

MEDIATEK

Global Product & Technology Launch



TL Lee

General Manager
Wireless Communications BU

July 30, 2019

Strong Commitment in India

- Established first office in Noida India in 2004
- 1/3 of all mobile handsets in India is powered by MediaTek
- Over 700+ employees in India
- Strong R&D commitment in India

15 YRS+



Top Selling Models in India



OPPO F11
OPPO F11 Pro

MediaTek Helio
P70



OPPO A5s

MediaTek Helio
P35



Vivo V15

MediaTek Helio
P70



Realme 3

MediaTek Helio
P70



Xiaomi Redmi 6

MediaTek Helio
P22



Xiaomi Redmi 6A

MediaTek Helio
A22

Helio G90 Series : Extensive Indian Team Involvement

**Collaboration with
Customer to
Define Product**

**Most Extensive
India R&D Team
Involvement**

**First to Announce
Globally**

MediaTek
helio | G90

Series



MediaTek
HyperEngine

Game Technology



Thomas Ho

Senior Director Wireless Communications BU

Introducing : Brand New Gaming Series

2.2
Billion

Mobile Gamers

3
Top

Most Popular Mobile Applications

- Gaming
- Social Networking
- Shopping

64
%

64% of global mobile gaming revenue from Asia

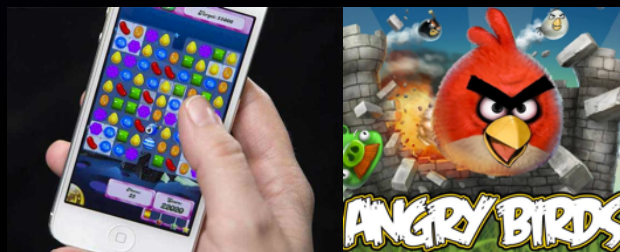
Evolution of Mobile Gaming

2G / Feature Phone



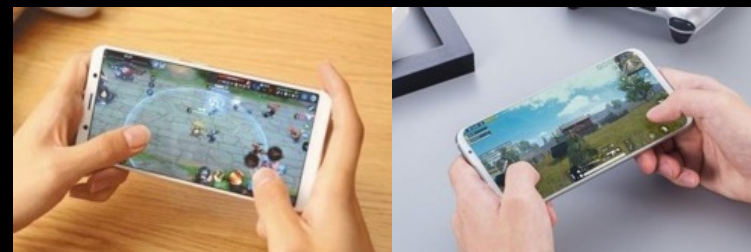
- Keypad
- Low system requirements

3G / Smartphone



- Touch screen
- Higher system requirements
- Single player

4G ERA



- PC games being adopted for mobile
- Multi-player online game
- Very high system requirements

Immersive Multi-Player online games are immensely popular now

#1

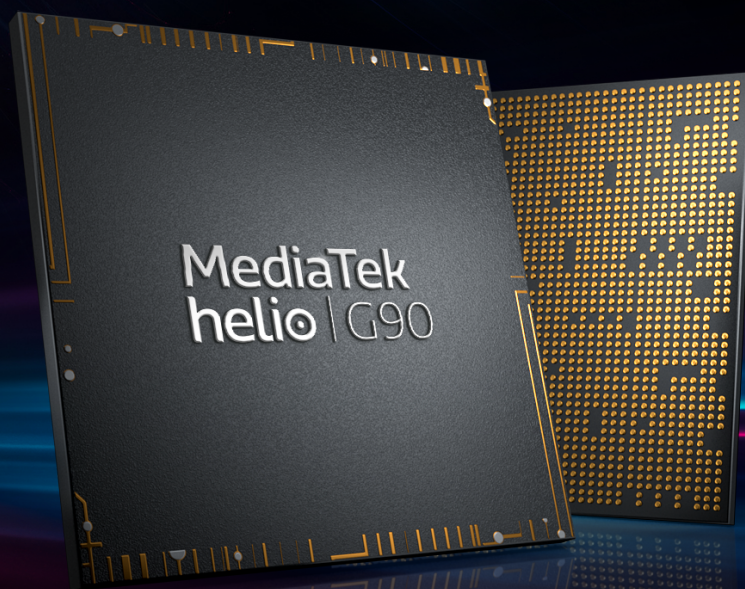
MOBA

#2

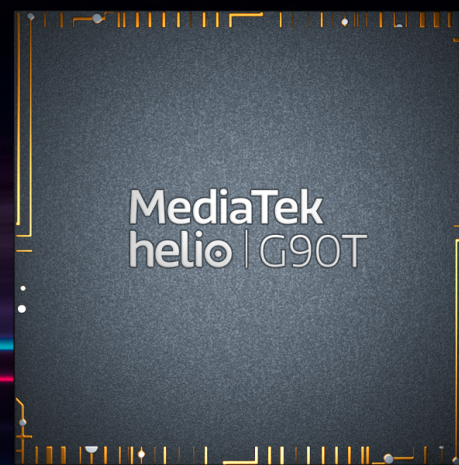
BATTLE ROYALE

- Higher CPU / GPU and system requirements
- 4G / WiFi connection becomes extremely important

Brand New Gaming Series : Designed Especially for Gamers



MediaTek helio | G90



MediaTek helio | G90T

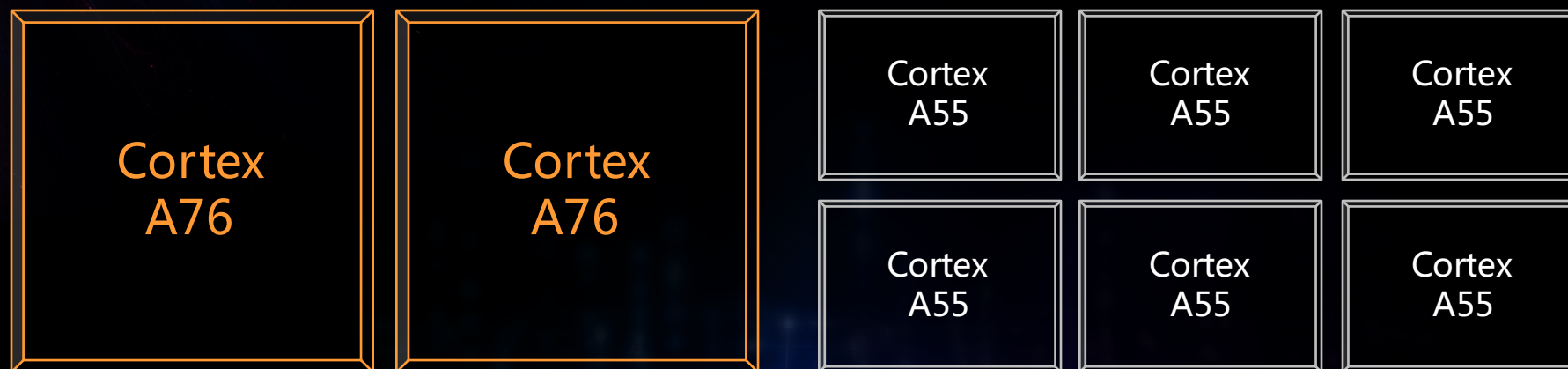
MediaTek helio | G90

MediaTek helio | G90T

Flagship Cortex-A76 CPU Dual Core A76 + 6x A55, up to 2.05GHz	○	Flagship Cortex-A76 CPU Dual Core A76 + 6X A55 up to 2.05GHz
Flagship Mali G76 GPU ARM Mali G76 MC4 720MHz	●	Flagship Mali G76 GPU GPU Performance better by 11%
Dual Core APU Architecture	○	Dual Core APU Architecture
LPDDR4x, Support 8GB Storage 2133MHz Dual Channel	●	LPDDR4x, Support up to 10GB Storage 2133MHz Dual Channel
3x ISP, Support 48MP / Triple Camera Support Real-Time Bokeh/ AI Face Detection	●	3x ISP, Support 64MP / Quad Camera Support Real-Time Bokeh/ AI Face Detection
Support Full-HD+ 21:9 60Hz Full Screen	●	Support Full-HD+ 21:9 90Hz Full Screen
LTE Cat-12 Network Support Support VoLTE / ViLTE, 4x4 MIMO	○	LTE Cat-12 Network Support Support Dual VoLTE / ViLTE, 4x4 MIMO
Intelligent Dual Mic Wake-up/ Single Wake-up word	●	Intelligent Dual Mic Wake-up/ Dual Wake-up words

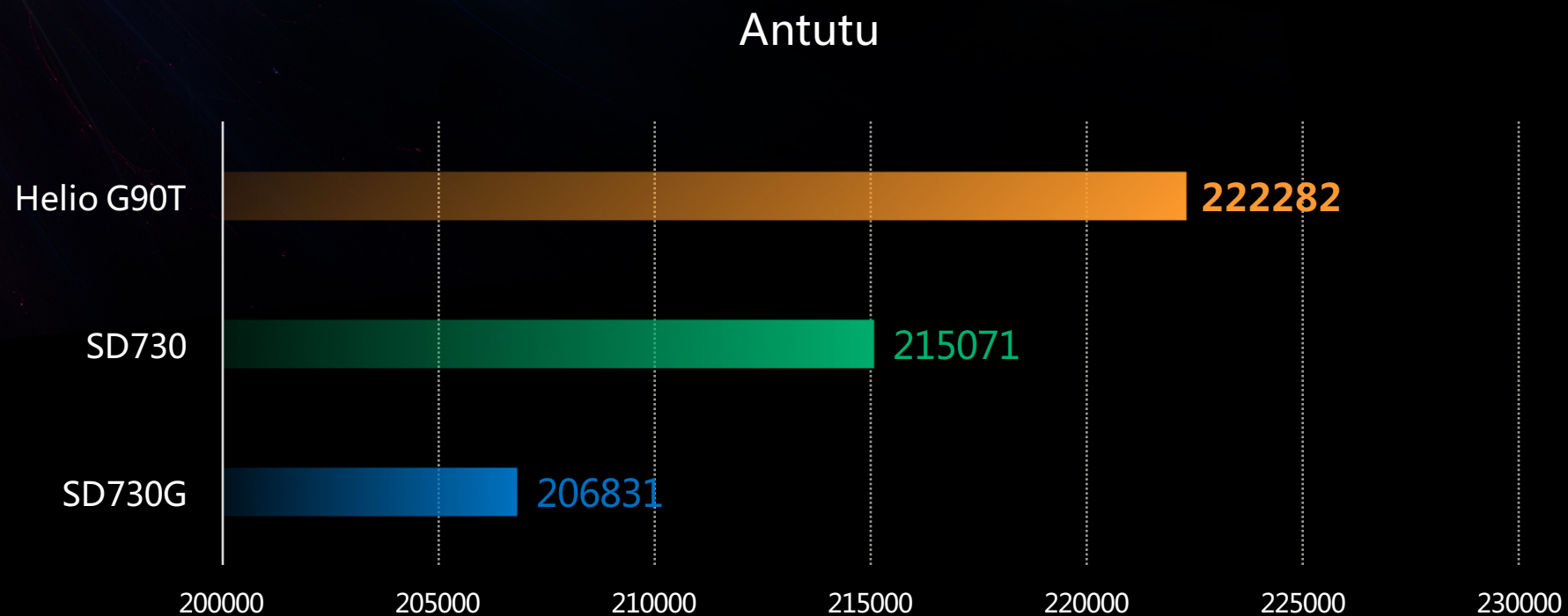
Flagship Big Cortex A76 Cores

Arm Cortex-A76 & Cortex-A55 CPUs in Octa-Core combination



Antutu Performance Benchmark

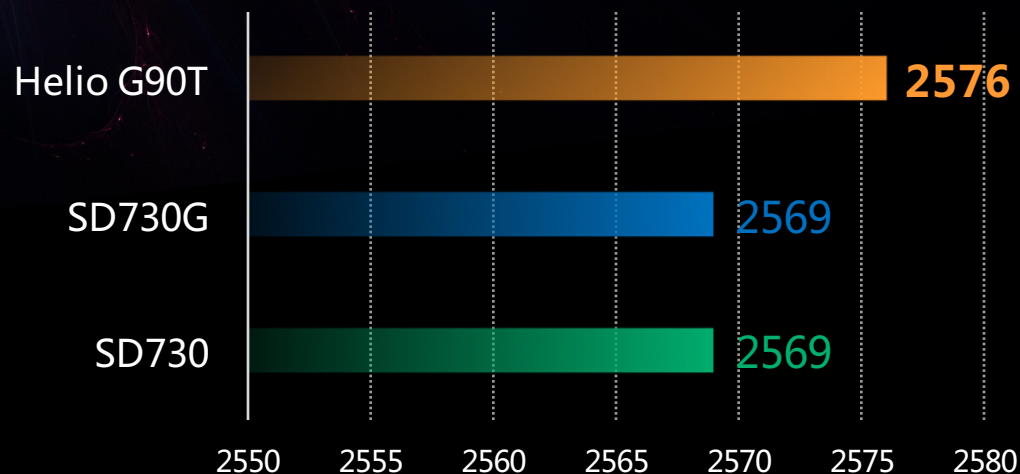
Outperforms SD730 by 3%; SD730G by 7%



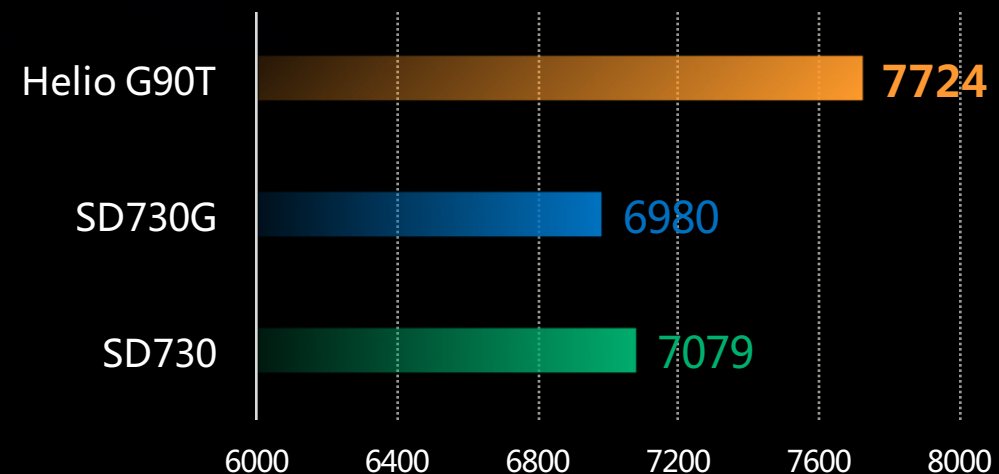
GeekBench 4.1 : CPU Performance Benchmark

Multi-core score better than SD730G by 10 % ; better than SD730 by 9%

Geekbench - Single



Geekbench - Multi



Flagship Mali G76 GPU

4 big customized cores. Optimized for peak gaming performance.

30% ↑

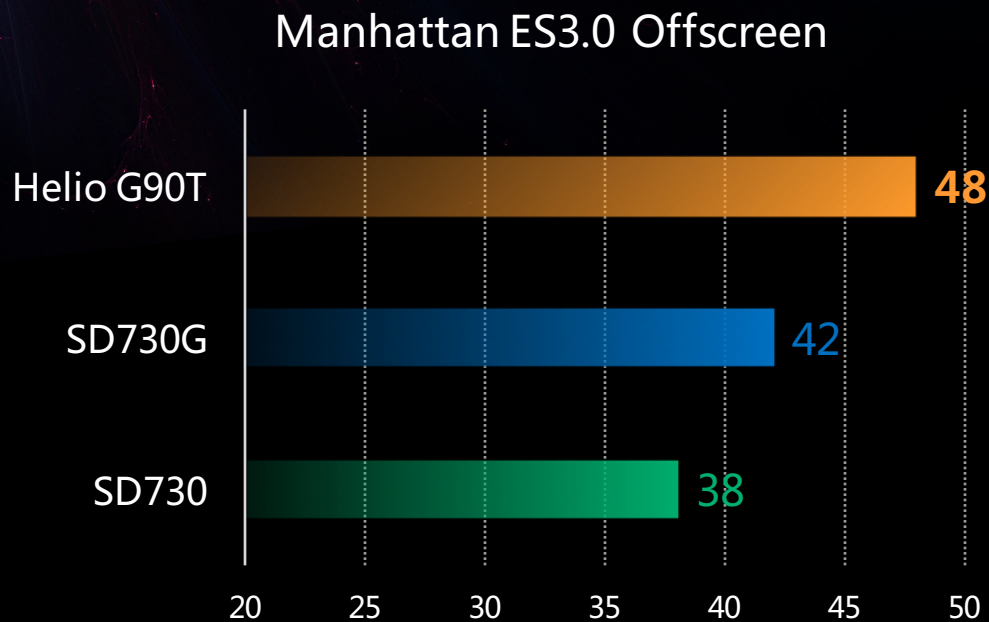
Performance Boost

(vs. previous gen. G72 GPU)



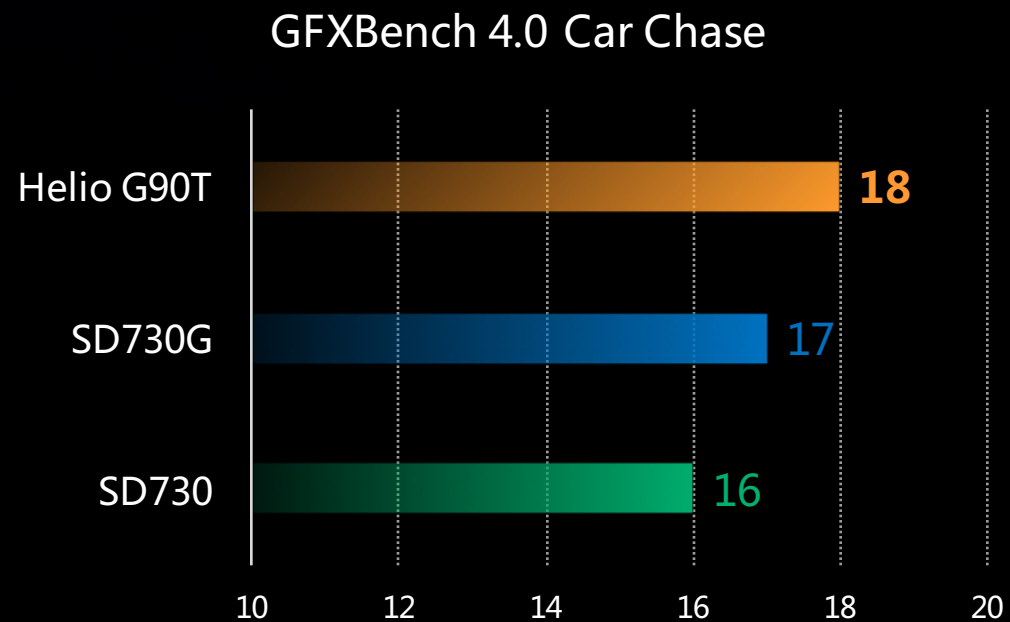
GFX 4.0 Manhattan 3.0

Better than SD730G by 14% ;
Better than SD730 by 26%



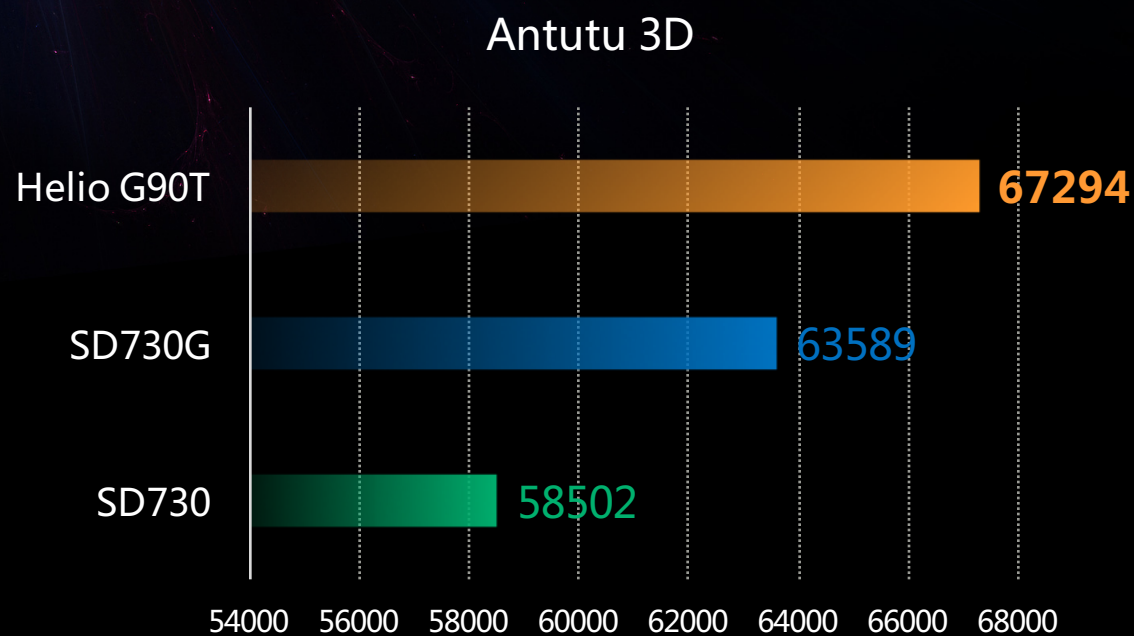
GFX 4.0 Car Chase

Better than SD730G by 5% ;
Better than SD730 by 13%



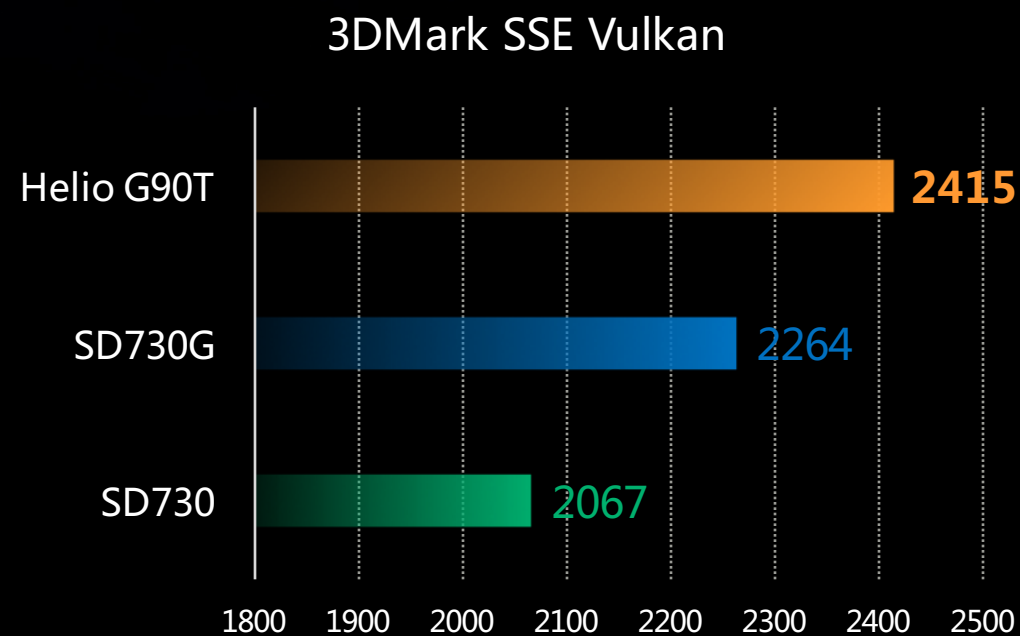
Antutu 3D

Better than SD730G by 6% ;
Better than SD730 by 15%



3D Mark

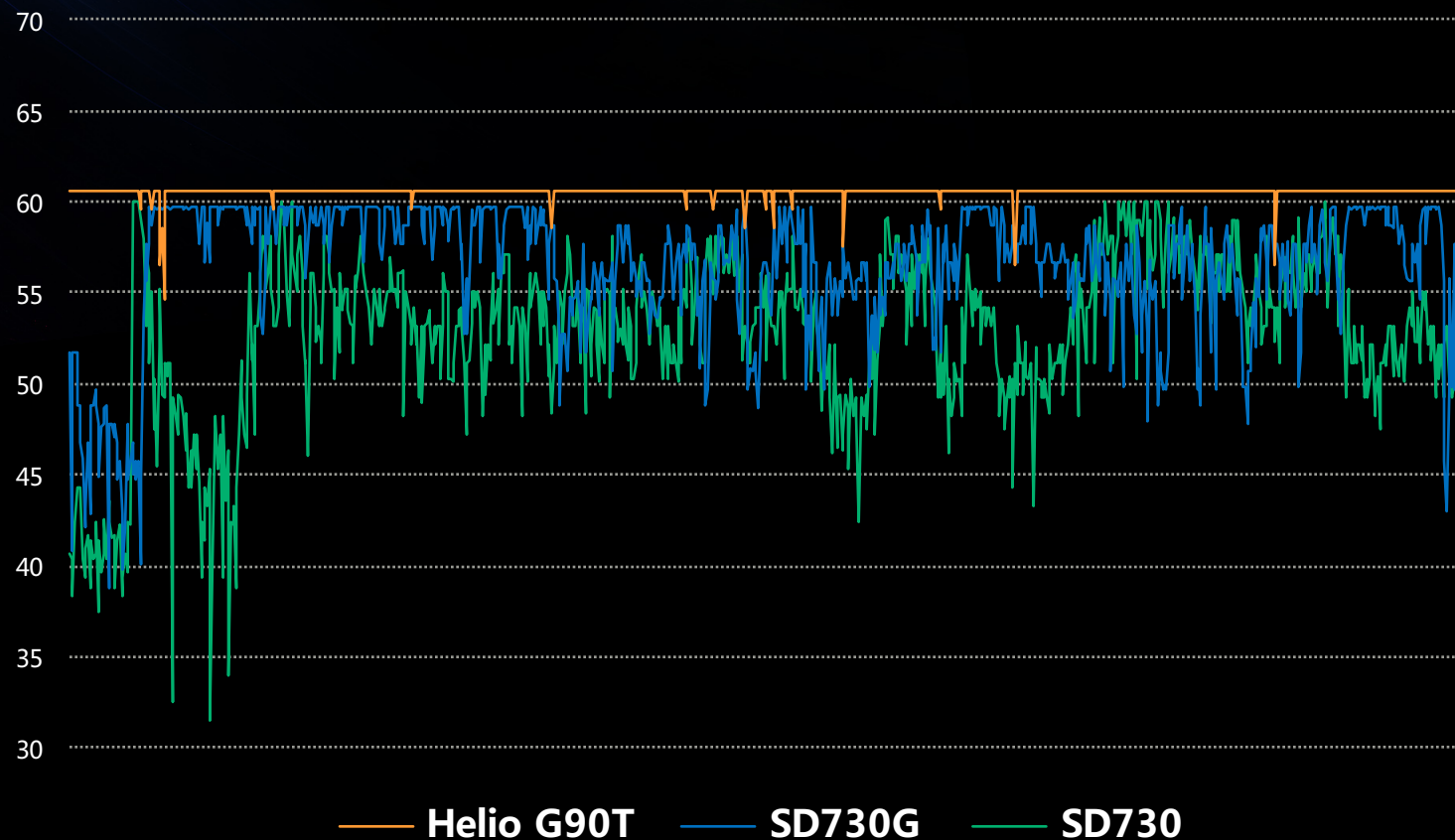
Vulkan performance
Better than SD730G by 6%;
Better than SD730 by 16%



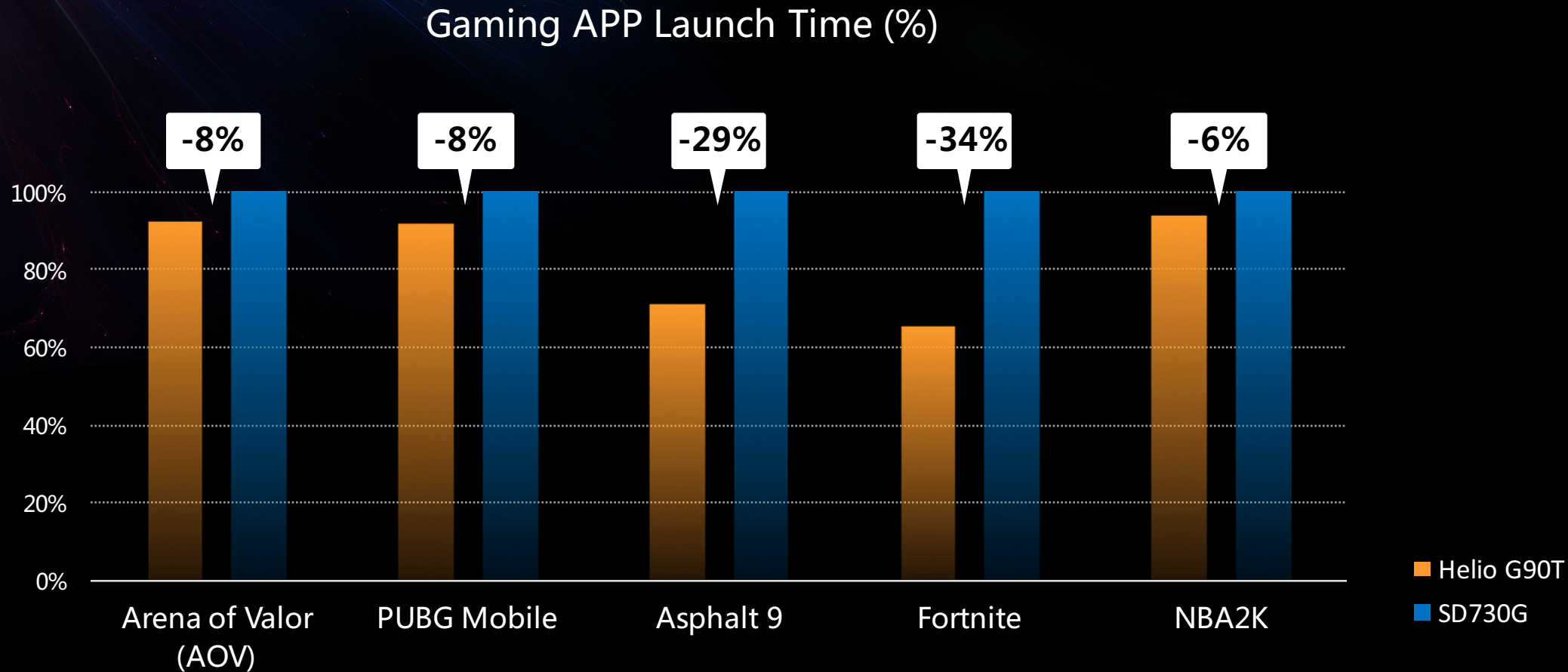
Popular Gaming Performance Comparison

Knives Out @60FPS + HD

	FPS
Helio G90T	60.5
SD730G	56.8
SD730	53.2



Faster Gaming APP Launch Time



Helio G90T Performance: Ahead of competition on all fronts

Flagship Dual-Core A76 CPU

- Antutu score 220,000 +
- CPU Multi-core Score better than competition by 10%

Flagship Quad-Core G76 GPU

- GFX 4.0 ahead of competition by up to 26%
- Antutu 3D / 3D Mark by up to 16%

Gaming Performance

- Smooth FPS, low stutter rates
- Game launch time faster than competition by up to 34%

Chip-level Optimizations Covering Gamer Needs

Faster
**Display
Response**

Faster
**Connection
Speeds**

True-to-life
Picture Quality

Fluid Gaming
Experience





MediaTek HyperEngine

Game Technology

MediaTek HyperEngine™ Game Technology

Designed for the Best Game Experience Ever



Networking
Engine



Rapid Response
Engine



Resource Management
Engine



Picture Quality
Engine

Networking

Engine



Networking Engine

Ensure gamers enjoy the lowest latency gameplay experience



- When in **crowded network situations** or **weak signal environments** (ex. crowded train station or in basement) , HyperEngine can determine best network concurrency option, to **ensure gamers enjoy lowest latency gameplay experience**
- Network concurrency is triggered by Intelligent Network Prediction Engine in just **13ms**

Networking Engine

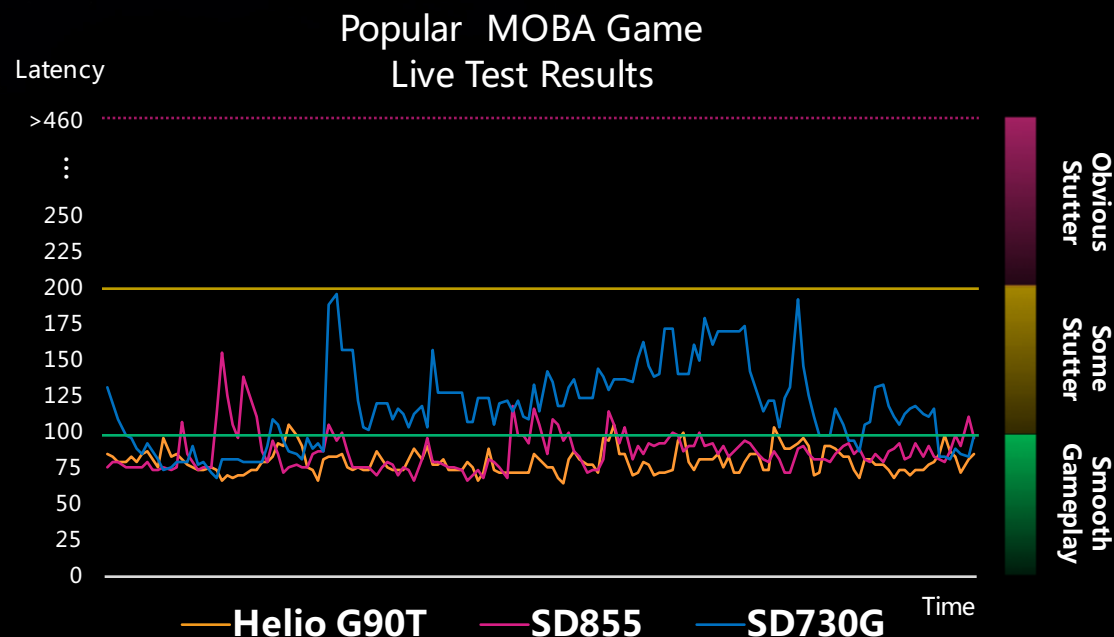
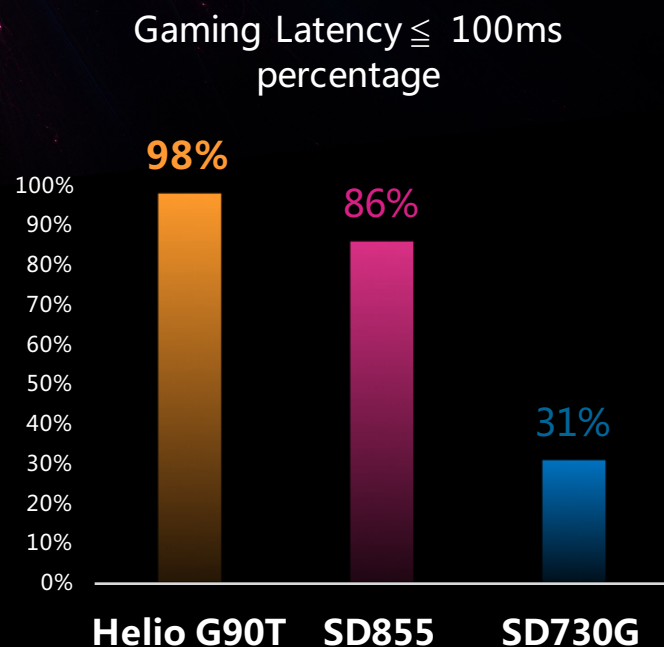
Test Environment : In basement with weak LTE network signal



Collaboration with
XunYou Game Booster

MediaTek HyperEngine™ Benchmark

Gaming Latency $\leq 100\text{ms}$ (Better than industry accepted benchmark $<200\text{ms}$)



TÜV Rheinland High Network Connection Performance (Gaming)



Word's **FIRST** to receive certification for
"High Network Connection Performance"
on mobile gaming platforms

3 Test Categories **52** Test Items

**Game Performance
Under Different Hand Posture Interference**

**Game Performance
Under Harsh Network Environment**

**Game Performance
Under Network Concurrency**

Rapid Response Engine



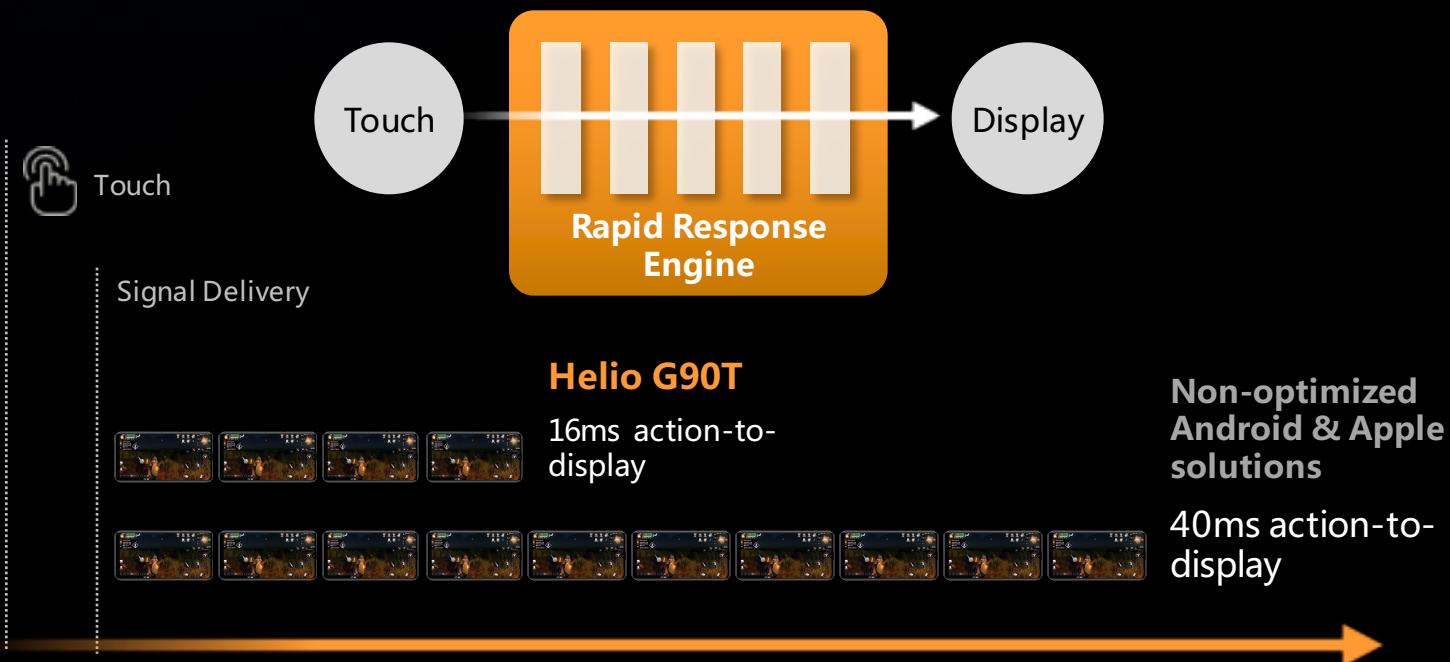
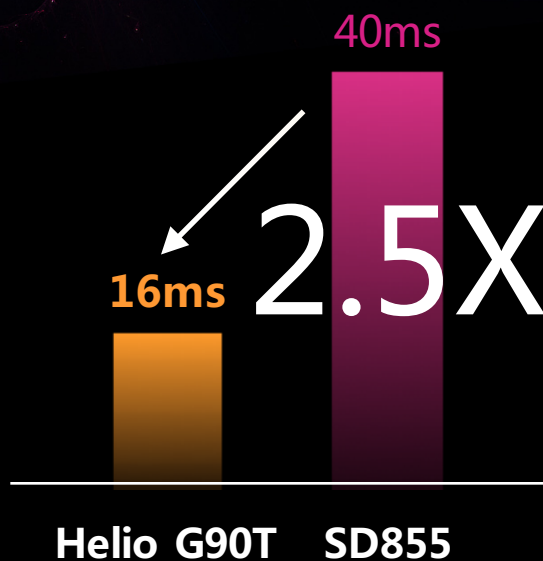
Rapid Response Engine

Shortened Chip Processing Latency from Touch to Display

MediaTek HyperEngine™ Benchmark

Chip Processing Latency $\leq 16.6\text{ms}$ (60FPS Games)

Popular MOBA Game Live Test
Chip Processing Latency



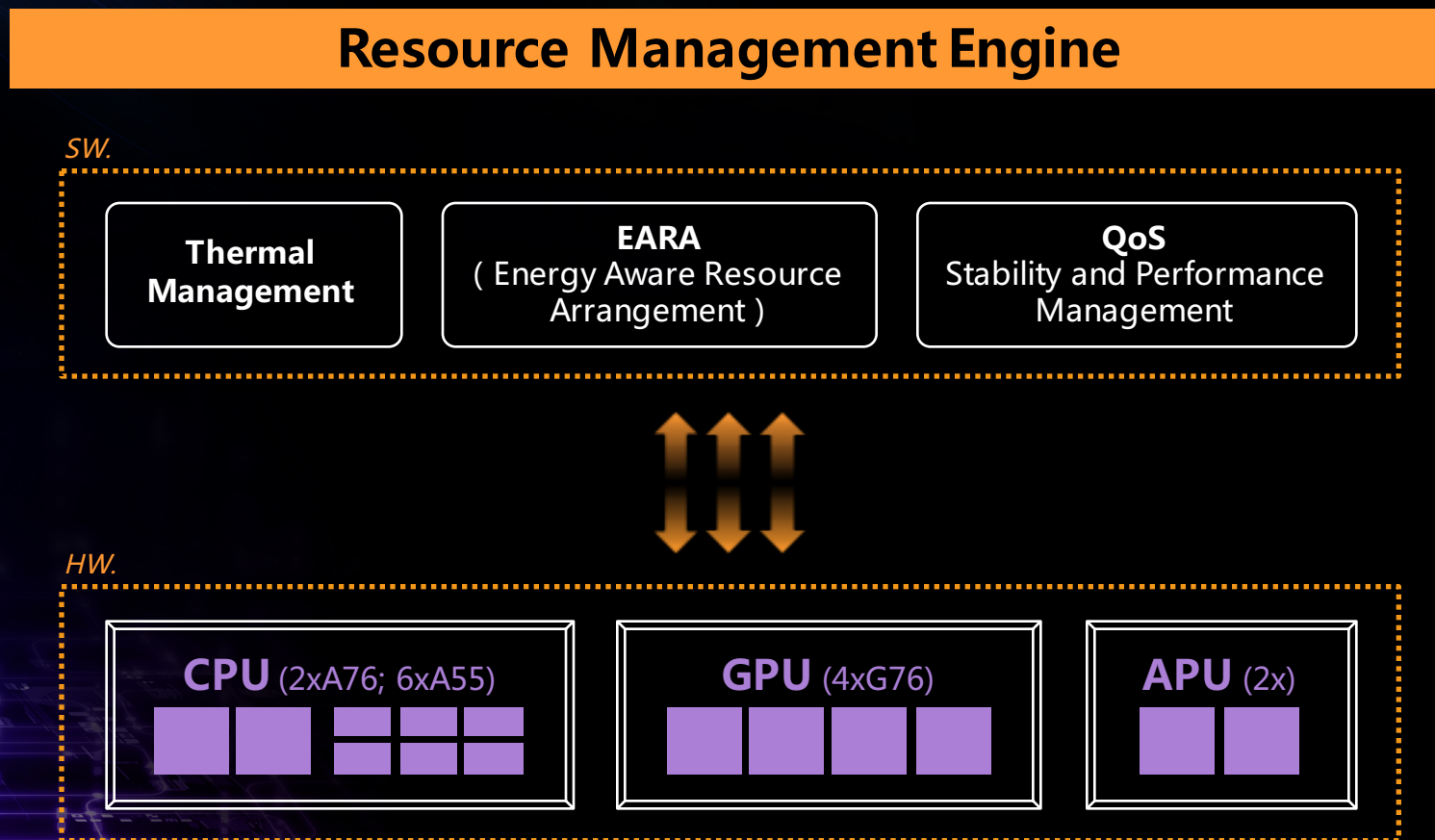
Resource Management Engine



Resource Management Engine

Intelligent resource management for smoother gameplay

- High FPS doesn't ensure smooth gameplay
- Resource Management Engine intelligently manage CPU / GPU / DRAM resources
- Precise prediction of resource loading to complete tasks with adequate resources



Resource Management Engine

- Smoothness on par with SD855, and significantly better than SD 730G
- Serious stutter when gaming on SD 730G, stutter rate is approx. 3x higher than Helio G90T

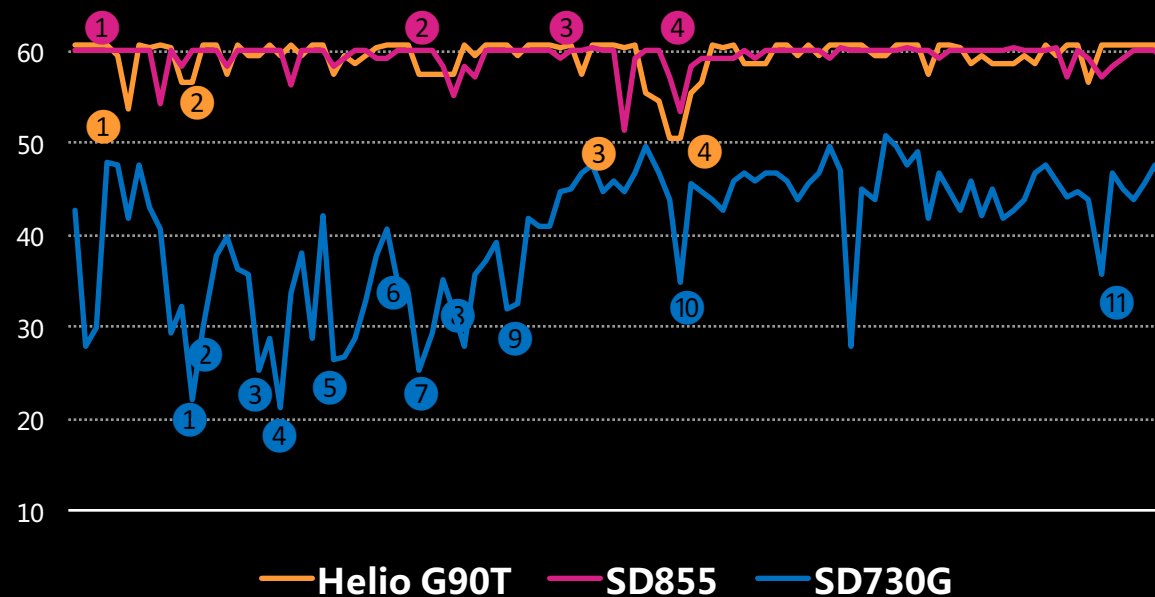
MediaTek HyperEngine™ Benchmark

Smooth Gameplay : Stutter Rate \leq 2 per min

Meteor Butterfly And a Blade
LIVE TEST RESULTS (2mins)

	# of Stutter	Stutter Rate	Performance
Helio G90T	4	2	Smooth
SD855	4	2	Smooth
SD730G	11	5.5	Serious Stutter

Meteor Butterfly And a Blade LIVE TEST RESULTS



Picture Quality

Engine



Picture Quality Engine

Enhance contrast and brightness, for true-to-life gaming experience

- MiraVision™ intelligently controls contrast based on content
- Support Hollywood-movie grade HDR10 standards for theatre-like experiences
- Picture Quality Engine can view dark battlegrounds clearly, even in the dark

Picture Quality Engine **ON**



Picture Quality Engine **OFF**



Content Source : **LIFEAFTER**

MEDIATEK

HyperEngine Game Technology Better than Industry Benchmarks

Networking Engine



MediaTek Benchmark

Network Latency
(≤ 100)

WiFi/
LTE

- **Helio G90T : 98%**
- SD855 : 86%
- SD730 : 31%

Rapid Response Engine



MediaTek Benchmark

Chip Processing Latency
($\leq 16\text{ms}$)

- **Helio G90T : 16ms**
- SD855 : 40ms
- SD730 : 40ms

Resource Management Engine (Smooth Gameplay)



MediaTek Benchmark

Stutter Rate (2/min)

- **Helio G90T : 2**
- SD855 : 2
- SD730 : 5.5

Picture Quality Engine



MediaTek Benchmark

MiraVision™

- **Helio G90T : YES – Local Tone Mapping**
- SD855 : NO
- SD730 : NO

Designed Especially for Mobile Gamers

MediaTek
helio | G90
Series



MediaTek
HyperEngine



Networking Engine



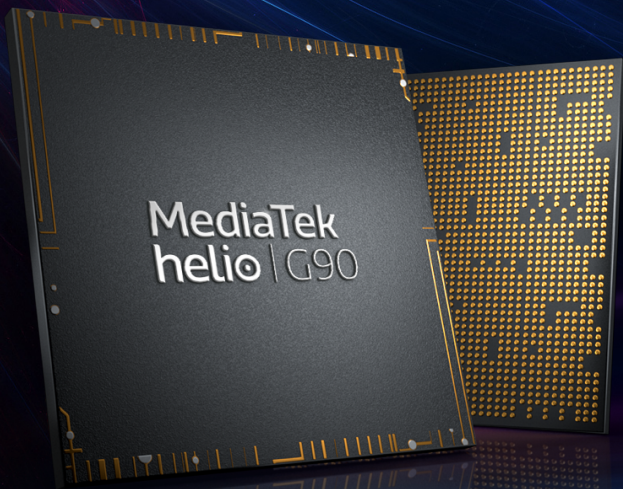
Rapid Response Engine



Resource Management Engine



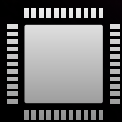
Picture Quality Engine



Series

All new
**MediaTek
helio | G90** + **MediaTek
HyperEngine**
Series Game Technology

Powerful Performance, Even Better Experience



Flagship A76+ G76
Performance



Networking
Engine



Rapid Response
Engine



Resource Management
Engine



Picture Quality
Engine

The background of the image is a solid orange color with a subtle, repeating pattern of white circuit lines and dots, resembling a printed circuit board (PCB). In the center, the word "MEDIATEK" is written in a bold, white, sans-serif font. The text is contained within a white-outlined parallelogram shape that is slightly tilted to the right.

MEDIATEK

everyday genius