

# 5G spurring tech advancements at suppliers

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The coming of the 5G era promises drastic changes to people's lives, but all these changes will not come without equipment, device and component suppliers making advances in their technologies and offerings, according to speakers at a Digitimes-arranged forum during Computex 2019.

Commercialization of 5G is just around the corner, but compared to 4G, which has been focusing on mobile communications, the scope of 5G applications will be much broader. The 2019 Computex Taipei 5G Mobile Technology Trend Forum, with the theme of "Recreating Industry Values," brought together heavyweight industry experts to shed light on the development of 5G.

In his opening speech, ST Liew, vice president of Qualcomm Technologies and president of Qualcomm Taiwan &SEA, noted that smart connection has become an inevitable trend in the future world and that through 5G's traits of high networking speed, broad bandwidth and low latency, digital technology applications will proliferate constantly. He said the world will march toward an era of inventions, with new applications and business models emerging continuously to bring major changes to industries and people's lives. And all these will be based on 5G technologies and solutions offered by various types of businesses.

The extended applications of 5G will be extremely broad through the integration with AIoT, and diverse software and hardware technologies required in the 5G application architectures will be sharply different from the past, according to Morris Chen, product marketing manager at STMicroelectronics. He said that for 5G application to both consumer and industrial domains, sensors are needed at the bottom layer of the architecture to detect surrounding environments and equipment conditions and transmit relevant data collected to upper layers. Accordingly, demand for sensors will rise sharply in the future, and their sturdiness and communication capability must be simultaneously upgraded.

Besides sensors, memory is also among devices that must undergo constant advancements. Mirian Kuao, senior marketing manager at Macronix, pointed out that 5G base stations are an important area for memory application. As base stations have long life cycles, their components must be highly stable and reliable. Memory suppliers for 5G base stations must guarantee long-term supplies, and their products must operate in wide ranges of temperatures and provide high storage densities.

In terms of communications, frequency bands for 5G applications will be far

broader than those for 4G, and system makers need brand-new development kits to support their product designs. **In this regard, SW Chang, president of TMYTEK,** noted that there are now fewer users of 30GHz mmWave for 5G application, as it involves greater difficulty in technology although it can provide cleaner and faster transmission. Chang disclosed that his firm's 5G beamforming antenna system development kits can help makers more easily develop antennas and test modules and baseband systems.

At the forum, Daniel CC Lee, director of industrial service group product certification at TUV NORD Taiwan, explained 5G regulations and standards enforced in the US and Europe. Lee said that besides regular security certifications for electronics products, extra information security and function safety are also required for 5G devices to ensure that the entire system can maintain safe operation in case of device malfunction. He advised Taiwan firms to join the 5G mmWave Channel Model Alliance under the National Institute of Standards and Technology to access more 5G-related information available worldwide for use in their product designs.

Roger Huang, director of Digitimes Research, said that the US and Korea will start commercialization of 5G services in 2019, while Japan and China will follow suit soon, inspiring major tech firms to step up development of diverse vertical application equipment in addition to smartphones. He concluded that the ever-proliferating 5G applications will usher in ever-expanding business opportunities, and Taiwan firms must speed up their deployments in related aspects to create more value-added services.



*The Digitimes-arranged 5G forum brings together industry experts.*

*Photo: Digitimes staff*