



Extend

Multi-gigabit Capacity for Miles
Now even better with Extend18



Introduction

Delivering cost-effective, multi-gigabit mmWave capacity more than a few miles has been difficult. Options to date often meant sacrificing “up time” or adding parallel links which resulted in cost increases, additional hardware and added complexity. To address these challenges and deliver multi-gigabit connections up to 6 miles (10km) or more, Siklu introduces Extend™.

Extend is a high-capacity and long-range solution that consists of a pair of multi-gigabit EtherHaul™ Kilo radios, enhanced ExtendMM software, a built-in switch and 2-foot dual-band antennas, backed by SmartHaul™ Apps (LBC & WiNDE). A pair of third party 5GHz or 18GHz band radios enable the additional range at lower capacity.

These elements can be implemented on an a la carte basis, but when used in unison, they create a powerful package. For example, here's how to create a 10 Gb link extending 6 miles (10 km) or more with 99.999% availability. Pair a Siklu EtherHaul™ Kilo radio with a lower-band radio (for example: 5 or 18 GHz), add the ExtendMM™ software license, add a dual-band 2-foot antenna and other accessories and that's it!

With “single click” simplicity, it is now possible to turn an EtherHaul™ Kilo product into a long-range link that delivers the capacity your network is demanding.

As a result, Siklu's ExtendMM™ solution delivers a long-range multi-gigabit connection that is both economical and easy to implement.

With the new EtherHaul™ Extend18 solution upgrading existing 18GHz microwave to 10Gbps is just a breeze

What is Extend and what does it offer?

Extend is a complete 10Gbps @ 10Km solution comprised of:

- Integrated and easy to use, single click configuration, monitoring and control.
- A powerful integrated networking engine.
- Built in switch means running a single cable to the combined dual-link solution.
- Two Dual Band antennas options:
 - DL18 EtherHaul Extend18 – 2-ft dual band antenna 70/80 + 18GHz - accommodate 18GHz DWX Harmony Enhanced and Harmony EnhancedMC microwave
 - DL5 EtherHaul Extend5 2-ft dual band 70/80GHz + 5GHz antenna supports any 5GHz radio with external antenna.
- SmartHaul™ Apps, LBC & WiNDE, to support link performance review and network design.



Why Siklu's Extend?

The E-Band spectrum is well suited for multi-gigabit capacity applications, with rain being the principal impediment affecting range. While light rain affects link performance marginally, heavy rain can degrade link performance significantly. The greater the distance of the link, the greater the degree of attenuation.

Siklu's Extend works with any lower-band radio of your choice without the need for external gear. For example, you can combine E-Band and 18GHz on a single antenna, which optimizes tower space and lowers attachment fees and installation costs. Pairing lower capacity and longer range frequency bands with the EtherHaul™ Kilo product family delivers the best of both technologies – high capacity and long range, at an unbeatable \$/Gb.

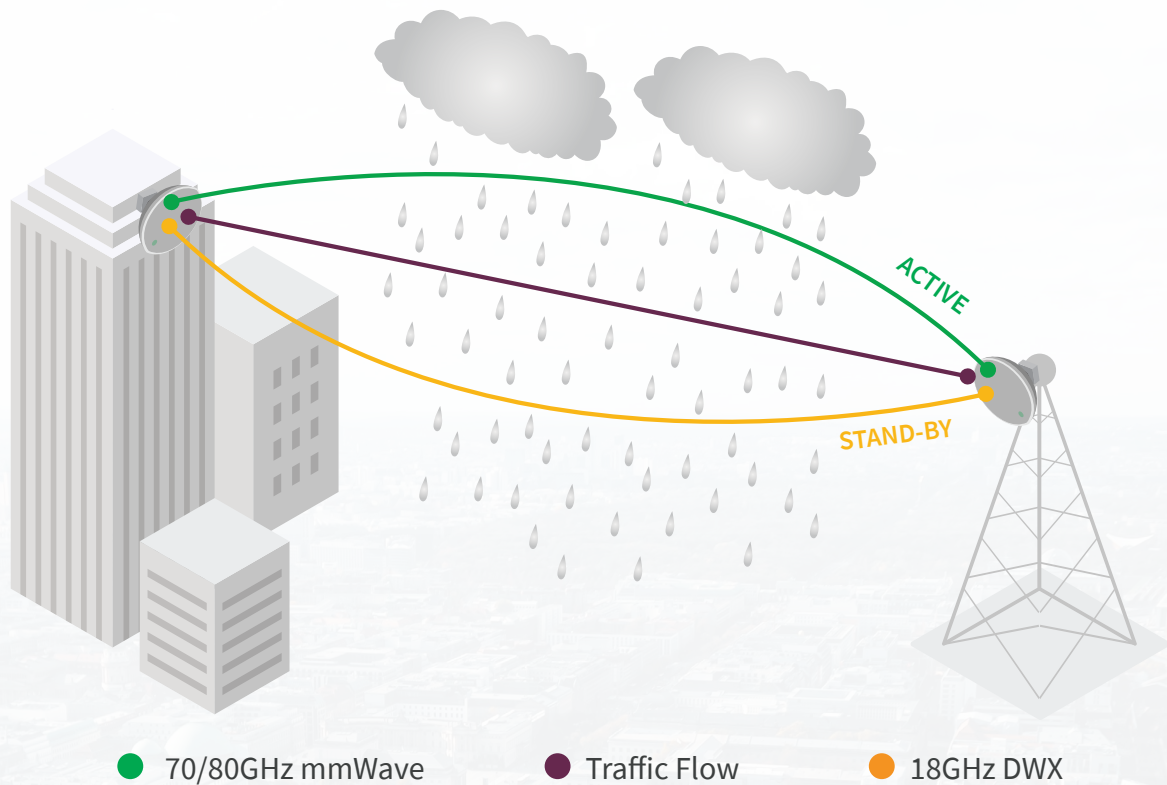
How does Siklu's Extend work?

Siklu's Extend™ combines EtherHaul™ millimeter wave radios with a secondary radio operating in a lower frequency to create a high-availability, all-weather and long-range connection. A single click in the EtherHaul™ management GUI turns the two radios into a fully-monitored high-performance long-distance multi-gigabit unified link.

Multiple Gbps will be available over the interference-free mmWave EtherHaul™ link, while the backup link is in stand-by mode, monitored by the Siklu radio, ready to be activated for the rare occasions during the year when the mmWave link is not available due to weather conditions.

Adaptive modulation and advanced QoS

When a significant rain event occurs, the adaptive capabilities of the EtherHaul™ are activated, lowering the capacity to improve the link budget and maintain the mmWave link. If the EtherHaul™ capacity reaches a user configured low threshold, traffic is forwarded to the lower frequency radio by the built-in EtherHaul™ advanced QoS engine, to maintain the availability of high priority traffic, and pass other traffic based on available capacity. Switching the traffic to the secondary radio is achieved hitlessly by the EtherHaul™ integrated networking engine. After the rain cell has passed, the EtherHaul™ link will automatically revert to its previous capacity load with no loss of traffic.



Minimum Requirements from your backup radio

Siklu's Extend solution operates with any wireless PtP product which supports the Ethernet transparent-bridge mode and that can transport any type of layer 2 broadcast or multicast traffic.