

PRINCIPLE BEHIND WIRELESS COMMUNICATION

What is a Walkie Talkie?

A walkie talkie is a hand held radio communication device that transmits and receives voice through radio channels. The physical body looks similar to that of a cordless phone and contains a microphone, a speaker, an antenna and the walkie talkie special push-to-talk button. They work on batteries and are one of the easiest modes of communication between people of set distance from each other.

How does a wireless Walkie talkie work?

Wi-Fi and Bluetooth technology allows duplex mode which means that transmission and reception can occur simultaneously. The transmission is always on and the power of such devices is in Milli Watts. Very high power will cause the device to heat up quickly and would drain out the battery. Less power mean that the transmission range is also very less (around 10 meters)

Walkie talkies work on a half duplex channel. This means that while only one person can transmit signals at a time, one or more receivers can receive them at the same time. Their power range depends on the model opted and it can range from

around 2 -7 Watt and accordingly their transmission range lies anywhere between 2-8 Km.

All walkie talkies need a frequency bandwidth to work. There are devices that work on the free range allowed by the Government (27 MHz). This band interferes with a lot of noise levels like computer monitors, generators and two wheeler engines. It is hence obsolete and there is no use investing on a device that works on this bandwidth and comes at cheaper costs.

Professional walkie talkies like TalkPRO works on DOT regulated bandwidths of 350 MHz and with 10 channels. A single analog voice channel requires a bandwidth of 6.25 KHz and a speed of around 8kbps. When voice in the form of an analog signal is transmitted, the device superimposes it on a carrier wave. This carrier wave is filtered out on the receiver device and only the voice is heard out. TalkPRO has 16 channels through which private talk groups can be formed and each channel transmits a particular frequency signal.

To make a walkie talkie's batteries last longer and high power to not damage the receiver device, there are a few techniques used.

An electronic gate ensures that the high power transmitted goes only to the antenna

The receiver is always closed when the transmitter is on

The transmitter end user always says 'Roger' or 'over' to mark the end of the sent signal and releases the push to talk button before the receiver starts communicating

TalkPRO walkie talkies come with a built in 'Roger Beep Tone' which is transmitted at the beginning and the end of each transmission and reception of signals and hence the user need not mark the end of each conversation.

These days walkie talkies are also striving to achieve their one disadvantage, the distance covered between two devices. Integrating the internet cloud, LAN and WAN technologies, walkie talkies can now connect between two cities and work as effectively as any communicating device.

When you decide to invest on a walkie talkie, learn the basics and understand your requirement. Investing once on a good quality walkie talkie like the TalkPRO will save time and energy for a long time.

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