Huawei Kirin 970 SoC launched: Here's how it compares with Snapdragon 835, A10X Fusion and others- Technology News, Firstpost

Huawei just **launched** its latest System-on-Chip (SoC) for mobile devices at IFA 2017 in Berlin, **Kirin 970**. The company announced that with the launch of Kirin 970, it is focusing on 'the future of artificial intelligence'. Kirin 970 is the first SoC by Huawei to pack a dedicated Neural Processing Unit (NPU) meant for 'native AI processing'.

Image Credit: Huawei

Richard Yu, CEO of Huawei Consumer Business Group added, "As we look to the future of smartphones, we're at the threshold of an exciting new era. Mobile AI = On-Device AI + Cloud AI. Huawei is committed to developing smart devices into intelligent devices by building end-to-end capabilities that support co-ordinated development of chips, devices, and the cloud.".

He continued his statement by adding, "The ultimate goal is to provide a significantly better user experience. The **Kirin 970** is the first in a series of new advances that will bring powerful AI features to our devices and take them beyond the competition."

The Kirin 970 chipset is powered by an octa-core CPU built using 10 nm fabrication process. Huawei has also added a 12-core GPU in the package to ensure that the device can perform graphics-intensive jobs without any problem.

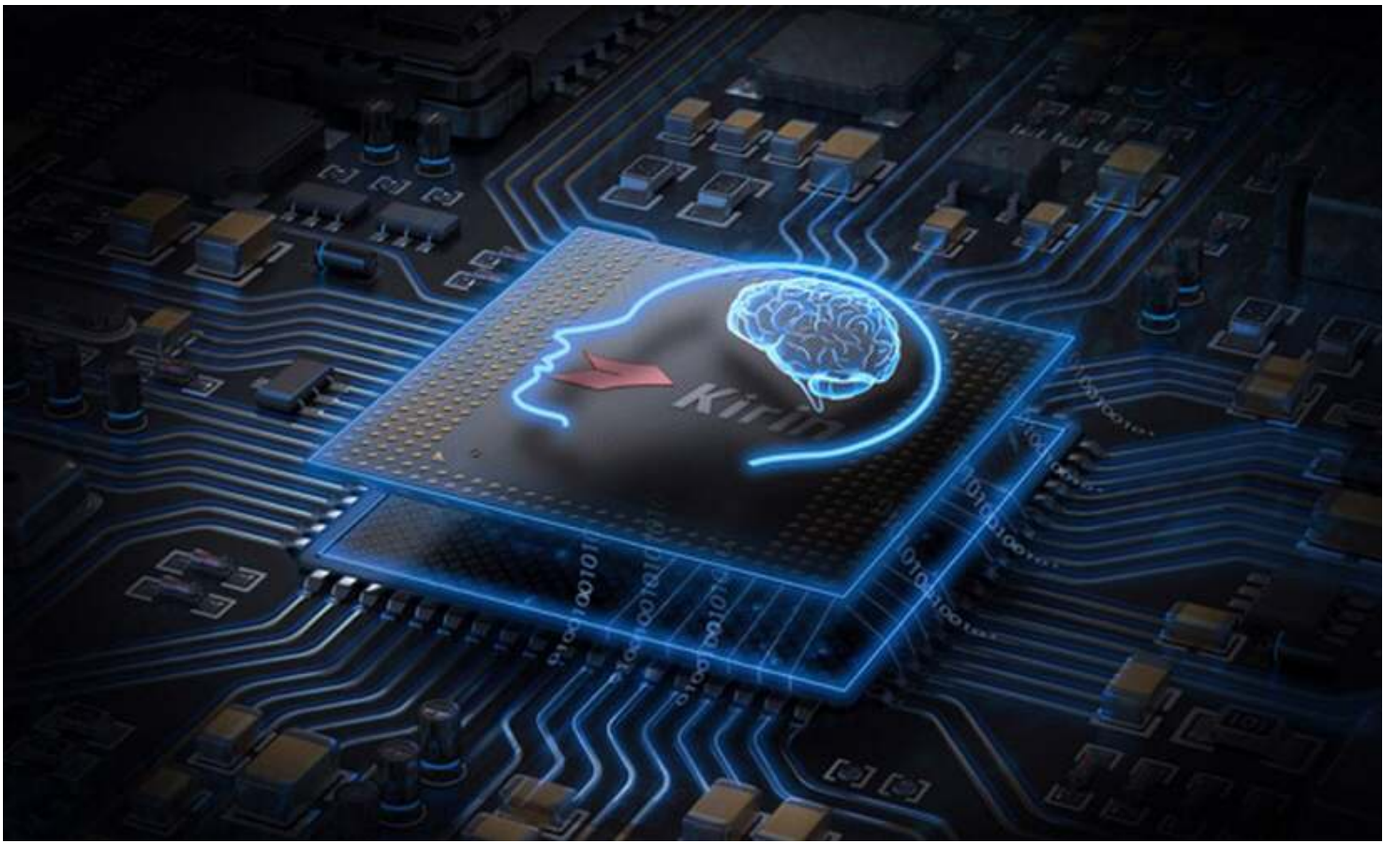

Image Credit: Huawei

The company is touting massive performance gains in AI-processing related jobs because of the presence of the dedicated NPU. According to the company, the NPU results in 25x improvement of performance and 50x improvement in efficiency. The best part about this NPU is that developers can use the NPU for their 3rd-party applications using the Kirin AI API making Kirin 970 ‘open platforms for mobile AI’. The SoC packs about 5 billion transistors. The company announced that Kirin 970 will debut on 16 October with Huawei Mate 10.

With the launch of this SoC, we thought that this is the right time to compare the flagship mobile SoCs from leading mobile manufacturers. We have taken the major mobile SoCs in the market like **Snapdragon 835** by **Qualcomm**, **Apple A10X Fusion**, **Samsung Exynos 9 Series (8895)** and **Helio X30** by **MediaTek** in addition to Huawei Kirin 970.

Image Credit: Samsung

One thing to note here is that the performance of the mobile SoC varies significantly on what kind of hardware configuration, operating system, and processor layout is employed by the OEM along with cooling facility. Due to such comprehensive list of variables, we are only taking in account, the specification of SoC on paper. In addition, a number of companies especially Apple have not specified some of the details about their SoC implementation. Here is how Huawei's Kirin 970 stacks against the competition:

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	Huawei Kirin 970	Qualcomm Snapdragon 835	Apple A10X Fusion	Samsung Exynos 9 Series (8895)	MediaTek Helio X30
Fabrication (nm)	10	10	10	10	10
Instructions set	ARMv8-A	ARMv8-A	ARMv8-A	ARMv8-A	ARMv8-A
CPU Microarchitecture	4x Cortex A73 @ 2.4 GHz + 4x Cortex A53 @ 1.8 GHz	4x Cortex A73 @ 2.45 GHz + 4x Cortex A53 @ 1.9 GHz	3× Hurricane + 3× Zephyr	4x Exynos M2 Mongoose @ 2.3 GHz + 4x Cortex A53 @ 1.7 GHz	4x Cortex A73 @ 2.6 GHz + 4x Cortex A53 @ 2.2 GHz + 2x Cortex A355
CPU Cores	8	8	6	8	10
CPU Frequency	2.4 GHz	2.45 GHz	2. 38 GHz	2.3 GHz	2.6 GHz
GPU Microarchitecture	Mali G72MP12	Adreno 540	NA	Mali G72MP12	MG PowerVR 7XTP-MT4
GPU Frequency	TBA	710 MHz	NA	546 MHz	850 MHz
GPU Cores	12	NA	12	NA	NA
GPU Performance (GFLOPS)	TBA	567	NA	375	NA

Memory Type	LPDDR 4X	LPDDR 4X	LPDDR 4	LPDDR 4X	LPDDR 4X
Memory Bus width	64-bit	64-bit	64-bit	64-bit	64-bit
Memory Frequency	TBA	1866 MHz	1600 MHz	NA	1866 MHz
Memory Bandwidth	29.8 Gbps	29.8 Gbps	NA	NA	27.8 Gbps
Cellular Modem	LTE Cat 18	LTE Cat 16, Cat 13	LTE Cat 9	LTE Cat 16, Cat 13	LTE Cat 10, Cat 13
Network Speed	1.2 Gbps	1 Gbps	NA	1 Gbps	NA
Neural Processing Unit	Kirin NPU	-	-	-	-

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