Interview by CHRIS DEMARTINO | Technology Editor

# Can S-SIX Technology Make Full-Duplex Communication a Reality?

In this Q&A, Sriram Vishwanath, co-founder of GenXComm, talks about the self-interference cancellation technology his company has developed and the benefits it offers.

**CD: Can you tell us about simultaneous self-interference cancellation (S-SIX) technology?**

SV: S-SIX is designed to enable wideband (around 1 GHz), low noise figure, tunable self-interference cancellation in both the analog and digital domains. It has traditionally been very difficult to achieve such wide bandwidths, tunability, and low noise figures for analog/RF systems. S-SIX is uniquely capable of achieving this, thus allowing for the design of good interference-cancellation systems.

Interference-cancellation systems that do not possess these characteristics may remove interference, but in doing so, introduce considerable noise. This can drastically impact the link budget, causing the system performance to be poor. Moreover, without wideband tunability, a new component would be required for any changes, giving the system no agility and reconfigurability. S-SIX offers it all in one: a solution that works across bands, with a noise figure that does not impact the link budget while eliminating interference.

**CD: What are some of the benefits of this technology? Furthermore, what applications will it enable?**

SV: The most obvious benefit of S-SIX is full-duplex communication, but there are many other benefits. By cancelling interference in a wideband manner, the solution is also a tunable filter that can eliminate interference in adjacent and/or overlapping bands. This results in multi-channel/multi-band radios that can operate in adjacent bands (without a guard band) simultaneously, without leakage into one another.

It also results in much better range extenders, mesh networks, and other ways in which radios can operate in two or more bands simultaneously. Further, it results in radios that can coexist on a multi-RAT platform. This includes LTE and Wi-Fi coexistence, as well as LAA/Wi-Fi coexistence.

**CD: GenXComm** (www.genxcomm.com) **has already publicly demonstrated its technology. Can you talk about**

**what you found?**

SV: We found a genuine interest in full duplex across market segments and communities. The notion that we waste half the spectrum and can use it using S-SIX is immediately obvious across these segments. In one public demonstration, we turned our cancellation off and on, and the rapid change in performance made the impact of full duplex much more real to the audience. These demonstrations also help dispel some misconceptions about S-SIX: that is only good for full duplex—and even then, [that] it just works in a lab environment. Self-interference cancellation does much more than full duplex (as listed in the question above), and it does work robustly indoors and outdoors.

**CD: The company recently announced the initial closing of a $9 million Series A investment round. Can you tell us more about that, as well as what we can expect to hear in the future?**

SV: The company recently closed a total $9 million in Series A ($7 million first close and a $2 million second close). We raised our Series A with a focus on delivering products to make our motto "Life without Interference" a reality across market segments. We are actively hiring—please spread the word!

We are planning to announce new partnerships and demonstrate our next-generation product in 2018. This is going to be an exciting, action-packed year for GenXComm.