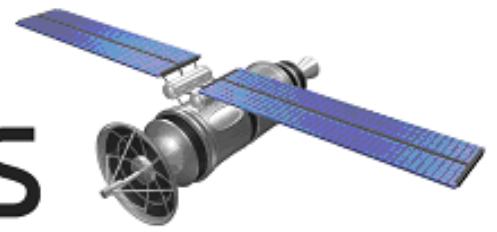


# FutureHorizons



The Global Semiconductor Industry Analysts

## FH MONDAY

8 April 2019

### OTA Testing Accelerates 5G Adoption

The rise of digital transformation as a catalyst for industry growth has seen a concurrent rise in the adoption of digital technologies in multiple sectors. Amongst these sectors, the telecom space has witnessed tremendous growth as 5G technology is slowly becoming a reality in India.

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### ST Bets Future on Silicon Carbide

STMicroelectronics is betting big on silicon carbide (SiC) as a critical part of its strategy and revenues, as it outlined at its Catania, Italy, plant last week. In all the company's recent quarterly and annual results briefings, CEO Jean-Marc Chery has consistently stated his intent to capture 30% of the SiC market, projected to be a \$3.7 billion market by 2025.

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### AI Will Permeate Our Lives Soon

AI will dramatically impact the way in which we see and interact with the world around us, our systems--including homes and cars--and each other.

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### TALK TO US



### TinyML Sees Big Hopes for Small AI

A group of nearly 200 engineers and researchers gathered here to discuss forming a community to cultivate deep learning in ultra-low power systems, a field they call TinyML. In presentations and dialogs, they openly struggled to get a handle on a still immature branch of tech's fastest-moving area in hopes of enabling a new class of systems

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### EVENTS

#### [Silicon Chip Industry Seminar](#)

10<sup>th</sup> June 2019 – London UK

#### [Industry Forecast Briefing](#)

– 17 Sept 2019 – London UK

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### More Memory Required for 5G to Compute

Today's cellphone networks aren't your dad's cellphone networks. In fact, 5G not only represents a vast leap in communications compared to the flip phone days of 3G, it's also going to be more memory hungry.

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## **OTA Testing Accelerates 5G Adoption**

As the industry moves closer to the commercial availability of 5G technology, industry players are looking to manage test and measurement requirements for both 5G NR as well as for legacy standards.

The rise of digital transformation as a catalyst for industry growth has seen a concurrent rise in the adoption of digital technologies in multiple sectors. Amongst these sectors, the telecom space has witnessed tremendous growth as 5G technology is slowly becoming a reality in India. Many major service providers in the country have already begun working towards the goal of beginning 5G rollout by late 2020, even stating that the lag present in 4G adoption will not be repeated. The evolutionary pace of 5G technology, however, has placed a greater emphasis on the simultaneous development of test and measurement strategies that are capable of verifying optimal product operation.

## **ST Bets Future On Silicon Carbide**

STMicroelectronics is betting big on silicon carbide (SiC) as a critical part of its strategy and revenues, as it outlined at its Catania, Italy, plant last week. In all the company's recent quarterly and annual results briefings, CEO Jean-Marc Chery has consistently stated his intent to capture 30% of the SiC market, projected to be a \$3.7 billion market by 2025.

SiC is one of the wide-bandgap technologies increasingly being adopted by silicon vendors to address the high power and high efficiency needed for the vehicle electrification.

But with supply side and ecosystem challenges, such as the global shortage of SiC wafers due to the limited number of vendors, ST has been making strategic moves to control the entire supply chain. This includes its recent \$250 million agreement with Cree to ensure a supply of Wolfspeed 150-mm SiC bare and epitaxial wafers, and the acquisition of a 55% stake in Swedish SiC wafer supplier Norstel, with the intention to ultimately buy up the remainder.

## **AI Will Permeate Our Lives Soon**

AI will dramatically impact the way in which we see and interact with the world around us, our systems--including homes and cars--and each other.

Many people think that the concept of artificial intelligence (AI) is a recent development, but as far back as the 19th century, Ada Lovelace (1815-1852) realized that the data stored and manipulated inside computers was not obliged to represent numerical quantities but could instead be used to represent more abstract concepts like musical notes. As Ada wrote:

Supposing that the fundamental relations of pitched sounds in the science of harmony and of musical composition were susceptible of such expression and adaptations, the engine might compose elaborate and scientific pieces of music of any degree of complexity or extent. [...] We might even invent laws for series or formulæ in an arbitrary manner, and set the engine to work upon them, and thus deduce numerical results which we might not otherwise have thought of obtaining.

## **TinyML Sees Big Hopes For Small AI**

SUNNYVALE, Calif. – A group of nearly 200 engineers and researchers gathered here to discuss forming a community to cultivate deep learning in ultra-low power systems, a field they call TinyML. In presentations and dialogs, they openly struggled to get a handle on a still immature branch of tech's fastest-moving area in hopes of enabling a new class of systems.

"There's no shortage of awesome ideas," said Ian Bratt, a fellow in machine learning at Arm, kicking off a discussion.

Four years ago, things were getting boring, and then machine learning came along with new floating-point formats and compression techniques—it's like being young again. But there's a big shortage of ways to use these ideas in a real system to make money," Bratt said.

## **More Memory Required For 5G To Compute**

5G not only represents a vast leap in communications compared to the flip phone days of 3G, it's also going to be more memory hungry.

Today's cellphone networks aren't your dad's cellphone networks. In fact, 5G not only represents a vast leap in communications compared to the flip phone days of 3G, it's also going to be more memory hungry.

It makes sense when you think about how much computing power people are carrying around in their hands compared to even the early days of the Blackberry. Mobile networks are just as much about transmitting 4K video as they are talk and text. Connected devices not only include smartphones, but sensors, parking meters, smart cars, wearables, and utilities. Telecom infrastructure is now networking and compute infrastructure—flash and DRAM are supplanting SRAM and TCAM, and there might be room for emerging memories, too.