MediaTek Helio P90

AI powerhouse with no compromises

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Within the P90, MediaTek has combined a powerful octa-core cluster of Arm Cortex-A75 and A55 CPUs with large L3 cache, a high-performance IMG PowerVR GM 9446 GPU, the performance-leading APU 2.0 and a fast LPDDR4X memory controller. MediaTek Helio P90's new CorePilot control supports ACAO (all cores all open) and a series of fluid gaming enhancements that altogether provide an unprecedented potential for the device makers and app developers to tap into, and a smartphone experience their users can rely on.

Generating 1165GMACs, the new APU 2.0 creates one of the most powerful AI hardware units available in a smartphone today, delivering 4.6 times the performance over the MediaTek Helio P60 and P70.

The AI-camera synergy offers a wealth of enhancements, such as fast and secure facial recognition, or beautification and relighting, even as you preview your portraits. A new AI-enhanced low-light noise reduction algorithm is also the first ever AI-feature in CV-performance.

Using the latest 48MP camera sensors, a new wave of premium smartphones can capture incredible, super-resolution photos or high-frame-rate shots at 120FPS in 16MP. Dual camera arrays benefit from the P90's high-performance hardware depth engine that's 6X faster and 2.25X higher resolution than competitor alternatives, as well as incredibly precise edge detection by combining this with neural network processing.

Dual 4G Dual VoLTE is available on the MediaTek Helio P90, enabling both SIM's with 4G LTE. VoLTE and ViLTE provide the best possible call and live video experience, with faster call setup time noticeably better sound quality. With 4G LTE benefits, the second SIM also has faster connectivity, VoLTE/ViLTE support, more reliable coverage, lower power consumption and meets the needs of 4G-only operators.

APU 2.0

- AI performance leadership: 1165 GMACs
  - 4X more powerful than previous generation P series
  - 50% faster than high-end competitor SoC
- 10-20% faster at INT8
- Greater power efficiency at FP16

AI-accelerated experiences

- 5-person human pose tracking
- Full body avatar AR
- 3D pose tracking
- Multiple object identification (Google Lens)
- AR/MR acceleration
- Semantic segmentation
- Scene identification

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AI	MediaTek APU 2.0
CPU	Octa-Core: 2x ARM Cortex-A75 @ 2.2GHz; 6x ARM Cortex-A55 @ 2.0GHz
GPU	IMG PowerVR GM 9446 GPU
Memory	2-Channel LPDDR4x up to 8GB, 1866MHz
Storage	UFS 2.1
Camera	48MP or 24+16MP
Display	2520 x 1080 (Full HD+) at 21:9
Modem	4G LTE Cat-12 (DL) / Cat-13 (UL) (FDD/TDD), 4x4 MIMO, 3CA, 256QAM, HPUE, IMS (VoLTE\ViLTE\WFC), eMBMS, Dual 4G VoLTE (DSDS), Band 71, TAS 2.0
Connectivity	802.11 a/b/g/n/ac, Bluetooth 5.0, GPS + Glonass + Beidou + Galileo, FM radio

For more information, visit
mediatek.com

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CorePilot

- Sustainable high performance at low-power
- Thermal Monitoring
- UX Monitoring
- Energy Awareness

Highly Capable Camera System

- 48MP single camera
- 24+16MP dual camera
- Single or dual camera bokeh (DoF)
- 14-bit RAW and 10-bit YUV processing
- 48MP@30FPS with ZSD
- 16MP@120FPS

AI Camera

- AI-NR low-light photography or video with live preview
- Video bokeh in live preview
- AI Depth Mapping: Faster hardware depth engine + NN edge-precision
- Portrait relighting in live preview
- Multi-frame super resolution
- "Best Shot" burst capture
- Real-time beautification in live preview or streaming

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