# FutureHorizons
## The Global Semiconductor Industry Analysts

# FH MONDAY

27 February 2023

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### Arctic Semiconductor pitches low-power 5G chip

US-based RF vendor SiTune rebranded as Arctic Semiconductor and commenced shipments of its first 5G chipset, part of a move to disrupt the low-power silicon market.

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### GlobalFoundries' success proves LTAs are here to stay

GlobalFoundries' method has been its increasing reliance on long-term agreements (LTAs) with some of its biggest customers, promising dedicated supply capacity for those customers and incremental revenue via prepayments for GlobalFoundries over the life of the contract.

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### Synopsys Reaches Scale for AI-driven Chip Designs

Synopsys reaches scale for AI-driven chip designs as major semiconductor customers register the first 100 commercial tape-outs with its DSO.ai autonomous design system.

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## TALK TO US

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### Renesas Automotive IPD Touts 40% Smaller Footprint

Renesas Electronics Corp. has launched a new automotive Intelligent Power Device (IPD) that will safely and flexibly control power distribution within vehicles, addressing the requirements of next-generation E/E (electrical/electronic)

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-March 2023– London UK

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– September  2023– London UK

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### NXP Goes In-House for Application Processor NPU

NXP's latest application processor, the i.MX 95, uses NXP's proprietary NPU IP for on-chip AI acceleration, in a change from previous products in the i.MX line, which used third-party IP.

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## Arctic Semiconductor Pitches Low-Power 5G Chip

US-based RF vendor SiTune rebranded as Arctic Semiconductor and commenced shipments of its first 5G chipset, part of a move to disrupt the low-power silicon market.

Marzieh Veyseh, co-founder and CTO at Arctic Semiconductor, told Mobile World Live (MWL) the company's IceWings universal chipset was an integrated RF transceiver designed for wireless networks.

She pitched the chip as ideal for private networks, fixed wireless access, macro base stations and massive MIMO, stating power consumption of less than 1W is up to 70 per cent less than competing products.

## GlobalFoundries' success proves LTAs are here to stay

GlobalFoundries' method has been its increasing reliance on long-term agreements (LTAs) with some of its biggest customers, promising dedicated supply capacity for those customers and incremental revenue via prepayments for GlobalFoundries over the life of the contract. During GlobalFoundries fourth quarter and full-year 2022 earnings call this week, CEO Tom Caulfield and CFO Dave Reeder discussed how the strategy is paying off.

Caulfield said that forging LTAs with foundry customers is not only about establishing long-term demand visibility and building or allocating capacity to match, but also about creating "the best economics for both partners." He added later, "Look, for me, it's pretty simple. This is a single-source business by and large. Customers are looking to secure their supply. In some cases, it requires investment. The only way the investment can be made and make economic sense for both parties is if we both put our balance sheets in there."

## Synopsys Reaches Scale for AI-driven Chip Designs

Synopsys Inc. reaches scale for AI-driven chip designs as major semiconductor customers register the first 100 commercial tape-outs with the company's Synopsys DSO.ai autonomous design system. Recent customers, including STMicroelectronics and SK hynix, have all seen significant uplifts in productivity and PPA, and are now charting a new design course using reinforcement learning-enabled design tools on cloud and on-premise.

By using Synopsys DSO.ai (Design Space Optimization AI) the companies are setting a blistering pace for the development of advanced-node chips through the key design phases. Results from customers since the launch of Synopsys DSO.ai speak for themselves: more than 3x productivity increases, up to 25% lower total power and significant reduction in die size, with reduced use of overall resources

STMicroelectronics (ST), a global semiconductor leader serving customers across the spectrum of electronics applications, is using cloud-based versions of DSO.ai to generate extra momentum on the most intensive design phases. STMicroelectronics taped-out using Synopsys DSO.ai coupled with Synopsys Fusion Compiler and Synopsys IC Compiler II physical implementation tools

## Renesas Automotive IPD Touts 40% Smaller Footprint

Renesas Electronics Corp. has launched a new automotive Intelligent Power Device (IPD) that will safely and flexibly control power distribution within vehicles, addressing the requirements of next-generation E/E (electrical/electronic) architectures.

The new RAJ2810024H12HPD is available in the small TO-252-7 package and reduces the mounting area by about 40% compared to the conventional TO-263 package product. In addition, the advanced current detection function of the new device allows highly accurate detection of abnormal currents such as overcurrent.

Since the new IPD detects abnormal currents even at low loads, it allows engineers to design highly safe and precise power control systems that can detect even the smallest abnormalities..

## NXP Goes In-House for Application Processor NPU

NXP's latest application processor, the i.MX 95, uses NXP's proprietary NPU IP for on-chip AI acceleration, in a change from previous products in the i.MX line, which used third-party IP.

The i.MX 95 series is developed for AI-enabled applications in automotive, industrial and IoT markets, with safety features for ISO 26262 ASIL-B and IEC 61508 SIL-2 functional safety standards, including a secure island. Typical applications would include factory machine vision and vehicle voice warnings, instrumentation and camera systems.

The i.MX 95 series features up to six ARM Cortex-A55 CPUs plus an ARM Mali GPU for 3D graphics, alongside NXP's dedicated 2-TOPS Neutron NPU and an in-house–developed image signal processor (ISP). The ISP handles camera interfaces and image pre-processing, including tasks like high dynamic range (HDR), de-noising and edge enhancement.