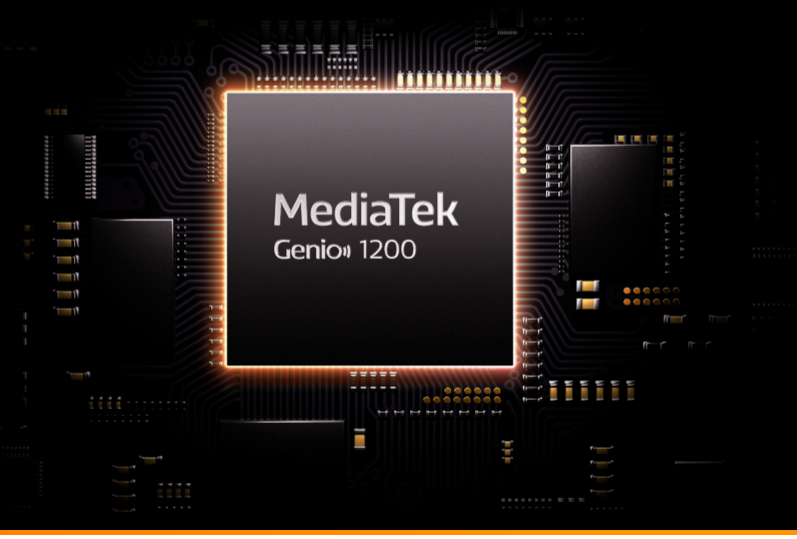
MediaTek Genio 1200

Powering Premium IoT Applications with Advanced Computing, Graphics & Rich Multimedia



Key Overview

The MediaTek Genio 1200 is designed for high-performance edge AI applications featuring an advanced octa-core computing platform with 4x Arm Cortex-A78 and 4x Arm Cortex-A55 cores, built on 6nm process technology. It features an integrated NPU offering 4.8 TOPS for AI acceleration, dual DSPs for high performance vision processing, rich multimedia capability that includes up to triple 4K display support, advanced dual-camera imaging system, and 4K video encode /decode. The Genio 1200 is ideal for smart industrial, enterprise, and a wide range of high-performance embedded system needs. With OS support for Android, Yocto Linux, and Ubuntu, the Genio 1200 provides developers with the flexibility to create scalable, high-performance IoT and intelligent embedded solutions.

Target Applications

- Home automation & smart home hubs
- Smart retail kiosks
- AI-driven digital signage
- Industrial HMI
- Industrial edge AI devices
- Industrial gateways
- Robotics
- Enterprise video conferencing
- Multimedia streaming devices

Highlights

High Performance Computing

Built on TSMC's advanced 6nm process technology, the Genio 1200 offers a high-performance octa-core computing platform consisting of 4x Arm Cortex-A78 performance cores operating up to 2.2GHz, and 4x Arm Cortex-A55 efficiency cores at 2.0GHz. This delivers a scalable computing capability that offers sufficient performance for AI, multimedia, and other intensive workloads, while also preserving power efficiency for lighter loads.

High-Resolution Display Support

The high-performance Arm Mali-G57 MC5 GPU provides exceptional 3D graphics performance. With support for up to triple 4K displays and 4K video encode/decode, the Genio 1200 is built to support applications that require rich, immersive multimedia experiences across multiple screens if needed. The use cases are further extended with enhanced camera capabilities that support a single camera up to 48MP @ 30fps, or dual cameras at 16MP + 16MP @ 30fps.

Comprehensive Software Support

Genio 1200 supports Android, Yocto Linux and Ubuntu operating systems. Android is a rapid time-to-market, reliable, and feature-rich OS that delivers optimal performance and power efficiency. Yocto Linux is a standard, open-source, and easily customizable OS that enables developers to create custom Linux-based systems for embedded products. Ubuntu is a trusted and reliable OS with long-term support that provides a unified, stable experience.

AI & Vision Processing

The Genio 1200 features an integrated MediaTek NPU offering up to 4.8 TOPS of acceleration for edge AI applications, as well as dual Cadence Tensilica VP6 DSPs for high-performance vision processing. These capabilities are ideal to support a variety of edge AI and computer vision applications such as object detection and classification.

Extensive IO Expansion Capability

The Genio 1200 offers expansive IO capability that allows for a wide range of system expansion to a large range of use cases. Specifically, the platform supports PCIe 2.0 & 3.0 interfaces, multiple USB 2.0/3.2 Gen 1 interfaces, a Gigabit Ethernet MAC with TSN (Time-Sensitive Networking) capability. Additionally multiple general-purpose interfaces such as UART, I2C, SPI and I2S are available.

Industrial Ready and 10-Year Longevity

Genio 1200 is available in both commercial and industrial temperature grades. Longevity of supply is guaranteed to at least 2032 with MediaTek's 10-Year commitment of supply for the Genio products. These features make it an ideal choice for a range of industrial, enterprise and other IoT use cases.

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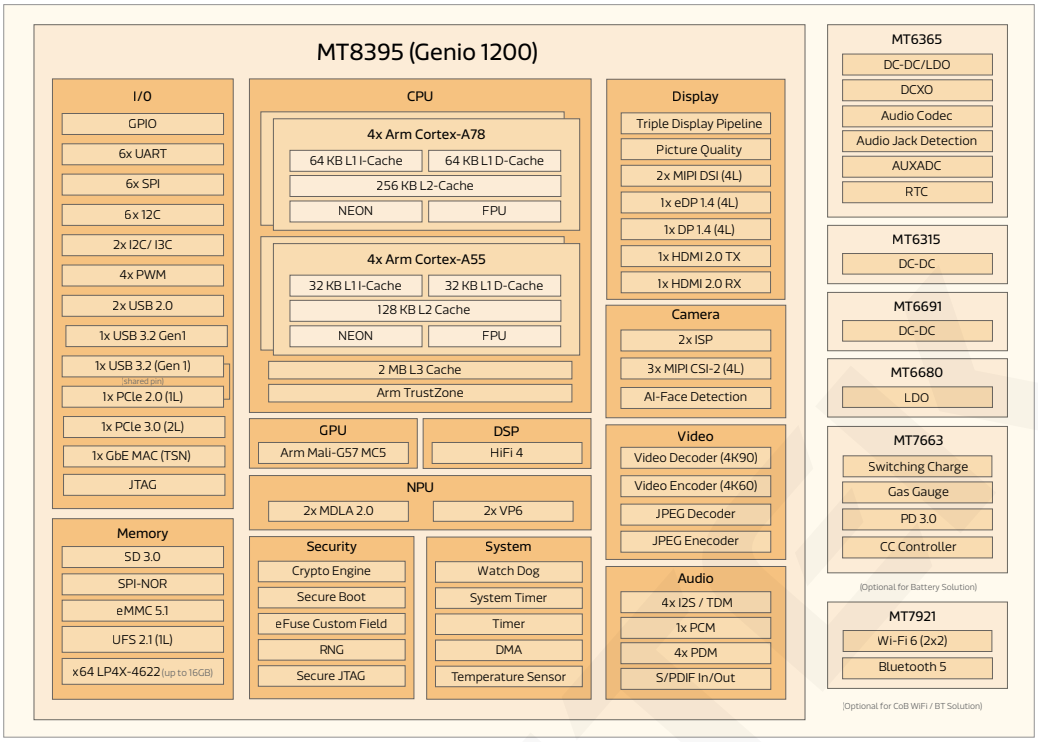
Block Diagram



Specifications

Processors	CPU	4xArm Cortex-A78 @ 2.2GHz 4xArm Cortex-A55 @ 2.0GHz
Memory & Storage	Memory Type & Speed	LPDDR4x up to 4266Mbps, up to 16GB
	Storage Type	UFS 2.1, 1-lane eMMC 5.1 SD 3.0 SPI-NOR
AI	NPU	MediaTek 3rd generation NPU (4.8 TOPS) Dual Cadence Tensilica VP6 DSPs
Graphics	GPU	Arm Mali-G57 MC5 Supports OpenGL, Vulkan, OpenCL
Display & Video	Display Support	Triple display (4K60 + 4K30 + 4K30) Dual display (4K60 + 4K60) Single display (4K60)
	Video Encode	H.264/H.265 (4K60)
	Video Decode	H.264/H.265/AV1/VP9 (4K90) MPEG4/VP8 (FHD60)
	JPEG Encode	250 MP/s
	JPEG Decode	250 MP/s
Peripheral Interfaces (IO)	Host/Host Device	2x USB 2.0 (Host/Device) 1x USB 3.2 Gen1 (Host, shared with PCIe 2.0) 1x USB 3.2 Gen1 (Host/Device)
	Interfaces	1x GbE MAC (TSN) 1x PCIe 2.0 (1L RC, shared with USB 3.2) 1x PCIe 3.0 (2L, RC/EP) 6x UART 6x I2C, 2x I2C/I3C 6x SPI Master, 2x SPI Slave 4x PWM
	Audio	Integrated Cadence Tensilica HiFi4 DSP 2x I2S/TDM input 2x I2S/TDM output 4x PDM input 1x PCM input/output 1x SPDIF input, 1x SPDIF output
Wireless Connectivity	Wi-Fi/Bluetooth	External MT7921 Combo IC 2x2 Wi-Fi 6 Bluetooth 5.2
Camera	ISP	2x ISP Single camera: 32MP @ 30fps Dual camera: 16MP + 16MP @ 30fps
Package	Type	VFBGA 15x15x0.9mm, 0.4mm ball pitch

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