

[News story: HiLight Semiconductor: new technology to increase broadband speed](#)

Demonstrating the integrated circuit developed by HiLight Semiconductor at a trade show in Shenzhen, China.

Global broadband networks are under increasing strain due to bandwidth-intensive applications such as cloud computing, video streaming and the Internet of Things. Experts fear this could lead to demand for data outpacing supply.

According to the [EU Fibre to the Home Council](#), “fast broadband infrastructure is now a determining factor in ensuring the economic fortunes of cities and regions”. Although modern fibre optic cable can provide almost unlimited bandwidth, the current interface technology is expensive and restricts speeds to 1 or 2.5Gbps, which is then often shared with at least 20 users.

[HiLight Semiconductor](#) has developed a new patented integrated circuit (IC) that provides an innovative solution to the problem – an approach that is simple yet flexible. HiLight provides software to control the IC but systems providers can change it if needed. HiLight believes the new IC offers the lowest operating power, at low cost, allowing speeds of up to 10Gbps, both upstream and downstream.

The company demonstrated the solution at 2 trade shows recently – in Shenzhen, China, and in San Diego, California.

Innovating ahead of market demand

So far, HiLight Semiconductor has exported more than 50 million integrated circuits worldwide. Independent analysts, [Ovum](#), expects the 10G ‘fibre to the home’ market to add over 50 million more units each year within the next 5 years.

Gary Steele, Executive Chairman of HiLight Semiconductor, explains his company’s approach:

Communications infrastructure can be a relatively slow-moving industry, but it has a very long lifetime too. We took our time to look at analyst reports and speak to customers and worked out ways we could speed up our customers’ production lines, for example, by maximising the number of components integrated on our IC. The telecoms industry wants low-power, robust designs that work totally reliably over the extremes of outside temperatures and over many years of continuous operation.

When we started out, very few people knew about the inner workings

of broadband, but now you see optical fibre in TV adverts and people are more aware of the Internet of Things. They certainly know about 4G and perhaps 5G phones. Our integrated circuits help provide the backbones that can support all this data, video, cloud computing and all the new services that seem to arrive as soon as more – and lower cost – capacity becomes available.

A fast-growing business

HiLight Semiconductor recently came 6th in the [Syndicatoroom's Top 100 of Britain's fastest-growing businesses](#). In the last year, the company has created more than 15 new high-level engineering jobs and the total number of employees will soon reach 60.

[News story: Next-generation services: new fund for industry and research](#)

A new pioneer fund worth £20 million will create new opportunities for businesses and researchers to work together to develop the next generation of services for the accountancy, insurance and legal industries.

The challenge is the latest in the [Industrial Strategy Challenge Fund](#). Investing in the UK's world-leading research and the most innovative businesses, the fund seeks to take on the biggest industrial and societal challenges of our time.

It will be delivered by Innovate UK, which is part of [UK Research and Innovation](#).

[ISCF Wave 2 – Next-generation services](#)

A closer look at the services industry

Estimates put the services industry at almost 80% of the UK economy. This includes financial and professional services, which on their own employ 2.2 million and have a value of £190 billion.

With the advancement of technologies such as artificial intelligence and data analytics, there is an opportunity to make the industry more efficient, productive and globally competitive – and, importantly, able to provide the very best services to clients and customers.

The challenge now is to make sure the industry is primed for the future and that the UK leads this huge market opportunity.

Through the £20 million pioneer fund, the government will support industry and research to work on projects that transform the industry. Details of activity within the fund will be released shortly.

Delivering the Industrial Strategy

The funding is part of a £1 billion deal between the government and 50 leading businesses and organisations to place the UK at the forefront of artificial intelligence. It features over £300 million of private sector investment.

[Artificial intelligence is one of the 4 grand challenges](#) set out in the government's [Industrial Strategy](#). These are global trends that, if the UK can exploit, will allow us to lead the industries, improve people's lives and the country's productivity.

[Press release: £6.2 million flood defence to protect A1\(M\) and Catterick complete](#)

A multi-million pound defence to help protect residents from flooding and keep traffic moving on one of England's main north-south routes has been officially opened today (Friday 27 April).

It is the first time Highways England and the Environment Agency have worked together on a jointly-funded flood scheme that will offer better flood protection to the A1(M) at Catterick and 149 properties in the area.

In September 2012, the Catterick area suffered major flooding affecting 130 properties and closing the A1(M) for two days – costing the region's economy more than £2 million.

The new flood reservoir, located between Brough Park and the A1(M), uses large embankments up to 6m high to hold 91 million gallons of water – equivalent to more than 130 Olympic swimming pools.

The scheme will slow the flow of water through Brough Beck, which previously overflowed in severe weather. This has been managed by putting meanders in the beck and building a control structure incorporating two 'hydro-brakes' to control the flow of water.

Five hectares of new habitat have been created, including wetlands, bat habitats, owl nesting and meadowland. Brown trout are a key feature of Brough Beck and re-routing provides increased fish habitat along the beck.

Once the habitat has become established, the area will be a haven for wildlife and provide a better experience for the public using the local bridleways and paths.

Emma Howard Boyd, Chair of the Environment Agency, said:

As well as reducing flood risk to local homes and businesses, this flood defence will protect a main traffic artery through Yorkshire which has been affected in recent years.

We are always looking for innovative ways to get the most benefit from our flood schemes, and by also creating five hectares of new habitat, this is a fantastic example of how working together can bring multiple benefits for the local community, economy and environment.

The bulk of the £6.2m scheme cost has come from a special fund managed by Highways England to tackle environmental issues.

Peter Mumford, Highways England Executive Director of Major Projects and Capital Portfolio Management, said:

This area suffered badly due to severe weather in 2012 and the A1 is a vitally important route which supports the UK economy so we must do all we can to keep traffic moving freely along it.

We're pleased to have worked with partners on this solution which helps protect the local community and lets drivers have safe journeys.

Further funding for the scheme came from the Environment Agency (£1m), Local Levy (£412,000) and North Yorkshire County Council (£200,000).

The Environment Agency's own internal field operations teams delivered the construction work.

The scheme was made possible with support from Highways England, Local Levy and North Yorkshire County Council, Richmondshire District Council, the Parish Council and the local community.

Councillor Don Mackenzie, North Yorkshire County Council's Executive Member for Highways, said:

The council is very pleased to have worked in partnership with the Environment Agency and Highways England to bring this important

scheme to a successful conclusion.

This flood storage reservoir will help to protect local residents from flooding and avoid a repeat of the closure of the A1 which occurred in 2012.

The Catterick flood storage reservoir had its first big test at the start of March after snow melt in the Dales led to flood water coming down the valley.

The reservoir worked as planned and held back the water from the A1(M) and Catterick village, storing it in the newly-created bowl, while slowly letting the water flow back out into Brough Beck at the other side at a speed that alleviated flooding.

At the opening ceremony, partners involved in the project and local residents were given a presentation on the scheme, before being given a tour of the site where an information board featuring artwork by a former Catterick Primary School pupil was installed.

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Statement to Parliament: Ministerial correction to closing speech on Thameslink upgrades across the south east

I wish to inform the House that an error has been identified in the [closing speech of the End of Day Debate: Thameslink upgrades across the South East, Official Report, 18 April 2018, Vol. 639](#). The correct information should have been:

As part of this upgrade, a fourth track and other improvements are being built north of Bedford, which will provide space for an additional train path from December 2020. Unfortunately, until these works take place, some difficult decisions have to be taken. East Midlands Trains' fast peak-time services will not call at Bedford or Luton from May 2018 to December 2020.