PUZZLE-IN004

IEI PUZZLE with Intel® Solution

UTM

IDS

Intel® IoT Solutions Alliance

IEI PUZZLE Series Products

Aiming to The Future with Next Generation Network Appliance

Proprietary Network Appliance

A Proprietary network appliance is a specialized electronic device that plugs into a network that is optimized for one specialized network purpose like switching, routing, protecting in a network environment. Proprietary network appliances include as Router, Load Balance, Bandwidth Management, Gateway security, WAN Optimization, application delivery controller (ADC), Next Generation Firewall (NGFW), Unified Threat Management (UTM), and Intrusion detection system (IDS).

uCPE (Universal Customer Premise Equipment)

uCPE consists of virtual network functions (VNFs) running on a standard operating system hosted on an open server with NFV technology.

Now with NFV technology, we can create several virtual machines and install these VNFs in a x86 or ARM based uCPE. VNFs could include popular software services such as a virtual firewall, virtual load-balancing, or other software-defined wide area network (SD-WAN)service. Besiads with NFV Orchestration, uCPU could be an edge computing system or an AI inference computing system.

Performance, Dependability and Security for The Next Generation of Networking Infrastructure
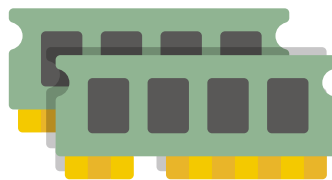
Equipped with Intel® Xeon® Processor D-2100 series (Skylake-D) System On Chip (up to 16 cores, 32 threads, turbo Core up to 3.0 GHz) with up to 512GB Quad-channels DDR4, the PUZZLE-IN004 enables lightning-fast multi-tasking with low power consumption with four port 10GbE SFP+ and eight ports of 1GbE (Intel I211) configuration. With a hardware secure multitenancy, the PUZZLE-IN001 also provides QAT (QuickAssist Technology), PTT(Platform Trusted Technology), Boot Guard, Intel® AVX-512. Integrated four ports 10GbE support lightning-fast throughput for bandwidth-demanding tasks.

PUZZLE-IN004 Supports Intel® Xeon® Processor D-2100 Which is Optimized for Compute & Network.

Performance For Range Of Workloads

Intel® AVX-512 new instructions

Enhanced security, storage and quality of service features.

Memory Improvements

Quad memory channels

Up to 512GB memory capacity

Integrated Accelerators

Quad 10Gb Ethernet ports with RDMA

Intel® QuickAssist Technology (QAT) encryption and compression

Key Values of PUZZLE-IN004

Performance improvement drives better total cost of ownership (TCO)

- Up to 1.5x** SIR Performance improvement and 2x Memory BW over Broadwell-DE
- AVX-512 instructions enhance security and pattern match algorithms

Integrated Accelerators to offload cores

- Integrated Intel® QuickAssist Technology with up to 100G crypto & compression drives storage efficiency for real time compression
- Integrated 4x10GbE with RDMA and native SFI

Comprehensive RAS/ Security features enable Carrier Grade & Security

- Improved failure diagnostics & prediction capabilities for managing CPU lifecycle
- Unified architecture for secure boot; IE integration enables customer specific uses

Intel® Advanced Vector Extensions 512 (Intel® AVX-512)

- One 512-bit FMAs
- 512-bit FP and Integer
- 32 registers
- 8 mask registers
- 32 SP/16 DP Flops/Cycle (SKUs with 1 512-bit FMA)
- Embedded rounding
- Embedded broadcast
- Scalar/SSE/AVX "promotions"
- Native media additions
- HPC additions
- Transcendental support
- Gather/Scatter

RDMA- Remote Direct Memory Access

- RDMA sets up a direct channel between source application data space and destination application data space for low latency, high throughput data communication.
- **Three flavors of RDMA:** InfiniBand, RoCE, iWARP
  - » iWARP is recommended for easy deployment and configuration, scalability and congestion control
  - » Bakerville platform features iWARP RDMA
- **VERBs:** applications needs to use VERB APIs to talk to each other, instead of traditional sockets
  - » OFA OFED provides the Linux VERB APIs
  - » Windows OS has Network Direct APIs
- Drivers supported with below top tier applications

Intel® QuickAssist Technology

Intel® QuickAssist Technology integrates hardware acceleration of compute intensive workloads

Such as Bulk Cryptography, Public Key Exchange & Compression on Intel® Architecture Platforms

- Intel's 3rd Generation Technology
- Sub Gb/s to 100 Gb/s Rates
- Networking, Storage, Big Data, Cloud, Datacenter, and HPC Applications Receive High Performance Execution of:
  - » Cryptographic Ciphers
  - » Authentication
  - » Public Key Exchange & Key Protection
  - » Compression/Decompression
- Enables Standard Server & Cloud Platforms to Offer Ubiquitous Security and Compression/Decompression
- Provides a Converged Platform Architecture for Cloud, Networking, Storage & Big Data

Integrated Accelerator & PCH

Intel® QuickAssist Technology

Crypto

Compression

10 GbE/1 GbE Ports

USB 3
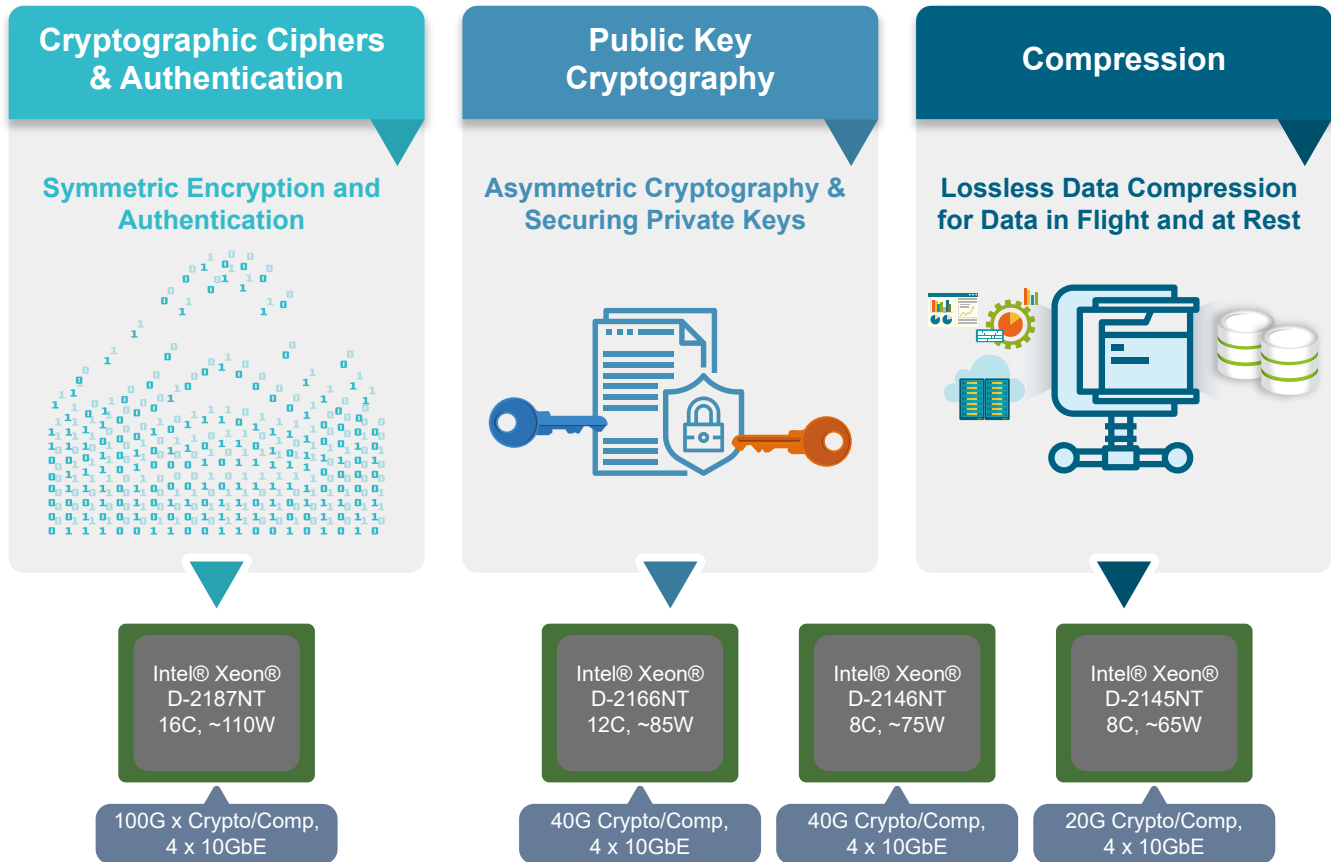
SATA 3

GPIO

SPI & eSPI

x1 GbE

SMBus

Innovation Engine (IE)

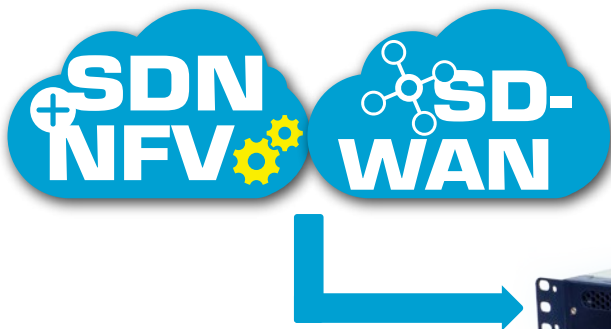PCIe Gen3 Root

Use Intel® QuickAssist For:

- Symmetric Cryptography Functions Including Cipher Operations And Authentication Operations
- Public Key Functions Including RSA, Diffie-Hellman, and Elliptic Curve Cryptography
- Compression/Decompression Functions supporting lossless Deflate

Cryptographic Ciphers & Authentication	Public Key Cryptography	Compression
Symmetric Encryption and Authentication	**Asymmetric Cryptography & Securing Private Keys**	**Lossless Data Compression for Data in Flight and at Rest**

Intel® Xeon® D-2187NT 16C, ~110W	Intel® Xeon® D-2166NT 12C, ~85W	Intel® Xeon® D-2146NT 8C, ~75W	Intel® Xeon® D-2145NT 8C, ~65W
100G x Crypto/Comp, 4 x 10GbE	40G Crypto/Comp, 4 x 10GbE	40G Crypto/Comp, 4 x 10GbE	20G Crypto/Comp, 4 x 10GbE

Intel® Ethernet Solutions Feature Comparison

Feature	XL710 Fortville	PUZZLE-IN004 Integrated X722	X550
1G/10GbE	4x 1G/10G	4x 1G/10G	2x 100M/1G/10G
Virtualization	VMDq, SR-IOV (16 PFs, 128 VFs per device), VEB enhancement	VMDq, SR-IOV (4 PFs, 128 VFs per device), VEB enhancement	VMDq, SR-IOV (1 PF and 64 VFs per port), VEB
MFP (NPAR, Flex-10)	Yes	No	No
DCB	Yes	Yes	Yes
FCoE	No	No	Yes
RDMA - iWARP	No	Yes	No
"Built In" - Server PCH / SoC integrated	No	Yes	No
Package	25x25	Skylake-D Integrated	25x25, 17x17

Target Applications

PUZZLE-A001 enable advanced NFV and SDN capabilities for service providers' next-generation networking infrastructure, spanning from the enterprise to the data center.

uCPE (Universal Customer Premise Equipment)

Highly parallelized CPU ideal for Network Function Virtualization (NFV) and Software Defined Network (SDN)

Proprietary Network Appliance

• Security for business critical network data

• HW encrypted multi-tenant security

• High I/O for network connectivity

• Memory capacity for large traffic datasets

Unified Threat Management (UTM)

Unified threat management or UTM is a single network appliance for all-inclusive security functions, such as network firewall, intrusion detection/prevention system (IDS/IPS), anti-virus gateway, anti-spam gateway, VPN, content filtering, load balancing, data loss prevention and appliance monitoring.

UTM appliances offer cost-effective, all-in-one security ideal for small/medium businesses, remote offices and retail networks.

Intrusion Detection System (IDS)

An intrusion detection system (IDS) is a device that monitors a network or systems for malicious activity or policy violations. Any malicious activity or violation is typically reported either to an administrator or collected centrally using a security information and event management (SIEM) system. A SIEM system combines outputs from multiple sources, and uses alarm filtering techniques to distinguish malicious activity from false alarms.

Next Generation Firewall (NGFW)

Both NGFW and traditional firewalls aim to serve the same purpose of protecting an organization's network and data assets, but the most important differences between traditional and next-generation firewalls is that NGFW offer a deep-packet inspection function that goes beyond simple port and protocol inspection by inspecting the data carried in network packets.
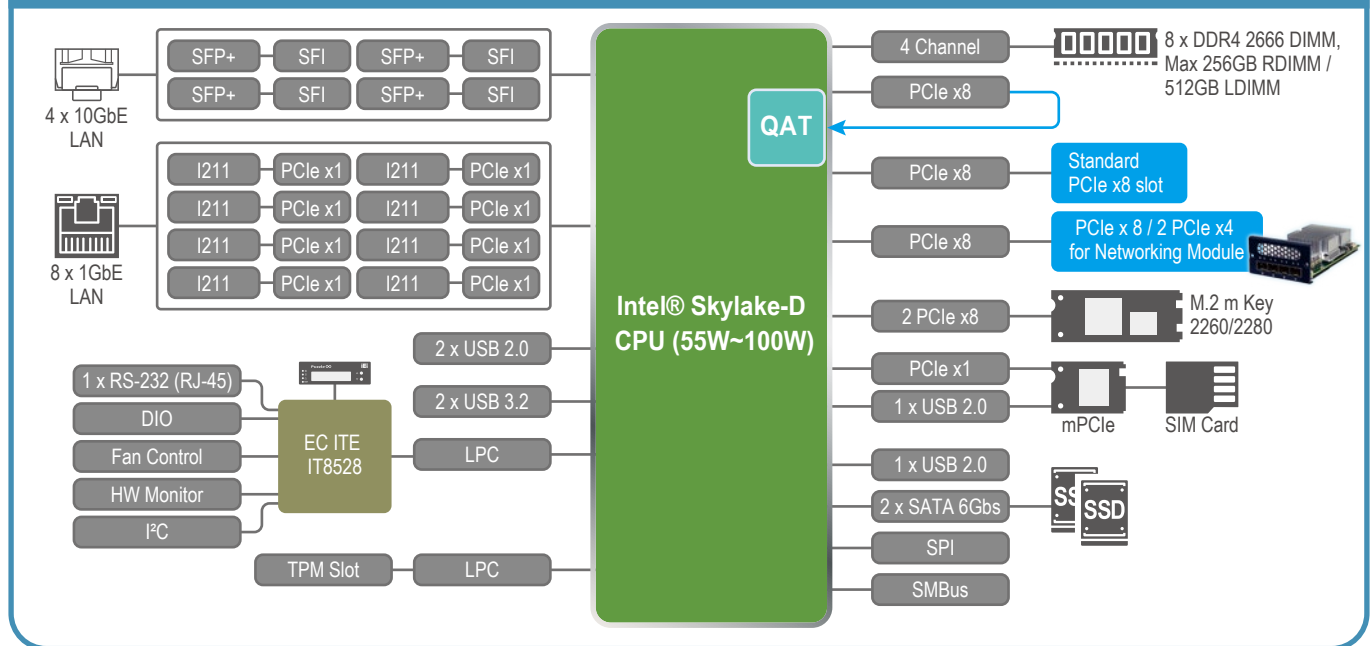
Application Delivery Controller

An application delivery controller (ADC) is a computer network device to improve the performance of web applications in a data center and it also could 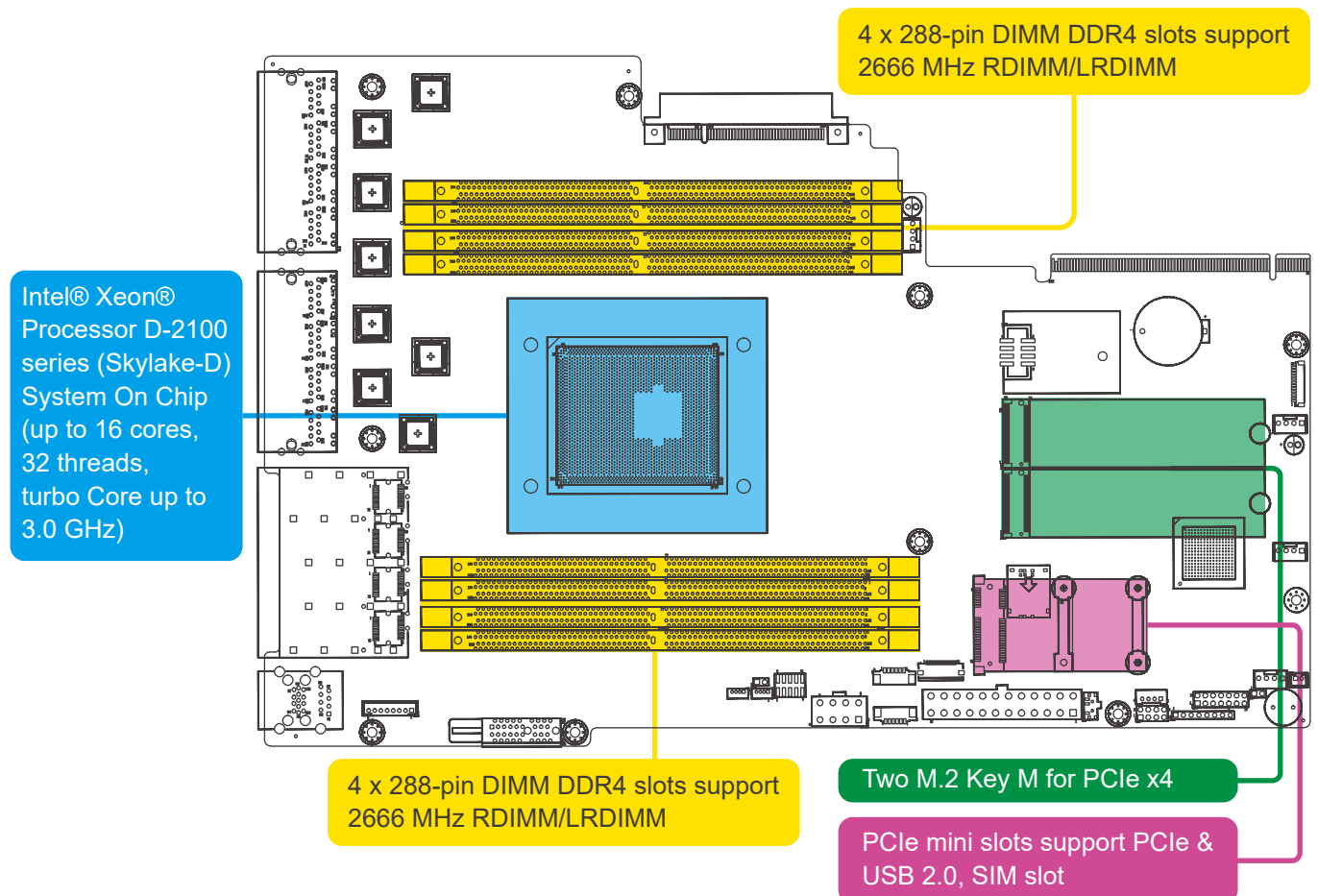be a part of an application delivery network (ADN). In order to deal with the increasing demands of Internet traffic, application delivery controllers (ADC) also provide load balancing, and support multi-tenancy for deployment in data centers and a large number of sessions with a fast transaction rate.

PUZZLE-IN004 1U Intel® Xeon-D 2100

PUZZLE-IN004 System Block Diagram

PUZZLE-IN004 Support Various Expansion Card

4 x 288-pin DIMM DDR4 slots support 2666 MHz RDIMM/LRDIMM

Intel® Xeon® Processor D-2100 series (Skylake-D) System On Chip (up to 16 cores, 32 threads, turbo Core up to 3.0 GHz)

4 x 288-pin DIMM DDR4 slots support 2666 MHz RDIMM/LRDIMM

Two M.2 Key M for PCIe x4

PCIe mini slots support PCIe & USB 2.0, SIM slot

PUZZLE-IN004 Support Various Expansion Card

System Fan

Standard PCIe Slot

- Puzzle-IN004 support One PCIe x8 slot.
- Support smart NIC cards and accelerator cards including CPU accelerator, GPU accelerator, FPGA accelerator and VPU accelerator

300W Redundant Power Supply

Hot-swappable redundant power supply to ensure maximum system uptime

System Fan

Tow 2.5" SSD/HDD Bays

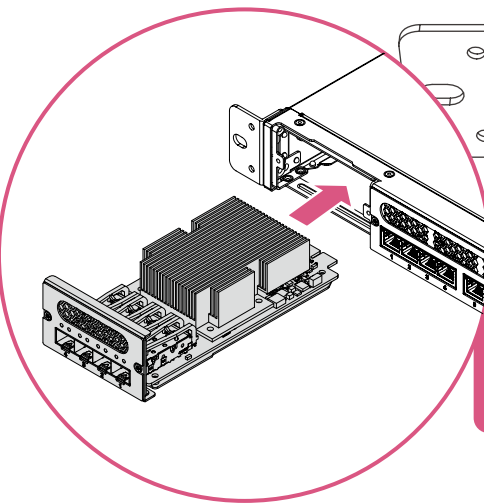- Support RAID 0/1
- Cable-less design

IEI PulM Network Module Slot

IEI PulM Network Module slot support 8 lanes of PCIe Gen3 signal form CPU. The PCIe lanes could be configured to one PCIe x8, two PCIe x4

Eight 1GbE

four10GbE SFP+

Console & USB

LCM Indicator

PUZZLE-IN004 Potential With One PCIe Slots

The PUZZLE-IN004 features one IEI PulM Network Module Slot. IEI PulM Network Module slots support 8 lanes of PCIe Gen3 signal form CPU. The PulM slot could be configured into one PCIe x8, two PCIe x4 supports smart NIC via PulM Network Module. The PUZZLE-IN004 also support one standard PCIe (Gen3 x8) slots, allowing for installing full height, 200mm length Standard PCIe card, such us single/dual-port 10GbE NICs to accelerate applications that demand higher bandwidth such as virtualization, media workflows, and backup/restoration tasks for an ever-growing amount of data.

Besides, expansion Card provides extra functions and computing power for the network appliance, Edge computing and AI inference, computing systems. 4G, 5G, WiFI could be supported by PCIe mini card or M.2 card. Adding a Smart NIC card will increase the performance of system and get specific network functions. Adding accelerator cards like GPU card, FPGA card and VPU card will provide extra performance for a Edge Computing or an AI Inference Computing system.
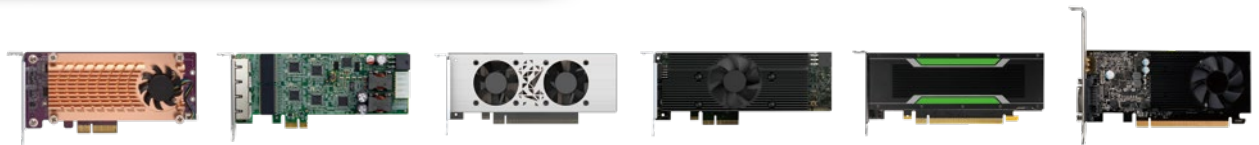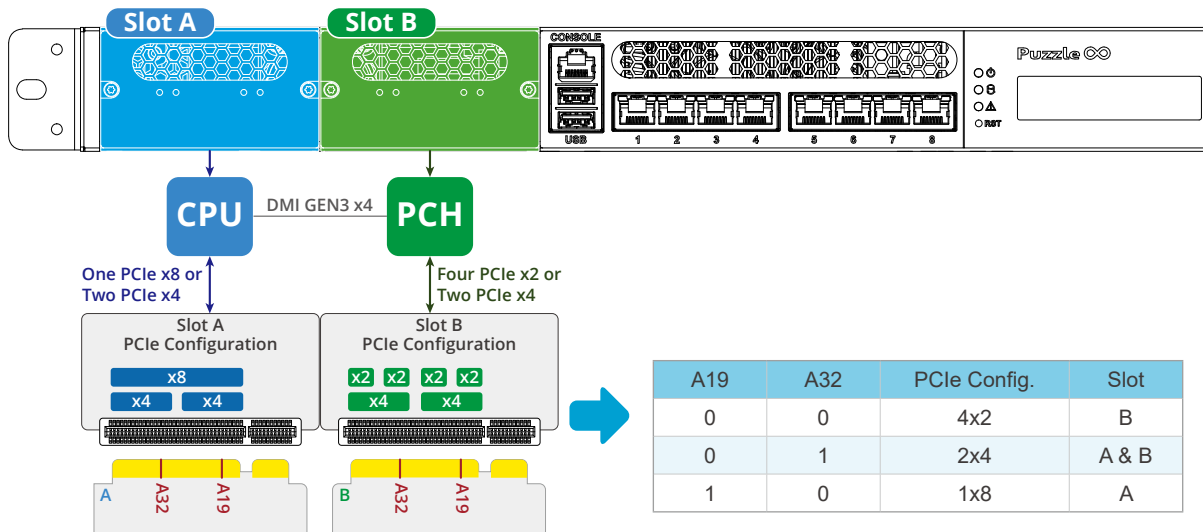
One PCIe x4 Expansion Slot

Standard PCIe Slots

➤ PUZZLE-IN004 support one PCIe x4 slot.
➤ Support full height, 200mm length Standard PCIe card.
  ● **AI Accelerating Card:** VPU, FPGA, GPU card…etc.
  ● **High Speed:** 10GbE card, Fiber card
  ● **I/O Card:** Serial port card, USB card, LAN card…etc.
  ● **Wireless Card:** WiFi card, mobile wireless card…etc.
  ● **Storage Card:** SAS, RAID card

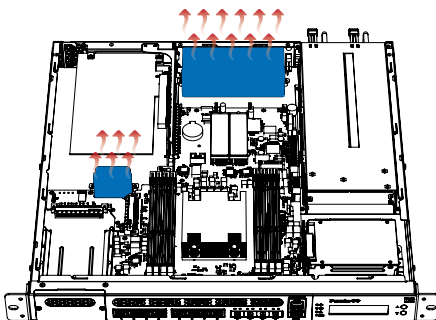| P/N	QNAP QM2-2P-384 QM2-2P-344	IEI GPOE-4P-R10 GPOE-2P-R10	IEI Mustang-F100-A10	IEI Mustang-V100-MX8	GP GPU	GT1030
Description	Dual M.2 PCIe SSD expansion card	2-port/4-port PoE card	FPGA card	VPU card	Inferencing accelerator card	GPU card
Form Factor/ Interface	Low-Profile PCIe 3.0 x8	Low-Profile PCIe x1	Low-Profile PCIe 3.0 x8	Low-Profile PCIe 2.0 x4	Low-Profile PCIe Gen3 x16	Low-Profile PCIe Gen3 x4

One Network Module Expansion Slot

Install the IEI PulM networking module into the slot of the PUZZLE series. The Slot A supports 8 lanes from CPU (one PCIe x8 or two PCIe x4); the Slot B supports two PCIe x4 or four PCIe x2 from PCH.

A19	A32	PCIe Config.	Slot
0	0	4x2	B
0	1	2x4	A & B
1	0	1x8	A

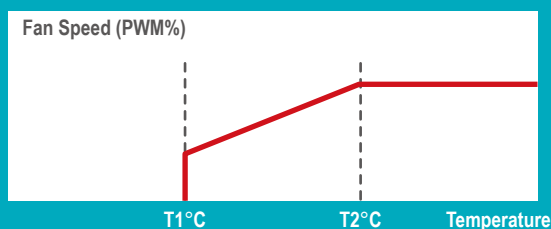| P/N	PulM-25G2SF-MLX	PulM-10G4SF-XL710	PulM-10G4SF-XL710-BP	PulM-10G4SF-MLX
NIC Brand	Mellanox	Intel	Intel	Mellanox
Form Factor Interface	Dual ports 25GbE SFP28	Quad ports 10GbE SFP+	Quad ports 10GbE SFP+	Quad ports 10GbE SFP+
LAN Bypass	No	No	Yes	No
Description	PCIe 3.0 x8	PCIe 3.0 x8	PCIe 3.0 x8	2 x PCIe 3.0 x4

Smart Fan Operation

Users can define CPU fan and system fan speed and temperature profile in the BIOS menu. When the system is in idle or running less demanding tasks, smart fan is able to bring down the level of noise produced by rotating fans. The adjustable settings allow the PUZZLE-A002 to be quieter during operation while extending the fan's lifespan, enhancing system stability and durability.
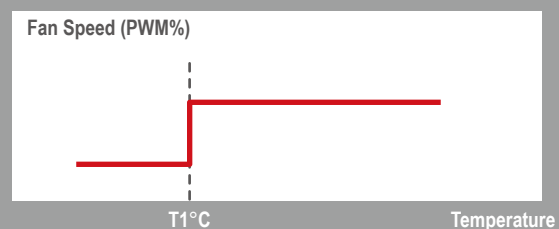
PUZZLE Series

With fan speed and temperature trigger settings set, the fan speed can change seamlessly according to temperature readings.

Fan Speed (PWM%)

T1°C   T2°C   Temperature

Traditional System

Traditional system fan operation is detected by system's ON (fan at full speed) and OFF statuses.
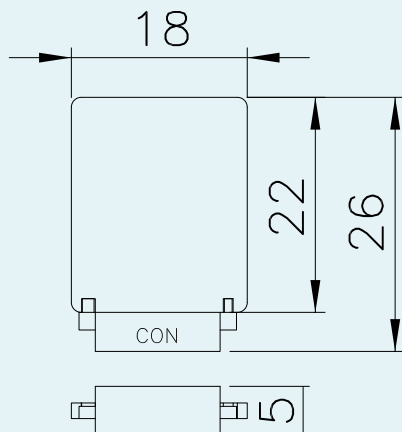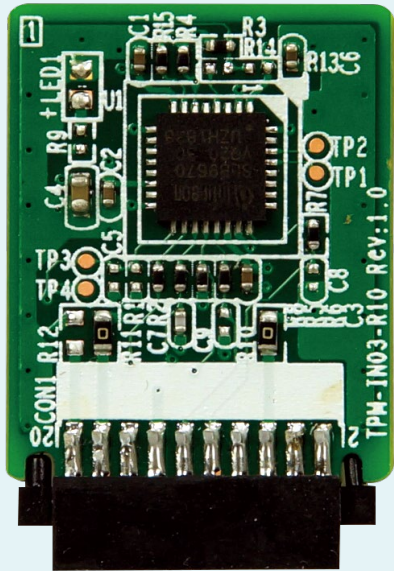
Fan Speed (PWM%)

T1°C   Temperature

Protecting Integrity and Authenticity of PUZZLE-IN004

PUZZLE-IN004 support TPM (Trusted Platform Module) which offers a broad portfolio of standardized security controllers to protect the integrity and authenticity of systems. With a secured key store and support for a variety of encryption algorithms, TPM security chips provide robust protection for critical data and processes through their rich functionality.

What is a TPM?

Trusted Platform Module (TPM) is an international standard for a secure cryptoprocessors that can securely store critical data such as passwords, certificates and encryption keys. TPM is a dedicated microcontroller designed to secure hardware by integrating cryptographic keys into devices and is used for secured crypto processes within computing devices as well as for secured storage of critical data. TPMs are typically used in business laptops, routers and embedded and IoT devices. The technical TPM specification was written by an industry consortium called Trusted Computing Group (TCG).

TPM-IN03

▶ Specifications

- ◆ Interface
  SPI interface
- ◆ Solution
  Infineon SPI TPM 2.0 with SLB9670VQ2.0 FW7.85
- ◆ Management Tool Function
  1. TPM management
  2. File & Folder En/De-cryption
  3. Personal secure drive
  4. Secure email
  5. Key transferring
  6. Security policy configuration
  7. SPI interface
- ◆ Market Segment
  Complete TPM 2.0 function
- ◆ OS Support: Windows® & Linux
- ◆ Operating Temperature: 0°C ~ 60°C
- ◆ Storage Temperature: -20°C ~ 70°C
- ◆ Operating Humidity: 5% ~ 95%, non-condensing
- ◆ Dimensions (LxW): 26mm x 18mm

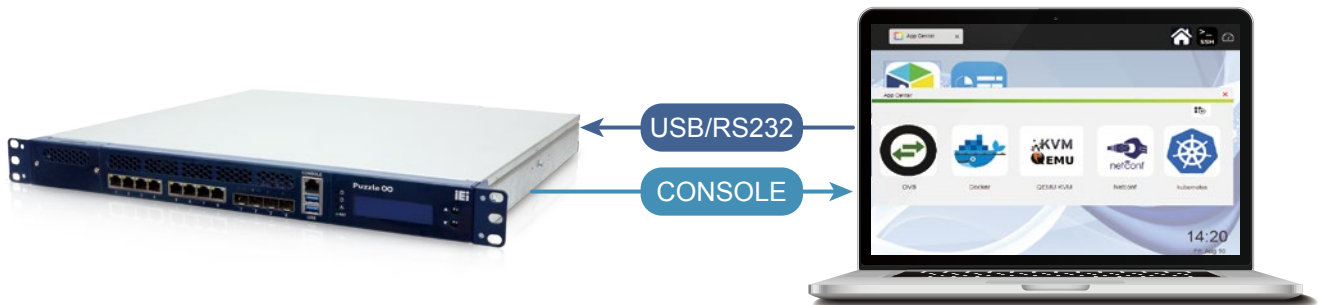### ▶ Packing List

1 x 20-pin TPM module

▶ Ordering Information

Part No.	Description
TPM-IN03-R10	20-Pin Infineon SPI TPM 2.0 module with SLB9670VQ2.0, software management tool, firmware v7.85.

(Unit: mm)

PUZZLE Software Introduction
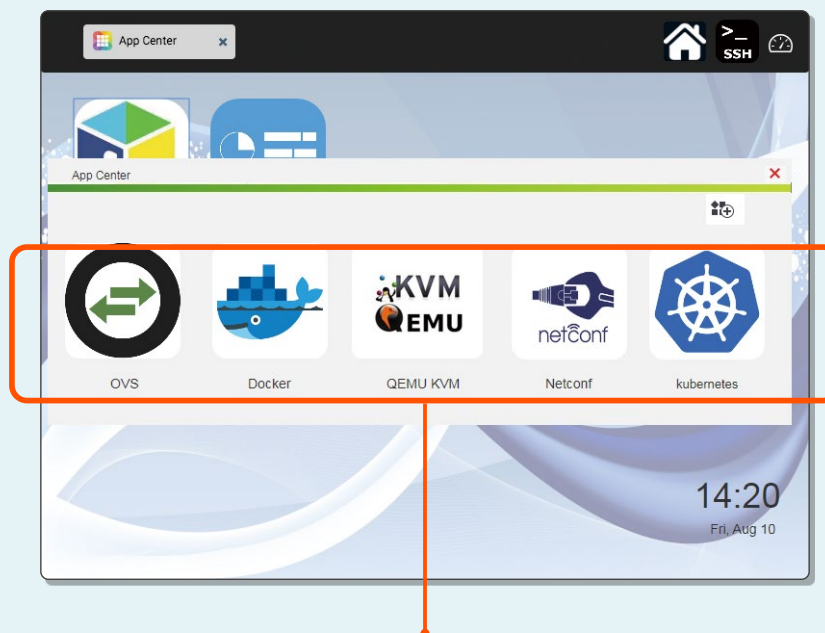
PUZZLE Finder Software AP

Use your PC/Laptop as a development environment.

After installing Ubuntu 16.04 on your PUZZLE, you can install the PUZZLE Finder application on your PC/Laptop. PUZZLE Finder can help users quickly develop environment and network applications, and allow them to perform PUZZLE system management, resource monitoring, version maintenance, software installation, software update and gaining information of CPU, memory, Internet, etc.
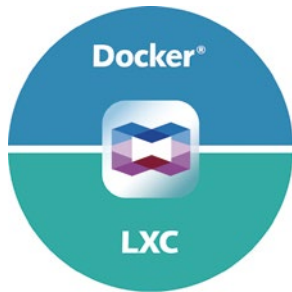

USB/RS232

CONSOLE

Easy to Install

The APP center provides the most popular and configured applications.
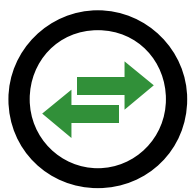

Eliminate cumbersome installation steps; choose the APP you want to install. The APP can be downloaded and automatically installed. You can immediately enjoy the benefits of the software.

Utilize Virtual Technology, Create Unlimited Value

Docker containerization unlocks the potential for Dev and Ops. Freedom of choice, agile operations and integrated security for legacy and cloud-native applications. Implement Docker Lightweight Micro Services on the IEI PUZZLE.

Installing the Open vSwitch (OVS) can implement domain cutting, QoS, data monitoring, and support openFlow.

Provide a more efficient Linux virtualization solution. Enhance the efficiency of virtualization by enhancing the operating mode of the CPU through QEMU-KVM.

Automate network configuration with Netconf; accelerate network equipment and services in enterprise in order to lower the cost.
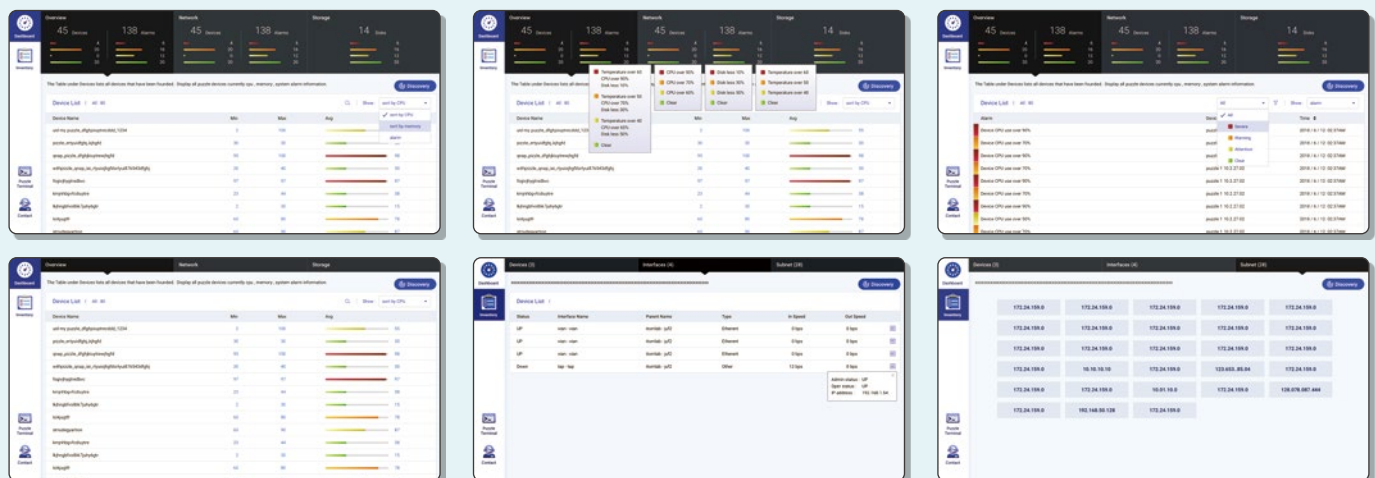
Kubernetes is a system that helps us automate the deployment, expansion, and management of containerized applications.

PUZZLE System Status Monitoring

Graphical user interface allows you to easily get an overview of the PUZZLE system and monitor resource status of each PUZZLE system you have.
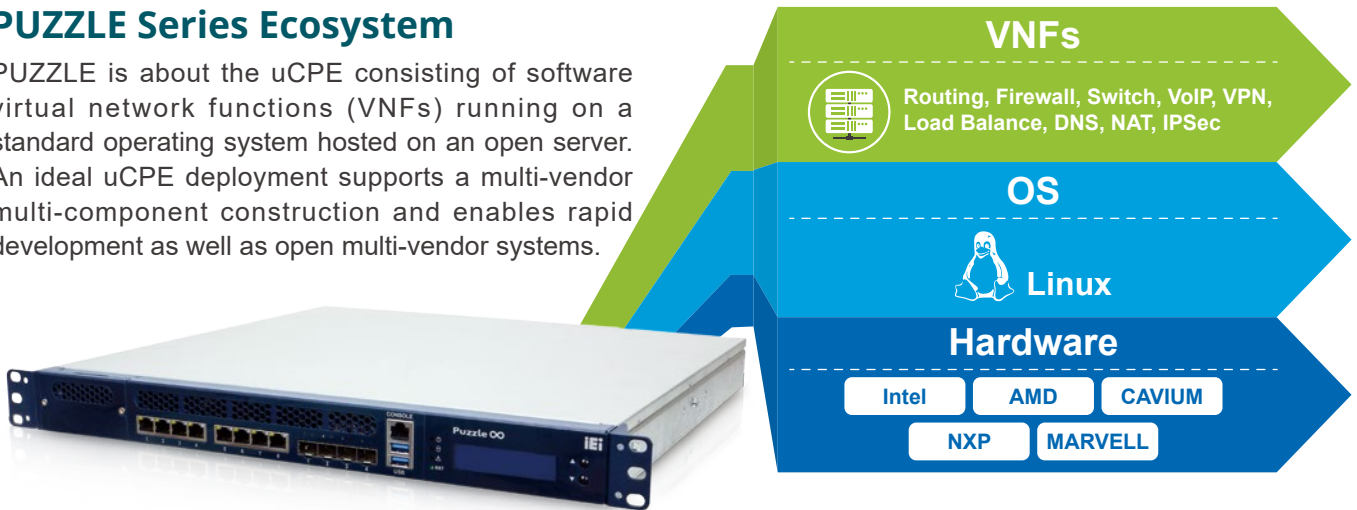
User Interface

PUZZLE Series Technology

Virtualization is the process of creating a software-based, or virtual, representation of something, such as virtual applications, servers, storage and networks. Network functions virtualization or NFV is a network architecture concept that uses the technologies of IT virtualization to virtualize entire classes of network node functions into building blocks that may connect, or chain together, to create communication services.

PUZZLE Series Ecosystem

PUZZLE is about the uCPE consisting of software virtual network functions (VNFs) running on a standard operating system hosted on an open server. An ideal uCPE deployment supports a multi-vendor multi-component construction and enables rapid development as well as open multi-vendor systems.

VNFs

Routing, Firewall, Switch, VoIP, VPN, Load Balance, DNS, NAT, IPSec

OS

Linux

Hardware

Intel | AMD | CAVIUM | NXP | MARVELL

PUZZLE Series is Ready for Next Generation Network

The following picture completely shows the components of the PUZZLE series. Choose the right components from CPU, NIC, software, manufacturing side, and fit them together. You will create a perfect network appliance.

Software/ Application

On the left hand side, it shows the S/W support from IEI. IEI will help customers to get device driver, application, other NFV basic software, DPDK, OvS, VPP, OpenDaylight and OpenStack. IEI will also help customers to deploy and install all of the software and build up their own NFV solutions.

openstack | OvS Open vSwitch | OPEN DAYLIGHT | DPDK | Device Driver | Application

NIC & Bandwidth

On the upper side, it shows the network connection ability of the PUZZLE series.
IEI provides four brands of NIC from Aquantia, Intel, Broadcom, Mellanox, and with 1G, 2.5G, 5G, 10G or 25G different kinds of speed.

AQUANTIA | BROADCOM | intel | Mellanox

10/100Mb, 1G, 2.5G, 5G, 10G 25G, **100G**

System Integration

On the right hand side, it shows the computing ability of the PUZZLE series.
IEI implements 5 major CPU brands, including Intel, AMD, Marvell, NXP, Cavium, and 3 kinds of accelerator cards for edge computing or AI computing.

intel | NVIDIA | MARVELL | NXP | Movidius
intel FPGA | AMD | CAVIUM

Designing & Manufacture

On the bottom side, it shows ARMOR Link cross IEI cross QNAP.
Most of network appliances are about network security. Some of the customers care about where the network appliance is designed and made. Therefore, we provide you two choices, designed and manufactured in Taiwan or in China. QNAP factory is in New Taipei City, Taiwan, and ARMOR Link factory is located in Shanghai, China.

ARMOR Link × iEi × QNAP

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PUZZLE-IN004 ▶

1U Rackmount Network Appliance with Intel® Xeon® D Processor support 8 x GbE, 4 x 10GbE SFP+ and 1 PCIe x8 slot
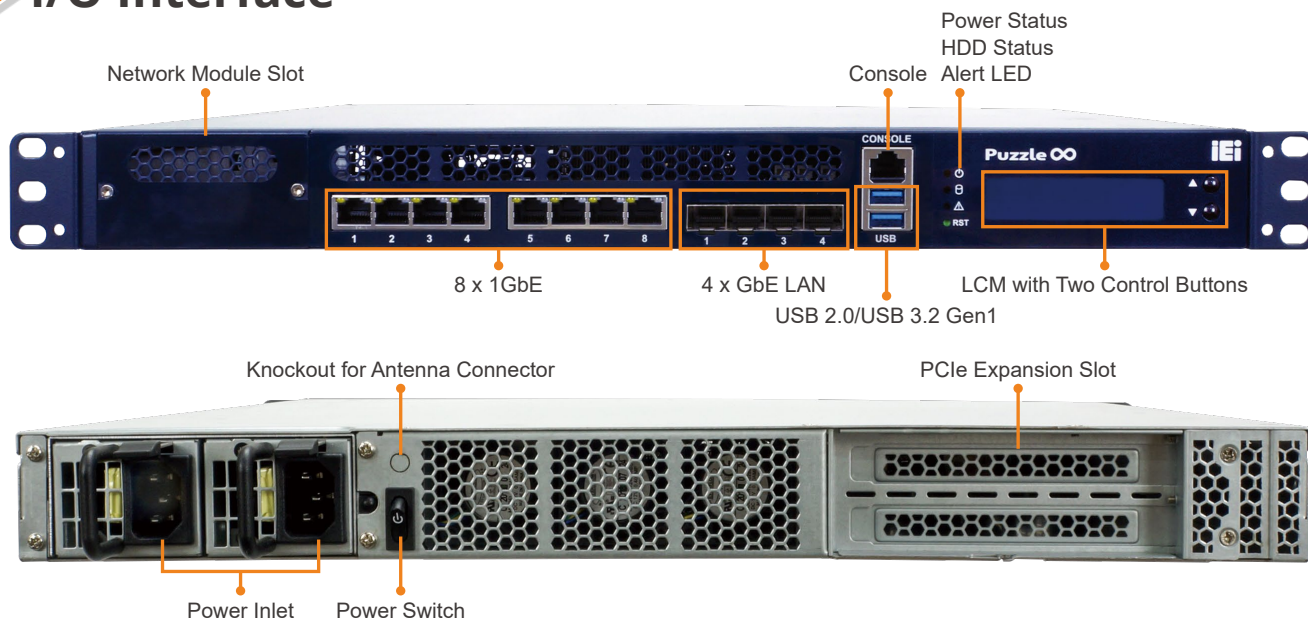

▶ Features

- Intel® Xeon D-2100 series processor (Skylake-D) with optional Intel® QAT
- Support eight GbE RJ-45 via Intel® I211-AT, four 10 GbE SFP+ and IEI networking module
- 8 x 288-pin RDIMM, 2 x DDR4 2666MHz, RDIMM up to 256GB / LRDIMM up to 512GB
- 1 x RJ-45 Console, 1 x USB 3.2 Gen 1 (5Gb/s), 1 x USB 2.0, LCM
- 2 x 2.5" SATA drive bay, 2 x M.2 M key 2280 (PCIe x4),1 x PCIe Mini (PCIe + USB 2.0) with SIM card
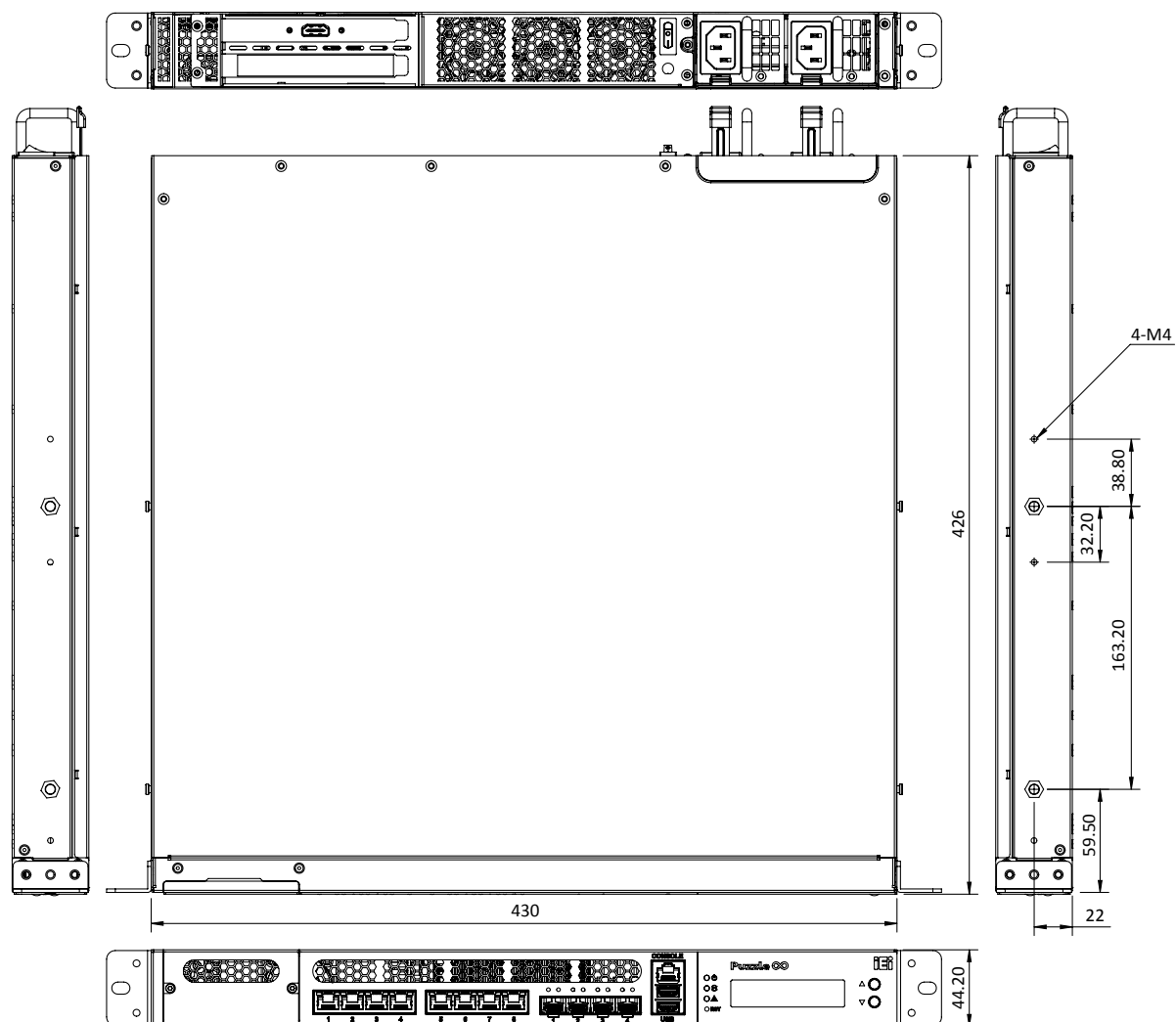- Support one PCIe x8 slot, one PulM module slot
- Redundant PSUs

▶ Specifications

		PUZZLE-IN004-XD1	PUZZLE-IN004-XD2	PUZZLE-IN004-XD3	PUZZLE-IN004-XD4	PUZZLE-IN004-XD5
Platform	**Form Factor**	1U				
	CPU	Intel® Xeon® D-2145NT processor 8-core, 11M cache, 1.90 GHz	Intel® Xeon® D-2146NT processor 8-core, 11M cache, 2.30 GHz	Intel® Xeon® D-2166NT processor 12-core, 16.5M cache, 2.00 GHz	Intel® Xeon® D-2177NT processor 19.25M cache, 1.90 GHz	Intel® Xeon® D-2187NT processor 16-core, 22M cache, 2.00 GHz
	Chipset	Integrated in CPU				
Memory	**Memory Technology**	DDR4 2666MHz ECC (by CPU) or non-ECC				
	Memory Capacity	RDIMM up to 256GB / LRDIMM up to 512GB				
	Memory Socket	8 x 288-pin DIMM				
Network and Security	**Network Acceleration and Security Function**	• Intel® AES New Instructions • Intel® Software Guard Extensions (Intel® SGX) • Intel® Memory Protection Extensions (Intel® MPX) • Intel® Trusted Execution Technology				
	TPM	1 x TPM 2.0 pin header				
Networking	**Ethernet IC**	1 GbE NIC: Intel® I211-AT				
	Ethernet Port	4 x 10 GbE SFP+ / 8 x 1GbE RJ-45 LAN ports				
	Network Module Slot	1 x PulM module slot				
Expansion Slot	**PCIe Slot**	1 x FH/HL gen3 x8 slot				
	PCIe Mini Card Slot	1 x PCIe Mini (PCIe + USB 2.0) with SIM card				
	M.2	1 x M.2 A key (USB 2.0, PCIe x1)				
Storage	**Storage**	2 x 2.5" SATA HDD/SSD bay				
	eMMC	N/A				
	SD Card	N/A				
External I/O	**USB**	1 x USB 2.0 / 1 x USB 3.2 Gen 1				
	Console	1 x RJ-45				
Internal I/O	**M.2**	2 x M key 2260/2280 (PCIe x4)				
	HDMI	N/A				
	USB	USB DOM, Digital I/O 4in 4out				
Power and Mechanical	**Power Switch**	1 x Power switch				
	Reset Button	1 x Reset button				
	Power Input	100 V ~ 240 V				
	Type/Watt	Redundant power 300W, 90V~264V AC				
	Processor Cooling	1 x Passive CPU heatsink				
	System Cooling	3 x Cooling fans with smart fan				
	Antenna Port	1 x Antenna port				
Physical and Environmental	**Storage Temperature**	0 ~ 40°C				
	Operating Temperature	0 ~ 40°C (32 ~ 104°F)				
	Operating Humidity	Relative humidity: 5% ~ 90% non-condensing				
	Dimensions (W x L x H) (mm)	430 x 426 x 44.2				
	Weight	7 kg				
OS and Certifications	**Certification**	CE/FCC				
	Operating System	Linux Ubuntu 18.04.04				
Indicators	**LCM**	LCM, 2 buttons				
	LED	Power status, Storage status, Alert LED				

▶ I/O Interface

Network Module Slot

Power Status
HDD Status
Console   Alert LED

8 x 1GbE   4 x GbE LAN   LCM with Two Control Buttons

USB 2.0/USB 3.2 Gen1

Knockout for Antenna Connector   PCIe Expansion Slot

Power Inlet   Power Switch

▶ Dimensions (Unit: mm)

4-M4

38.80

32.20

163.20

426

59.50

430   22

44.20

PUZZLE-IN004

▶ Ordering Information

Part No.	Description
PUZZLE-IN004-XD1/32G/R-R10	1U Rackmount network appliance with Intel® Xeon® D-2145NT processor, 32GB DDR4, two 256GB SSD, eight 1GbE, four 10 GbE, one PulM module slot and one PCIe expansion, RoHS
PUZZLE-IN004-XD2/32G/R-R10	1U Rackmount network appliance with Intel® Xeon® D-2146NT processor, 32GB DDR4, two 256GB SSD, eight 1GbE, four 10 GbE, one PulM module slot and one PCIe expansion, RoHS
PUZZLE-IN004-XD3/32G/R-R10	1U Rackmount network appliance with Intel® Xeon® D-2166NT processor, 32GB DDR4, two 256GB SSD, eight 1GbE, four 10 GbE, one PulM module slot and one PCIe expansion, RoHS
PUZZLE-IN004-XD4/32G/R-R10	1U Rackmount Network Appliance with Intel® Xeon® D-2177NT processor, 32GB DDR4, two 256GB SSD, eight 1GbE, four 10 GbE, one PulM module slot and one PCIe expansion, RoHS
PUZZLE-IN004-XD5/32G/R-R10	1U Rackmount Network Appliance with Intel® Xeon® D-2187NT Processor, 32GB DDR4, two 256GB SSD, eight 1GbE, four 10 GbE, one PulM module slot and one PCIe expansion, RoHS

▶ Packing List

	PUZZLE-IN004-XD1/32G/R-R10	PUZZLE-IN004-XD2/32G/R-R10	PUZZLE-IN004-XD3/32G/R-R10	PUZZLE-IN004-XD4/32G/R-R10	PUZZLE-IN004-XD4/32G/R-R10
Power cord	2	2	2	2	2
Rack mounting ears	2	2	2	2	2
Screws for rack mounting ears	6	6	6	6	6
USB to console cable	1	1	1	1	1
RS-232 to console cable	option	option	option	option	option
Slide rail	option	option	option	option	option

▶ Options

Item	Part No.	Description
Slide rail	RAIL-B02	New rail kit for new 1U & 2U NAS: TVS-471U, 1253U, etc
USB to console cable	32013-004000-100-RS	ROUND CABLE; LAN CABLE; FTDI Console Cable; 2; 1800MM; (A)USB A TYPE 4P MALE+PCB:FTDI_FT232RL; (B)RJ-45 8P8C; RoHS
RS-232 to console cable	32005-005100-100-RS	ROUND CABLE; RS-232/422/485; PUZZLE RS-232 Cable; 2; 500MM; 24AWG; (A) D-SUB 9P MALE+#4-40 Screw; (B)RJ-45 PLUG 8P8C; ONE PCS PKG; TC&C; RoHS