

MOBILE PROCESSOR

SAMSUNG
Exynos8 OCTA

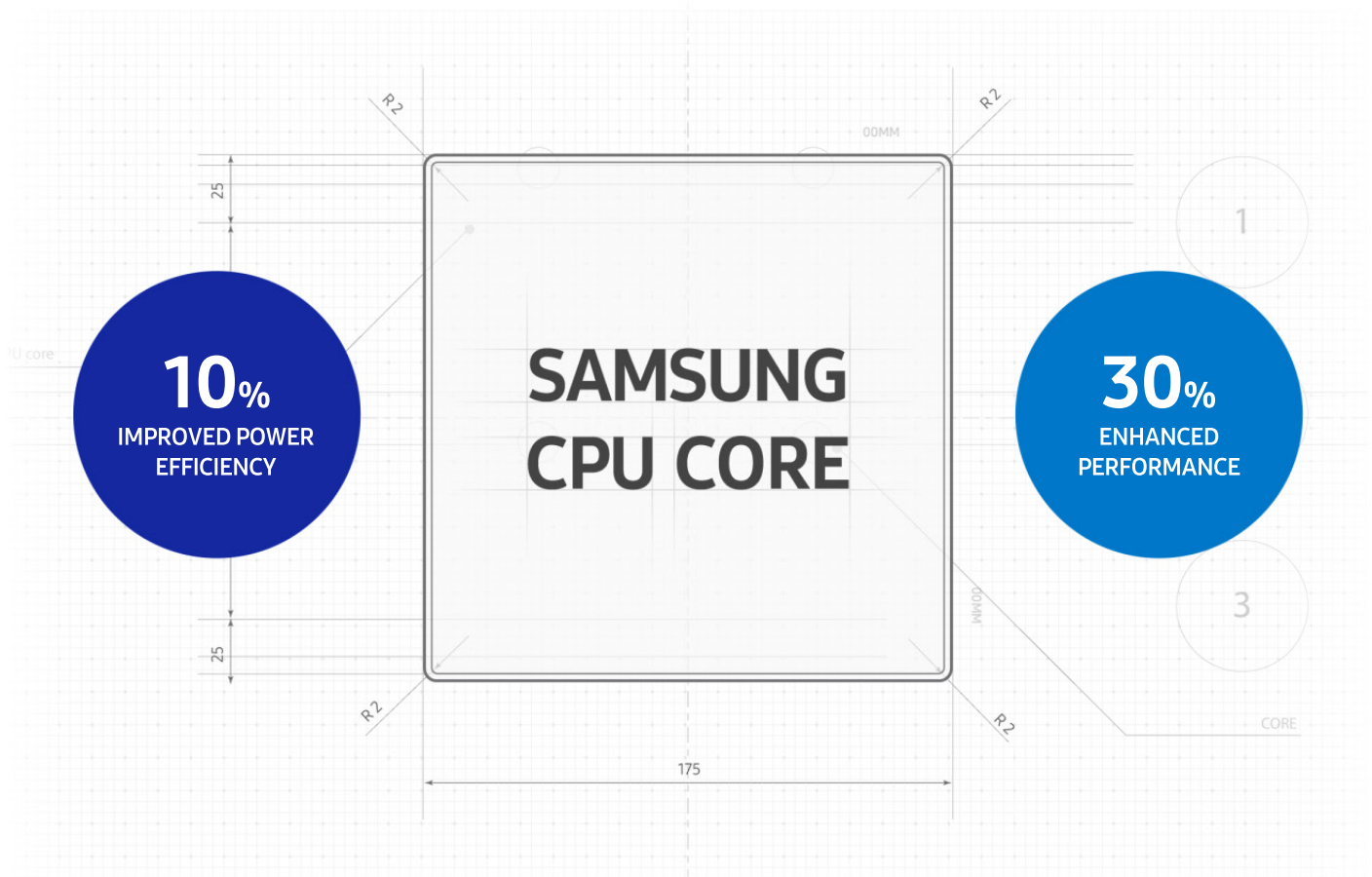
8890

| Exynos 8 Octa (8890)

THE SUPERB PROCESSOR ENGINEERED FOR SUPERLATIVE MOBILE EXPERIENCES

The Exynos 8 Octa (8890) is Samsung's premium application processor built on 14nm FinFET LPP process technology for unmatched performance and power efficiency. The Exynos 8890 features company's first custom designed CPU based on 64-bit ARMv8 architecture to break through the performance limitation from conventional CPU technology. The Exynos 8890 integrates LTE-advanced modem that supports latest LTE specifications up to Category 12/13 for faster and seamless mobile communication.

SAMSUNG



Custom CPU Core

Redesigned brain to redefine the speed

The Exynos 8890 has eight CPU cores including Samsung custom-designed CPU core based on 64-bit ARMv8 architecture. It provides over 30 percent improvement in performance and 10 percent in power efficiency compared to the Exynos 7 Octa. With Samsung's own SCI (Samsung Coherent Interconnect) technology, which provides cache-coherency between Samsung's custom CPU and Cortex-A53 cores, the processor fully utilizes benefits of big.LITTLE processing for offering perfect balance of performance and efficiency.

2nd generation 14nm FinFET process

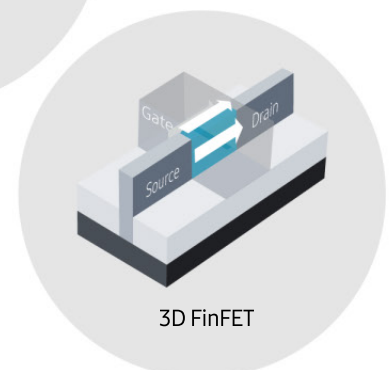
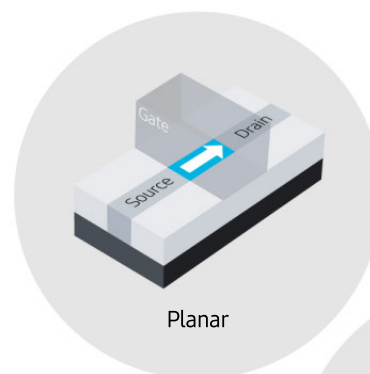
More power. More play.

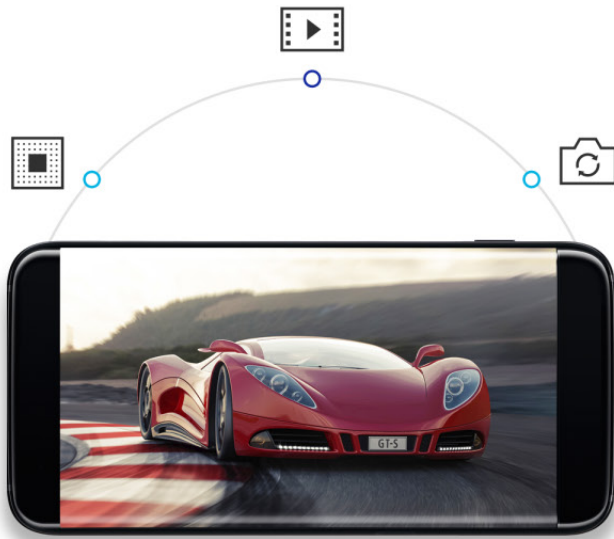
Exynos 8890 is built on 2nd generation 14nm FinFET LPP (Low-Power Plus) process for best-in-class performance and efficiency. In FinFET transistor, the gate is placed on multiple sides of each source and drain, controlling the current leakage more effectively. And carriers can move across the many surfaces of fins-shaped 3d structure in transistor resulting in fast speed of computing calculation.



+

Samsung's 14nm process uses FinFET structure, unlike the previous process' planar structure. In a planar structure, gate is attached to the transistor on only one surface, whereas in a FinFET structure, gate is attached on three sides of the channel allowing more effective control of the current leakage than planar. Also, in planar structure, electrons can only move from source to drain through one surface under the gate, whereas in FinFET structure, electrons can move across three surfaces of the fin-shaped 3D structure. Furthermore, with 14nm process' shorter gate length, which means shorter distance between the source and the drain, electrons need to move shorter distance enabling transistors to switch on and off quickly. Simply put, if the channel is a road, there are more number of lanes that are shorter in length. With more paths that are shorter in length, more electrons can move faster through the channel resulting in enhanced performance.





Advanced GPU, MFC and ISP

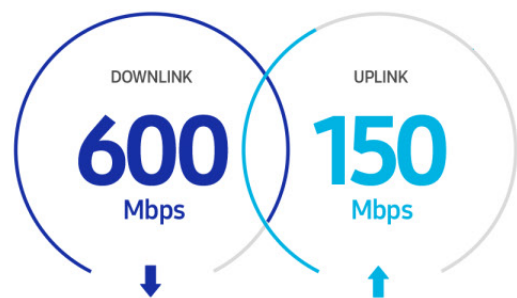
Sophisticated technologies to appreciate lifelike content

Exynos 8890 employs ARM®'s latest GPU, Mali™-T880, for graphic-intensive user interface, 3D gaming and life-like virtual reality experience. With 4K UHD video recording and playback capabilities thanks to the advanced MFC(Multi-Format Codec), and up to 4K UHD (4096x2160) & WQUXGA (3840x2400) display resolution support, users can enjoy life like visual experience. Furthermore, Exynos 8890 with advanced ISP enables smartphone camera to maximize its capabilities for great quality of photo and video.

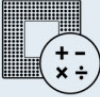








LTE-Advanced Modem

Fast and reliable connectivity

Exynos 8890 is a LTE-Advanced Category 12/13 modem integrated one-chip solution that supports downlink speed of up to 600Mbps and uplink speed of up to 150Mbps. Exynos 8 Octa supports FDD-TDD joint carrier aggregation for more flexible network usage resulting in reliable connectivity for seamless mobile network experiences.



Spec

 <p>CPU 2.3GHz Quad-Core (Custom Core) + 1.6GHz Quad-Core (Cortex[®]-A53)</p>	 <p>GPU Mali[™]-T880 MP12</p>	 <p>Process 14nm FinFET Process</p>	 <p>Display Up to WQXGA (3840x2400), 4K UHD (4096x2160)</p>	 <p>LTE Modem LTE Cat.12 3CA (DL) 600Mbps / Cat.13 2CA 150Mbps (UL)</p>
 <p>Video 4K UHD 60fps encoding and decoding with HEVC (H.265), H.264, VP9 Codec</p>	 <p>Memory LPDDR4</p>	 <p>Camera Rear 24MP, Front 24MP, Dual Camera 24MP+13MP</p>	 <p>Storage eMMC 5.1, UFS 2.0, SD 3.0</p>	

About Samsung Electronics Co., Ltd.

Samsung Electronics Co., Ltd. inspires the world and shapes the future with transformative ideas and technologies. The company is redefining the worlds of TVs, smartphones, wearable devices, tablets, cameras, digital appliances, printers, medical equipment, network systems, and semiconductor and LED solutions. For the latest news, please visit the Samsung Newsroom at <http://news.samsung.com>.

For more information

For more information about Samsung Exynos, please visit and follow

- Samsung Semiconductor Website : www.samsung.com/Semiconductor
- Exynos Website : www.samsung.com/Exynos
- Facebook : www.facebook.com/SamsungExynos
- Twitter : www.twitter.com/SamsungExynos
- Weibo : www.weibo.com/SamsungExynos

Copyright ©2017 Samsung Electronics Co., Ltd. All rights reserved. Samsung is registered trademark of Samsung Electronics Co., Ltd. Specifications and designed are subject to change without notice. Non-metric weights and measurements are approximate. All data were deemed correct at time of creation. Samsung is not liable for errors or omissions. All brand, product, service names and logos are trademarks and/or registered trademarks of their respective owners and are hereby recognized and acknowledged.