POLYHEX

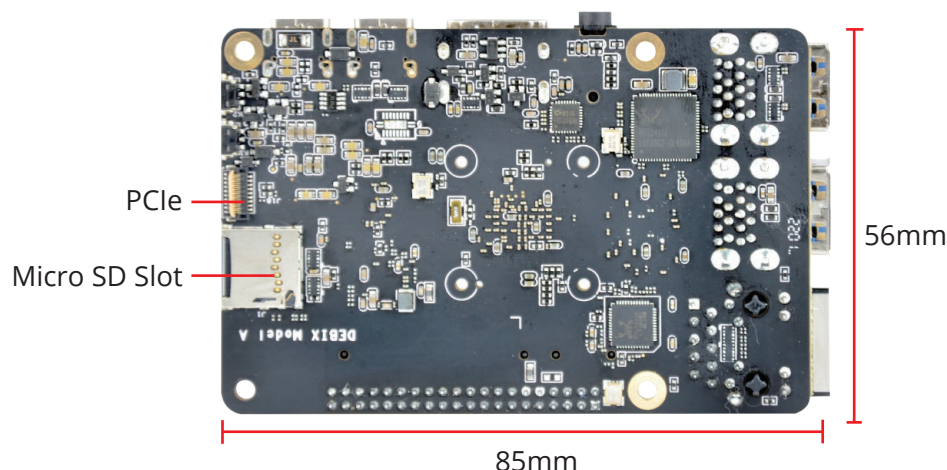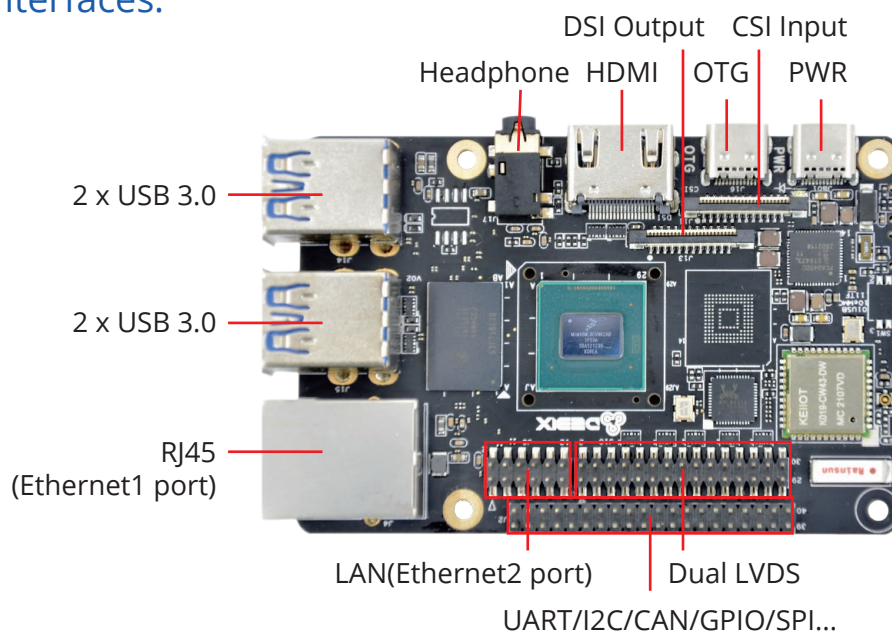# DEBIX Model A: Industrial Grade Single Board Computer Based on NXP i.MX 8M Plus
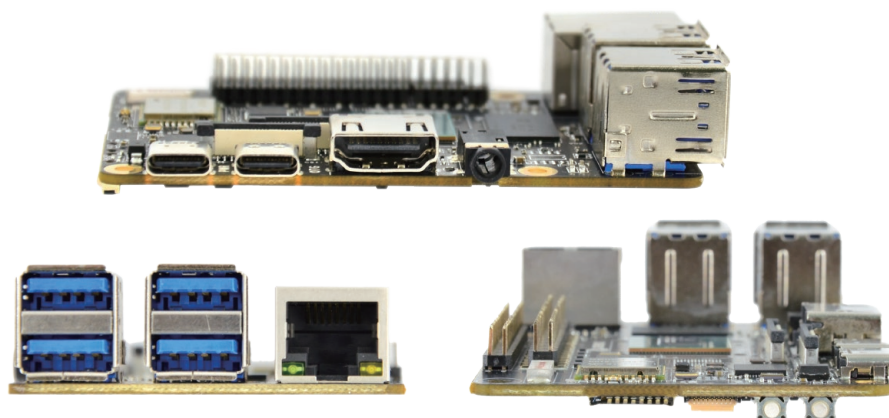
Main Features:

(1) Powerful quad core CPU with 2.3 TOPS NPU

(2) -40℃~105℃ CPU temperature for both industrial and commercial contexts such as industry 4.0, IoTs, multimedia and smart cities

(3) Gigabit network, 2.4GHz & 5GHz Wifi, BT5.0 to monitor and control networked industrial equipment

(4) Complete software development for direct applications (Ubuntu 20.04, Yocto-L5.10.72_2.2.0, Android 11 OS with basic software)

I/O Interfaces:

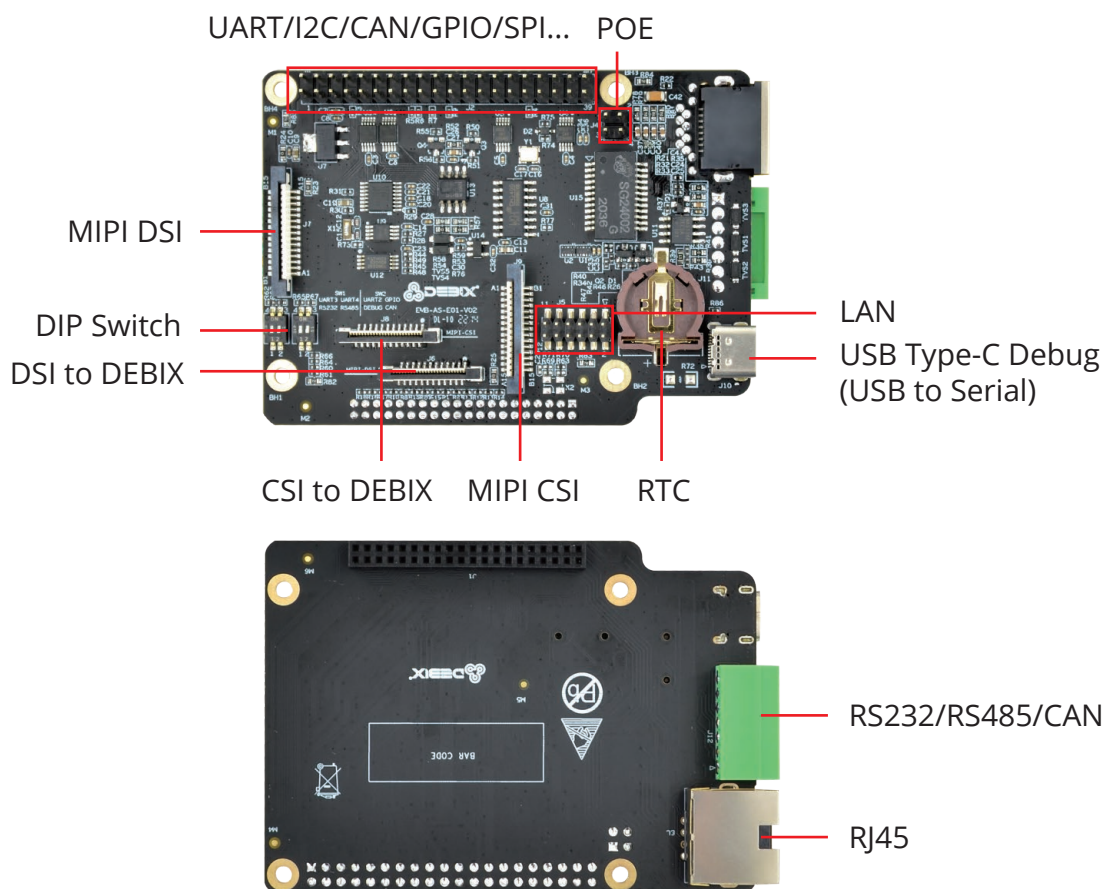Headphone   HDMI   DSI Output   OTG   CSI Input   PWR

2 x USB 3.0

2 x USB 3.0

RJ45 (Ethernet1 port)

LAN(Ethernet2 port)   Dual LVDS

UART/I2C/CAN/GPIO/SPI...

PCIe

Micro SD Slot

56mm

85mm

Main Board Certificates:

210–188060

FCC ID: 2A4SS-DEBIX-MODEL-A

Specification:

System	
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 (4GB/6GB optional)
Storage	Default: Micro SD card (Onboard 8GB/16GB/32GB/64GB/128GB eMMC optional)
Operating System	Android 11, Yocto-L5.10.72_2.2.0, Ubuntu 20.04
I/O Interfaces	
Gigabit Ethernet	1 x RJ45 with POE power supply (need POE power device module) 1 x pin header (without network transformer)
WIFI & BT	2.4GHz & 5GHz WIFI, BT5.0
USB	4 x USB 3.0 Host Type-A, 1 x USB 2.0 OTG Type-C
Audio	1 x Headphone and Mic combo port
HDMI	1 x HDMI OUT
Expansion	
40-Pin Double-Row Headers	(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, double-row pin headers
MIPI CSI	1 x MIPI CSI, support 4-lane 24-Pin 0.5mm Pitch FPC socket
MIPI DSI	1 x MIPI DSI, support 4-lane 24-Pin 0.5mm Pitch FPC socket
PCIe	1 x PCIe, support PCIe x1, 19-Pin 0.3mm Pitch FPC socket
Power Supply	
Power Supply	DC 5V/3A Type-C
Mechanical & Environmental	
Size	85.0mm x 56.0mm
CPU Temperature	-40℃ to 105℃

Add-on Board EMB-AS-E01:

UART/I2C/CAN/GPIO/SPI...   POE

MIPI DSI

DIP Switch
DSI to DEBIX

LAN
USB Type-C Debug
(USB to Serial)

CSI to DEBIX   MIPI CSI   RTC

RS232/RS485/CAN

RJ45

EMB-AS-E01 Specification:

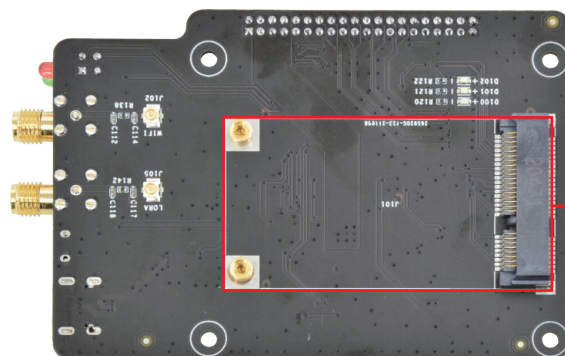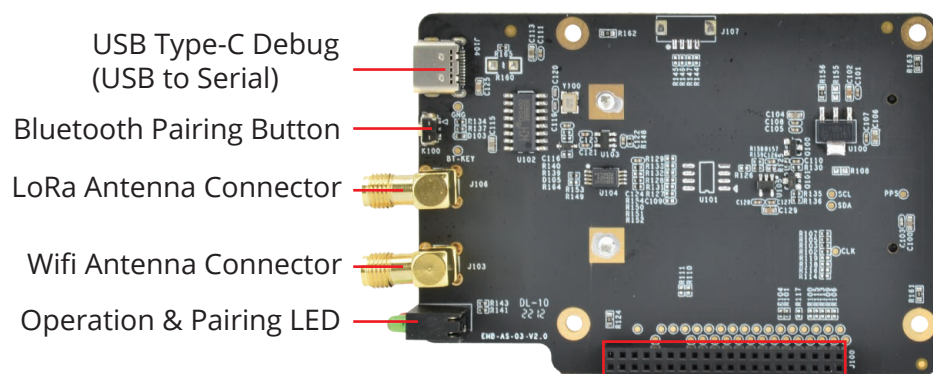| I/O Interfaces	
Network	1 x RJ45 Gigabit Network POE Supported (Compatible with POE power device module)
USB	1 x USB Type-C Debug (USB to Serial)
RTC	1 x RTC
Serial Ports	1 x RS232 1 x RS485
CAN	1 x CAN Transceiver
DIP Switch	2 x 2bit DIP Switch (used for selecting USB-Debug, RS232, RS485 and CAN)
Expansion	
40-Pin Double-Row Headers	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.
MIPI CSI	1 x MIPI CSI
MIPI DSI	1 x MIPI DSI
EEPROM	1 x 2Kbit EEPROM
Accessories	
Cables	2 x Flexible flat cable for DSI & CSI 1 x Female to female jumper wires for Ethernet

Add-on Board EMB-AS-03:

Mini PCIe LoRa Module

USB Type-C Debug (USB to Serial)

Bluetooth Pairing Button

LoRa Antenna Connector

Wifi Antenna Connector

Operation & Pairing LED

Connection Interface with DEBIX Model A

EMB-AS-03 Specification:

I/O Interfaces	
USB	1 x USB Type-C Debug (USB to Serial)
Mini PCIe	1 x Mini PCIe (LoRa Module)
Buttons	1 x Bluetooth Pairing Button
LED	1 x Operation Indicator, 1 x Pairing Indicator
External Antenna	1 x LoRa Antenna Connector, 1 x Wifi Antenna Connector
EEPROM	1 x 2Kbit EEPROM
Clipper Chip	1 x Secure Element, eg.ATECC608

ABOUT POLYHEX

As a board level and system level designer and manufacturer, Polyhex, with 9-year experience, always delivers best-in-class embedded computing solutions based on both ARM and X86 architecture, including hardware customization and software debugging etc. Partnered with silicon vendors like Intel, NXP, ST, Rockchip, Allwinner and so on, we have earned trust from clients worldwide in over 30 countries. Polyhex is also certified with ISO9001 and ISO13485 for the self-owned manufacture facility.

POLYHEX
Beyond the Embedded Deployment