

# **Free wifi in the TRA halls and faster mobile access**

## **Glossary of Telecommunications terms**

### **2G**

2G is a digital mobile communications standard allowing for voice calls and limited data transmission. 2G refers to it being the second generation of mobile communications standards. 2G is still used in the UK by several networks and is what your connection will fall back on when 3G or 4G are not available.

### **3G**

The third generation of mobile technology, and what many of us use to access the internet via our phones, tablets or laptops using a signal from a mobile service provider. It offers much better performance over 2G but speeds will depend on many factors such as signal strength, network traffic and the hardware used. Most of the UK is now covered by 3G network signals from all the operators.

### **4G:**

The fourth generation of mobile technology currently superseding 3G by offering far superior mobile connection speeds, on a par with home broadband. While coverage is presently limited compared to 3G it is gradually improving and now available in most major towns and cities as well as less populated areas. To use 4G you may need to upgrade your smartphone or other device, though many new devices now support it as standard. 4G may offer an alternative to home broadband, though anyone wishing to go this route should pay attention to data usage caps to avoid large bills.

### **(4G) LTE**

Long Term Evolution is a next-generation 4G mobile data standard. It has been widely adopted and marketed as such by networks across the world, including in the UK where it is used by the mobile networks for their 4G services.

### **5G**

The next generation of mobile technology. This is still in development and nothing has been set in stone yet, but the plan is to build a network that can easily support the growing demands of the Internet of Things as well as regular users. At the very

least it's expected to be much faster than even 4G. We're unlikely to see a 5G network in the UK until the early 2020s.

### **ADSL broadband**

A broadband type that uses BT telephone lines to provide broadband connection in the UK. You may also use your telephone to make and receive calls while you are online. ADSL can provide up to 8Mbps download speed.

### **ADSL 2+**

High-speed ADSL +2 technology is the upgraded version of ADSL. This type of broadband is available in places where the local exchanges are upgraded to this technology. It can offer up to 24 Mbps download speeds.

### **Backhaul**

The middle part of the network that links your local exchange to the core network

### **Bandwidth**

Bandwidth is the rate of data transfer across a digital network. A broad bandwidth allows more data to be received in any given amount of time than a narrow bandwidth service.

### **Cable broadband**

Broadband internet delivered over cable TV lines. In the UK the largest cable broadband operator is Virgin Media, formed from a merger of NTL and Telewest. Over the last few years Virgin has stopped describing its services as cable broadband and now calls it fibre optic because, like the BT OpenReach's fibre network, it uses fibre connections to street cabinets then completes the link to homes with coaxial cable.

### **Coaxial Cable**

Coaxial cable is the kind of copper cable used by cable TV companies between the street cabinets and user homes and businesses.

### **Contention ratio**

Your contention ratio tells you the potential maximum demand on your broadband connection from yourself and other customers. Once your broadband signal leaves

your home it joins a line connecting your neighbours and others to the web; so the more people using it at once, the slower it can become. A contention ratio of 50:1 (typical for ADSL broadband) means there are up to 50 people on one connection. This is often why you see broadband slow down during peak usage times. Business broadband may be uncontended (or have lower contention ratios) so companies get a faster and more reliable connection without peak time congestion.

## **Data**

A general term for files, videos, text, pictures or sound stored on, processed by, sent or received by your computer.

## **Download**

The transfer of data to your computer or device. Downloading does not just happen when you specifically request a file transfer, anytime you access a web site, stream a video or do anything else which takes information from the internet you are downloading.

## **Download limit**

Your broadband package will often have a download limit, which caps the amount of data you can download from the internet over a specific time period, usually a month. It is also known as a bandwidth cap and is usually expressed in MB or GB.

## **Download speed**

How fast your broadband connection can receive data. This is the headline figure you'll see advertised on any broadband package. It will be either kilobits per second (Kbps or Kb), megabits per second (Mbps or Mb) or gigabits per second (Gbps or Gb).

## **DSL**

Digital subscriber line: a group of technologies that deliver data services (including broadband) over the wires of the telephone network.

## **Ducts**

Ducts are underground pipes that hold copper or fibre cables.

## **Fibre optic broadband**

A method of transferring data which utilises pulses of light sent along plastic or glass cables. Fibre optic data communications are faster and less prone to interference and have revolutionised telecommunications. It will one day entirely replace all the older copper cable that has been used on UK telephone lines for years. The old telephone network wasn't introduced with data in mind and as anyone living far away from their BT exchange will testify, a long copper wire from the exchange to the home can heavily hamper broadband speeds. However, the UK is slowly turning to fibre optic. Both Virgin (through its cable service) and the BT OpenReach network now offer much faster speeds thanks to fibre, though not all homes are covered. Speeds also vary depending on whether the fibre connection goes all the way to the home or only to your street cabinet.

### **Fixed line**

Fixed line broadband is a term used to describe internet delivered over a physical link, either cable, fibre or ADSL. The term is mostly used to differentiate fixed line broadband from wireless services like mobile broadband and satellite internet.

### **FTTC**

Fibre To The Cabinet.

TTC is a type of broadband service which uses fibre optic cables to street cabinets then regular telephone or cable lines to reach homes. This is cheaper and quicker to deploy, but speeds are more limited than a full fibre solution like FTTH / FTTP (though still much faster than ADSL). If you sign up for fibre broadband now it is most likely to be FTTC, using either the BT OpenReach network or Virgin Media cable.

### **FTTH / FTTP**

Fibre To The Home / Fibre To The Premises.

These are different terms for the same thing: a full fibre optic broadband connection. The connection speed of such a link is far greater than either ADSL or FTTC. Some FTTH services are now available in the UK and offer home users an incredible 1Gb speed. Vitally, this is not the limit of fibre so it's a future proof technology

### **Gb / Gbps/ gigabit**

Gb is short for gigabit, which is a unit used to describe the speed at which data travels across an internet connection. It is often written as Gbps, or gigabits per

second, but on Broadband Genie we use Gb as this is the style most commonly used by ISPs.

There are 1024 bytes in a kilobyte (KB), 1024 kilobytes in a megabyte (MB), and 1024 megabytes in a gigabyte.

To put it in some context, a small text file could be measured in bytes, a basic Word document in kilobytes, a music file in megabytes and a DVD quality film in gigabytes.

## **GPS**

Global positioning system. This allows the user to know exactly where they are on earth and is now often used within hand-held devices such as smartphones.

## **Internet**

The internet, or 'net', is a global collection of interconnected networks sharing common protocols. While many consider the World Wide Web to be the internet, the web is only one part of the greater internet which also includes the likes of email, VOIP and Usenet.

## **Internet of Things**

The Internet of Things (IoT) is network of objects with embedded electronics and sensors which share data and can be remotely controlled. A 'thing' could be anything from a smart thermostat to a lightbulb to an internet connected fridge.

## **IP address**

An Internet Protocol address is a string of numbers which acts as a unique identifier for every computer connected to the internet.

## **ISP**

Internet Service Provider. The company responsible for billing you for your internet connection. This is not always the same company which owns and operates the networks. If you get your broadband down a BT line but you pay your bills to Sky, Sky is your internet service provider.

## **Kb / Kbps / Kilobit**

Kb is an abbreviation of kilobit. When it comes to internet speeds you may also see it written as Kbps - kilobits per second. This was commonly used to measure dial-up

internet speeds and still crops up with slower mobile broadband connections and slow uploads and downloads of internet files.

### **Masts**

Powerful radio transmitters and receivers which allow mobile phones and computers to connect to the internet or mobile phone networks.

### **Mb / Mbps / Megabit**

Mb is an abbreviation of megabit. In terms of data storage a megabit (also abbreviated as Mb) is 1/8th the size of a megabyte. In relation to broadband speeds, this means a 1Mb connection will be able to transfer 1MB (megabyte) of data in eight seconds. When talking about the speed of a broadband connection the full phrase is megabits per second (Mbps), however as 'Mb' is currently the term most often linked with the measurement of internet speeds this is how you'll see broadband speeds displayed

### **Not-spot (or black spot)**

An area where there is no wired internet service available or the service is so poor it is effectively of no use.

### **OFCOM**

Office of Communications. The UK's communications regulator. OFCOM has done much to improve broadband for consumers, including the streamlining of the broadband switching process, cracking down on misleading unlimited broadband and formalising broadband complaints procedures.

### **Router**

A router directs traffic on a network. In relation to broadband the router usually (but not always) includes a modem so is responsible for connecting to the internet as well as providing networking in your home. A broadband router may also be called a hub.

### **SDSL**

Symmetric Digital Subscriber Line. Upload speeds are par with download speeds on a SDSL line. This is generally for businesses use rather than at home, it is also more expensive than a standard broadband.

### **Speed**

The transfer rate of a broadband connection. This is the key selling point of any service and usually the first thing any of us will check when comparing broadband. Broadband speed is measured in kilobits per second (Kbps or Kb), megabits per second (Mbps or Mb) or gigabits per second (Gbps or Gb). For most consumer broadband connections the speed will be faster downloading than it is for uploading.

### **Streaming**

Viewing media without saving files to your computer. If you watch a video through Netflix or listen to music with Spotify you are streaming. The advantage is that you get quick access without having to download the whole file, but on the downside you'll need a minimum speed to view without interruption and the content needs to be streamed each time, potentially an issue if your broadband is capped.

### **Superfast Broadband**

According to the EU, 'superfast' broadband is any broadband deemed to run at 24Mb or above. This essentially rules out any service running on old BT lines (ADSL) or any mobile broadband up to and including 3G: leaving us in the UK with 4G (potentially), fibre and cable as 'superfast'. The UK government has made a commitment to have superfast broadband available to 95% of the UK by the end of 2017

### **Unlimited**

Broadband without limits, where you can use it as much as you like without additional charges or restrictions. There's been a great deal of controversy over unlimited broadband in the past as providers liked to sneak Fair Use Policies in the small print or come up with their own loose definition of the word, but today many ISPs are actually unlimited. Sometimes they may have no data usage caps but still utilise traffic management, while others are 'truly unlimited' and have no usage caps or traffic management policy.

### **Wi-Fi**

A standard for connecting devices using radio waves. The term Wi-Fi does not stand for anything, but is a trademarked name owned by the Wi-Fi Alliance. In broadband terms the most common usage is when referring to wireless routers. These devices connect to the internet via a fixed-line telephone socket and then transmit the data through the ether over a local Wi-Fi network so that you don't have to run wires to

your PC, laptop, games console or other devices. Wi-Fi is now commonly available in places such as hotels, airports and cafes, offering the internet in public areas (which are often known as hotspots).

**Wireless access point**

A component used in wireless networking or wi-fi hotspots.

**Voice over Internet Protocol (VoIP)**

VoIP or broadband telephony uses internet connection to make and receive voice calls. The call rates are quite cheaper than standard telephone service.