

## SOLUTION BRIEF



### HIGHLIGHTS:

Fast, reliable Wi-Fi networks require a backhaul network that provides sufficient bandwidth to ensure users have a great Wi-Fi experience. If sufficient backhaul capacity is not available, the performance of the wireless network suffers and users get frustrated. As Wi-Fi networks transition to 802.11ac Wave 2, the requirements for backhaul capacity increase substantially. In many Wi-Fi network implementations, fiber is the ideal solution since it has the capacity needed and multiple fiber strands can be laid to plan for future capacity needs. However, laying new fiber takes time and is expensive. In addition, laying new fiber typically requires streets to be torn up. In situations where fiber is not available and/or laying new fiber is not an option, Ruckus has partnered with Siklu to provide a multi-gigabit fiber-like backhaul solution. The Ruckus-Siklu solution enables Wi-Fi networks to be deployed in the fraction of the time and with much lower costs than implementations requiring new fiber. Together, the joint solution combines two industry leaders:

- Siklu, the market leader for multi-Gbps millimeter-waves wireless networks, provides an ideal, interference-free wireless backhaul solution for high performance outdoor networks
- Ruckus smart Wi-Fi solution provides unsurpassed Wi-Fi performance, reliability and security for public Wi-Fi deployments.

### KEY BENEFITS:

- Faster, easier and less costly outdoor Wi-Fi deployments leveraging the Siklu millimeter wave wireless backhaul solution
- Delivers up to 10 Gbps of wireless backhaul for high density, high performance Wi-Fi connectivity without the need for fiber
- Delivers new and extended multi-services network such as IP Video and Public Wi-Fi via readily available high speed backhaul, perfectly suited for smart city applications

### THE CHALLENGE

In today's 'connected everywhere' world, people expect to be connected all the time. This expectation for being connected includes locations such as cities, campuses, hotels and stadiums. Ruckus is a leading provider of smart Wi-Fi solutions that includes industry leading indoor and outdoor Wi-Fi access points. These access points can be mounted in various locations in multiple configurations. Each Wi-Fi access point requires a connection to the backhaul network so traffic from Wi-Fi users can be sent/received. In many Wi-Fi deployments, getting sufficient backhaul to the Wi-Fi access points is a major challenge.

In a perfect world, Wi-Fi networks could leverage an all-fiber backhaul network and have access to virtually unlimited bandwidth. Fiber is proven, reliable and as future proof as technology gets. However, in most cases fiber is not readily available and getting access to it is difficult. Laying new fiber is not feasible in many situations due to the physical proximity with where the fiber is needed, the labor associated with digging up sidewalks for new fiber runs, costs associated with laying new fiber, the time it takes to get digging permits and for performing the digging work. This lack of fiber can lead to Wi-Fi deployments that are not ideal.

Existing Wi-Fi networks that are upgraded to the latest Wi-Fi technology such as 802.11ac Wave 2 significantly increases end user speeds and thus, backhaul capacity. Even applications such as IP Cameras, which many cities are considering for security, parking and traffic monitoring/control, can vastly increase the bandwidth requirements of the backhaul network. Thus, existing Wi-Fi networks sometimes need additional backhaul capacity which may or may not be readily available. This can stall new projects that need to run on the public Wi-Fi network.

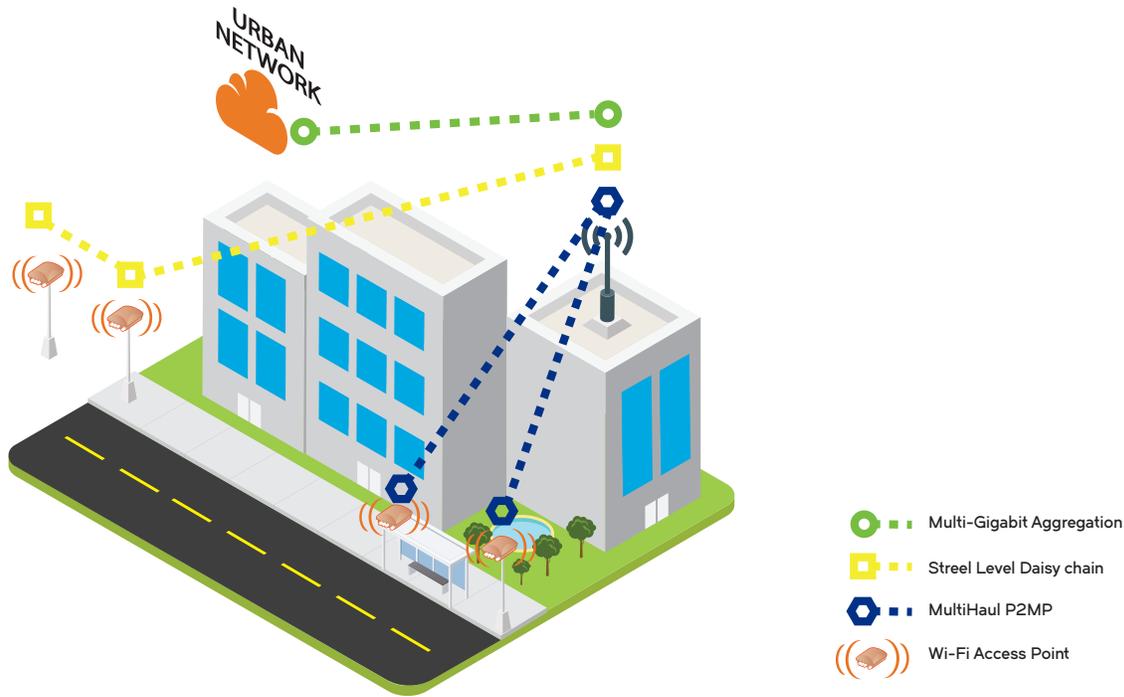
### THE SOLUTION

Recognizing the increasing importance of making sufficient backhaul available wherever and whenever it is needed, Ruckus and Siklu have partnered to provide a new backhaul option for fast Wi-Fi—millimeter wave (mmWave) wireless.

Siklu's mmWave technology utilizes the 60, 70/80GHz frequency bands, and features inherent pencil-beams in abundant, unpopulated, 24GHz-wide spectrum. These characteristics translate into reliable, interference-free, high-capacity transmission with:

- Small dimensions for easier site acquisition
- Multi-Gigabit throughput creating futureproof investment
- Light license / license exempt
- Fiber-like services with fast time-to-market
- P2P and P2MP options, easy to deploy, proven and reliable





In general, the Siklu mmWave solution provides very high spectrum bands with a lot of available bandwidth. The spectrum bands are short range, 700–2300 ft. for street level and 1–2 Miles for roof tops, which lowers the risk of interference and simplifies RF planning. Lastly, mmWave is unlicensed or lightly licensed, depending on local regulation schemes.

Ruckus Smart Wi-Fi features BeamFlex high-performance adaptive antenna technology that is designed to handle the densest urban areas. This highly efficient antenna technology enables better overall coverage so more devices can be connected across a larger area, reducing the number of access points required, which is especially valuable for outdoor deployments since it enables simplified, lower cost deployments and a solution that is easier and less complex to manage.

The joint Ruckus and Siklu Wi-Fi with mmWave wireless backhaul is ideal for highly dense Wi-Fi environments where a future-proof multi-gigabit bandwidth is a requirement. This includes Wi-Fi for city deployments, campuses, stadiums, convention centers and other high-density locations. In addition, the solution is ideal for temporary Wi-Fi connections such as concerts or sporting events where a multi-gigabit Wi-Fi solution is needed to a period of time.

The joint Ruckus and Siklu multi-gigabit Wi-Fi solution solves the Wi-Fi backhaul challenge. The combination of Ruckus smart Wi-Fi with the Siklu field-proven mmWave backhaul solution enables high dense Wi-Fi networks that can be deployed quickly and cost effectively without the need for costly fiber runs. Wi-Fi access is only as good as the backhaul and with Siklu, multi-gigabit backhaul can be deployed anywhere, quickly and cost effectively.

In summary, with Ruckus and Siklu, you can:

- Deploy a multi-gigabit Wi-Fi network quickly and cost effectively
- Quickly add multi-gigabit backhaul capacity to an existing Wi-Fi network to support additional services and/or expand its footprint
- Avoid high-cost fiber runs for backhaul capacity