

2021

PUZZLE SERIES

NEXT-GEN NETWORK APPLICATION



iEi
®

intel
partner
Titanium

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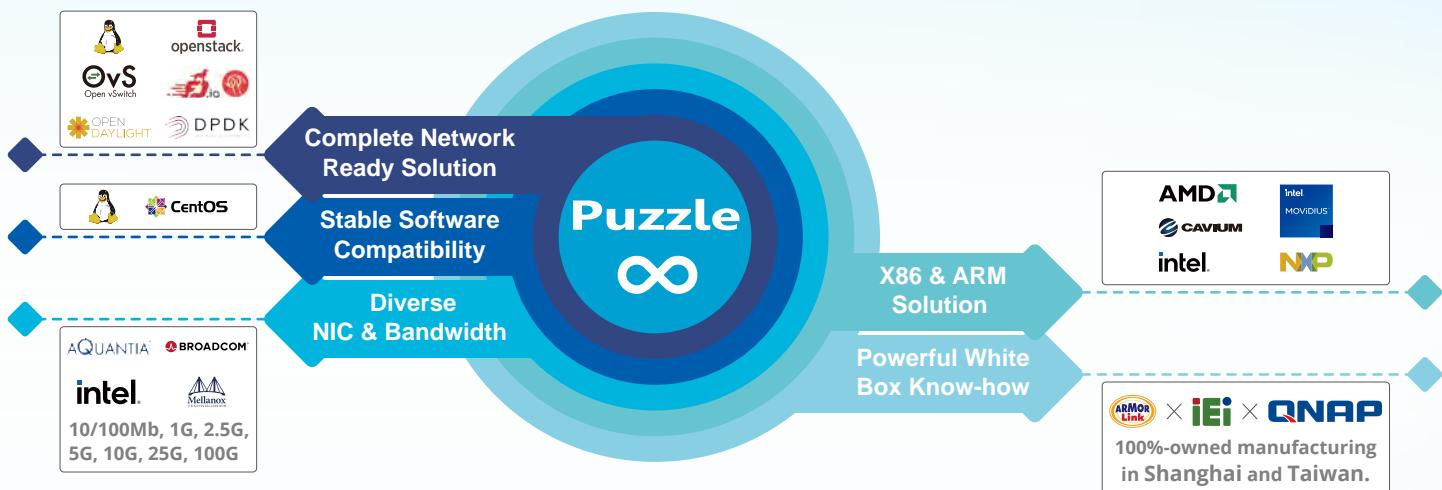
Why PUZZLE Series?

Redefining and Maximizing Network Scalability

The next gen. network appliance, the PUZZLE series, is an uCPE solution consisting of software virtual network functions running on a standard operating system hosted on an open server.

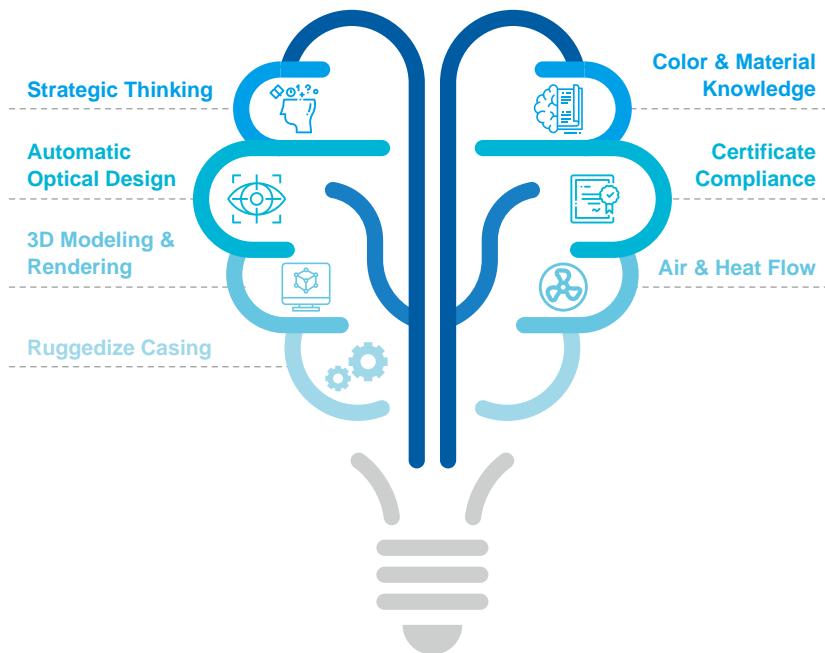
Universal CPE (uCPE) is one of the most compelling use cases of Network Function Virtualization (NFV). Virtualization is the process of creating a software-based, or virtual, representation of something, such as virtual applications, servers, storage and networks. Network functions virtualization or NFV is a network architecture concept.

The IEI PUZZLE system can provide an open universal customer premises equipment (uCPE) solution that offers realtime software-defined wide-area network (SD-WAN) services that support both x86 and ARM architectures with any additional virtual network functions (VNF) services.



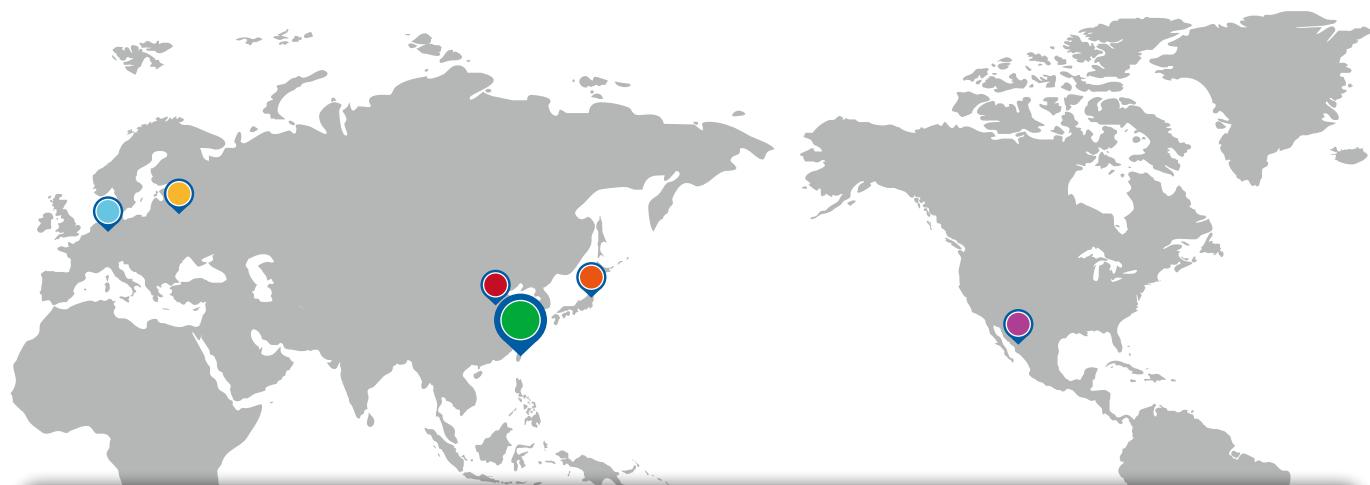
IEI's Leadership in White Box

Zero to One, Build the Future



IEI has more than 20-year IPC knowledge and delivered hundreds of ODM projects covering different industries. Accumulated know-how makes us easier to communicate with customers and understand their needs. In addition, we provide a wide range of computing products for various industries and allow customers to customize our standard products. Product development and manufacture experiences allow us to provide quick responses to customers' requirements and meet or exceed customers' expectations to save development time and cost.

IEI Group Global Hubs



HQ, Taiwan

- ODM / OEM
- RD Center (Taipei, Kaohsiung)
- Manufacturing
- Logistics & RMA

China (Shanghai)

- ODM / OEM
- Logistics & RMA

USA (Los Angeles)

- ODM / OEM
- Logistics & RMA

Japan (Tokyo)

- Technical Support

Netherlan (Bleiswijk)

- Repair Center

Germany (Willich)

- Logistics & RMA

Advanced Network Customized Solutions



R&D Design

IEI's R&D team has years of experience in designing and developing professional software, hardware, mechanical and system integration. Our extensive experience covers nearly every product line in the IPC field and enables us to provide outstanding OEM/ODM services. We guarantee a successful and timely product development experience. The research and development team at IEI is focused on bringing successful products to our clients.

Global Service

As a leading IPC provider, IEI offers prompt, localized services to customers worldwide. IEI has a global network of over 100 distributors in Europe, Asia and North America to provide quick service and achieve fast response time. From new sales inquiries to ongoing technical support, IEI's localization strategy is backed by our strong technical and logistical support team. Having forged strong relationships with our distributors, their support expertise and technical knowledge of IEI products are readily accessible to IEI customers worldwide.

RMA Support

All IEI products come with a limited hardware warranty that includes repair service at no additional cost. For out-of-warranty products, IEI provides paid Return Merchandise Authorization (RMA) service based on the product damage level and under the condition that the product is repairable and that components are available.

Logistics Support

IEI has warehouses in Shanghai and the US which offer comprehensive system integration hardware, software, customer-driven services and global logistics support.



5G Solution



IEI's PUZZLE series network appliance is developed to meet the low latency and quality of service (QoS) requirements in 5G network. The PUZZLE series allows private companies/organizations to utilize the Virtual Evolved Packet Core (vEPC) framework by deploying Mobile Edge Computing (MEC) and Open Radio Access Network (O-RAN) architecture with network function virtualization (NFV) to replace traditional proprietary hardware equipment.

In order to meet 5G speed, point-to-point latency and service quality, network operators need to upgrade the entire front-end to back-end process. IEI's PUZZLE series can provide solutions for today's IoT that expands massively; it can boost cellular operations, IoT security and network challenges, and drive the Internet future to the edge.

IEI's Network Appliance Series for 5G Solution

- Network maintainability
- Coverage of wireless communication
- Reducing capital expenditure
- Throughput, and high scalability
- Trustworthy
- Security



PUZZLE Series Technology

4-Speed Multi-Gigabit

The PUZZLE solution is equipped with a high-performance Multi-Gig Ethernet controller, Marvell AQtion AQC111C 5GbE, to offer a seamless Multi-Gig upgrade path for network applications. The industry proven Marvell AQrate PHY technology delivers 5GbE network connectivity speed through 100 meters of the Cat 5e cabling. Therefore, end-users can easily maximize the benefit of the existing Cat 5e cabling.

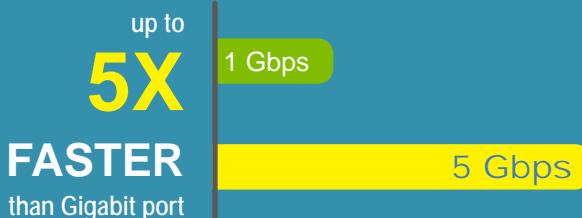
Standard Cat 5e at 5 Gbps, 2.5 Gbps, 1 Gbps, 100 Mbps

Require no change to the existing infrastructure or cabling



	1 Gbps	2.5 Gbps	5 Gbps	10 Gbps
CAT 5e	✓	✓	✓	✗
CAT 6	✓	✓	✓	55m
CAT 6A	✓	✓	✓	✓

Up to 5X faster transfer speeds

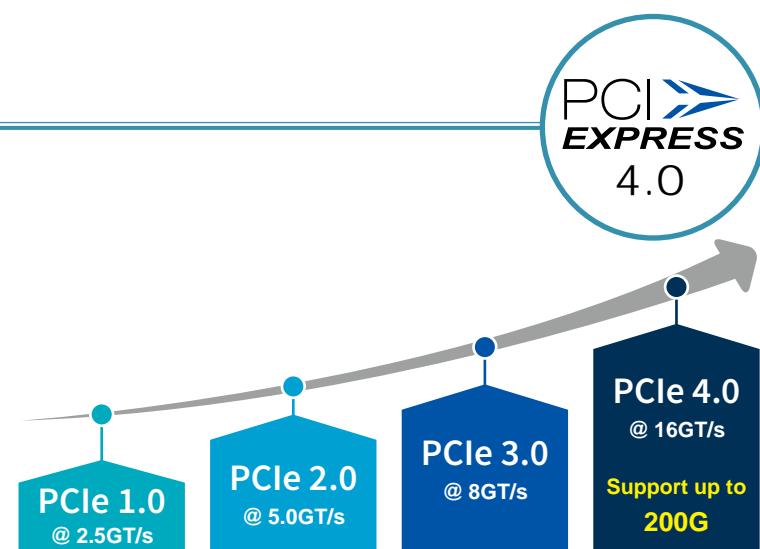


Backward compatible with 5GBASE-T / 2.5GBASE-T / 1000BASE-T / 100BASE-TX

- ✓ 5 Gbps
- ✓ 1 Gbps
- ✓ 2.5 Gbps
- ✓ 100 Mbps

PCI Express 4.0

- Higher performance storage (next generation NVME) with double the speed of PCIe 3.0
- Faster Ethernet capability to eliminate throughput bottlenecks for data intensive applications (100/200G NIC cards)
- FPGA/GPU accelerators to support emerging machine learning and deep learning workloads with uncompromised PCIe 4.0 bandwidth and lowest latency



Intel® Select Solutions for uCPE for CentOS/ADVA



CentOS

- NFV-based edge computing
- Optimized software
- Virtualized and non-virtualized services

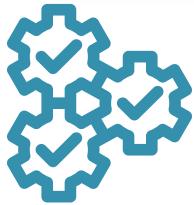


NFVI Solution

ADVA Ensemble Connector

- Manageability and Operability
- Reducing costs
- Accelerating service provision

To support uCPE platforms, Intel® Select Solutions for uCPE provide a foundation for the development of uCPE products with a solution reference design and verification of performance.



Faster Evaluation



Fast and Easy Deployment

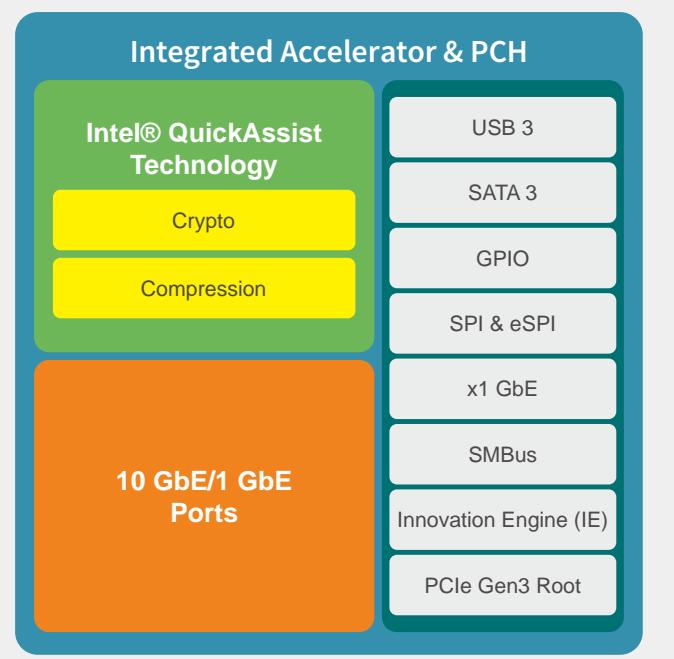


Workload-optimized Performance

Intel® QuickAssist Technology

Intel® QuickAssist Technology (Intel® QAT) 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



Hot-swappable SSD & Redundant Power Supply

Hot-swappable SSD

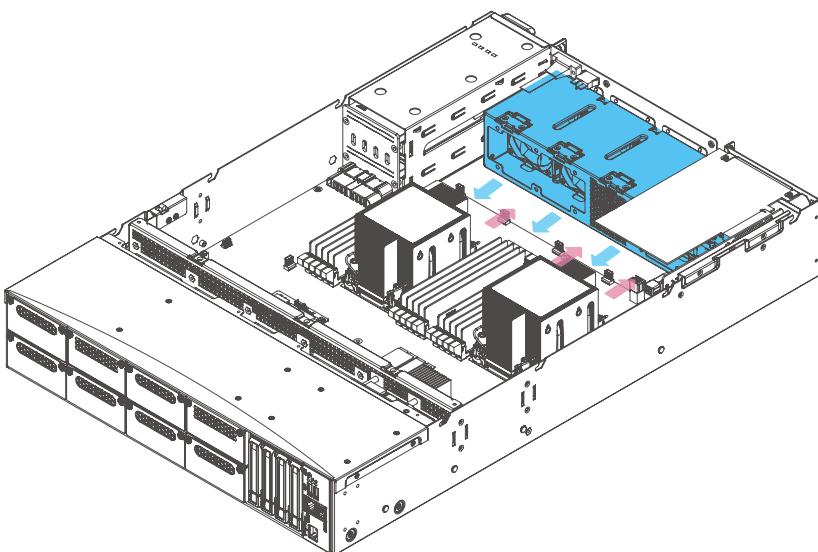
High reliability design is a very important factor for network service. The hot-swap is desirable to change the configuration or repair a working system without interrupting its operation. The hot-swappable SSD and redundant power supply can provide infinitive service to avoid shutting down and restarting complex equipment, because it is essential for equipment to be continuously active.



Redundant Power Supply

The PUZZLE series contains two 300W power supply units for redundant power supply. Each power supply unit is capable of powering the entire computer so the computer runs with only one unit. If one fails, the other power supply starts running to maintain continuous operation.

Smart Fan Operation



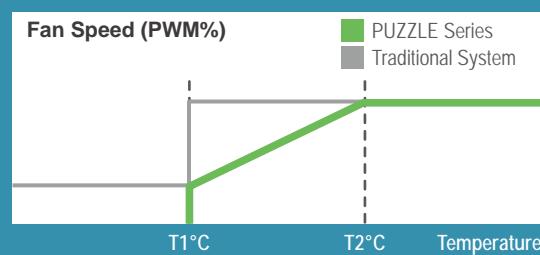
Users can define CPU fan and system fan speed and temperature profile in the BIOS menu. When the system is in idle or running less demanding tasks, smart fan is able to bring down the level of noise produced by rotating fans. The adjustable settings allow the PUZZLE series run with less noise while extending 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.

Traditional System

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



Full Spectrum of Network Solutions



Wireless Gateway

Wireless gateway routes packets to wired or wireless WAN. It combines the functions of a wireless access point, a router, and often provides firewall function as well.



WAN Optimization or Wan

The goal of WAN optimization is to speed up the data transfer, to reduce latency and insure bandwidth of access to critical applications and information.



NGFW Firewalls

With the purpose of protecting an organization's network and data assets, the next-generation firewalls offer a deep packet inspection function that goes beyond simple port and protocol inspection by inspecting the data carried in network packets.



5G MEC

5G MEC is a network solution to provide IT service and telecommunication network at the edge. It brings services closer to the users and provides ultra-low latency, high bandwidth, virtualization application and reliable network solution.



Cybersecurity

- Business protection against cyberattacks and data breaches
- Protection for data and networks, end users and endpoint devices
- Business continuity and Regulatory compliance
- Improved recovery time after a breach



Application Delivery Controller (ADC)

- Improve the performance of web applications in a data center
- A part of an application delivery network (ADN)
- Support multi-tenancy for deployment in data centers
- Support large number of sessions with a fast transaction rate



Unified Threat Management (UTM)

- Network firewall
- Intrusion detection
- Prevention system (IDS/IPS)
- Gateway, VPN
- Offer cost-effective all-in-one security ideal

uCPE Solution (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. Besides, with NFV orchestration, uCPE could serve as an edge computing system or an AI inference computing system.

Lower Power Consumption

uCPE can run several VNFs to build up a network environment instead of running several physical network appliances. Running an uCPE can save energy.

Lower CapEx & OpEx

Reduce the consumption of CapEx and OpEx including for management time and effort, maintenance and contracts or software licensing etc.

Various Solutions

The true value of openness comes from being able to combine a mix of open source and proprietary software components to deliver an innovative service.

uCPE

Standard Hardware

Service providers simplify customer site deployments by using a panoply of dedicated appliances with VNFs running on a single universal platform.

Open Source Software

Open source software reduces time to market and the risk of vendor lock-in.

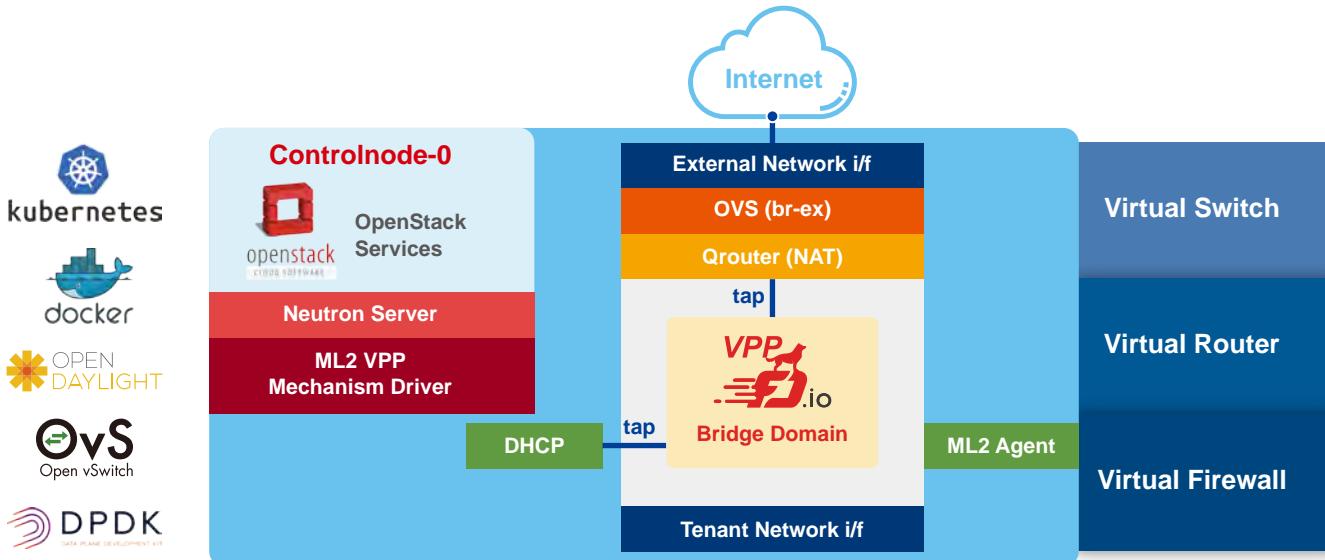
Flexible

The uCPE helps service providers and their customers from suffering hardware vendor lock-in. It creates the flexibility of manageability through NFV.



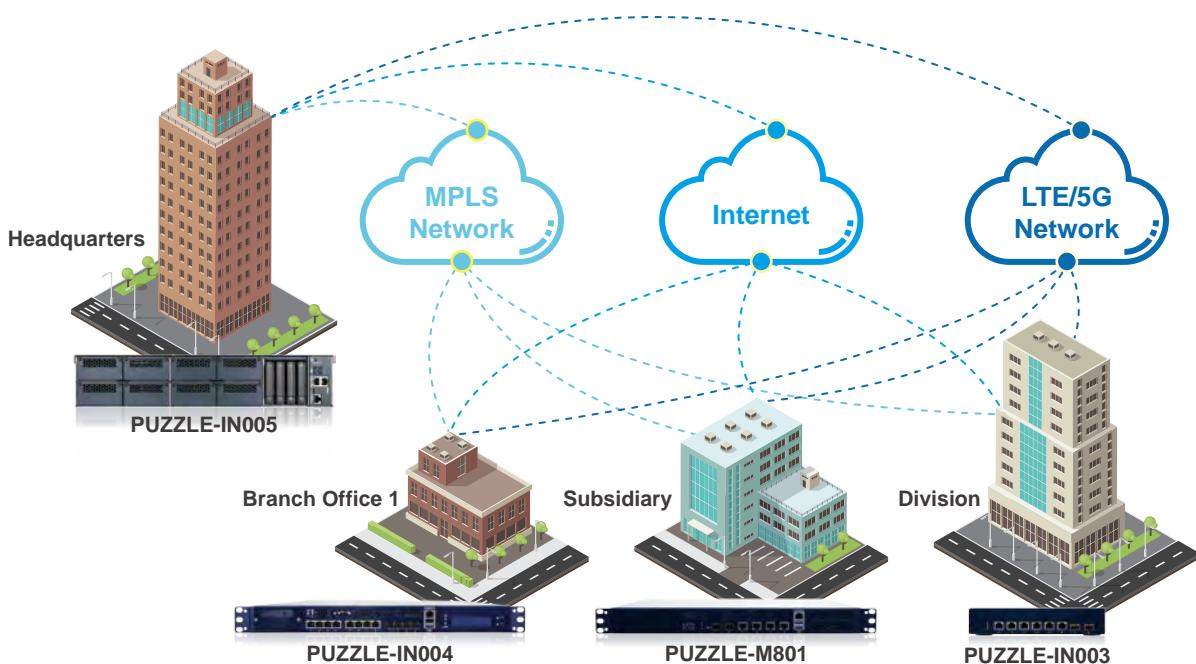
NFV Solution (Network Functions Virtualization)

IEI PUZZLE series has been verified with NFV (Network Functions Virtualization) software testing tools based on open source. With the test and verification, IEI uCPEs are ready to implement DPDK (Data Plane Development Kit), OVS (Open vSwitch), or VPP (Vector Packet Processing), which can be installed on OpenStack to create virtual machines and containers. Once the virtual machines and containers are created, it is easy to deploy VNFs (Virtual Network Functions) and to create vFirewall, vRouter, vSwitch, and SD-WAN as needed.

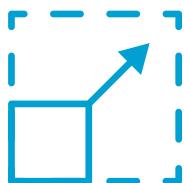


SD-WAN Solution

SD-WAN can reduce your WAN costs by up to 90 percent because it supplements or replaces dedicated private WAN networks, which usually are MPLS, with regular broadband connectivity. By using this, enterprises can get the flexibility and cost savings of SD-WAN and at the same time minimize the headache of managing the infrastructure and connectivity. Moreover, the traffic can be automatically and dynamically transferred based on network status, security, and service quality requirements.



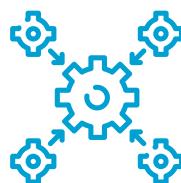
Unmanned Parking Management System



Flexible Design with Slim Form Factor



Multiple Upgrade Options



Highly Compatible with Major Operating Systems

As a smart integrated parking service provider, the optimal system should solve the challenges, such as space limitation, multiple tasks and hard compatibility of software and hardware.

The PUZZLE can be used as a central parking management server with all the components connected to it for feeding their data back to the central server. With the space limitation of modulized parking system, it is an ideal networking appliance for this application because it has a height of only 1.75 inches, supports 1U rack mount and is equipped with powerful Intel® processor. It has high flexibility, capable of integrating server functions in one device through add-on cards or VPU cards. Moreover, it supports Linux and Windows operating system, so no matter what operating system you decide to use, the software applications are fully compatible with the hardware. That means fewer headaches, quicker development times, and more options.

Payment KIOSK

Credit card, mobile payment, etc.



Digital Signage

Effective display of parking fees, parking lot guides, announcements, promotional videos

CCTV

License Plate Number + Circuit Breaker + Sign Board (integrated)

- High resolution best performance license plate camera
- Application of Cloud LPR / Deep Learning Solution
- Highest recognition rate without distortion
- Smart design with integrated circuit breaker



Parking Management Server

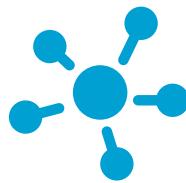
- Built in digital signage S/W
- Parking control system control with overwhelming H/W performance



Security and Surveillance



**Easily Upgrade with
PulM Module**



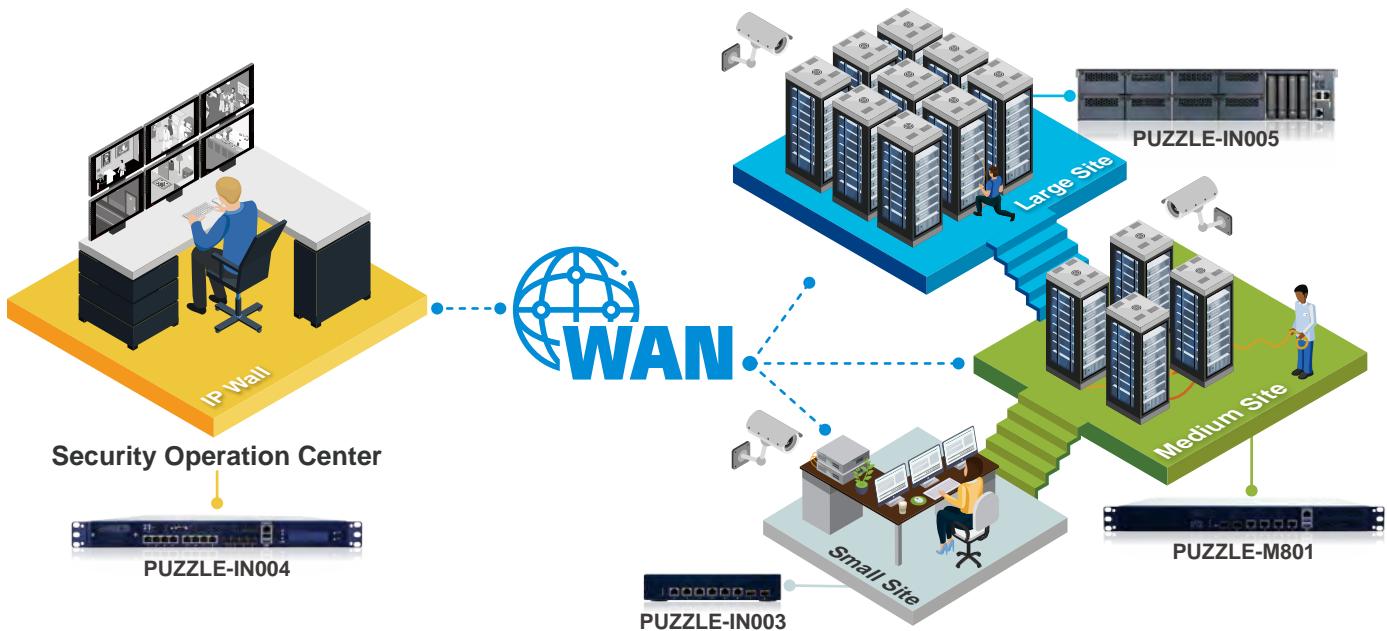
**High Flexibility of
PCIe Expansion**



**Uninterrupted
24-7 Service**

Current video surveillance systems are generally too slow, provide inadequate video quality, and have limited expansion capabilities, impeding future expansion and upgrades.

The PUZZLE series is a high-speed, high-definition, and highly scalable hardware-integrated product that provides NVR, VMS, IPWALL and intelligent CCTV. It offers several easy add-ons, expansion options, and PulM networking module slots that allow for the simple addition of an LCM display, or other bandwidth from 1GbE to 100GbE. By adding a PCIe expansion card, it could feature a graphics card or VPU for powerful AI video analysis. It also supports Intel® vPro® to provide powerful centralized management of networked computers and this reduces the number of times a technician has to physically go to the hardware, resulting in a 27% reduction in TCO. Beside, designed with redundant power supply and automated backup functions, it gives users uninterrupted 24-7 surveillance service. Hence, based on its slim form factor, it can be designed as an pocket surveillance station to increase mobility, and easily deployed in anywhere anytime.



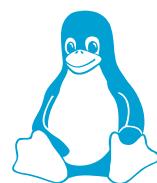
Next Generation Firewall



Easily Upgraded
with PulM Module

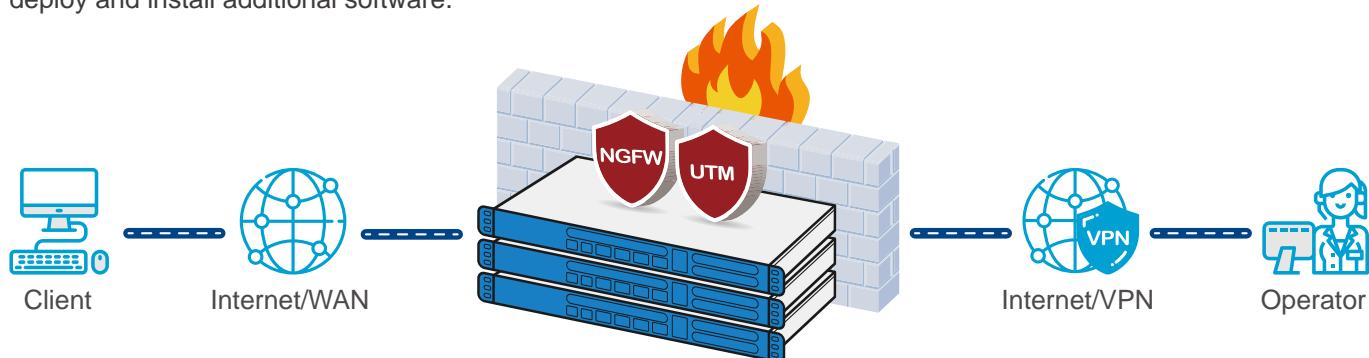


Higher Efficiency of
Virtualization



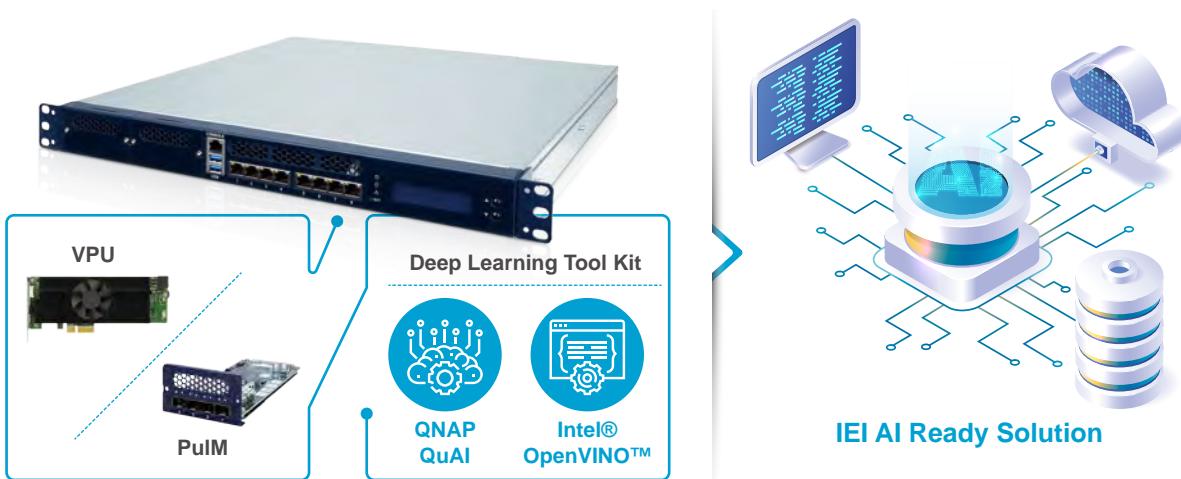
Linux-tested Software
Compatibility

The traditional route of a dedicated firewall hardware appliance is too bulky and costly. The PUZZLE series is built with powerful Off-The-Shelf (OTS) networking computer parts, and customizable with PulM network modules to provide a powerful hardware base for network appliance design. It features eight GbE ports as standard, with expansion options that include 1 Gb/s, 10 Gb/s, and 25 Gb/s network connections. It is designed and tested to support applications for virtual machines, virtualization, and containers such as Docker. Multiple isolated applications can be installed on a single hardware appliance. In addition, all hardware in the PUZZLE is verified to work with Linux (specifically Ubuntu), so users can leverage all the goodness of open-source software to quickly deploy and install additional software.



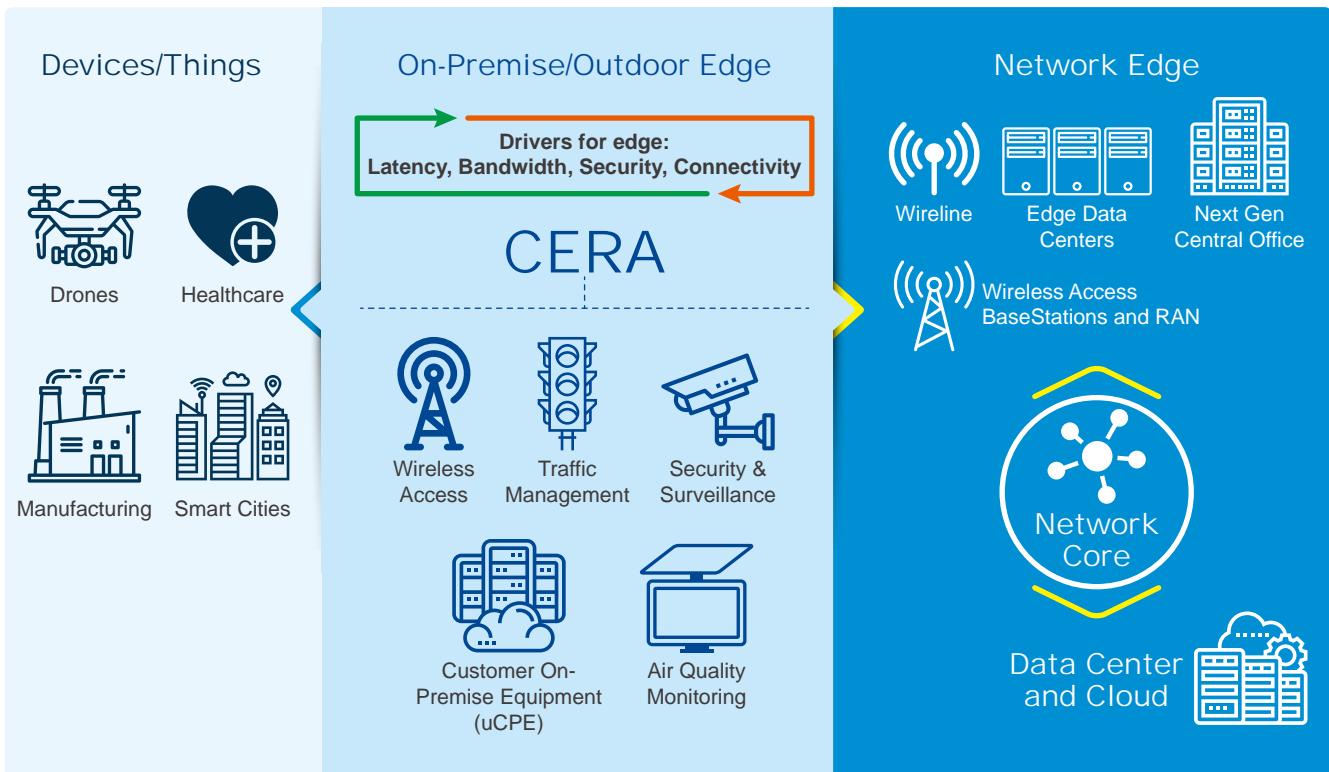
Network AI Solution - PUZZLE Dev. Kit

Puzzle Dev. Kit is an AI hardware ready system ideal for deep learning inference computing to enable faster, deeper insights for your customers and your business. It supports graphics cards, and Intel® FPGA and VPU acceleration cards to provide additional computational power and end-to-end solutions. Built-in with NVIDIA TensorRT, QNAP QuAI, or Intel® OpenVINO AI development toolkit, it is able to deploy your solutions faster than ever.



Intel® CERA Design

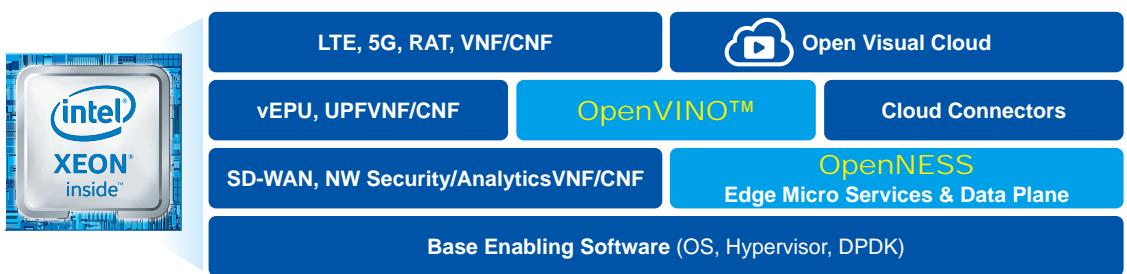
CERA combines Intel®-powered, commercially-hardened hardware, software and support to rapidly deploy wireless networks through an all-in-one solution. Infrastructure connectivity and consolidates workloads help grow compute-hungry workloads at the edge. By harnessing the Intel® Open Network Edge Services Software (OpenNESS), CERA provides a platform to develop, securely on-board, and manage new edge services on the on-premise & network edge.



OpenNESS

OpenNESS is a software toolkit that enables highly optimized and performant edge platforms to on-board and manage applications and network functions with cloud-like agility. OpenNESS is a modular, microservice oriented architecture which can be consumed by a customer as whole solution or in parts.

Networking, AI, Media and Edge Services



PUZZLE Series Selection Guide



		PUZZLE-IN005 New	PUZZLE-IN001	
			PUZZLE-IN001-XE	PUZZLE-IN001-i3T
Platform	Form Factor	2U	1U	
	CPU	Intel® Ice-Lake LGA-4189 Xeon® Scalable Processor	Intel® Xeon® E-2136 processor, 6C/12T, up to 4.50 GHz	8th Generation Intel® Core™ i3-8100T processor, 4C/4T, up to 3.10 GHz
	Chipset	Intel® C627A	Intel® C246	
Memory	Memory Technology	DDR4 3200MHz ECC RDIMM / LRDIMM	2 x DDR4 2400MHz ECC/Non-ECC UDIMM	
	Memory Capacity	Up to 1280GB (20 x 64GB)	Up to 32GB	
	Memory Socket	20 x 288-pin DIMM	2 x 288-pin DIMM	
Network and Security	Network Acceleration and Security Function	<ul style="list-style-type: none"> • Intel® AES New Instructions • Intel® QuickAssist Technology (Intel® QAT) • Intel® Virtualization Technology (Intel® VT) • Intel® Trusted Execution Technology (Intel® TXT) 	<ul style="list-style-type: none"> • 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	1 x TPM 2.0 Pin header	
IPMI	IPMI solution	1 x iRIS-2400 module	N/A	
Networking	Ethernet IC	1 GbE NIC: Intel® i210-AT with NCSI support 1 GbE NIC: Intel® i219	1 GbE NIC: Intel® i211-AT	
	Ethernet Port	2 x 1GbE RJ45 ports (1 x IPMI Lan)	8 x 1GbE RJ45 LAN ports	
	Bypass	N/A	N/A	
	Network Module Slot	8 x Networking Module Slot	2 x PulM module slots	
Expansion Slot	PCIe Slot	1 x PCIe Gen4 x8 (FHHL) slot (single width)	1 x PCIe 3.0 x8 (FHHL) slot, 1 x PCIe 3.0 x4 (FHHL) slots	
	PCIe Mini Card Slot	N/A	1 x PCIe Mini card (PCIe 3.0 & SATA 3.0, USB 2.0)	
	M.2	2 x M.2 M key 2280 Support PCIe Gen3 x4 nVMe	1 x 3042/2260 M.2 B key (SATA 3.0 / USB 3.2 Gen1) Support SATA SSD and 4G LTE module	
Storage	Storage	4 x U.2 SSD drive bay compatible to SATA	2 x 2.5" SATA HDD/SSD bay support SATA 3.0 (6 Gbps)	
	eMMC	N/A	N/A	
	SD Card	N/A	N/A	
External I/O	VGA	1 x VGA port	N/A	
	USB	2 x USB 3.1 Gen 1 (5Gb/s) Type-A ports	2 x USB 3.2 Gen 1	
	Console	1 x RJ45 1 x USB Type-C	1 x RJ45	
Internal I/O	HDMI	N/A	1 x HDMI connector (optional)	
	USB	1 x USB 2.0 pin header	4 x USB 2.0 (pin header)	
Power and Mechanical	Power Switch	1 x Power Switch	1 x Power Switch	
	Reset Button	1 x Reset Button	1 x Reset Button	
	Power Input	100 V ~ 240 V	100 V ~ 240 V	
	Type/Watt	Redundant Power 1200W, 90V~264V AC	Redundant Power 300W, 90V~264V AC	
	Processor Cooling	2 x Active CPU Cooler	1 x Passive CPU Heatsink	
	System Cooling	5 x Cooling Fans with Smart Fan	4 x Cooling Fans with Smart Fan	
	Antenna Hole	N/A	1 x Antenna hole	
Physical and Environmental	Storage Temperature	-20°C ~ 75°C (-4°F ~ 167°F)	-20°C ~ 75°C (-4°F ~ 167°F)	
	Operating Temperature	0°C ~ 40°C (32°F ~ 104°F)	0°C ~ 40°C (32°F ~ 104°F)	
	Operating Humidity	Relative humidity: 5%~90% non-condensing	Relative humidity: 5%~90% non-condensing	
	Dimensions (W x L x H) (mm)	438 x 650 x 88 mm	430 x 426 x 44.2	
	Weight	23 KG	7 KG	
OS and Certifications	Certification	CE / FCC / RoHS	CE / FCC / RoHS	
	Operating System	Linux 18.04 (CentOS, Red Hat, Ubuntu, etc.) Windows server 2019	Linux Ubuntu 18.04.04 CentOS 7 / Red Hat / Fedora EPEL Microsoft Windows 10	
Indicators	LCM	N/A	LCM, 2 buttons	
	LED	1 x Power LED, 1 x Storage LED, 1 x Alert LED	1 x Power LED, 1 x Storage LED, 1 x Alert LED	

PUZZLE Series Selection Guide



		PUZZLE-IN001A		PUZZLE-IN002	
		PUZZLE-IN001A-XE	PUZZLE-IN001A-i3T	PUZZLE-IN002-i3T	PUZZLE-IN002-PGT
Platform	Form Factor			1U	
	CPU	Intel® Xeon® E-2136 processor, 6C/12T, up to 4.50 GHz	8th Generation Intel® Core™ i3-8100T processor, 4C/4T, up to 3.10 GHz	8th Generation Intel® Core™ i3-8100T processor, 4C/4T, up to 3.10 GHz	Intel® Pentium® Gold G5400T processor, 2C/4T, up to 3.10 GHz
	Chipset	Intel® C246		Intel® H310	
Memory	Memory Technology	4 x DDR4 2400MHz ECC/Non-ECC UDIMM		DDR4 2400MHz Non-ECC UDIMM	
	Memory Capacity	Up to 64GB		Up to 32GB	
	Memory Socket	4 x 288-pin DIMM		2 x 288-pin DIMM	
Network and Security	Network Acceleration and Security Function	<ul style="list-style-type: none"> • Intel® AES New Instructions • Intel® Software Guard Extensions (Intel® SGX) • Intel® Memory Protection Extensions (Intel® MPX) • Intel® Trusted Execution Technology 		<ul style="list-style-type: none"> • 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		1 x TPM 2.0 pin header	
IPMI	IPMI solution	N/A		N/A	
Networking	Ethernet IC	5GbE NIC: AQC 111C		1 GbE NIC: Intel® i211-AT	
	Ethernet Port	8 x 5GbE RJ45 LAN ports		6 x 1GbE RJ45 LAN ports	
	Bypass	N/A		N/A	
	Network Module Slot	2 x PULM module slots		N/A	
Expansion Slot	PCIe Slot	1 x PCIe 3.0 x8 (FHHL) slot 1 x PCIe 3.0 x4 (FHHL) slots		1 x PCIe 3.0 x16 (FHHL) slot (double width)	
	PCIe Mini Card Slot	1 x PCIe Mini card (PCIe 3.0 & SATA 3.0, USB 2.0)		1 x PCIe Mini card (SATA 3.0, USB 2.0) with SIM slot	
	M.2	1 x 3042/2260 M.2 B key (SATA 3.0 / USB 3.2 Gen1) Support SATA SSD and 4G LTE module		1 x M.2 A key (PCIe 2.0 & USB 2.0)	
Storage	Storage	2 x 2.5" SATA HDD/SSD bay support SATA 3.0 (6 Gbps)		2 x 2.5" SATA HDD/SSD bay support SATA 3.0 (6 Gbps)	
	eMMC	N/A		N/A	
	SD Card	N/A		N/A	
External I/O	VGA	N/A		N/A	
	USB	2 x USB 3.2 Gen 1		2 x USB 3.2 Gen 1	
	Console	1 x RJ45		1 x RJ45	
Internal I/O	HDMI	1 x HDMI connector (optional)		1 x HDMI connector (optional)	
	USB	4 x USB 2.0 (pin header)		2 x USB 2.0 (pin header)	
Power and Mechanical	Power Switch	1 x Power Switch		1 x Power Switch	
	Reset Button	1 x Reset Button		1 x Reset Button	
	Power Input	100 V ~ 240 V		100 V ~ 240 V	
	Type/Watt	Redundant Power 300W, 90V~264V AC		ATX Power 250W, 90V~264V AC	
	Processor Cooling	1 x Passive CPU Heatsink		1 x Passive CPU heatsink	
	System Cooling	4 x Cooling Fans with Smart Fan		4 x Cooling Fans with Smart Fan	
	Antenna Hole	1 x Antenna hole		1 x Antenna hole	
Physical and Environmental	Storage Temperature	-20°C ~ 75°C (-4°F ~ 167°F)		-20°C ~ 75°C (-4°F ~ 167°F)	
	Operating Temperature	0°C ~ 40°C (32°F ~ 104°F)		0°C ~ 40°C (32°F ~ 104°F)	
	Operating Humidity	Relative humidity: 5%~90% non-condensing		Relative humidity: 5%~90% non-condensing	
	Dimensions (W x L x H) (mm)	430 x 426 x 44.2		430 x 320 x 44.2	
	Weight	7 KG		5 KG	
OS and Certifications	Certification	CE / FCC / RoHS		CE / FCC / RoHS	
	Operating System	Linux Ubuntu 18.04.04 CentOS 7 / Red Hat / Fedora EPEL Microsoft Windows 10		Linux Ubuntu 18.04.04 CentOS 7 / Red Hat / Fedora EPEL Microsoft Windows 10	
Indicators	LCM	LCM, 2 buttons		LCM, 2 buttons	
	LED	1 x Power LED, 1 x Storage LED, 1 x Alert LED		1 x Power LED, 1 x Storage LED, 1 x Alert LED	

PUZZLE Series Selection Guide



		PUZZLE-IN003A		PUZZLE-IN003B	
		PUZZLE-IN003A-C1	PUZZLE-IN003A-C3	PUZZLE-IN003B-C0	PUZZLE-IN003B-C1
Platform	Form Factor			Desktop	
	CPU	Intel® Atom® processor C3558 8M cache, up to 2.20 GHz	Intel® Atom® Processor C3336 4M Cache, 1.50 GHz	Intel® Atom® processor C3758 16M cache, up to 2.20 GHz	Intel® Atom® processor C3558 8M cache, up to 2.20 GHz
	Chipset	Integrated in CPU		Integrated in CPU	
Memory	Memory Technology	DDR4 2133MHz ECC (By CPU) or non-ECC UDIMM, Support DDR4 RDIMM		DDR4 2133MHz ECC (By CPU) or non-ECC UDIMM, Support DDR4 RDIMM	
	Memory Capacity	UDIMM up to 64GB RDIMM up to 128GB		UDIMM up to 64GB RDIMM up to 128GB	
	Memory Socket	2 x 288-pin DIMM	1 x 288-pin DIMM	4 x 288-pin DIMM	
Network and Security	Network Acceleration and Security Function	<ul style="list-style-type: none"> • Intel® AES New Instructions • Intel® Software Guard Extensions (Intel® SGX) • Intel® Virtualization Technology for Directed I/O (VT-d) • Intel® QuickAssist Technology (Intel® QAT) 		<ul style="list-style-type: none"> • Intel® Virtualization Technology for Directed I/O (VT-d) • Intel® Virtualization Technology (VT-x) • Intel® QuickAssist Technology (Intel® QAT) 	
				<ul style="list-style-type: none"> • Intel® AES New Instructions • Intel® Software Guard Extensions (Intel® SGX) • Intel® Memory Protection Extensions (Intel® MPX) • Intel® Virtualization Technology for Directed I/O (VT-d) • Intel® QuickAssist Technology (Intel® QAT) 	
	TPM	1 x TPM 2.0 pin header		1 x TPM 2.0 pin header	
IPMI	IPMI solution	N/A		N/A	
Networking	Ethernet IC	1 GbE NIC: Intel® i211-AT 1 GbE PHY: Marvell 88E1543		1 GbE NIC: Intel® i211-AT 1 GbE PHY: Marvell 88E1512 10 GbE: Intel® X553 integrated in CPU	
	Ethernet Port	4 x GbE from Intel® i211-AT 4 x GbE from Marvell 88E1543	4 x GbE from Intel® i211-AT 2 x GbE from Marvell 88E1543	4 x 1GbE from Intel® i211-AT 2 x 1GbE from Marvell 88E1512 2 x 10 GbE SFP+	
	Bypass	Yes, 2 bypass segments	Yes, 1 bypass segments	N/A	
Expansion Slot	Network Module Slot	N/A		N/A	
	PCIe Slot	N/A		N/A	
	PCIe Mini Card Slot	1 x PCIe Mini card (PCIe 3.0, USB 2.0) with SIM slot		1 x PCIe Mini card (PCIe 3.0, USB 2.0) with SIM slot	
Storage	M.2	1 x M.2 A key (PCIe 3.0 & USB 2.0)		1 x M.2 A key (PCIe 3.0 & USB 2.0)	
	Storage	1 x SATA 3.0 + 1 x 5V power connector (for SATA DOM) 1 x M.2 M key 2260/2280 Support PCIe 3.0 x4 nVME		1 x SATA 3.0 + 1 x 5V power connector (for SATA DOM) 1 x M.2 M key 2260/2280 Support PCIe 3.0 x4 nVME	
	eMMC	1 x eMMC 32GB		1 x eMMC 32GB	
External I/O	SD Card	N/A		N/A	
	VGA	N/A		N/A	
	USB	1 x USB 2.0 1 x USB 3.2 Gen 1		1 x USB 2.0 1 x USB 3.2 Gen 1	
Internal I/O	Console	1 x RJ45		1 x RJ45	
	HDMI	N/A		N/A	
	USB	N/A		N/A	
Power and Mechanical	Power Switch	1 x Power Switch		1 x Power Switch	
	Reset Button	1 x Reset Button		1 x Reset Button	
	Power Input	1 x DC jack		1 x DC jack	
	Type/Watt	12 V DC-in, 60W		12 V DC-in, 60W	
	Processor Cooling	Passive CPU heatsink		Passive CPU heatsink	
	System Cooling	Fanless		Two system fans Fanless	
	Antenna Hole	2 x Antenna hole		2 x Antenna hole	
Physical and Environmental	Storage Temperature	-20°C ~ 75°C (-4°F ~ 167°F)		-20°C ~ 75°C (-4°F ~ 167°F)	
	Operating Temperature	0°C ~ 40°C (32°F ~ 104°F)		0°C ~ 40°C (32°F ~ 104°F)	
	Operating Humidity	Relative humidity: 5%~90% non-condensing		Relative humidity: 5%~90% non-condensing	
	Dimensions (W x L x H) (mm)	225 x 206 x 44.2		225 x 206 x 44.2	
	Weight	2 KG		2 KG	
OS and Certifications	Certification	CE / FCC / RoHS		CE / FCC / RoHS	
	Operating System	Linux Ubuntu 18.04.04 CentOS 7 / Red Hat / Fedora EPEL Microsoft Windows 10		Linux Ubuntu 18.04.04 CentOS 7 / Red Hat / Fedora EPEL Microsoft Windows 10	
	Indicators	LCM	N/A	N/A	
	LED	1 x Power LED, 1 x Storage LED, 1 x Alert LED		1 x Power LED, 1 x Storage LED, 1 x Alert LED	

PUZZLE Series Selection Guide



		PUZZLE-IN004				
		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 14-core, 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 2133/2400MHz ECC DDR4 RDIMM/LRDIMM				
	Memory Capacity	RDIMM up to 256 GB LRDIMM up to 512 GB				
	Memory Socket	8 x 288-pin DIMM				
Network and Security	Network Acceleration and Security Function	<ul style="list-style-type: none"> Intel® AES New Instructions Intel® QuickAssist Technology (Intel® QAT) Intel® Virtualization Technology (Intel® VT) Intel® Trusted Execution Technology (Intel® TXT) 				
	TPM	1 x TPM 2.0 pin header				
IPMI	IPMI solution	N/A				
Networking	Ethernet IC	1 GbE NIC: Intel® i211-AT 10 GbE: Intel® X722 integrated in CPU				
	Ethernet Port	8 x 1GbE RJ45 LAN ports 4 x 10 GbE SFP+				
	Bypass	N/A				
	Network Module Slot	1 x PuliM module slot				
Expansion Slot	PCIe Slot	1 x PCIe 3.0 x8 (FHHL) slot (double width)				
	PCIe Mini Card Slot	1 x PCIe Mini (PCIe +USB 2.0) with SIM card				
	M.2	1 x M.2 M key 2260/2280 Support PCIe 3.0 x4 nVME				
Storage	Storage	2 x 2.5" SATA HDD/SSD bay support SATA 3.0 (6 Gbps)				
	eMMC	N/A				
	SD Card	N/A				
External I/O	VGA	N/A				
	USB	1 x USB 2.0 1 x USB 3.2 Gen 1				
	Console	1 x RJ45				
Internal I/O	HDMI	N/A				
	USB	N/A				
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	4 x Cooling Fans with Smart fan				
	Antenna Hole	1 x Antenna hole				
Physical and Environmental	Storage Temperature	-20°C ~ 75°C (-4°F ~ 167°F)				
	Operating Temperature	0°C ~ 40°C (32°F ~ 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 / RoHS				
	Operating System	Linux Ubuntu 18.04.04 CentOS 7 / Red Hat / Fedora EPEL Microsoft Windows 10				
Indicators	LCM	LCM, 2 buttons				
	LED	1 x Power LED, 1 x Storage LED, 1 x Alert LED				

PUZZLE Series Selection Guide



		PUZZLE-A001		PUZZLE-A001A	
		PUZZLE-A001-SO2	PUZZLE-A001-SO3	PUZZLE-A001A-SO2	PUZZLE-A001A-SO3
Platform	Form Factor	1U			
	CPU	AMD EPYC™ Embedded 3201 processor, 8C/8T, up to 3.10 GHz	AMD EPYC™ Embedded 3151 processor, 4C/8T, up to 2.90 GHz	AMD EPYC™ Embedded 3201 processor, 8C/8T, up to 3.10 GHz	AMD EPYC™ Embedded 3151 processor, 4C/8T, up to 2.90 GHz
	Chipset	Integrated in CPU		Integrated in CPU	
Memory	Memory Technology	DDR4 2133/2666 MHz ECC or non-ECC UDIMM/ DIMM		DDR4 2133/2666 MHz ECC or non-ECC UDIMM/ DIMM	
	Memory Capacity	UDIMM Up to 64GB RDIMM Up to 128GB		UDIMM Up to 64GB RDIMM Up to 128GB	
	Memory Socket	4 x 288-pin DIMM		4 x 288-pin DIMM	
Network and Security	Network Acceleration and Security Function	<ul style="list-style-type: none"> Secure Processor for Crypto Co-processing Secure Memory Encryption (SME) Secure Encrypted Virtualization (SEV) Integrated crypto acceleration supporting the IPsec protocol 		<ul style="list-style-type: none"> Secure Processor for Crypto Co-processing Secure Memory Encryption (SME) Secure Encrypted Virtualization (SEV) Integrated crypto acceleration supporting the IPsec protocol 	
	TPM	1 x TPM 2.0 pin header		1 x TPM 2.0 pin header	
IPMI	IPMI solution	N/A		N/A	
Networking	Ethernet IC	1 GbE NIC: Broadcom® BCM5720		1 GbE NIC: Broadcom® BCM5720	
	Ethernet Port	8 x 1GbE RJ45 LAN ports 4 x 10GbE SPF+ ports (Integrated in CPU)		8 x 1GbE RJ45 LAN ports	
	Bypass	N/A		N/A	
	Network Module Slot	1 x PulM module slot		1 x PulM module slot	
Expansion Slot	PCIe Slot	2 x PCIe 3.0 x4 (FHHL) slots		2 x PCIe 3.0 x4 (FHHL) slots	
	PCIe Mini Card Slot	1 x PCIe Mini card (PCIe 3.0, USB 2.0)		1 x PCIe Mini card (PCIe 3.0, USB 2.0)	
	M.2	1 x 3042/2260 M.2 B key (SATA / USB 3.2 Gen1) Support SATA SSD and 4G LTE module		1 x 3042/2260 M.2 B key (SATA / USB 3.2 Gen1) Support SATA SSD and 4G LTE module	
Storage	Storage	2 x 2.5" SATA HDD/SSD bay support SATA 3.0 (6 Gbps)		2 x 2.5" SATA HDD/SSD bay support SATA 3.0 (6 Gbps)	
	eMMC	N/A		N/A	
	SD Card	N/A		N/A	
External I/O	VGA	N/A		N/A	
	USB	2 x USB 3.2 Gen 1		2 x USB 3.2 Gen 1	
	Console	1 x RJ45		1 x RJ45	
Internal I/O	HDMI	N/A		N/A	
	USB	1 x USB 3.2 Gen 1 (5Gb/s) 4 x USB 2.0		1 x USB 3.2 Gen 1 (5Gb/s) 4 x USB 2.0	
Power and Mechanical	Power Switch	1 x Power Switch		1 x Power Switch	
	Reset Button	1 x Reset Button		1 x Reset Button	
	Power Input	100 V ~ 240 V		100 V ~ 240 V	
	Type/Watt	Redundant Power 300W, 90V~264V AC		Redundant Power 300W, 90V~264V AC	
	Processor Cooling	1 x Passive CPU Heatsink		1 x Passive CPU Heatsink	
	System Cooling	4 x Cooling Fans with Smart fan		4 x Cooling Fans with Smart fan	
	Antenna Hole	1 x Antenna hole		1 x Antenna hole	
Physical and Environmental	Storage Temperature	-20°C ~ 75°C (-4°F ~ 167°F)		-20°C ~ 75°C (-4°F ~ 167°F)	
	Operating Temperature	0°C ~ 40°C (32°F ~ 104°F)		0°C ~ 40°C (32°F ~ 104°F)	
	Operating Humidity	Relative humidity: 5% ~ 90% non-condensing		Relative humidity: 5% ~ 90% non-condensing	
	Dimensions (W x L x H) (mm)	430 x 426 x 44.2		430 x 426 x 44.2	
	Weight	7 KG		7 KG	
OS and Certifications	Certification	CE / FCC / RoHS		CE / FCC / RoHS	
	Operating System	CentOS 7 / Red Hat / Fedora EPEL		CentOS 7 / Red Hat / Fedora EPEL	
Indicators	LCM	LCM, 2 buttons		LCM, 2 buttons	
	LED	1 x Power LED, 1 x Storage LED, 1 x Alert LED		1 x Power LED, 1 x Storage LED, 1 x Alert LED	

PUZZLE Series Selection Guide



		PUZZLE-A002	PUZZLE-M801
		PUZZLE-A002-MF1	PUZZLE-M801-A1
Platform	Form Factor	1U	
	CPU	AMD R-Series RX-421ND processor, 4C, up to 3.4 GHz	Marvell® ARMADA® 88F8040 High-Performance CPU System on Chip, 4C, 1.6GHz
	Chipset	Integrated in CPU	Integrated in CPU
Memory	Memory Technology	DDR4 2400MHz ECC/Non-ECC UDIMM	DDR4 2400MHz ECC/Non-ECC/RDIMM
	Memory Capacity	Up to 32GB	Up to 16 GB
	Memory Socket	2 x 288-pin DIMM	1 x 288-pin DIMM
Network and Security	Network Acceleration and Security Function	<ul style="list-style-type: none"> • AES-NI encryption acceleration • AMD Secure Processor • Secure boot with AMD Hardware Validated Boot (HVB) 	<ul style="list-style-type: none"> • Configurable packet processor • HW offload for networking • Acceleration engines for storage, networking and security • Public Key Processor (RSA/DH/ECC) • Secure Storage • Secure boot
	TPM	1 x TPM 2.0 pin header	N/A
IPMI	IPMI solution	N/A	N/A
Networking	Ethernet IC	1 GbE NIC: Broadcom® BCM5720	10 GbE PHY: SoC Marvell 88F8040 1 GbE PHY: Marvell 88E1512P
	Ethernet Port	6 x 1GbE RJ45 LAN ports	4 x 1GbE RJ45 LAN ports 2 x 10 GbE SFP+
	Bypass	N/A	N/A
	Network Module Slot	N/A	N/A
Expansion Slot	PCIe Slot	2 x PCIe 3.0 x4 (FHHL) slots	1 x PCIe x16 (FHHL) slot PCIe 3.0 x2 signal
	PCIe Mini Card Slot	1 x PCIe Mini card (PCIe 2.0, USB 2.0, Micro SIM slot)	N/A
	M.2	1 x 2230 M.2 A key (PCIe 2.0 / USB 2.0)	1 x M.2 B Key (3042/2260) (SATA 3.0 and USB 3.2 Gen 1) Support SATA SSD or 4G LTE module (USB signal)
Storage	Storage	2 x 2.5" SATA HDD/SSD bay support SATA 3.0 (6 Gbps)	1 x 2.5" SATA HDD/SSD bay support SATA 3.0 (6 Gbps)
	eMMC	8 GB	32GB
	SD Card	N/A	N/A
External I/O	VGA	N/A	N/A
	USB	2 x USB 3.2 Gen 1	2 x USB 3.2 Gen 1
	Console	1 x RJ45	1 x RJ45
Internal I/O	HDMI	N/A	N/A
	USB	1 x USB USB 3.2 Gen 1 (5Gb/s) 2 x USB 2.0	1 x USB 2.0
Power and Mechanical	Power Switch	1 x Power Switch	1 x Power Switch
	Reset Button	1 x Reset Button	1 x Reset Button
	Power Input	100 V ~ 240 V	100 V ~ 240 V
	Type/Watt	ATX Power 250W, 90V~264V AC	ATX Power 250W, 90V~264V AC
	Processor Cooling	1 x Passive CPU Heatsink	1 x Active CPU Heatsink with fan
	System Cooling	4 x Cooling Fans with Smart fan	2 x Cooling Fans with Smart Fan
	Antenna Hole	1 x Antenna hole	1 x Antenna hole
Physical and Environmental	Storage Temperature	-20°C ~ 75°C (-4°F ~ 167°F)	-20°C ~ 75°C (-4°F ~ 167°F)
	Operating Temperature	0°C ~ 40°C (32°F ~ 104°F)	0°C ~ 40°C (32°F ~ 104°F)
	Operating Humidity	Relative humidity: 5% ~ 90% non-condensing	Relative humidity: 5% ~ 90% non-condensing
	Dimensions (W x L x H) (mm)	430 x 320 x 44.2	430 x 320 x 44.2
	Weight	5 KG	5 KG
OS and Certifications	Certification	CE / FCC / RoHS	CE / FCC / RoHS
	Operating System	CentOS 7 / Red Hat / Fedora EPEL	Linux Ubuntu 16.04.04
Indicators	LCM	LCM, 2 buttons	N/A
	LED	1 x Power LED, 1 x Storage LED, 1 x Alert LED	1 x Power LED, 1 x Storage LED, 1 x Alert LED

PUZZLE-IN005

2U Rackmount Network Appliance support dual Intel® ice-lake CPU



New

Features

- Dual Intel® Ice lake Xeon® Scalable processors (up to 185W)
- 20 x DDR4 R-DIMM / LR-DIMM memory
- 8 network module with PCIe gen4 x8 signal
- Intel® Quick-Assist Technology
- 4 x U.2(PCle x4) 2.5" SSD compatible with SATA
- 1+1 1200W CRPS redundant power supply
- 4+1 hot swappable system fans

Specifications

		PUZZLE-IN005
Platform	Form Factor	2U
	CPU	Intel® Ice-Lake LGA-4189 Xeon® Scalable Processor
	Chipset	C627A
Memory	Memory Technology	DDR4 3200MHz ECC RDIMM / LRDIMM
	Memory Capacity	Memory up to:1280GB (20 x 64GB)
	Memory Socket	20 x 288-pin DIMM
Network and Security	Network Acceleration and Security Function	<ul style="list-style-type: none"> • Intel® AES New Instructions • Intel® QuickAssist Technology (Intel® QAT) • Intel® Virtualization Technology (Intel® VT) • Intel® Trusted Execution Technology (Intel® TXT)
	TPM	1 x TPM 2.0 Pin header
IPMI	IPMI Sulation	1 x iRIS-2400 module
Networking	Ethernet IC	1 GbE NIC: Intel® i210-AT with NCSI support 1 GbE NIC: Intel® i219
	Ethernet Port	2 x 1GbE RJ45 ports (1 x IPMI Lan)
	Network Module Slot	8 x Networking Module Slot
Expansion Slot	PCIe Slot	1 x PCIe Gen4 x8 (FHHL) slot (single width)
	PCIe Mini Card Slot	N/A
	M.2	2 x M.2 M key 2280 Support PCIe Gen3 x4 nVMe
Storage	Storage	4 x U.2 SSD drive bay compatible to SATA
	eMMC	N/A
	SD Card	N/A
External I/O	VGA	1 x VGA port
	USB	2 x USB 3.1 Gen 1 (5Gb/s) Type-A ports
	Console	1 x RJ45 1 x USB Type-C
Internal I/O	HDMI	N/A
	USB	1 x USB 2.0 pin header
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 1200W, 90V~264V AC
	Processor Cooling	2 x Active CPU Cooler
	System Cooling	5 x Cooling Fans with Smart Fan
	Antenna Hole	N/A
Physical and Environmental	Storage Temperature	-20°C ~ 75°C (-4°F ~ 167°F)
	Operating Temperature	0°C ~ 40°C (32°F ~ 104°F)
	Operating Humidity	Relative humidity: 5% ~ 90% non-condensing
	Dimensions (W x L x H) (mm)	438 x 650 x 88 mm
	Weight	23kg
OS and Certifications	Certification	CE / FCC / RoHS
	Operating System	Linux 18.04 (CentOS, Red Hat, Ubuntu, etc.) Windows server 2019
Indicators	LCM	N/A
	LED	1 x Power LED, 1 x Storage LED, 1 x Alert LED

Ordering Information

Part No.	Description
PUZZLE-IN005-R-R10*	2U Rackmount Network Appliance support dual Intel® ice-lake-SP CPU, twenty DDR4 R-DIMM/LR-DIMM slots, and two 1GbE (one support BMC control), eight Puls, one PCIe expansion, Redundant Power, without cooler, RoHS

* A CPU heatsink must be purchased separately

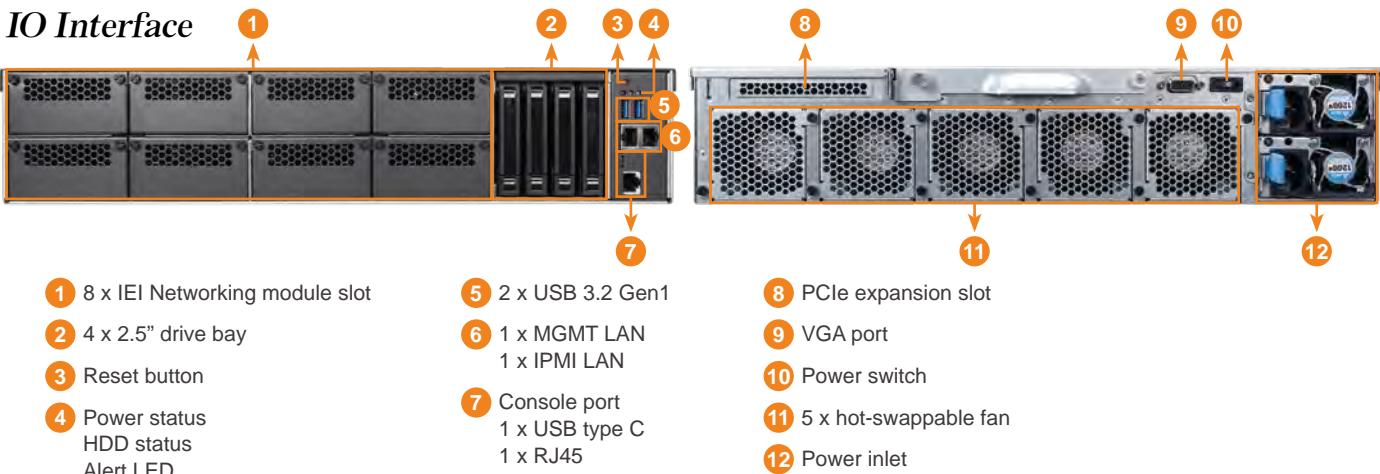
Packing List

1 x USB to RJ45 console cable	Rack mounting ears
2 x Power cord	Screws for rack mounting ears
Flat head screws (for 2.5" HDD)	

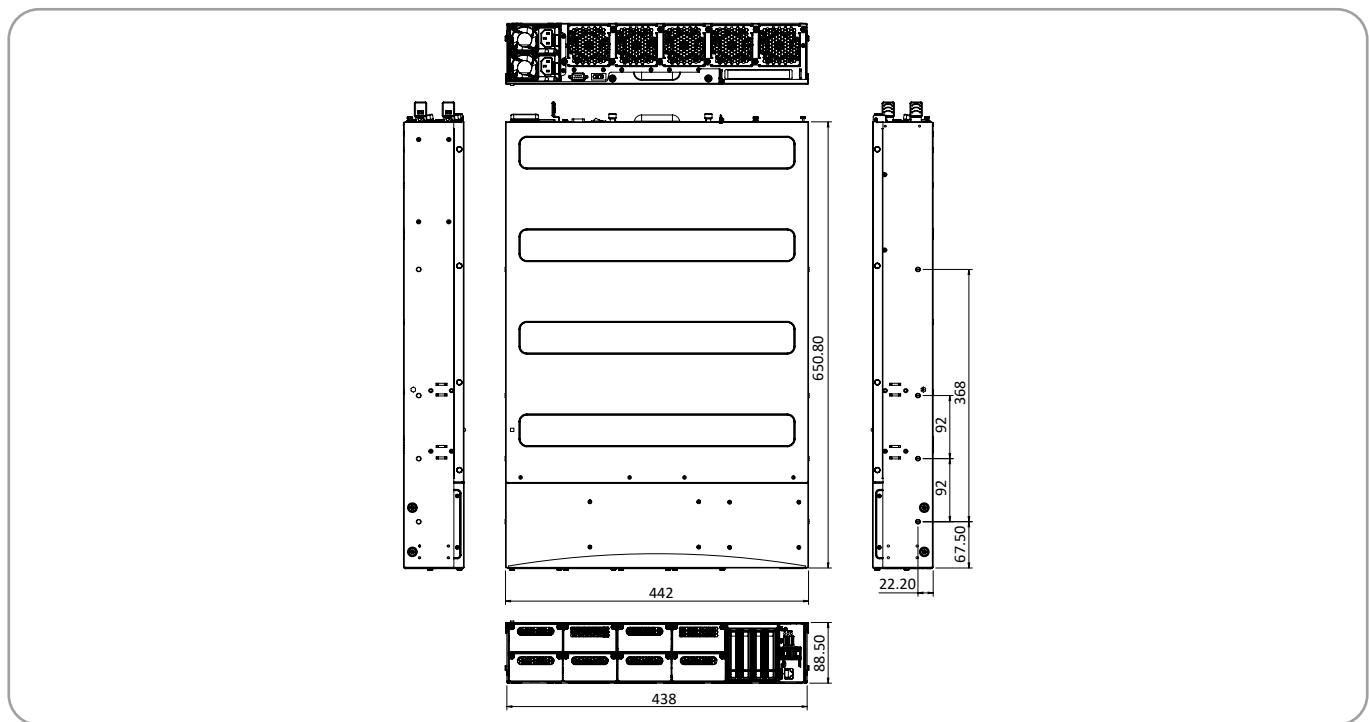
Options

Item	Part No.	Description
Slide rail	RAIL-A03-57	Kingslide Rail kit for TS-EC2480U-RP, maximum load 90 kg
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
CPU cooler	19100-000287-00-RS	Cooler module/Heat Pipe; HEATSINK:113*78*64mm, FAN:60*60*15mm; Standard; 00; TSM-002007-HS3; Aluminum plate+FIN Buckle+Heat Pipe*5; +Grease:TC5888+6025FAN+FAN cover+LGA4189*4; Nidec; H60T12BHA7-57T07; CCL; RoHS

IO Interface



Dimensions (Unit: mm)



PUZZLE-IN001

1U Rackmount Network Appliance with Intel® Xeon® E and 8th & 9th Generation Intel® Core™ i3/Pentium®/Celeron® Processor, two PulM module slots and two PCIe slots



Features

- Intel® Xeon® E, 8th & 9th Generation Intel® Core™/ Pentium®/Celeron® processor
- 8 x GbE RJ45 via Intel® I211
- 2 x 288-pin DIMM, DDR4 2400MHz ECC & non ECC, up to 32GB
- 1 x RJ45 Console, 2 x USB 3.2 Gen 1 (5Gb/s), LCM
- 2 x 2.5" SATA drive bay, 1 x M.2 B-Key (SATA, USB 3.2 Gen 1 (5Gb/s)), 1 x PCIe Mini
- Support PCIe x4, PCIe x8 slot and two PulM module slots
- Redundant PSUs

Specifications

		PUZZLE-IN001-XE	PUZZLE-IN001-i3T
Platform	Form Factor	1U	
	CPU	Intel® Xeon® E-2136 processor, 6C/12T, up to 4.50 GHz	8th Generation Intel® Core™ i3-8100T processor, 4C/4T, up to 3.10 GHz
	Chipset	Intel® C246	
Memory	Memory Technology	2 x DDR4 2400MHz ECC/Non-ECC/RDIMM	
	Memory Capacity	Up to 32GB	
	Memory Socket	2 x 288-pin DIMM	
Network and Security	Network Acceleration and Security Function	<ul style="list-style-type: none"> • 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	8 x 1GbE RJ45 LAN ports	
	Network Module Slot	2 x PulM module slots	
Expansion Slot	PCIe Slot	1 x PCIe 3.0 x8 (FHHL) slot, 1 x PCIe 3.0 x4 (FHHL) slots	
	PCIe Mini Card Slot	1 x PCIe Mini card (PCIe 3.0 & SATA 3.0, USB 2.0)	
	M.2	1 x 3042/2260 M.2 B key (SATA 3.0 / USB 3.2 Gen1) Support SATA SSD and 4G LTE module	
Storage	Storage	2 x 2.5" SATA HDD/SSD bay support SATA 3.0 (6 Gbps) (RAID 0/1 support)	
	eMMC	N/A	
	SD Card	N/A	
External I/O	USB	2 x USB 3.2 Gen 1 (5Gb/s)	
	Console	1 x RJ45	
Internal I/O	HDMI	N/A	1 x HDMI connector (optional)
	USB	4 x USB 2.0 (pin header)	
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	4 x Cooling fans with smart fan	
	Antenna Hole	1 x Antenna hole	
	Storage Temperature	-20°C ~ 75°C (-4°F ~ 167°F)	
Physical and Environmental	Operating Temperature	0°C ~ 40°C (32°F ~ 104°F)	
	Operating Humidity	5% ~ 90% non-condensing	
	Dimensions (W x L x H) (mm)	430 x 426 x 44.2	
	Weight	7kg	
	Certification	CE / FCC / RoHS	
OS and Certifications	Operating System	Linux Ubuntu 18.04.04 CentOS 7 / Red Hat / Fedora EPEL Microsoft Windows 10	
	Indicators	LCM, 2 buttons 1 x Power LED, 1 x Storage LED, 1 x Alert LED	

Ordering Information

Part No.	Description
PUZZLE-IN001-R-R11*	1U Rackmount Network Appliance support Intel® Gen8 Xeon®E3, Core™ i3, Pentium® or Celeron® processor, two DDR4 slots, two SSD slots and eight 1GbE, two PulsM, two PCIe expansion without heatsink, Redundant Power, RoHS
PUZZLE-IN001-XE/R-R11	1U Rackmount Network Appliance with Intel® Gen8 Xeon® E-2136 processor, two DDR4 slots, and eight 1GbE, two PulsM module slots, two PCIe expansion, Redundant Power, RoHS
PUZZLE-IN001-i3T/R-R11	1U Rackmount Network Appliance with Intel® Gen8 Core™ i3-8100T processor, two DDR4 slots, and eight 1GbE, two PulsM module slots, two PCIe expansion, Redundant Power, RoHS
PUZZLE-IN001-XE/16G/R-R11	1U Rackmount Network Appliance with Intel® Gen8 Xeon® E-2136 processor, two 8GB DDR4, two 256GB SSD, and eight 1GbE, two PulsM module slots, two PCIe expansion, Redundant Power, RoHS
PUZZLE-IN001-i3T/16G/R-R11	1U Rackmount Network Appliance with Intel® Gen8 Core™ i3-8100T processor, two 8GB DDR4, two 256GB SSD, and eight 1GbE, two PulsM module slots, two PCIe expansion, Redundant Power, RoHS

* A CPU heatsink must be purchased separately

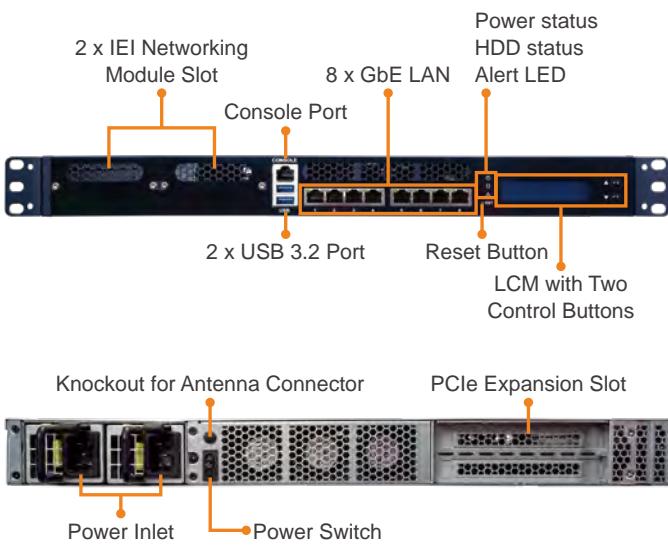
Packing List

	PUZZLE-IN001-R	PUZZLE-IN001-XE/R	PUZZLE-IN001-i3T/R	PUZZLE-IN001-XE/16G/R	PUZZLE-IN001-i3T/16G/R
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	Option	Option	Option	1	1
RS-232 to console cable	1	1	1	Option	Option
Slide rail	Option	Option	Option	Option	Option

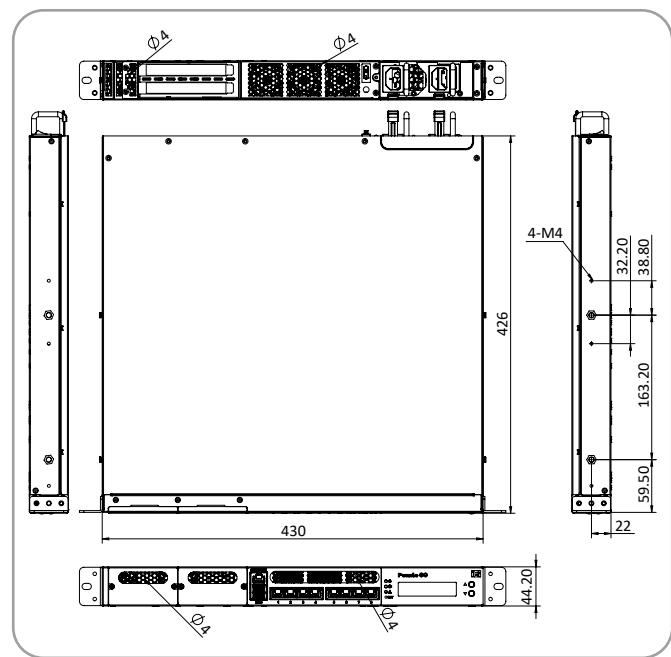
Options

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)RJ45 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)RJ45 PLUG 8P8C; ONE PCS PKG; TC&C; RoHS
HDMI cable	19B00-000403-00-RS	Z532; Accessory module; PUZZLE series HDMI cable assembly (only processor support graphics model); standard; 00, RoHS
Heatsink (TDP: 35W)	34000-000731-RS	HEATSINK; 90*90*27MM, GREASE:35*35mm_K=6.5; Washer*4+SPRING SCREW Set*4, for CPU TDP 35W; RoHS
Heatsink (TDP: 80W)	34000-000722-RS	HEATSINK/Heat Pipe; FIN:89.5X88.4X20MM+Ø6 Heat Pipe*1, Copper Block:40*36*3MM + Aluminum Block:90*90*4.0MM; SCREW+SPRING+E-RING+WASHER*4, GREASE:X23-7762for CPU TDP 80W; RoHS

IO Interface



Dimensions (Unit: mm)



PUZZLE-IN001A

1U Rackmount Network Appliance with Intel® Xeon® E and 8th & 9th Generation Intel® Core™ i3/Pentium®/Celeron® Processor, two PuIM module slots and two PCIe slots



Features

- Intel® Xeon® E, 8th & 9th Generation Intel® Core™/ Pentium®/Celeron® processor
- 8 x 5 GbE RJ45 via AQC 111C, support 100 meters over Cat 5e or better at 5 Gbps, 2.5 Gbps, 1 Gbps, 100 Mbps (require no change to existing infrastructure or cabling)
- 4 x 288-pin DIMM, DDR4 2400MHz ECC & non ECC, up to 64 GB
- 1 x RJ45 Console, 2 x USB 3.2 Gen 1, LCM
- 2 x 2.5" SATA drive bay, 1 x M.2 B-Key, 1 x PCIe Mini

Specifications

		PUZZLE-IN001A-XE	PUZZLE-IN001A-i3T
Platform	Form Factor	1U	
	CPU	Intel® Xeon® E-2136 processor, 6C/12T, up to 4.50 GHz	8th Generation Intel® Core™ i3-8100T processor, 4C/4T, up to 3.10 GHz
	Chipset	Intel® C246	
Memory	Memory Technology	4 x DDR4 2400MHz ECC/Non-ECC UDIMM	
	Memory Capacity	Up to 64GB	
	Memory Socket	4 x 288-pin DIMM	
Network and Security	Network Acceleration and Security Function	<ul style="list-style-type: none"> • 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	8 x 5GbE NIC: AQC 111C	
	Ethernet Port	8 x 5 GbE RJ45 LAN ports	
	Network Module Slot	2 x PuIM module slots	
Expansion Slot	PCIe Slot	1 x PCIe 3.0 x8 (FHHL) slot, 1 x PCIe 3.0 x4 (FHHL) slots	
	PCIe Mini Card Slot	1 x PCIe Mini card (PCIe 3.0 & SATA 3.0, USB 2.0)	
	M.2	1 x 3042/2260 M.2 B key (SATA 3.0 / USB 3.2 Gen1) Support SATA SSD and 4G LTE module	
Storage	Storage	2 x 2.5" SATA HDD/SSD bay support SATA 3.0 (6 Gbps)	
	eMMC	N/A	
	SD Card	N/A	
External I/O	USB	2 x USB 3.2 Gen 1 (5Gb/s)	
	Console	1 x RJ45	
Internal I/O	HDMI	N/A	1 x HDMI connector (optional)
	USB	4 x USB 2.0 (pin header)	
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	4 x Cooling fans with smart fan	
	Antenna Hole	1 x Antenna hole	
Physical and Environmental	Storage Temperature	-20°C ~ 75°C (-4°F ~ 167°F)	
	Operating Temperature	0°C ~ 40°C (32°F ~ 104°F)	
	Operating Humidity	5% ~ 90% non-condensing	
	Dimensions (W x L x H) (mm)	430 x 426 x 44.2	
	Weight	7kg	
OS and Certifications	Certification	CE / FCC / RoHS	
	Operating System	Linux Ubuntu 18.04.04 CentOS 7 / Red Hat / Fedora EPEL Microsoft Windows 10	
Indicators	LCM	LCM, 2 buttons	
	LED	1 x Power LED, 1 x Storage LED, 1 x Alert LED	

Ordering Information

Part No.	Description
PUZZLE-IN001A-i3T/16G/R-R10	1U Rackmount Network Appliance with Intel® Gen 8 Core™ i3-8100T processor, two 8GB DDR4, two 256GB SSD, eight 5GbE, two PulsM, two PCIe expansion, Redundant Power, RoHS
PUZZLE-IN001A-XE/16G/R-R10	1U Rackmount Network Appliance with Intel® Gen 8 Xeon® E-2136 processor, two 8GB DDR4, two 256GB SSD, eight 5GbE, two PulsM, two PCIe expansion, Redundant Power, RoHS

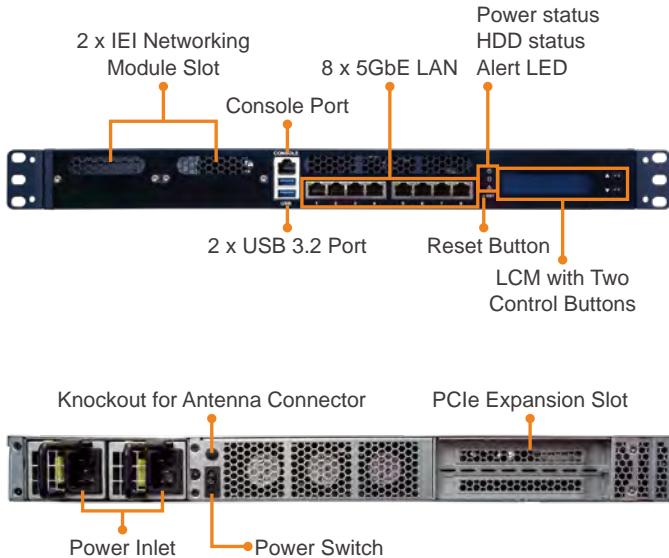
Packing List

	PUZZLE-IN001A-XE/16G/R	PUZZLE-IN001A-i3T/16G/R
Power cord	2	2
Rack mounting ears	2	2
Screws for rack mounting ears	6	6
USB to console cable	1	1
RS-232 to console cable	Option	Option
Slide rail	Option	Option

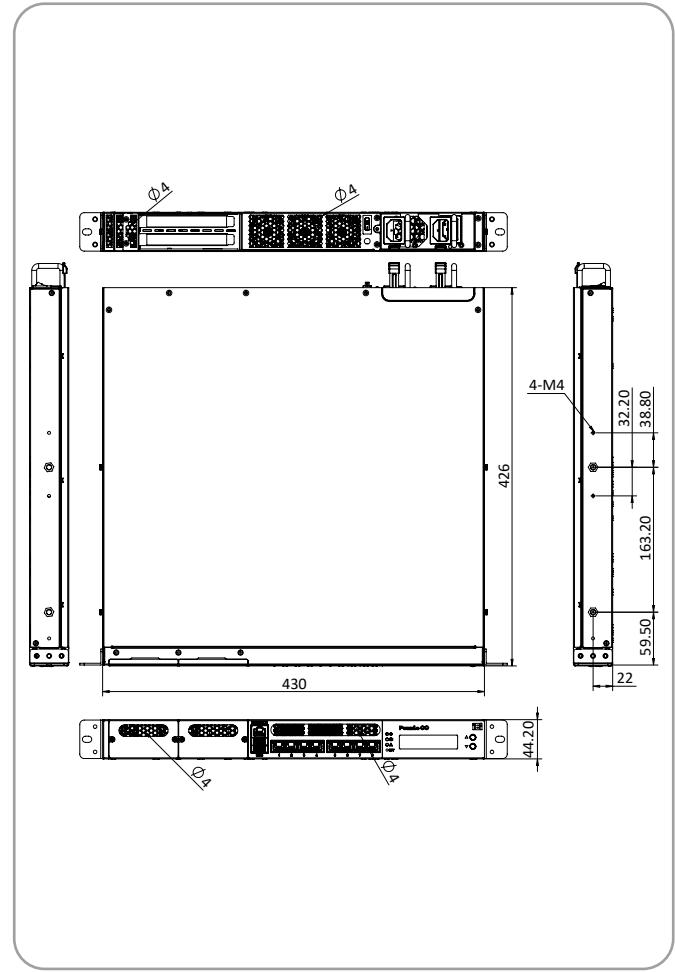
Options

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)RJ45 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)RJ45 PLUG 8P8C; ONE PCS PKG; TC&C; RoHS

IO Interface



Dimensions (Unit: mm)



PUZZLE-IN002

1U Rackmount Network Appliance with 8th & 9th Generation Intel® Core™ i7/i5/i3, Pentium® or Celeron® Processor, 1 PCIe slots



Features

- 8th & 9th Generation Intel® Core™ i7/i5/i3, Pentium® or Celeron® processor
- 6 x GbE RJ45 via Intel® I211
- 2 x DDR4 2400MHz Non-ECC UDIMM, up to 32GB
- 1 x RJ45 Console, 2 x USB 3.2 Gen 1 (5Gb/s), LCM
- 2 x 2.5" SATA drive bay, 1 x M.2 A key (PCIe & USB 2.0), 1 x PCIe Mini card (SATA, USB 2.0) with SIM slot
- Support PCIe x16

Specifications

		PUZZLE-IN002-i3T	PUZZLE-IN002-PGT
Platform	Form Factor	1U	
	CPU	8th Generation Intel® Core™ i3-8100T processor, 4C/4T, up to 3.10 GHz	Intel® Pentium® Gold G5400T processor, 2C/4T, up to 3.10 GHz
	Chipset	Intel® H310	
Memory	Memory Technology	2 x DDR4 2400MHz Non-ECC UDIMM	
	Memory Capacity	Up to 32GB	
	Memory Socket	2 x 288-pin DIMM	
Network and Security	Network Acceleration and Security Function	<ul style="list-style-type: none"> • 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	6 x 1GbE RJ45 LAN ports	
	Network Module Slot	N/A	
Expansion Slot	PCIe Slot	1 x PCIe 3.0 x16 (FHHL) slot (double width)	
	PCIe Mini Card Slot	1 x PCIe Mini card (SATA 3.0, USB 2.0) with SIM slot	
	M.2	1 x M.2 A key (PCIe 2.0& USB 2.0)	
Storage	Storage	2 x 2.5" SATA HDD/SSD bay support SATA 3.0 (6 Gbps)	
	eMMC	N/A	
	SD Card	N/A	
External I/O	USB	2 x USB 3.2 Gen 1 (5Gb/s)	
	Console	1 x RJ45	
Internal I/O	HDMI	1 x HDMI connector (optional)	
	USB	2 x USB 2.0 (pin header)	
Power and Mechanical	Power Switch	1 x Power switch	
	Reset Button	1 x Reset button	
	Power Input	100 V ~ 240 V	
	Type/Watt	ATX power 250W 90V~264V AC	
	Processor Cooling	1 x Passive CPU heatsink	
	System Cooling	4 x Cooling fans with smart fan	
Physical and Environmental	Antenna Hole	1 x Antenna hole	
	Storage Temperature	-20°C ~ 75°C (-4°F ~ 167°F)	
	Operating Temperature	0°C ~ 40°C (32°F ~ 104°F)	
	Operating Humidity	5% ~ 90% non-condensing	
	Dimensions (W x L x H) (mm)	430 x 320 x 44.2	
OS and Certifications	Weight	5kg	
	Certification	CE / FCC / RoHS	
	Operating System	Linux Ubuntu 18.04.04 CentOS 7 / Red Hat / Fedora EPEL Microsoft Windows 10	
Indicators	LCM	LCM, 2 buttons	
	LED	1 x Power LED, 1 x Storage LED, 1 x Alert LED	

Ordering Information

Part No.	Description
PUZZLE-IN002-R11*	1U Rackmount Network Appliance support Intel® Gen 8 Core™ i7, i5, i3, Pentium® or Celeron® processor, two DDR4 slots, and six 1GbE, one PCIe x16 expansion, RoHS
PUZZLE-IN002-i3T-R11	1U Rackmount Network Appliance with Intel® Gen8 Core™ i3-8100T processor, two DDR4 slots, and six 1GbE, one PCIe x16 expansion, RoHS
PUZZLE-IN002-PGT-R11	1U Rackmount Network Appliance with Intel® Gen8 Pentium® Gold G5400T processor, two DDR4 slots, and six 1GbE, one PCIe x16 expansion, RoHS
PUZZLE-IN002-i3T/8G-R11	1U Rackmount Network Appliance with Intel® Gen8 Core™ i3-8100T processor, two 4GB DDR4, one 256GB SSD, six 1GbE, one PCIe x16 expansion, RoHS
PUZZLE-IN002-PGT/8G-R11	1U Rackmount Network Appliance with Intel® Gen8 Pentium® Gold G5400T processor, two 4GB DDR4, one 256GB SSD, and six 1GbE, one PCIe x16 expansion, RoHS

* A CPU heatsink must be purchased separately

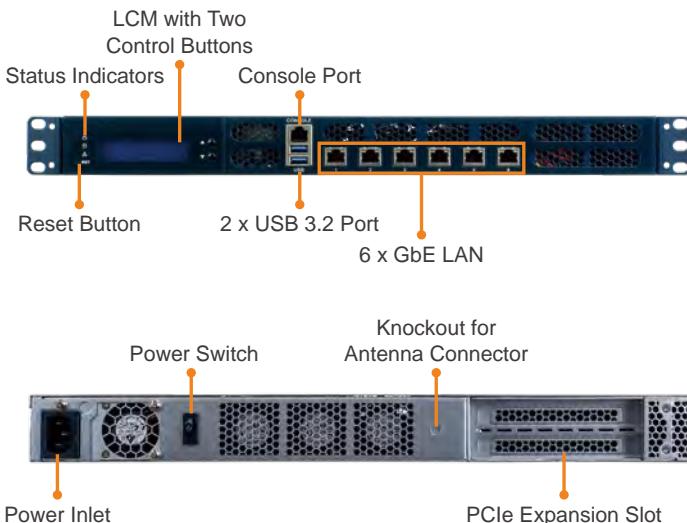
Packing List

	PUZZLE-IN002	PUZZLE-IN002-i3T	PUZZLE-IN002-PGT	PUZZLE-IN002-i3T/8G	PUZZLE-IN002-PGT/8G
Power cord	1	1	1	1	1
Rack mounting ears	2	2	2	2	2
Screws for rack mounting ears	6	6	6	6	6
USB to console cable	Option	Option	Option	1	1
RS-232 to console cable	1	1	1	Option	Option
Slide rail	Option	Option	Option	Option	Option

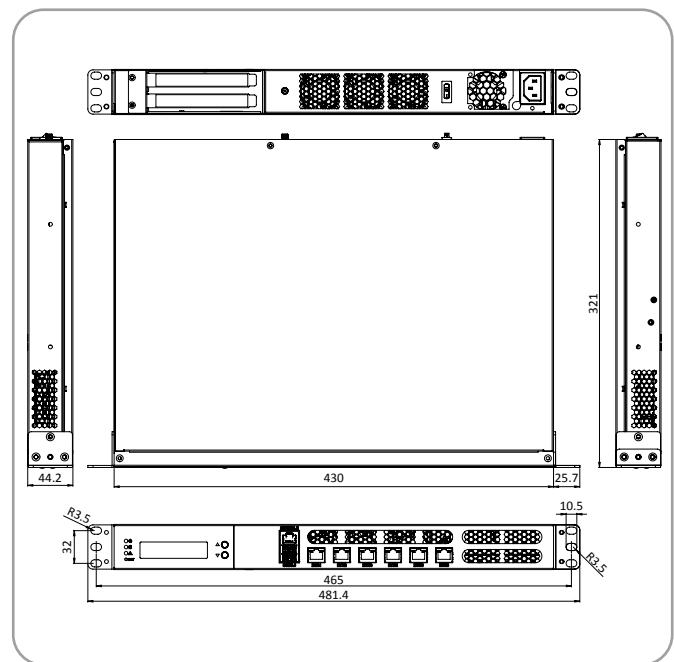
Options

Item	Part No.	Description
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)RJ45 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)RJ45 PLUG 8P8C; ONE PCS PKG; TC&C; RoHS
HDMI cable	19B00-000403-00-RS	Z532; Accessory module; PUZZLE series HDMI cable assembly (only processor support graphics model); standard; 00, RoHS
Heatsink (TDP: 35W)	34000-000731-RS	HEATSINK; 90*90*27MM, GREASE:35*35mm_K=6.5; Washer*4+SPRING SCREW Set*4, for CPU TDP 35W; RoHS
Heatsink (TDP: 80W)	34000-000722-RS	HEATSINK/Heat Pipe; FIN:89.5X88.4X20MM+Ø6 Heat Pipe*1, Copper Block:40*36*3MM + Aluminum Block:90*90*4.0MM; SCREW+SPRING+E-RING+WASHER*4, GREASE:X23-7762for CPU TDP 80W; RoHS

IO Interface



Dimensions (Unit: mm)



PUZZLE-IN003A

Desktop Network Appliance with Intel® Atom® Processor C3000 Processor, up to 8 x 1 GbE on Board with 2 (by sku) bypass segments, 1 x eMMC 32GB



Specifications

		PUZZLE-IN003A-C1	PUZZLE-IN003A-C3
Platform	Form Factor	Desktop	
	CPU	Intel® Atom® processor C3558 8M Cache, up to 2.20 GHz	Intel® Atom® Processor C3336 4M Cache, 1.50 GHz
	Chipset	Integrated in CPU	
Memory	Memory Technology	DDR4 2133MHz ECC (By CPU) or non-ECC UDIMM, Support DDR4 RDIMM	
	Memory Capacity	UDIMM up to 64GB / RDIMM up to 128GB	
	Memory Socket	2 x 288-pin DIMM	1 x 288-pin DIMM
Network and Security	Network Acceleration and Security Function	<ul style="list-style-type: none"> Intel® AES New Instructions Intel® Software Guard Extensions (Intel® SGX) Intel® Virtualization Technology for Directed I/O (VT-d) Intel® QuickAssist Technology (Intel® QAT) 	<ul style="list-style-type: none"> Intel® Virtualization Technology for Directed I/O (VT-d) Intel® Virtualization Technology (VT-x) Intel® QuickAssist Technology (Intel® QAT)
	TPM	1 x TPM 2.0 pin header	
Networking	Ethernet IC	1 GbE NIC: Intel® i211-AT 1 GbE PHY: Marvell 88E1543	
	Ethernet Port	4 x GbE from Intel® i211-AT 4 x GbE from Marvell 88E1543	4 x GbE from Intel® i211-AT 2 x GbE from Marvell 88E1543
	Bypass	Yes, 2 bypass segments	Yes, 1 bypass segments
Expansion Slot	Network Module Slot	N/A	
	PCIe Slot	N/A	
	PCIe Mini Card Slot	1 x PCIe Mini card (PCIe 3.0, USB 2.0) with SIM slot	
Storage	M.2	1 x M.2 A key (PCIe 3.0 & USB 2.0)	
	Storage	1 x SATA 3.0 + 1 x 5V power connector (for SATA DOM) 1 x M.2 M key 2260/2280 Support PCIe 3.0 x4 NVME	
	eMMC	1 x eMMC 32GB	
External I/O	SD Card	N/A	
	USB	1 x USB 2.0 1 x USB 3.2 Gen 1	
	Console	1 x RJ45	
Internal I/O	HDMI	N/A	
	USB	N/A	
Power and Mechanical	Power Switch	1 x Power switch	
	Reset Button	1 x Reset button	
	Power Input	1 x DC jack	
	Type/Watt	12 V DC-in, 60W	
	Processor Cooling	Passive CPU heatsink	
	System Cooling	Fanless	
	Antenna Hole	2 x Antenna hole	
Physical and Environmental	Storage Temperature	-20°C ~ 75°C (-4°F ~ 167°F)	
	Operating Temperature	0°C ~ 40°C (32°F ~ 104°F)	
	Operating Humidity	5% ~ 90% non-condensing	
	Dimensions (W x L x H) (mm)	225 x 206 x 44.2	
	Weight	2 kg	
OS and Certifications	Certification	CE / FCC / RoHS	
	Operating System	Linux Ubuntu 18.04.04 CentOS 7 / Red Hat / Fedora EPEL Microsoft Windows 10	
Indicators	LCM	N/A	
	LED	1 x Power LED, 1 x Storage LED, 1 x Alert LED	

Ordering Information

Part No.	Description
PUZZLE-IN003A-C1-R10	Desktop network appliance with Intel® ATOM® C3558 processor, 8 x 1GbE on Board with up to 2 bypass segments, eMMC 32GB & 2 x M.2 slot, RoHS
PUZZLE-IN003A-C1/8G-R10	Desktop network appliance with Intel® ATOM® C3558 processor, 8 x 1GbE on Board with up to 2 bypass segments, 8GB DDR4, eMMC 32GB & 2 x M.2 slot, RoHS
PUZZLE-IN003A-C3-R10	Desktop network appliance with Intel® ATOM® C3336 processor, 6 x 1GbE on Board with up to 1 bypass segments, eMMC 32GB & 2 x M.2 slot, RoHS
PUZZLE-IN003A-C3/8G-R10	Desktop network appliance with Intel® ATOM® C3336 processor, 6 x 1GbE on Board with up to 1 bypass segments, 8GB DDR4, eMMC 32GB & 2 x M.2 slot, RoHS

Packing List

	PUZZLE-IN003A-C1-R10	PUZZLE-IN003A-C1/8G-R10	PUZZLE-IN003A-C3-R10	PUZZLE-IN003A-C3/8G-R10
Power cord	1	1	1	1
Power adapter	1	1	1	1
Rack mounting ears	Option	2	Option	2
Screws for rack mounting ears	Option	6	Option	6
USB to console cable	Option	1	option	1
RS-232 to console cable	1	Option	1	Option

Options

Item	Part No.	Description
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) RJ45 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) RJ45 PLUG 8P8C, ONE PCS PKG, TC&C, RoHS
Rack ear mounting kit	19B00-000417-00-RS	Accessory module: PUZZLE-IN003 series rack ear mounting kit

IO Interface

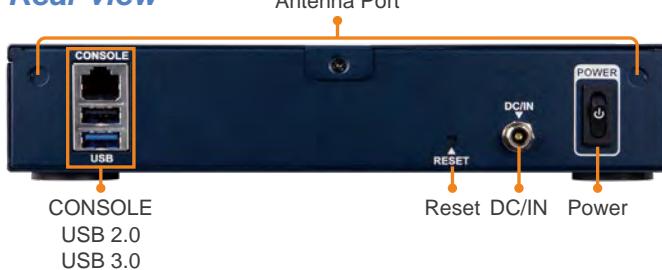
PUZZLE-IN003A-C1



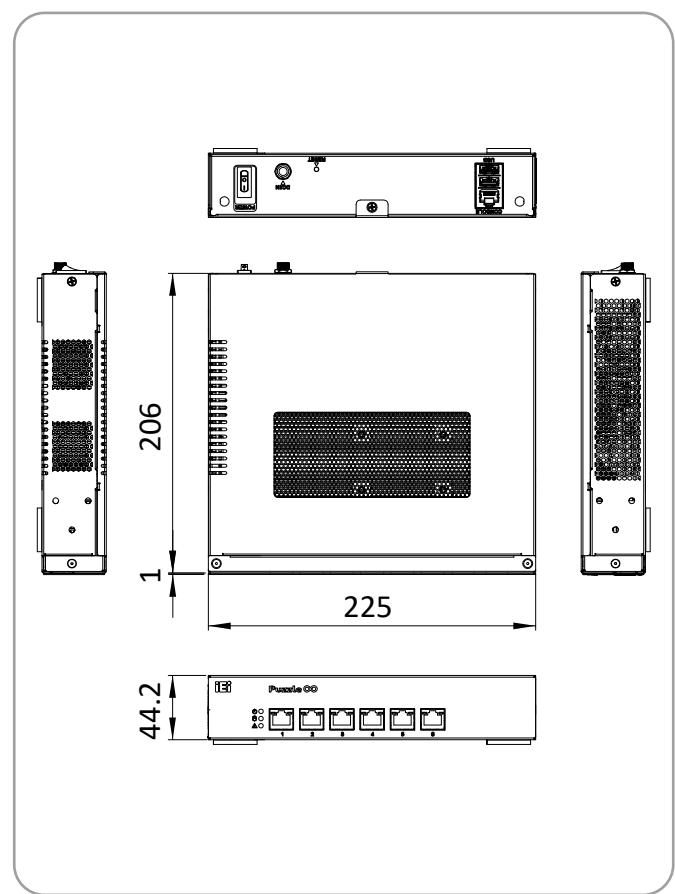
PUZZLE-IN003A-C3



Rear view



Dimensions (Unit: mm)



PUZZLE-IN003B

**Desktop Network Appliance with Intel® Atom® Processor C3000
Processor support up to 6 x 1 GbE, 2 x 10 GbE & 2 x M.2 slots, 1 x PCIe Mini, 1 x eMMC 32GB**



Specifications

		PUZZLE-IN003B-C0	PUZZLE-IN003B-C1
Platform	Form Factor	Desktop	
	CPU	Intel® Atom® processor C3758 16M cache, up to 2.20 GHz	Intel® Atom® processor C3558 8M cache, up to 2.20 GHz
	Chipset	Integrated in CPU	
Memory	Memory Technology	DDR4 2133MHz ECC (By CPU) or non-ECC UDIMM, Support DDR4 RDIMM	
	Memory Capacity	UDIMM up to 64GB / RDIMM up to 128GB	
	Memory Socket	4 x 288-pin DIMM	
Network and Security	Network Acceleration and Security Function	<ul style="list-style-type: none"> Intel® AES New Instructions Intel® Software Guard Extensions (Intel® SGX) Intel® Memory Protection Extensions (Intel® MPX) Intel® Virtualization Technology for Directed I/O (VT-d) Intel® QuickAssist Technology (Intel® QAT) 	<ul style="list-style-type: none"> Intel® AES New Instructions Intel® Software Guard Extensions (Intel® SGX) Intel® Virtualization Technology for Directed I/O (VT-d) Intel® QuickAssist Technology (Intel® QAT)
	TPM	1 x TPM 2.0 pin header	
Networking	Ethernet IC	1 GbE NIC: Intel® i211-AT 1 GbE PHY: Marvell 88E1512 10GbE: Intel® X553 integrated in CPU	
	Ethernet Port	4 x 1GbE from Intel® i211-AT 2 x 1GbE from Marvell 88E1512 2 x 10GbE SFP+	
	Network Module Slot	N/A	
Expansion Slot	PCIe Slot	N/A	
	PCIe Mini Card Slot	1 x PCIe Mini card (PCIe 3.0, USB 2.0) with SIM slot	
	M.2	1 x M.2 A key (PCIe 3.0& USB 2.0)	
Storage	Storage	1 x SATA 3.0 + 1 x 5V power connector (for SATA DOM)	1 x M.2 M key 2260/2280 Support PCIe 3.0 x4 NVME
	eMMC	1 x eMMC 32GB	
	SD Card	N/A	
External I/O	USB	1 x USB 2.0 1 x USB 3.2 Gen 1	
	Console	1 x RJ45	
Internal I/O	HDMI	N/A	
	USB	N/A	
Power and Mechanical	Power Switch	1 x Power switch	
	Reset Button	1 x Reset button	
	Power Input	1 x DC jack	
	Type/Watt	12 V DC-in, 60W	
	Processor Cooling	Passive CPU heatsink	
	System Cooling	Two system fans	Fanless
	Antenna Hole	2 x Antenna hole	
Physical and Environmental	Storage Temperature	-20°C ~ 75°C (-4°F ~ 167°F)	
	Operating Temperature	0°C ~ 40°C (32°F ~ 104°F)	
	Operating Humidity	5% ~ 90% non-condensing	
	Dimensions (W x L x H) (mm)	225 x 206 x 44.2	
	Weight	2 kg	
OS and Certifications	Certification	CE / FCC / RoHS	
	Operating System	Linux Ubuntu 18.04.04 CentOS 7 / Red Hat / Fedora EPEL Microsoft Windows 10	
Indicators	LCM	N/A	
	LED	1 x Power LED, 1 x Storage LED, 1 x Alert LED	

Ordering Information

Part No.	Description
PUZZLE-IN003B-C0-R10	Desktop network appliance with Intel® ATOM® C3758 processor, 4 x DDR4 slots, 6 x 1GbE, 2 x 10 GbE & 2 x M.2 slots, 1 x PCIe Mini slot, 1 x eMMC 32GB, RoHS
PUZZLE-IN003B-C0/8G-R10	Desktop network appliance with Intel® ATOM® C3758 processor, one 8GB DDR4, 6 x 1GbE, 2 x 10 GbE & 2 x M.2 slots, 1 x PCIe Mini slot, 1 x eMMC 32GB, RoHS
PUZZLE-IN003B-C1-R10	Desktop network appliance with Intel® ATOM® C3558 processor, 4 x DDR4 slots, 6 x 1GbE, 2 x 10 GbE & 2 x M.2 slots, 1 x PCIe Mini slot, 1 x eMMC 32GB, RoHS
PUZZLE-IN003B-C1/8G-R10	Desktop network appliance with Intel® ATOM® C3558 processor, one 8GB DDR4, 6 x 1GbE, 2 x 10 GbE & 2 x M.2 slots, 1 x PCIe Mini slot, 1 x eMMC 32GB, RoHS

Packing List

	PUZZLE-IN003B-C0-R10	PUZZLE-IN003B-C0/8G-R10	PUZZLE-IN003B-C1-R10	PUZZLE-IN003B-C1/8G-R10
Power cord	1	1	1	1
Power adapter	1	1	1	1
Rack mounting ears	Option	2	Option	2
Screws for rack mounting ears	Option	6	Option	6
USB to console cable	Option	1	Option	1
RS-232 to console cable	1	Option	1	Option

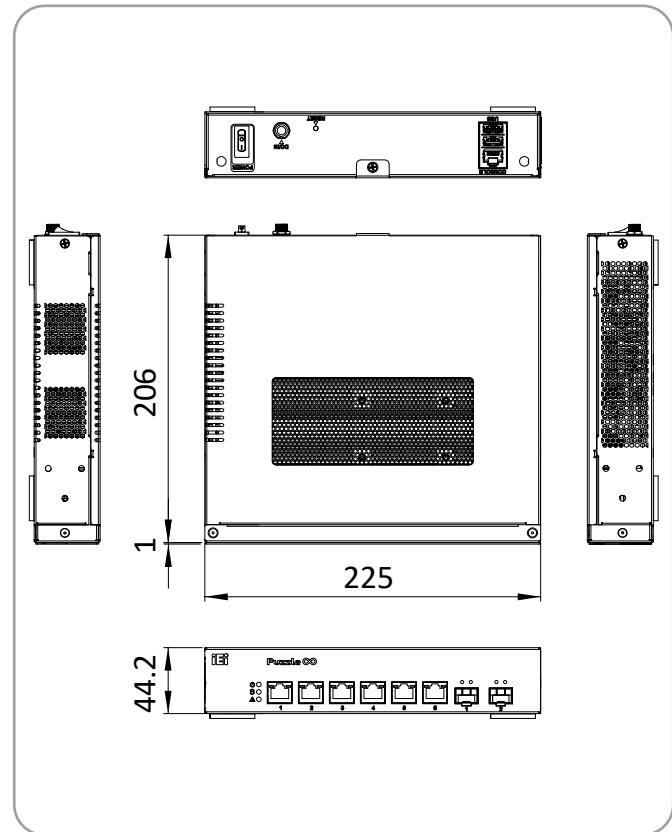
Options

Item	Part No.	Description
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) RJ45 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) RJ45 PLUG 8P8C, ONE PCS PKG, TC&C, RoHS
Rack ear mounting kit	19B00-000417-00-RS	Accessory module: PUZZLE-IN003 series rack ear mounting kit

IO Interface



Dimensions (Unit: mm)



Rear view



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 RJ45 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 RJ45 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 Puls 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 8C16T, 1.90 GHz	Intel® Xeon® D-2146NT processor 8C16T, 2.30 GHz	Intel® Xeon® D-2166NT processor 12C24T, 2.00 GHz	Intel® Xeon® D-2177NT processor 14C28T, 1.90 GHz	Intel® Xeon® D-2187NT processor 16C32T, 2.00 GHz
	Chipset	Integrated in CPU				
Memory	Memory Technology	DDR4 2133/2400MHz ECC DDR4 RDIMM/LRDIMM				
	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	<ul style="list-style-type: none"> • 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 10 GbE: Intel® X722 integrated in CPU				
	Ethernet Port	4 x 10 GbE SFP+ / 8 x 1GbE RJ45 LAN ports				
	Network Module Slot	1 x Puls module slot				
Expansion Slot	PCIe Slot	1 x PCIe 3.0 x8 (FHHL) slot (double width)				
	PCIe Mini Card Slot	1 x PCIe Mini (PCIe + USB 2.0) with SIM card				
	M.2	1 x M.2 M key 2260/2280 Support PCIe 3.0 x4 nVME				
Storage	Storage	2 x 2.5" SATA HDD/SSD bay support SATA 3.0 (6 Gbps)				
	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 RJ45				
Internal I/O	HDMI	N/A				
	USB	N/A				
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 Hole	1 x Antenna hole				
Physical and Environmental	Storage Temperature	-20°C ~ 75°C (-4°F ~ 167°F)				
	Operating Temperature	0°C~ 40°C (32°F ~ 104°F)				
	Operating 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 / RoHS				
	Operating System	Linux Ubuntu 18.04.04 CentOS 7 / Red Hat / Fedora EPEL Microsoft Windows 10				
Indicators	LCM	LCM, 2 buttons				
	LED	Power status, Storage status, Alert LED				

Ordering Information

Part No.	Description
PUZZLE-IN004-XD1/R-R10	1U rackmount network appliance with Intel® Xeon® D-2145NT processor, eight 1GbE, four 10 GbE, one PulM module slot and one PCIe expansion, RoHS
PUZZLE-IN004-XD1/32G/R-R10	1U rackmount network appliance with Intel® Xeon® D-2145NT processor, four 8GB DDR4, two 240GB SSD, eight 1GbE, four 10 GbE, one PulM module slot and one PCIe expansion, RoHS
PUZZLE-IN004-XD2/R-R10	1U rackmount network appliance with Intel® Xeon® D-2146NT processor, 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, four 8GB DDR4, two 240GB SSD, eight 1GbE, four 10 GbE, one PulM module slot and one PCIe expansion, RoHS
PUZZLE-IN004-XD3/R-R10	1U rackmount network appliance with Intel® Xeon® D-2166NT processor, 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, four 8GB DDR4, two 240GB SSD, eight 1GbE, four 10 GbE, one PulM module slot and one PCIe expansion, RoHS
PUZZLE-IN004-XD4/R-R10	1U rackmount network appliance with Intel® Xeon® D-2177NT processor, eight 1GbE, four 10 GbE, one PulM module slot and one PCIe expansion, RoHS
PUZZLE-IN004-XD4/64G/R-R10	1U rackmount network appliance with Intel® Xeon® D-2177NT processor, four 16GB DDR4, two 480GB SSD, eight 1GbE, four 10 GbE, one PulM module slot and one PCIe expansion, RoHS
PUZZLE-IN004-XD5/R-R10**	1U rackmount network appliance with Intel® Xeon® D-2187NT processor, eight 1GbE, four 10 GbE, one PulM module slot and one PCIe expansion, RoHS
PUZZLE-IN004-XD5/64G/R-R10**	1U rackmount network appliance with Intel® Xeon® D-2187NT processor, four 16GB DDR4, two 480GB SSD, eight 1GbE, four 10 GbE, one PulM module slot and one PCIe expansion, RoHS

** By order production

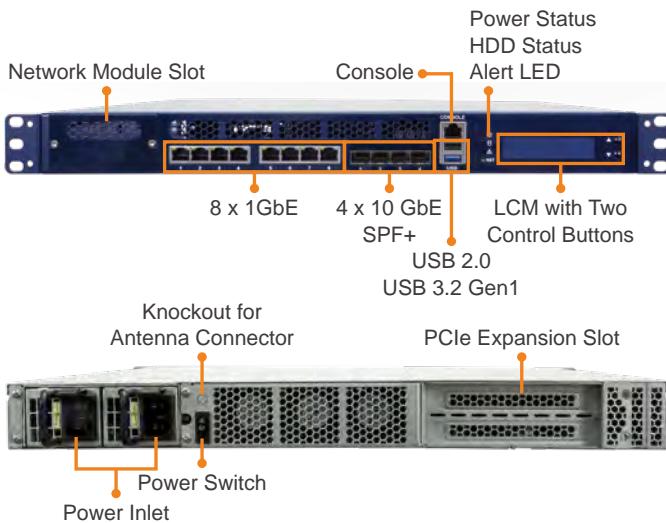
Packing List

	PUZZLE-IN004									
	XD1/R	XD2/R	XD3/R	XD4/R	XD5/R	XD1/32G/R	XD2/32G/R	XD3/32G/R	XD4/64G/R	XD5/64G/R
Power cord	2	2	2	2	2	2	2	2	2	2
Rack mounting ears	2	2	2	2	2	2	2	2	2	2
Screws for rack mounting ears	6	6	6	6	6	6	6	6	6	6
USB to console cable	option	option	option	option	option	1	1	1	1	1
RS-232 to console cable	1	1	1	1	1	option	option	option	option	option
Slide rail	option	option	option	option	option	option	option	option	option	option

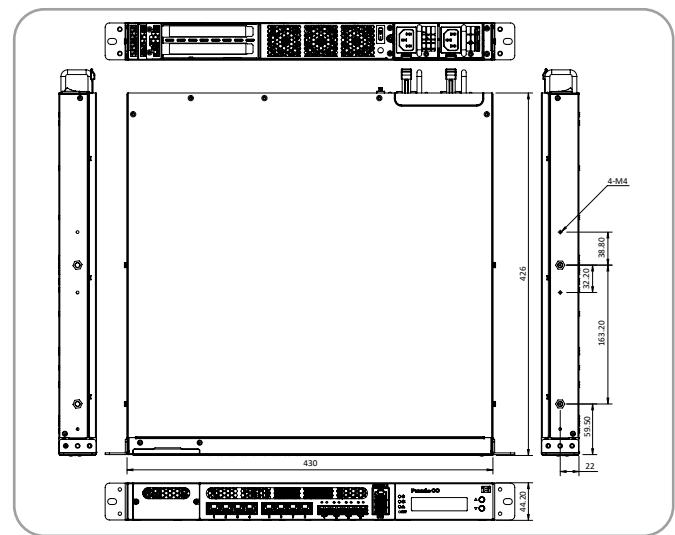
Options

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)RJ45 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)RJ45 PLUG 8P8C; ONE PCS PKG; TC&C; RoHS

IO Interface



Dimensions (Unit: mm)



PUZZLE-A001

1U Rackmount Network Appliance with AMD EPYC™ Embedded 3000 series processor, one PuIM module slot & 2 PCIe x4 slots



Features

- AMD EPYC™ Embedded 3000 series processor, high-performance System-on-Chip
- Support 8 x GbE RJ45 via BCM 5720, 4 x 10 GbE SFP+
- 4 x 288-pin DDR4 2666 MHz, UDIMM up to 64GB / RDIMM up to 128GB
- 1 x RJ45 Console, 2 x USB 3.2 Gen 1 (5Gb/s), LCM
- 2 x 2.5" SATA 3.0 drive bay, 1 x M.2 B-Key (SATA 3.0, USB 3.2 Gen 1 (5Gb/s)), 1 x PCIe Mini card (PCIe 3.0, USB 2.0)
- Support two PCIe x4 slots, one PuIM module slot
- Redundant PSUs

Specifications

		PUZZLE-A001-SO2	PUZZLE-A001-SO3
Platform	Form Factor	1U	
	CPU	AMD EPYC™ Embedded 3201 processor, 8C/8T, up to 3.10 GHz	AMD EPYC™ Embedded 3151 processor, 4C/8T, up to 2.90 GHz
	Chipset	Integrated in CPU	
Memory	Memory Technology	4 x DDR4 2133/2666 MHz ECC or non-ECC UDIMM/ RDIMM	
	Memory Capacity	UDIMM Up to 64GB / RDIMM Up to 128GB	
	Memory Socket	4 x 288-pin DIMM	
Network and Security	Network Acceleration and Security Function	<ul style="list-style-type: none"> • Secure Processor for Crypto Co-processing • Secure Memory Encryption (SME) • Secure Encrypted Virtualization (SEV) • Integrated crypto acceleration supporting the IPsec protocol 	
	TPM	1 x TPM 2.0 pin header	
Networking	Ethernet IC	1 GbE NIC: Broadcom® BCM5720	
	Ethernet Port	8 x 1GbE RJ45 LAN ports, 4 x 10GbE SPF+ ports (Integrated in CPU)	
Expansion Slot	Network Module Slot	1 x PuIM module slot	
	PCIe Slot	2 x PCIe 3.0 x4 (FHHL) slots	
	PCIe Mini Card Slot	1 x PCIe Mini card (PCIe 3.0, USB 2.0)	
	M.2	1 x 2260/3042 B key (SATA and USB 3.2 Gen 1 (5Gb/s)) Support SATA SSD and 4G LTE module	
Storage	Storage	2 x 2.5" SATA HDD/SSD bay support SATA 3.0 (6 Gbps)	
	eMMC	N/A	
	SD Card	N/A	
External I/O	USB	2 x USB 3.2 Gen 1 (5Gb/s)	
	Console	1 x RJ45	
Internal I/O	HDMI	N/A	
	USB	1 x USB 3.2 Gen 1 (5Gb/s) 4 x USB 2.0	
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	4 x Cooling fans with smart fan	
	Antenna Hole	1 x Antenna hole	
	Storage Temperature	-20°C ~ 75°C (-4°F ~ 167°F)	
Physical and Environmental	Operating Temperature	0°C ~ 40°C (32°F ~ 104°F)	
	Operating Humidity	5% ~ 90% non-condensing	
	Dimensions (W x L x H) (mm)	430 x 426 x 44.2	
	Weight	7kg	
	Certification	CE / FCC / RoHS	
OS and Certifications	Operating System	Linux Ubuntu 18.04.04 CentOS 7 / Red Hat / Fedora EPEL	
	Indicators	LCM, 2 buttons 1 x Power LED, 1 x Storage LED, 1 x Alert LED	

Ordering Information

Part No.	Description
PUZZLE-A001-SO2/16G/R-R10	1U Rackmount Network Appliance with AMD EPYC™ Embedded 3201 processor, two 8GB DDR4, two 256GB SSD, four 10 GbE SFP+, eight 1GbE, one Pulsar module slot, two PCIe expansion, Redundant Power, RoHS
PUZZLE-A001-SO3/16G/R-R10	1U Rackmount Network Appliance with AMD EPYC™ Embedded 3151 processor, two 8GB DDR4, two 256GB SSD, four 10 GbE SFP+, eight 1GbE, one Pulsar module slot, two PCIe expansion, Redundant Power, RoHS

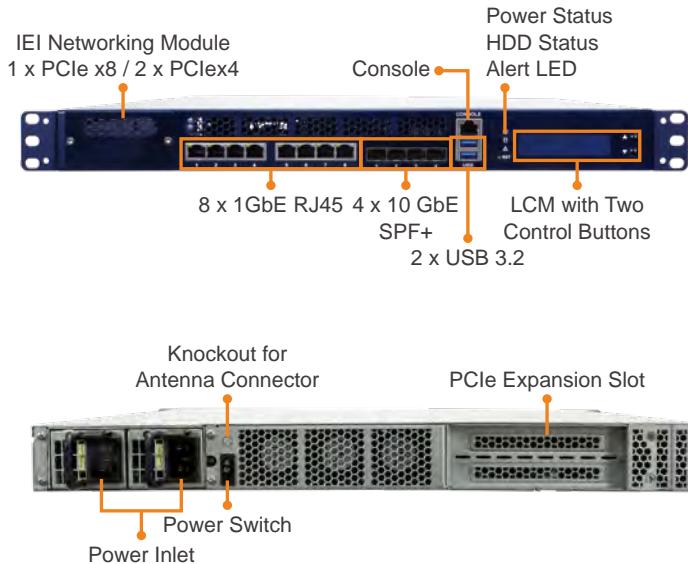
Packing List

	PUZZLE-A001-SO2/16G/R	PUZZLE-A001-SO3/16G/R
Power cord	2	2
Rack mounting ears	2	2
Screws for rack mounting ears	6	6
USB to console cable	1	1
RS-232 to console cable	Option	Option
Slide rail	Option	Option

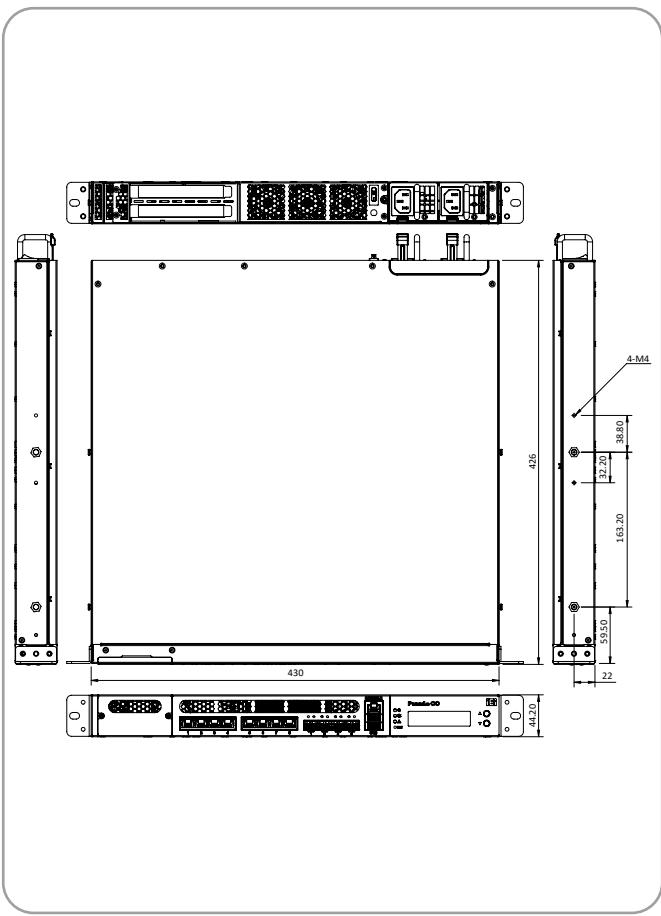
Options

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)RJ45 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)RJ45 PLUG 8P8C; ONE PCS PKG; TC&C; RoHS

IO Interface



Dimensions (Unit: mm)



PUZZLE-A001A

1U Rackmount Network Appliance with AMD EPYC™ Embedded 3000 series processor, one PulM module slot & 2 PCIe x4 slots



Specifications

		PUZZLE-A001A-SO2	PUZZLE-A001A-SO3
Platform	Form Factor		1U
	CPU	AMD EPYC™ Embedded 3201 processor, 8C/8T, up to 3.10 GHz	AMD EPYC™ Embedded 3151 processor, 4C/8T, up to 2.90 GHz
	Chipset		Integrated in CPU
Memory	Memory Technology	4 x DDR4 2133/2666 MHz ECC or non-ECC UDIMM/RDIMM	
	Memory Capacity	UDIMM Up to 64GB / RDIMM Up to 128GB	
	Memory Socket	4 x 288-pin DIMM	
Network and Security	Network Acceleration and Security Function	<ul style="list-style-type: none"> Secure Processor for Crypto Co-processing Secure Memory Encryption (SME) Secure Encrypted Virtualization (SEV) Integrated crypto acceleration supporting the IPsec protocol 	
	TPM	1 x TPM 2.0 pin header	
Networking	Ethernet IC	1 GbE NIC: Broadcom® BCM5720	
	Ethernet Port	8 x GbE RJ45 LAN ports	
	Network Module Slot	1 x PulM module slot	
Expansion Slot	PCIe Slot	2 x PCIe 3.0 x4 (FHHL) slots	
	PCIe Mini Card Slot	1 x PCIe Mini card (PCIe 3.0, USB 2.0)	
	M.2	1 x 2260/3042 B key (SATA and USB 3.2 Gen 1 (5Gb/s)) Support SATA SSD and 4G LTE module	
Storage	Storage	2 x 2.5" SATA HDD/SSD bay support SATA 3.0 (6 Gbps)	
	eMMC	N/A	
	SD Card	N/A	
External I/O	USB	2 x USB 3.2 Gen 1 (5Gb/s)	
	Console	1 x RJ45	
Internal I/O	HDMI	N/A	
	USB	1 x USB 3.2 Gen 1 (5Gb/s) 4 x USB 2.0	
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	4 x Cooling fans with smart fan	
	Antenna Hole	1 x Antenna hole	
Physical and Environmental	Storage Temperature	-20°C ~ 75°C (-4°F ~ 167°F)	
	Operating Temperature	0°C ~ 40°C (32°F ~ 104°F)	
	Operating Humidity	5% ~ 90% non-condensing	
	Dimensions (W x L x H) (mm)	430 x 426 x 44.2	
	Weight	7kg	
OS and Certifications	Certification	CE / FCC / RoHS	
	Operating System	Linux Ubuntu 18.04.04 CentOS 7 / Red Hat / Fedora EPEL	
Indicators	LCM	LCM, 2 buttons	
	LED	1 x Power LED, 1 x Storage LED, 1 x Alert LED	

Ordering Information

Part No.	Description
PUZZLE-A001A-SO2/R-R10	1U Rackmount Network Appliance with AMD EPYC™ Embedded 3201 processor, four DDR4 slots, and eight 1GbE , one PulsM slot, two PCIe expansion, Redundant Power, RoHS
PUZZLE-A001A-SO3/R-R10	1U Rackmount Network Appliance with AMD EPYC™ Embedded 3151 processor, four DDR4 slots, and eight 1GbE , one PulsM slot, two PCIe expansion, Redundant Power, RoHS

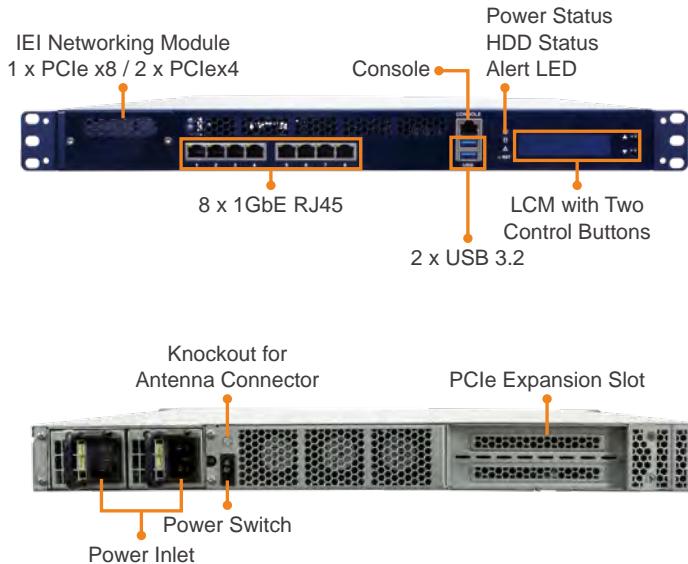
Packing List

	PUZZLE-A001A-SO2/R-R10	PUZZLE-A001A-SO3/R-R10
Power cord	2	2
Rack mounting ears	2	2
Screws for rack mounting ears	6	6
USB to console cable	Option	Option
RS-232 to console cable	1	1
Slide rail	Option	Option

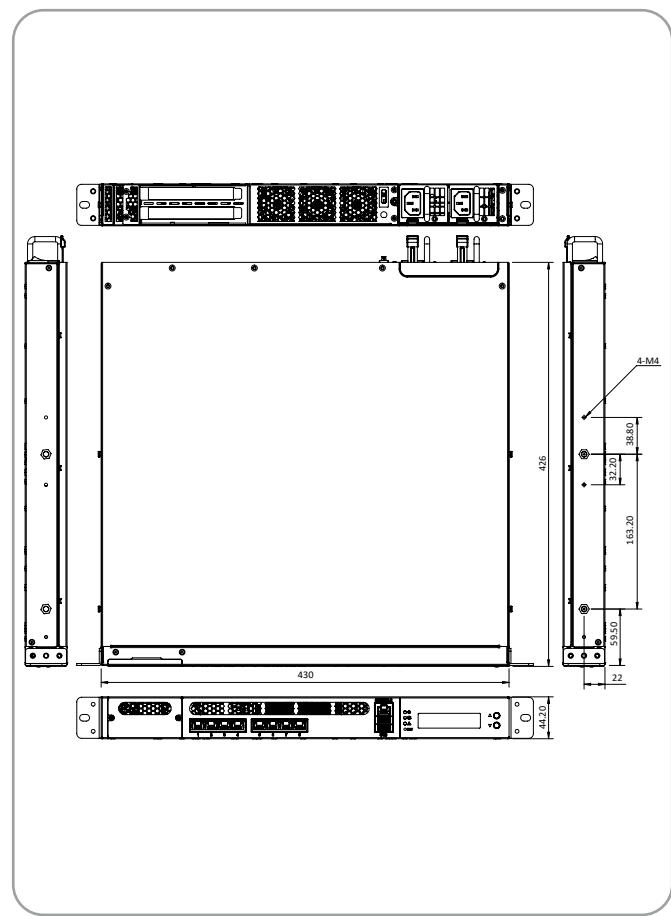
Options

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)RJ45 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)RJ45 PLUG 8P8C; ONE PCS PKG; TC&C; RoHS

IO Interface



Dimensions (Unit: mm)



PUZZLE-A002

1U Rackmount Network Appliance with AMD R-Series RX-421ND Processor, Support Six GbE RJ45



Features

- AMD R-Series RX-421ND quad-core 2.1 GHz processor
- 2 x DDR4 2400MHz ECC/Non-ECC UDIMM, up to 32 GB
- Support six GbE RJ45 via BROADCOM BCM 5720
- 1 x RJ45 Console, 2 x USB 3.2 Gen 1 (5Gb/s), 2 x USB 2.0, LCM
- 2 x 2.5" SATA 3.0 drive bay, 1 x PCIe Mini card (PCIe 2.0, USB 2.0, Micro SIM slot)
- Support two PCIe x4

Specifications

		PUZZLE-A002
Platform	Form Factor	1U
	CPU	AMD R-Series RX-421ND processor, 4C, up to 3.4 GHz
	Chipset	Integrated in CPU
Memory	Memory Technology	2 x DDR4 2400MHz ECC/Non-ECC UDIMM
	Memory Capacity	Up to 32GB
	Memory Socket	2 x 288-pin DIMM
Network and Security	Network acceleration and Security function	<ul style="list-style-type: none"> • AES-NI encryption acceleration • AMD Secure Processor • Secure boot with AMD Hardware Validated Boot (HVB)
	TPM	1 x TPM 2.0 pin header
Networking	Ethernet IC	1 GbE NIC: Broadcom® BCM5720
	Ethernet Port	6 x 1GbE RJ45 LAN ports
Expansion Slot	Network Module Slot	N/A
	PCIe Slot	2 x PCIe 3.0 x4 (FHHL) slots
	PCIe Mini Card Slot	1 x PCIe Mini card (PCIe 2.0, USB 2.0, Micro SIM slot)
Storage	M.2	1 x 2230 M.2 A key (PCIe 2.0/ USB 2.0)
	Storage	2 x 2.5" SATA HDD/SSD bay support SATA 3.0 (6 Gbps)
	eMMC	8 GB
External I/O	SD Card	N/A
	USB	2 x USB 3.2 Gen 1 (5Gb/s)
	Console	1 x RJ45
Internal I/O	HDMI	N/A
	USB	1 x USB 3.2 Gen 1 (5Gb/s) 2 x USB 2.0
Power and Mechanical	Power Switch	1 x Power switch
	Reset Button	1 x Reset button
	Power Input	100 V ~ 240 V
	Type/Watt	ATX power 250W 90V~264V AC
	Processor Cooling	1 x Passive CPU heatsink
	System Cooling	4 x Cooling fans with smart fan
	Antenna Hole	1 x Antenna hole
Physical and Environmental	Storage Temperature	-20°C ~ 75°C (-4°F ~ 167°F)
	Operating Temperature	0°C ~ 40°C (32°F ~ 104°F)
	Operating Humidity	5% ~ 90% non-condensing
	Dimensions (W x L x H) (mm)	430 x 320 x 44.2
	Weight	5kg
OS and Certifications	Certification	CE / FCC / RoHS
	Operating System	Linux Ubuntu 18.04.04 CentOS 7 / Red Hat / Fedora EPEL
Indicators	LCM	LCM, 2 buttons
	LED	1 x Power LED, 1 x Storage LED, 1 x Alert LED

Ordering Information

Part No.	Description
PUZZLE-A002-MF1-R10	1U Rackmount Network Appliance with AMD® RX-421ND processor, two DDR4 slots, and six 1GbE, two PCIe x4 expansion, RoHS
PUZZLE-A002-MF1/8G-R10	1U Rackmount Network Appliance with AMD® RX-421ND processor, one 8GB DDR4, one 256GB SSD, six 1GbE, two PCIe x4 expansion, RoHS

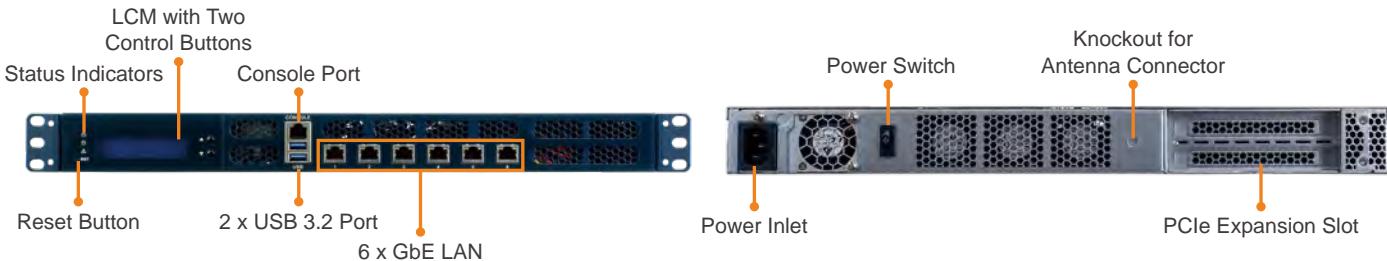
Packing List

	PUZZLE-A002-MF1	PUZZLE-A002-MF1/8G
Power cord	1	1
Rack mounting ears	2	2
Screws for rack mounting ears	6	6
USB to console cable	Option	1
RS-232 to console cable	1	Option
Slide rail	Option	Option

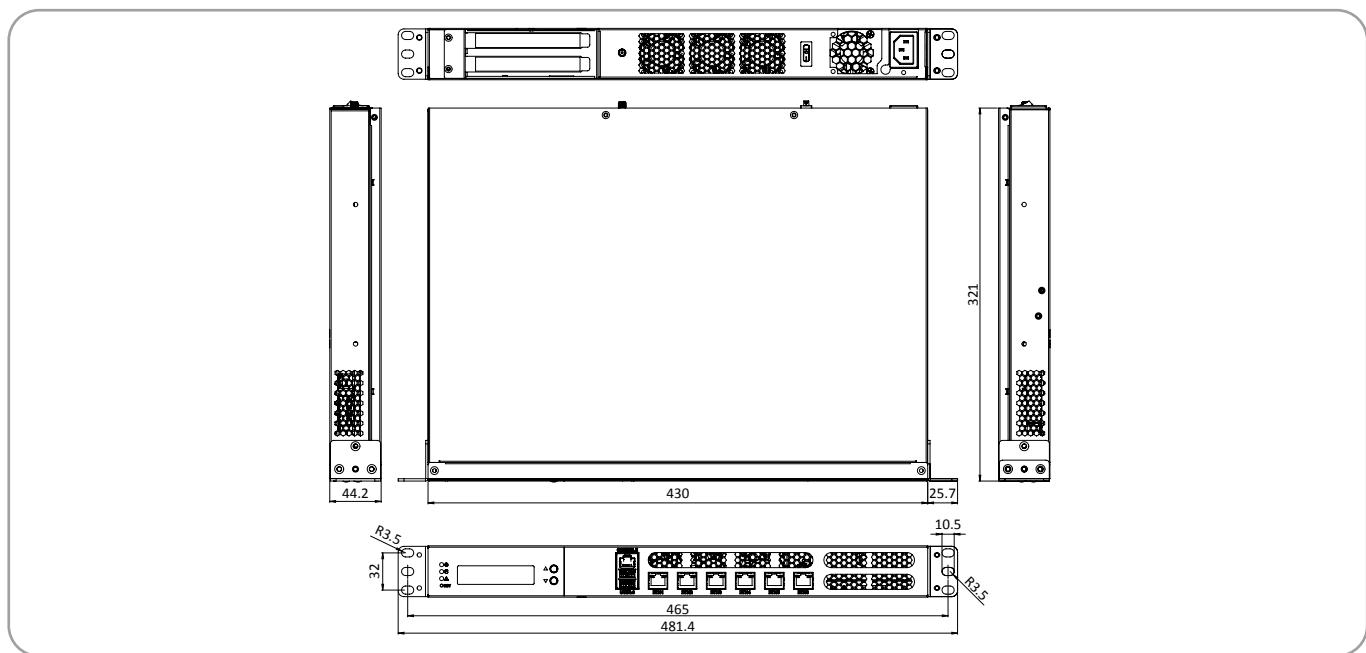
Options

Item	Part No.	Description
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)RJ45 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)RJ45 PLUG 8P8C; ONE PCS PKG; TC&C; RoHS

IO Interface



Dimensions (Unit: mm)



PUZZLE-M801

1U Rackmount Network Appliance with Marvell® ARMADA® 88F8040 High-Performance Quad-Core CPU



Specifications

		PUZZLE-M801
Platform	Form Factor	1U
	CPU	Marvell® ARMADA® 88F8040 high-performance quad-core System-on-Chip processor, 1.6GHz
	Chipset	Integrated in CPU
Memory	Memory Technology	DDR4 2400MHz ECC/Non-ECC/RDIMM
	Memory Capacity	Up to 16GB
	Memory Socket	1 x 288-pin DIMM
Network and Security	Network Acceleration and Security Function	<ul style="list-style-type: none"> Configurable packet processor HW offload for networking Acceleration engines for storage, networking and security Public Key Processor (RSA/DH/ECC) Secure Storage Secure boot
	TPM	N/A
Networking	Ethernet IC	1 GbE PHY: Marvell 88E1512P
	Ethernet Port	2 x 10 GbE SFP+, 4 x 1GbE RJ45 LAN ports
	Network Module Slot	N/A
Expansion Slot	PCIe Slot	1 x PCIe x16 (FHHL) slot PCIe 3.0 x2 signal
	PCIe Mini Card Slot	N/A
	M.2	1 x M.2 B Key (3042/2260) (SATA 3.0 and USB 3.2 Gen 1) Support SATA SSD or 4G LTE module (USB signal)
Storage	Storage	1 x 2.5" SATA HDD/SSD bay support SATA 3.0 (6 Gbps)
	eMMC	32GB
	SD Card	N/A
External I/O	USB	2 x USB 3.2 Gen 1 (5Gb/s)
	Console	1 x RJ45
Internal I/O	HDMI	N/A
	USB	2 x USB 2.0
Power and Mechanical	Power Switch	1 x Power switch
	Reset Button	1 x Reset button
	Power Input	100 V ~ 240 V
	Type/Watt	ATX Power 250W 90V~264V AC
	Processor Cooling	1 x Active CPU heatsink with fan
	System Cooling	2 x Cooling fans with smart fan
	Antenna Hole	1 x Antenna hole
	Storage Temperature	-20°C ~ 75°C (-4°F ~ 167°F)
Physical and Environmental	Operating Temperature	0°C ~ 40°C (32°F ~ 104°F)
	Operating Humidity	5% ~ 90% non-condensing
	Dimensions (W x L x H) (mm)	430 x 320 x 44.2
	Weight	5kg
	Certification	CE / FCC / RoHS
OS and Certifications	Operating System	Linux Ubuntu 16.04.04
Indicators	LCM	N/A
	LED	1 x Power LED, 1 x Storage LED, 1 x Alert LED

Ordering Information

Part No.	Description
PUZZLE-M801-A1-R10	1U Rackmount Network Appliance with Marvell Armada 8040 processor, one DDR4 slot, four 1GbE, two 10GbE via SFP+, one PCIe expansion, RoHS
PUZZLE-M801-A1/8G-R10	1U Rackmount Network Appliance with Marvell Armada 8040 processor, 8GB DDR4, one 256GB SSD, four 1GbE, two 10GbE via SFP+, one PCIe expansion, RoHS

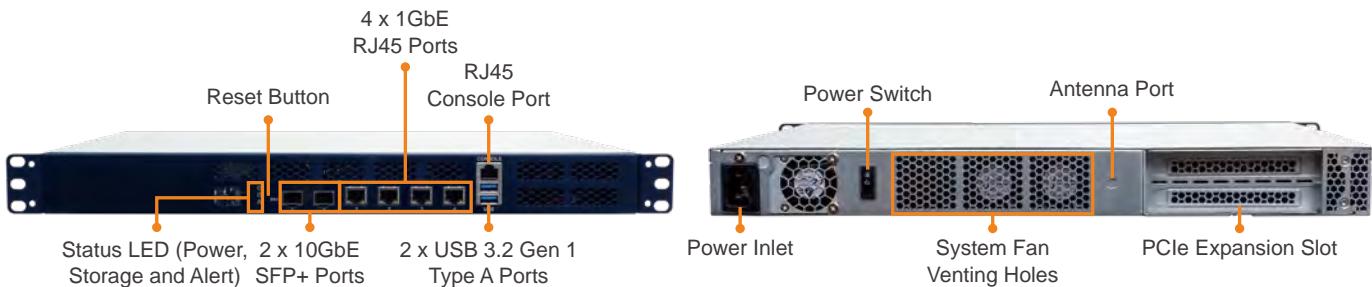
Packing List

	PUZZLE-M801-A1	PUZZLE-M801-A1/8G
Power cord	1	1
Rack mounting ears	2	2
Screws for rack mounting ears	6	6
USB to console cable	Option	1
RS-232 to console cable	1	Option

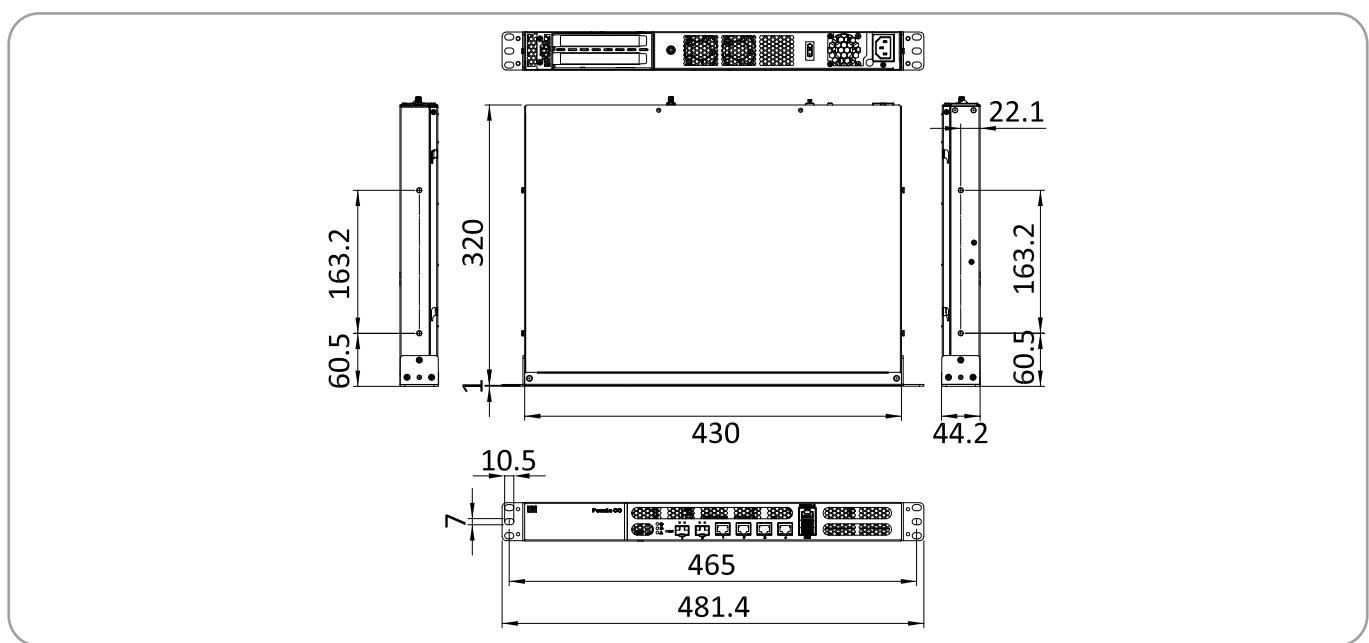
Options

Item	Part No.	Description
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)RJ45 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)RJ45 PLUG 8P8C; ONE PCS PKG; TC&C; RoHS

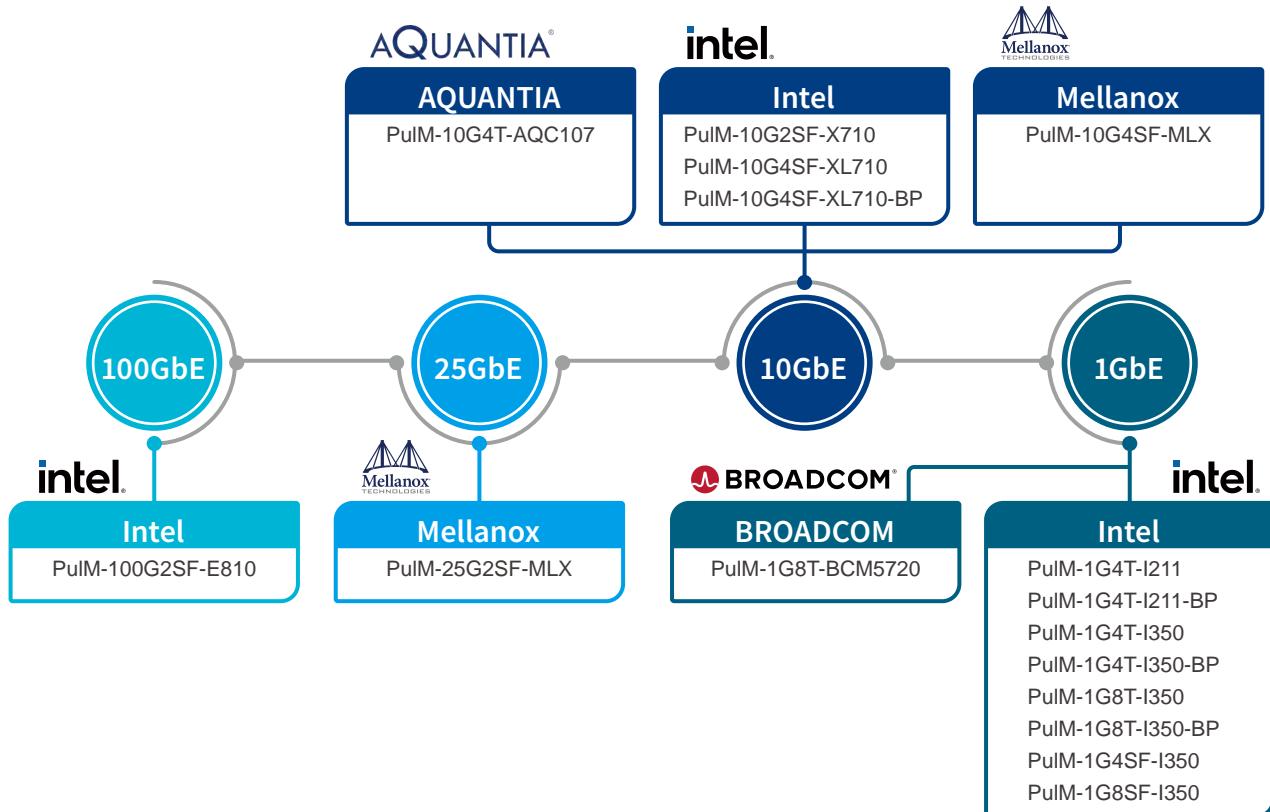
IO Interface



Dimensions (Unit: mm)

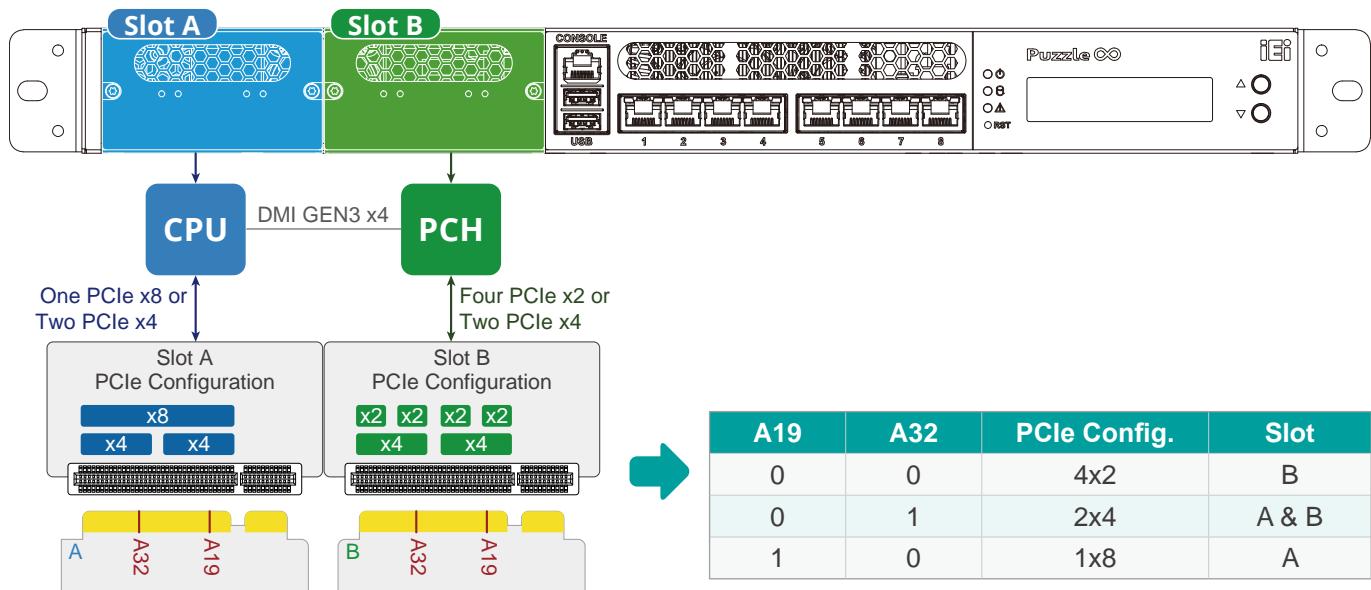


Diverse PulM Network Modules



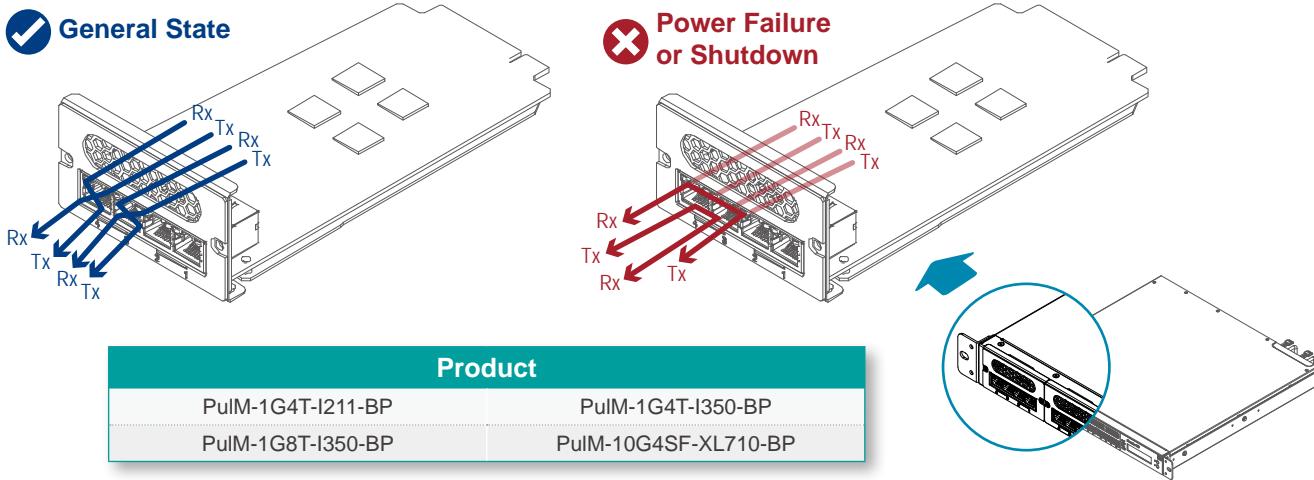
Dual BIOS

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.



Uninterrupted Data Transmission - Bypass Function

With bypass function, the network connected to this device can be connected to each other when the network security device fails.

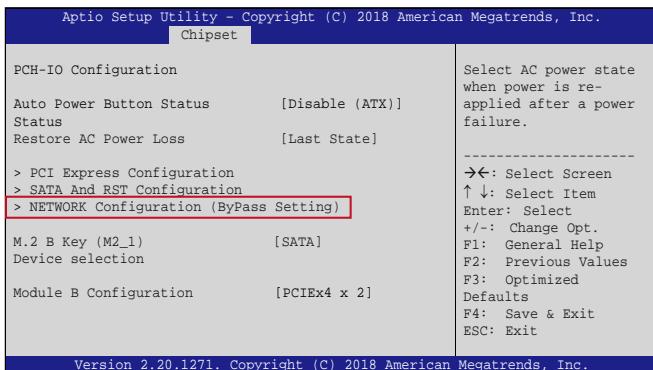


Bypass Configuration in BIOS

Some PulM modules support bypass. To enable/disable bypass function, configure the BIOS menu of the PUZZLE series as described below.

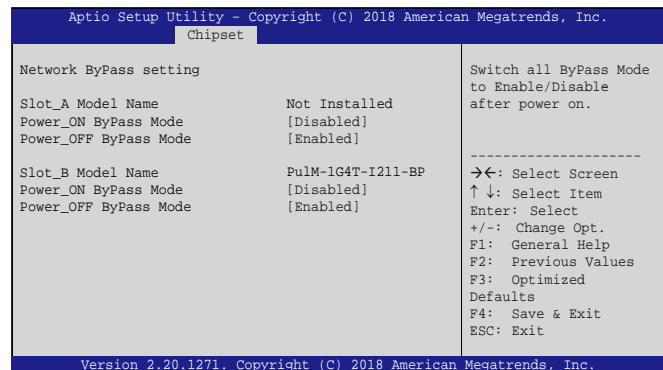
Step 1

Go to Chipset → PCH - IO Configuration → NETWORK Configuration (Bypass Setting)



Step 2

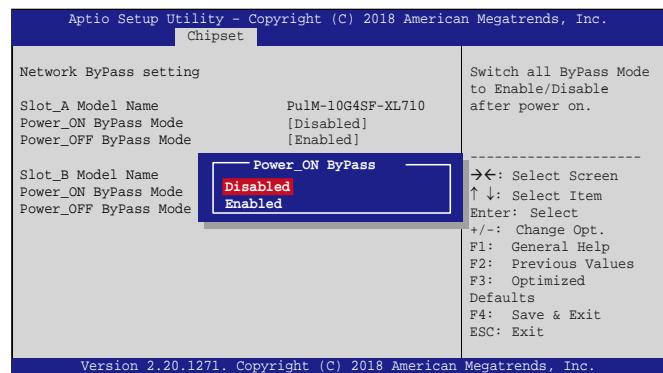
The **Network ByPass Setting** menu appears. The model names of the PulM module installed in the PUZZLE series are shown.



Step 3

Configure the Power_ON ByPass Mode and the Power_OFF ByPass Mode BIOS options to enable/disable bypass function of the installed PulM modules.

PUZZLE System	Power_ON Bypass Mode		Power_OFF Bypass Mode	
	Disabled	Enabled	Disabled	Enabled
BIOS Setting				
PulM Bypass Modules	Close	Open	Close	Open



Step 4

Press F4 to save and exit the BIOS menu. The PUZZLE series will reboot with the new settings.

2U PulM Series Selection Guide

New

	PulM-100G2SF-E810	PulM-25G2SF/T-MLX	PulM-10G2SF/T-X710	PulM-10G4SF/T-XL710
Chipset	Intel® E810	Mellanox ConnectX-4	Intel® X710	Intel® XL710
Bypass	No	No	No	No
Host Interface	PCIe 4.0 x8	PCIe 3.0 x8	PCIe 3.0 x8	PCIe 3.0 x8
LAN Interface	QSFP28	SFP+	SFP+	SFP+
Speed	1GbE / 10GbE / 25GbE / 50GbE / 100GbE	1GbE / 10GbE / 25GbE	1GbE/10GbE	1GbE/10GbE
LAN Port Number	2	2	2	4
Storage Temp.	-20°C ~ 75°C (-4°F ~ 167°F)			
Operating Temp.	0°C ~ 40°C (32°F ~ 104°F)			
Humidity	5% ~ 90% RH, non-condensing			
Dimensions (mm)	165.50 (L) x 77.8 (W) x 44.2 (H)			
Certification	RoHS	CE / FCC / RoHS	RoHS	CE / FCC / RoHS

	PulM-10G4SF/T-XL710-BP	PulM-10G4SF/T-MLX	PulM-1G4SF/T-I350	PulM-1G8SF/T-I350
Chipset	Intel® XL710	Mellanox ConnectX-4	Intel® I350-AM4	Intel® I350-AM4
Bypass	Yes, two pairs	No	No	No
Host Interface	PCIe 3.0 x8	2 PCIe 3.0 x4	2 PCIe 2.0 x4	2 PCIe 2.0 x4
LAN Interface	SFP+	SFP+	SFP	SFP
Speed	1GbE/10GbE	1GbE/10GbE	GbE	GbE
LAN Port Number	4	4	4	8
Storage Temp.	-20°C ~ 75°C (-4°F ~ 167°F)			
Operating Temp.	0°C ~ 40°C (32°F ~ 104°F)			
Humidity	5% ~ 90% RH, non-condensing			
Dimensions (mm)	165.50 (L) x 77.8 (W) x 44.2 (H)			
Certification	RoHS	CE / FCC / RoHS	RoHS	RoHS

	PulM-1G4T/T-I350	PulM-1G4T/T-I350-BP	PulM-1G8T/T-I350	PulM-1G8T/T-I350-BP
Chipset	Intel® I350-AM4	Intel® I350-AM4	Intel® I350-AM4	Intel® I350-AM4
Bypass	No	Yes, two pairs	No	Yes, four pairs
Host Interface	2 PCIe 2.0 x4	2 PCIe 2.0 x4	2 PCIe 2.0 x4	2 PCIe 2.0 x4
LAN Interface	RJ45	RJ45	RJ45	RJ45
Speed	GbE	GbE	GbE	GbE
LAN Port Number	4	4	8	8
Storage Temp.	-20°C ~ 75°C (-4°F ~ 167°F)			
Operating Temp.	0°C ~ 40°C (32°F ~ 104°F)			
Humidity	5% ~ 90% RH, non-condensing			
Dimensions (mm)	165.50 (L) x 77.8 (W) x 44.2 (H)			
Certification	CE / FCC / RoHS	CE / FCC / RoHS	CE / FCC / RoHS	CE / FCC / RoHS

1U PulM Series Selection Guide

	PulM-25G2SF-MLX	PulM-10G2SF-X710	PulM-10G4SF-XL710	PulM-10G4SF-XL710-BP	PulM-10G4SF-MLX
Chipset	Mellanox ConnectX-4	Intel® X710	Intel® XL710	Intel® XL710	Mellanox ConnectX-4
Bypass	No	No	No	Yes, two pairs	No
Host Interface	PCIe 3.0 x8	PCIe 3.0 x8	PCIe 3.0 x8	PCIe 3.0 x8	2 PCIe 3.0 x4
LAN Interface	SFP+	SFP+	SFP+	SFP+	SFP+
Speed	1GbE/ 10GbE/ 25GbE	1GbE/ 10GbE	1GbE/10GbE	1GbE/10GbE	1GbE/10GbE
LAN Port Number	2	2	4	4	4
Storage Temp.	-20°C ~ 75°C (-4°F ~ 167°F)				
Operating Temp.	0°C ~ 40°C (32°F ~ 104°F)				
Humidity	5% ~ 90% RH, non-condensing				
Dimensions (mm)	165.50 (L) x 77.8 (W) x 44.2 (H)				
Certification	CE / FCC / RoHS	RoHS	CE / FCC / RoHS	RoHS	CE / FCC / RoHS

	PulM-10G4T-AQC107	PulM-1G4SF-I350	PulM-1G8SF-I350	PulM-1G4T-I211	PulM-1G4T-I211-BP
Chipset	Aquantia AQC107	Intel® I350-AM4	Intel® I350-AM4	Intel® I211	Intel® I211
Bypass	No	No	No	No	Yes, two pairs
Host Interface	4 PCIe 3.0 x2	2 PCIe 2.0 x4	2 PCIe 2.0 x4	4 PCIe 2.0 x2	4 PCIe 2.0 x2
LAN Interface	RJ45	SFP	SFP	RJ45	RJ45
Speed	10GBASE-T/ 5GBASE-T/ 2.5GBASE-T/ 1000BASE-T/ 100BASE-TX	GbE	GbE	GbE	GbE
LAN Port Number	2	4	8	4	4
Storage Temp.	-20°C ~ 75°C (-4°F ~ 167°F)				
Operating Temp.	0°C ~ 40°C (32°F ~ 104°F)				
Humidity	5% ~ 90% RH, non-condensing				
Dimensions (mm)	165.50 (L) x 77.8 (W) x 44.2 (H)				
Certification	RoHS	RoHS	RoHS	RoHS	RoHS

	PulM-1G4T-I350	PulM-1G4T-I350-BP	PulM-1G8T-I350	PulM-1G8T-I350-BP	PulM-1G8T-BCM5720
Chipset	Intel® I350-AM4	Intel® I350-AM4	Intel® I350-AM4	Intel® I350-AM4	Broadcom BCM5720
Bypass	No	Yes, two pairs	No	Yes, four pairs	No
Host Interface	2 PCIe 2.0 x4	2 PCIe 2.0 x4	2 PCIe 2.0 x4	2 PCIe 2.0 x4	4 PCIe 2.0 x2
LAN Interface	RJ45	RJ45	RJ45	RJ45	RJ45
Speed	GbE	GbE	GbE	GbE	GbE
LAN Port Number	4	4	8	8	8
Storage Temp.	-20°C ~ 75°C (-4°F ~ 167°F)				
Operating Temp.	0°C ~ 40°C (32°F ~ 104°F)				
Humidity	5% ~ 90% RH, non-condensing				
Dimensions (mm)	165.50 (L) x 77.8 (W) x 44.2 (H)				
Certification	CE / FCC / RoHS	CE / FCC / RoHS	CE / FCC / RoHS	CE / FCC / RoHS	RoHS

	PulM-2P1M	PulM-M2-2S
Interface	1 PCIe 3.0 x4	2 PCIe 3.0 x4
Onboard IC	ASIM1812 (PCIe Gen2x4) FL1100EX (PCI-E To USB 3.0 (4 Port))	N/A
M.2	1 x 2230/2242 M.2 B key (PCIe 2.0, USB 3.2 Gen1) with SIM card slot	2 x M key 2260/2280/22110 (PCIe 3.0 x4/NVMe)
PCIe	2 x PCIe Mini (PCIe 2.0, USB 2.0) with SIM card slot	N/A
Storage Temp.	-20°C ~ 75°C (-4°F ~ 167°F)	
Operating Temp.	0°C ~ 40°C (32°F ~ 104°F)	
Humidity	5% ~ 90% RH, non-condensing	
Dimensions (mm)	165.50 (L) x 77.8 (W) x 44.2 (H)	
Certification	RoHS	RoHS

Pu1M-100G2SF-E810

Intel® Ethernet Controller EZE810CAM2 based Network Interface Card with 2 x QSFP28 by PCIe 4.0 x8 interface



New

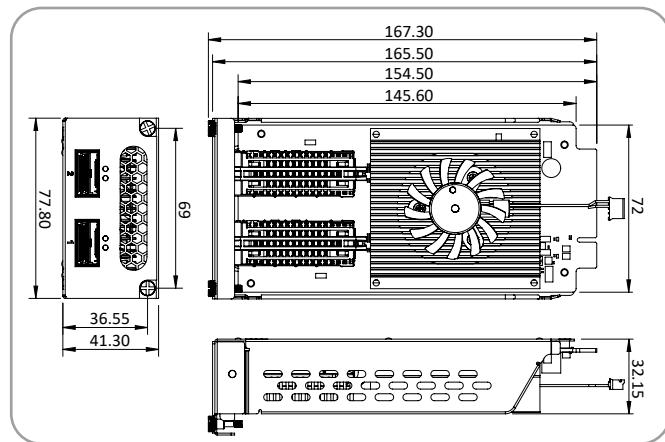
Features

- 1 x Intel® E810 Ethernet controller
- 2 ports 100GbE QSFP28 connector
- PCIe 4.0 x8 interface
- RoHS compliant

Specifications

	Pu1M-100G2SF-E810
Form Factor	IEI Networking Module - Pu1M
NIC	Intel® E810
LAN Bypass	N/A
LAN Interface	QSFP28
Speed	100GbE
Ports	2
Host Interface	PCIe 4.0 x8
Storage Temp.	-20°C ~ 75°C (-4°F ~ 167°F)
Operating Temp.	0°C ~ 40°C (32°F ~ 104°F)
Humidity	5% ~ 90% RH, Non-condensing
Dimensions (mm)	165.50 (L) x 77.8 (W) x 44.2 (H)
Compliance	RoHS

Dimensions (Unit: mm)



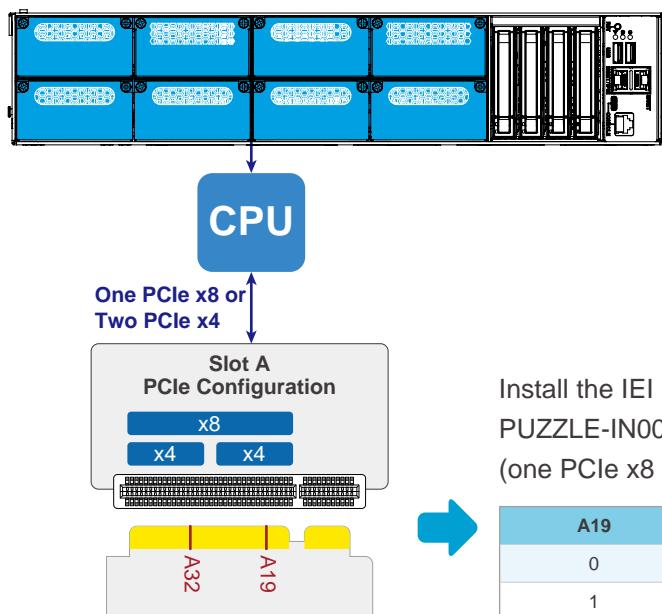
Ordering Information

Part No.	Description
Pu1M-100G2SF-E810-R10	Intel® Ethernet Controller EZE810CAM2 based Network Interface Card with 2 x QSFP28 by PCIe 4.0 x8 interface

Packing List

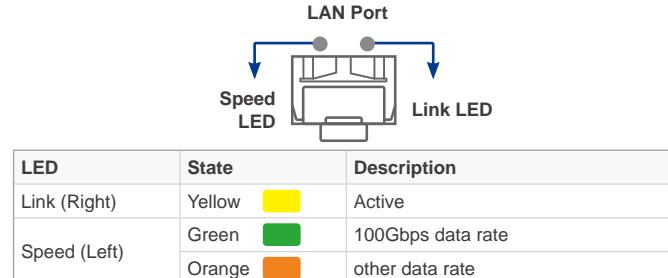
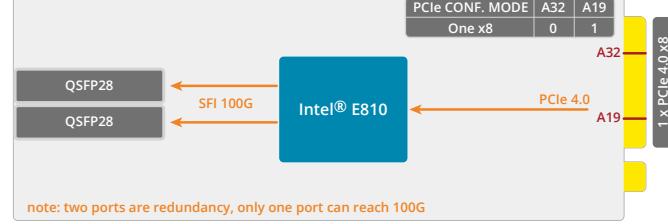
1 x Pu1M-100G2SF-E810 module	1 x QIG
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Hardware Installation



Install the IEI Pu1M-100G2SF-E810 networking module into the slot of the PUZZLE-IN005. All slots support 8 lanes of PCIe gen4 signal from CPU (one PCIe x8 or two PCIe x4).

Block Diagram



PuIM-25G2SF-MLX

Mellanox ConnectX-4 Lx based Network Interface Card support Dual 25GbE with 2 x SFP28 and PCIe 3.0 x8 Interface



Features

- 1 x Mellanox ConnectX-4 Lx EN
- 2 x 25 GbE SFP28 connectors
- PCIe 3.0 x8
- RoHS/CE/FCC compliant

Specifications

Model Name	PuIM-25G2SF-MLX	PuIM-25G2SF/T-MLX	
Form Factor		IEI Networking Module	
NIC		Mellanox ConnectX-4 Lx EN	
LAN Interface		SFP28	
Speed		1GbE/10GbE/25GbE	
Ports		2	
Host Interface		PCIe 3.0 x8	
Storage Temp.		-20°C ~ 75°C (-4°F ~ 167°F)	
Operating Temp.		0°C ~ 40°C (32°F ~ 104°F)	
Humidity		5% ~ 90% RH, Non-condensing	
Dimensions (mm)		165.50 (L) x 77.8 (W) x 44.2 (H)	
Compliance		CE / FCC / RoHS	
Support Device	PUZZLE-IN001 PUZZLE-IN001A PUZZLE-IN004	PUZZLE-A001 PUZZLE-A001A	PUZZLE-IN005

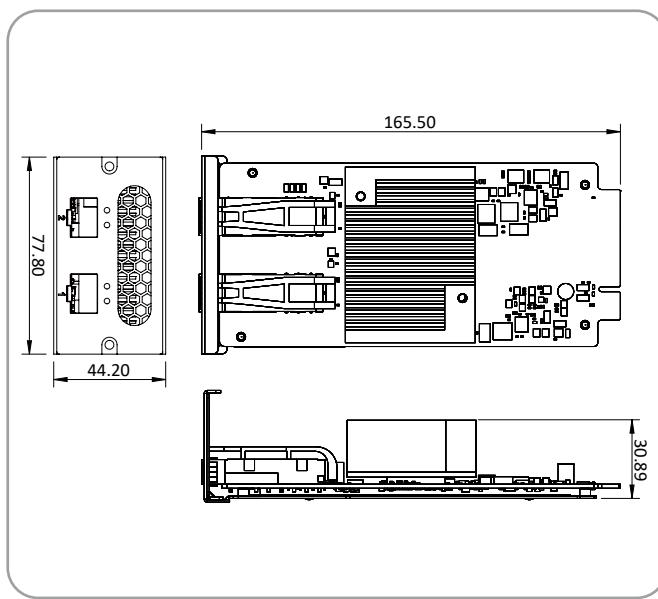
Ordering Information

Part No.	Description
PuIM-25G2SF-MLX-R10	Mellanox ConnectX-4 Lx based Network Interface Card support Dual 25GbE with 2 x SFP28 by 1 PCIe 3.0 x 8 Interface, RoHS
PuIM-25G2SF/T-MLX-R10	Mellanox ConnectX-4 Lx based Network Interface Card support Dual 25GbE with 2 x SFP28 by 1 PCIe 3.0 x 8 Interface, RoHS

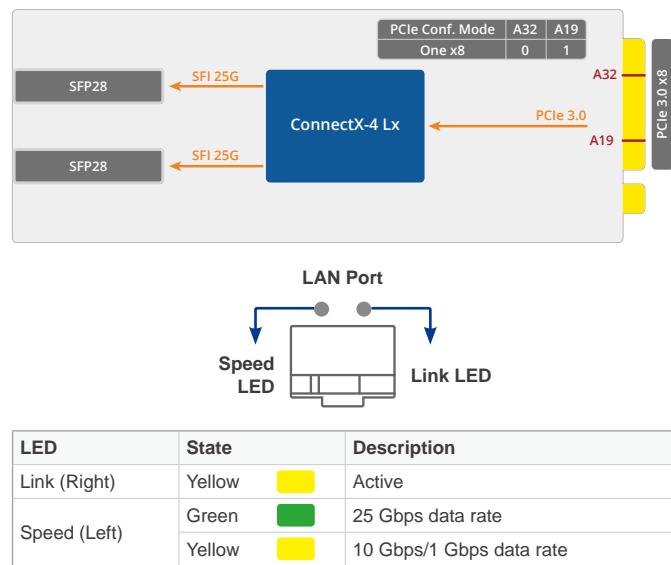
Packing List

Part No.	L-shaped T10 PuIM Wrench	Torx Screws	QIG
PuIM-25G2SF-MLX-R10	1	2	1
PuIM-25G2SF/T-MLX-R10	N/A	N/A	1

Dimensions (Unit: mm)



Block Diagram



Pu1M-10G2SF-X710

Intel® Ethernet Controller X710-BM2 based Network Interface Card with 2 x SFP+ by 1 PCIe 3.0 x8 interface



Features

- 1 x Intel® Ethernet Controller X710-BM2
- 2 x 10 GbE SFP+ connectors
- PCIe 3.0 x8
- RoHS compliant

Specifications

Model Name	Pu1M-10G2SF-X710	Pu1M-10G2SF/T-X710	
Form Factor	IEI Networking Module		
NIC	Intel® Ethernet Controller X710-BM2		
LAN Interface	SFP+		
Speed	1GbE / 10GbE		
Ports	2		
Host Interface	PCIe 3.0 x8		
Storage Temp.	-20°C ~ 75°C (-4°F ~ 167°F)		
Operating Temp.	0°C ~ 40°C (32°F ~ 104°F)		
Humidity	5% ~ 90% RH, Non-condensing		
Dimensions (mm)	165.50 (L) x 77.8 (W) x 44.2 (H)		
Compliance	RoHS		
Support Device	PUZZLE-IN001 PUZZLE-IN001A PUZZLE-IN004	PUZZLE-A001 PUZZLE-A001A	PUZZLE-IN005

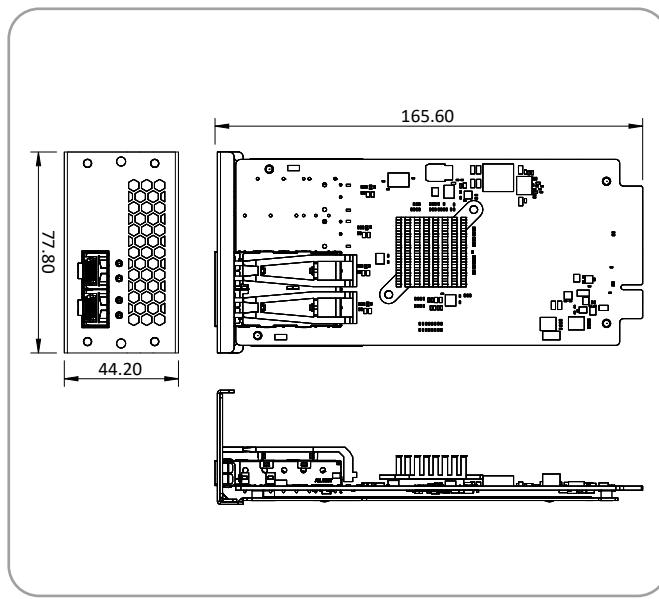
Ordering Information

Part No.	Description
Pu1M-10G2SF-X710-R10	Intel® Ethernet Controller X710-BM2 based Network Interface Card with 2 x SFP+ by 1 PCIe 3.0 x8 interface, RoHS
Pu1M-10G2SF/T-X710-R10	Intel® Ethernet Controller X710-BM2 based Network Interface Card with 2 x SFP+ by 1 PCIe 3.0 x8 interface, RoHS

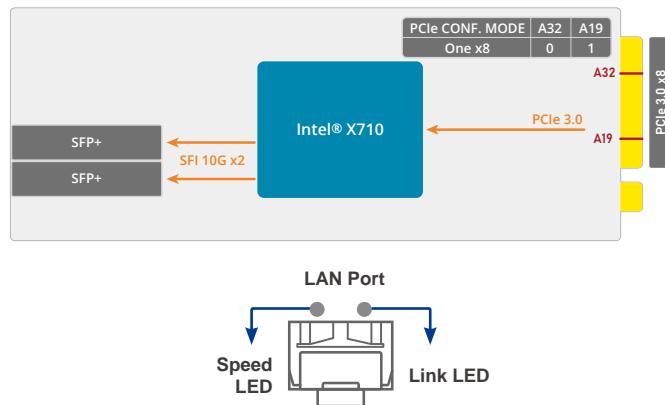
Packing List

Part No.	L-shaped T10 Pu1M Wrench	Torx Screws	QIG
Pu1M-10G2SF-X710-R10	1	2	1
Pu1M-10G2SF/T-X710-R10	N/A	N/A	1

Dimensions (Unit: mm)



Block Diagram



LED	State	Description
Link (Right)	Yellow	Active
Speed (Left)	Green	10 Gbps data rate
Speed (Left)	Off	1 Gbps/100Mbps data rate

Pu1M-10G4SF-XL710

Intel® Ethernet Controller XL710-BM1 based Network Interface Card with 4 x SFP+ by PCIe 3.0 x8 interface



Features

- 1 x Intel® Ethernet Controller XL710-BM1
- 4 x 10 GbE SFP+ connectors
- PCIe 3.0 x8
- RoHS/CE/FCC compliant

Specifications

Model Name	Pu1M-10G4SF-XL710		Pu1M-10G4SF/T-XL710
Form Factor	IEI Networking Module		
NIC	Intel® XL710-BM1 Ethernet Controller		
LAN Interface	SFP+		
Speed	1GbE / 10GbE		
Ports	4		
Host Interface	PCIe 3.0 x8		
Storage Temp.	-20°C ~ 75°C (-4°F ~ 167°F)		
Operating Temp.	0°C ~ 40°C (32°F ~ 104°F)		
Humidity	5% ~ 90% RH, Non-condensing		
Dimensions (mm)	165.50 (L) x 77.8 (W) x 44.2 (H)		
Compliance	CE / FCC / RoHS		
Support Device	PUZZLE-IN001 PUZZLE-IN001A PUZZLE-IN004	PUZZLE-A001 PUZZLE-A001A	PUZZLE-IN005

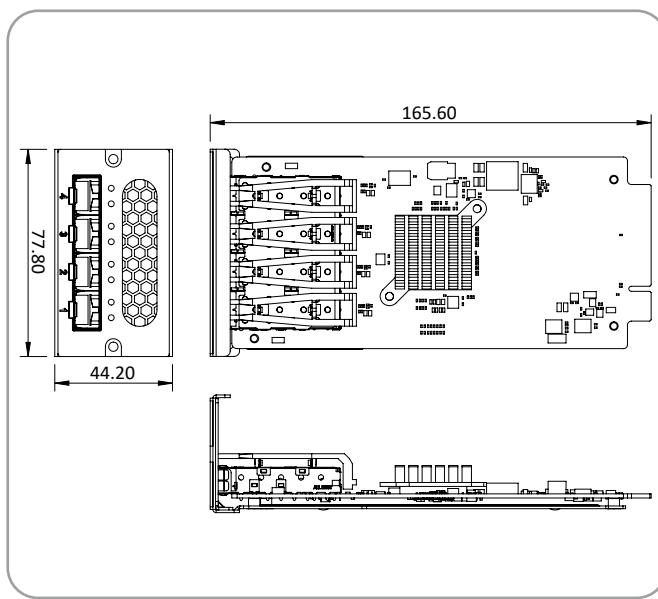
Ordering Information

Part No.	Description
Pu1M-10G4SF-XL710-R10	Intel® Ethernet Controller XL710-BM1 based Network Interface Card with 4 x SFP+ by 1 PCIe 3.0 x 8 interface,RoHS
Pu1M-10G4SF/T-XL710-R10	Intel® Ethernet Controller XL710-BM1 based Network Interface Card with 4 x SFP+ by 1 PCIe 3.0 x 8 interface,RoHS

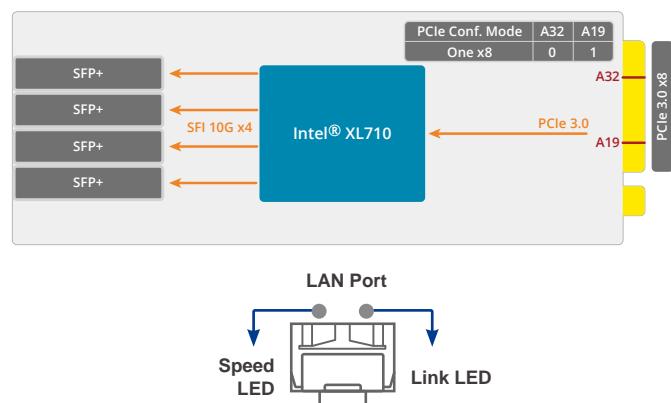
Packing List

Part No.	L-shaped T10 Pu1M Wrench	Torx Screws	QIG
Pu1M-10G4SF-XL710-R10	1	2	1
Pu1M-10G4SF/T-XL710-R10	N/A	N/A	1

Dimensions (Unit: mm)



Block Diagram



LED	State	Description
Link (Right)	Yellow	Active
Speed (Left)	Green	10 Gbps data rate

Pu1M-10G4SF-XL710-BP

Intel® Ethernet Controller XL710-BM1 based Network Interface Card with four 10GbE Fiber ports, two pair Bypass



Specifications

Model Name	Pu1M-10G4SF-XL710-BP	Pu1M-10G4SF/T-XL710-BP	
Form Factor	IEI Networking Module		
NIC	Intel® XL710-BM1 Ethernet Controller		
Bypass	Yes, two pairs		
LAN Interface	10 GbE fiber LC (SR & LR)		
Speed	10GbE		
Ports	4		
Host Interface	PCIe 3.0 x8		
Storage Temp.	-20°C ~ 75°C (-4°F ~ 167°F)		
Operating Temp.	0°C ~ 40°C (32°F ~ 104°F)		
Humidity	5% ~ 90% RH, Non-condensing		
Dimensions (mm)	165.50 (L) x 77.8 (W) x 44.2 (H)		
Compliance	CE / FCC / RoHS		
Support Device	PUZZLE-IN001 PUZZLE-IN001A PUZZLE-IN004	PUZZLE-A001 PUZZLE-A001A	PUZZLE-IN005

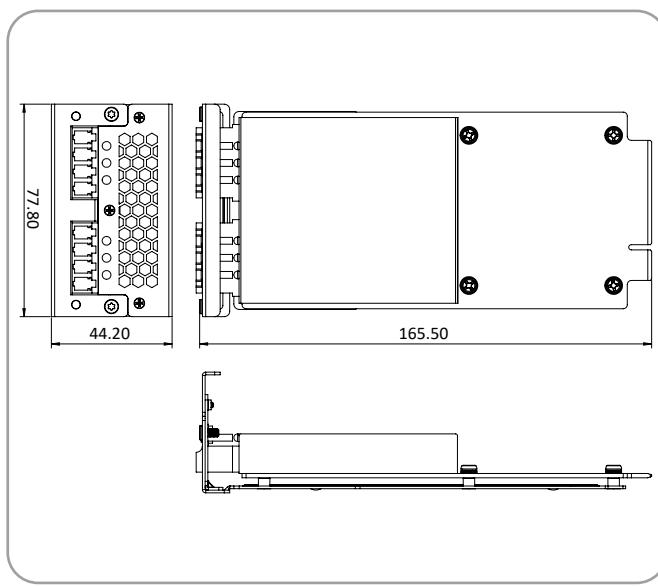
Ordering Information

Part No.	Description
Pu1M-10G4SF-XL710-BP-R10	Intel® Ethernet Controller XL710-BM1 based Network Interface Card with four 10GbE Fiber ports, two pair Bypass, RoHS.
Pu1M-10G4SF/T-XL710-BP-R10	Intel® Ethernet Controller XL710-BM1 based Network Interface Card with four 10GbE Fiber ports, two pair Bypass, RoHS.

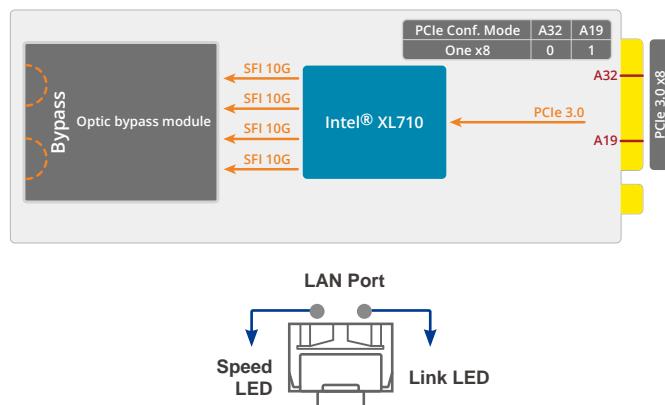
Packing List

Part No.	L-shaped T10 Pu1M Wrench	Torx Screws	QIG
Pu1M-10G4SF-XL710-BP-R10	1	2	1
Pu1M-10G4SF/T-XL710-BP-R10	N/A	N/A	1

Dimensions (Unit: mm)



Block Diagram



LED	State	Description
Link (Right)	Yellow	Active
Speed (Left)	Green	10 Gbps data rate

PuIM-10G4SF-MLX

Mellanox ConnectX-4 Lx based Network Interface Card
support Quad 10GbE with 4 x SFP+ by 2 PCIe 3.0 x4
Interface.



Features

- 2 x Mellanox ConnectX-4
- 4 x 10 GbE SFP+ connectors
- 2 PCIe 3.0 x4
- RoHS compliant

Specifications

Model Name	PuIM-10G4SF-MLX	PuIM-10G4SF/T-MLX	
Form Factor		IEI Networking Module	
NIC		Mellanox ConnectX-4	
LAN Interface		SFP+	
Speed		1GbE / 10GbE	
Ports		4	
Host Interface		2 PCIe 3.0 x4	
Storage Temp.		-20°C ~ 75°C (-4°F ~ 167°F)	
Operating Temp.		0°C ~ 40°C (32°F ~ 104°F)	
Humidity		5% ~ 90% RH, Non-condensing	
Dimensions (mm)		165.50 (L) x 77.8 (W) x 44.2 (H)	
Compliance		RoHS	
Support Device	PUZZLE-IN001 PUZZLE-IN001A PUZZLE-IN004	PUZZLE-A001 PUZZLE-A001A	PUZZLE-IN005

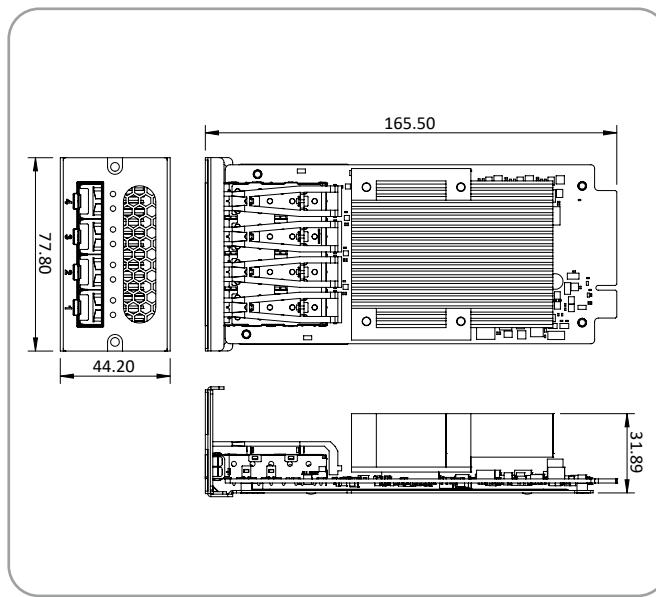
Ordering Information

Part No.	Description
PuIM-10G4SF-MLX-R10	Mellanox ConnectX-4 Lx based Network Interface Card support Quad 10GbE with 4 x SFP+ by 2 PCIe 3.0 x 4 Interface, RoHS.
PuIM-10G4SF/T-MLX-R10	Mellanox ConnectX-4 Lx based Network Interface Card support Quad 10GbE with 4 x SFP+ by 2 PCIe 3.0 x 4 Interface, RoHS.

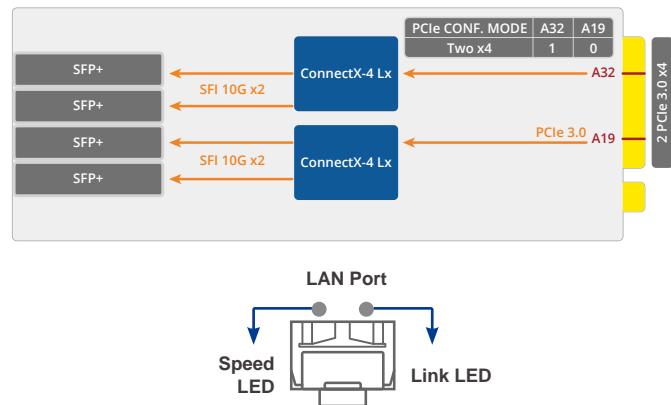
Packing List

Part No.	L-shaped T10 PuIM Wrench	Torx Screws	QIG
PuIM-10G4SF-MLX-R10	1	2	1
PuIM-10G4SF/T-MLX-R10	N/A	N/A	1

Dimensions (Unit: mm)



Block Diagram



LED	State	Description
Link (Right)	Yellow	Active
Speed (Left)	Green	10 Gbps data rate
	Off	1 Gbps/100 Mbps data rate

PuIM-10G4T-AQC107

Aquantia AQC107 based Network Interface Card
with 4 x 10GBASE-T by 4 PCIe 3.0 x2 Interface



Features

- 4 x Aquantia AQC107
- 4 x 10GBASE-T connectors
- 4 PCIe 3.0 x2
- RoHS compliant

Specifications

Model Name	PuIM-10G4T-AQC107	PuIM-10G4T/T-AQC107	
Form Factor	IEI Networking Module		
NIC	Aquantia AQC107		
LAN Interface	10GBASE-T (RJ45)		
Speed	10GBASE-T/ 5GBASE-T/ 2.5GBASE-T/ 1000BASE-T/ 100BASE-TX		
Ports	4		
Host Interface	4 PCIe 3.0 x2		
Storage Temp.	-20°C ~ 75°C (-4°F ~ 167°F)		
Operating Temp.	0°C ~ 40°C (32°F ~ 104°F)		
Humidity	5% ~ 90% RH, Non-condensing		
Dimensions (mm)	165.50 (L) x 77.8 (W) x 44.2 (H)		
Compliance	RoHS		
Support Device	PUZZLE-IN001 PUZZLE-IN001A PUZZLE-IN004	PUZZLE-A001 PUZZLE-A001A	PUZZLE-IN005

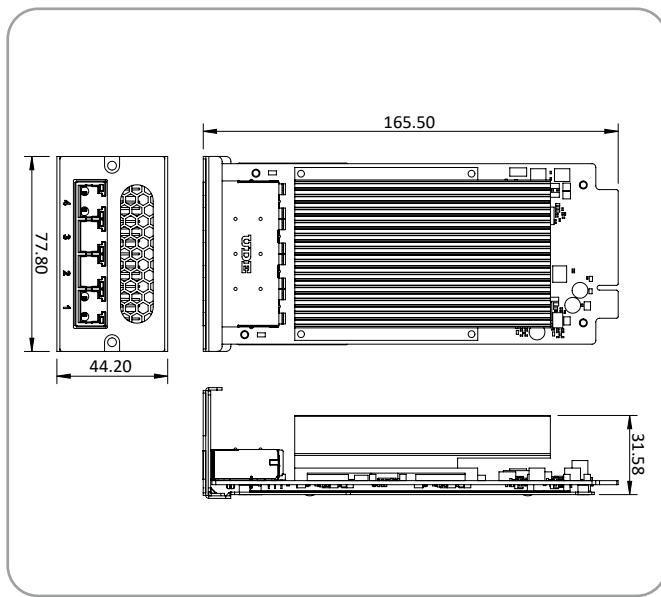
Ordering Information

Part No.	Description
PuIM-10G4T-AQC107-R10	Aquantia AQC107 based Network Interface Card with 4 x 10GBASE-T by 4 PCIe 3.0 x2 Interface, RoHS
PuIM-10G4T/T-AQC107-R10	Aquantia AQC107 based Network Interface Card with 4 x 10GBASE-T by 4 PCIe 3.0 x2 Interface, RoHS

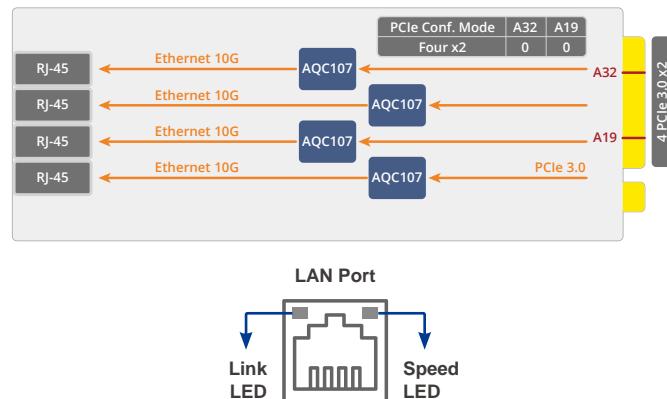
Packing List

Part No.	L-shaped T10 PuIM Wrench	Torx Screws	QIG
PuIM-10G4T-AQC107-R10	1	2	1
PuIM-10G4T/T-AQC107-R10	N/A	N/A	1

Dimensions (Unit: mm)



Block Diagram



LED	State	Description
Link (Left)	Yellow	Active
Speed (Right)	Green	10 Gbps date rate
	Orange	5 Gbps/1 Gbps/ 100 Mbps data rate

Pu1M-1G4SF-I350

Intel® Ethernet Controller I350-AM4 based Network Interface Card with 4 x SFP by 2 PCIe 2.0 x4 interface



Specifications

Model Name	Pu1M-1G4SF-I350	Pu1M-1G4SF/T-I350	
Form Factor		IEI Networking Module	
NIC		Intel® Ethernet Controller I350-AM4	
LAN Interface		SFP	
Speed		1GbE	
Ports		4	
Host Interface		2 PCIe 2.0 x4	
Storage Temp.		-20°C ~ 75°C (-4°F ~ 167°F)	
Operating Temp.		0°C ~ 40°C (32°F ~ 104°F)	
Humidity		5% ~ 90% RH, Non-condensing	
Dimensions (mm)		165.50 (L) x 77.8 (W) x 44.2 (H)	
Compliance		RoHS	
Support Device	PUZZLE-IN001 PUZZLE-IN001A PUZZLE-IN004	PUZZLE-A001 PUZZLE-A001A	PUZZLE-IN005

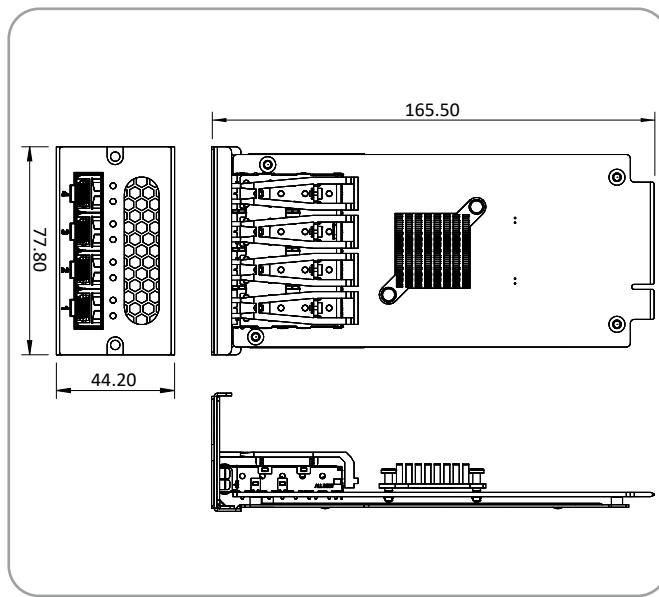
Ordering Information

Part No.	Description
Pu1M-1G4SF-I350-R10	Intel® Ethernet Controller I350-AM4 based Network Interface Card with 4 x SFP by 2 PCIe 2.0 x4 interface, RoHS
Pu1M-1G4SF/T-I350-R10	Intel® Ethernet Controller I350-AM4 based Network Interface Card with 4 x SFP by 2 PCIe 2.0 x4 interface, RoHS

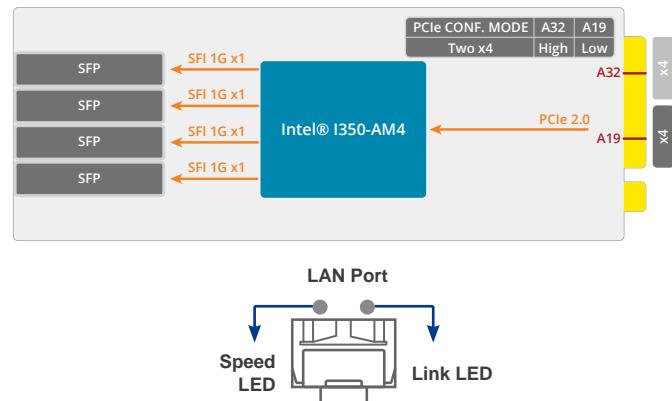
Packing List

Part No.	L-shaped T10 Pu1M Wrench	Torx Screws	QIG
Pu1M-1G4SF-I350-R10	1	2	1
Pu1M-1G4SF/T-I350-R10	N/A	N/A	1

Dimensions (Unit: mm)



Block Diagram



LED	State	Description
Link (Right)	Yellow	Active
Speed (Left)	Green	1 Gbps data rate

Pu1M-1G8SF-I350

Intel® Ethernet Controller I350-AM4 based Network Interface Card with 8 x SFP by 2 PCIe 2.0 x4 interface



Features

- 2 x Intel® Ethernet Controller I350-AM4
- 8 x GbE SFP connectors
- 2 PCIe 2.0 x4
- RoHS compliant

Specifications

Model Name	Pu1M-1G8SF-I350	Pu1M-1G8SF/T-I350	
Form Factor		IEI Networking Module	
NIC		Intel® Ethernet Controller I350-AM4	
LAN Interface		SFP	
Speed		1GbE	
Ports		8	
Host Interface		2 PCIe 2.0 x4	
Storage Temp.		-20°C ~ 75°C (-4°F ~ 167°F)	
Operating Temp.		0°C ~ 40°C (32°F ~ 104°F)	
Humidity		5% ~ 90% RH, Non-condensing	
Dimensions (mm)		165.50 (L) x 77.8 (W) x 44.2 (H)	
Compliance		RoHS	
Support Device	PUZZLE-IN001 PUZZLE-IN001A PUZZLE-IN004	PUZZLE-A001 PUZZLE-A001A	PUZZLE-IN005

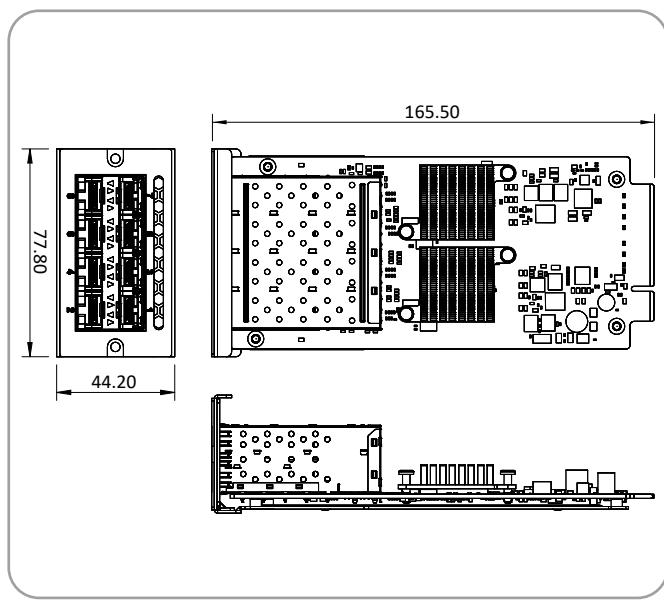
Ordering Information

Part No.	Description
Pu1M-1G8SF-I350-R10	Intel® Ethernet Controller I350-AM4 based Network Interface Card with 8 x SFP by 2 PCIe 2.0 x4 interface.
Pu1M-1G8SF/T-I350-R10	Intel® Ethernet Controller I350-AM4 based Network Interface Card with 8 x SFP by 2 PCIe 2.0 x4 interface.

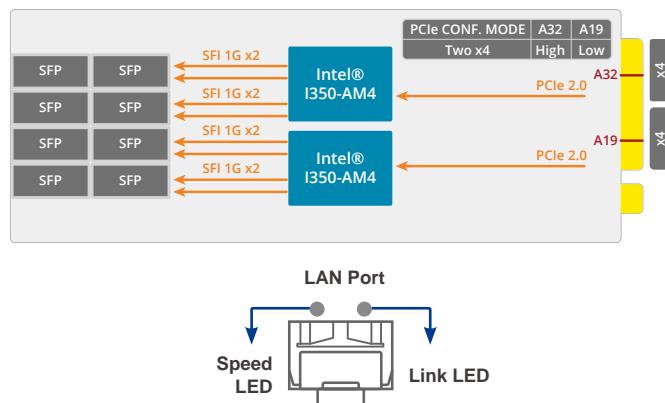
Packing List

Part No.	L-shaped T10 Pu1M Wrench	Torx Screws	QIG
Pu1M-1G8SF-I350-R10	1	2	1
Pu1M-1G8SF/T-I350-R10	N/A	N/A	1

Dimensions (Unit: mm)



Block Diagram



LED	State	Description
Link (Right)	Yellow 	Active
Speed (Left)	Green 	1 Gbps data rate

PulM-1G4T-I211

**Intel® I211 Ethernet Controller based Network Interface Card
with Four 1GbE RJ-45 by 4 PCIe 2.0 x2 Interface**



Specifications

Model Name	PulM-1G4T-I211
Form Factor	IEI Networking Module - PulM
NIC	Intel® I211-AT Ethernet Controller
LAN Bypass	No
LAN Interface	4 x Intel® I211-AT Ethernet Controller
Speed	GbE
Ports	4
Host Interface	4 PCIe 2.0 x2
Storage Temp.	-20°C ~ 75°C (-4°F ~ 167°F)
Operating Temp.	0°C ~ 40°C (32°F ~ 104°F)
Humidity	5% ~ 90% RH, Non-condensing
Dimensions (mm)	165.50 (L) x 77.8 (W) x 44.2 (H)
Compliance	RoHS
Support Device	PUZZLE-IN001 / PUZZLE-IN001A

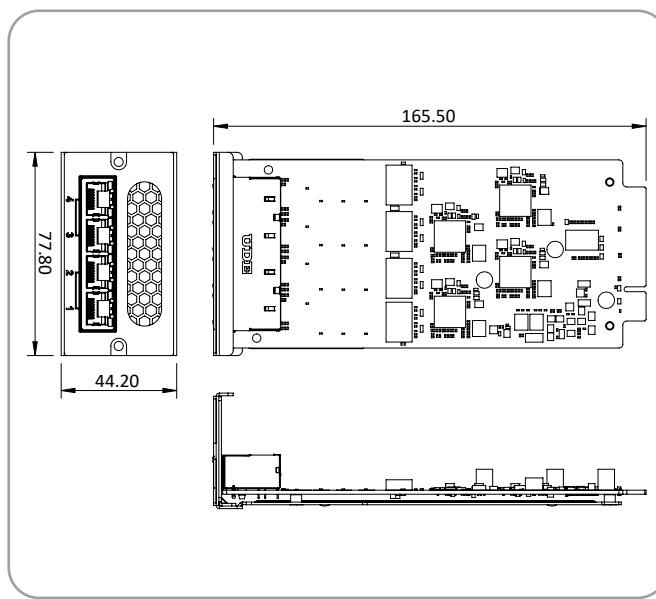
Ordering Information

Part No.	Description
PulM-1G4T-I211-R10	Intel® I211 Ethernet controller based network interface card with four 1GbE RJ-45 without bypass, four PCIe 2.0x2 interfaces, RoHS

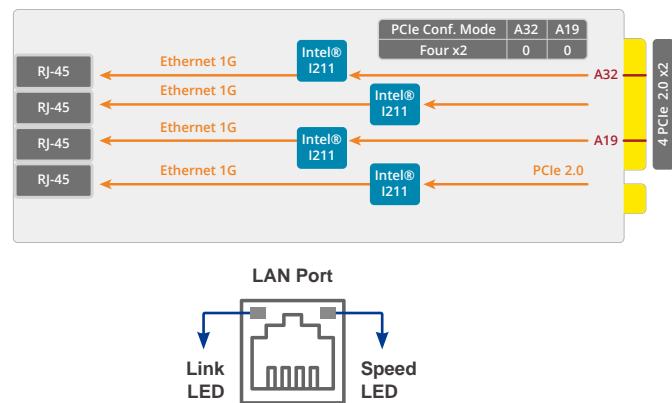
Packing List

Part No.	L-shaped T10 PulM Wrench	Torx Screws	QIG
PulM-1G4T-I211-R10	1	2	1

Dimensions (Unit: mm)



Block Diagram



LED	State	Description
Link (Left)	Yellow	Active
Speed (Right)	Green	1 Gbps data rate
Speed (Right)	Orange	100 Mbps data rate

PulM-1G4T-I211-BP

Intel® I211 Ethernet Controller based Network Interface Card with Four 1GbE RJ-45 with bypass function, 4 PCIe 2.0 x2 Interfaces



Specifications

Model Name	PulM-1G4T-I211-BP
Form Factor	IEI Networking Module - PulM
NIC	Intel® I211-AT Ethernet Controller
LAN Bypass	Yes, two pairs
LAN Interface	4 x Intel® I211-AT Ethernet Controller
Speed	GbE
Ports	4
Host Interface	4 PCIe 2.0 x2
Storage Temp.	-20°C ~ 75°C (-4°F ~ 167°F)
Operating Temp.	0°C ~ 40°C (32°F ~ 104°F)
Humidity	5% ~ 90% RH, Non-condensing
Dimensions (mm)	165.50 (L) x 77.8 (W) x 44.2 (H)
Compliance	RoHS
Support Device	PUZZLE-IN001 / PUZZLE-IN001A

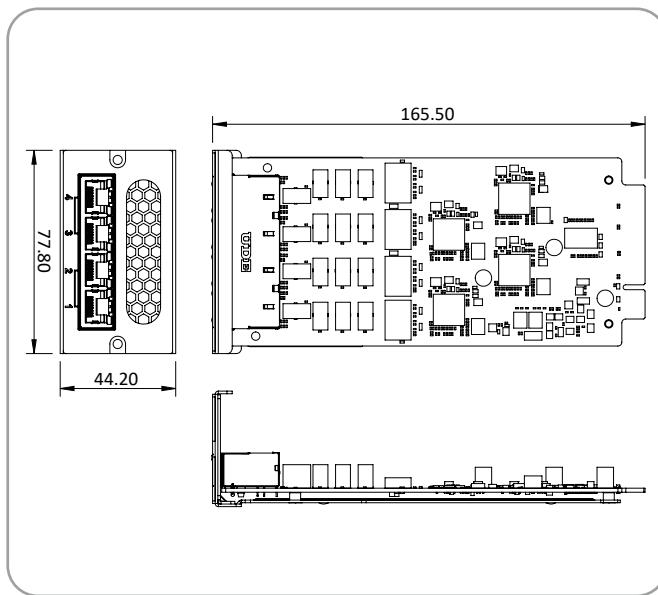
Ordering Information

Part No.	Description
PulM-1G4T-I211-BP-R10	Intel® I211 Ethernet controller based network interface card with four 1GbE RJ-45 with bypass function, four PCIe 2.0 x2 interfaces, RoHS

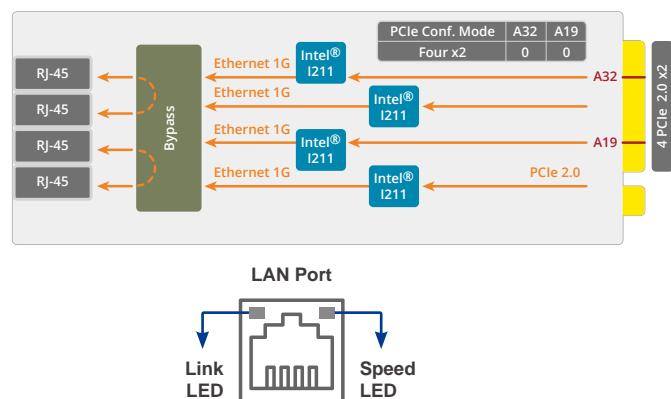
Packing List

Part No.	L-shaped T10 PulM Wrench	Torx Screws	QIG
PulM-1G4T-I211-BP-R10	1	2	1

Dimensions (Unit: mm)



Block Diagram



LED	State	Description
Link (Left)	Yellow	Active
Speed (Right)	Green	1 Gbps data rate
	Orange	100 Mbps data rate
Off (Left/Right)	Off	Bypass function

PuIM-1G4T-I350



Specifications

Model Name	PuIM-1G4T-I350	PuIM-1G4T/T-I350	
Form Factor		IEI Networking Module	
NIC		Intel® Ethernet Controller I350-AM4	
LAN Interface		RJ45	
Speed		1GbE	
Ports		4	
Host Interface		2 PCIe 2.0 x4	
Storage Temp.		-20°C ~ 75°C (-4°F ~ 167°F)	
Operating Temp.		0°C ~ 40°C (32°F ~ 104°F)	
Humidity		5% ~ 90% RH, Non-condensing	
Dimensions (mm)		165.50 (L) x 77.8 (W) x 44.2 (H)	
Compliance		CE / FCC / RoHS	
Support Device	PUZZLE-IN001 PUZZLE-IN001A PUZZLE-IN004	PUZZLE-A001 PUZZLE-A001A	PUZZLE-IN005

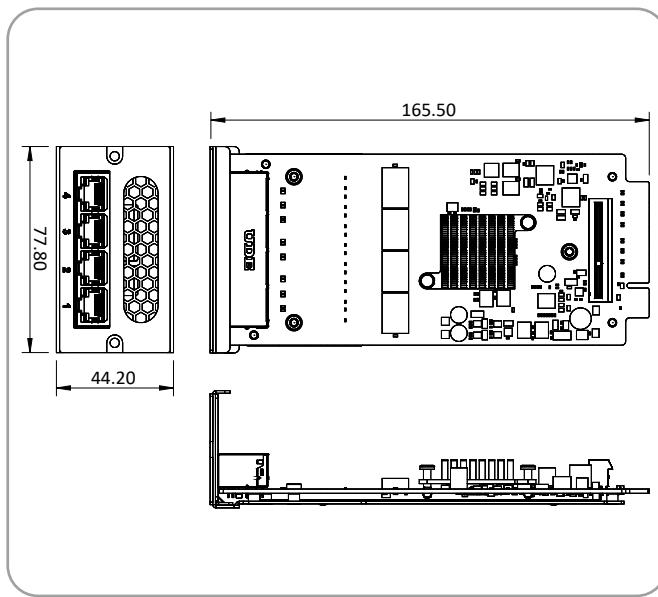
Ordering Information

Part No.	Description
PuIM-1G4T-I350-R10	Intel® Ethernet Controller I350-AM4 based Network Interface Card with 4 x RJ45 by 2 PCIe 2.0 x4 interface, RoHS.
PuIM-1G4T/T-I350-R10	Intel® Ethernet Controller I350-AM4 based Network Interface Card with 4 x RJ45 by 2 PCIe 2.0 x4 interface, RoHS.

Packing List

Part No.	L-shaped T10 PuIM Wrench	Torx Screws	QIG
PuIM-1G4T-I350-R10	1	2	1
PuIM-1G4T/T-I350-R10	N/A	N/A	1

Dimensions (Unit: mm)

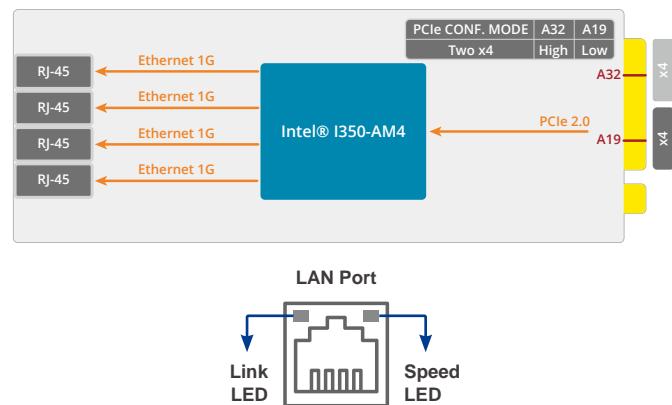


Intel® Ethernet Controller I350-AM4 based Network Interface Card with 4 x RJ45 by 2 PCIe 2.0 x4 interface, RoHS

Features

- 1 x Intel® Ethernet Controller I350-AM4
- 4 x GbE RJ45 connectors
- 2 PCIe2.0 x4
- CE / FCC / RoHS compliant

Block Diagram



LED	State	Description
Link (Left)	Yellow	Active
Speed (Right)	Green	1 Gbps data rate
	Orange	100 Mbps data rate

Pu1M-1G4T-I350-BP

Intel® Ethernet Controller I350-AM4 based Network Interface Card with 4 x RJ45 by 2 PCIe 2.0 x4 interface, RoHS



Features

- 1 x Intel® Ethernet Controller I350-AM4
- 4 x GbE RJ45 connectors
- 2 PCIe2.0 x4
- LAN Bypass
- CE / FCC / RoHS compliant

Specifications

Model Name	Pu1M-1G4T-I350-BP	Pu1M-1G4T/T-I350-BP	
Form Factor	IEI Networking Module		
NIC	Intel® Ethernet Controller I350-AM4		
Bypass	Yes, two pairs		
LAN Interface	RJ45		
Speed	1GbE		
Ports	4		
Host Interface	2 PCIe 2.0 x4		
Storage Temp.	-20°C ~ 75°C (-4°F ~ 167°F)		
Operating Temp.	0°C ~ 40°C (32°F ~ 104°F)		
Humidity	5% ~ 90% RH, Non-condensing		
Dimensions (mm)	165.50 (L) x 77.8 (W) x 44.2 (H)		
Compliance	CE / FCC / RoHS		
Support Device	PUZZLE-IN001 PUZZLE-IN001A PUZZLE-IN004	PUZZLE-A001 PUZZLE-A001A	PUZZLE-IN005

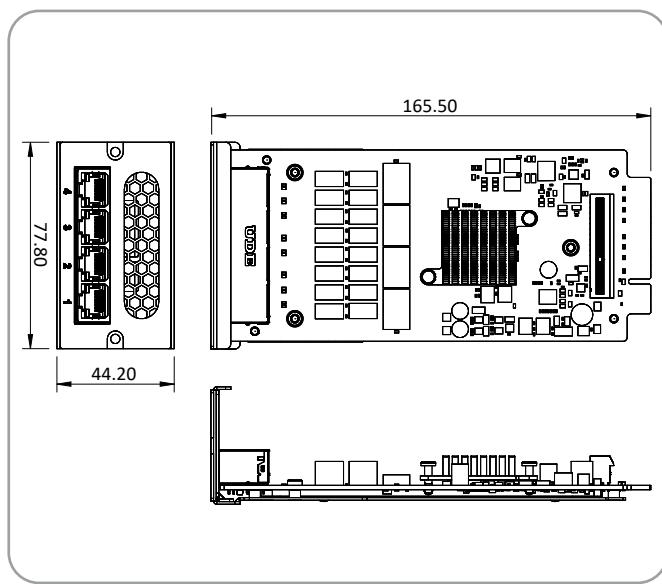
Ordering Information

Part No.	Description
Pu1M-1G4T-I350-BP-R10	Intel® Ethernet Controller I350-AM4 based Network Interface Card with 4 x RJ45 by 2 PCIe 2.0 x4 interface, RoHS.
Pu1M-1G4T/T-I350-BP-R10	Intel® Ethernet Controller I350-AM4 based Network Interface Card with 4 x RJ45 by 2 PCIe 2.0 x4 interface, RoHS.

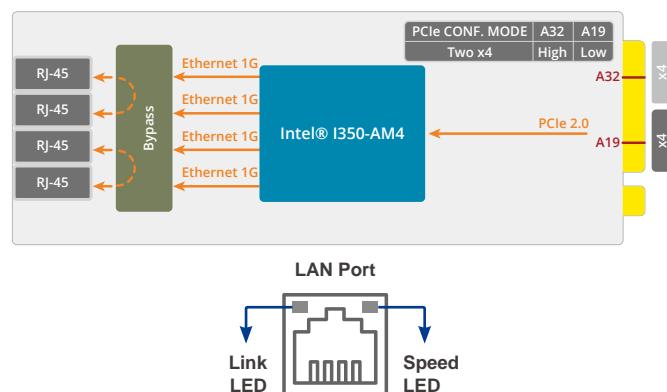
Packing List

Part No.	L-shaped T10 Pu1M Wrench	Torx Screws	QIG
Pu1M-1G4T-I350-BP-R10	1	2	1
Pu1M-1G4T/T-I350-BP-R10	N/A	N/A	1

Dimensions (Unit: mm)



Block Diagram



LED	State	Description
Link (Left)	Yellow	Active
Speed (Right)	Green	1 Gbps data rate
	Orange	100 Mbps data rate
Off	Off	Bypass function

PuIM-1G8T-I350

2 x Intel® Ethernet Controller I350-AM4 based Network Interface Card with 8 x RJ45 by 2 PCIe 2.0 x4 interface, RoHS



Features

- 2 x Intel® Ethernet Controller I350-AM4
- 8 x GbE RJ45 connectors
- 2 PCIe2.0 x4
- CE / FCC / RoHS compliant

Specifications

Model Name	PuIM-1G8T-I350	PuIM-1G8T/T-I350	
Form Factor		IEI Networking Module	
NIC		Intel® Ethernet Controller I350-AM4	
LAN Interface		RJ45	
Speed		1GbE	
Ports		8	
Host Interface		2 PCIe 2.0 x4	
Storage Temp.		-20°C ~ 75°C (-4°F ~ 167°F)	
Operating Temp.		0°C ~ 40°C (32°F ~ 104°F)	
Humidity		5% ~ 90% RH, Non-condensing	
Dimensions (mm)		165.50 (L) x 77.8 (W) x 44.2 (H)	
Compliance		CE / FCC / RoHS	
Support Device	PUZZLE-IN001 PUZZLE-IN001A PUZZLE-IN004	PUZZLE-A001 PUZZLE-A001A	PUZZLE-IN005

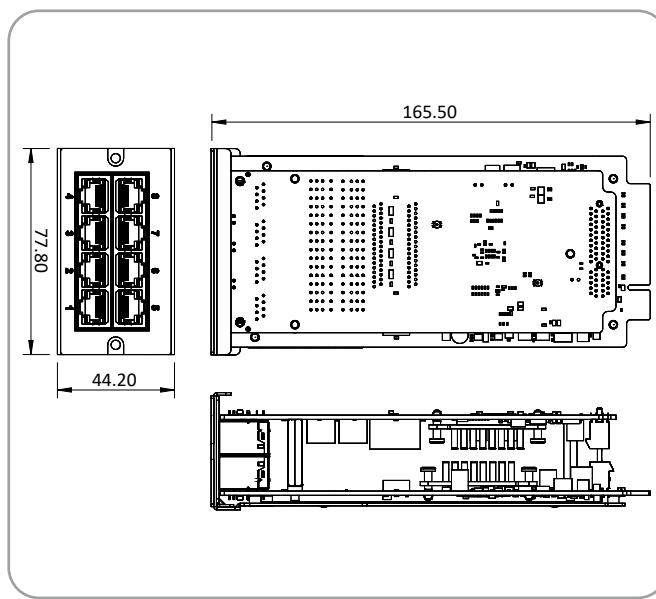
Ordering Information

Part No.	Description
PuIM-1G8T-I350-R10	Intel® Ethernet Controller I350-AM4 based Network Interface Card with 8 x RJ45 by 2 PCIe 2.0 x4 interface, RoHS.
PuIM-1G8T/T-I350-R10	Intel® Ethernet Controller I350-AM4 based Network Interface Card with 8 x RJ45 by 2 PCIe 2.0 x4 interface, RoHS.

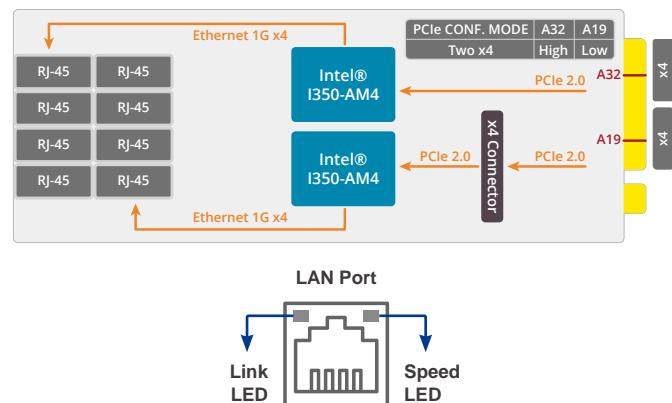
Packing List

Part No.	L-shaped T10 PuIM Wrench	Torx Screws	QIG
PuIM-1G8T-I350-R10	1	2	1
PuIM-1G8T/T-I350-R10	N/A	N/A	1

Dimensions (Unit: mm)



Block Diagram



LED	State	Description
Link (Left)	Yellow	Active
Speed (Right)	Green	1 Gbps data rate
	Orange	100 Mbps data rate

Pu1M-1G8T-I350-BP

Intel® Ethernet Controller I350-AM4 based Network Interface Card with 4 x RJ45 by 2 PCIe 2.0 x4 interface, RoHS



Specifications

Model Name	Pu1M-1G8T-I350-BP	Pu1M-1G8T/T-I350-BP	
Form Factor	IEI Networking Module		
NIC	Intel® Ethernet Controller I350-AM4		
Bypass	Yes, four pairs		
LAN Interface	RJ45		
Speed	1GbE		
Ports	8		
Host Interface	2 PCIe 2.0 x4		
Storage Temp.	-20°C ~ 75°C (-4°F ~ 167°F)		
Operating Temp.	0°C ~ 40°C (32°F ~ 104°F)		
Humidity	5% ~ 90% RH, Non-condensing		
Dimensions (mm)	165.50 (L) x 77.8 (W) x 44.2 (H)		
Compliance	CE / FCC / RoHS		
Support Device	PUZZLE-IN001 PUZZLE-IN001A PUZZLE-IN004	PUZZLE-A001 PUZZLE-A001A	PUZZLE-IN005

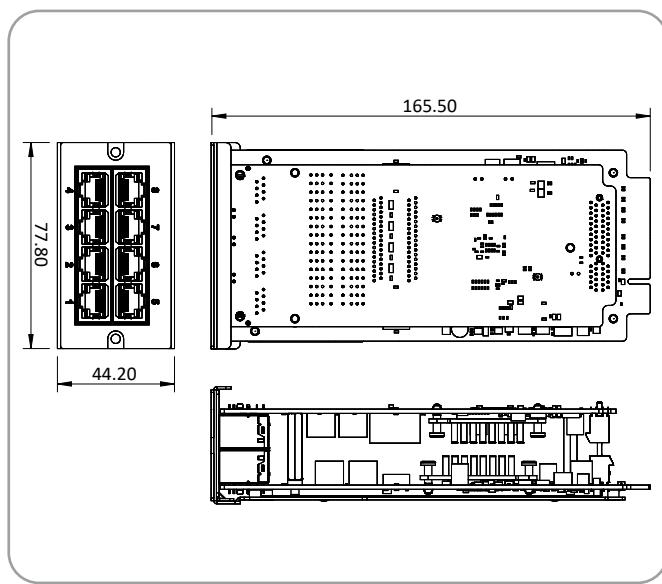
Ordering Information

Part No.	Description
Pu1M-1G8T-I350-BP-R10	Intel® Ethernet Controller I350-AM4 based Network Interface Card with 8 x RJ45 by 2 PCIe 2.0 x4 with bypass interface, RoHS
Pu1M-1G8T/T-I350-BP-R10	Intel® Ethernet Controller I350-AM4 based Network Interface Card with 8 x RJ45 by 2 PCIe 2.0 x4 with bypass interface, RoHS

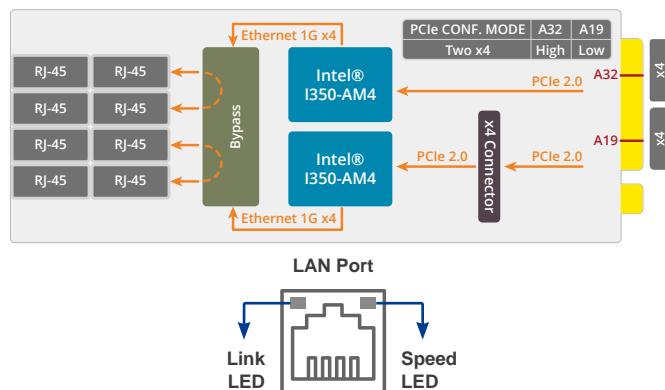
Packing List

Part No.	L-shaped T10 PulM Wrench	Torx Screws	QIG
Pu1M-1G8T-I350-BP-R10	1	2	1
Pu1M-1G8T/T-I350-BP-R10	N/A	N/A	1

Dimensions (Unit: mm)



Block Diagram



LED	State	Description
Link (Left)	Yellow	Active
Speed (Right)	Green	1 Gbps data rate
	Orange	100 Mbps data rate
Off	Off	Bypass function

Pu1M-2P1M

Two Mini-PCIe and One M.2 Expansion Card Support the Wi-Fi or LTE Module, RoHS



Specifications

Model Name	Pu1M-2P1M	
Interface	IEI Networking Module - Pu1M	
Onboard IC	ASIM1812 (PCIe Gen2x4) FL1100EX (PCI-E To USB 3.0 (4 Port))	
M.2	1 x 2230/2242 M.2 B key (PCIe 2.0, USB 3.2 Gen1) with SIM card slot	
PCIe	2 x PCIe Mini (PCIe, USB 2.0) with SIM card slots	
Storage Temp.	-20°C ~ 75°C (-4°F ~ 167°F)	
Operating Temp.	0°C ~ 40°C (32°F ~ 104°F)	
Humidity	5% ~ 90% RH, Non-condensing	
Dimensions (mm)	165.50 (L) x 77.8 (W) x 44.2 (H)	
Compliance	RoHS	
Support Davice	PUZZLE-IN001 PUZZLE-IN001A PUZZLE-IN004	PUZZLE-A001 PUZZLE-A001A

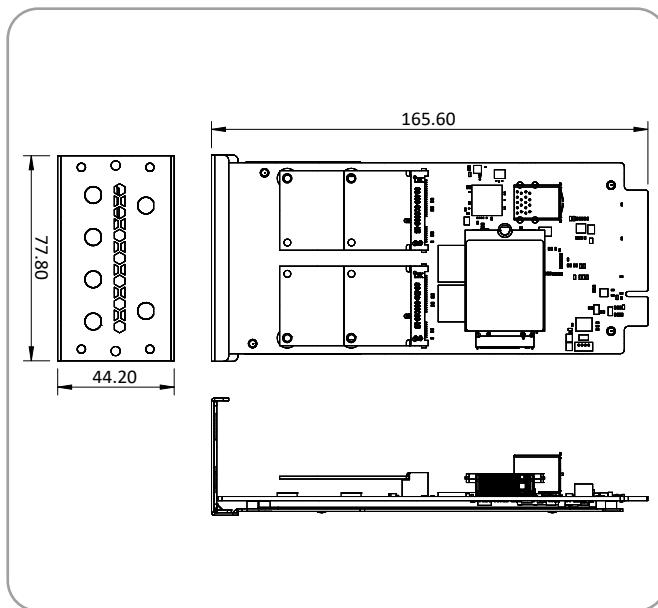
Ordering Information

Part No.	Description
Pu1M-2P1M-R10	Two Mini-PCIe and One M.2 Expansion Card Support the Wi-Fi or LTE Module, RoHS

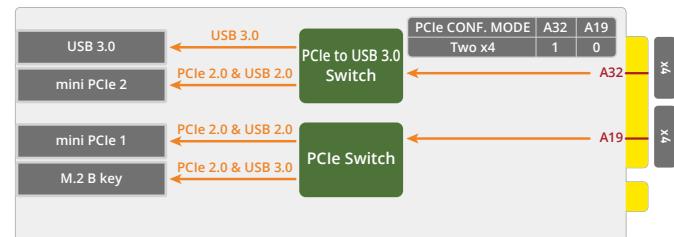
Packing List

Part No.	L-shaped T10 Pu1M Wrench	Torx Screws	QIG
Pu1M-2P1M-R10	1	2	1

Dimensions (Unit: mm)



Block Diagram



PulM-M2-2S

M.2 PCIe SSD expansion card supports two M.2 2280 PCIe NVMe (3.0 x4) SSDs, two PCIe 3.0 x4 host interface



Specifications

Model Name	PulM-M2-2S	
Interface	IEI Networking Module - PulM	
Onboard IC	N/A	
M.2	2 x M key 2260/2280/22110 (PCIe 3.0 x4/NVMe)	
PCIe	N/A	
Storage Temp.	-20°C ~ 75°C (-4°F ~ 167°F)	
Operating Temp.	0°C ~ 40°C (32°F ~ 104°F)	
Humidity	5% ~ 90% RH, Non-condensing	
Dimensions (mm)	165.50 (L) x 77.8 (W) x 44.2 (H)	
Compliance	RoHS	
Support Device	PUZZLE-IN001 PUZZLE-IN001A PUZZLE-IN004	PUZZLE-A001 PUZZLE-A001A

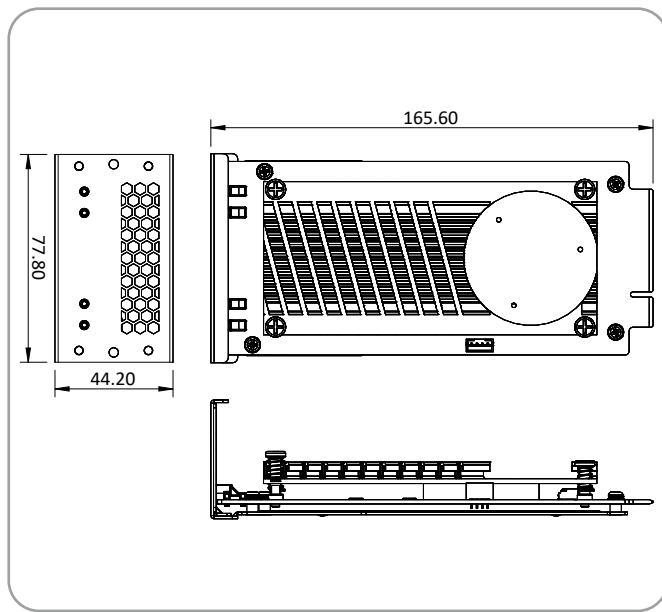
Ordering Information

Part No.	Description
PulM-M2-2S-R10	M.2 PCIe SSD expansion card supports two M.2 2280 PCIe NVMe (3.0 x4) SSDs; two PCIe 3.0 x4 host interface, RoHS

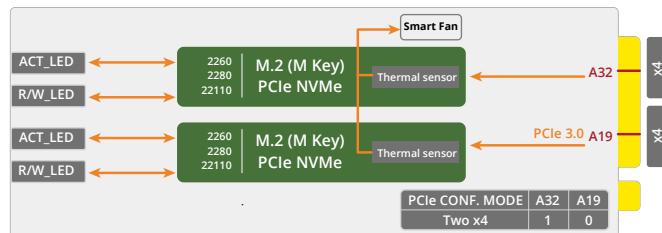
Packing List

Part No.	L-shaped T10 PulM Wrench	Thermal Pad kit	Torx Screws	M.2 SSD Screw	QIG
PulM-M2-2S-R10	1	2	2	4	1

Dimensions (Unit: mm)



Block Diagram



LED	State	Description
Left	Red	Active
Right	Green	Read/Write

Mustang-QA100-C627

Intel® QAT accelerator for Crypto and Compression with lewisburg chipset, PCIe Gen3 x16, RoHS

New



Specifications

Throughput	
SSL/IPSec	100Gbps
Compression Deflate	100Gbps
Decompression Deflate	100Gbps
RSA Decrypt 1k-bit	550K Ops/sec
RSA Decrypt 2k-bit	100 Ops/Sec

Features

- 1 x Intel® Lewisburg chipset C627
- Asymmetric and Symmetric encryption and authentication
- Digital signatures
- RSA, DH, and ECC
- Lossless data compression

Specifications

Main Chip	Intel® C627 Chipset
Cooling	Active cooling
Interface	PCIe Gen3 x16
Operating Humidity	0% ~ 90%, non-condensing
Operating Temperature	0°C ~ 40°C
Storage Temperature	-40°C ~ 75°C (-40°F ~ 167°F)
Dimension	144.27 x 68.9 x 15.43 (L x W x H mm)
Regulation	RoHS
Operating system support	Linux

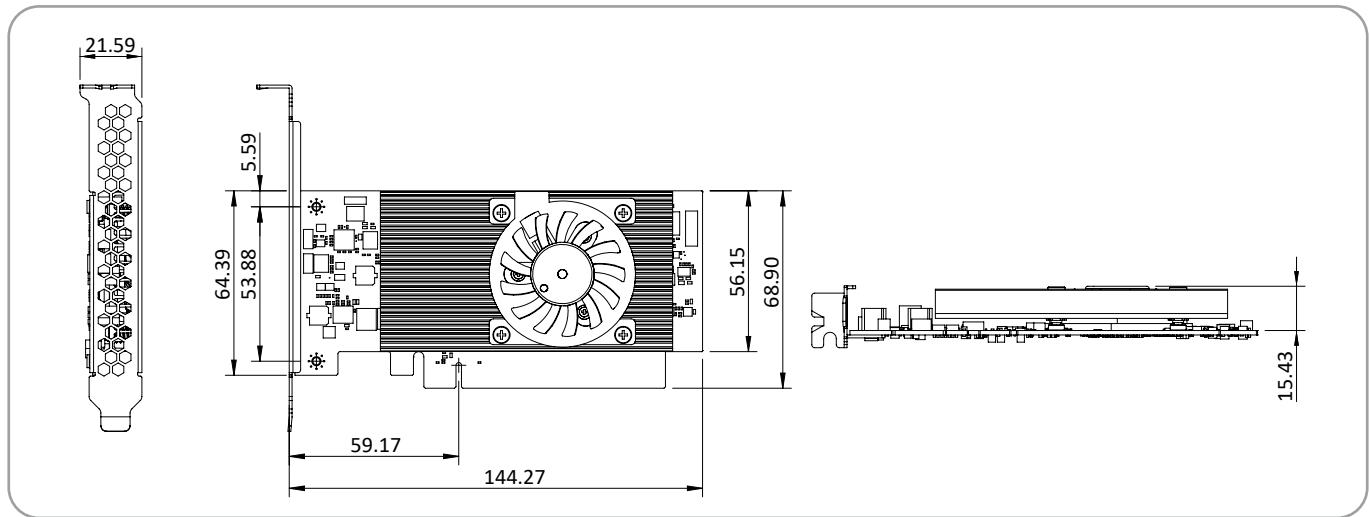
Ordering Information

Part No.	Description
Mustang-QA100-C627-R10	Intel® QAT accelerator for Crypto and Compression with lewisburg chipset, PCIe Gen3 x16, RoHS

Packing List

Mustang-QA100-C627-R10	1 x QIG
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Dimensions (Unit: mm)





*Specifications are subject to change without prior notice.

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