Ethernet Guide

Work faster and smarter with one of our business-grade Ethernet solutions

daisy.
COMMUNICATIONS

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Why Daisy

Are you starting out in business or a sole trader? We can help you speed up your broadband connection and help you keep costs down.

Are you a multi-site company looking for a scalable, secure solution to accommodate ever-growing amounts of data transmission and a reliance on cloud services? With dedicated Ethernet connectivity you'll have all the volume, velocity and security you need, today and in the future.

At Daisy we're dedicated to helping businesses succeed in a digital world, providing the fast, reliable and secure connectivity that every business needs, be it large or small.

We understand that businesses need robust, future-aware solutions and that the explosion in internet usage among consumers has created a need for specialist solutions designed specifically for businesses. And we know that online support has to be 24/7/365. Downtime is not an option.

We have the experience and expertise to guide you through the many options available and help you choose the one that's right for your business.

Please note:

This brochure contains information on our Ethernet solutions, if you are interested in seeing our Broadband products please **click here**.

Why the right solution matters

Choosing the right connectivity makes a huge difference to the running of your business. The right technology will enable you to access cloud-based applications that can help your business work smarter, faster and further and to communicate, collaborate and connect in real time, wherever your customers and suppliers are in the world.

Four reasons why it's important to choose well.

1

Cloud-based computing - Software as a Service (SaaS) - Instead of holding everything locally on desktops and laptops, SaaS enables you to host all your business applications – such as Microsoft Office®, CRM software and other management systems – in one central point, normally in a secure data centre where remote access is then given to your business. As well as cost savings, with the correct, robust data connection, SaaS also increases data security, important when most of your critical business activities will now take place online.

2

Fast, reliable access - Remote hosting and data backup - Moving vital data off-site, then being able to access and retrieve it quickly and efficiently is of paramount importance. Whether it's stored at your own off-site data centre or a third party data centre, such as the four UK based facilities operated by Daisy, you need your data connection to be rapid, robust and reliable. High speed connectivity means that disaster recovery back-ups can be run without any effect on ongoing online business.

3

Working remotely - Video conferencing - Video conferencing can dramatically reduce travel time and cost while improving the effectiveness and wellbeing of your staff. Simultaneous users and bandwidth-hungry voice and video can be accommodated with the right data connection.

The last year has taught us video conferencing is vital to businesses and, going forward, for those businesses looking for a hybrid working environment or looking to offer remote working flexibility, video conferencing is an essential tool.

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Reducing costs - Voice over Internet Protocol (VoIP) and Wireless LAN (WiFi) - Migrating your telephony to VoIP will certainly give you lower bills and more integrated communications, and with the 2025 PSTN switch-off, all-IP VoIP is no longer a choice, it's the future.

4

A built-for-business connection with a low contention ratio will deliver high quality calls with the consistency that you need, unlike consumer broadband which can result in loss of speed and time delays. As more and more devices become WiFi-enabled, businesses are able to quite literally cut the cord. With the right connectivity solution and sufficient bandwidth, the safe and secure deployment of a well-managed network can be achieved, leading to savings on internal network cabling as well as mobile data costs.

Which one is right for your business?

No two businesses are the same, and as there are now so many different ways to access the internet, it's important to choose a provider who can help to find the one that's right for you.

For smaller businesses with low data volumes looking to keep costs down, broadband is still the obvious choice – but a business grade solution from Daisy could give you that extra edge and greater support that you really need whilst you get on with the business of growing.

At the other end of the scale, organisations with high volumes of data that require rapid, secure communications, may wish to consider fully managed leased lines with exclusive usage and maximum support levels.

Daisy is here to help you through the tangle of wires and terminology so that you make the right choice. And whichever solution you choose, with Daisy you have the reassurance that every solution is not only designed for and dedicated to business but also fully backed up by our expertise and experience.

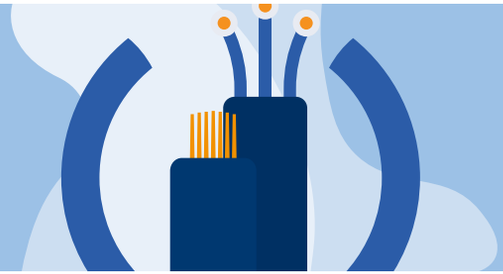
Please note:

This brochure contains information on our Ethernet solutions, if you are interested in seeing our Broadband products please **click here**.

What is Ethernet?

Unlike broadband, which is a shared resource, Ethernet connectivity is a dedicated connection which can be deployed through various solutions explained in this brochure. Each delivery method will give the security, reliability and bandwidth that your business needs and with guaranteed speeds and service levels, Ethernet connectivity from Daisy is the ideal solution.

In simple terms...
The extra reliability, security and symmetrical download and upload speeds makes Ethernet ideal for smooth and seamless VoIP and video conferencing, large data transfers and access to cloud based services.



Ethernet over FTTC/GEA

Where existing fibre or copper cable (if full-fibre is not available) connects your business to the nearest street cabinet, and a dedicated Ethernet line carries data to the Daisy core network. Daisy has a solution that guarantees symmetrical upload and download speeds of up to 19Mbps, with unlimited data usage and a 8 hour fix time.

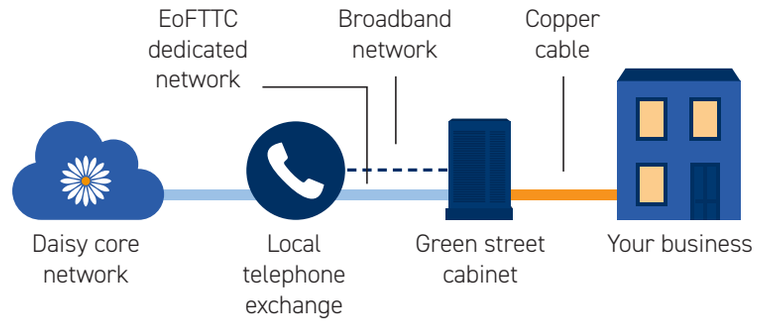
In simple terms...
A reliable, hybrid solution that provides your business with the speeds you need. It's also a simple deployment process but you'll get the enhanced stability and SLA guarantees you would expect from a leased line service.

Consider this option if...
You have up to 20 users and are looking for an upgrade on traditional business broadband products. It's perfect if you want an upgrade but aren't quite ready to make the jump to Full Fibre Ethernet just yet.

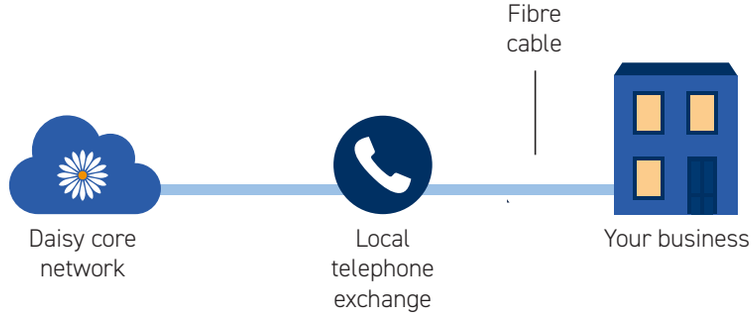
WATCH OUR VIDEO

How it works

EoFTTC



EoFTTP



Fibre Ethernet

Daisy's ultimate connectivity, this end-to-end fibre solution offers unparalleled levels of reliability and speed. It can be implemented in most locations regardless of whether or not fibre is currently available.

Speeds of 1Mbps to 10Gbps and low latency ensure that the most demanding real time applications can be handled with ease. Daisy options include our highest service levels (99.93% availability), a 5 hour circuit fix and 4 hour Customer Premises Equipment (CPE) replacement service.

In simple terms...
A secure, totally managed service capable of dealing with large numbers of users and any high bandwidth cloud based application.

Consider this option if...
Your business needs complete control of your connectivity at all times, and any loss of service would have a major financial or operational impact.

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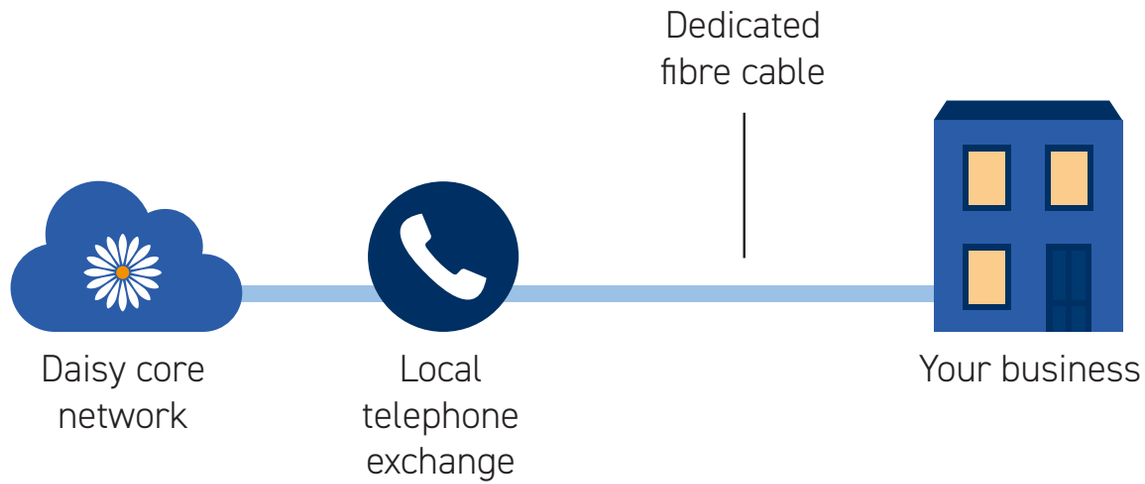
How it works



Ethernet First Mile (EFM)

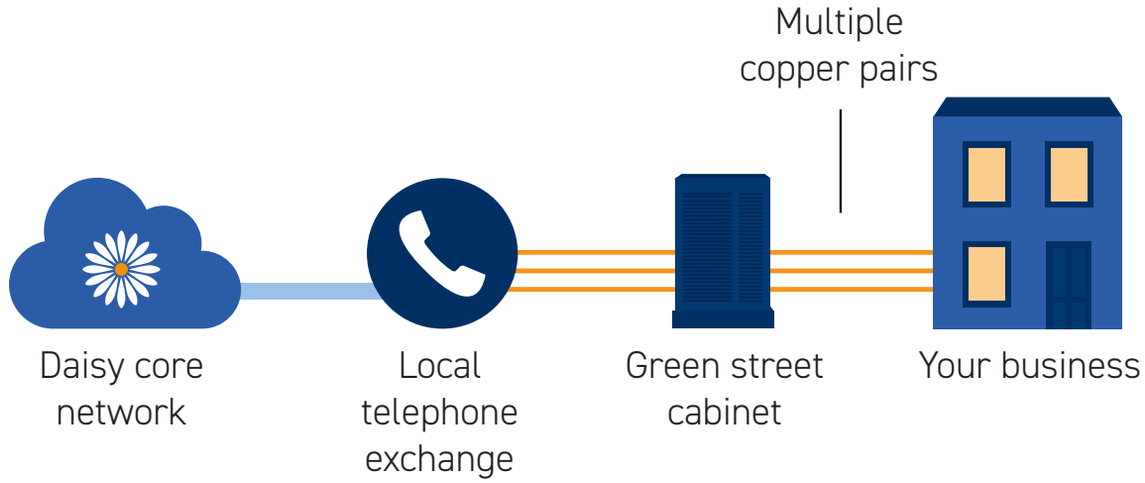
Where Fibre Ethernet may be too expensive to install, Daisy EFM provides an end-to-end solution using one or more copper pairs to connect your premises to the Ethernet core network. This is an older technology using copper and may not be as reliable as Fibre Ethernet but can be a cost effective solution where EoFTTC or Fibre Ethernet are not viable.

In simple terms...
A fixed speed, dedicated and fully managed connection. EFM is suitable for the smooth running of real time applications such as video conferencing and VoIP in areas where fibre is not yet an option.

Consider this option if...
You want the benefits of dedicated connectivity and can predict your future data requirements. Your business needs complete control of your connectivity and any loss of service would have major fundamental or operational impact.

WATCH OUR VIDEO

How it works



Point-to-point Leased Lines

By employing dedicated Ethernet connections, Daisy's point-to-point solutions are perfect for directly linking offices on geographically separate sites. Point-to-point can also be used to connect key user locations to an off-site data centre. Your data will be more secure, performance will be more reliable, and using VoIP connectivity, you'll make big savings on inter-site calls.

In simple terms...
A point-to-point leased line links two or more offices together on a secure, safe network.

Consider this option if...
You have two or more offices which require a secure and safe network between them to increase your reliability.

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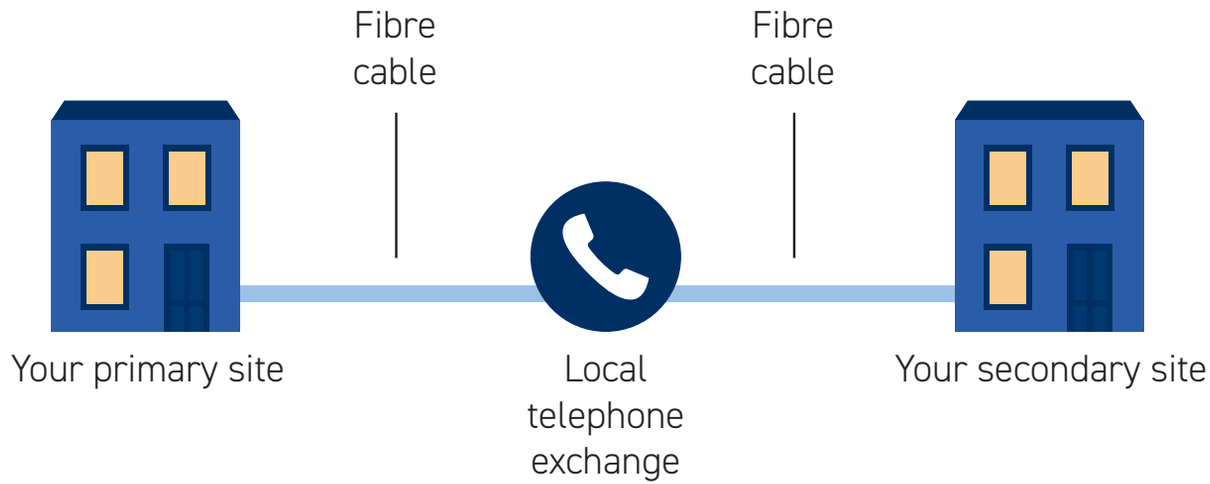
How it works



Multi-Protocol Label Switching

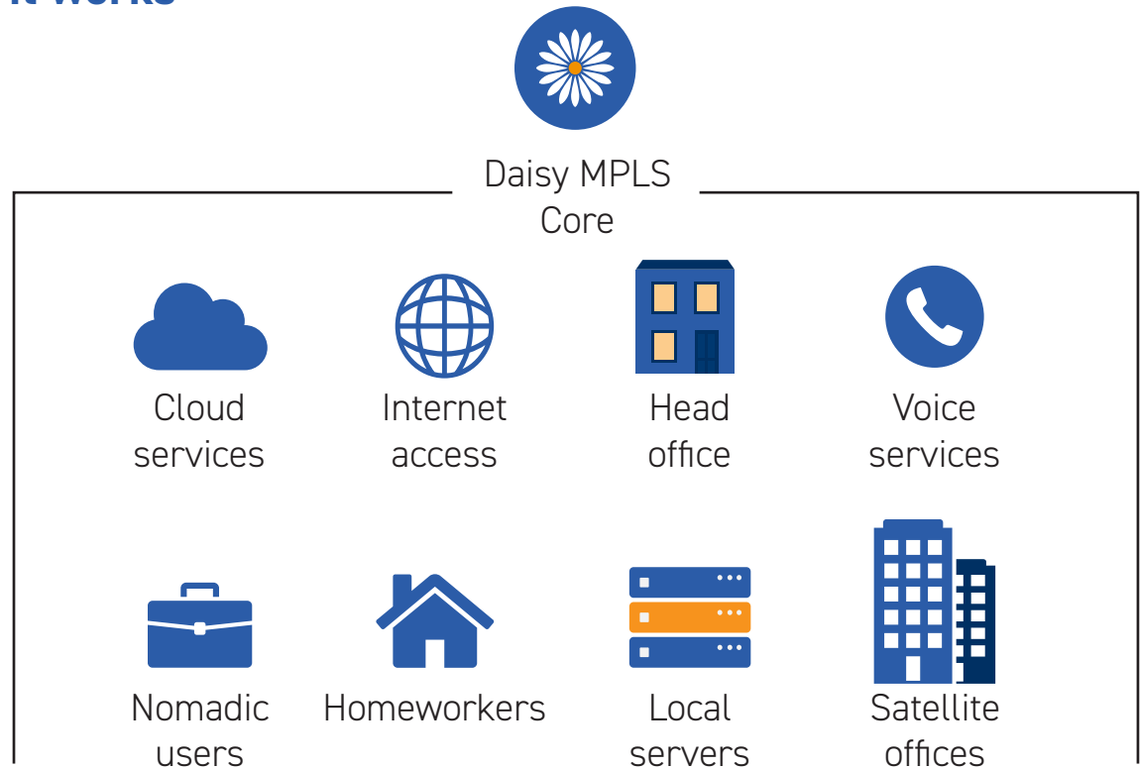
No matter how large your organisation, Daisy can streamline your communications, improve collaboration and make significant cost savings. Perfectly matched to today's diverse business needs, MPLS technology (Multi-Protocol Label Switching) is used to link together offices, data centres, disaster recovery sites and home/remote/mobile workers. It allows servers and network printers to be managed, used and shared effortlessly amongst staff.

The list of benefits is impressive; reduced costs, an improvement in the quality of communications between your sites, the ability for a single voice solution to be deployed across all business locations, greatly increased opportunities to utilise cloud based applications and the flexibility and scalability essential for future growth.

MPLS is a technology which allows a business to create a network between sites no matter which broadband solution each site has.

WATCH OUR VIDEO

How it works



Our SLAs

	ADSL Broadband	FTTC & GFAST Broadband				Ethernet		
	ADSL Broadband	Superfast Fibre Broadband 38 Mbps	Superfast Fibre Broadband 76 Mbps	Ultrafast Fibre Broadband 150 Mbps	Ultrafast Fibre Broadband 300 Mbps	EoFTTC	EFM	Fibre Ethernet
Technology Type	ADSL	FTTC	FTTC	GFAST	GFAST	EoFTTC	EFM	Fibre Ethernet
Latency	< 80ms	< 30ms	< 30ms	< 30ms	< 30ms	< 30ms	< 20ms	< 20ms
Jitter	< 75ms	< 25ms	< 25ms	< 25ms	< 25ms	< 25ms	< 25ms	< 25ms
Packet Loss	< 3%	< 0.1%	< 0.1%	< 0.1%	< 0.1%	< 0.1%	< 0.01%	< 0.01%
Contention Ratio	>1:1[1]	>1:1[1]	>1:1[1]	>1:1[1]	>1:1[1]	>1:1[1]	1:1	1:1
Service Guarantee	None	None	None	None	None	99.93%	99.93%	99.93%
Max Download Speed	Up to 16Mbps[2] subject to line conditions	Up to 38Mbps subject to line conditions	Up to 76Mbps subject to line conditions	Up to 150Mbps subject to line conditions	Up to 300Mbps subject to line conditions	Guaranteed to the Max Upload Speed	Up to 35Mbps guaranteed	Up to 10Gbps guaranteed
Max Upload Speed	Up to 0.9Mbps[2] subject to line conditions	Up to 9.5Mbps subject to line conditions	Up to 19Mbps subject to line conditions	Up to 30Mbps subject to line conditions	Up to 50Mbps subject to line conditions	Up to 19Mbps subject to line conditions	Symmetrical service	Symmetrical service
Coverage (availability)	High	High	High	High	High	High	High[3]	High[3]
Support	24 hrs / 7 days	24 hrs / 7 days	24 hrs / 7 days	24 hrs / 7 days	24 hrs / 7 days	24 hrs / 7 days	24 hrs / 7 days	24 hrs / 7 days
Lead Time (Working Days)	10 working days	10 working days	10 working days	10 working days	10 working days	10 working days	45 working days	70 working days
Target Fix Time	<40 hrs	<40 hrs	<40 hrs	<40 hrs	<40 hrs	<8 hrs[4]	<7 hrs[4]	<6 hrs[4]
Monthly Site Availability (Up To)	97.00%	99.80%	99.80%	99.80%	99.80%	99.85%	99.90%	99.93%

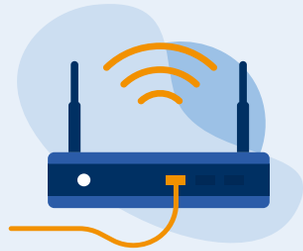
[1]Business Broadband connections are no longer physically contended. Contention is now on a nationwide basis and is only enforced during busy periods when needed.
[2]Higher bandwidth may be possible, however to make relevant comparisons a high average is used.
[3]May be subject to excess constructions charges.
[4]Target Fix Time relates to network fault/outage. On site equipment failure may require on-site engineer and may fall outside standard target fix time.

Our SLAs

	Single Order Broadband and FTTP							
	Single Order Generic Ethernet Access 40 Mbps	**Single Order Generic Ethernet Access 80 Mbps**	**SOGFAST 150 Mbps**	**SOGFAST 300 Mbps**	**Superfast Full-Fibre Broadband 38 Mbps**	**Superfast Full-Fibre Broadband 76 Mbps**	**Ultrafast Full-Fibre Broadband 150 Mbps**	**Ultrafast Full-Fibre Broadband 300 Mbps**
Technology Type	SOGEA (FTTC)	SOGEA (FTTC)	SOGFAST	SOGFAST	FTTP	FTTP	FTTP	FTTP
Latency	< 30ms	< 30ms	< 30ms	< 30ms	< 30ms	< 30ms	< 30ms	< 30ms
Jitter	< 25ms	< 25ms	< 25ms	< 25ms	< 25ms	< 25ms	< 25ms	< 25ms
Packet Loss	< 0.1%	< 0.1%	< 0.1%	< 0.1%	< 0.1%	< 0.1%	< 0.1%	< 0.1%
Contention Ratio	>1:1[1]	>1:1[1]	>1:1[1]	>1:1[1]	>1:1[1]	>1:1[1]	>1:1[1]	>1:1[1]
Service Guarantee	None	None	None	None	None	None	None	None
Max Download Speed	Up to 38Mbps subject to line conditions	Up to 76Mbps subject to line conditions	Up to 150Mbps subject to line conditions	Up to 300Mbps subject to line conditions	Up to 38Mbps	Up to 76Mbps	Up to 150Mbps	Up to 300Mbps
Max Upload Speed	Up to 9.5Mbps subject to line conditions	Up to 19Mbps subject to line conditions	Up to 30Mbps subject to line conditions	Up to 50Mbps subject to line conditions	Up to 9.5Mbps	Up to 19Mbps	Up to 30 Mbps	Up to 50Mbps
Coverage (availability)	High	High	High	High	High	High	High	High
Support	24 hrs / 7 days	24 hrs / 7 days	24 hrs / 7 days	24 hrs / 7 days	24 hrs / 7 days	24 hrs / 7 days	24 hrs / 7 days	24 hrs / 7 days
Lead Time (Working Days)	10 working days	10 working days	10 working days	10 working days	10 working days	10 working days	10 working days	10 working days
Target Fix Time	<40 hrs	<40 hrs	<40 hrs	<40 hrs	<40 hrs	<40 hrs	<40 hrs	<40 hrs
Monthly Site Availability (Up To)	99.80%	99.80%	99.80%	99.80%	99.80%	99.80%	99.80%	99.80%

[1]Business Broadband connections are no longer physically contended. Contention is now on a nationwide basis and is only enforced during busy periods when needed.

Further Technical Information



Business ADSL Broadband

- Up to 5 users[1]
- Up to 16Mbps download speed[3]
- 1 Mbps upload speed
- One static IP provided
- Variety of data usage options
- UK-based support and customer service
- Can be used in conjunction with one analogue voice connection
- Business grade standard care SLA with 40 hour fix time

Daisy Superfast Fibre Broadband

- 5-20 users[1]
- Fibre broadband
- Up to 76 Mbps download speed[2]
- Up to 19 Mbps upload speed[2]
- Free router and static IP provided
- 24/7 UK-based support
- 8 hour fix SLA
- Variety of data usage options
- Can be used in conjunction with an analogue line or as a standalone (single order) product as required.

Daisy Ultrafast Full-Fibre Broadband

- Up to 20 users[1]
- 300 Mbps download speed
- 50 Mbps upload speed
- One static IP provided
- Variety of data usage options
- UK-based support and customer service
- Can be used in conjunction with one analogue voice connection
- Single order broadband product utilising fibre to the premises, No need or option to utilise an analogue voice line.

Ethernet Over FTTC

- 20+ users[1]
- Cost effective
- Highly secure
- Guaranteed download speeds of up to 20Mbps
- Guaranteed symmetrical upload and download speeds
- Download speeds may be higher (not guaranteed)
- Guaranteed low latency and packet loss
- Availability is dependent on local exchange capability and FTTC or FTTP availability
- This technology is not scalable so you need to be sure that the bandwidth provided will suit your business
- Cannot be used in conjunction with analogue voice connections

[1]Business Broadband connections are no longer physically contended. Contention is now on a nationwide basis and is only enforced during busy periods when needed.
[2]Higher bandwidth may be possible, however to make relevant comparisons a high average is used.
[3]May be subject to excess constructions charges.

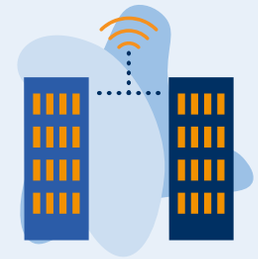
Further Technical Information

EFM

- 20+ users[1]
- End-to-end Ethernet offering symmetrical download and upload speeds
- Highly secure
- Completely uncontended
- Low latency and packet loss
- Availability is dependent on local exchange capability and available copper lines
- Limited product life, Fibre Ethernet may be a better choice where possible.

Fibre Ethernet

- 20 + users[1]
- Available from 1Mbps to 10Gbps
- Highly secure
- Guaranteed low latency, low jitter and low packet loss
- 5 hour circuit fix SLA and 4 hour CPE replacement service
- Easy to upgrade



Point-to-point Leased Lines

- Perfect to connect two sites
- Available using copper or fibre Ethernet
- Highly secure
- High availability, low latency private circuits
- Robust SLAs
- UK-based support services and technical support

Wide Area Network Solutions (MPLS)

- Make multiple sites act as on homogenous network
- Easy to share servers and printers across multiple sites
- Reduced traffic tromboning
- Single internet breakout, easy to secure by means of firewalls and content filtering
- Internal network not exposed to the outside world
- Easy to expand with additional sites
- No restriction on private fixed IP addresses, making VoIP configurations more secure and easier
- Cost effective

[1]Business Broadband connections are no longer physically contended. Contention is now on a nationwide basis and is only enforced during busy periods when needed.

Glossary

ADSL – Asymmetric Digital Subscriber Line (ADSL) This is the most common way of accessing broadband internet. ADSL transforms a normal analogue telephone line into a high speed digital line. ADSL offers customers faster download speeds but the upload speeds are much slower. Residential customers tend to use ADSL which affects the speed.

The bearer – The total size of bandwidth available on your connection. You pay for what you use within the bearer. For example imagine a cake, you don't want the whole cake, just a piece of it, so that is what you pay for. However, if in the future you are a bit hungrier you have the ability to purchase (upgrade) a bit more cake!

Coverage availability – This is the availability of the connectivity product across the UK.

Contention ratio – Refers to the maximum number of users (or businesses) sharing a connection (bandwidth). For example if you have a contention ratio of 1:1 this means that you have sole access to one connection (bandwidth) which all your users can then share.

Core network - The central part of a telecommunication network that provides various services to customers connected by the access network.

Cloud based business applications – Services that are hosted in a data centre. Cloud services tend not to have a direct relationship with a computing platform, and can therefore be moved anywhere 'in the cloud', thus giving a high level of resilience.

Data network applications – These are any applications that Ethernet allows you to do. For example point-to-point access, managed internet access or MPLS with breakout.

Ethernet over Fibre – A connection providing high speed Ethernet bandwidth delivered as Ethernet over fibre optic lines. In contrast with broadband technologies these Ethernet services are dedicated services and not shared.

Ethernet over Copper (known as Ethernet First Mile -EFM) - If Fibre Optic is not available in a given area, an Ethernet service can be delivered over multiple copper telephone lines.

Ethernet – A method of connecting computers in a data network and to transfer data within a computer network. Used in our Ethernet Extensions, National Ethernet and Ethernet VPN services.

Fibre Broadband – Fibre Broadband uses Fibre Optic cable to deliver data and is able to deliver it faster and in higher volume than can be done with the existing copper wires currently in use.

FTTC - Fibre to the Cabinet is a broadband product that offers faster internet speeds by reducing the amount of copper wire being used to deliver a service to your premises. Fibre Optic cable replaces the copper wire between the local telephone exchange and the telephone cabinet, nearest to your premises. Once the
fibre has been installed a faster service can be offered to you.

FTTP – Fibre to the Premises. This broadband product offers customers an even faster service than FTTC. Like FTTC, Fibre Optic cables replace the copper wiring from the local telephone exchange to the telephone cabinet. With FTTP the Fibre Optic cables are then installed directly into the actual premises.

Homeworkers – Employees and workers who either work from home full-time or part-time and who need access to the business network.

Jitter - Is about timing. Imagine the sound of a clock as it gently ticks away in a steady regular rhythm. Suddenly the rhythm drops out of time for a beat, then resumes the correct pace. That is a Jitter. The delay of information being received is (a step) out of time from the rest of the information being sent. In severe cases when the jitter is larger than a simple drop in the timing, a packet of information may be lost. A good example of jitter is when you are on a video call and the screen jumps about and the conversation is delayed or even muddled up.

Latency – The speed of your network, in other words its 'delays'. 'Low latency' will usually have small delays and process information quickly. 'High latency' will have longer delays and process information more slowly.
Lead time – This is how long it will take to deliver your connectivity product from the time of ordering.

Local servers – A server that is installed in close proximity of end-users, usually

in the same building and uses the LAN to communicate.

Max download speed - The download speed is the pace at which data (websites, programmes, music etc) is transferred from another source to your device. The max download speed will all depend on what type of connectivity you have.

Max upload speed – The upload is the speed at which data (such as design files, photographs, videos) is uploaded to the internet. Typically this could be to a business intranet or uploading to file share, to colleagues or customers. Essentially, the upload is going in the opposite direction to the download - from your computer to someone else's.

Multi-site network - A network of multiple locations joined together.

Multiple data applications - Such as email, web browsing and business management systems that are used at the same time.

Outage – A situation where a connection is not available or seriously degraded as a result of a network failure.

Packet loss – is when the network gets congested and loses packets of information. Reasons for this happening can vary from poor signal strength at the destination to hardware failure or even corrupt software. Often more than one factor is involved. This loss of information will cause intermittent gaps in the audio during a video or VoIP call. This can also cause Jitter during video conference.

Private circuits – An older term for a dedicated connection between two addresses that is fully transparent and is not routed in the public network exchanges. More commonly the term point-to-point is used.

SaaS – Software as a Service. This is a service that uses the most up to date software available to computers. There is now no need to purchase the software for your company and then pay for updates. Simply 'rent' the software from us and we will provide it to you 'as a service'.

SLAs – Service Level Agreement. In the unlikely event that a failure occurs, we have an agreement in place stating how long it will take for us to fix it for you.
Service guarantee – This is the guaranteed performance you can expect the connectivity to achieve when you take in to account factors such as the latency and jitter.

SOGEA - Single Order Generic Ethernet Access is a next generation broadband product which replaces FTTC. SOGEA removes the need for a separate analogue telephone line but unlike FTTP does still use copper technology.

Static IP – (Internet Protocol) – When a computer (or any device) connects to the internet it is automatically allocated a numeric code called an IP address. An IP address is like a telephone number that any computer can use to find any other computer in a network. However if there's an interruption in the network connection and you need to reboot your computer, a new IP address may then be assigned to your computer or device. With a static IP address this would not happen as it is a permanent address on the internet for that computer or device.

Support – If you have any questions, queries or concerns, our support teams are available to help you 24/7.

Symmetrical bandwidth – You can transmit OR receive communication at the same speed on the network.

Target fix time – The time in which we aim to have any faults or issues resolved for you.

Throughput – The amount of data transferred or processed in a specific amount of time. Throughputs are usually measured in bits per second (bps).

VPN – Virtual Private Network (VPN): a private network that uses the public telecoms infrastructure.

VoIP – Voice over Internet Protocol. A method of transmitting voice calls over the internet.

Wide area network solutions - Networks are designed in a hierarchical fashion. A Local Area Networks (LAN) is a network that is in one building and is self-contained. Wide Area Network (WAN), is a network that joins multiple Local Area Networks together. A Metropolitan Area Network joins multiple WANs together.

Contact us

For an unbiased view of current and future technologies, **talk to us**. We are an independent provider and we deliver competitively priced, bespoke solutions to meet your requirements.

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business communications
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