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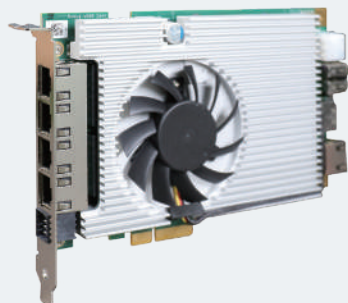www.backplane.com.au

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PCIe-NX154PoE

100 TOPS Intelligent Frame Grabber Card with 4x PoE+ ports for IVA or AI Inspection

Key Features

- Powered by NVIDIA® Jetson Orin™ NX bundled with JetPack 5.1.1
- Single-slot half-length PCIe card form factor
- 4x PoE+ 2.5 GbE ports with a 50W total power budget
- 100 TOPS AI inference performance capable of up to four simultaneous streams of 4K@30FPS video decoding
- 1x isolated RS-485 and 1x RS-232
- x1 Gen2 PCI Express interface offering 2.5Gb/s total bandwidth
- -25°C to 60°C operating temperature with airflow (No throttling at 60°C with Orin NX 20W TDP mode)
- Compatible with Windows and Linux host computers

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Introduction

PCIe-NX154PoE is an intelligent 4-port 2.5GbE PoE+ frame grabber card fueling 100 TOPS AI inference performance for modern vision inspection, intelligent video analytics and surveillance/ security applications. Powered by NVIDIA's Jetson Orin NX system-on-module, PCIe-NX154PoE delivers 100 INT8 TOPS AI performance via its 1024 CUDA cores, 32 Tensor cores and 2 NVDLA® engines. It also features four 2.5GbE PoE+ ports with a 50W total PoE power budget to connect and power industrial GigE cameras or IP cameras.

With a standard single-slot half-length PCIe card form factor and utilizing 2.5GbE for host communication, PCIe-NX154PoE can be installed into a single PCIe x4 slot while operate on Gen2 x1 signals. This makes it an easy integration into any existing computer system, such as a 19" rack-mount IPC or commercial off-the-shelf box PC. When installed into a vision computer system, PCIe-NX154PoE provides necessary camera connectivity, and it also offloads the deep-learning image processing from host CPU/GPU since image capture, video streaming, pre-processing, and inference are all computed on PCIe-NX154PoE.

Wide temperature -25°C to 60°C operation capability, and compatibility with Windows and Linux operating systems make PCIe-NX154PoE the perfect upgrade for legacy machine vision systems to leverage deep learning-based image processing such as object detection, classification, tracking, facial recognition, etc. It's a revolutionary frame grabber card with intelligence for next-generation computer vision applications.

Specifications

System Core	
Processor	NVIDIA® Jetson Orin™ NX system-on-module (SoM), comprising NVIDIA® Ampere GPU and ARM Cortex CPU
Memory	8GB/ 16GB LPDDR5 @ 3200 MHz on SoM

Storage Interface	
M.2 NVMe	1x M.2 2242 M key socket (PCIe Gen4 x2) for NVMe SSD

Deployment I/O Interface	
Bus Interface	x1, Gen2 PCI Express
PoE	4x IEEE 802.3at PoE+. Max 25.5W per port. Total 50W power budget for 4 ports
Ethernet	4x 2.5GBASE-T Ethernet ports[1]
Serial Port	1x RS-232 port and 1x isolated RS-485 port

Development I/O Interface	
Ethernet port	1x Gigabit Ethernet
USB	2x USB 2.0 ports 1x micro USB (OTG)

Development I/O Interface	
Video Port	1x DisplayPort, supporting 3840x2160 at 60Hz
DC Input	12V DC power input (for standalone development, or when total power consumption is more than 66W)

Mechanical	
Dimension	167.7 mm (W) x 111 mm (H)
Weight	0.4 kg

Environmental	
Operating Temperature	-25°C to 60°C with airflow (20W TDP mode)[2]
Storage Temperature	-40°C to 85°C
Humidity	10% to 90%, non-condensing
EMC	CE/FCC Class A, according to EN 55032 & EN 55035

[1] Due to I225-IT specification limitation, for systems running 2.5G Ethernet link speeds, please limit the operating temperature to 60°C.
[2] For sub-zero and over 60°C operating temperature, a wide temperature NVMe is required.

Ordering Information

Model No.	Product Description
PCIe-NX154-JON8	Intelligent Frame Grabber with 4x PoE+ GbE ports by Jetson Orin NX (8GB) and 128GB NVMe with pre-installed system image
PCIe-NX154-JON16	Intelligent Frame Grabber with 4x PoE+ GbE ports by Jetson Orin NX (16GB) and 128GB NVMe with pre-installed system image

Optional Accessories

PA-60W-OW	60W AC/ DC power adapter 12V/ 5A; cord end terminals for terminal block, operating temperature: -30 to 60°C