

# Synopsys Enables First-Pass Silicon Success for Early Adopters of Next-Generation Armv9 Architecture-based SoCs

Design, Verification, and IP Solutions Combine to Deliver a Total-Compute-centric Solution That Enables Maximum Performance-Per-Watt for High-End Consumer Devices

MOUNTAIN VIEW, Calif., May 25, 2021 /PRNewswire/ --

## Highlights of this Announcement:

- Arm's deployment of Synopsys' Fusion Design Platform, including RTL Architect and Fusion Compiler enables early adopters to achieve optimum PPA targets and accelerated tape-out success on the latest Arm Cortex CPUs, based on Armv9, and Arm Mali GPUs
- Synopsys Verification Continuum Platform speeds software development, verification throughput, and time-to-market for Arm-based designs
- Silicon-proven DesignWare Interface IP portfolio, with leading power, performance, and area, enables rapid development of Arm-based SoCs for broad-market consumer applications

Synopsys, Inc. (Nasdaq: [SNPS](#)) today announced multiple SoC tape-outs at early adopters of the next-generation Arm<sup>®</sup> Cortex<sup>®</sup>-X2, Cortex-A710, and Cortex-A510 CPUs based on Armv9, Arm Mali<sup>™</sup>-G710 GPUs and Arm DynamIQ Shared Unit-110 were achieved using Synopsys' portfolio of industry-leading solutions. These advanced SoCs developed for high-end consumer devices, deliver a leap in performance and power efficiency through Arm's latest architectural innovations and jointly developed flows and methodologies targeting the latest 5-nanometer (nm), 4nm, and 3nm advanced-process technologies. Synopsys' best-in-class EDA and IP solutions, including the [Fusion Design Platform<sup>™</sup>](#), [Verification Continuum<sup>®</sup> Platform](#), and [DesignWare<sup>®</sup> Interface IP](#), together provide designers with the leading, SoC-centric, and power-first software-to-silicon solution demanded by this new era of [Total Compute](#). This true, end-to-end solution speeds the achievement of the maximum performance-per-Watt across various demanding use cases, including specialized artificial intelligence (AI), digital signal processing (DSP) and virtual and augmented reality (XR) workloads slated for broad deployment in next-generation consumer devices.

"Based on the Armv9 architecture, the Arm Total Compute solution is designed to deliver a step-change in compute performance and efficiency while providing the levels of native security and trust needed in an increasingly data-centric and connected world," said Paul Williamson, senior vice president and general manager, Client Line of Business, Arm. "Our broad collaboration with Synopsys has enabled us to push the industry's achievable performance-per-Watt for highly pervasive computing in the client compute market."

Designers creating new Armv9-based SoC's targeting a broad range of client markets, including smartphones, laptops, PCs, digital TVs, wearables, and augmented- and virtual-reality applications, select Synopsys' portfolio of highly integrated digital, verification and interface IP solutions to achieve optimum differentiation and the fastest time-to-market.

"Data is becoming an ever-increasing and important currency in this knowledge-driven world, and its timely, efficient and secure processing is paramount in shaping a safe, information-leveraged future," said Shankar Krishnamoorthy, general manager of the Digital Design Group at Synopsys. "Our broad portfolio of optimized design, verification, IP, software security and software quality solutions have been aggressively co-optimized with Arm to enable a new wave of high-value applications based on the Armv9 architecture, establishing the new benchmark for trustworthy, power-centric performance."

The Fusion Design Platform delivers unprecedented full-flow quality-of-results and time-to-results, continually accelerating Arm's and the broader industry's path to successive waves of semiconductor innovation. Fusion Technology<sup>™</sup> uniquely redefines conventional EDA tool boundaries – test, synthesis, place-and-route, and signoff – by sharing common, best-in-class engines, enabling broad-flow optimizations and wide-ranging margin reduction for the industry's best performance-per-Watt and time-to-results.

Early adopters of Arm's new mobile solution are using Synopsys' Verification Continuum Platform solutions optimized for Arm, including Virtualizer<sup>™</sup> Development Kit (VDK) with Arm Fast Models for Cortex-X2, Cortex-A710, Cortex-A510 CPUs and Mali-G710 GPUs, VCS<sup>®</sup> simulation, Verdi<sup>®</sup> for hardware and software debug, Verification IP for the latest Arm AMBA<sup>®</sup> interconnect, ZeBu<sup>®</sup> Server and HAPS<sup>®</sup> hardware to accelerate hardware-software bring up and power and performance validation resulting in shorter time-to-market.

The silicon-proven DesignWare Interface IP portfolio provides the required performance, power efficiency, security and real-time connectivity for Arm-based systems implementing the latest Cortex CPUs and Mali GPUs. Synopsys' broad IP portfolio, consisting of controllers and PHYs supporting the latest protocols such as PCI Express®, DDR, MIPI and USB, is optimized for the rapid development of Arm-based SoCs.

### **Availability**

Synopsys QuickStart Implementation Kits (QIKs) include implementation scripts and reference guides that enable early adopters to accelerate time-to-market and achieve their demanding performance-per-Watt targets. These QIKs are available today by request through the [Arm support hub](#) or from [Synopsys SolvNet](#).

### **About Synopsys**

Synopsys, Inc. (Nasdaq: SNPS) is the Silicon to Software™ partner for innovative companies developing the electronic products and software applications we rely on every day. As an S&P 500 company, Synopsys has a long history of being a global leader in electronic design automation (EDA) and semiconductor IP and offers the industry's broadest portfolio of application security testing tools and services. Whether you're a system-on-chip (SoC) designer creating advanced semiconductors, or a software developer writing more secure, high-quality code, Synopsys has the solutions needed to deliver innovative products. Learn more at [www.synopsys.com](http://www.synopsys.com).

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