PCIe-NX156U3

100 TOPS Intelligent Frame Grabber Card with 6x USB 3.2 ports for AI Inspection

Key Features

- Powered by NVIDIA® Jetson Orin™ NX bundled with JetPack 5.1.1
- Single-slot width, standard PCIe half-length card form factor
- 6x USB 3.2 ports, each port with user-configurable 900mA and 1500mA current limit
- 100 TOPS AI inference performance
- Software-programmable per-port power on/off control
- 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

Contact Neousys   Get Quote

Introduction

PCIe-NX156U3 is an intelligent 6-port USB 3.2 frame grabber card powered by NVIDIA's Jetson Orin NX designed to enable AI capabilities for modern vision inspections. It delivers 100 INT8 TOPS AI performance via its 1024 CUDA cores, 32 Tensor cores, and 2 NVDLA® engines. It also features two USB 3.2 Gen2 ports and four USB 3.2 Gen1 ports; each port provides 10 Gbps (Gen2) or 5 Gbps (Gen1) data bandwidth, and up to 1500mA current for USB camera connectivity.

PCIe-NX156U3 aims to enable AI inference and increase USB camera connectivity for existing 19" rack-mount or commercial off-the-shelf box AOI systems. With a standard single-slot half-length PCIe card form factor, PCIe-NX156U3 communicates with the host via the PCIe x4 slot Gen2 x1 signal. Its AI capabilities offloads deep-learning vision computing from the host computer, actions such as image capture, pre-processing, and inference are all performed by PCIe-NX156U3 while utilizing minimum host computer resources.

Capable of wide temperature -25°C to 60°C operation and Windows and Linux OS compatibility make PCIe-NX156U3 the perfect upgrade for legacy machine vision systems to leverage deep learning-based image processing such as package inspection, object sorting, surface defect detection, assembly verification, and robotic guidance, etc. It is a revolutionary AI-enabling frame grabber card for next-generation inspection 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
USB	2x USB 3.2 Gen2 (10 Gbps) ports 4x USB 3.2 Gen1 (5 Gbps) ports
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)

Deployment 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) *
Storage Temperature	-40°C to 85°C
Humidity	10% to 90%, non-condensing
EMC	CE/FCC Class A, according to EN 55032 & EN 55035

* For sub-zero and over 60°C operating temperature, a wide temperature NVMe is required.

Ordering Information

Model No.	Product Description
PCIe-NX156-JON8	Intelligent Frame Grabber with 6x USB 3.2 ports by Jetson Orin NX (8GB) and 128GB NVMe with pre-installed system image
PCIe-NX156-JON16	Intelligent Frame Grabber with 6x USB 3.2 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