

More Cost-Effective Deployments

5G network deployments must be cost-effective, fulfill aggressive deployment schedules to meet required densification, and achieve higher system performance to guarantee success. This is no small task for network designers, but thankfully Microlab's broad portfolio of readily available 5G ultra-wideband (UWB) products are here to provide solutions to 5G network deployment challenges, such as ensuring deployment costs are at a minimum.

Microlab products are accurately designed and deliver proper operation to reduce costly system troubleshoot while commissioning in the field. Guaranteed specifications assure minimal dissipative loss and RF insertion loss, along with high isolation and low passive intermodulation (PIM). The importance of PIM, in particular, cannot be understated, since it can severely diminish system reliability and capacity, which reduces return on investment (ROI). Microlab's dedicated attention to mechanical design limits PIM generation and its adverse effects on system performance and project costs.

5G UWB high-performance components from Microlab reduce on-site troubleshooting time that can lead to subsequent delays in commissioning, which adds to the project's cost. Compact form factor of Microlab components increase mechanical design flexibility and enable better concealment. For small cell deployments, smaller components give designers more flexibility for aesthetically pleasing designs to enable quicker deployment approval and additional room for carrier equipment or higher order MIMO within the same enclosure, which helps achieve higher capacity and a more cost-effective result. To further speed up carrier/major mobile network operator (MNO) approval and component procurement, Microlab's 5G UWB components are pre-approved at many major MNOs and neutral hosts. As a result, lengthy approval timeframes that can significantly increase the total cost of ownership (TCO) are avoided.

As technology and standards update and improve, it is crucial for designers to deploy networks that can support signal distribution for newly allocated mid-band spectrum. By designing with the future in mind, 5G sites will not only increase network capacity, but will decrease TCO through prolonging the lifecycle of deployments. Additionally, deploying wideband solutions reduces the scale and frequency of a potential rip-and-replace of the network by maximizing available spectrum utilization with carrier aggregation and utilizing all available bandwidth for 5G throughput benefits.

For neutral host deployments, it may not be possible to have all the operator contracts in place on day one of deployment. Modular solutions for combining RAN radio heads for RF distribution allow for the simpler addition of new tenants into the network instead of a re-design and rip-and-replace. It also assists in reducing the initial capital expense by only selecting the hardware needed on the deployment's first day. In addition, modular solutions can be easily upgraded for future requirements, which alleviates some uncertainty and initial costs when the number of joining carriers or site upgrades are undefined.

It is crucial to select the appropriate solutions for each deployment, however, selecting the appropriate solution out of multiple options can be challenging. Microlab offers thorough design consultation for customers, which provides bill of materials (BOM) review and recommendations to optimize link budgets, lead times, and future proof for new licensed, unlicensed, and shared

bands. Consultation with solution partners like Microlab can be a valuable resource to combine a network designer's deployment expertise with a vendor's product expertise. Backed by experienced application engineering support, customer-focused consultation will lead to higher system performance, cost-effective designs, and customized solutions to address unique requirements.

Supported by a manufacturing facility located in Parsippany, NJ, Microlab resolves customer questions without delays through timely client support. With more than 70 years of experience providing high-performance and trusted RF and microwave products to support distributed antenna systems (DAS), public safety networks, and high-powered signal combining and distribution, Microlab is here to help designers overcome their 5G network deployments. To learn more about Microlab's 5G UWB solutions that enable 5G network deployments at a low cost, head over to <https://microlabtech.com/5g>.