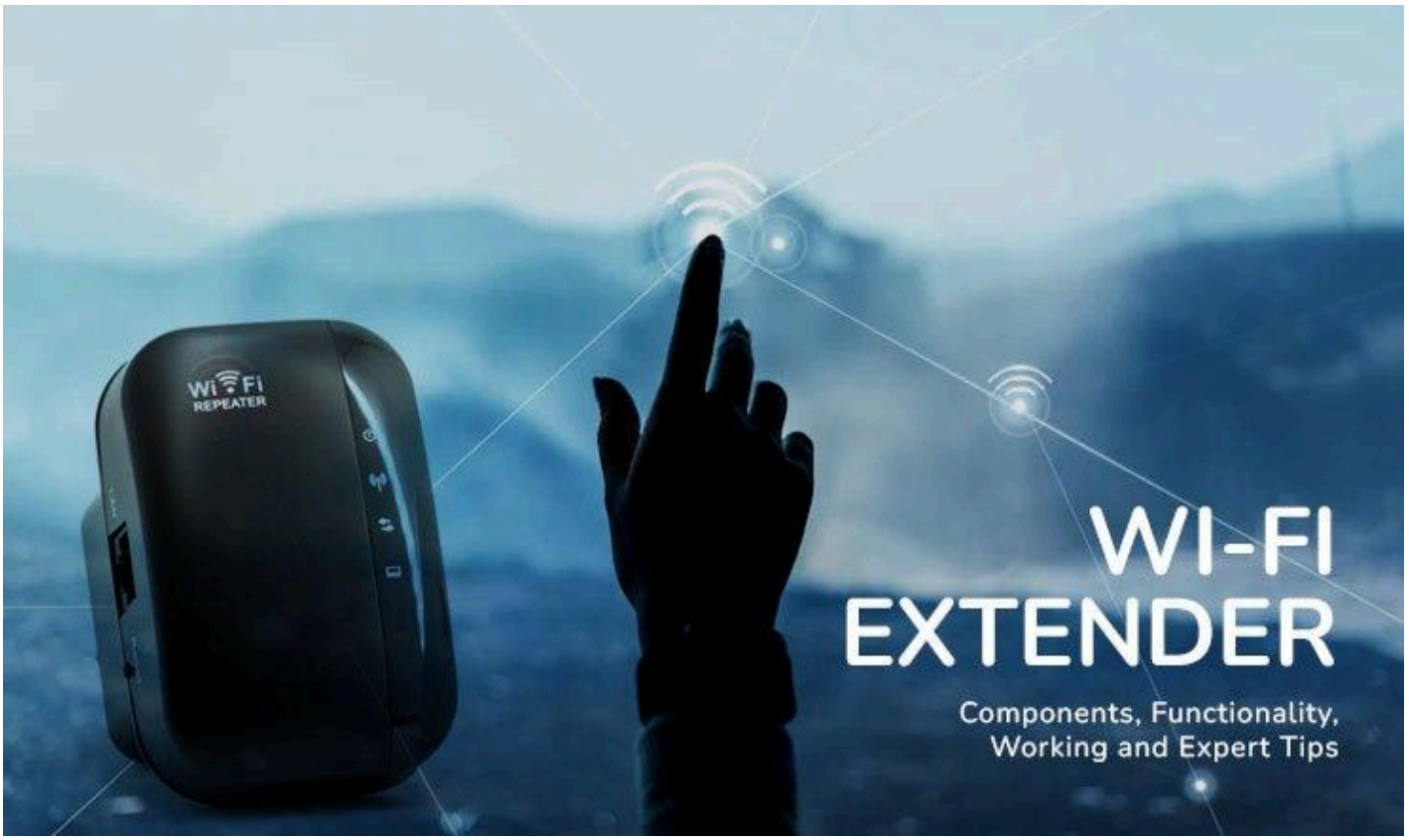
A Wi-Fi extender: Components, Functionality, Working and Expert Tips

Wireless coverage is an important topic of discussion as more homes and small-scale businesses are facing difficulties connecting to the devices. The reason is many such as dead spots, insufficient coverage, breaking of signals, and many more. So there is an incredible sale of wifi extenders in the first place that can easily reverse the situation for users.



This article will tell you the important aspects of a **WIFI router long-range extender**, its components, typical functionalities, and some expert advice to make your life easier. So, without wasting a second more, let’s get going:

Prime Components

Common components

A range extender is likely to comprise of essential components such as a CPU and memory (RAM and ROM) to store and run the device's firmware, as well as to manage network traffic and other device operations. Better performance from such components, like any other piece of electronics, is always desirable, so pay attention to their specifications.

The radio, which handles wireless communication, is another component that is always present in a wireless range extender. A wireless chipset and one or more amplifiers for each frequency, as well as the antennas necessary to improve the signal, are often found in dual-band range extenders that handle both 2.4 and 5 GHz frequencies. Signal strength is often influenced by the size and positioning of antennas, which can be a major selling factor.

There is at least one Ethernet port on a wifi router extender, but some versions include four to six ports for wired access. USB ports are also ubiquitous, however, their use varies greatly between devices, and they are used to facilitate media server capability, file sharing, and printing. Audio outputs for streaming music and other I/O like eSATA are also provided on some range extenders.

The Embedded software

Firmware is the term for embedded software. The read-only nature of firmware adds an extra degree of protection by preventing malicious programming from being installed on the device. Software updates should be done with caution, as incorrectly installed firmware is a common cause of device failure.

The Hardware (H/w)

There are two types of range extenders: those that sit on a shelf or mount on the wall like a wireless access point or router, and those that mount directly on a power outlet. Both form factors provide the same basic functions that any range extender should provide. Internal or external antennas can be used for the wireless network, while external antennas are likely to deliver a greater signal. LED indicators are typically included to show the state of your network link or to provide additional troubleshooting information.

The majority of shelf-mounted range extenders provide four or five gigabit Ethernet ports for connecting wired devices. Many of these devices also include a USB connection for file-sharing or media server functions, as well as the ability to share a USB printer over your network. Because of their larger size, these range extenders often outperform their outlet-mounted counterparts by using more powerful processors or amplifiers.

Functionality

Wireless routers link directly to the broadband modem, sharing the Internet connection with wired and wireless devices while also providing basic network services such as DHCP, NAT, and a rudimentary firewall.

Expert advice

1. **Confusion:** The main difference between a wifi range extender and a wifi router, which most people have a small misunderstanding about, is the embedded software, which offers you a clear view of the capabilities that are enabled on the device and ultimately drives the hardware. Sadly, this embedded software is rarely compatible between devices, so don't expect to be able to flash your range extender with router firmware anytime soon.
2. **Placement:** The physical location of your wireless range extender will be determined by the nature of your environment and the devices that will benefit from the increased wireless coverage. Although a central location between the wireless router and wireless clients is optimal, the location of connected PCs may also influence the range extender's placement.