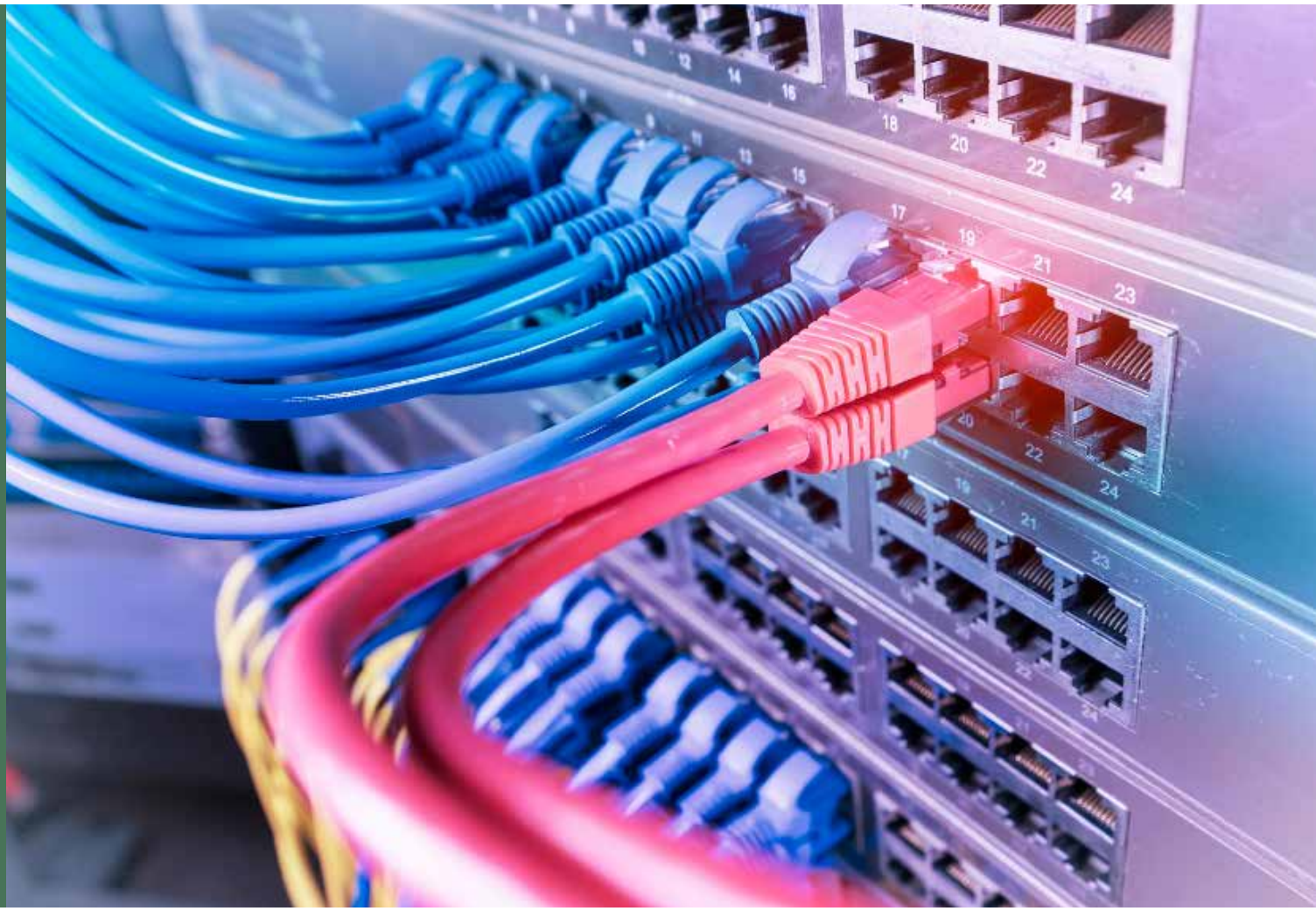
Lanner



Network Computing

Innovative Platforms for Next Generation Network Infrastructure



Empowering Future Network Security

The exponential growth of Internet traffic, fueled by cloud computing and high-speed mobile communication networks, has placed a substantial burden on network appliances. This surge in demand has attracted a rising tide of sophisticated malware, viruses, and information security risks. Service providers and infrastructure owners now seek innovative, next-generation platforms equipped with high-performance, high-throughput processors to implement hardware-based security measures, enabling efficient deep packet inspection and swift virus scanning.

For over three decades, Lanner has stood as a trailblazer in the rapidly evolving information security industry. Our unwavering commitment revolves around supplying cutting-edge, next-generation hardware platforms featuring advanced architectures. According to Gartner Magic Quadrants, an impressive 60% of the 46 companies offering Enterprise Network Firewalls, UTM, Wired/Wireless LAN, WAN optimization, and Application Delivery rely on Lanner's hardware. This substantial market share signifies Lanner's pivotal role in this domain, with over 3.5 million networking appliances shipped—a significant corporate milestone.

The evolving landscape demands superior network platforms that are higher in quality, more advanced, and more potent. Lanner remains steadfast in our expertise and remains dedicated to fully supporting our clients and partners. Together, we will continue to progress and thrive, meeting the industry's escalating demands for excellence.

Jeans Tseng
CTO

About Lanner

Lanner Electronics Inc. (TAIEX 6245) is a globally renowned hardware provider specializing in the design, engineering, and manufacturing of advanced network appliances and rugged industrial computers. With 38 years of experience, Lanner offers dependable and cost-effective computing platforms renowned for their exceptional quality and performance. Presently, Lanner boasts a substantial and dynamic workforce of around 1,000 highly experienced employees worldwide. The company's headquarters are located in Taipei, Taiwan, and it operates subsidiaries in the US, Canada, China, and Europe.

Global Manufacturing Capabilities

Taipei, Taiwan

- Area 30,000 m²
- 4x SMT, 2x DIP and 4x assembly lines
- Production capacity: 56,000 system units/month

Certifications

- ISO 26262:2021
- ISO 9001:2008
- ISO 14001:2004
- ISO 28000:2007
- QC 080000:2012
- OHSAS 18001:2007
- TL 9000:R5.5
- ISO 27001:2013

Service Capabilities

- Custom design and production in board, chassis and system
- High mix low volume manufacturing
- Quality assurance services
- Global order fulfillment services

Fremont, USA

- Area 27,000 sf²
- 5 x Assembly lines
- Production capacity: 3,000 system units/month

Contents

Why Lanner?

Lanner holds a prominent position in technological advancement and boasts well-established manufacturing processes, allowing us to offer tailored solutions for mission-critical applications. Our robust manufacturing lines are adept at customizing both hardware and software components of a platform. This includes chassis specifications, dimensions, modular or fixed ports, BIOS settings, IPMI configuration, acceleration cards, NIC modules, and necessary certifications.

Intel®

Lanner is an Associate Member of the Intel® Network Builders Partner, a community of SDN/NFV developers, system integrators, OEMs and solution providers committed to the development of modular, standards-based solutions on Intel® technologies.

NVIDIA Technologies

NVIDIA is a computing platform company, innovating at the intersection of graphics, HPC, and AI. The company specializes in the manufacture of graphics-processor technologies for workstations, desktop computers, and mobile devices.

AMD®

Advanced Micro Devices, Inc. is an American multinational semiconductor company that develops computer processors and related technologies for business and consumer markets.

American Megatrends Inc. (AMI®)

AMI creates and manufactures key hardware and software solutions for the global computer marketplace, providing the highest quality and compatibility necessary to build today's advanced computing systems.

NXP Semiconductors N.V.

NXP is driving innovation in the secure connected vehicle, end-to-end security and privacy and smart connected solutions markets.

Marvell® Networks

Lanner's Network Processing Appliance are built with performance-boosting and low-powered RISC processors from Marvell® for specified mission-critical applications like IPS, VPN and virus scanning.

Broadcom®

Broadcom® is a global innovator and leader in semiconductor solutions for wired and wireless communications. Lanner offer products with processors from Broadcom.

Infineon Technologies

TPM product family offers standardized ready-to-use security controllers that identify and authenticate PCs, servers, and connected IoT devices, and protect data integrity and confidentiality.

Insyde Software

Insyde Software is a leading worldwide provider of UEFI firmware, OpenBMC-based systems management solutions.

ASPEED Technology Inc

ASPEED specializes in Cloud & Enterprise Solutions, including Baseboard Management Controller (BMC) SoC and PFR SoC.

Design and Manufacturing Services

Extensive Customization Choices

Lanner offers a comprehensive range of custom hardware solutions for mission-critical applications, backed by in-house design and manufacturing to ensure a well-managed production process.

Advanced Networking Features

- Copper/fiber at 10/25/40/100/200/400GbE
- Future-proof scalability with NIC modules
- Advanced LAN bypass
- Network throughput acceleration
- Hardware-assisted cryptographic engine
- Built-in TPM/PFR hardware security
- Remote manageability
- GPU, DPU and Smart NIC card support

Best-In-Class Port Density

Lanner delivers exceptional port density in our rackmount network appliances. With modular or blade technology, each platform can be customized to meet your specific requirements.

Engineered for Reliable Operation

Equipped with redundant power supplies, hot-swappable fans, and LAN bypass, these network appliances ensure uninterrupted network support, even in the face of unexpected events.

The Latest and Fastest Processors

Leveraging the latest Intel® Xeon®, Core™, Atom™, and AMD EPYC™ processors, our network appliances efficiently handle network security tasks with optimal throughput and minimal power consumption. Additionally, Lanner designs platforms with NXP® processors to provide high-performance RISC-based network solutions.

Electronic Engineering

Choose from a wide range of board- and platform-level components to create the ideal appliance or solution for your application. Lanner's strategic partnerships enable us to integrate the latest industry technologies, offering customers a broader palette of options.

Mechanical Engineering

Lanner's engineers are highly experienced in addressing a wide range of design challenges at both the board and mechanical levels, including ventilation, peripherals, and more. Rigorously tested, Lanner products withstand a broad spectrum of environmental conditions, ensuring robustness across diverse applications.

Software Engineering

Implement the necessary BIOS or firmware on your platforms with the support of Lanner's software team. Our expertise enables us to develop and customize BIOS, firmware, drivers, and APIs to ensure seamless communication between hardware and application software.

Lanner's Comprehensive Network Appliance Lineup

Lanner boasts an extensive array of network appliances, ranging from compact desktop with integrated processors to advanced rackmount models featuring multiple processors, acceleration capabilities, and robust redundancy features. Our portfolio includes both x86 and RISC appliances, which can be complemented by various NICs and expansion modules to create the ideal solution.

Prototyping

During the prototype stage, Lanner can assist with testing guidelines and BIOS tuning to maximize appliance performance. With a wide range of standard appliances, we can accelerate your product development and help bring your products to market faster

Product Identity Service

Take advantage of Lanner's product identity service. We can customize every aspect of your product's identity—from 2D and 3D industrial design of faceplates to custom packaging and labeling. This ensures your products effectively promote your brand and leave a lasting impression on your customers.

Manufacturing

Lanner owns and operates state-of-the-art in-house SMT, DIP, assembly, and testing facilities. By maintaining full control of the manufacturing process, we ensure the integrity of your end product through strict production procedures, integrated quality assurance programs, and rigorous design standards.

Order Fulfillment

Global Service Coverage

With a presence across multiple continents, Lanner delivers seamless service and support to clients around the world.

Comprehensive Service Offering

Once we've completed the design and manufacturing of your products, we handle software installation and ship directly to your customers in branded packaging. We can also facilitate drop shipments from our global logistics centers.

Our service allows you to focus on your core expertise in software development for the information security sector, while we manage hardware design, manufacturing, logistics, and support — our core competency.

Quality Control

Lanner's strict, ISO 9001–certified quality testing procedures are fully compliant with international standards. As part of our green management plan, initiated in early 2006, all Lanner products also meet RoHS certification requirements.

Logistics

Successful logistics are supported by efficient procedures. Lanner clients can track their orders throughout the production process using unique order numbers, enabling routine project updates. This order traceability ensures consistency and quality.

Technical Support

Lanner provides comprehensive RMA services and technical support to ensure excellent customer service. For systems built on Intel® platforms, we offer up to 7 years of lifecycle support. Extended lifecycle support can also be arranged through jointly planned inventories.

NCA-1050
Intel® Atom™ X7835RE/X7405C/
X7203C CPU (Amston Lake)
4x RJ45 Ports

NCA-1250
Intel® Atom x7000 CPU
(Amston Lake or Alder Lake N)
6x 2.5GbE RJ45

NCA-1600
14th Gen Intel® Core CPU
(Raptor Lake)
4x RJ45, 1x 2.5G RJ45, 2x 10G SFP+

NCA-1525
Intel® Atom® C5000 CPU
(Parker Ridge)
6x RJ45, 2x 10G SFP+

VP-210
Marvell OCTEON CN102 Series Processors
8x 2.5 GbE RJ45, 2x10G Combo
2x 10G SFP+

Low-footprint Intel CPU Engine

To addresses the demand for building efficient and secured network edge, Lanner adopts the latest generation of Intel® Atom™ and Celeron® processors to supply entry security gateway/UTM/ SD-WAN/uCPE for SMBs or branch networks.

Intel QuickAssist Technology

This hardware-assisted security engine is not only designed to optimize the cryptographic and data compression applications, but also reserves processor cycles for critical application processing while improving overall system performance.

SR-IOV (Single Root I/O Virtualization)

SR-IOV (Single Root I/O Virtualization) lets a single network device be divided into multiple virtual functions for direct VM or container access. It provides high-performance, low-latency networking, improves scalability, and enhances security, making it ideal for data centers, NFV, cloud, and edge computing.

Wireless RF Connectivity

Lanner desktop appliances feature concurrent expansion slots for Wi-Fi/5G/LTE/Wi-Fi 6 RF modules, and external antennas for wireless network connectivity.

Fanless Design

System fans, considered one of the most error-prone components, are removed from appliances while at the same time allowing heat dissipation off the top of the corrugated aluminum enclosure.

Versatile Mounting Kits

For mounting flexibility, Lanner desktop appliances are compatible with wallmount or rackmount options for suitable installation in any environment setting.

Desktop Network Appliances

Feature	Description	NCA-1040/NCA-1040SE	NCA-1050 NEW	NCA-1250
Form factor		Desktop	Desktop	Desktop
Platform	Processor Options	Intel® Atom® X6413E Or Celeron® N6210 (Elkhart Lake)	Intel® Atom® X7835RE/X7405C/X7203C (Amston Lake)	Intel® Atom® x7425E/N97 (Alder Lake N) Intel® Atom® x7405C/x7835RE (Amston Lake)
	CPU Socket	onboard	onboard	onboard
	Chipset	SoC	SoC	SoC
	Security Acceleration	N/A	N/A	N/A
BIOS		AMI SPI Flash BIOS	AMI SPI Flash BIOS	AMI SPI Flash BIOS
System Memory	Technology	DDR4 3200 MT/s SODIMM	DDR5 4800MT/s SODIMM	DDR5 4800MT/s SODIMM
	Max. Capacity	32 GB	16 GB	16 GB
	Socket	1 x 260-pin SODIMM	1 x 262-pin SODIMM	1 x 262-pin SODIMM
Networking	Ethernet Ports	NCA-1040: 4 x GbE RJ45 Intel® i210AT NCA-1040SE: 4x 2.5GbE RJ45 Intel i226V (Support For 1x PoE+)	1 x 2.5GbE RJ45, 4x GbE RJ45	5 x 2.5GbE RJ45 Via Intel® I226-V 1 x 2.5GbE RJ-45 Via GPY211 SGMII Interface (SKU A/C/D)
	Bypass	N/A	N/A	N/A
	NIC Module Slot	N/A	N/A	N/A
LOM	I/O Interface	N/A	N/A	N/A
	OPMA Slot	N/A	N/A	N/A
I/O Interface	Reset Button	1	1	1
	LED	Power/Status/Storage/M.2/Mini PCIe	Power/Status/Storage	Power/Status/Storage
	Power Button	1	1	1
	Console	1 x RJ45	1 x RJ45	1 x RJ45
	USB	1 x USB 3.0	1 x USB 3.1	1 x USB 3.0
	LCD Module	N/A	N/A	N/A
	Display	1 x Display Port (No Audio)	1 x Display Port 1.2 (SKU A)	N/A
	Power Input	1 x DC Jack With Lock	1 x DC Jack With Lock	1 x DC Jack With Lock
Storage	HDD/SSD Support	N/A	N/A	N/A
	Onboard Storage	1 x M.2 2280 B key (SATA), 1 x SATA connector (reserved)	1 x M.2 2280 B key (SATA)	1 x M.2 2280 (SATA), 1 x EMMC 16GB Onboard (By SKU)
Expansion	PCIe	N/A	N/A	N/A
	mini-PCIe or M.2	1 x mini-PCIe (PCIe x1/USB2.0), 1 x M.2 (USB 3.1) 3042/3052 B key 2x nano SIM	1 x M.2 (PCIe x1) 2230 E Key 1 x M.2 (USB 3.1) 3042/3050/3052 B Key 2 x Nano SIM Slots	1 x M.2 3042/3050/3052 for 5G/LTE (USB3.2) 1 x M.2 2230 E key for Intel AX201 (CNVIo) 1 x Nano SIM
Miscellaneous	Watchdog	Yes	Yes	Yes
	Internal RTC with Li Battery	Yes	Yes	Yes
	TPM	YES (TPM 2.0)	YES (TPM 2.0)	YES (TPM 2.0)
Cooling	Processor	Passive CPU heatsink	Passive CPU heatsink	Passive CPU heatsink
	System	Fanless (Default); 1 x 5-pin Fan Connector (Optional)	Fanless	Fanless
Environmental Parameters	Temperature	0~40°C Operating -40~70°C Non-Operating	0~40°C Operating -20~70°C Non-Operating	0~40°C Operating -20~70°C Non-Operating
	Humidity (RH)	5~90% Operating 5~95% Non-Operating	5~90% Operating 5~95% Non-Operating	10~90% Operating 5~95% Non-Operating
System Dimensions	(WxHxD)	183 x 32 x 168 mm	183 x 32 x 168 mm	231 x 44 x 200 mm
	Weight	0.9 kg	0.88 kg	1.1 kg
Power	Type / Watts	60W Power Adapter/40W Power Adapter	40W Power Adapter	40W Power Adapter
	Input	AC 100~240V @50~60Hz	AC 100~240V @50~60Hz	AC 100~240V @50~60Hz
Approvals and Compliance		RoHS, CE/FCC Class B (Class A with PoE), UL, VCCI, UKCA	RoHS, CE/FCC Class B, UL, VCCI, UKCA	RoHS, CE/FCC Class B




NCA-1252	NCA-1525/1526	NCA-1600	VP-210
Desktop	Desktop	Desktop	Desktop
Intel® Atom® X7809C/X7405C (Amston Lake)	Intel® Atom® C5325/C5315 (Parker Ridge)	14th Gen Intel® Core i7/i5/i3 CPU (Raptor Lake)	Marvell OCTEON CN102 Series
onboard	onboard	onboard	onboard
SoC	SoC	SoC	SoC
N/A	Intel® QuickAssist Technology	N/A	Crypto 50G IMIX Unidir + ~12K RSA 2K OPS
AMI SPI Flash BIOS	AMI SPI Flash BIOS	AMI SPI Flash BIOS	N/A
DDR4 3200MT/s SODIMM	DDR4 2933/2400MT/s ECC/Non-ECC SODIMM	DDR5 4800MT/s Non-ECC SODIMM	DDR5 4800 MT/s SO-DIMM
32 GB	64 GB	16GB/32GB/64GB	128 GB
1 x 262-pin SODIMM	2 x 260-pin SODIMM	2 x 262-pin SODIMM	1 x 262-pin SODIMM
2 x 2.5GbE RJ45, 4 x GbE RJ45, 2 x 10GbE SFP+ (SKU A) 2 x 2.5GbE RJ45, 2 x GbE RJ45, 2 x GbE SFP (SKU B)	4x GbE RJ45, 2x 10G SFP+, NCA-1525: 2x 2.5G RJ45 (PoE+ Optional) NCA-1526: 2x GbE RJ45 (PoE+ Optional)	4x GbE RJ45, 1x 2.5G RJ45, 2x 10G SFP+	8x 2.5 GbE RJ45, 2x10G Combo (RJ45/ SFP+), 2x 10G SFP+ (By SKU)
1 x Pair Gen3SE (SKU A)	N/A	N/A	2 x Pairs Of Gen 3
N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A
1	1	1	1
Power/Status/Storage	Power/Status/Storage	Power/Status/Storage	Power/Status/Storage
1	1	1	1
1 x RJ45	1 x RJ-45	1 x MicroUSB	1 x RJ-45
1 x USB 3.2 Gen1	2 x USB 3.0	1 x USB 3.2	1 x USB 3.0
N/A	N/A	N/A	N/A
N/A	N/A	2 x Mini Display Ports	N/A
1 x DC Jack With Lock	2 x DC Jack With Lock	1 x 2 x 3 12V Power Connector	2 x Or 1 x DC Jack (By SKU)
EMMC 64GB (SKU A)	N/A	N/A	N/A
1 x M.2 2280 B Key (SATA)	1 x M.2 2280 B Key (SATA)	1 x M.2 2280 M Key (NVMe)	1 x M.2 2280 M Key (NVMe)
1 x PCIe*4 Gen3 Board To Edge Connector For IO-12521A (SKU A)	N/A	1 x HHHL Slot (SKU A/B)	N/A
2 x M.2 3042/3052 B Key For 5G/LTE 1 x M.2 2230 E Key 3 x Nano SIM Slots	1 x Mini-PCIe (PCIe/USB2.0) 2 x M.2 3042/3052 B Key (USB3.0) 2 x Nano SIM Slots	1 x M.2 (USB3.2) 2230 E Key For WiFi 1 x M.2 (PCIe x1/USB3.2) 3042/3052 B Key, 1 x M.2 (PCIe x1 / USB3.2) 2280 M Key, 1 x Nano SIM Slot	1 x Or 2 x M.2 B Key (3042/3050/3052) For LTE/5G (By SKU) 1 x M.2 E Key (2230) For Wi-Fi 2 x Nano SIM Slots
Yes	Yes	Yes	Yes
Yes	Yes	Yes	Yes
YES (TPM 2.0)	Yes	Yes (Optional)	Yes
Passive CPU heatsink	Passive CPU heatsink	Passive CPU heatsink	Passive CPU Heatsink
1 x Smart Fan	2 x Cooling Fan w/ Smart Fan	4 x Cooling Fan w/ Smart Fan	2 x Cooling Fan w/ Smart Fan
0~40°C Operating -20~70°C Non-Operating	0~40°C Operating -40~70°C Non-Operating	0~40°C Operating -40~70°C Non-Operating	0~40°C Operating -40~70°C Non-Operating
10~90% Operating 5~95% Non-Operating	5~90% Operating 5~95% Non-Operating	5~90% Operating 5~95% Non-Operating	5~90% Operating 5~95% Non-Operating
275 x 44 x 202 mm	250 x 44 x 200 mm	250 x 44 x 250 mm	310 x 44 x 265 mm
1.8 kg	1.5 kg	2.1 kg	4.5 kg
60W Power Adapter	90W Power Adapter	150W/90W Power Adapter (By SKU)	90W Power Adapter
AC 110~240V@50~60Hz	AC 100~240V @50~60 Hz	AC 100~240V @50~60 Hz	AC 100~240V @50~60 Hz
RoHS, CE/FCC Class B, UL, UKCA	RoHS, CE/FCC Class B (Without PoE+), UL, VCCI, UKCA	RoHS, CE/FCC Class B (Without PoE), UL, UKCA	RoHS, CE/FCC Class B (Without PoE+), UL, UKCA, VCCI

IT Security

Rackmount Network Appliances

NCA-5110
AMD Ryzen™ Embedded 7000 Series
2x 2.5G RJ45, 8x RJ45, 4x 10G SFP+, Max.32GB RAM

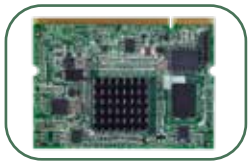
NCA-4035
Intel Xeon® D2800/D2700 Processor
10G RJ45, 4x 10G SFP+ 1x NIC, Max.256GB RAM

NCA-4240
14th Gen Intel® Core Processor
8x 2.5G RJ45, 1x NIC, Max.64GB RAM

NCA-5330
AMD EPYC™ 9004 Series Processor
4x NIC, Max.512GB RAM

NCA-6050
Intel Xeon 6 Processors
8x NIC or 4x NIC+2x PCIe, Max.1024GB RAM

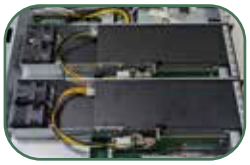
• Intel Xeon/Core CPUs



• BMC

• Redundant Power

• Modular Fans



• GPU Support

Intel® Core™ and Xeon® CPU

Lanner rackmount appliances feature the latest server-grade Intel® Core™ and Xeon® CPUs optimized to offer high throughputs and function as next-gen firewalls deployed in the enterprise network and cloud infrastructures.

Smart NIC Modules and Cards

Scale the performance and throughputs up for your network appliances with over 20 different copper, fiber bypass Ethernet modules including 1/10/40/50/100/200/400GbE LAN options, and also the add-on accelerator cards providing high performance tunneling and encryption.

High Availability Design

To ensure the 24/7 non-stop network operation, Lanner appliances support high availability design including dual management ports, hot-swappable cooling fans and redundant power supplies.

Trusted Platform Module

Our appliances support Trusted Platform Module (TPM) that provides the integrated cryptographic keys and secure boot to protect the hardware from unauthorized accesses.

AMD EPYC™ 9000 Series CPU

With the flexibility to choose from 8 to 128 cores, AMD EPYC™ enables you to deploy the right hardware platforms to meet your workload needs from virtualized infrastructure to large-scale big-data and analytics platforms and legacy line-of-business applications.

BMC Remote Manageability

Lanner provides SSL encrypted BMC add-on card and custom SDK to remotely configure, monitor, reboot and shut down your appliances.

GPU Support

GPU support on Lanner appliances can offload AI inference from the CPU, enabling accelerated deep learning algorithms for security tasks such as malware detection and DDoS prevention.

Platform Firmware Resilience (PFR)

PFR is a hardware-based safeguard that verifies firmware via a hardware root of trust, detects tampering, and restores a trusted "golden image." It ensures integrity, rapid recovery, and continuous trust for network security appliances in zero-trust and critical infrastructure environments.

Rackmount Network Appliances

Feature	Description	NCA-2520/2522	NCA-2523	NCA-4035
Form Factor		1U 19" Rackmount	1U 19" Rackmount	1U 19" Rackmount
Platform	Processor Options	Intel® Atom® P5300 (Snow Ridge NS)	Intel® Atom® C5325/C5315 (Parker Ridge)	Intel® Xeon® D2800/D2700 4~22 Cores (Eddy Lake D/Ice Lake D)
	CPU Socket	onboard	onboard	1 x Onboard
	Chipset	SoC	SoC	N/A
	Security Acceleration	N/A	Intel® QuickAssist Technology	Intel® QuickAssist Technology (By SKU)
BIOS		AMI SPI Flash BIOS	AMI SPI Flash BIOS	AMI SPI Flash BIOS
System Memory	Technology	DDR4 2933MT/s REG Or Non-ECC UDIMM	DDR4 2933MT/s ECC Or Non-ECC SODIMM	DDR4 3200/2933/2667 MT/s REG ECC Or Non-ECC UDIMM/RDIMM
	Max. Capacity	256GB	64GB	256GB
	Socket	4 x 288-pin DIMM	2 x 260pin DIMM	4 x 288-pin DIMM
Networking	Ethernet Ports	8 x GbE RJ45 Intel i350-AM4, 4 x 10G SFP+ Intel SoC Integrated MAC, 4 x 10G SFP+ Intel C827 Via SFI Signal (By Project)	Default: 8 x GbE RJ45, 2x 10GbE SFP+ Customizable for: - 4 x GbE RJ45 & 4x 10GbE RJ45, 2 x 10GbE SFP+ - 4 x GbE RJ45 & 4x 10GbE SFP+, 2x 10GbE SFP+	2 x GbE RJ45 Via I210-AT 8 x GbE RJ45 Via I350-AM4 4 x 10G SFP+ (Default) 4 x 25G SFP28 (By OEM Project)
	Bypass	2 pairs Gen3	2 pairs Gen3	N/A
	NIC Module Slot	1	1 (By SKU)	2
LOM	I/O Interface	Optional	N/A	1 x RJ45
	OPMA Slot	N/A	N/A	Yes
I/O Interface	Reset Button	1	1	1
	LED	Power/Status/Storage	Power/Status/Storage	Power/Status/Storage
	Power Button	1 x ATX Power switch	1	1 x ATX Power switch
	Console	1 x RJ45	1 x RJ45	1 x RJ45
	USB	2 x USB 2.0	2 x USB 3.0	2 x USB 3.0
	LCD Module	N/A	N/A	N/A
	Display	1 x VGA From OPMA Slot (Optional)	N/A	N/A
	Power Input	AC Power Inlet on PSU	AC power inlet on PSU	AC power inlet on PSU
Storage	HDD/SSD Support	2 x 2.5" HDD/SSD Internal Bays	1 x 2.5" HDD/SSD Internal Bays	N/A
	Onboard Storage	1 x M.2 2280 M Key (SATA III/PCIe*2 Signal)	1 x M.2 2280 M Key (SATA/PCIe*1 Signal)	2 x M.2 2280 B Key (SATA) 1 x M.2 2242 B Key (SATA)
Expansion	PCIe	1 x PCI-E*8 Or 2x PCI-E*4 FH/HL (By Project)	1 x Gen3 PCI-E*4 With NCS2 NIC Support (SKU A/C Only)	1 x Gen4 PCIe*8 & 1 x Gen4 PCIe*16
	mini-PCIe	1 x Mini-PCIe (PCIe/USB2.0)	1 x M.2 (USB3.0) 3042/3050/3052 For 5G/LTE 1 x Nano SIM Slot	N/A
Miscellaneous	Watchdog	Yes	Yes	Yes
	Internal RTC w/ Li Battery	Yes	Yes	Yes
	TPM	N/A	Yes	Yes
Cooling	Processor	Passive CPU heatsink	Passive CPU heatsink	Passive CPU heatsink
	System	3 x cooling fans with smart fan	3 x cooling fans with smart fan	4 x cooling fans with smart fan
Environmental Parameters	Temperature	0~40°C Operating -20~70°C Non-Operating	0~40°C Operating -40~70°C Non-Operating	0~40°C Operating -20~70°C Non-Operating
	Humidity (RH)	5~90% Operating 5~95% Non-Operating	5~90% Operating 5~95% Non-Operating	5~90% Operating 5~95% Non-Operating
System Dimensions	(WxDxH)	438 x 429 x 44 mm	438 x 321 x 44 mm	438 x 321 x 44 mm
	Weight	10.1 kg	8 kg	7.5 kg
Package Dimensions	(WxDxH)	582 x 548 x 182 mm	600 x 550 x 185 mm	582 x 739 x 215 mm
	Weight	17.1 kg	10.88 kg	12 kg
Power	Type / Watts	300W 1+1 AC/DC Redundant CRPS PSU	300W Redundant PSUs (SKU A/B) 350W Single PSU (SKU C/D)	300W 1+1 Redundant PSUs Or 350W Single PSU
	Input	AC 90~264V @47~63Hz	AC 90~264V @47~63 Hz	Redundant: AC 100~240V @50~60Hz Single: AC 100~240V @47~63Hz
Approvals and Compliance		RoHS, CE/FCC Class A, UL	RoHS, CE/FCC Class A, UL, UKCA	CE/FCC Class A, UL, RoHS

Rackmount Network Appliances



Feature	Description	NCA-4112	NCA-4310 NEW	NCA-5110 NEW
Form Factor		1U 19" Rackmount	1U 19" Rackmount	1U 19" Rackmount
Platform	Processor Options	AMD EPYC™ 3000 Series (4~8 Cores)	AMD Ryzen™ Embedded 7000 Series	AMD Ryzen™ Embedded 7000 Series
	CPU Socket	onboard	AM5	AM5
	Chipset	SoC	B650	B650
	Security Acceleration	10Gbps Encryption + 10Gbps Decryption	N/A	N/A
BIOS		AMI SPI Flash BIOS	AMI SPI Flash BIOS	AMI SPI Flash BIOS
System Memory	Technology	DDR4 2666 MT/s ECC/U/R DIMM	DDR5 5200 MT/s ECC or non-ECC UDIMM or DDR5 3600 MT/s ECC or Non-ECC UDIMM	DDR5 5200MT/s ECC Or Non-ECC UDIMM DDR5 5600MT/s ECC Or Non-ECC UDIMM DDR5 3600MT/s ECC Or Non-ECC UDIMM
	Max. Capacity	128GB	128GB	32GB
	Socket	4 x 288-pin DIMM	4 x 288-pin DIMM	4 x 288-pin DIMM
Networking	Ethernet Ports	8 x GbE RJ45 Intel® i350-AM4 2 x 10G SFP+	2 x 2.5GbE RJ45, 8 x GbE RJ45, 4 x 10G SFP+ (SKU A/B/C) 1x RJ45 MGMT (SKU D)	2 x 2.5GbE RJ45 via 2x Intel® i226-V 8 x GbE RJ45 via 2x I350-AM4 4 x 10G SFP+ via 1x XL710-BM1
	Bypass	3 x Pairs of Gen3	Bypass Gen3 SE (SKU A/B/D)	SKU A/B/D: 4 Pairs Of Bypass Gen3 SE SKU C: N/A
	NIC Module Slot	1	1	2
LOM	I/O Interface	1 x RJ45	1 x RJ45	SKU D: 1x RJ45 NCSI SKU A/B/C: N/A
	OPMA Slot	Yes	Yes (SKU D)	SKU D: YES SKU A/B/C: N/A
I/O Interface	Reset Button	1	1	1
	LED	Power/Status/Storage	Power/Status/Storage	Power/Status/Storage
	Power Button	1 x ATX Power Switch	1 x ATX Power Switch	1 x ATX Power Switch
	Console	1 x RJ45	1 x RJ45	1 x RJ45
	USB	2 x USB 3.0	2 x USB 3.0	2 x USB 3.0
	LCD Module	1 x LCM, 4 x Keypads	1 x LCM, 4 x Keypads	N/A
	Display	From OPMA Slot for VGA (Optional)	N/A	N/A (SKU D: Optional support by BMC)
	Power Input	AC Power Inlet on PSU	AC/DC ATX Power Inlet On PSU	AC Power Inlet On PSU
Storage	HDD/SSD Support	2 x 2.5" Swappable Bays	2 x 2.5" HDD/SSD Internal Bays (Optional)	2 x 2.5" HDD/SSD Internal Bays (Optional)
	Onboard Storage	1 x M.2 2242 1x Mini-PCIe	1 x M.2 2280 B Key (SATA) 1 x M.2 2280 M Key (NVMe)	1 x M.2 2280 (SATA) 1 x M.2 2280 (NVMe)
Expansion	PCIe	N/A	1x PCIe x8 Single Deck, HH/HL	Default N/A, 1x PCIe x16 Gen4 Single-Deck FH3/4L (10.5") PCIE Card At Rear (Extra KIT Needed)
	mini-PCIe	1x Mini-PCIe for WiFi 1 x LTE (Optional)	N/A	N/A
Miscellaneous	Watchdog	Yes	Yes	Yes
	Internal RTC w/ Li Battery	Yes	Yes	Yes
	TPM	TPM 1.2/2.0	Optional	Yes, TPM2.0 (Optional)
Cooling	Processor	Passive CPU Heatsink	Passive CPU Heatsink	Passive CPU Heatsink
	System	2 x Cooling Fans w/ Smart Fan	4 x Cooling Fans w/ Smart Fan	4 x Cooling Fans w/ Smart Fan
Environmental Parameters	Temperature	0~40°C Operating -20~70°C Non-Operating	0~40°C Operating -40~70°C Non-Operating	0~40°C Operating -40~70°C Non-Operating
	Humidity (RH)	5~90% Operating 5~95% Non-Operating	5~90% Operating 5~95% Non-Operating	5~90% Operating 5~95% Non-Operating
System Dimensions	(WxDxH)	438 x 431 x 44 mm	438 x 430 x 44 mm	438 x 580 x 44mm
	Weight	8.6 kg	11.27 kg	8.6 kg
Package Dimensions	(WxDxH)	582 x 548 x 182 mm	588 x 841 x 215 mm	588 x 788 x 215 mm
	Weight	13 kg	17.59 kg	8.6 kg
Power	Type / Watts	300W Redundant PSUs	1300W 1+1 ATX AC Redundant PSUs	450W 1+1 ATX AC Redundant PSUs (DC As Optional)
	Input	100~240VAC @50~60Hz, 5~3A	100~240V@50~60Hz Or 47~63Hz	100~120V/200~240V@50-60Hz
Approvals and Compliance		RoHS, CE, FCC, UL	RoHS, CE/FCC Class A, UL	RoHS, CE/FCC Class A, IL, UKCA




NCA-5115	NCA-5310	NCA-5330	NCA-4240/4242
1U 19" Rackmount	1U 19" Rackmount	1U 19" Rackmount	1U 19" Rackmount
AMD EPYC™ 4004/4005, Ryzen™ Embedded 7000/9000 Series	AMD EPYC 7000 series(Rome/Milan)	AMD EPYC 9004 Series Processors (Codenamed Genoa/Bergamo)	14th Gen Intel® Core™ i9/i7/i5/i3, Pentium® Or Celeron® Processor (Alder Lake S/Raptor Lake S/Raptor Lake Refresh)
AM5	1 x FCLGA-4094	1 x LGA-6096	1 x LGA1700
AMD B650	N/A	AMD Enhanced Security	Intel® H610E/Q670E
B650	N/A	N/A	N/A
AMI SPI Flash BIOS	AMI SPI Flash BIOS	AMI SPI Flash BIOS	AMI SPI Flash BIOS
DDR5 ECC or non-ECC UDIMM 1DPC up to 5600 MT/s , 2DPC DDR5 3600 MT/s	DDR4 3200 MT/s REG DIMM	DDR5 4800MT/s R-DIMM	DDR5 5600MT/s Non-ECC UDIMM
32GB	512GB	512GB	64GB
4 x 288pin DIMM	8 x 288-pin DIMM	8 x 288-pin DIMM	2 x 288pin DIMM
1x GbE RJ45 MGMT Intel i210	1 x GbE RJ45 Intel® i210	1 x GbE RJ45 Intel® i210	1 x GbE RJ45 With LED MGMT Via i219 NCA-4240: 8 x 2.5GbE RJ45 Via i226 NCA-4242: 2 x 10GbE SFP+, 8 x 2.5Gb RJ45 Intel® i226-LM, 1 x 1GbE RJ45 MGMT Intel® i219
N/A	N/A	N/A	3 Pairs Gen3 SE
2* PCIe x2+PCIe x2 2* PCIE8 or PCIE4*2	Default: 2, max up to 4	4	1
N/A	1 x RJ45 (Optional) *Share with ETH0	1 x RJ45 (Optional) *Share with ETH0	N/A
N/A	Yes	Yes	N/A
1	1	1	1
Power/Status/Storage	Power/Status/Storage	Power/Status/Storage	Power/Status/Storage
1 x ATX Power Switch	1 x ATX Power Switch	1 x ATX Power Switch	1 x ATX Power switch
1 x RJ45	1 x RJ45	1 x RJ45	1 x RJ45
2 x USB 3.0	2 x USB 3.0	2 x USB 3.0	2 x USB 3.0
N/A	N/A	N/A	2 x 20 character LCM 4 x keypads
Internal (Develop Only)	1x VGA (Optional)	N/A	N/A
AC Power Inlet on PSU	AC Power Inlet on PSU	AC Power Inlet on PSU	AC power inlet on PSU
1 x 2.5" or 3.5" Internal Bays	2 x 2.5" Swappable Bays	2 x 2.5" SSD/HDD Bays	2 x 2.5" SSD/HDD Bays
1 x M.2 2280 (NVMe)	1 x M.2 2280/22110	1 x M.2 2280 (SATAIII / PCIe x5)	1 x M.2 2242 M Key (SATA) (By SKU) 1 x M.2 2280 M Key (NVMe) (By SKU)
N/A	1 x PCIe*8 HH/HL (Optional)	1 x PCIe*8 HH/HL (Optional)	1 x PCIe x8 Gen4 FH/HL (Optional)
N/A	N/A	N/A	1 x M.2 2230 E Key (Optional)
N/A	Yes	Yes	Yes
Yes	Yes	Yes	Yes
YES (Optional) (TPM2.0)	Yes (Optional)	Yes (Optional)	Yes (Optional)
Passive CPU Heatsink	Passive CPU Heatsink	Passive CPU Heatsink	Passive CPU heatsink
4x Cooling Fans With Smart Fan	5 x Individual Hot-swappable Cooling Fans	5 x Individual Hot-swappable Cooling Fans	4 x cooling fans with smart fan
0 to 40°C Operating -40 to 70°C Non-Operating	0~40°C Operating -20~70°C Non-Operating	0~40°C Operating -20~70°C Non-Operating	0~40°C Operating -40~70°C Non-Operating
5 to 90% Operating 5 to 95% Non-Operating	5~90% Operating 5~95% Non-Operating	5~90% Operating 5~95% Non-Operating	5~90% Operating 5~95% Non-Operating
438 x 525 x 44mm	438 x 610 x 44 mm	438 x 650 x 44 mm	438 x 321 x 44 mm
TBD	10 kg	11.27 kg	4.71 kg
TBD	582 x 739 x 215 mm	588 x 841 x 215 mm	588 x 494 x 185 mm
TBD	15.7 kg	17.59 kg	8.55 kg
450W Redundant PSUs	550W 1+1 ATX Redundant PSUs	1300W 1+1 ATX Redundant PSUs	NCA-4240: 220W ATX Single PSU NCA-4242: 220W ATX Single PSU or 450W Redundant PSU
AC Redundant 450W: 100-120V 6A 50-60 Hz 200-240V 6A 50-60 Hz	AC 100V~240V @47~63Hz	AC 100V~240V @47~63Hz	AC 90~264V @47~63 Hz
RoHS, CE/FCC Class A, UL, UKCA	RoHS, CE/FCC Class A, UL	RoHS, CE/FCC Class A, UL	RoHS, CE/FCC Class A, UKCA, UL

Rackmount Network Appliances



Feature	Description	NCA-5230	NCA-5540	NCA-5550
Form Factor		1U 19" Rackmount	1U 19" Rackmount	1U 19" Rackmount
Platform	Processor Options	Intel® Core® i9/i7/i5/i3 Or Xeon W Processors (Comet Lake-S)	5th Gen Intel® Xeon® Scalable Processors (Codenamed Emerald Rapids)	Intel® Xeon® 6 SP Processor With P Cores & E Cores (Birch Stream/Sierra Forrest-SP/ Granite Rapids-SP/ Clearwater Forest-SP
	CPU Socket	1 x LGA1200	1 x LGA 4677	2 x LGA4710
	Chipset	Intel® W480E	Intel® Emmitsburg PCH	N/A
	Security Acceleration	N/A	Intel® QuickAssist Technology	Intel® QuickAssist Technology (By SKU)
BIOS		AMI SPI Flash BIOS	AMI SPI Flash BIOS	AMI SPI Flash BIOS
System Memory	Technology	DDR4 2933MT/s, ECC(By CPU) or non-ECC UDIMM	DDR5 5600MT/s RDIMM	DDR5 6400 MT/s REG-DIMM (By SKU)
	Max. Capacity	128GB	768GB	512GB
	Socket	4 x 288-pin DIMM	12 x 288-pin DIMM	8 x 288-pin DIMM
Networking	Ethernet Ports	8 x GbE RJ45 8 x SFP	2 x GbE RJ45 With LED Dual MGT By Intel® I226-LM	2 x 1Gb RJ45 Intel® i210
	Bypass	4 Pairs	N/A	Depends on NIC module specifications
	NIC Module Slot	2 x NCS2 or 1 x N2S	4 x NCS2 or 2 x N2S	4 x NCS2 or 2 x N2S
LOM	I/O Interface	Optional	Yes, 1x LOM Port (Via BMC Chip)	1 x RJ45
	OPMA Slot	Yes	Yes (Support AST2600 IPMI Card)	Yes
I/O Interface	Reset Button	1	1	N/A
	LED	Power/Status/Storage	Power/Status/Storage	Power
	Power Button	1 x ATX Power Switch	1 x ATX Power switch	1 x ATX Power switch
	Console	1 x RJ45	1 x RJ45	1 x RJ45
	USB	2 x USB 3.0	2 x USB 3.0	2 x USB 3.0
	LCD Module	4 x Keypads, 16x2 Character LCD	N/A	N/A (Optional)
	Display	VGA (Optional)	Yes (VGA Via IAC-AST2600 IPMI Card)	1x Mini Display port
	Power Input	AC Power Inlet on PSU	AC Power Inlet on PSU	AC Power Inlet on PSU
Storage	HDD/SSD Support	2 x 2.5" HDD/SSD Bays	2 x 2.5" or 4 x 2.5" HDD/SSD Bays	1 x U.2 NVMe SSD Bays
	Onboard Storage	1 x M.2 (SATA) 2242/2280 B+M key	1 x M.2 (SATA) 2280 B+M Key 2 x M.2 NVMe (PCIe) 2280 M Key	1 x M.2 2280 NVMe
Expansion	PCIe	1 x PCIe*8 FH/HL (Optional)	1 x PCIe*8 HH/HL (Optional)	1 x PCIe*16 Double Deck (Gen5) or FH3/4L (By SKU)
	Mini-PCIe Or M.2	N/A	N/A	N/A
Miscellaneous	Watchdog	Yes	Yes	Yes
	Internal RTC with Li Battery	Yes	Yes	Yes
	TPM	Yes	Yes (Optional TPM2.0)	Yes (TPM 2.0)
Cooling	Processor	Passive CPU Heatsink	Passive CPU heatsink	Passive CPU heatsink
	System	4 x Cooling Fans with Smart Fan	5 x Cooling Fans w/ Smart Fan (By SKU)	5 x Cooling Fans w/ Smart Fan
Environmental Parameters	Temperature	0~40°C Operating -40~70°C Non-Operating	0~40°C Operating -40~70°C Non-Operating	0~40°C Operating -40~70°C Non-Operating
	Humidity (RH)	5~90% Operating 5~95% Non-Operating	5~90% Operating 5~95% Non-Operating	5~90% Operating 5~95% Non-Operating
System Dimensions	(WxDxH)	438 x 468 x 44 mm	438 x 650 x 44 mm	438x670x88mm
	Weight	7.6 kg	10.5 kg	25 kg
Package Dimensions	(WxDxH)	582 x 739 x 215 mm	582 x 739 x 215 mm	-
	Weight	15.8 kg	18.5kg	-
Power	Type / Watts	350W 1+1 ATX Redundant PSUs (SKU A) 350W Single PSU (SKU B)	1300W CRPS AC PSU	1200W Redundant PSU
	Input	AC 90~264V @47~63 Hz	AC 100~240V @47~63Hz	AC 100~127V @50~60Hz
Approvals and Compliance		RoHS, CE/FCC Class A, UKCA, UL	RoHS, CE/FCC Class A, UKCA, UL	RoHS, CE/FCC Class A, UL




NCA-6040 NEW	NCA-6050 NEW	NCA-6250	NCA-6520 NEW
2U 19" Rackmount	2U 19" Rackmount	2U 19" Rackmount	2U 19" Rackmount
4th/5th Gen Intel® Xeon® Processor Scalable Family (Sapphire Rapids-SP/Emerald Rapids-SP)	Intel® Xeon® 6 Processor with P cores & E cores (Sierra Forest-SP, Granite Rapids-SP)	2x Intel® Xeon® 6 Processor with P cores & E cores (Sierra Forest-SP, Granite Rapids-SP)	3rd Gen Intel® Xeon® Scalable CPU (Ice Lake SP)
1 x LGA 4677	1 x LGA 4710	2x LGA4710	2 x LGA4189
Intel® C741	N/A	ASPEED AST2600 BMC Chip	Intel® C627A
Intel® QuickAssist Technology	Intel® QuickAssist Technology (By CPU)	Intel® QuickAssist Technology	Intel® QuickAssist Technology
AMI SPI Flash BIOS	AMI SPI Flash BIOS	AMI SPI Flash BIOS	AMI SPI Flash BIOS
DDR5 5600MT/s RDIMM	DDR5 6400MT/s REG-RDIMM Or DDR5 8800MT/s MR-DIMM	DDR5 6400MT/s REG DIMM	DDR4 3200/2933/2666/2400/2133MT/s RDIMM/LRDIMM
768GB	1024GB For RDIMM (128GB/DIMM) 512GB For MR-DIMM (64GB/DIMM)	1536GB (RDIMM)	1536GB
12 x 288pin DIMM	8 x 288pin DIMM	16x 288-pin DIMM	24 x 288-pin DIMM
2 x GbE RJ45 Intel® I226-LM	2x GbE RJ45	2 x GbE RJ45 Intel® i350-AM2	2 x GbE RJ45 Intel® i350-AM2
Depends on NIC module specifications	N/A	N/A	Depends on NIC Module Specifications
8 x NCS2 or 4 x N2S	SKU A: 8 x NCS2 or 4 x N2S SKU B: 4 x NCS2 or 2 x N2S	8 x NCS2 or 4 x N2S	8 x NCS2 or 4 x N2S
1 x LOM Port	NCSI (Shared With BMC MGMT)	1 x LOM Port Via BMC	1 x LOM Port
Yes (By SKU)	Yes, For IAC-AST2601A	BMC AST2600 On IPMI Card	IPMI Onboard
1	1	1	1
Power/Status/Storage	Power/Status	Power/Status/Storage	Power/Status/Storage
1 x ATX Power switch	N/A	1 x ATX Power switch	1 x ATX Power switch
1 x RJ45	1 x RJ45	1 x RJ45	1 x RJ45
2 x USB 3.0	2 x USB 3.0	2 x USB 3.0	2 x USB 3.0
N/A	N/A	Yes	N/A
1 x VGA via IPMI card	1 x Mini Display Port (VGA Signal)	1 x VGA	1 x VGA (Optional)
AC power inlet on PSU	N/A	AC power inlet on PSU	AC power inlet on PSU
2 x 2.5" HDD/SSD Internal	2 x U.2 NVMe SSD KIT (Optional)	2 x 2.5" U.2 NVMe SSD Hot-swappable	2 x 3.5" or 2.5" HDD/SSD Swappable
2 x M.2-2280 M key (NVMe) 1 x M.2-2280 B+M key (SATA)	N/A	- 1 x M.2 22110/2280/2242, M Key NVMe (1x PCIe x4 Gen5) - 1 x M.2 2280/2242, M Key NVMe (1 x PCIe x4 Gen5) - 1 x M.2 2242 (1x PCIE*4 Gen5) Or M.2 3042 For PCIE To SATA Module	2 x M.2 (NVMe); 1x M.2 (SATA)
1 x PCIe*8 FH/FL (Optional) Support GPU Cards up to 150W	Rear: 2 x Single-Deck FHHL PCIe Gen5 (Optional) Front: 2 x Double-Deck FHFL PCIe Gen5 Support GPU Cards up to 600W (SKU B)	1 x Double-deck FH ¾L PCIE*16 Gen5 or 2 x Single-deck FH ¾L PCIE*16 Gen5 Support GPU Cards up to 300W	SKU A: 1 x PCIe x16 FH/FL & 1 x PCIe x 16 FH/HL Single-slot (Optional) SKU B: 2 x PCIe x 16 FH/FL Dual-slot (Optional)
N/A	N/A	N/A	N/A
Yes	Yes	Yes	Yes
Yes	Yes	Yes	Yes
TPM2.0 (Optional)	YES	TPM2.0 (Optional)	TPM2.0 (Optional)
Passive CPU heatsink	Passive CPU heatsink	2 x Passive CPU heatsink	Passive CPU heatsink
4 x Individual Hot-swappable Cooling Fans with Smart Fan	4 x Individual Hot-swappable Cooling Fans with Smart Fan	4 x Cooling Fans	4 x Individual Hot-swappable Cooling Fans with Smart Fan
0~40°C Operating -40~70°C Non-Operating	0~40°C Operating -40~70°C Non-Operating	0~40°C Operating -40~70°C Non-Operating	0~40°C Operating -20~70°C Non-Operating
5~90% Operating 5~95% Non-Operating	5~95% Operating 5~95% Non-Operating	5~90% Operating 5~95% Non-Operating	5~90% Operating 5~95% Non-Operating
438 x 650 x 88 mm	438 x 650 x 88 mm	438 x 650 x 88 mm	438 x 720 x 88 mm
24 kg	17 kg	15.3kg	19.3kg
588 x 827 x 356 mm	-	588 x 824 x 315 mm	588 x 997 x 250 mm
30.1kg	-	25.3 kg	32 kg
1300W Redundant PSUs	SKU A: 1200W AC 1+1 Redundant PSU SKU B: 2000W AC 1+1 Redundant PSU	CRPS 1200W/2000W 1+1 Redundant Module	1300W/2000W 1+1 ATX Redundant PSUs
AC 230V @50~60Hz	100-120Vac/200-240Vac	AC 200~240V @50~60Hz	AC 100~240V @47~63 Hz
RoHS, CE/FCC Class A, UL	RoHS, CE/FCC Class A, UL	RoHS, CE/FCC Class A, UL, UKCA, VCCI	RoHS, CE/FCC Class A, UL

Rackmount Network Appliances



Feature	Description	NCA-6530	NCA-6120	NCA-6130 NEW
Form Factor		2U 19" Rackmount	2U 19" Rackmount	2U 19" Rackmount
Platform	Processor Options	4th/5th Gen Intel® Xeon® Processor Scalable Family (Sapphire Rapids-SP/Emerald Rapids-SP)	AMD EPYC 7000 Series With Support For Milan & Rome (64C/128T)	AMD EPYC 9005 Series
	CPU Socket	2 x LGA 4677	2 x FCLGA-4094	SP5/SP6
	Chipset	Intel® C741	N/A	SoC
	Security Acceleration	Intel® QuickAssist Technology	40Gbps Encryption + 40Gbps Decryption	N/A
BIOS		AMI SPI Flash BIOS	AMI SPI Flash BIOS	AMI SPI Flash BIOS
System Memory	Technology	DDR5 5600MT/s RDIMM	DDR4 3200MT/s ECC REG DIMM	DDR5 6000MT/s RDIMM
	Max. Capacity	1536GB	1024GB	768GB
	Socket	24 x 288-pin DIMM	16 x 288-pin DIMM	12 x 288-pin DIMM
Networking	Ethernet Ports	2 x GbE RJ45 Intel® i350-AM2	1 x GbE RJ45 Intel® i210	2 x GbE RJ45 Intel® i210AT
	Bypass	Depends on NIC Module Specifications	N/A	N/A
	NIC Module Slot	8 x NCS2 or 4 x N2S	8 x NCS2 or 4 x N2S	8 x NCS2 or 4 x N2S
LOM	I/O Interface	1 x LOM Port	1 x LOM Port	1 x LOM Port
	OPMA Slot	IPMI Onboard	Yes	Yes
I/O Interface	Reset Button	1	1	1
	LED	Power/Status/Storage	Power/Status/Storage	Power/Status/Storage
	Power Button	1 x ATX Power switch	1 x ATX Power Switch	1 x ATX Power Switch
	Console	1 x RJ45	1 x RJ45	1 x RJ45
	USB	2 x USB 3.0	2 x USB 3.0	2 x USB 3.0
	LCD Module	Yes	N/A	N/A
	Display	1 x VGA (Internal Pin Header)	1 x VGA (Optional)	N/A
	Power Input	AC power inlet on PSU	AC Power Inlet on PSU	AC Power Inlet on PSU
Storage	HDD/SSD Support	SKU A/C: 2 x 2.5" HDD/SSD Swappable SKU B/D: 12 x U.2 NVMe SSD Swappable	SKU A: 4 x 2.5"/ 3.5"HDD/SSD Swap-pable, SKU B: 2 x 2.5"/ 3.5", HDD/SSD Swappable	2 x 3.5" Or 2 x 2.5" HDD/SSD Swap-pable
	Onboard Storage	2 x M.2 2280 M Key (NVMe); 1 x M.2 2280 M Key (SATA)	1 x M.2 2280 M Key (SATA)	1 x M.2 2280/22110 (NVMe)
Expansion	PCIe	SKU A/B: up to 2 x PCIe x 16 card in FH/HL single/dual-slot (Optional) SKU C/D: up to 2 x PCIe x 16 card with FH/FL single/dual-slot(Optional) Support GPU Cards up to 350W	2 x PCIe*8 FHHL or 1x PCIe*16 FHHL	2 x PCIe Gen5*16 FHFL (Optional) Or 1 x 3/4 PCIe Card
	mini-PCIe	N/A	N/A	N/A
Miscellaneous	Watchdog	Yes	Yes	Yes
	Internal RTC with Li Battery	Yes	Yes	Yes
	TPM	TPM2.0 (Optional)	Yes (Optional)	Reserved
Cooling	Processor	Passive CPU heatsink	Passive CPU Heatsink	Passive CPU Heatsink
	System	6 x Individual Hot-swappable Cooling Fans with Smart Fan	4 x Individual Hot-swappable Cooling Fans	4 x Cooling Smart Fans
Environmental Parameters	Temperature	0~40°C Operating -20~70°C Non-Operating	0~40°C Operating -20~70°C Non-Operating	0~40°C Operating -40~70°C Non-Operating
	Humidity (RH)	5~90% Operating 5~95% Non-Operating	5~90% Operating 5~95% Non-Operating	5~90% Operating 5~95% Non-Operating
System Dimensions	(WxDxH)	438 x 760 x 88 mm	438 x 600 x 88 mm	438 x 670 x 88 mm
	Weight	21.2kg	24 kg	18 kg
Package Dimensions	(WxDxH)	588 x 926 x 303 mm	825 x 600 x 270 mm	944 x 606 x 333 mm
	Weight	31.2 kg	26 kg	25 kg
Power	Type / Watts	1600W/2000W 1+1 ATX Redundant PSUs	850W 1+1 ATX Redundant PSUs	1300W
	Input	AC 200~240V @50~60Hz	AC 100V~240V @47~63Hz	AC 90V~264V @47~63Hz
Approvals and Compliance		RoHS/RoHS, CE, FCC Class A, UL	RoHS, CE, FCC, UL	RoHS, CE, FCC, UL, UKCA

Elevate the performance and bandwidth of your network appliances with Lanner's innovative swappable network modules. These modules enhance packet processing capabilities, especially for applications such as DPI, IPS/IDS, and WAN optimization.

Model Name	Ports	Chipset	Bypass
GbE RJ45 Modules			
NCS2-IGM806A	8	Intel i350-AM4	4 Pairs Gen3
GbE SFP Modules			
NCS2-ISM405A	4	Intel i350-AM4	Fiber Bypass
NCS2-ISM406	4	Intel i350-AM4	N/A
NCS2-ISM802A	8	Intel i350-AM4	N/A
10G RJ45 Modules			
NCS2-ITM401	4	Intel XL710-BM1	N/A
NCS2-ITM402	4	Intel E610-XAT2	2 Pairs (SKU A)
10G Fiber Modules			
NCS2-IXM407/409	4	Intel XL710-AM2/BM1	N/A/Yes
NCS2-IXM415	4	Intel E810-CAM1	N/A
NCS2-IXM803	8	Intel E810-AM2	N/A
25G Modules			
NCS2-IXM415	4	Intel E810-CAM1	N/A
40G Modules			
NCS2-IQM201	2	Intel XL710-BM2	N/A
NCS2-IQM203	2	Intel XL710-BM2	Fiber Bypass
100G Modules			
N2S-IHM205	2	Intel E810-CAM2	Yes
NCS2-IHM204A/B	2/1	Intel E810-CAM2/1	N/A
N2S-MHM203	2	NVIDIA ConnectX-6	N/A
200G Modules			
N2S-MBF301	2	NVIDIA Bluefield-3	N/A
N2S-IHM206	2	Intel E830 CCAM1	N/A
NCS2-IDM101	1	Intel E830 CCAM1	N/A
400G Modules			
N2S-MFM101	1	NVIDIA ConnectX-7	N/A

Processor and Performance

Choose from a comprehensive range of network modules powered by cutting-edge technologies, including Intel® E830/810/610/XL710 chipsets, NVIDIA ConnectX series multi-host Ethernet controllers, and more.

Wide Compatibility and Scalability

Lanner delivers extensive compatibility and scalability through our custom modular design. Each module undergoes rigorous endurance and compatibility testing to ensure certification and is fully compatible with both current and future Lanner network appliances..

Module Customizations

Select from over 20 versatile Ethernet network modules, including RJ-45, fiber, and bypass options, with speeds from 1GbE up to 400GbE. Lanner also offers PCIe expansion modules for data storage, Wi-Fi connectivity, video transcoding, and more.

Time to Market

Focused on accelerating your time-to-market, Lanner customizes standard models to seamlessly meet your unique, mission-critical application needs.

Smart NIC

Lanner Smart NIC modules deliver hardware offloads for SDN, security, and management, maximizing performance. With DPUs and accelerators, they empower service providers to efficiently manage large-scale virtualized, containerized, and bare-metal infrastructures.

200Gbps Smart NIC Module - N2S-MBF301

- NVIDIA BlueField-3 DPU
- 2x 200GbE QSFP112 Ports
- 2 x Gen5 PCIe*8 Golden Finger

100Gbps Smart NIC Module - IAC-PTL301A

- Intel® Xeon® 6 SoC
- 2x 100G QSFP56 Ports
- 128GB NVMe (PCIE*2) Onboard Storage
- Intel® QuickAssist Technology

Connectivity Modules

Lanner offer wide selections of NIC modules that support 1/10/25/40/100/200/400GbE with copper and fiber interface, LAN bypass, PoE+ / Wi-Fi / LTE /5G connectivity.

400Gbps NIC Module - N2S-MFM101

- NVIDIA ConnectX-7
- 1 x 400GbE QSFP RHS

100/200Gbps NIC Module - NCS2-IHM204/ N2S-IHM206

- Intel E810 Series/ E830 Series
- 2 x 100GbE QSFP28/2 x 200G QSFP56

PoE+ NIC Module - NCS2-POEIG402A / POEIG801A

- Intel Ethernet Controller
- IEEE 802.3af/at Compliant
- 4/8 x PoE+ RJ45 Ports, 30W Per Module

RF Carrier Module - NCS2-MINIPCIE02

- 1 x MPCIE slot (PCIE)
- 1 x MPCIE slot (PCIE/USB)
- 1 x m.2 B key (USB)
- 2 x SIM card readers

4G/LTE Radio Modem Module - PGN-600/300

- Sierra Wireless EM7511/EM7455
- CAT-12/ CAT-6
- AT&T/Verizon Pre-certified
- PTCRB/FirstNet™/CBRS Pre-certified

5G Radio Modem Module - PGN-750

- 5G sub6
- 2x Nano SIM, 4x Antenna Jacks,
- SATA Connector (USB 3.0 Signal)

Storage Modules

The new swappable storage modules support mainstream standard storage devices, including 2.5" SSD/HDD, 3.5" HDD, and future-proof NVMe SSD drive.

NCS2-25TRAY201

- Single NCS2 Form Factor
- 2x 2.5" Swappable Tray

N3S-35TRAY201

- Tri NCS2 Form Factor
- 2x 3.5" Swappable Tray

NCS2-NVMeM2201

- NCS2 Form Factor
- 2x M.2 Connector (Length 2280 & 22110)

PCI-Express Expansion Modules

To meet the diverse requirement in open-compute projects, Lanner offer PCIe expansion modules compatible with acceleration cards for GPU, network performance and flow processing.

PCIe Carrier Module - N2S-PCIE16X12A

- Double NCS2 NIC Module Slot
- PCIe Gen 4
- Support for 1 x PCIe x16 Full Height, Half-length Card

PCIe Carrier Module - N2S-PCIE16X13A

- Double NCS2 NIC Module Slot
- PCIe Gen 5
- Support for 2 x PCIe x8 Full Height, Half-length Card

Video Transcoding Modules

Lanner provides front-facing, easily swappable video transcoding modules that transport high quality streaming and bandwidth-hungry video content.

Video Transcoding Module - NCS2-VT04

- Video transport NIC module for Lanner network appliances
- Intel® Tiger Lake U CPU (i7/Celeron)
- Max. 32GB DDR4 3200 MT/s non-ECC UDIMM
- 10bit HEVC Codec

OT Security

Rugged Security Appliance

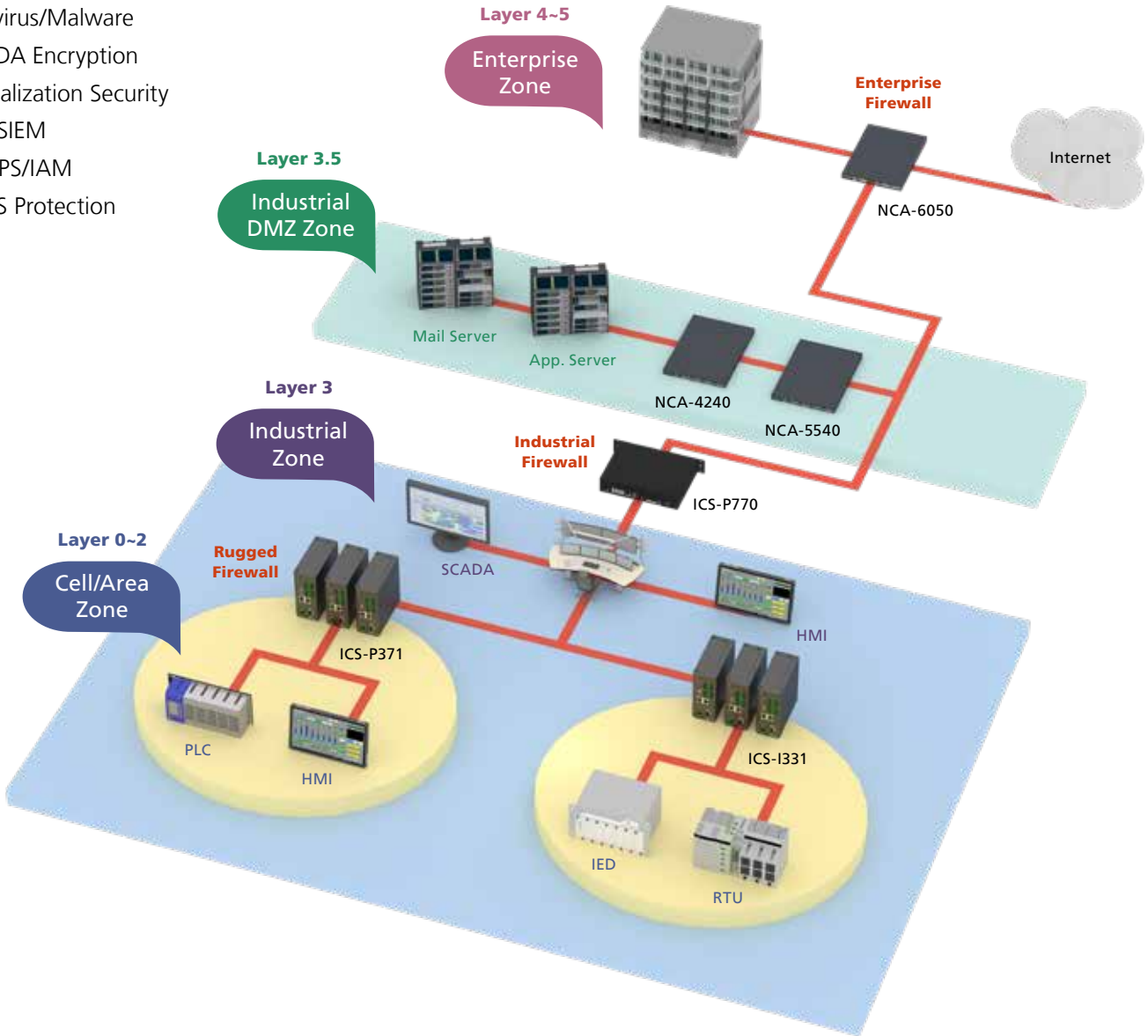
Lanner OT Security Solutions

Protecting critical infrastructures from advanced cyber threats requires a multi-layer defense strategy for both IT and OT networks. In this architecture, OT secures the Industrial Zone (Layers 03), which includes instrumentation buses, controller LANs, and SCADA systems, while IT manages the Enterprise Zone (Layers 4~5), encompassing web, email, and enterprise servers. Between them, the Industrial DMZ Zone (Layers 3~5) adds an extra layer of security for externally interfaced services.

As a leading provider of network security hardware, Lanner offers a broad portfolio of customizable platforms engineered to secure communication protocols across both IT and OT domains. Built to meet the rigorous demands of critical infrastructure, our solutions deliver unmatched reliability, scalability, and performance for industries including energy, power, oil, and gas.

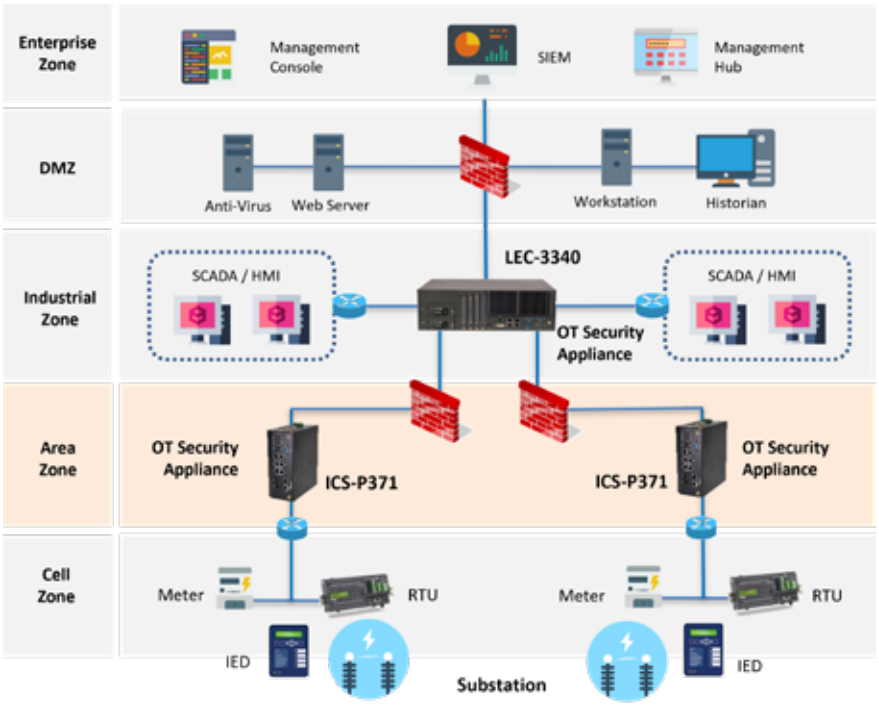
IIoT Network Security Gateway

- Antivirus/Malware
- SCADA Encryption
- Virtualization Security
- DLP/SIEM
- IDS/IPS/IAM
- DDoS Protection



Industrial OT Security Appliances

Lanner offers industry-certified OT (Operational Technology) security appliances meticulously designed to ensure zero-trust security for critical assets. These Lanner OT security appliances adhere to IEC 61850-3 and C1D2 certifications, ensuring compliance with industry-specific standards and guaranteeing reliability, durability, and robust security measures.



IIoT Network Security Gateway

- Antivirus/Malware
- SCADA Encryption
- Virtualization Security
- DLP / SIEM
- IDS / IPS / IAM
- DDoS Protection

Rackmount OT Security Appliances

Intel Sierra Forest-SP
IEC61850-3

Intel Tiger Lake
IEC61850-3

Model Name	ICS-P770	LEC-3340
Processor System	Intel® Xeon® 6 Processor with E-cores	Intel® Xeon® W-11865MLE 11555MLE/11155MLE
Memory	512GB	64GB
Graphics	1 x VGA	2 x HDMI
Storage	4 x 2.5" U.2 NVMe Bays 1x M.2 2280/22110 M Key (NVMe)	2 x 2.5" Swappable HDD/SSD Bays 1x M.2 2242 M key (SATA) 1x M.2 2280 M key (NVMe)
Ethernet	SKU A: 4 x 2.5G RJ45+4x 25G SFP28 SKU B: 4 x 2.5G RJ45, 2x RJ45, 2x10G RJ45 SKU D: 4x 2.5G RJ45	4 x 2.5GbE RJ45
I/O	1 x Console, 5x USB 3.1	4 x COM, 1x IRIG-B, 5x USB 3.0
Expansion	2 x FHHL PCIe Gen5 x16, 1 x FHHL PCIe Gen5 x8, 1 x FHHL PCIe Gen5 x4	1 x PCIe x16, 3x PCIe x4 Slots
Power Supply	110 to 240 VAC & VDC	Dual Power Module: 100 - 240 VAC 16.6 - 160 VDC
Dimensions (W x H x D)	438 x 131.8 x 455 mm	438 x 131.8 x 300.1 mm
Weight	TBD	8.5 kg
Operating Temperature	-25°C ~ 55°C	-40°C ~ 70°C
Driver Support	Linux	Windows 10 Embedded, Linux
Certification	CE/UKCA, MTBF, EN 50121-4, UL + CB, IEC-61850-3, IEEE 1613	CE, FCC ClassA, CB,UL, IEC 61850-3, IEEE 1613

Industrial GbE PCIe Cards

LEK-IG401
- Intel® i210IT
- 4x GbE RJ45 ports

LEK-IS401
- Intel® i210IS
- 4x GbE SFP ports

IEK-XF300
- HSR/PRP
- IEEE 1588

OT Security Appliances

Intel Amston Lake

Intel Apollo Lake

Intel Elkhart Lake

Intel Denverton

Model Name	ICS-I331 NEW	ICS-I370	ICS-I372	ICS-R373
Processor System	Intel® Atom® x7835RE/ x7433RE/x7211RE	Intel® Atom™ x7-E3950/x5-E3940	Intel® Atom™ Processor X6425E/X6413E	Intel® Atom™ C3708/C3508/C3308
Memory	32GB	8GB	32GB	64GB/32GB
Graphics	1x DP	1x DP	1x DP	N/A
Storage	Onboard 128GB eMMC 1 x M.2 2280 B-Key (SATA)	Onboard eMMC 64GB 1 x mSATA, 1x 2.5" Bay (Reserved)	Onboard eMMC 64GB 1 x M.2 M-Key (SATA) 1 x 2.5" Bay (Reserved)	1 x EMMC 128GB onboard (by SKU) 1 x M.2 2242/2280 M Key (SATA)
Ethernet	2 x GbE RJ45/SFP 4 x 2.5GbE RJ45	8 x, 6 x or 4 x RJ45 w/ LAN Bypass, 2 x SFP (by SKU)	8 x, 6 x or 4 x 2.5GbE RJ45 2 x SFP (by SKU)	4 x GbE RJ45, 2 x 2.5GbE RJ45
I/O	1 x Console, 1x USB 3.0 2 x USB 2.0	1 x COM, 2x USB 3.0	1 x COM, 2x USB 3.0	2 x USB 2.0, 1 x OOB(by SKU)
Expansion	1 x M.2 E-Key for WiFi 1 x M.2 B-Key for LTE/5G Dual Nano SIM Slots	1 x M.2 B-Key For LTE/5G 1 x M.2 E-Key For WiFi	1 x M.2 3042/3052 B-Key For LTE/5G 1 x M.2 2230 E-Key For WiFi	1 x M.2 2230 E-Key For WiFi 2 x M.2 3042/3050/3052 B-Key For LTE/5G
Power	12 ~ 48VDC	12VDC ~ 36VDC	Dual 12VDC ~ 36VDC	24VDC ~ 110VDC
Dimensions (W x H x D)	67 x 200 x 193 mm	160 x 156.5 x 81 mm	81 x 180 x 156.5 mm	280 x 83 x 198 mm
Weight	2 kg	2 kg	2.5 kg	4.2 kg
Environment	-40°C ~ 70°C	-40°C ~ 70°C	-40°C ~ 70°C	-40°C ~ 70°C
Driver Support	Win 10 IoT, Linux	Win 10 IoT, Linux	Windows 10 IoT 64bits/11 IoT Linux	Dabian 10 pre-installed, Win 10 IoT
Certification	CE/UKCA, FCC Class A, UL+CB 62368-1, C1D2	CE/FCC Class A, UL, C1D2	CE/FCC Class A, UL/IEC 62368-1, C1D2	CE/FCC Class A, UL/CB, E13, UKCA, ICES issue 7, C1D2 (SKU A only), EN50155, EN50121-3-2, EN 45545, EN50121-4, MIL-STD-810G, IEC-61850-3

Intel Elkhart Lake

Intel Amston Lake

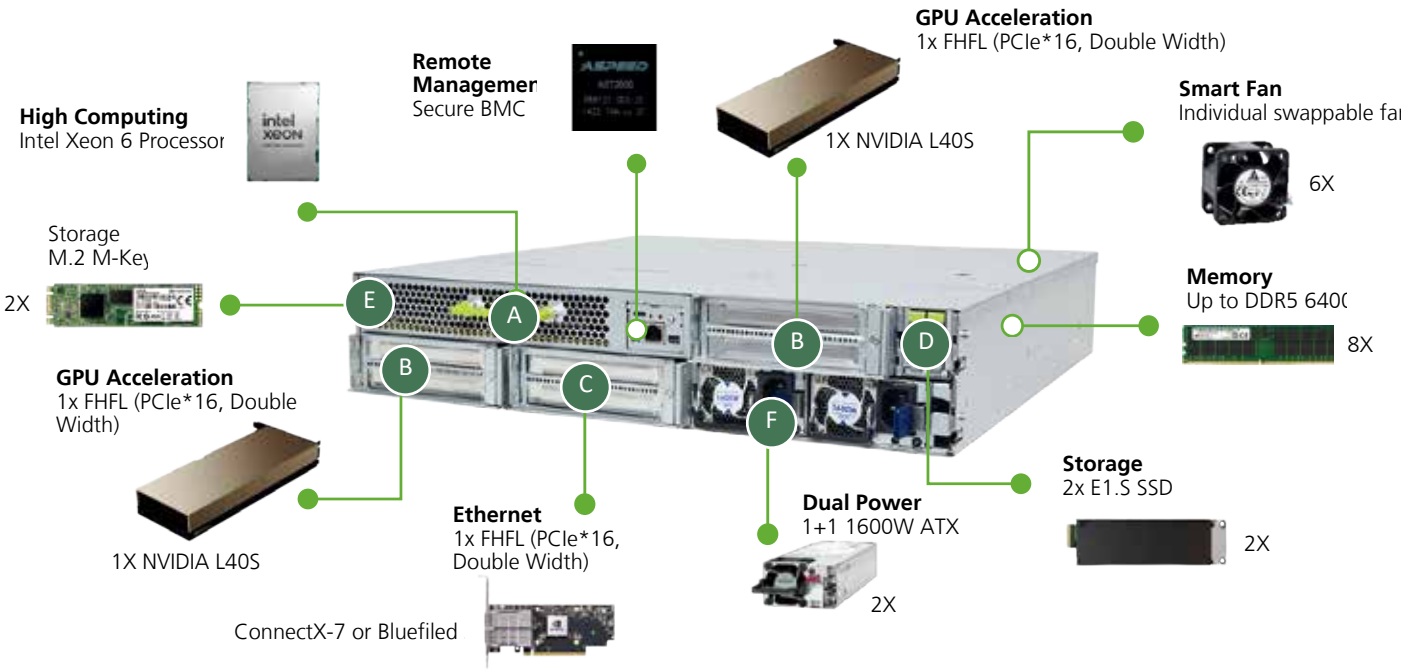
AMD Ryzen

Intel Apollo Lake

Model Name	ICS-P371	ICS-P375 NEW	ICS-P570	LEC-6041 NEW
Processor System	Intel® Atom™ X6211E/ X6413E/X6425E	Intel® Atom® X7835RE/X7433RE/X7211RE	AMD Ryzen V1404I	Intel ® Atom™ x7-E3950/x5-E3930
Memory	32GB	32GB	32GB	8GB
Graphics	1 x Internal DP pin-header	1 x DP	1 x internal HDMI pin-header	1 x HDMI
Storage	1 x 2.5" SSD/HDD Drive Bay, Micro SD, 1x M.2 2242 M-Key	Onboard eMMC 128/32GB (By SKU) 1 x M.2 2242 M key (SATA)	1 x M.2 M Key 2242 (SATA) Micro SD	1 x 2.5" HDD/SSD Bays 1 x mSATA (optional)
Ethernet	6 x RJ45, 2x SFP, 2x IPMI (By SKU)	4 x 2.5GbE RJ45 & 2x GbE RJ45/SFP (By SKU)	6 x GbE RJ45 or 4 x GbE RJ45 & 2x GbE SFP	5 x RJ45 & 2x SFP 1x pair Bypass
I/O	1 x COM, 1x USB 3.1, 1 x USB 2.0, 2x DIO	1 x RJ45 Console, 2x RS-232, 1 x USB 3.2, 2x USB 2.0	1 x COM, 2x DIO, 1x USB 3.0	2 x COM, 2x USB 3.0
Expansion	1 x M.2 B-Key For LTE/5G 1 x M.2 E-Key For Wi-Fi Dual Nano-SIM Slots	1 x M.2 B Key for 5G/LTE Dual Nano-SIM Slots	1 x M.2 3042 B-Key For LTE Dual Nano-SIM Slots	1 x Mini-PCIe with SIM Slot For LTE
Power	Dual 12VDC ~ 48VDC	24/48VDC	Dual 12VDC ~ 48VDC	Dual 20VDC ~ 54VDC
Dimensions (W x H x D)	87 x 196 x 180 mm	210 x 70 x 190 mm	65 x 201 x 196 mm	160 x 166 x 53.5 mm
Weight	3.4 kg	3 kg	2.5 kg	1.6 kg
Environment	-40°C ~ 70°C	-40°C ~ 70°C	-40°C ~ 70°C	-40°C ~ 75°C
Driver Support	Windows 10/11 IoT, Linux	Windows 10/11 IoT, Linux	Linux	Windows 10 Pro, Linux
Certification	FCC/CE Class A, UL (IEC-62368), C1D2, IEC 61850-3, IEEE 1613	CE, FCC Class A, EN 50121-4, IEC 61850-3, IEEE 1613, MIL-STD-810H, C1D2, UL+CB	FCC/CE Class A, UL (IEC-62368) IEC 61850-3, IEEE 1613	CE/UKCA, MTBF, EN 50121-4, UL + CB, IEC-61850-3, IEEE 1613

NVIDIA MGX Network Platform

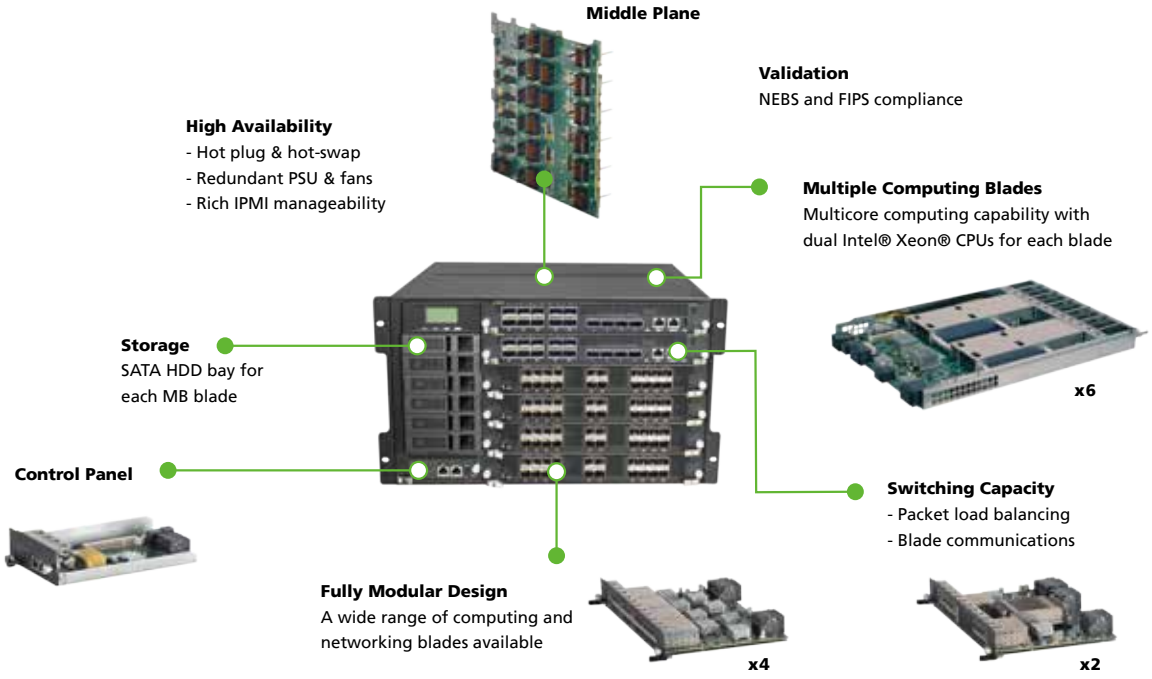
Lanner's ECA-6051 is a 2U short-depth edge AI server designed for AI-enhanced network security at the enterprise edge, leveraging the NVIDIA MGX reference architecture and Intel Xeon 6 processors. The ECA-6051 integrates the NVIDIA L40S GPU, NVIDIA BlueField-3 DPU, and NVIDIA ConnectX-7 Smart NIC, with support for multiple GPUs and DPUs. This enables a scalable, high-performance ecosystem for deploying open, efficient, and secure enterprise networks.



Items	PIC	Model Name	Type	Slot
GPU		Nvidia L4 tensor core GPU	PCIe x16 Gen4, HHHL, 24GB DDR5	B
DPU		Nvidia BlueField3 B3220 Nvidia BlueField3 B3140 Nvidia BlueField3 B3240	2-Ports QSFP112, PCIe x16 Gen5, FHHL 1-Ports QSFP112, PCIe x16 Gen5, FHHL 2-Ports QSFP112, PCIe x16 Gen5, FHHL	C
NIC		ConnectX-7 900-9X7AO-00C3-STZ	4-Ports SFP56, PCIe x16 Gen4, HHHL	C
Storage E1.S		1 TB E1.S 2 TB E1.S 4 TB E1.S 8 TB E1.S	E1.S PCIe x4 Gen5, 9.5mm E1.S PCIe x4 Gen5, 9.5mm E1.S PCIe x4 Gen5, 9.5mm E1.S PCIe x4 Gen5, 9.5mm	D
M.2 M-Key		512 GB M.2 1 TB M.2 2 TB M.2 4 TB M.2	2280 M.2 M-Key 2280 M.2 M-Key 2280 M.2 M-Key 2280 M.2 M-Key	E
PSU		DC PSU DC PSU AC PSU	800W -48VDC Redundant 900W -48VDC Redundant 800W 100-240VAC Redundant	F

Multi-Node Edge Computing Platform

Lanner's HybridTCA platforms unify control, management, and data processing within a single system, supporting applications such as AI-powered Multi-access Edge Computing (AI MEC). Compared to traditional AdvancedTCA infrastructure, these platforms offer superior hardware design, greater customization, and enhanced cost and energy efficiency.



Compute and Networking Blades

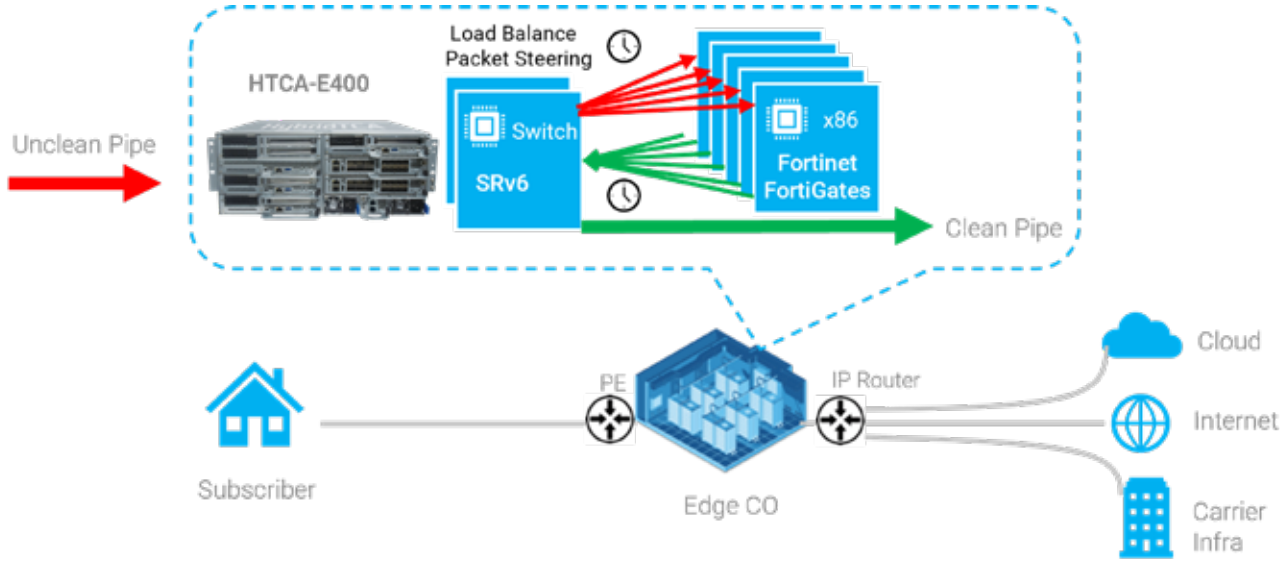
Lanner's lineup of HTCA-compatible, swappable blades delivers enhanced redundancy, interoperability, flexibility, bandwidth, and overall performance.

Blades	Picture	Features/Ports	Chipset
NEW **HMB-6130**		2 x 4th/5th Gen Intel® Xeon® Scalable Processor (Sapphire Rapids)	Intel C741
HCM-1030		6x 100GbE QSFP28, 4x 40GbE QSFP+, 16x 10GbE SFP+, IEEE 1588 expansion module	Broadcom StrataXGS Tomahawk BCM56960
NEW **HDM-1006**		Hot Swappable 6x NVMe SSD Trays Max up to 3.2TB/18W NVMe SSD	N/A
HLM-1101		14x 100GbE QSFP28	Intel Tofino T10-032D switch controller
HLM-1021		2x 100GbE QSFP28, 16x 25/10GbE SFP28, 4x 10GbE RJ45	Broadcom StrataXGS Trident-III BCM 56770
NEW **HLM-1001**		20 port 10GbE SFP+	Intel XL710 Ethernet Controller

The Compute, I/O blades or NIC modules shown in this material are not designed to operate independently without a compatible Lanner appliance. Please make sure a compatible Lanner appliance is in place before purchasing the modules.

AI MEC

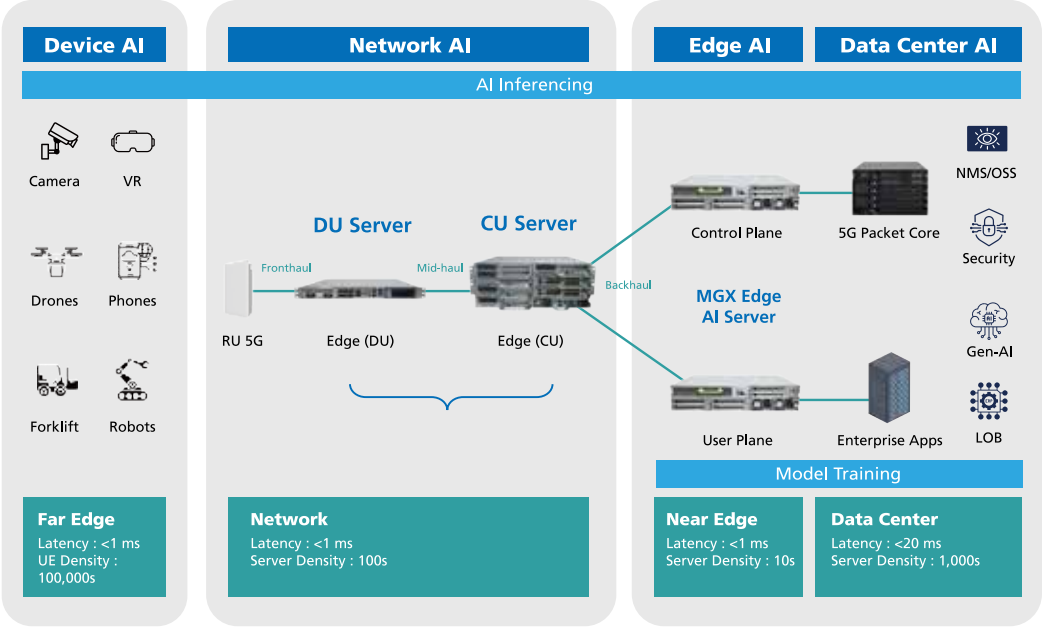
AI-powered Multi-access Edge Computing (AI MEC) merges artificial intelligence with edge computing to deliver ultra-low latency and high-performance applications at the network edge. By processing data closer to end users, AI MEC reduces response times, lowers bandwidth usage, and enables real-time decision-making for applications such as autonomous vehicles, smart factories, and AR/VR. The integration of AI enhances analytics, predictive maintenance, and resource optimization, transforming telecom infrastructure for smarter, faster, and more responsive networks.



AI RAN

As 5G evolves, it offers ultra-low latency, faster speeds, and massive connectivity. Yet, traditional CPU-based systems often struggle with the computational demands of virtualized RAN (vRAN) functions, leading to performance bottlenecks. Edge AI addresses these challenges by optimizing latency, bandwidth, and software-programmable NOS for RAN operations.

AI in RAN (AI-RAN) delivers high-performance computing and generative AI inferencing at the edge, enhancing vRAN capabilities and improving spectral efficiency. Looking ahead to 6G, AI-RAN will be essential for enabling ubiquitous AI across cellular networks.



DU/CU Edge Servers

NVIDIA Certified

NVIDIA Certified

Feature	Description	ECA-4027	ECA-4035 NEW	ECA-5540
Form Factor		1U Rackmount	1U Rackmount	1U Rackmount
Platform	Processor Options	Intel® Xeon® D2100 12/16 Cores (Ice Lake D)	Intel® Xeon® D2700/2800 8~22 Cores (Ice Lake D)	5th Geb Intel® Xeon® Scalable Processor (Sapphire Rapids-SP)
	Chipset	SoC	SoC	Intel C741
OS Support		Linux Kernel 2.6 or above	Linux	Linux Kernel 2.6 or above
System Memory	Technology	DDR4 2666MHz REG DIMM	DDR4 3200/2933MHz REG, RDIMM	DDR5 4400 MHz RDIMM
	Max. Capacity	64 GB	256 GB	1024 GB
	Socket	2 x 288-pin DIMM	4 x 288-pin DIMM 2 x 288-pin DIMM (SKU B/C/E)	16 x 288-pin DIMM
Storage	SATA/M2	2 x 2.5" HDD/SSD Internal Bays 2 x M.2 2280 M key (NVMe)	2 x 2.5" HDD/SSD Interna Bays (SKU A/D) 1 x M.2 2280 M Key (NVMe) 1 x M.2 2280 M key (SATA)	2 x 2.5" HDD/SSD Bays 2 x M.2 2280/2242 M Key (NVMe)
Networking	Ethernet Ports	1 x GbE RJ45 (i210/BMC) 8 x 10G SFP+, 2 x 40G QSFP+	2 x GbE RJ45 Intel® i210-AT 4 x 10G SFP+, 2x 25G SFP28 4 x 10G SFP+ Intel® XL710	1 x 1GbE Rj45 for MGMT
	Bypass	N/A	N/A	N/A
	Controllers	Intel i210 and BCM56172	N/A	N/A
	NIC Module Slot / Blade	N/A	N/A	1x OCP NIC
	IPMI	1 x onboard IPMI port	1 x onboard IPMI port	1 x onboard IPMI port
	Management Port	N/A	Yes	N/A
I/O Interface	Reset Button	Yes	Yes	Yes
	Console	1 x RJ-45	1 x RJ-45	1 x RJ-45
	USB	1 x USB 3.0	2 x USB 3.0	2 x USB 3.0
Expansion	PCIe	1 x PCIe*16 FH/HL Support GPU card up to 75W	1 x PCIe*16, Double Width, FHFL Support GPU card up to 350W 1 x OCP 3.0 Slot	1 x PCIe*16, Double Width, FHFL Support GPU card up to 350W 2 x PCIe*8 LP or 1xFHHL
	mini-PCIe	N/A	N/A	N/A
Cooling	Processor	Passive CPU Heatsink	Passive CPU Heatsink	Passive CPU Heatsink
	System	5 x smart fans	8 x Or 6 x Smart Fans (By SKU)	5x Swappable cooling fans with smart fan
Environmental Parameters	Temperature	-40~65°C Operating -40~70°C Non-Operating	SKU A/D: 0-40°C Operating SKU B/C: -40~65°C Operating -40~70°C Non-Operating	0-40°C Operating -40~70°C Non-Operating
	Humidity (RH)	5~90% Operating 5~95% Non-Operating	5~95% Operating 5~95% Non-Operating	5~90% Operating 5~95% Non-Operating
Miscellaneous	LCD Module	N/A	N/A	N/A
	Watchdog	Yes	Yes	Yes
	Internal RTC with Li Battery	Yes	Yes	Yes
Dimensions	Dimensions (WxHxD)	438 x 371 x 44 mm	438 x 44 x 382.2 mm	438 x 44 x 580 mm
	Weight	5 kg	10.7 kg	20.4 kg
Power	Watts / Type	400W 1+1 Redundant PSU	600W Or 800W	1600W AC PSU
	Input	-57 VDC~-40VDC dual input feed	AC 90~264V @47~63Hz (SKU A/B/C/D) DC -57VDC~-40VDC (SKU E)	AC 110 -240V
Approvals & Compliance		CE/FCC Class A, UL	CE/FCC Class A, UL, RoHS	CE/FCC Class A, UL, RoHS

NVIDIA Certified

ECA-5540C NEW	ECA-5555 NEW	ECA-6040 NEW
1U Rackmount	1U Rackmount	2U Rackmount
5th Gen Intel® Xeon® Scalable Processor (Sapphire Rap ids-SP)	Intel® Xeon® 6 SoC (Granite Rapids D)	Intel® Xeon® Processor Scalable Family (Codenamed Sap-phire Rapids-SP/Emerald Rapid-SP/ Sapphire Rapids-EE)
Intel C741	SoC	Intel® C741
Linux Kernel 2.6 or above	Linux	Linux
DDR5 4800 MHz RDIMM	DDR5 6400 MHz REG , RDIMM	DDR5 4800MHz RDIMM
1024 GB	512 GB	1024 GB
16 x 288-pin DIMM	4 x 288-pin DIMM	16 x 288pin RDIMM
2 x 2.5" HDD/SSD Bays 2 x M.2 2280/2242 M key (NVMe)	2 x M.2 22110/2280 M Key (NVMe)	4 x 2.5" HDD/SSD Or 4x U.2 Bays 1 x M.2 2242/2260 M Key (NVMe) 1 x M.2 2280 M Key
1 x GbE RJ45, 12x 10GbE SFP+	2 x GbE RJ45 Ports, 8x 25GbE SFP28 Ports, 2 x 100GbE QSFP28 (By SKU)	1 x GbE RJ45 For MGMT
N/A	N/A	N/A
N/A	N/A	N/A
N/A	N/A	N/A
1 x LOM Port	1 x LOM Port	1 x LOM Port Via BMC Chip
N/A	N/A	Yes
Yes	Yes	Yes
1 x RJ-45	1 x RJ45	1 x RJ45
2 x USB 3.0	2 x USB 3.0	2 x USB 3.0
1 x FHHL PCIe Support GPU card up to 350W	1 x PCIe*16 FHFL Double Width Support GPU card up to 350W	2 x PCIe*16 FHFL Double Width 2 x PCIe*8 LP, 1 x OCP 3.0 Slot Support GPU card up to 350W
N/A	N/A	N/A
Passive CPU Heatsink	Passive CPU Heatsink	Passive CPU Heatsink
6x Swappable cooling fans with smart fan	8x swappable cooling fans with smart fan	6x swappable cooling fans with smart fan
-40~65°C Operating -40~70°C Non-Operating	0~55°C Operating -40~55°C Operating (By SKU) -40~70°C Non-operating	0~40°C Operating -20~70°C Non-Operating
5~90% Operating 5~95% Non-Operating	5~95% Operating 5~95% Non-Operating	5~90% Operating 5~95% Non-Operating
N/A	N/A	N/A
Yes	Yes	Yes
Yes	Yes	Yes
438 x 44 x 580 mm	438 x 44 x 480 mm	438 x 88 x 580.1 mm
20.4 kg	13.74 kg	20 kg
1600W AC PSU	1200W AC / 1300W DC (By SKU) / 1200 DC (Optional)	1600W AC Redundant
AC 110 -240V	AC 90~264V @50~60 Hz DC 45~57 vDC	AC 200~240V @50~60 Hz
RoHS, CE/FCC Class A, UL	RoHS, CE/FCC Class A, UL	RoHS, CE/FCC Class A, UL

CU & MEC Edge Servers

NVIDIA Certified

TAIWAN EXCELLENCE 2018

Feature	Description	ECA-6050 NEW	ECA-6051 NEW	HTCA-6200
Form Factor		2U Rackmount	2U Rackmount	2U Rackmount
Platform	Processor Options	Intel® Xeon® 6 Processor (Sierra Forest- SP/Granite Rapid-SP)	Intel® Xeon® 6 Processor (Sierra Forest- SP)	Up to 4x Intel® Xeon® Scalable Processor (Ice Lake-SP/Sapphire Rapids-SP)
	Chipset	N/A	N/A	Intel C621/C627/C741
OS Support			Linux	Linux Kernel 2.6 or above
System Memory	Technology	DDR5 6400MHz RDIMM	DDR5 6400MHz REG RDIMM (Sierra Forest-SP CPU) DDR5 8000MHz REG RDIMM (Granite Rapids-SP)	DDR4 2933 MHz REG DIMM
	Max. Capacity	1024GB	1024GB (Sierra Forest-SP CPU) 2048GB (Granite Rapids-SP)	512GB per blade
	Socket	8x 288pin DIMM	8x 288pin DIMM	16x 288pin DIMM per blade
Storage	SATA/M2	4 x E1.S NVMe, 2x M.2 2280/2 2110 M Key	2 x E1.S NVMe, 2 x M.2 2280 M Key	2 x 2.5" Swappable HDD drive bays
Networking	Ethernet Ports	1x GbE RJ45 MGMT (i210)	1x GbE RJ45 MGMT (i210)	Blade 1~2: Switch Fabric Blade or Ethernet I/O Blade
	Bypass	N/A	N/A	N/A
	Controllers	N/A	N/A	Depends on blade specification (HLM series)
	NIC Module Slot / Blade	N/A	N/A	N/A
	IPMI	NCSI To i210	NCSI To i210	1 x onboard IPMI port
	Management Port	N/A	N/A	1 x Management port
I/O Interface	Reset Button	Yes	N/A	Yes
	Console	1 x RJ-45	1 x Type-C	1 x RJ-45
	USB	2 x USB 3.0	1 x USB 3.0	1 x USB 2.0
Expansion	PCIe	4x PCIe x16, FHFL, Double Width (NVlink Support, 600W) 1x PCIe x16, FHFL, Double Width, 150W	SKU A: 2x PCIe*16 FHFL (Double Width) 1x PCIe*16 FHHL SKU B: 1x PCIe*16 FHFL (Double Width) 1x PCIe*16 LP	N/A
	mini-PCIe	N/A	N/A	N/A
Cooling	Processor	Passive CPU Heatsink	Passive CPU Heatsink	CPU heatsink with fan duct
	System	5 x cooling fans	6 x cooling fans	5 x hot-swappable cooling fans per blade
Environmental Parameters	Temperature	0 to 40°C Operating -40~70°C Non-Operating	0~40°C Operating -40~70°C Non-Operating	0~40°C Operating -20~70°C Non-Operating
	Humidity (RH)	5~95% Operating 5~95% Non-Operating	5~95% Operating 5~95% Non-Operating	5~90% Operating 5~95% Non-Operating
Miscellaneous	LCD Module	N/A	N/A	2 x 20 characters
	Watchdog	Yes	Yes	Yes
	Internal RTC with Li Battery	Yes	Yes	Yes
Dimensions	Dimensions (WxHxD)	438 x 88 x 760 mm	438 x 88 x 420 mm	438 x 88 x 685 mm
	Weight	TBD	17 kg	26 kg
Power	Watts / Type	1600W CRPS AC/DC PSU (Support N+1)	1600W 1+1 Redundant PSU	AC 2000 watt N+1 Redundant per blade DC 1600 watt N+1 Redundant per blade PM bus support
	Input	AC: 110 - 240V	200-240 VAC , 9.5A 50Hz ~ 60Hz	AC 85 ~ 264 V DC -36V ~ -72V
Approvals & Compliance		CE/FCC Class A, UL, CB	CE/FCC Class A, UL, CB	CE Class A, FCC Class A, RoHS, NEBS design compliance

HTCA-E400	HTCA-6400	HTCA-6600
4U Rackmount	4U Rackmount	6U Rackmount
Up to 5x Intel® Xeon® Scalable Processor (Ice Lake-SP)	Up to 4x Intel® Xeon® Scalable Processor (Ice Lake-SP/Sapphire Rapids-SP)	Up to 4x Intel® Xeon® Scalable Processor (Ice Lake-SP/Sapphire Rapids-SP)
Intel C621/C627	Intel C621/C627/C741	Intel C621/C627/C741
Linux Kernel 2.6 or above	Linux Kernel 2.6 or above	Linux Kernel 2.6 or above
DDR4 2933 MHz REG DIMM	DDR4 2933 MHz REG DIMM	DDR4 2933 MHz REG DIMM
512GB per compute sled	512GB per blade	512GB per blade
8x 288pin DIMM per compute sled	16x 288pin DIMM per blade	16x 288pin DIMM per blade
2 x 2.5" Swappable HDD drive bays	8 x 2.5" Swappable HDD drive bays	6 x 3.5" Swappable HDD drive bays
2x Switch Fabric Sleds	Blade 1~2: Switch Fabric Blade Blade 3~4: Ethernet I/O Blade	Blade 1~2: Switch Fabric Blade Blade 3~6: Ethernet I/O Blade
N/A	N/A	N/A
Depends on blade specification	Depends on blade specification (HLM series)	Depends on blade specification (HLM series)
1x OCP NIC per compute sled	N/A	N/A
1 x onboard IPMI port	1 x onboard IPMI ports	1 x onboard IPMI ports
1 x Management port	1 x Management port	1 x Management port
Yes	Yes	Yes
1 x RJ-45	1 x RJ-45	1 x RJ-45
N/A	1 x USB 2.0	1 x USB 2.0
1x PCIe slot per sled 2U Compute sled: FH3/4L double or single width PCIe Card 1U Compute sled: single width PCIe Card	N/A	N/A
N/A	N/A	N/A
CPU heatsink with fan duct	CPU heatsink with fan duct	CPU heatsink with fan duct
4 x hot-swappable cooling fans per 1U Compute Sled 2 x hot-swappable cooling fans per 2U Compute Sled	5 x hot-swappable cooling fans per blade	5 x hot-swappable cooling fans per blade
0~40°C Operating -20~70°C Non-Operating	0~40°C Operating -20~70°C Non-Operating	0~40°C Operating -20~70°C Non-Operating
5~90% Operating 5~95% Non-Operating	5~90% Operating 5~95% Non-Operating	5~90% Operating 5~95% Non-Operating
N/A	2 x 20 characters	2 x 20 characters
Yes	Yes	Yes
Yes	Yes	Yes
438 x 88 x 685 mm	438 x 177.3 x 685 mm	438 x 265.9 x 685 mm
27.5 kg	40 kg	55 kg
AC 3000W 1+1 Redundant PSU DC 1600W 220V 1+1 Redundant PSU	AC 2000 watt N+1 Redundant per blade DC 1600 watt N+1 Redundant per blade PM bus support	AC 1200 watt N+1 Redundant per blade DC 1010 watt N+1 Redundant per blade PM bus support
DC -36V ~ -72V	AC 85 ~ 264 V DC -36V ~ -72V	AC 85 ~ 264 V DC -36V ~ -72V
CE Class A, FCC Class A	CE Class A, FCC Class A, RoHS, NEBS design compliance	CE Class A, FCC Class A, RoHS, NEBS design compliance

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