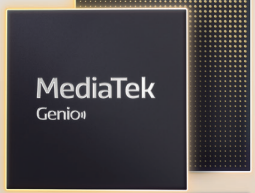
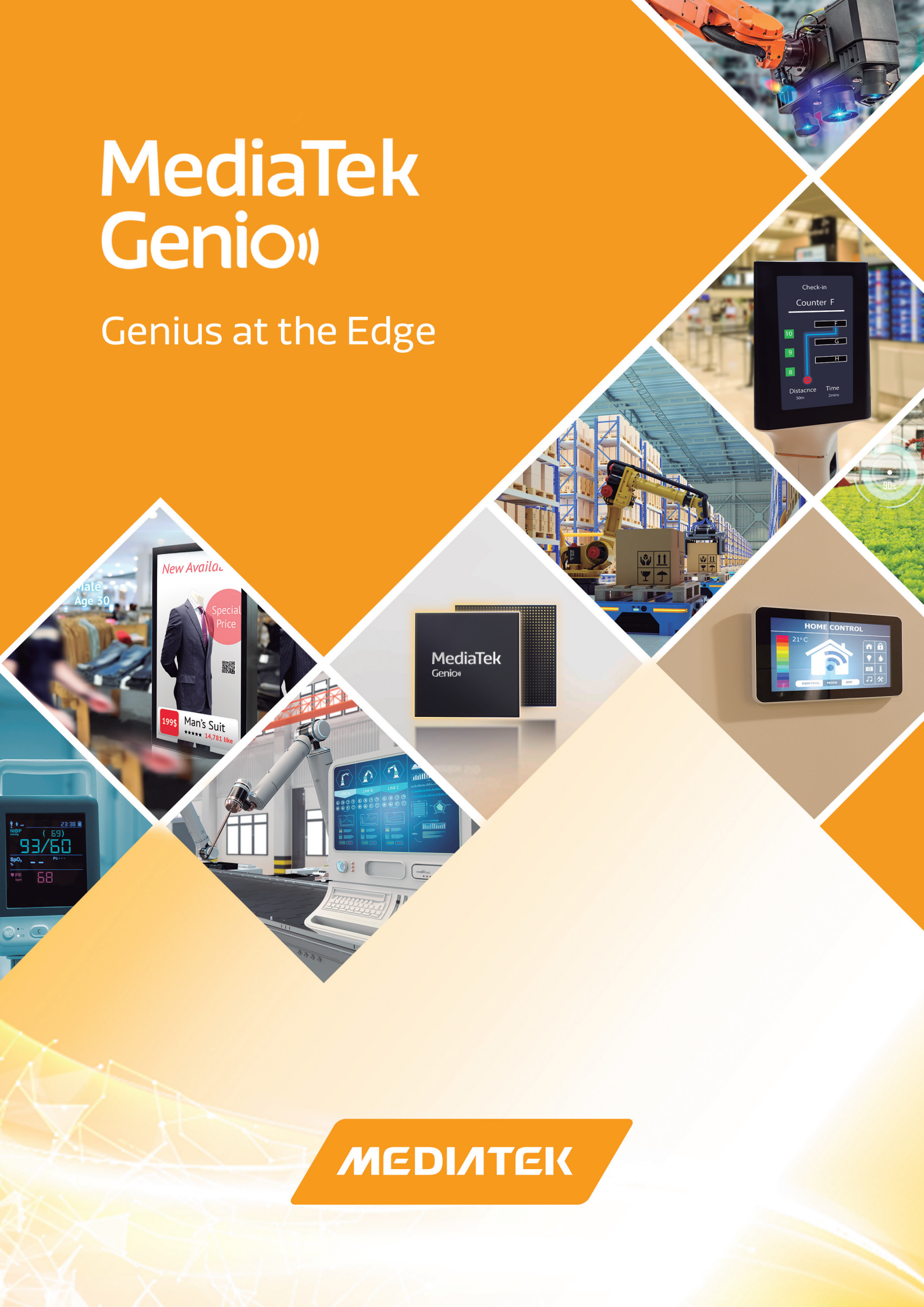


# MediaTek Genio™

Genius at the Edge



**MEDIA TEK**

## Everyday Genius at the Edge

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



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 and 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.

## 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

# MediaTek Genio Portfolio

	 <b>Genio 350</b>	 <b>Genio 500</b>	 <b>Genio 510*</b> (Pin compatible with Genio 700)	 <b>Genio 700*</b> (Pin compatible with Genio 510)	 <b>Genio 1200</b>
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)

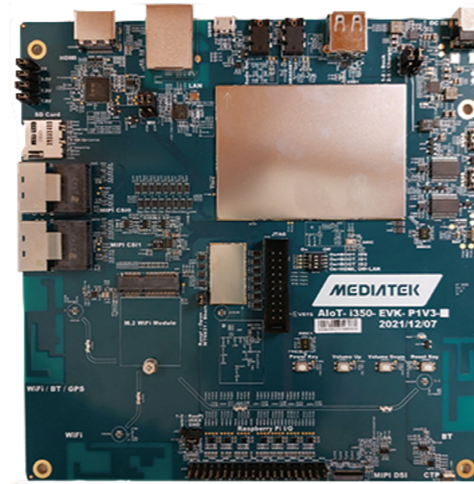
\*Pin compatible

# 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 10/100M Ethernet RJ45 connector
- 40-pin GPIO
- A 7-inch Full HD LCM touch panel



## MediaTek Genio 700 EVK

### Key Features

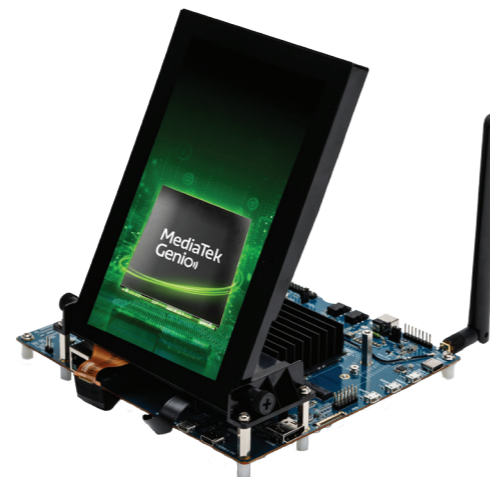
- 8GB of LPDDR4X
- 64GB eMMC onboard
- Wi-Fi 6 (2x2) + BT5.2 wireless connectivity
- 2x MIPI CSI connectors with 13MP and 8MP cameras
- 2x USB 2.0 ports
- 1x Micro SD card slot
- 1x HDMI Tx port
- 1x 10/100/1000M Ethernet RJ45 connector
- 40-pin GPIO
- A 7-inch Full HD LCM touch panel



## MediaTek Genio 510 EVK

### Key Features

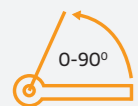
- 4GB of LPDDR4x
- 64GB eMMC onboard
- Wi-Fi 6 (2x2) + BT5.2 wireless connectivity
- 2x MIPI CSI connectors with 13MP and 8MP cameras
- 2x USB 2.0 ports
- 1x Micro SD card slot
- 1x HDMI Tx port
- 1x 10/100/1000M Ethernet RJ45 connector
- 40-pin GPIO
- A 7-inch Full HD LCM touch panel



## 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 RJ45 connector
- 40-Pin GPIO
- A 7-inch full HD LCM touch panel



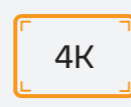
Lay Flat



Dual Display



Camera Board



4K UltraHD



HDMI



Type-C



Wi-Fi-6 2x2



Android



Linux



Ubuntu

# MediaTek Genio Partner Solutions

## MediaTek Genio 1200

**ADVANTECH**

Enabling an Intelligent Planet

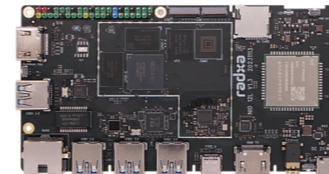


### RSB-3810 & EPC-R3810

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

**radxa**



### NIO 12L

High-Performance Meets AI Efficiency

- 140x75 mm single board computer
- 4GB/8GB/16GB LPDDR4x and 128GB/256GB/512GB UFS
- 40-Pin GPIO, 4x USB 3.0 Type A, 1x USB 3.0 OTG/HOST Type C
- Android, Yocto Linux, Ubuntu

**ADLINK**  
LEADING EDGE COMPUTING

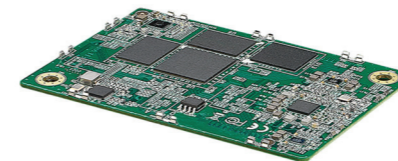


### I-Pi SMARC 1200

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

**Vecow**  
Smarter AIoT Solution Services

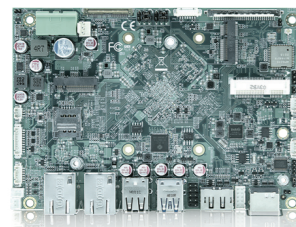


### ESOM-MT-1200

SOM Module

- 82x55 mm system on module
- 8GB LPDDR4X, 64GB eMMC
- 2 x Display Port, 2x MIPI DSI, 2x PCIe
- Android, Yocto Linux

**kontron**

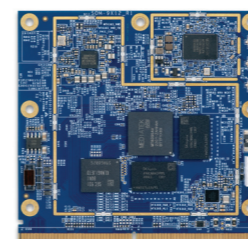


### 3.5"-SBC-i1200

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

**VIA**



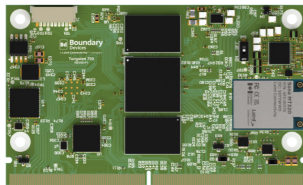
### SOM-7000

Ready for Edge AI Applications

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

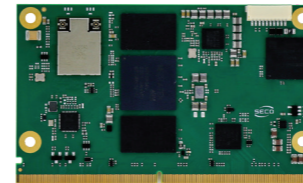
# MediaTek Genio Partner Solutions

## MediaTek Genio 700



### Tungsten700 SMARC

- Standard SMARC module
- 4/8GB LPDDR4, 16GB eMMC
- 2x GbE, 3x UART, 5x I2C, 14x GPIO
- Optional carrier board with Rich I/O feature set
- Android, Yocto Linux, Ubuntu



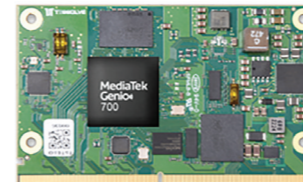
### SOM-SMARC-Genio700

- Standard SMARC module
- Up to 8GB LPDDR4X, up to 64GB eMMC
- 2x GbE, 1x CAN, 4x UART, TPM integrated
- Optional carrier board with Rich I/O feature set
- Android, Yocto Linux



### Pumpkin Genio 700

- 95x115 mm single board computer
- Up to 8GB LPDDR4X, 16GB eMMC
- 1x USB Type C DRP (Host/Device), 2x USB Type A, 1x USB Micro-B (Serial Console)
- Android, Yocto Linux



### Tessolve Genio700 SOM

- Standard SMARC module
- 4/8GB LPDDR4X, 64GB eMMC
- Optional carrier board with Rich I/O feature set
- Android, Yocto Linux



### RCB-6100

- 316Pin Stamp holes
- 4/8GB LPDDR4X, 16/32/64GB eMMC
- MIPI\_DSI, MIPI\_CSI, EDP, DP, HDMI, USB3.0, USB2.0, ENIC, Audio
- Android, Yocto Linux

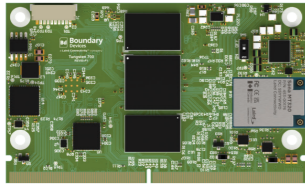


### SOM-5000

- Standard SMARC module
- 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
- Optional carrier board with Rich I/O feature set
- Android, Yocto Linux, Ubuntu

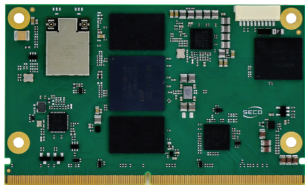
# MediaTek Genio Partner Solutions

## MediaTek Genio 510



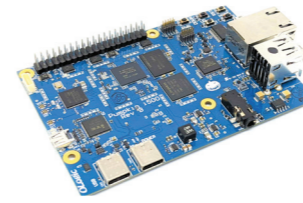
### Tungsten510 SMARC

- Standard SMARC module
- 4/8GB LPDDR4, 16GB eMMC
- 2x GbE, 3x UART, 5x I2C, 14x GPIO
- Optional carrier board with Rich I/O feature set
- Android, Yocto Linux, Ubuntu



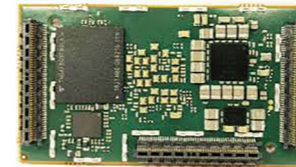
### SOM-SMARC-Genio510

- Standard SMARC module
- Up to 8GB LPDDR4X, up to 64GB eMMC
- 2x GbE, 1x CAN, 4x UART, TPM integrated
- Optional carrier board with Rich I/O feature set
- Android, Yocto Linux



### Pumpkin Genio 500

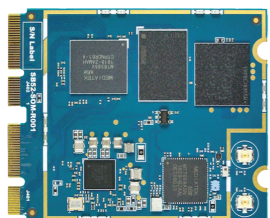
- 70x103 mm single board computer
- 2GB LPDDR4, 16GB eMMC
- Certified for Azure IoT Edge and qualified for AWS IoT Greengrass
- Supports ROS1, ROS2, and libcamera
- Yocto Linux



### MT8385 Nano SoM

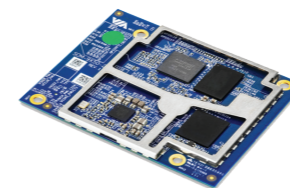
- 50x28 mm system on module
- Up to 8GB LPDDR4X, eMMC 5.1
- GPS/GLONASS, 4x I2C, 1x UART, 29x GPIO
- Android, Yocto Linux

## MediaTek Genio 500



### SB-52

- 45x55 mm system on module
- 2/4GB LPDDR4, 16/32GB eMMC
- Ethernet/USB2.0 OTG (Key interface)
- Android

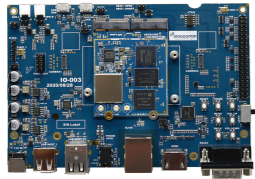


### SOM-9X50

- 70x55 mm system on module
- 2/4GB LPDDR4, 16GB eMMC
- Optional carrier board with rich I/O feature set
- Android, Yocto Linux

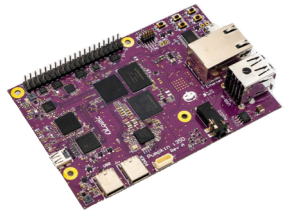
# MediaTek Genio Partner Solutions

## MediaTek Genio 350



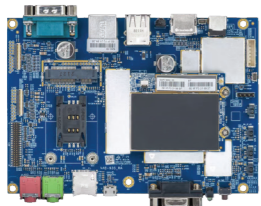
### SB-35

- 45x55 mm system on module
- 2/4GB LPDDR4, 32GB eMMC
- 1x Ethernet, 1x USB 2.0 OTG + 1x USB 2.0 Host
- Android



### Pumpkin Genio 350

- 70x103 mm single board computer
- 2GB LPDDR4, 16GB eMMC
- 40 Pin GPIO, 1x USB Type C DRP (Host/Device), 2x USB Type A, 1x USB Micro-B (Serial Console)
- Supports ROS1, ROS2, and libcamera
- Android, Yocto Linux



### 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

# 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.

### Features of NeuroPilot include:

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

### Resources:

- [Neuropilot Home Page](#)
- [Getting Started](#)
- [Watch video: What is Neuropilot?](#)



<https://neuropilot.mediatek.com/>



# MediaTek Genio Connectivity Solutions

## 5G: MediaTek T700



### RMM-G1

- M.2 3052 (Key B): PCIe 3.0
- 5G NR (Sub-6 GHz), LTE DL/UL Cat.19/Cat.18, 4 MIMO
- GNSS: GPS L1
- OP: -40°C to +85°C (Industrial grade)
- Certification: FCC, ISED, CE, UKCA, TELEC, NCC, CCC, RCM
- OS: Linux



### RM500K

- M.2 3052 (Key B): USB
- 5G NR (Sub-6 GHz), + LTE Cat.12, 4 MIMO
- GNSS: GPS/Glonass/BeiDou/Galileo
- OP: -20°C to 60°C
- Certification: CCC
- OS: Android, Linux

## Wi-Fi: MediaTek MT7663



### WCT22M2101

- 20x25 mm 60 pin SMD Pad: SDIO
- Wi-Fi 5 2x2 MIMO, BT 5.1
- OP: -10°C to +70°C
- Certification: KC, FCC, IC, CE, NCC, MIC
- OS: Android, Linux



### AW-CB451NF-D V2

- Main chip: MT7663BSN, featured Wi-Fi 5 2T2R and BT5.1
- SDIO for Wi-Fi and BT
- M.2 2230 Key A-E
- Linux and Android MediaTek Genio SDK

## Wi-Fi: MediaTek MT7921



### Sona MT320

- M.2 1420 (SMT)/2230 (Key E)
- Wi-Fi 6 2x2 MIMO, BT 5.3
- OP: -40°C to +85°C
- Certification: FCC, ISED, CE, UKCA
- OS: Android, Linux



### WXT2PM2003

- 24x24 mm 60 pin SMD Pad
- Wi-Fi 6 2x2 MIMO, BT 5.4
- OP: -10°C to +70°C
- Certification: FCC, SRRRC, CE, NCC, MIC
- OS: Android, Linux



### AW-XB468NF

- M.2 2230 (Key A-E): PCIe
- Wi-Fi 6 2x2 MIMO, BT 5.4
- OP: -10°C to +70°C
- Certification: FCC, ISED, CE, UKCA
- OS: Android, Linux



### AW-XB554NF

- M.2 2230 (Key A-E): SDIO
- Wi-Fi 6 2x2 MIMO, BT 5.4
- OP: -10°C to +70°C
- Certification: FCC, ISED, CE, UKCA
- OS: Android, Linux

# CASE STUDY



This case study explores how a scroll chiller solution provider overcame challenges by partnering with MediaTek to develop a versatile control panel PC and achieve fast time to market.



## Challenge

Scroll chiller solution provider needed a rugged, long-lifecycle control panel PC with flexible sizing and OS options.



## Solution

MediaTek's Genio 350 CPU-powered solution streamlined PCB design, extended product life, supported dual OS, optimized performance, and improved stock control and repairs.

## Benefits:

- **Longevity:** The Genio 350 ensures a prolonged product lifecycle and reduces the need for frequent upgrades
- **Streamlined Design:** MediaTek's Module Design (MMD) guide accelerates PCB design, leading to rapid time-to-market
- **Dual OS Support:** The Genio 350 CPU supports both Android and Yocto Linux
- **Performance:** The Genio 350 chip delivers superior performance for industrial applications
- **Modular Rugged Design:** With an IP65 rating, the modular design simplifies inventory management and repairs



**MEDIATEK**

## About MediaTek

MediaTek Incorporated (TWSE: 2454) is the world's 5<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.

## Contact Information

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