

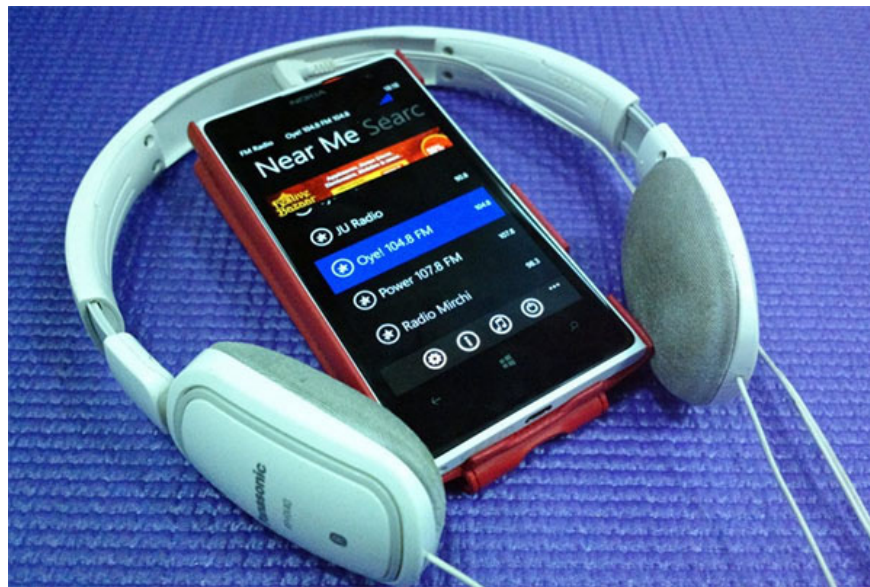
Plug in a headset to hear the FM radio on your phone, why is it so complicated?

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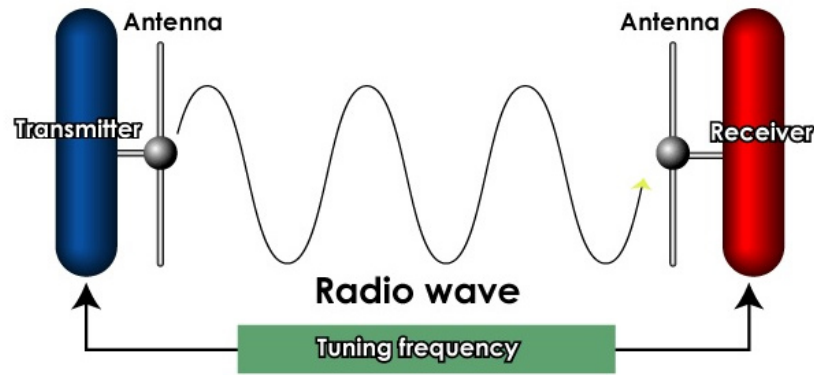
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Let's learn about the radio's operating principle for answers.

Radio sends energy from one place to another without any direct wired connection. To operate it only requires a transmitter to transmit wireless radio waves and a receiver to record.



Specifically, the mechanism of its operation is as follows: first, the sound of the voice or the recording is recorded and then converted into electrical energy. Then, this electrical signal is modulated with a wave signal, and is fed into the antenna to increase the intensity. The process of increasing the intensity is controlled in accordance with the desired distance of the signal transmitted from the location of the antenna.



From the antenna, the wave is transmitted at the speed of light to the receiving antenna. Here, it continues to be converted back into electric current by the receiver, then decoded into a radio sound that we still hear!

Radio is usually emitted at two frequencies equivalent to two modulation methods:

1. Amplitude Modulation (AM), using wave propagation at greater distances and at lower frequencies (about 1000 kHz).
2. Frequency modulation (FM - Frequency Modulation), transmits in short distances but at high frequencies (about 85-100 MHz).



The current semiconductor stations have two different antennas: one is rolled inside and one is extended to the outside. They need two separate antennas by a single antenna that cannot receive both large difference frequencies.

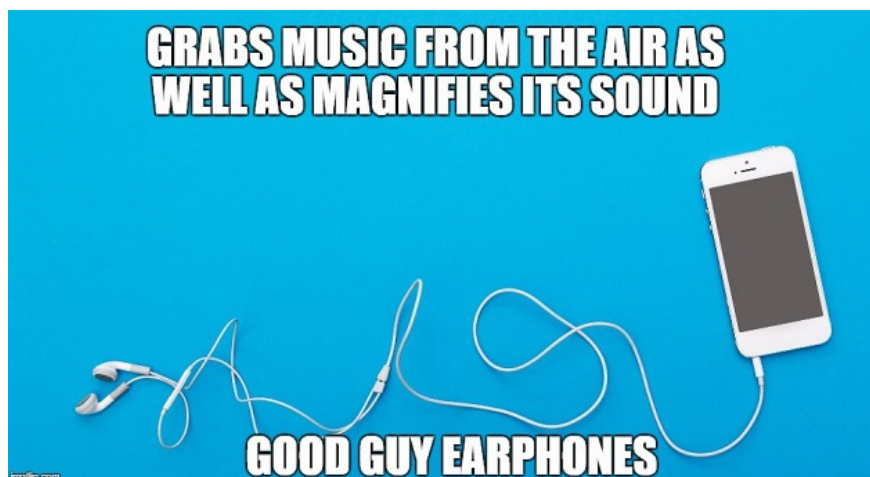
The length of the antenna is determined by the frequency of the radio waves, the larger the wave the longer the antenna needs. For example, to catch an FM signal, you need an antenna about 90 cm long.



The car also needs an antenna to listen to the FM radio.

Phone is not integrated inside antenna. Of course, manufacturers can do it, but that will make the phone heavier, bulky and worse. Because of that, they chose a more interesting method, the headset with the ability to act as a perfect antenna!

The headset is made of an insulated metal wire, one end consists of a coil that surrounds the magnet and the other end surrounds the metal jack. The headset acts as an antenna, taking energy from radio waves, then transmitting to our ears via metal wires. Headphones are usually longer than 90 cm, ideal conditions for receiving FM signals!



In fact, just a simple metal wire, not necessarily a headset, can listen to FM radio on mobile phones. Evidence that we can still listen to the radio even when connecting the phone to the speakerphone with a regular USB cord.

See more:

1. Parallel use of headphones and speakers on Windows 10 April Update

2. Do you distinguish headset, headphone and earphone?
3. 5 principles to know if you regularly use headphones to listen to music

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