

GENERAL BLUETOOTH QUESTIONS

What is Bluetooth?

Bluetooth is a wireless technology that allows two different devices to connect to one another. It is a universal protocol making it available for all devices from **any** brand. The purpose of Bluetooth is to replace the cables that normally connect devices, while still keeping the communications between them secure.

How does Bluetooth work?

Bluetooth operates in the 2.4-2.483 GHz license-free Industrial, Scientific, and Medical (ISM) frequency bands. All devices connected together are forming a small network named piconet. At any given time, data can be transferred between the leader and one other device. The leader chooses which follower device to address. Bluetooth uses adaptive frequency hopping to avoid interference. The piconet's radio channel is shared by the group of followers that are synchronized to the leader's clock and hopping frequency to ensure alignment.

What are Bluetooth profiles and what are they for?

Bluetooth profiles are a set of rules that allow the technology to complete a particular task. For example, to connect a pair of headphones to another device, a specific Bluetooth profile (or rules) is used. A different Bluetooth profile is needed to listen to high quality stereo music.

HFP: Hands-Free Profile (HFP) is a Bluetooth profile in which sounds get transmitted and received by both devices, like a phone call. This Bluetooth profile is necessary for devices such as mobile phones, headsets, and in-vehicle equipment.

A2DP: Advanced Audio Distribution Profile (A2DP) is the Bluetooth profile that characterizes how multimedia audio is streamed from one device to another. This profile allows for the transmission of high-quality stereo audio such as music streamed from a mobile phone.

What is Bluetooth LE?

Bluetooth Low-Energy (LE) uses frequency hopping wireless technology in the 2.4 GHz unlicensed radio band to interconnect nearby devices. Bluetooth LE is slower than Bluetooth Classic (about one third of the speed), but only uses half the power. Bluetooth LE is perfect for devices that only need to send tiny bits of data and that can operate with very low power consumption. Bluetooth LE remains in sleep mode unless a connection is initiated. Bluetooth LE is also known as Bluetooth Smart.

How is Bluetooth LE different than Bluetooth Classic?

The power consumption of Bluetooth Classic is greater than Bluetooth LE as Bluetooth Classic maintains the connection between the two devices at all times. There is constant data transmission with Bluetooth Classic, so it is ideal for streaming audio signals like phone calls and music, whereas Bluetooth LE sends data periodically. The transmission range is similar for both protocols.

For what purposes does Marvel CI use Bluetooth LE?

Marvel CI uses Bluetooth LE to connect to:

- Phonak RemoteControl
- Noahlink Wireless
- AB Remote mobile application

Bluetooth LE is ideal for these applications that do not require continuous connection but depend on long battery life.

For what purposes does Marvel CI use Bluetooth Classic?

Marvel CI uses Bluetooth Classic to connect to:

- Any Bluetooth-enabled device for media streaming
- Bluetooth phones for phone calls

Bluetooth Classic is designed for continuous two-way data transfer. It is highly effective, but only for short distances. This is a perfect solution in the case of streaming audio and video, and phone calls, all needing a continuous, broadband link.

Which version of Bluetooth is Marvel CI compatible with?

Marvel CI is Bluetooth 4.2 certified. Any mobile device that supports Bluetooth Classic should work with Marvel CI.

- For phone calls, any phone supporting Bluetooth 2.1 and newer should work without problem.
- Phones with Bluetooth versions prior to 2.1 may still work.

Bluetooth compatibility information should be used as a reference guide only, because hardware and software levels and releases may vary, and numerous hardware and software combinations are possible. We recommend that the user evaluate product compatibility testing before making purchasing decisions on smartphones and other Bluetooth-enabled devices.

CONNECTING TO BLUETOOTH WITH MARVEL CI

Can I connect Marvel CI to an Android Phone?

Yes, you can connect to any Android phone with Bluetooth 2.1 or newer.

1. Go to the Android phone's home screen and tap on the **Settings** icon.
2. In the settings menu, tap on the **Bluetooth** icon.
3. Tap on the slider button to turn Bluetooth on.
4. Connect the M Battery to Marvel CI to start the 3-minute pairing window.
5. On the Android phone, you will now see a message, **Available Devices**.
6. The name of the Marvel CI will appear with a telephone icon next to it. Tap on it to select.
7. A connection beep will be heard in the paired Marvel CI.
8. The Android phone is now connected to Marvel CI.

Can I connect Marvel CI to an iPhone?

Yes, you can connect to any iPhone with Bluetooth 2.1 or newer.

1. Go to the iPhone home screen and tap on the **Settings** icon.
2. In the settings menu, tap on the **Bluetooth** icon.
3. Tap on the slider button next to Bluetooth to turn Bluetooth **On**.
4. Connect the M Battery to Marvel CI to start the three-minute pairing window.
5. After several seconds, the customized name of the Marvel CI will appear on the iPhone screen. Tap on it to select.
6. You will now see a message: **Bluetooth Pairing Request**. Click **Pair**.
7. A connection beep will be heard in the paired Marvel CI.
8. The iPhone is now connected to Marvel CI.

How many Bluetooth devices can be paired to Marvel CI at the same time?

Two Bluetooth devices (e.g. one smartphone and one tablet) can be paired with Marvel CI. Only one Bluetooth device can be connected at a time.

What is the difference between pairing and connecting?

Pairing is the process of establishing a link between two devices, allowing them to communicate with one another. Connecting happens when the two devices are actively exchanging information. For example, Marvel CI can be paired to a device by going to the Bluetooth menu of that device, searching for devices within range, and then selecting Marvel CI. Initiating an audio stream establishes a connection between the two devices.

How can a recipient switch from one Bluetooth device connected to Marvel CI to the other?

1. Switch off Bluetooth on the device that is connected at the moment.
2. Ensure that Bluetooth wireless technology is enabled on the device that you are going to connect to.
3. Slide off the M Battery on Marvel CI and slide it back on.
4. Marvel CI will now connect to the other Bluetooth device.

Can Skype, FaceTime and WhatsApp be used with Marvel CI?

Yes. Marvel CI supports Skype, FaceTime and WhatsApp for phone and video calling. The call will be heard in Marvel CI as with normal phone calls. If using Skype on a computer, Marvel CI needs to be paired to the computer.

How does Own-Voice Pickup work?

Own-voice pickup uses the microphones within the processor to pick up the recipient's voice for transmission via Bluetooth for phone calls. This allows the recipient to simply talk, without holding the phone up to their mouth, when taking phone calls via Bluetooth using Marvel CI. Own-voice pickup only uses the processor microphones; it will not use the M T-Mic or the Slim HP microphone.

Can I connect a Bluetooth computer to Marvel CI?

Yes, you can connect to any computer equipped with Bluetooth.

1. Go into the Bluetooth settings menu of the computer.
2. Connect the M Battery to Marvel CI to start the three-minute pairing window.
3. Find Marvel CI which has been set for the phone calls and pair it.
4. The pairing code is 0000.

Can I connect a tablet to Marvel CI?

Yes, you can connect to any tablet equipped with Bluetooth 2.1 or newer.

1. On the tablet, ensure that Bluetooth wireless technology is enabled and search for Bluetooth enabled devices in the connectivity settings menu.
2. Connect the M Battery to Marvel CI to start the three-minute pairing window.
3. The tablet shows a list of found Bluetooth devices. Select Marvel CI from the list.
4. The recipient will hear a confirmation alert if they are wearing the processor.

Will Marvel CI pair to the Bluetooth in a car?

No. Most in-car Bluetooth systems pair with input devices, such as a phone. Marvel CI is an output device.

Will Marvel CI pair to a smartwatch?

Yes. As long as the smartwatch supports Bluetooth Classic profiles (A2DP and HFP). A2DP transmits music and HFP provides the ability to make hands-free phone calls. Please be aware that not all smartwatches support these profiles.

TROUBLESHOOTING BLUETOOTH WITH MARVEL CI

Bluetooth is disconnecting and reconnecting. Why is that?

If Marvel CI is powered off, it will automatically disconnect from a paired device, such as the mobile phone.

Additional troubleshooting steps if Marvel CI is disconnecting from the phone:

- Verify that Marvel CI did not run out of battery.
- Verify Bluetooth is enabled on the phone.
- Make sure the phone is within range. If Marvel CI was out of range (10 m / 30 ft) for a longer period of time it may take up to two minutes for Marvel CI to connect again.
- Make sure there are no other Bluetooth devices connected to the phone (such as the car Bluetooth system). This may cause Marvel CI to disconnect.

A recipient is reporting connection problems with Marvel CI in the car. How does the recipient troubleshoot this connection?

If the car is equipped with a Bluetooth system which was previously paired to the mobile phone, it will try to connect the phone every time the recipient enters the car. This may result in a connection loss to Marvel CI as a phone can only support one headset connection at a time.

The exact behavior depends on the version and configuration of the car's Bluetooth system. To prevent unwanted switching, you may recommend that the recipient removes the car's Bluetooth system from the list of paired devices via the mobile phone configuration screen.

What do I do if Marvel CI is not connecting to the smartphone to use the AB Remote mobile application?

1. Ensure that the phone Bluetooth is on and Marvel CI is on.
2. When you open the app, you will see status indicators for each device which will indicate if the devices are currently connecting, connected, or the connection has failed.
3. If the app cannot connect, close the app completely, restart the smartphone, and restart the app.
4. If a restart of the app does not work, remove the app and reinstall it.

How can I disable the streaming of touch sounds when using an Android Phone?

To stop hearing the touch sounds with Marvel CI, go to the smartphone settings and disable the following:

- Touch sound
- Lock screen sound

How can I disable the streaming of touch sounds when using an iPhone?

To stop hearing the touch sounds with Marvel CI, go to the iPhone settings:

- Select Sounds.
- Change the toggle of the Keyboard Clicks to OFF.

How can I disable sound notifications from apps when using an Android Phone?

1. Go to Settings > Apps & notifications > Notifications > App notifications.
2. Here, you'll see a list of all apps installed on the Android device. Scroll and tap any app whose notifications the recipient wants to customize.
3. Next a list of all types of notifications the app can send will appear. Toggle each type of notification on or off as desired.
 - Tap on each notification type to change it from "sound" to "vibration" or other settings. You can also toggle the main switch to block all notifications from that app.

How can I disable the streaming of touch sounds when using an iPhone?

You can selectively silence notifications on a per-app basis within iOS Settings.

1. Open Settings and tap on "Notifications" (labeled as Notification Center in the latest iOS versions)
2. Tap the app in question and scroll down to Sounds, swipe to OFF.
3. Repeat for other apps in the Notification Center preferences

What do I do if a recipient is experiencing connection problems with Marvel CI and a Bluetooth device?

1. Check if Bluetooth is **on** on the Bluetooth device.
2. Connect the M Battery to Marvel CI to restart the 3-minutes pairing window.
3. If this is not working, power off the Bluetooth device and back on.
4. Delete Marvel CI from the list of devices on the Bluetooth device and restart the pairing process over again.
5. Make sure that Marvel CI is not connected to 2 other Bluetooth devices in range of the Bluetooth device you want to connect to.

What can a recipient do if there are issues with sound quality for phone calls?

First, the user should attempt restarting their Marvel CI device. Next, the user should attempt restarting their phone, particularly if they are using an iPhone.

In addition, adjusting the bandwidth setting in Target CI or AB Remote mobile app may change the sound quality for phone calls. Fixed and adaptive bandwidth settings are available. Fixed bandwidth uses a narrow bandwidth (8 kHz); adaptive bandwidth uses a broader bandwidth (up to 16 kHz). Fixed bandwidth is the default setting.

Currently, there isn't specific guidance on which bandwidth setting should be used based on the phone model or operating system.