AVerMedia

NVIDIA Elite Partner

EMBEDDED VISION SOLUTIONS

Carrier Board
Box PC
Engineering Kit

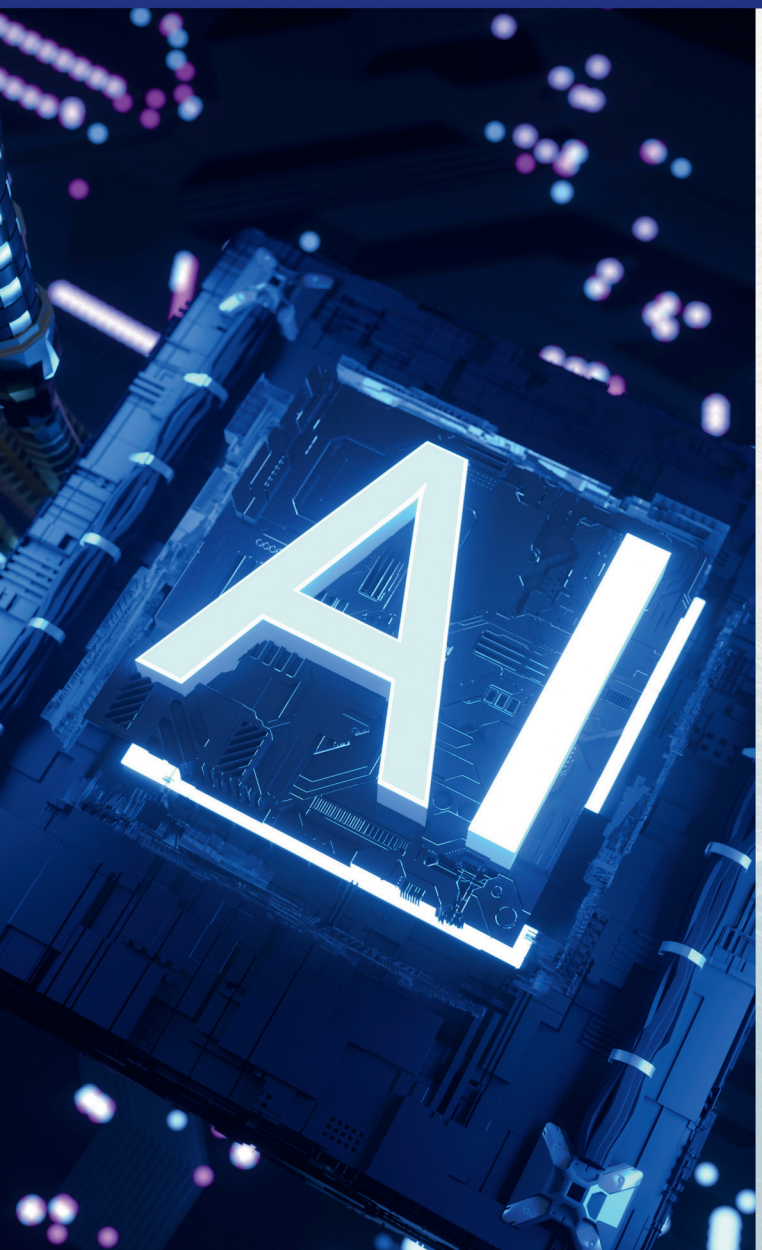
www.avermedia.com/professional/

Contents

ABOUT US

Established in 1990, AVerMedia is a Taiwanese multinational company specializing in hardware and software for image capturing and video transmission solutions. These solutions aim to enrich customer experiences and provide effective communications across a wide range of professional fields.

Currently, AVerMedia holds more than 359 audiovisual patents and has recently moved into providing high-quality audiovisual products for Edge AI solutions, including AI Box PCs, Carrier Boards, and Frame Grabbers, built around NVIDIA's Jetson SoM for a variety of vertical market use cases.



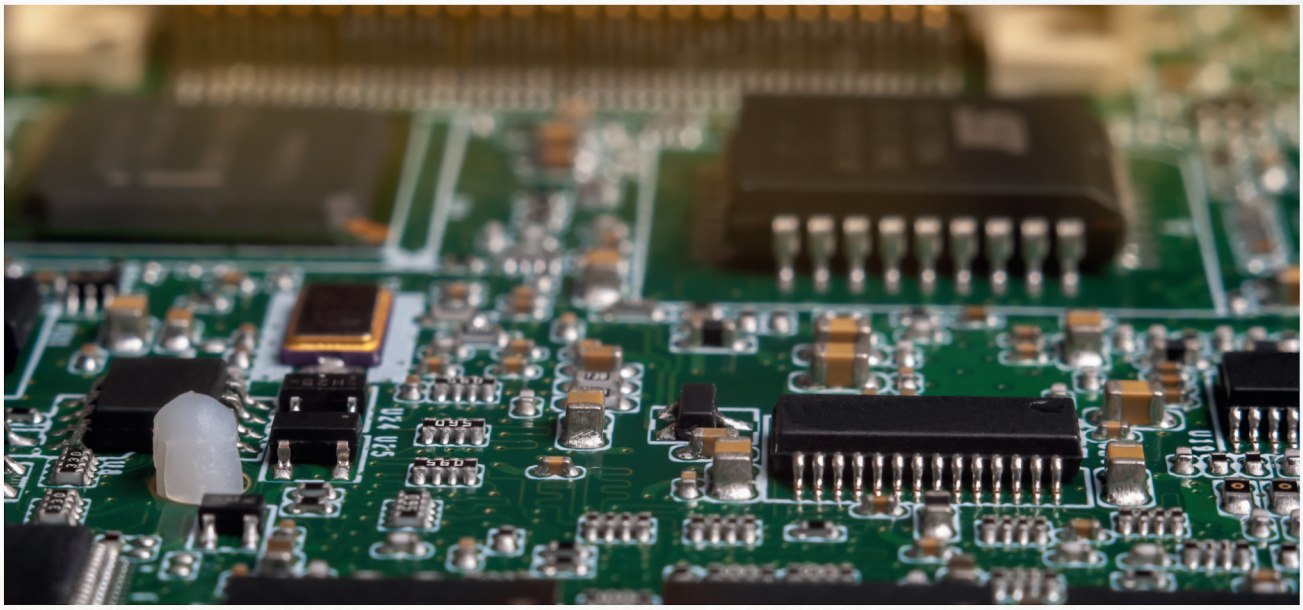
Strategic Partnership with NVIDIA

AVerMedia's status as an Elite Level NVIDIA OEM Partner underscores its excellence in the industry. The company's support-driven team is dedicated to providing expedited support, ensuring faster project deployment, especially when compared to Preferred-level partners.

This partnership allows AVerMedia to offer its customers benefits such as rapid deployment, flexible collaboration, and reliable devices, further solidifying its reputation as a trusted provider of cutting-edge technology solutions.

NVIDIA | Elite Partner

Manufacturing & Customization



A comprehensive set of manufacturing capabilities

With decades of experience in developing award-winning products, AVerMedia prides itself on supplying technically demanding Edge AI solutions to globally recognized companies. Our team continually enhances our products and equipment to meet the dynamic standards of the industry and the expectations of our customers. Our competitive edge and agility stem from our quick innovation, decades of R&D and manufacturing expertise, and flexible production lines.

A reliable partner for your custom solutions

We recognize that each project is distinct, and an off-the-shelf product may not meet your specific needs. For custom projects, AVerMedia offers a comprehensive range of customization services, with a service-driven team dedicated to working with you to craft a high-performance and reliable solution that meets your specifications.

- Hardware: Offering PCB Dimensions, I/O, and certifications.
- Software: Including BSP, Driver, MCU firmware, algorithms, and applications.
- Design: Covering ID/ME/UX/UI/GUI.
- Thermal: Functioning across a broad temperature spectrum.
- Solid Verification: Extending from System, HW to BSP validation.

Video processing technology is one of the core competencies we apply to custom projects. AVerMedia provides support for multiple cameras with a variety of I/O ports to accommodate a broad spectrum of camera types, including AHD, MIPI, HDMI, USB, SDI, and IP cameras. Moreover, we efficiently address video quality issues, such as black screens, FPS drops, screen freezes, flickering, and latency.

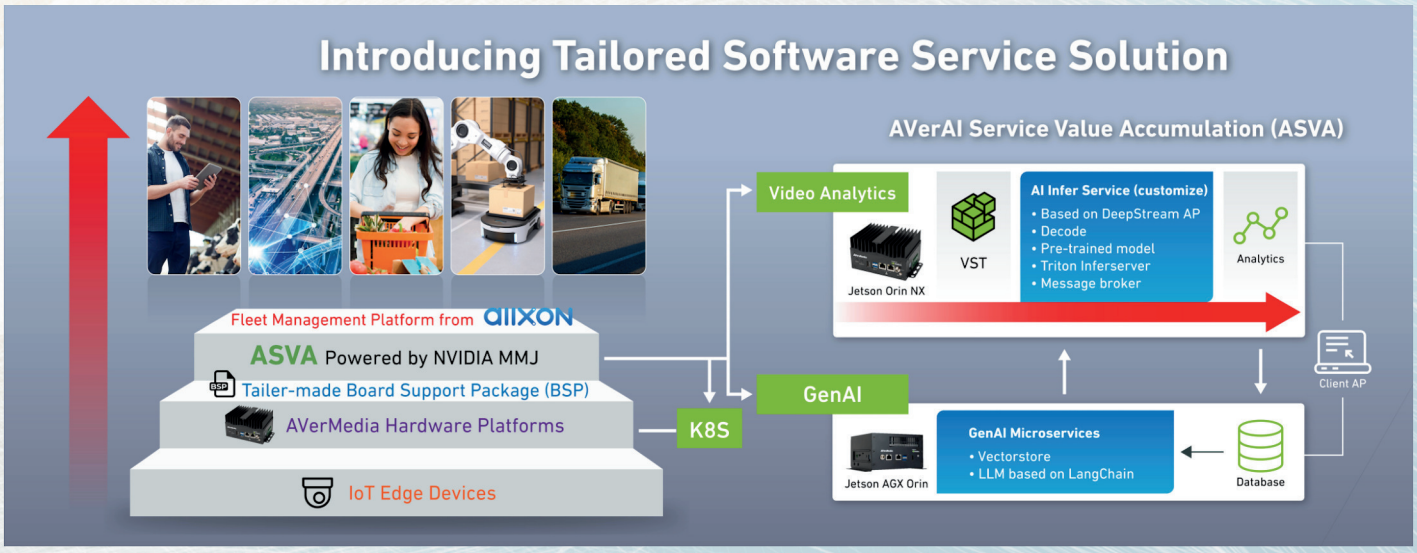
AVerMedia has collaborated with numerous international companies on many successful projects. This track record of success showcases our innovative design technologies and in-depth industry expertise, which gives us the confidence to guarantee the success of your project.

Introducing ASVA

Discover the power of AVerAI Service Value Accumulation (ASVA), our comprehensive platform that seamlessly integrates hardware, board support packages, and cutting-edge software applications. ASVA brings together the robust Fleet Management Platform from Allxon, state-of-the-art Artificial Intelligence (AI) inference capabilities, and our advanced GenAI reporting tool.

What sets ASVA apart is its foundation on NVIDIA Metropolis Microservices for Jetson, coupled with AVerMedia's tailored DeepStream app. This unique combination expedites development processes, allowing our customers to harness the full potential of AI technology effortlessly.

Revolutionizing operational efficiency and decision-making, ASVA offers a feature-rich suite. The Fleet Management Platform empowers businesses with centralized control over IoT devices, facilitating remote monitoring, configuration, and maintenance.



ASVA: Future-Ready Integration

Data-Driven Insights with GenAI

The GenAI reporting tool is a standout feature of ASVA, leveraging artificial intelligence to generate insightful analytics from data. This capability provides stakeholders with valuable insights, facilitating improved decision-making processes in retail and manufacturing sectors.

Enhanced Device Management and AI Capabilities

ASVA offers a centralized solution for managing IoT devices, enabling businesses to oversee remote monitoring, configuration, and maintenance with ease. The integration of AI inference technology allows for real-time data analysis, enabling predictive maintenance, inventory optimization, and the delivery of personalized customer experiences, particularly beneficial in the context of smart retail environments.

Unlock the Potential of 5G

AVerMedia's 5G Solutions for Smart Factory Excellence

Elevate your manufacturing with AVerMedia's 5G series Carrier Board, engineered for the future. Experience unparalleled connectivity that drives efficiency, reduces downtime, and ensures secure data transmission in your smart factory.

Secure Your Operations

Private 5G networks offer robust security, keeping your sensitive data safe from cyber threats. Trust AVerMedia to protect your competitive edge.

Quality Control Redefined

Utilize the AVerMedia's 5G series's advanced camera connectivity for flawless product inspections. With 5G, you can analyze data instantly for impeccable quality control.

Smart Automation

Deploy Automated Mobile Robots powered by AVerMedia's 5G series to navigate and collaborate seamlessly. Our 5G solutions ensure real-time communication, making your operations faster and smarter.

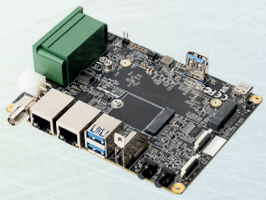
Embrace the Future

With AVerMedia's 5G solutions, step into a new era of manufacturing excellence. Let's build a smarter, more efficient, and secure factory together.

D315 5G (Jetson AGX Orin and Industrial)

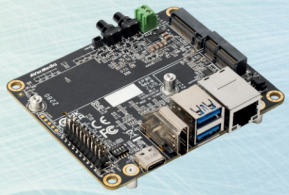
- 1x GbE and 1x10G
- 3x USB 3.1, 1x 4Kp60 HDMI output
- M.2 Key M for SSD, Key E for Wi-Fi, key B for 4G/5G
- 1xPCIex8, 1x120-pin for SerDes board

D115W 5G (Jetson Orin NX and Orin Nano)



- Wide temperature -40°C ~ 85°C
- 2x GbE, 3x USB 3.2, 1x 4Kp60 HDMI output
- M.2 Key M for SSD/ M.2 Key E for Wi-Fi
- Optional M.2 B Key for 5G and OOB support

D133 5G (Jetson Orin Nano and Orin NX)



- Wide temperature -40°C ~ 85°C
- Optional M.2 B Key for 5G and OOB support
- 1x GbE, 2 x USB 3.2 Type-A
- 1x 4Kp60 HDMI output, 2x4 Lane MIPI CSI-2

AVerMedia Engineering Kit

AVerMedia: Empowering Customization with NVIDIA

As a trusted ODM/OEM partner of NVIDIA, AVerMedia delivers bespoke solutions that meet the unique needs of our customers. Our Engineering Kit offers unparalleled flexibility for hardware customization, ensuring your project's requirements are precisely matched. This collaboration with NVIDIA highlights our commitment to providing adaptable, high-quality solutions for developers at every level.

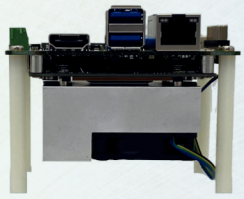
Seamless Integration with NVIDIA Technology

AVerMedia specializes in AI edge computing, catering to industries such as Smart Security, Smart Factory, Smart Retail, Smart Logistics, and Autonomous Mobile Robots (AMRs). Our Engineering Kit is designed to work flawlessly with NVIDIA® Jetson™ modules, supported by both NVIDIA BSP and AVerMedia's customized BSP optimization services. This dual support guarantees enhanced performance and flexibility for your projects.

Accelerate Your Project Deployment

With AVerMedia, you benefit from rapid deployment capabilities, ensuring quick and efficient project execution. Our high hardware compatibility, exceptional technical support, and customizable options across various sectors enable you to innovate with confidence and achieve your project goals with speed and reliability.

D111NO (Jetson Nano)



- Equipped with Jetson Nano Module
- 1x GbE, 2x USB 3.0, 1x 4Kp30 HDMI output
- 2x2 lane and 1x4 Lane MIPI CSI-2
- 20-pin: 2x I2C, 1x UART, 9x GPIOs

D315AO 5G (Jetson AGX Orin)

- 1x GbE and 1x10G
- 3x USB 3.1, 1x 4Kp60 HDMI output
- M.2 Key M for SSD, Key E for Wi-Fi, key B for 4G/5G

D131LOX/D131LON (Jetson Orin NX and Orin Nano)

- OOB support optional
- 1x GbE(POE optional), 4x USB 3.1,
- 1x 4Kp60 HDMI output
- 1x2 Lane MIPI CSI-2 and 40pin header

SMART SECURITY

- Temperature heat mapping
- Behavior analysis for access control in restricted areas
- People classification

Recommended Model:

D115WOXB/D115WONB 5G

Built with NVIDIA Orin NX/Nano. Wide temperature (-25 ~ 60°C), optional POE, 3x USB 3.2, 2x 4K HDMI and 3x M.2 for SSD/WIFI/5G.

SMART RETAIL

- Seamless shopping experience by frictionless autonomous checkout
- Reduce or no wait times Scan/print & go scale

Recommended Model:

D133OXB/D133ONB 5G

Built with NVIDIA Orin NX/Nano. Compact size, wide temperature (-25 ~ 60°C),1x 4K HDMI and 3x M.2 for SSD/WIFI/5G.

AMRS

- Increase productivity with high accurate operations
- Safer operations
- Flexible relocation

Recommended Model:

D315AOB 5G

Support NVIDIA AGX Orin and Industrial. Featuring 1x GbE, 1x 10G, 3x USB 3.2 and 3x M.2 for SSD/WIFI/5G.

AGRICULTURE

- Manage crops and climate with real-time data
- Detect and prevent crop illnesses early
- Use data to maximize harvests

Recommended Model:

D135OXD/D135OXB

Rugged and IP65/67 level with fanless or fan support, wide temperature range -40°C to 85°C. Waterproof IO for GMSL/POE/GbE/CAN BUS/GPIO.

SPORT

- Performance improvement for players
- Best moments recognized by analyzing audience's reaction
- Scout new players

Recommended Model:

D133OXB/D133ONB

Built with NVIDIA Orin NX/Nano. Compact size, wide temperature (-25 ~ 60°C),1x 4K HDMI and 3x M.2 for SSD/WIFI/5G.

MEDICAL IMAGING

- Increase the capability of detection and characterization
- Dissect complicated data to diagnostic image
- Precision medicin

Recommended Model:

D315AOP 5G

D315AOP 5G Support NVIDIA AGX Orin and Industrial. Featuring 1x GbE, 1x 10G, 3x USB 3.2 and 3x M.2 for SSD/WIFI/5G.

BSP Optimized Service

Equipping with NVIDIA® Jetson™ modules, AVerMedia provides AI edge computing solutions aiming at vertical focus markets, such as Smart Security, Smart Factory, Smart Retail, Smart Logistics, AMRs, etc. Furthermore, as an add-on value of a hardware provider, the optimized service of the Board Support Package(BSP) is one of the cores of AVerMedia. From PCB design to verification, we ensure to provide a dedicated solution to every single vertical market and provide customized service to optimize the BSP to fulfill the various demand of the application.

Industrial solutions & BSP optimized services for vertical markets

Vertical Markets	VERTICAL MARKETS		 AMR	 Agriculture	 Security	 Medical Imaging
	PRODUCTION		Pre-install SDK or SW / Install Image & Test			
Recommended BSP Optimization	SYSTEM	Boot Sequence				
		Change Logo	V	V		V
		One Button to Default	V	V	V	V
		Boot from SD/SSD	V	V	V	V
		Simplification		V		
		Software Secure	V	V	V	V
		OTA	V	V		
		Config Change			V	
		Expansion Header Config	V	V		
	DEVICE	Driver/Core Customize	V	V		V
		DMS	V			
		Wi-Fi	V	V	V	
		Thermal			V	
		4G/5G	V	V	V	
Hardware Solutions	SUGGESTED MODELS		D315AOB(5G)	D135OXQ	D115WOXB (5G) D115WONB (5G)	D315AOP(5G)
	ENGINEERING KIT/BOX PC/CARRIER BOARD WITH NVIDIA JETSON MODULE / VIDEO CAPTURE CARD					



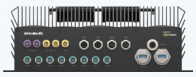


Model name	EN715	D133 (5G)	D131 D131L	D115W (5G)	D315 (5G)
Jetson Nano/ Xavier NX/TX2 NX	•				
Jetson Orin NX Jetson Orin Nano		•	•	•	
Jetson AGX Orin and Industrial					•
HDMI Output	1x 4Kp60 for Xavier NX, 4Kp30 for Nano	1x 4Kp60 for Orin NX, 4Kp30 for Orin Nano	1x 4Kp60 for Orin NX, 4Kp30 for Orin Nano	1x 4Kp60 for Orin NX, 4Kp30 for Orin Nano	1x 4Kp60
USB 3.0/USB 2.0	2/0	2/0	4/0	3/0	2/2
Networking	1x GbE	• 1x GbE • 1x M.2 E key	• 1x GbE (PSE optional) • 1x M.2 E key	• 2x GbE (1x PSE optional) • 1x M.2 E key	• 1x GbE • 1x 10G • 1x M.2 E key
Storage	1x Micro SD	1x M.2 M key	1x M.2 M key	1x M.2 M key	• 1x Micro SD • 1x M.2 M key
4G/5G support	-	1x M.2 B key for 4G/5G (daughter board)	4G/5G (Need adapter card)	1x M.2 B key for 4G/5G (daughter board)	1x M.2 B key for 4G/5G
Others	20 pins: 2x I2C, 1x UART, 9x GPIOs	• 20 pins: 2x I2C, 1x UART, 9x GPIOs • 1x OOB support optional	• 40pin(UART, SPI,I2C, I2S, GPIOs) • 1x CAN with transceiver (only for D131) • 1x OOB support optional	• 20 pins: 2x I2C, 2x UART, 4x GPIOs, 1xCAN • 1x OOB support optional	• x SIM slot • 1x PCIe (x16) • 1x CAN with transceiver • 40pin(UART,SPI,I2C,I2S,CAN,GPIOs) • 1x OOB support optional
Camera support	• 2x 2 lane MIPI CSI-2 • 1x 4 lane MIPI CSI-2 • USB camera	• 2x 4 lane MIPI CSI-2 • USB camera • SDI/HDMI camera via capture card	• 2x 2 lane MIPI CSI-2 (D131L support 1x 2 lane) • 1x 4 lane MIPI CSI-2 (only for D131) • USB camera • IP camera	• 2x 4 lane MIPI CSI-2 • USB camera • SDI/HDMI camera via capture card	• 1x 120pin for mipi/ GMSL/FPD link/ V-by-One® HS camera • SDI/HDMI camera via capture card • USB camera
Capture card support	-	CN311H, CN312SW, CN312MW(via daughter board)	-	CN311H, CN312SW, CN312MW(via daughter board)	CN311H, CN312SW, CN312MW
Operating temperature	0°C~70°C	-40°C~85°C	0°C~70°C	-40°C~85°C	-40°C~85°C
Adaptor/Power cord included	12V/5A (Optional)	12V/5A (Optional)	12V/5A (Optional)	12V/5A (Optional)	54V/2.78A
Dimensions (LxW) mm	87 x 70.6	90 x 76	113 x 105	126 x 96	141.5 x 133.5

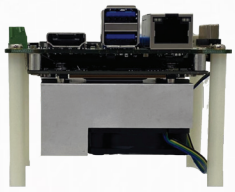
Box PC







Model name	D133OXB (5G) D133ONB (5G)	D115OXB D115ONB D115WOXB (5G) D115WONB (5G)	ON135B	D315AOB (5G) D315AOP (5G)	D135OXB D135OXD D135OXQ (IP65/67 grade)
Jetson Nano Jetson Xavier NX					
Jetson Orin NX Jetson Orin Nano	•	•	•		•
Jetson AGX Orin and Industrial				•	
HDMI Output	1x 4Kp60 for Orin NX, 4Kp30 for Orin Nano	1x 4Kp60 for Orin NX, 4Kp30 for Orin Nano	1x 4Kp60 for Orin NX, 4Kp30 for Orin Nano	1x 4Kp60	1x 4Kp60 for Orin NX, 4Kp30 for Orin Nano
USB 3.0 /USB 2.0	2/0	3/0	2/0	2/2	3/0
Networking	• 1x GbE • 1x M.2 E key	• 2x GbE (1x PSE optional for D115WOXB/ONB) • 1x M.2 E key	• 2x GbE • 1x M.2 E key	• 1x GbE • 1x 10G • 1x M.2 E key	• 2x GbE w/ PSE (waterproof) • 1x M.2 E key • 4x POE Optional
Storage	1x M.2 M key(256G SSD preinstalled on box PC for Orin NX/ Orin Nano)	1x M.2 M key (256G SSD preinstalled on box PC)	• 1x micro SD • 1x M.2 M key (256G SSD preinstalled on box PC)	• 1x Micro SD • 1x M.2 M key	1x M.2 key M (256G SSD preinstalled on box PC for Orin NX/ Orin Nano)
4G/5G support	1x M.2 B key for 4G/5G (daughter board)	1x M.2 B key for 4G/5G on D115WOXB/ONB (daughter board)	1x mPCIe for 4G module	1x M.2 B key for 4G/5G	1x M.2 B key for 4G/5G
Others	• 20 pins: 2x I2C, 1x UART, 9x GPIOs • 1x OOB support optional	• 20 pins: 2x I2C, 2x UART, 4x GPIOs, 1xCAN • 1x OOB support optional on D115WOXB/ONB	• 3x RS232,1x RS485 • 2x UART • 2x CAN, 6x GPIO with Isolated • 1x Mic in, 1x Line out • 1x half mPCIe for GPS • 5x LED Indicator	• 1x SIM slot • 1x PCIe (x16) • 1x CAN with transceiver • 40pin (UART, SPI, I2C, I2S, CAN, GPIOs) • 1x OOB support optional	• 1x mPCIe (IMU/GPS) • 2x Nano SIM slot • 1x OOB support (optional) **Waterproof:** • 8x GMSL(optional) • 2x CAN BUS with transceiver • 1x 12 pin (GPIO, RS485) • SuperCAP
Camera support	• 2x 4 lane MIPI CSI-2 • USB camera • SDI/HDMI camera via capture card	• 2x 2 lane MIPI CSI-2 for D115OXB/ONB, • 2x 4 lane MIPI CSI-2 for D115WOXB/ONB, • USB camera • SDI/HDMI camera via capture card	• 3x AHD/TVI/CVI Input Max.1080p30 • USB camera	• 1x 120pin for mipi/ GMSL/FPD link/ V-by-One® HS camera • SDI/HDMI camera via capture card • USB camera	• GMSL camera • IP camera • USB camera
Capture card support	CN311H, CN312SW, CN312MW(via daughter board)	CN311H, CN312SW, CN312MW for D115WOXB/ONB (via daughter board)	-	CN311H, CN312SW, CN312MW	-
Operating temperature	-25°C~60°C	• 0°C~60°C for D115OXB/ONB • -25°C~60°C for D115WOXB/ONB	0°C~40°C	D315AOB: -25~65°C D315AOP: -25~50°C D315AOB-industrial: -25~65°C	-40°C~85°C (based on SKU)
Adaptor/Power cord included	12V/5A	12V/5A	-	54V/2.78A	-
Thermal solution	Fan	Fanless	Fanless	Fan/Fanless	Fanless/Quad Fan/ Dual Fan
Dimensions (LxWxH) mm	93 x 81.2 x 74.4	126 x 96 x 74	235 x 160 x 70	D315AOB (Fan): 145 x 136.4 x 88 D315AOP (Fanless): 160 x 136.9 x 65	300 x 153 x 103



Model name	D111NO	D131LOX D131LON (Apply NVIDIA BSP directly)	D315AO (5G)
Jetson Module	Nano	Orin NX/Orin Nano	AGX Orin and Industrial
HDMI Output	1x 4Kp30	1x 4Kp60 for Orin NX, 4Kp30 for Orin Nano	1x 4Kp60
USB 3.0 /USB 2.0	2/0	4/0	2/2
Networking	• 1x GbE • 1x M.2 E key	• 1x GbE (PSE optional) • 1x M.2 E key	• 1x GbE • 1x 10G • 1x M.2 E key
Storage	1 x micro-SD	1x M.2 M key (optional 256G SSD Preinstalled)	1x Micro SD 1x M.2 M key
4G/5G support	-	4G/5G (need adapter card)	1x M.2 B key for 4G/5G
Others	20pin(UART,I2C,GPIOs)	• 40pin (UART, SPI, I2C, I2S, GPIOs) • 1x OOB support optional	• 1x SIM slot • 1x PCIe (x16) • 1x CAN with transceiver • 40pin(UART,SPI,I2C,I2S,CAN, GPIOs) • 1x OOB support optional
Camera support	• 2x 2 lane MIPI CSI-2 • 1x 4 lane MIPI CSI-2 • USB camera	• 1x 2 lane MIPI CSI-2 • USB camera • IP camera	• 1x 120pin for mipi/GMSL/ FPD link/V-by-One® HS camera • SDI/HDMI camera via capture card • USB camera
Capture card support	-	-	CN311H, CN312SW, CN312MW
Operating temperature	0°C~65°C	0°C~70°C	-25°C~70°C
Adaptor/Power cord included	12V/5A (Optional)	12V/5A (Optional)	54V/2.78A (Optional)
Fan	Yes	Yes	Yes
Dimensions (LxWxH) mm	87 x 70.6 x 58.2	113 x 105 x 50	135.5 x 130 x 54.6

NOTES

GET IN TOUCH

To learn more about our solutions or to request a PoC, feel free to contact us.

www.avermedia.com/professional/

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