Unit
- GPS
- Quadlock



NOTE!
MIB II units may have different configurations between MQB and non-MQB platforms. See Page 2 of this SSP for more information

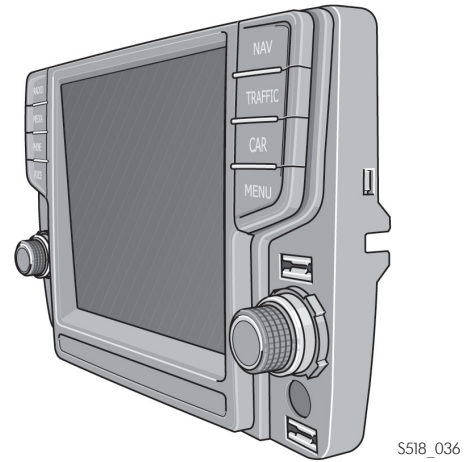
MIB II Versions

Discover Pro

Technical Features

All functions of the Discover Media plus:

- 8-inch color touchscreen display
- Navigation with 3D landmarks, 3D city map and Personal POI
- DVD player
- Playback of various film formats (AVI, MPEG, Divx, H264)
- Podcast playback
- Integrated Gracenote database (adds artist and title information to music files played)
- WLAN hotspot
- Two SD card slots and a single slot CD/DVD located in the glove box



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MIB II Versions

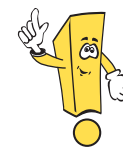
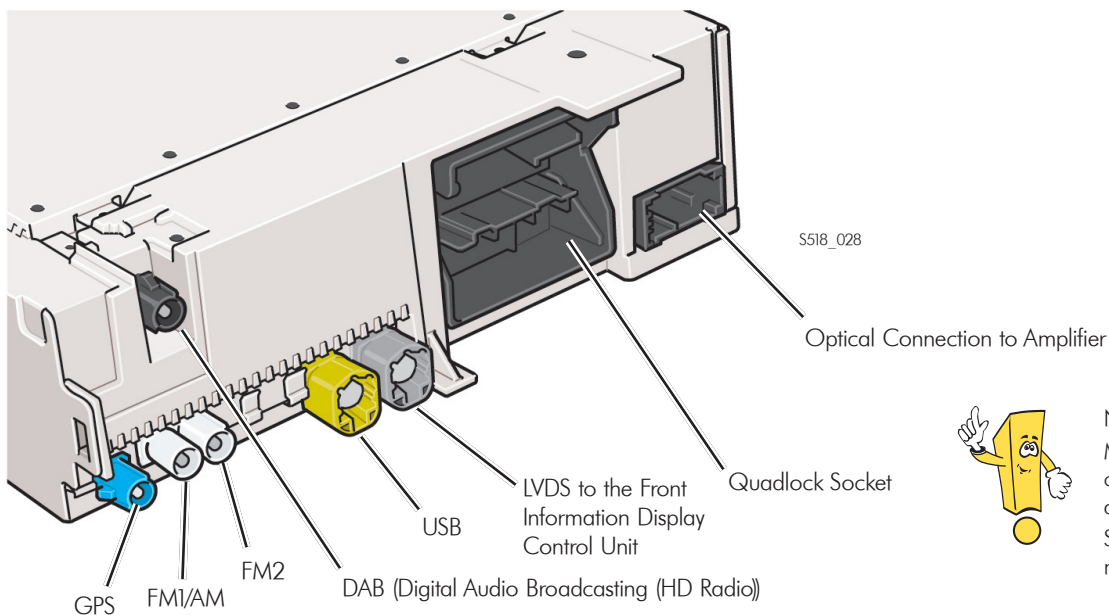
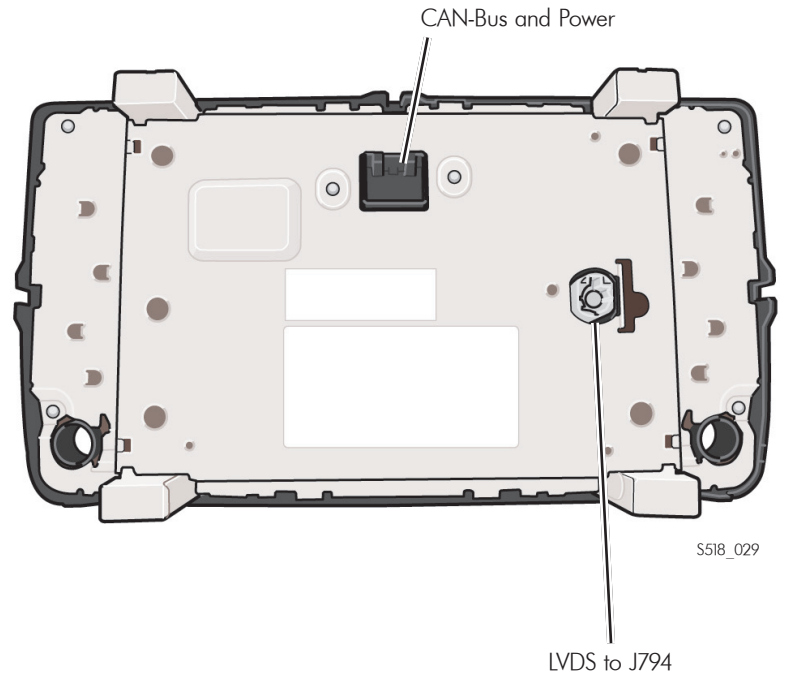
Electrical Connections

Operating and Display Unit

- Low Voltage Differential Signal (LVDS) to J794, the Information Electronics Control Module
- CAN-Bus and power supply connection

J794 Control Module for Information Electronics

- GPS
- FM1/AM/FM2
- DAB (optional)
- USB
- Connection for the Front Information Display Control Unit
- Quadlock



NOTE!
MIB II units may have different configurations between MQB and non-MQB platforms. See Page 2 of this SSP for more information

Media Inputs

MIB II Media Inputs

Multiple media inputs are available, depending on the version of MIB II that you have, or the options on the vehicle. This section will cover all available media inputs.

Standard for all MIB II radios is a USB and AUX-IN jack. This is located in front of the shifter, under the infotainment head or in the center console.



S546_023

Single USB and AUX-IN Interface

USB inputs vary between vehicle models and trim levels. These may or may not include additional AUX-IN jacks or USB ports.

An additional USB Port may be located on the rear of the center armrest, accessible to the rear seat occupants.

Any secondary USB input will charge and support audio integration, but will not support App-Connect.



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S546_021

Single USB and AUX-IN Interface plus Additional USB Port

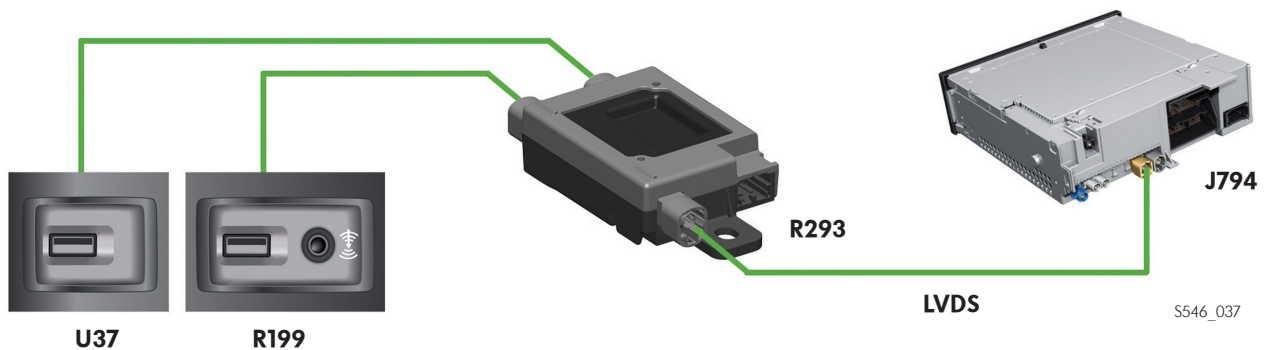
Connections

If the vehicle has only the front AUX-IN and USB ports, they are connected directly to the Information Electronics Control Module 1 J794.

If the additional USB connection is included on the vehicle, an additional USB distributor is used. This USB distributor module is located under the center console, next to the shifter assembly.

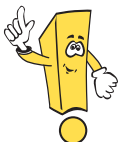
The ports connect to the USB hub, then to J794 using LVDS communication.

The rear USB port will charge and act as a media interface, but will not have App-Connect functionality.



Key

- J794 Information Electronics Control Module 1
- R199 External Audio Source Connection
- R293 USB Distributor
- U37 USB Charging Socket 1 (data-enabled)
- LVDS Low Voltage Differential Signaling



Note: With the above configuration, the Apple authentication chip is located inside of R293.

Antennas

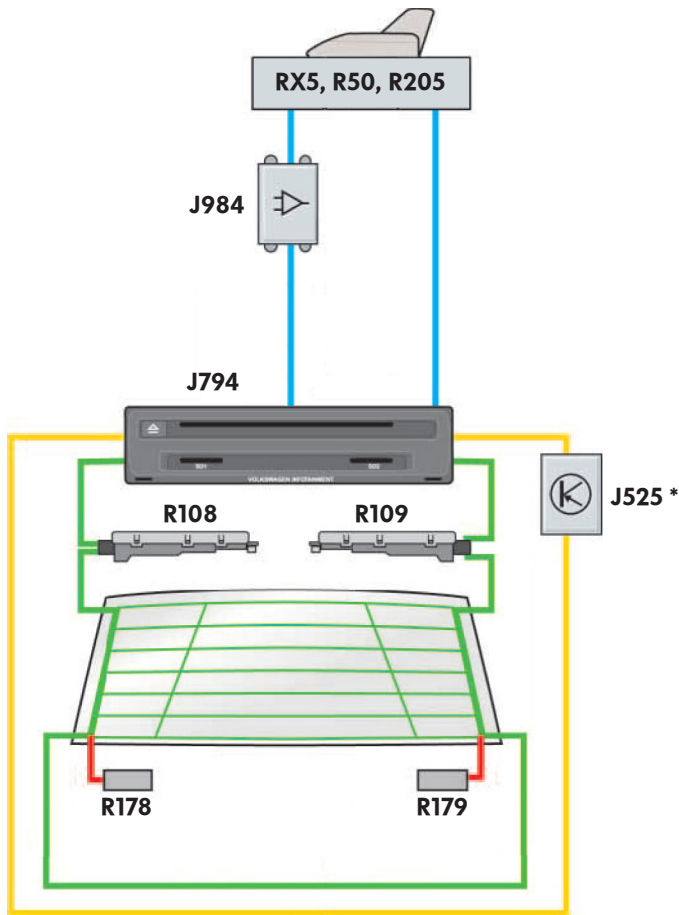
Antennas

The antenna system for the 2016 Passat is detailed on the next two pages. The basic locations of the components are listed below. The vehicle shown is a European Passat. North American version components may have slightly different locations.



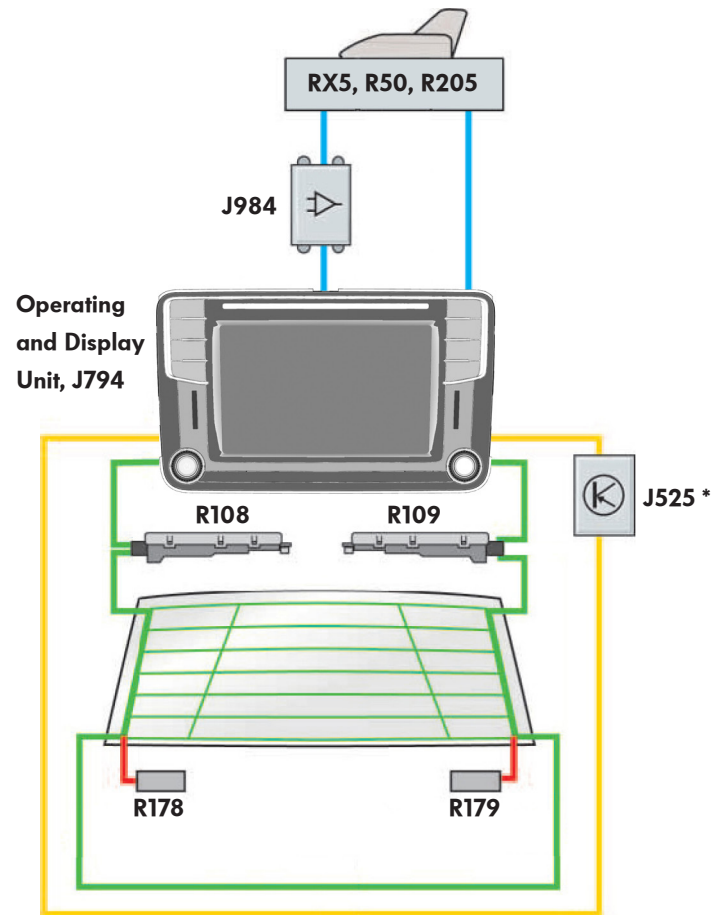
Antennas

MQB Antenna Configuration



Antenna 1

Non-MQB Antenna Configuration



Antenna 1

Key

J525 Digital Sound System Control Module
 J794 Information Electronics Control Module 1
 J984 Mobile Communication 2-way Signal Amplifier
 R50 GPS Antenna
 R108 Left Antenna Module
 R109 Right Antenna Module

R178 FM Frequency Filter in Negative Wire
 R179 FM Frequency Filter in Positive Wire
 R205 GSM Antenna
 RX5 Roof Antenna
 * Optional Equipment

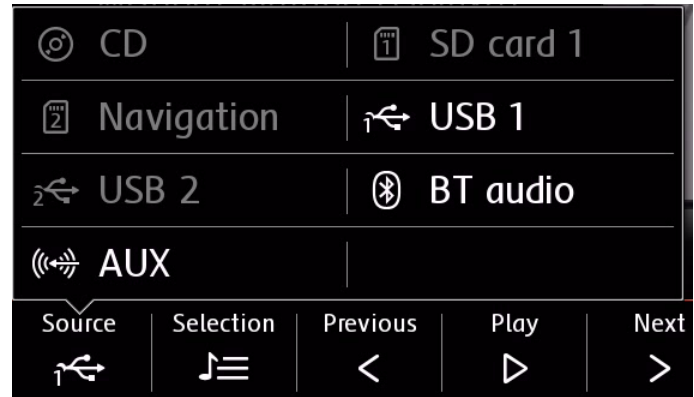
Media Selection

Selecting Media

Different media sources can be used to play music:

- CD
- SD Cards (may have multiple)
- USB (may have multiple)
- Bluetooth
- AUX

To switch media sources, simply select the Source soft key, then select one of the highlighted media sources. If a source is grayed out, the infotainment system cannot access it.



USB Media

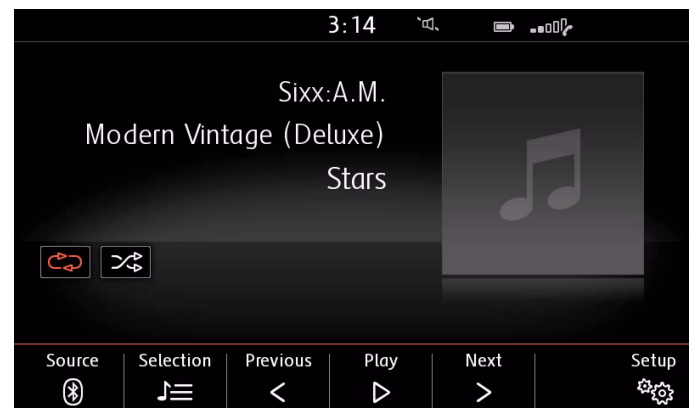
When playing music through USB, the Infotainment system will transfer the information that exists on the input device, such as artist, title, and an image.

All MIB II models can play MP3, WMA and AAC audio files. FLAC audio files are also compatible on all radios except for Composition Color.



Bluetooth Media

When a compatible smartphone is plugged into the USB and App-Connect is active, the Bluetooth audio on that device will be disabled. Audio will be streamed through the USB cable.



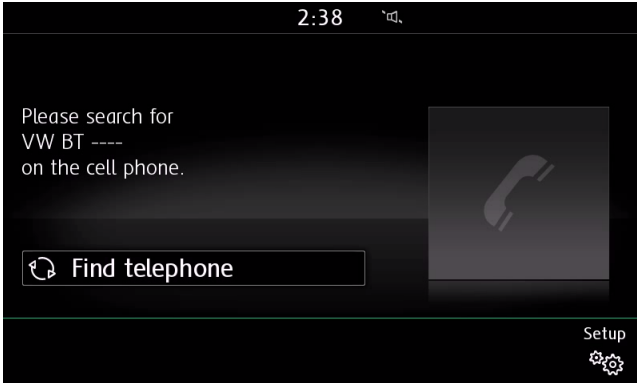
AUX-IN Media

When playing music through the AUX-IN port, only the music comes through without any artist or title.

Bluetooth Connectivity

Bluetooth Pairing

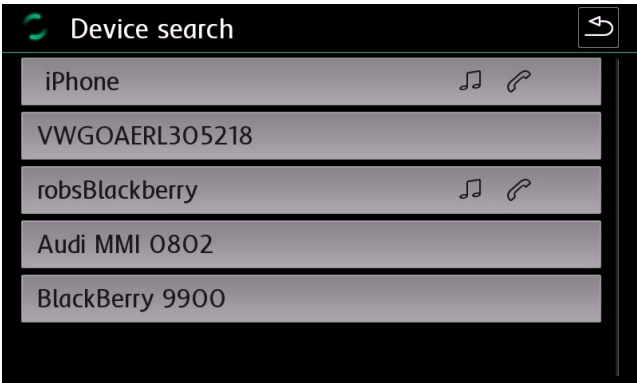
The Bluetooth pairing process is almost identical to the MIB I systems.



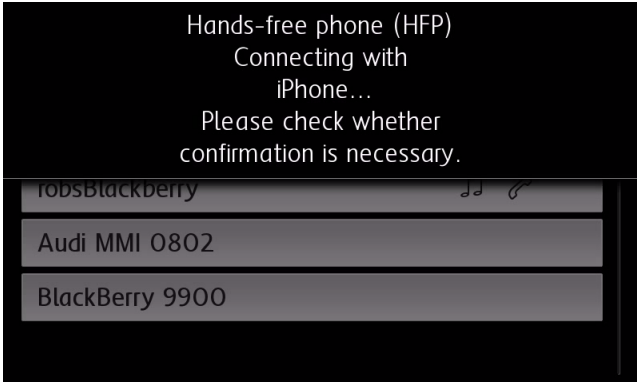
1. Search for Devices



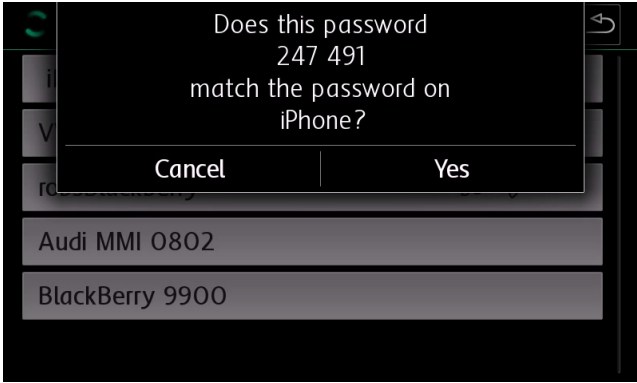
2. Select "Results" to Display Devices



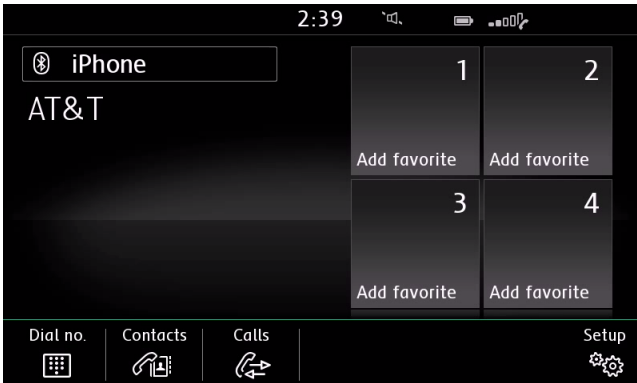
3. Select Device to Pair



4. Connecting



5. Verify the Passcode on the Phone within 30 Seconds



6. Paired Phone Ready to Use

Bluetooth Connectivity

Bluetooth Features

The Bluetooth capability of the MIB II has been expanded from the MIB I. There can be two active and paired Bluetooth devices at the same time.

Paired devices can take calls and stream audio. When taking calls, the paired phone will be shown on the screen.

If arrows appear next to the paired phone, more than one phone is paired to the vehicle. Pressing the paired phone will switch between the two paired devices.

Even if the address book of one phone is displayed, the other phone can receive calls.



In addition, one device can be connected to the phone functions while the other is connected for Bluetooth audio.



Smartphone Integration through App-Connect

Accessibility

The MIB II radio brings a new level of phone connectivity to the Infotainment system. When an android or iPhone is connected to the Infotainment system using the USB connection, information can be directly transferred, and some Apps can be operated using App-Connect.

App-Connect allows certain smartphones to integrate with the Infotainment system. It accesses the data and apps on the phone, then displays them in a user-friendly format.

The next few pages will detail some of the general steps for this advanced accessibility. Please use these as a general reference only. Different MIB II systems will have different screens. Also, these screens may change with different software levels.

Note: Not all phones with all software levels will work with this system

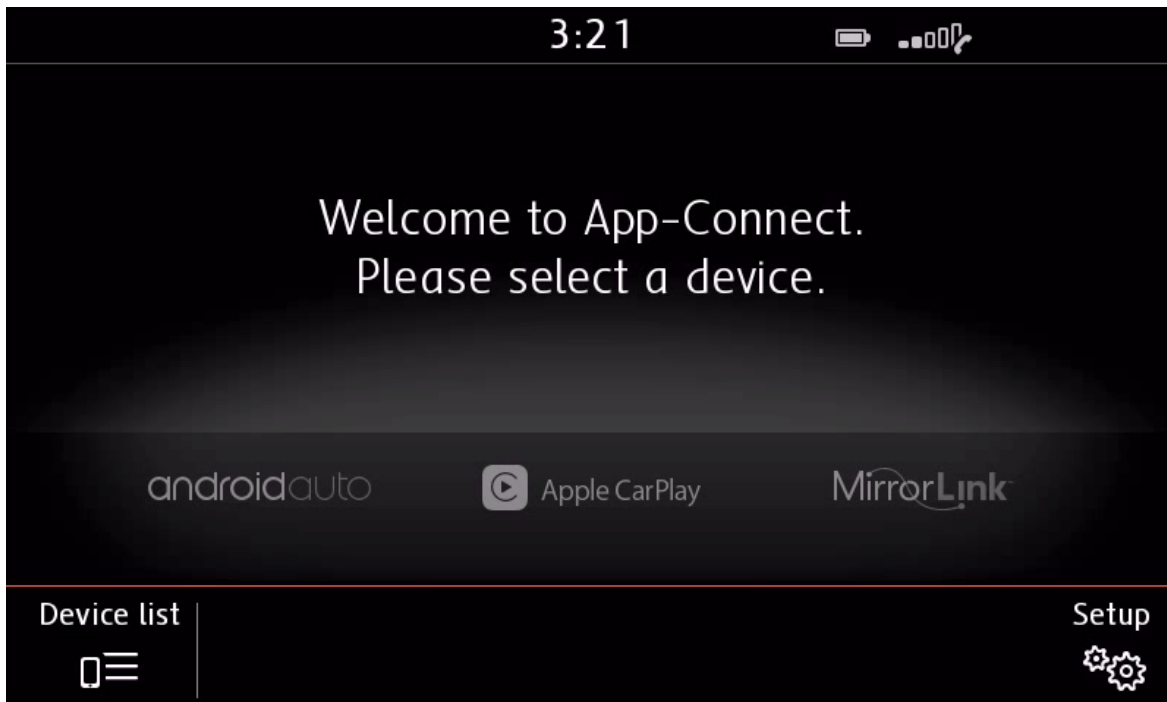


Smartphone Integration through App-Connect

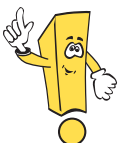
Selecting

After selecting App-Connect, the following options will be available:

- androidauto
- Apple CarPlay
- MirrorLink
- Select your choice in the graphic below to skip directly to that section



Select one of the on-screen options above to jump to that section.



Note:

- BlackBerry and Windows phones are not compatible with App-Connect.
- Apple devices are not compatible with MirrorLink

Smartphone Integration through App-Connect

androidauto

androidauto allows android devices with the correct software level to connect to the MIB II Infotainment system. The phone must be connected to the front USB port in the vehicle in order to use App-Connect.

At the time of launch, the required phone Android OS was Lollipop 5.

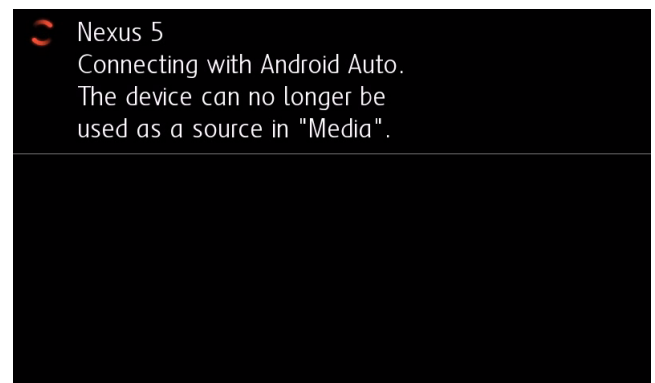
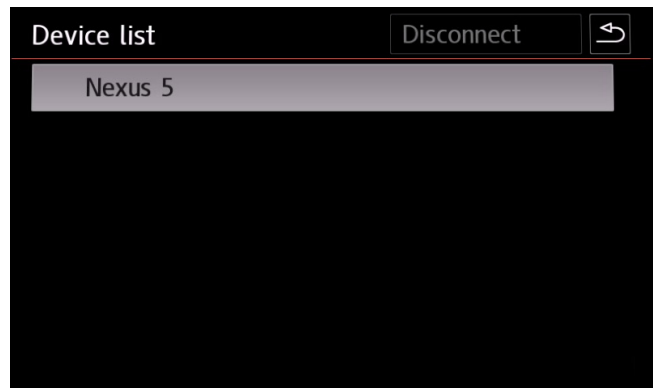
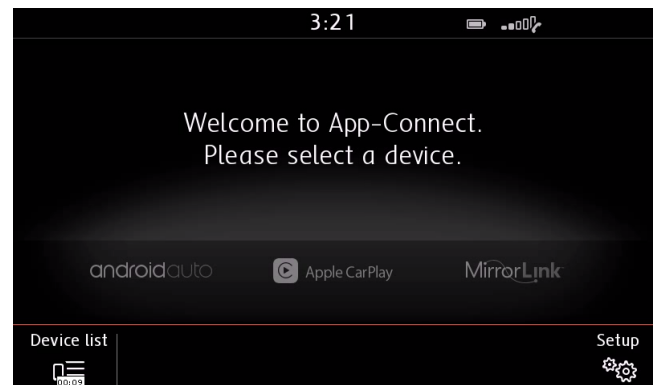
Steps to ensure a successful androidauto integration:

1. User must have a Google ID
2. User must download and install the androidauto app from the Google Play store
3. User must be in a place with a clear view of the sky and a good cellular signal for initial integration of androidauto

At this screen, you should select **Device List** to bring up any phones that are plugged into the USB connection.

When the Device List screen appears, and you see the correct device, select it to continue.

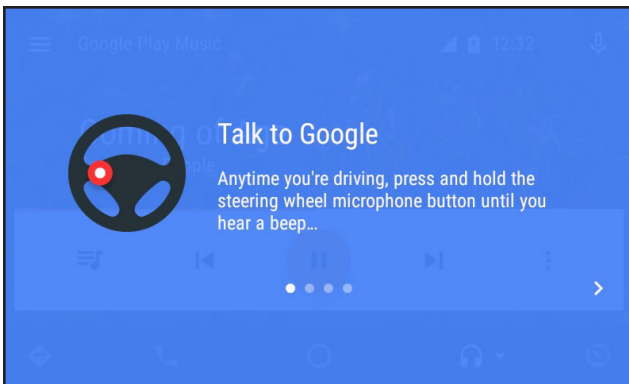
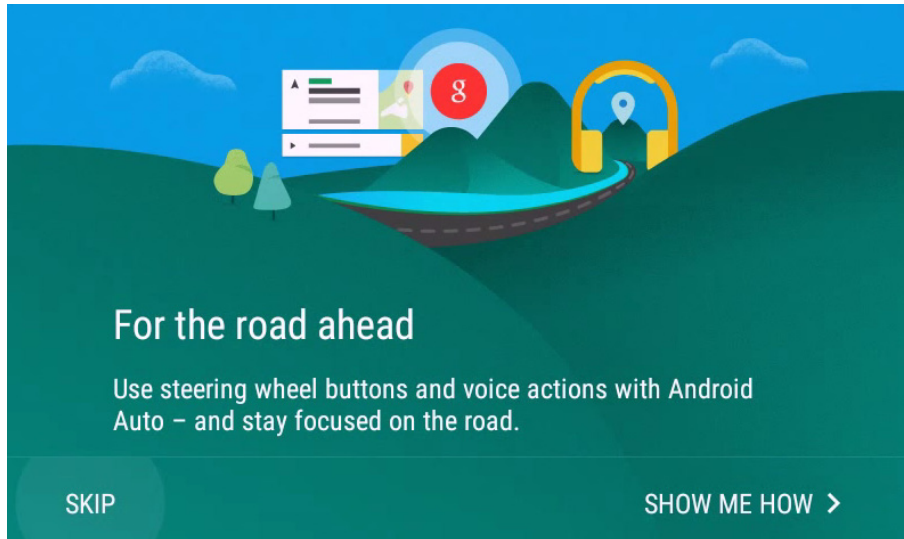
Now the device will connect with the androidauto interface. At this point, it will no longer be available as a media device. If you wish to use it as a media device, use the features in androidauto.



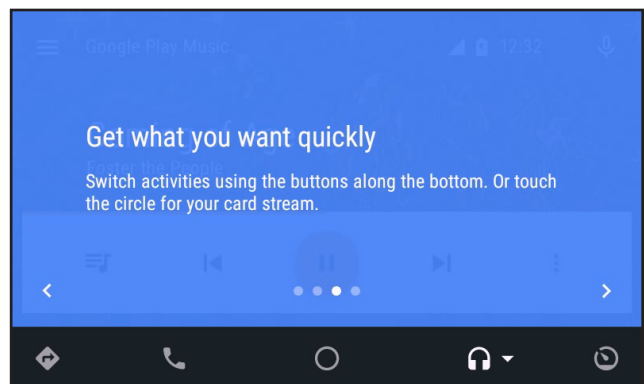
Smartphone Integration through App-Connect

android auto

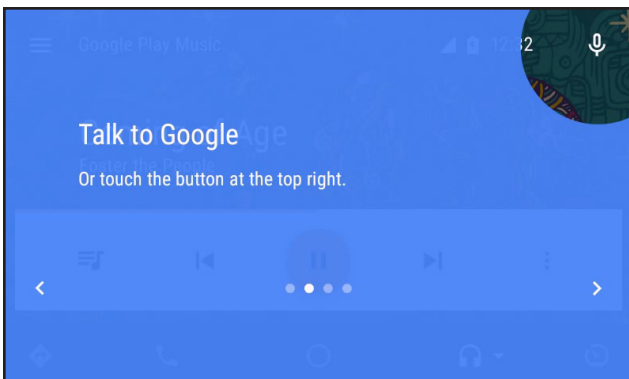
Once a phone is paired with androidauto, a tutorial pops up. You can choose to go through the screens of this short tutorial or skip it and begin using androidauto.



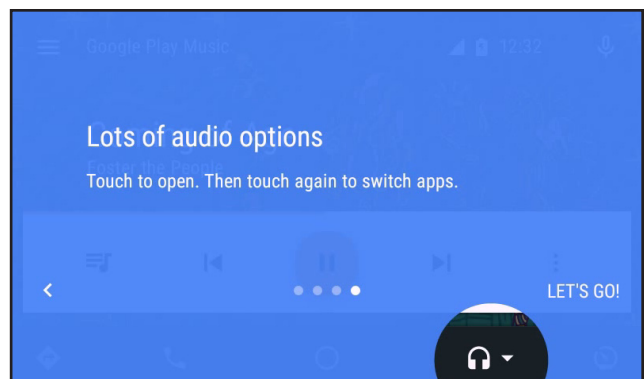
Tutorial 1



Tutorial 3



Tutorial 2

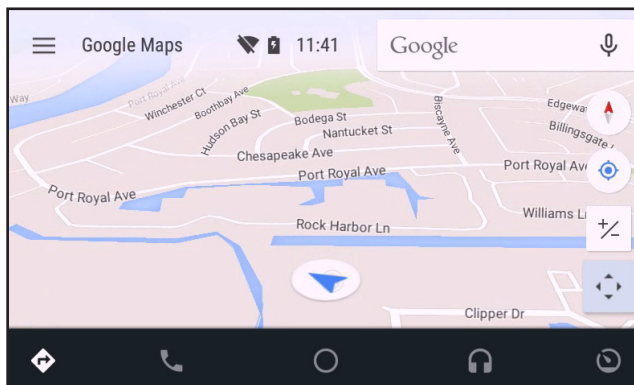
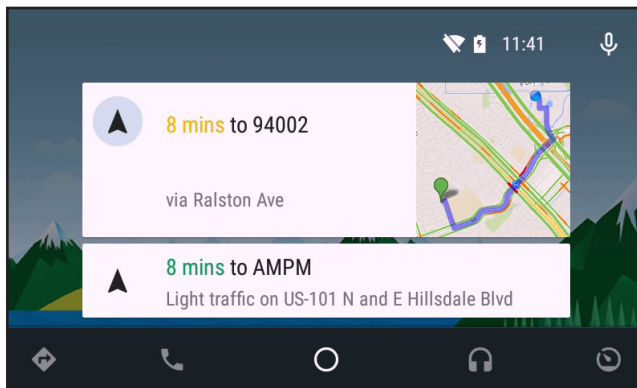


Tutorial 4

Smartphone Integration through App-Connect

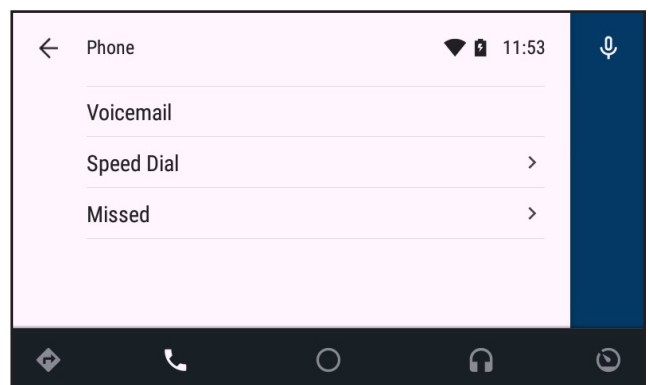
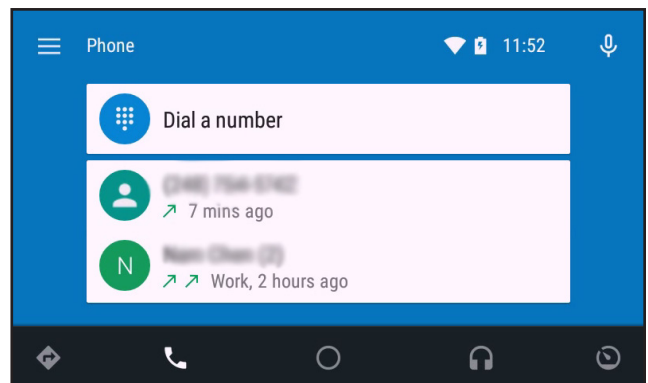
android auto

Now that you are past the tutorial, any apps that were open on the phone will appear. In this example, Navigation on the phone was already active. Selecting the upper Navigation link brings up the phone's native navigation app.



androidauto Phone

When selecting the Phone icon at the bottom of the screen, the androidauto Phone feature appears. This operates just like the phone function on the android phone itself.



Smartphone Integration through App-Connect

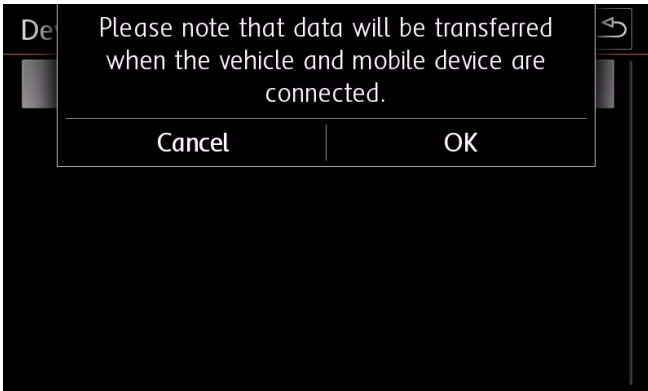
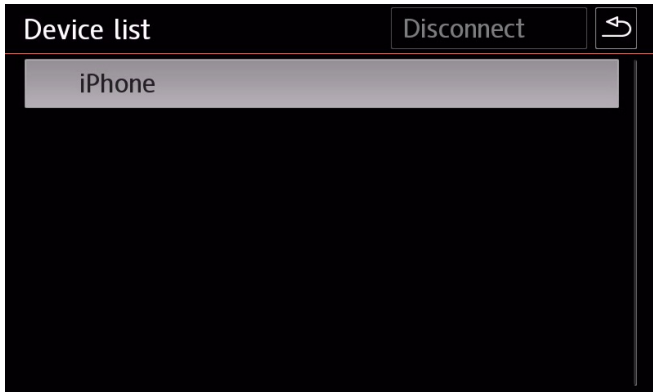


Apple CarPlay

Apple CarPlay allows iPhones with the correct software level to connect to the MIB II Infotainment system.

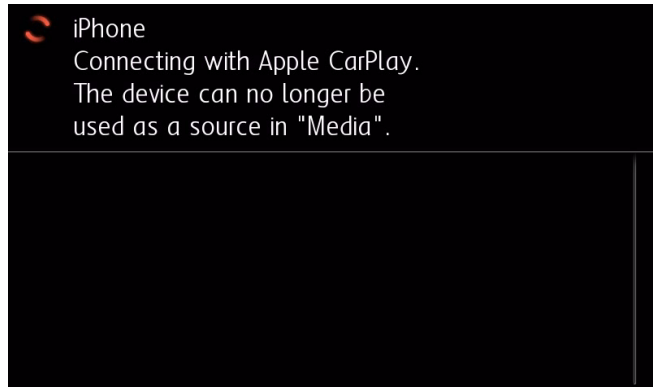
Before attempting to connect the iPhone, make sure it is unlocked and Siri is enabled. If Siri is not enabled, an error screen will appear.

When an iPhone is connected by USB, you select the phone...



Then acknowledge that the phone's data will be transferred to the Infotainment system.

The iPhone will connect to the Infotainment system. If the iPhone had been previously connected using Bluetooth, it will no longer appear as a Source there, as long as it is plugged in via USB.



Smartphone Integration through App-Connect

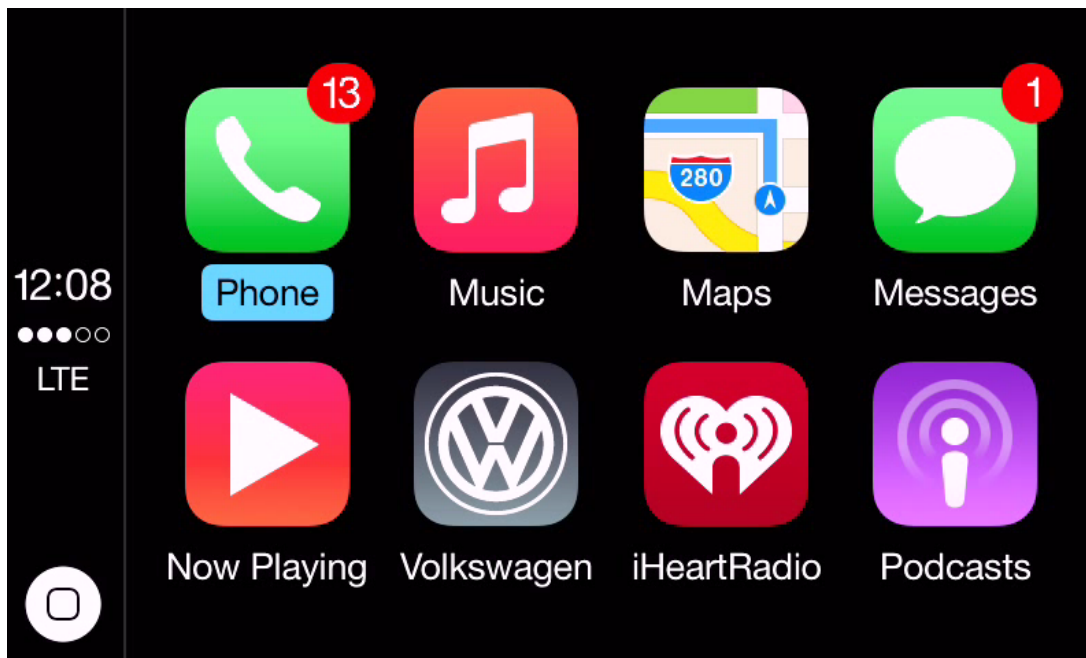


Apple CarPlay

Apple CarPlay allows iPhones with the correct software level to connect to the MIB II Infotainment system.

When connected, some apps will appear on the CarPlay screen. You can use these apps through the MIB II infotainment head just like they are used on the phone's screen.

Any iPhone 5 or higher with iOS 8 or higher are required to use CarPlay. Unlike androidauto, no downloads or permissions are required to access CarPlay. It is truly a plug-and-play system.

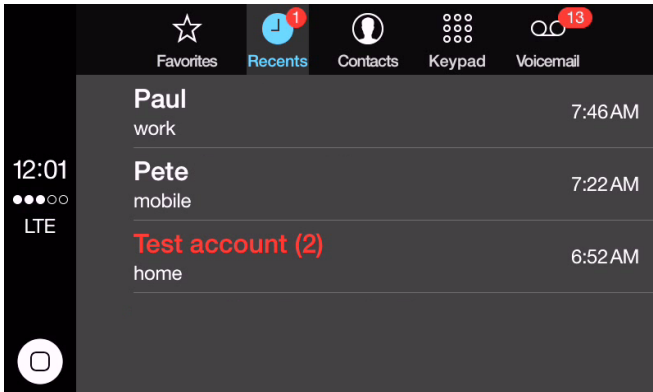


Smartphone Integration through App-Connect

Apple CarPlay

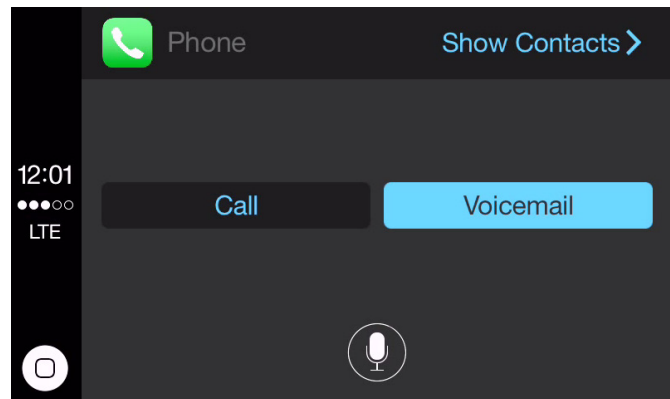
When using the phone function of CarPlay, the same features of the iPhone's phone are available. They look slightly different, but all function the same.

In addition, Siri can be operated for some functions.

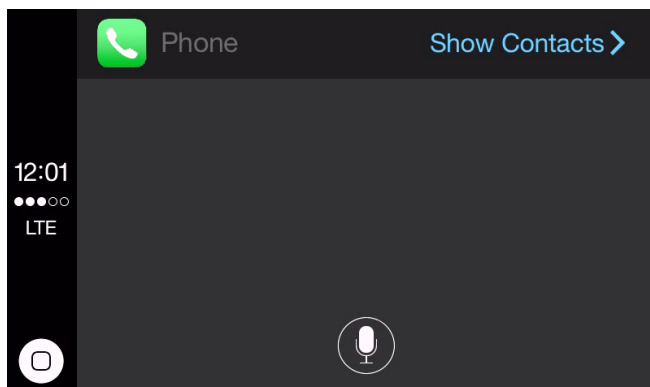


Select a contact using Siri

Speak to select an option



Siri listening for a command.



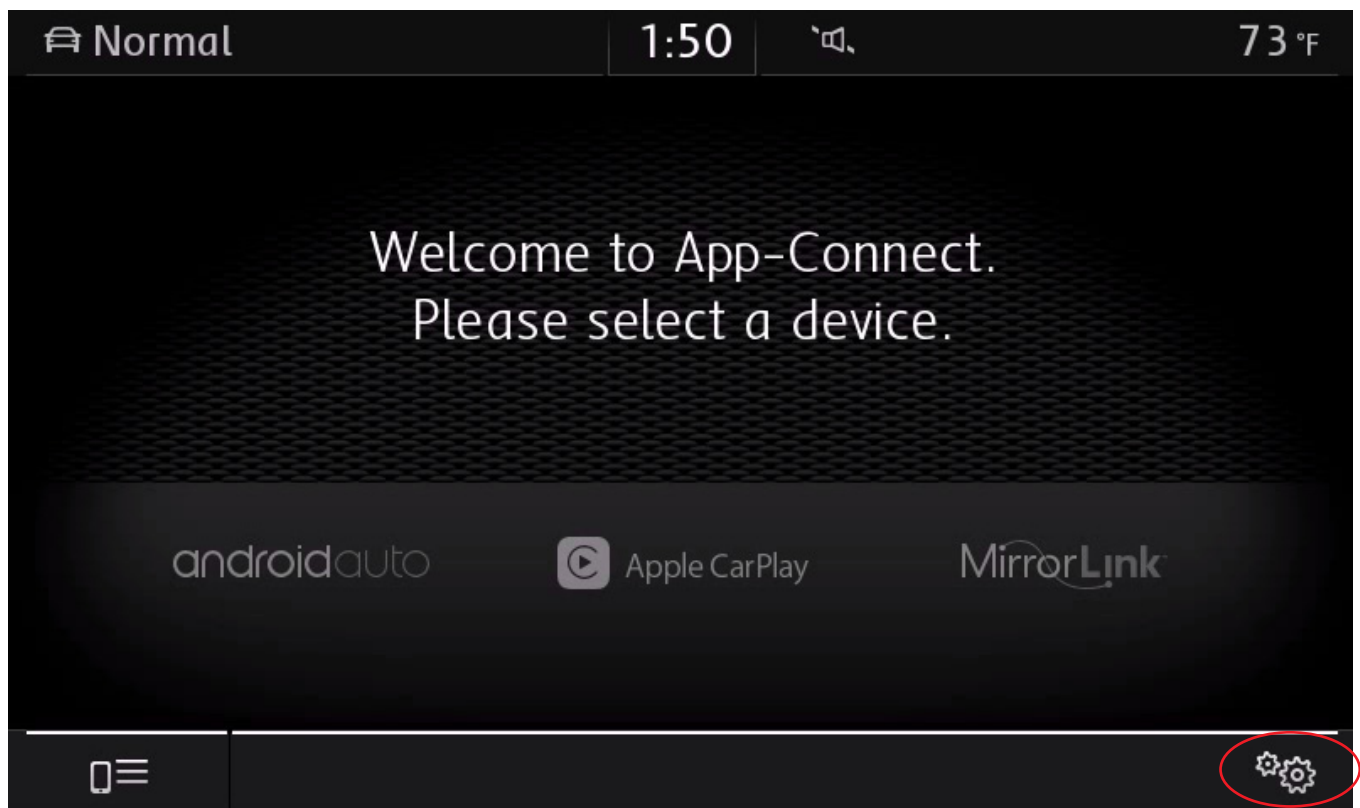
Smartphone Integration through App-Connect

MirrorLink™

MirrorLink is another way for the MIB II system to interact with a mobile phone.

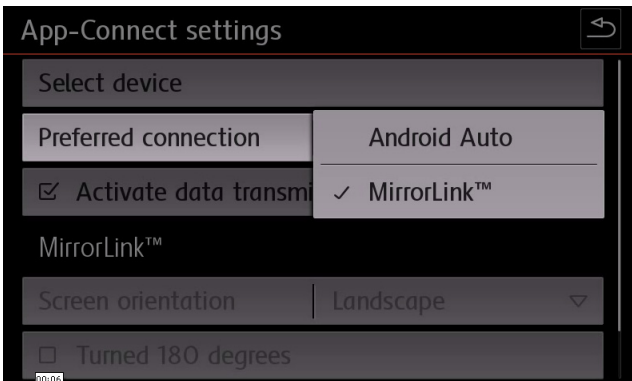
MirrorLink does not work with all phones. To find out which phones that MirrorLink works with, visit the MirrorLink website <https://cert.MirrorLink.com/ProductListing/>. iPhones do not have MirrorLink capability.

To access MirrorLink, use the App-Connect feature.

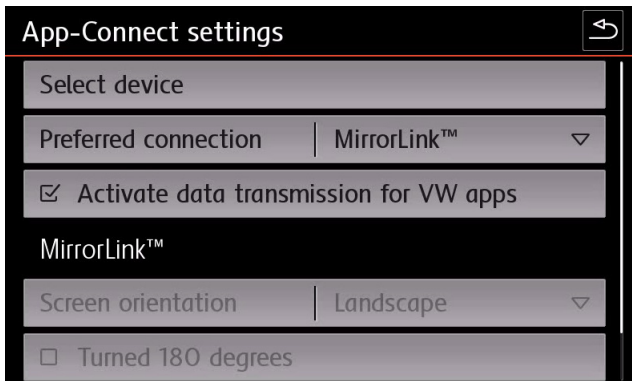


Before attempting to access MirrorLink, select **Settings** to set MirrorLink as the default for the phone's Operating System.

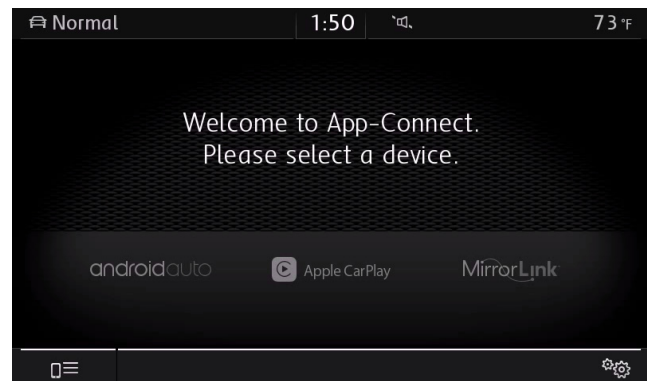
Smartphone Integration through App-Connect



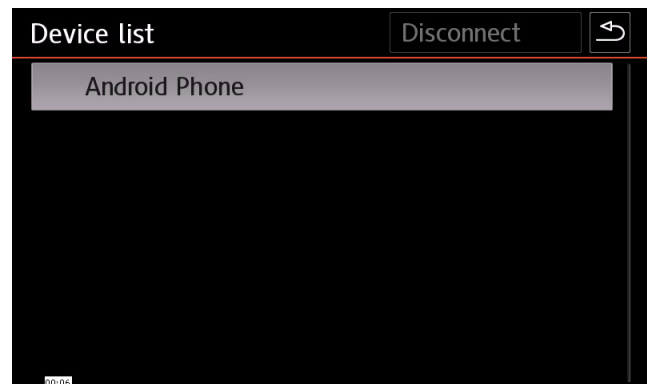
In Settings, select **Preferred Connection** and make sure **MirrorLink** is selected.



When exiting the selection menu, MirrorLink should be the Preferred Connection, then select the Back Button to return to the main App-Connect screen.



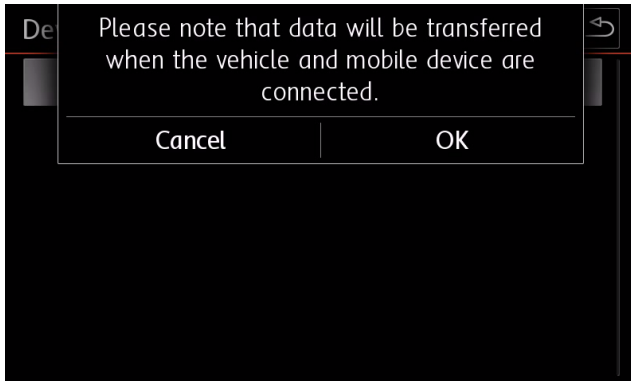
Now that MirrorLink is the preferred connection, select a device using the Devices softkey in the lower left of the screen



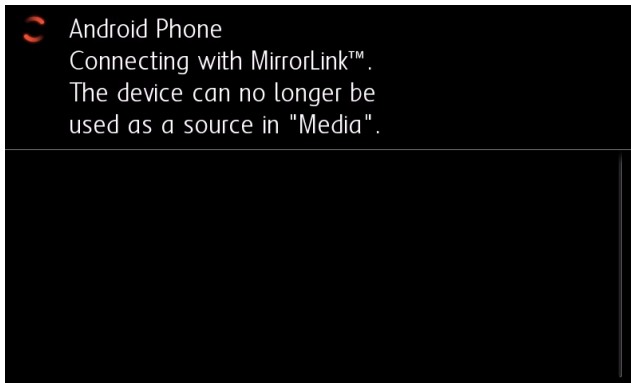
Select the device you wish to use, then select the Back button to return to the main App-Connect screen.

Smartphone Integration through App-Connect

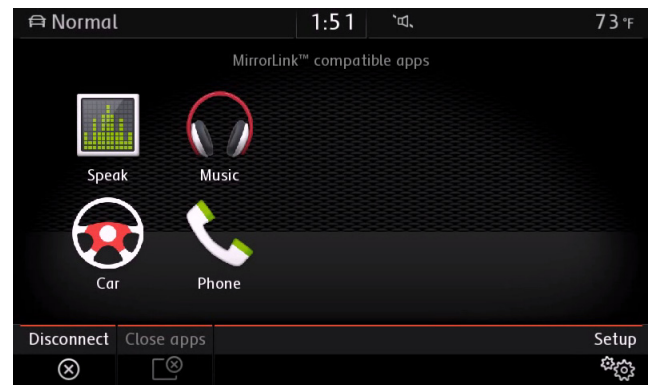
MirrorLink™ Connection and Car App



After the device is selected a data transfer warning will appear.

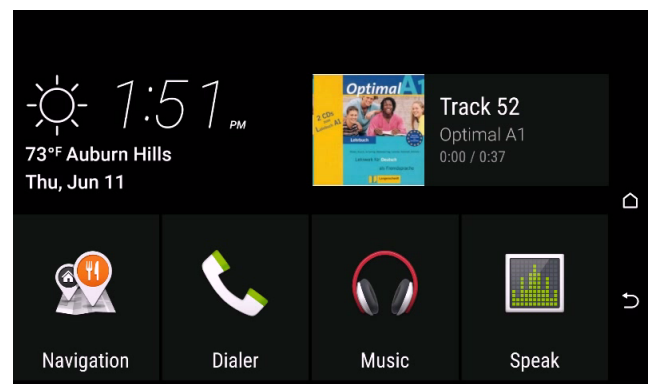


After selecting OK, the phone will connect with MirrorLink and is no longer available in Media, since audio is now accessible through MirrorLink.



When MirrorLink launches, the available apps are listed. In this case they are:

- Speak
- Music
- Phone
- Car



Once the apps are finished launching, the screen will appear like this.

Smartphone Integration through App-Connect



Navigation Functions

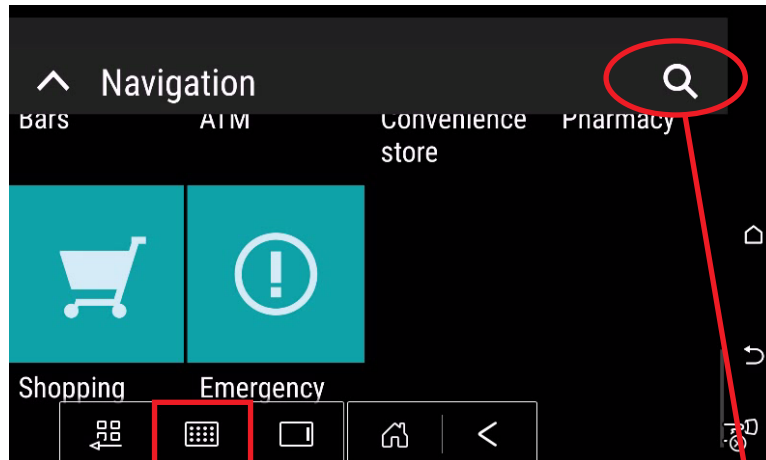
For the Navigation feature, there are four rows of navigation options, as displayed below.



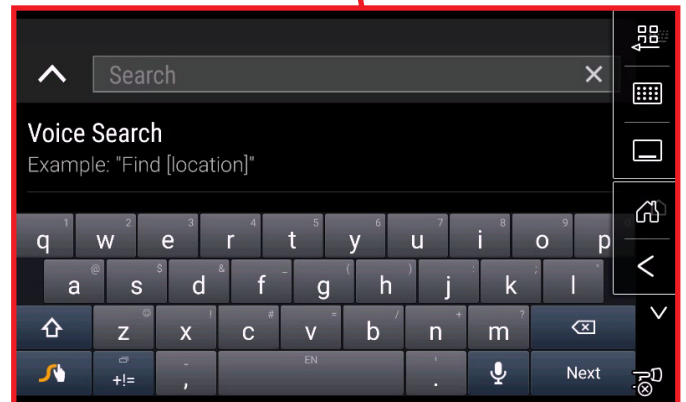
Smartphone Integration through App-Connect

Searching

Searching can be done two ways:



Using a keyboard



Voice

Smartphone Integration through App-Connect

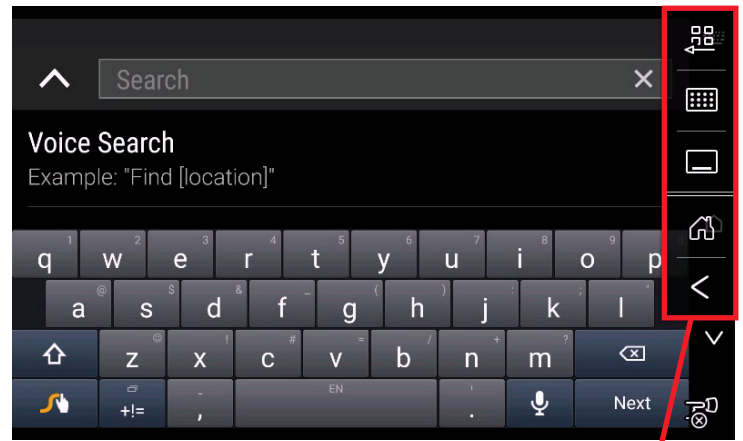
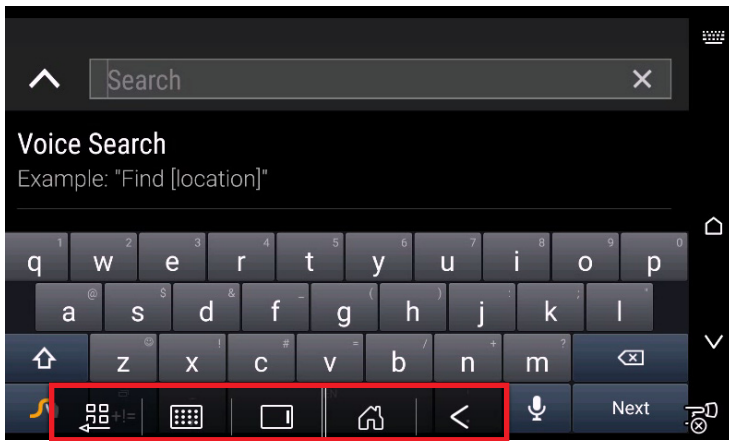
Menus

When your hand comes close enough to activate the MIB II proximity sensors, a menu will pop up with five options:

- Menu
- Keyboard
- Menu Location
- Home
- Back

The default placement of the menu is on the bottom of the screen. However, sometimes this can pop up over part of a keyboard or other option that needs to be selected.

Selecting the Menu Location option will move the menu to the side of the screen, and selecting it again will move it back to the bottom.



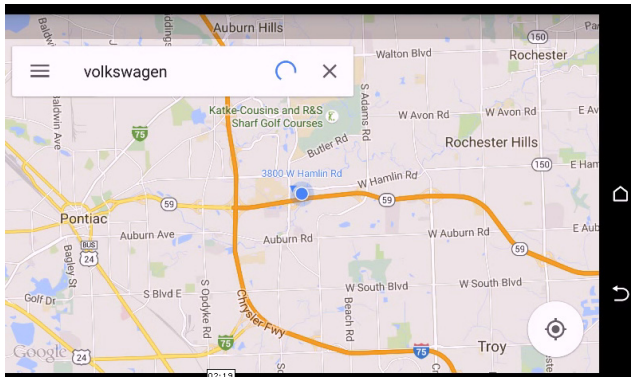
Side Menu Placement

- Menu
- Keyboard
- Menu Location
- Home
- Back

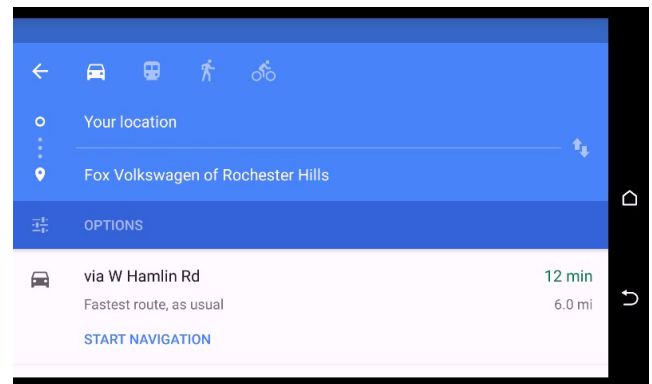
Smartphone Integration through App-Connect

Navigation Function

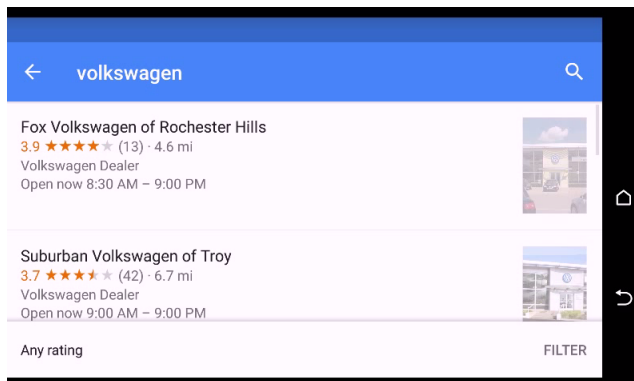
This is an example of using the Google Maps Navigation function.



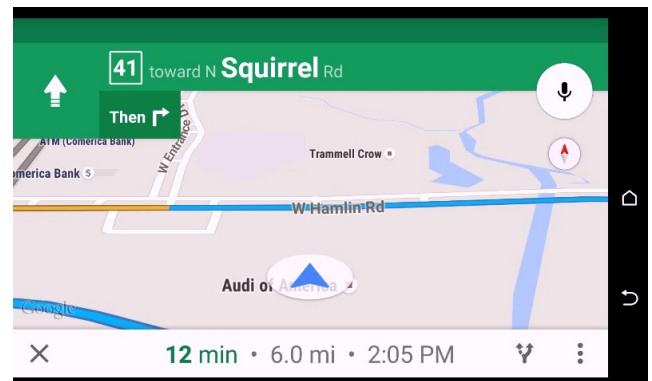
Enter the search term into the search window.



When a result is selected, the navigation details will be displayed.



The search results will be displayed. These can be filtered to narrow down your search.

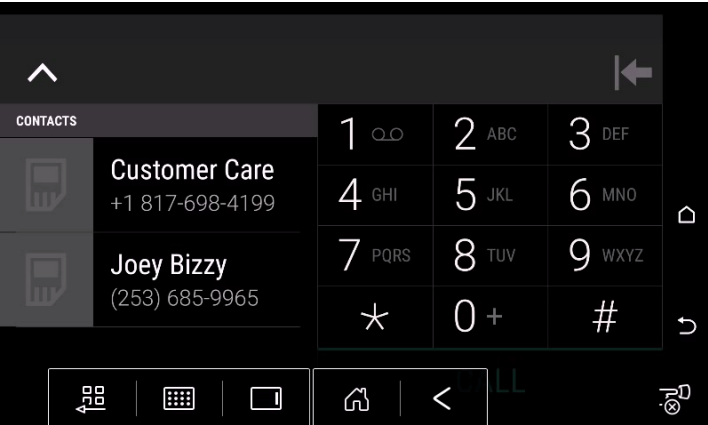


After Start Navigation is selected, the Google Navigation map will launch and provide directions to your destination.

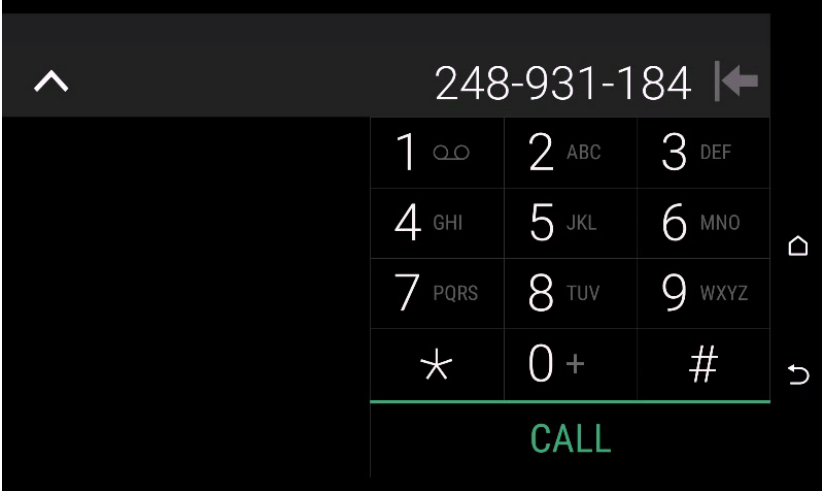
Smartphone Integration through App-Connect

Phone Function

When the Phone function is selected, the following screens will appear.



Contacts can be searched...

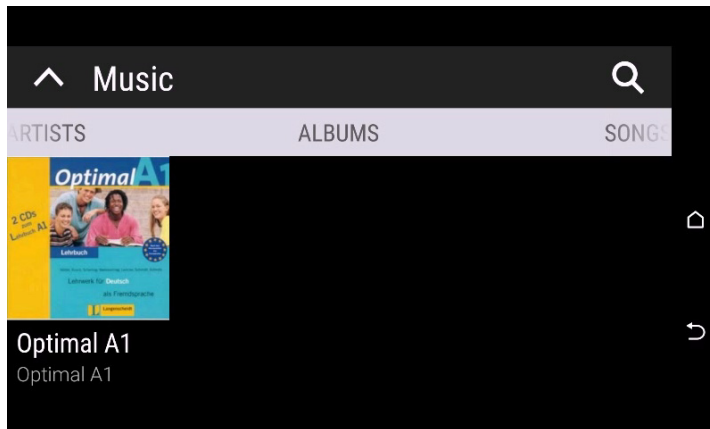


Or the number can be manually entered and called.

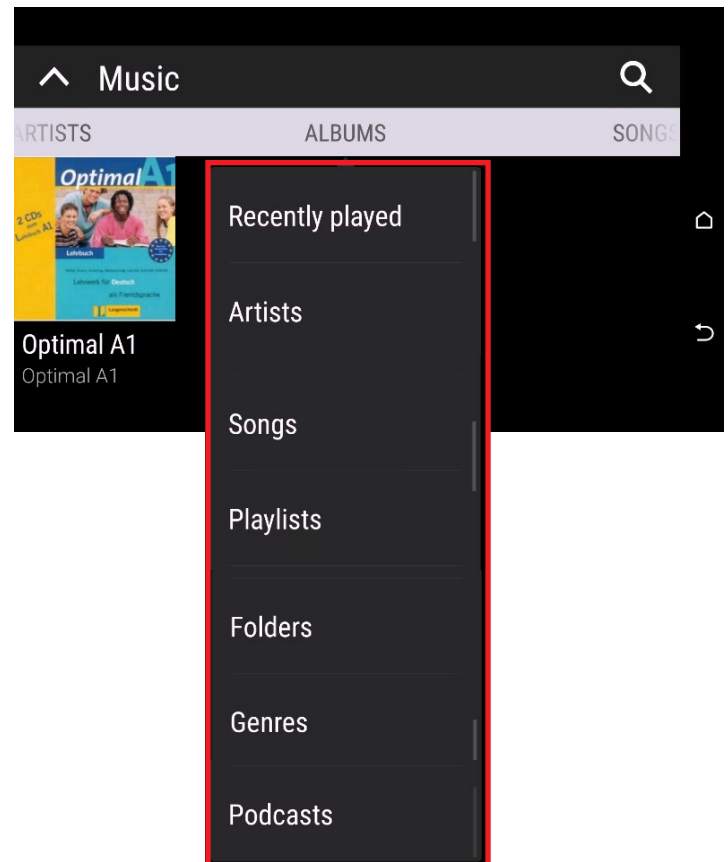
Smartphone Integration through App-Connect

Music Function

When Music is selected, the available music is displayed as Artists, Albums or Songs.



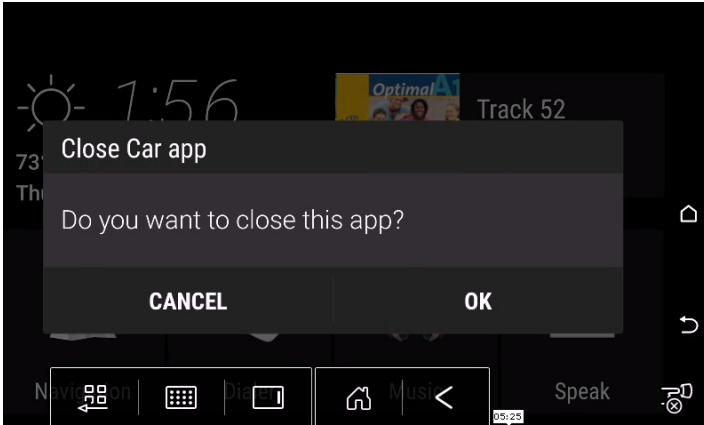
Music can also be sorted by the categories listed on the right using a scrolling list.



Smartphone Integration through App-Connect

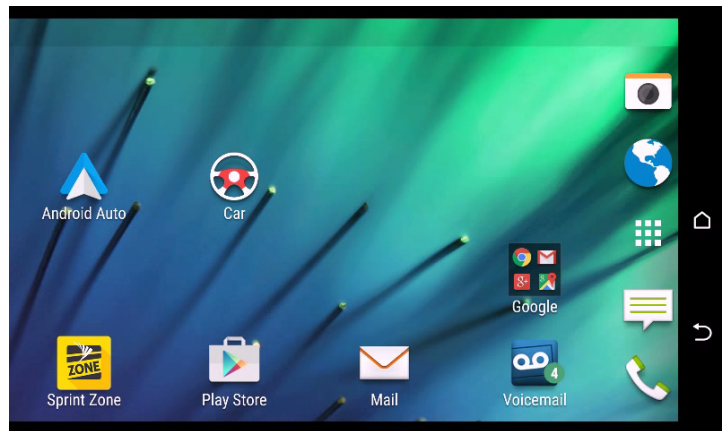
MirrorLink with Car App Closed

When the Car App is closed...



The actual screen of the phone will appear on the MIB II radio face. You can interact with it just like the phone. Any interactions with either the phone or the MIB II screen will take place both on the phone and the MIB II screen.

This can only occur when the vehicle has a road speed of 0 mph. As soon as the vehicle starts moving, this mirroring function is cancelled.



Knowledge Assessment

An on-line Knowledge Assessment (exam) is available for this Self-Study Program.

The Knowledge Assessment may or may not be required for Certification.

You can find this Knowledge Assessment at:

www.vwwebservice.com

For Assistance, please call:

Volkswagen Academy

Certification Program Headquarters

1-877-791-4838

(8:00 a.m. to 8:00 p.m. EST)

Or, E-mail:

concierge@volkswagenacademy.com

Important Links

The screenshot shows the top navigation bar with links for Home, VWWebsource, My Certification, Course Catalog Search, ILL Schedule, Library, and Logout. Below the navigation is a 'Welcome' message and an 'Academy News' section with a 'Welcome to Certification 2013' announcement. To the right is a 'Login' form with fields for 'Enter your last name:' and 'Enter the last 4 digits of your SS/SI/SAP number:', and a 'Login' button. The VW logo and 'Volkswagen ACADEMY' text are also visible.

https://www.datarunners.net/vw_crc/default.asp?pageid=home

The screenshot displays the Volkswagen websource homepage. The main banner features a car on a road with the text 'Roadside Assistance' and 'Peace of mind and confidence on the road.' Below the banner are several promotional tiles: 'Performance Driven Through People HR Toolkit', 'Awards that Sell Cars', '2015 RQC THE SPOTLIGHT AWAITS!', 'Where car and human connect Updated Enrollment Process', 'Ask Otto Bahn', and 'Customize Me!'. An 'UPDATES' section on the right lists recent manual articles for various models.

www.vwwebsource.com

The screenshot shows the vwhub.com login and registration page. It includes a 'Sign In' form with fields for 'User ID' and 'Password', and a 'Forgot Password' link. Below is a 'New Users Register' section with instructions and 'Register' buttons for 'New dealer user registration' and 'New corporate user registration'. At the bottom, there are links for 'VW customers and enthusiasts' and 'Learn more about vwhub.com'.

www.vwhub.com

