

MEDIATEK

# MediaTek Genio™

Genius at the Edge





# MediaTek Genio

## MEDIATEK'S NEW IOT DEVELOPMENT PLATFORM

- UNIFIED OPEN PLATFORM SDK FOR ALL CHIPSETS
- DEVELOPER RESOURCES
- PARTNER ECOSYSTEM
- PRODUCT LONGEVITY

The MediaTek Genio chipsets offer fast multicore performance with extreme power-efficiency, optimizing the user experience for even the most compute-intensive AI applications. The CPU, GPU, and AI Processing Unit (APU) in each Genio chipset work together to enhance intelligent autonomous capabilities at the edge and support high-quality displays, cameras, and more. Additionally, each chipset offers support for the latest Wi-Fi and Bluetooth protocols to deliver seamless connectivity.

# MediaTek Genio

## Key Features

### High Performance Low Range

 Power efficient, high performing multi-core SoCs

### Product Longevity

 Long term support for silicon, operating systems updates and security patches

### Connectivity

 Wi-Fi & 5G technologies enabling anywhere, anytime connectivity

### AI - Powered Advanced Multimedia

 Dedicated APU cores & AI accelerators to make the edge intelligent

### Security

 High secure SoCs that customers can trust

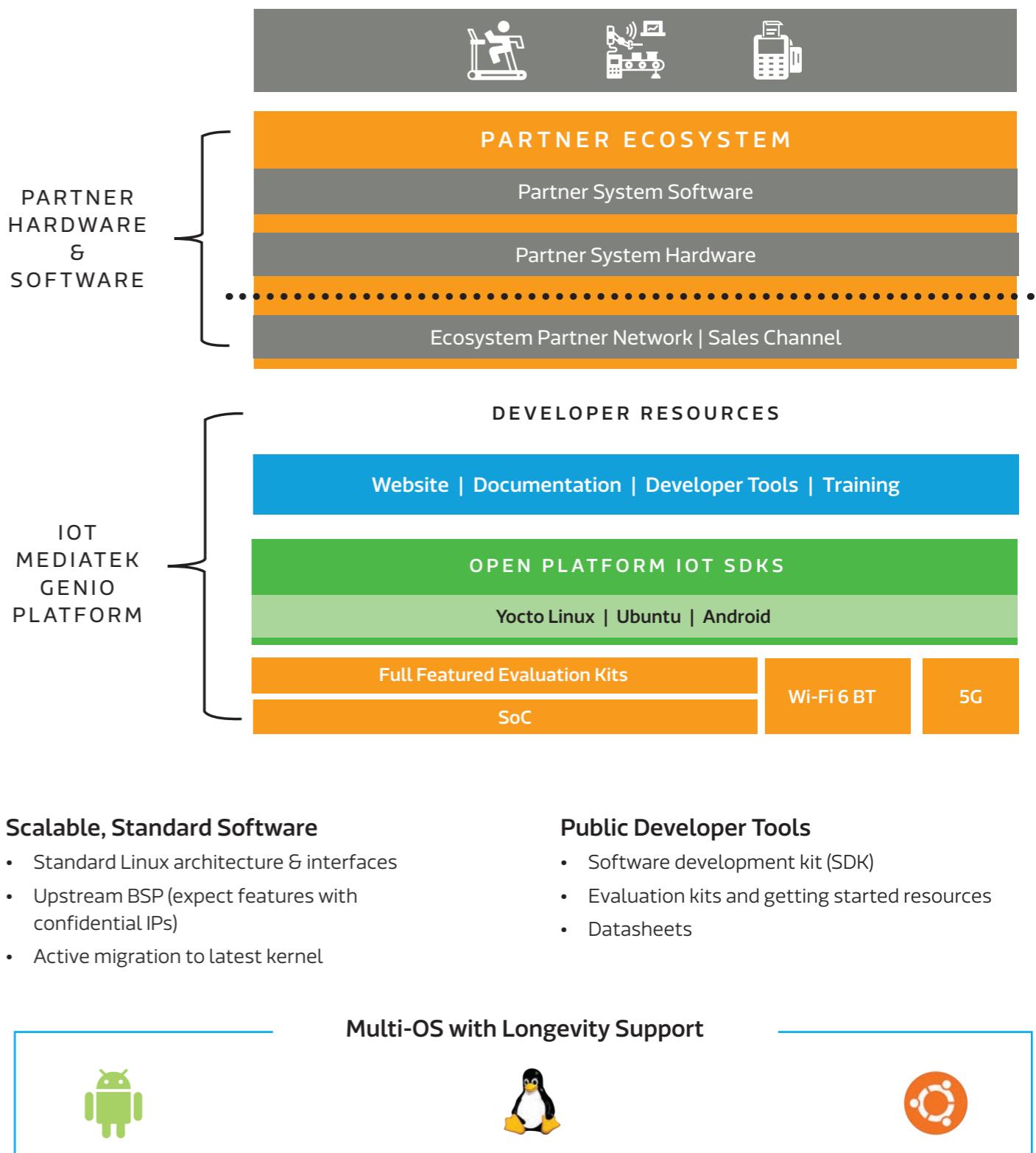
### One Platform Multiple Applications

 Unified SDK to reduce development costs and enable faster time to market

# MediaTek Genio Platform Stack

## One Platform, Multiple Applications

MediaTek Genio is a complete platform stack for the IoT with powerful and ultra-efficient chipsets, open platform software development kits (SDKs), and a developer portal with comprehensive resources and tools. The open standards platform for the development of industry, commercial, and enterprise IoT applications reduces development costs and enables faster time-to-market.

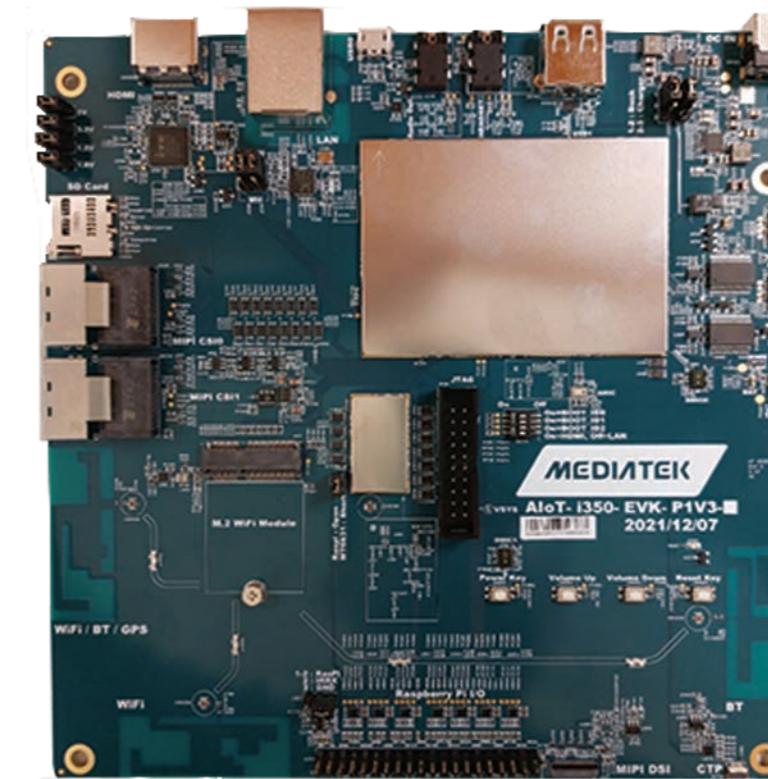


# MediaTek Genio: Solutions to Fit Your Needs

	Genio 350	Genio 500	Genio 700	Genio 1200
Process	14nm	12nm	6nm	6nm
CPU	4x CA53 (2.0GHz)	4+4 CA73 (2.0G)/A53 (2.0G)	2+6 CA78 (2.2G)/CA55 (2.0G)	4+4 CA78 (2.2G)/CA55 (2.0G)
GPU	Mali-G52	Mali-G72 MP3	Mali-G57 MC3	Mali-G57 MC5
APU	1x VP6	2x VP6	1x MDLA3.0 + 1x VP6	2x MDLA2.0 + 2x VP6
Audio DSP	HiFi-4	N/A	HiFi-5	HiFi-4
Memory	DDR3L/DDR4/LP3/LP4, up to 4GB	LP3/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	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	Triple Display, FHD60+FHD60+4K60 MIPI-DSI + eDP + HDMI/DP
Video Input	2x MIPI CSI-2	3x MIPI CSI-2	2x MIPI CSI-2	3x MIPI CSI-2, 1x HDMI 2.0
VDEC	1080P60, H.265/H.264/VP9	1080P30, H.265/H.264	4K75, AV1/VP9/H.265/H.264	4K90, AV1/VP9/H.265/H.264
VENC	1080P60, H.265/H.264	1080P30, 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 PCIe3.0, 1x PCIe2.0/USB3.1, 1x USB3.1, 2x USB2.0, 6x UART, 1x Giga Ethernet MAC

## MediaTek Genio 350 Evaluation Kit

The MediaTek Genio 350 is a IoT platform with integrated APU and DSP designed for Edge AI applications that require voice and vision processing. Genio 350 is a fitting solution for designing products for industrial, portable, home, or IoT applications.



Part #: IoT-i350-EVK

The HDK board offers includes the following hardware and interfaces:

- Genio 350 (MT8365) SoC
- 3GB of LPDDR4X
- 64GB eMMC onboard
- Wi-Fi 5 (2x2) wireless connectivity
- 2x MIPI CSI connectors with 1.3MP cameras
- 1x Micro SD card slot
- 1x HDMI Tx port
- 1x RJ45 fast ethernet
- 40-pin GPIO
- A 7-inch full HD LCM touch panel

### Getting Started Resources



Learn More:  
[IoT-i350-EVK](#)

MediaTek Genio products have **10 years** longevity support

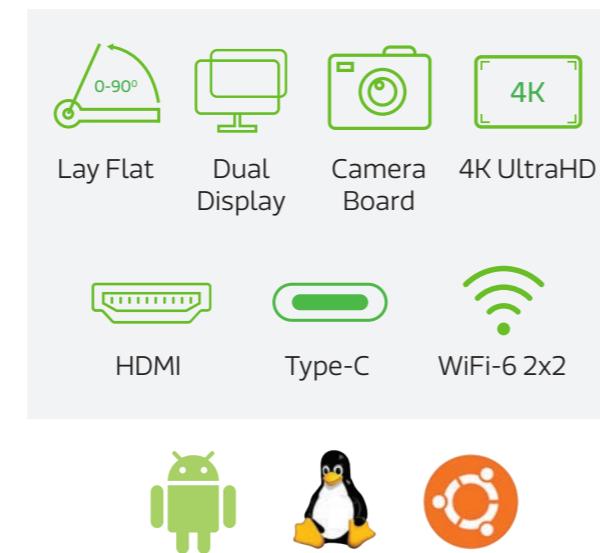
\*The actual available functions are dependent on the operating systems, please check with your MediaTek contact for details

## MediaTek Genio 700 Evaluation Kit

The MediaTek Genio 700 EVK is a high-performance edge-AI IoT platform designed for building industrial, smart home, interactive retail, and commercial applications. It provides highly responsive edge processing, advanced multimedia, multi-tasking OS and is well-suited for fanless enclosure designs and off-grid power solutions.



Part #: IoT-700-EVK

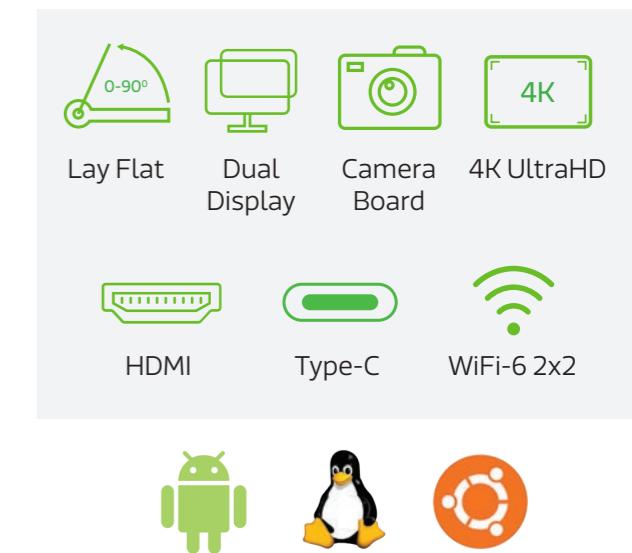


## MediaTek Genio 1200 Evaluation Kit

MediaTek Genio 1200 is a flagship-grade SoC (system on chip) with leading 6nm design. It provides top of its class performance, advanced multimedia and power efficiency for Edge computing and Edge AI applications. Its flexible I/O supports GbE, WiFi-6/5G modules suitable for IoT applications.



Part #: IoT-1200-EVK



The HDK board offers includes the following hardware and interfaces:

- Genio 700 (MT8390) SoC
- 8GB of LPDDR4X
- 64GB eMMC 5.1 onboard
- Wi-Fi 6 + BT 5.2 (2x2) wireless connectivity
- 2x MIPI CSI daughterboard with cameras
- 1x USB 2.0 + 1x USB 3.0 ports
- 1x Micro SD card slot
- 1x HDMI Tx port
- 1x DP ( USB Type-C )
- 1x RJ45 fast ethernet
- 40-pin GPIO
- A 7-inch full HD LCM touch panel

The HDK board offers includes the following hardware and interfaces:

- Genio 1200 (MT8395) SoC
- 8GB of LPDDR4X
- 64GB UFS 2.1 onboard
- Wi-Fi 6 + BT 5.2 (2x2) wireless connectivity
- 2x MIPI CSI daughterboard with cameras
- 1x HDMI Rx port
- 2x USB 3.2 ports , 1x Micro-USB OTG
- 1x Micro SD card slot
- 1x HDMI Tx port
- 1x DP ( USB Type-C )
- 1x LVDS
- 1x CANBUS
- 1x RJ45 fast ethernet
- 40-pin GPIO
- A 7-inch full HD LCM touch panel

### Getting Started Resources



Learn More:  
[MediaTek Genio 700](#)

### Getting Started Resources



Learn More:  
[MediaTek Genio 1200](#)

# MediaTek Genio Partner Solutions

## MediaTek Genio 1200



Enabling an Intelligent Planet



### RSB-3810 & EPC-R3810

#### 2.5" Pico-ITX SBC & Edge AI Box

- Onboard LPDDR4 8GB, 4000MT/s memory
- HDMI 4k60fps, 1x Dual Channel 24 bit LVDS
- 1x 4-wire RS-232/422/485, 2 x USB3.2 Gen1 By 1, 2 x USB2.0, 1x Micro SD, 1x Mic. in/Line out
- 1x M.2 3052 Key B for 5G, 1x M.2 2230 Key E Slot for Wi-Fi/BT
- 6 rear I/O configurations available



### ESOM-MT-1200

#### SOM Module

- Onboard 8GB LPDDR4X RAM, 64GB eMMC
- Supports 3 4-lane MIPI CSI-2 camera with internal ISP
- Supports 2 Digital Display, 2 DisplayPort and 2 MIPI DSI
- Supports 1 PCIe x2, 2 USB 3.0, 1 Gigabit Ethernet
- Android 11 and Yocto 3.1 operating system



### I-Pi SMARC 1200

#### I-Pi SMARC Development Kit based on MediaTek® Genio 1200 Platform

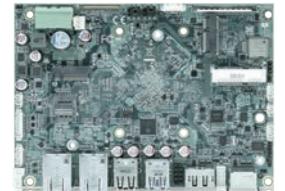
- I-Pi SMARC Plus carrier
- LEC-MTK-I1200 module powered by MediaTek® MT8395 with Octa-core (Arm Cortex-A78 x4 + A55 x4)
- Integrated 5-core GPU and APU (AI Processor Unit) system, up to 5 TOPS
- Memory: 4GB LPDDR4X, 64GB UFS storage
- 4K HDMI, DSI, 3x CSI support
- Dual GbE, CAN bus, PCIe Gen3, USB 2.0, USB 3.0
- Rugged operating temperature (optional): -40°C to 85°C



### SOM-9X12

#### SMARC 2.11 Module with Carrier Board

- Powered by MediaTek Genio 1200 Octa-core SoC
- Dual-MIPI display and dual MIPI CSI-2 camera support
- Dual-band Wi-Fi 6, BT 5.2, and optional 5G connectivity
- Flexible I/O configuration options



### 3.5"-SBC-i1200

#### 3.5" SBC with I/O Extension Socket

- 4GB/8GB LPDDR4X RAM, 32GB eMMC
- 3x MIPI CSI for camera input
- 1x DP, 1x MIPI DSI, 1x LVDS for video output
- 1x 2.5 GbE LAN, 1x GbE LAN for Ethernet connection
- 1x USB 3.2 Gen 1, 4x USB 2.0, 4x COM, 1x UART, 8x DIO
- M.2 Key M & Key B expansion support
- 1x I/O Extension socket (eDP, HDMI, I<sup>2</sup>C, UART)



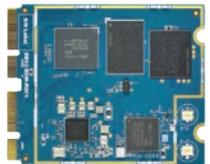
### WILK

#### SMARC® Rel. 2.1.1 module

- Soldered-down LPDDR4X-3733 memory, up to 8GB total, 4x16-bit interface
- Up to 2x GB Ethernet, 1x USB 3.1, 2x USB 2.0, 1x CAN, 4 x UART, opt Wi-Fi +BT 5.0, MIPI-CSI, 1x I2S
- Mali G57 MC3 GPU
- eMMC 5.1 Drive soldered on-board, up to 64GB (boot device); SDIO Interface
- Linux Yocto

# MediaTek Genio Partner Solutions

## MediaTek Genio 500



### SB-52

- 2GB/4GB LPDDR4, 16GB/32GB eMMC
- Ethernet/USB2.0 OTG (Key interface)
- Smart home/Connected fitness/AIDC
- Android/Linux Support OS



### SOM-9X50

- Compact low-power form factor
- Dual display and dual camera support
- Optional carrier board with rich I/O feature set



### Pumpkin i500

- LPDDR4 2GB (upgradable)/16GB eMMC
- Certified for Azure IoT Edge and qualified for AWS IoT Greengrass
- Supports ROS1, ROS2, and libcamera



### MT8385 Nano SoM

- LPDDR4x up to 8GB, eMMC 5.1 (Boot and Storage)
- Camera: 2x MIPI CSI interface, 2.8Gbps per lane (4 lane)
- Supports GPS/GLONASS
- Other Interfaces: 4x I2C, 1x SPI, 1x UART, 29x GPIO

## MediaTek Genio 350



### SB-35



- LPDDR4x 2GB up to 4GB, eMMC 5.1 32GB (RAM/Storage)
- Ethernet/USB 2.0 OTG x1 + Host x 1 (Key interface)
- Smart home/Connected fitness/AIDC (Focus vertical)
- Android Support OS



### SOM-9X35



- Dual-band 802.11ac Wi-Fi with Bluetooth 5.0
- Dual display and dual camera support
- Optional carrier board with rich I/O feature set



### Pumpkin i350



- LPDDR4 2GB (upgradable)/16GB eMMC
- Quad-core Arm Cortex-A53
- Supports ROS1, ROS2, and libcamera

## Case Study

### AI-Based Hand-held Device

#### Challenges

Deploying edge AI applications to power smart handheld devices for POS (point of sale), face recognition, license plate, and object recognition applications, etc. presents many challenges. Ruggedized hardware that can withstand harsh environments and provide reliable and consistent connectivity is critical to optimal edge performance.

#### Key Business Outcomes

- Genio 500's AI integration capability helped shorten development time by 15%
- Low power consumption increases product life by 20%.
- 17% reduction in unstable connection between the product and the background
- 20% overall increase in job efficiency with the product.



#### Key Features

- High-performance and data processing capability with 8-core CPU (4 x Arm A73 2.0 GHz + 4 x Arm A53 2.0 GHz)
- Built-in independent APU (AI Acceleration Processor) with 0.7 TOPS AI computing power
- TensorFlow Lite integration interface
- 4G Cat7 and support 5G+5G dual card standby provides better stability and coverage
- 7W power consumption offers efficiency and extended usage



## About MediaTek

MediaTek Incorporated (TWSE: 2454) is the world's 4<sup>th</sup> largest global fabless semiconductor company and powers more than 2 billion 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.

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