

BUYING A WIRELESS ROUTER

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I recently went Router shopping. As do most people, I wanted a router that would extend my wireless throughout the entire house if possible. If necessary, I was willing to play with various external antennas and antenna hacks to directionally enhance the signal, but I wanted a quality router signal to start with. Here is what I learned:

- 1) First of all, I was unable to find any reviews or comparisons on the web regarding router performance over distance (long-range) or signal strength (radio signal). Yes, Wireless uses a radio signal and the radio's signal strength is shown by the little bars or the "%" value in your PC's Wireless Utility when it detects a nearby router.
- 2) I found that a higher price on a router does not insure better signal strength. My cheap old Netgear Router (WGR614 v5) has much better signal strength across my house than the newer higher priced Models that I tested. (*Netgear, D-Link, Linksys, and others*).
- 3) Without good radio signal strength, all the digital technology in the world will not make a router perform at a distance, no matter what it says on the box. You need a good signal to connect. After that, better technology can improve speed and performance. The better speed promised by 802.11n is only good if there's a decent signal level reaching your PC to begin with.
- 4) The signal on the new 5.0 GHz band that is added to many new high-end "Dual-band" Routers does not travel as far through walls as does the signal of the regular 2.4 GHz band that 802.11g/n currently uses. Even though the 5.0 GHz band is less prone to interference, I would not choose it for long range. A waste of money.
- 5) Some routers come with their antennas mounted either internally or permanently affixed to the outside of the router so there is no way to connect an external antenna. *Netgear for example, does not seem to have even one model that has a removable antenna.* If a router does have a removable antenna, then you can connect an aftermarket antenna to improve signal strength. Some antennas are directional and some have a long cable to you can mount it high.
- 6) If you do buy an external high gain antenna to extend the range of your router, be aware that the connector may not fit on your router. There are several different antenna connector types. RP-SMA, RP-TNC, MMCX, and MC-Card. See the following link for photos to help identify most of these connectors: <http://wireless.gumph.org/content/3/7/011-cable-connectors.html>
- 7) Routers usually use either the RP-SMA or RP-TNC style connector. The antenna's connector must exactly match your Router's. I found that some antennas do come with an adapter that will allow it to work with the two most common Router antenna connectors.
- 8) As an old radio technician, I suspect that most the external Wi-Fi antennas currently available on the market are optimized for the 2.4 GHz band and not the 5.0 GHz band, even though the specs may say they will work on both. Another reason to stay on the 2.4 GHz band.
- 9) If you have a wireless router that does not quite give a strong enough signal, try the trick at these links: http://www.metacafe.com/watch/1009569/how_to_double_your_wifi_signal_easy_and_free/ and at: <http://www.freeantennas.com/projects/template2/index.html>
- 10) Personally, I ended up buying a Hawking Technology Hi-Gain Wireless-300N Router that has the availability of several Hi-Gain external antenna solutions. It is the only router that gave me better signal strength than my old Netgear. *Note: While shopping, I returned a both a D-Link DIR-825 and a Netgear WGT624, before finding the Hawking unit. Both had terrible signal strength across my house.*
- 11) **NOTE: Also check out the EnGenius 600mW 802.11bg ECB3500 Wireless Router.**
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