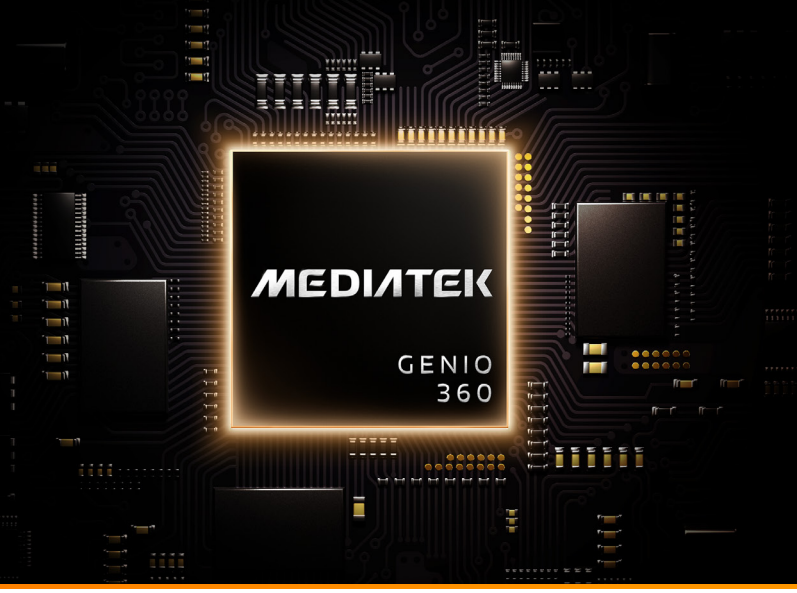
MediaTek Genio 360

GenAI capable, 6nm, hexa-core, value-tier IoT platform



Key Overview

The MediaTek Genio 360 is an advanced, 6nm, IoT platform that brings high-tier features to the value segment. The platform offers high-performance single-core computing by integrating an Arm Cortex-A76 big-core CPU at up to 2.0GHz. The hexa-core CPU configuration is completed with a 5-core Arm Cortex-A55 cluster, running at speed of up to 2.0GHz. The Genio 360 enables edge GenAI on models under two billion parameters, powered by an on-chip 8th generation MediaTek NPU capable of 5.1 TOPS. while the overall system can deliver up to 6 TOPS of AI acceleration on device. The platform enables a rich multimedia experience with support for a single 4K60 display or dual displays at FHD60 resolution, a single 16MP camera at 30fps and 4K video decode.

With a rich I/O capability including PCIe Gen2, USB 3.2 Gen1, dual USB 2.0 and GbE MAC (TSN) interfaces available, a wide variety of system expansion is possible. Genio 360 is ideal for value-oriented IoT platforms in the commercial, enterprise and industrial markets, looking to bring more low-power compute and edge AI acceleration to the applications. The guaranteed longevity of supply for 10 years and both commercial & industrial temperature ranges further support these markets. As with all Genio platforms, the Genio 360 supports a rich OS offering including Android, IoT Yocto, and Ubuntu OS.

Target Applications

- Smart appliances & smart home hubs
- Smart retail kiosks
- Industrial HMI
- Industrial edge AI devices
- Utility & infrastructure devices
- Smart building solutions
- Fleet & traffic management
- EV charging stations
- Healthcare & remote patient monitoring

Highlights

High-Performance Computing

Built on TSMC's advanced 6nm process, the platform features a hexa-core CPU configuration consisting of 1x Arm Cortex-A76 at up to 2.0GHz and 5x Arm Cortex-A55 cores, each operating at up to 2.0GHz. This heterogeneous computing architecture delivers excellent single-core computing performance balanced with power-efficient multi-core operation.

Edge GenAI Processing

Genio 360 incorporates a MediaTek 8th generation NPU that can deliver up to 5.1 TOPS for edge GenAI acceleration, and a total computing system that provides 6 TOPS of total AI acceleration. This enables GenAI acceleration for LLMs and transformer models under two billion parameters and real-time, low-latency AI inference at the edge.

Balanced Camera Capability

The Genio 360 integrates a single camera image signal processor that supports up to 16MP at 30fps extensible to support up to 6xFHD camera inputs using MIPI virtual channels. The ISP supports advanced features like noise reduction and AI-Face Detection.

High-Resolution Display Support

Genio 360 is ideal for media & display rich use cases by supporting a single 4K60 display or dual FHD60 displays and advanced video encoding and decoding.

Flexible Expansion & Extended Temperature Support

Genio 360 allows for scalability and expansion to a wide array of IoT applications with flexible interfaces like PCIe Gen 2.0, USB 3.2/2.0, GbE MAC, and multiple UART/I2C/SPI connections. In addition to Genio 360, Genio 360P provides a higher CPU/AI performance tier and is positioned as the scalability path for Genio 360. Both tiers support industrial- and commercial-grade temperature ranges, expanding the addressable applications.

Muti-OS Support & Longevity

With support for Android, IoT Yocto and Ubuntu operating systems and a rich ecosystem of partners, the Genio 360 can support a wide variety of applications & use-cases. 10-year supply longevity is guaranteed.

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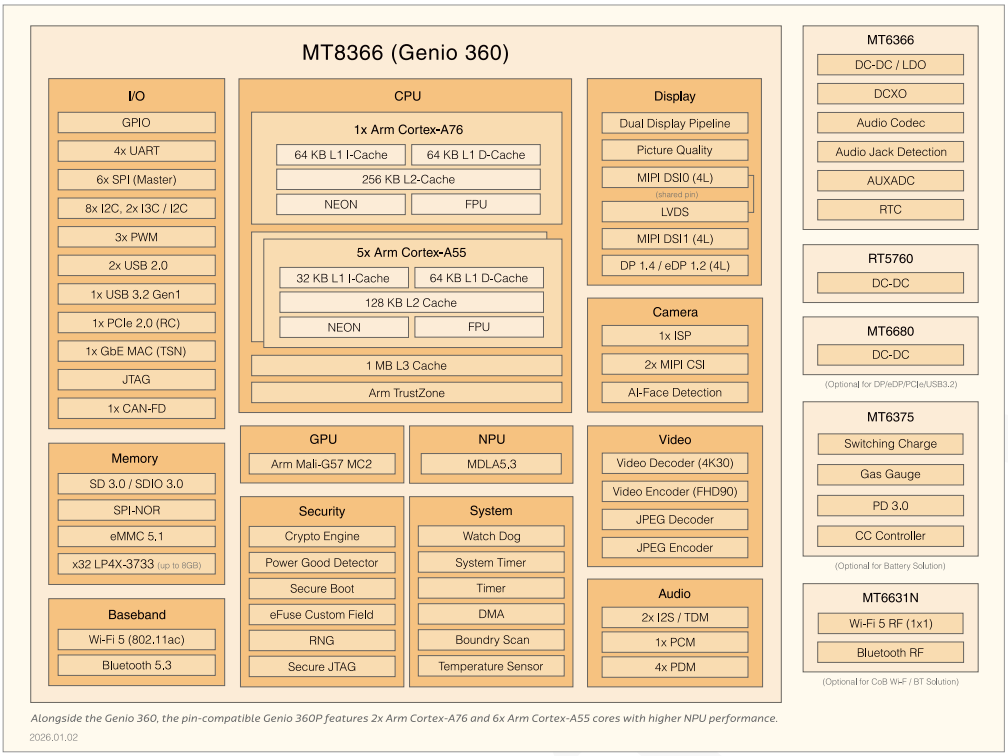
Block Diagram



Alongside the Genio 360, the pin-compatible Genio 360P features 2x Arm Cortex-A76 and 6x Arm Cortex-A55 cores with higher NPU performance.

2026.01.02

Specifications

Processors	CPU	[Genio 360] Consumer 1x Arm Cortex-A76 (2.0GHz) 5x Arm Cortex-A55 (2.0GHz) [Genio 360] Industrial 1x Arm Cortex-A76 (1.9GHz) 5x Arm Cortex-A55 (1.7GHz) [Genio 360P] Consumer 2x Arm Cortex-A76 (2.0GHz) 6x Arm Cortex-A55 (2.0GHz) [Genio 360P] Industrial 2x Arm Cortex-A76 (1.9GHz) 6x Arm Cortex-A55 (1.7GHz)
Memory & Storage	Memory Type & Speed	LPDDR4x up to 3733Mbps, up to 8GB
	Storage Type	eMMC 5.1 SD 3.0 SPI-NOR
AI	NPU	MediaTek 8th-Gen NPU (1x MDLA5.3, GenAI) [Genio 360] 5.1 TOPS [Genio 360P] 7.4 TOPS
Graphics	GPU	Arm Mali-G57 MC2 Supports OpenGL, Vulkan, OpenCL
Display & Video	Display Suppport	Dual display (FHD60 + FHD60) Single display (4K60)
	Video Encode	H.264/H.265 (FHD90)
	Video Decode	H.264/H.265/VP9 (4K30)
	JPEG Encode	400 MP/s
	JPEG Decode	250MP/s
Peripheral Interfaces (IO)	Host/Host Device	2x USB 2.0 (Host) 1x USB 3.2 Gen1 (Host)
	Interfaces	1x GbE MAC (TSN) 1x PCIe 2.0 (1L, RC, WoWLAN) 4x UART 8x I2C, 2x I2C/I3C 6x SPI Master 3x PWM 1x CAN-FD
	Audio	2x I2S/TDM input 2x I2S/TDM output 4x PDM input 1x PCM input/output
Wireless Connectivity	Wi-Fi/Bluetooth	1x1 Wi-Fi 5, Bluetooth 5.3 MT6631 External Connectivity RF
Camera	ISP	1x ISP Single camera: 16MP @ 30fps
Package	Type	VFBGA 12.2x13.4x0.9mm, 0.4mm ball pitch

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