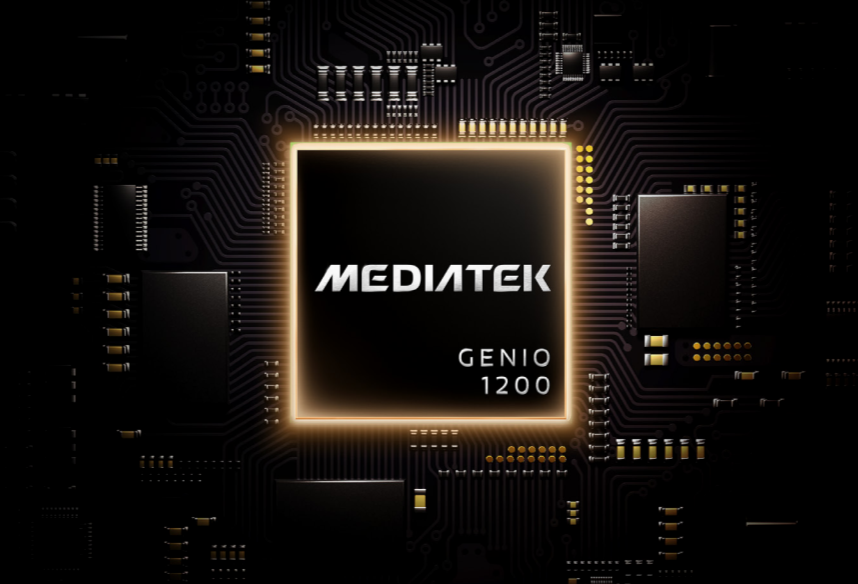


# MediaTek Genio 1200

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 3rd generation NPU (2x MDLA2.0 + 2x Tensilica VP6) offering up to 4.8 TOPS of acceleration for edge AI applications. 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

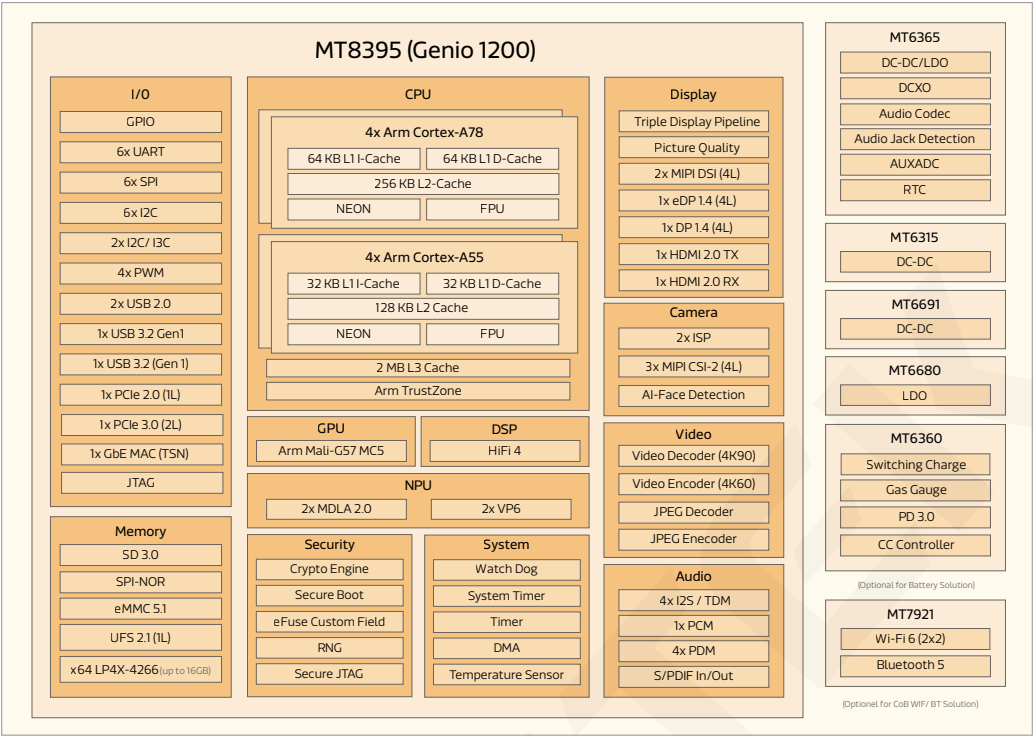
The Genio 1200 offers expansive IO capability that allows for a wide range of system expansion to a large range of use cases. Specifically, the platform supports PCIe 2.0 & 3.0 interfaces, multiple USB 2.0/3.2 Gen 1 interfaces, a Gigabit Ethernet MAC with TSN (Time-Sensitive Networking) capability. Additionally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

# Block Diagram



# Specifications

|                            |                     |                                                                                                                                                                   |
|----------------------------|---------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Processors                 | CPU                 | 4xArm Cortex-A78 @ 2.2GHz<br>4xArm Cortex-A55 @ 2.0GHz                                                                                                            |
| Memory & Storage           | Memory Type & Speed | LPDDR4x up to 4266Mbps, up to 16GB                                                                                                                                |
|                            | Storage Type        | UFS 3.1, 1-lane<br>eMMC 5.1<br>SD 3.0<br>SPI-NOR                                                                                                                  |
| AI                         | NPU                 | MediaTek 3rd Gen NPU 4.8 TOPS<br>(2x MDLA2.0 + 2x Tensilica VP6)                                                                                                  |
| Graphics                   | GPU                 | Arm Mali-G57 MC3<br>Supports OpenGL, Vulkan, OpenCL                                                                                                               |
| Display & Video            | Display Support     | Triple display (4K60 + 4K30 + 4K30)<br>Dual display (4K60 + 4K60)<br>Single display (4K60)                                                                        |
|                            | Video Encode        | H.264/H.265 (4K60)                                                                                                                                                |
|                            | Video Decode        | H.264/H.265/AV1/VP9 (4K90)<br>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)<br>1x USB 3.2 Gen1 (Host, shared with PCIe 2.0)<br>1x USB 3.2 Gen1 (Host/Device)                                                         |
|                            | Interfaces          | 1x GbE MAC (TSN)<br>1x PCIe 2.0 (IL RC, shared with USB 3.2)<br>1x PCIe 3.0 (2L, RC/EP)<br>6x UART<br>6x I2C, 2x I2C/I3C<br>6x SPI Master, 2x SPI Slave<br>4x PWM |
|                            | Audio               | Integrated Cadence Tensilica HiFi4 DSP<br>2x I2S/TDM input<br>2x I2S/TDM output<br>4x PDM input<br>1x PCM input/output<br>1x SPDIF input, 1x SPDIF output         |
| Wireless Connectivity      | Wi-Fi/Bluetooth     | External MT7921 Combo IC<br>2x2 Wi-Fi 6<br>Bluetooth 5.2                                                                                                          |
| Camera                     | ISP                 | 2x ISP<br>Single Camera 48MP @ 30fps<br>Dual camera: 16MP + 16MP @ 30fps                                                                                          |
| Package                    | Type                | VFBGA 15x15x0.9mm, 0.4mm ball pitch                                                                                                                               |