

Audio, Music, & Bluetooth

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As you know by now, or maybe you remember from my article describing Bluetooth (October 2011), Bluetooth is a wireless network supported by many common devices. Devices like smartphones, tablets, laptop computers, certain speakers, certain headphones, newer cars, and possibly others that I have not yet seen.

Bluetooth is intended to connect various devices without the use of wires.

Technically, it sets up a Personal Area Network (PAN) that is useful within an area.

The area can vary depending on the Class of Bluetooth supported. There are three classes of Bluetooth, differing in range and power. Class 1 has a range of 100 meters (with a power output of 100mW), Class 2 has a range of 10 meters (with a power output of 2.5 mW, and Class 3 has a range of 1 meter (with a power output of 1 mW). Most devices provide Class 2, so most of the time, the range will be about 10 meters or about 33 feet. (If you connect two devices of differing Classes, you will only be able to operate over the lower range.)

Bluetooth devices are connected by a process called “pairing”. Each device has to have Bluetooth enabled, and the devices have to be “visible to nearby devices”. The pairing process may take a few minutes the first time a device is paired. Once the pairing process completes, the two devices can be connected. After the devices have been disconnected, they can be re-connected automatically and reasonably quickly. If one of your devices has a display, like a smartphone, you will see a list of possible pairing candidates, and the pairing and connection process will be pretty straightforward. If neither of your devices has a display and you are trying to connect a speaker to a stereo, the process may be guided only by a flashing light or lights and may seem difficult the first time it is attempted. But eventually, it should be an easy enough routine.



One of the most common uses for Bluetooth is in newer cars with newer information/entertainment systems (the car radio). These cars allow you to pair a few smartphones to the infotainment system. Initially, each phone is individually paired with the car system. Then when the smartphone is brought into the car, it automatically connects to the car system, as long as the phone's Bluetooth is turned on. (The smartphone can remain in your pocket or bag.) This lets the driver receive

calls through the car's infotainment system while keeping his hands on the steering wheel. Outgoing calls can be made by choosing the contact to call using the car system display, but this requires a co-driver in order for the driver to keep his hands on the wheel. On some car systems, outgoing calls can be made using voice commands, so the driver can keep his hands on the wheel. So, by using Bluetooth devices, one can still contact their friends and associates while safely traveling the highways.



Another use of Bluetooth is to connect a smartphone to a pair of headphones. I see people using these while running, walking, or using exercise equipment. The fact that no wires are connecting the headphones gives the wearer a sense of freedom you don't get with wires hanging down from the headphones to the smartphone. Pairing and connecting these devices is relatively easy because the smartphone has a display. Just enable Bluetooth on both devices, and look at the Bluetooth display on the smartphone. The headphone device should show up in the list of devices. Choose the headphones for pairing. Once paired, connect to the headphones. Once connected, all the audio from the smartphone will be routed to the headphones via the Bluetooth connection. After the headphones have been disconnected, they can be re-connected by finding them in the paired devices list and choosing them. Once you can listen to audio on the headphones, it is time to choose something to listen to. If you use an audio streaming service like Pandora or Spotify, you can start the App and begin listening to the streaming music. Most smartphones do not come with any music pre-installed, so if you want to listen to your own music from the smartphone, you will first have to get the music onto the smartphone. The specific procedure for putting music files onto your smartphone will probably be different for Apple iPhones and Android phones. You can probably use iTunes on your home computer and transfer your music files over the Apple iPhone hardware interface to the home computer with an iPhone. (Though I haven't tried this, I am told it should work.) With an Android smartphone, you may be able to connect your phone to your home computer via a micro-USB interface, and then if the phone shows up in the computer's File Explorer, drag and drop your music files into the "Music" folder on the smartphone. (You might have to click the "USB charging this device, Tap for more Options" notification and then select Transfer files.) I have found that it works in most cases, especially on smartphones with the latest Operating System. But if that doesn't work, you can use the Wi-Fi File Transfer App.

You can get the free Wi-Fi File Transfer App at the Google Play Store. There are over 100 Apps that purport to do the job. I have used the free App, from the “smarterDroid” developer. Once you have the App installed on your phone, you can use it with a browser on your computer to transfer files between the two devices. For example, if you are moving music files (remember those have an .mp3 file type) to the phone, move them into the “Music” folder on the phone. (If you are moving pictures from your phone to your computer, remember that the pictures from your phone camera are stored in the “camera” folder, which is under the DCIM folder in your “internal memory.”) Once the music files are on the smartphone, you have to start a music player and select the music you want to hear from the music library.



Another use of Bluetooth is to pair a Bluetooth Speaker with a Stereo system so that you can listen to music at a remote location (a location that cannot be reached by unsightly wires but is close enough for Bluetooth; maybe outside by the pool). Once paired and connected, the stereo music will play on the Bluetooth speakers and the regular stereo speakers (of course, the stereo has to have Bluetooth). These are just a few uses of Bluetooth; I am sure there are others, and there probably will be many more in the future.