ADLINK
LEADING EDGE COMPUTING

EOS-JNX Series

NVIDIA® Jetson Xavier™ NX Edge
AI Vision Inference System

Kevin Hsu / 2022 Feb.

Edge AI Vision System Designed for PoE Camera Applications

What is the EOS-JNX Series?

- A vision system with the NVIDIA® Jetson Xavier™ NX supporting 4-channel PoE cameras, **Smart PoE** and Digital I/O.
- Designed for machine vision applications, the EOS-JNX-G has **dedicated bandwidth** GigE ports for industrial GigE cameras, preventing image data loss.
- With an uplink port, the EOS-JNX-I is designed as an **AI PoE hub** to easily enable AI on existing surveillance systems.

EOS-JNX-I

ONVIF®

EOS-JNX-G

GiGE VISION

NVIDIA®

Onvif and GigE

Feature	Onvif	GigE
Cameras	IP surveillance camera	Industrial GigE vision camera
Image Data	Compressed (H264 or H265), image detail is lost	RAW data, without losing detail
Required bandwidth	Low	High
Computing power for image capture	High, for video stream decoding	Low
Applications	Object or people detection and recognition	Object inspection, measurement, identification and guidance

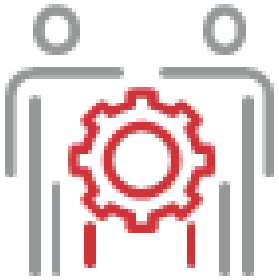
Edge AI Vision System Designed for PoE Camera Applications

3 Main Advantages

Easy management & maintenance

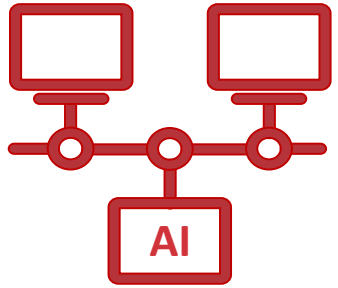
Smart PoE, PoE loss detection function and **WatchDog** indicator design reduce maintenance effort with easy management

Comprehensive reliability



Dedicated GigE bandwidth (EOS-JNX-G) and optimized OS with **100m cable** validation, secures capturing performance for non-stop operation and surveillance monitoring

Optimized for AI vision deployment



Easy integration into existing surveillance system with **Uplink port** (EOS-JNX-I); ADLINK exclusive **EVA SDK** support realizes fast AI application deployment.

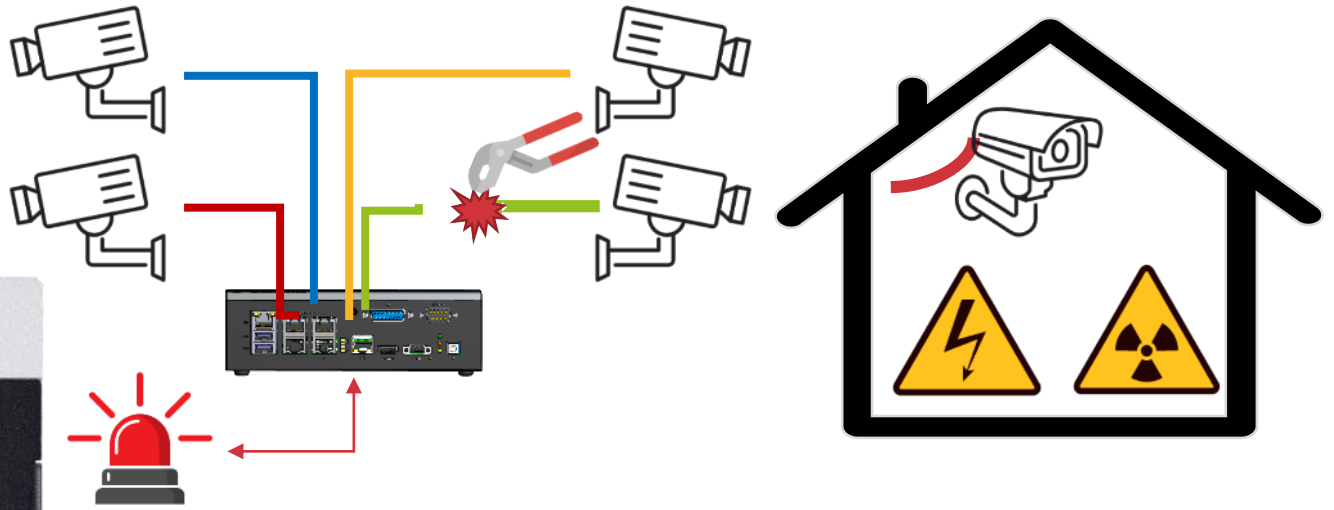
Easy PoE management and monitoring

ADLINK offers:

- **Smart PoE lets users switch PoE on/off to reset the camera remotely**
- **PoE Loss Detection provides proactive alerts if PoE power is unexpectedly cut off**
- **User-defined PoE switch indicates PoE initial status**

Customer Pain Points

- Manually plugging/unplugging cables to reset cameras is inconvenient and risky.
- Unclear PoE status can lead to the loss of critical video if PoE power is cut off unexpectedly
- PoE is enabled automatically by hardware and can't be control by software

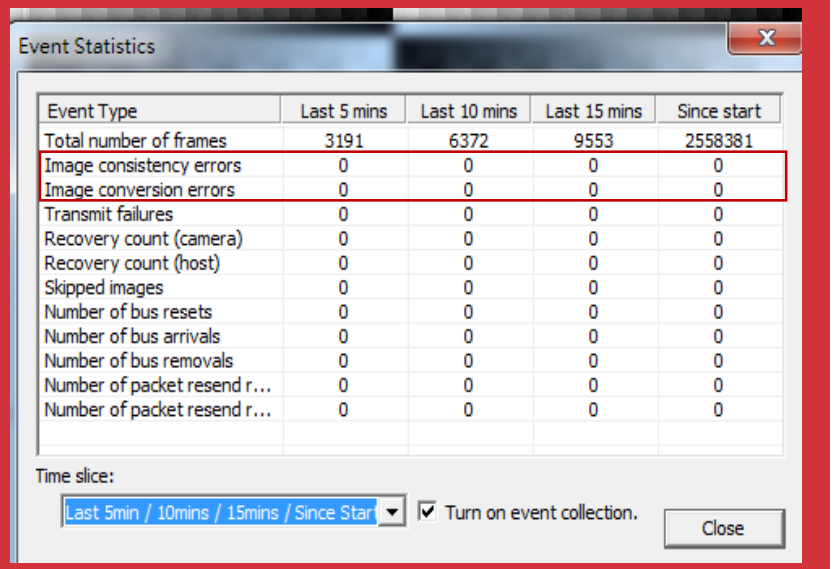


PoE Switch

No more image data loss

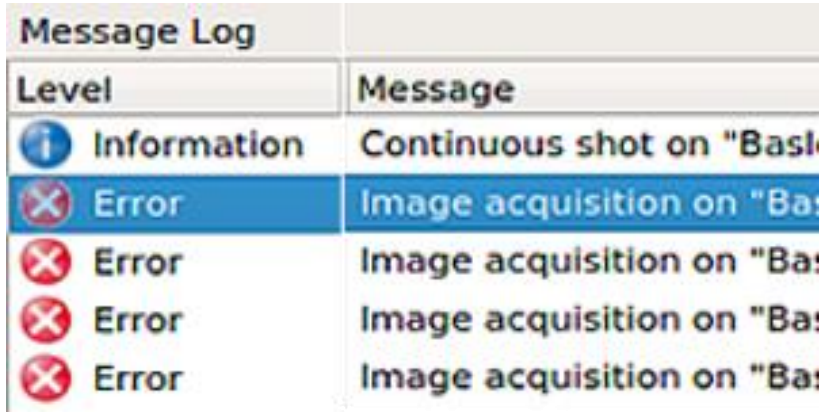
ADLINK offers:

- **Dedicated 1Gb bandwidth per port with validated 100m GigE cable**
- **Optimized memory allocation in OS for vision applications**



Customer Pain Points

- Frame drops require a lot of effort to debug
- No simple OS setting makes error investigation time consuming



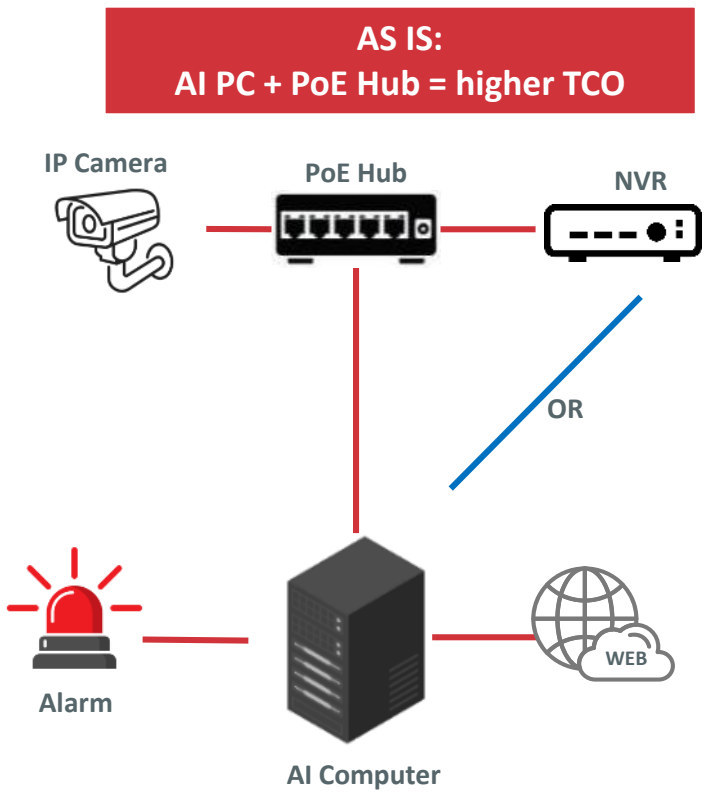
Enables Easy AI deployment

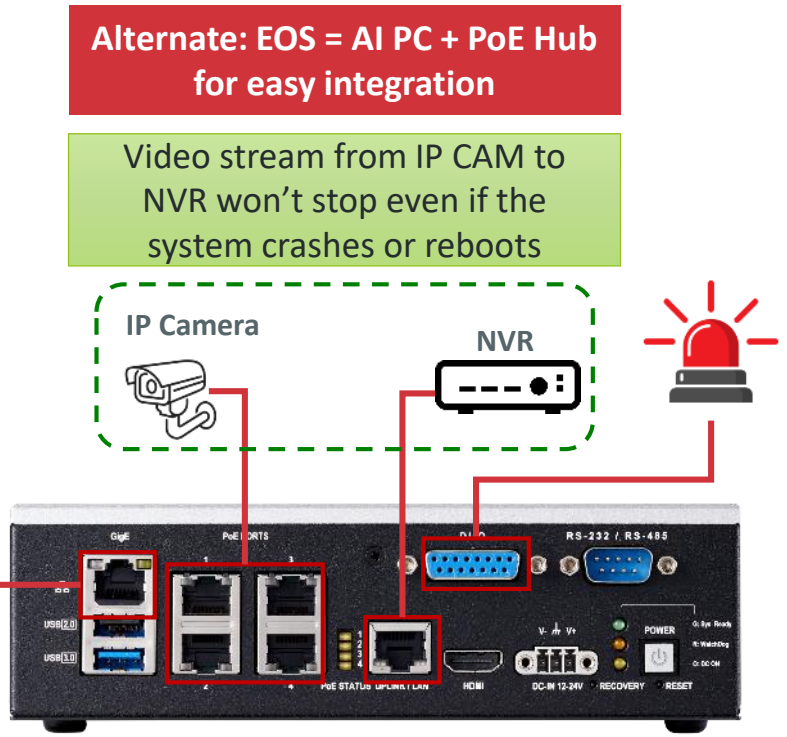
ADLINK offers:

- **The EOS-JNX-I not only offers PoE and AI inference, it also includes an uplink port to stream video to an NVR (network video recorder), saves space and reduces cabling, making AI enablement easy.**
- **Special power design makes the video stream and PoE work continuously even if the system (Jetson NX) crashes or reboots.**

Customer Pain Points

- Enabling AI on an existing surveillance system may need an AI computer and an extra PoE hub, causing higher TCO
- Worrying about losing video if the system crashes or reboots

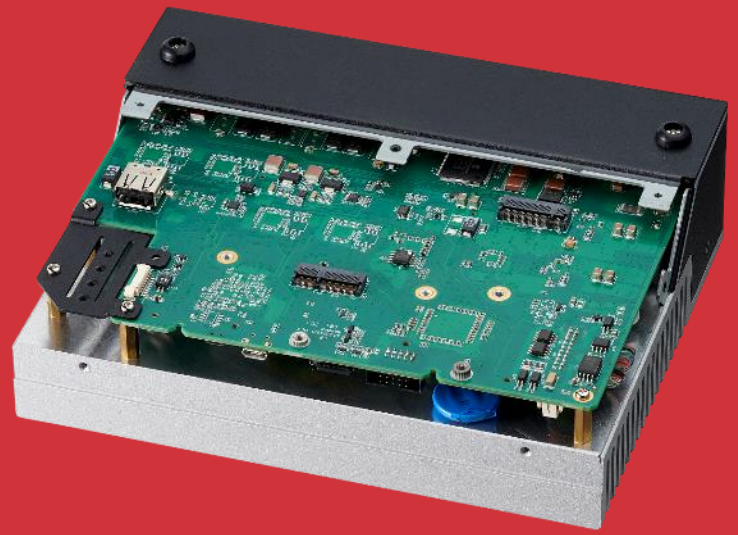


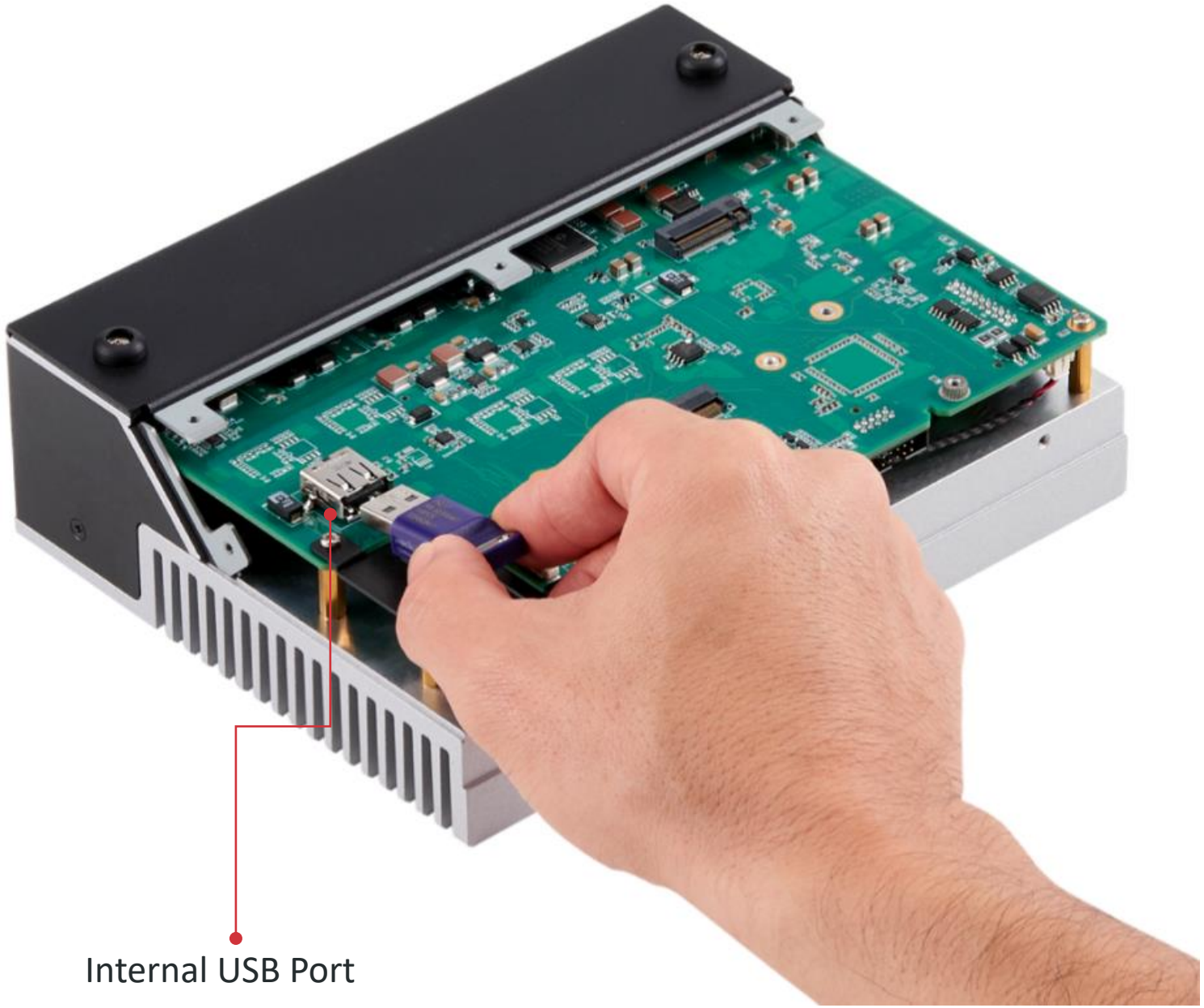


Internal USB protects important data

ADLINK offers:

- **Internal USB port saves valuable data such as a license dongle from being lost during transportation or deployment**

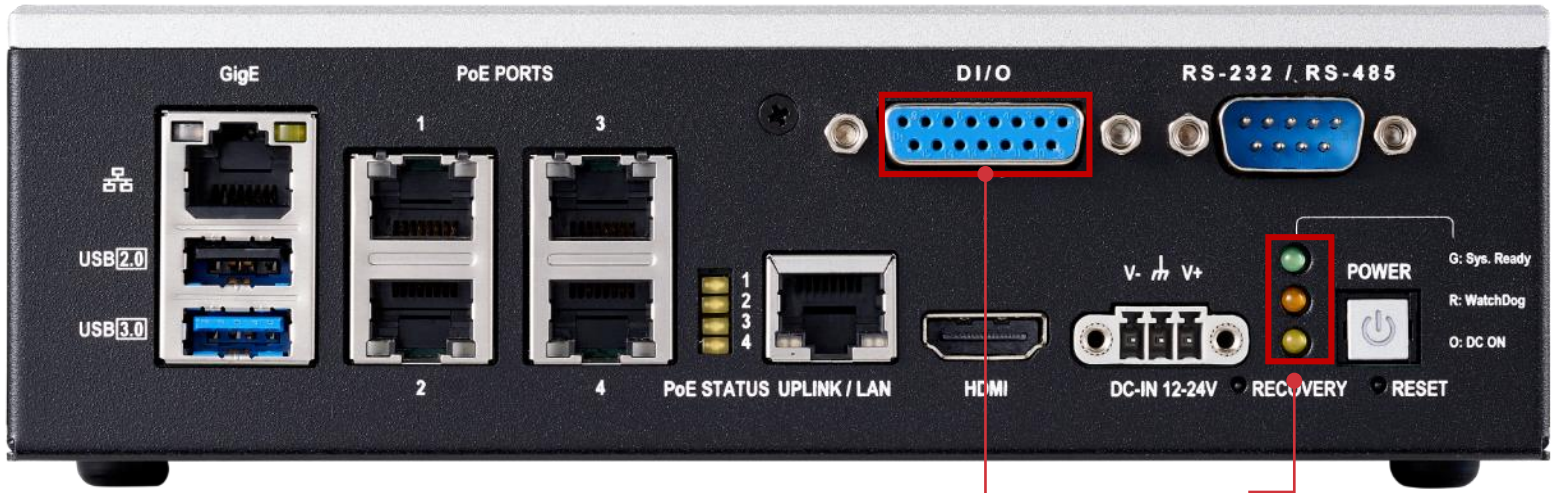




Advanced Watchdog makes debugging easy and provides proactive alerts

ADLINK offers:

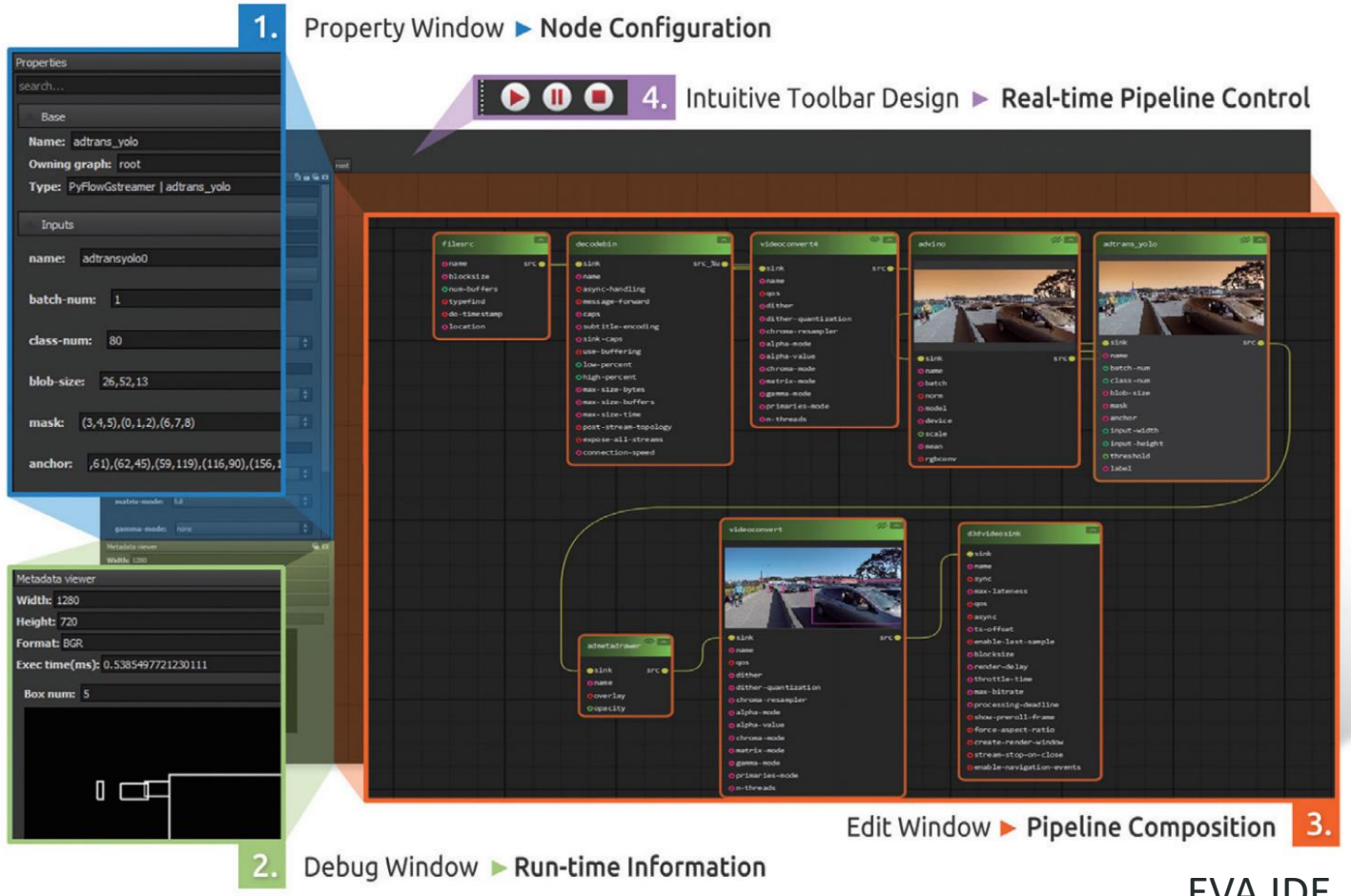
- **Front panel LED displays the Watchdog status, making it easy to debug**
- **Watchdog DO provides proactive alerts if enabled**



Active DO provides alerts if Watchdog is enabled

Watchdog LED conveniently shows status

EVA SDK Supported for fast Edge AI PoC Deployment



EVA IDE

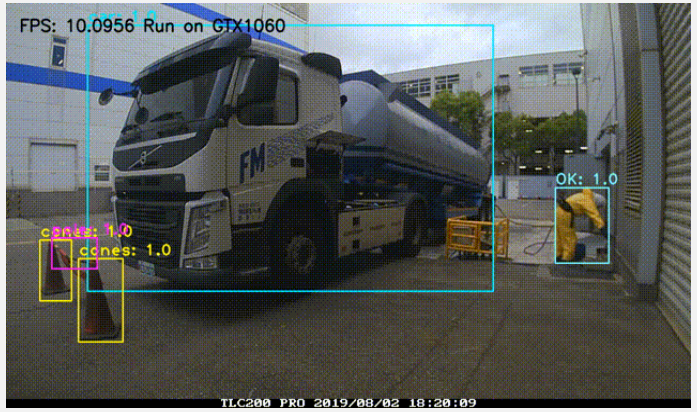
EDGE VISION ANALYTICS

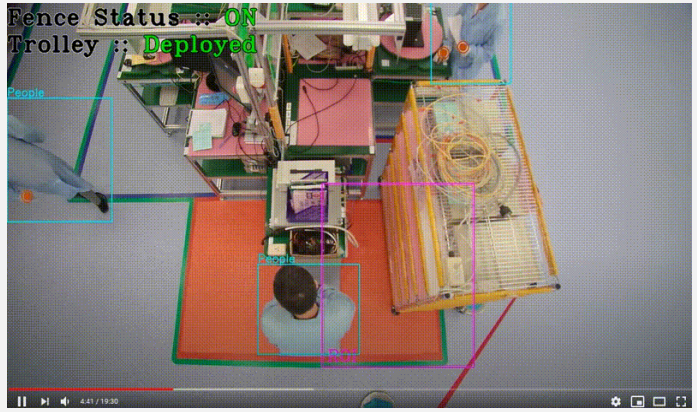
- Intuitive GUI for Fast and Easy AI Inference Pipeline Development
- Kick-Start Your AI-enabled Smart Factory with 5 Applications (Geofence, Wear Detection, Cookie Inspection, Parts Preparation, Parts Assembly)

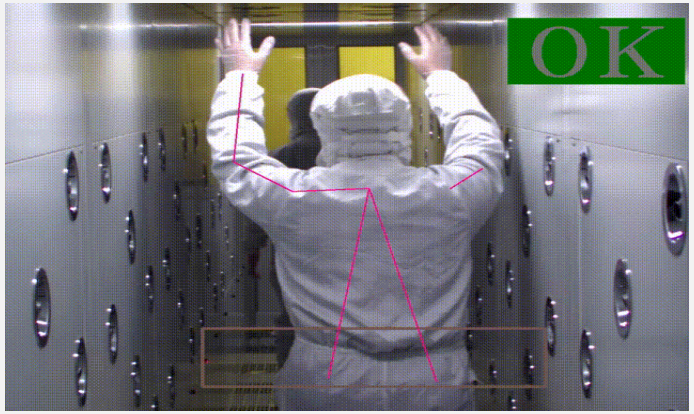
EOS-JNX-I

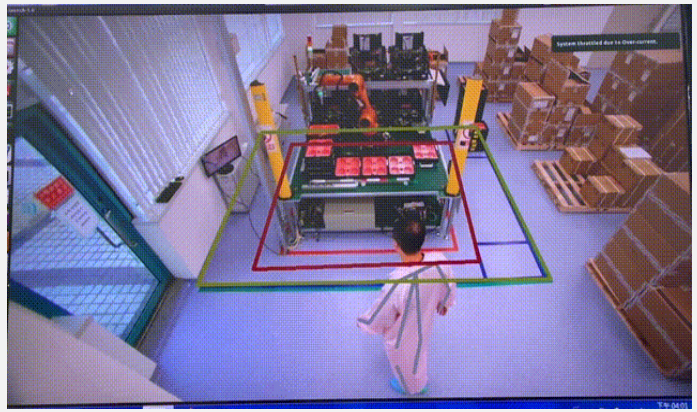
Target Applications: Pose Detection & Geofencing

The ONVIF protocol is used by most IP camera manufacturers and has been very important for system compatibility in the security industry. Through the support of ONVIF, EOS-JNX can easily connect to an IP camera or NVR recorder to easily build a variety of AI vision-based applications, such as personal protective equipment detection, people counting, or perimeter detection.





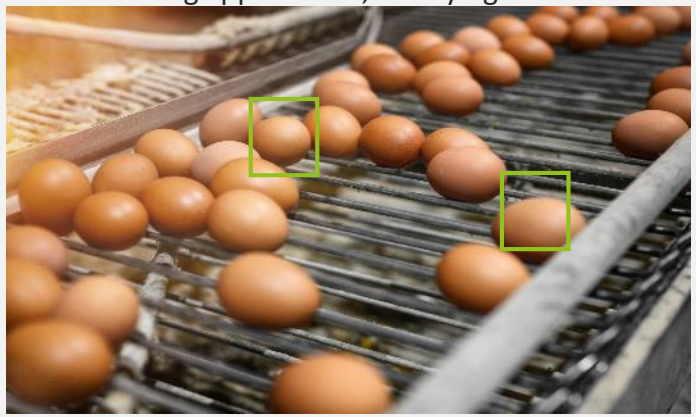


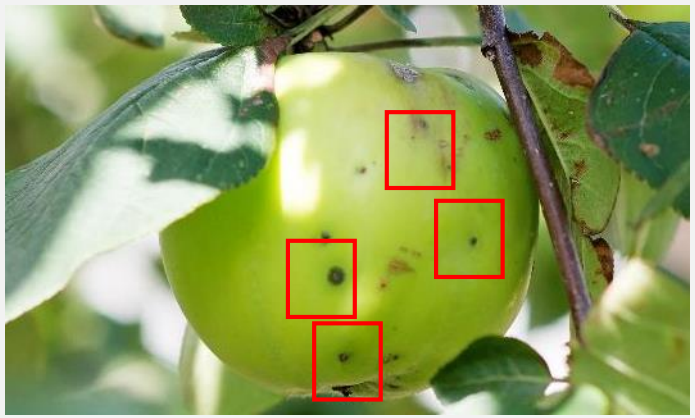


EOS-JNX-G

Target Applications: Food & Beverage Classification

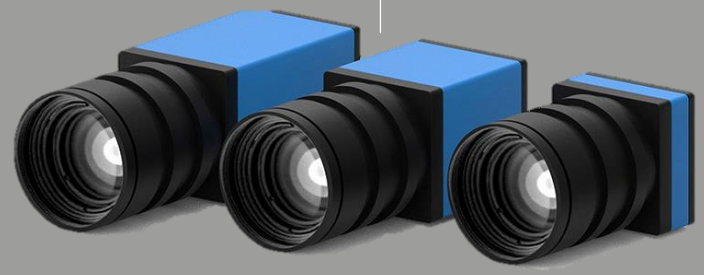
AI-enabled automated optical inspection (AOI) can help manufacturers improve the accuracy and speed of quality inspection for non-rules-based inspection challenges. EOS-JNX has dedicated bandwidth GigE ports for industry GigE cameras, guaranteeing no image data loss image, which is crucial for production line and manufacturing applications, satisfying customer needs for real-time AI-based defect inspection.





EOS-JNX-G

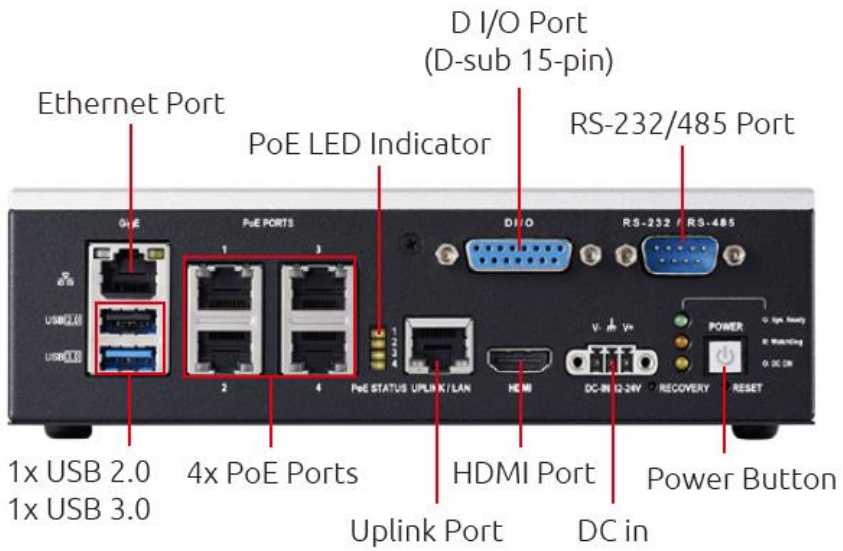
GiGE VISION



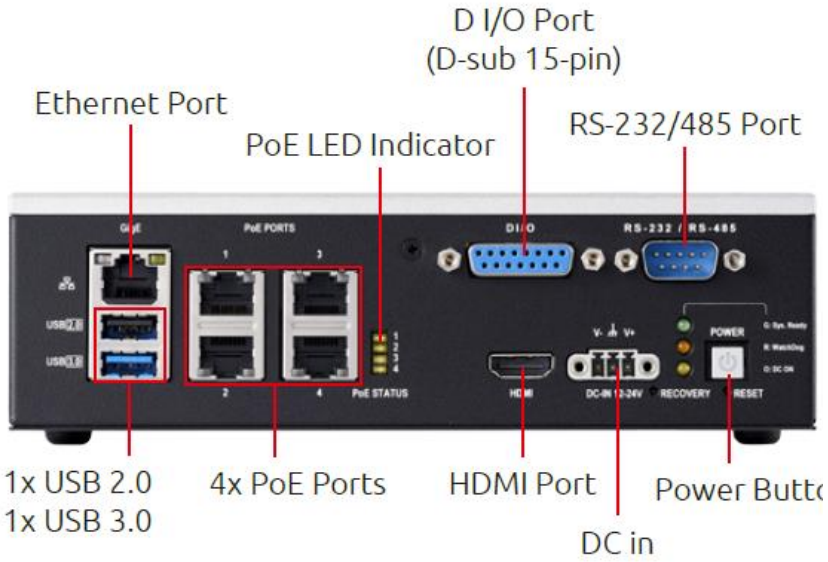
Industrial GigE cameras

Enhanced Connectivity with Rich I/O

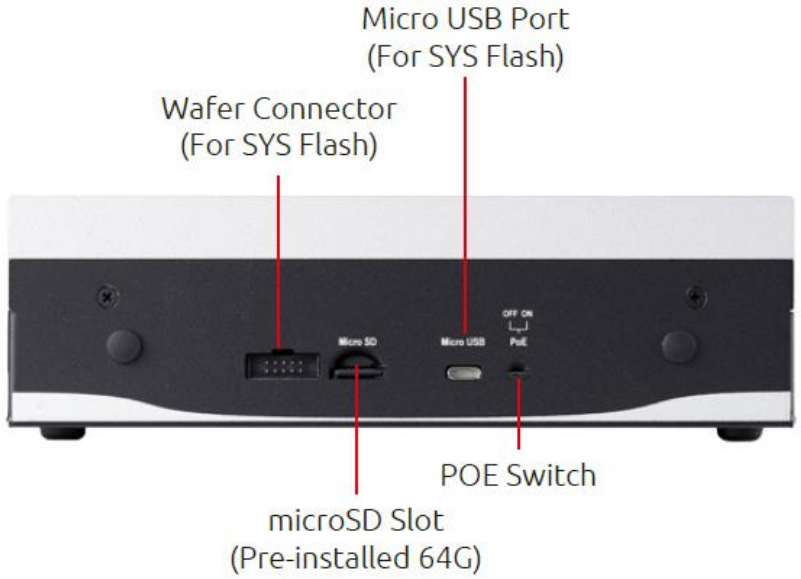
EOS-JNX-I Front Panel



EOS-JNX-G Front Panel



EOS-JNX-I / EOS-JNX-G Rear Panel



Product Specification

Model	EOS-JNX-I	EOS-JNX-G
System Core		
Platform	Nvidia Jetson Xavier NX	
Processor	6-core NVIDIA Carmel ARM®v8.2 64-bit CPU 6 MB L2 + 4 MB L3	
GPU	NVIDIA Volta architecture with 384 NVIDIA CUDA® cores and 48 Tensor cores	
Memory	8 GB 128-bit LPDDR4	
eMMC	16G	
Front Panel I/O Interface		
Ethernet	1x GigE w/o PoE	
PoE Port 1-4 (Total 60W)	4x PoE ports (30W max. per-channel, 802.3at) for IP Camera (10M/100M)	4x PoE ports (30W max. per-channel, 802.3at) for GigE Camera (1Gb)
Uplink Port	1Gb NVR connection	No
USB Port	1x USB2.0, 1x USB3.0	
Graphics Output	1x HDMI 1.4	
Serial Port	1x RS-232 / RS-485 (with Auto Direction)	
Digital I/O	D-sub 15-pin (expandable to 37-pin DIO Board) 4-ch D I/O with isolation	
Rear Panel I/O Interface		
microSD Slot	1x microSD slot (OS boots from microSD card, pre-installed 64G)	
Micro USB	1x Micro USB (to flash Jetson NX)	
Wafer Connector	For system flash with jumper	

Product Specification

Model	EOS-JNX-I	EOS-JNX-G
Internal I/O Interface		
M.2 2280 slot	M key, and support for B+M key PCIe (Gen2 x1) SSD	
M.2 2230 slot	E key, and support for A+E key PCIe or USB devices	
Internal USB	1x USB2.0 (for license protection)	
Power		
DC Input	DC 12-24V, reverse protection	
Fail Reset	Reset and Recovery Buttons	
POE Switch	PoE initial mode setup	
Mechanical		
Dimensions	187.5(W) x 149.5(D) x 55.25(H) mm	
Weight	1.85kg	
Mounting	supports wall mount & DIN rail mount	
Environment		
Operating Temperature	-20°C to 70°C (w/ 0.6m/s airflow) PoE full load and Xavier NX max. 10W mode at 70°C PoE full load and Xavier NX max. 15W mode at 60°C PoE full load and Xavier NX max. 20W mode at 50°C	
Storage Temperature	-40°C to 85°C	
Humidity	40% to 95% (non-condensing)	
Vibration	Operating, 5-500 Hz, 5 Grms, 3 axes	
Shock	Operating, 11ms duration, 30G, half sine, 3 axes	
ESD	Contact ± 4kV, Air ± 8kV	
EMC	CE and FCC Class A (EN61000-6-4/ 6-2EN61000-6-3/ 6-1)	
Safety	UL(62368) and CB	

EOS-JNX vs. DLAP-211/301

Function	EOS-JNX-G	EOS-JNX-I	DLAP-211	DLAP-301
PoE	Yes	Yes	No	Yes
Smart PoE function	Yes	Yes	No	No
GigE Port & Bandwidth	4x GigE, 1Gb/port	4x Lan, 100Mb/port	2x GigE, 1Gb/port	8x Lan, 100Mb.port
DC input	12-24V	12-24V	12V	12V

With the 4-channel GigE PoE function featured, EOS-JNX-G addresses the industrial inspection market while EOS-JNX-I is ideal for the surveillance market with its outstanding Smart PoE function.

Stock, Ordering information & Schedule

- The design (A2 version) validation is done and the stock is also ready for early engagement.
- Due to serious material shortages, a revision (A3) is needed. A formal NPL will be on Feb. 25th and more stock will be ready on March 18th

Model Name	PN	Spec.
EOS-JNX-I	93-51049-002E	NVIDIA® Jetson Xavier™ NX AI System for IP camera surveillance with 4 PoE ports
EOS-JNX-G	93-51049-102E	NVIDIA® Jetson Xavier™ NX AI System for industrial GigE cameras with 4 PoE ports

Appendix

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Who is the competition?

Unlike a generic Jetson NX Box, EOS-JNX is designed for vision vertical markets with advanced PoE management

- EOS-JNX-I: An AI PoE Hub with smaller size & integration effort to enable AI on IP surveillance
- EOS-JNX-G: Dedicated GigE bandwidth with 100m validation, and no frame drops.

USD $1,995

MIC-710IVX

ADVANTECH

USD $1,000

ES-JNX22

AUVIDEA audio video media

ES-JNX8 (Dual)

AUVIDEA audio video media

USD $1,075

NX213B

AVerMedia

USD $1,280

JETBOX-FLOYD-XNX-01

DIAMOND SYSTEMS

LI-XNX-BOX-POE-MIPI

Leopard imaging

Lite NX

米文动力 MIIVII.COM

USD $1015

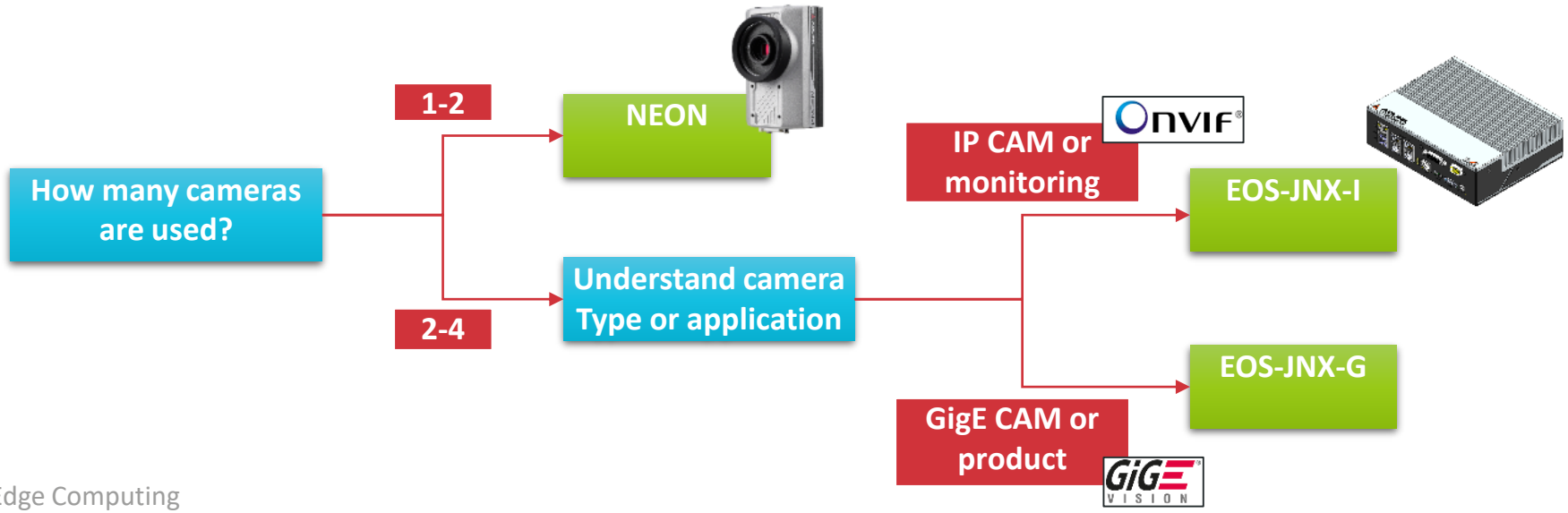
AIE100-903-FL-NX

AXIOMTEK

NEON or EOS

Vision Vertical Oriented

Model	Camera Type	APP/Vertical	Camera Qty	Highlight features
NEON-2000 series	Camera platform	People and Product	1-2	• All-in-one
EOS-JNX-I	IP surveillance camera ONVIF	1. For People 2. Safety monitoring	2-4	• PoE power loss detection and remote PoE control • Uplink port
EOS-JNX-G	Ind. GigE Camera GiGE VISION	1. For Product, quality 2. Quality assurance	2-4	• 1Gb/ channel, no frame drop • PoE power loss detection and remote PoE control



THANK YOU

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