

Press Release

Socionext Unveils “FlexletsTM”, a Configurable Chiplet Ecosystem to Accelerate Multi-die Silicon Innovation

[Yokohama, Japan, October 28, 2025] --- Socionext Inc., a global leader in System-on-Chip (SoC) design and advanced semiconductor solutions, introduces “Flexlets”, a new class of configurable chiplets designed to advance heterogenous integration.

As traditional monolithic SoC designs face physical and economic limits—reticle size constraints, yield challenges, and thermal bottlenecks— the industry is turning toward chiplet-based design, where designers can integrate their core features and interface functionalities, provided as chiplets, into a packaged device to improve performance, cost, and accelerate time-to-market.



While chiplet technology opens exciting possibilities for modular designs and scalability, many current solutions are derived from fixed-function ASSPs, limiting flexibility and customization. Socionext’s Flexlets overcome this by offering a configurable library of chiplet designs at the RTL level. Unlike traditional approaches, Flexlets empower customers to tailor performance to their unique application needs – whether in high-performance computing, advanced networking, or next-generation automotive systems.

Unlike competitors who are limited to their own ecosystem, Flexlets from Socionext enable customers to co-design differentiated features by integrating best-in-class IP from any vendor. This flexibility is a game-changer for companies aiming to deliver state-of-the-art designs with optimized power, performance, and area (PPA) in a competitive market.

Expanding the Chiplet Ecosystem

Socionext will launch a portfolio of Flexlets, each integrating security, debug features, and optimized interfaces. Customers have the option to customize their designs at the RTL level to meet specific application requirements. Engineering samples of the initial Flexlet base designs, including Known Good Die (KGD), are currently in development. Socionext will initiate its first customer design this year and broaden design engagements beginning in Q2 calendar year 2026.

- **Memory Expansion Flexlets**
Scalable memory solutions with support for the latest DDR/LPDDR standards connected to either UCIe-S or UALink
- **Ethernet Controller Flexlets**
Robust and high-performance networking connectivity via 224G/UE bridged to UCIe 2.0
- **PCIe Controller Flexlets**
Seamless integration to PCIe ecosystem by bridging PCIe Gen7 128G PHY to UCIe 2.0 with configurable lanes

- **Hybrid PCIe + Ethernet Controller Flexlets**

A versatile range of I/O capabilities, bridging high-speed SerDes (224G/UE) to UCle 2.0

All Flexlets support 2.5D/3D advanced packaging, including CoWoS, SoW-X, EMIB, and 3D stacking, leading-edge process nodes (5, 3, 2nm), and industry standards, including UCle, UALink, PCIe Gen7, and Ultra Ethernet – enabling robust interoperability across multi-vendor ecosystems.

Socionext's packaging capabilities rival those of the largest chipmakers. With successful tapeouts in 2nm and 3DIC test vehicles, we offer real-world proof of engineering excellence, including support of multiple - 64 to 128 - instances of high-speed 224G SerDes in a Flexlet. In a market still lacking standardized design rule checks for large chiplet-based packages, Socionext provides the credibility and capability customers need to innovate with confidence.

A Platform Shaping the Future

Socionext is committed to redefining flexible chiplet-based architectures to meet the demands of today's most advanced systems applications. Our family of Flexlets delivers a scalable, modular foundation for next-generation silicon design- built for adaptability, performance, and innovation.

Follow us for future product and platform updates by visiting
<https://www.socionext.com/en/products/customsoc/Flexlets/>.

About Socionext Inc.

Socionext Inc., a leading global System-on-Chip (SoC) supplier, is a pioneer of the 'Solution SoC' business model. This innovative approach encompasses Socionext's 'Entire Design' capabilities and offering of 'Complete Service'. As a trusted silicon partner, Socionext fuels global innovation, providing superior features, performance, and quality that set its customers' products and services apart in diverse domains ranging from automotive and data centers to networking, smart devices, and industrial equipment.

Socionext Inc., based in Yokohama, operates offices across Japan, Asia, the United States, and Europe for development and sales. For more information, visit <https://www.socionext.com/en/>.

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