

In a major achievement, Signalchip, a Bengaluru-based semiconductor manufacturing company, recently produced India's first indigenously manufactured semiconductor chipset. The launch of the chipset will provide a major impetus to the evolving 5G ecosystem by facilitating network densification. Himamshu Khasnis, founder and chief executive officer, Signalchip, talks about the company's key focus areas and future roadmap. Excerpts...

What are Signalchip's key focus areas?

Signalchip is an Indian fabless semiconductor company focusing primarily on the wireless communication domain. It has been developing chipsets/systems in the 4G/long-term evolution/3G domains to provide high performing commercial devices for high speed wireless networks. Signalchip is one of the few companies to develop technologies/chips – from baseband processing system on chip (SoC) to mixed signal devices, radio frequency (RF) front-ends for 5G new radio (NR), LTE and wideband code division multiple access technologies.

What were the company's business highlights in 2018-19?

The fabrication of our flagship chipset family, Agumbe, which includes a complete base station in a single chip, has been the highlight of 2018-19. Four chips of the Agumbe family, catering to 5G and LTE standards, were unveiled in February 2019. While intermediate milestones like demonstrating 3G/4G systems and fabricating our first RF transceiver SCRF1401 had been achieved in the past, Agumbe culminates our dream of making a world-class, high performance SoC.

How is the telecom R&D landscape evolving in the country? What role is R&D playing in Signalchip?

Telecom R&D in India is evolving. With the dawn of the 5G era, there has been a larger focus

on encouraging telecom R&D in the country. The 5G test bed project involving the IITs, standardisation activities through the Telecommunications Standards Development Society, India are all encouraging signs.

Signalchip has been unequivocally R&D focused. We have built a large number of IP modules across complex domains like algorithms, communication accelerators, RF and analog design. Today, we have one of the most integrated chips in the world for telecom infrastructure radio access networks (RANs).

How do you plan to commercialise your new products? Where will they find the most adoption?

We plan to leverage the optimality and high performance-to-cost ratio of the Agumbe chipsets to jumpstart the small cell market. As operators add more cells and reduce the cell size to add more capacity to their networks, systems based on our chipsets will significantly reduce the burden on them. Systems using this chipset require very few external components and hence will boost the densification of networks. Our chipsets have been designed with a customisable physical layer using unique design techniques and smart hardware-software partitions, and can fit into a myriad of distributed RAN architectures. Further, this can enable custom data security for strategic applications and custom networks for public safety applications.

What is your view on the progress under the Make in India initiative? Do you have a regulatory wish list?

The government's various policies and initiatives have served as a great morale booster for Indian technology companies. We have given our inputs to the Department of Telecommunications and the Ministry of Electronics and Information Technology to provide regulatory support for 5G, semiconductors, and micro, small and medium enterprises.

What opportunities do you foresee in the 5G space in India? How do you plan to tap these?

We see opportunities worldwide. We are working with the 5G test bed project to include our chipsets. Our RF transceivers support the most popular 5G frequency bands around 3.5 GHz. Over 35 million base stations (a good portion of them being small cells) will be deployed globally by 2025. Historically, India accounts for about 8 per cent of the world telecom deployment, and this percentage is expected to grow. We are also aware of the push to shift from importing and deploying third-party telecom products to deploying indigenously designed products.

What are the key challenges faced by the company?

We are working towards making our products a commercial success. Scaling up organically to meet customer needs and building a worldwide presence are important challenges that we are working on.

What are your plans, growth strategies and targets for the coming years?

We are actively working on ramping up customer-facing activities for our existing portfolio. Further, we are working on optimised chipset products for 5G NR standards, on both the baseband and RF sides. Focused devices for other wireless domains such as internet of things and navigation are also on the anvil. We plan to continue building Signalchip with multiple products spanning multiple application domains.

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