NEON-2000 Series

NVIDIA® Jetson™ TX2/Jetson™ Xavier NX-based Industrial AI Smart Camera for the Edge

Features

- Integration of Jetson™ TX2 or Jetson™ Xavier NX, image sensor and vision software suites, ready to deploy
- All-in-one design minimizes cabling, footprint and maintenance
- FPGA-based DI/O for accurate, real-time triggering
- USB Type-C port for video, power, and USB simplifies connectivity
- 1x microSD slot for external storage (not supported by NEON-2000-JT2-X)
- Choose from four different image sensors
- DI/O, 1x LAN and 1x COM
- Supports C-mount lenses
- IP67-certified (NEON-2000-JT2-X Series)



Introduction

ADLINK's NEON-2000 Series of the NVIDIA® Jetson™-based industrial AI cameras integrate the Jetson™ Xavier NX or Jetson™ TX2, an image sensor, an optimized OS, and broad I/O for vision applications in a compact chassis with verified thermal stability, saving users' total cost of ownership on integration and troubleshooting, as well as minimizing cabling and space requirements for installation.

Supporting four types image sensors, integration of DI/O, 1x communication port, and 1x LAN port in a compact chassis, the NEON-2000 Series is ideal for the AI vision applications at the edge.

For harsh environments requiring ingress protection, the NEON-2000-JT2-X Series is IP67-certified, enabling AI vision capabilities in critical applications.

Software Support

- Ubuntu 18.04 L4T (Linux for Tegra)
- Jetpack
- Basler pylon

Note: Supported software versions will be updated as released by NVIDIA.

Accessories

- 1.8m USB Type-C cable with screw lock
- USB Type-C hub/adapter
- 2m DB-15 to DB-37 I/O extension cable
- I/O extension board (DIN-37D-01)
- 12V AC/DC adapter (for NEON-2000-JT2 and NEON-2000-JNX Series)
- C-mount lens, focal length 8mm, aperture f1.4
- M12 USB Type-C cable (for NEON-2000-JT2-X Series)
- M12 Ethernet cable (for NEON-2000-JT2-X Series)
- M12 I/O & power cable (for NEON-2000-JT2-X Series)
- Lens protector (for NEON-2000-JT2-X Series)
- M12 system flash cable (for NEON-2000-JT2-X Series)

Note: Use only recommended ADLINK power adapters and cables.

Ordering information

- **NEON-201B-JT2**
  NVIDIA® Jetson™ TX2, color sensor, 1.2M 54fps, global shutter
- **NEON-202B-JT2**
  NVIDIA® Jetson™ TX2, color sensor, 1.9M 60fps, global shutter
- **NEON-203B-JT2**
  NVIDIA® Jetson™ TX2, color sensor, 2M 30fps, rolling shutter
- **NEON-204B-JT2**
  NVIDIA® Jetson™ TX2, color sensor, 5M 14fps, rolling shutter
- **NEON-201B-JT2-X**
  NVIDIA® Jetson™ TX2, color sensor, 1.2M 54fps, global shutter, IP67
- **NEON-202B-JT2-X**
  NVIDIA® Jetson™ TX2, color sensor, 1.9M 60fps, global shutter, IP67
- **NEON-203B-JT2-X**
  NVIDIA® Jetson™ TX2, color sensor, 2M 30fps, rolling shutter, IP67
- **NEON-204B-JT2-X**
  NVIDIA® Jetson™ TX2, color sensor, 5M 14fps, rolling shutter, IP67
- **NEON-201B-JNX**
  NVIDIA® Jetson™ Xavier NX, color sensor, 1.2M 54fps, global shutter
- **NEON-202B-JNX**
  NVIDIA® Jetson™ Xavier NX, color sensor, 1.9M 60fps, global shutter
- **NEON-203B-JNX**
  NVIDIA® Jetson™ Xavier NX, color sensor, 2M 30fps, rolling shutter
- **NEON-204B-JNX**
  NVIDIA® Jetson™ Xavier NX, color sensor, 5M 14fps, rolling shutter

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Specifications

Model Name	NEON-201B-JT2	NEON-202B-JT2	NEON-203B-JT2	NEON-204B-JT2
Image Sensor				
Resolution (HxV)	1280x960	1600x1200	1920x1080	2592x1944
Resolution	1.2M	1.9M	2M	5M
Frame Rate (fps)	54	60	30	14
Color/Mono	Color	Color	Color	Color
Shutter	Global	Global	Rolling	Rolling
Sensor Size	1/3"	1/1.8"	1/3.7"	1/2.5"
Pixel Size (µm)	3.75 x 3.75	4.5 x 4.5	2.2 x 2.2	2.2 x 2.2
Sensor Vendor	ON Semiconductor	e2v	ON Semiconductor	ON Semiconductor
Sensor Model	AR0134	EV76C570	MT9P031	MT9P031
Lens Mount	C-Mount			
Image Sensor Trigger Mode	External H/W trigger, S/W trigger, free run			
System				
Computing Platform	NVIDIA® Jetson™ TX2			
Processor	ARM Cortex-A57 and NVIDIA® Denver 2			
Supported OS	Ubuntu 18.04			
GPU	256-core NVIDIA® Pascal GPU			
Memory/Storage	8GB LPDDR4/32G B eMMC (integrated with TX2 module)			
Connectors & Functions				
Ethernet	Supports 10/100/1000 Mbps			
USB Type-C Port	Video output (Display-Port), 1920x1080 @ 30fps			
	1x USB 3.0 and 1x USB 2.0			
	Power supply for camera (when connected to a USB Type-C charger or adapter)			
	Power supply (5 W) for external USB Type-C hub (when connected to the hub)			
D-Sub Socket	4x DI and 4x DO			
	1x UART (TXD, RXD, GND)			
Micro-USB	USB OTG (for system flash)			
microSD Slot	For additional storage			
Wafer Connector	For system flash			
Mechanical & Power				
Dimensions	123.3 x 77.5 x 66.81 mm			
Weight	700g			
Power Input	DC jack (12VDC) or USB Type-C (15VDC)			
Power Consumption	<35W (camera only)			
Environmental & Certification				
Operating Temperature	0°C to 45°C			
Storage Temperature	-20°C to 70°C			
Humidity	40% to 75% (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 (EN61000-4/-2)			
Safety	UL and cB			

Note: DC power can be supplied from either the DC jack or the USB Type-C port.

Specifications

Model Name	NEON-201B-JT2-X	NEON-202B-JT2-X	NEON-203B-JT2-X	NEON-204B-JT2-X
Image Sensor				
Resolution (HxV)	1280x960	1600x1200	1920x1080	2592x1944
Resolution	1.2M	1.9M	2M	5M
Frame Rate (fps)	54	60	30	14
Color/Mono	Color	Color	Color	Color
Shutter	Global	Global	Rolling	Rolling
Sensor Size	1/3"	1/1.8"	1/3.7"	1/2.5"
Pixel Size (μm)	3.75 x 3.75	4.5 x 4.5	2.2 x 2.2	2.2 x 2.2
Sensor Vendor	ON Semiconductor	e2v	ON Semiconductor	ON Semiconductor
Sensor Model	AR0134	EV76C570	MT9P031	MT9P031
Lens Mount	C-Mount			
Image Sensor Trigger Mode	External H/W trigger, S/W trigger, free run			
Protection				
Ingress Protection	IP67			
System				
Computing Platform	NVIDIA® Jetson™ TX2			
Processor	ARM Cortex-A57 and NVIDIA Denver 2			
Supported OS	Ubuntu 18.04			
GPU	256-core NVIDIA Pascal GPU			
Memory/Storage	8GB LPDDR4/32G eMMC (integrated on TX2 module)			
Connectors & Functions				
M12 8-pin FML for Ethernet	10/100/1000 Mbps			
M12 USB Type-C FML for Video, USB and Power	Video output (DisplayPort), 1920x1080 @ 30fps			
	1x USB 3.0 and 1x USB 2.0			
	Power supply for the camera (when connected to a USB Type-C charger or adapter, DC 15V/2A)			
	Power supply (5 W) for external USB Type-C hub (when connected to the hub)			
M12 17-pin FML for I/O and Power	2x DI and 2x DO			
	1x UART (TXD, RXD, GND)			
	USB port & I/O for flashing the TX2			
	DC 24V power input			
Mechanical & Power				
Dimensions	79.55 x 137.3 x 122.85 mm			
Weight	900g (with lens protector, no lens)			
Power Consumption	<35W (camera only)			
Environmental & Certification				
Operating Temperature	0°C to 45°C			
Storage Temperature	-20°C to 70°C			
Humidity	40% to 75% (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 (EN61000-4/-2)			
Safety	CE			

Note: DC power can be supplied from either the M12 17-pin or M12 USB Type-C connector.

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Specifications

Model Name	NEON-201B-JNX	NEON-202B-JNX	NEON-203B-JNX	NEON-204B-JNX
Image Sensor				
Resolution (HxV)	1280x960	1600x1200	1920x1080	2592x1944
Resolution	1.2M	1.9M	2M	5M
Frame Rate (fps)	54	60	30	14
Color/Mono	Color	Color	Color	Color
Shutter	Global	Global	Rolling	Rolling
Sensor Size	1/3"	1/1.8"	1/3.7"	1/2.5"
Pixel Size (µm)	3.75 x 3.75	4.5 x 4.5	2.2 x 2.2	2.2 x 2.2
Sensor Vendor	ON Semiconductor	e2v	ON Semiconductor	ON Semiconductor
Sensor Model	AR0134	EV76C570	MT9P031	MT9P031
Lens Mount	C-Mount			
Image Sensor Trigger Mode	External H/W trigger, S/W trigger, free run			
System				
Computing Platform	NVIDIA® Jetson™ Xavier NX			
Processor	6-core NVIDIA Carmel ARM® v8.2 64-bit CPU			
Supported OS	Ubuntu 18.04			
GPU	384-core NVIDIA® Volta™ GPU with 48 Tensor Cores			
Memory/Storage	8GB LPDDR4/16G eMMC (integrated on NX module)			
Connectors & Functions				
Ethernet	Supports 10/100/1000 Mbps			
USB Type-C Port	Video output (DisplayPort), 1920x1080 @ 30fps			
	1x USB 3.0 and 1x USB 2.0			
	Power supply for the camera (when connected to a USB Type-C charger or adapter)			
	Power supply (5 W) for external USB Type-C hub (when connected to the hub)			
D-Sub	4x DI and 4x DO			
	1x UART (TXD, RXD, GND)			
Micro-USB	USB OTG (for system flash)			
microSD Slot	For additional storage			
Wafer Connector	For system flash			
Mechanical & Power				
Dimensions	123.3 x 77.5 x 66.81 mm			
Weight	700g			
Power Input	DC jack (12VDC) or USB Type-C (15VDC)			
Power Consumption	<30W (camera only)			
Environmental & Certification				
Operating Temperature	0°C to 45°C			
Storage Temperature	-20°C to 70°C			
Humidity	40% to 75% (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 (EN61000-4/-2)			
Safety	UL and cB			

Note: DC power can be supplied from either the DC jack or the USB Type-C port.

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