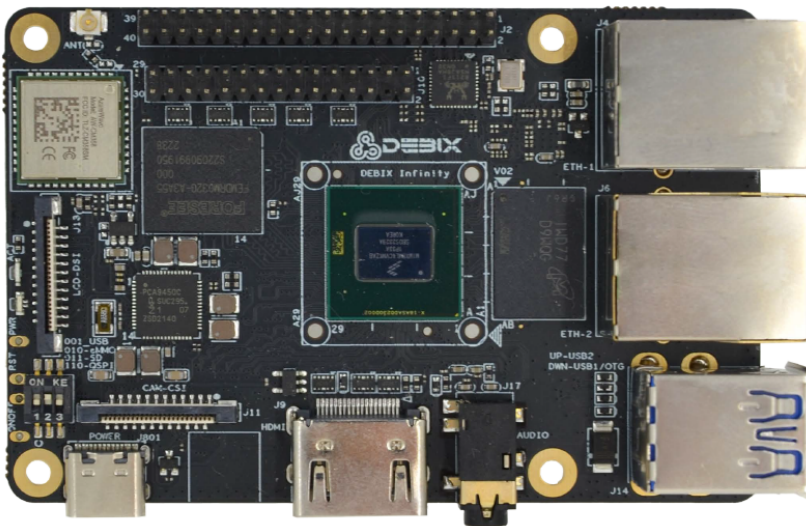# DEBIX Infinity

# DEBIX Infinity Industrial Single Board Computer

## Overview:

DEBIX Infinity is an embedded board based on NXP i.MX 8M Plus Quad Lite, which provides a range of scalable interface options aimed at smart robots, Industry 4.0, edge computing, gateways, IoT, and security applications.
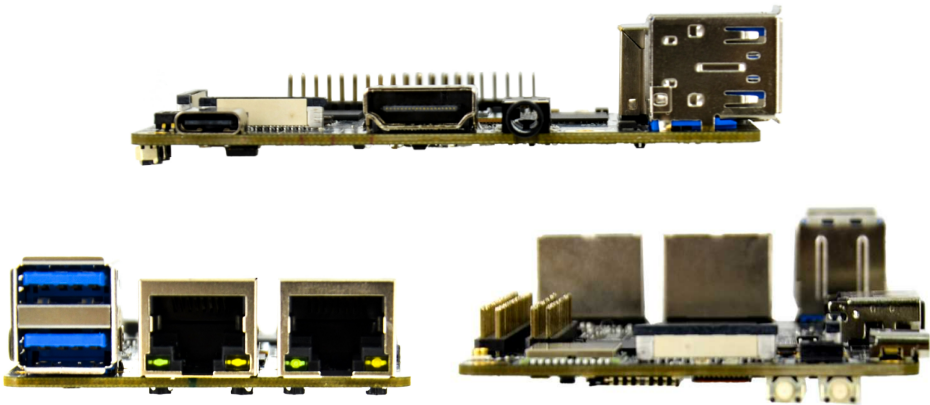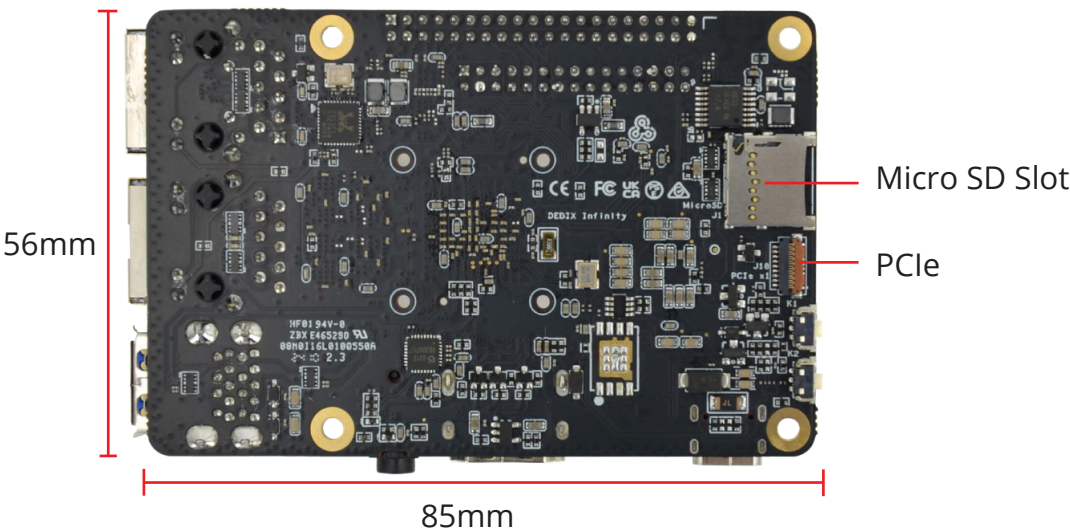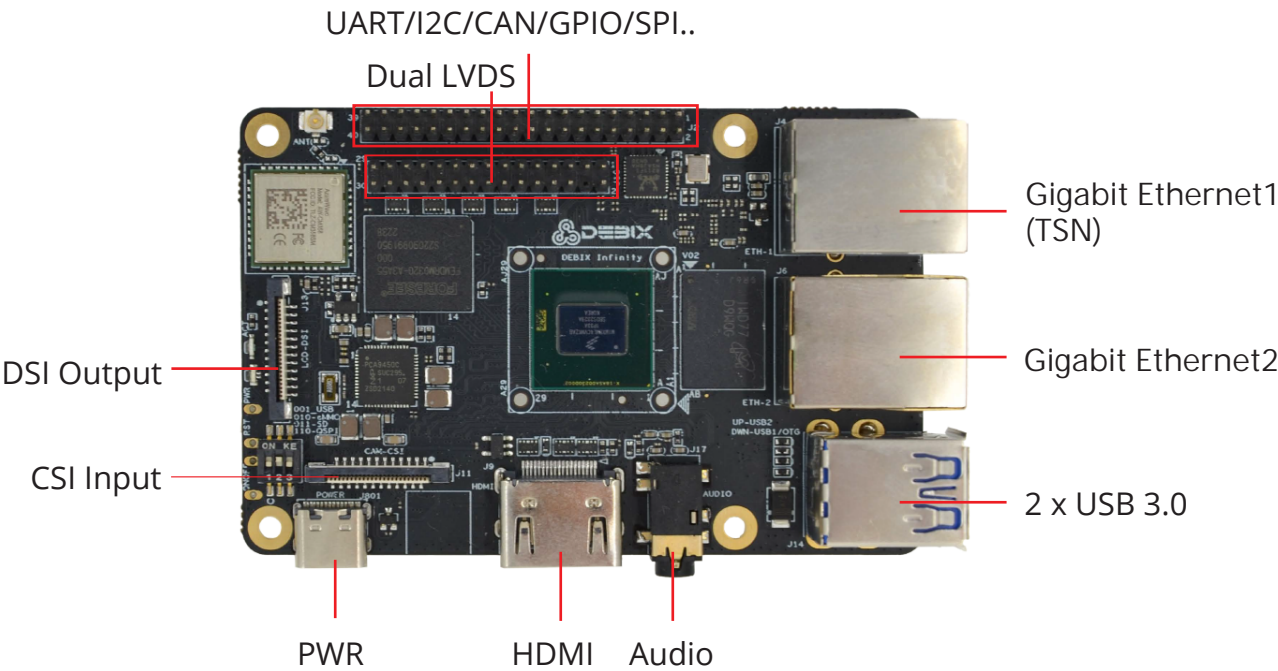
## Main Features:

· **Performance:** Powerful quad-core Arm® Cortex®-A53 CPU at 1.6GHz indicates sufficient processing power for demanding industrial applications.

· **Real-time control:** Cortex-M7 core and robust control network interfaces like dual CAN FD and dual Gigabit Ethernet with one TSN support make it suitable for real-time applications with strict timing requirements.

· **Industrial reliability:** Designed for critical environment condition and temperature change, the wide CPU temperature range -40°C to 105°C make it can be used in critical industrial environment, transportation and industry control etc.

· **Rich Connectivity:** A comprehensive range of connectivity options, including Gigabit Ethernet, 2.4GHz & 5GHz Wi-Fi, Bluetooth 5.2, high-speed USB 3.0, and PCIe support. This allows for easy connection and control of various industrial peripherals.

· **Complete Software Support:** Includes Android11/ Yocto-L6.6.36/ Ubuntu22.04/ Debian12 / Windows 10 IoT Enterprise/ OpenWRT/ FreeRTOS operating system and basic software for fast and direct applications.
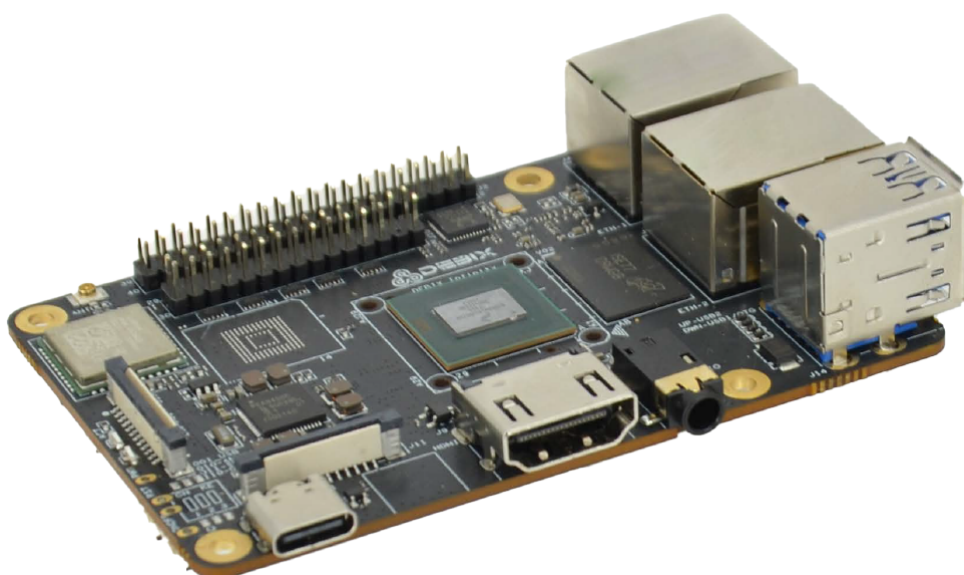
## Specification:

| System | |
|---|---|
| CPU | NXP i.MX 8M Plus Quad Lite, MIMX8ML4CVNKZAB, 4 x Cortex-A53 1.6GHz |
| Memory | 2GB LPDDR4 (4GB optional, while 8GB is optional when operating temp. is -20℃ to 70℃) |
| 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)<br>Note: 4GB/8GB LPDDR4 supports Windows 10 IoT, recommend 8GB version. |
| **I/O Interfaces** | |
| Gigabit Ethernet | 2x Gigabit Ethernet port, one supports TSN and PoE power supply (need PoE power device module) |
| Wi-Fi & BT | NXP 88W8987 SoC: 2.4GHz & 5GHz Wi-Fi + BT 5.2 |
| USB | 2 x USB 3.0 Host Type-A (DWN_USB1 can be configured as OTG via software) |
| Audio | 1 x 3.5mm Headphone and Mic combo port |
| HDMI | 1 x HDMI OUT |
| **Expansion** | |
| 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.<br>(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 |
| Slot | 1 x Micro SD slot |
| **Power Supply** | |
| Power Supply | DC 5V/3A Type-C |
| **Mechanical & Environmental** | |
| Size | 85.0mm x 56.0mm (±0.5mm) |
| Operating Temp. | -20℃ to 70℃ (-40℃ to 85℃ optional) |
| Net Weight | 46g(±0.5g) |

## I/O Interfaces:

UART/I2C/CAN/GPIO/SPI..

Dual LVDS

Gigabit Ethernet1 (TSN)

Gigabit Ethernet2

2 x USB 3.0

DSI Output

CSI Input

PWR

HDMI

Audio

56mm

85mm

Micro SD Slot

PCIe

## Compatible with DEBIX's Accessories:

| Product | Model |
|---|---|
| DEBIX Fanless Aluminum Enclosure | EMC-7090B Infinity |
| 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.

## Contact Us:

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