



Technical Service Bulletin

91 Apple CarPlay cannot be started using Wi-Fi connection (Wireless CarPlay)

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Model(s)	Year	VIN Range	Vehicle-Specific Equipment
A6, A7, A8, Q3, Q8, and Audi e-tron quattro	2019	All	MIB2+
A6, A7, A8, Q3, Q7, Q8, and Audi e-tron Sportback	2020	All	MIB2+
Q3	2021	All	MIB2+
A4, A5, A6, A7, A8, Q5, Q7, Q8, Audi e-tron quattro, and Audi e-tron Sportback	2021	All	MIB3

Condition

The customer cannot connect their device to the MMI using Wireless Apple CarPlay or the connection does not automatically start after starting the vehicle.

Technical Background

To learn more about Apple CarPlay, please visit Apple's support article titled, "How to use CarPlay with your iPhone" <https://support.apple.com/en-us/HT205634> (Figure 1).



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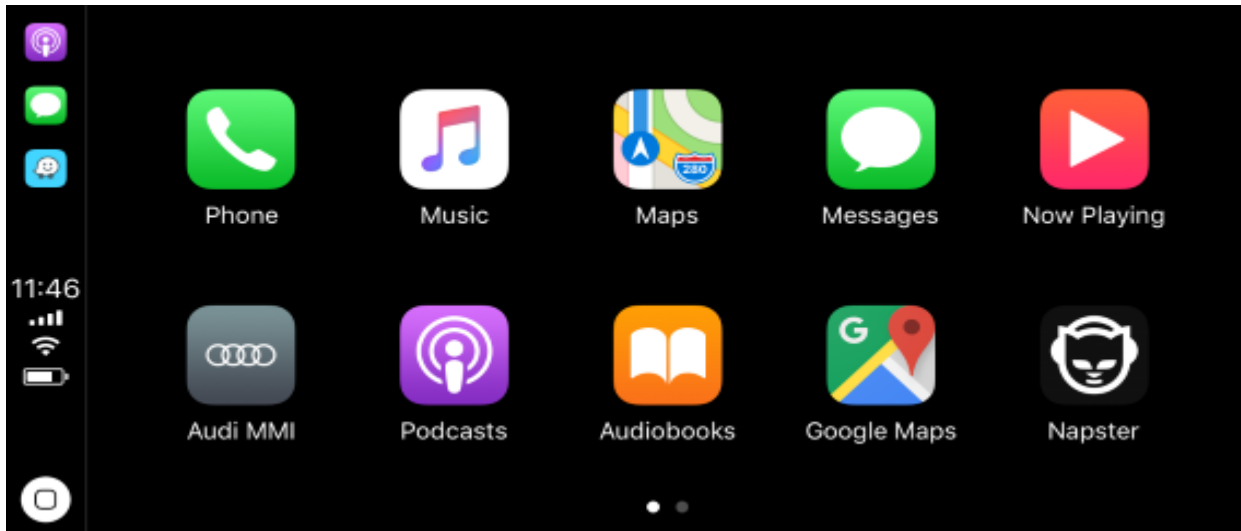


Figure 1. Apple CarPlay screen in Audi MMI.

What is Wireless CarPlay?

Wireless CarPlay is the same functionality provided by Apple CarPlay without using a tethered USB connection to the vehicle's infotainment system.

Which Audi MMI systems support Wireless CarPlay?

MIB2+ with ConBox Low

- 2019 Audi e-tron quattro.
- 2019 A6, A7, A8, Q3, and Q8.
- 2020 A6, A7, A8, Q3, Q7, Q8, and Audi e-tron Sportback.
- 2021 Q3.

MIB3* with ConBox High

- 2021 Audi e-tron quattro and Audi e-tron Sportback.
- 2021 A4, A5, A6, A7, A8, Q5, Q7, and Q8.
- *The MY2020 A4/A5 models with MIB3 do not support Wireless CarPlay.

The ConBox system is called out because the Wi-Fi hotspot is controlled by the ConBox Low module for MIB2+ MMI systems. The Wi-Fi and Bluetooth systems are controlled by the ConBox High module for MIB3 MMI systems.

How does the Apple iPhone establish a Wireless CarPlay connection to the vehicle's infotainment system?

Initiating a Wireless CarPlay session can be performed using two different methods.



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1. Bluetooth connection to vehicle.
2. Wi-Fi connection to vehicle.

It is important to note, these two different “pairing” methods have major differences between them. The first being how the vehicle recognizes the iPhone when the ignition is first started and the second being how the iPhone uses data during a CarPlay session.

- For the Bluetooth pairing method, the vehicle establishes the Wireless CarPlay session when the vehicle sees the Apple iPhone connected to Bluetooth.
- For the Wi-Fi pairing method, the vehicle establishes the Wireless CarPlay session when the vehicle sees the Apple iPhone connected to the in-vehicle Wi-Fi hotspot.

Data usage for each method:

- For the Bluetooth pairing method, the phone always uses the data plan (LTE) of the phone to send and receive data.
- For the Wi-Fi pairing method, the phone always attempts to use the data from the vehicle’s Wi-Fi hotspot. In some cases, if Wi-Fi Assist is turned on in the “Cellular” settings of iOS, then the phone will attempt to use the data plan of the phone. It is important to note, that this doesn’t always work in some situations. The customer should contact their mobile network provider or Apple customer support if they have issues with this feature.

Production Solution

Not applicable.

Service

Initial Pairing for Wireless CarPlay

To allow Wireless CarPlay to work, the following preconditions need to be true (using the preferred method of Bluetooth pairing).

1. SIRI must be enabled and configured in the iPhone (*Check Settings >> General*).
2. Bluetooth must be turned on in the iPhone and MMI (Only used for setup).
3. Wi-Fi must be turned on in the iPhone, but no pairing is needed (If not on, the iOS software should prompt the user to turn it on).

Pairing for Wireless connection using the MMI system:



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1. The customer should establish a Bluetooth pairing using the MMI and upon doing so accept the prompt to enable Wireless CarPlay (Figure 2).

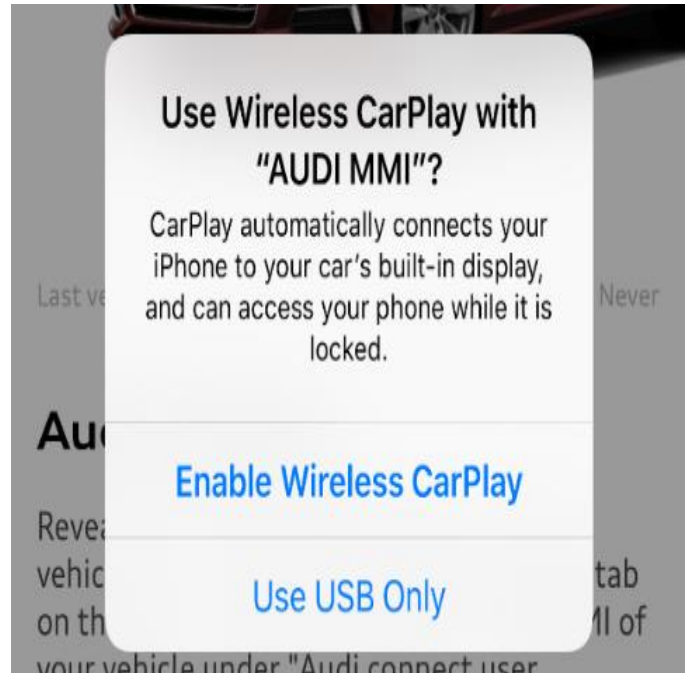


Figure 2. Initial Apple CarPlay pairing prompt on iPhone.

2. Accept the prompts in the MMI to enable wireless CarPlay. Upon accepting, the MMI shares the Wi-Fi security credentials to the iPhone over Bluetooth. It's important to note that the customer will never need to manually pair the iPhone to the Wi-Fi hotspot in the vehicle
3. At this point, Apple CarPlay should be active in the MMI. If it is not, then turn off Bluetooth on the iPhone and then turn it back on. Once the MMI sees the phone via Bluetooth it will connect to Wireless CarPlay over the Wi-Fi hotspot and then Bluetooth will be disabled in the MMI

When using the Bluetooth pairing method above: the iPhone does not use the Wi-Fi hotspot in the vehicle for data consumption. Instead, a private channel for communication is set up between the MMI and the iPhone ONLY for Wireless CarPlay. This is why the Audi hotspot name will not be shown in the iPhone's settings when the iPhone is connected to the MMI for Wireless CarPlay. The iPhone will continue to use the LTE network for data. Additionally, the Bluetooth is not used once the CarPlay session is active in the MMI.

Troubleshooting

Concern: Intermittently after starting the vehicle, wireless CarPlay cannot be started. Upon touching the tile in the MMI, the tile turns green but CarPlay does not start.

Solution: Cycle the CarPlay toggle in the Bluetooth Settings for the Vehicle in the iPhone Settings Menu (Figure 3).



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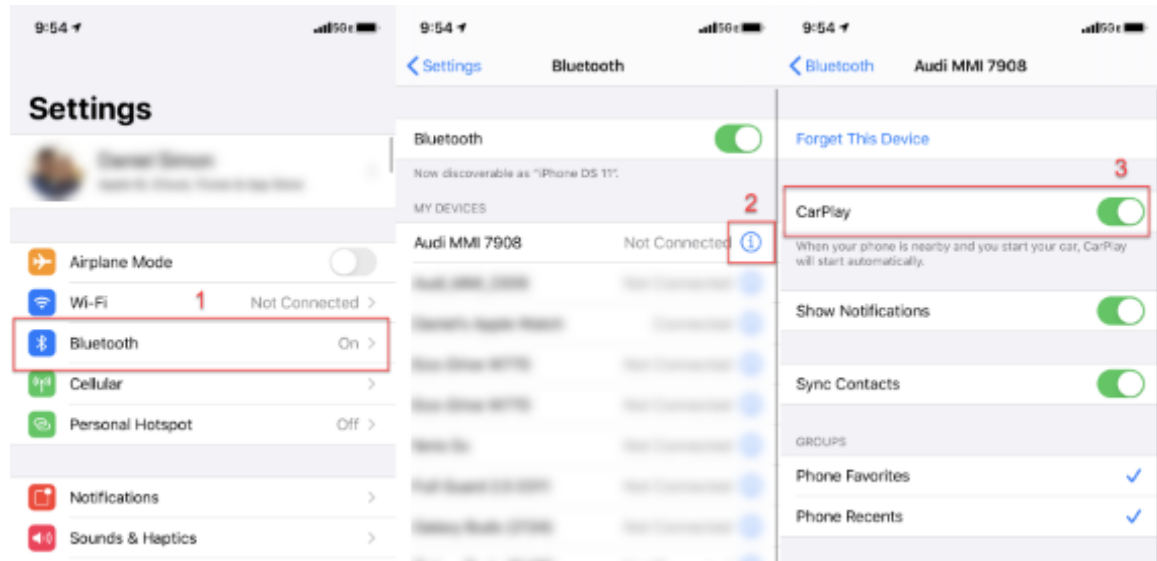


Figure 3. Toggle CarPlay option in Bluetooth settings in iPhone.

This situation can occur when the MMI attempts to start Wireless CarPlay and it cannot find the iPhone on the MMI's Wi-Fi network. Typically when this occurs the iPhone is still active on a different Wi-Fi hotspot (home or work network). Wireless CarPlay sessions operate over Wi-Fi, but the Bluetooth communication is used initially to tell the MMI that the iPhone is present and ready to use Wireless CarPlay (as well as share the Wi-Fi security information).

After the MMI attempts to make a connection to the iPhone for CarPlay over the Wi-Fi, it soon realizes it cannot find the iPhone because the iPhone is connected to a different hotspot. This also can happen if the iPhone is manually paired to the 2.4Ghz band of the car's Wi-Fi hotspot. The MMI has two bands for Wi-Fi, 2.4Ghz (labeled AUDI_XXXX) and the 5Ghz (labeled AUDI_XXXX_5Ghz). Apple CarPlay uses the 5Ghz band and this is automatically chosen when the first pairing is done. If the customer tries to manually pair the iPhone to the 2.4Ghz band it can create this concern because from this point on the iPhone is constantly switching between the two bands which can upset Wireless Carplay.

To fix this issue, in the iPhone settings, go to the Bluetooth settings (Figure 3, Step 1) for the MMI and select the little "(i)" next to the MMI's name (Figure 3, Step 2) and then cycle the "CarPlay" option off and back on (Figure 3, Step 3). If CarPlay does not automatically start then reselect it in the MMI. This step will need to be repeated anytime this issue occurs again in the future.

Concern: Since the latest iOS update, the customer has had issues with Wireless CarPlay not connecting at times.



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Solution: Reset network settings on the iPhone.
Here's how to reset iPhone Network Settings: *Tap Settings > General > Reset > Reset Network Settings* (Figure 4). This also resets ALL SAVED Wi-Fi networks and passwords, cellular settings, and VPN and APN settings that have been used before.

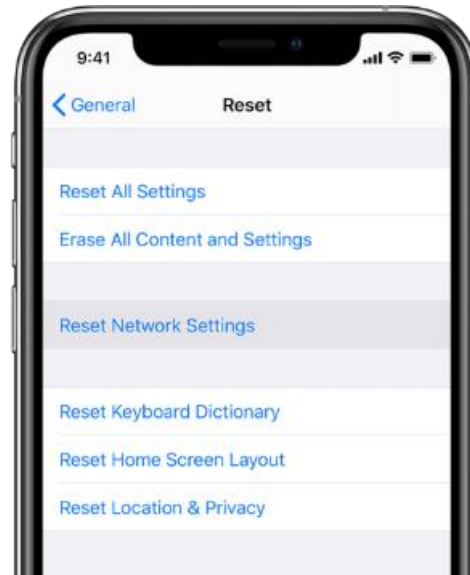


Figure 4. Reset Network Settings for Apple iPhone.

Concern: Since the Audi connect PLUS plan has expired, the customer can no longer use Wireless CarPlay.

Solution: Either turn on Wi-Fi assist or delete pairings for Wi-Fi and Bluetooth and perform a new Bluetooth pairing only.

For this scenario, the customer must have connected the iPhone manually to the MMI's hotspot using the SSID and password given by the MMI (Wi-Fi pairing method). When the customer does this, the iPhone uses the Wi-Fi hotspot in the car for sending and receiving data. If the customer does not have an active Audi connect PLUS plan (not required for Wireless CarPlay) and the iPhone does not have Cellular Wi-Fi assist turned on, then the iPhone will disconnect from the vehicle's Wi-Fi hotspot if internet data is not provided. Leaving Cellular Wi-Fi Assist on forces the iPhone to stay connected to a Wi-Fi hotspot that does not provide internet data, but will then utilize LTE for the internet data only. Please note this solution only works with some iOS versions and can break during an iOS update.

If the previous solution does not work, then delete the MMI Wi-Fi hotspot settings in the iPhone, delete the Bluetooth pairing in the phone and MMI, and then pair the phone again to Bluetooth and accept the prompts for Wireless CarPlay. DO NOT manually connect the iPhone to the Wi-Fi hotspot in the car.

Why this is important: If you connect a phone to the Wi-Fi hotspot in the vehicle then the iPhone will try to use the MMI for data consumption. Since no data can be obtained with an expired Plus subscription, then Wireless CarPlay will not work since data is required for CarPlay in general.

Concern: What if Apple CarPlay does not turn on automatically after turning on the car?

Solution: Check to ensure the iPhone is not connected to a different Wi-Fi hotspot.



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Wireless Apple CarPlay requires that the customer's phone be connected to the Wi-Fi hotspot of the vehicle, either directly or via the private channel (not seen in the iPhone Wi-Fi settings). Check to ensure that the iPhone is not connected to the customer's home or work Wi-Fi hotspot. If the iPhone shows no connection to any Wi-Fi hotspot then it could be connected to the Wi-Fi using the private channel for Wireless CarPlay. The key here is to ensure the iPhone is not connected to another Wi-Fi hotspot outside of the car.

Concern: Wireless CarPlay works intermittently, what could be causing this?

Solution: Unlock iPhone or turn off USB accessories security feature (Customer must be made aware of this security feature before turning it off).

Apple has instituted security features in iOS starting with iOS 12. The newest feature locks out the use of connected USB accessories, including the MMI, if the iPhone has not been unlocked in the last hour before connecting the iPhone to the vehicle's USB or wirelessly for CarPlay. Unlock the iPhone to fix the customer's concern.

General Question: What is the 5Ghz Wi-Fi hotspot seen in the vehicle.

Answer: 5Ghz Wi-Fi is part of the dual-band high-speed Wi-Fi system in the MMI. Most modern home routers are now dual-band, offering a 2.4Ghz band and a 5Ghz band. In most cases, upon pairing the iPhone to the MMI, the iPhone will connect to the 5Ghz hotspot, which is normal, but this connection may NOT be shown in the *iPhone Settings >> Wi-Fi* when the iPhone is connected for Wireless CarPlay. 5Ghz allows for higher bandwidth but has shorter signal range. This is critical for a Wireless CarPlay since video and audio are being streamed wirelessly.

Warranty

This TSB is informational only and not applicable to any Audi Warranty.

Additional Information

All part and service references provided in this TSB (2062466) are subject to change and/or removal. Always check with your Parts Department and/or ETKA for the latest information and parts bulletins. Please check the Repair Manual for fasteners, bolts, nuts, and screws that require replacement during the repair.

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