

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 base 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)
- Choice of four different image sensors
- DI/O, 1x LAN and 1x COM
- Supports C-mount lens
- IP67 rated (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, image sensor, optimized OS, and Rich I/O for vision applications in a compact chassis with verified thermal performance, saving users' Total Cost Ownership on integration and trouble shooting, as well as minizing footprint and cableing required 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 supports IP67, enabling AI vision capabilities in critical applications.

Software Support

- Ubuntu 18.04 L4T (Linux for Tegra)
- Jetpack 4.3
- Basler Pylon 5.2.0.13457

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

Accessories

- 1.8m USB Type-C cable with screw lock
- USB Type-C adapter/hub
- 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
- IP67 USB Type-C cable (for NEON-2000-JT2-X Series)
- IP67 Ethernet cable (for NEON-2000-JT2-X Series)
- IP67 I/O & power cable (for NEON-2000-JT2-X Series)
- Lens protector (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

 $\mathsf{NVIDIA}^{\otimes}$ JetsonTM 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

 $\mathsf{NVIDIA}^{\otimes}$ Jetson^{m} 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

 $\mathsf{NVIDIA}^{\otimes}$ JetsonTM Xavier NX, color sensor, 1.9M 60fps, global shutter

NEON-203B-JNX

 $\mathsf{NVIDIA}^{\circledcirc}$ Jetson $^{\mathsf{m}}$ Xavier NX, color sensor, 2M 30fps, rolling shutter

NEON-204B-JNX

 $\mathsf{NVIDIA}^{\otimes}$ Jetson^{M} Xavier NX, color sensor, 5M 14fps, rolling shutter



Specifications

Resolution (HxV)	Model Name	NEON-201B-JT2	NEON-202B-JT2	NEON-203B-JT2	NEON-204B-JT2	
Resolution	Image Sensor					
Frame Rate (fps)	Resolution (HxV)	1280x960	1600x1200	1920x1080	2592x1944	
Color/Mono Color Color Color Color Shutter Global Global Rolling Rolling Sensor Size 1/3" 1/18" 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 Vendor AR0134 EV76C70 M™PP031 M™PP031 Lens Mount C-Mount M™PP031 M Lens Mount C-Mount M™PP031 M Competition MXISBA MXIDIA® Jetson™ TX2 M Processor ARN Cortex-AS7 and NYIDIA® Pascal GPU M M Memory/Storage RSGB LPDDR4/32G B eMMC (integrated on TX2 module) M	Resolution	1.2M	1.9M	2M	5M	
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 EVT6C570 MT9P031 MT9P031 Lens Mount CoMount COMOUNT Image Sensor Trigger Mode External H/W trigger, S/W trigger, free run System Computing Platform NVIDIA® Jetson™ TX2 Processor ARIN Cortex-AS7 and NVIDIA® Denver 2 Supported OS Ubuntu 18.04 GPU Wemony/Storage 8GB LPDDR/32G B eMMC (Integrated on TX2 module) Connectors and Functions Ethernet Supports 10/100/1000 Mbps USB Type-C Port Supports 10/100/1000 Mbps Ethernet Supports 10/100/1000 Mbps USB Type-C Port Power Supply for camera	Frame Rate (fps)	54	60	30	14	
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	Color/Mono	Color	Color	Color	Color	
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 CMOUNT TOWN	Shutter	Global	Global	Rolling	Rolling	
Sensor Vendor ON Semiconductor e2v ON Semiconductor ON Semiconductor Sensor Model AR0134 EY76C570 MT9P031 MT9P031 Lens Mount External HyW trigger, SyW 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 on TX2 module) Connectors and Functions Ethernet Supports 10/100/1000 Mbps Video output (Display-Port), 1920x 1080 @ 30fps Tx USB 3 and Tx USB 2 Power supply for camera (when connected to USB charger or adapter) Power supply for camera (when connected to USB charger or adapter) Power supply (5 W) for external USB Type-C Hub (when connected to a Type-C hub) Ax DSB 3 and Tx USB 2 Power supply (5 W) for external USB Type-C Hub (when connected to a Type-C hub) Micro-USB 3 and Tx USB 2 Power supply (5 W) for external USB Type-C Hub (w	Sensor Size	1/3"	1/1.8"	1/3.7"	1/2.5"	
Sensor Model AR0134 EV76C570 MT9P031 MT9P031 Lens Mount CMount <	Pixel Size (µm)	3.75 x 3.75	4.5 x 4.5	2.2 x 2.2	2.2 x 2.2	
Lens Mount Image Sensor Trigger Mode System Computing Platform NNIDIA® Jetson™TX2 Processor ARM Cortex-AS7 and NVIDIA® Denver 2 Supported OS GPU Score NVIDIA® Bascal GPU Memory/Storage BGB LPDDR4/32 G B eMMC (integrated on TX2 module) Connectors and Functions Ethernet Supports 10/100/1000 Mbps Video output (Display-Port), 19/20x1080 @ 30fps 1x USB 3 yand x USB 2 Power supply for camera (when connected to USB charger or adapter) Power supply (5 W) for external USB Type-C Hub (when connected to a Type-C hub) Micro-USB Nicro-USB	Sensor Vendor	ON Semiconductor	e2v	ON Semiconductor	ON Semiconductor	
System External H/W trigger, free run Computing Platform NVIDIA® Jetson™ TX2 Processor ARM Cortex-AS7 and NVIDIA® Denver 2 Supported OS Ubuntu 18.04 GPU 256-core NVIDIA® Pascal GPU Memory/Storage 8GB LPDDR4/32G B eMMC (integrated on TX2 module) Connectors and Functions Ethernet Supports 10/100/1000 Mbps USB Type-C Port Video output (Display-Port), 1920x1080 @ 30fps 1 x USB 3 and 1 x USB 2 Power supply for camera (when connected to USB charger or adapter) Power supply [5 W] for external USB Type-C Hub (when connected to a Type-C hub) Micro-USB 4x D Iand 4x DO Micro-USB USB OTTG (for system flash) Micro-SISI For externed storage Wafer Connector For system flash Mechanical & Power 123.3 x 77.5 x 66.81 mm Weight 700g Power Input DC jack (12VDC) or USB Type-C (15VDC) Power Consumption 3 you (camera only) Environmental & Certification Operating Temperature 0°C to 45°C Storage Temperature 20°C to 70°C <tr< td=""><td>Sensor Model</td><td>AR0134</td><td>EV76C570</td><td>MT9P031</td><td>MT9P031</td></tr<>	Sensor Model	AR0134	EV76C570	MT9P031	MT9P031	
System NVIDIA® Jetson™ TX2 Processor ARM Cortex-AS7 and NVIDIA® Denver 2 Supported OS Ubuntu 18.04 GPU 256-core NVIDIA® Pascal GPU Memory/Storage 8GB LPDDR4/32G B eMMC (integrated on TX2 module) Connectors and Functions Ethernet Supports 10/100/1000 Mbps 1 X USB 3 and 1x USB 2 Power supply for camera (when connected to USB charger or adapter) Power supply (5 W) for external USB Type-C Hub (when connected to a Type-C hub) 4x DI and 4x DO D-Sub Socket 4x DI and 4x DO Micro-USB USB TG (for system flash) Prover supply (5 W) for extended storage Wafer Connector For system flash Mechanical & Power Dimensions 123.3 x 77.5 x 66.81 mm Weight Power Logo (18VDC) or USB Type-C (18VDC) Power Consumption A 30W (camera only) Entripremental & Certification	Lens Mount	C-Mount				
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 on TX2 module) Connectors and Functions Ethernet Supports 10/100/1000 Mbps USB Type-C Port 1 X USB 3 and 1 x USB 2 Power supply for camera (when connected to USB charger or adapter) Power supply (5 W) for external USB Type-C Hub (when connected to a Type-C hub) Micro-USB USB TOTG (for system flash) Micro-USB USB DTG (for system flash) Micro-USB USB DTG (for system flash) Micro-USB For extended storage Wafer Connector For system flash Mechanical & Power 123.3 x 77.5 x 66.81 mm 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)	Image Sensor Trigger Mode	External H/W trigger, S/W trigger, free run				
Processor ARM Cortex-AS7 and NVIDIA® Denver 2 Supported OS Ubuntu 18.04 GPU 256-core NVIDIA® Pascal GPU Memory/Storage 8GB L PDDR4/32G B eMMC (integrated on TX2 module) Connectors and Functions Ethernet Supports 10/100/1000 Mbps 1 X USB 3 pard 1x USB 2 Power supply for camera (when connected to USB charger or adapter) Power supply (5 W) for external USB Type-C Hub (when connected to a Type-C hub) Micro-USB Power supply (5 W) for external USB Type-C Hub (when connected to a Type-C hub) Micro-USB USB OTG for system flash microSD Slot For extended storage Wafer Connector For system flash Mechanical & Power Dimensions 123.3 x 77.5 x 66.81 mm Weight 700g Power Consumption < 30W (camera only) Environmental & Certification Cyc to 45°C Operating Temperature 0°C to 45°C Storage Temperature 0°C to 45°C Storage Temperature 0°C to 45°C Humidity 40% to 75% (non-condensing) Vibratio	System					
Supported OS Ubuntu 18.04 GPU 256-core NVIDIA® Pascal GPU Memory/Storage 8GB LPDDR4/32G B eMMC (integrated on TX2 module) Connectors and Functions Ethernet Supports 10/100/1000 Mbps Video output (Display-Port), 1920x1080 @ 30fps 1 x USB 3 and 1 x USB 2 Power supply for camera (when connected to USB charger or adapter) Power supply (5 W) for external USB Type-C Hub (when connected to a Type-C hub) A X DI and 4 X DO D-Sub Socket 4 X DI and 4 X DO 1 x UART (TXD, RXD, GND) Micro-USB USB OTG (for system flash) Micro-USB Mechanical & Power Dimensions 1 23.3 x 77.5 x 66.81 mm Weight 7 00g Power Liput DC jack (12VDC) or USB Type-C (15VDC) Power Consumption <30W (camera only)	Computing Platform					
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Memory/Storage 8GB LPDDR4/32G B eMMC (integrated on TX2 module) Connectors and Functions Ethernet Supports 10/100/1000 Mbps USB Type-C Port Video output (Display-Port), 1920x1080 @ 30fps USB Type-C Port 1x USB 3 and 1x USB 2 Power supply for camera (when connected to USB charger or adapter) Power supply (5 W) for external USB Type-C Hub (when connected to a Type-C hub) 4x DI and 4x DO 4x DI and 4x DO Micro-USB USB OTG (for system flash) Micro-USB USB OTG (for system flash) Micro-USB For extended 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)	Supported OS	Ubuntu 18.04				
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D-Sub Socket 1x UART (TXD, RXD, GND) Micro-USB USB OTG (for system flash) microSD Slot For extended 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 Environmental & Certification Operating Temperature 0°C to 45°C Storage Temperature 10°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 EXECUTED AND AND AND AND AND AND AND AND AND AN						
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Wafer ConnectorFor system flashMechanical & Power123.3 x 77.5 x 66.81 mmDimensions123.3 x 77.5 x 66.81 mmWeight700gPower InputDC jack (12VDC) or USB Type-C (15VDC)Power Consumption<30W (camera only)Environmental & CertificationOperating TemperatureStorage Temperature0°C to 45°CStorage Temperature-20°C to 70°CHumidity40% to 75% (non-condensing)VibrationOperating, 5-500 Hz, 5 Grms, 3 axesShockOperating, 11ms duration, 30G, half sine, 3 axesESDContact ± 4kV, Air ± 8kVEMCCE and FCC Class A (EN61000-4/-2)						
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EMC CE and FCC Class A (EN61000-4/-2)						
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	Safety					

Note: the DC power source can be either from the DC jack or frm 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				
lmage Sensor Trigger Mode		External H/W trigger	, S/W trigger, free run		
Protection					
Ingress Protection		IP	67		
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)/64G from internal microSD card				
Connectors and Functions	S				
M12 8-pin FML for Ethernet		Support 10/	100/1000 Mb		
M12 USB Type-C FML for Video, USB and Power	Video output (Display Port), 1920x1080 @ 30fps				
	1x USB 3 and 1x USB 2				
	Power supply for the camera (when connect to the Type C charger or adaptor, DC 15V/2A)				
	Power supply (5 W) for external Type C Hub (when connect to Type C hub)				
	2x DI and 2x DO				
M12 17-pin FML for I/O and	1x UART (TXD, RXD, GND)				
power	USB port & I/O for flashing the TX2				
	DC 24V power input				
Mechanical & Power					
Dimensions	137.3 x79.55x 74.85 mm				
Weight	900g				
Power Consumption	<30W (camera only)				
Environmental & Certifica	ation				
Operating Temperature		0°C to	o 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		<u> </u>	kV, Air ± 8kV		
EMC		CE and FCC Class	A (EN61000-4/-2)		
Safety			nd cB		

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

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-M	ount		
Image Sensor Trigger Mode	External H/W trigger, S/W trigger, free run				
System					
Computing Platform		NVIDIA® Jets	on™ Xavier NX		
Processor		6-core NVIDIA Carme	ARM® v8.2 64-bit CPU		
Supported OS		Ubunt	u 18.04		
GPU	384-core NVIDIA® Volta™ GPU with 48 Tensor Cores				
Memory/Storage	8GB LPDDR4/16G eMMC (integrated on NX module)				
Connectors and Functions	s				
Ethernet	Supports 10/100/1000 Mbps				
	Video output (Display-Port), 1920x1080 @ 30fps				
USB Type-C Port	1x USB 3 and 1x USB 2				
	Power supply for the camera (when connect to the Type C charger or adaptor)				
	Power supply (5 W) for external Type C Hub (when connect to Type C hub)				
D Cub	4x DI and 4x DO				
D-Sub	1x UART (TXD, RXD, GND)				
Micro-USB	USB OTG (for system flash)				
microSD Slot	For extended 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 & Certifica	ation				
Operating Temperature		0°C to	o 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			on, 30G, half sine, 3 axes		
ESD		Contact ± 4	kV, Air ± 8kV		
EMC		CE and FCC Class	A (EN61000-4/-2)		
Safety	UL and cB				

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



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ADLINK Technology:

NEON-201B-JT2 Series Kit NEON-202B-JT2 Series Kit NEON-203B-JT2 Series Kit NEON-204B-JT2 Series Kit

Other:

NEON-202B-JT2-X