

## **How fast is my broadband?**

### **Introduction**

This document explains exactly what “Superfast Broadband” is, what you can expect from your service and how you can measure it.

### **How fast should it be?**

#### **Overview**

Tove Valley Broadband delivers broadband to villages and scattered properties in the upper Tove Valley. Properties are connected via microwave radio to a local “Point of Presence” in their village. This PoP is connected directly to our main hub in Wappenham by buried fibre optic cables. The main feed into Wappenham gives a maximum of 1000Mbps (1Gbps) and this is the service that is delivered to each PoP.

The radio links to properties have a maximum capacity of 100Mbps and so, generally speaking, that is the maximum speed you could expect in your home. However, the radio infrastructure is shared with your neighbours and so in reality the highest speed you are likely to see is 60 to 80 Mbps.

Please note that some settlements and communities in our area are not served directly with a fibre optic cable but with a high speed radio link to a local access point. In these cases we cannot guarantee a superfast service, although the expectation is that the speed would be greater than 10Mbps and certainly better than an ADSL service via a copper phone line.

If you have a Fibre to the Property (FTTP) service from TVB, then the speed will be much higher. However the measured speed will be even more dependant on other factors (see below)

## Definition

There are many confusing definitions of the term “Superfast Broadband”.

According to Broadband Delivery UK (BDUK), the Government’s national target is for 95% of people in each local authority area to be put within reach of a “*superfast broadband*” service by 2017, which has for the most part been described as a service that offers “*speeds of greater than 24 Megabits per second*”.

Broadband suppliers such as BT deliver Fibre to the Cabinet (FTTC) and connect this service to premises using the copper wires already in place. These suppliers currently always quote an “*up to xxMbps*”.

Tove Valley Broadband has installed the infrastructure to provide superfast broadband using a grant from the government which is partly funded from the European Community. The European Commission’s (EC) digital agenda defines superfast broadband as being at least 30Mbps. Therefore this is the speed that TVB seeks to deliver.

Of course it’s not quite as straightforward as that. There are very complicated formulas to determine exactly what speed the client will actually see. Simply put, that means that we will provide better than 30Mbps to **most** clients **most** of the time. (*This caters for the situation where, for example, the network gets heavily used as soon as school’s out and the kids hit the Internet, or for whatever technical reason it proves impossible to supply a service of the required speed to a particular property*)

All these caveats are exactly the same for all Internet Service Providers (ISP’s) because it is impossible to guarantee a constant level and quality of service for broadband to every property.

## Upload and Download speeds

When you are connected to the Internet you are receiving and transmitting data. For example when you want to get Google up you send data to the Internet (Upload) requesting that webpage. When Google sends you the page you are receiving data from the internet (Download). In normal use there is much more download traffic and this is mainly what affects your surfing experience. For this reason most ISP’s optimise their service for Download. It’s rather like having 5 of the six lanes on the M1 taking traffic into London and just one lane taking traffic out. This asynchronous service makes the best use of the network but does result in a much lower speed for upload. You only really see this when uploading a lot of data (eg uploading photos in an email or

to eBay; a video to Youtube; the use of or backing up data to a Cloud service.) Even BT Infinity will often only give 1 or 2 Mbps upload speed, even when the download speed is over 20 or 30 Mbps or more.

In contrast the TVB service is a synchronous service, meaning that upload and download speeds are not biased towards one or the other. When measuring the TVB speed you will see that both upload and download are broadly similar. In fact upload is sometimes faster than download.

**TVB, in common with all ISP's, consider just the download speed for measuring quality of service.**

## **What affects the speed that you see?**

Any device between the service coming into your property and the device you are using will adversely affect (slow down) the speed that you measure.

### **Routers**

Most clients will use a router to distribute the service (wired and WiFi) around the house. The router itself should not affect the speed very much unless it is an old model. But at times this can prove a bottleneck.

### **Wi-Fi**

Almost everyone these days uses wireless in their home to connect the internet to phones, tablets and other devices. Wi-Fi is never going to be as fast as a wired connection and users are often surprised that their Wi-Fi speed is **very significantly slower** than a wired connection. This is normally a fact of life, although some steps can be taken to improve Wi-Fi in the home (see our document – “Home Wi-Fi network issues” for advice)

### **Homeplugs**

Homeplugs or Powerline devices are often used to distribute broadband around the house. These are a great way to solve problems, but they do have a detrimental effect on speed (not normally as severe as wireless)

## Computer

Your computer, tablet or phone can have a big effect on the measurement of broadband speed. For example, if your PC/laptop is very old, then it may not be able to handle speeds greater than even 10Mbps.

## Measuring your broadband speed

To obtain an accurate reading of your broadband speed it is important that there are no other users on your home network. If you sit in your study and measure the speed while someone is in the lounge watching iPlayer and the teenagers are playing on-line games with their mates, then the results are not going to be accurate.

**For all the reasons discussed above, when measuring your speed it is vital to connect to your incoming service. This means plugging a PC or laptop into the socket labelled LAN on the power injector connected to the CPE device on the outside of your property. *DO NOT UNPLUG THE LEAD FROM THE SOCKET LABELLED PoE.* (If you cannot reach your injector and you have a router connected, then use a socket on that. However this is a second best solution and if at all possible the reading should be taken at the injector)**



Performing the measurement involves using a website that measures the time taken to download and upload a defined size of file. There are many websites offering this service. TVB use one of the following:

- <http://fibretest.kc.kcom.com/>
- [www.thinkbroadband.com](http://www.thinkbroadband.com)

Run several tests, one after the other, to get a good feel for the reading.

Your results should look something like the following. Note that each website uses different techniques, so the results can vary.

Restart Test

<p><b>Latency</b></p> <p><b>12 ms</b></p>	<p><b>Packet Loss</b></p> <p>Test Skipped</p>	<p><b>Firewall</b></p> <p>Test Skipped</p>	<p><b>Speed</b></p> <p>Download Speed</p> <p><b>49.45 Mbps</b></p>
<p><b>Jitter</b></p> <p><b>1 ms</b></p>			<p>Upload Speed</p> <p><b>67.74 Mbps</b></p>

**Speed Test Result** Test History Test Again

**DOWNLOAD**

51.5 Mbps bursting to 53.0 Mbps

**UPLOAD**

61.1 Mbps bursting to 70.8 Mbps

Your Latency: 102 ms  
Previously: Avg Down 57.2 Mbps, Up 55.7 Mbps from 3 tests

[Open Shareable Results Link](#) [tweet](#) [UK Stats](#)

If, after running tests according to these guidelines, you feel your service is not as you expect, please contact us for advice using our website - <http://www.tovevalley.com/members/ContactUs.aspx>