MediaTek Genio◗ **Platform**

V 2.0

MEDIATEK

Content

MediaTek Genio))

Everyday Genius at the Edge

MTK Genio SoC combined with an **open standards software platform** helps you design and create intelligent connected devices

| MediaTek Genio)) **350** | MediaTek Genio)) **500** | MediaTek Genio)) **510** | MediaTek Genio)) **700** | MediaTek Genio)) **1200** |

Our Product Portfolio

- Semiconductors
- Passive Components
- Electromechanical Components
- Displays & Monitors
- Boards & Systems
- Storage Technologies
- Wireless Technologies

Our Initiatives

- RUTRONIK IT ELECTRONICS
- RUTRONIK SOLUTIONS
- RUTRONIK AUTOMOTIVE
- RUTRONIK EMBEDDED
- RUTRONIK POWER
- RUTRONIK SMART

RUTRONIK SOLUTIONS
AI³

RUTRONIK 24
next generation e-commerce

E-COMMERCE MADE EASY
www.rutronik24.com
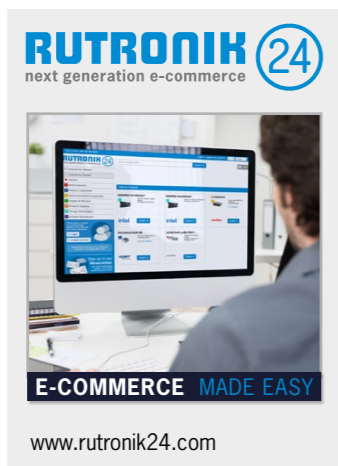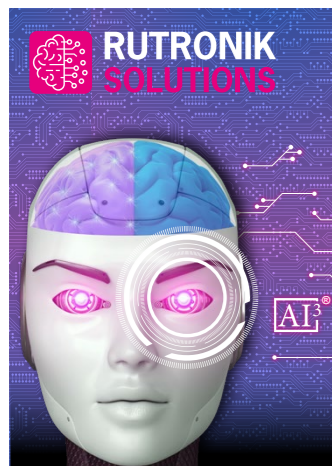
Committed to excellence

Consult – Know-how. Built-in.
The Technical Competence from RUTRONIK
Worldwide and individual consulting on the spot by competent sales staff, application engineers & product specialists.

Components – Variety. Built-in.
The Product Portfolio from RUTRONIK
Wide product range of semiconductors, passive and electromechanical components, displays & monitors, boards & systems, storage and wireless technologies for optimum coverage of your needs.

Logistics – Reliability. Built-in.
The Delivery Service from RUTRONIK
Innovative and flexible solutions: from supply chain management to individual logistics systems.

Quality – Security. Built-in.
Quality without Compromise from RUTRONIK
The integrated management system (IMS) encompasses quality control, information security, environmental protection, occupational health and safety.

50 Years

RUTRONIK
ELECTRONICS WORLDWIDE

MediaTek Genio))

MediaTek's Genio family of System-on-Chips (SoCs) empowers a diverse range of next-generation IoT devices. From smart home appliances and industrial automation to connected healthcare, Genio SoCs offer a compelling combination of features:

Multicore CPUs	High-performance Arm® Cortex®-A processors deliver the performance needed for demanding tasks
Integrated GPUs	Seamless rendering of graphics enhances user experience and supports advanced functionalities without compromising performance
Dedicated AI Processing Units (APUs)	Efficiently handles complex AI workloads, enabling features like facial recognition and voice commands
Robust Connectivity	Reliable 5G/Wi-Fi 6/Wi-Fi 6E/Bluetooth connectivity ensures devices stay online and responsive
Long-Lasting Battery Life	Genio SoCs dynamically switch between high-performance cores for demanding tasks and energy-efficient cores for background activities, reducing power consumption
10-Year Longevity Support	MediaTek offers a comprehensive 10-year longevity program for Genio SoCs, encompassing both silicon and software support. This commitment guarantees sustained availability and ongoing assistance for applications demanding extended lifecycles, particularly in industrial and healthcare settings.

MediaTek Genio Portfolio

	Genio 350	Genio 500	Genio 510* (Pin compatible with Genio 700)	Genio 700* (Pin compatible with Genio 510)	Genio 1200
Process	14nm	12nm	6nm	6nm	6nm
CPU	4X Arm® Cortex®-A53, 2.0 GHz	4X Arm® Cortex®-A73, 2.0 GHz + 4X Arm® Cortex®-A53, 2.0 GHz	2 x Arm® Cortex®-A78, 2.0 GHZ + 4 x Arm® Cortex®-A55, 2.0 GHz	2 x Arm® Cortex®-A78, 2.2 GHZ + 6 x Arm® Cortex®-A55, 2.0 GHz	4X Arm® Cortex®-A78, 2.2 GHz + 4X Arm® Cortex®-A55, 2.0 GHz
GPU	Arm Mali-G52	Arm Mali-G72 MP3	Arm Mali-G57 MC2	GPU Arm Mali-G57 MC3	Arm Mali-G57 MC5
APU	1x VP6, 0.35 TOPS	2x VP6, 0.75 TOPS	1x MDLA3.0 + 1x VP6, 3.2 TOPS	1x MDLA3.0 + 1x VP6, 4.0 TOPS	2x MDLA2.0 + 2x VP6, 4.8 TOPS
Audio DSP	HiFi-4	N/A	HiFi-5	HiFi-5	HiFi-4
Memory	DDR3L/DDR4/LP3/ LP4(x), up to 4GB	LP3/LP4(x), up to 8GB	2-ch or 4-ch 16-bit LP4(x), up to 8GB	2-ch or 4-ch 16-bit LP4(x), up to 8GB	4-ch 16-bit LP4(x), up to 16GB
Storage	eMMC 5.1	eMMC 5.1, UFS2.1	eMMC 5.1	eMMC 5.1	UFS2.1, eMMC 5.1
Display	Dual Display, FHD60+ HD60 MIPI-DSI + LVDS/DPI	Dual Display, FHD60+ FHD60 MIPI-DSI + DPI	Dual Display, FHD60+4K60 MIPI-DSI/eDP + HDMI/DP	Dual Display, FHD60+4K60 MIPI-DSI/eDP + HDMI/DP	Triple Display, FHD60+ FHD60+ 4K60 MIPI-DSI + eDP + HDMI/DP
Video Input	2x MIPI CSI-2	3x MIPI CSI-2	2x MIPI CSI-2	2x MIPI CSI-2	3x MIPI CSI-2 , 1x HDMI 2.0
VDEC	1080P60, H.265/H.264	1080P30, H.264	4K60, H.265/H.264/VP9/AV1	4K75, H.265/H.264/VP9/AV1	4K90, H.265/H.264/VP9/AV1
VENC	1080P60, H.265/H.264/VP9	1080P30, H.265/H.264	4K30, H.265/H.264	4K30, H.265/H.264	4K60, H.265/H.264
Peripheral	2x USB2 (1xOTG, 1xHost), 3x UART, 4x I2C, 10/100 Ethernet MAC	1x USB3/USB2 OTG, 3x UART, 6x I2C, N/A	1x PCIe2.0, 1x USB3.1, 2x USB2.0, 4x UART, 1x GbE MAC (TSN)	1x PCIe2.0, 1x USB3.1, 2x USB2.0, 4x UART, 1x GbE MAC (TSN)	1x PCIe3.0, 1xPCIe2.0/USB3.1, 1x USB3.1, 2x USB2.0, 6x UART, 1x Giga Ethernet MAC
Temperature	-20°C to 65°C (Ta)	-20°C to 65°C (Ta)	Consumer: -20°C to 95°C (Tj) Industrial: -40°C to 105°C (Tj)	Consumer: -20°C to 95°C (Tj) Industrial: -40°C to 105°C (Tj)	Consumer: -20°C to 95°C (Tj) Industrial: -40°C to 105°C (Tj)

*Pin compatible

MediaTek Genio Evaluation Kits

MediaTek Genio 350 EVK

Key Features

- 3GB of LPDDR4X
- 64GB eMMC onboard
- Wi-Fi 5 2x2 wireless connectivity
- 2x MIPI CSI connectors with 1.3MP cameras
- 2x USB 2.0 ports
- 1x Micro SD card slot
- 1x HDMI Tx port
- 1x RJ45 Fast Ethernet
- 40-pin GPIO
- A 7-inch Full HD LCM touch panel
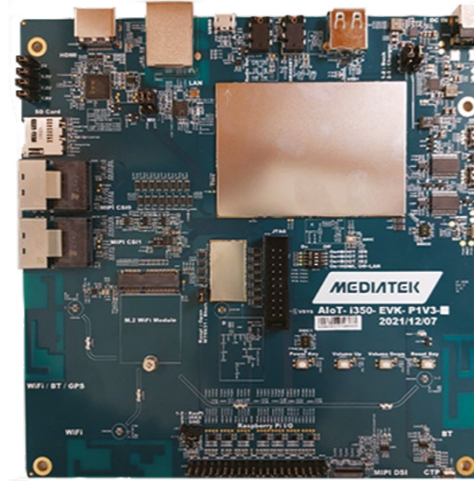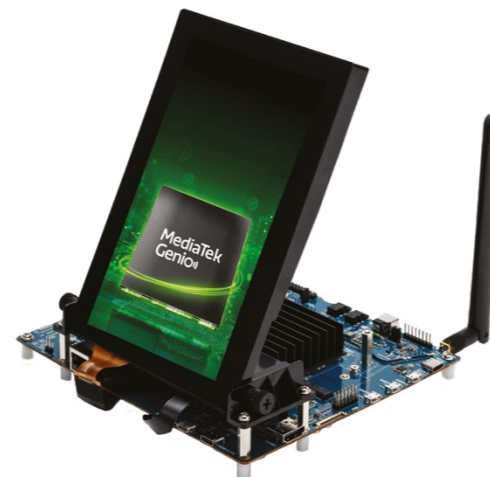
MediaTek Genio 700 EVK

Key Features

- 8GB of LPDDR4X
- 64GB eMMC onboard
- Wi-Fi 6 (2x2) + BT5.2 wireless connectivity
- 2x MIPI CSI connectors with 13MP and 8MP cameras
- 2x USB 2.0 ports
- 1x Micro SD card slot
- 1x HDMI Tx port
- 1x RJ45 Fast Ethernet
- 40-pin GPIO
- A 7-inch Full HD LCM touch panel

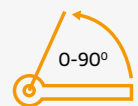## MediaTek Genio 510 EVK

Key Features

- 4GB of LPDDR4x
- 64GB eMMC onboard
- Wi-Fi 6 (2x2) + BT5.2 wireless connectivity
- 2x MIPI CSI connectors with 13MP and 8MP cameras
- 2x USB 2.0 ports
- 1x Micro SD card slot
- 1x HDMI Tx port
- 1x RJ45 Fast Ethernet
- 40-pin GPIO
- A 7-inch Full HD LCM touch panel

MediaTek Genio 1200 EVK

Key Features

- 8GB of LPDDR4X
- 64GB eMMC5.1 onboard
- Wi-Fi 6 (2x2) + BT5.2 wireless connectivity
- 2x MIPI CSI camera board with camera modules
- 2x USB 3.2 ports, 1x Micro USB OTG, 1x USB Type-C connector support DP
- 1x Micro SD card connector
- 2x HDMI port (IN x1, OUT x1) , 1x eDP connector
- 1x LVDS connector
- 1x 10/100/1000M Ethernet RJ-45 connector
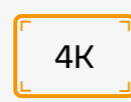- 40-Pin GPIO
- A 7-inch full HD LCM touch panel

Lay Flat	Dual Display	Camera Board	4K UltraHD	HDMI	Type-C	Wi-Fi-6 2x2	Android	Linux	Ubuntu

MediaTek Genio Partner Solutions

MediaTek Genio 1200

RSB-3810 & EPC-R3810
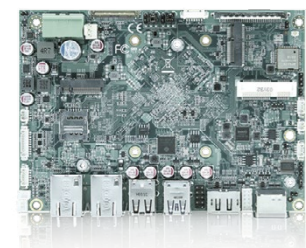
Edge AI Single Board Computer and Box

- 2.5" Pico-ITX single board computer
- 8GB LPDDR4X, 32GB eMMC
- Dual GbE, 1x 4-wire RS-232/422/485, 6 rear I/O configurations
- Android, Yocto Linux, Ubuntu

I-Pi SMARC 1200

Edge AI Development Kit Package

- Standard SMARC module plus carrier
- 4GB LPDDR4X, 64 GB UFS
- Dual GbE, CAN bus, 3x MIPI-CSI
- Yocto Linux, Ubuntu

3.5"-SBC-i1200

Rich I/O Extension

- 3.5" single board computer
- 4/8GB LPDDR4X, 32GB eMMC
- 4x COM, 1x UART, 8x DIO, 1x I/O extension socket (eDP, HDMI, I2C, UART)
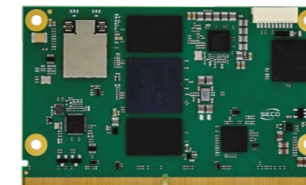- Android, Yocto Linux

MediaTek Genio 1200

SOM-7000

Ready for Edge AI Applications

- Standard SMARC with carrier
- 4GB LPDDR4, 16GB eMMC
- Dual-MIPI display and dual MIPI CSI-2 camera, flexible I/O configuration
- Android, Yocto Linux

MediaTek Genio 700
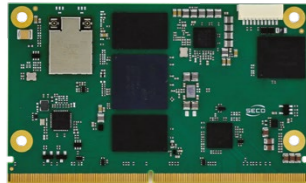
SOM-SMARC-Genio700

- Standard SMARC with carrier
- Up to 8GB LPDDR4X, up to 64GB eMMC
- 2x GbE, 1x CAN, 4x UART, TPM integrated
- Android, Yocto Linux

SOM-5000

- Standard SMARC with carrier
- 2GB LPDDR4X, 16GB eMMC
- 1x I/O expansion pin-header (supports GPIO x 40), 1x UART connector 1x M.2 slot, 1x Nano SIM card slot
- Android, Yocto Linux, Ubuntu

MediaTek Genio Partner Solutions

One Platform, Multiple Applications

MediaTek Genio 510

SOM-SMARC-Genio510

- Standard SMARC with carrier
- Up to 8GB LPDDR4X, up to 64GB eMMC
- 2x GbE, 1x CAN, 4x UART, TPM integrated
- Android, Yocto Linux

MediaTek Genio 350

VAB-3000

- 3.5" single board computer
- 1/2/4GB LPDDR4, 16GB eMMC
- Optional carrier board with rich I/O feature set
- Android, Yocto Linux

MediaTek Genio Development

Streamline Development with a Single SDK

MediaTek simplifies development by offering a single SDK for all SoCs. This single platform eliminates the need for developers to learn and manage multiple, individual SDKs, significantly reducing development time and complexity.

The streamlined process allows for shorter development cycles and simplified codebases. Additionally, the unified SDK enhances code portability, allowing applications to be deployed on multiple Genio SoCs. This enables wider application compatibility and facilitates seamless integration across the Genio hardware ecosystem.

Scalable, Standard Software

- Standard Linux architecture & interfaces
- Upstream BSP
  (expert features with confidential IPs)
- Active migration to latest kernel
- Single SDK for the Genio Family SoCs

AI Development Tools

- Software tools and APIs
- Optimized and pre-trained deep learning models
- AI simulator to estimate and optimize performance

Android Support

- 3 Android upgrade with vendor freeze
- 3-year security patch after last upgrade

Linux Support

- 3 Kernel version upgrade
- 3-year security patch after last upgrade
- Mainline kernel

Ubuntu Support

- Lifecycle 10 years
- Follow Canonical's policy

IoT Yocto

Simplify Your Software and Service Integration

MediaTek's IoT Open Linux, based on Yocto Linux, proves a secure, feature-rich platform for developing IoT applications. Our platform simplifies software and services integration and enables powerful IoT applications built for optimal performance, reliability, and security.
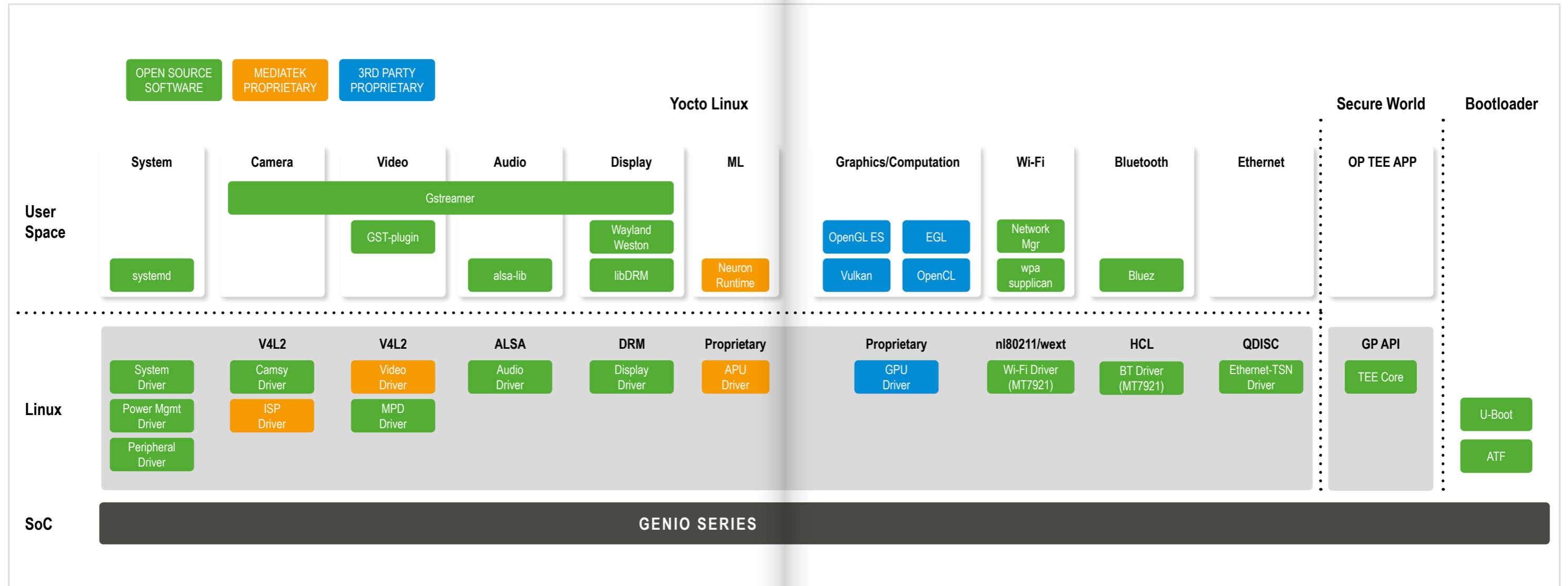
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Features

Open and Standard

Based on standard Yocto Linux, all drivers will upstream to mainline, providing an easy to develop environment for users.

AI Accelerator

Integrated MediaTek AI Accelerator – Neuro-Pilot for a complete APU application in Genio series products and provide a standard TensorFlow lite interface.

Connectivity

Pre-integrated with MediaTek connectivity modules, quickly landing 5G/Wi-Fi 6/Wi-Fi 6E support in your IoT application.

Guides

IoT Yocto Overview

Based on the Yocto project, IoT Yocto provides board support packages (BSP) for IoT evaluation kits and development boards.

Get Started

Easy steps to set up the development environment, build an image, flash the image to the board, and connect it to the board.

IoT Tools

IoT tools are a set of tools to configure and interact with MediaTek Evaluation boards.

*The actual available functions are dependent on the operating systems, please check with your MediaTek contact for details

MediaTek's NeuroPilot

Easy Integration of Edge AI

NeuroPilot: MediaTek's Ecosystem for AI Development

MediaTek's NeuroPilot is an ecosystem of software tools and APIs designed to simplify the development of efficient AI applications on devices powered by MediaTek chipsets, specifically targeting the edge AI space. MediaTek's NeuroPilot technology enables executing AI tasks directly on the device reducing latency, improving security, and facilitating reliable and efficient offline operation.

Support for Popular AI Frameworks	NeuroPilot Model Hub	Hardware Acceleration
Compatibility with frameworks like TensorFlow Lite, PyTorch, Caffe, and others allows developers to leverage existing models and code	Set of pre-trained machine learning models ready for fine-tuning and deployable anywhere with AI enabled devices powered by MediaTek	Utilizes dedicated hardware components, MediaTek AI Processing Unit (APU), within the chipset to accelerate AI computations, improving performance and power efficiency

AI on Board

More powerful chips and development tools will brig AI capabilities to connected devices at the edge, delivering better performance and enhanced features to the Internet of Things.

Case Study

Solutions to Fit Your Needs

One Standard Platform, Multiple Applications

MediaTek offers a single platform for the development of industry, commercial and enterprise IoT applications, reducing development costs and enabling faster time to market.

Flexible Fleet Management system	AI-based Hand-Held Device	New Generation Livestreaming
Integrates of many functions such as vehicle surveillance, tasking management, driver management, fleet analysis, and driving safety management.	Deploying edge AI applications to power smart handheld devices for POS (point of sale), face recognition, license plate, and object recognition applications	Streaming media simultaneously recorded and broadcast in real-time over the Internet.
Mediatek Genio 350 has 4 x ARM Cortex A53, 2.0 GHz with less than 2W power consumption, is especially suitable for high performance applications in a fanless scenario. Genio 350 provides 0.3 TOPS APU, it helps the end user to realize edge AI application easily. For software, Genio 350 supports Android and Yocto Linux. It provides a flexible structure with complete documentation for developers; users can integrate their application and solutions easily and quickly.	MediaTek Genio 510 has 2 x ARM Cortex A78, 2.0 GHz and 4 x ARM Cortex A55, 2.0 GHz six cores CPU with less than 4W power consumption, especially suitable for advanced and compact handheld devices. The Genio 510 provides over 2.8 tops APU, it help end user to realize edge AI application easily. MediaTek Genio 510 connects with the latest WiFi, Bluetooth and Sub-6 GHz 5G modules based on MediaTek devices for industrial, consumer and enterprise applications, enabling anywhere, anytime connectivity.	Mediatek Genio 1200 has 4 x ARM Cortex A78, 2.2 GHz and 4 x ARM Cortex A55, 2.0 GHz eight cores CPU with less than 7W power consumption, especially suitable for high performance application in a fanless scenario. The Genio 1200 provides over 4.8 TOPS APU, it help end user to realize edge AI application easily. For video streaming capabilities, Genio 1200 has 4K/90fps decode and 4K/60fps encode. It also supports dual ISP for camera application. The software development kits with Yocto Linux and Ubuntu, provides flexible structure with complete documentations for developers. Users can integrate their application and solution easily and quickly.

About MediaTek

MediaTek Incorporated (TWSE: 2454) is the world's 4th largest global fabless semiconductor company and powers more than 2 illion connected devices a year. We are a market leader in developing innovative systems-on-chip (SoC) for mobile device, home entertainment, connectivity, and IoT products.

Our dedication to innovation has positioned us as a driving market force in several key technology areas, including highly power-efficient mobile technologies, industrial and automotive solutions, and a broad range of advanced multimedia products such as smartphones, tablets, TVs, 5G, Chromebooks, Voice Assistant Devices (VAD) and wearables.

Find your regional Rutronik contact!

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