



## NEXCOM's TCA 5170 with Intel® Xeon® D Processor and CentOS verified as an Intel® Select Solution for Universal Customer Premises Equipment (uCPE)

### **Introduction**

Facing the rapidly changing business environment and the rise of new digital technologies, the digital transformation of enterprises has brought with it many new business opportunities and challenges. Enterprises increasingly need more network functions, such as SD-WAN, virtual private network, firewall, IPS, ADC, router, carrier-grade NAT, and AP controller, just to name a few. This has amplified investment in network function hardware but complicates network infrastructure and topology.

### **The Challenge**

When network functions are bundled tightly with hardware, its use requires a corresponding network topology. For example, a physical firewall must exist and is used to isolate two network segments. When network architecture expands along with the business, network functions also increase, which quickly complicates network topology. This additionally requires more investment in dedicated hardware and makes maintenance difficult, as it increases total cost of ownership (TCO).

### **The Solution**

An effective solution is to decouple the network function from the hardware platform. By virtualizing network functions, the virtual network functions (VNFs) are deployed on the universal customer premises equipment (uCPE) hardware platform and network topology configured through the software-defined networking (SDN) mechanism, so that you can directly and flexibly deploy network functions, such as firewalls, on the required network nodes. When network architecture expands along with the business, it only needs to add more uCPEs, deploy more network functions, and adjust the network topology on the abstract level, which greatly reduces hardware investment costs, as well as its complexity and maintenance costs.

### **About uCPE**

Universal customer premises equipment (uCPE) is an emerging category of network functions virtualization (NFV)-based edge computing and service provisioning systems that augments Communications Service Providers' (CommSPs) service agility. NEXCOM has launched its TCA 5170 uCPE based on the Intel® Select Solutions for uCPE reference design, combining the powerful Intel® Xeon® D processor with an optimized software stack.

The TCA 5170 uCPE is a platform that can bring virtualized and non-virtualized (bare metal) services to small branch offices and small-to-medium-sized businesses.

Intel® Select Solutions for uCPE provide a reference design for these platforms that combines Intel® technology with NEXCOM's expertise in NFV systems architecture.

## Configuration and Specifications

The NEXCOM TCA 5170 is a verified Intel® Select System for uCPE that leverages the following hardware components:

Item	Description
Server Name	TCA 5170
Processor	Intel® Xeon® D-2177NT Processor, 14C at 1.9 GHz, 105W
Memory	4x 16 GB at 2667 MHz (Total 64 GB).
NICs	4x10GbE Integrated Ethernet ports
Offload technology	Intel® QAT
Storage	Intel® SSD DC S4510 Series, 480 GB, 2.5" or equivalent Intel® Solid State Drive Data Center (Intel® SSD DC) (SATA or M.2)
Operating System	CentOS 7.6 with RT Kernel

### About TCA 5170

The 1U rackmount uCPE TCA 5170 was designed to help users build virtualization environments based on Intel®'s Xeon® D SoC. Packing excellent multi-core CPU performance, accelerated data cryptography with Intel® QAT, redundant power supply, 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.



### Key Benefits

Key benefits of investing in an Intel® Select Solution for uCPE from NEXCOM include:

*Faster evaluation:* Intel Select Solutions for uCPE combine tight hardware and software specifications to eliminate guesswork and speed up decision-making. IT managers can focus their searches on key value-added elements and quickly select an optimal solution.

*Fast and easy deployment:* Intel Select Solutions for uCPE feature pre-defined settings and rigorous system-wide tuning for efficient pre-deployment testing. IT staff know what to expect upfront, which expedites service delivery and increases confidence in solution performance.

*Workload-optimized performance:* Intel Select Solution for uCPE configurations are designed by Intel and its partners to deliver at a workload performance threshold and built on the latest Intel® architecture, including Intel® Xeon® D processors.

#### [Sidebar]

### Intel® Xeon® Processor D-2100 Product Family

The Intel® Xeon processor D-2100 product family is based on the Intel® Xeon® Scalable processor architecture and optimized for low power consumption and high-density solutions, integrating essential network, security, and acceleration capabilities. Intel® Xeon® D processor-based solutions enable CommSPs to bring intelligent services to the network edge by offering low total cost of ownership and power draw, while delivering space-efficient, off-the-shelf commercial servers. Key features include:

- *Enhanced memory:* Up to 512 GB of DDR4 ECC
- *Enhanced accelerators:* Integrated Intel® QAT for accelerated compression and encryption/decryption
- *New extensions:* Intel® Advanced Vector Extensions 512 (Intel® AVX-512), a specialized instruction set for outstanding computing performance
- *Enhanced networking:* Up to four integrated 10 GbE Intel® Ethernet adapters

### Conclusion

The Intel® Select Solutions for uCPE reference design provides NEXCOM with the platform, software, and the ecosystem delivering a large number of tested and optimized virtual network functions (VNFs) to get to market quickly with a differentiated product. With the TCA 5170, NEXCOM now has a verified uCPE solution to help their CommSP customers to deliver new services to enterprises and small businesses.

### Learn More

NEXCOM TCA5170 : <http://www.nexcom.com/Products/network-and-communication-solutions/edge-cloud-solutions/sd-wan-appliance>

Intel® Select Solutions web page: <https://builders.intel.com/intelselectsolutions>

Intel® Xeon® D processor family: <http://www.intel.com/xeond>

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<https://builders.intel.com>

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