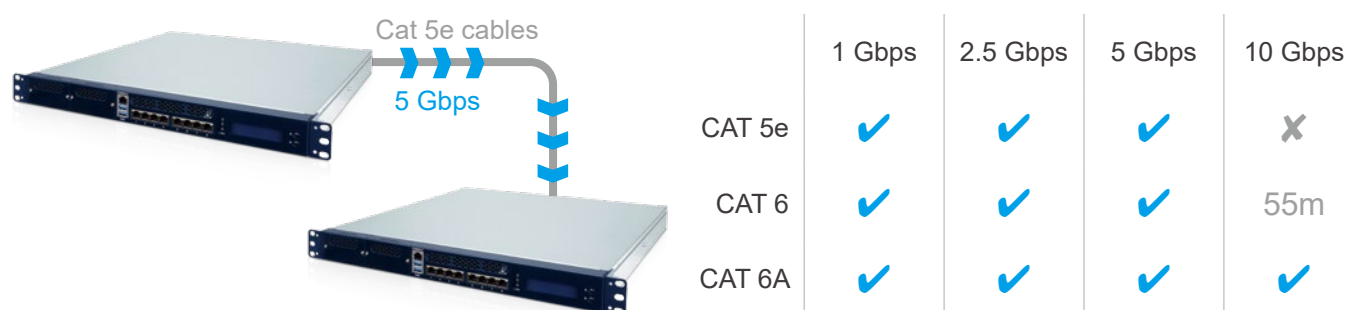


PUZZLE Series Technology

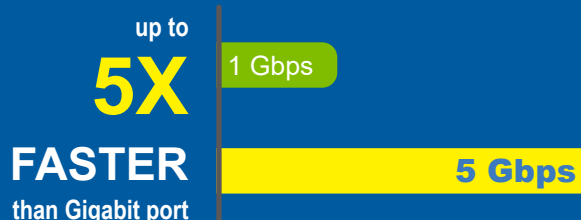
4-Speed Multi-Gigabit

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.

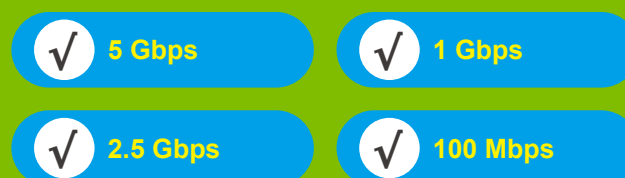
Standard Cat 5e at 5 Gbps, 2.5 Gbps, 1 Gbps, 100 Mbps
Require no change to the existing infrastructure or cabling



Up to 5X faster transfer speeds

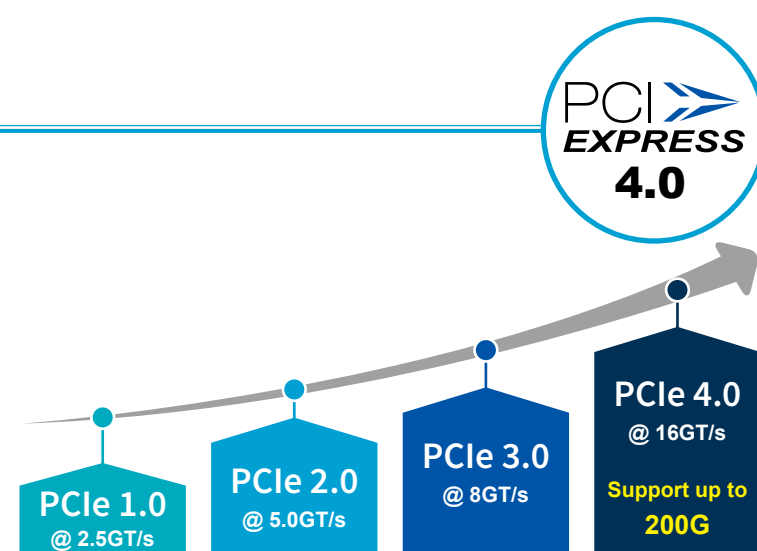


Backward compatible with 5GBASE-T / 2.5GBASE-T / 1000BASE-T / 100BASE-TX



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



► PUZZLE-IN004

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**

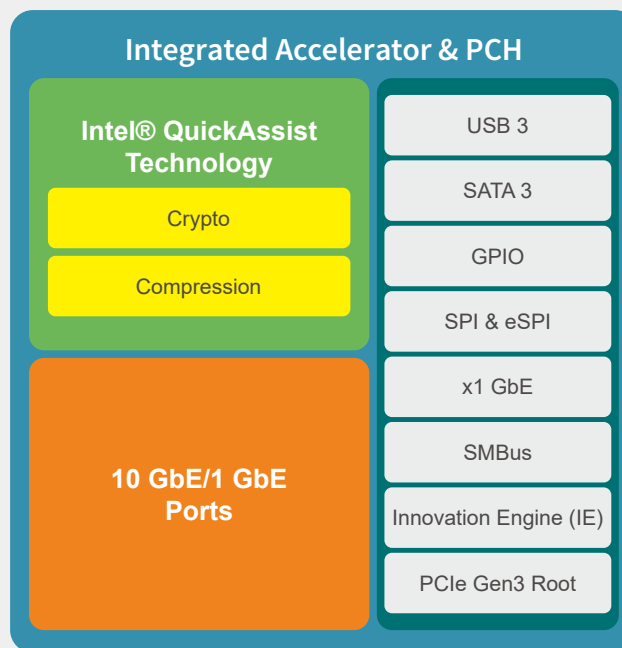


**Workload-optimized
Performance**

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

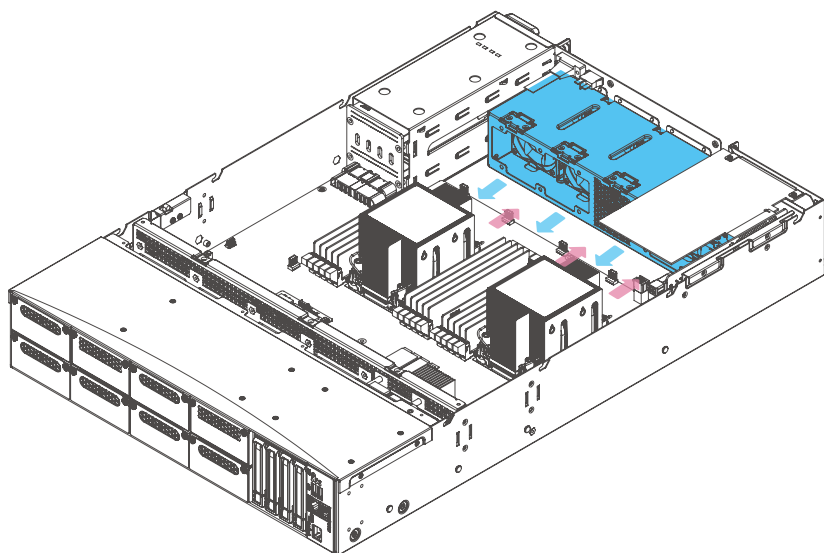
High reliability design is a very important factor for network service. The hot-swap is desirable to change the configuration or repair a working system without interrupting its operation. The hot-swappable SSD and redundant power supply can provide infinite service to avoid shutting down and restarting 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



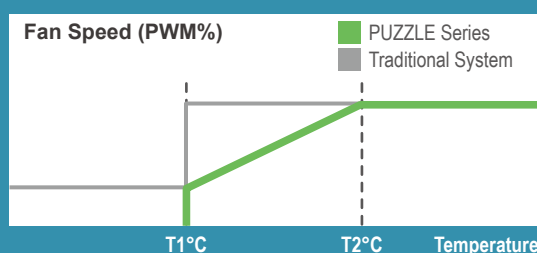
Users can define CPU fan and system fan speed and temperature profile in the BIOS menu. When the system is in idle or running less demanding tasks, smart fan is able to bring down the level of noise produced by rotating fans. The adjustable settings allow the PUZZLE series run with less noise while extending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



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.

Standard Hardware

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

Various Solutions

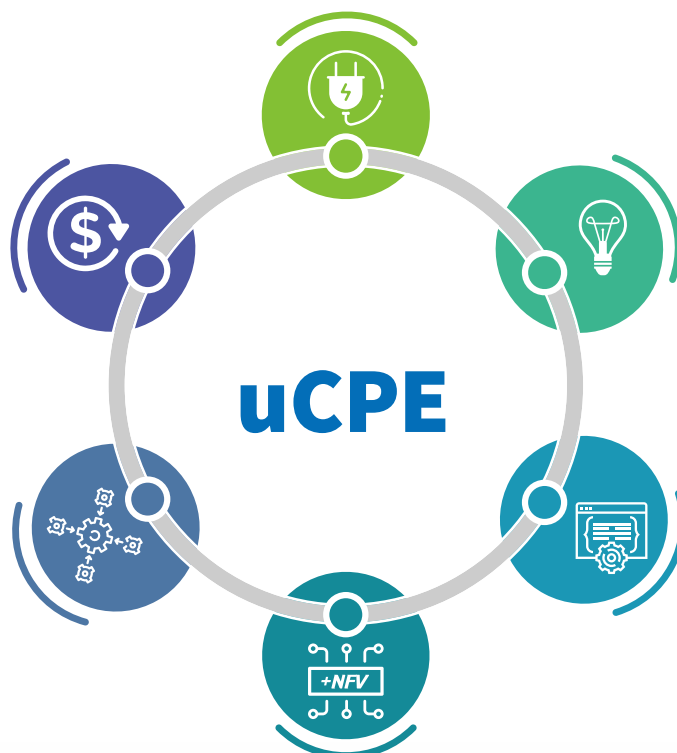
The true value of openness comes from being able to combine a mix of open source and proprietary software components to deliver an innovative service.

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.



Unmanned Parking Management System



**Flexible Design with
Slim Form Factor**



**Multiple Upgrade
Options**



**Highly Compatible with
Major Operating Systems**

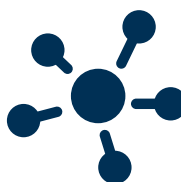
As a smart integrated parking service provider, the optimal system should solve the challenges, such as space limitation, multiple tasks and hard compatibility of software and hardware.

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 modularized 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.

Security and Surveillance



**Easily Upgrade with
PuIM 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 PuIM 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 a pocket surveillance station to increase mobility, and easily deployed in anywhere anytime.

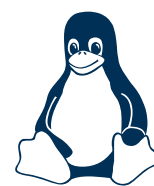
Next Generation Firewall



**Easily Upgrade with
PulM Module**

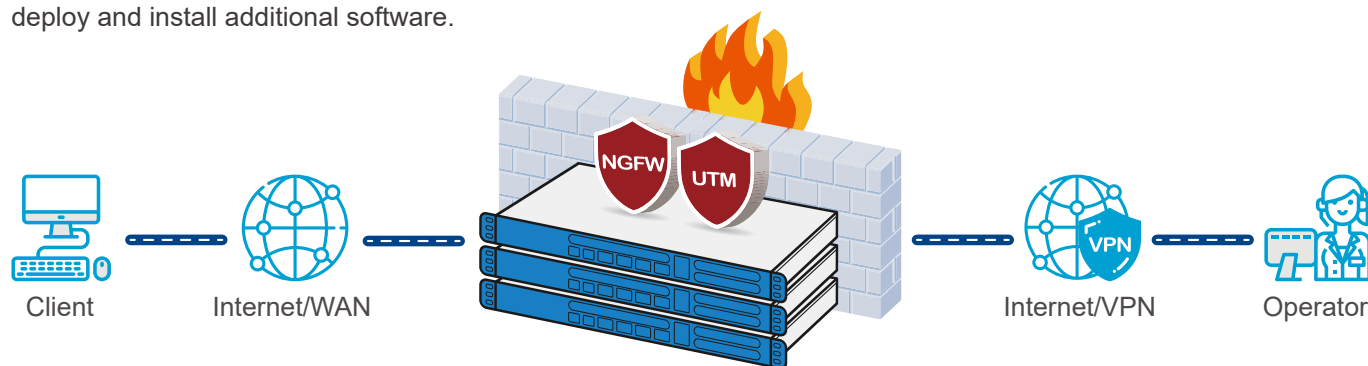


**Higher Efficiency of
Virtualization**



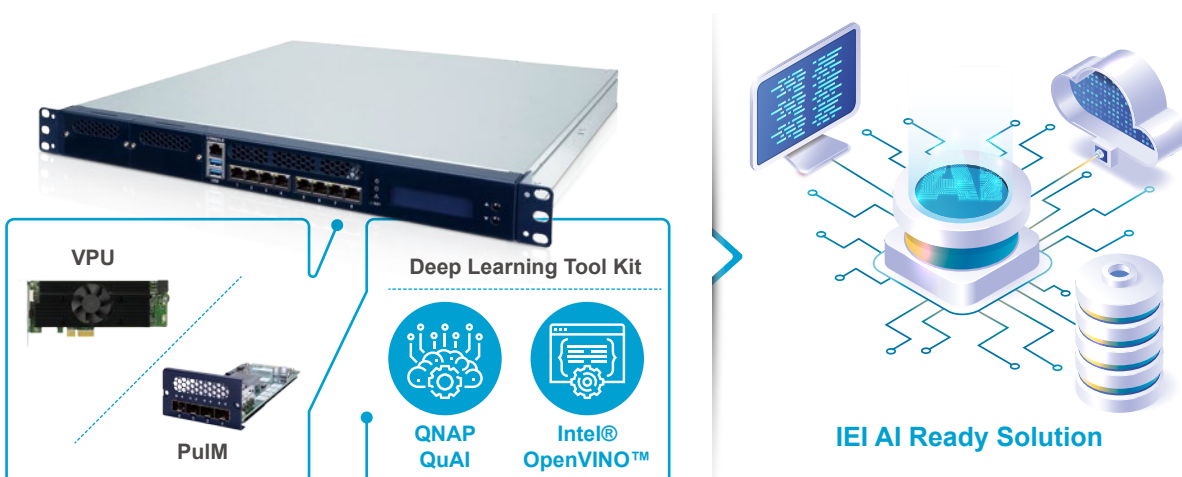
**Linux-tested Software
Compatibility**

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.



PUZZLE Series Selection Guide



		PUZZLE-IN005	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	• Intel® AES New Instructions • Intel® QuickAssist Technology (Intel® QAT) • Intel® Virtualization Technology (Intel® VT) • Intel® Trusted Execution Technology (Intel® TXT)	• 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 (HHHL) 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	-10°C ~ 50°C	-20°C ~ 75°C (-4°F ~ 167°F)	
	Operating Temperature	-20°C ~ 75°C (-4°F ~ 167°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	• Intel® AES New Instructions • Intel® Software Guard Extensions (Intel® SGX) • Intel® Memory Protection Extensions (Intel® MPX) • Intel® Trusted Execution Technology		• 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	- Intel® AES New Instructions - Intel® Software Guard Extensions (Intel® SGX) - Intel® Virtualization Technology for Directed I/O (VT-d) - Intel® QuickAssist Technology (Intel® QAT)	- Intel® Virtualization Technology for Directed I/O (VT-d) - Intel® Virtualization Technology (VT-x) - Intel® QuickAssist Technology (Intel® QAT)	- 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)	- 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		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	
	Network Module Slot	N/A		N/A	
Expansion Slot	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	
	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	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	
	SD Card	N/A		N/A	
External I/O	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	
	Console	1 x RJ45		1 x RJ45	
Internal I/O	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	• 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 PuLM 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-S02	PUZZLE-A001-S03	PUZZLE-A001A-S02	PUZZLE-A001A-S03
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	- Secure Processor for Crypto Co-processing - Secure Memory Encryption (SME) - Secure Encrypted Virtualization (SEV) - Integrated crypto acceleration supporting the IPsec protocol		- 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 PuIM module slot		1 x PuIM 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	• AES-NI encryption acceleration • AMD Secure Processor • Secure boot with AMD Hardware Validated Boot (HVB)	• 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



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(PCIe 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	• 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	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 (HHHL) 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
Physical and Environmental	Antenna Hole	N/A
	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
OS and Certifications	Weight	23kg
	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 PuLM, one PCIe expansion, Redundant Power, without cooler, RoHS

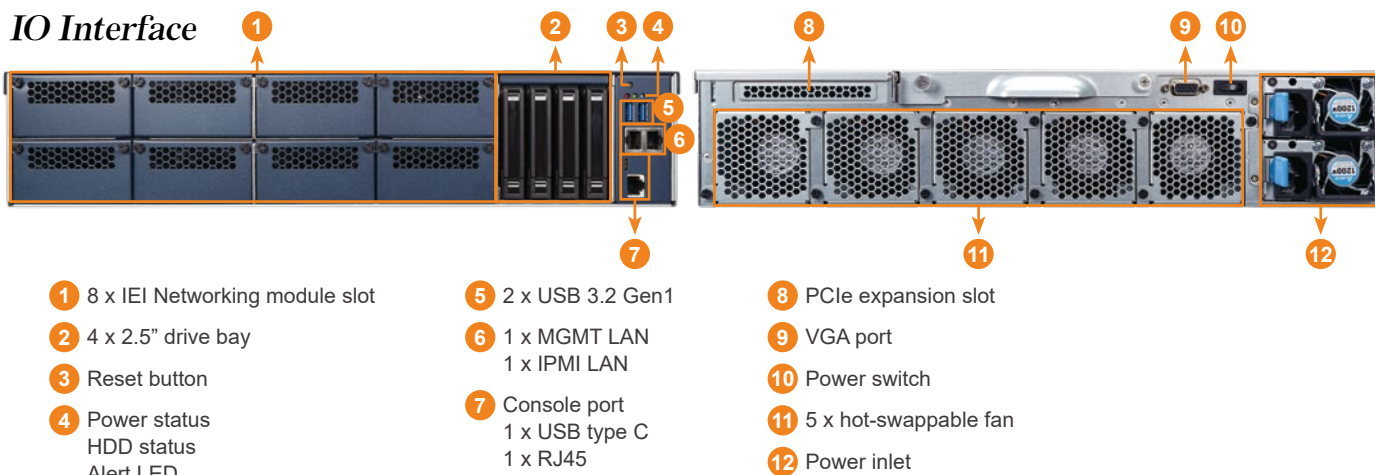
Packing List

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)	

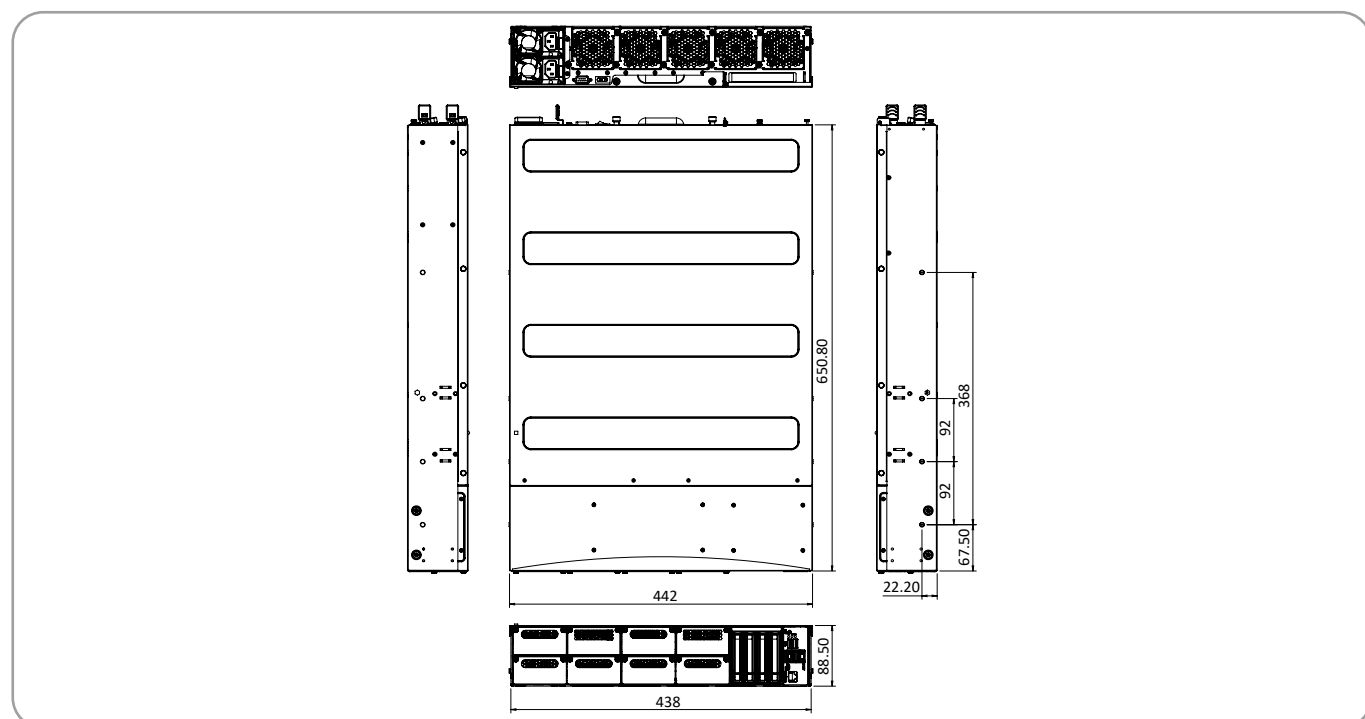
Options

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 PuIM 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 PuIM 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	• 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 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) (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	
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 426 x 44.2	
OS and Certifications	Weight	7kg	
	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-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 PuIM, 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 PuIM 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 PuIM 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 PuIM 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 PuIM module slots, two PCIe expansion, Redundant Power, RoHS

* A CPU heatsink must be purchased separately

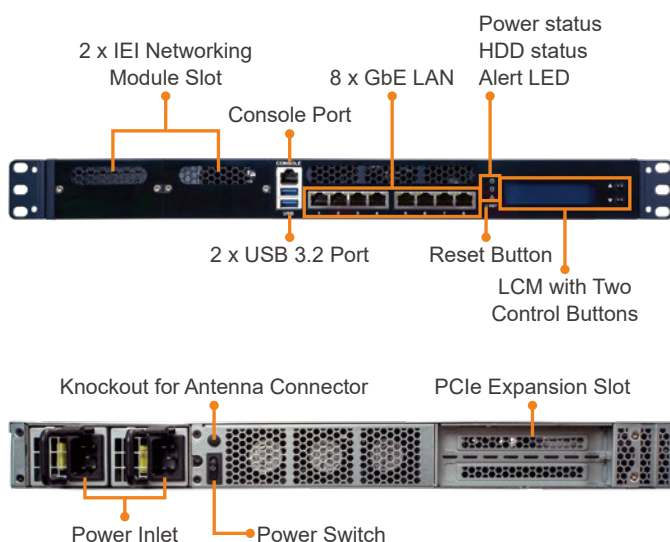
Packing List

	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

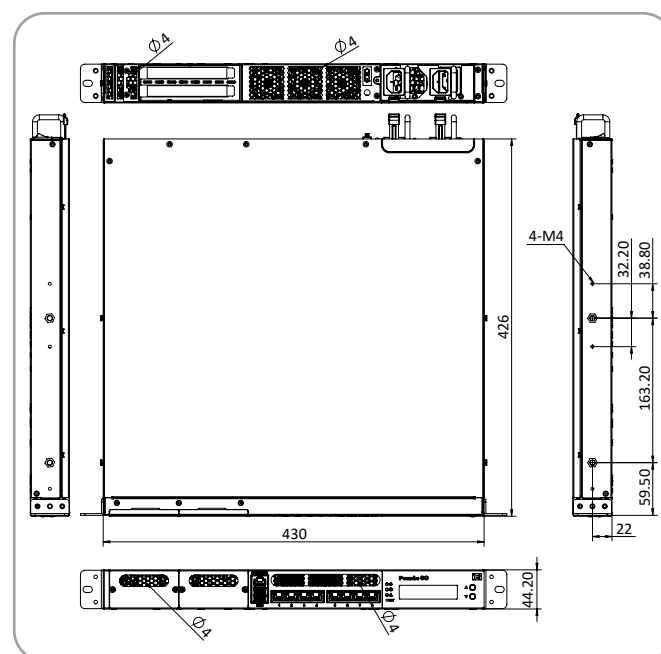
Options

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+SPING 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	• 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	
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 426 x 44.2	
OS and Certifications	Weight	7kg	
	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	

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 PuIM, 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 PuIM, two PCIe expansion, Redundant Power, RoHS

	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

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

Diagram illustrating the front panel components of the HP Z440 Workstation:

- 2 x IEL Networking Module Slot
- Console Port
- 8 x 5GbE LAN
- Power status HDD status Alert LED
- 2 x USB 3.2 Port
- Reset Button
- LCM with Two Control Buttons
- Knockout for Antenna Connector
- PCIe Expansion Slot
- Power Inlet
- Power Switch

Technical drawing of the PMS 400 power supply unit, showing front, top, and side views with dimensions.

Front View (Top): Shows the input terminals (labeled $\phi 4$), the PMS 400 label, and the output terminals (labeled $\phi 4$). The width is 430 mm.

Front View (Bottom): Shows the input terminals (labeled $\phi 4$), the PMS 400 label, and the output terminals (labeled $\phi 4$). The height is 44.20 mm.

Side View (Right): Shows the mounting holes and dimensions: 22 mm (mounting hole diameter), 59.50 mm (distance between mounting holes), 163.20 mm (total length), 32.20 mm (distance from mounting hole to output terminal), and 38.80 mm (distance from mounting hole to input terminal).

Top View (Left): Shows the mounting holes and dimensions: 430 mm (width) and 426 mm (height).

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	• 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

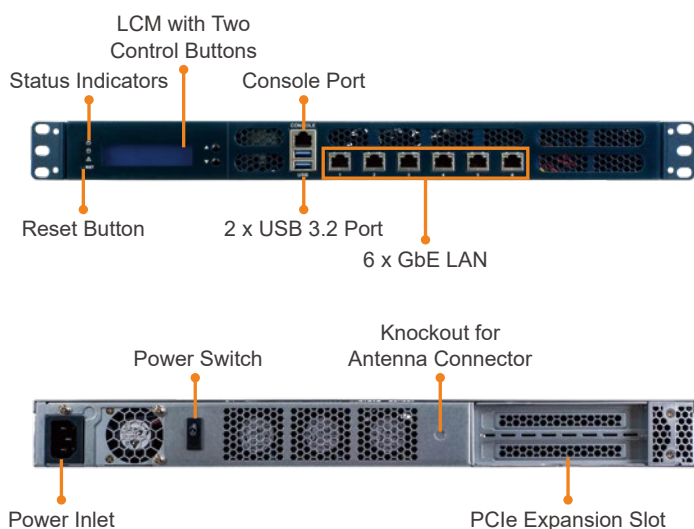
Packing List

	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

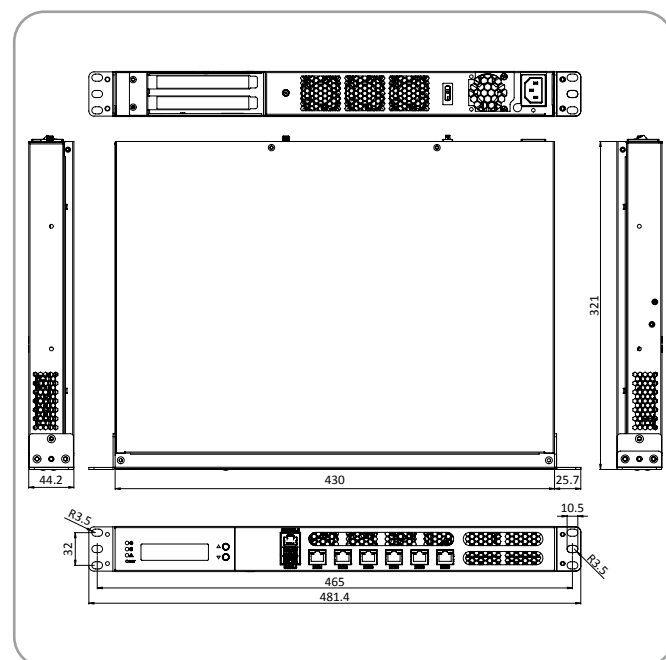
Options

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+SPING 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



Features

- Intel® Atom® processor C3558 8M Cache, up to 2.20 GHz
- Support 4 x 1 GbE NIC via Intel® I211, 4 x 1 GbE PHY via Marvell 88E1543
- Support bypass function (by sku)
- DDR4 2133MHz ECC (by CPU) or non-ECC UDIMM/R-DIMM Up to 128GB
- 1 x M.2 A key (USB 2.0, PCIe x1), 1 x miniPCIe (USB 2.0, PCIe x1) with SIM card slot, 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	• Intel® AES New Instructions • Intel® Software Guard Extensions (Intel® SGX) • Intel® Virtualization Technology for Directed I/O (VT-d) • Intel® QuickAssist Technology (Intel® QAT)	• 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	
	Network Module Slot	N/A	
	PCIe Slot	N/A	
Expansion Slot	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	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	
Storage	eMMC	1 x eMMC 32GB	
	SD Card	N/A	
	USB	1 x USB 2.0 1 x USB 3.2 Gen 1	
External I/O	Console	1 x RJ45	
	HDMI	N/A	
Internal I/O	USB	N/A	
	Power Switch	1 x Power switch	
Power and Mechanical	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	
	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)	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

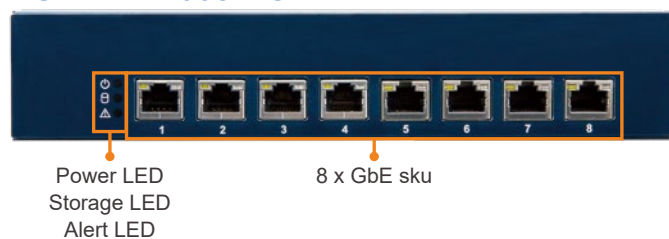
	PUZZLE-IN003A-C1-R10	PUZZLE-IN003A-C1/8G-R10	PUZZLE-IN003A-C3-R10	PUZZLE-IN003A-C3/8G-R10
Power cord	1	1	1	1
Power adapter	1	1	1	1
Rack mounting ears	Option	2	Option	2
Screws for rack mounting ears	Option	6	Option	6
USB to console cable	Option	1	option	1
RS-232 to console cable	1	Option	1	Option

Options

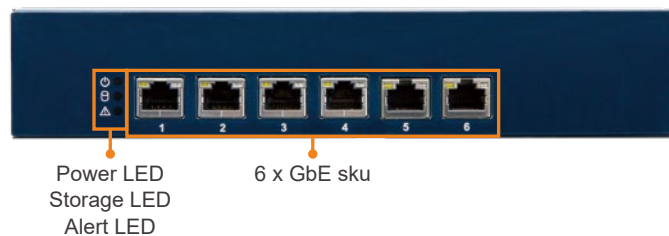
Item	Part No.	Description
USB to console cable	32013-004000-100-RS	Round cable, LAN cable, FTDI console cable, 2, 1800MM, (A) USB A TYPE 4P MALE+PCB:FTDI_FT232RL, (B) RJ45 8P8C, RoHS
RS-232 to console cable	32005-005100-100-RS	Round cable, RS-232/422/485, PUZZLE RS-232 cable, 2, 500MM, 24AWG, (A) D-SUB 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

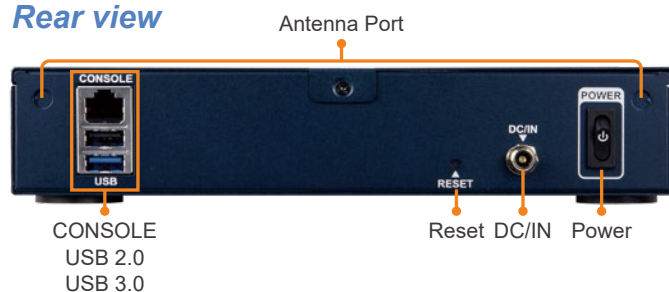
PUZZLE-IN003A-C1



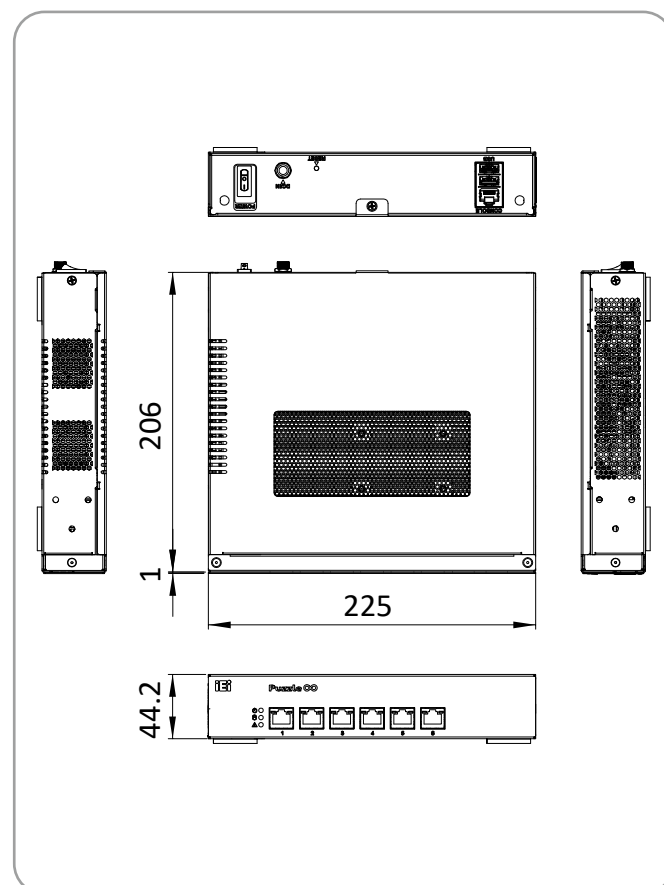
PUZZLE-IN003A-C3



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



Features

- Intel® Atom® processor C3558 8M Cache, up to 2.20 GHz
- Support 4 x 1 GbE NIC via Intel® C3558, 2 x 1 GbE PHY via Marvell 88E1512, 2 x 10 GbE SFP+ via intel C3558
- DDR4 2133MHz ECC (by CPU) or non-ECC UDIMM/R-DIMM Up to 128GB
- 1 x M.2 A key (USB 2.0, PCIe x1), 1 x miniPCIe (USB 2.0, PCIe x1) with SIM card slot, 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	• 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)	• 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 10 GbE: Intel® X553 integrated in CPU	
	Ethernet Port	4 x 1GbE from Intel® i211-AT 2 x 1GbE from Marvell 88E1512 2 x 10 GbE SFP+	
	Network Module Slot	N/A	
	PCIe Slot	N/A	
Expansion Slot	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

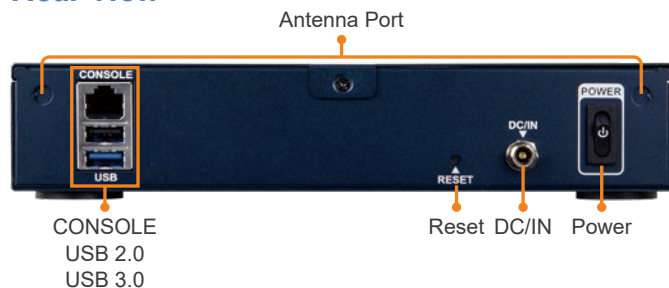
Options

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

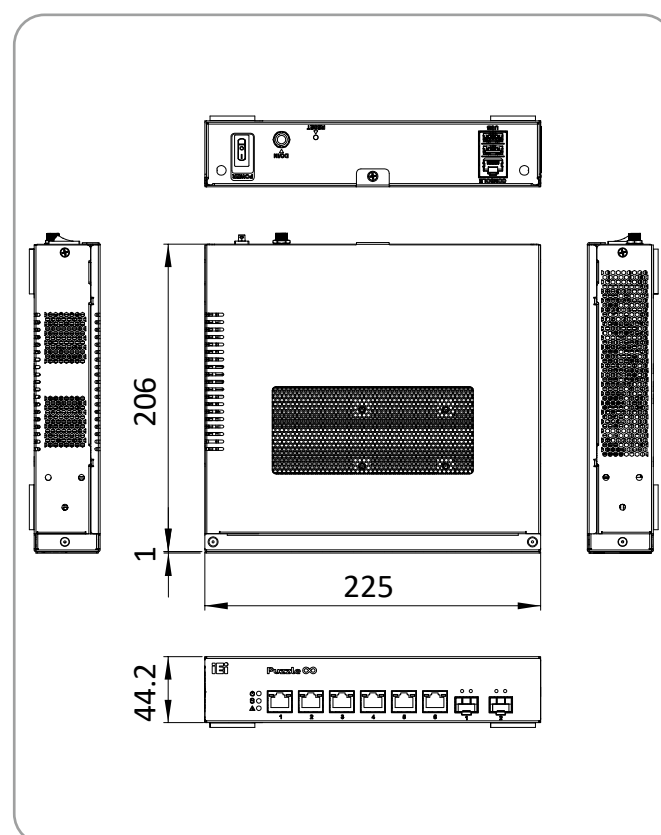
IO Interface



Rear view



Dimensions (Unit: mm)



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 PulM module slot
- Redundant PSUs

Specifications

		PUZZLE-IN004-XD1	PUZZLE-IN004-XD2	PUZZLE-IN004-XD3	PUZZLE-IN004-XD4	PUZZLE-IN004-XD5
Platform	Form Factor	1U				
	CPU	Intel® Xeon® D-2145NT processor 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	• 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 PulM 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				
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 426 x 44.2				
OS and Certifications	Weight	7 kg				
	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 PuIM 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 PuIM 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 PuIM 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 PuIM 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 PuIM 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 PuIM 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 PuIM 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 PuIM 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 PuIM 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 PuIM module slot and one PCIe expansion, RoHS

** By order production

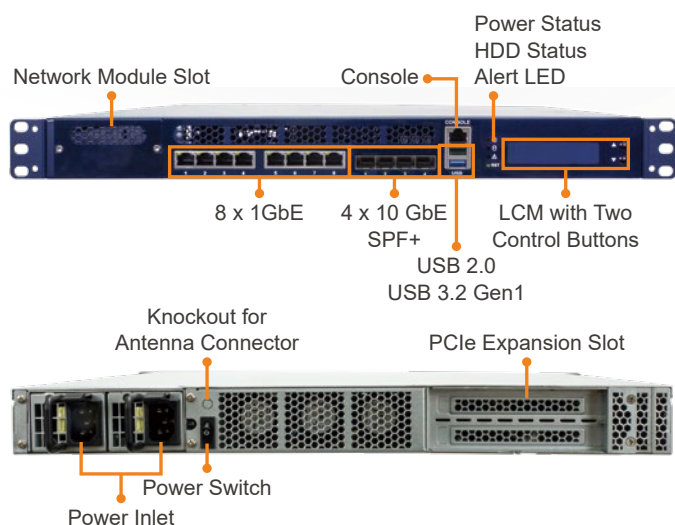
Packing List

	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

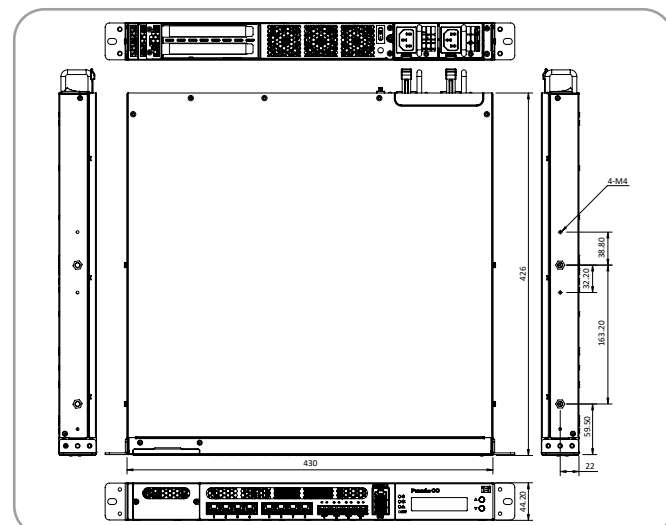
Options

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-S02	PUZZLE-A001-S03
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	• 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 SFP+ ports (Integrated in CPU)	
	Network Module Slot	1 x PuIM 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-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 PuIM 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 PuIM module slot, two PCIe expansion, Redundant Power, RoHS

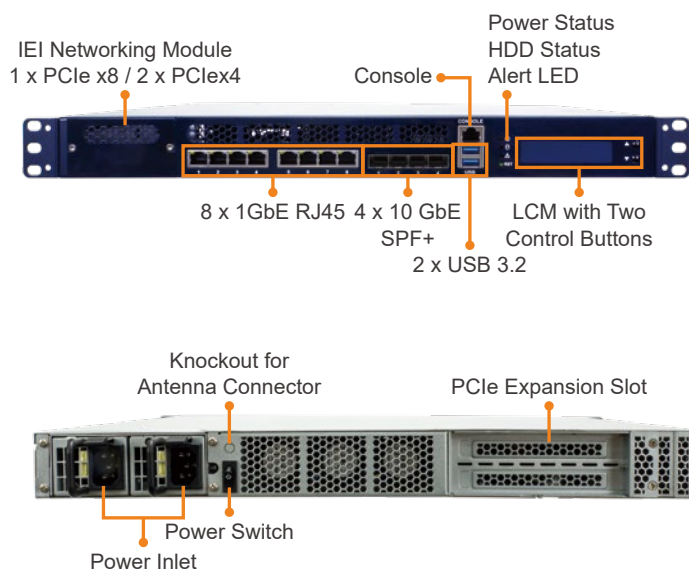
Packing List

	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

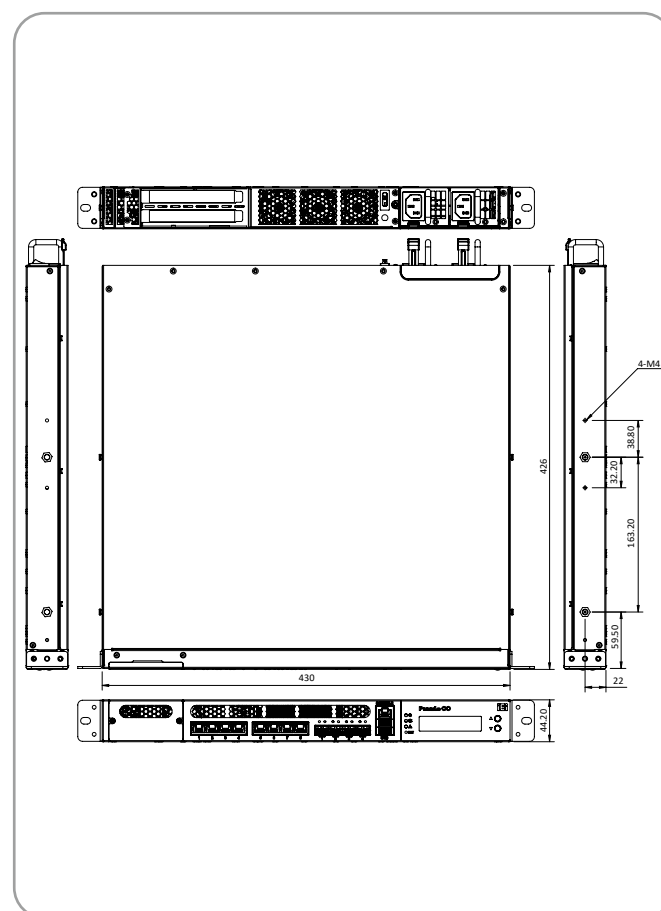
Options

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



Features

- AMD EPYC™ Embedded 3000 series processor, highperformance System-on-Chip
- Support 8 x GbE RJ45 via BCM 5720
- 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 PuLM module slot
- Redundant PSUs

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	• 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	
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 426 x 44.2	
OS and Certifications	Weight	7kg	
	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 PuIM 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 PuIM slot, two PCIe expansion, Redundant Power, RoHS

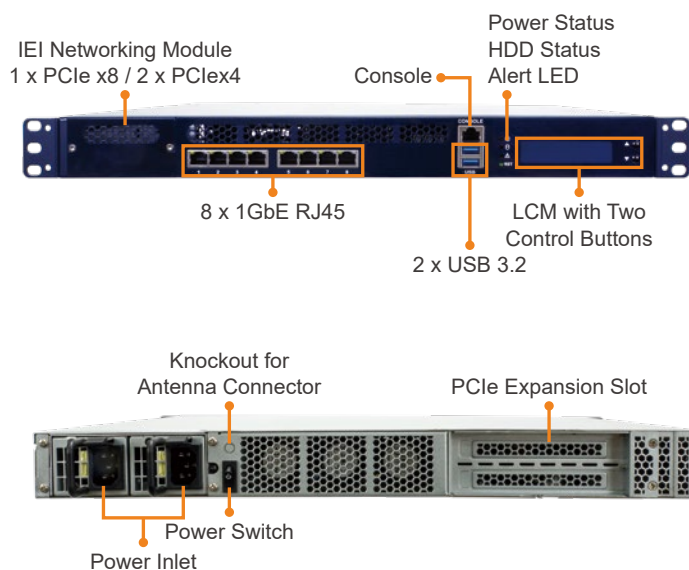
Packing List

	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

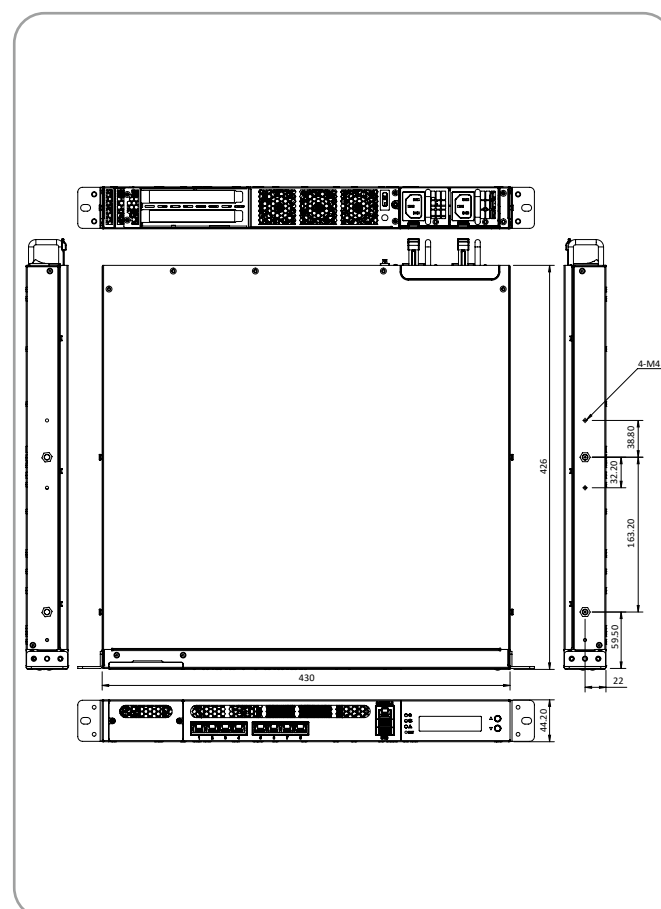
Options

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	• 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
	Network Module Slot	N/A
Expansion Slot	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)
	M.2	1 x 2230 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	8 GB
	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) 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

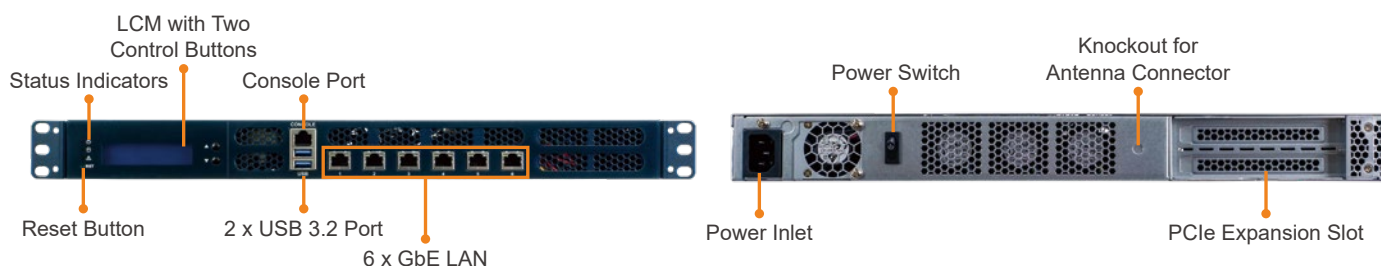
Packing List

	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

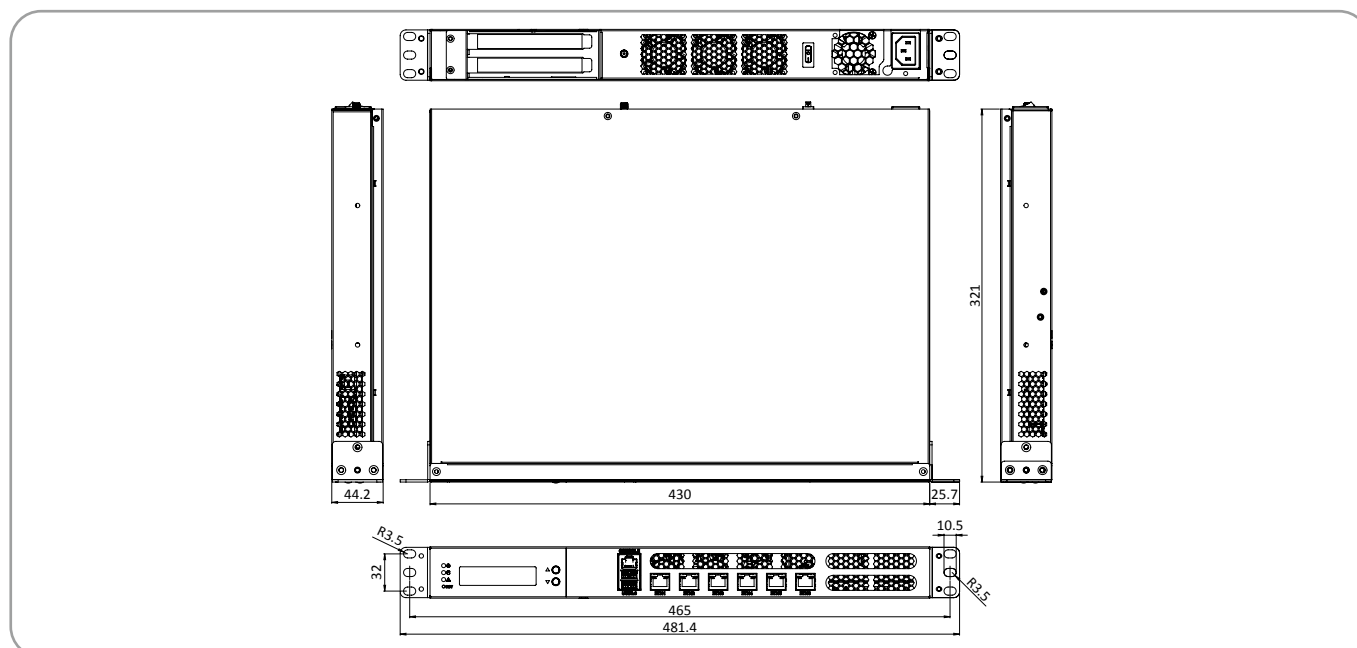
Options

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



Features

- Marvell® ARMADA® 88F8040 high-performance quad-core System-on-Chip processor
- 1 x 288-pin DIMM, DDR4 2400MHz, 16GB (ECC)
- 2 x 10GbE SFP+ via Marvell® ARMADA® 88F8040, 4 x GbE RJ45 via Marvell 88E1512P
- 2 x USB 3.2 Gen 1 (5Gb/s), 1 x RJ45 console, 1 x M.2 B key (SATA & USB 3.2 Gen 1 (5Gb/s)) with SIM holder
- 1 x PCIe x16 slot (PCIe x2 signal)

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	• 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
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 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

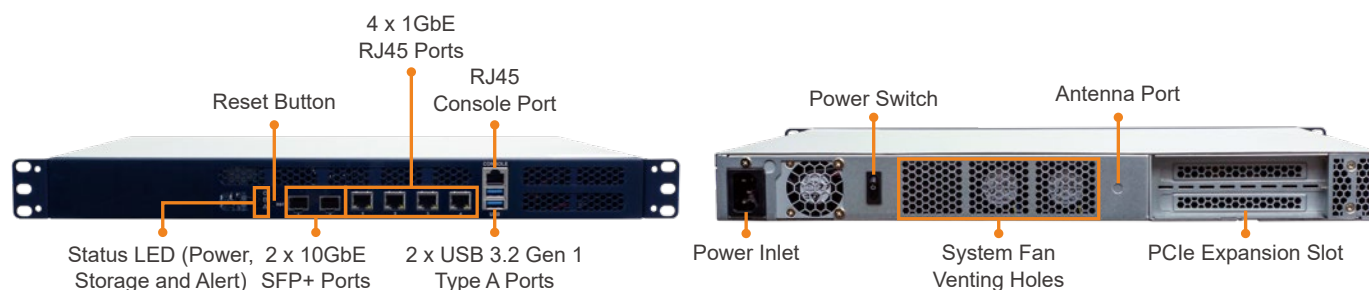
Packing List

	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

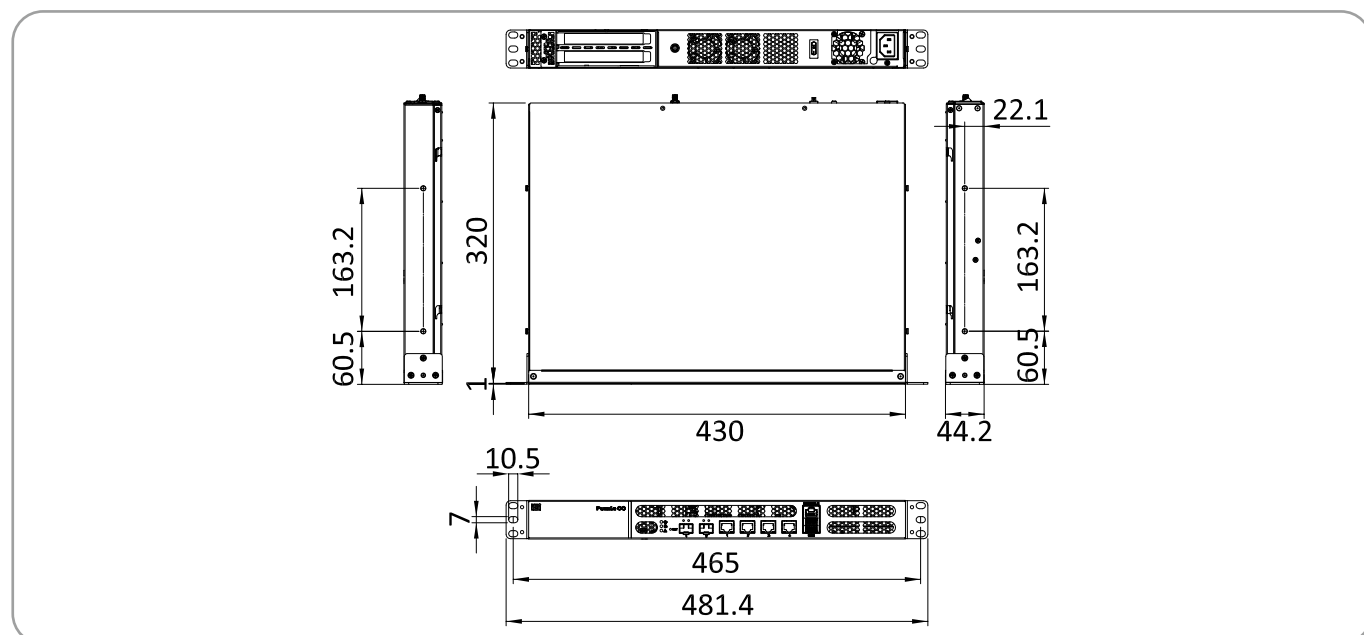
Options

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



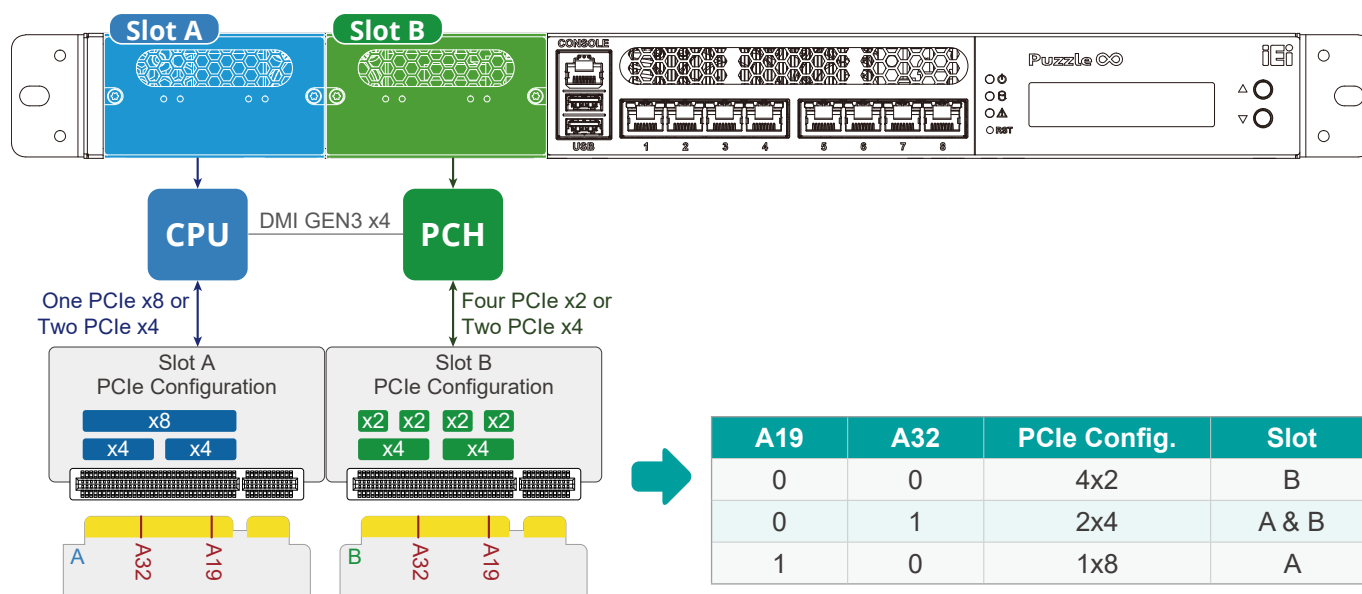
Dimensions (Unit: mm)



Diverse PuLM Network Modules

Dual BIOS

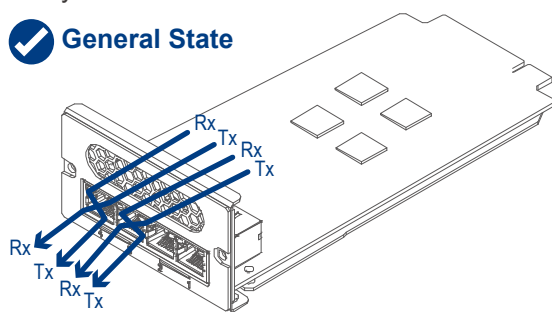
Install the IEI PuLM networking module into the slot of the PUZZLE series. The Slot A supports 8 lanes from CPU (one PCIe x8 or two PCIe x4); the Slot B supports two PCIe x4 or four PCIe x2 from PCH.



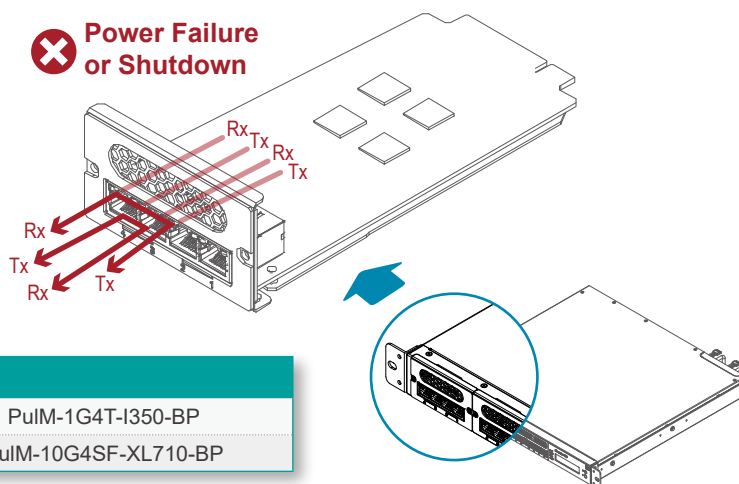
Uninterrupted Data Transmission - Bypass Function

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

General State



Power Failure or Shutdown



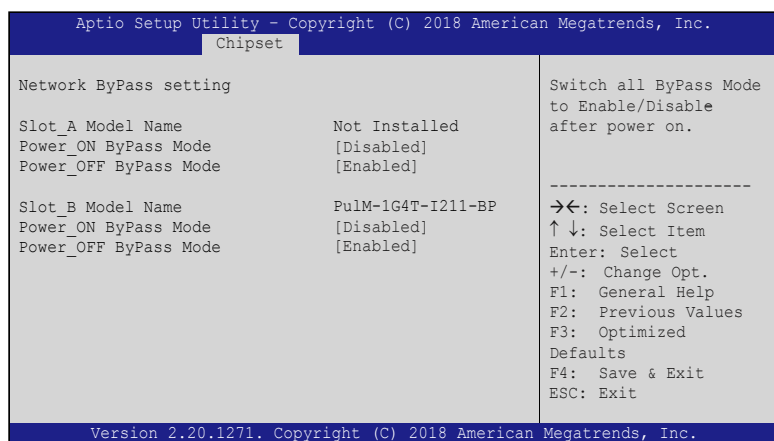
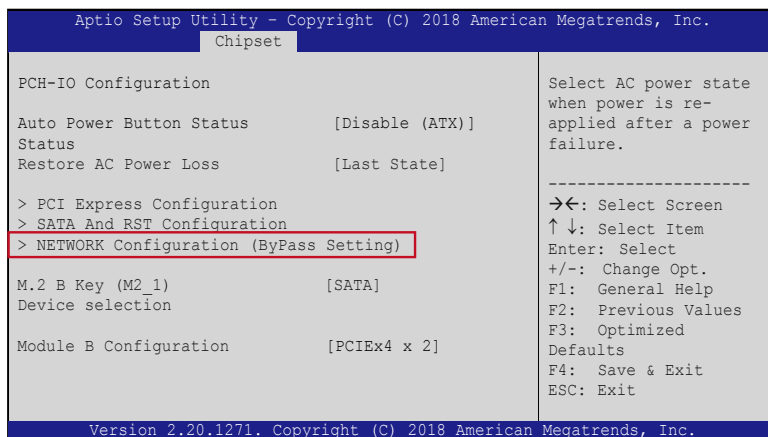
Product	
PuLM-1G4T-I211-BP	PuLM-1G4T-I350-BP
PuLM-1G8T-I350-BP	PuLM-10G4SF-XL710-BP

Bypass Configuration in BIOS

Some PuIM 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)

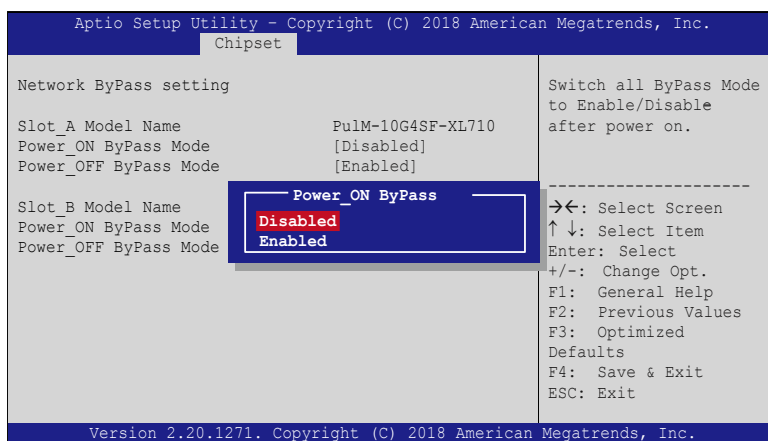


Step 2

The **Network ByPass Setting** menu appears. The model names of the PuIM 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 PuIM modules.



PUZZLE System	Power_ON Bypass Mode		Power_OFF Bypass Mode	
BIOS Setting	Disabled	Enabled	Disabled	Enabled
PuIM 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 PuIM Series Selection Guide

	PuIM-100G2SF-E810	PuIM-25G2SF/T-MLX	PuIM-10G2SF/T-X710	PuIM-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	CE / FCC / RoHS	CE / FCC / RoHS	RoHS	CE / FCC / RoHS

	PuIM-10G4SF/T-XL710-BP	PuIM-10G4SF/T-MLX	PuIM-1G4SF/T-I350	PuIM-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

	PuIM-1G4T/T-I350	PuIM-1G4T/T-I350-BP	PuIM-1G8T/T-I350	PuIM-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 PuIM Series Selection Guide

	PuIM-25G2SF-MLX	PuIM-10G2SF-X710	PuIM-10G4SF-XL710	PuIM-10G4SF-XL710-BP	PuIM-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

	PuIM-10G4T-AQC107	PuIM-1G4SF-I350	PuIM-1G8SF-I350	PuIM-1G4T-I211	PuIM-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

	PuIM-1G4T-I350	PuIM-1G4T-I350-BP	PuIM-1G8T-I350	PuIM-1G8T-I350-BP	PuIM-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

	PuIM-2P1M	PuIM-M2-2S
Interface	1 PCIe 3.0 x4	2 PCIe 3.0 x4
Onboard IC	ASM1812 (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

PuIM-100G2SF-E810

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



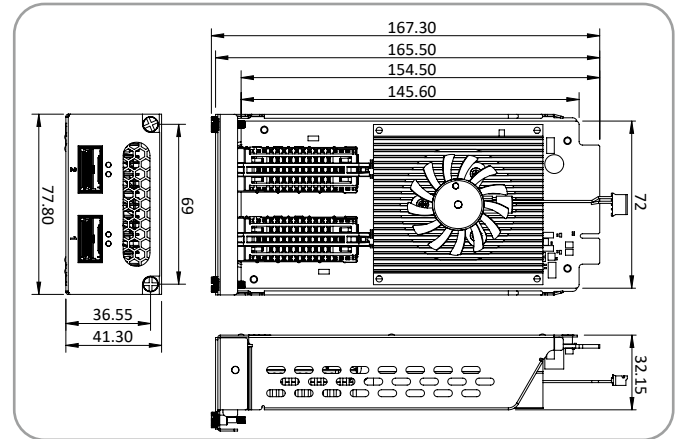
Features

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

Specifications

	PuIM-100G2SF-E810
Form Factor	IEI Networking Module - PuIM
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)



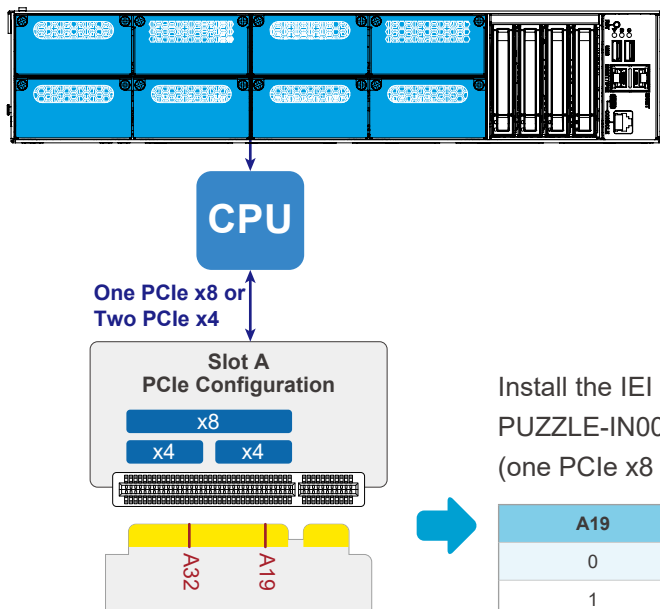
Ordering Information

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

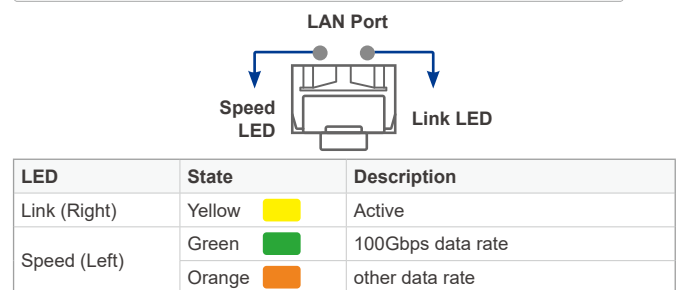
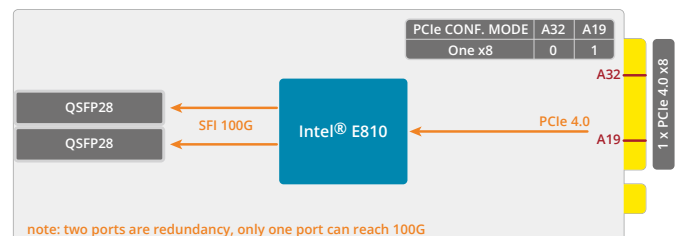
Packing List

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



Block Diagram



Install the IEI PuIM-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).

A19	A32	PCIe Config.
0	1	2x4
1	0	1x8

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

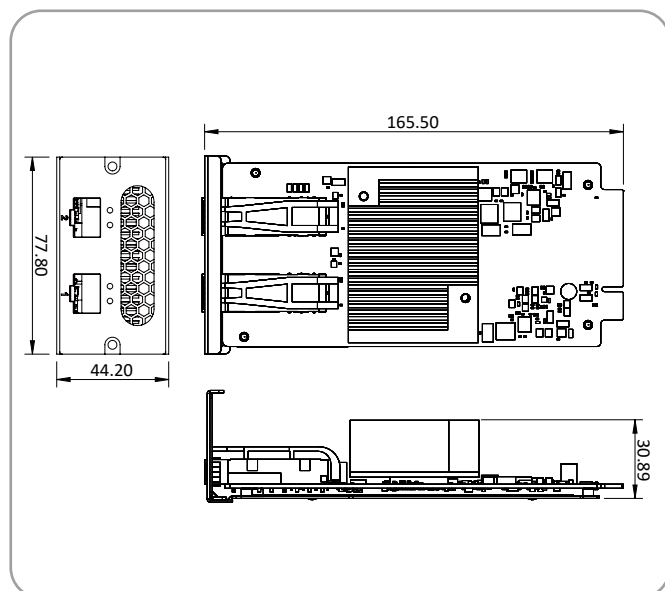
Ordering Information

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

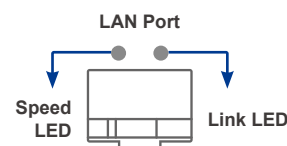
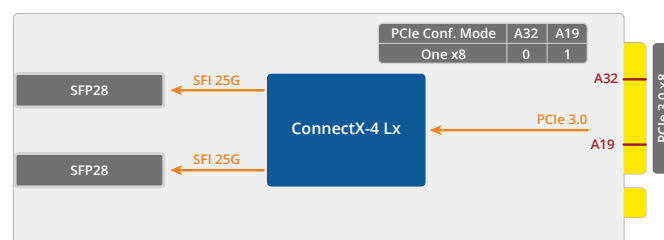
Packing List

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



LED	State	Description
Link (Right)	Yellow	Active
Speed (Left)	Green	25 Gbps data rate
	Yellow	10 Gbps/1 Gbps data rate

PuIM-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	PuIM-10G2SF-X710		PuIM-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

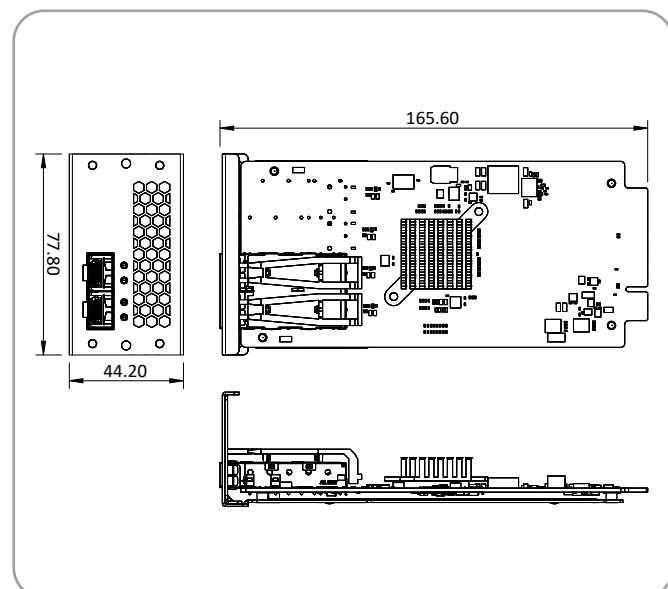
Ordering Information

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

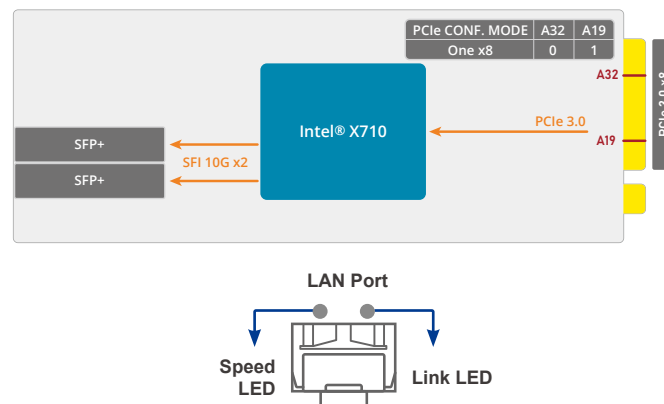
Packing List

Part No.	L-shaped T10 PuIM Wrench	Torx Screws	QIG
PuIM-10G2SF-X710-R10	1	2	1
PuIM-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
	Off	1 Gbps/100Mbps data rate

PuIM-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	PuIM-10G4SF-XL710		PuIM-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

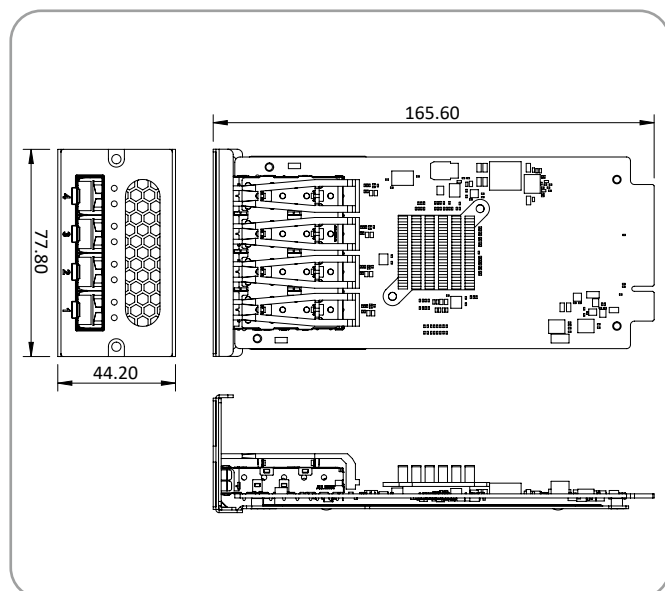
Ordering Information

Part No.	Description
PuIM-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
PuIM-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

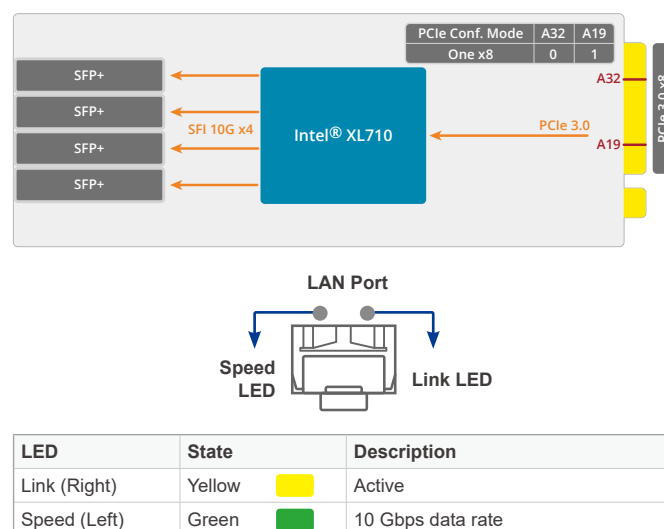
Packing List

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

Dimensions (Unit: mm)



Block Diagram



PuIM-10G4SF-XL710-BP

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



Features

- 1 x Intel® Ethernet Controller XL710-BM1
- 4 x Fiber LC (SR or LR) interface
- PCIe 3.0 x8
- Two LAN bypass model available

Specifications

Model Name	PuIM-10G4SF-XL710-BP		PuIM-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

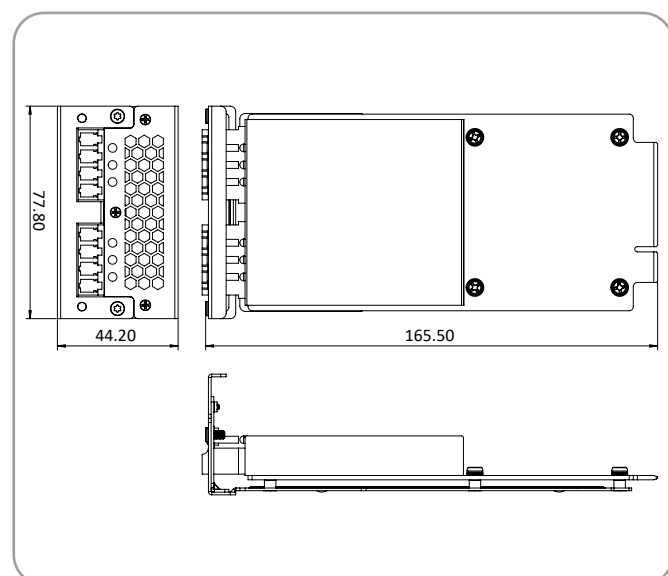
Ordering Information

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

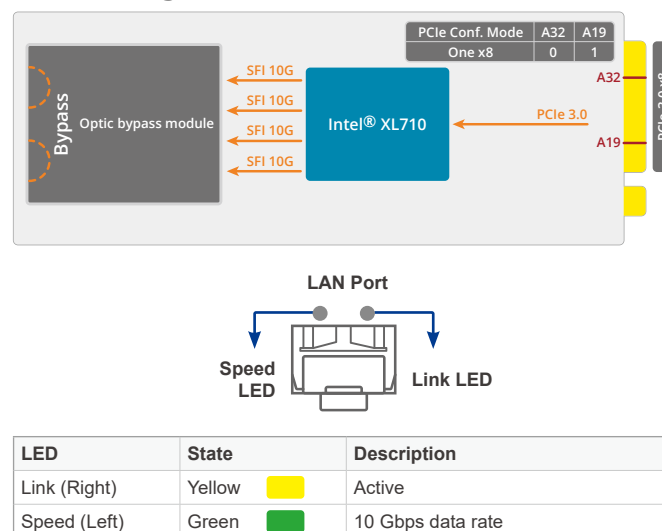
Packing List

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

Dimensions (Unit: mm)



Block Diagram



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

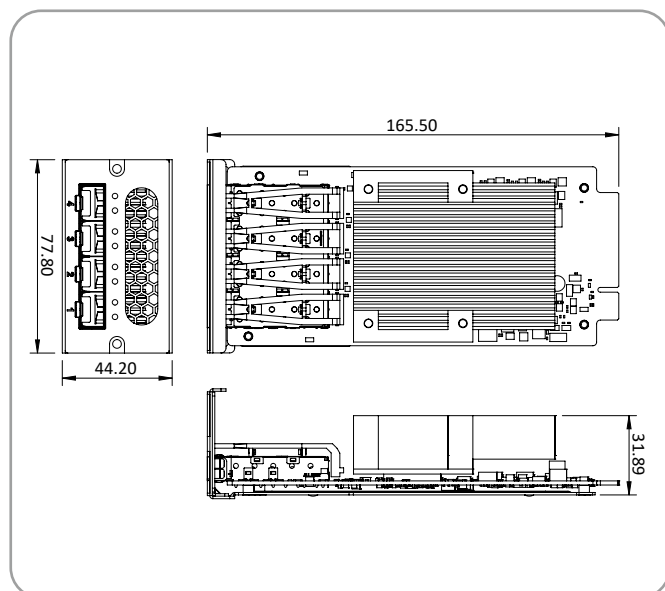
Ordering Information

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 x4 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 x4 Interface, RoHS.

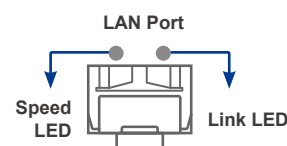
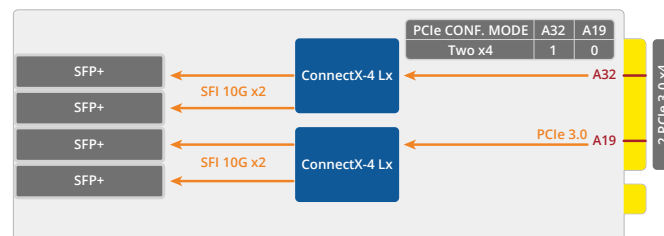
Packing List

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

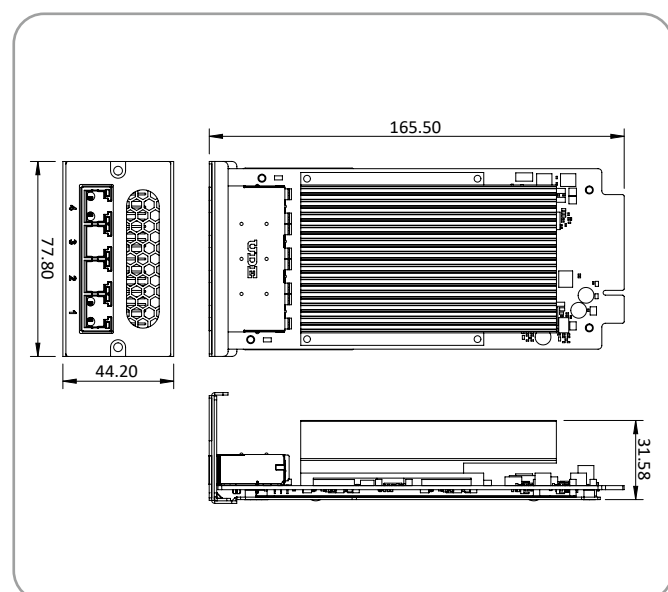
Ordering Information

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

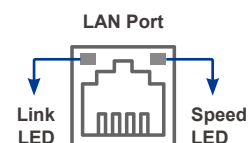
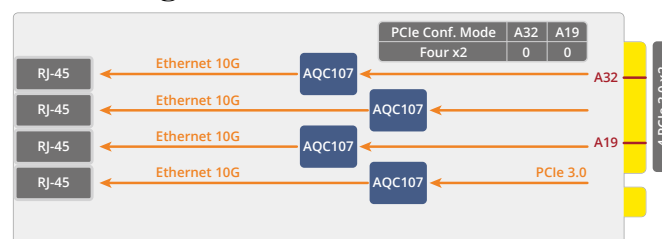
Packing List

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 data rate
	Orange	5 Gbps/1 Gbps/ 100 Mbps data rate

PuIM-1G4SF-I350

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



Features

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

Specifications

Model Name	PuIM-1G4SF-I350		PuIM-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

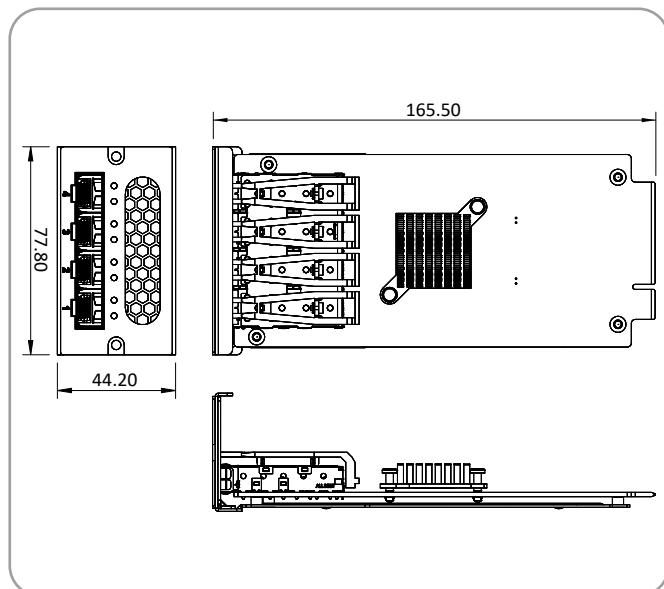
Ordering Information

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

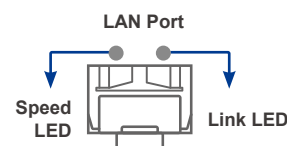
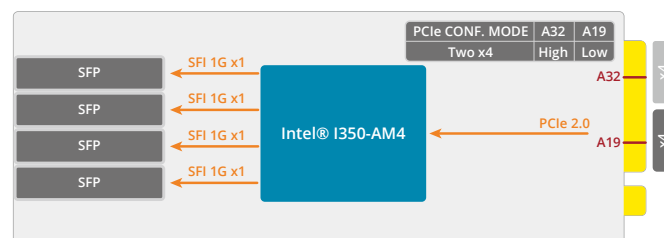
Packing List

Part No.	L-shaped T10 PuIM Wrench	Torx Screws	QIG
PuIM-1G4SF-I350-R10	1	2	1
PuIM-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

PuIM-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	PuIM-1G8SF-I350		PuIM-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

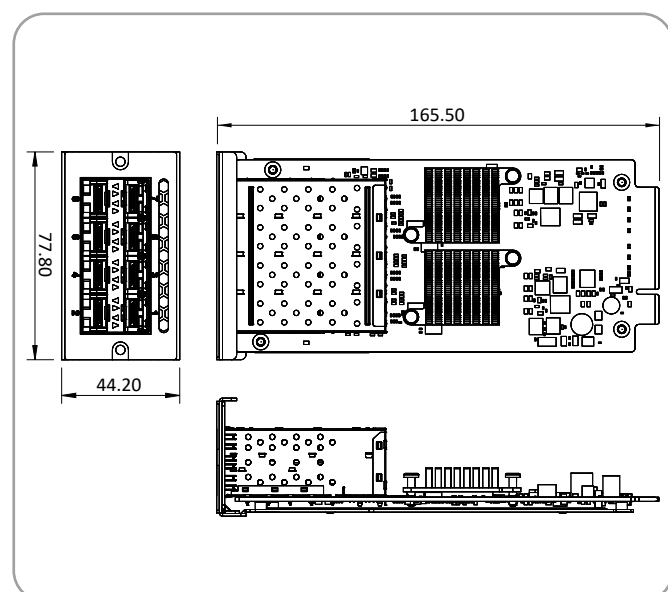
Ordering Information

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

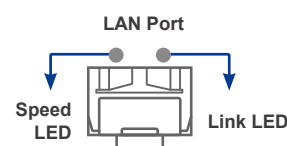
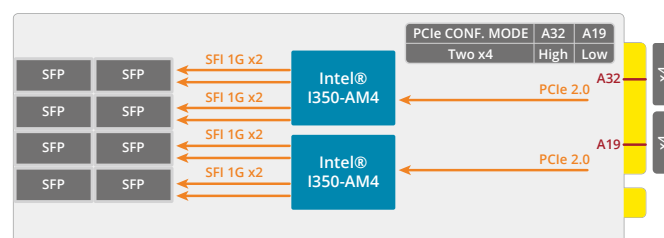
Packing List

Part No.	L-shaped T10 PuIM Wrench	Torx Screws	QIG
PuIM-1G8SF-I350-R10	1	2	1
PuIM-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

PuIM-1G4T-I211

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



▲ PuIM-1G4T-I211

▲ PuIM-1G4T-I211-BP

Features

- 4 x Intel® I211-AT Ethernet Controller
- 4 x RJ-45 connector
- 4 PCIe 2.0 x2
- LAN bypass (PuIM-1G4T-I211-BP)
- RoHS compliant

Specifications

Model Name	PuIM-1G4T-I211	PuIM-1G4T-I211-BP
Form Factor	IEI Networking Module - PuIM	
NIC	Intel® I211-AT Ethernet Controller	
LAN Bypass	No	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	

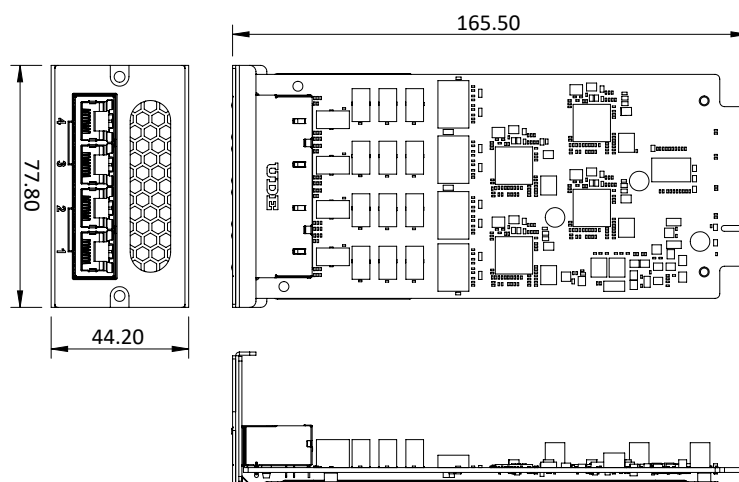
Ordering Information

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

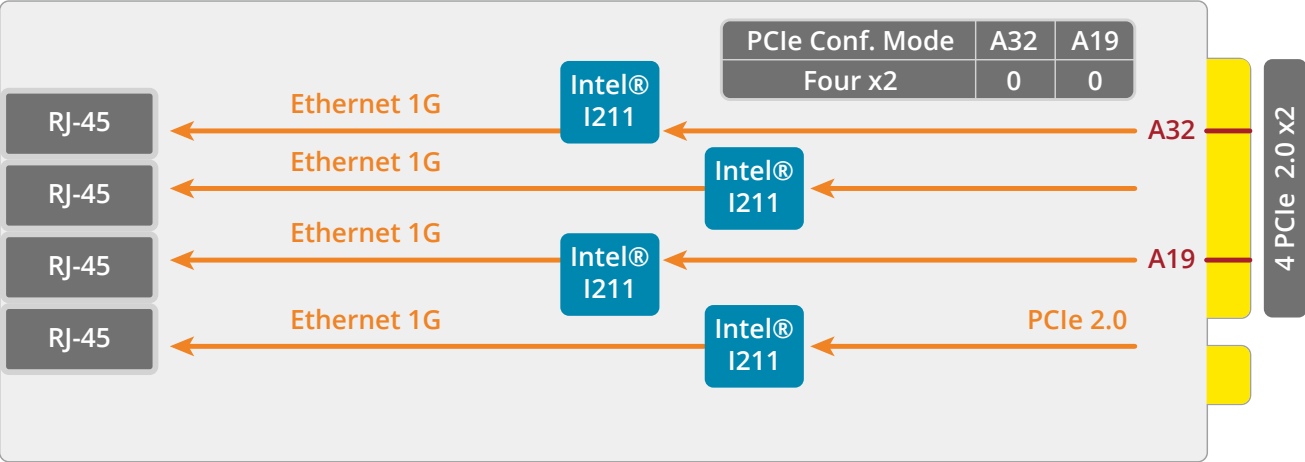
Part No.	L-shaped T10 PuIM Wrench	Torx Screws	QIG
PuIM-1G4T-I211-R10	1	2	1
PuIM-1G4T-I211-BP-R10	1	2	1

Dimensions (Unit: mm)

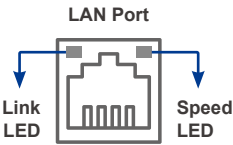
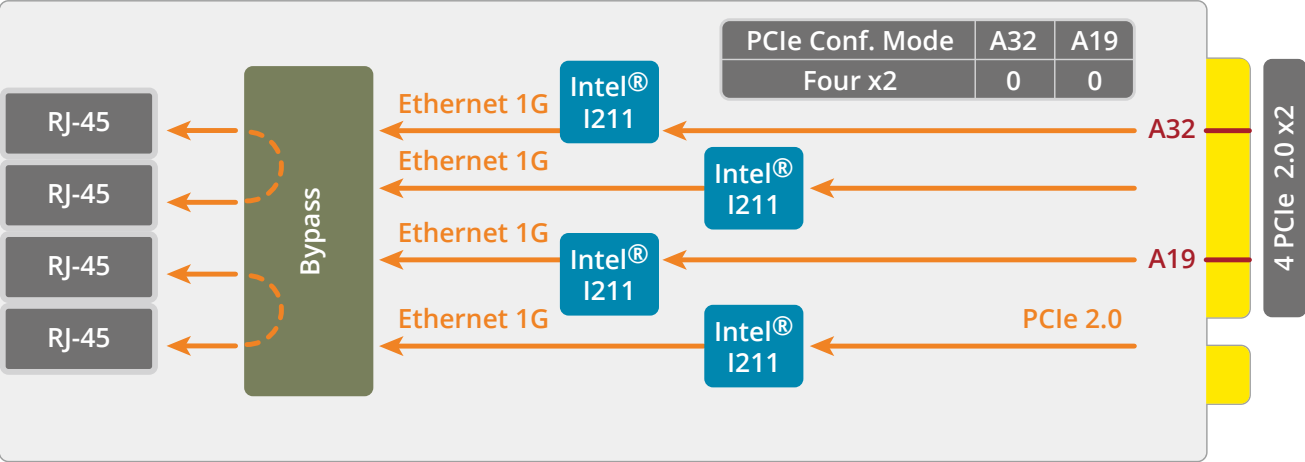


Block Diagram

▼ PuIM-1G4T-I211 Block Diagram



▼ PuIM-1G4T-I211-BP 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-I211-BP)

PuIM-1G4T-I350

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

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

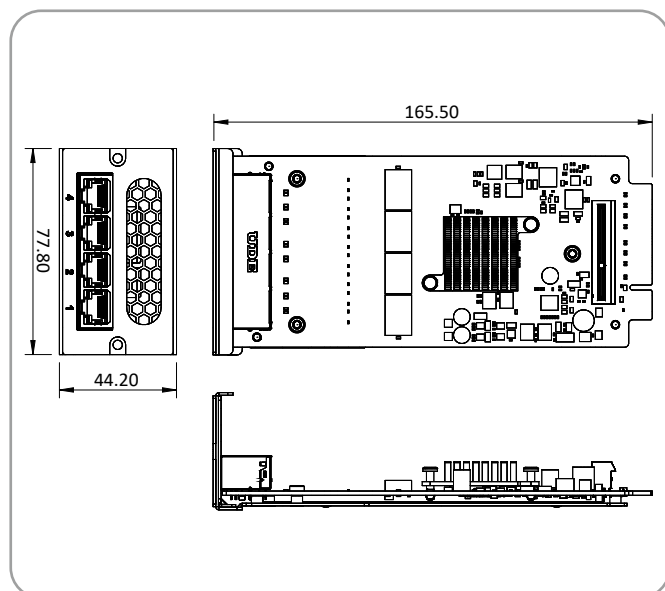
Ordering Information

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.

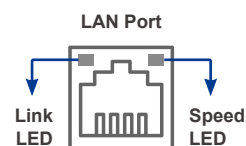
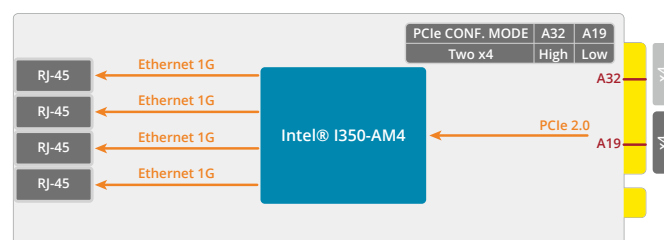
Packing List

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)



Block Diagram



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

PulM-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 PCIe 2.0 x4
- LAN Bypass
- CE / FCC / RoHS compliant

Specifications

Model Name	PulM-1G4T-I350-BP		PulM-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

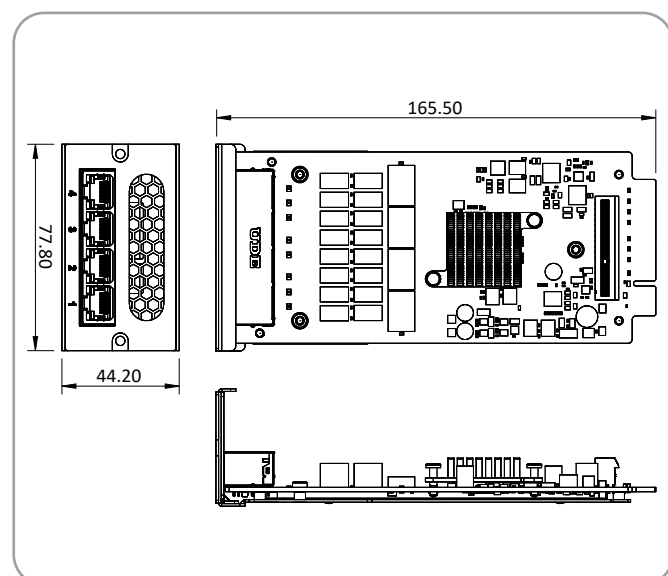
Ordering Information

Part No.	Description
PulM-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.
PulM-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.

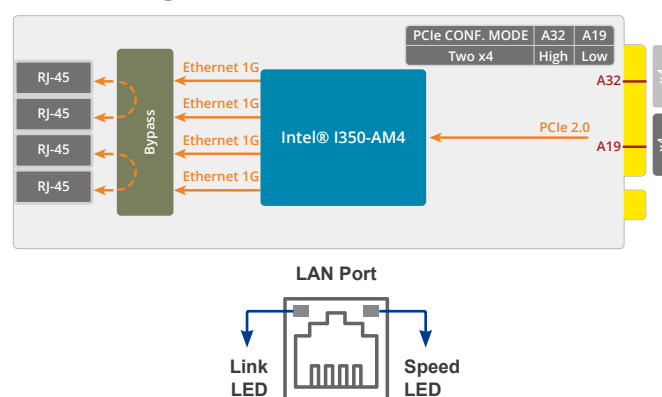
Packing List

Part No.	L-shaped T10 PulM Wrench	Torx Screws	QIG
PulM-1G4T-I350-BP-R10	1	2	1
PulM-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

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



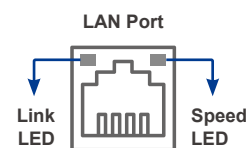
- 2 x Intel® Ethernet Controller I350-AM4
- 8 x GbE RJ45 connectors
- 2 PCIe2.0 x4
- CE / FCC / RoHS compliant

Model Name	PulM-1G8T-I350		PulM-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

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.

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

The diagram illustrates the Intel® I350-AM4 network interface card (NIC) and its connections. The NIC is shown with six RJ-45 ports (labeled RJ-45) and two Ethernet 1G x4 ports (labeled Ethernet 1G x4). It also features two PCIe 2.0 ports (labeled PCIe 2.0) and a PCIe CONF. MODE switch (labeled PCIe CONF. MODE) with positions for Two x4, A32, and A19. The diagram shows the NIC connected to a system with two Intel® I350-AM4 NICs and a PCIe connector.



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

PulM-1G8T-I350-BP

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



Features

- 2 x Intel® Ethernet Controller I350-AM4
- 8 x GbE RJ45 connectors
- 2 PCIe 2.0 x4
- LAN Bypass (by sku)
- CE / FCC / RoHS compliant

Specifications

Model Name	PulM-1G8T-I350-BP		PulM-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

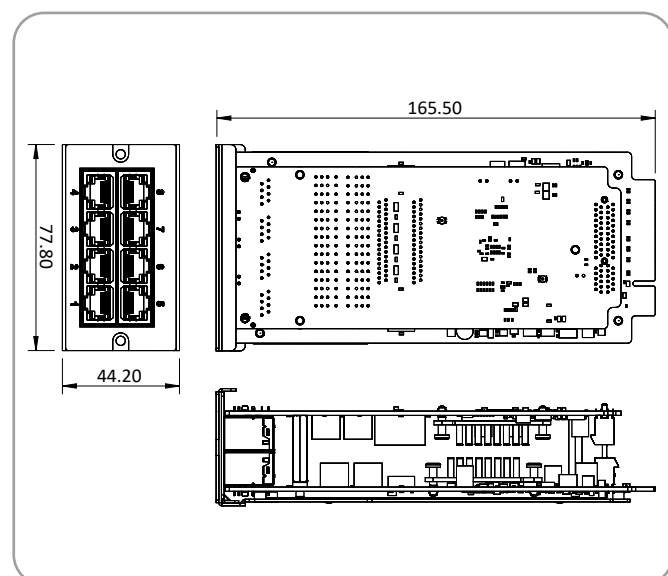
Ordering Information

Part No.	Description
PulM-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
PulM-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

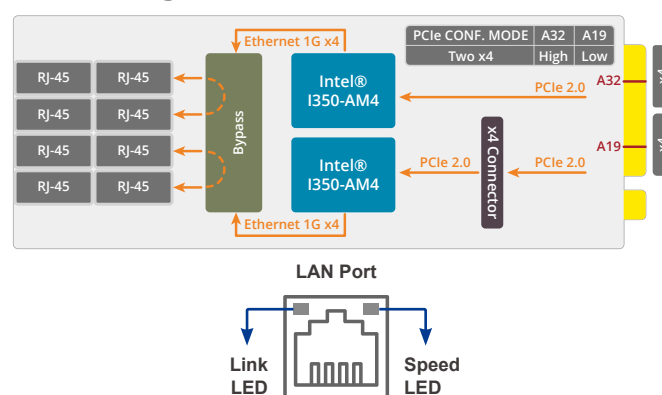
Packing List

Part No.	L-shaped T10 PulM Wrench	Torx Screws	QIG
PulM-1G8T-I350-BP-R10	1	2	1
PulM-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

PuIM-2P1M

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



Features

- Supports 2 x PCIe mini and 1 x 2230/2242 M.2 B key
- Mini PCIe and M.2 with SIM card slots
- 2 PCIe 3.0 x4
- RoHS compliant

Specifications

Model Name	PuIM-2P1M	
Interface	IEI Networking Module - PuIM	
Onboard IC	ASM1812 (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 Device	PUZZLE-IN001 PUZZLE-IN001A PUZZLE-IN004	PUZZLE-A001 PUZZLE-A001A

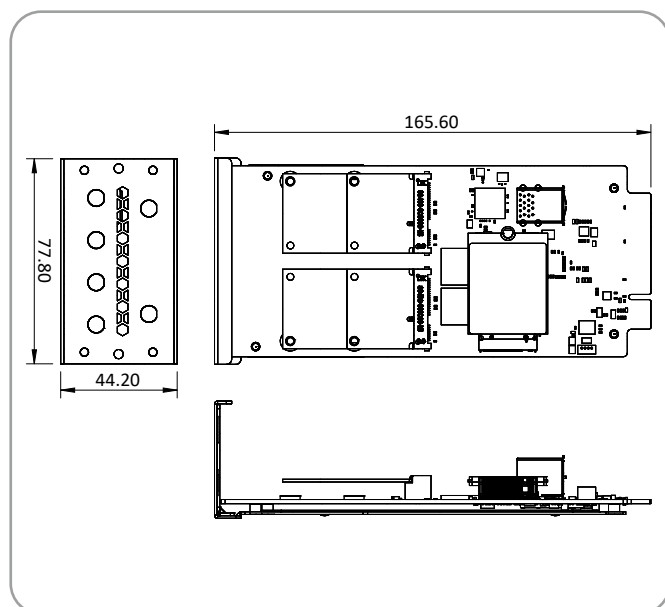
Ordering Information

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

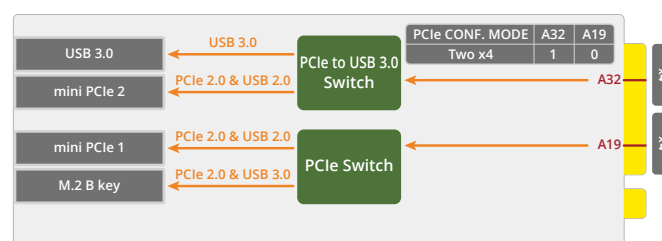
Packing List

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

Dimensions (Unit: mm)



Block Diagram



PuIM-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



Features

- Supports two M.2 2280 PCIe NVMe (3.0 x4) SSDs
- M.2 SSD temperature is monitored in real time by sensor IC
- 2 PCIe 3.0 x4
- LED indicator shows the M.2 status
- RoHS compliant

Specifications

Model Name	PuIM-M2-2S	
Interface	IEI Networking Module - PuIM	
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

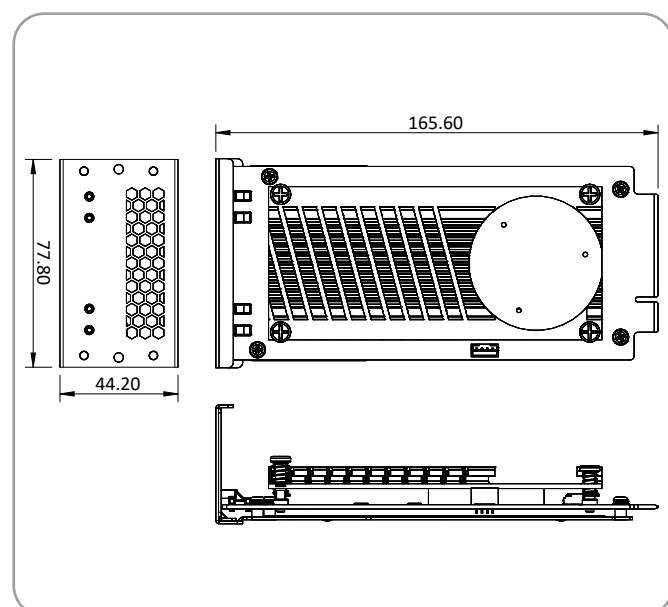
Ordering Information

Part No.	Description
PuIM-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

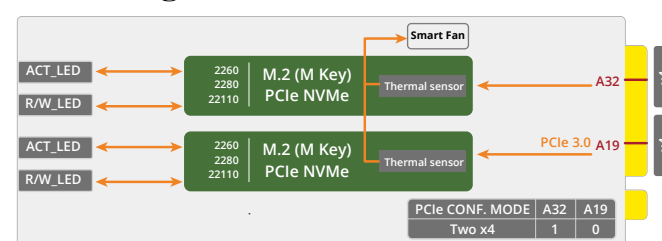
Packing List

Part No.	L-shaped T10 PuIM Wrench	Thermal Pad kit	Torx Screws	M.2 SSD Screw	QIG
PuIM-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



Features

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

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

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
------------------------	---------

Dimensions (Unit: mm)

