

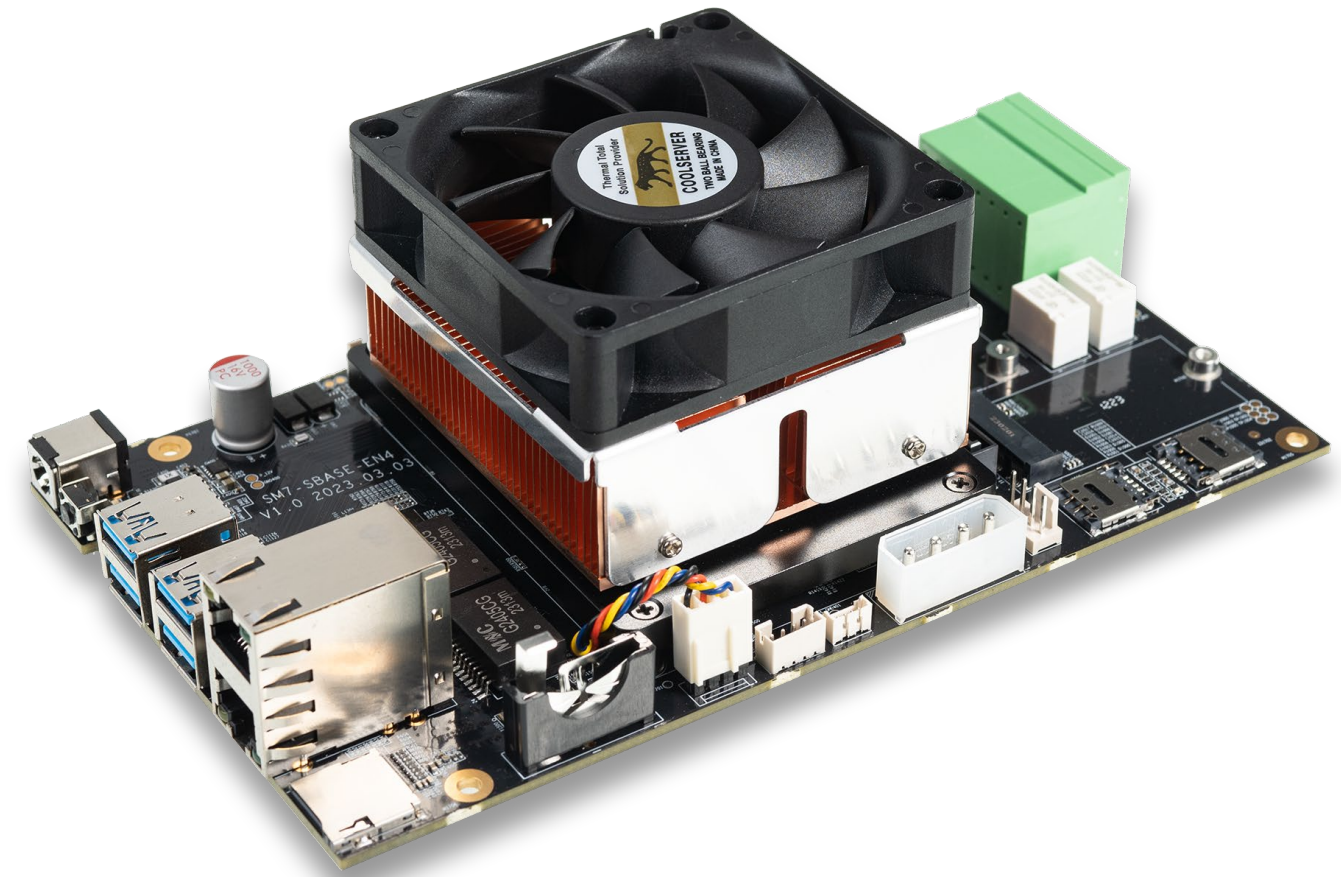


AIO-1684XQ

32T Computing Power AI Mainboard

T-CHIP INTELLIGENCE TECHNOLOGY

V1.0



Product features



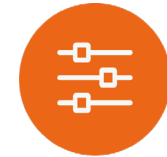
New-gen AI processor

SOPHON AI processor BM1684X
32TOPS (INT8) , 16TFLOPS (FP16/BF16)
2TFLOPS (FP32)
Super High Computing Power



Powerful video AI performance

32-channel H.265 1080p video decoding
32-channel H.265 1080P HD video full process processing (decoding+AI analysis)
12-channel H.265 1080p video encoding



A variety of interfaces

M.2(5G), Mini PCIe, SATA3.0, Gigabit Ethernet, USB3.0, RS485, RELAY, GPIO



One-stop toolkit

SOPHON SDK one-stop deep learning development toolkit provides a series of software tools, it supports Caffe/TF/PyTorch/Mxnet/Paddle



High throughput

Based on INT8 quantified Batch4 measured data, it has higher throughput and energy efficiency ratio



A wide range of applications

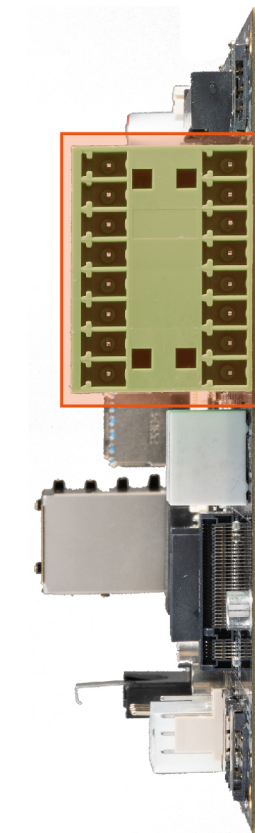
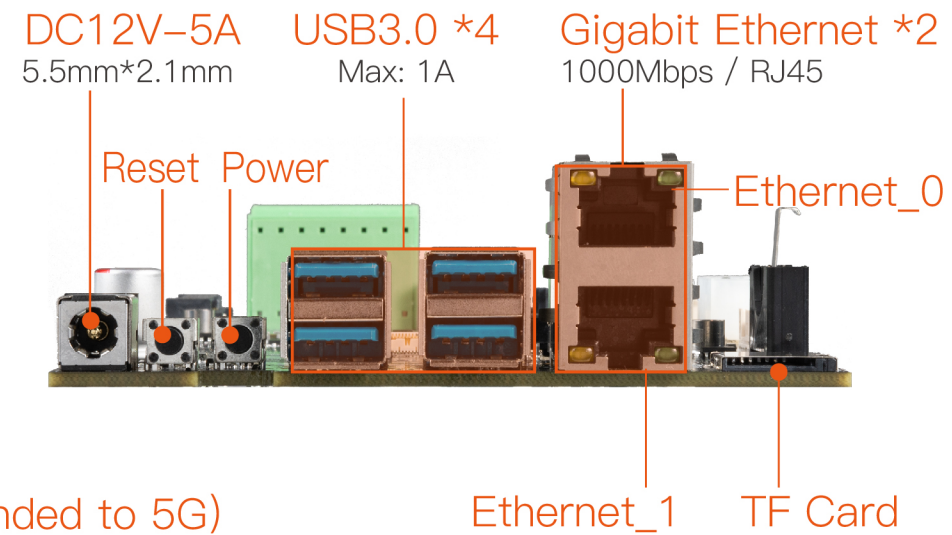
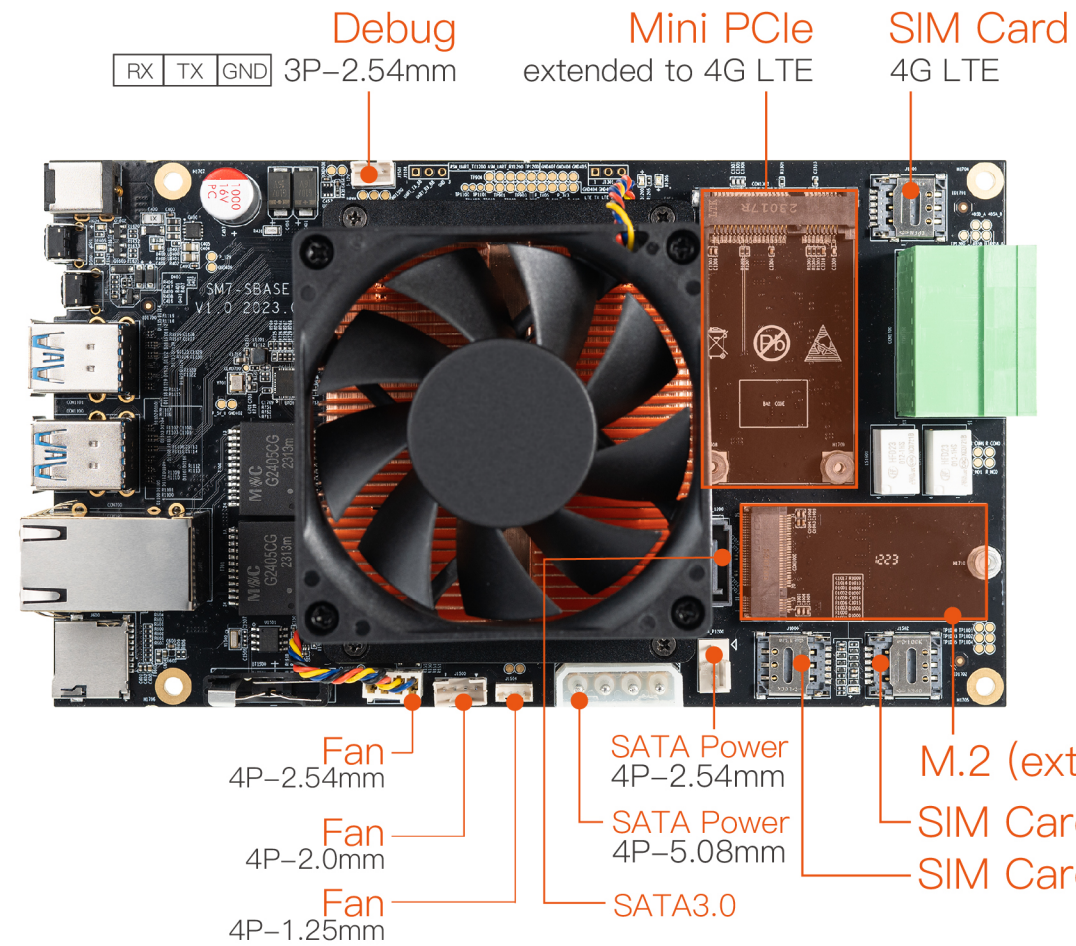
Visual computing, edge computing, general computing power services, Artificial Intelligence, intelligent construction site, intelligent transportation, security surveillance

Specifications



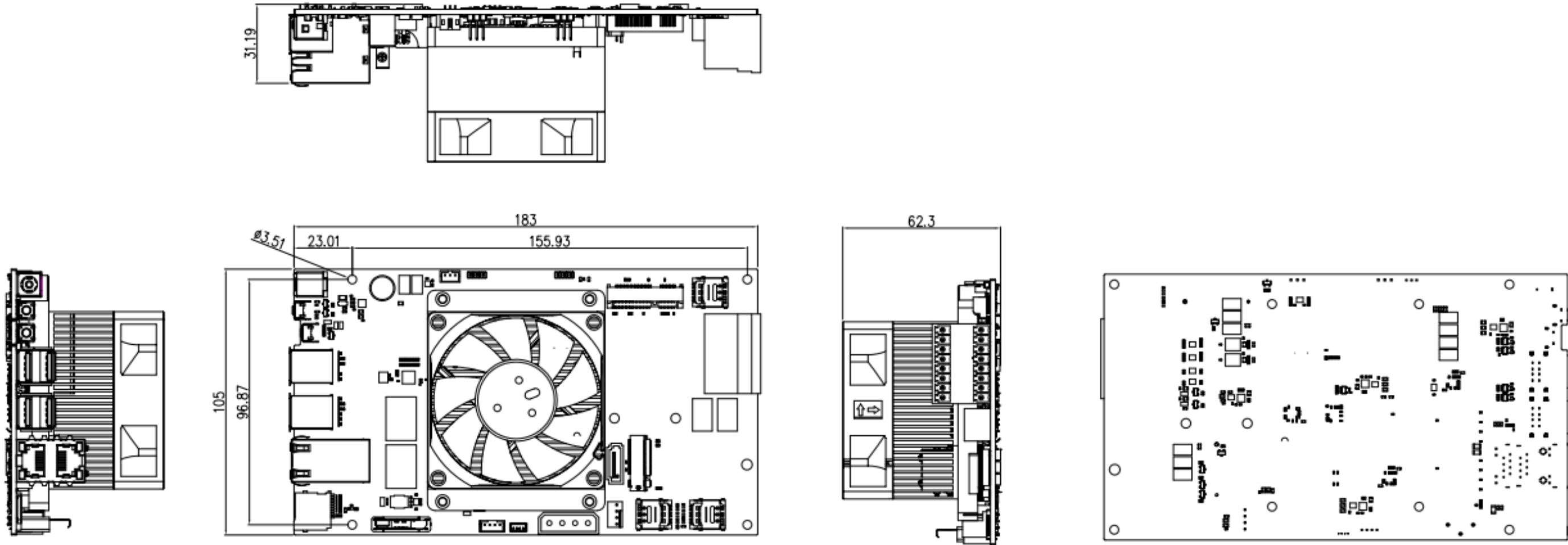
Specification	
SOC	SOPHON BM1684X
CPU	Integrated high-performance ARM A53, 12nm lithography process, clock speed up to 2.3GHz
TPU	Built-in tensor computing module TPU, computing power up to: 32TOPS (INT8), 16TFLOPS (FP16/BF16), 2TFLOPS (FP32) Support mainstream programming frameworks, such as TensorFlow / Caffe / PyTorch / Paddle / ONNX / MXNet / DarkNet
Encoding/Decoding	32-channel H.265/H.264 1080p@25fps video decoding 32-channel 1080P@25fps HD video full process processing (decoding+AI analysis) 12-channel H.265/H.264 1080p@25fps video encoding
RAM	16GB LPDDR4x
Storage	64GB eMMC, 128MB SPI Flash
Ethernet	2* Gigabit Ethernet (1000Mbps)
Interface	M.2(5G), Mini PCIe, SATA3.0, Gigabat Ethernet, USB3.0, RS485, RELAY, GPIO
Power	DC 12V/5A (5.5mm*2.1mm)
Power consumption	Normal: 24W(12V/2000mA), Max: 42W(12V/3500mA)
OS	Linux
Dimension	183mm * 105mm * 41.8mm
Weight	≈380g(including radiator)
Environment	Operating Temperature: -20°C ~ 60°C, Storage Temperature: -20°C ~ 70°C, Storage humidity: 10% ~ 90%RH (non-condensing)

Interface description



GND	GND
485A-A	485B-A
485A-B	485B-B
RELAY_COM0	RELAY_COM1
RELAY_NO0	RELAY_NO1
GPIO5	GPIO7
GPIO6	GPIO29
GND	GND

Dimension





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