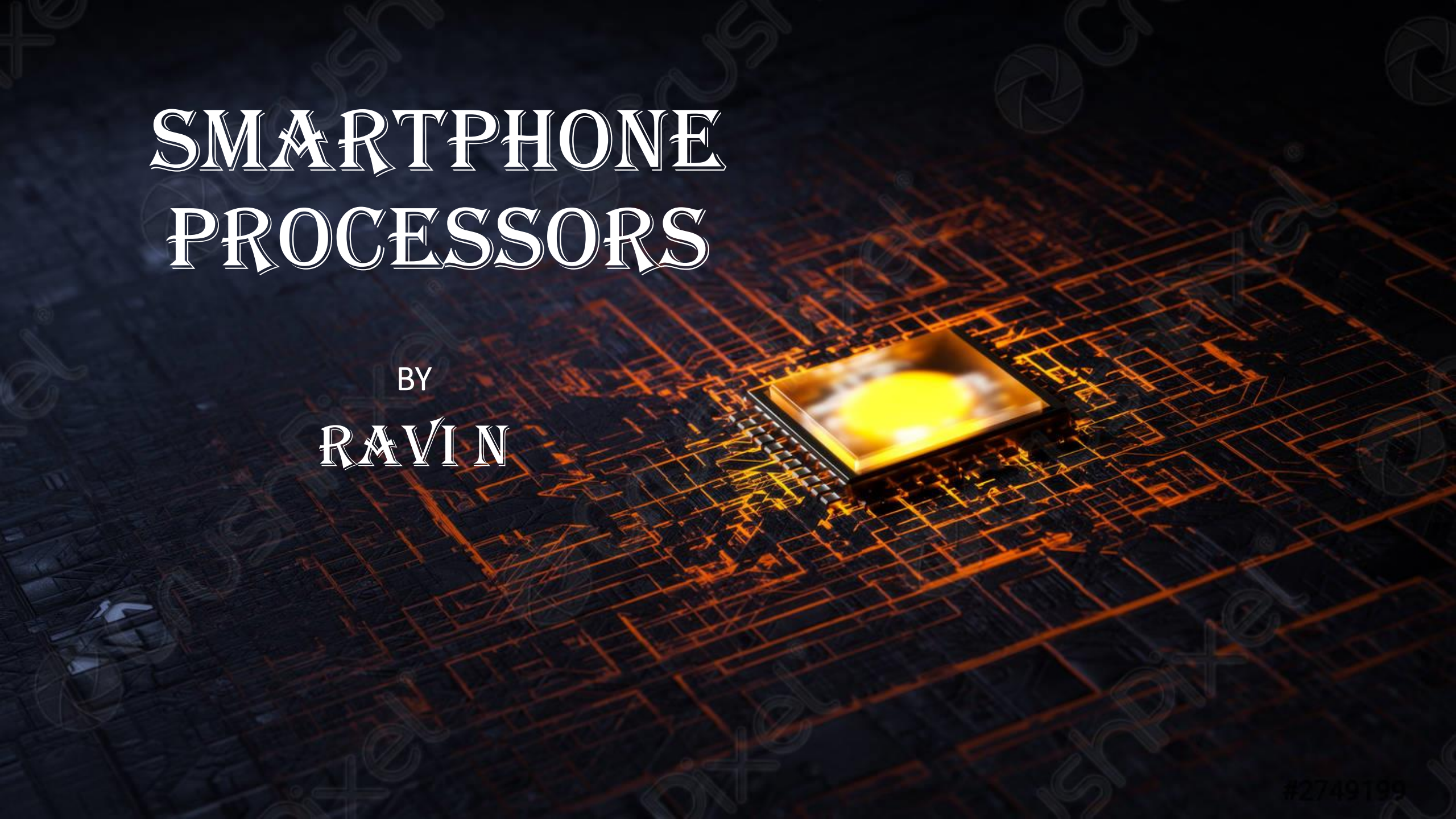
SMARTPHONE PROCESSORS

BY

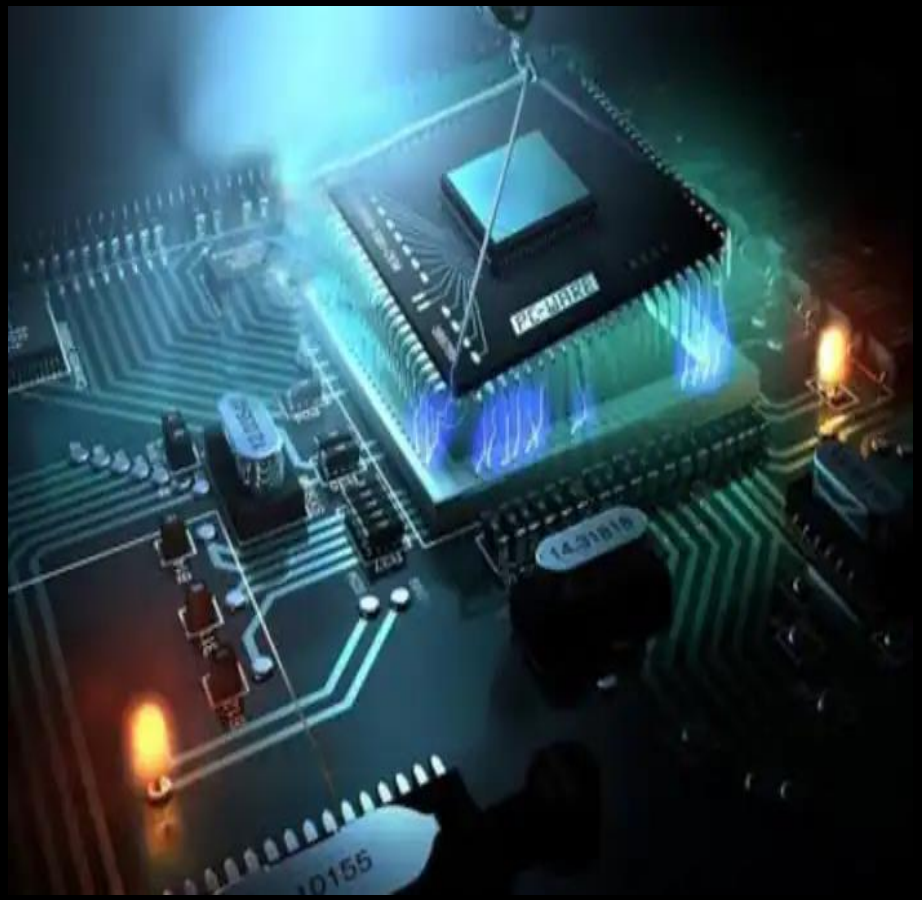
RAVI N



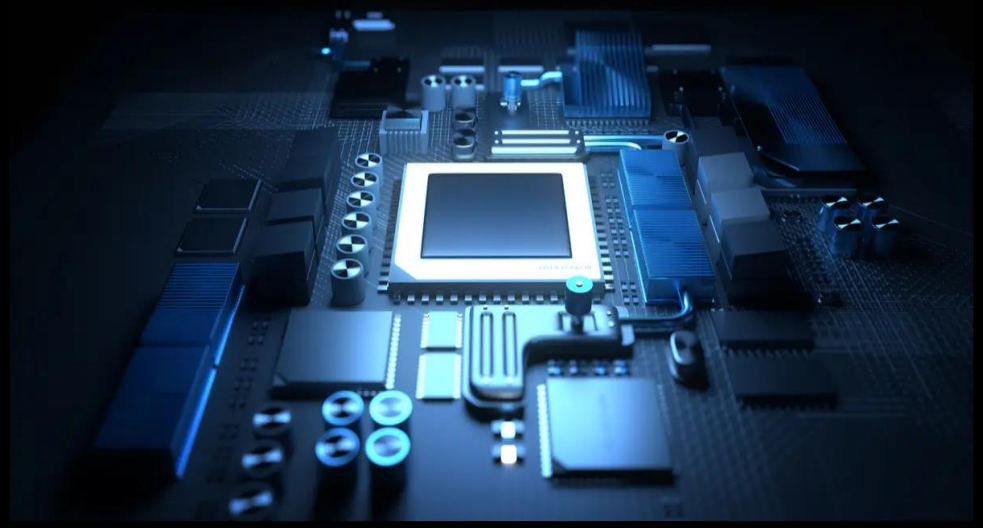
CONTENTS

INTRODUCTION

- Today’s smartphone processors are very powerful, so powerful that it is almost as powerful as a desktop computer.
- Processors are now coming with more cores. The processing speed has reached upto 3-3.5 GHz.
- The ability to include GPU (Graphic Processing Unit) inside mobile processors has enabled devices to best graphics picture, 3D capability, Virtual Reality capability and 4K recording.
- The improved processor technology also made today’s modern mobile devices more power efficient



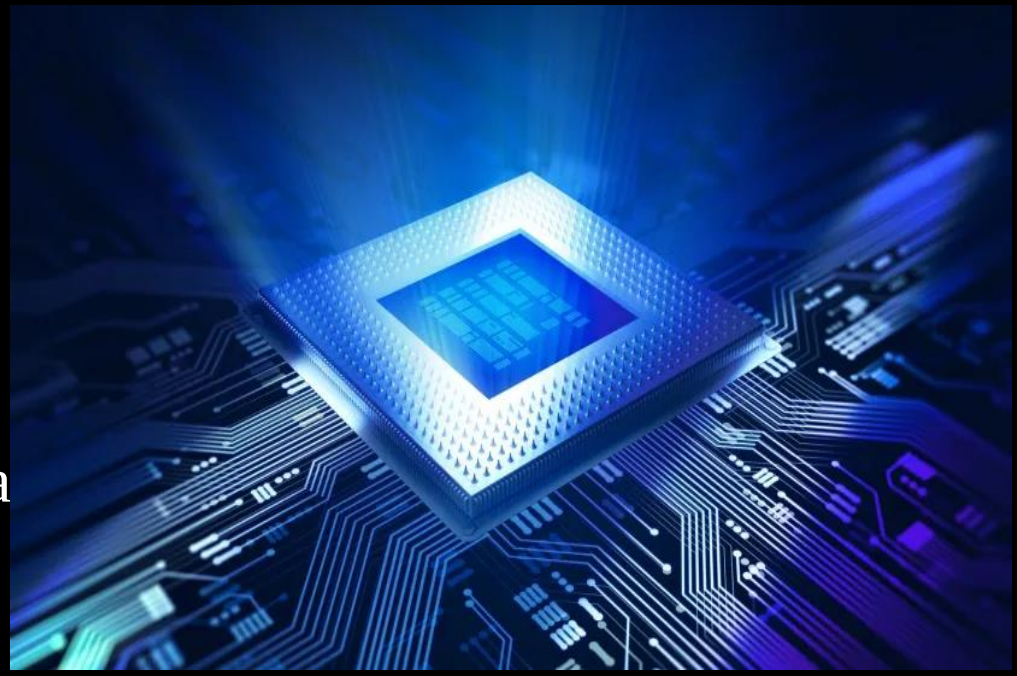
MOBILE PROCESSORS



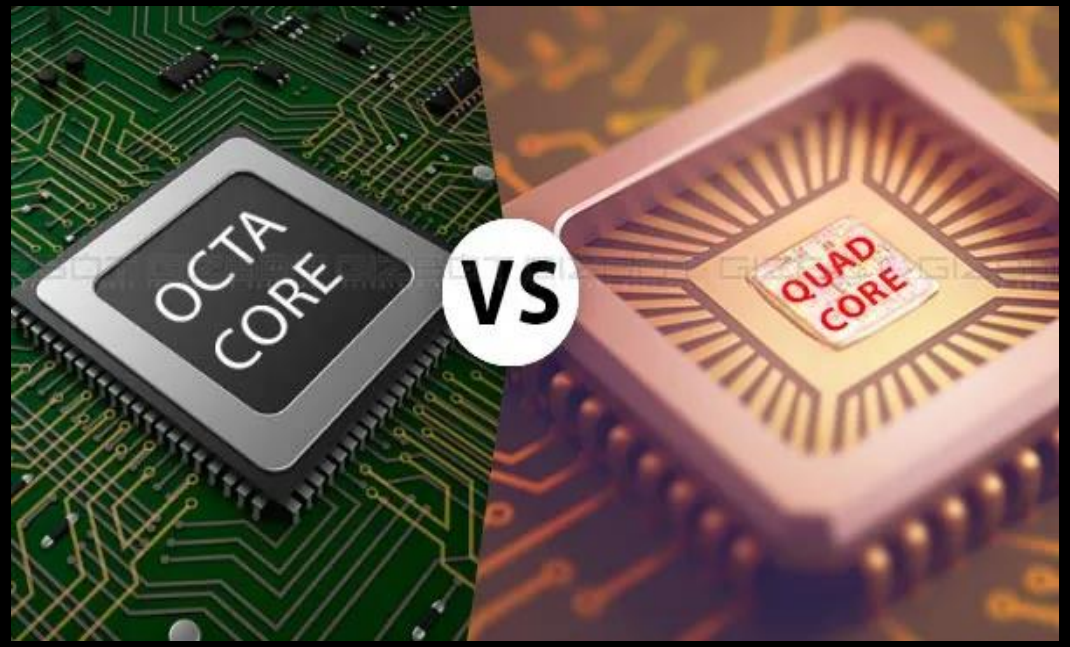
- A **mobile processor** is found in mobile computers and cellphones.
- A CPU chip is designed for portable computer, It is typically housed in a smaller chip package, but more importantly, in order to run cooler, it uses lower voltages than its desktop counterpart and has more sleep mode capability.
- A mobile processor can be throttled down to different power levels or sections of the chip can be turned off entirely when not in use.

HOW PROCESSOR WORKS

- The performance of your smartphone is influenced largely responsible for the speed, efficiency, and battery life of your smartphone—the processor.
- This is the "brain" of your smartphone. The CPU receives commands, makes instant calculations, and sends signals throughout your device.
- There are multiple ways to gauge the performance of a CPU besides checking the Gigahertz (GHz) speed or the number of CPU cores (a.k.a dual-core and quad-core and octa-core).



WHAT’S A CORE



- It is an element found in the main processor that reads and executes the instructions.
- Device began with a single-core processor ; but engineers created more powerful devices by including more cores in one device.
- That led to dual-core, Quad-core, and Octa-core processors and Deca-cores used in smartphones and tablets.
- More the number of core in a processor, More efficient is the processor

ADVANTAGES OF MULTIPLE CORE

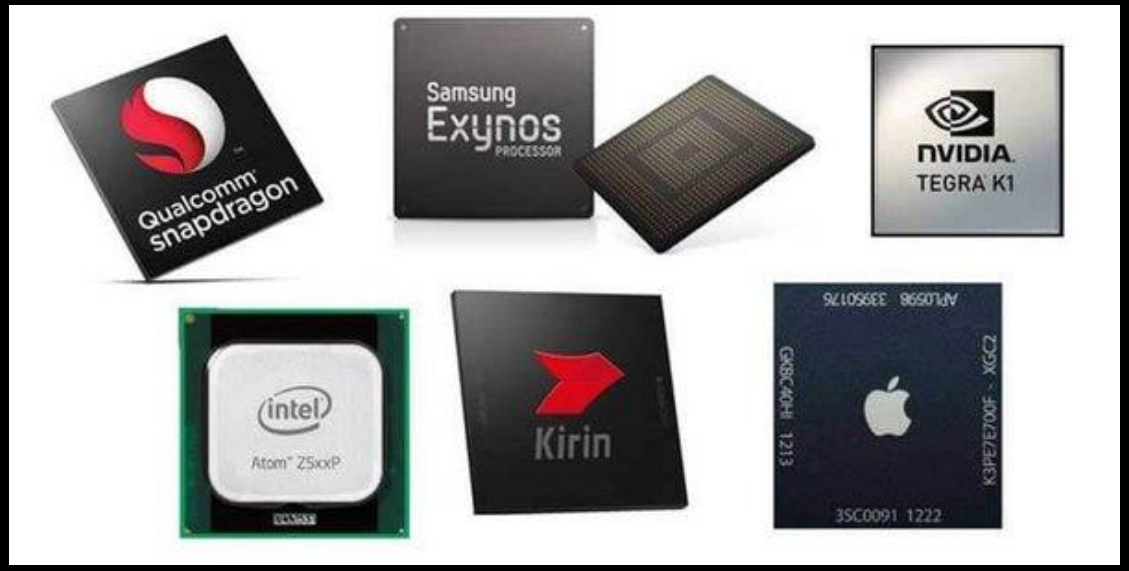
- Lower power consumption, Higher performance per watt
- Faster Web page load times
- Higher Performance for Demanding Applications
- Faster Multitasking
- Higher Quality Gaming

NANOMETER TECHNOLOGY

- nm stands for nanometer, a unit of measure for length. 1nm is equal to 0.000000001 meters—which is absolutely minute.
- In a CPU, nm is used to measure the size of the transistors that make up a processor.
- There are billions of transistors in a CPU that perform calculations through electrical signals by switching on and off.
- Lower nm is better for your machine due to More Power Efficient, Less Cooling Required, Transistors Are Faster

TYPES OF PROCESSORS

1. Apple bionic chips
2. Qualcomm snapdragon processors
3. Mediatek
4. Exynos
5. Kirin
6. Intelrom
7. Arm cortex

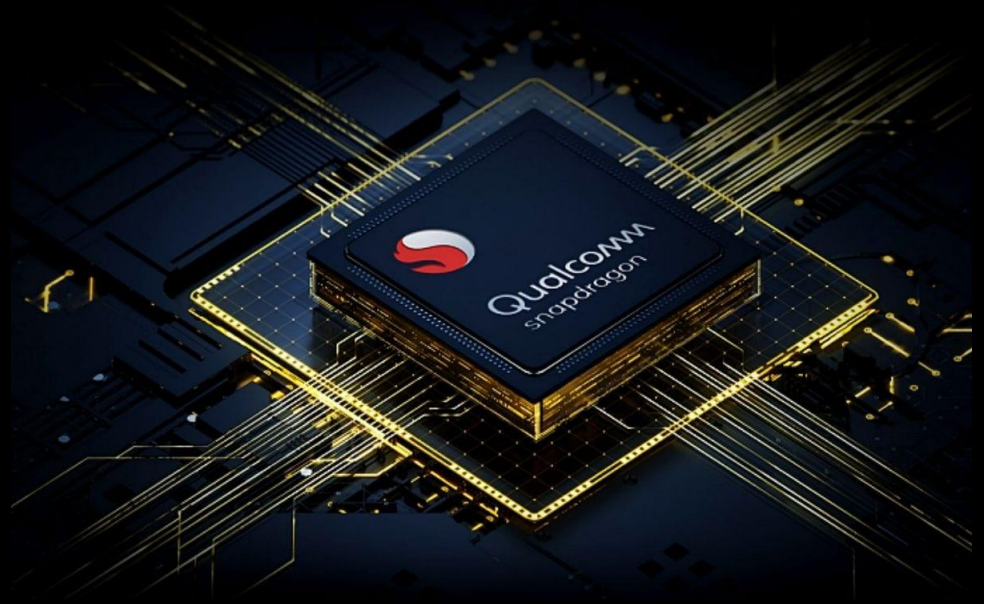


Apple bionic chips

- The Apple A16 Bionic features an Apple-designed 64-bit six-core CPU implementing ARMv8.6-A. with two "Everest" [9][10] high-performance cores running at 3.46 GHz
- The A16 contains 16 billion transistors, a 6.7 % increase from the A15's transistor count of 15 billion.
- this used in the iPhone 14 Pro and 14 Pro Max models only.

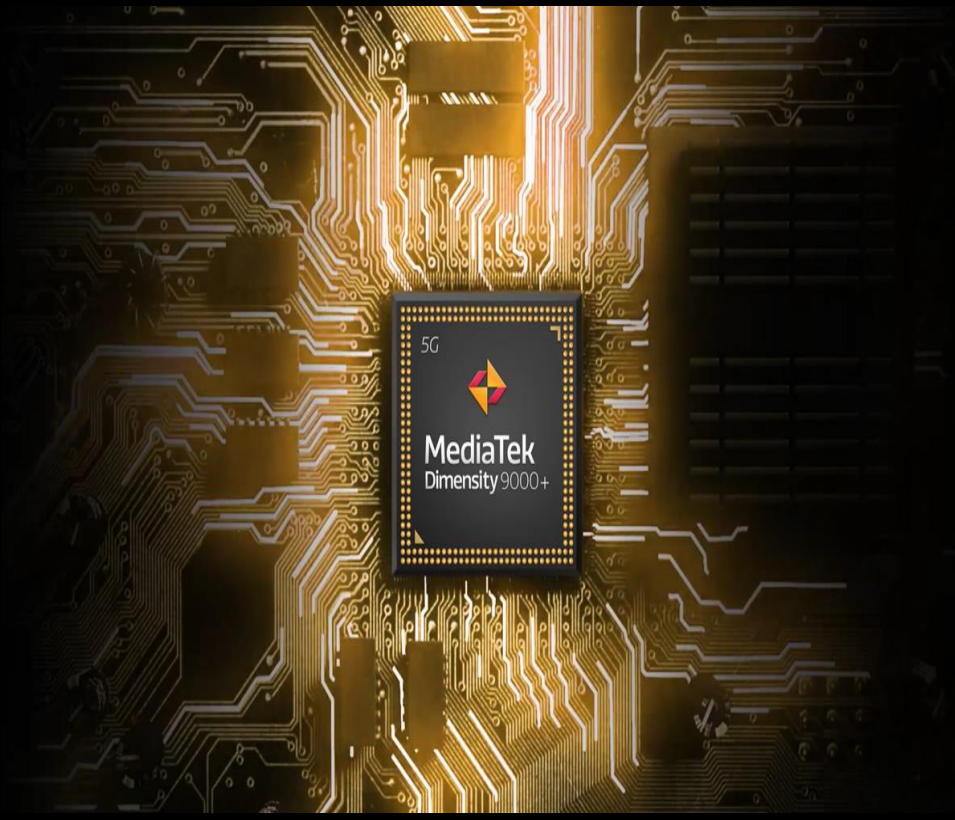
Qualcomm snapdragon processors

- Qualcomm unveiled the Snapdragon 8 Gen 1 chipset at Snapdragon Tech Summit in Hawaii.
- The Snapdragon® 8+ Gen 1 Mobile Platform is latest premium-tier powerhouse.
- This is the company’s front runner and that which will power most of the flagships of 2022.



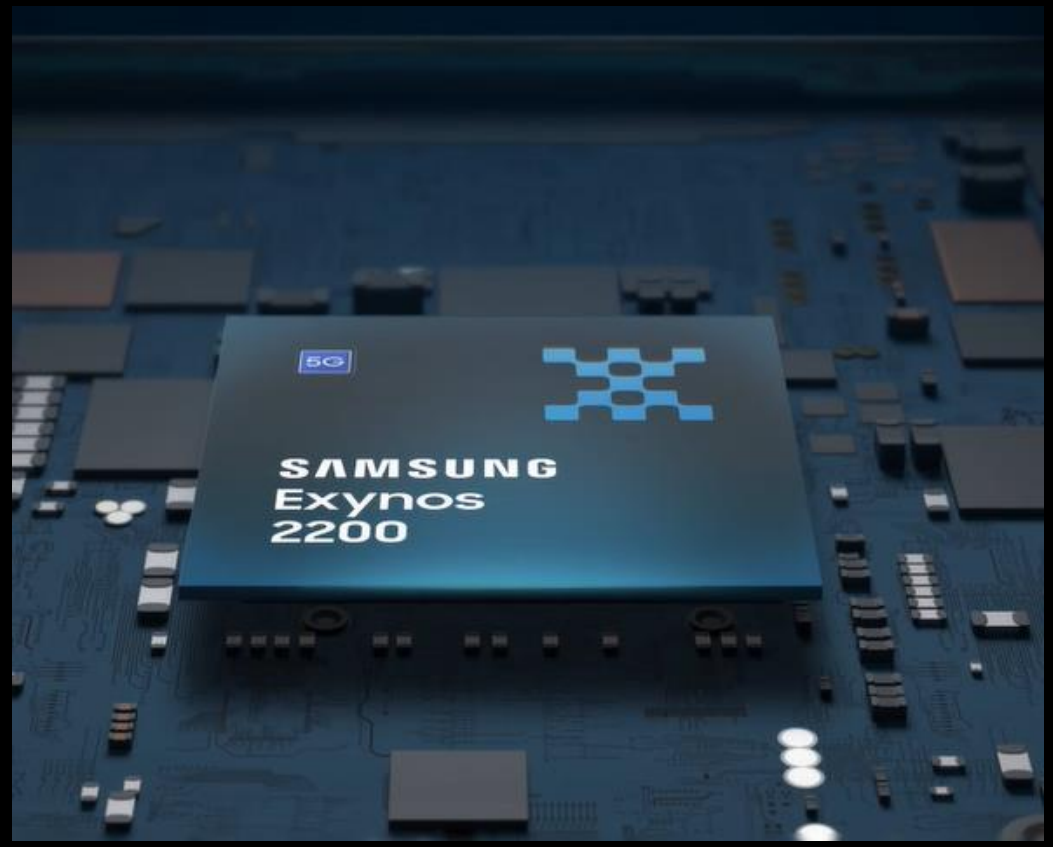
Mediatek Dimensity

- The top mobile chip in MediaTek's stable is described as a "milestone of innovation," and that "everything inside its super powerful—yet super power efficient—4nm package screams flagship chip."
- The Dimensity 9000 delivers a sizable 35 percent performance advantage over other Android flagships, and is reportedly 37 percent more power efficient too.



EXYNOS

- The Samsung Exynos 2200 is a high end SoC with 8 cores in three clusters.
- Samsung Exynos 2200 – an 8-core chipset that was announced on January 18, 2022, and is manufactured using a 4-nanometer process technology.



CONCLUSION

- It is very difficult to predict the future. When it comes to mobiles, the speed at which new features are added every day, it is even more difficult.
- You can have improved CPU and RAM for lightning speed data transfer and 5G or more networking technology.
- We can expect multi-core CPU s potentially up to 16+ cores


Thank you!