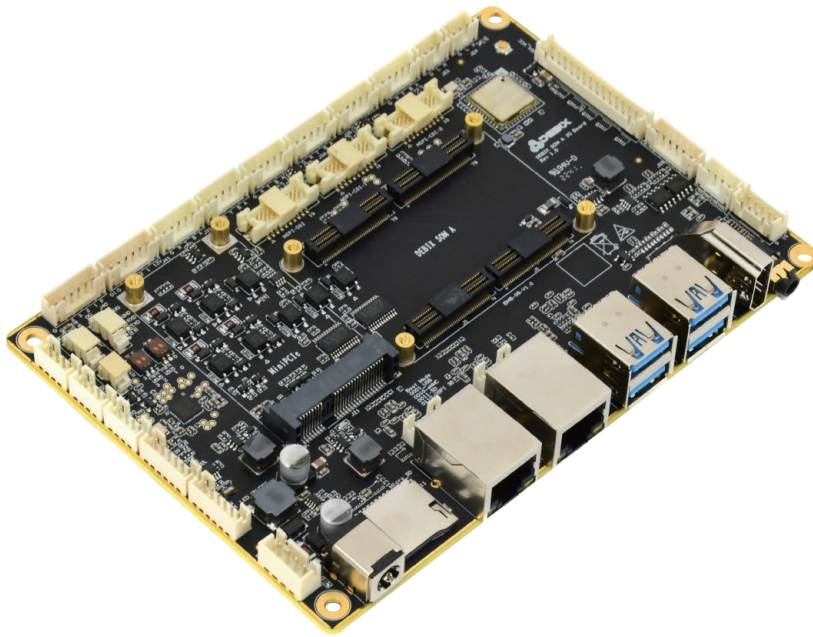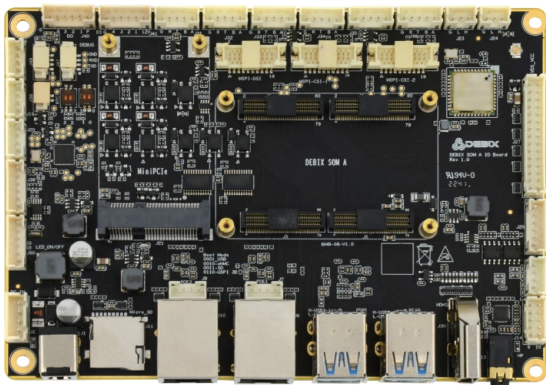# DEBIX SOM A I/O Board

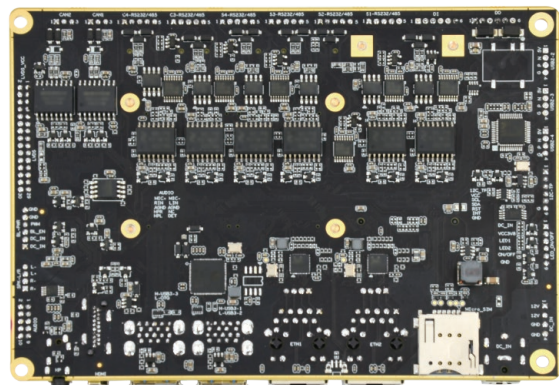# DEBIX SOM A I/O Board

Overview:

DEBIX SOM A I/O Board is a carrier board designed for DEBIX SOM A, which connects to DEBIX SOM A through 4 double-sided board-to-board socket connectors on its front side. It's all about full-featured interfaces supported by the core board based on i.MX 8M Plus, and provides a perfect solution combining the functions required for industrial control, IoT connection and multimedia.

Main Features:

· Feature rich interfaces to take advantage of the i.MX 8M Plus processor to the fullest extent
· Besides boot from eMMC on DEBIX SOM A, the I/O Board supports boot from Micro SD and SPI Nor Flash
· The serial ports, CAN and GPIO of the I/O Board are designed with physical isolation, dedicated to industrial and IoT applications
· Support 2 Gigabit Ethernet with POE function, 2.4GHz & 5GHz Wi-Fi and Bluetooth 5.0
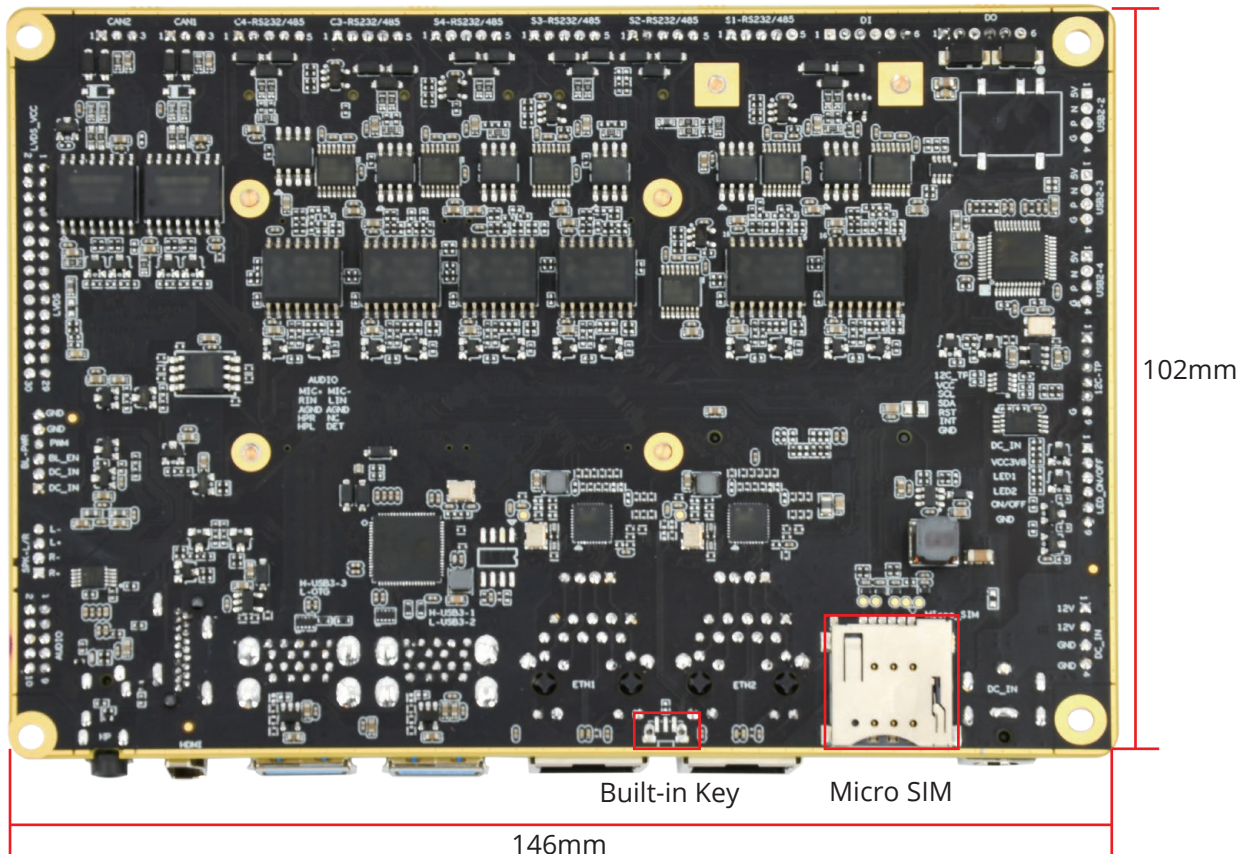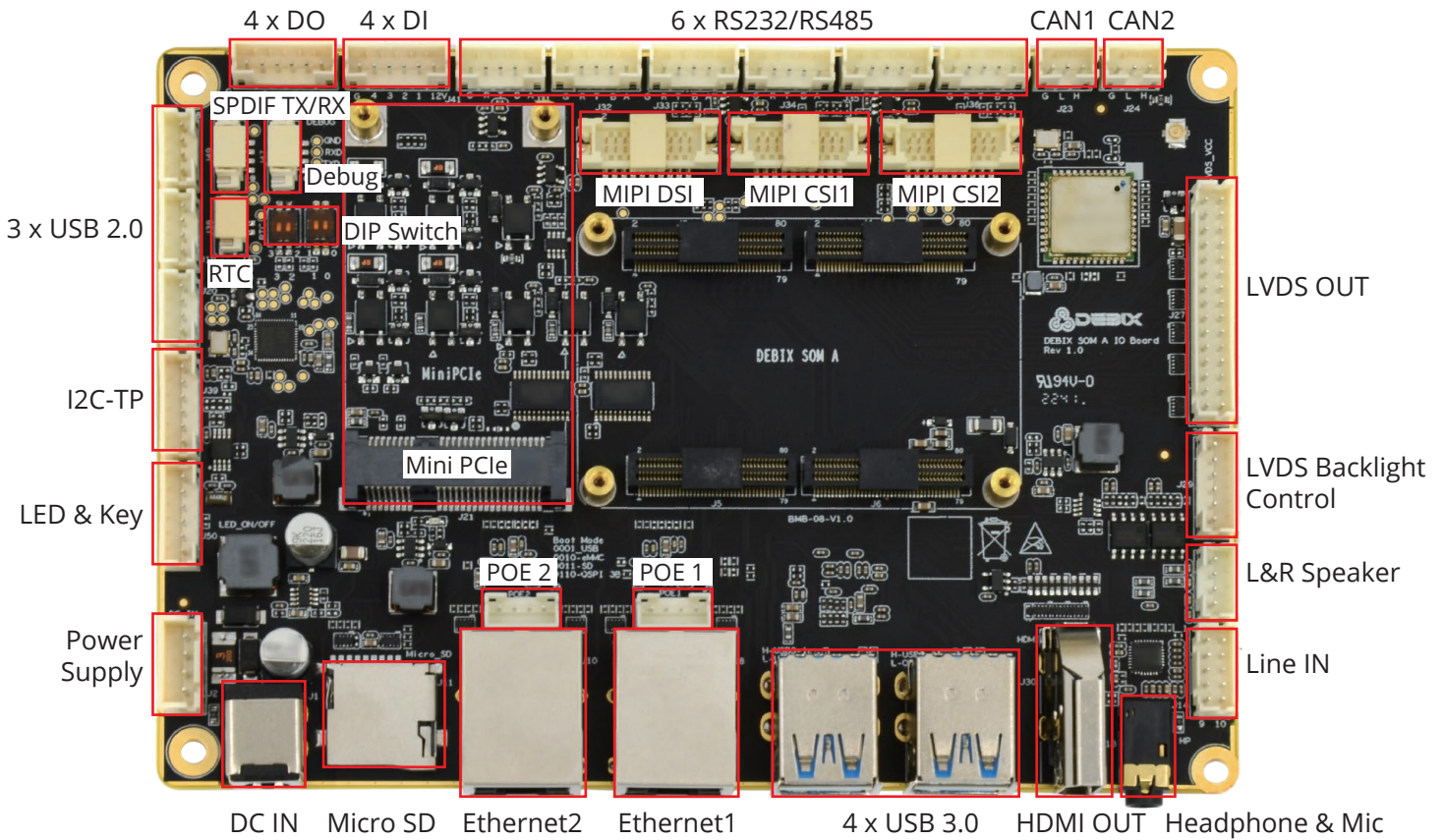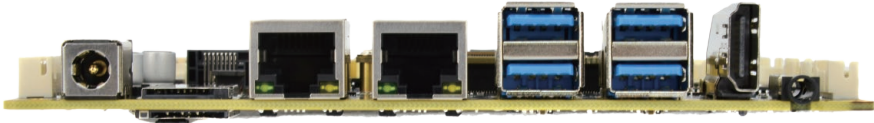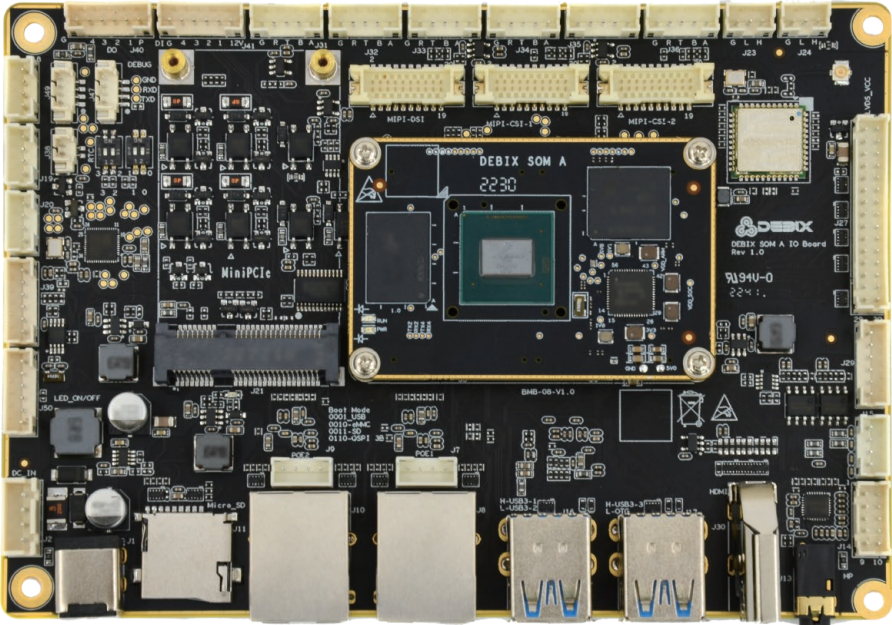

(Front View)

(Back View)

Specification:

System	
Core Board	DEBIX SOM A
Boot	(1) Support boot from eMMC on DEBIX SOM A (2) Support boot from Micro SD on carrier board (3) Support boot from SPI Nor Flash on carrier board
Vedio & Audio	
HDMI	1 x HDMI output, Type-A female socket
LVDS	(1) 1 x Dual-channel LVDS output, support single-channel 8bit and dual-channel 8bit output (2*15Pin/2.0mm pin header) (2) 1 x Backlight control connector (1*6Pin/2.0mm pin header) (3) 1 x I2C touch panel connector (1*6Pin/2.0mm pin header)
MIPI DSI	1 x 4Lane MIPI DSI (2*10Pin/1.25mm pin header)
MIPI CSI	2 x 4Lane MIPI CSI (2*10Pin/1.25mm pin header)
Audio	(1) 1 x Headphone and mic combo port, 3.5mm socket, compatible with built-in header design (2) 1 x Line in, analog input (3) 1 x L&R speaker output, Max. 3W@4Ω (1*4Pin/2.0mm pin header) (4) 1 x SPDIF TX/RX audio connector (1*4Pin/1.25mm pin header)
Communication	
Ethernet	2 x Independent MAC Gigabit RJ45 port with POE power supply (need POE power device module)
WIFI & BT	2.4GHz & 5GHz Wi-Fi and Bluetooth 5.0, external SMA antenna connectors for Wi-Fi and 4G
Other I/O Interfaces	
SIM Slot	1 x Micro SIM slot, push pop-up slot
SD Slot	1 x Micro SD slot, push pop-up slot
Mini PCIe	(1) Support 4G Mini PCIe module such as Quectel 4G Module, built-in SIM card, etc. (2) Support LoRa Mini PCIe module (3) Support Mini PCIe expansion for network card, SATA and serial port
USB 3.0	4 x USB 3.0 Host, double-layer Type-A interface
USB 2.0	3 x USB 2.0 Host (1*4Pin/2.0mm pin header)
Serial Ports	(1) 6 x Physically-isolated RS232/RS485 (you can choose only one of two), compatible with UART TTL 3.3V without physical isolation (2) 1 x UART TTL 3.3V system debug port
GPIO	(1) 4 x Physically-isolated DI, support dry contact and wet contact (2) 4 x Physically-isolated DO, support wet contact, compatible with dry contact of external relay
CAN	2 x Physically-isolated CAN
LED & Key	(1) 1 x Power LED (2) 2 x Programmable LED (3) 1 x ON/OFF The above interfaces share one connector (1*6Pin/2.0mm pin header) (4) Built-in small key for eMMC upgrade without disassembly
DC Jack	(1) 1 x DC jack for 5.5mm x 2.1mm DC plug (2) 1 x Built-in power supply connector (1*4Pin/2.54mm pin header)
Power Supply	
Power Input	DC 12V for default, support wide voltage range of DC 12V~36V
Mechanical	
Dimension	146.0mm x 102.0mm
Operating Temp.	-20℃~70℃ for default, -40℃~85℃ optional

I/O Interfaces:

4 x DO   4 x DI   6 x RS232/RS485   CAN1   CAN2

SPDIF TX/RX

Debug

DIP Switch

MIPI DSI   MIPI CSI1   MIPI CSI2

3 x USB 2.0

RTC

LVDS OUT

I2C-TP

MiniPCIe

DEBIX SOM A

Mini PCIe

LED & Key

LVDS Backlight Control

L&R Speaker

POE 2   POE 1

Power Supply

Line IN

DC IN   Micro SD   Ethernet2   Ethernet1   4 x USB 3.0   HDMI OUT   Headphone & Mic

Built-in Key   Micro SIM

102mm

146mm

Connection with DEBIX SOM A:

Safety Instruction:

To avoid malfunction or damage to this product please observe the following:
• Do not expose to water, moisture or place on a conductive surface whilst in operation.
• Take care while handling to avoid mechanical or electrical damage to the printed circuit board and connectors.
• Avoid handling the printed circuit board whilst it is powered and only handle by the edges to minimize the risk of electrostatic discharge damage.

Warnings:

• This product should be used with DEBIX SOM A.

• This product should be operated in a well-ventilated environment and, if used inside a case, the case should not be covered.

• This product should be placed on a stable, flat, non-conductive surface in use and should not be contacted by conductive items.

• The connection of incompatible devices to the GPIO connection may affect compliance and result in damage to the unit and invalidate the warranty.

• All peripherals used with this product should comply with relevant standards for the country of use and be marked accordingly to ensure that safety and performance requirements are met. These articles include but are not limited to keyboards, monitors and mice when used in conjunction with DEBIX.

• Where peripherals are connected that do not include the cable or connector, the cable or connector must offer adequate insulation and operation in order that the relevant performance and safety requirements are met.

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