

MediaTek Genio 350

Powering Entry IoT Applications
with Balanced Performance

MEDIATEK

GENIO
350

Key Overview

The MediaTek Genio 350 is a highly integrated entry IoT platform featuring a quad-core Arm Cortex-A53 processor system built on a 14nm process technology. The single chip integrates a camera ISP, Cadence Tensilica VP6 Vision DSP and a separate HiFi 4 Audio DSP, making it an ideal solution for a variety of consumer, enterprise and industrial applications that require a balance of computer vision/AI or audio processing, along with capable compute and multimedia. With a rich I/O capability that includes USB, Ethernet MAC, UART, SPI, I2C and extensive audio I/O interfaces, the Genio 350 offers a scalable platform for wide variety of IoT applications. Wireless connectivity is supported via an integrated Wi-Fi 5/Bluetooth 5 baseband. Android, IoT Yocto, and Ubuntu OS support provides developers with the flexibility to create scalable IoT and intelligent embedded solutions.

Target Applications

- Fitness equipment
- Access control
- Smart retail kiosks
- Smart parking & charging systems
- Digital signage
- Smart building automation
- Fleet & traffic management
- Healthcare & remote patient monitoring

Highlights



Efficient & Balanced Computing Power

Ideal for portable and battery powered applications. The 4-core Arm Cortex-A53, and Arm Mali-G52 GPU, DSPs and peripheral IO are implemented in a single chip on a low-power 14nm process technology.



Cost-Effective and Reliable

The modest power requirements and -20°C to 65°C ambient temperature range make it a cost-effective solution for consumer and commercial IoT deployments.



On-Device AI, Vision, and Audio Acceleration

The integrated Cadence Tensilica Vision 6 DSP (VP6) enables efficient on-device acceleration for AI/computer vision for tasks like facial recognition and object detection using the MediaTek NeuroPilot SDK. The Cadence HiFi 4 DSP is optimized for audio algorithms, further off-loading the CPUs.



Flexible Multimedia Capabilities

Supports dual displays (HD and Full HD resolutions), providing rich visual outputs for interactive kiosks and digital signage. The advanced image signal processor handles camera inputs up to 13MP@30fps, with features like noise reduction, face detection, and lens shading correction.



Enhanced Connectivity

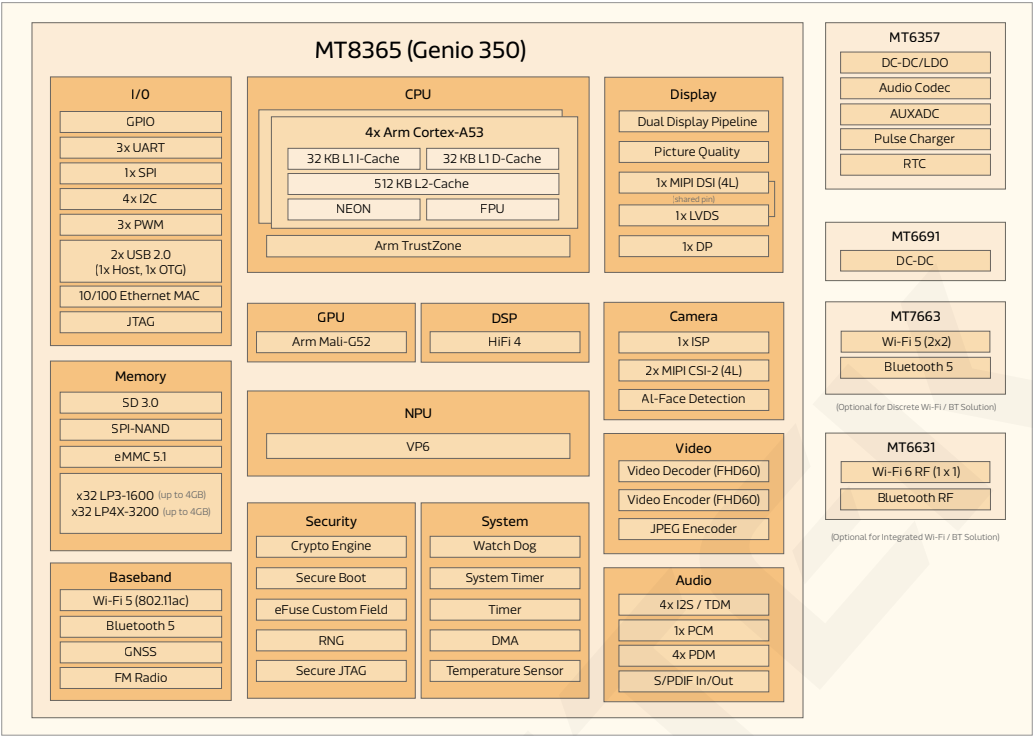
Equipped with interfaces like USB 2.0, Ethernet, and multiple UART/I2C/SPI connections, the Genio 350 simplifies integration into a wide range of edge devices. It supports audio features such as I2S and PDM inputs for devices requiring high-quality sound processing.



Multi-OS Support

With support for Android, AOSP, IoT Yocto and Ubuntu operating systems and a rich ecosystem of partners, the Genio 350 can support a wide variety of applications & use-cases.

Block Diagram



Specifications

Processors	CPU	4xArm Cortex-A53 @ 2.0GHz
Memory & Storage	Memory Type & Speed	LPDDR3 up to 1600Mbps, up to 4GB LPDDR4x up to 3200Mbps, up to 4GB
	Storage Type	eMMC 5.1 SD 3.0 SPI-NAND
AI	NPU	Cadence Tensilica VP6 DSP (0.35 TOPS)
Graphics	GPU	Arm Mali-G52 Supports OpenGL, Vulkan, OpenCL
Display & Video	Display Support	Dual display (FHD + HD) Single display (FHD)
	Video Encode	H.264/H.265 (FHD60)
	Video Decode	MPEG4/H.264/H.265 (FHD60)
	JPEG Encode	N/A
	JPEG Decode	Yes
Peripheral Interfaces (IO)	Host/Host Device	1x USB 2.0 (Host) 1x USB 2.0 (Host/Device)
	Interfaces	10/100 Ethernet MAC 3x UART 4x I2C 1x SPI Master 3x PWM
	Audio	Integrated Cadence Tensilica HiFi4 DSP 2x I2S input/2xI2S output 1xTDM input/1xTDM output 4x PDM input 1x PCM input/output 1x SPDIF input, 1x SPDIF output
Wireless Connectivity	Wi-Fi/Bluetooth	Integrated 1x1 Wi-Fi 5 Bluetooth 5.0
Camera	ISP	1x ISP Single camera: 13MP @ 30fps
Package	Type	12.2x11.8x0.9mm, 0.4mm ball pitch