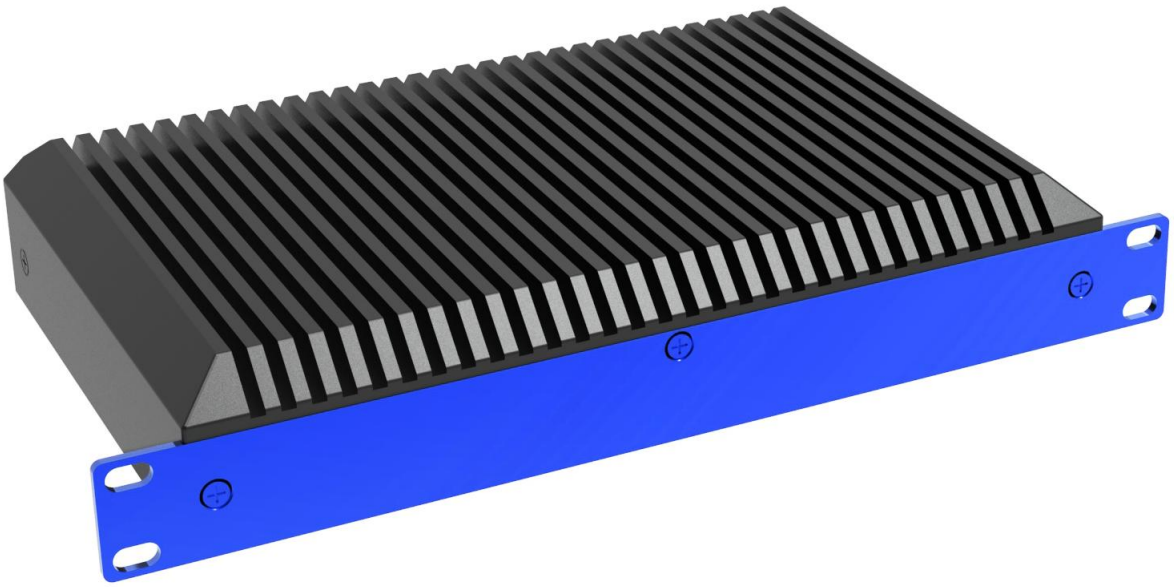
Shenzhen Geniatech Co.,Ltd.

i.MX 8M Plus
High-Performance AI Computing Power PC Specification

MODEL: APC880



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Revision History

VERSION	DATE	PAGE	DESCRIPTION	AUTHOR
V1.0	2025-2-13	8	Initial version	
V1.01	2025-3-12	8	Update product pictures	

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CONTENT

1. General Description

The i.MX 8M Plus AI Edge Computing PC is based on the high-performance i.MX 8M Plus SoC, Is the first NXP integrated transmission nerve processing unit (NPU) product, Running rates of up to 2.3 TOPS, Focus on machine learning and vision, multimedia, and industrial automation with high reliability, Also paired with the Kinara Ara-2 40 TOPS computing chip, Rapid prototyping of edge AI application scenarios, It can be widely used in machine learning and artificial intelligence, NPU vision system, advanced multimedia and industrial automation.

-- i.MX 8M Plus SoC

- i.MX 8M Plus SoC with 14nm FET process technology
- Quad-core 64-bit ARM Cortex A53 processor + Cortex-M7
- Integrated Neural Network Processing Unit (NPU) with 2.3 TOPS performance
- Highly efficient H.265/H.264/VP9 video decoding capability, supports up to 4K resolution

-- Kinara Ara-2 SoC

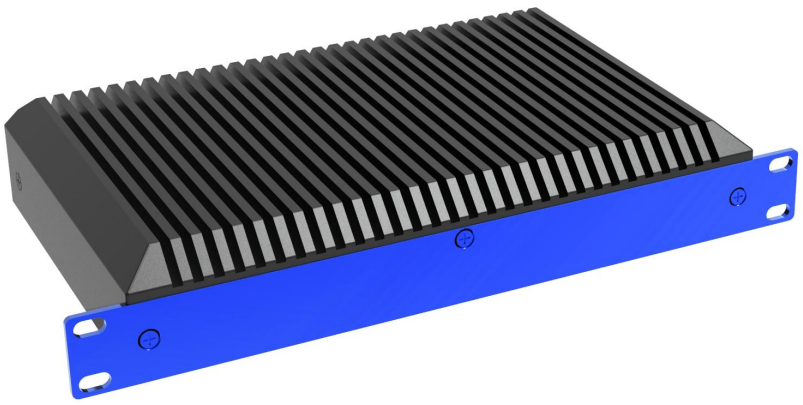
- 8 second-generation neural cores
- 16GB LPDDR4X memory
- 40 TOPS of high-performance computing power
- Supports TensorFlow,PyTorch,ONNX AI models

-- I/O interface

- 2*Gigabit Ethernet RJ 45 interfaces
- 2*USB3.0 and 2*USB2.0 interfaces
- 2*CAN, 1*RS232, and 1*RS485
- MIPI DSI、MIPI CSI、LVDS、HDMI and other display and camera interfaces
- Multi-channel M.2 interface can extend 4G / 5G
- Micro SD card slot,Micro SIM card slot
- DC IN

2. Product Overview

Below picture is for reference only, please prevails in kind.



3. Features

CHIPSET	NXP iMX8M Plus+Kinara Ara-2		
MARKET AREA	Global		
Core parameters	OS	Yocto(Linux)	
	SoC	4 x Cortex-A53, up to 1.8GHz&1 x Cortex-M7, up to 800MHz	
	GPU	GC7000UL with OpenCL and Vulkan support Supports OpenGL ES 1.1, 2.0, 3.0, OpenCL 1.2, Vulkan	
	NPU	iMX8M Plus	2.3 TOPS Neural Network performanc
		Kinara Ara-2	40TOPS Neural Network performanc TensorFlow,PyTorch,ONNX AI Model
	Memory	iMX8M Plus	4GB（1G-8G optional）
		Kinara Ara-2	16GB
	Storage	32GB eMMC5.1(8-128GB optional)	

I/O interface	Network Interface	2 x Giga Ethernet
		Wifi2.4G+5G +BT 5.0
	Video Interface	1 x HDMI output 1 x LVDS Screen Connector 2x15P (J24) 1 x MIPI DSI connector for MIPI Panel (J33) 1 x MIPI CSI connector for MIPI Camera 2 lanes (J3) 1 x MIPI CSI connector for MIPI Camera 4 lanes (J1)
	USB interface	2 x USB 2.0 Type A (J21 J23) 2 x USB 3.0 Type A (J21 J23) 1 x USB Type C (J18) 2 x USB2.0 4P Header (J13 J14)
	PCIe interface	1 x B2B Connector for AI module 60Pin (J9) 1 x B2B Connector for AI module power supply 30Pin (J5) 1 x M.2 Key M for M.2 AI module(J7)
	SD Card	1 x Micro SD card slot
	SIM Card	1 x Micro SIM card slot(J34)
	Extended interface	1 x M.2 Key B for 4G/5G (J26) 1 x Mini PCIe for 4G (J27)
	Audio interface	1 x Speaker (Left/Right Channel) 4P Header (J2) 1 x 3.5 Headphone seat(J6) 1 x Mic 2P Header (MIC1)
	Communication interface	1 x RS232 4P Header (J11) 1 x RS485 4P Header (J12) 2 x CAN 4P Header (J31 & J32) 1 x A53 Core Debug connector (UART) (J4)
	Other interfaces	1 x I2C Touch Screen connector (J30) 1 x RTC-Battery（JBAT1） 1 x Expended Connector 2x20 P Header (J20) 1 x FAN 4P Header with FAN PWM (J16) 1 x LCD Backlight 6P Header (J28) 1 x LVDS Panel Power Switch (j22) 1 x SW1 for System boot mode switch 1 x System upgrade key 1 x Reset Key 1 x DC Jack
	Power supply input	DC 12V /3A
Size	238*130*40mm	
Weight	1300g	

4. Interface Function Description

No.	Function	Note
1	Antenna interface	
2	3.5-inch headset Sound output port	
3	Giga Ethernet 1	
4	Giga Ethernet 2	
5	Micro SD card slot	
6	Antenna interface	
7	USB Type C OTG	
8	USB3.0+USB2.0	
9	USB3.0+USB2.0	
10	Reset button	
11	HDMI Out	
12	Recovery button	
13	DC 12V Power supply input interface	

5. Video Parameter

Video Decode

- 1080p60 HEVC/H.265 Main, Main 10 (up to level 5.1)
- 1080p60 VP9 Profile 0, 2
- 1080p60 VP8
- 1080p60 AVC/H.264 Baseline, Main, High decoder

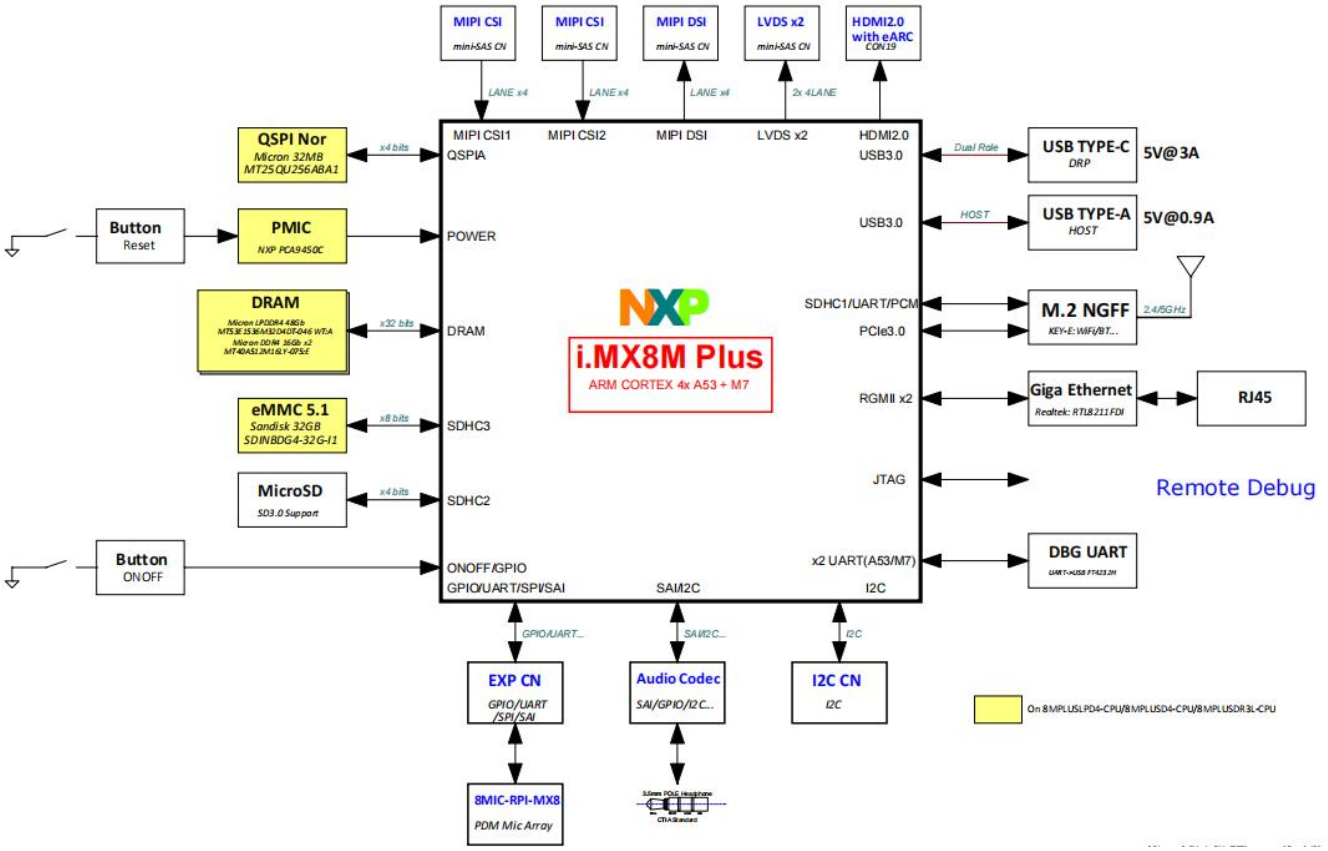
Video Encode

- 1080p60 AVC/H.264 encoder
- 1080p60 HEVC/H.265 encoder

Image Sensor Processor (ISP)

- 375 Mpixel/s HDR ISP supporting configurations, such as 12MP@30fps, 4kp45, or 2x 1080p80

6. System Block Diagram



7. Precautions For Use

- Relative humidity: ≤80% .
- Operation temperature: Commercial field：0~ 85℃； Industrial field: -40~85℃.
- Do not squeeze, bend or disassemble the product.
- Keep products away from static electricity.
- Do not allow water or other liquids to come into contact with the product.
- Clean the product with a soft dry towel or brush.