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PCIe Preps for 64G Leap

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Flexible RFID ICs To Tackle Counterfeit Consumer Goods

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Volvo Group announced this week it is using Nvidia's Drive end-to-end autonomous driving platform to train, test and deploy self-driving AI vehicles, targeting public transport, freight transport, refuse and recycling collection, construction, mining and forestry.

They will co-locate engineering teams in Gothenburg and Silicon Valley to build on the Drive AGX Pegasus platform for in-vehicle AI computing and utilize the full Drive AV software stack for 360-degree sensor processing, perception, map localization and path planning. They will also test and validate these systems using the Nvidia Drive hardware-in-the-loop simulation platform.

Chiplet Ecosystem Gathering Momentum

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Chiplets represent one of several efforts to compensate for slowing performance gains through brute force scaling; it's the slowing of Moore's Law. While individual chip companies including Intel, Marvell, and startup zGlue — as well as system companies such as Cisco — have had some success in creating their own chiplet ecosystems, efforts to date have relied on proprietary multi-chip interfaces.

The development of an industry-wide open chiplet ecosystem that would allow designers to assemble "best of breed" chips incorporating components from multiple vendors requires not only standard open interfaces but also technology advancements in areas such as wafer testing and thermal management and the creation of new business models.

X-FAB And Efabless Deliver Open Source Mixed-Signal SoC

Mixed signal foundry X-FAB Silicon Foundries and crowd-sourcing IC platform Efabless Corp. have announced silicon availability of a RISC-V based mixed signal system-on-chip (SoC) reference design. The open-source semiconductor project went from design start to tape-out in less than three months using the Efabless design flow based on open-source tools.

The mixed-signal SoC, called Raven, is based on the community developed ultra-low power PicoRV32 RISC-V core. Efabless has successfully bench-tested the Raven at 100MHz and based on simulations the design should be able to operate at up to 150MHz. Raven's open-source top-level design utilizes X-FAB proprietary analog IP and is created with an open-source design flow.

PCIe Preps for 64G Leap

SANTA CLARA, Calif. — PCI Express (PCIe) will get a 6.0 spec in 2021, enabling data rates up to 64 gigatransfers per second (GT/s) and leveraging PAM-4 modulation. The news shows that copper interconnects will have a long life, albeit with an increasingly short reach.

The PCI Special Interest Group (SIG) is bringing to mainstream designers the PAM-4 capabilities that SerDes developers are already running at 56G and beyond for high-end systems. At the bleeding edge, other groups already have multiple 112G specs in the works, and some experts say there's a clear line of sight to 200G copper links and beyond.

The perpetual tradeoff is that the faster the link is, the shorter the distance that it can travel. There are some caveats. The tradeoff can be mitigated by adopting more expensive printed circuit board materials or retimer chips. Another consideration is that PAM-4 requires forward error correction (FEC) blocks that add latency.

Flexible RFID ICs To Tackle Counterfeit Consumer Goods

Chinese packaging materials firm BSN intends to use flexible electronics firm PragmatIC's RFID ICs in a new printing facility focused on anti-counterfeit solutions for fast-moving consumer goods (FMCG), online sales, and pharmaceutical drugs.

BSN is part of the Baoshen Group, one of China's leading packaging material suppliers for footwear, apparel, bags, furniture, cosmetics and accessories, with an annual capacity of 7 billion print items and 1 billion RFID labels. PragmatIC's ConnectIC products will be used in BSN's new Eprint line of RFID products.

The ConnectIC family, released earlier this year, provides connectivity solutions using HF RFID proximity identification aimed at smart packaging, and targets markets such as food and beverage, personal and home care, pharmaceutical and healthcare.