



Get the most from your Broadband

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Fleur Telecom – How to Get the Most from your Broadband

1. The Technical Bit: Router Basics

Your router is the glue that holds your home network together. It connects all your computers to one another, either through Ethernet cables or a wireless connection. A router is different from a **modem**: your modem connects you to the internet, while your router connects your computers to one another. When you hook up your router to the modem, however, you're then able to share that internet connection with all of the computers on your network. Most often, modems come with routers built-in, but this isn't always the case, for FTTC (fibre to the cabinet) connections, it was normal to have a separate router, but this is changing with integrated devices becoming available in 2016.

Devices that connect to your router – that is, the computers, tablets, smartphones, digital video recorders (DVRs), game systems, and so on – are called **clients**. Each client on the network is given an IP address, which helps your router direct traffic. Clients within the network get a **local** IP address, while your modem gets a **global** IP address.

Global IP addresses are like street addresses, while local IP addresses are like flat numbers: one lets you find the building in relation to the rest of the world, while the other lets you find the specific location within the building. These addresses make sure the right information from the outside world gets to the right computer on your network.

Routers have a number of different features, so we'll go through some of the most common router specs and how they affect your home network.

2. Wired vs Wireless

The diagram below shows how devices connect to the internet.



It is always better to hardwire any computer that doesn't need to move around, like a desktop, since wired connections are faster than wireless and not prone to interference.

However, wired connections are not ideal for devices you pick up and move around, like laptops, so for those, we use a wireless connection (commonly known as **Wi-Fi**). Wi-Fi is more than adequate for simple web browsing, though wired connections are ideal if you're transferring big files, gaming, video chatting, or streaming videos.

3. Factors Which Can Affect Broadband

Multiple Users

The speed of the wireless router is limited. If there are several people in the house using multiple devices over Wi-Fi at the same time, the service will slow down. Downloading files, watching videos and real-time gaming all use a lot of bandwidth and will perform better on wired connections where possible.

Range

Wireless routers can only reach so far. If you have a big house or your walls are very thick and you have the router on one side of the house, you might not be able to access the network from the other side.

Your range, like your speed, is impacted by a number of factors: the type of construction of your property, thick walls between rooms; metal radiators next to the router; as well as the wireless standard you use, wireless N has a longer range than wireless AC, so if range is important, you'll want to use wireless N (see the sections on Wired Throughput and Wireless Throughput for more information).

Location

Routers may be ugly, but that doesn't mean you should hide them behind the TV cabinet. If you want the best signal, you'll need it out in the open, **free of any walls and obstructions**. Point the antennae perpendicularly, and **elevate** the router if you can. Lastly, make sure it's in the centre of your house, so you have the best coverage possible throughout your home.

Interference

If you have neighbours, their routers may be interfering with yours and causing the signal to degrade. Wireless routers can operate on a number of different channels, and you want yours on a channel with as little interference as possible. The routers are set to automatically seek the clearest channel to operate on (based on the location of the router). At long distances from the router, interference may still be encountered.

Other routers aren't the only thing that can cause interference. **Cordless phones, microwaves, flashing Christmas lights and other appliances** can interfere with your signal as well. Try moving your router farther away from potentially interfering appliances.

4. Additional Devices to Improve Coverage in the House

There are many other ways to connect to your network from afar. Wireless **extenders** (also called wireless **repeaters**) are products that do exactly as their names say: extend your network further. These devices plug in to a power socket in range of your router and then **re-transmit the signal**, extending the range further.

Alternatively, you can buy "**Powerline adapters**," which are sold in pairs. One unit connects to your router by an Ethernet cable and is plugged in to a power socket. The second unit is plugged in to a power socket near the device you want to connect (such as a TV) and then connected to the device with an Ethernet cable. These systems use the mains electric circuit in your house to carry the signal and will get a faster connection than wireless would allow for. Please note, the power sockets must be on the same ring main for this to work; some large houses may have multiple ring mains.

Both of these devices are readily available from computer stores or general stores such as Argos and Maplin. They are easy to install with the instructions included in the box.

5. Wired Throughput

Throughput is the speed at which a router can transfer data.

The wired half of your router will come in one of two speeds: 10/100Mbps and 10/100/1000 Mbps (also known as "gigabit"). 10/100 routers won't transfer data between computers as quickly as gigabit routers will. If you're only using your router to connect to the internet, 10/100 is fine, since your internet connection is likely to be slower than 100Mbps, meaning you wouldn't be able to actually take advantage of the router's full speed. If you're transferring data between computers in your house, however, you should use a gigabit router, as it will transfer this data much faster than a 10/100 model.

6. Wireless Throughput

The transfer speed of your wireless connection is dependent on the wireless **standard** it uses. The most common standards today are 802.11n (also known as "**Wireless N**") and 802.11ac ("**Wireless AC**"), the latest variant with higher speeds but shorter range. Wireless N is most common in devices, although some new devices are now installing AC wireless cards.

7. Wireless Security

Unless you don't mind strangers using your bandwidth and potentially accessing your networked files, you should always protect your wireless network with a password. **WPA2** (Wi-Fi Protected Access) is currently the most secure type of wireless encryption. It is standard in most devices which normally come with security set to "on". If you take the security off, then be aware that this could impact the wireless performance if other people are using your router.

8. Internet Security: Fleur Security Suite

Fleur has partnered with the award-winning Netintelligence to bring you **Fleur Security Suite** for **Windows-based systems**. It is very simple to install and operate, with reports centrally managed through one control panel. The Suite has received the internationally recognised Kitemark for **Online Child Safety** and includes the following benefits:

- Protection wherever, whenever and however you connect to the internet.
- Monitor the usage of family members and block inappropriate websites.
- Integrated **Symantec Endpoint Protection** to proactively identify files that are at risk and stop threats without slowing you down.
- Dispel distractions at homework time by restricting when content can be viewed.

Fleur Security Suite is **free** for customers with 12 month broadband packages, and costs just £2/month for customers with 30 day broadband contracts.

9. Further Information

If you have any questions or would like further support, please call **0333 320 4020** to speak to one of our **UK-based** Technical Support staff.