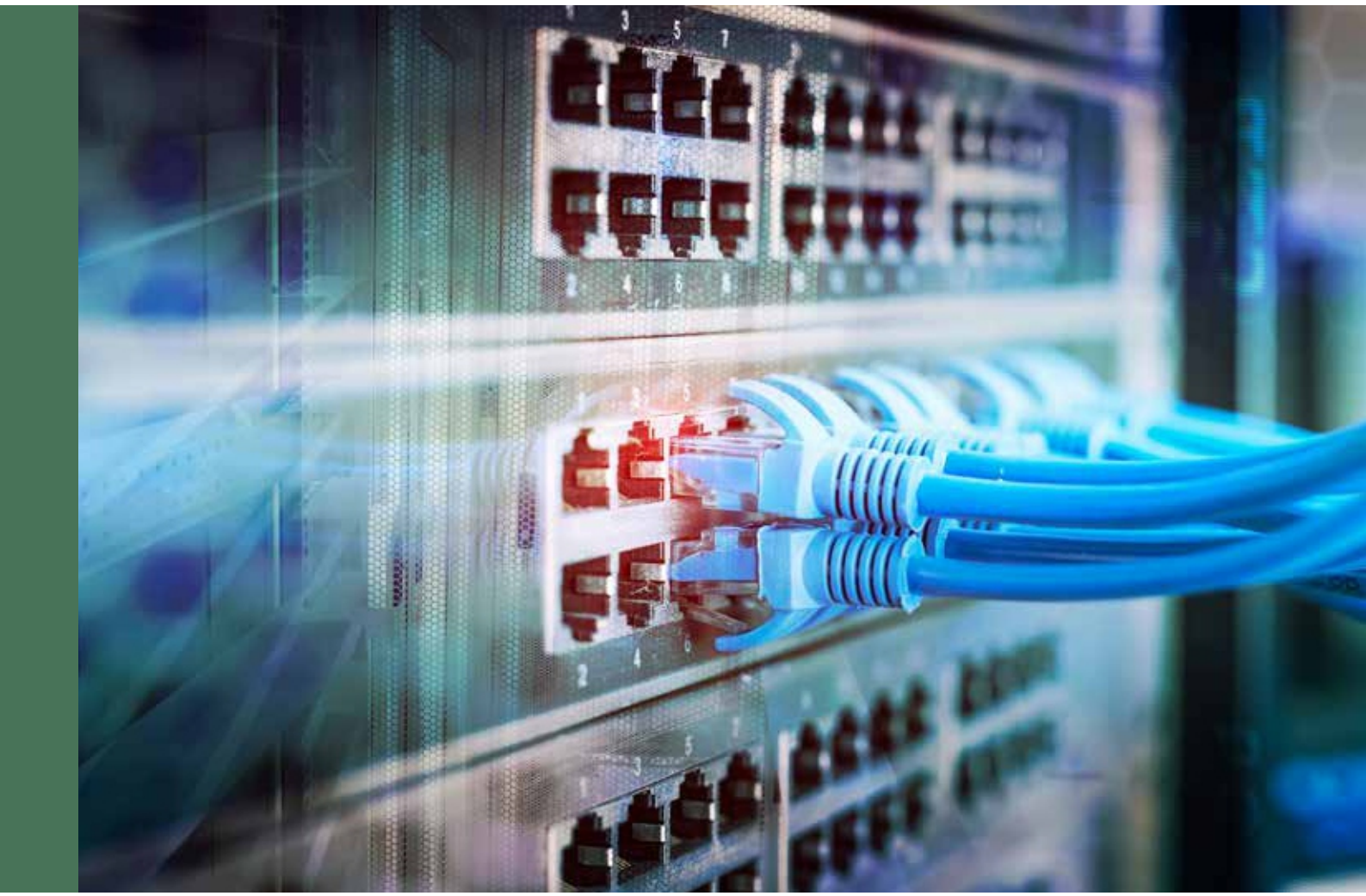
Lanner



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: 2,000 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.

Strong Allies

Lanner's membership in industrial-leading alliances enables us to provide the latest technology, and extend your product lifecycles.

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 Semiconductors N.V. is the world leader in secure connectivity solutions for embedded applications. 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

Infineon Technologies AG, a Germany-based designer, developer and manufacturer of semiconductors and related system solutions, operates through four segments: Automotive, Industrial Power Control, Power Management & Multimarket, and Chip Card & Security.

Design and Manufacturing Services

Extensive Customization Choices

Lanner offers a comprehensive range of tailor-made hardware solutions for mission-critical applications, made possible through our in-house design and manufacturing services, ensuring 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 hardware security
- Remote manageability
- GPU and Smart NIC card support

Best-In-Class Port Density

Lanner offers exceptional port density in our rackmount network appliances. Using modular or blade technology, each platform can be tailored to your specific needs.

Engineered for Reliable Operation

Equipped with redundant power sources, hot-swappable fans, and LAN bypass, these network appliances ensure seamless support for your network, even in the face of the unexpected.

The Latest and Fastest Processors

Utilizing the latest Intel® Xeon®, Core, Atom, and AMD EPYC processors, our network appliances efficiently execute network security tasks with optimal throughput and minimal power consumption. In addition, Lanner designs platforms with NXP® processors to deliver RISC-based network solutions.

Electronic Engineering

Choose from an array of board and platform level components to create the perfect appliance or solution based on your application requirements. Lanner's strategic partnerships allow us to incorporate the latest technology in the industry to provide customers with a richer palette of options.

Mechanical Engineering

Lanner's engineers are well-versed in tackling the multitude of design issues faced on the board and mechanical level including ventilation, peripherals, and more. Rigorously tested, Lanner products can withstand a broad range of environmental parameters to guarantee product robustness in an array of applications.

Software Engineering

Implement the necessary BIOS or firmware into your platforms with the help of Lanner's software team.

Our software development expertise can create and customize the necessary BIOS, firmware, drivers and API level, 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 cost-effective desktop firewalls with integrated processors to sophisticated hybrid appliances featuring multiple processors, expansion capabilities, and robust redundancy attributes. Our offerings encompass both x86 and RISC appliances, which can be complemented by various acceleration cards and expansion modules to create the ideal appliance solution.

Prototyping

During the prototype stage, Lanner can help you with testing guidelines and BIOS tuning to maximize the performance of your appliance. Lanner has a wide range of standard appliances that can speed up your product development and bring your product to the market faster.

Product Identity Service

Take advantage of Lanner's product identify service. Lanner can customize the identity of your products, everything from industrial design of 2D and 3D faceplates to custom packaging and labeling. This ensures that your product accurately promotes your brand awareness and leaves a lasting impression with your customers.

Manufacturing

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

NCA-1040
Intel Atom X6413E/N6415 CPU
(Elkhart Lake)
4x RJ45 Ports

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

NCA-1516
Intel® Atom C3000 CPU
(Denverton-R CPU)
6x 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.

Intel Virtualization Technology (Intel VT)

Intel® VT provides hardware assist to the virtualization software, reducing its size, cost, and complexity; it is part of Lanner s value-added software packages intended for optimizing the performance, security, agility and manageability. Intel® Virtualization Technology such as VT-x, VT-d and SR-IOV are baked into Lanner appliances.

Wireless RF Connectivity

Lanner desktop appliances feature concurrent Wi-Fi, dual LTE, 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-1250 NEW	NCA-1513
Form Factor		Desktop	Desktop	Desktop
Platform	Processor Options	Intel® Atom X6413E Or Celeron N6210 (Elkhart Lake)	Intel® Atom® x7425E/N97 (Alder Lake N) Intel® Atom® x7405C/x7835RE (Amston Lake)	Intel® Atom® C3000 (Denverton)
	CPU Socket	onboard	onboard	onboard
	Chipset	SoC	SoC	SoC
	Security Acceleration	N/A	N/A	Intel® QuickAssist Technology (by SKU)
BIOS		AMI SPI Flash BIOS	AMI SPI Flash BIOS	AMI SPI Flash BIOS
System Memory	Technology	DDR4 3200 MHz SODIMM	DDR5 4800MHz SODIMM	DDR4 2133/1866 MHz ECC/Non-ECC SODIMM (By SKU)
	Max. Capacity	32 GB	16 GB	32 GB
	Socket	1 x 260-pin SODIMM	1 x 262-pin SODIMM	1 x 260-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+)	5 x 2.5GbE RJ45 Via Intel® I226-V 1 x 2.5GbE RJ-45 Via GPY211 SGMII Interface (SKU A/C/D)	4 x GbE RJ45 Intel® SoC Integrated MAC 2 x GbE RJ45 Intel® i210AT or i211AT (by SKU 2x GbE SFP Intel® i210-IS(by SKU)
	Bypass	N/A	N/A	2 pair Gen3 (By SKU)
	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 RJ-45
	USB	1 x USB 3.0	1 x USB 3.0	2 x USB 2.0
	LCD Module	N/A	N/A	N/A
	Display	1 x Display Port (No Audio)	N/A	N/A
	Power Input	1 x DC Jack With Lock	1 x DC Jack With Lock	1 x DC Jack
Storage	HDD/SSD Support	N/A	N/A	1 x 2.5 Internal (Optional)
	Onboard Storage	1 x M.2 (SATA) 2280 B key, 1 x SATA connector (reserved)	1 x M.2 (SATA) 2280, 1 x EMMC 16GB Onboard (By SKU)	1x EMMC 8G onboard(By SKU), 1 x M.2-2242/2280(SATA), B Key
Expansion	PCIe	N/A	N/A	N/A
	mini-PCIe or M.2	1 x mini-PCIe (PCIex1/USB2.0), 1 x M.2 (USB 3.1) 3042/3052 B key 2x nano SIM	1x M.2 3042/3050/3052 for 5G/LTE (USB3.2) 1x M.2 2230 E key for Intel AX201 (CNVIo) 1 x Nano SIM	1 x Mini-PCIe (PCIe/USB2.0), 1 x M.2 3042 (USB3.0), 1x 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	Passisve CPU heatsink	Passive CPU heatsink	Passisve CPU heatsink
	System	Fanless (Default); 1 x 5-pin Fan Connector (Optional)	Fanless	1 x Cooling Fan w/ Smart Fan
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	10~90% Operating 5~95% Non-Operating	5~90% Operating 5~95% Non-Operating
System Dimensions	(WxHxD)	183 x 32 x 168 mm	231 x 44 x 200 mm	231 x 44 x 200 mm
	Weight	0.9 kg	1.1 kg	1.2 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, 1.7A
Approvals and Compliance		RoHS, CE/FCC Class B (Class A with PoE), UL, VCCI, UKCA	RoHS, CE/FCC Class B	RoHS, CE/FCC Class B, UL




NCA-1515	NCA-1516	NCA-1525/1526	VP-210 NEW
Desktop	Desktop	Desktop	Desktop
Intel® Atom® C3000 (Denverton)	Intel® Atom® C3000 (Denverton)	Intel® Atom® C5325/C5315 (Parker Ridge)	Marvell OCTEON CN102 Series
onboard	onboard	onboard	onboard
SoC	SoC	SoC	SoC
Intel QuickAssist Technology	Intel QuickAssist Technology	Intel® QuickAssist Technology	Crypto 50G IMIX Unidir + ~12K RSA 2K OPS
AMI SPI Flash BIOS	AMI SPI Flash BIOS	AMI SPI Flash BIOS	N/A
DDR4 2400/2133/1866 MHz ECC/Non-ECC SODIMM (By SKU)	DDR4 2400/2133/1866 MHz ECC/Non-ECC SODIMM (By SKU)	DDR4 2933/2400 MHz ECC/Non-ECC SODIMM	DDR5 4800 MHz SO-DIMM
64 GB	64 GB	64 GB	128 GB
2 x 260-pin SODIMM	2 x 260-pin SODIMM	2 x 260-pin SODIMM	1 x 262-pin SODIMM
4 x GbE RJ45 Intel® SoC Integrated MAC 2 x GbE RJ45 Intel® i350 and (by SKU) 2 x GbE SFP Intel® i350 (by SKU)	4 x GbE RJ45 Intel® i350 2 x GbE RJ45 SoC Integrated MAC (Optional PoE+ Support) 2 x SFP+ SoC Integrated MAC	4x GbE RJ45, 2x 10G SFP+, NCA-1525: 2x 2.5G RJ45 (PoE+ Optional) NCA-1526: 2x GbE RJ45 (PoE+ Optional)	8x 2.5 GbE RJ45, 2x10G Combo (RJ45/SFP+), 2x 10G SFP+ (By SKU)
1 pair Gen3 (By SKU)	N/A	N/A	2x Pairs Of Gen 3
N/A	N/A	N/A	N/A
1 x RJ45 (By SKU)	N/A	N/A	N/A
Yes	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 RJ-45	1 x RJ-45	1 x RJ-45	1 x RJ-45
2 x USB 2.0	2 x USB 3.0	2 x USB 3.0	1 x USB 3.0
N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A
1 x DC Jack	2 x DC Jack (Optional 2nd DC Jack)	2 x DC Jack With Lock	2 x Or 1 x DC Jack (By SKU)
1 x 2.5 Internal (Optional)	N/A	N/A	N/A
1 x M.2-2242(SATA) B Key	1 x Onboard EMMC 8G (By Request), 1x 2242 M.2 (SATA)	1 x M.2 2280 B Key (SATA),	1 x M.2 M Key (2280) For NVMe Storage
N/A	N/A	N/A	N/A
2x Mini-PCIe (PCIe/USB2.0), 1 x M.2 2242 B Key (USB3.0) 1 x M.2 3042 B Key (USB3.0), 2x nano SIM	1 x Mini-PCIe (PCIe/USB2.0), 1x M.2 3052/3580 B Key (PCIe/USB 3.0), 1x M.2 3042 B Key (USB 3.0), 2x nano SIM	1 x Mini-PCIe (PCIe/USB2.0) 2 x M.2 3042/3052 B Key (USB3.0) 2 x Nano SIM for M.2	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
Yes	Yes	Yes	Yes
Yes	Yes	Yes	Yes
YES (TPM 2.0)	YES (TPM 2.0)	Yes	Yes
Passive CPU Heatsink	Passive CPU Heatsink	Passisve CPU heatsink	Passive CPU Heatsink
1 x Cooling Fan w/ Smart Fan (SKU A~E) 2 x Cooling Fans w/ Smart Fan (SKU F)	2 x Cooling Fans w/ Smart Fan or Fanless (By Request)	2 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 -20~70°C Non-Operating	0~40°C Operating -40~70°C Non-Operating	0~40°C Operating -40~70°C Non-Operating
5~90% Operating 5~95% Non-Operating	5~90% Operating 5~95% Non-Operating	5~90% Operating 5~95% Non-Operating	5~90% Operating 5~95% Non-Operating
231 x 44 x 200 mm	231 x 44 x 200 mm	250 x 44 x 200 mm	310 x 44 x 265 mm
1.2 kg	1.2 kg	1.5 kg	TBD
36W or 60W Power Adapter (By SKU)	60W Power Adapter	90W Power Adapter	90W/60W Power Adapter (By SKU)
AC 100~240V @50~60 Hz	AC 100~240V @50~60 Hz	AC 100~240V @50~60 Hz	AC 100~240V @50~60 Hz
RoHS, CE/FCC Class A, UL	RoHS, CE/FCC Class B, UL	RoHS, CE/FCC Class B (Without PoE+), UL, VCCI, UKCA	RoHS, CE/FCC Class B (Without PoE+), UL, UKCA, VCCI

IT Security

Rackmount Network Appliances

NCA-2523
Intel® Atom® C5000 Processor
8x GbE RJ45, 2x 10G SFP+, 1x NIC, Max.64GB 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-6530
Dual 5th Gen Intel® Xeon® Scalable Processors
8x NIC, Max.1536GB 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.

Intel Virtualization Technology

Lanner appliances come with Intel® VT (VT-x, VT-d and SR-IOV), AMD-Vi built in, providing hardware assist to the virtualization software, reducing its size, cost, and complexity and optimizing performance, security, agility and manageability.

Rackmount Network Appliances



Feature	Description	NCA-2510	NCA-2513	NCA-2520/2522
Form Factor		1U 19□ Rackmount	1U 19□ Rackmount	1U 19□ Rackmount
Platform	Processor Options	Intel® Atom□ C3000, 4~16 Cores (Denverton)	Intel® Atom□ C3000 2~8 Cores (Denverton-R)	Intel® Atom P5300 (Snow Ridge NS)
	CPU Socket	onboard	onboard	onboard
	Chipset	SoC	SoC	SoC
	Security Acceleration	Intel® QuickAssist Technology	Intel® QuickAssist Technology	N/A
BIOS		AMI SPI Flash BIOS	AMI SPI Flash BIOS	AMI SPI Flash BIOS
System Memory	Technology	DDR4 2400MHz ECC or Non-ECC UDIMM/RDIMM	DDR4 2400MHz ECC or Non-ECC UDIMM/ RDIMM	DDR4 2933MHz REG Or Non-ECC UDIMM
	Max. Capacity	128GB Or 64GB	64GB	256GB
	Socket	4 x 288pin DIMM	2 x 288-pin DIMM	4 x 288-pin DIMM
Networking	Ethernet Ports	1 x GbE RJ45 Intel® i210 4 x GbE RJ-45 Intel® i350-AM4 4 SFP+ Intel® Denverton Integrated (By SKU)	2 x GbE RJ45 Intel® i210 2 x GbE RJ45 Intel® i350-AM2 (By SKU) 4 x GbE RJ45 Intel® SoC Integrated MAC	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)
	Bypass	2 pairs Gen3 (By SKU)	2 pairs Gen3 (By SKU)	2 pairs Gen3
	NIC Module Slot	1	1	1
LOM	I/O Interface	1 x RJ45 (By SKU)	N/A	Optional
	OPMA Slot	Yes	N/A	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 2.0	2 x USB 3.0 or 2.0 (By SKU)	2 x USB 2.0
	LCD Module	2x20 character LCM 4 x keypads	2x20 character LCM 4 x keypads	N/A
	Display	From OPMA slot (Optional)	N/A	1 x VGA From OPMA Slot (Optional)
	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□ bays	2 x 2.5" bays (By SKU)	2 x 2.5□ Internal
	Onboard Storage	1 x mSATA	1 x M.2	1 x M.2 (SATA III/PCIe*2 Signal)
Expansion	PCIe	1 x PCI-E*8 HH/HL (Optional)	1 x PCI-E*8 or *4 FH/HL (By SKU)	1 x PCI-E*8 Or 2x PCI-E*4 FH/HL (By Project)
	mini-PCIe	N/A	Yes (By SKU)	1 x Mini-PCIe (PCIe/USB2.0)
Miscellaneous	Watchdog	Yes	Yes	Yes
	Internal RTC w/ Li Battery	Yes	Yes	Yes
	TPM	Yes (optional)	Yes	N/A
Cooling	Processor	Passive CPU heatsink	Passive CPU Heatsink	Passive CPU heatsink
	System	2 x cooling fans with smart fan	1 x Cooling Fan	3 x cooling fans with smart fan
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 -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 321 x 44 mm	438 x 321 x 44 mm	438 x 429 x 44 mm
	Weight	4.4 kg	4.4 kg	10.1 kg
Package Dimensions	(WxDxH)	540 x 500 x 230 mm	540 x 500 x 230 mm	TBD
	Weight	8 kg	8 kg	TBD
Power	Type / Watts	150W ATX Single PSU	150W ATX Single PSU	300W 1+1 AC/DC Redundant CRPS PSU
	Input	AC 90~264V @47~63Hz	AC 90V~264V @47~63Hz	AC 90~264V @47~63Hz
Approvals and Compliance		RoHS, CE/FCC Class A, UL	RoHS, CE/FCC Class A, UL	RoHS, CE/FCC Class A, UL

Rackmount Network Appliances

Feature	Description	NCA-2523	NCA-4035	NCA-4112
Form Factor		1U 19□ Rackmount	1U 19□ Rackmount	1U 19□ Rackmount
Platform	Processor Options	Intel® Atom C5325/C5315 (Parker Ridge)	Intel® Xeon® D2800/D2700 4~22 Cores (Eddy Lake D/Ice Lake D)	AMD EPYC□ 3000 Series (4~8 Cores)
	CPU Socket	onboard	1 x Onboard	onboard
	Chipset	SoC	N/A	SoC
	Security Acceleration	Intel® QuickAssist Technology	Intel® QuickAssist Technology (By SKU)	10Gbps Encryption + 10Gbps Decryption
BIOS		AMI SPI Flash BIOS	AMI SPI Flash BIOS	AMI SPI Flash BIOS
System Memory	Technology	DDR4 2933MHz ECC Or Non-ECC SODIMM	DDR4 3200 MHz REG ECC Or Non-ECC UDIMM/RDIMM	DDR4 2666 MHz ECC/U/R DIMM
	Max. Capacity	64GB	256GB	128GB
	Socket	2 x 260pin DIMM	4 x 288-pin DIMM	4 x 288-pin DIMM
Networking	Ethernet Ports	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)	8 x GbE RJ45 Intel® i350-AM4 2 x 10G SFP+
	Bypass	2 pairs Gen3	N/A	3 x Pairs of Gen3
	NIC Module Slot	1 (By SKU)	2	1
LOM	I/O Interface	N/A	1 x RJ45	1 x RJ45
	OPMA Slot	N/A	Yes	Yes
I/O Interface	Reset Button	1	1	1
	LED	Power/Status/Storage	Power/Status/Storage	Power/Status/Storage
	Power Button	1	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	N/A	N/A	1 x LCM, 4 x Keypads
	Display	N/A	N/A	From OPMA Slot for VGA (Optional)
	Power Input	AC power inlet on PSU	AC power inlet on PSU	AC Power Inlet on PSU
Storage	HDD/SSD Support	1 x 2.5□ bays	N/A	2 x 2.5" Swappable Bays
	Onboard Storage	1 x M.2 2280 (SATA/PCIe*1 Signal)	2 x M.2 2280 / 1 x M.2 2242	N/A
Expansion	PCIe	1 x Gen3 PCI-E*4 With NCS2 NIC Support (SKU A/C Only)	1 x Gen4 PCIe*8 & 1 x Gen4 PCIe*16	N/A
	mini-PCIe	1x M.2 (USB3.0) 3042/3050/3052 For 5G/LTE 1x Nano SIM Slot	N/A	1 x 2242 M.2, 1 x Mini-PCIe, 1 x LTE (Optional)
Miscellaneous	Watchdog	Yes	Yes	Yes
	Internal RTC w/ Li Battery	Yes	Yes	Yes
	TPM	Yes	Yes	TPM 1.2/2.0
Cooling	Processor	Passive CPU heatsink	Passive CPU heatsink	Passive CPU Heatsink
	System	3 x cooling fans with smart fan	4 x cooling fans with smart fan	2 x Cooling Fans w/ Smart Fan
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	5~90% Operating 5~95% Non-Operating
System Dimensions	(WxDxH)	438 x 321 x 44 mm	438 x 321 x 44 mm	438 x 431 x 44 mm
	Weight	8 kg	8.6 kg	8.6 kg
Package Dimensions	(WxDxH)	600 x 550 x 185 mm	739 x 215 x 582 mm	582 x 548 x 182 mm
	Weight	10.88 kg	15 kg	13 kg
Power	Type / Watts	300W Redundant PSUs (SKU A/B) 350W Single PSU (SKU C/D)	300W 1+1 Redundant PSUs Or 350W Single PSU	300W Redundant PSUs
	Input	AC 90~264V @47~63 Hz	Redundant: AC 100~240V @50~60Hz Single: AC 100~240V @47~63Hz	100~240VAC @50~60Hz, 5~3A
Approvals and Compliance		RoHS, CE/FCC Class A, UL, UKCA	CE/FCC Class A, UL, RoHS	RoHS, CE, FCC, UL

NCA-4240	NCA-5230	NCA-5310
1U 19□ Rackmount	1U 19□ Rackmount	1U 19□ Rackmount
Intel® 14th Gen Core□ i9/i7/i5/i3, Pentium® Or Celeron® Processor (Alder Lake S/Raptor Lake S/Raptor Lake Refresh)	Intel® Core® i9/i7/i5/i3 Or Xeon W Processors (Comet Lake-S)	AMD EPYC 7000 series(Rome/Millan)
1 x LGA1700	1 x LGA1200	1 x FCLGA-4094
Intel® H610E/Q670E	Intel® W480E	N/A
N/A	N/A	N/A
AMI SPI Flash BIOS	AMI SPI Flash BIOS	AMI SPI Flash BIOS
DDR5 4800 Non-ECC UDIMM	DDR4 2933MHz, ECC(By CPU) or non-ECC UDIMM	DDR4 3200 MHz REG DIMM
64GB	128GB	512GB
2 x 288pin DIMM	4 x 288-pin DIMM	8 x 288-pin DIMM
1 x GbE RJ45 With LED MGMT Via i219 8 x 2.5GbE RJ45 With LED Via i226	8x GbE RJ45 8x SFP	1 x GbE RJ45 Intel® i210
3 Pairs Gen3 SE	4 Pairs (For RJ45 Copper Only)	N/A
1	2	Default: 2, max up to 4
N/A	Optional	1x RJ45 (Optional) *Share with ETH0
N/A	Yes	Yes
1	1	1
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 RJ45	1 x RJ45	1 x RJ45
2 x USB 3.0	2 x USB 3.0	2 x USB 3.0
2x20 character LCM 4 x keypads	4 x Keypads, 16x2 Character LCD	N/A
N/A	VGA (Optional)	N/A
AC power inlet on PSU	AC Power Inlet on PSU	AC Power Inlet on PSU
2 x 2.5□ bays	2 x 2.5" Bays	2 x 2.5" Swappable Bays
SKU A: 1 x M.2 2242 (M Key) SATA SKU B: 1 x M.2 2242 (M Key) SATA & 1 x M.2 2280 (M Key) NVME (PCIe Gen4 x 4)	1 x M.2 (SATA) 2242/2280 B+M key	1 x M.2 2280
1 x PCIE x8 Gen4 FH/HL (SKU B Only)	1 x PCI-E*8 FH/HL (Optional)	1 x PCI-E*8 HH/HL (Optional)
1 x M.2 2230 E Key (SKU B Only)	N/A	N/A
Yes	Yes	Yes
Yes	Yes	Yes
N/A	Yes	Yes (Optional)
Passive CPU heatsink	Passive CPU Heatsink	Passive CPU Heatsink
4 x cooling fans with smart fan	4 x Cooling Fans with Smart Fan	5 x Individual Hot-swappable Cooling Fans
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	5~90% Operating 5~95% Non-Operating	5~90% Operating 5~95% Non-Operating
438 x 321 x 44 mm	438 x 468 x 44 mm	438 x 610 x 44 mm
4.71 kg	7.6 kg	10 kg
588 x 494 x 185 mm	739 x 582 x 215 mm	739 x 582 x 215 mm
8.55 kg	15.8 kg	15.7 kg
220W ATX Single PSU	350W 1+1 ATX Redundant PSUs (SKU A) 350W Single PSU (SKU B)	550W 1+1 ATX Redundant PSUs
AC 90~264V @47~63 Hz	AC 90~264V @47~63 Hz	AC 100V~240V @47~63Hz
RoHS, CE/FCC Class A, UKCA, UL	RoHS, CE/FCC Class A, UKCA, UL	RoHS, CE/FCC Class A, UL

Rackmount Network Appliances

Feature	Description	NCA-5330	NCA-5530	NCA-5540
Form Factor		1U 19□ Rackmount	1U 19□ Rackmount	1U 19□ Rackmount
Platform	Processor Options	AMD EPYC 9004 Series Processors	3rd Gen Intel® Xeon® Scalable CPU (Ice Lake SP)	4th/5th Gen Intel® Xeon® Scalable processor (Sapphire Rapids-SP/Emerald Rapids-SP)
	CPU Socket	1 x LGA-6096	1 x LGA4189	1 x LGA4677
	Chipset	N/A	Intel® C621A/C627A	Intel® C741
	Security Acceleration	40Gbps Encryption + 40Gbps Decryption/ AMD Enhanced Security	Intel® QuickAssist Technology (By SKU)	Intel® QuickAssist Technology
BIOS		AMI SPI Flash BIOS	AMI SPI Flash BIOS	AMI SPI Flash BIOS
System Memory	Technology	DDR5 4800MHz R-DIMM	DDR4 3200MHz R DIMM	DDR5 4800MHz R DIMM
	Max. Capacity	512GB	512GB	768GB
	Socket	8 x 288-pin DIMM	8 x 288pin DIMM	12 x 288pin DIMM
Networking	Ethernet Ports	1 x GbE RJ45 Intel® i210	1 x GbE RJ45 Intel i210	2x GbE RJ45 Intel® I226-LM
	Bypass	N/A	Depends on NIC Module Specifications	Depends on NIC Module Specifications
	NIC Module Slot	4	4 or 2	4
LOM	I/O Interface	1x RJ45 (Optional) *Share with ETH0	1 x RJ45 (Optional) *Share with ETH0	Yes, 1x LOM Port (Via BMC Chip)
	OPMA Slot	Yes	Yes	Yes (Support AST2600 IPMI Card)
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	N/A	N/A (Optional)	N/A (Optional)
	Display	N/A	1 x VGA, From OPMA Slot (Optional)	1x VGA via IPMI card
	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" Swappable Bays	2 x 2.5□ Internal	2 x 2.5□ Internal
	Onboard Storage	1 x M.2 2280	1 x M.2-2280 (SATA)	1 x M.2 (SATA) 2280 B+M Key 2 x M.2 NvME (PCIe) 2280 M Key
Expansion	PCIe	1 x PCI-E*8 HH/HL (Optional)	N/A (Default); 1x PCI-E*16 FH/HL (By Project)	1 x PCI-E*8 HH/HL (Optional)
	mini-PCIe	N/A	N/A	N/A
Miscellaneous	Watchdog	Yes	Yes	Yes
	Internal RTC with Li Battery	Yes	Yes	Yes
	TPM	Yes (Optional)	Yes (Optional TPM2.0)	Yes (Optional TPM2.0)
Cooling	Processor	Passive CPU Heatsink	Passive CPU heatsink	Passive CPU heatsink
	System	5 x Individual Hot-swappable Cooling Fans	5 x Or 4 x Individual Hot-swappable Cooling Fans w/ Smart Fan (By SKU)	5 x Smart Fan
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 -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 650 x 44 mm	438 x 610 x 44 mm	438 x 610 x 44 mm
	Weight	11.27 kg	10.5kg	10.5kg
Package Dimensions	(WxDxH)	841 x 588 x 215 mm	739 x 215 x 582 mm	739 x 215 x 582 mm
	Weight	17.59 kg	18.5kg	18.5kg
Power	Type / Watts	1300W 1+1 ATX Redundant PSUs	550W 1+1 ATX Redundant PSUs	1300W Redundant PSUs
	Input	AC 100V~240V @47~63Hz	AC 100~240V @47~63Hz	AC 100~240V @47~63 Hz
Approvals and Compliance		RoHS, CE/FCC Class A, UL	RoHS, CE, FCC Class A, UL	RoHS, CE/FCC Class A, UL

NCA-6040 NEW	NCA-6120	NCA-6250 NEW
2U 19□ Rackmount	2U 19□ Rackmount	2U 19□ Rackmount
4th/5th Gen IIntel® Xeon® Processor Scalable Family (Sapphire Rapids-SP/Emerald Rapids-SP)	AMD EPYC 7000 Series With Support For Milan & Rome (64C/128T)	2x Intel® Xeon®6 Processor (Sierra Forest SP/Granite Rapid-SP/Clearwater forest-SP)
1 x LGA 4677	2 x FCLGA-4094	2x LGA4710
Intel® C741	N/A	N/A
Intel® QuickAssist Technology	40Gbps Encryption + 40Gbps Decryption	Intel® QuickAssist Technology
AMI SPI Flash BIOS	AMI SPI Flash BIOS	AMI SPI Flash BIOS
DDR5 4800MHz RDIMM	DDR4 3200MHz ECC REG DIMM	DDR5 6400 MT/s REG DIMM or MCR 8000 MT/s
768GB	1024GB	1536GB (RDIMM) Or 1024GB (MCR DIMM)
12 x 288pin DIMM	16 x 288-pin DIMM	16x 288-pin DIMM
2x GbE RJ45 Intel® I226-LM	1 x GbE RJ45 Intel® i210	2 x GbE RJ45 Intel® i350-AM2
Depends on NIC module specifications	N/A	Depends on NIC Module Specifications
8	8 Or 4 (By SKU)	8
1 x RJ45	1 x RJ45	1 x RJ45
Yes (By SKU)	Yes	IPMI Onboard
1	1	1
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 RJ45	1 x RJ45	1 x RJ45
2 x USB 3.0	2 x USB 3.0	2 x USB 3.0
N/A	N/A	N/A
1x VGA via IPMI card	1 x VGA (Optional)	1 x VGA (Optional)
AC power inlet on PSU	AC Power Inlet on PSU	AC power inlet on PSU
2 x 2.5□ Internal	SKU A: 4 x 2.5□ or 3.5□ SKU B: 2 x 2.5" or 3.5"	2x 2.5□□ U.2 NVME SSD Hot-swappable
2 x M.2-2280(NVME) 1 x M.2-2280(SATA)	1 x M.2 (SATA/PCIe) 2280	- 1x M.2 22110/2280/2242, M Key NVME (1x PCIEx4 Gen5) - 1x M.2 2280/2242, M Key NVME (1x PCIEx4 Gen5) - 1x M.2 2242 For PCIE To SATA*4 Module
1x PCIe*16 HH/HL (Optional) Support GPU Cards up to 150W	2x PCIe*8 FHHL or 1x PCIe*16 FHHL	2x PCIe*16 Gen5 For 2x FHHL PCIe Card Or 1x 3/4 PCIe Card Support GPU Cards up to 150W
N/A	N/A / Max. 1TB	N/A
Yes	Yes	Yes
Yes	Yes	Yes
TPM2.0 (Optional)	Yes (Optional)	N/A
Passive CPU heatsink	Passive CPU Heatsink	Passive CPU heatsink
4 x Individual Hot-swappable Cooling Fans with Smart Fan	4 x Individual Hot-swappable 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 -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
438 x 650 x 88 mm	438 x 600 x 88 mm	438 x 610 x 88 mm
24 kg	24 kg	21.2kg
588 x 827 x 356 mm	825 x 600 x 270 mm	588 x 997 x 250 mm
30.1kg	26 kg	31.2 kg
1300W Redundant PSUs	850W 1+1 ATX Redundant PSUs	1200W/1300W/2000W 1+1 ATX Redundant PSUs
AC 230V @50~60Hz	AC 100V~240V @47~63Hz	AC 200~240V @50~60Hz
RoHS, CE/FCC Class A, UL	RoHS, CE, FCC, UL	RoHS, CE/FCC Class A, UL, UKCA, VCCI

Rackmount Network Appliances

TAIWAN EXCELLENCE 2018

Feature	Description	NCA-6520	NCA-6530 NEW
Form Factor		2U 19□ Rackmount	2U 19□ Rackmount
Platform	Processor Options	3rd Gen Intel® Xeon® Scalable CPU (Ice Lake SP)	4th/5th Gen Intel® Xeon® Processor Scalable Family (Sapphire Rapids-SP/Emerald Rapids-SP)
	CPU Socket	2 x LGA4189	2 x LGA 4677
	Chipset	Intel® C627A	Intel® C741
	Security Acceleration	Intel® QuickAssist Technology	Intel® QuickAssist Technology
BIOS		AMI SPI Flash BIOS	AMI SPI Flash BIOS
System Memory	Technology	DDR4 3200/2933/2666/2400/2133MHz RDIMM/LRDIMM	DDR5 4800MHz RDIMM
	Max. Capacity	1536GB	1536GB
	Socket	24 x 288-pin DIMM	24 x 288-pin DIMM
Networking	Ethernet Ports	2 x GbE RJ45 Intel® i350-AM2	2 x GbE RJ45 Intel® i350-AM2
	Bypass	Depends on NIC Module Specifications	Depends on NIC Module Specifications
	NIC Module Slot	8	8
LOM	I/O Interface	1 x RJ45	1 x RJ45
	OPMA Slot	IPMI Onboard	IPMI Onboard
I/O Interface	Reset Button	1	1
	LED	Power/Status/Storage	Power/Status/Storage
	Power Button	1 x ATX Power switch	1 x ATX Power switch
	Console	1 x RJ45	1 x RJ45
	USB	2 x USB 3.0	2 x USB 3.0
	LCD Module	N/A	Yes
	Display	1 x VGA (Optional)	1 x VGA (Internal Pin Header)
	Power Input	AC power inlet on PSU	AC power inlet on PSU
Storage	HDD/SSD Support	2x 3.5□ or 2.5□ Swappable	SKU A & C: 2 x 2.5□ Swappable
	Onboard Storage	2x M.2 (NVME); 1x M.2 (SATA)	2x M.2 NVME 2280; 1x M.2 2280 SATA
Expansion	PCIe	A SKU: N/A (default); 1x PCIE x16 FH/FL & 1x PCIE x16 FH/HL single-slot (Optional) B SKU: N/A (default); 2x PCIE x16 FH/FL dual-slot (Optional) Support GPU Cards up to 350W	A/B SKU: N/A (default); up to 2x PCIE x16 card in FH/HL single/dual-slot size bracket(Optional) C/D SKU: N/A (default); up to 2x PCIE x16 card with FH/FL single/dual-slot size bracket(Optional) Support GPU Cards up to 350W
	mini-PCIe	N/A	N/A
Miscellaneous	Watchdog	Yes	Yes
	Internal RTC with Li Battery	Yes	Yes
	TPM	TPM2.0 (Optional)	TPM2.0 (Optional)
Cooling	Processor	Passive CPU heatsink	Passive CPU heatsink
	System	4 x Individual Hot-swappable Cooling Fans with Smart Fan	6 x Individual Hot-swappable Cooling Fans with Smart Fan
Environmental Parameters	Temperature	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
System Dimensions	(WxDxH)	438 x 720 x 88 mm	438 x 760 x 88 mm
	Weight	19.3kg	21.2kg
Package Dimensions	(WxDxH)	588 x 997 x 250 mm	588 x 926 x 303 mm
	Weight	32 kg	31.2 kg
Power	Type / Watts	1300W/2000W 1+1 ATX Redundant PSUs	1600W/2000W 1+1 ATX Redundant PSUs
	Input	AC 100~240V @47~63 Hz	AC 200~240V @50~60Hz
Approvals and Compliance		RoHS, CE/FCC Class A, UL	RoHS/RoHS, CE, FCC Class A, UL

Elevate the performance and bandwidth of your network appliances using Lanner's innovative swappable network modules. These modules unlock heightened packet processing capabilities for network appliances, particularly in applications like DPI, IPS/IDS, and WAN optimization.

Model Name	Ports	Chipset	Bypass
GbE RJ45 Modules			
NCS2-IGM806A	8	i350-AM4	4 Pairs Gen3
GbE SFP Modules			
NCS2-ISM405A	4	i350-AM4	Fiber Bypass
NCS2-ISM802A	8	i350-AM4	N/A
10G RJ45 Modules			
NCS2-ITM401	4	XL710-BM1	N/A
10G Fiber Modules			
NCS2-IXM407	4	XL710-AM2	N/A
NCS2-IXM415	4	E810-AM1	N/A
NCS2-IXM803	8	E810-AM2	N/A
25G Modules			
NCS2-IVM201	2	XXV710-AM2	N/A
40G Modules			
NCS2-IQM201	2	XL710-BM2	N/A
NCS2-IQM203	2	XL710-BM2	Fiber Bypass
100G Modules			
N2S-IHM203	2	E810-CAM2	N/A
N2S-IHM205	2	E810-CAM2	Yes
NCS2-IHM204A/B	2/1	E810-CAM2/1	N/A
N2S-MHM203	2	ConnectX-6	N/A
200G Modules			
N2S-MBF301	2	NVIDIA Bluefield-3	N/A
N2S-MDM201	2	ConnectX-7	N/A
400G Modules			
N2S-MFM101	1	ConnectX-7	N/A

Processor and Performance

Opt for your ideal network modules from a comprehensive array featuring Intel's cutting-edge CPU/chipset technologies, including Intel® E810/ XL710, XXV710, Mellanox® ConnectX® series multi-host Ethernet controller, and more.

Wide Compatibility and Scalability

Lanner presents extensive compatibility and scalability through our custom modular design. Our modules undergo rigorous endurance and compatibility testing, ensuring certification, and are fully compatible with both our existing and forthcoming network appliances.

Module Customizations

Select from a versatile range of over 20 Ethernet network modules, encompassing RJ-45, fiber, bypass, and transmission rates spanning 1GbE, 10GbE, 25GbE, 40GbE, and even 200GbE. Additionally, Lanner offers PCI-E expansion modules to cater to data storage, Wi-Fi connectivity, video transcoding, and other needs.

Time to Market

With a focus on expediting your time-to-market development, Lanner tailors our standard models to align seamlessly with your unique, mission-critical applications.

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.

100Gbps Smart NIC Module - N2S-MBF201

• NVIDIA BlueField DPU • 2x 100GbE QSFP56 Ports
□ Mellanox ConnectX-6 Dx Controller & ARM CPU

200Gbps Smart NIC Module - N2S-MBF301

• NVIDIA BlueField DPU • 2x 200GbE QSFP112 Ports
□ 2 x Gen5 PCIe*8 Golden Finger

100Gbps Smart NIC Module - N2S-IPU01

□ Intel Atom® Processor P5742 □ 1x 100GbE QSFP28 Or 4x 25GbE SFP28
□ 2 x Gen5 PCIe*8 Golden Finger □ 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.

100Gbps NIC Module - NCS2-IHM204/ N2S-MHM202A

□ Intel E810 Series/Mellanox ConnectX®-5 EN Ethernet Controller
□ 2 x 100GbE QSFP28/Fiber Ports

4-port PoE+ NIC Module - NCS2-POEIG402A / NCS2-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
□ 4 x Antennas

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

□ Sierra Wireless EM7511/EM7455 □ CAT-12/ CAT-6
□ AT&T/Verizon Pre-certified □ 2x SIM, 2x 4G LTE Antenna
• PTCRB/FirstNet™/CBRS Pre-certified

Swappable 5G Radio Modem Module - PGN-750

□ 5G sub6 □ 2x Nano SIM, 4x Antenna Jacks,
• 5F Failover • SATA Connector (USB 3.0 Signal)
□ Designed For Nework Failover And Vehicle Applications

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, such as GPU Card, Storage, Network Acceleration Card or Flow Processing 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, such as GPU Card, Storage, Network Acceleration Card or Flow Processing 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 MHz non-ECC UDIMM
- □ 10bit HEVC Codec

OT Security

Rugged Security Appliance

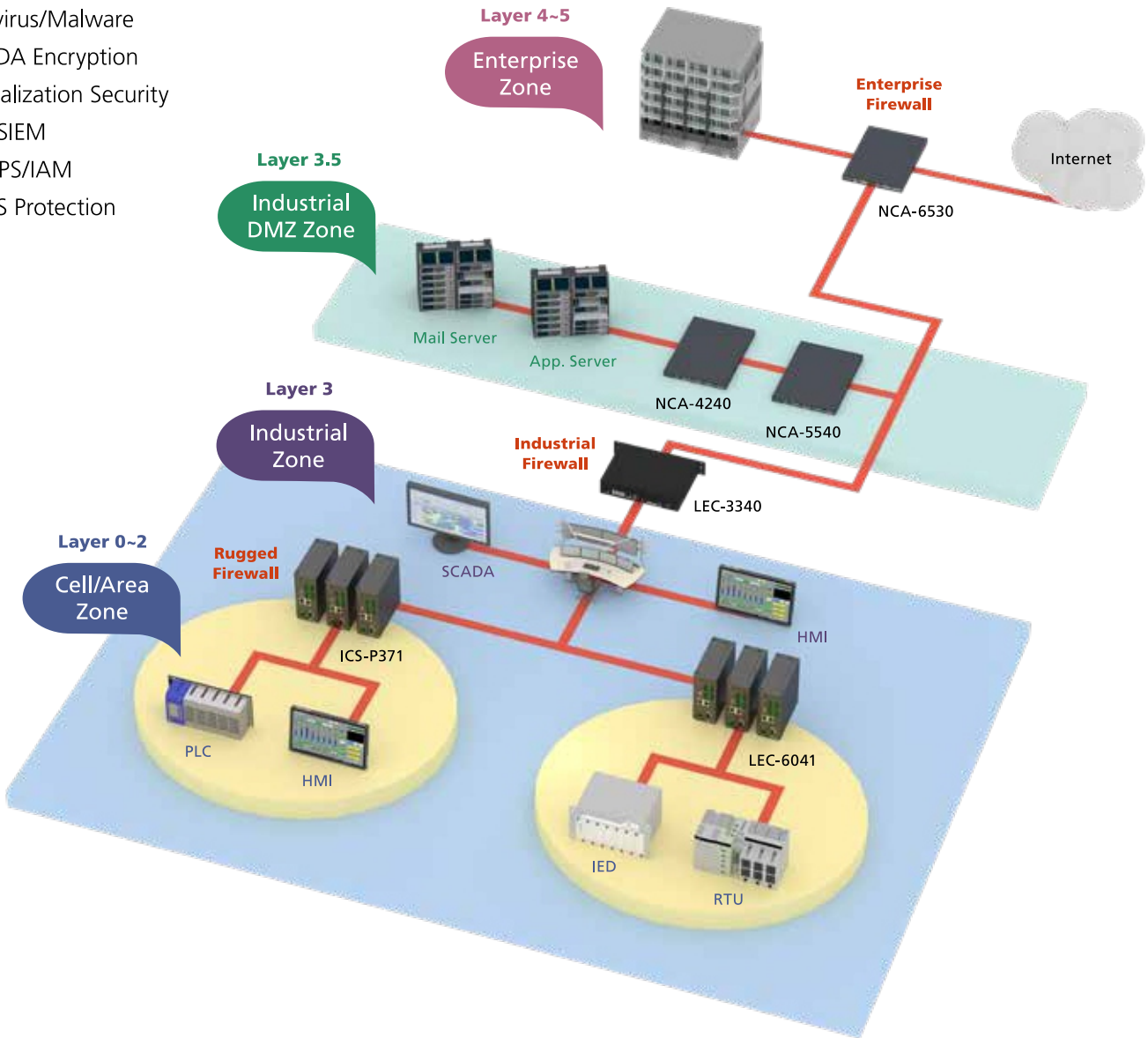
Lanner ICS / ISD / OT Security Solutions

To ensure robust protection against advanced cyber threats, it□s crucial to establish multi-layer defenses for both IT and OT networks within critical infrastructures. In this setup, OT manages the Industrial Zone (Layer 0~3) comprising instrumentation buses, controller LANs, and SCADA systems, while IT oversees the Enterprise Zone (Layer 45) with web, email, and enterprise servers. An Industrial DMZ Zone (Layer 3~5) adds an extra layer of protection for externally interfaced services.

As a premier hardware solution provider in the realm of network security, Lanner offers an extensive and customizable range of hardware platforms. These platforms are meticulously designed to safeguard communication protocols within both IT and OT domains for critical infrastructures, spanning industries such as energy, power, oil, and gas.

IIoT Network Security Gateway

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



ICS / OT Security Appliances

OT Security Appliance

IEC61850-3/C1D2/IEEE1613 OT Security Appliance

IEC61850-3/IEEE1613 OT Security Appliance

Model Name		LEC-6032	LEC-6041	LEC-3340
Processor System	CPU	Intel® Atom□ E3845	Intel® Atom□ x7-E3950 or x5-E3930	Intel® Xeon® W-11865MLE/11555MLE/11155MLE
	Frequency	1.91 Ghz	1.3 GHz / 1.6 GHz	1.5 GHz / 1.8 GHz / 1.9 GHz
	Core Number	4C	Atom x5-E3930: 2C, Atom x7-E3950: 4C	4/8C
	BIOS	AMI SPI Flash BIOS	AMI SPI Flash BIOS	AMI SPI Flash BIOS
	Chipset	SoC	SoC	Intel® RM590
Fanless		Yes	Yes	Yes
Memory	Technology	DDR3L 1600 MHz	DDR3L, 1600 MHz	DDR4 3200 MHz, ECC
	Max. Capacity	8GB	8GB	Up to 64 GB
	Socket	1x 204-pin SODIMM	1x 204-pin SODIMM	2 x 260-pin SODIMM
Graphic	Controller	Intel® HD Graphics	Intel HD 505 Graphics	Intel HD Graphics P630
	Interface	Internal pin header	1 x HDMI	2x HDMI
Ethernet	Controller	Intel® i210	Intel® i210	Intel® I226IT
	Speed	10/100/1000Mbps	RJ45: 10/100/1000Mbps, SFP: 1 Gbps	Either 1000 Mbps or 10/100 Mbps
	Interface	5 x GbE RJ-45, 1 pair Bypass, 2 x SFP GbE ports	5 x GbE RJ45, 1 pair LAN Bypass 2 x GbE SFP ports	4 x 2.5 GbE RJ45 ports
	Magnetic Isolation Protection	1.5KV magnetic isolation protection	1.5KV magnetic isolation protection	1.5KV magnetic isolation protection
Storage	Type	-	m-SATA	M.2
	Installation	-	1 x mSATA socket	1x SATA M.2 2242 M-key, 1x PCIe x4 M.2 2280
	Type	SATA	SATA	SATA
	Installation	1x SATA connector, optional 2.5□ drive bay	1 x SATA connector with 2.5□ drive bay (optional)	2 x 2.5□ Swappable HDD/SSD drive bay support RAID0,1
I/O	Serial Port	1x DB9 for RS-232	2x RS-232, DB9 male	4 x DB9 Male with isolation supports software selectable RS-232/422/485
	ESD Protection	15KV ESD Protection	15KV ESD protection	15KV ESD Protection
	Isolation Protection	2KV Digital Isolation	2KV Digital Isolation	2KV Digital Isolation
	Digital I/O	-	-	-
	USB 2.0	1x Type A		-
	USB 3.0	1x Type A	2x Type A	5 x type A
	Power On/Off/Reset Button	- / 1x Reset	- / 1x Reset	- / 1x Reset
	LED	Storage, RUN, Power, LAN LEC-6032: SFP	Power, Storage, Run(User defined), 5 x LAN, 2 x SFP	Power, Storage, LAN, COM, RX, Failure
Expansion Interface	PCIe/Mini-PCIe	-	1x mini-PCIe with 1 SIM card for 4G LTE module (USB & PCIe signal)	1x PCIex16, 3x PCIex4 slots
Watchdog Timer		Watchdog Timer 1~255 Level Time Interval System Reset, Software Programmable	Watchdog Timer 1~255 Level Time Interval System Reset, Software Programmable	Watchdog Timer 1~255 Level Time Interval System Reset, Software Programmable
Power	Power Supply Voltage	Dual 12-36Vdc	Dual 20-54 Vdc	Dual 16.6Vdc or 100~240Vac
	Connector	6-pin Phoenix Contact Connector	6-Pin Terminal Block	3-Pin Terminal Block
	Power Consumption (Idle)	9 ~ 10W	13.19 W	16.3W
	Power Consumption (Full Load)	15 ~ 16W	27.42 W	28.7W
Environment	Operating Temperature	-40~70°C (-40~176°F)	-40~70°C (-40~176°F)	-40~70°C (-40-158°F)
	Storage Temperature	-40~85°C (-40~185°F)	-40~85°C (-40~185°F)	-40~85°C (-40~185°F)
	Relative Humidity	5%~95%, Non-condensing	5%~95%, Non-condensing	5%~95%, Non-condensing
Mechanical	Dimension (W x H x D)	78 x 146 x 127 mm	53.5 x 186 x160 mm	438 x 131.8 x 300.1 mm
	Construction	Aluminum	Aluminum + SGCC	Aluminum + Steel
	Weight	1 Kg	1.6 Kg	8.5 kg
	Mounting	DIN rail, Wallmount	DIN rail, Wallmount	Rackmount
Driver Support	Microsoft Windows	Windows 7, Windows 7 Embedded	Windows 10 PRO	Windows 10 Embedded
	Linux	Kernel 3.X	Kernel 4.X	Kernel 5.18, Ubuntu
Certification	EMC	CE,FCC Class A	CE,FCC Class A	CE,FCC Class A, UL
Compliance		RoHS	IEC 61850-3, IEEE 1613	IEC 61850-3, IEEE 1613

ICS / OT Security Appliances

C1D2
OT Security Appliance

IEC61850-3/CID2/IEEE1613
OT Security Appliance

IEC61850-3/IEEE1613
Security Appliance

Model Name		ICS-I372 NEW	ICS-P371 NEW	ICS-P570 NEW
Processor System	CPU	Intel Atom X6211E/X6413E/X6425E	Intel Atom X6211E/X6413E/X6425E	AMD Ryzen V1404I
	Frequency	1.3~2.0 GHz	1.3~2.0 GHz	Max: 3.6 GHz, Base: 2GHz
	Core Number	4 Cores	2~4 Cores	4 Cores
	BIOS	AMI SPI Flash BIOS	AMI SPI Flash BIOS	AMI SPI Flash BIOS
	Chipset	SoC	SoC	SoC
Fanless		Yes	Yes	Yes
Memory	Technology	DDR4 3200 MHz, In Band ECC 8GB	DDR4 3200 MHz, In Band ECC 8GB	DDR4, 2400 MHz, ECC
	Max. Capacity	Up to 32 GB	Up to 32 GB	Up to 32 GB
	Socket	1x 260-pin SODIMM	1x 260-pin SODIMM	2 x 260-pin SODIMM
Graphic	Controller	Intel HD Graphics 500	Intel HD Graphics 500	Vega 8 Graphics
	Interface	1 x DP port	1 x internal DP pin-header	1 x internal HDMI pin-header
Ethernet	Controller	LAN3 & LAN4: Intel i210IS/IT/AT LAN1, 2 & LAN5 ~ 8: Intel i226IT	Intel i226T/i210IS	Intel i210-IT / i210IS
	Speed	LAN1, 2 & LAN5 ~ 8: 10/100/1000/2500 Mbps LAN3 & LAN4 : 100/1000 Mbps	RJ45: 100M/1G/2.5Gbps, SFP: 1 Gbps	RJ45: 100M/1G/2.5Gbps, SFP: 1 Gbps
	Interface	8x, 6x or 4x 2.5GbE RJ45 2x GbE SFP (by SKU)	6 x RJ45, 2 x SFP, optional IPMI Ports (By SKU)	6 x or 4 x GbE RJ45 + 2x SFP
	Bypass	1 or 2 pairs	1 pair	1 pair
Storage	Type	eMMC	SATA	SATA
	Installation	Onboard 64GB	1 x 2.5□ drive bay (optional) 1 x M.2 M Key 2242	1 x M.2 M Key 2242
	Type	M.2/SATA	SD	SD
	Installation	1x M.2 M-key SATA SSD, 1x SATA For 2.5□ SSD/ HDD Or1x M.2 M-key SATA SSD	1 x Micro SD reader	1 x Micro SD reader
I/O	Serial/Console Port	1x DB9 Console	1 x RS-232, DB9 male	1 x RS-232, 1x RJ45
	Digital I/O	2x DIO	2 x Isolated DIO	2 x Isolated DIO
	USB	2x USB 3.0 type A	2x USB 3.0 type A	1x USB 3.0
	Power On/Off/Reset Button	- / 1x Reset	- / 1x Reset	- / 1x Reset
	LED	HDD, Power, LTE Status, LTE Signal, DI/DO, LAN TX/RX	System Status, Ethernet Status & Programmable LEDs	1x POWER/STATUS/HDD LED (3 LEDs) 2x LEDs per eth ports (total 12 LEDs) 1x LED per DI or DO (total 4 LEDs)
Expansion Interface	PCIe/Mini-PCIe/M.2	1x M.2 B-Key for LTE/5G sub6 with dual SIM, 1x M.2 E-Key for WiFi	1x M.2 B-Key 3042/3050/3052 for LTE/5G Sub6 module, with dual Nano-SIM; 1x M.2 E-Key for Wi-Fi module (By SKU)	1x M.2 B-Key 3042 for LTE module, with dual Nano-SIM
Watchdog Timer		Watchdog timer 256 level time interval system reset, software programmable	Watchdog timer 256 level time interval system reset, software programmable	Watchdog timer 256 level time interval system reset, software programmable
Power	Power Supply Voltage	Dual +12~36Vdc	Dual +12~48Vdc	Dual +12~48Vdc
	Connector	1x 6-pin terminal block for dual DC input from 12~36V	Phoenix contact 6-pin connector with lock	Phoenix contact 6-pin connector with lock
Environment	Operating Temperature	-40°C~70°C with LTE	-40°C~70°C (-40-158°F)	-40°C~70°C (-40-158°F)
	Storage Temperature	-40~85°C (-40~185°F)	-40~85°C (-40~185°F)	-40~85°C (-40~185°F)
	Relative Humidity	Operating Relative Humidity: 10~90% Non-Operating Humidity: 5~95%	5%~95%, Non-condensing	5%~95%, Non-condensing
Mechanical	Dimension (W x H x D)	160 x 156.5 x 81 mm	87 x 196 x 180 mm	65 x 201 x 196 mm
	Construction	Aluminum + SGCC	Aluminum + SGCC	Aluminum + SGCC
	Weight	2 kg	2.2 kg	2.5 kg
	Mounting	DIN rail mount, optional wall mount	DIN rail mount, optional wall mount	DIN rail mount, optional wall mount
Driver Support	Microsoft Windows	Windows 10 IoT 64bits/11 IoT	Windows 10/11 IoT	N/A
	Linux	Linux Kernel 3.12/ Ubuntu 18.10 64bit above	Linux Kernel 2.6X or later	Linux Kernel 2.6X or later
Certification	EMC	CE/FCC Class A, UL (IEC-62368)	FCC/CE Class A, UL (IEC-62368)	FCC/CE Class A, UL (IEC-62368)
Compliance		C1D2 (By SKU)	IEC 61850-3, IEEE 1613, C1D2 (By SKU)	IEC 61850-3, IEEE 1613 (By SKU)

Rail Network Security Appliances

EN50155/45545 Rail Security Appliance

E/24/EN50155/45545/IEC61850-3 Rail Security Appliance

E13/EN50155/45545 Rail Security Appliance

Model Name		ICS-R372	ICS-R373	ICS-R570
Processor System	CPU	Intel® Atom® x7-E3950 processor (Apollo Lake)	Intel® Atom® C3000 series processor (Denverton)	AMD Ryzen™ Embedded V1404
	Frequency	1.6 GHz	1.6 or1.7 GHz	Up to 3.6GHz
	Core Number	4 Cores	2/4/8 Cores	4 Cores
	BIOS	AMI SPI Flash BIOS	AMI SPI Flash BIOS	AMI SPI Flash BIOS
	Chipset	SoC	SoC	SoC
Fanless		Yes	Yes	Yes
Memory	Technology	LPDDR4 up to 2400 MHz	DDR4 SODIMM w ECC/ non-ECC up to 2133/1866Mhz	LPDDR4 up to 2400 MHz
	Max. Capacity	Up to 8GB (Factory default: 8GB pre-installed)	64GB/32GB (By SKU)	Up to 8GB (Factory default: 8GB pre-installed)
	Socket	Solder-mount	1 x 260-pin SODIMM	1 x 260-pin SODIMM
Graphic	Controller	Intel integrated HD Graphics 505	N/A	Radeon™ Vega 8 Graphics
	Interface	2 x HDMI	N/A	2 x HDMI
Ethernet	Controller	Intel® i210-IT	Intel® i226IT & MARVELL_88E1548	Intel® i210-IT
	Speed	10/100/1000Mbps	10/100/1000Mbps	10/100/1000Mbps
	Interface	Up to 6 x Ethernet ports with M12 X-coded connectors	4x GbE RJ45, 2x 2.5GbE RJ45, 1.5KV Isolation Protection	Up to 6 x 2.5Gbe Ethernet ports with M12 X-coded connectors
	Bypass	N/A	1 pair Gen3 for 2.5GbE (By SKU)	1 pair Gen3 for 2.5GbE
Storage	Type	m-SATA, SDXC	SATA	M.2
	Installation	1 x mSATA socket (128G Pre-installed)	1x M.2 2242/2280 M-Key	1x M.2 2242/2280 M Key Socket
	Type	SATA II	eMMC	-
	Installation	Internal 2.5" drive bay x 1	Onboard eMMC 128GB/32GB TLC (By SKU)	-
I/O	Serial Port	1x DB9 Console	N/A	6x Isolated DIO 8x Isolated RS232/422/485
	GPS	3 GNSS (GPS, Galileo, GLONASS, BeiDou), default @ GPS + GLONASS dual band	4 GNSS (BeiDou, Galileo, GLONASS, GPS/QZSS), Default GPS + GLONASS Dual Band, with UDR (By SKU)	SKU A: BeiDou, Galileo, GLONASS, GPS / QZSS (3 concurrent GNSS) with ADR SKU B: BeiDou, Galileo, GLONASS, GPS / QZSS (4 concurrent GNSS) with UDR
	G-sensor	ADXL 345	Include in GPS Module/ADXL 345	-
	OOB	-	1x RJ45 OOB (By SKU)	1x RJ45 OOB (By SKU)
	USB 2.0	4 x type A	2 x type A	
	USB 3.0	-	-	3x type A
	Power On/Off/Reset Button	- / 1x Reset	- / 1x Reset	- / 1x Reset
	LED	TBD	TBD	TBD
Expansion Interface	PCIe/Mini-PCIe	2x M.2 3042 B Key	1x M.2 2230 E-Key for WiFi 2x M.2 3042/3050/3052 B-Key for LTE/5G	2x M.2 3042/3052 B key socket (USB 3.1 signal) for 5G with dual SIM slots 1x M.2 2230 E key socket (PCIe + USB 2.0) for WiFi (SKU A)
Watchdog Timer		Yes	Yes	Yes
Power	Power Supply Voltage	SKU A: Input Rated: 24~36Vdc, SKU B: Input Rated: 72~110Vdc	Dual 24~110VDC	Dual 24~110VDC
	Connector	M12 K-coded	2x 3-pin terminal block	M12 K-coded
Environment	Operating Temperature	-40°C~70°C (-40-158°F)	-40°C~70°C (-40-158°F)	-40°C~70°C (-40-158°F)
	Storage Temperature	-40~85°C (-40~185°F)	-40~85°C (-40~185°F)	-40~85°C (-40~185°F)
	Relative Humidity	5%~95%, Non-condensing	5%~95%, Non-condensing	5%~95%, Non-condensing
Mechanical	Dimension (W x H x D)	272.4 x 88.3 x 228 mm	280 x 83 x 196 mm	438 x 44 x 300 mm
	Construction	Aluminum + Steel	Aluminum + Steel, IP40 / option IP51	Aluminum + Steel
	Weight	5 kg	4.2 kg	6 kg
	Mounting	Wallmount	Wallmount/VESA/Din Rail	Rackmount
Driver Support	Microsoft Windows	Windows: Win10 IOT	Dabian 10 pre-installed, Win 10 IoT	Windows 10 IoT
	Linux	Linux: Redhat Enterprise 5, Fedora 14. Linux Kernel 2.6.18 or later	Linux: Redhat Enterprise 5, Fedora 14. Linux Kernel 2.6.18 or later	Linux: Redhat Enterprise 5, Fedora 14. Linux Kernel 2.6.18 or later
Certification	EMC	E13, CE Class A, FCC Class A, RoHS	E24, CE Class A, FCC Class A, RoHS	E13, CE Class A, FCC Class A, RoHS
Compliance		MIL-STD-810G, EN50155, EN50121-3-2, EN50121-4, EN50125, EN 45545	C1D2 (SKU A), UL/IEC 62368-1, EN 50155, EN 50121-3-2, EN 50121-4, EN 45545-2, IEC-61850-3, IEEE 1613	EN50155, EN45545-2, EN50121-3-2, EN50121-4, EN50125-3, IP-40 Compliant, MIL-STD-810G anti-vibration & shock

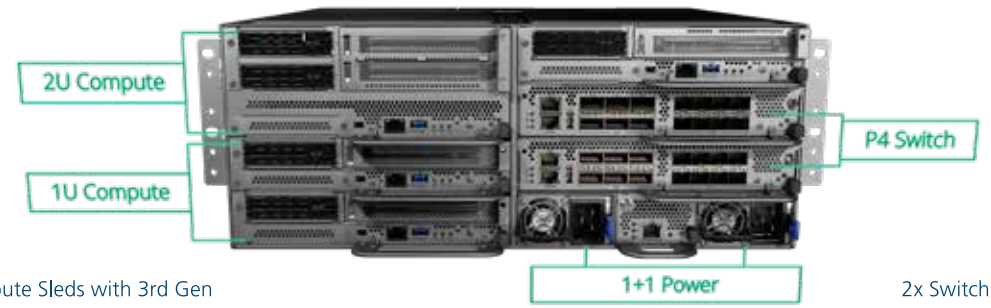
CT Security
Hyper Converged Platform

HTCA-E400 Multi-Node Edge Server

Fueled by 5x Intel Xeon Scalable Processors, the Lanner HTCA-E400 stands as a unified hyper-converged edge server meticulously tailored for OpenRAN infrastructure. Bolstered by Intel Tofino P4 support and FPGA/GPU acceleration, the scalable HTCA-E400 edge compute platform boasts programmable, intelligent switching capabilities that effectively offload the open architecture CPU. This strategic design ensures long-term cost-effectiveness by facilitating protocol-independent and multi-Tbps networking performance, while maintaining resilience against hardware bottlenecks.

PCIE, Storage and
OCP NIC 3.0 Card Expansion

hort-Depth Chassis Designed for
5G Distributed Edge



5x Compute Sleds with 3rd Gen
Intel Xeon Scalable Processors

2x Switch Sleds with
Intel Tofino P4 Programmable ASIC

Consolidated Edge Server for
Next-Gen Open RAN

Compute and Switch Sleds

The Lanner HTCA-E400 boasts a lineup of compatible and swappable sleds that deliver elevated redundancy, interoperability, flexibility, increased bandwidth, and performance enhancements.

Blades	Picture	Features/Ports	Processor
HTCA-E400		HybridTCA□ 4U telecom network appliance chassis	N/A
HMB-E100		1U Compute sled for HTCA-E400	3rd Gen Intel Xeon Scalable Processor (Ice Lake)
HMB-E200		2U Compute sled for HTCA-E400	3rd Gen Intel Xeon Scalable Processor (Ice Lake)
HLM-E110		1U Switch sled for HTCA-E400 Fabric interface with 6x 100GbE QSFP28, 8x 10/25GbE SFP+ Optional IEEE 1588	Intel Tofino Series

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.

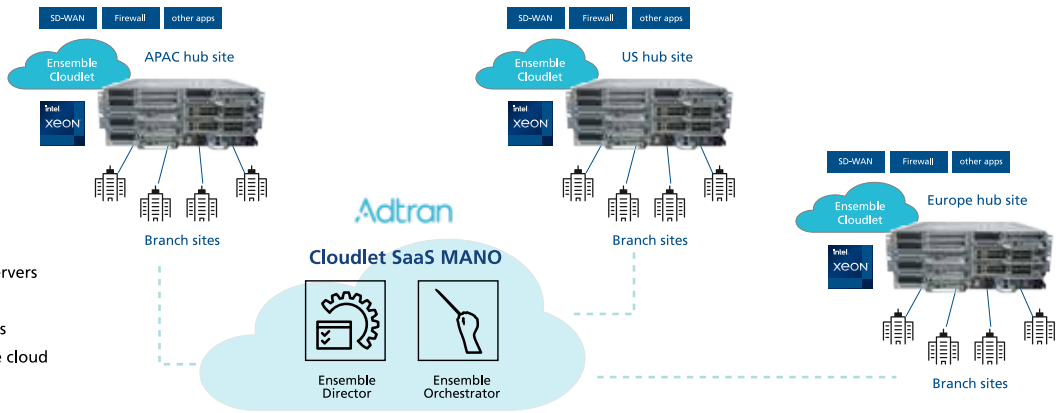
Use Case: Multi-Node Edge Cloud Solution

Epsilon, a software-defined wide area network (SD-WAN) provider, faced high costs and inefficiencies using AWS for cloud services. Seeking a tailored solution, they partnered with Lanner and Adtran to develop a scalable, cost-effective multi-node edge cloud solution.

Deploying HTCA-E400 servers with Ensemble Cloudlet software at on-prem and network edge locations, Epsilon reduced operational expenses and improved performance for their SD-WAN Hub. The modular design and flexibility of the solution also enabled Epsilon to easily scale and adapt to future needs.

Hub sites comprised of

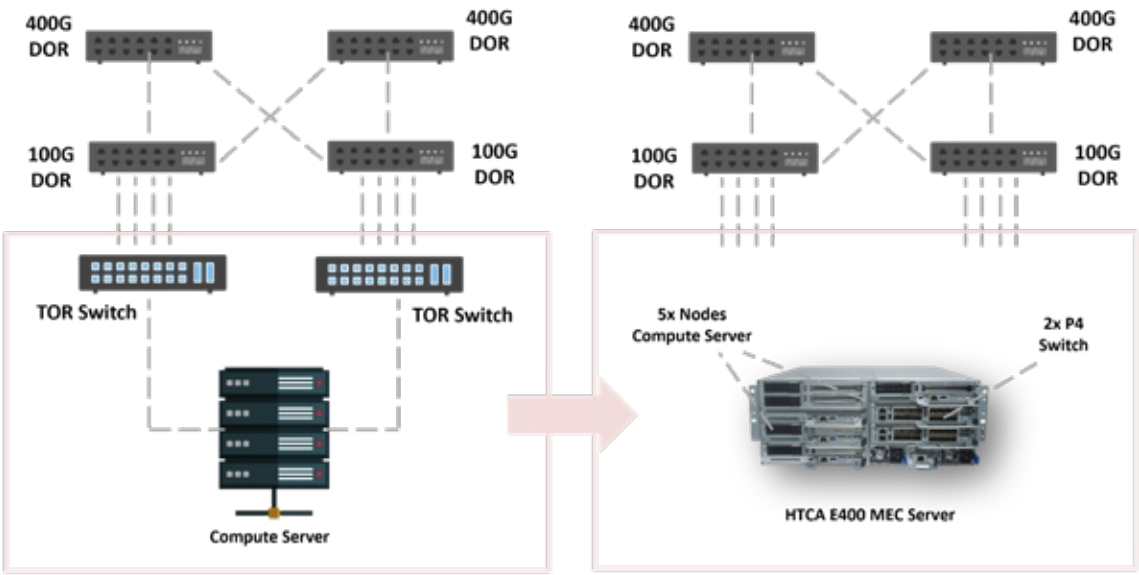
- Lanner HTCA-E400 Edge Compute Servers
- Adtran Ensemble Cloudlet software
- SD-WAN gateway VNFs, security VNFs
- Other applications hosted in hub site cloud



Use Case: Scalable MEC Server Enables DDoS Security Edge Services

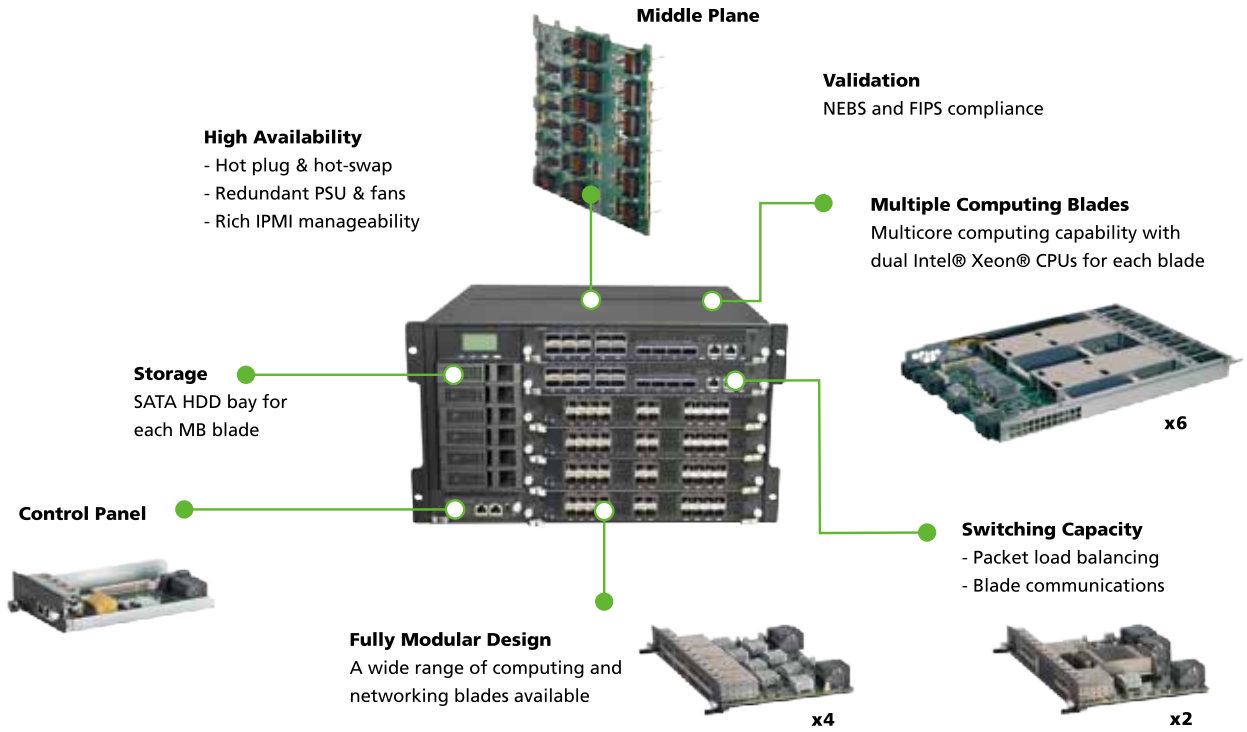
Deploying DDoS prevention at the edge offers immediate threat mitigation, reducing latency and enabling faster responses. This approach enhances visibility, control, and real-time security adjustments.

To meet edge security demands, Lanner and Arrcus developed a scalable MEC solution. By integrating Arrcus Connected Edge software with Intel Xeon processing and high-speed SDN switching, the solution enables DDoS protection closer to devices, offering ultra-low latency, enhanced security, and cost savings.



HybridTCA Architecture

Lanner's HybridTCA platforms seamlessly integrate control, management, and data processing within a single system, offering significant advantages over the prevalent AdvancedTCA infrastructure in terms of hardware design, customization options, and cost/energy efficiency.



Compute and Networking Blades

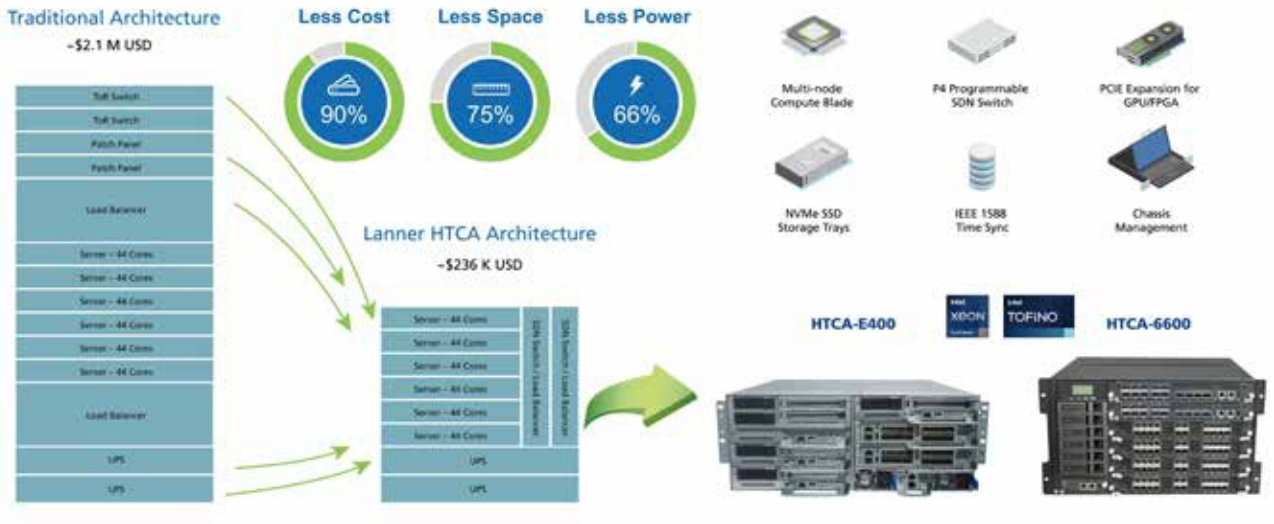
Lanner's HTCA-compatible and swappable blade lineup offers improved redundancy, interoperability, flexibility, increased bandwidth, and enhanced performance.

Blades	Picture	Features/Ports	Chipset
NEW HMB-6130		2x 4th/5th Gen Intel® Xeon® Scalable Processor (Sapphire/Emerald 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-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.

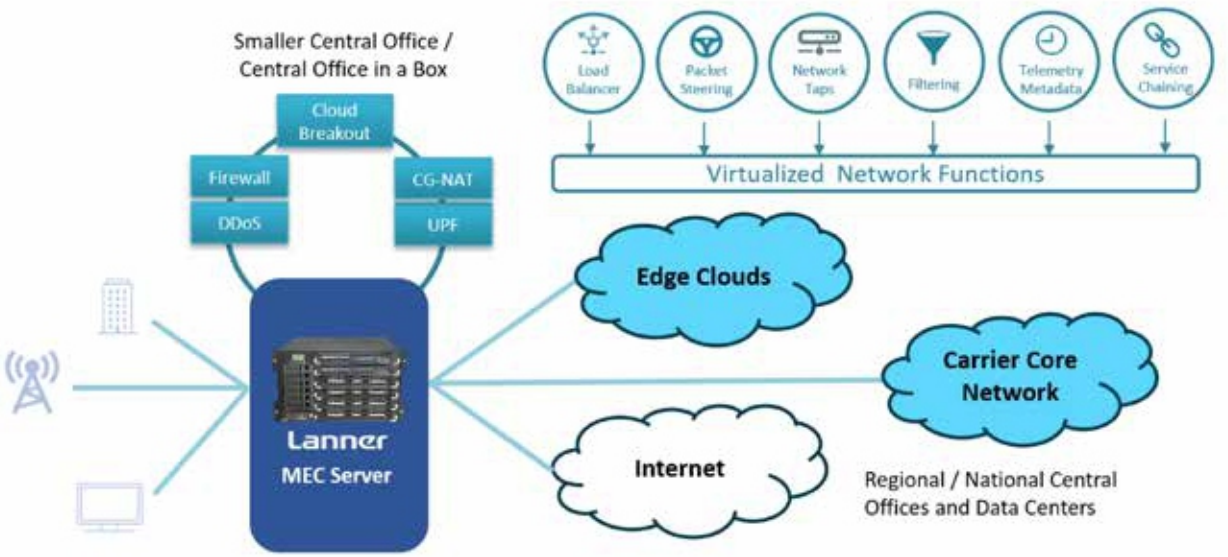
Reduction in Total Cost of Ownership

The implementation of the MEC server in the telco's edge cloud has led to a substantial reduction in telecom deployment costs compared to traditional core-driven architecture. By utilizing software-defined networking and network virtualization technology, the total cost of ownership (TCO) can be reduced by over 90%, resulting in a 75% savings in space utilization and a remarkable 66% reduction in power consumption.



Use Case: MEC Platforms for SRv6 Segment Routing

Lanner provides a scalable, high-performance server that functions as a MEC platform to enable SRv6 service chaining at the edge cloud. Designed for low-latency virtualized network function deployment, the HTCA-6600 edge server features high-core-count, multi-node compute blades, high-speed switches, and massive storage, consolidating next-gen firewall, DDoS protection, load balancing, and CGNAT functions into a single platform.



Advanced Network Platforms

Feature	Description	ECA-5540	ECA-6040 NEW	ECA-6051 NEW
Form Factor		1U Rackmount	2U Rackmount	2U Rackmount
Platform	Processor Options	4th/5th Gen Intel® Xeon® Scalable Processor (Sapphire Rapids-SP/Emerald Rapids-SP)	4th/5th Gen Intel® Xeon® Scalable Processor (Sapphire Rapids-SP/Emerald Rapids-SP)	NVIDIA Grace Arm Neoverse V2 Or Intel® Xeon®6 Processor (Sierra Forest)
	Chipset	Intel C741	Intel C741	N/A
OS Support		Linux Kernel 2.6 or above	Linux Kernel 2.6 or above	Linux Kernel 2.6 or above
System Memory	Technology	DDR5 4400 MHz RDIMM	DDR5 4800 MHz RDIMM	DDR5 6400MHz REG RDIMM
	Max. Capacity	1024 GB	1024 GB	1024GB Max
	Socket	16 x 288-pin DIMM	16 x 288-pin DIMM	8x 288pin DIMM
Storage	SATA/M2	2 x 2.5□ HDD/SSD 2 x M.2 NvME (PCIe) 2280 M key	4 x 2.5□ HDD/SSD, , Removeable HDD Trays 1 x M.2 NVMe (PCIe) 2242/2260 M Key 1 x M.2 (SATA) 2280 BB+M Key	2x E1.S SSD 2x M.2 NVMe (PCIe Gen5*4) 22110
Networking	Ethernet Ports	1x 1GbE Rj45 for MGMT	1x 1GbE Rj45 for MGMT	1 x RJ45
	Bypass	N/A	N/A	N/A
	Controllers	Intel i210	Intel i210	Intel i210
	NIC Module Slot / Blade	1x OCP NIC	1x OCP NIC	N/A
	IPMI	On board IPMI Module	On board IPMI Module	On board IPMI Module
	Management Port	N/A	N/A	1 x Management port
I/O Interface	Reset Button	Yes	Yes	Yes
	Console	1 x RJ-45	1 x RJ-45	1 x RJ-45
	USB	2 x USB 3.0	2 x USB 3.0	1 x USB 3.0
Expansion	PCIe	1x FHFL (PCIex16, double width 2xLP (PCIex8) or 1xFHHL (PCIex8) Support GPU Cards up to 350W	2 x FHFL (PCIe*16, Double Width) 2 x LP (PCIe*8) Support GPU Cards up to 350W	SKU A: 2x PCIe*16 FHFL (Double Width) 1x PCIe*16 FHHL (Double Width) SKU B: 1x PCIe*16 FHFL (Double Width) 1x PCIe*16 LP Support GPU Cards up to 350W
	mini-PCIe	N/A	N/A	N/A
Cooling	Processor	Passive CPU Heatsink	Passive CPU Heatsink	Passive CPU Heatsink
	System	5x swappable cooling fans with smart fan	6x swappable cooling fans with smart fan	6x swappable cooling fans with smart fan
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 -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
Miscellaneous	LCD Module	N/A	N/A	N/A
	Watchdog	Yes	Yes	Yes
	Internal RTC with Li Battery	Yes	Yes	Yes
Dimensions	Dimensions (WxHxD)	438x580x44 mm	438 x 580 x 88 mm	438 x 420 x 88 mm
	Weight	20.43 kg	TBD	TBD
Power	Watts / Type	1600W AC PSU	1600W AC PSU	1600W AC PSU
	Input	AC 110 -240V	AC 200~240V	AC 90~264V @47~63Hz
Approvals & Compliance		RoHS, CE/FCC Class A, UL NEBS compliance	RoHS, CE/FCC Class A, UL	RoHS, CE/FCC Class A, UL

HTCA-E400	HTCA-6200	HTCA-6600
4U Rackmount	2U Rackmount	6U Rackmount
Up to 5x Intel® Xeon® Scalable Processor (Ice Lake-SP)	Up to 4x Intel® Xeon® Scalable Processor (Sapphire Rapids-SP/Emerald Rapids-SP)	Up to 12x Intel® Xeon® Scalable Processor (Sapphire Rapids-SP/Emerald 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 DIMMs	DDR5 4800 MHz REG DIMM	DDR5 4800 MHz REG DIMM
512GB per compute sled	1024GB per blade	1024GB 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	2 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 or 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 (HLM series)	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 port	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: 1x FHFL (PCIex16, double width, 270W) 1U Compute sled: 1x FHHL	N/A	N/A
N/A	N/A	N/A
Passive CPU Heatsink	Passive CPU Heatsink	Passive CPU Heatsink
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 88 x 685 mm	438 x 265.9 x 685 mm
27.5 kg	26 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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