

SM9 16-ENC-A3



The deep learning computing module SM9 16-ENC-A3 is equipped processor 8-core ARM CA53, featuring low power consumption, high computing power, rich interfaces and excellent compatibility. It supports mixed-precision computing of INT4/INT8/FP16/BF16/FP32 and enables 16-channel HD real-time video analysis. It can be flexibly applied in scenarios such as images, voice, and natural language analysis and integrated into products including intelligent computing servers, edge computing boxes, industrial control computers, drones and AIOT.

High Energy Efficiency and Flexibility

- 16-channel HD intelligent video analysis
- Support mixed-precision computing of INT4/INT8/FP16/BF16/FP32

Strong Multimedia Support

- Support 16-channel HD hardware decoding and 10-channel HD hardware encoding.
- Support multiple VI inputs, audio inputs and ISP
- Support hardware acceleration for stereo depth, image stitching and fisheye unwrapping

Rich Interfaces, Wide Temp Range, Low Power Consumption and Flexible Deployment

- Support SATA/USB/GbE/HDMI/CAN/SDIO.
- Low power consumption, wide temperature design and enhanced adaptability.

Compatible with NV Orin Nano/NX series Modules with High Cost-Performance

- Pin-to-pin compatibility, Pinlist/Pinmux enrichment
- 4GB/8GB LPDDR4 configurations available

Application Scenario



Product Specification

Product Model	SM9 16-ENC-A3
Processor	8-core ARM CA53 1.6GHz
Computing Power	16-channel HD intelligent video analysis
Memory	8GB LPDDR4x 64bits 4266Mbps
Storage	32GB eMMC 5.1
Video Decoding	H.264&H.265: 16x 1080P@30fps, support 8192 * 8192 / 8K / 4K / 1080P / 720P / D1 / CIF
Video Encoding	H.264&H.265: 10x 1080P@30fps, support 8K / 4K / 1080P / 720P / D1 / CIF
Image Decoding	JPEG: 1080P@480fps, maximum support 32768 * 32768
Audio&Video Input	6x VI; 2x I2S 2x dual-channel input and output (optional)
ISP	2x 8Mp30, 2f-HDR, 3DNR / LDC / 3A / Dehaze
CV	IVE/VPSS + DPU (binocular depth) + Stitch (image stitching) + Dewarp (fisheye unwrapping)
PCIE	PCIe Gen3 1 x2 + 1 x2 RC&EP
USB	2x USB3.0, 2x USB2.0
Network	2x GbE
Display Interface	1x HDMI 2.0
Other Interfaces	2x SATA3.0, 1x CAN, 1x SD/SDIO, 4x UART, 4x I2C, 6x PWM, 2x SPI, ADC, GPIOs
Power Supply	DC 5V
Operating Temperature	-20°C ~ +70°C
Connector	260-pin SO-DIMM
Dimensions	69.6mm x 45mm x 6mm