



Lesson 9: AM and FM radio

What you need to know:

1. How radio waves are produced.
2. The principle of Amplitude Modulation (AM).
3. The principle of Frequency Modulation (FM).

Radio waves have been used to transmit information and communicate over large distances for over 100 years. The technology and the method of producing radio waves really hasn't changed much over time.

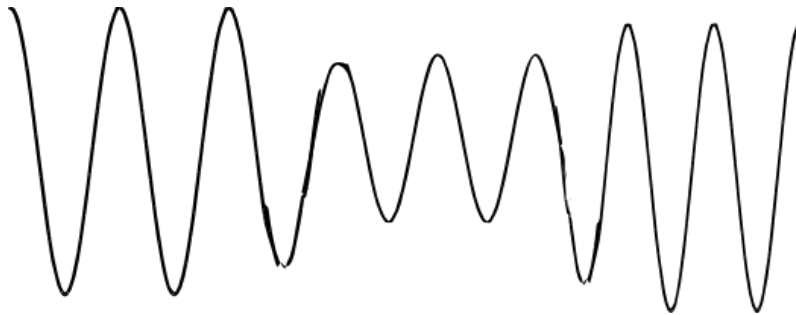
People still speak into microphones joined to a transmitter, which produces a voltage. This is then turned into radio waves (a carrier signal), in a modulator, which is transmitted via an aerial.

An aerial on a radio receiver picks up the radio waves, and changes them into a voltage via a demodulator, which is used to produce sound waves via a speaker.

You may have seen that your radio can pick up two different types of radio signals, either AM or FM:

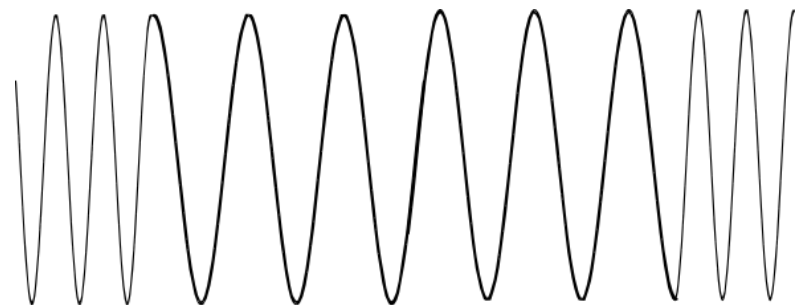
- **AM:** AM stands for Amplitude Modulation and the **information is transmitted by changing the amplitude of the carrier waves.**

AM radio signal



- **FM:** FM stands for Frequency Modulation and the **information is transmitted by changing the frequency of the carrier waves.**

FM radio signal



AM and FM radio signals are called analogue radio signals.



In your exam you may be asked to explain how AM and FM radio signals transfer information.



Recap:

1. Sound waves produce radio signals in a radio transmitter.
2. A radio receiver produces sound waves from radio signals.
3. AM stands for Amplitude Modulation. AM radio signals transfer information by changing the amplitude of the carrier wave.
4. FM stands for Frequency Modulation. FM radio signals transfer information by changing the frequency of the carrier wave.