

# SMARC-M8371 SMARC-M8391

Embedded AI SMARC SOM



**MEDIATEK**

## Overview

The SERA SMARC-M8371/SMARC-M8391 is a SMARC module powered by the MediaTek Genio 520/720 SoC includes an octa-core processor with 2x Arm Cortex-A78 cores and 6x Arm Cortex-A55, and an Arm Mali G57 MC2 GPU

The module incorporates a spate of IoT technologies, such as on-device artificial intelligence (AI) capabilities and support for up to 2 cameras, while delivering a low power envelope, making it the ideal solution for robotic and drone applications across various sectors, including consumer, enterprise, defense, industrial, logistics, and more.

## Features

- SMARC-M8371: 2x ARM Cortex-A78@2.2GHz + 6x ARM Cortex-A55@2.0GHz.
- SMARC-M8391: 2x ARM Cortex-A78@2.6GHz + 6x ARM Cortex-A55@2.0GHz.
- MediaTek 8<sup>th</sup> Generation NPU (NPU8.0)(Generative AI), up to 10 TOPS
- SGET SMARC v2.1 compliant.
- 8GB LPDDR5X
- MIPI-DSI, 1 set of 4D1C (MIPI C/D PHY) D-PHY 2.5Gbps, C-PHY 2.0Gbps
- Display resolution up to 4K/60Hz
- Onboard 128GB UFS
- Supports one GbE port
- Supports 2 x 4-Lane MIPI-CSI interfaces
- 2xUSB 3.0/2xUSB 2.0 interfaces
- 2x2 WiFi 6 (optional)
- GNSS Receiver (optional)
- Support Android/Yocto Linux/Ubuntu operation
- A high-performance multi-core AI processor with dedicated visual processing engine for a wide variety of computer vision applications, including facial recognition, object/people identification, collision warning, driver monitoring, gesture and posture detection, image segmentation
- Rich IO for peripherals, including scanners, card readers, sensors, factory equipment, network connectivity

## Specification

Embedded SMARC SOM

| Interface        | Specifications | Features   |
|------------------|----------------|--|
| System           | CPU            | SMARC-M8371: ARM Cortex-A78@2.2GHz x 2 + ARM Cortex-A55@2.0GHz x 6<br>SMARC-M8391: ARM Cortex-A78@2.6GHz x 2 + ARM Cortex-A55@2.0GHz x 6 |
|                  | NPU            | MediaTek 8th Generation NPU (NPU8.0)(Generative AI), up to 10 TOPS   |
|                  | RAM            | 8GB DDR5X  |
|                  | Storage        | 128GB UFS  |
| Display          | GPU            | ARM Mali-G57 MC2 880MHz  |
|                  | DisplayPort    | 1 x 4-Lane DP 1.4, 1 x 4-Lane eDP 1.2  |
|                  | MIPI           | 1 x 4-Lane MIPI-DSI  |
| Camera           | CSI            | 2 x 4-Lane MIPI-CSI  |
| Video            | Encode         | 4K@30fps HEVC/H.264  |
|                  | Decode         | 4K@60fps HEVC/H.264  |
| Connectivity     | Ethernet       | 1x10/100/1000 Mbit/s   |
|                  | WiFi           | 2x2 WiFi 6 (option)  |
|                  | GNSS           | GNSS receiver (option)   |
| Extension Busses | USB            | 2 x USB 3.0, 2 x USB 2.0   |
|                  | UART           | 3 x UART   |
|                  | I2S            | 2 x I2S/PDM  |
|                  | I2C            | 2 x I2C  |
|                  | SDIO           | 1 x 4-Lane SDIO  |
|                  | SPI            | 2 x SPI  |
|                  | GPIO           | 10 x GPIO  |
|                  | PWM            | 2 x PWM (shared with GPIO)   |
|                  | PCIe           | 1 x PCIe 1-Lane Gen2   |
| Power            | DC             | 5VDC   |
| Form Factor      | SMARC          | SMARC Custom Size  |
|                  | Dimension      | 80 x 65mm  |
| Operation System | Linux          | Yocto Linux  |
|                  |                | Ubuntu   |
|                  |                | Android  |

*\*Specifications are subject to change without notice.*