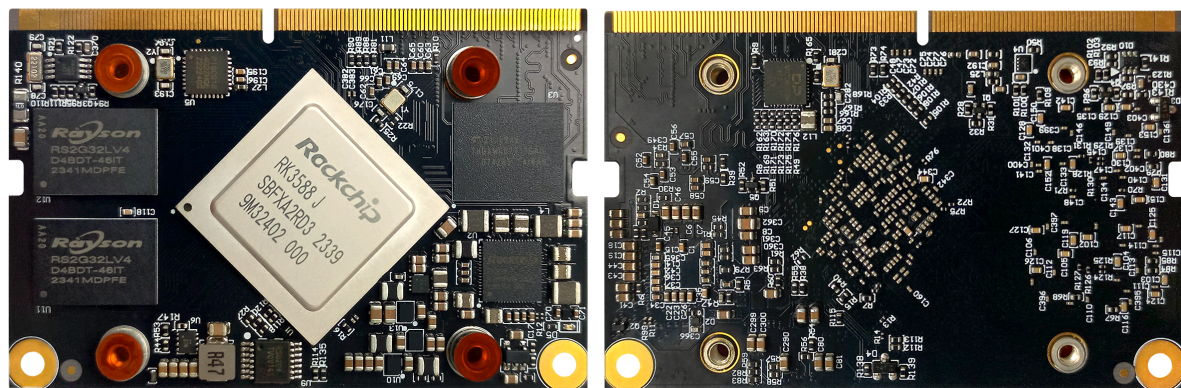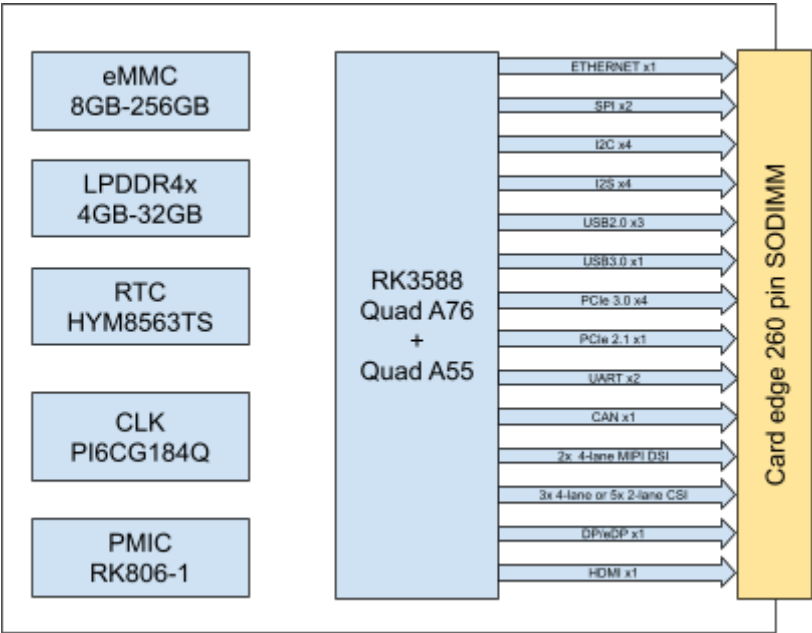# Compact and High-performance SOM for AIoT

The ELNAGE-NV-RK3588 processor module in the Jetson TX2 NX format stands out for its high performance and versatility. It features an octa-core CPU consisting of four Cortex-A76 cores and four Cortex-A55 cores, delivering excellent efficiency and power. The clock speed reaches up to 2.4 GHz, allowing it to handle complex tasks effectively.

The integrated Mali-G610 GPU, and NPU supports up to 6 TOPS (trillions of operations per second), making it ideal for applications in artificial intelligence and machine learning. The module also supports various AI frameworks, facilitating the integration of deep learning into projects.

Additionally, the RK3588J offers a wide range of interfaces and connectivity options, simplifying integration with various peripheral devices and sensors. This makes it a powerful solution for development in areas such as smart cities, industrial automation, and IoT.

Block diagram

Technical specification

CPU	Quad-core Cortex-A76 (2.4 GHz) + Quad-core Cortex-A55, Neon and FPU
GPU	Arm Mali-G610 MP4 with support for OpenGL ES3.2, OpenCL 2.2, Vulkan1.2
NPU	RK NN, 6 TOPS NPU with support for TensorFlow, Caffe,TFLite, PyTorch, ONNX NN, Android NN
Memory	4 GB, 8 GB, 16 GB, or 32 GB 64-bit LPDDR4x
Storage	32 GB - 256 GB eMMC 5.1 flash storage
Supported OS	Debian 11, Ubuntu 22.04, and Armbian 23.07
Supply power	5 V DC, 25W TDP
Video codec	8Kp60 video decoding (H.264/H.265/VP9) 8Kp30 video encoding (H.264/H.265)
Display	1xHDMI + 1x DP/eDP, up to 7680 x 4320@60 Hz for HDMI Interface and DP, and 3840 x 2160@60 Hz for eDP
Camera	3x 4-lane or 5x 2-lane MIPI CSI interfaces @ 2.5 Gbps/lane
ISP	48M ISP, HDR
Network	10/100/1000 BASE-T
USB	1x USB 3.0 (Gen1), 3x USB 2.0
PCIe	PCIe 3.0 x4 + PCIe 2.1 x1
Others	UART DEBUG x1, UART+flow control x2,SPI x2, I2C x4, CAN x1, I2S x4, SD 4.0, SDHOST 4.0, and SDIO 3.0, PWM x3, GPIO x15
Connector	260-pin SO-DIMM edge connector, compatible with Jetson TX2 NX
Optional accessory	Heatsink with fan
Dimensions	69.6 mm x 45 mm
Temperature	Operating: -40°C to 80°C Storage: -40°C to 85°C

Ordering information

ELNAGE-NV-RK3588-16G-32G-I

- I - Industrial grade CPU, RAM, eMMC, Ethernet and etc.
- C - Commercial grade CPU, RAM, eMMC, Ethernet and etc.

32G - eMMC size: 8G, 32G, 64G, 128G, 256G

16G - LPDDR4x size: 4G, 8G, 16G, 32G