



## Network Computing

Innovative Platforms for Next Generation Network Infrastructure







## Lanner's Leadership in Network Appliance

Cloud computing and high-speed mobile communications networks have exponentially increased the Internet traffic, placing enormous workload demands onto network appliances. Such network demand is attracting increasing numbers of sophisticated and well-prepared malware, viruses, and other information security risks; service providers and infrastructure owners are in need of innovative, next-generation platforms with high-performance and high-throughput processors for implementing hardware security measures that could carry out deep packet inspection and virus scanning in a thorough and swift manner.

Lanner has been the leader in the rapid-growing information security industry for over three decades and is dedicated to supplying innovative and next-generation hardware platforms with advanced architectures. According to Gartner Magic Quadrants, 60% of all 46 companies supplying Enterprise Network Firewalls, UTM, Wired/Wireless LAN, WAN optimization and Application Delivery use hardware made by Lanner. Lanner had thus far shipped over 3.5 million networking appliances, reaching a significant corporate milestone. Such demand demonstrates Lanner's strength and commitment to designing superior network platforms in the field.

As the industry requires higher quality, more advanced and more powerful network appliances, we will continue our expertise, and will support our clients and partners in full dedication so we can all grow together.

**Jeans Tseng**  
CTO

# About Lanner

Lanner Electronics Inc. (TAIEX 6245) is a world-leading hardware provider in design, engineering, and manufacturing services for advanced network appliances and rugged industrial computers.

With 37-year experiences, Lanner provides reliable and cost-effective computing platforms with high quality and performance. Today, Lanner has a large and dynamic manpower with approximately 1,000 well-experienced employees worldwide with the headquarters in Taipei, Taiwan and subsidiaries in the US, Canada, China and Europe.

## Global Manufacturing Capabilities

### Taipei, Taiwan

- Area 30,000 m<sup>2</sup>
- 3 x SMT, 2x DIP and 5x assembly lines
- Production capacity:  
50,000 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 sf<sup>2</sup>
- 5 x Assembly lines
- Production capacity:  
2,000 system units/month

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# Why Lanner?

Lanner has the leading technological advantages and long-established manufacturing processes to service clients with customized solutions for mission-critical applications. Lanner possesses well-managed manufacturing lines, and is capable of customizing both hardware and software parts of a platform, including chassis, dimensions, modular/fixed ports, BIOS, IPMI, acceleration cards, NIC modules, and required 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.

### 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.

### 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.

### 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

## Wide Customization Options

Lanner supplies customized hardware solutions for mission-critical applications with managed manufacturing process thanks to our in-house design and manufacturing services.



## Advanced Networking Features

- Copper and fiber at 10/25/40/100/200 GbE
- Future-proof scalability with NIC modules
- Advanced LAN bypass
- Network throughput acceleration
- Hardware-assisted cryptographic engine
- Built-in hardware security
- Remote manageability
- Enhanced PoE power management

## Best-In-Class Port Density

Lanner has engineered unprecedented port density for our rackmount network appliances. Utilizing our modular or blade technology, each platform can be configured to your optimal requirements.

## Engineered for Reliable Operation

With redundant power sources, hot-swappable fans and LAN bypass, these network appliances will continue to support your network even when the unexpected occur.

## The Latest and Fastest Processors

The latest Intel® Xeon®, Core™, Celeron®, Atom™ and AMD EPYC™ processors perform network security functions at optimal throughput while at low power. Lanner also designs with NXP® and Broadcom® processors to provide RISC based network platforms.



## 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 Complete Range of Network Appliances

Lanner possesses a wide range of network appliances including budget desktop firewalls with onboard processors, and also advanced hybrid appliances with multiple processors, expansion options, and reassuring redundancy features. Lanner offers both x86 and RISC appliances that can come with a range of acceleration cards and expansion modules to form the perfect appliance.



### 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 identity 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.

## Global Order Fulfillment and RMA

### Worldwide Offices and RMA Centers

With our presence in various continents, we are able to serve our clients worldwide.



### A Complete Service

After we have designed and manufactured your products, we install the required software and ship directly to your customers in your branded packages. Drop shipments can be arranged from our logistics centers worldwide.

Our service allows you to focus on your core competency of software development for the information security industry. We take care of the hardware design, manufacturing, logistics and service. That's our core competency.



#### Quality Control

Lanner's strict and ISO 9001-certified quality testing procedures have been adjusted to comply with standards. Also, as part of our green management plan, initiated early 2006, all Lanner products meet RoHS certification requirements.



#### Logistics

Successful logistics are reinforced by efficient procedures. Lanner clients' orders can be tracked through the production process by specific numbers allowing for routine project updates. Order traceability can guarantee consistency and quality.



#### Technical Support

Lanner provides full RMA service and technical support to fulfill customer service. For the systems built with Intel® platforms, we offer up to 7-year lifecycle support. Longer lifecycle support can also be arranged by jointly planned inventories.





### NCA-1040

Intel Atom X6413E/N6415 CPU with  
4 GbE RJ45 Ports



### NCA-1515

Intel Denverton CPU with  
6x GbE RJ45, 2x GbE SFP Ports



### NCA-1516

Intel Denverton-R CPU  
6 GbE RJ45 (w/ 2 PoE+ Option)  
2 10GbE SFP+ Ports



### NCA-1526

Intel Atom Parker Ridge with  
4 GbE RJ45, 2 10G SFP+,  
2 GbE RJ45 (PoE+ Support Optional)



### VP-200

NXP LS1046A SoC with  
2 SFP/RJ45 GbE Combo Ports,  
4 RJ45 GbE Ports

## Low-footprint Intel CPU Engine

To address 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 Wifi concurrent, dual LTE, expansion slots for Wi-Fi/5G/LTE/Wifi6 RF modules and external antenna 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



NEW

Feature	Description	NCA-1040	NCA-1040SE
<b>Form Factor</b>		Desktop	Desktop
<b>Platform</b>	Processor Options	Intel® Atom X6413E (Elkhart Lake)	Intel® Atom X6413E Or Celeron N6210 (Elkhart Lake)
	CPU Socket	onboard	onboard
	Chipset	SoC	SoC
	Security Acceleration	N/A	N/A
<b>BIOS</b>		AMI SPI Flash BIOS	AMI SPI Flash BIOS
<b>System Memory</b>	Technology	DDR4 3200 MHz SODIMM	DDR4 3200 MHz SODIMM
	Max. Capacity	32 GB	32 GB
	Socket	1 x 260-pin SODIMM	1 x 260-pin SODIMM
<b>Networking</b>	Ethernet Ports	4 x GbE RJ45 Intel® i210AT	4x 2.5GbE RJ45 Intel i226V (SKU A: Support For 1x PoE+)
	Bypass	N/A	N/A
	NIC Module Slot	N/A	N/A
<b>LOM</b>	I/O Interface	N/A	N/A
	OPMA Slot	N/A	N/A
<b>I/O Interface</b>	Reset Button	1	1
	LED	Power/Status/Storage/M.2/Mini PCIe	Power/Status/Storage/M.2/Mini PCIe
	Power Button	1	1
	Console	1 x RJ45	1 x RJ45
	USB	1 x USB 3.0	1 x USB 3.0
	LCD Module	N/A	N/A
	Display	1 x Display Port (No Audio)	1 x Display Port (No Audio)
	Power Input	1 x DC Jack With Lock	1 x DC Jack With Lock
<b>Storage</b>	HDD/SSD Support	N/A	N/A
	Onboard Storage	1 x M.2 (SATA)	1 x M.2 (SATA)
	PCIe	N/A	N/A
<b>Expansion</b>	mini-PCIe	1 x Mini-PCIe (PCIe/USB2.0) 1 x M.2 (PCIe/USB 3.0) 3042/3052 B Key 2x Nano SIM	SKU A: 1x Mini-PCIe (USB2.0) SKU A: 1x M.2 (USB 3.1) 3042/3052 B Key SKU A: 2 x Nano SIM
<b>Miscellaneous</b>	Watchdog	Yes	Yes
	Internal RTC with Li Battery	Yes	Yes
	TPM	N/A	N/A
<b>Cooling</b>	Processor	Passive CPU heatsink	Passive CPU heatsink
	System	Fanless (Default); 1 x 5-pin Fan Connector (Optional)	Fanless (Default); 1 x 5-pin Fan Connector (Optional)
<b>Environmental Parameters</b>	Temperature	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
<b>System Dimensions</b>	(WxHxD)	183 x 32 x 168 mm	183 x 32 x 168 mm
	Weight	0.9 kg	0.9 kg
<b>Power</b>	Type / Watts	60W Power Adapter	40W Power Adapter
	Input	AC 100~240V @50~60Hz	AC 100~240V @50~60Hz
<b>Approvals and Compliance</b>		RoHS, CE/FCC Class B (Class A with PoE), UL, VCCI, UKCA	RoHS, CE/FCC Class B (Class A with PoE), UL, VCCI, UKCA



NCA-1513	NCA-1515	NCA-1516
Desktop	Desktop	Desktop
Intel® Atom® C3000 (Denverton)	Intel® Atom® C3000 (Denverton)	Intel® Atom® C3000 (Denverton)
onboard	onboard	onboard
SoC	SoC	SoC
Intel® QuickAssist Technology (by SKU)	Intel QuickAssist Technology	Intel QuickAssist Technology
AMI SPI Flash BIOS	AMI SPI Flash BIOS	AMI SPI Flash BIOS
DDR4 2133/1866 MHz ECC/Non-ECC SODIMM (By SKU)	DDR4 2400/2133/1866 MHz ECC/Non-ECC SODIMM (By SKU)	DDR4 2400/2133/1866 MHz ECC/Non-ECC SODIMM (By SKU)
32 GB	32 GB	64 GB
1 x 260-pin SODIMM	2 x 260-pin SODIMM	2 x 260-pin SODIMM
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)	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
2 pair Gen3 (By SKU)	1 pair Gen3 (By SKU)	N/A
N/A	N/A	N/A
N/A	1 x RJ45 (By SKU)	N/A
N/A	Yes	N/A
1	1	1
Power/Status/Storage	Power/Status/Storage	Power/Status/Storage
1	1	1
1 x RJ-45	1 x RJ-45	1 x RJ-45
2 x USB 2.0 or 2 x USB 3.0 (by SKU)	2 x USB 2.0	2 x USB 3.0
N/A	N/A	N/A
N/A	N/A	N/A
1 x DC Jack	1 x DC Jack	2 x DC Jack (Optional 2nd DC Jack)
1 x 2.5" Bay (Optional)	1 x 2.5" Bay (Optional)	N/A
1 x EMMC 8GB (SKU A/B/C/D)	1 x EMMC 8GB	1 x EMMC 8GB (By Request)
N/A	N/A	N/A
1 x Mini-PCIe (PCIe/USB2.0), 1 x M.2 2280/2242 (SATA3.0), 1x M.2 3042 (USB3.0), 1 x Nano SIM for M.2	2 x Mini-PCIe (PCIe/USB2.0) 1 x M.2 2242 B Key (USB3.0) 2 x Nano SIM for M.2 (Using Optional LTE Module)	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) 1x M.2 2242 B Key (SATA) 2 x Nano SIM (Using Optional LTE Module)
Yes	Yes	Yes
Yes	Yes	Yes
Yes	Yes	Yes
Passive CPU heatsink	Passive CPU Heatsink	Passive CPU Heatsink
1 x Cooling Fan w/ Smart Fan	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)
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
231 x 44 x 200 mm	231 x 44 x 200 mm	231 x 44 x 200 mm
1.2 kg	1.2 kg	1.2 kg
40W Power Adapter	36W or 60W Power Adapter (By SKU)	60W Power Adapter
AC 100~240V @50~60Hz, 1.7A	AC 100~240V @50~60 Hz	AC 100~240V @50~60 Hz
RoHS, CE/FCC Class B, UL	RoHS, CE/FCC Class A, UL	RoHS, CE/FCC Class B, UL



Feature	Description	NCA-1525	NCA-1526	VP-200
<b>Form Factor</b>		Desktop	Desktop	Desktop
<b>Platform</b>	Processor Options	Intel® Atom® C5325/C5315 (Parker Ridge)	Intel® Atom® C5325/C5315 (Parker Ridge)	NXP LS1046A
	CPU Socket	onboard	onboard	onboard
	Chipset	SoC	SoC	SoC
	Security Acceleration	Intel® QuickAssist Technology	Intel QuickAssist Technology	N/A
<b>BIOS</b>		AMI SPI Flash BIOS	AMI SPI Flash BIOS	N/A
<b>System Memory</b>	Technology	DDR4 2933/2400 MHz ECC/Non-ECC SODIMM	DDR4 2933/2400 MHz ECC/Non-ECC SODIMM	DDR4 2100 MHz SODIMM
	Max. Capacity	64 GB	64 GB	32 GB
	Socket	2 x 260-pin SODIMM	2 x 260-pin SODIMM	1 x 260-pin SODIMM
<b>Networking</b>	Ethernet Ports	4x GbE RJ45, 2x 10G SFP+, 2x 2.5G RJ45 (PoE+ Support Optional)	4x GbE RJ45, 2x 10G SFP+, 2x GbE RJ45 (PoE+ Support Optional)	2x SFP/RJ45 GbE Combo Ports, 4x RJ45 GbE Ports (2x PoE+ Support Optional)
	Bypass	N/A	N/A	1 x Pair of Gen 3 (By SKU)
	NIC Module Slot	N/A	N/A	N/A
<b>LOM</b>	I/O Interface	N/A	N/A	N/A
	OPMA Slot	N/A	N/A	N/A
<b>I/O Interface</b>	Reset Button	1	1	1
	LED	Power/Status/Storage	Power/Status/Storage	Power/Status/Storage
	Power Button	1	1	1
	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
	LCD Module	N/A	N/A	N/A
	Display	N/A	N/A	N/A
	Power Input	2 x DC Jack With Lock	2 x DC Jack	2 x DC Jack
<b>Storage</b>	HDD/SSD Support	N/A	N/A	1 x M.2 B+M Key 2280 SSD (SATA Signal)
	Onboard Storage	N/A	N/A	1 x eMMC 16GB
	PCIe	N/A	N/A	N/A
<b>Expansion</b>	mini-PCIe	1 x Mini-PCIe (PCIe/USB2.0) 2 x M.2 3042/3052 B Key (USB3.0) 1 x M.2 2280 B Key (SATA), 2 x Nano SIM for M.2	1 x Mini-PCIe (PCIe/USB2.0) 2 x M.2 3042/3052 B Key (USB3.0) 1 x M.2 2280 B Key (SATA) 2 x Nano SIM for M.2	2x Nano SIM 2 x M.2
<b>Miscellaneous</b>	Watchdog	Yes	Yes	Yes
	Internal RTC with Li Battery	Yes	Yes	Yes
	TPM	Yes	Yes	Yes
<b>Cooling</b>	Processor	Passive CPU heatsink	Passive CPU Heatsink	Passive CPU Heatsink
	System	2 x Cooling Fan w/ Smart Fan	2 x Cooling Fan w/ Smart Fan	Fanless
<b>Environmental Parameters</b>	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
<b>System Dimensions</b>	(WxHxD)	251 x 44 x 200 mm	251 x 44 x 200 mm	231 x 44 x 200 mm
	Weight	TBD	TBD	2 kg
<b>Package Dimensions</b>	(WxHxD)	TBD	TBD	TBD
	Weight	TBD	TBD	TBD
<b>Power</b>	Type / Watts	90W Power Adapter	90W Power Adapter	40W Power Adapter
	Input	AC 100~240V @50~60 Hz	AC 100~240V @50~60 Hz	AC 100~240V @50~60 Hz
<b>Approvals and Compliance</b>		RoHS, CE/FCC Class B (Without PoE+), UL, VCCI, UKCA	RoHS, CE/FCC Class B (Without PoE+), UL, VCCI, UKCA	RoHS, CE/FCC Class B (Without PoE), UL, UKCA, VCCI (By Request)

# IT Security

## Rackmount Network Appliances



### NCA-4030

Intel® Ice Lake D CPU  
4 1G RJ45, 1 2.5G RJ45, 1 1G RJ45 (LOM), 4 10G SFP+



### NCA-5710

Intel® Skylake-SP/Cascade Lake-SP CPU  
Onboard IPMI Chip, 4 10G SFP+, 4 NIC Slots



### NCA-2513

Intel® Atom™ C3000 2~8 Cores (Denverton-R)  
6x GbE RJ45 or 8x GbE RJ45 (By SKU)

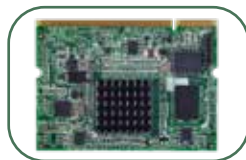


### NCA-6530

Intel® Sapphire Rapids-SP CPU  
8 NIC Slots, 24 288-pin DDR5 4800MHz R-DIMM



• Support Intel Xeon/Core CPUs



• IPMI



• Redundant Power



• Modular Fans

### 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.

### Scalable Modules and Cards

Scale the performance and throughputs up for your network appliances with over 20 different copper, fiber bypass Ethernet modules including 1/10/40/50/100GbE 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™ 7000 Series CPU

With the flexibility to choose from 8 to 64 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.

### Data Plane Development Kit (DPDK)

Lanner appliances support Intel DPDK that manages communication workload consolidation to accelerate network packet processing performance by 3 to 4 times.

### Intel Virtualization Technology

Lanner appliances come with Intel® VT (VT-x, VT-d and SR-IOV) 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
<b>Form Factor</b>		1U 19" Rackmount	1U 19" Rackmount	1U 19" Rackmount
<b>Platform</b>	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
<b>BIOS</b>		AMI SPI Flash BIOS	AMI SPI Flash BIOS	AMI SPI Flash BIOS
<b>System Memory</b>	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	2x 288-pin DIMM	4 x 288-pin DIMM
<b>Networking</b>	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	8x GbE RJ45 Intel i350-AM4, 4x 10G SFP+ Intel SoC Integrated MAC, 4x 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
<b>LOM</b>	I/O Interface	1 x RJ45 (By SKU)	N/A	Optional
	OPMA Slot	Yes	N/A	N/A
<b>I/O Interface</b>	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	1x VGA From OPMA Slot (Optional)
	Power Input	AC power inlet on PSU	AC Power Inlet on PSU	AC Power Inlet on PSU
<b>Storage</b>	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	1x M.2 (SATA III/PCIe*2 Signal)
<b>Expansion</b>	PCIe	1 x PCI-E*8 HH/HL (Optional)	1 x PCI-E*8 or *4 FH/HL (By SKU)	1x PCI-E*8 Or 2x PCI-E*4 FH/HL (By Project)
	mini-PCIe	N/A	Yes (By SKU)	1x Mini-PCIe (PCIe/USB2.0)
<b>Miscellaneous</b>	Watchdog	Yes	Yes	Yes
	Internal RTC w/ Li Battery	Yes	Yes	Yes
	TPM	Yes (optional)	Yes	N/A
<b>Cooling</b>	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
<b>Environmental Parameters</b>	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
<b>System Dimensions</b>	(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
<b>Package Dimensions</b>	(WxDxH)	540 x 500 x 230 mm	540 x 500 x 230 mm	TBD
	Weight	8 kg	8 kg	TBD
<b>Power</b>	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
<b>Approvals and Compliance</b>		RoHS, CE/FCC Class A, UL	RoHS, CE/FCC Class A, UL	RoHS, CE/FCC Class A, UL



NCA-4220	NCA-4240	NCA-4030	NCA-4035
1U 19" Rackmount	1U 19" Rackmount	1U 19" Rackmount	1U 19" Rackmount
Intel® Xeon E or Core™ i7/i5/i3 or Pentium® Or Celeron® (Coffee Lake)	Intel® Alder Lake S	Intel® Xeon® D-1700 4~10 Cores	Intel® Xeon® D2700 4~20 Cores
1 x LGA1151	1 x LGA1700	1 x Onboard LGA1150	1 x Onboard
Intel® H310/Q370/C246	Intel® H610E/Q670E	N/A	N/A
N/A	N/A	Intel® QuickAssist Technology (By SKU)	Intel® QuickAssist Technology (By SKU)
AMI SPI Flash BIOS	AMI SPI Flash BIOS	AMI SPI Flash BIOS	AMI SPI Flash BIOS
DDR4 2666MHz ECC(By CPU for C246 only) or Non-ECC UDIMM	DDR5 4800 Non-ECC UDIMM	DDR4 2933MHz REG or ECC/Non-ECC RDIMM	DDR4 3200 MHz REG ECC Or Non-ECC UDIMM/RDIMM
32GB	64GB	128GB	256GB
2 x 288pin DIMM	2 x 288pin DIMM	4 x 288-pin DIMM	4 x 288-pin DIMM
8 x Or 6 x GbE RJ45 Intel® i210	1 x GbE RJ45 With LED MGMT Via i219 8 x 2.5GbE RJ45 With LED Via i226	4 x 1G RJ45, 1 x 2.5G RJ45, 1 x 1G RJ45 (LOM), 4 x 10G 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)
Up to 3 pairs Gen3 (By SKU)	3 Pairs Gen3 SE	N/A	N/A
1	1	2	2
-	N/A	1 x RJ45	1 x RJ45
-	N/A	Yes	Yes
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
2x20 character LCM 4 x keypads	2x20 character LCM 4 x keypads	N/A	N/A
HDMI (Optional)	N/A	N/A	N/A
AC power inlet on PSU	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" bays	N/A
1 x M.2	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	2 x M.2 2280 / 1 x M.2 2242
1 x PCI-E*8 FH/HL (Optional)	1 x PCIe x8 Gen4 FH/HL (SKU B Only)	1 x PCI-E*8 FH/HL (Optional), 1 x PGN LTE Module (Optional)	1 x Gen4 PCIe*8 & 1 x Gen4 PCIe*16
1 x Mini-PCIe (PCIe / USB2.0)	1 x M.2 2230 E Key (SKU B Only)	N/A	N/A
Yes	Yes	Yes	Yes
Yes	Yes	Yes	Yes
Yes (optional)	N/A	Yes (optional)	Yes
Passive CPU heatsink	Passive CPU heatsink	Passive CPU heatsink	Passive CPU heatsink
3 x Or 2 x cooling fans with smart fan	4 x cooling fans with smart fan	3 x cooling fans with smart fan	4 x cooling fans with smart fan
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	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	5~90% Operating 5~95% Non-Operating
438 x 321 x 44 mm	438 x 321 x 44 mm	438 x 510 x 44 mm	438 x 44 x 321 mm
7.5 kg	19.3 kg	9.4 kg	8.6 kg
540 x 500 x 230 mm	588 x 494 x 185 mm	739 x 215 x 582 mm	739 x 215 x 582 mm
8.5 kg	TBA	13 kg	15 kg
220W ATX Single PSU	220W ATX Single PSU	450W 1+1 Redundant PSU	300W 1+1 Redundant PSUs Or 350W Single PSU
AC 100~240V @50~60 Hz	AC 90~264V @47~63 Hz	AC 90~264V @47~63 Hz	Redundant: AC 100~240V @50~60Hz Single: AC 100~240V @47~63Hz
RoHS, CE/FCC Class A, UL	RoHS, CE/FCC Class A, UKCA, UL	CE/FCC Class A, UL, RoHS	CE/FCC Class A, UL, RoHS

# Rackmount Network Appliances



Feature	Description	NCA-5230	NCA-5530	NCA-5540
<b>Form Factor</b>		1U 19" Rackmount	1U 19" Rackmount	1U 19" Rackmount
<b>Platform</b>	Processor Options	Intel® Core® i9/i7/i5/i3 Or Xeon W Processors (Comet Lake-S)	3rd Gen Intel® Xeon® Scalable CPU (Ice Lake SP)	4th Gen Intel® Xeon® Scalable processor (Sapphire Rapids SP)
	CPU Socket	1 x LGA1200	1 x LGA4189	1 x LGA4677
	Chipset	Intel® W480E	Intel® C621A/C627A	Intel® Emmitsburg PCH
	Security Acceleration	N/A	Intel® QuickAssist Technology (By SKU)	Intel® QuickAssist Technology
<b>BIOS</b>		AMI SPI Flash BIOS	AMI SPI Flash BIOS	AMI SPI Flash BIOS
<b>System Memory</b>	Technology	DDR4 2933/2666 MHz ECC/Non-ECC UDIMM	DDR4 3200/2933/2666/2400/2133/MHz RDIMM/LRDIMM	DDR5 4800MHz REG DIMM
	Max. Capacity	128GB	512GB	768GB
	Socket	4 x 288-pin DIMM	8 x 288pin DIMM	12 x 288pin DIMM
<b>Networking</b>	Ethernet Ports	8x GbE RJ45 8x SFP	1 x GbE RJ45 Intel i210	2 x GbE RJ45 Intel i226 LM
	Bypass	4 Pairs (For RJ45 Copper Only)	Depends on NIC Module Specifications	Depends on NIC Module Specifications
	NIC Module Slot	2	4 or 2	4 or 2
<b>LOM</b>	I/O Interface	Optional	1 x RJ45 (Optional) *Share with ETH0	Yes, 1x LOM Port (Via BMC Chip)
	OPMA Slot	Yes	Yes	Yes (Support AST2600 IPMI Card)
<b>I/O Interface</b>	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	4 x Keypads, 16x2 Character LCD	N/A (Optional)	N/A (Optional)
	Display	VGA (Optional)	1 x VGA, From OPMA Slot (Optional)	Yes (VGA Via IAC-AST2600 IPMI Card)
<b>Storage</b>	HDD/SSD Support	2 x 2.5" Bays	2 x 2.5" Internal	2 or 4 x 2.5" Internal
	Onboard Storage	1 x M.2 (SATA) 2242/2280 B+M key	1 x M.2-2280 (SATA)	1 x M.2 (SATA) 2280 B+M Key 2 x M.2 NVME (PCIe) 2280 M Key
<b>Expansion</b>	PCIe	1 x PCI-E*8 FH/HL (Optional)	N/A (Default); 1x PCI-E*16 FH/HL (By Project)	1 x PCI-E*8 HH/HL (Optional)
	mini-PCIe / NVME	N/A	N/A	N/A
<b>Miscellaneous</b>	Watchdog	Yes	Yes	Yes
	Internal RTC with Li Battery	Yes	Yes	Yes
	TPM	Yes	Yes (Optional TPM2.0)	Yes (Optional TPM2.0)
<b>Cooling</b>	Processor	Passive CPU Heatsink	Passive CPU heatsink	Passive CPU heatsink
	System	4 x Cooling Fans with Smart Fan	5 x Or 4 x Individual Hot-swappable Cooling Fans w/ Smart Fan (By SKU)	5 x Smart Fan
<b>Environmental Parameters</b>	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
<b>System Dimensions</b>	(WxDxH)	438 x 468 x 44 mm	438 x 610 x 44mm	438 x 650 x 44 mm
	Weight	7.6 kg	10.5kg	10.5kg
<b>Package Dimensions</b>	(WxDxH)	739 x 582 x 215 mm	739 x 215 x 582mm	TBA
	Weight	15.8 kg	18.5kg	TBA
<b>Power</b>	Type / Watts	350W 1+1 ATX Redundant PSUs (SKU A) 350W Single PSU (SKU B)	550W 1+1 ATX Redundant PSUs	1300W CRPS AC PSU
	Input	TBD	AC 100~240V @47~63Hz	TBA
<b>Approvals and Compliance</b>		RoHS, CE/FCC Class A, UKCA, UL	RoHS, CE, FCC Class A, UL	RoHS, CE/FCC Class A, UKCA, UL



NCA-6040	NCA-6520	NCA-6530
2U 19" Rackmount	2U 19" Rackmount	2U 19" Rackmount
4th Gen Intel® Xeon® Processor Scalable Family (Sapphire Rapids-SP)	3rd Gen Intel® Xeon® Scalable CPU (Ice Lake SP)	4th Gen Intel® Xeon® Processor Scalable Family (Sapphire Rapids-SP)
1 x LGA 4677	2 x LGA4189	2 x LGA 4677
Intel® C741	Intel® C627A	Intel® C741
Intel® QuickAssist Technology	Intel® QuickAssist Technology	Intel® QuickAssist Technology
AMI SPI Flash BIOS	AMI SPI Flash BIOS	AMI SPI Flash BIOS
DDR5 4800MHz RDIMM	DDR4 3200/2933/2666/2400/2133MHz RDIMM/LRDIMM	DDR5 4800MHz RDIMM
768GB	1536GB	1536GB
12 x 288pin DIMM	24 x 288-pin DIMM	24 x 288-pin DIMM
2 x GbE RJ45 With LED Dual MGT By Intel® I226-LM	2 x GbE RJ45 Intel® i350-AM2	2 x GbE RJ45 Intel® i350-AM2
N/A	Depends on NIC Module Specifications	Depends on NIC Module Specifications
8 Or 4	8	8
Yes, 1x LOM Port (Via BMC Chip)	1 x RJ45	1 x RJ45
Yes (Support AST2600 IPMI Card)	IPMI Onboard	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	Yes
VGA (Via IPMI Card)	1 x VGA (Optional)	1 x VGA (Internal Pin Header)
AC power inlet on PSU	AC power inlet on PSU	AC power inlet on PSU
2 x 3.5" Or 2x2.5" HDD/SSD	2x 3.5" or 2.5" Swappable	SKU A & C: 2 x 2.5" Swappable
1 x M.2 (SATA) 2280 B+M Key, 2 x M.2 NVMe (PCIe) 2280 M Key	2x M.2 (NVME); 1x M.2 (SATA)	2x M.2 NVME 2280; 1x M.2 2280 SATA
1 x PCI-E*8 FH/HL (Optional)	N/A (Optional) SKU A: 1x PCIe x16 Gen 4 FH/FL Size Bracket & 1x PCIe x16 Gen 4 FH/HL Size Bracket (Optional) SKU B: 2x PCIe x16 Gen 4 FH/FL Size Bracket	SKU A: N/A (Default); 2x PCIe x16 FH/HL Dual Slots (Optional) SKU C: N/A (Default); 2x PCIe x16 FH/HL Dual Slots (Optional)
N/A	N/A	N/A
Yes	Yes	Yes
Yes	Yes	Yes
Optional	TPM2.0 (Optional)	TPM2.0 (Optional)
Passive CPU heatsink	Passive CPU heatsink	Passive CPU heatsink
4 x Smart Fans	4 x Individual Hot-swappable cooling fan with smart fan	6 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 720 x 88mm	438mm x 760mm x 88mm
24 kg	19.3kg	21.2kg
TBD	588 x 997 x 250mm	588mm x 926mm x 303mm
TBD	32 kg	31.2 kg
1600W CRPS AC PSU	Default: 1300W/2000W 1+1 ATX Redundant PSUs Optional: 1600W 1+1 ATX Redundant PSUs	1600W/2000W 1+1 ATX Redundant PSUs
TBD	AC 90~264V @47~63Hz	AC 200~240V @50~60Hz
RoHS, CE/FCC Class A, UKCA, UL	RoHS/RoHS, CE, FCC Class A, UL	RoHS/RoHS, CE, FCC Class A, UL

# AMD Network Appliances



Feature	Description	NCA-4112	NCA-5310	NCA-6120 <span style="color: red; font-weight: bold;">NEW</span>
<b>Form Factor</b>		1U 19" Rackmount	1U 19" Rackmount	2U 19" Rackmount
<b>Platform</b>	Processor Options	AMD EPYC™ 3000 Series (4~8 Cores)	AMD 3rd Gen EPYC™ Processor Family (Codename Milan)	AMD EPYC 7000 Series With Support For Milan & Rome (64C/128T)
	CPU Socket	SP4r2	SP3	SP3
	Chipset	SoC	N/A	N/A
	Security Acceleration	10Gbps Encryption + 10Gbps Decryption	40Gbps Encryption + 40Gbps Decryption	40Gbps Encryption + 40Gbps Decryption
<b>BIOS</b>		AMI SPI Flash BIOS	AMI SPI Flash BIOS	AMI SPI Flash BIOS
<b>System Memory</b>	Technology	DDR4 2666 MHz ECC/U/R DIMM	DDR4 3200MHz ECC REG DIMM	DDR4 3200MHz ECC REG DIMM
	Max. Capacity	128GB	512GB	1024GB
	Socket	4 x 288-pin DIMM	8 x 288-pin DIMM	16 x 288-pin DIMM
<b>Networking</b>	Ethernet Ports	8 x GbE RJ45 Intel® i350-AM4 2 x 10G SFP+	1 x GbE RJ45 Intel® i210	1 x GbE RJ45 Intel® i210
	Bypass	3 x Pairs of Gen3	N/A	N/A
	NIC Module Slot	1	2 (Default), 2(Optional)	8 Or 4 (By SKU)
<b>LOM</b>	I/O Interface	1 x RJ45	1 x RJ45	1 x RJ45
	OPMA Slot	Yes	Yes	Yes
<b>I/O Interface</b>	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	N/A	N/A
	Display	From OPMA Slot for VGA (Optional)	1 x VGA (Optional)	1 x VGA (Optional)
	Power Input	AC Power Inlet on PSU	AC Power Inlet on PSU	AC Power Inlet on PSU
<b>Storage</b>	HDD/SSD Support	2 x 2.5" Swappable Bays	2 x 2.5" Swappable Bays	SKU A: 4 x 2.5" or 3.5" SKU B: 2 x 2.5" or 3.5"
	Onboard Storage	N/A	1 x 22110/2280 M.2 Slot	1 x M.2 (SATA/PCIe) 2280
<b>Expansion</b>	PCIe	N/A	1 x PCIe*8 FHHL	2x PCIe*8 FHHL or 1x PCIe*16 FHHL
	mini-PCIe / NVME	1 x 2242 M.2, 1 x Mini-PCIe, 1 x LTE (Optional)	N/A	N/A / Max. 1TB
<b>Miscellaneous</b>	Watchdog	Yes	Yes	Yes
	Internal RTC with Li Battery	Yes	Yes	Yes
	TPM	TPM 1.2/2.0	Yes (Optional)	Yes (Optional)
<b>Cooling</b>	Processor	Passive CPU Heatsink	Passive CPU Heatsink	Passive CPU Heatsink
	System	2 x Cooling Fans w/ Smart Fan	5 x Individual Hot-swappable Cooling Fans	4 x Individual Hot-swappable Cooling Fans
<b>Environmental Parameters</b>	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
<b>System Dimensions</b>	(WxDxH)	438 x 431 x 44 mm	438 x 610 x 44 mm	438 x 600 x 88 mm
	Weight	8.6 kg	10.6 kg	24 kg
<b>Package Dimensions</b>	(WxDxH)	582 x 548 x 182 mm	739 x 582 x 215 mm	825 x 600 x 270 mm
	Weight	13 kg	15 kg	26 kg
<b>Power</b>	Type / Watts	300W Redundant PSUs	550W 1+1 ATX Redundant PSUs	850W 1+1 ATX Redundant PSUs
	Input	100~240VAC @50~60Hz, 5~3A	AC 100V~240V @47~63Hz	AC 100V~240V @47~63Hz
<b>Approvals and Compliance</b>		RoHS, CE, FCC, UL	RoHS, CE, FCC, UL	RoHS, CE, FCC, UL





Enhance the performance and bandwidth of your network appliances with Lanner's new swappable network modules. These modules enable higher packet processing for network appliances in applications such as DPI, IPS/IDS and WAN optimization.

Model Name	Ports	Chipset	Bypass
<b>GbE RJ45 Modules</b>			
NCS2-IGM806A	8	i350-AM4	4 Pairs Gen3
<b>GbE SFP Modules</b>			
NCS2-ISM405A	4	i350-AM4	Fiber Bypass
NCS2-ISM802A	8	i350-AM4	N/A
<b>10G RJ45 Modules</b>			
NCS2-ITM401	4	XL710-BM1	N/A
<b>10G Fiber Modules</b>			
NCS2-IXM407	4	XL710-AM2	N/A
NCS2-IXM415	4	E810-AM1	N/A
NCS2-IXM803	8	E810-AM2	N/A
<b>25G Modules</b>			
NCS2-IVM201	2	XXV710-AM2	N/A
<b>40G Modules</b>			
NCS2-IQM201	2	XL710-BM2	N/A
<b>100G Modules</b>			
N2S-IHM203	2	E810-CAM2	N/A
NCS2-IHM204A/B	2/1	E810-CAM2/1	N/A
N2S-MHM203	2	ConnectX-6	N/A
N2S-MHM202A	2	ConnectX-5 EN	N/A

### Processor and Performance

Choose from a wide selection of network modules powered by Intel's latest CPU/chipset technologies, which include Intel® E810/XL710, XXV710, Mellanox® ConnectX® series multi-host Ethernet controller and more.

### Wide Compatibility and Scalability

Lanner offers wide compatibility and scalability with our custom modular design. Our modules are certified with endurance and compatibility tests and are compatible with our existing and future network appliances.

### Module Customizations

Choose from 20+ Ethernet network modules, including RJ-45, fiber, bypass and transmission rates from 1GbE, 10GbE, 25GbE, 40GbE to even 100GbE. Lanner also has PCI-E expansion modules for data storage, Wi-Fi connectivity, video transcoding and more.

### Time to Market

Aiming to accelerate your time-to-market development, Lanner customizes our standard models based on your specific, mission-critical applications.

# Expandable Modular Design

Design and customize your appliances for today's dynamic network environments with the all-new F.A.S.T. Solutions. These **F**lexible, **A**daptable, **S**calable and **T**ransformable multi-purpose solutions are compatible with Lanner appliances and are developed for unleashing, expanding and accelerating networking appliances' connectivity, storage, video transcoding and Open Compute capabilities.

## 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 Smart NIC Module - N2S-MBF201

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



### 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



## 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
- 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-PCIE8X2A

- Double NCS2 NIC Module Slot
- 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 NIC With Intel® Tiger Lake U - 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

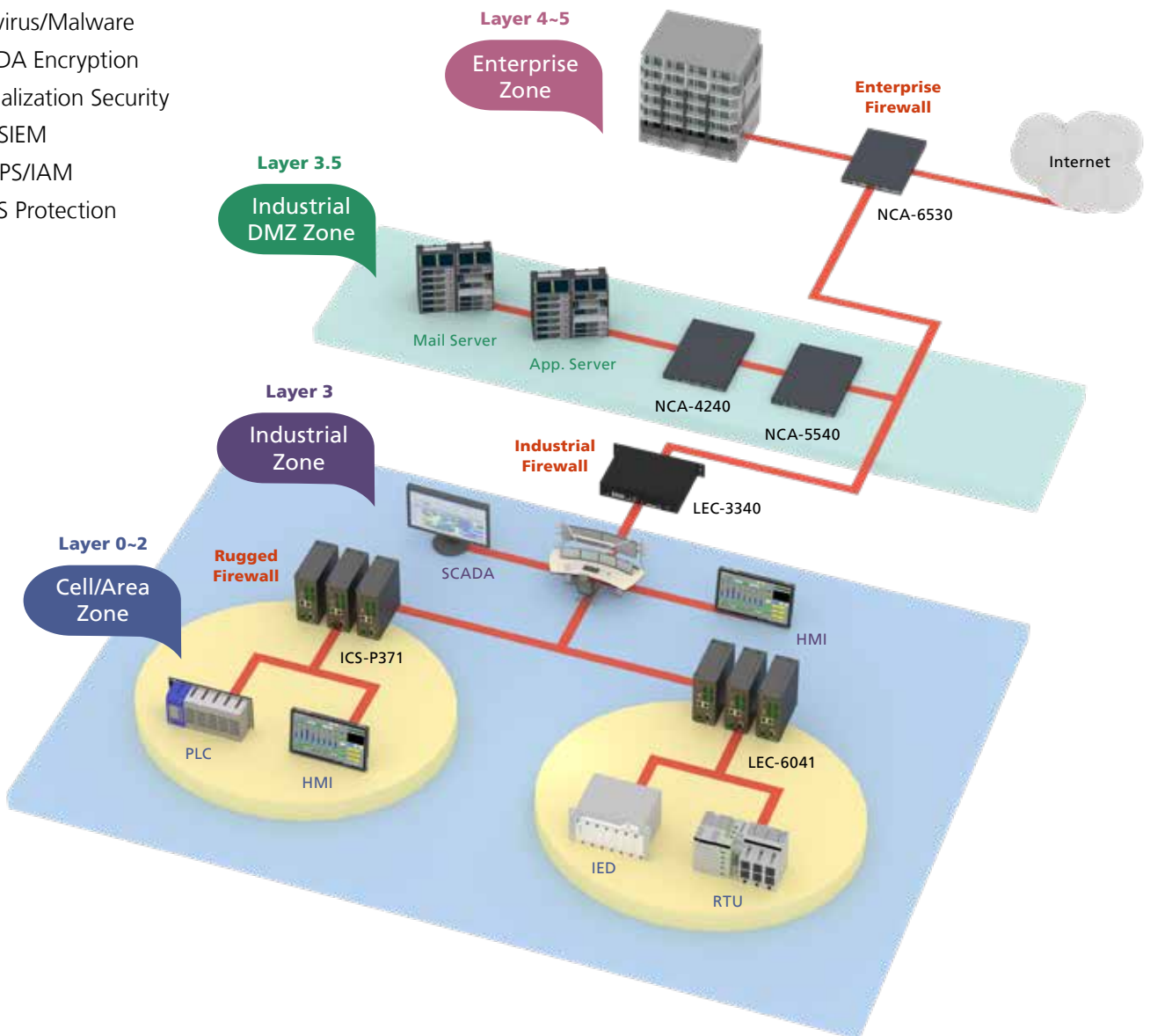
### Lanner ICS / ISD / OT Security Solutions

To fully protect critical infrastructures from advanced cyber malwares, it is necessary to establish multi-layer protections covering both IT and OT networks. In a common digitalized setting for critical infrastructures, OT controls and manages Industrial Zone (Layer 0~3) like instrumentation bus, controller LAN and supervisory HMI and SCADA systems, whereas the IT monitors and authenticates Enterprise Zone (Layer 4~5) like web server, email server, FTP server and enterprise servers. In a more advanced model, an Industrial DMZ Zone (Layer 3.5) is established as an additional layer of protection towards externally interfaced services.

Lanner, the leading hardware solution providers for network security, offers wide-range, customizable hardware platforms designed to protect the communication protocols in both IT and OT domains for critical infrastructures including energy, power, oil and gas industries.

#### IIoT Network Security Gateway

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



# ICS / OT Security Appliances



OT Security Appliance



IEC-61850 OT Security Appliance



IEC-61850 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® E3-1505L V6 or Core i5-7442EQ CPU
	Frequency	1.91 Ghz	Atom x5-E3930: 1.3 GHz, Atom x7-E3950: 1.6 GHz	2.2 GHz or 2.9 GHz
	Core Number	4C	Atom x5-E3930: 2C, Atom x7-E3950: 4C	4C
	BIOS	AMI SPI Flash BIOS	AMI SPI Flash BIOS	AMI SPI Flash BIOS
	Chipset	SoC	SoC	Intel® CM238
Fanless		Yes	Yes	Yes
Memory	Technology	DDR3L 1333 MHz	DDR3L, 1866 MHz	DDR4 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	DP, DVI-D
Ethernet	Controller	Intel® i210	Intel® i210	Intel® i210
	Speed	10/100/1000Mbps	RJ45: 10/100/1000Mbps, SFP: 1 Gbps	Either 1000 Mbps or 10/100 Mbps
	Interface	6032B: 5 x GbE RJ-45, 2 pairs Bypass 6032C: 5 x GbE RJ-45, 1 pair Bypass, 2 x SFP GbE ports 6032D: 5 x GbE RJ-45, 1 pair Bypass 6032F: 3 x GbE RJ-45, 1 pair Bypass, 4 x SFP GbE ports	5 x GbE RJ45, 1 pair LAN Bypass 2 x GbE SFP ports	4 x 1000Base-T 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-SATA
	Installation	-	1 x optional mSATA socket	1 x mSATA socket
	Type	SATA	SATA (Optional)	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 (6032D only)	2x RS-232, DB9 male	2 x DB9 Male (COM1/COM2) 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	2x Type A	-
	USB 3.0	1x Type A	-	5 x type A
	Power On/Off/Reset Button	- / 1x Reset	- / 1x Reset	- / 1x Reset
	LED	Storage, RUN, PWR, LAN LEC-6032 C/F: SFP	PWR, Storage, Run(User defined), 5 x LAN, 2 x SFP	2x Power on for LED (Power1/Power2) in Green 1x Storage access LED for mSATA/HDD1/HDD2 in Green 4x double stack LED for Ethernet active in Yellow; Speed LED 100M in Green; Speed LED 1G: Yellow 2x Double Stack LED for COM1/COM2 TX in Yellow; RX Signal Access in Green 1x Failure LED(User Programmable)in multi-color Red/ Green
Expansion Interface	PCIe/Mini-PCIe	-	1x mini-PCIe with 1 SIM card for 4G LTE module (USB & PCIe signal)	1x PCIe16, 3x PCIe4 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	12-36Vdc	20-54 Vdc	2x 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°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)	78 x 146 x 127 mm	53.5 x 186 x 160 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 4.X, Ubuntu
Certification	EMC	CE,FCC Class A	CE,FCC Class A	CE,FCC Class A
Compliance		RoHS	IEC 61850-3, IEEC 1613	IEC 61850-3, IEEC 1613
Ordering Information		LEC-6032B/C/D/F	LEC-6041A/B	LEC-3340A/B/C/D



# ICS / OT Security Appliances



IIoT Security Appliance



IEC-61850-3  
Security Appliance



IEC-61850-3  
Security Appliance

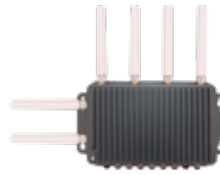


Model Name		ICS-I370	ICS-P371	ICS-P570
Processor System	CPU	Intel® Atom™ x7-E3950 / x5-E3940	Intel Atom X6211E/X6413E/X6425E	AMD Ryzen V1404I
	Frequency	1.60 GHz	1.3~2.0 GHz	Max: 3.6 GHz, Base: 2GHz
	Core Number	4 Cores	2~4 Cores	4 Cores
	BIOS	AMI SPI Flash BIOS	AMI SPI Flash BIOS	AMI SPI Flash BIOS
	Chipset	SoC	SoC	SoC
Fanless		Yes	Yes	Yes
Memory	Technology	DDR3L, non ECC	DDR4, non ECC & IB-ECC	DDR4, 2400 MHz
	Max. Capacity	Up to 8 GB	Up to 32 GB	Up to 32 GB
	Socket	1 x SODIMM	1x 260-pin SODIMM	2 x 260-pin SODIMM
Graphic	Controller	Intel HD Graphics 500	N/A	<b>Vega 8 Graphics</b>
	Interface	1 x DP port	1 x internal DP pin-header	1 x internal HDMI pin-header
Ethernet	Controller	LAN3 & LAN4 by using Intel i210-IS/IT/AT ; LAN1 & LAN2 by using Intel i210-IT /AT	Intel i226T/i210IS	Intel i210-IT / i210IS
	Speed	10/100/1000Mbps	RJ45: 100M/1G/2.5Gbps, SFP: 1 Gbps	RJ45: 100M/1G/2.5Gbps, SFP: 1 Gbps
	Interface	8x, 6x or 4x GbE RJ45 ports SKU C,D,F plus 2x GbE SFP	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, 1 x M.2 M Key 2242	1 x M.2 M Key 2242
	Type	mSATA/SATA	SD	SD
	Installation	1 x 2.5" storage drive (design reserved)	1 x Micro SD reader	1 x Micro SD reader
I/O	Serial/Console Port	1 x RS-232, DB9 male	1 x RS-232, DB9 male	1 x RS-232, DB9 male
	Digital I/O	2 x DIO	2 x Isolated DIO	2 x Isolated DIO
	USB	2x USB 3.0 type A	1x USB 3.0, 1x USB 2.0 type A	1x USB 3.0
	Power On/Off/Reset Button	Default H/W reset, selectable by jumper to SW reset	Reset button	Reset button
	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	M.2 B-key for LTE/5G sub6 with dual SIM 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 DC input from 12~36V	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 ~ 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	Win 10 IoT	Windows 10/11 IoT	N/A
	Linux	Linux Kernel 3.x or later	Linux Kernel 2.6X or later	Linux Kernel 2.6X or later
Certification	EMC	CE/FCC Class A	FCC/CE Class A, UL (IEC-62368), C1D2	FCC/CE Class A, UL (IEC-62368)
Compliance		UL	IEC 61850-3, IEEE 1613	IEC 61850-3, IEEE 1613
Ordering Information		ICS-I370A/B/C/D/E/F	ICS-P371A/B/C/D/E/F	ICS-P570A/B

# ICS / OT Security Appliances



Rugged Wireless Gateway



IP67 Wireless Gateway



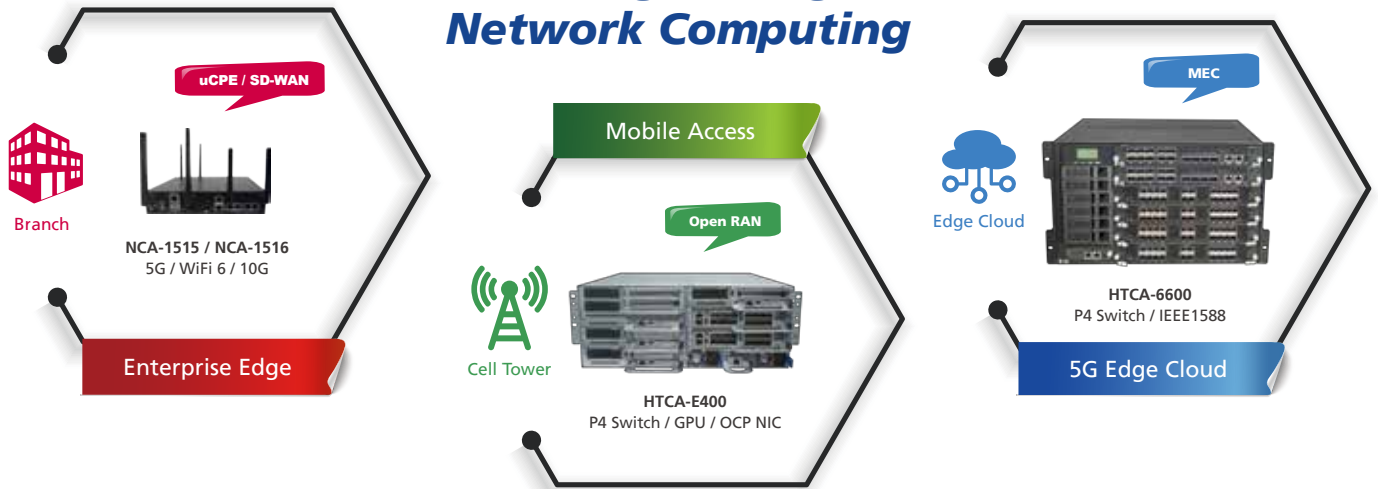
Rail Cyber Security Appliance

Model Name		NCR-1510	ISD-O370	ICS-R372
Processor System	CPU	Intel® Denverton C3308/C3508/C3708	Intel® Denverton C3708/C3808	Intel Apollo Lake X7-E3950
	Frequency	1.6 ~ 1.7 GHz	1.7~2.0 GHz	1.6 GHz
	Core Number	2~8 Cores	8~12 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 2400MHz ECC/Non-ECC	DDR4 up to 2133 MT/s ECC SODIMM	LPDDR4 up to 2400 MHz
	Max. Capacity	SKU A/D: 32GB, SKU B/C/E/F:64GB	64 GB, Deafult ECC RAM 16GB x1	Up to 8GB (Factory default: 8GB pre-installed)
	Socket	SKU A/D:1x 260-pin SODIMM, SKU B/C/E/F:2x 260-pin SODIMM	2x 260-pin SODIMM	1 x 260-pin SODIMM
Graphic	Controller	N/A	N/A	Intel integrated HD Graphics 505
	Interface	N/A	N/A	2 x HDMI
Ethernet	Controller	4 x GbE RJ45 Intel® SoC Integrated MAC 2 x SFP Intel® i210 (By SKU) or 2 x GbE RJ45 Intel i210 (By SKU)	4x or 6x Ethernet Ports, support SR-IOV, GbE PoE+ & 2.5GbE LANs (By SKU), by M12 X-coded 8-pin Female Connector with Isolation 1.5KVDC	Intel® i210-IT
	Speed	10/100/1000Mbps	10/100/1000Mbps	10/100/1000Mbps
	Interface	6x or 4x RJ45 2 x GbE SFP (By SKU)	4x or 6x Ethernet Ports, by M12 X-coded 8-pin Female Connector with Isolation 1.5KVDC	Up to 6 x Ethernet ports with M12 X-coded connectors
	Bypass	1 pair Gen3	N/A	N/A
Storage	Type	SATA	eMMC	m-SATA
	Installation	1 x 2.5" Bay (Optional)	On-board eMMC 128GB TLC	1 x mSATA socket
	Type	N/A	M.2	SATA II
	Installation	N/A	1x M.2 2242 B key	Internal 2.5" drive bay x 1
I/O	Serial Port	N/A	1 x RS232/485 by M12 X-coded 8pin Female connector with isolation 1.5KVDC	N/A
	ESD Protection	N/A	1.5KVDC	-
	Isolation Protection	N/A	Yes	-
	Digital I/O	N/A	N/A	-
	USB 2.0	1 x Mini USB for console	1 x USB 2.0 by M12 A-coded 8pin Male connector	4 x type A
	USB 3.0	2 x USB 3.0 (By SKU)	N/A	-
	Power On/Off/Reset Button	1x DC Jack, 1x Reset Button	N/A	
Expansion Interface	PCIe/Mini-PCIe	SKU A/B/D/E: 1x M.2 B key 3042 for LTE, 2242 SSD with Nano-SIM; 1x Mini-PCIe for Wi-Fi,LTE with Nano-SIM SKU C/F: 1x M.2 B key 3042 for LTE, 2242 SSD with Nano-SIM; 2x Mini-PCIe for Wi-Fi,LTE with Nano-SIM	1x M.2 304(5)2 B Key socket for 5G 1x M.2 2230 E Key socket for WiFi 6 Mini-SIM & 1x eSIM (reserved)	2x M.2 3042 B Key
		Watchdog Timer	Yes	Yes
Power	Power Supply Voltage	9~54 VDC	DC-IN, Up to 130W, Rated 24-36Vdc (range 9-50Vdc)	SKU A: Input Rated: 24~36Vdc, SKU B: Input Rated: 72~110Vdc
	Connector	2-pin terminal block	M12 K-coded 5pin Male connector	M12 K-coded
Environment	Operating Temperature	-40~70°C Operating (SKU A/B) -40~60°C Operating (SKU C)	-40~70°C Operating (SKU D & F) -40~60°C Operating (SKU C & E)	-40°C~70°C (-40~158°F)
	Storage Temperature	-40~85°C (-40~185°F)	-40~85°C Ambient storage	-40~85°C (-40~185°F)
	Relative Humidity	5~90% Operating 5~95%, Non-Operating	5~90% Operating 5~95% Non-Operating	5%~95%, Non-condensing
Mechanical	Dimension (W x H x D)	310 x 44 x 240 mm	370 x 210 x 83mm	272.4 x 88.3 x 228 mm
	Construction	Aluminum + Steel	Aluminum + Steel	Aluminum + Steel
	Weight	3 kg	4.6 kg	7 kg
	Mounting	Wallmount	Wallmount	Wallmount
Driver Support	Microsoft Windows	Windows: Win10 IOT	N/A	Windows: Win10 IOT
	Linux	Linux: Redhat Enterprise 5, Fedora 14. Linux Kernel 2.6.18 or later	Linux Kernel	Linux: Redhat Enterprise 5, Fedora 14. Linux Kernel 2.6.18 or later
Certification	EMC	CE/FCC Class A	CE/FCC Class A	E13, CE Class A, FCC Class A, RoHS
Compliance		RoHS	UL 62368-1, CB, IP67, MIL-STD-810G	MIL-STD-810G, EN50155, EN50121-3-2, EN50121-4, EN50125, EN 45545
Ordering Information		NCR-1510 A/B/C/D/E/F	ISD-O370 C/D/E/F/G/H/J/K/L	ICS-R372 A/B

# CT Security

## Hyper Converged Platform

### Driving 5G Edge Network Computing



With the advances in networking technologies like SDN and NFV, communication service providers and carriers benefit from the flexibility and the agility to evolve their new services. Designed for next generation network virtualization, Lanner provides carrier-grade, NEBS-compliant communication platforms featuring extreme computing power, modular I/O flexibility, WiFi/LTE connectivity and full redundancy design. These high-availability SDN/NFV ready platforms are ideal to work as virtual CPE, virtual Router, NFVi appliance and MEC platforms for today's telecom environments.

#### SD-WAN uCPE



uCPE devices for SD-Security, SD-WAN and other VNF in access networks

#### Hyper Converged Infrastructure



HCI-ready platforms with multi-node compute, switching and storage in one single appliance

#### Mobile Edge Computing



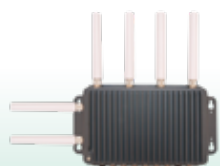
MEC servers deployed at edge data center for ultra-low latency, high bandwidth content delivery

#### 5G Edge Open RAN



NEBS compliant network platforms for virtualized cloud-based radio access networking at CORD

#### Outdoor Edge Computing



5G/-WiFi 6 ready platforms for telco central offices, data centers in core networks

#### vRouter vBNG

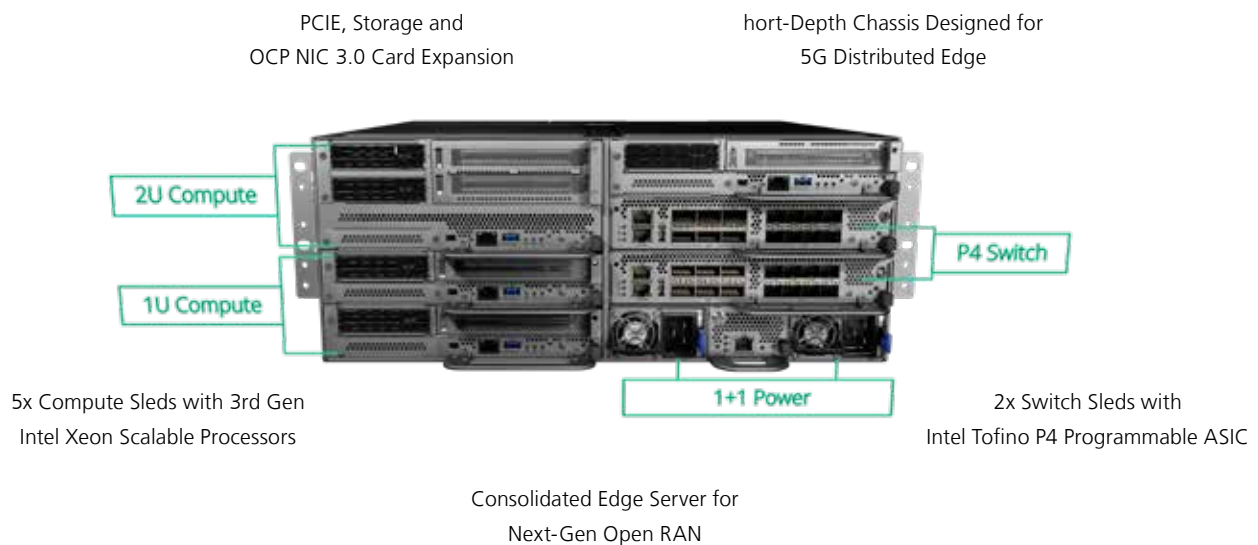


Customizable and scalable whitebox hardware platforms for vRouter and vBNG

# HTCA-E400





## Consolidated Edge Server for Open RAN

Powered by 5x Intel Xeon Scalable Processors, Lanner HTCA-E400 is a consolidated hyper-converged edge server specifically designed for OpenRAN infrastructure. With support of Intel Tofino P4 and FPGA/GPU acceleration, the scalable HTCA-E400 edge compute platform features programmable, intelligent switching capability that can offload open architecture CPU and is cost-effective in the long term through supporting protocol-independent and multi-Tbps networking performance without being compromised by hardware bottleneck.



### Compute and Switch Sleds

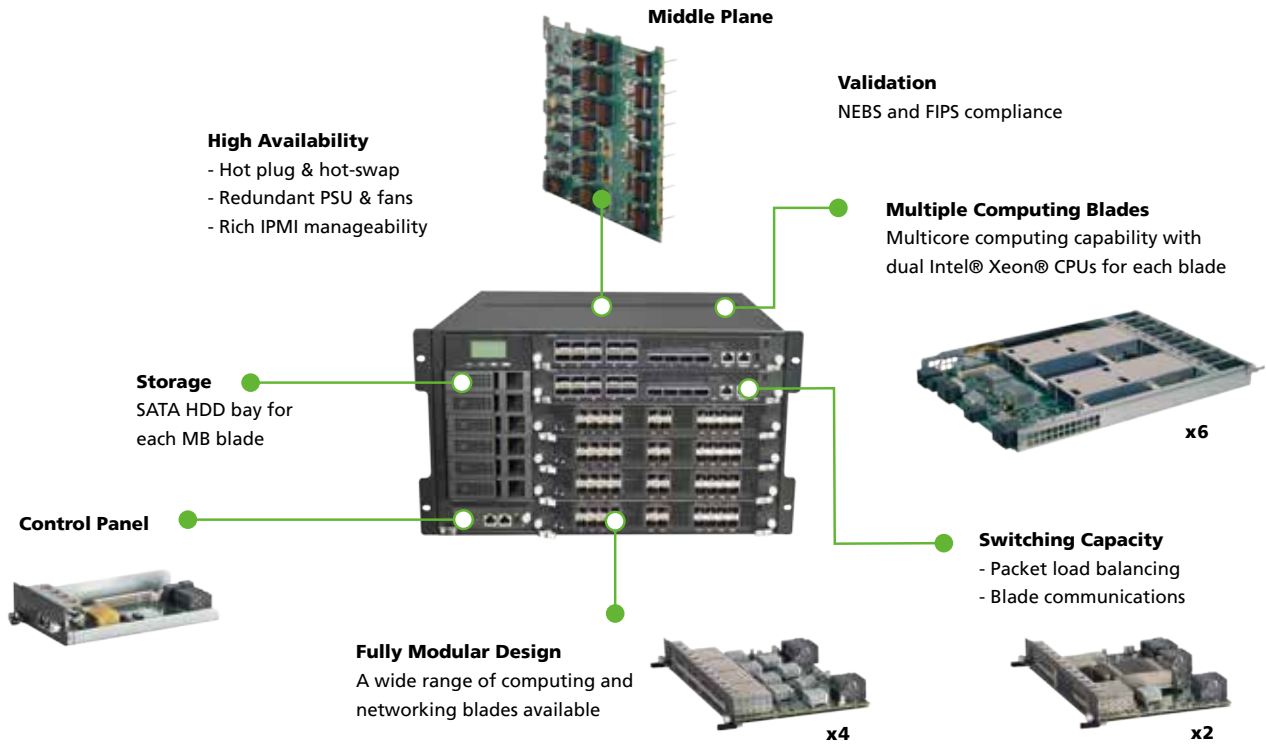
Lanner HTCA-E400 compatible and swappable sleds lineup provide enhanced redundancy, interoperability, flexibility, bandwidth and performance boosts.

Blades	Picture	Features/Ports	Processor
<b>HTCA-E400</b>		HybridTCA™ 4U telecom network appliance chassis	N/A
<b>HMB-E100</b>		1U Compute sled for HTCA-E400	Intel Ice Lake
<b>HMB-E200</b>		2U Compute sled for HTCA-E400	Intel Ice Lake
<b>HLM-E110</b>		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.

# HybridTCA Architecture

Lanner's HybridTCA Platforms integrate control, management and data processing in one system and have advantages over the prevalent AdvancedTCA infrastructure in aspects of hardware design, customization options and cost/energy efficiency.



## Compute and Networking Blades

Lanner HTCA-compatible and swappable blades lineup provide enhanced redundancy, interoperability, flexibility, bandwidth and performance boosts.

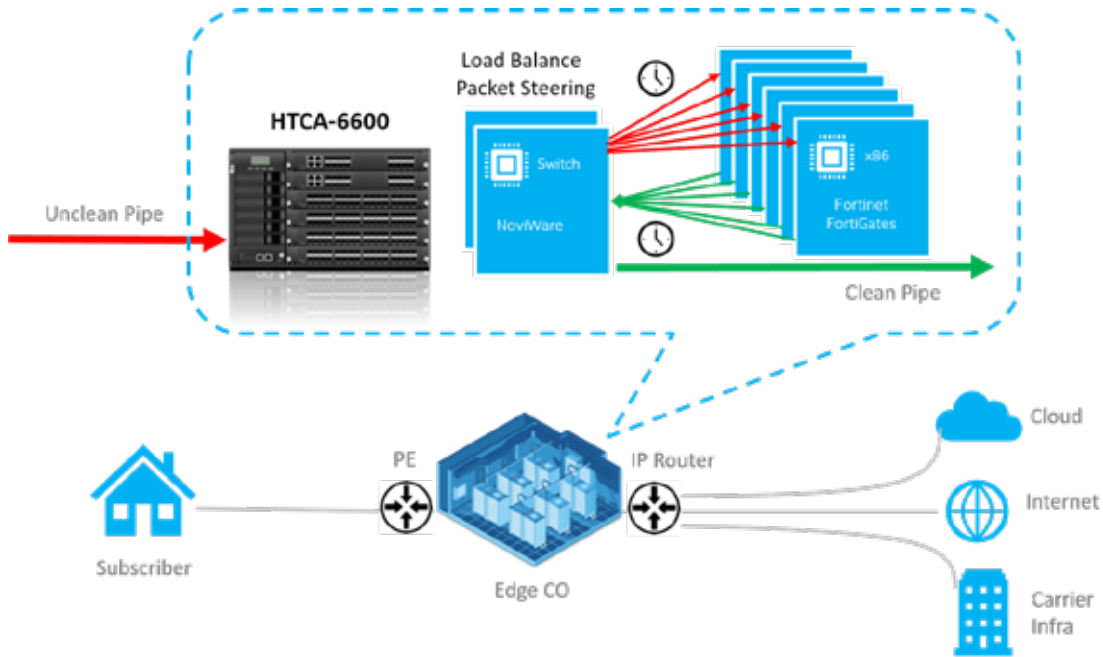
Blades	Picture	Features/Ports	Chipset
<b>NEW</b> HMB-6130		2 x 4th Gen Intel® Xeon® Scalable Processor (Sapphire Rapids-SP)	Intel C741
HCM-1030		20 port 10GbE SFP+	Intel XL710
<b>NEW</b> HDM-1006		Hot Swappable 6x NVMe SSD Trays Max up to 3.2TB/18W NVMe SSD	N/A
HLM-1101		14x QSFP28 Ports	Barefoot Tofino Switch
HLM-1021		2.0T Bandwidth Fabric Interface Switch 2 x 100G QSFP28, 16x 25G SFP28	Broadcom BCM56873 (Trident 3)
<b>NEW</b> 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.



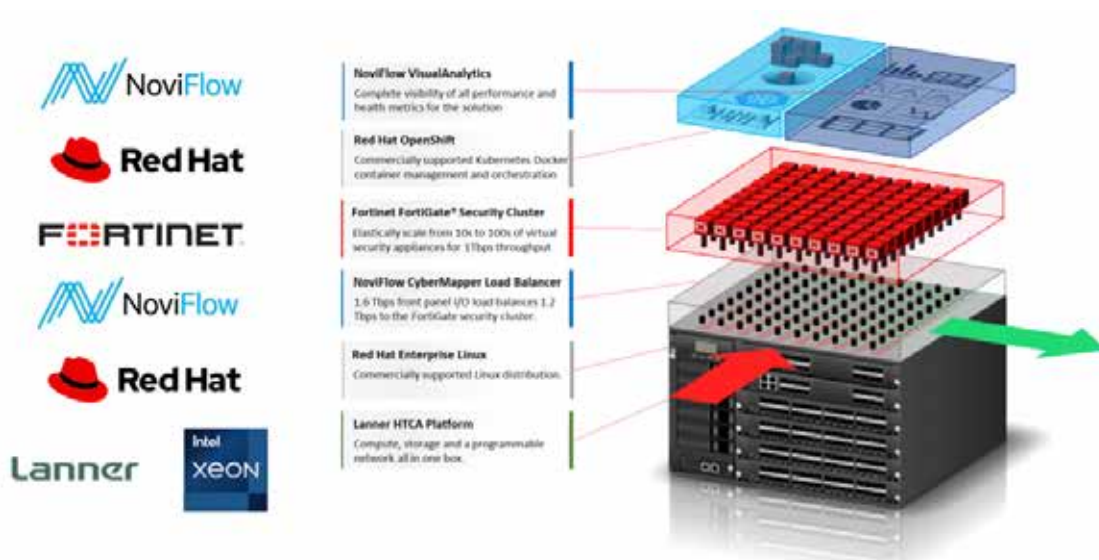
# Multi-Access Edge Computing (MEC)

MEC refers to the ability to perform critical core network functions, covering the compute, storage and analytics, at the network edge so that latency is substantially reduced when traffic can be routed to the edge first instead of to the cloud directly. Under this infrastructure, the orchestration aggregates the compute and storage resources, along with networking capability to run user applications at the edge, within proximity to where requests and traffics are generated.



## Use case: Programmable Network Platform Empowers Scalable Firewall

Lanner collaborated with NoviFlow to deliver a scalable firewall solution. The integrated multivendor solution leverages modular hardware and software to provide 145 Gbps to 1 Tbps of scale-out Firewall service with unmatched remote configuration and monitoring, while delivering significant reductions in capital and operating costs, footprint and power consumption.



# Advanced Network Platforms



Feature	Description	FX-3420	ECA-5540	HTCA-6200
<b>Form Factor</b>		2U 19" Rackmount	1U Rackmount	2U Rackmount
<b>Platform</b>	Processor Options	Intel® Xeon® Scalable Processor (Skylake-SP/Cascade Lake-SP)	Intel® Xeon® Scalable Processor (Sapphire Rapids-SP)	Up to 4x Intel® Xeon® Scalable Processor (Ice Lake-SP/Sapphire Rapids-SP)
	Chipset	Intel C612	Intel C741	Intel C621/C627/C741
<b>OS Support</b>		Linux Kernel 2.6 or above	Linux Kernel 2.6 or above	Linux Kernel 2.6 or above
<b>System Memory</b>	Technology	DDR4 2933 MHz REG DIMM	DDR5 4400 MHz RDIMM	DDR5 4800 MHz REG DIMM
	Max. Capacity	768GB	1024 GB	1024GB per blade
	Socket	24x 288-pin DIMM	16 x 288-pin DIMM	16x 288pin DIMM per blade
<b>Storage</b>	SATA/M2	Front: 12x 3.5" HDD SATA 6G /SAS 12G or 12x 2.5" NVME Back: 2 x 2.5" SATA 6G	2 x 2.5" HDD/SSD 2 x M.2 NVMe (PCIe) 2280 M key	2 x 2.5" Swappable HDD drive bays
<b>Networking</b>	Ethernet Ports	4 x 10G SFP+ 6 x GbE RJ45	1x 1GbE RJ45 for MGMT	Blade 1~2: Switch Fabric Blade or Ethernet I/O Blade
	Bypass	N/A	N/A	N/A
	Controllers	i350 / XL710	N/A	Depends on blade specification (HLM series)
	NIC Module Slot / Blade	N/A	1x OCP NIC	N/A
	IPMI	IPMI Chip Onboard	1 x onboard IPMI port	1 x onboard IPMI port
	Management Port	N/A	N/A	1 x Management port
<b>I/O Interface</b>	Reset Button	Yes	Yes	Yes
	Console	1 x DB9	1 x RJ-45	1 x RJ-45
	USB	2 x USB 2.0, 2 x USB 3.0	2 x USB 3.0	1 x USB 2.0
<b>Expansion</b>	PCIe	2x PCI-E*16 FH/FL + 1x PCI-E*8 HH/HL M.2 PCI-e SSD	1x FHFL (PCIex16, double width, 350W) 2xLP (PCIex8) or 1xFHHL (PCIex8)	N/A
	mini-PCIe	Optional	N/A	N/A
<b>Cooling</b>	Processor	Passive CPU Heatsink	Passive CPU Heatsink	CPU heatsink with fan duct
	System	6x individual hot-swappable cooling fans with smart fan	5x swappable cooling fans with smart fan	5 x hot-swappable cooling fans per blade
<b>Environmental Parameters</b>	Temperature	0~40°C / -20~70°C	-40~65°C Operating -40~70°C Non-Operating	0 ~ 40°C Operating -20~70°C Non-Operating
	Humidity (RH)	5~90% non condensing / 5~95%, non condensing	5 ~ 90% Operating 5 ~ 95% Non-Operating	5 ~ 90% Operating 5 ~ 95% Non-Operating
<b>Miscellaneous</b>	LCD Module	N/A	N/A	2 x 20 characters
	Watchdog	Yes	Yes	Yes
	Internal RTC with Li Battery	Yes	Yes	Yes
<b>Dimensions</b>	Dimensions (WxHxD)	445 x 88 x 785 mm	438x580x44 mm	438 x 88 x 685 mm
	Weight	TBD	TBD	26 kg
<b>Power</b>	Watts / Type	1200W 1+1 Redundant PSU	1600W AC PSU	AC 2000 watt N+1 Redundant per blade DC 1600 watt N+1 Redundant per blade PM bus support
	Input	AC 100V~240V @47~63Hz	AC 110 -240V	AC 85 ~ 264 V DC -36V ~ -72V
<b>Approvals &amp; Compliance</b>		CE/FCC Class A	TBD	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 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	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
Broadcom BCM5396	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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# Lanner

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