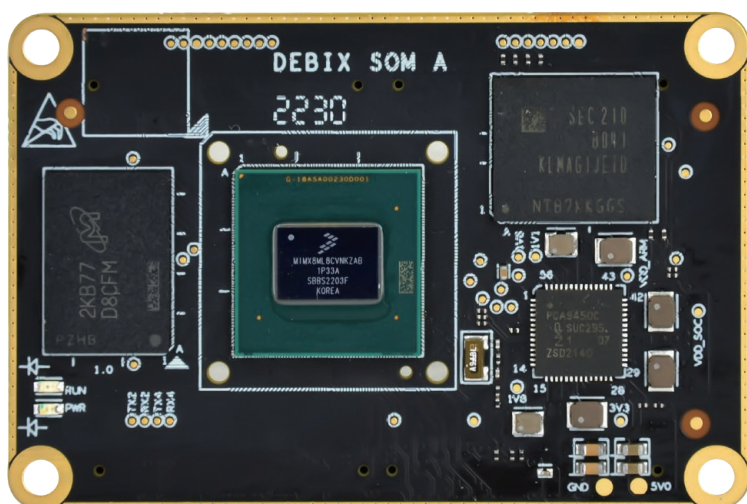


# DEBIX SOM A



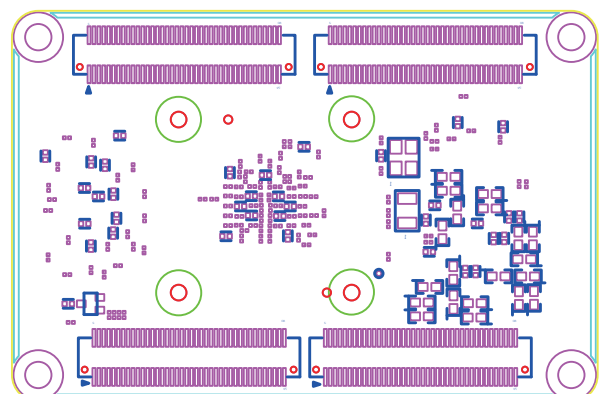
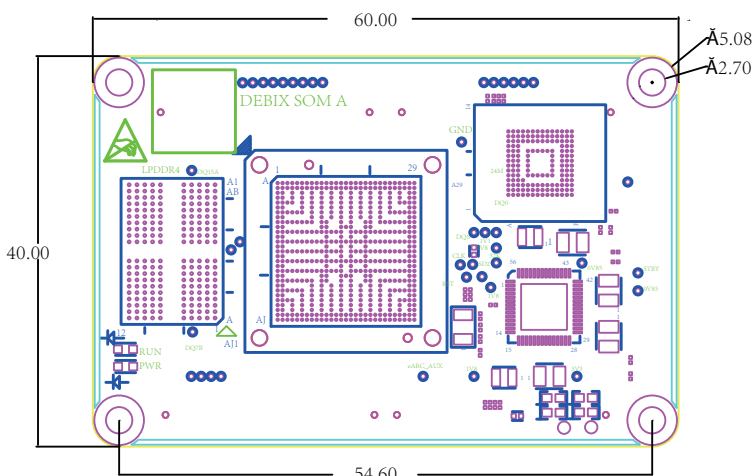
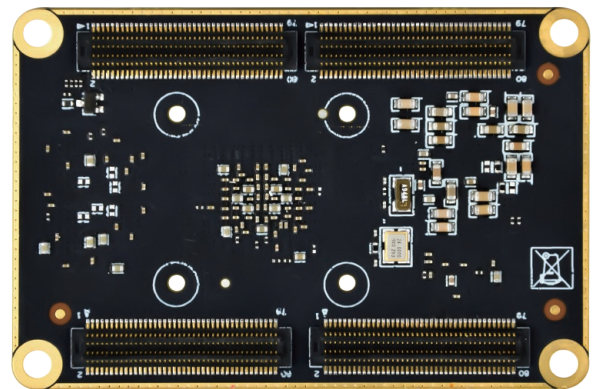
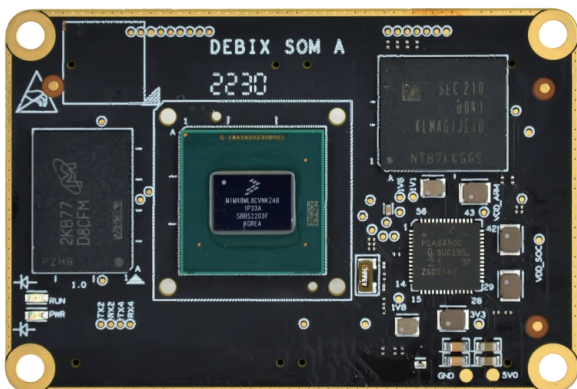
## DEBIX SOM A i.MX 8M Plus Core Board

### Overview:

DEBIX SOM A is the first System on Module product of the DEBIX series. As with the DEBIX Model A SBC, it is based on NXP i.MX 8M Plus CPU with a 2.3 TOPS NPU, which brings us the same powerful system performance. This core board design has some notable benefits, such as design reutilization, reduction of development time of the carrier boards, and flexible integration into various embedded systems.

### Main Features:

- **Industrial-grade performance:** Designed for demanding applications in Industry 4.0, IoT, smart cities, and multimedia.
- **Comprehensive software support:** Includes Yocto-L6.1.22\_2.2.0, Ubuntu 22.04, Debian 12 and Windows 10 IoT Enterprise operating systems, along with basic software for fast and direct applications.
- **Real-time control:** Cortex-M7 core for real-time responsiveness, supported by robust control networks like CAN FD and dual Gigabit Ethernets (one with TSN capability).
- **Advanced vision system:** Dual Image Signal Processors (ISPs) and dual camera inputs for efficient image processing and analysis.
- **Advanced Multimedia:** 1080p60 video encode/decode (H.265/H.264), 3D/2D graphics acceleration, and multiple audio/voice functionalities.



## Specification:

### System

CPU	NXP i.MX 8M Plus (default), 4 x Cortex-A53, comes with an integrated neural processing unit (NPU) that delivers up to 2.3 TOPS. Industrial grade CPU runs at 1.6GHz, and commercial grade CPU runs at up to 1.8GHz. (i.MX 8M Plus series CPU optional)
Memory	2GB LPDDR4 (1GB/4GB optional, while 8GB is optional when operating temp. is -20°C to 70°C)
Flash	Onboard 16GB eMMC (8GB/32GB/64GB/128GB/256GB optional)
OS	Ubuntu22.04, Yocto-L6.1.22_2.2.0, Debian 12, Windows 10 IoT Enterprise Note: 4GB and 8GB LPDDR4 supports Windows 10 IoT Enterprise, recommend 8GB version.

### I/O Interfaces

Gigabit Ethernet	2 x Gigabit Ethernet controller, one of them supports Time Sensitive Networking (TSN)
Display	1 x HDMI 2.0a, support 3840 x 2160@30Hz, 1920 x 1080@120Hz, 1920 x 1080@ 60Hz 1 x LVDS, support 4-lane and 8-lane 1 x MIPI DSI, support 2560 x 1080@60Hz
Camera	2 x MIPI CSI
Audio	Up to 6 x SAI (synchronous audio interface), HiFi4 DSP, 1 x SPDIF IN, 1 x SPDIF OUT (Note: 1 x SAI with 8 TX and 8 RX lanes, 1 x SAI with 4 TX and 4 RX lanes, 2 x SAI with 2 TX and 2 RX lanes, 2 x SAI with 1 TX and 1RX lane, all SAIs support I2S and AC97)
USB	2 x USB 3.0, configurable as device or host
UART	Up to 4 x UART
I2C	Up to 6 x I2C, I2C2~I2C6 are exposed to the connectors (2 of the five I2Cs are multiplexed as SD1). I2C1 is not allowed to be configured.
SDIO	2 x SDIO
SPI	Up to 3 x ECSPI
PCIe	1 x PCIe Gen3 1-lane
CAN	2 x CAN
GPIO	13 x GPIO for default, other functional pins can be configured as GPIO through software

### Power Supply

Power Input	3.5V~5V/2A
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### Operating Temperature

Temp. Range	-20°C~70°C for default, -40°C~85°C optional
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### Mechanical

Connector	4 x Double-sided board-to-board connector (model number BB51024A-R80-10-32), 2 x 40pin/0.5mm pitch, matching sockets of various heights
Dimension	60mm(L) x 40mm(W) x 5.6mm(H)
Gross Weight	23g(±0.5g)
Net Weight	11g(±0.5g)

## Product Version:

DEBIX SOM A standard version, see the table below for details.

Version	NPU	VPU	ISP	HiFi 4
DEBIX SOM A Standard	1	1	1	1

## Certificates:



## Safety Instruction and Warnings:

### General:

- Avoid exposure to water, moisture, and conductive surfaces while operating.
- Handle with care to avoid mechanical or electrical damage to the circuit board and connectors.
- Only handle the board by the edges when powered on to minimize the risk of electrostatic discharge damage.

### Power:

- Use the product with a carrier board and connect it to a 5V/2A external power supply.

### Environment:

- Operate in a well-ventilated environment, even if using a case.
- Place on a stable, flat, non-conductive surface and avoid contact with conductive items.

### Connections:

- Use peripherals that comply with relevant standards for the country of use and ensure proper insulation and operation.

### Additional notes:

- This summary is not exhaustive, please refer to the full User Manual for details.
- If you are unsure about any aspect of safety or operation, consult a qualified professional.

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