

## All About FM Transmitters for iPod®

### Why would I want to buy an FM Transmitter?

Now that you have purchased an iPod, one of the first things you'll want to do is listen to your favorite iPod music in your car. The use of headphones while driving is unsafe and illegal in most states so you'll need to find another way to take your iPod tunes on the road. One solution is to buy a car cassette adapter for MP3 players. Car cassette adapters allow you to listen to your iPod through your car's cassette tape deck. The advantages of the car cassette adapter are its low cost and good audio quality. However, there are also downsides. Some of those include the following:

1. No battery recharging for your iPod
2. Unsightly wire hanging in the middle of your car
3. Many of today's newer models of cars do not have a car cassette player



This is where FM Transmitters should be considered as an alternative to a car cassette adapter. FM Transmitters offer an enhanced means to listen to your iPod in the car, as well as your home, without some of the drawbacks of the cassette adapter.

### How do FM Transmitters work?

FM Transmitters play your iPod tunes through any FM radio, whether it's in your car, house or on the go. Simply find an unused or weak frequency between 88.1 and 107.9 MHz on your FM radio, match the station on your FM Transmitter and hit "play" on your iPod.

FM transmitters work through a two-step process.

1. First they take your iPod music (audio signal) and convert it into an FM signal. If not converted properly, you can end up with distortion and digital noise. The quality of the conversion will determine the clarity, accuracy, and fidelity of your music.
2. The second step is taking that FM signal and broadcasting it to your FM Radio. There are several factors that affect the quality of this broadcast, but one of the most important is the antenna length and efficiency.

### What to consider when shopping for FM Transmitters

There are different factors to consider when shopping for FM Transmitters. Some of the most important are:

- Audio Quality/Signal Strength
- Usage Model (car or home)
- Size
- Compatibility
- Features



### Audio Quality / Signal Strength

Audio quality is **the most important and critical feature** in an FM Transmitter. There are two factors that effect sound quality: conversion of the audio signal (out from the iPod) to an FM signal and broadcasting the FM signal efficiently from the transmitter to the FM Radio.

To deliver the best audio quality, FM transmitter manufacturers use design techniques to:

- Minimize Total Harmonic Distortion - Percentage of distortion introduced by the electronics of the FM Transmitter
- Increase Stereo Separation - Separation of left and right audio channels that helps accentuating the concert hall and spatial effect of the original music recording



- Increase Signal to Noise Ratio - Indicates the level of background noise in sound produced by the FM Transmitter
- Deliver frequency response characteristics that lead to richer lows and crisper highs

In addition, some FM Transmitters use sophisticated filtering technologies to eliminate noise from the audio stream. For example, Kensington is using Aerielle technology in all of its FM Transmitters, which is audio filtered to enable better sound purity, resulting in clean, crisp low noise audio.

Now that it has a clean and clear audio signal your FM Transmitter needs to transmit it to your radio antenna for “hiss-free” reception. This is another area where many current FM Transmitters fall short. The transmission clarity depends on signal strength, which is limited by government regulation, antenna layout and its length. Just how good the manufacturer is at implementing all of this determines the fidelity and purity of the sound that you hear.

### Usage Model: What to Consider

Are you looking for a solution to play your iPod in the car? Or are you also looking for a solution for playing your iPod at home? Maybe a little bit of both. Are you more focused on audio quality, or are you looking for the most cost-effective solution? There are many choices of FM Transmitters, each one better optimized for a different usage model and cost/performance trade-off.

**Car-only FM Transmitters** can only be used in the car because they are powered from the car DC power source. Car-only FM Transmitters come with an integrated car charger and allow charging the iPod while playing tunes in the car. Car-only FM Transmitters usually provide better sound quality because the charging cable is used as an antenna to transmit the FM signal and to deliver better FM reception. Driving in your car is typically a very “noisy” environment, and Kensington recommends an FM Transmitter with an antenna/charging cable, such as Kensington’s Digital FM Transmitter/Auto Charger (K33185).

**Wireless or Portable FM Transmitters** are truly portable solutions and can be used in the car or at home. Wireless FM Transmitters draw power from the iPod, so they don’t recharge your iPod unless used with an optional charger. Their primary benefits are small size, lower price and flexibility to use them anywhere, not just the car. The downside of a typical Portable FM transmitter is the (sometimes) poor FM reception that can result in an audible “hiss” noise typical of a weak radio reception. Kensington recommends Wireless or Portable FM Transmitters to be used outside of the car. Some of the Wireless FM Transmitters will work fine in the car, such as Kensington Pico FM Transmitter (K33365), but we recommend the purchase of the optional 4-in-1 Car Charger for iPod (K33368), to increase its virtual antenna length.

### Size

FM Transmitter size could be a deciding factor but there are audio quality trade-offs that come with the size and should be considered. Small FM Transmitters don’t deliver the same audio quality you can experience from larger and wired FM Transmitters, because they do not have the space for a large antenna.

### Compatibility

Make sure the FM Transmitter is compatible with your iPod. There are many generations of iPods, and not all of the FM Transmitters are compatible with each version.



### Features

Many FM Transmitters include extra features to make their operation easier or give them extra functionality.

These can include station pre-sets that are used to store unused or weak frequencies and let you jump to commonly used frequencies just by pressing a button, similar to a station pre-set function



on your radio. Some FM Transmitters include LCD displays so that you can see your frequency on the transmitter while others only show it through your iPod. Additionally, some FM Transmitters backlight the display so that you can see it at night. Some provide an Autoseek feature to automatically find the best frequency for playback.

Finally, some include extra functionality such as integrated FM Transmitter and FM Radio capabilities so that you can listen to your iPod music while driving in your car or listen to a live FM radio station through your iPod at a ball game or taking a stroll. Kensington's Digital FM Radio and Transmitter (K33169) is one example of a product that includes many of these features.



There are many excellent FM Transmitter products on the market, but do your research to determine the best solution for you and your iPod.

For a complete listing of Kensington solutions visit [www.kensington.com](http://www.kensington.com)

