

CONNECTION CHANNELS.

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We can't imagine today's world without modern technologies, but modern technology can't work without connection channels. Therefore, today I am going to speak about different types of connection. They are divided into two main groups: wired and wireless.

Thanks to the new electronic devices, using different types of wireless connections such as microwave, infrared, and radio waves, this type of connections nowadays become more and more popular. Today the most widespread are microwaves and radio channels. These are WI-FI and radio transmitters.

WI-FI (Wireless Fidelity) is a local area wireless technology that allows an electronic device to participate in computer network using radio bands from 2.4 GHz to 5GHz. The speed of transmission may reach 54 Mbit/s. Radio range is about 500 m. The disadvantage is imperfect equipment.

The radio channel has average prices on the equipment and an average speed (20 – 150 Kbit/s). It is exposed to all kinds of interference. Distance of communication is defined by the radio reach.

The infrared channel is quite cheap. The speed is 5 - 10 Mbit/s. This kind of channel is insensitive to electromagnetic interference. Distance bond is determined by direct optical visibility but no more than 3 km.

What is about wired connection? The most popular types of cables are coaxial, fiber optic and twisted pair. Coaxial cable is cheap and popular in recent past way of transmission. It has a high mechanical strength. Speed is about 50 Mbit/s. Due to the high attenuation of the signal, nowadays this cable is not used in creating modern networks. Lifetime of the coaxial cable is about 10 – 12 years. Growing popularity of the fiber optic cable caused by the speed of the transfer - 1 Gbit/s and long distance limit - 110 km. Fiber optic cable is insusceptible to electromagnetic interference and has a high performance as a medium of transmission. Nevertheless, it has a low mechanical strength and costs too much. Structurally twisted pair cable consists of four pairs of the twisted copper insulated conductors along the length. The conductors also twisted in each pair that provides an independence of signals. That's why the signal easily transmits on the distances up to 2 km with the high speed (1 Gbit/s).

To conclude, I want to say that connection channels play a great role in our life. They are used everywhere and in everything that refers to electricity from elementary conductors of electricity to complex networks.