



What is 5G Wireless Backhaul?

5G wireless backhaul, or as some refer to it, wireless transport, is a means for connecting broadband sites to the core network in a wireless manner. In the case of mobile networks, this is a common way to connect a radio access network (RAN) tail site (e.g. a base station, eNodeB/eNB or gNodeB/gNB) to the core of the mobile network – without the need to deploy optical fiber. It is used when high-speed wireline connectivity to telecom sites (typically via fiber optics) is unavailable, when rapid deployment is required, and when a cost-efficient solution is needed. In fact, according to a 5G Microwave Report, about 38% of all global telecom sites will be connected to the rest of the network via wireless backhaul, by 2025.

5G WIRELESS BACKHAUL REACH

Short-haul solutions

which typically provide wireless link capacity of up to 20 Gbps, are used in the access and aggregation backhaul segments over short distances ranging between several hundred feet to 10 miles. Short-haul links deployed in access applications (macrocells and small cells) wirelessly connect individual base stations and cellular towers to the core network.

Long-haul solutions

which also provide multi-Gbps capacity, are used in the “highways” of the telecommunication backbone network. These links are used to carry services at distances of 10 to 100 miles, and, using the right planning, configuration and equipment, can also bridge distances of over 150 miles. Long-haul microwave links often use a multicarrier configuration, grouping 4, 8 and even 16 carriers into a single link. Such configurations utilize the same antenna with a branching system and implement space diversity techniques to avoid fading and maintain availability targets. When implementing multicarrier configurations, traffic distribution engines, such as Ceragon’s multicarrier Adaptive Bandwidth Control (ABC), dynamically adjusts the traffic sent over each carrier to accommodate the available capacity of the carrier.

Applications:

- COMMUNICATIONS SERVICE PROVIDERS
- CRITICAL INFRASTRUCTURE
- UTILITIES
- ON/OFF SHORE - KINETICS
- RURAL BROADBAND
- MILITARY
- HEALTHCARE

