

## CASE STUDY

BRIDGING  
GLASGOW'S  
BROADBAND GAP

Delivering Gigabit Speeds with Fiber and Spectrum Challenges



ISP



EUROPE

GigaAir is the only change with Internet service provider (ISP) in Glasgow that provides gigabit broadband for residential and business customers both wirelessly and via fibre using its own infrastructure.

The ISP gained new customers at a rapid pace and needed to expand its network in the Glasgow City Center and in the nearby town of Falkirk in order to meet the growing demand. That's where Siklu by Ceragon entered the picture.

## THE CHALLENGES

GigaAir owns and leases dark fibre but could not pull more fibre for these projects for various logistical and economic reasons. Therefore, GigaAir had to come up with a wireless solution and, due to City Centre locations being flooded by WiFi, the usual 5 and 6 GHz based systems for backhaul and end point services would be very "noisy" and unreliable. GigaAir looked at other successful WISP operators in the UK and noted the benefits of interference-free millimetre wave-based networks in the 60 and 80 GHz bands, which also offer abundant spectrum and bandwidth.

To meet the anticipated demand, GigaAir determined it would need backhaul links and access links to customers with a total network capacity of 10 Gigabits. They also wanted to provide a yearly uptime rate of 99.999% ("five 9s of reliability") and needed an enhanced solution for the backhaul links. Further, they needed an easily installable solution for customer premises locations.

## THE SOLUTION

GigaAir chose to look at Siklu's EtherHaul™ (80 GHz) and MultiHaul™ TG (60 GHz) product lines to meet the requirements in both areas. The new network incorporating these radios allowed GigaAir to build an interference-free network delivering up to 10 Gbps.

Equipped with one-foot and two-foot antennas, the system supports the company's "Leased Line Flex" service offered to businesses, and provides broadband with multi-gigabit capacity. On the access/customer premises side, this part of the network installation was facilitated as the MultiHaul TG equipment which features a 360-degree field of view. This industry-unique feature allows full coverage of a particular area and simple connection of up to 60 terminal units with high capacity to accommodate the growing number of users.

The feature also enables an automatic "point and connect" capability. As for the backhaul portion of the network, reliability is enhanced by the incorporation of Siklu by Ceragon's industry-unique "ExtendMM" feature, which helps guarantee a five 9s of reliability rate. ExtendMM is a relatively new technique that uses software to combine the high capacity capabilities of E-band radios (70/80 GHz) with long-distance transmission capabilities of the lower band radios (e.g., 5 GHz) to deliver an astounding 10 Gbps at distances of 10 km or longer.

As it rains often in Scotland, GigaAir can utilize the solution software which adds adaptive modulation and advanced QoS operation for the E-band and lower-band radio combination.

## THE RESULT

After working closely with Siklu by Ceragon's field support team using their network planning tools, GigaAir was able to complete both projects in less than a month. They successfully achieved link spans surpassing 2 km and were impressed by the self-aligning and connection capabilities of the MultiHaul TG terminal units.

GigaAir is finding that all links are performing as specified and are meeting its 99.999% uptime goal. As a result, they plan to grow their network further with additional EtherHaul and MultiHaul TG equipment. GigaAir is also realizing immediate cost savings as they report that, the installation of a 10 Gb fibre backhaul link would have cost £5.5K and 7 to install, and approximately £8,000 per year to operate.

"A large established wireless provider was using Siklu by Ceragon and after reading a case study, we decided Siklu by Ceragon was the perfect fit for us", said Alan Cameron, Managing Director, of GigaAir. "We were looking at interference-free connectivity and the ability to offer fibre-like uptime guarantees. With Siklu by Ceragon we can offer service at up to 10 Gbps to our customers and have complete confidence in its performance. We looked at a few other wireless vendors and decided on Siklu by Ceragon, as their end-to-end solution fit our offering. And the millimeter wave kit was a lot better for our type of residential and business deployments."

