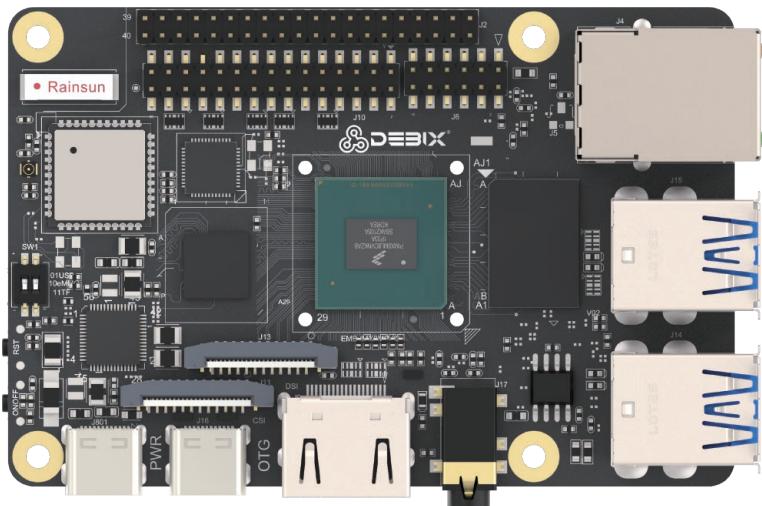


# DEBIX Model A



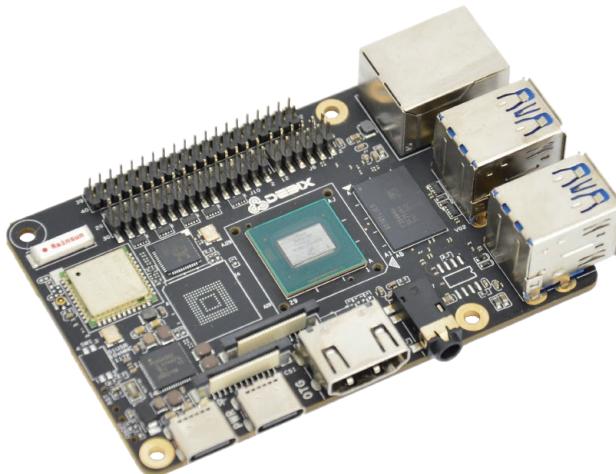
# DEBIX Model A Industrial Single Board Computer

## Overview:

DEBIX Model A is an industrial grade single board computer to bring you faster speed and more powerful performance. Powered by quad core i.MX 8M Plus with 2.3 TOPS NPU, DEBIX Model A with complete software development and rich I/O ports is ready and capable for direct applications in industry 4.0, IoT, smart city, and multimedia.

## Main Features:

- **Powerful Performance:** Built for demanding industrial applications, DEBIX Model A boasts a quad-core ARM Cortex-A53 CPU up to 1.8GHz and 2GB/4GB/8GB LPDDR4 RAM. This combination ensures smooth operation even for complex processing tasks.
- **Industrial Grade Build:** Designed for harsh environments, DEBIX Model A features industrial-grade components and a wide CPU temperature range of -40°C to 105°C. Its DDR inline ECC design and 14 FinFET process further enhance its reliability.
- **Rich Connectivity:** DEBIX Model A offers a comprehensive range of connectivity options, including Gigabit Ethernet, 2.4GHz & 5GHz Wi-Fi, Bluetooth 5.0, high-speed USB 3.0, and PCIe support. This allows for easy connection and control of various industrial peripherals.
- **Advanced Multimedia:** For multimedia applications, DEBIX Model A features 1080p60 video encode and decode (including H.265 and H.264), 3D/2D graphic acceleration, and multiple audio and voice functionalities.
- **Complete Software Support:** It includes Android 11/ Yocto-L6.6.36/ Ubuntu 22.04/ Debian 12/ Windows 10 IoT Enterprise/ OpenWRT/ FreeRTOS operating system and basic software for fast and direct applications.



## Specification:

<b>System</b>	
CPU	NXP i.MX 8M Plus (default), 4 x ARM 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/8GB optional)
Storage	Micro SD card (Onboard 8GB/16GB/32GB/64GB/128GB/256GB eMMC optional)
OS	Android 11, Yocto-L6.6.36, Ubuntu 22.04, Debian 12, Win10 IoT Enterprise (also supports OpenWRT and FreeRTOS) Note: 4GB/8GB LPDDR4 supports Windows 10 IoT, recommend 8GB version.
<b>I/O Interfaces</b>	
Gigabit Ethernet	1 x Gigabit Ethernet port, support TSN and POE power supply (need POE power device module) 1 x Gigabit Ethernet port, 12pin header (without network transformer)
WIFI & BT	2.4GHz & 5GHz WIFI5, BT5.0
USB	4 x USB 3.0 Host 1 x USB 2.0 OTG
Audio	1 x Headphone and Mic combo port
HDMI	1 x HDMI OUT
<b>Expansion</b>	
40-Pin Double-Row Header	(1) 3 x UART, 2 x I2C, 2 x SPI, 2 x CAN, 6 x GPIO for default, can be reused as I2S, PWM, SPDIF and GPIO through software configuration. (2) 5V power supply, system reset, ON/OFF
LVDS	1 x LVDS, single & dual channel 8bit
MIPI CSI	1 x MIPI CSI (4-lane)
MIPI DSI	1 x MIPI DSI (4-lane)
PCIe	1 x PCIe Gen3 1-lane
<b>Power Supply</b>	
Power Supply	DC 5V/3A Type-C
<b>Mechanical &amp; Environmental</b>	
Size	85.0mm x 56.0mm ( $\pm 0.5\text{mm}$ )
Operating Temp.	-20°C to 70 °C
Net Weight	46g( $\pm 0.5\text{g}$ )
Gross Weight	72g( $\pm 0.5\text{g}$ )

## Product Version:

DEBIX Model A version, see the table below for details.

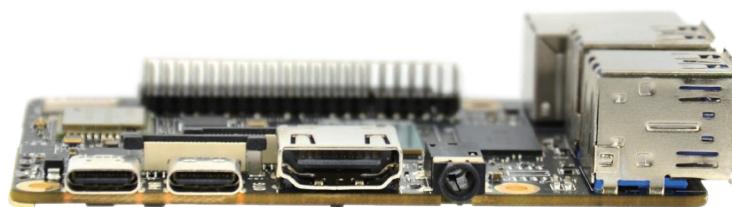
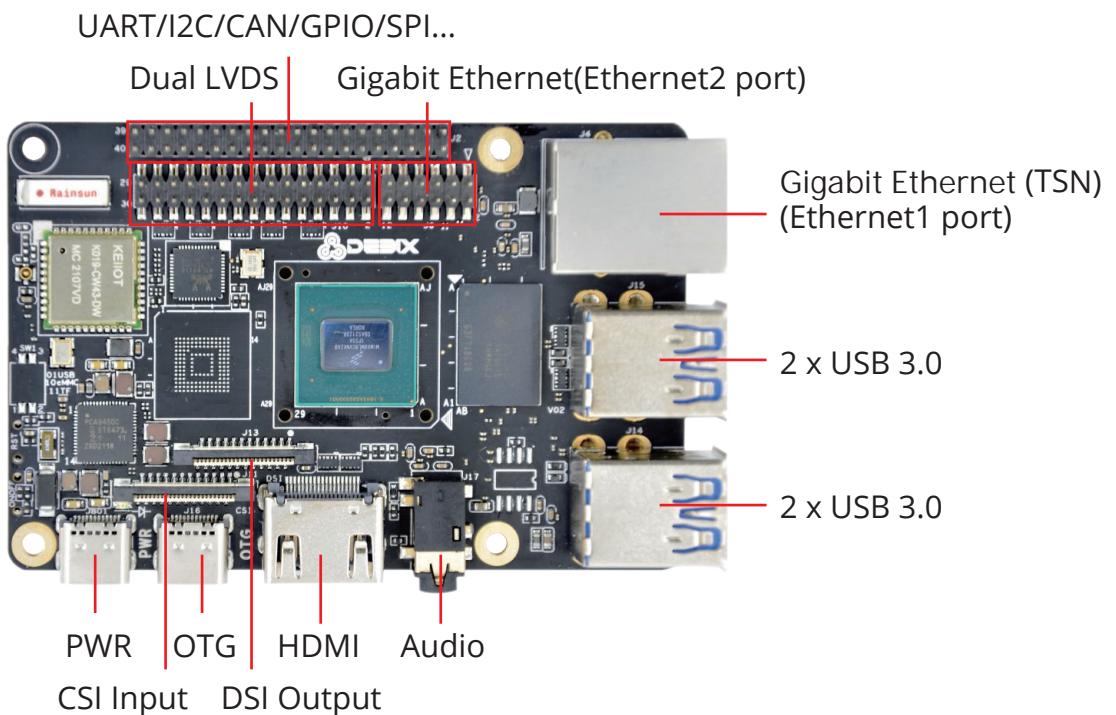
Version	CPU	NPU	VPU	ISP	HiFi 4
DEBIX Model A Standard	<b>NXP i.MX 8M Plus</b>	1	1	1	1
DEBIX Model A Lite	<b>NXP i.MX 8M Plus Quad Lite</b>	N/A	N/A	N/A	N/A

## Certificates:

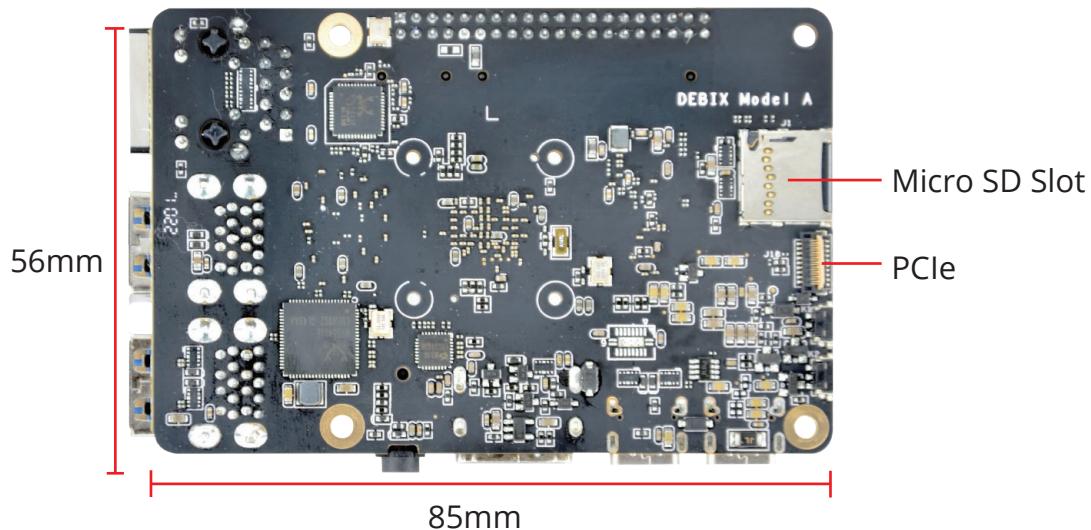


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## I/O Interfaces:



## I/O Interfaces: (continued)



## Ordering Codes:

RAM LPDDR4	eMMC Storage	PN for Model A	PN for Model A Lite
1GB DDR	N/A	Model A-D1E0	Model A Lite-D1E0
	8GB	Model A-D1E8	Model A Lite-D1E8
	16GB	Model A-D1E16	Model A Lite-D1E16
	32GB	Model A-D1E32	Model A Lite-D1E32
	64GB	Model A-D1E64	Model A Lite-D1E64
2GB DDR	N/A	Model A-D2E0	Model A Lite-D2E0
	8GB	Model A-D2E8	Model A Lite-D2E8
	16GB	Model A-D2E16	Model A Lite-D2E16
	32GB	Model A-D2E32	Model A Lite-D2E32
	64GB	Model A-D2E64	Model A Lite-D2E64

## Ordering Codes: (continued)

RAM LPDDR4	eMMC Storage	PN for Model A	PN for Model A Lite
4GB DDR	N/A	Model A-D4E0	Model A Lite-D4E0
	8GB	Model A-D4E8	Model A Lite-D4E8
	16GB	Model A-D4E16	Model A Lite-D4E16
	32GB	Model A-D4E32	Model A Lite-D4E32
	64GB	Model A-D4E64	Model A Lite-D4E64
8GB DDR	N/A	Model A-D8E0	Model A Lite-D8E0
	8GB	Model A-D8E8	Model A Lite-D8E8
	16GB	Model A-D8E16	Model A Lite-D8E16
	32GB	Model A-D8E32	Model A Lite-D8E32
	64GB	Model A-D8E64	Model A Lite-D8E64

## Compatible with DEBIX's Accessories:

Product	Model
DEBIX Fanless Aluminum Enclosure	EMC-7090B Model A/B
I/O Board	EMB-AS-E01
4G Board	EMB-AS-05
LoRa Board	EMB-AS-03
SBC POE Board	EMB-AS-06
DEBIX Camera Module	Camera 200A
	Camera 500A
	Camera 1300A
DEBIX Display Screen	DEBIX TD050A
	DEBIX TD070A
	DEBIX TD101A
	DEBIX TD050H
	DEBIX TD070H
	DEBIX TD101H

## 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 only a 5V/3A DC minimum external power supply that complies with relevant regulations and standards for your country.

### ***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:***

- Only connect compatible devices to the GPIO ports to avoid damage and warranty voiding.
- 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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## Contact Us:

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