



# PCIe-NX156U3

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

Preliminary



CE FC

## Key Features

- Powered by NVIDIA® Jetson Orin™ NX bundled with JetPack 5.1
- 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

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## 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	Supporting 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)
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	TBD
Environmental	
Operating Temperature	-25°C to 60°C with airflow (20W TDP mode) *
Storage Temperature	-40°C ~85°C
Humidity	10%~90% , non-condensing
EMC	CE Class A, according to EN 55032/55035 (pending) FCC Class A, according to FCC Part 15, Subpart B (pending)

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

PCIe-NX156U3



### Ordering Information

Model No.	Product Description
PCIe-NX156-JON8	100 TOPS Intelligent Frame Grabber with 6x USB 3.2 ports by Jetson Orin NX (8GB)
PCIe-NX156-JON16	100 TOPS Intelligent Frame Grabber with 6x USB 3.2 ports by Jetson Orin NX (16GB)

### Ordering Information

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

## Assured Systems

Assured Systems is a leading technology company with over 1,500 regular clients in 80 countries, deploying over 85,000 systems to a diverse customer base in 12 years of business. We offer high-quality and innovative rugged computing, display, networking and data collection solutions to the embedded, industrial, and digital-out-of-home market sectors.

### US

[sales@assured-systems.com](mailto:sales@assured-systems.com)

Sales: +1 347 719 4508  
Support: +1 347 719 4508

1309 Coffeen Ave  
Ste 1200  
Sheridan  
WY 82801  
USA

### EMEA

[sales@assured-systems.com](mailto:sales@assured-systems.com)

Sales: +44 (0)1785 879 050  
Support: +44 (0)1785 879 050

Unit A5 Douglas Park  
Stone Business Park  
Stone  
ST15 0YJ  
United Kingdom

VAT Number: 120 9546 28  
Business Registration Number: 07699660