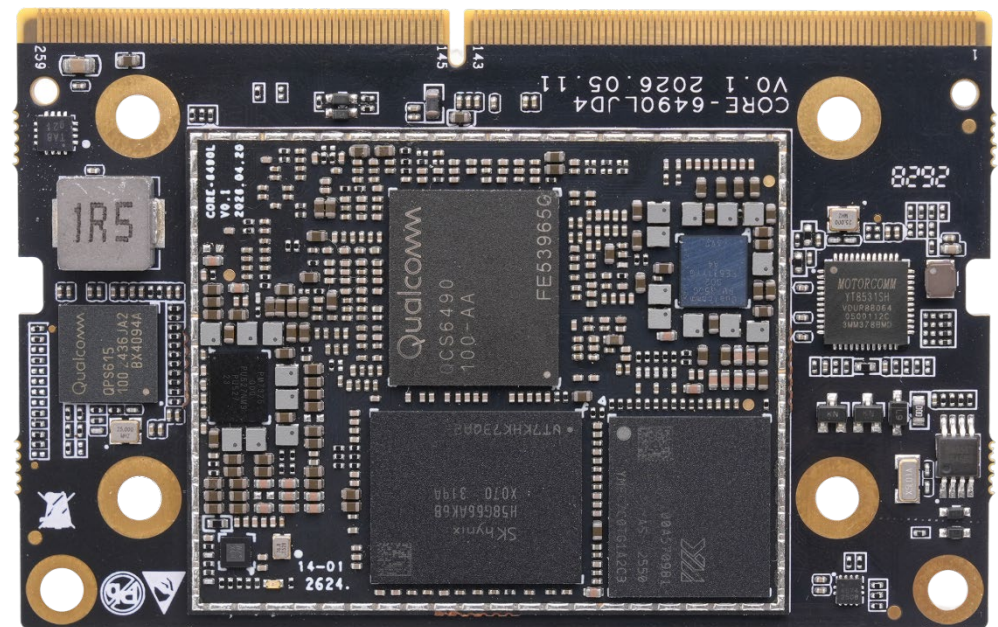




CORE-6490JD4

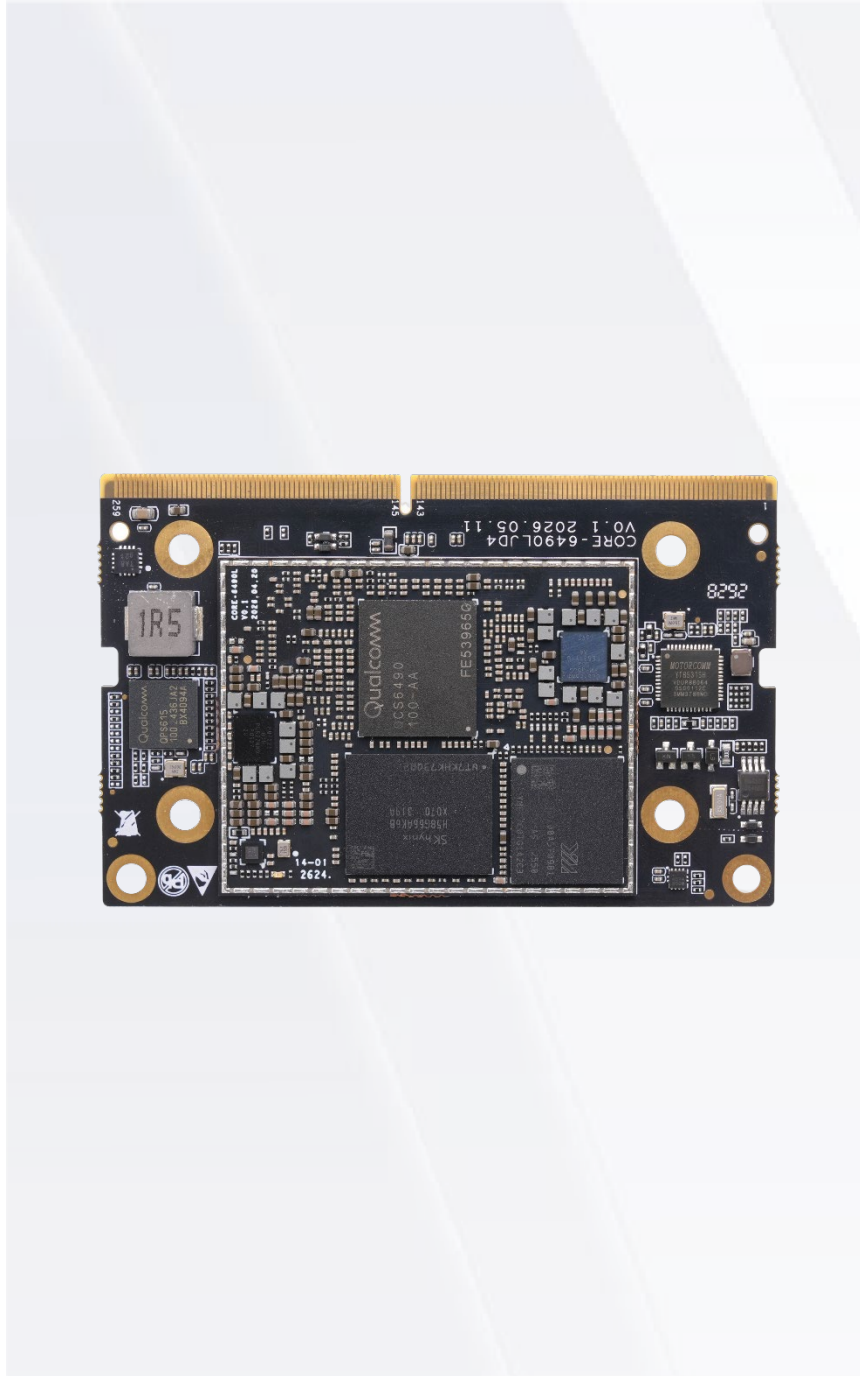
| Qualcomm QCS6490 SoM



V0.1 2026-9-22

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Product features



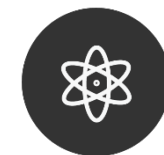
Octa-core Heterogeneous Processor QCS6490

Adopts Qualcomm QCS6490 octa-core 64-bit heterogeneous processor, built on ARM architecture with advanced 6nm process technology and a clock frequency up to 2.7 GHz, delivering powerful support for high-performance computing and multi-task processing.



4K Video Encoding and Decoding

Supports 4K@60fps H.265/H.264/VP9 video decoding, 4K@30fps H.265/H.264 video encoding, and concurrent processing of 4K decoding and 1080P encoding.



Integrated Adreno 643 GPU

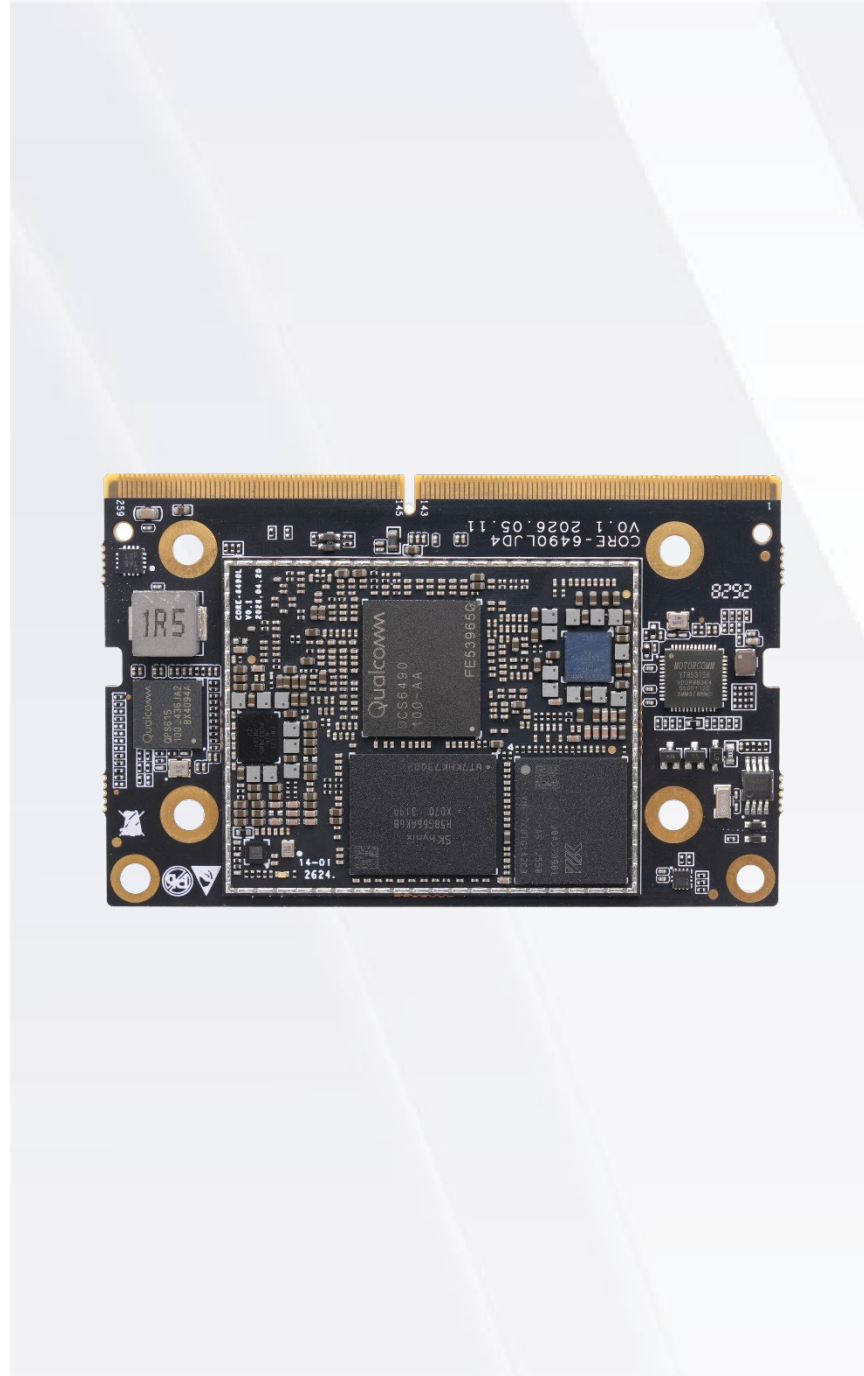
Comes with integrated Adreno 643 GPU, supporting OpenGL ES 3.2, Vulkan 1.x, OpenCL 2.0 and DX FL12 graphics APIs. It efficiently handles tasks such as graphics rendering and image processing to meet visualization display requirements for edge scenarios.



Built-in 12 TOPS NPU

Comes with built-in 12 TOPS NPU, supporting mixed computation of INT4/INT8/INT16/FP16. It enables intelligent data processing, speech recognition and image analysis to satisfy edge computing AI application requirements for most terminal devices.

Product features



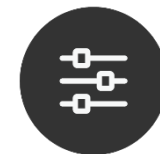
Supports 3-Channel Camera Input

It is equipped with 3-channel on-board MIPI-CSI interfaces to enable simultaneous image capture from three cameras for multi-vision scenarios. Fitted with HD video output interface, it supports up to 4K@30Hz video output to meet high-definition display requirements.



Gold-Finger Interface With Compact Form Factor

It adopts the standard 260-Pin SODIMM gold-finger interface and features a compact form factor. Measuring 69.6 × 45mm and weighing only 23g, it can be easily embedded into various end-devices for rapid product integration.



Rich Expansion Interfaces

It features expansion interfaces including PCIe 3.0, USB 3.0, MIPI-CSI, HD, SDIO 3.0, SPI, I2C and UART to meet peripheral expansion requirements for diverse scenarios.



Wide Range of Application Scenarios

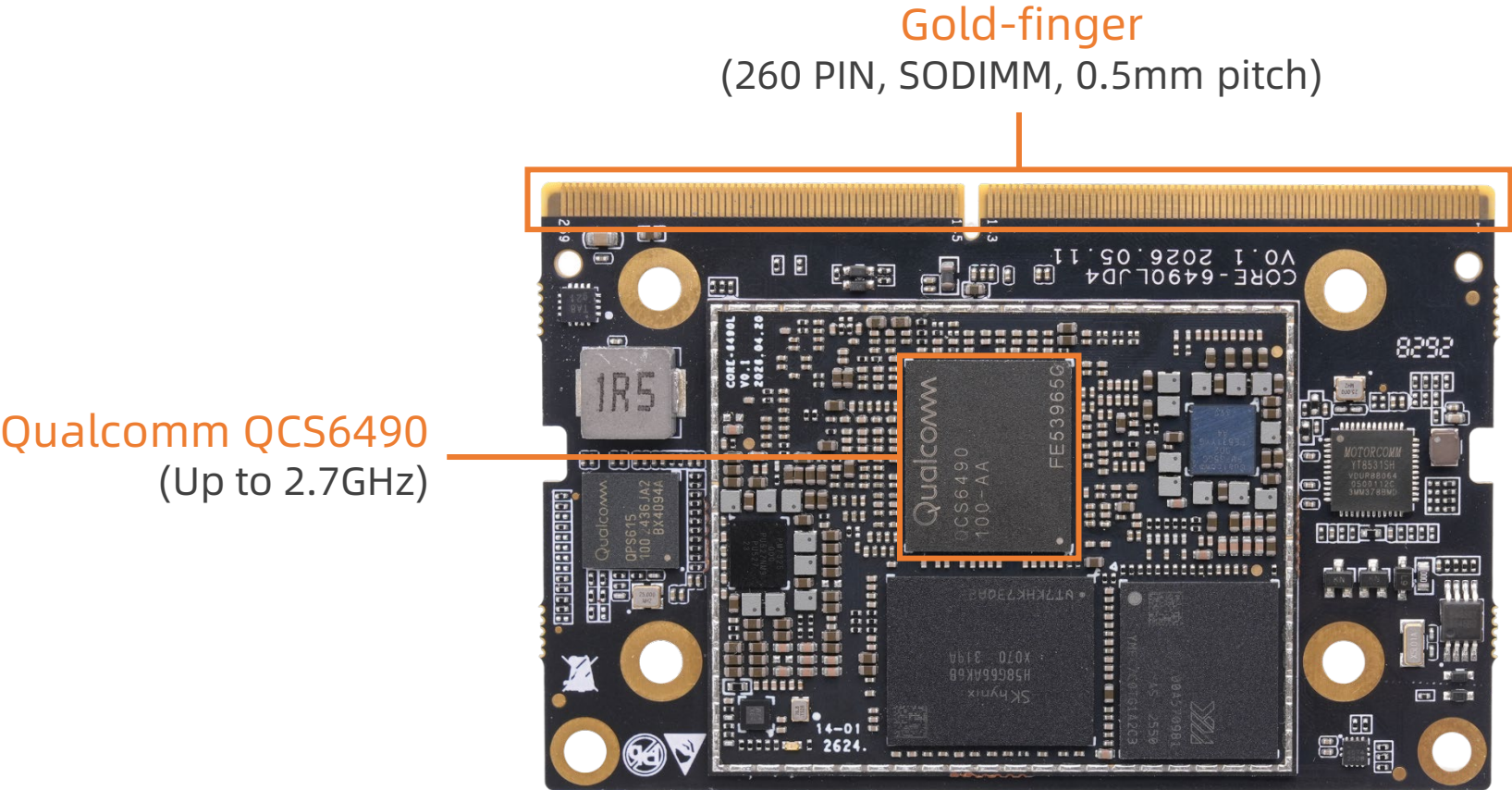
Widely applicable to edge computing, private deployment of end-side large models, robots, industrial visual inspection, intelligent security, vehicle multi-camera perception, smart retail and other industry sectors.

Specifications

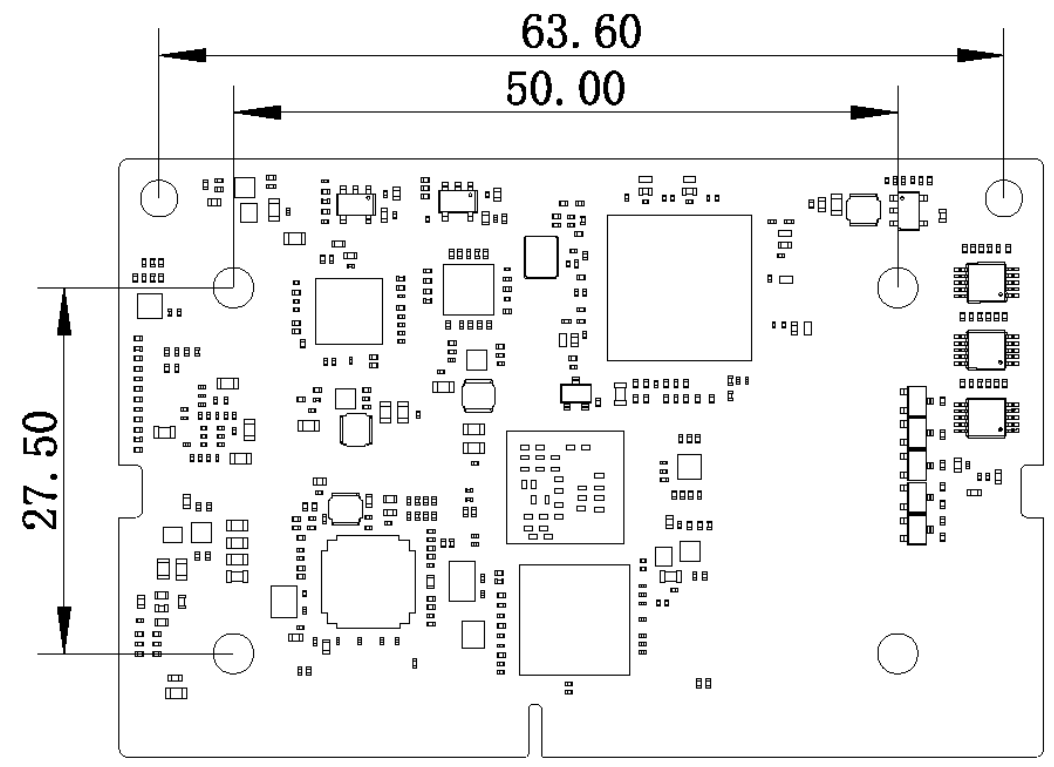
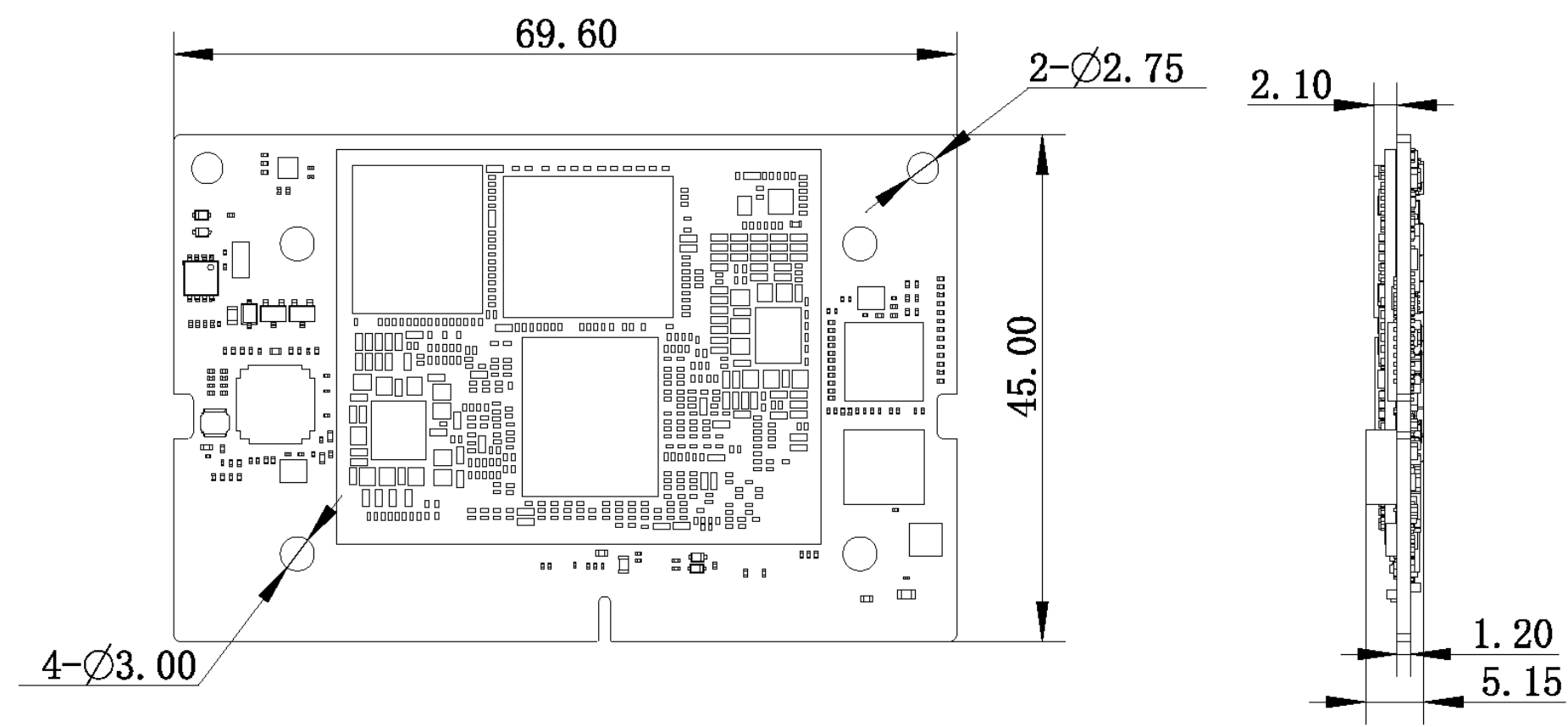


Specifications		
Basic Specifications	SOC	Qualcomm QCS6490
	CPU	Qualcomm Kryo CPU: Octa-core 64-bit processor (1×Kryo Prime 2.7GHz + 3×Kryo Gold 2.4GHz + 4×Kryo Silver 1.9GHz), built on advanced 6nm process, max frequency up to 2.7GHz
	GPU	Adreno 643 GPU, supports OpenGL ES 3.2, Vulkan 1.x, OpenCL 2.0, DX FL12
	NPU	Hexagon 770 NPU, 12 Dense TOPS
	ISP	Spectra 570L ISP, Zero Shutter Lag (ZSL) mode: 64MP / 36MP+22MP / 3×22MP @30fps, Non-Zero Shutter Lag (non-ZSL) mode: 192MP
	Codec	Video Decoding: 1×4K@60fps/2×4K@30fps/4×1080P@60fps (H.265/HEVC, H.264/AVC, VP9) Video Encoding: 1×4K@30fps/4×1080P@60fps (H.265/HEVC, H.264/AVC) Video Concurrency: 1080P@60fps decoding + 1080P@60fps encoding / 4K@30fps decoding + 1080P@30fps encoding
	RAM	4GB/8GB LPDDR5
	Storage	64GB eMMC
	Power Supply	5V (voltage tolerance ±5%)
	Power Consumption	Normal: 4W(5V/800mA), Max: 10W(5V/2000mA), Min(Sleep): 0.7W(5V/140mA)
	OS	Qualcomm Linux, Ubuntu
	Software Support	Supports private deployment of ultra-large-parameter models under Transformer architecture, including large language models such as Deepseek-R1, Gemma, Llama, Qwen and Phi series. Supports QNN AI inference framework and multiple deep-learning frameworks: TensorFlow, TensorFlow Lite, PyTorch, MXNet, Keras, Caffe.
	Interface Type	SODIMM (260PIN, 0.5mm pitch)
	Dimension	69.6mm × 45.0mm × 5.15mm
	Weight	≈23g
	Environment	Operating Temperature: -20°C ~ 60°C, Storage Temperature: -20°C ~ 70°C, Operating Humidity: 10% ~ 90%RH (No condensation)
Interface Specifications	Network	2 × 1000 M Ethernet ports. Wi-Fi and Bluetooth can be further expanded via PCIe or USB.
	Video Input	3 × 4-Lane MIPI-CSI, supports D-PHY v1.2 / C-PHY v1.2, enables simultaneous acquisition from 3 cameras
	Video Output	1 × HD2.0 (Up to 4K@30Hz)
	Audio	2 × MI2S (each group with 2 data channels, supporting full-duplex stereo or up to 4-channel transmit-receive)
	PCIe	1 × PCIe Gen3x1, 1 × PCIe Gen3x2 (NVMe-capable)
	USB	1 × USB3.0 OTG (5Gbps), 2 × USB3.0 (5Gbps), 1 × USB2.0
	SDIO	1 × SDIO3.0
	Other Interfaces	9 × QUPv3 Bus (QUPv3 can be flexibly configured as UART, SPI or I2C. Signals are multiplexed and cannot be used simultaneously; allocate resources according to practical application)

SoM Interface description



SoM Dimension





FIREFLY TECHNOLOGY



Contact Us
(+86)18688117175



E-mail
global@t-firefly.com



Website
<https://www.t-firefly.com>



Address
Room 2101, Hongyu Building, #57 Zhongshan 4Rd, East District,
Zhongshan, Guangdong, China.