

# FutureHorizons



The Global Semiconductor Industry Analysts

## FH MONDAY

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### STMicroelectronics Rad-Hard ICs Target 'New Space'

Built with low-earth orbit (LEO) in mind, STMicroelectronics' latest series of radiation-hardened ICs boast a plastic package with a total ionization dose immunity up to 50 krad(Si), enabling next-gen satellites to provide earth observation and broadband internet from the relative safety of LEOs.

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### SiFive Raises \$175M To Quicken 'Arm Intercept' Strategy

SiFive has raised \$175 million in a series F funding round aimed at accelerating its processor roadmap and strengthen its position in the market against Arm. The investment puts the company valuation at over \$2.5 billion, and in a position to prepare itself for an initial public offering (IPO) next year.

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### Renesas launches reference design for in-cabin wireless charging

Renesas Electronics Corp. has released a reference design for automotive wireless charging stations. The new P9261-3C-CRBv2 enables automotive manufacturers to deliver premium performance and safety features for in-cabin wireless charging.

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## TALK TO US



### Nvidia Launches Next-Gen GPU Architecture: Hopper

Nvidia unveiled its next-generation GPU architecture — named Hopper, alongside the new flagship GPU using the Hopper architecture, the H100. Perhaps surprisingly, Nvidia has not opted to go down the trendy chiplets route favored by Intel and AMD for their mammoth GPUs.

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## EVENTS

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

- March 2022- London UK

### [Industry Forecast Briefing](#)

- September 2022- London UK

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### Qualcomm Invests \$100 million for Snapdragon

Qualcomm announced this week its Snapdragon Metaverse Fund, which boasts a total investment of \$100 million meant to support both developers and companies actively producing extended reality (XR) ecosystems as well as the augmented reality (AR) and artificial intelligence (AI) technologies designed to advance the XR experience.

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## **STMicroelectronics Rad-Hard ICs Target 'New Space'**

Built with low-earth orbit (LEO) in mind, STMicroelectronics' latest series of radiation-hardened ICs boast a plastic package with a total ionization dose immunity up to 50 krad(Si), enabling next-gen satellites to provide earth observation and broadband internet from the relative safety of LEOs. Hello new space, goodbye old space.

ST's newest LEO series includes a data converter, a voltage regulator, an LVDS transceiver, a line driver, and five logic gates. They possess high immunity to total non-ionizing dose and single event latch-up immunity up to 62.5MeV.cm<sup>2</sup>/mg, can withstand temperatures between -40 to 125 degrees Celsius, and are based on AEC-Q100 specifications — all which ST claims will enable them to meet the rising demand to deploy additional satellite constellations thanks to both their low-cost plastics packaging and the allure of what new space can offer.

## **SiFive Raises \$175M To Quicken 'Arm Intercept' Strategy**

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In an interview with EE Times, Patrick Little, president and CEO of SiFive, told us that adoption of the company's Performance and Intelligence line processors had "wildly exceeded" their expectations. He said, "Almost every customer we spoke to said there's a mandate from their boards to diversify their processor base. While we may have been focused previously on simple embedded designs, we're now seeing a shift where we are targeting the center of the customer's requirements for intelligent designs. And the automotive community is also looking at our processors."

## **Renesas launches reference design for in-cabin wireless charging**

Renesas Electronics Corp. has released a reference design for automotive wireless charging stations. The new P9261-3C-CRBv2 enables automotive manufacturers to deliver premium performance and safety features for in-cabin wireless charging. The reference design is certified to the Wireless Power Consortium (WPC) Qi 1.3 standard EPP (Extended Power Profile) for 15-W charging. It also supports proprietary charging profiles and is capable of 50-W power delivery.

The P9261-3C-CRBv2 reference design includes the automotive-qualified wireless power controller P9261 with the MP-A13 3-coils reference board as the wireless power transmitter (TX). It offers a large active charging area with high efficiency and is said to provide 'exceptional' EMC/EMI performance, meeting the CISPR-25 requirement. It also includes a Renesas RH850 automotive microcontroller as a host controller, which enables the system to provide functional safety features that comply with Automotive Safety Integrity Level B (ASIL B).

## **Nvidia Launches Next-Gen GPU Architecture: Hopper**

Nvidia unveiled its next-generation GPU architecture — named Hopper, alongside the new flagship GPU using the Hopper architecture, the H100. Perhaps surprisingly, Nvidia has not opted to go down the trendy chiplets route favored by Intel and AMD for their mammoth GPUs. While the H100 is the first GPU to use HBM3, its compute die is monolithic, 80 billion transistors in 814mm<sup>2</sup> built on TSMC's 4N process. Memory and compute are packaged via TSMC's CoWoS 2.5D packaging.

Named for US computer science pioneer Grace Hopper, the Nvidia Hopper H100 will replace the Ampere A100 as the company's flagship GPU for AI and scientific workloads. It will offer between 3x and 6x the raw performance of the A100 (4 PFLOPS of FP8 performance, or 60 TFLOPS of FP64). As the first GPU with HBM3 technology, its memory bandwidth is a staggering 3 TB/s, and it's also the first GPU to support PCIe Gen5. The chip has nearly 5 TB/s of external connectivity. To put this into context, twenty H100 GPUs could sustain the equivalent of the entirety of global internet traffic today.

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Qualcomm's Snapdragon chipsets have been meeting with increasing success in the 5G market; during the first quarter of Qualcomm's fiscal 2022 (which ended on Dec. 26, 2021), the Snapdragon line was on a path toward annual revenue growth of 60 percent. The company also reported revenues of \$10.7 billion, which reflects a 30 percent increase year over year. Pair that with the rapidly increasing advancements in virtual reality (VR) over the past year by companies such as Meta and Microsoft, and it's no wonder Qualcomm is eager to grasp the metaverse market.