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Better System Performance

As emerging 5G networks continue to become a reality, network designers face a myriad of challenges in order to successfully deploy 5G networks that are cost-effective, fulfill aggressive deployment schedules, meet required densification, and achieve higher system performance. Microlab's broad portfolio of readily available 5G ultra-wideband (UWB) products and its comprehensive design consultation for customized solutions can meet the diverse range of 5G network deployment obstacles described above. Improving system performance is vital for a deployment's overall success to meet system-level key performance indicators (KPIs), and Microlab continues to provide trusted solutions to realize the service quality of 5G networks.

Guaranteed performance allows network designers to understand system performance over changes in temperature and the environment. Microlab's product portfolio offers guaranteed specifications, such as low insertion loss, low return loss, high isolation, and low passive intermodulation (PIM). Intermodulation is the addition of signals to create new signals, like in a mixer where it is desired for the signals to add up to produce more signals, perhaps to put it on a carrier. PIM can severely weaken system reliability, capacity, as well as increase the cost of PIM mitigation, and is a considerable contributor to performance degradation when dealing with components subjected to prolonged outdoor exposure with elements like salt and high humidity that can cause rust. Microlab's acute attention to mechanical design and material selection prevents rust-causing galvanic corrosion in harsh environmental conditions, which subsequently deteriorates a component's low PIM performance over time and limits PIM's adverse effects on receiver sensitivity. Furthermore, Microlab's guaranteed low PIM rated products can be equated to the PIM rating of a macro tower, and thus provides the same quality of service as renowned carrier-grade networks.

Used as a design aid for wireless communication networks, a link budget is a calculation that determines a signal's total power gains and losses as it travels from an RF signal source, through a network, and to a receiver. The calculated summary helps determine if sufficient radiated power is achieved to facilitate optimal coverage. As stated, Microlab's components come with guaranteed performance specifications, such as low insertion loss and low return loss. These metrics help to optimize coverage by providing flexibility in link budgeting, allowing for wider coverage and a higher density of signals. Microlab's components are also supported by industry-standard network design and simulation tools, such as Ranplan and iBwave, which further enables designers to efficiently create optimal wireless networks.

For more than 70 years, Microlab has provided high-performance and trusted RF and microwave products to support wide-ranging applications, such as distributed antenna systems (DAS) for signal combining and distribution. For specific site requirements, custom solutions can be designed with the support of application engineering consultation. As 5G continues to become a reality, Microlab's relied upon expertise and 5G UWB solutions are here to meet the system performance needs of emerging 5G networks. To learn more, visit https://microlabtech.com/5g.