Samsung Sets New Standard for Flagship Mobile Processors With Exynos 2100

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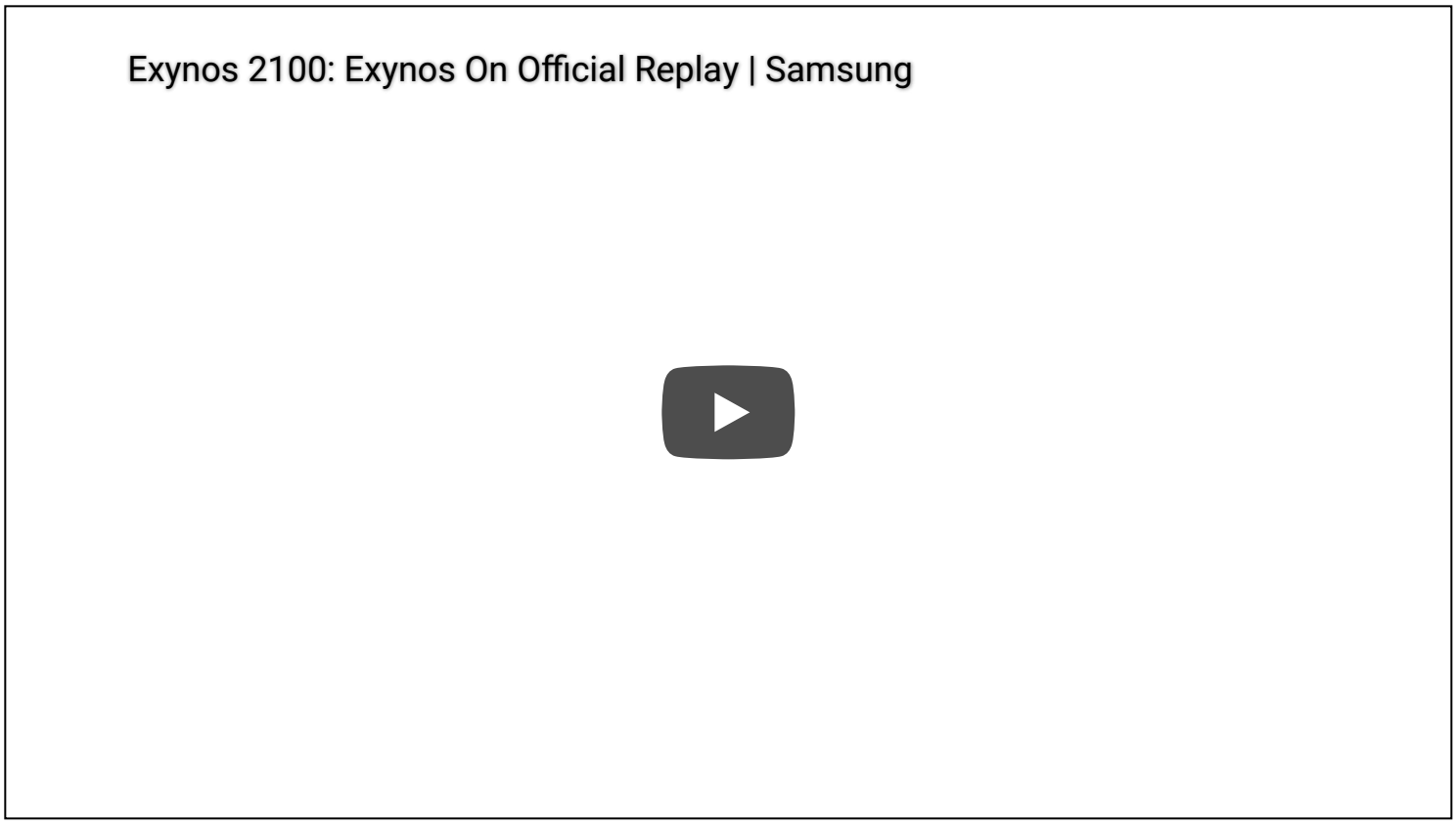
Powerful performance and high energy-efficiency based on 5nm EUV allows elevated multitasking and gaming experiences

Enhanced NPU offers major boost to AI tasks while integrated 5G capabilities deliver seamless connectivity



Samsung Electronics, a world leader in advanced semiconductor technology, today announced the Exynos 2100 through its first virtual event, Exynos On 2021 (www.youtube.com/samsung). The new mobile processor is the company's first premium 5G-integrated mobile processor built on the most advanced 5-nanometer (nm) extreme ultra-violet (EUV) process node.

"Our Exynos team has been committed to creating premium mobile computing experiences by bringing innovations to processors that are at the heart of today's

smart devices," said Inyup Kang, President of System LSI Business at Samsung Electronics. "Today we are delighted to introduce the Exynos 2100, our most advanced mobile processor yet. Armed with powerful processing technologies and an advanced 5G modem on a power-efficient 5nm process node, Exynos 2100 will set a new standard for tomorrow's flagship mobile devices."

"At Samsung Electronics, we are dedicated to providing innovative technologies and services with our flagship devices to deliver the ultimate mobile experience to our customers," said Kyeongjun Kim, Executive Vice President and head of Mobile R&D Office at Mobile Communications Business, Samsung Electronics. "With powerful processing, fast 5G connectivity, and intelligent AI-acceleration, the Exynos 2100 offers the utmost performance that meets the stringent quality standards and requirements for our next generation smartphone."

"The evolution of technologies such as 5G, advanced graphics and machine learning have been critical in enabling new mobile experiences," said Paul Williamson, Vice President and General Manager, Client Line of Business at Arm. "Arm and Samsung have collaborated closely to incorporate Arm's powerful next-generation compute and graphics platform, at the heart of the Samsung Exynos 2100. As a result of our partnership, we are able to maximize performance and make these experiences a reality in next-generation mobile devices while delivering exceptional battery life."

The chip's computation and graphic processing performance have been improved and refined to surpass the power user's performance expectations. As Samsung's first 5G-integrated flagship mobile processor, the Exynos 2100 is built on an advanced 5nm EUV process technology that allows up to 20-percent lower power consumption or 10-percent higher overall performance than the 7nm predecessor. For further enhancement, the chip offers improved cache memory utilization and a stronger scheduler. The octa-core CPU comes in an improved tri-cluster structure made up of a single powerful Arm® Cortex®-X1 core that runs at up to 2.9GHz, three high-performing Cortex-A78 cores and four power-efficient Cortex-A55 cores delivering more than 30-percent enhancement in multi-core performance than the predecessor.

The Arm Mali™-G78, which supports the latest APIs such as Vulkan and OpenCL, improves graphic performance by more than 40-percent for visually stunning and seamless graphics, enabling the most immersive on-screen mobile experiences yet, including gaming and AR/VR or MR(Mixed Reality). The Exynos 2100 also integrates advanced multi-IP governor (AMIGO) technology, which overlooks and optimizes power usages of CPU, GPU, and other processes, allowing longer use time even with intense on-screen activities. With such comprehensive efforts to increase energy efficiency of its products across software and hardware technologies, Samsung also continues its strive to help minimize the carbon footprint of tomorrow's mobile devices.

AI capabilities will also enjoy a significant boost with the Exynos 2100. The newly-designed tri-core NPU has architectural enhancements such as minimizing unnecessary operations for high effective utilization and support for feature-map and weight compression. Exynos 2100 can perform up to 26-trillion-operations-per-second (TOPS) with more than twice the power efficiency than the previous generation. With on-device AI processing and support for advanced neural networks, users will be able to enjoy more interactive and smart features as well as enhanced computer vision performance in applications such as imaging.

The Exynos 2100's advanced image signal processor (ISP) supports camera resolutions of up to 200-megapixels (Mp). It can connect up to six individual sensors and is able to process four concurrently for richer multi-camera experiences. With a multi-camera and frame processor (MCFP), the ISP can combine feeds from multiple cameras to improve zoom performance, enhance image quality for ultra-wide shots and more. With AI acceleration, the ISP offers a content-aware feature that quickly and seamlessly recognizes scenes, faces and objects and optimally adjusts the camera settings to capture the image with fuller detail.

The Exynos 2100's integrated 5G modem supports 5G's sub-6GHz and mmWave spectrums from 2G GSM/CDMA, 3G WCDMA and 4G LTE, for strong network coverage and reliability. The modem delivers a maximum downlink speed of up to 5.1-gigabits per second (Gbps) in sub-6-gigahertz (GHz) and 7.35Gbps in mmWave, or up to 3.0Gbps in 4G networks with 1024 Quadrature Amplitude Modulation (QAM) support.

The Exynos 2100 is currently in mass production.

For more information about Samsung's Exynos products, please visit http://www.samsung.com/exynos.

Process	5nm	**AI**	26 TOPS
Multi-core	Octa-core	**CPU (Main)**	Arm Cortex-X1 (2.9GHz)
CPU (Sub)	Arm Cortex-A78 and Cortex-A55	**GPU**	Arm Mali-G78
Connectivity	5G (sub-6GHz/mmWave), 4G LTE (1024 QAM), 3G WCDMA, 2G GSM/CDMA	**Memory**	LPDDR5 (51.2GB/s)
Storage	UFS 3.1, UFS 2.1	**Camera (Rear)**	200MP
Video (Encoding)	4K UHD 120fps	**Video (Decoding)**	8K 60fps

* *Editor's Note: Actual performance may vary depending on device and user environment.*

Exynos 2100 Exynos On 2021

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