A Passion for Innovation

2021
Network and Communication Solutions

- Cyber Security
- Edge and Cloud
- 5G and uCPE
- Industrial Security

www.nexcom.com
Corporate Information
About NEXCOM  004
NCS’s Core Competencies  012

Vertical Industry Applications
Cloud/Edge/EPC/SCG Platform
Paradigm Shift: From Purpose-built Appliances to NFVI  016
Edge Computing and Intel® Select Solutions for uCPE  018

AI Computing Platform
Artificial Intelligence in Edge Computing  020

ARM/SoC Based Appliance
RISC (ARM/MIPS/PowerPC) SoC Capabilities  022

Industrial Communication Gateway
The Growth of Industry 4.0 is Forcing Us to be “Smarter”  024

Product Guide
2021 Featured Products  026
Product Selection Table  028

Product Portfolio
NSA 7150  030
NSA 7146  032
NSA 7141  034
NSA 5181  036
NSA 3190A  038
NSA 3180A  040
NSA 3180HA  042
NSA 1160  044
TCA 5170  046
TCA 5170B  048
TCA 5170C  050
DTA 1164W  052
DTA 1162 Series  053
DTA 1160  054
DNA 1160  055
DNA 130  056
ISA 140  057
About NEXCOM

**Reliable Partner for the Future Network**

Founded in 1992 and headquartered in Taipei, Taiwan, NEXCOM is committed to being your trustworthy partner in building the intelligent solutions. To surpass customers’ expectations, NEXCOM makes the difference by utilizing its decades of industrial computing experience, a highly talented R&D team, and by providing exceptional levels of customer service. With these core strengths, NEXCOM has enabled its customers to win key projects in a diverse range of industries.

With its focus on delivering these core values to better serve customers, NEXCOM integrates its capabilities and operates six global businesses, which are IoT Automation Solutions, Intelligent Video Security, Intelligent Platform @ Smart City, Mobile Computing Solutions, Medical and Healthcare Informatics, Network and Communication Solutions. This strategic deployment enables NEXCOM to offer time-to-market, time-to-solution products and service without compromising cost.

In addition, the service-to-market business model gives NEXCOM core competence to build a strong world-class service network by providing customized service, global logistics, local access, and real-time support. Operating five subsidiaries, from China, Japan, Taiwan, the United States, to the United Kingdom, NEXCOM is able to better facilitate customers’ requirements as well as closely work with global partners in different regions.

NEXCOM’s Taiwan based Headquarters and subsidiary offices in China, UK and USA have obtained ISO 9001:2008 Certification.

**Business Strategy**

Aim to better support the activities of all its partners, NEXCOM divides its sales force into eight dedicated business units to target rapidly expanding vertical markets. This enhances each business unit concentrating on strategic channel accounts and on repeat order business. Moreover, NEXCOM’s business units have been set up to serve the requirements of key project accounts, where product ODM and project support are frequently required.

NEXCOM is working with embedded computing solution providers to envision new opportunities for growth. We’ll help you deliver reliable vertical solutions, optimized for the next wave of IoT and Industry 4.0 solutions.

**Research and Development**

**Innovation, Quality, Speed and One-stop Service**

Over a decade ago, NEXCOM successfully launched the PEAK series of Single Board Computers onto the IPC market, and in doing so, gained a solid reputation for product quality and innovation. In subsequent years, NEXCOM has enhanced its reputation for R&D excellence with a multitude of high-end technology products, which has cemented NEXCOM as one of the industry leaders for R&D and innovation.

The mission of NEXCOM R&D team is to design exceptional products that meet the stringent requirements of today’s global markets. In order to achieve this goal, we have recruited hundreds of talented engineers who have the knowledge and expertise to make NEXCOM’s products stand out in this highly competitive market.

NEXCOM offers solutions for IoT gateway, robot controller, connected cars, Industry 4.0, and industrial security applications. The team is encouraged to “Think with New Ideas” and “Know how to make it and do it right first time”. In addition, NEXCOM’s R&D team has been expanded to over 300 engineers with the ration of software engineers to hardware engineers coming to about 1:1, and remains as one of core competences of the company.

**Quality Assurance**

Under a strict Quality Assurance System, product design and reliability are controlled to support all critical solutions, and ensure Total Quality Assurance (TQA) implementation for all NEXCOM products and service. Furthermore, NEXCOM technical support team aims to provide feedback within 24 hours to ensure technical issues are resolved in the shortest possible time.

**Versatile Design Capabilities**

- Fanless technology for industrial computer
- High availability network security platform, blade, and cPCI
- Rugged tablet computer and car PC
- Ultra small footprint computer-on-module
- High speed networking
- Isolated and non-isolated power system
- Isolated and non-isolated industrial I/O
- Wide range of operating temperature
Green Policy
As a global citizen, NEXCOM is committed to providing green products and services, which are compliant with WEEE and RoHS legislation. NEXCOM continues to proactively work with industry peers and suppliers to clarify standards, and identify compatible technologies and practices that help reduce hazardous substances from our products and manufacturing processes.

Global Fulfillment Service
Product delivery and customer support are always more effective when delivered locally. NEXCOM localizes support and provides a global customer service network to handle all aspects of global business, from presales, order taking, and system assembly to logistics. For expeditious product delivery, NEXCOM has established four regional service centers: Taiwan (for Asia), USA (for North America and South America), the United Kingdom (for Europe) and China. Therefore, NEXCOM customers benefit from quality assured product assembly and four service centers.

NEXCOM has invested heavily to establish operational infrastructures, including advanced equipment and facilities, not only at its global headquarters but also at subsidiary offices. Today, each of our service centers, with ISO 9001:2008 certification, has a purpose built assembly line, RMA/DOA center and warehouse storage capability.

Assembly Line Operation
NEXCOM offers custom-built products based on customers’ specific requirements through the build-to-order services. A dedicated 24/7 assembly line and Quality Assurance System are installed in the services center to ensure exceptional production efficiency and superb product performance and reliability.

Service Pledge and Connection
As a reliable intelligent systems provider for vertical markets, NEXCOM provides the very best products and the most expeditious service to help customers build the digital infrastructure. Comprehensive types of service are provided to promptly satisfy varying requirements. In addition to the headquarters in Taiwan, seven subsidiaries and distributors in strategic worldwide locations are at your service.

Your Truly Global Information Resource
www.nexcom.com
www.nexcom.com is your one-stop platform for the latest information on all NEXCOM products and services. The rejuvenated website not only contains product relevant information and data, solutions/products demo, up-to-date news, but incorporates online downloads, publications, and technical service supports, such as RMA/DOA centre. Furthermore, to localize service and support, seven NEXCOM sister websites remain to serve visitors in diverse geographical regions.

Get the Latest Updates Anytime, Anywhere
m.nexcom.com
At the end of the year 2011, NEXCOM launches its mobile site, m.nexcom.com. The site aims to cross time and space boundaries by allowing users to access the latest innovation and information of NEXCOM via smartphones. On this website, users will easily find our latest products, news, application stories, white papers, and videos. The mobile site now supports iOS and Android system. Please visit us at m.nexcom.com.
Design and Manufacturing Services (DMS)

Customized Service for Tailor-Made Solutions

NEXCOM provides cost-effective and time-to-market Design and Manufacturing Services (DMS). The DMS offers product customization from core modular designs to finished products based on customers’ specifications in all kinds of industrial fields. The levels of the service include manufacturing new CPU boards and system based products to fulfill customers’ unique applications.

Unique DMS Features

With vast experience, the know-how, leading technology and innovative design capabilities, NEXCOM DMS incorporates the following features:

Prompt Time-to-Market

NEXCOM possesses a dedicated project management team to monitor and ensure each DMS project is delivered on schedule. Thus, a quick time-to-market solution can be offered with time-scales varying from one-to-three months for the design phase, with an average six month period from design to market.

Flexible Design and Manufacturing

NEXCOM possesses a complete R&D team to design and engineer the latest industrial grade products. As R&D engineers grouped into small cross-functional teams, they can develop more reliable products with flexible designs and quicker response to customers’ requirements. In addition to our R&D capabilities, the state of art manufacturing facility and production lines enables NEXCOM to offer a flexible manufacturing with highly skilled factory staff.

Rigid Quality Control

NEXCOM is pledged to deliver high quality products, from design to manufacture, and safeguard against defective products by implementing a rigid Quality Assurance System. In this system, at the end of each process, NEXCOM performs various tests to ensure that the product passes the industrial standard before it enters into next stage. Finally, additional tests are performed to ensure all board and system level products function correctly. Tests include “Failure Mode and Effects Analysis”, “Vibration Test”, “Burn-in Chambers”, “Drop Test”, and “AC Power Source Test”.

Extensive DMS Experience

We set higher standards! NEXCOM surpasses your tailor-made product requirements with extensive DMS experiences. We are specialized in X86 architecture and have accumulated invaluable experience and know-how in real working environments. Moreover, with a superb reputation, NEXCOM has under its belt many ODM projects in diverse fields, such as gaming, medical, PDS, network security, transportation, marine, blade servers, and Linux BIOS etc.

Scope of DMS Work

Original Design Manufacturing Service (ODMS)

NEXCOM offers a complete ODM Service starting from the brand new product design right through to the finished product. We can design products based on the customer’s unique specifications and application requirements.

Customization to Order Service (CTOS)

NEXCOM also provides CTOS, which is a quick-to-market solution by modifying the existing products to fit your business requirements, such as BIOS setting, component change by using current PCM layout, chassis color change, and packing accessories etc.

Service of DMS

With decades of industrial computing experience, NEXCOM has the capability to provide different levels of customized service to manufacture innovative products with exceptional high quality. We can assist you to differentiate from competitors, and save significant time and efforts.

<table>
<thead>
<tr>
<th>Level</th>
<th>Service Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Level 1</td>
<td>Logo Re-brand</td>
</tr>
<tr>
<td>Level 2</td>
<td>Customerized Build</td>
</tr>
<tr>
<td>Level 3</td>
<td>Manufacturing Service</td>
</tr>
<tr>
<td>Level 4</td>
<td>New Project</td>
</tr>
</tbody>
</table>
Professional Conformal Coating Solution

Get Ruggedized with NEXCOM Cost-Effective Conformal Coating Service for Hash Environment Protection

Prompt Time-to-Market
NEXCOM recognizes the harsh reality that many embedded systems find themselves operating in unusual hostile environments. When conformal coating is required to protect your application against substantial humidity, dust, chemicals or temperature extremes, we can help!

Cost Effective Service to Apply Coating Solution in Vertical Market Segments
In addition to the usual military and harsh industrial environments that demand conformal coating, NEXCOM expand our conformal coating to Vehicle Telematics Computing, outdoor traffic control/surveillance, and off-shore Marine applications. These applications demand embedded computing performance with increased reliability through conformal coating process.

To support a wide range of applications in vertical markets, NEXCOM has engineered a diverse range of platforms, which incorporate the latest.

“State of the Art” Conformal Coating Line
NEXCOM uses automated Conformal Coater equipment for applications that require a high level of accuracy and repeatability in moderate to high volume manufacturing environments. “State of the Art” coating line is a closed-loop robotic platform featuring optical encoder feedback on all axes.

Smart Masking Technology
Our smart masking technology can pin point specific area on the PCBA for coating. The green, programmable conformal coater equipment allow user to only coat the area selected, which save labor/material costs.

De-Flux Cleaning
To prepare a PCB for conformal coating, the circuits need to be cleaned. NEXCOM uses automatic defluxing and cleanliness testing systems. The deflux system is equipped with an automatic chemical management system that automatically doses and mixes defluxing chemicals at the turn of a keyed switch.

Real Time Cleanliness Testing
NEXCOM’s deflux cleaning system is also equipped with an onboard cleanliness testing system which allows a user to program a desired cleanliness level. This assures that cleanliness levels will be consistent batch after batch.

De-Coating RMA Service
NEXCOM offer De-Coating RMA service upon request. This new service allows you to further cost down and generate higher ROI.

Quality Assurance Policy and Consistency Guarantee
Conformal coating inspection is a critical factor in determining successful coating application and long term reliability of PCBs. Using the IPC standards allows the coating operator to monitor the coating application performance. NEXCOM offers 100% manual screening by examining the PCB under white and UVA light and Thickness Gauge.

NEXCOM follows IPC-A 610, IPC-CC-830, IPC J-STD-001E regulations to generate consistent, adjustable coating thickness and cleanliness.
NCS's Core Competencies

Hardware Technology
To meet the needs of different network applications, the intelligent network platform must be able to adapt to different network configurations, creating flexibility and scalability in computing power and availability. Therefore, NEXCOM hardware technology encompasses six major concepts:

High-Performance Computing
Computing power is the core of the network applications. NEXCOM offers a wide range of computing platforms, from RISC platform and low-end x86 Atom, from Core i CPUs to high-end Scalable Xeon Processors to meet different computing power needs.

Network Technology
Network technology is the key to intelligent network applications. Technology embodied in the intelligent network platform designed by NEXCOM forms a complete range of network interface and throughput. NEXCOM invests on cutting-edge network technologies and will continue to lead this industry.

Acceleration
The very basis of network application comes down to process packets. In some network applications such as VPN, forwarding, deep packet inspection, etc., the acceleration engine that designed for network packet processing is critical to enhancing overall performance. NEXCOM is capable of integrating Intel® QAT technology, Ethernet switch and other kinds of acceleration engine.

Remote Management
It is vital for IT & OR personnel to efficiently manage and maintain a large number of network platforms deployed in different locations and keep the operational costs to the minimum. In light of this, NEXCOM integrates various remote management technologies, such as Intel® AMT vPro™, IPMI, etc., to provide customers with management interfaces for in-band and out-of-band management, NEXCOM provides optional features and SW/FW designs in creating unique appliances for customers.

Availability
NEXCOM's intelligent network platform consists of a WDT (Watch Dog Timer) mechanism, which allows soft-reboot with software acceleration, Hot Swapable Fans, and PSU redundancy, and other technologies to maintain service availability.

Modular Design
Depending on different user cases, network configuration varies. It is possible to combine high and low bandwidth and different port numbers on the same platform. NEXCOM specializes in modular design, providing a comprehensive series of network modules, when incorporated into NEXCOM's intelligent network platforms, providing maximum flexibility to optimize its network configuration for their application scenarios.

Software Technology
NEXCOM has a wealth of experience in fulfilling customers' various software customization requirements across both horizontal and vertical integrations. From board level to application layer, from x86 to RISC, from in-band management to out-of-band management, NEXCOM provides optional features and SW/FW designs in creating unique appliances for customers.

We have comprehensive R&D teams for FW and SW development, including CPLD, MCU, BIOS, Linux kernel drivers, system software, and application software. We also develop embedded systems on various distributions, such as CentOS, Ubuntu, OpenWRT, BMC, and, especially, self-developed OS.

Our vertical experience in HW-FW-SW design helps us perform better control-flow analyses on system applications, while horizontal experience in appliance development enables us to truly understand the necessities of different system hierarchies. We also provide high-level system views and design analysis to help customers find their ideal solution.

Software Solutions
NEXCOM has countless software solutions to fit customers' needs, from low-level FW mechanisms and device drivers, to comprehensive OS solutions and integration support.

Atlas OS™ – NCS’ complete system solution
Atlas OS™ is designed as a Linux-based network appliance OS that provides comprehensive system software and hierarchical design from board driver to front-end GUI. The well-defined system architecture can be adapted for different platforms or systems.
virtualizations, combine with different peripherals, and collect various applications to become a specific customized appliance or network function.

Atlas OS™ has a modern management webtop UI which is highly modular and developed for single-page application (SPA). With a quick, smooth, interactive, and user-friendly experience, its dual desktop design decreases front-end loading and separates workspace and dashboard to reduce unnecessary background operational noise. Atlas webtop not only brings the desktop operation experience to end users but also the ability to manage installed applications. Furthermore, users can construct each Atlas device as a specific appliance by installing different packages.

Currently, Atlas network modules such as PoE, L2 switch, and NAS are available, with more features in development. Combined with Atlas network functions and applications, Atlas OS™ can be a physical appliance (i.e., NAS and PoE switches) or VNF for providing container- or VM-based services like DHCP and SNMP.

The flexible and modular design of Atlas OS™ also makes fulfilling customization requirements convenient: simply select which packages to install.

One of the most important features in Atlas OS™ is support for RESTful API, which enables communication among devices and application services, as well as distributed environment deployment and management. Our management webtop apps use RESTful API to connect backend or remote devices so that users can conveniently use one webtop to manage different devices or VNFs in each Atlas app.

OEM Commands (e.g., failure LED). NCS is excited to announce that its BMCs are currently available in x86 solutions and is currently working towards supporting more server products, along with RISCs.

**Third-Generation Network Bypass**

NCS has just launched the third generation of its Ethernet bypass. The network bypass solution provides intelligent protection to network security equipment, such as firewalls, IPS, DPI, and UTM. Its end goal is to protect enterprise network traffic and services from the risk of a network being congested – or even unreachable – due to appliance issues, external attacks, and power failures, among other reasons.

The newest network bypass function is a comprehensive upgrade that keeps system software developers’ needs top of mind. The innovative, highly integrated HW-FW-SW design completely consolidates software and hardware protection mechanisms, as well as more wide-ranging functions; to deal with system software crashes and hardware device failures, not to mention offers friendly settings, control interfaces, and extensibility for system developers.

The upgraded bypass’ capabilities also include full triple states, friendly watchdog timer, enable/disable functionality, and complete statuses. The new HW architecture of bypass LAN modules removes any motherboard dependencies and creates consistent behaviors and experiences. The new-generation bypass is also a solution which has SW hooks that adapt to Linux syscalls stacks and establishes relationships between OS bypass segments and net devices. Lastly, it comes with kernel device driver and library.

**Linux Driver Support**

NCS provides support for fine-tuning and porting of existing drivers to resolve platform issues, upstream bugs, and other special requirements. For system and application developers, we also provide drivers for specific HW designs that are adaptable for Linux stack APIs, avoiding the inconvenience of self-defining their own interfaces. This allows developers to effortlessly develop device drivers straight from a universally compatible Linux stack library.

---

**Out-of-Band Management with BMCs**

The key to OOB management for NCS’ mainstream/ performance solutions is the baseboard management controller (BMC). The BMC is mainly used to monitor system states and record information (e.g., fans, temperature, voltage), as well as to manage simple problems when they occur (e.g., to reboot). In addition, you can also use BMCs to update BMC/BIOS/CPLD firmware. What’s more, IPMI commands or SDL/KVM functions can allow users to remotely operate, diagnose, and repair systems without even entering data centers (e.g., installing the OS by mounting the optical disk drive on the BMC via KVM. NCS’ BMC also supports Dual BIOS architecture, which effortlessly operates through the solid integration of HW/BIO/CPLD/BMC. It also synchronizes with hardware design for customizing IPMI.
Paradigm Shift:
From Purpose-built Appliances to NFVI

Background

In the rapidly changing environment of the 5G and IoT world, dedicated and purpose-built appliances have been replaced by commercial, off-the-shelf hardware platforms with virtualization software that optimizes their scale and agility. Teeming with mobile devices, more diverse data traffic continues to emerge, and the importance of information security has increased exponentially. We now face new, complicated, and rapidly evolving use cases, in addition to more frequent deployments, upgrades, and replacements of network functions and components than ever before.

Challenges not only include the shift from purpose-built appliances to virtualization platforms, and a hunger for more bandwidth to run a variety of software applications, but also the bigger challenge of security considerations. Information is valuable; as such, many companies have built up their IT infrastructures to defend against attacks from hackers and ransomware. Increasingly, attackers have even carried out data exfiltration to force victims to pay ransoms so that they can avoid customer record leaks, government fines, and even damages to their public reputation.

Network Function Virtualization Infrastructure (NFVI) is the foundation of 5G infrastructure. Using Open Radio Access Network (O-RAN) means that businesses can avoid proprietary protocols. IP protocols are too familiar; they’re easy to utilize in O-RAN but effortlessly attacked when compared to proprietary protocols. Enterprises and telecoms alike need secured platforms than ever before, and they must be secured on the hardware level.

Solution: More Computing Power, Faster Ethernet Speed, and Stronger Security

NFVI architecture uses standardized general-purpose hardware to simplify IT operation and maintenance. Sharing hardware resources can reduce unnecessary investments in dedicated hardware. Accordingly, NEXCOM has developed NSA 7150, a new-generation NFVI platform with a state-of-the-art uniform security mechanism called Platform Firmware Resilience (PFR). PFR, using a hardware-based solution, is a new approach to securing server firmware that prevents attacks on all server-hosted firmware. With the embedded FPGA security core, NSA7150 provides a hardware mechanism to detect any firmware inside the system. If a security breach is detected, FPGA provides a recovery mechanism which increases the overall security level of NSA 7150.

Conclusion

As a long-term partner of Intel, NEXCOM proudly introduces the NSA 7150. The 2U rackmount network appliance based on the Intel® Xeon® Scalable (Ice Lake) processor family delivers a workload-optimized platform for NFVI. The network appliance features enhancements to computing performance through dual scalable processors and flexible NEXCOM Ethernet modules that can handle 1Gbps to 200Gbps speeds. Most of the embedded C627A chipset supports Intel® QuickAssist Technology (Intel® QAT) to accelerate CPUs’ heavy network encryption and decryption needs. The NSA 7150 also includes IPMI 2.0 remote management and swappable system fans for simple operation and easy maintenance. Furthermore, the CRPS redundant power supply prevents service interruptions caused by single PSU failures. In conclusion, the NSA 7150 is a fantastic PFR hardware-based security solution that meets the ever-mounting challenges of the business world.

Intel® Solution NSA 7150 HW Configuration

<table>
<thead>
<tr>
<th>Module (P/N)</th>
<th>NSA 7150 (P/N: 10S00715000X0)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Processor Family</td>
<td>3rd Gen Intel Xeon Scalable processor</td>
</tr>
<tr>
<td>Cores</td>
<td>Up to 72</td>
</tr>
<tr>
<td>Memory (Max.)</td>
<td>1280 for RDIMM / 2560 for LRDIMM</td>
</tr>
<tr>
<td>Storage</td>
<td>&gt; 1 TB</td>
</tr>
<tr>
<td>LAN Module Expansion</td>
<td>8</td>
</tr>
<tr>
<td>PFR</td>
<td>Yes*</td>
</tr>
<tr>
<td>TPM 2.0</td>
<td>Yes</td>
</tr>
<tr>
<td>Intel® QAT</td>
<td>Yes</td>
</tr>
<tr>
<td>IPMI 2.0 RunBMC</td>
<td>Yes (Optional)</td>
</tr>
<tr>
<td>Expansion Card</td>
<td>PCIe4 x16 low profile Riser card</td>
</tr>
<tr>
<td>OCP NIC 3.0 Support</td>
<td>Yes</td>
</tr>
</tbody>
</table>

* For ODM Projects only
Edge Computing and Intel® Select Solutions for uCPE

Perfect for Edge Computing

Edge Computing

Over the past few decades, cloud computing has experienced extensive development and increasing application due to its high cost efficiency and flexibility. Much of the growth in cloud services has been achieved through consolidation, in which computer network management functions operate in a centralized manner. With the rapid development of Internet of Things applications, conventional centralized cloud computing began encountering challenges such as high latency, low spectral efficiency (SE), security risks, and non-adaptive machine communication.

To address these challenges, a new technology called edge computing is driving a trend that shifts the function of centralized cloud computing to devices residing along the so-called edges of distributed networks. Several edge computing technologies have evolved to offer decreased latency, improved SE, and support for comprehensive machine communication.

What were until recently nascent technologies and applications are now increasingly driving a shift in the computing and communication landscape that moves the responsibilities of centralized cloud computing onto edge device networks. Software defined networking (SDN) and the associated concept of network function virtualization (NFV) are emerging solutions for networks. In particular, NFV enables edge devices to provide computing services and operate network functions by creating multiple virtual machines (VMs). Moreover, the ultra-low latency offered by edge computing goes well with 5G communications, as high speed radio access networks (RANs) make big bandwidth and low latency absolute must-haves.

NEXCOM TCA 5170 1U rackmount products are designed with ideal features for universal customer premises equipment (uCPE) platforms and are a verified Intel® Select Solutions for uCPE. They expand customer service portfolios in ways that solve the challenges mentioned above.

Meanwhile, as a 1U network security appliance, the TCA 5170 helps medium enterprises build a securely connected workplace and delivers significant performance enhancement when running multiple virtual network functions in software defined wide area networks (SD-WANs). Based on the Intel® Skylake-D Xeon® SoC (BGA type), the TCA 5170 packs excellent performance per watt, QuickAssist Technology, Intel® Virtualization Technology (Intel® VT), scalability, vulnerability management solutions, accelerated data cryptography, and server-grade LAN functions, all in a small form factor. The TCA 5170 network security appliance creates safe environments for network communications to connect employees and businesses.

Intel® Select Solutions for uCPE

As consumers demand more sophisticated services over increasingly advanced networks such as cloud, mobility, IoT, and AI, seeking solutions to work toward network virtualization for communications and cloud services providers is becoming more challenging.

Meanwhile, small business owners also encounter connectivity issues when adopting current consumer-grade IT communication appliances for business purposes. This problem persists through the transition of IT infrastructure from traditional standalone communication appliances (such as load balancers, edge routers, industry firewalls, and VPPs) to virtualized appliances, where a great variety of network functions run on general purpose servers.

NEXCOM’s universal customer premises equipment (uCPE) platform products are excellent solutions for expanding customer portfolios in a world transitioning to 5G and looking beyond. As more speed and greater responsiveness become even more imperative, NEXCOM solutions step up to the challenge.

Intel® Select Solutions for uCPE provide a foundation for the development of universal customer premises equipment: products with a solution reference design and performance verification. Certified systems bring the powerful performance of Intel® Xeon®-D processors to edge communication service provider networks for agile provisioning.

As a verified Intel® Select Solutions for uCPE, NEXCOM products offer a faster and more efficient deployment path for trustworthy and reliable infrastructure configurations that support virtual network enhancements and help meet emerging customer workload demands in network communications.

TCA 5170

Intel® Xeon®-D 2100 (Skylake-D) SoC Processors, 1U Rackmount with 8GbE Copper, 4 x 10GbE Fiber, 2 LAN Module

<table>
<thead>
<tr>
<th>Module (P/N)</th>
<th>TCA 5170 (P/N: 10CA0517000X0)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Processor Number</td>
<td>Intel® Xeon® D-2100 series processor</td>
</tr>
<tr>
<td>Memory</td>
<td>8 x 16GB DDR4 2666 DIMM ECC/non-ECC memory, max. 256GB</td>
</tr>
<tr>
<td>Networking</td>
<td>(8 x 1GbE integrated 2 x Intel® Ethernet controller I350 LAN chip)</td>
</tr>
<tr>
<td>Storage</td>
<td>1 x Intel® Solid State Drive Data Center @ 480 GB 1 x 2.5&quot; HDD bay 1 x M.2 2280 length Key M socket</td>
</tr>
<tr>
<td>Intel® QAT</td>
<td>Yes</td>
</tr>
<tr>
<td>Intel® Select Solution</td>
<td>uCPE with CentOS  uCPE with ADVA Ensemble Connector</td>
</tr>
<tr>
<td>TPM 1.2/2.0</td>
<td>Yes</td>
</tr>
<tr>
<td>Front I/O</td>
<td>1 x USB 3.0 1 x Micro USB type console port 1 x Management LAN port 8 x Copper RJ45 ports 4 x SFP+ fiber ports 1 x 16x2 LCM (optional) 2 x LAN module slots (optional; refer LAN module list ) 4 x SMA connector holes for RF antenna cable</td>
</tr>
</tbody>
</table>
Artificial Intelligence in Edge Computing

The invention of the first computer also launched the development of AI (Artificial Intelligence). In the 1980s, the expert system began to be popular, as computers used knowledge from a large number of experts as input. The computer judged answers according to users’ questions. Though the experts’ knowledge was vast, it was still impossible to input every bit of knowledge into computers, so the expert system became impractical in the end.

The advancement of semiconductor technology has increased computing power at the same time that the cost of semiconductors has decreased. Similarly, new AI technology is on the rise. Artificial neural networks based on the advantages of semiconductor technology also provide excellent environments for further development of various fields, such as autonomous vehicles, dialogue robots, medical illness detection, network security, smart manufacturing, and more. Overall, AI has the potential to deliver an additional global economic value of around $13 trillion by 2030.

Current AI mainly uses artificial neural network technology to perform deep learning and applies the deep learning model to specific applications. There are several characteristics that need specific consideration.

First, the computational characteristics of the artificial neural network: when both the amount of data used for learning and number of layers of the neural network are greater, the performance of the learning model is better. Artificial neural networks need to handle big data and model parameters through an enormous amount of matrix computation. Therefore, computing platforms suitable for artificial intelligence need to have powerful parallel computing capabilities and support a substantial amount of memory.

Secondly, there are two steps to applying an artificial neural network to a specific case. The first is to learn a usable model from big data (AI training) and then deploy the model on-site (AI inference). In training, because it requires a huge amount of computing power, it repeatedly adjusts model parameters, mostly in the cloud data center. Once a viable model is trained, it can be deployed to the site. There are many ways to deploy the trained model: in the cloud, to the endpoint, or to the edge. These deployment methods have their individual advantages and disadvantages.

When the inference model is deployed in the cloud, the result of the backhaul inference will be delayed. For some critical applications, the delay is not only inconvenient but also more likely to cause damage.

When the inference model is deployed to the endpoint, for example, the embedded box PC deployed at the endpoint has the advantage of low latency, but the disadvantage is that a large number of machines need to be deployed in the endpoints to cover the service area, compounding equipment costs. Spread out, hundreds or even thousands of inference embedded PCs become a big challenge in terms of operation and maintenance.

Edge computing combines the advantages of both of the previous methods, while offering low latency and cost, as well as ease of operation and maintenance. Its basic concept is inference engine deployment close to and within the same local area network as the endpoints. Purchasing uplink bandwidth services through the ISP is unnecessary, thus reducing data upload costs. At the same time, because the edge computing platform and endpoints are in the same local area network, it greatly reduces latency, and deployment is also centralized. Less equipment needs deployment, making it easy to control and upkeep.

In view of the AI inference model’s deployment requirements, NEXCOM introduces NSA7141, a high-performance edge computing platform based on the Intel® scalable processor family. The CPU provides up to 28 computing cores and 256GB of memory. For the model’s parallel computing requirements, the NSA7141 supports PCIe® slots for GPU cards, which are widely used in AI inference accelerators.

In terms of operation and maintenance, the NSA7141 is equipped with two management ports, which can be used for remote management, and redundant PSUs to avoid service interruptions caused by single power failures. In addition, the NSA7141’s flexible LAN module design can be used with NEXCOM’s own LAN module series, which provides a wide range of network bandwidths with different interfaces. The LAN module card includes a LAN bypass function as a layered, backup mechanism. When the main system stops service for any reason, this function switches data to another system, thus maintaining service availability and assisting customers in quickly deploying AI services.

Intel® Single Xeon® 1U Rackmount NSA 7141 HW Configuration

<table>
<thead>
<tr>
<th>Module (P/N)</th>
<th>NSA 7141 (P/N: 10500714102X0)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Processor Number</td>
<td>Intel® Xeon® processor scalable family</td>
</tr>
<tr>
<td>Memory</td>
<td>8 x DDR4 RDIMM, support 2133/2400/2666, up to 256 GB 2 x Intel® Optane™ DC persistent memory (Apache Pass)</td>
</tr>
<tr>
<td>Networking</td>
<td>Optional LAN module Support 1Gbe/10Gbe/25Gbe/40Gbe link speed LAN bypass</td>
</tr>
<tr>
<td>Storage</td>
<td>2 x 2.5”Internal SSD/HDD 1 x M.2 2242 Key B 1 x M.2 2242 Key B</td>
</tr>
<tr>
<td>Front I/O</td>
<td>1 x Micro USB type and 1 x RJ45 type console ports 1 x VGA 2 x Management LAN port 2 x USB 3.0 port 4 x LAN module slots (x8, x8, x8, or x16, x8, x8)</td>
</tr>
<tr>
<td>Internal I/O</td>
<td>1 x PCIe x16 expansion slot</td>
</tr>
</tbody>
</table>

Intel® Xeon® Processor Scalable Family, 1U Rackmount with 4 LAN Module & PCIe x16 Extension
Over the last decade, NEXCOM has gained a strong foothold across the world in the area of RISC SoCs with our quality design and exceptional manufacturing capabilities, especially critical nowadays as leading network security companies deploy millions of boxes powered by SoCs.

We have dedicated team members in Sales, Product Management, and R&D ready to support our customers. Specifically within our R&D team, each member has rich design experience in various types of products – some with even more than 20 years.

Wide Range of Capabilities in a Changing World

NEXCOM’s RISC SoC capabilities are not limited to network security appliances. Our products range from module to 5U, commercial-grade to industrial-grade, with fan to fanless, and wired to wireless. These products include 40G Ethernet switches, 10G EPON OLT with 10G Ethernet switch board, industrial-grade firewalls and NAS, network appliances with Wi-Fi and LTE support, network storage with two to 24 bays, and even vehicular multimedia with touchscreen, among others. We’re capable of designing and making Wi-Fi and PoE modules in-house or, for the utmost savings in cost and space for our customers, developing options such as on-board PCBAs. Our professional know-how in installing multiple Wi-Fi/LTE/GPS antennas on a compact desktop chassis also helps customers resolve critical issues among Wi-Fi/LTE/GPS systems. All of these capabilities help address the complexities of the 5G era’s fluctuating IT infrastructure.

Strategic Partnerships Help Us Excel

Our strategic partners include NXP, Marvell/Cavium, Broadcom, Intel, Qualcomm, and Amazon/Annapurna, all top-of-the-line in network communications technology. We at NEXCOM have positioned ourselves as part of the driving force to transform network infrastructure and have thus been actively involved in developing the IoT network ecosystem. We’ve not only taken the lead in technological innovation by developing 100G/40G/25G Ethernet but are also especially experienced in RF technology for Wi-Fi/LTE designs. NEXCOM has always been well known for its industrial-grade design, such as in rugged fanless appliances for various applications.

Why NEXCOM?

As our company slogan states, we’re committed to customer success. In order to deliver such an important commitment to our clientele, the Network and Communications Solutions Group continues to be passionate about innovation not only in technology leadership, but also in other equally important factors across the entire value chain, such as product life cycle management, support and services, global logistics, and supply chain management. All things considered, NEXCOM is a trustworthy partner that will help you to gain a competitive edge amidst the ever changing landscape of the IT world.

NSA 6310 is an open uCPE based on the Layerscape® LX2160A processor, with sixteen 64-bit ARM Cortex-A72 cores. The cores, in combination with integrated hardware acceleration for cryptographic processing, virtual forwarding, and traffic management, provide support for multi-gigabit routing and network services.

The NSA 6310 white box also offers two SerDes slots, with a choice of four dedicated 25G, 10G, and 1G LAN modules, for customers who need multiple I/Os to satisfy different applications; FPGA/GPU support to extend computing applications, board manager control (BMCI module and IEEE 1588 PTP feature for server-grade network appliances; and optional PoE support for edge deployments.

NXP® Layerscape® Solution

NSA 6310

1U NXP® Layerscape® LX2160A SoC Processors, 4 x GbE RJ45 and 2 x SerDes Module Slot

<table>
<thead>
<tr>
<th>Module (P/N)</th>
<th>NSA 6310 (P/N: 10S00631000X1)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Processor Number</td>
<td>NXP® Layerscape® LX2160A processor</td>
</tr>
<tr>
<td>Memory</td>
<td>4 x DDR4 3200 ECC DIMM sockets, up to 64GB</td>
</tr>
<tr>
<td>Networking</td>
<td>2 x SerDes LAN modules support 25G/10G/1G</td>
</tr>
<tr>
<td>Storage</td>
<td>1 x 2.5” Internal SSD/HDD bay, 1 x M.2 2280 Key B, supports SATA signal</td>
</tr>
<tr>
<td>PoE at/af Sport</td>
<td>Yes</td>
</tr>
<tr>
<td>IEEE1588 PTP</td>
<td>Yes, optional</td>
</tr>
<tr>
<td>TPM 2.0</td>
<td>Yes, optional</td>
</tr>
<tr>
<td>Remote Management</td>
<td>Yes</td>
</tr>
<tr>
<td>Arm Server Ready</td>
<td>Planning</td>
</tr>
<tr>
<td>Dual Boot</td>
<td>Yes</td>
</tr>
<tr>
<td>LAN Module</td>
<td>NSK 7200, NSK 7100, NSK 7602, NSK 7601</td>
</tr>
<tr>
<td>Speed/Port Type</td>
<td>25G SFP28 x 4, 10G SFP+ x 4, 10G RJ45 x 4, 1G RJ45 x 4</td>
</tr>
</tbody>
</table>

* Only for use with NSA 6310
The Growth of Industry 4.0 is Forcing Us to be “Smarter”

In the face of a world pandemic, Industry 4.0 still continues its accelerated development. Specifically, the growth of Industry 4.0’s smart manufacturing has been triggered by the compounding of an aging population and low birth rates consequently multiplying human resource costs, and increasingly complex industrial processes mixing with decreasing quantities of wide-ranging production modes. However, when workers can’t work in factories or simultaneously gather in the same workspace due to COVID-19 restrictions, the only options are minimal or zero-contact: smart manufacturing and automated production.

One prerequisite for a factory to become “smart” is Internet connectivity. From operational equipment, sensor nodes, and gateways, to back-end databases, industrial controls, AI analytics, and the BI (business intelligence) displayed in war rooms, all parts need to be connected through a sophisticated network – like a spider web. A spider web is elastic, scalable, and interconnected, particularly needed in SCADA frameworks and complex network operating environments, all create a haven for malware propagation.

The Pain Points of Upgrading Facilities are Manifold

In the past, manufacturing facilities used “on-premise security,” or facilities are manifold, particularly needed in SCADA frameworks and gateways, to back-end databases, industrial controls, AI analytics, and the BI (business intelligence) displayed in war rooms, all parts need to be connected through a sophisticated network – like a spider web. A spider web is elastic, scalable, and interconnected, particularly needed in SCADA frameworks and complex network operating environments, all create a haven for malware propagation.

Finally, factories’ manifold equipment all require their own protocols and interfaces. When compounded with factories’ complex network architectures, obtaining IT network visibility – what machines there are, who’s using these machines, how these machines connect – becomes a tremendous effort. As if this isn’t enough, the combination of numerous factors, such as network infrastructure not taking into account information security, machinery OS not updating to eliminate security loopholes, and complex network operating environments, all create a haven for malware propagation.

Our Newest Solution: ISA 140

In order to introduce Industry 4.0 into smart factories, they need to incorporate a painless solution to upgrade their network security infrastructure, with three considerations:

- Enhance network security without changing current intranet infrastructure
- Enhance network security without affecting productivity and creating downtime
- Enhance IT network visibility by detecting unauthorized network connections and immediately issuing alerts, as well as performing event logging and traffic monitoring

This may sound like mission impossible, but NEXCOM’s ISA 140 is up to the task. Powered by Intel’s latest dual-core Atom® CPUs (codename Elkhart Lake), ISA 140 is a compact, fanless industrial security appliance equipped with six 1GbE ports for network connectivity. It also supports seamless Wi-Fi/LTE connectivity and OOB remote management, and operates in settings with wide temperature ranges.

The compact DIN rail design allows IT personnel to easily deploy ISA 140 in existing network infrastructure. Through the built-in security feature of “micro-segregation,” factory managers only need to decide which security nodes the existing intranet requires, install ISA 140 in these nodes, and deploy required information security software on ISA 140, to perform painless information security upgrades of factory networks.

ISA 140 is deployed in secure nodes on existing network infrastructure, which neither changes the infrastructure nor affects manufacturing equipment productivity, but instead improves factories’ network security. Information security software runs on ISA 140 to monitor and manage network packets passing through the gateway. Suspicious or unwanted data packets are “quarantined” in segregated zones to prevent further spread and reported to the central node.

ISA 140 essentially blocks harmful packets, records and reports suspicious network behavior, and prohibits unauthorized access. Through network micro-segregation, you can considerably strengthen network security. And even if network security is ever compromised, ISA 140 can limit the range of its effects.

Your Reliable Partner for Future Networks

ISA 140 is the best choice to introduce Industry 4.0 and strengthen factory network security. NEXCOM’s Network and Communication Solutions Group, as a leading manufacturer of information security equipment, is always one step ahead of others in securing network connectivity.

Fanless Industrial Security Appliance

ISA 140

Fanless Industrial Security appliance in a compact DIN Rail form factor with Intel Atom processor and 6 x 1GbE RJ45 ports

<table>
<thead>
<tr>
<th>Module (P/N)</th>
<th>ISA 140 (P/N: 10L10014000X0)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Processor</td>
<td>Intel Atom® processor x6212RE, BGA type</td>
</tr>
<tr>
<td>Cores</td>
<td>2</td>
</tr>
<tr>
<td>Mem (max)</td>
<td>16 GB</td>
</tr>
<tr>
<td>Bypass</td>
<td>6 x 1GbE RJ45</td>
</tr>
<tr>
<td>TPM 2.0</td>
<td>Yes</td>
</tr>
<tr>
<td>Wireless</td>
<td>Wi-Fi and 4G LTE</td>
</tr>
<tr>
<td>DOB remote management</td>
<td>Yes</td>
</tr>
<tr>
<td>Wide Temperature</td>
<td>Yes</td>
</tr>
<tr>
<td>Fanless Design</td>
<td>Yes</td>
</tr>
</tbody>
</table>
2021 Featured Products

**NSA 7150/7150A**

2U Rackmount Performance Appliance w/ Dual 3rd Gen Intel® Xeon® Scalable Processor and 8 x PCIe4 LAN Module Slots

- Dual 3rd Gen Intel® Xeon® Scalable processor (socket P + 4189-pin)
- Supports Intel® Optane™ persistent memory
- 20 x DDR4 3200 ECC/UDIMM/RDIMM
- 2 x 2.5" swappable SSD/HDD
- 8 x PCIe4 LAN module slots
- 1 x PCIe4 x16 low profile riser card
- Supports Intel® QAT (NSA-7150A)

**NSA 7141**

Intel® Xeon® Processor Scalable Family, 1U Rackmount with 4 LAN Module & PCIe x16 Extension

- Single Intel® Xeon® processor Scalable family
- DDR4 2133/2400/2666 ECC & REG, up to 256GB
- Modular design supports 4 x LAN Modules
- PCIe x16 Expansion slot on rear side
- Internal 2.5" SATA HDD/SSD
- 1+1 ATX Redundant power supply
- Optional TPM module

**NSA 5181**

Intel® Xeon® (Coffee Lake-S) Processors (LGA1151) 1U Rackmount with 4 LAN Modules

- 1U rackmount workstation system
- Intel® Xeon® (Coffee Lake-S) processors (LGA1151)
- Support DDR4 2666 UDIMM slots
- Support PMI 2.0 remote management
- Four LAN module slots
- Support LCM module (optional)
- Support internal 2.5", mSATA and M.2 storage

**NSA 3180A/AHA**

1U Rackmount Entry Level Appliance w/ Intel® Coffee Lake Processor (LGA1151), 8 x GbE LANS and 1 x LAN Module

- Intel® Coffee Lake Processor (LGA1151)
- 2 x DDR4 2666 UDIMM slots
- 2 x 2.5" internal 500GB/1TB
- 1 x M.2 2280 Key M
- 8 x GbE RJ45 LAN ports
- 1 x LAN module
- 1 x PCIe x1 slot (optional)

**NSA 6310**

1U NXP® Layerscape LX2160A SoC Processors, 4 x GbE RJ45 and 2 x SerDes Module Slot

- NXP® Layerscape® LX2160A SoC, BGA type
- 4 x DDR4-3200 ECC-UDIMM
- PCIe Gen3 x8 with SR-IOV
- 2 x SerDes LAN modules support 25G/10G/1G
- Optional IEEE1588 PTP
- Optional BMC support with Management port
- Optional PoE at/af support

**TCA 5170**

1U Rackmount uCPE w/ Intel® Xeon® Scalable Processor, 8 x GbE RJ45, 4 x 10GbE Fiber and 2 x LAN Modules

- Intel® Xeon® D-2133T SoC, BGA type
- 8 x DDR4-2400 RDIMM
- PCIe Gen3 x8 with SR-IOV
- 2 x SerDes LAN modules support 25G/10G Fiber
- 2 x LAN modules
- Redundant power supply

**DTA 1164W**

Desktop uCPE Appliance with Intel Atom® SoC Processor and 6 x 1GbE RJ45 + 2 x SFP or 8 x 1GbE RJ45 Ports

- Intel Atom® C3000 series SoC, BGA type
- 1 x DDR4-2400 SD-RDIMM
- 1 x M.2 SATA 2242 Key M
- 8 x GbE RJ45 (reserve co - layout design to support 2 x SFP ports)
- 1 x M.2 3042/3052 B Key for LTE/5G support (Sub 6G)
- 1 x mPCIe slot for WiFi support

**ISA 140**

Industrial Security Appliance with Intel Atom® Processor and 6 x 1GbE RJ45 Ports

- Intel Atom® processor x6212RE
- DIN rail, fanless design
- 6 x 1GbE RJ45
- Dual DC power input
- Supports out of Band Remote Management
- Supports WiFi and LTE modules
- Wide temperature range
Product Selection Tables

Gateway to Communication

NEXCOM delivers the trusted and reliable platforms for network security appliances. Building upon the standard x86 architecture, our products allow network security software vendors to create their own professional appliances easier without additional efforts in BIOS and drivers. With the integration of leading technology from x86 CPU, PCI-Express and I/O accelerations, the security and performance of customers' applications are greatly improved.

Features and Benefits

• RoHS compliance: commit to produce green products and services compliant with EU RoHS directive 2002/95/EC.
• PCIe based GbE LAN: our PCIe based network security appliances can be enhanced to utilize 10 Gigabit networks to boost network performance.
• Dual/quad core processors with I/O acceleration: greatly improve CPU computing bandwidth in complex and intensive security computing. With sufficient processing power, they are appropriate for connection/ control- oriented and threat management-oriented network security appliances.
• Modular design platforms: can cope with diverse connection types from copper to fiber or from 2 ports to multi port. Security software vendors can focus on per port performance or increased connectivity with high port density.
• LAN bypass: enable connection fault tolerance for appliances, which act as the transparent bridges among networks. Users will hardly sense the network inaccessible when the appliances stops working due to hardware or software detects.

LAN Modules

Our 1U and 2U rackmount network appliances adopt a variety of LAN modules, with up to 200GB workloads per one single LAN module. These LAN modules come in different port types (copper or fiber), port counts, speeds, and choice of with or without bypass. All LAN modules are swappable to provide flexibility in configuration.

To check the list of all supported LAN modules for this appliance, please visit our website: https://www.nexcom.com/Products/network-and-communication-solutions or scan the QR code:

Network Security Appliance

<table>
<thead>
<tr>
<th>Model</th>
<th>NSA 7150</th>
<th>NSA 7141</th>
<th>NSA 5181</th>
<th>NSA 3180A/3180HA</th>
<th>NSA 1160/1160A</th>
</tr>
</thead>
<tbody>
<tr>
<td>Form Factor</td>
<td>2U</td>
<td>1U</td>
<td>1U</td>
<td>1U</td>
<td>1U</td>
</tr>
<tr>
<td>Processor</td>
<td>Dual Intel® Xeon® processor scalable family</td>
<td>Intel® Xeon® processor scalable family</td>
<td>8th/9th gen Intel® Xeon® processor</td>
<td>8th/9th gen Intel® Xeon® processor</td>
<td>Intel Atom® C3000 series, BGA type</td>
</tr>
<tr>
<td>Cores</td>
<td>Max. 56</td>
<td>Max. 22</td>
<td>Max. 6</td>
<td>Max. 6</td>
<td>Max. 16</td>
</tr>
<tr>
<td>Mem (max.)</td>
<td>512 GB</td>
<td>256 GB</td>
<td>64 GB</td>
<td>32 GB</td>
<td>128 GB</td>
</tr>
<tr>
<td>Default LAN port(s)</td>
<td>2x Intel® I210-AT for management port</td>
<td>2 x Intel® I210-AT for management port</td>
<td>8 x Intel® I211-AT</td>
<td>4 x Intel® I211-AT, 2 x Marvell PHY 88E1543, 2 x SoC</td>
<td>8 x Intel® I211-AT, 4 x Marvell PHY B8E1543</td>
</tr>
<tr>
<td>LAN Module</td>
<td>B</td>
<td>4</td>
<td>2</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>TPM</td>
<td>TPM 1.2/2.0</td>
<td>TPM 2.0</td>
<td>TPM 2.0</td>
<td>TPM 2.0</td>
<td>TPM 2.0</td>
</tr>
<tr>
<td>Intel® VT-x</td>
<td>V</td>
<td>V</td>
<td>V</td>
<td>V</td>
<td>V</td>
</tr>
<tr>
<td>Intel® VT-d</td>
<td>V</td>
<td>V</td>
<td>V</td>
<td>V</td>
<td>V</td>
</tr>
<tr>
<td>SR-IOV</td>
<td>V</td>
<td>V</td>
<td>V</td>
<td>V</td>
<td>V</td>
</tr>
<tr>
<td>Intel® QAT</td>
<td>V</td>
<td>V</td>
<td>V</td>
<td>V</td>
<td>V</td>
</tr>
<tr>
<td>Intel® AES-NI</td>
<td>V</td>
<td>V</td>
<td>V</td>
<td>V</td>
<td>V</td>
</tr>
</tbody>
</table>

*** Supported by selected LAN module.

<table>
<thead>
<tr>
<th>Model</th>
<th>DTA 1164W</th>
<th>DTA 1160</th>
<th>DNA 1160/1160A</th>
<th>DNA 130/130A/130B</th>
<th>ISA 140</th>
</tr>
</thead>
<tbody>
<tr>
<td>Form Factor</td>
<td>Desktop</td>
<td>Desktop</td>
<td>Desktop</td>
<td>Desktop</td>
<td>DIN Rail</td>
</tr>
<tr>
<td>Processor</td>
<td>Intel Atom® processor C3000R series SoC, BGA type</td>
<td>Intel Atom® C3000 series, BGA type</td>
<td>Intel Atom® processor x5-E3900 series, BGA type</td>
<td>Intel Atom® processor x6212RE, BGA type</td>
<td>Intel Atom® processor x6212RE, BGA type</td>
</tr>
<tr>
<td>Cores</td>
<td>Max. 4</td>
<td>Max. 16</td>
<td>Max. 12</td>
<td>Max. 4</td>
<td>Max. 2</td>
</tr>
<tr>
<td>Mem (max.)</td>
<td>64 GB</td>
<td>128 GB</td>
<td>4 GB</td>
<td>4 GB</td>
<td>16 GB</td>
</tr>
<tr>
<td>Default LAN port(s)</td>
<td>6 x 1GbE RJ45 + 2 x SFP ports (reserve design to support 8 x 1GbE RJ45)</td>
<td>4 x Intel® I350-AM4, 4 x Marvell PHY 88E1543</td>
<td>4 x Intel® I211-AT, 4 x Marvell PHY B8E1543</td>
<td>(Flexible I/O)**</td>
<td>-</td>
</tr>
<tr>
<td>LAN Module</td>
<td>-</td>
<td>-</td>
<td>4 x Intel® I211-AT, 4 x Marvell PHY B8E1543</td>
<td>-</td>
<td>8 x 1GbE RJ45 ports</td>
</tr>
<tr>
<td>TPM</td>
<td>TPM 2.0/2.0</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Intel® VT-x</td>
<td>V</td>
<td>V</td>
<td>V</td>
<td>V</td>
<td>V</td>
</tr>
<tr>
<td>Intel® VT-d</td>
<td>V</td>
<td>V</td>
<td>V</td>
<td>V</td>
<td>V</td>
</tr>
<tr>
<td>SR-IOV</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>V</td>
</tr>
<tr>
<td>Intel® QAT</td>
<td>V</td>
<td>V</td>
<td>V</td>
<td>V</td>
<td>V</td>
</tr>
<tr>
<td>Intel® AES-NI</td>
<td>V</td>
<td>V</td>
<td>V</td>
<td>V</td>
<td>V</td>
</tr>
</tbody>
</table>
### NSA 7150/7150A

2U Rackmount Performance Appliance w/ Dual 3rd Gen Intel® Xeon® Scalable processor and 8 x PCIe4 LAN Module Slots

#### Main Features
- Dual 3rd Gen Intel® Xeon® Scalable processor (socket P + 4189-pin)
- Supports Intel® Optane™ Persistent Memory
- 20 x DDR4 3200 ECC RDIMM/LRDIMM
- 2 x 2.5” swappable SSD/HDD
- 8 x PCIe4 LAN module slots
- 1 x PCIe4 x16 low profile riser card
- 1300W 1 + 1 CRPS redundant power supply
- Supports OCP NC 3.0
- Supports IPMI 2.0 RunBMC (optional)
- Supports Intel® QAT (NSA 7150A)

#### Specifications

**Main Board**
- Dual 3rd Gen Intel® Xeon® Scalable processor
- Intel® C627A w/ Intel® QAT (NSA 7150A)
- Supports 3 x UPI between CPUs
- Supports 8 x PCIe4 LAN modules
- Supports IPMI 2.0 RunBMC (optional)

**PCH**
- NSA 7150: Intel® Lewisburg/Refresh LBG-1G (C621A)
- NSA 7150A: Intel® Lewisburg/Refresh LBG-T (C627A)

**Memory**
- Support 20 (10 + 10) DDR4 memory DIMMs (up to 1280GB for RDIMM and up to 2560GB for LRDIMM)
- Support Intel® Optane™ persistent memory (Barlow Pass)

**Storage**
- 2 x 2.5” swappable SSD/HDD
- 1 x M.2 2280 (Key M) socket

**Interface External**
- Button: power & reset & NMI
- LED: PWR/STBY/HDD/ERR
- 2 x 2.5” swappable SSD/HDD bays
- 8 x USB 3.0 ports
- 1 x UART type console
- 8 x PCIe4 x16 low profile card
- 8 x OCP NC 3.0 slots
- 1 x PCIe4 x16 low profile card (optional)

**Interface Internal**
- TPM 2.0 module (optional)
- RunBMC module (optional)

**Power**
- 1300W 1 + 1 CRPS redundant power supply

**Dimension and Weight**
- Chassis dimension: 438 mm x 650 mm x 88 mm
- Carton dimension: 867 mm x 688 mm x 249 mm
- Without packing: 16.72 kg
- With packing: 25 kg

**Environment**
- Operating temperature: 0°C~40°C
- Storage temperature: -20°C~75°C
- Relative humidity: 10%~90% non-condensing

#### Product Overview

The NSA 7150 is a 2U rackmount high-performance networking appliance intended for networking security and 5G network applications. Based on 3rd Gen Intel® Xeon® product family (codenamed Whitley), NEXCOM's NSA 7150 features enhancements in multi-core computing performance, high memory capacity, high speed I/O interface, and Intel® QAT hardware acceleration with DPDK to support NEXCOM proprietary LAN modules and OCP NIC 3.0 modules for both enterprise and telecommunication applications.

#### Ordering Information

**Barebone**
- NSA 7150 (P/N: 10S00715000X0)
  - 2U w/ Dual 3rd Gen Intel® Xeon® Scalable processor, w/o QAT, LCM, 8 x LAN module slots and RunBMC
- NSA 7150A (P/N: 10S00715001X0)
  - 2U w/ Dual 3rd Gen Intel® Xeon® Scalable processor, w/ QAT, LCM, 8 x LAN module slots and RunBMC

**Optional**
- LAN modules
  - To check the list of all supported LAN modules for this appliance, please visit our website: [https://www.nexcom.com/UploadFiles/FCKeditor/file/NCS/LAN-Matrix.pdf](https://www.nexcom.com/UploadFiles/FCKeditor/file/NCS/LAN-Matrix.pdf)
Main Features
- Dual Intel® Xeon® scalable processor (LGA3647)
- 16 x DDR4-2666 RDIMM
- 2 x 2.5" swappable SSD/HDD
- 2 x Management ports
- 8 x LAN modules
- Supports Intel® QAT
- Redundant power supply
- Supports IPMI 2.0 remote management
- Intel® Select Solution for NFVI, VCDN (RHEL), and NFVI FP

Specifications

Main Board
- Dual Intel® Xeon® Skylake-SP scalable processor (LGA3647), up to 165W
- Supports 2 x UPI between CPUs
- Intel® C627 w/ Intel® QAT
- Supports IPMI 2.0
- Supports Dual BIOS

Main Memory
- 16 x DDR4 2133/2400/2666 RDIMM sockets, up to 512GB

Storage
- 2 x 2.5" swappable SSD/HDD
- 1 x CFast

Interface-External
- Button: Power & Reset
- LED: Power/HDD/GPIO/System
- 2 x 2.5" swappable SSD/HDD bays
- 2 x USB 3.0 ports
- 2 x USB 2.0
- 1 x RJ45 type console
- 8 x PCIe x8 LAN module slots
- 2 x Management ports
- 1 x VGA port
- 3 x Swappable smart fans
- 2 x Power inlets
- LCM module

Interface-Internal
- TPM 1.2/2.0 module (optional)

Power
- 700W 1+1 CRPS redundant power supply

Dimensions and Weight
- Chassis dimension: 440.6 mm x 570 mm x 88 mm
- Carton dimension: 774 mm x 636 mm x 293 mm
- Without packing: 19 kg
- With packing: 25 kg

Environment
- Operating temperature: 0°C–40°C
- Storage temperature: -20°C–70°C
- Relative humidity: 10%–90%, non-condensing

Certifications
- CE
- FCC Class A
- UL

Product Overview
The NSA 7146 is a 2U rackmount high-performance security appliance intended for more secure workloads and lower energy consumption in contributing to a greener world. Based on the Intel® Xeon® product family (codenamed Skylake-SP), NEXCOM’s NSA 7146 features enhancements of multi-core computing performance, flexible I/O throughput and interface, and Intel® QAT hardware acceleration technology to process network traffic for both enterprise and telecommunication applications.

Ordering Information

Barebone
- NSA 7146 (P/N: 10S00714600X0)
  2U w/ Dual Intel® Xeon® Scalable Processor, w/ QAT, IPMI, LCM and 8 x LAN modules

Optional
- 1 x LAN modules

To check the list of all supported LAN modules for this appliance, please visit our website: https://www.nexcom.com/UploadFiles/FCKeditor/file/NCS/LAN-Matrix.pdf
Main Features
• 1U compact rackmount
• Single Intel® Xeon® Scalable processor family, up to 14-core
• 8 x DDR4 RDIMM, support 2133/2400/2666, up to 256 GB
• 4 x PCIe x8 LAN module slots, up to 100G QSFP28
• 2 x 2.5” SSD/HDD internal bracket
• 1 x M.2 2242 B key
• 1 x FHHL PCIe x16 extension slot
• 3 Swappable fans
• 450W redundant power supply
• TPM module option

Specifications
Main Board
• NSB 7141 (PCH C621)
• Single Intel® Xeon® scalable processor family
• 1 x PCIe x16 expansion slot
LAN Features
• Optional LAN module
• Support 1GbE/10GbE/25GbE/40GbE/100GbE link speed
• LAN bypass
• please see LAN module list information
I/O Interface-Front
• Power status/HEX status/FRU monitor/GPIO LEDs
• 1 x Power button and 1 x reset button
• 1 x Micro USB type and 1x RJ45 type console ports
• 1 x VGA
• 2 x Management LAN port
• 2 x USB 3.0 port
• 4 x LAN module slots (x8, x8, x8, or x16, x8, x8)
I/O Interface-Rear
• 1 x PCIe x16 expansion slot
• 3 x Swappable system fans
Main Memory
• 8 x DDR4 RDIMM, support 2133/2400/2666, up to 256 GB
• 2 x Intel® Optane™ DC persistent memory (Apache Pass)

Storage Device
• 2 x 2.5” internal SSD/HDD
• 1 x SATA DOM
• 1 x M.2 2242 B-key
Power Input
• 450W redundant power supply
Dimensions
• Chassis dimension: 438 mm x 600 mm x 44 mm
• Packing dimension: 773 mm x 588 mm x 221 mm
Weight
• Without packing: 10.91 kg
• With packing: 14 kg
Environment
• Operating temperatures: 0°C–40°C
• Storage temperature: -20°C–80°C
• Relative humidity: 10%–90% non-condensing
Certifications (Plan)
• CE approval
• FCC Class A

Product Overview
NEXCOM has released the 1U network security appliance NSA 7141 to take on more VNFs workloads and lower energy consumption to contribute to a greener world. Based on Intel® Xeon® scalable processor family (codenamed Purley), NEXCOM NSA 7141 features enhancements in computing performance, system responsiveness, I/O throughput and hardware design for virtual network functions for both enterprise and telecommunication applications. Support PCIe x16 extension slot for more application use like AI engine or crypto/decrypt Accelerator.

Ordering Information
Barebone
• NSA 7141 (P/N: 10500714102X0)

Optional
• LAN modules
To check the list of all supported LAN modules for this appliance, please visit our website: https://www.nexcom.com/UploadFile/FCKeditor/file/NCS/LAN-Matrix.pdf
NSA 5181

Main Features
- 1U rackmount workstation system
- Intel® Coffee Lake-S Xeon® processors (LGA1151)
- Support DDR4 2666 DIMM x 4
- Support 1PM 2.0 remote management
- Four LAN module slots
- Support LCM module (optional)
- Support internal 2.5”, mSATA and M.2 storage
- IPMI 2.0 remote management

Specifications

Main Board
- NSB 5180
- Intel® Coffee Lake-S Xeon® processors (LGA1151)
- Intel® C246

Main Memory
- 4 x DDR4 2666 memory DIMMs support ECC/non-ECC memory, up to 64GB

LAN Features
- Support 4 x swappable LAN modules
- Support up to 1 x 10GBase-LAN module
- LAN bypass
- IPMI 2.0 remote management

Power Input
- Power supply: 300W (1+1) redundant PSU

Dimensions
- Chassis dimension: 438mm x 470mm x 44mm
- Carton dimension: 655mm x 547mm x 226mm

Weight
- Without packing: 7.5 KG
- With packing: 10.5 KG

Certifications
- CE Approval
- FCC Class A

Product Overview

NEXCOM network appliance NSA 5181 helps small and medium-sized businesses (SMBs) scrutinize network traffic with ease. Featuring Intel® Xeon® E Series Product Family, the NSA 5181 delivers scalable computing performance, high port density, and easy expansions of high-speed networking interface. By simplifying deployment, configuration, and management of network security controls, NEXCOM network appliance can fend off unauthorized access, patch potential security loopholes, and create protected networks for business environments.

Ordering Information

Barebone
- NSA 5181 (P/N: 10S00518100X0)
  - Intel® Coffee Lake-S, Xeon® processor with 4 x DDR4 DIMM, 4 x LAN modules, IPMI and redundant PSU

Optional:
- LAN modules
  To check the list of all supported LAN modules for this appliance, please visit our website: https://www.nexcom.com/UploadFiles/FCKeditor/file/NCS/LAN-Matrix.pdf

036
Mainstream Platform

037
Main Features

- Intel® Comet Lake processor (LGA1200)
- 2 x DDR4 ECC/non-ECC (2666/2933) UDIMM
- 2 x 2.5" Internal SSD/HDD
- 1 x SATA3 for SATA DOM
- 1 x M.2 2242 Key M
- 8 x 2.5 GbE RJ45 LAN ports
- 1 x LAN module
- Single power supply

Product Overview

NSA 3190A is a network communication appliance intended for secure workloads and lower energy consumption. Based on the Intel® Comet Lake processor, NEXCOM’s NSA 3190A features high performance computing, flexible I/O, and cost-effective design in processing traffic for network security applications. With up to 16 2.5GbE RJ45 LAN ports and optional expansion cards, it also gives opportunities for customization. NSA 3190A is an ideal edge server or a network security appliance in small and medium business networks.

Specifications

Main Board
- Intel® Comet Lake processor (LGA1200), up to 8W
- Intel® W480
- TPM 2.0 (optional)
- Dual BIOS

Main Memory
- 2 x DDR4 2666/2933 ECC/non-ECC UDIMM, up to 32GB

Storage
- 2 x 2.5" Internal SSD/HDD bays
- 1 x M.2 2242 Key M (SATA)
- 1 x SATA3 for SATA DOM

Interface-External
- Buttons: power & reset
- LED: HDD/bypass 1/bypass 2/GPIO
- 2 x USB 3.0 ports
- 1 x RJ45 console
- 8 x 2.5 GbE RJ45 LAN ports
- 2 x 2.5 GbE bypass pairs
- 2 ports PoE supported (30Wx2) (optional)
- 1 x LAN module slot
- 1 x HDMI

Interface-Internal
- 2 x Fixed smart fans
- 1 x Power inlet
- 1 x 54V DC Input (optional for PoE function)
- 1 x low profile standard PCIe x8 expansion slot (optional)
- LCM (optional)

Riser card (one out of three can be installed per SKU) (optional)
- 2 ports PoE control card
- NVMe with 2 x M.2 SSD
- 8 x 2.5GbE riser LAN card

Power
- 300W single power supply
- 54V DC adapter (optional)

Dimensions and Weight
- Chassis dimension: 430mm x 300mm x 44mm
- Carbon dimension: 546mm x 506mm x 265mm
- Without packing: 4.7kg
- With packing: 7.5kg

Environment
- Operating temperature: 0°C~40°C
- Storage temperature: -40°C~80°C
- Relative humidity: 10%~90%, non-condensing

Ordering Information

Barebone
- NSA 3190A (P/N: 10500319000X0) for ODM projects only.

Optional
- LAN modules

To check the list of all supported LAN modules for this appliance, please visit our website: https://www.nexcom.com/UploadFiles/FCKeditor/file/NCS/LAN-Matrix.pdf
NSA 3180A

1U Rackmount Entry Level Appliance w/ Intel® Coffee Lake Processor (LGA1151),
8 x GbE LANs and 1 x LAN Module

Main Features
- Intel® Coffee Lake Processor (LGA1151)
- 2 x DDR4 2666 UDIMM slots
- 2 x 2.5" Internal SSD/HDD
- 1 x M.2 2280 M key
- 8 x GbE RJ45 LAN ports
- 1 x LAN module
- 1 x PCIe x8 slot (optional)
- Single power supply

Specifications
Main Board
- Intel® Coffee Lake Processor (LGA1151), up to 80W
- Intel® C246
- TPM 2.0
- Dual BIOS
Main Memory
- 2 x DDR4 2666 ECC/non-ECC UDIMM, up to 32GB
Storage
- 2 x 2.5" Internal SSD/HDD bays
- 1 x M.2 2280 M key (SATA)
Interface-External
- Button: Power & Reset
- LED: HDD/Bypass 1/Bypass 2/GPIO
- 2 x USB 3.0 ports
- 1 x Micro USB and 1 x RJ45 console
- 8 x GbE RJ45 LAN ports
- 2 x LAN bypass ports
- 1 x LAN module slot
- 1 x HDMI

Product Overview
The NSA 3180A is a 1U rackmount entry level security appliance intended for secure workloads and lower energy consumption in contributing to a greener world. Based on the Intel® Coffee Lake product family, NEXCOM’s NSA 3180A features high performance computing, flexible I/O, and cost-effective design in processing traffic for network security applications.

Ordering Information
Barebone
- NSA 3180A (P/N: 10500318000XX)
  1U w/ Intel® Coffee Lake Processor, 8 x 2.5 GbE, 1 x LAN module, single PSU

Optional
- LAN modules
To check the list of all supported LAN modules for this appliance, please visit our website: https://www.nexcom.com/UploadFiles/FCKeditor/file/NCS/LAN-Matrix.pdf

041040
NSA 3180HA

1U Rackmount Entry Level Appliance w/ Intel® Coffee Lake Processor (LGA1151), 8 x GbE LANs and 1 x LAN Module

Main Features
- Intel® Coffee Lake Processor (LGA1151)
- 2 x DDR4 2666 UDIMM slots
- 2 x 2.5" internal SSD/HDD
- 1 x M.2 2280 M key
- 8 x GbE RJ45 LAN ports
- 1 x LAN module
- 1 x PCIe x8 slot for acceleration card (optional)
- Redundant power supply

Product Overview
The NSA 3180HA is a 1U rackmount entry-level security appliance intended for secure workloads and lower energy consumption in contributing to a greener world. Based on the Intel® Coffee Lake product family, NEXCOM’s NSA 3180HA features high performance computing, flexible I/O, redundant PSU, and cost-effective design in processing traffic for network security applications.

Specifications
**Main Board**
- Intel® Coffee Lake Processor (LGA1151), up to 8W
- Intel® C246
- TPM 2.0
- Dual BIS
**Main Memory**
- 2 x DDR4 2666 ECC/non-ECC UDIMM, up to 32GB
**Storage**
- 2 x 2.5" internal SSD/HDD bays
- 1 x M.2 2280 M key (SATA)
**Interface-External**
- Button: Power & Reset
- LED: HDD/Bypass 1/Bypass 2/GPIO
- 2 x USB 3.0 ports
- 1 x Micro USB and 1x RJ45 console
- 8 x GbE RJ45 LAN ports
- 2 x LAN bypass pair
- 1 x LAN module slot
- 1 x HDAM
- 2 x Fixed smart fans
- 2 x Power inputs
- 1 x PCIe 3.0 x16 slot (optional)
- LCM (optional)
**Power**
- 450W 1+1 redundant power supply
**Dimensions and Weight**
- Chassis dimension: 430 mm x 480 mm x 44 mm
- Carbon dimension: 632 mm x 567 mm x 203 mm
- Without packing: 7.6 kg
- With packing: 10.6 kg
**Environment**
- Operating temperature: 0°C~40°C
- Storage temperature: -40°C~80°C
- Relative humidity: 10%~90%, non-condensing
**Certifications**
- CE, FCC Class A
- CE-LVD

**Ordering Information**
**Barebone**
- NSA 3180HA (P/N: 10500318001X0)
- 1U w/ Intel® Coffee Lake Processor, 8 x GbE, 1 x LAN module, dual PSU

**Optional**
- LAN modules
To check the list of all supported LAN modules for this appliance, please visit our website: https://www.nexcom.com/UploadFiles/FCKeditor/file/NCS/LAN-Matrix.pdf
Main Features

- Intel Atom® processor C3000 series SoC, BGA type
- DDR4-2400 ECC/non-ECC UDIMM/RDIMM, up to 128GB
- 8 x GbE RJ45 ports for NSA1160
- 2 x 10GBE SFP+ & 6 x GbE RJ45 ports for NSA1160A
- 1 x LAN module slot for NSA1160A
- 2 x USB3.0 connector
- Two pairs bypass

Specifications

Main Board
- NSA 1160/NSB 1160A
  - Intel Atom® processor C3558 for NSA 1160
  - Intel Atom® processor C3758 for NSA 1160A
Main Memory
- 4 x DDR4-2400 ECC/Non-ECC UDIMM/RDIMM, up to 128GB
LAN Features
- 8 x 10GBE RJ45 for NSA 1160
- 2 x 10GBE SFP+ & 6 x GbE RJ45 for NSA 1160A
- 1 x PCIe x4 LAN module slot for NSA 1160A
- LAN bypass: 2 pairs
I/O Interface-Front
- Power/HDD/LAN bypass 1/LAN bypass 2 LEDs
- 1 x Reset button
- 2 x USB 3.0
- 1 x RJ45 type console port
- 1 x LCD (optional)
I/O Interface-Rear
- 1 x VGA
- 2 x USB 2.0
- 1 x Power inlet

Storage Device
- 1 x mSATA slot
- 2.5" HDD/SSD bay (optional)
Power Input
- 65W power supply for NSA 1160
- 150W power supply for NSA 1160A
Dimensions
- Chassis dimension: 430mm x 310mm x 44mm
- Carton dimension: 544mm x 506mm x 205mm
Weight
- Without packing: 5.6kg
- With packing: 8.4kg
Environment
- Operating temperature: 0°C~40°C
- Storage temperature: -20°C~75°C
- Relative humidity: 10%~90% non-condensing
Certifications
- CE Approval
- FCC Class A
- UL

Product Overview

1U network security appliance NSA1160/1160A helps small and medium enterprises build a securely connected workplace. Based on the new Intel Atom® processor C3000 series, the NSA1160A packs excellent performance per watt, accelerated data cryptography and server-grade LAN functions into a small form factor. This 1U network security appliance can create safe environments for network communication to connect employees and offices.

With Intel Atom® processor C3000 series integrated with Intel® QuickAssist technology, the NSA1160/1160A is designed to help increase both network responsiveness and security by distributing computing power to core applications, ranging from mail servers to Firewalls, while using Intel® QuickAssist technology for data encryption and decryption, which were processed by software or a discrete hardware accelerator.

Ordering Information

Barebone
- NSA 1160 (P/N: 10S00116000X0)
  - Intel Atom® C3558, BGA type, 4 x DDR4 memory slots, 8 copper LAN ports, mSATA slot
- NSA 1160A (P/N: 10S00116001X0)
  - Intel Atom® C3758, BGA type, 4 x DDR4 memory slots, 2 10GBE + 6 copper LAN ports, 1 LAN module slot, mSATA slot

Optional
- LAN modules

To check the list of all supported LAN modules for this appliance, please visit our website: https://www.nexcom.com/UploadFiles/FCKeditor/file/NCS/LAN-Matrix.pdf
Main Features
• Intel® Xeon® D-2123IT SoC, BGA type
• 8 x DDR4-2400 RDIMM
• 1 x 2.5" SSD, 1 x M.2 2280
• 8 x GbE RJ45 & 4 x 10GbE Fiber
• 2 x LAN modules
• Redundant power supply
• Intel® Select Solution for uCPE (ADVA Ensemble Connector)

Product Overview
The 1U rackmount uCPE TCA 5170 helps telecom companies build virtualization environments based on Intel® Xeon® D-2123IT processor (Skylake). Packing excellent multi-core CPU performance and server grade LAN functions into a small form factor, this 1U rackmount uCPE creates virtualized environments for flexible VNF deployments in enterprises and branch offices.

Specifications
Main Board
• Intel® Xeon® Skylake-D SoC, BGA type
  - D-2123IT, 4 cores w/o QAT
Main Memory
• 8 x DDR4-2400 RDIMM sockets, up to 256GB
Storage Device
• 1 x 2.5" internal SSD/HDD bay
• 1 x M.2 2280 M key, supports SATA and PCIe x4 signal
Interface-External
• Button: Power & Reset
• LED: Power/HDD/2 x GPIO
• 1 x USB 3.0 port
• 1 x Micro USB type-console
• 8 x GbE RJ45 ports
• 2 x LAN bypass pairs
• 4 x 10GbE fiber ports
• 2 x PCIe x8 LAN module slots
• 1 x Management port
• 4 x SMA connectors for Antennas
• 3 x Fixed smart fans

Dimensions and Weight
• Chassis dimension: 438 mm x 480 mm x 44 mm
• Package dimension: 632 mm x 567 mm x 203 mm
• Without packing: 8kg
• With packing: 12kg

Environment
• Operating temperature: 0°C~40°C
• Storage temperature: -20°C~80°C
• Relative humidity: 10%~90%, non-condensing

Certifications
• CE/FCC Class A
• Intel® Select Solution for uCPE (ADVA Ensemble Connector)
• 2 x LAN modules
• Redundant power supply
• Intel® Select Solution for uCPE (ADVA Ensemble Connector)

Ordering Information
• TCA 5170 (P/N: 10CA0517000X0)
  1U Intel® Xeon® D-2123IT w/o Intel® QAT, w/ 4 x 10GbE & 8 x 1GbE LAN ports, 2 LAN module slots
• Optional
  • LAN modules
  To check the list of all supported LAN modules for this appliance, please visit our website: https://www.nexcom.com/uploadFiles/FOA/UCPE/UCPE-LAN-Matrix.pdf

046
Mainstream Platform
047
Mainstream Platform
Main Features
- Intel® Xeon® D-2177NT SoC, BGA type
- 8 x DDR4-2666 RDIMM
- 1 x 2.5" SSD, 1 x M.2 2280
- 8 x GbE RJ45 & 4 x 10Gbe fiber
- 2 x LAN modules
- Support Intel® QAT
- Redundant power supply
- Intel® Select Solution for uCPE (CentOS)

Specifications
Main Board
- Intel® Xeon® Skylake-D SoC, BGA type
  - D-2177NT, 14 cores w/ QAT
Main Memory
- 8 x DDR4 2666 RDIMM sockets, up to 256GB
Storage Device
- 1 x 2.5" internal SSD/HDD bay
  - 1 x M.2 2280 M key, supports SATA and PCIe x4 signal
Interface-External
- Button: Power & Reset
- LED: Power/HDG x 2 GPIO
- 1 x USB 3.0 port
- 1 x Micro USB type console
- 8 x GbE RJ45 ports
  - 2 x LAN bypass pairs
  - 4 x 10Gbe fiber ports
  - 2 x PCIe x8 LAN module slots
- 1 x Management port
- 4 x SMA connectors for antennas
- 3 x Fixed smart fans
- 2 x Power inlets
- LOM module (optional)

Interface-Internal
- 1 x M.2 2230E key
- 1 x M.2 3042 B key with SIM slot

Power
- 450W 1+1 redundant power supply

Dimensions and Weight
- Chassis dimension: 438 mm x 480 mm x 44 mm
- Package dimension: 632 mm x 567 mm x 203 mm
- Without packing: 8kg
- With packing: 12kg

Environment
- Operating temperature: 0°C~40°C
- Storage temperature: -20°C~80°C
- Relative humidity: 10%~90%, non-condensing

Certifications
- CE/FCC Class A
- Optional: LAN modules

To check the list of all supported LAN modules for this appliance, please visit our website: https://www.nexcom.com/UploadFiles/FCKeditor/file/NCS/LAN-Matrix.pdf

Product Overview
The 1U rackmount uCPE TCA 5170B helps telecom companies build virtualization environments based on Intel® Xeon® D-2177NT processor (Skylake). Packing excellent multi-core CPU performance, accelerated data cryptography with Intel® QAT technology, and server-grade LAN functions into a small form factor, this 1U rackmount uCPE, an Intel® Select Solution for uCPE, creates virtualized environments for flexible VNF deployments in enterprises and branch offices.

TCA 5170B
1U Rackmount uCPE w/ Intel® Xeon® Skylake-D SoC Processor,
8 x GbE RJ45, 4 x 10GbE Fiber and 2 x LAN Modules

Ordering Information
- TCA 5170B (P/N: 10CA0517002X0)
  1U Intel® Xeon® D-2177NT w/ Intel® QAT, w/ 4 x 10GbE & 8 x 1GbE LAN ports, 2 LAN module slots

Optional
- LAN modules

049 Mainstream Platform
TCA 5170C

1U Rackmount uCPE w/Intel® Xeon® Skylake-D SoC Processors, 8 x GbE RJ45, 4 x 10GbE Fiber and 2 x LAN Modules

Main Features
- Intel® Xeon® D-2146NT SoC, BGA type
- 8 x DDR4-2133 RDIMM
- 1 x 2.5" SSD, 1 x M.2 2280
- 8 x GbE RJ45 & 4 x 10GbE Fiber
- 2 x LAN modules
- Redundant power supply

Specifications

Main Board
- Intel® Xeon® Skylake-D SoC, BGA type
  - D-2146NT, 8 cores w/ QAT

Main Memory
- 8 x DDR4 2133 RDIMM sockets, up to 256GB

Storage Device
- 1 x 2.5" internal SSD/HDD bay
- 1 x M.2 2280 M key, supports SATA and PCIe x4 signal

Interface-External
- Button: Power & Reset
- LED Power/HDD/2 x GPIO
- 1 x USB 3.0 port
- 1 x Micro USB type-USB console
- 8 x GbE RJ45 ports
- 4 x 10GbE Fiber ports
- 2 x PCIE x8 LAN module slots
- 2 x Management port
- 4 x SMA connectors for Antennas
- 3 x Fixed smart fans
- 2 x Power inputs
- LCM module (optional)

Interface-Internal
- 1 x M.2 2230 E key
- 1 x M.2 3042 B key with SIM slot

Power
- 450W 1+1 redundant power supply

Dimensions and Weight
- Chassis dimension: 438 mm x 480 mm x 44 mm
- Chassis dimension: 438 mm x 480 mm x 44 mm
- Package dimension: 632 mm x 567 mm x 203 mm
- Without packing: 8kg
- With packing: 12kg

Environment
- Operating temperature: 0°C~40°C
- Storage temperature: -20°C~80°C
- Relative humidity: 10%~90%, non-condensing

Certifications
- CE/FCC Class A

Product Overview
The 1U rackmount uCPE TCA 5170C helps telecom companies build virtualization environments based on Intel® Xeon® D-2146NT processor (Skylake). Packed with excellent multi-core CPU performance and server-grade LAN functions into a small form factor, this 1U rackmount uCPE creates virtualized environments for flexible VNF deployments in enterprises and branch offices.

Ordering Information

- TCA 5170C (P/N: 10CA0517003X0)
  - 1U Intel® Xeon® D-2146NT w/Intel® QAT, w/ 4 x 10GbE & 1 x GbE LAN ports, 2 LAN module slots

Optional
- LAN modules

To check the list of all supported LAN modules for this appliance, please visit our website: https://www.nexcom.com/UploadFiles/FCKeditor/file/NCS/LAN-Matrix.pdf
DTA 1164W

Network Function Virtualization and Software-Defined Appliance with Intel® SOC C3000R

Main Features
- Intel® Atom® processor C3000R series SoC, BGA type
- DDR4-2400 ECC memory SO-DIMM, up to 16GB
- 6 x 1GE RJ45 + 2 x SFP ports (reserved design to support 8 x 1GE RJ45)
- Two ports with PoE, supports up to 30W (802.11at)
- M.2 SATA 2242 Key M
- M.2 3842/3052 for 4G LTE and 5G (FR1)
- mini-PCIe slot for Wi-Fi 5 and 6
- Supports Intel® QAT
- Supports Intel® QuickAssist Technology
- Supports Intel® Dual Intel® QuickAssist Technology
- 1 x 8GB eMMC
- 1 x M.2 3042/3052 for 4G LTE and 5G (FR1)
- 1 x M.2 SATA 2242 Key M
- 1 x M.2 3042 Key B for LTE module with SIM slot onboard
- 1 x M.2 2230 Key E for Wi-Fi module
- 2 x Antenna holes on each chassis side for 5G/4GLTE support (4 x total)
- 1 x Reset button
- 2 x DC-in (12V for system, 54V for PoE)
- 1 x SIM slot
- 1 x M.2 2242 SATA Key M
- 1 x RJ45 console + 1 x USB 3.0 port
- 1 x Power button
- 2 x Antenna holes for Wi-Fi 5 or 6
- 3 x SMA connector holes for RF cable
- Onboard 8GB eMMC 5.0
- 1 x M.2 2242 storage socket
- SW1/SW2/power/SSD LEDs
- LAN Features
  - 6 x 1GbE RJ45 + 2 x SFP ports (reserve design to support 8 x 1GE RJ45)
  - Two ports with PoE, supports up to 30W/port and individual power
  - Two ports with PoE, supports up to 30W (802.11at)
- Main Memory
  - 1 x DDR4-2133 ECC or non-ECC memory SO-DIMM, up to 32GB
  - 1 x DDR4-1866 SO-DIMM ECC/non-ECC memory for DTA 1162A, up to 16GB
- Storage
  - 1 x M.2 2242 SATA Key M
  - 1 x M.2 3042 Key B for LTE module with SIM slot onboard
  - 1 x M.2 3042/3052 for 4G LTE and 5G (FR1)
- Specifications
  - Power: 65W 12V AC power adapter
  - 72W 54V PoE power adapter (optional)
  - Dimension and Weight
    - Dimensions (mm): 168 x 122 x 24 mm
    - Weight: 1.25kg
- Ordering Information
  - DTA 1164W (P/N: 10TA011640080X0)
  - Intel® Atom® processor C3436L, BGA type, 4 cores, 1.30 GHz
  - 6 x 1GE RJ45 + 2 x SFP ports
  - Memory: 0.5 GB DDR4-2133 SO-DIMM ECC/Non-ECC memory
  - Storage: 16 GB M.2 3042/3052 for 4G LTE and 5G (FR1)
  - Main Memory: 8 GB DDR4-1866 SO-DIMM ECC/Non-ECC memory
  - Expansion: 0.25 GB on-board memory
  - I/O Interface-Front
    - 1 x DC-in
    - 1 x Power button
    - 2 x USB 3.0
    - 1 x RJ45 type console port
  - I/O Interface-Rear
    - 1 x RJ45
    - 1 x USB 3.0
    - 1 x SIM slot
    - 3 x SMA connector holes for RF cable
  - Storage Device
    - 1 x SSD U.2HMC

Product Overview

The desktop uCPE DTA 1164W helps small and medium enterprises build a securely connected workplace. Based on Intel® Atom® processor C3000R series SoC, BGA type, the DTA 1164W packs excellent performance per watt and PoE functionality, all in a small form factor. This compact network appliance is perfect for cloud native deployments, while its flexible, multiple configuration easily adapts to today’s dynamic IT environments.

DTA 1162 Series

Virtualization Networks and Software-Defined Appliance with Intel® SOC C3000

Main Features
- Intel® Atom® processor C3000 series SoC, BGA type
- DDR4-2400 ECC memory SO-DIMM, up to 16GB
- 6 x 1GE RJ45 + 2 x SFP ports (reserve design to support 8 x 1GE RJ45)
- Two ports with PoE, supports up to 30W (802.11at)
- M.2 SATA 2242 Key M
- M.2 3842/3052 for 4G LTE and 5G (FR1)
- mini-PCIe slot for Wi-Fi 5 and 6
- Supports Intel® QAT
- Supports Intel® QuickAssist Technology
- Supports Intel® Dual Intel® QuickAssist Technology
- 1 x 8GB eMMC
- 1 x M.2 3042/3052 for 4G LTE and 5G (FR1)
- 1 x M.2 SATA 2242 Key M
- 1 x M.2 3042 Key B for LTE module with SIM slot onboard
- 1 x M.2 3042/3052 for 4G LTE and 5G (FR1)
- mini-PCIe slot for Wi-Fi 5 and 6
- Supports Intel® QAT
- Supports Intel® QuickAssist Technology
- Supports Intel® Dual Intel® QuickAssist Technology
- 1 x 8GB eMMC 5.0
- 1 x M.2 2242 storage socket
- Onboard 8GB eMMC 5.0
- 2 x USB 3.0 connector
- TPM 1.2/2.0

Specifications
- Main Board
  - Intel® Atom® processor C3436L, BGA type, 4 cores, 1.30 GHz,
  - Intel® Devnerton SoC Atom® C3558, BGA type 4 cores 2.2GHz,
- Main Memory
  - 1 x DDR4-1866 SO-DIMM ECC/Non-ECC memory for DTA 1162A, up to 16GB
  - 1 x DDR4-2133 SO-DIMM ECC/Non-ECC memory for DTA 1162B, up to 32GB
- LAN Features
  - 4 x 1GE RJ45 (88E1543) & 2 x 1GE RJ45 (Intel® I211) for DTA 1162A
  - 4 x 1GE RJ45 & 2 x 1GE RJ45 for DTA 1162B
- Power
  - 65W 12V AC power adapter
  - 72W 54V PoE power adapter (optional)
- Dimension and Weight
  - Chassis dimension (mm): 225mm x 150mm x 44mm (W x D x H)
  - Package dimension (mm): 343 x 258 x 212 (W x D x H)
  - Without packing: 1.5kg
  - Dimensions and Weight
    - Dimensions (mm): 225 x 150 x 44
  - With packing: 2.5kg
- Environmental
  - Operating temperature: -20°C~80°C
  - Relative humidity: 10%~90% non-condensing
- Certification
  - CE/FCC Class B
  - CCC

Ordering Information

Desktop network security appliance DTA 1162A/1162B helps small and medium enterprises build a securely connected workplace. Based on the Intel® processor C3000, the DTA 1162A/1162B packs excellent performance per watt, accelerated data cryptography and server-grade LAN functions into a small form factor. This desktop network security appliance can create safe environments for network communication to connect employees and offices.

With Intel® Atom® processor C3000 integrated with Intel® QuickAssist Technology, the DTA 1162A/1162B is designed to help increase both network responsiveness and security by distributing computing power to core applications, ranging from mail servers to firewalls, while using Intel® QuickAssist Technology for data encryption and decryption, which were processed by software or a discrete hardware accelerator.

Certifications
- CE Approval
- FCC Class B

DTA 1162A

 Barebone
  - DTA 1162A (P/N: 10TA0116201X0)
  - Intel® Devnerton SoC Atom® C3338, BGA type 2 cores 1.5GHz, non
  - Intel® QAT

 DTB1162 series

 Barebone
  - DTA 1162A (P/N: 10TA0116200X0)
  - Intel® Devnerton SoC Atom® C3338, BGA type 4 cores 2.2GHz, non
  - Intel® QAT

 DTB1162 series

 Barebone
  - DTA 1162A (P/N: 10TA0116201X0)
  - Intel® Devnerton SoC Atom® C3338, BGA type 2 cores 1.5GHz, non
  - Intel® QAT

 DTB1162 series

 Barebone
  - DTA 1162A (P/N: 10TA0116200X0)
  - Intel® Devnerton SoC Atom® C3338, BGA type 4 cores 2.2GHz, non
  - Intel® QAT
**DTA 1160**

Virtualization Networks and Software Defined Appliance with Intel Atom® SOC C3758

**Main Features**
- Intel Atom® C3758 SoC 8 cores, BGA type
- Support Intel® QAT
- DDR4-2400 ECC/non-ECC UDIMM/RDIMM, up to 64GB
- 2 x 10GbE SFP+ and 6 x 1GbE LAN ports
- 8GB eMMC
- 1 x 2.5" internal SSD bay (optional)
- 2 x USB 3.0 connector
- TPM 1.2/2.0

**Specifications**
- **Main Board**: DTA 1160
- **Intel Atom® C3758, BGA type**
- **Main Memory**: DDR4-2400 ECC/non-ECC UDIMM/RDIMM, up to 64GB
- **LAN Features**: 2 x 10GbE SFP+ ports
- **Expansion**: 1 x 2.5" internal SSD bay (optional)
- **I/O Interface-Front**: 2 x USB 3.0 ports
- **I/O Interface-Rear**: 4 x 1GbE RJ45 ports from Intel® I350-AM4

**Power Input**
- DC 12V/3A 60W power adapter

**Ordering Information**
- Barebone: DTA 1160 (P/N: 10TA0116000X0) Intel Atom® C3758 base, 8 cores, BGA type, 2.2GHz

---

**DNA 1160**

Intel Atom® Processor C3000 Series BGA type with 8 GbE Copper LAN Ports

**Main Features**
- Intel Atom® processor C3000 series SoC, BGA type
- DDR4-2133 Long-DIMM ECC memory, up to 32GB
- Support 8 GbE LAN ports
- One CFast socket
- USB 3.0 connector (Type A)

**Specifications**
- **Main Board**: DNA 1160
- **Intel Atom® processor C3000 series, BGA type**
- **Main Memory**: DDR4-2133 Long-DIMM ECC memory, max. 32GB
- **LAN Features**: 8 x Copper ports
- **Expansion**: 1 x mini-PCIe slot for Wi-Fi module

**Power Input**
- DC 12V/3A 60W power adapter

**Ordering Information**
- Barebone: DNA 1160 (P/N: 10L00116000X0) Intel Atom® processor C3338, BGA type 2 cores/1.5 GHz
- DNA 1160A (P/N: 10L00116002X0) Intel Atom® processor C3558, BGA type 4 cores/2.2 GHz

---
DNA 130

Intel Atom® Processor x5-E3900 Series up to 4 Cores, 1.6GHz, BGA type with 5GbE Copper LAN Ports

Main Features
- Intel® Atom® processor x5-E3900 series, SoC, BGA type
- DDR3L SO-DIMM memory, max. 8GB
- Onboard eMMC 4GB
- 1 x mSATA connector
- 1 x Power button
- 1 x mPCIe slot for Wi-Fi or LTE
- 5 x Copper ports
- 1 x DDR3L SO-DIMM non-ECC memory, max. 8GB

Product Overview
Desktop network security appliance DNA 130 helps small and medium enterprises build a securely connected workplace. Based on the Intel Atom® processor x5-E3900, the DNA 130 packs excellent performance per watt and LAN functions into a small form factor. This desktop network security appliance can create safe environments for network communication to connect employees and offices.

Specifications
- Main Board
  - 1x Intel® Atom® processor x5-E3900 series, BGA type
- Main Memory
  - 1x DDR3L SO-DIMM memory, max. 8GB
- LAN Features
  - 5 x Copper ports
  - 4 x 1GbE Copper ports
  - 1 x Power button
  - 1 x mPCIe slot for Wi-Fi or LTE

ISA 140

Fanless Industrial Security Appliance in a Compact DIN Rail Form Factor with Intel® Processor and 6 x 1GbE RJ45 Ports

Main Features
- Intel® Atom® x6212RE (Elkhart Lake) Industrial grade processor
- 1x DDR4 SO-DIMM slot and support up to 16GB 2666/3200 MT/s
- M.2
- Support eMMC up to 8GB for OS
- Support M.2 Key B slot, supports 2242 for data storage
- 6 x 1GbE RJ45 with 1 x bypass pair

Product Overview
NEXCOM’s ISA 140, powered by Intel’s latest dual-core Atom® processor, is a compact, fanless industrial security appliance equipped with six 1GbE ports for network connectivity. It also supports seamless Wi-Fi/LTE connectivity and DOB remote management, and operates in settings with wide temperature ranges. The compact DIN rail design allows IT personnel to easily embed ISA 140 in existing network infrastructure without affecting manufacturing equipment productivity.

Specifications
- Main Board
  - 1x Intel® Atom® x6212RE (Elkhart Lake) Industrial grade processor
- Main Memory
  - 1x DDR4 SO-DIMM slot support 2666/3200 MT/s up to 16GB
- Storage
  - 8GB eMMC for OS
  - Storage M.2 Key B slot, supports 2242 for data storage
- Interface External
  - 6 x 1GbE RJ45 with 1 x bypass pair
- Fanless with Intel® Processor

Ordering Information
- ISA 140 (P/N: 10L10014000X0)
  - Intel® Atom® x6212RE (Elkhart Lake) processor, with 6 x 1GbE RJ45 Ports
  - Without packing: TBD
  - System size: 165 x 61.7 x 129.25 mm
  - Dual 24VDC (9~36VDC)
  - Power: Dual 24VDC (9~36VDC)

Ordering Information
- ISA 140 (P/N: 10L10014000X0)
  - Intel® Atom® x6212RE (Elkhart Lake) processor, with 6 x 1GbE RJ45 Ports
  - With packing: TBD
  - System size: 165 x 61.7 x 129.25 mm
  - Dual 24VDC (9~36VDC)
  - Power: Dual 24VDC (9~36VDC)