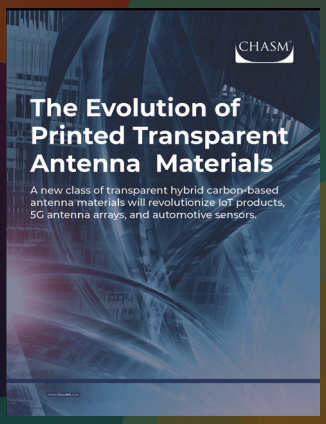
Transparent Antennas: Out of Sight, Out of Mind

Summary

With origins reaching back to ALOHAnet in 1971, a confluence of protocol existing antenna materials? If antennas could be made transparent, escaping the bounds of an enclosure, could they "hide in plain sight" or advancements and mass adoption of devices such as smartphones have cemented "cutting the cord" using RF signals as the preferred method of connectivity for an ever-growing array of data consuming devices. Despite the rapid escalation in wireless speed and the explosion in connected devices, the technology enabling all this connectivity – the antenna – has failed to keep pace with these technological advancements.

With the rollout of 5G necessitating more antennas closer to the point of use to achieve high-bandwidth line of sight connections and manufacturers seeking to retrofit IoT connectivity in a broad range of devices, have performance and design requirements finally exceeded the capabilities provided by be adhered to the outside of existing devices to overcome the challenges of new applications? Better yet, could this new material deliver equal or better performance to traditional materials so not requiring the rationalization of design tradeoffs typically found with new materials?

A new class of transparent conductive material – CNT hybrids – delivers the conductivity required for high performance antenna applications while achieving near transparency to effectively make antennas disappear. Currently being used to revolutionize IoT products, 5G antenna arrays, and automotive sensors, this white paper presents a range of commercially available alternative materials and how the CNT hybrid empowers designers with new options for innovation.



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