

# IEI PUZZLE Dev. Kit

## Intel® CERA Design



Equipped with Intel® Xeon® Processor D-2100 series (Skylake-D) with Quad-channels DDR4, four port 10GbE SFP+, one Mustang-V100-MX8 and OpenNESS software, the PUZZLE Dev. Kit enables highly optimized and performant edge platforms to on-board and manage applications and network functions with cloud-like agility, and it eases edge platform development and deployment.



## IEI PUZZLE Dev. Kit is intended for the following types of developers



### Service Providers

Communication Service Providers (CoSP), Cloud Service Providers (CSP), Managed Service Providers (MSP) and Enterprise.



### Edge Builder

Independent Software Vendors, Original Equipment Manufacturers, System Integrators



### App/Services Developers

Network Function vendors, Enterprise/ Cloud/ IoT App vendors

# IEI PUZZLE Dev. Kit



## Features

- Intel® Xeon D-2100 series processor (Skylake-D) with optional Intel® QAT
- 8 x 288-pin RDIMM DDR4 2666MHz, RDIMM up to 256GB / LRDIMM up to 512GB
- Pre-install Mustang-V100-MX8 Intel VPU acceleration card
- Support 1x PuIM modules support 1GbE, 10GbE or 25GbE.
- Pre-installed CentOS & Open Network Edge Services Software (OpenNess) & Neural Network Optimization (OpenVINO™) toolkit
- Also available as Intel Select Solution for uCPE
- Also available as Intel® Select Solutions for uCPE for ADVA



## Specifications

		PUZZLE-IN004-XD1	PUZZLE-IN004-XD4
Platform	Form Factor	1U	
	CPU	Intel® Xeon® D-2145NT processor 8-core, 11M cache, 1.90 GHz	Intel® Xeon® D-2177NT processor 14-core, 19.25M cache, 1.90 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 Sockets	
	System Memory	Pre-install 64GB (four 16GB) DDR4	Pre-install 128GB (eight 16GB) DDR4
Network and Security	Network Acceleration and Security Function	<ul style="list-style-type: none"> <li>• Intel® AES New Instructions</li> <li>• Intel® Software Guard Extensions (Intel® SGX)</li> <li>• Intel® Memory Protection Extensions (Intel® MPX)</li> <li>• Intel® Trusted Execution Technology</li> </ul>	
	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 RJ-45 LAN ports	
	Network Module Slot	1 x PuIM module slot	
Expansion Slot	PCIe Slot	Pre-install Intel® VPU acceleration card, Mustang-V100-MX8	
	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) (2 x 2.5" 512MB SSD pre-installed) (RAID 0/1 support)	
External I/O	USB	1 x USB 2.0 / 1 x USB 3.2 Gen 1	
	Console	1 x RJ-45	
Power and Mechanical	Power Switch	1 x Power switch	
	Reset Button	1 x Reset button	
	Power Input	100 V ~ 240 V	
	Type/Watt	Redundant power 300W, 90V~264V AC	
	Processor Cooling	1 x Passive CPU heatsink	
	System Cooling	3 x Cooling fans with smart fan	
	Antenna Hole	1 x Antenna hole	
Physical and Environmental	Storage Temperature	-20°C ~ 75°C (-4°F ~ 167°F)	
	Operating Temperature	0°C ~ 40°C (32°F ~ 104°F)	
	Operating Humidity	Relative humidity: 5% ~ 90% non-condensing	
	Dimensions (W x L x H) (mm)	430 x 426 x 44.2	
	Weight	7 kg	
OS and Certifications	Certification	CE/FCC	
	Operating System	Pre-installed CentOS & Open Network Edge Services Software (OpenNess) & Neural Network Optimization (OpenVINO™) toolkit	
Indicators	LCM	LCM, 2 buttons	
	LED	Power status, Storage status, Alert LED	

## Ordering Information

Part No.	Description
<b>PUZZLE-IN004-XD1/64G/V/R-R10</b>	1U Rackmount Network Appliance with Intel® Xeon® D-2145NT (Up to 3.00 GHz, 8-Core, TDP 65W) Processor, four 64GB (four 16GB) DDR4, 1T (two 512GB) SSD, eight 1GbE, four 10 GbE with one Mustang-V100-MX8, RoHS
<b>PUZZLE-IN004-XD4/128G/V/R-R10</b>	1U Rackmount Network Appliance with Intel® Xeon® D-2177NT (Up to 3.00 GHz, 14-Core, TDP 105W) Processor, 128GB (eight 16GB) DDR4, 1T (two 512GB) SSD, eight 1GbE, four 10 GbE with one Mustang-V100-MX8, RoHS

## AI Accelerator Card Options

Part No.	Description
<b>Mustang-V100-MX8-R11</b>	Computing Accelerator Card with 8 Movidius™ Myriad™ X MA2485 VPU, PCIe 2.0 x4
<b>Mustang-V100-MX4-R10</b>	Computing Accelerator Card with 4 Intel® Movidius™ Myriad™ X MA2485 VPU, PCIe 2.0 x2 interface
<b>Mustang-M2BM-MX2-R10</b>	Deep learning inference accelerating M.2 2280 B/M key card with 2 Intel® Movidius™ Myriad™ X MA2485 VPU

## PuIM Series NIC Card Options

Part No.	Description
<b>PuIM-10G4SF-XL710-R10</b>	Intel® Ethernet Controller XL710-BM1 based Network Interface Card with 4 x SFP+ by 1 PCIe 3.0 x 8 interface, RoHS
<b>PuIM-10G2SF-X710-R10</b>	Intel® Ethernet Controller X710-BM2 based Network Interface Card with 2x SFP+ by 1 PCIe 3.0 x 8 interface, RoHS
<b>PuIM-1G4T-I350-R10</b>	Intel® Ethernet Controller I350-AM4 based Network Interface Card with 4 x RJ-45 by 2 PCIe 2.0 x4 interface, RoHS
<b>PuIM-1G4T-I350-BP-R10</b>	Intel® Ethernet Controller I350-AM4 based Network Interface Card with 4 x RJ-45 by 2 PCIe 2.0 x4 with bypass interface, RoHS
<b>PuIM-1G8T-I350-R10</b>	Intel® Ethernet Controller I350-AM4 based Network Interface Card with 8 x RJ-45 by 2 PCIe 2.0 x4 interface, RoHS
<b>PuIM-1G8T-I350-BP-R10</b>	Intel® Ethernet Controller I350-AM4 based Network Interface Card with 8 x RJ-45 by 2 PCIe 2.0 x4 with bypass interface, RoHS
<b>PuIM-1G4SF-I350-R10</b>	Intel® Ethernet Controller I350-AM4 based Network Interface Card with 4 x SFP by 2 PCIe 2.0 x4 interface, RoHS
<b>PuIM-1G8SF-I350-R10</b>	Intel® Ethernet Controller I350-AM4 based Network Interface Card with 8 x SFP by 2 PCIe 2.0 x4 interface, RoHS

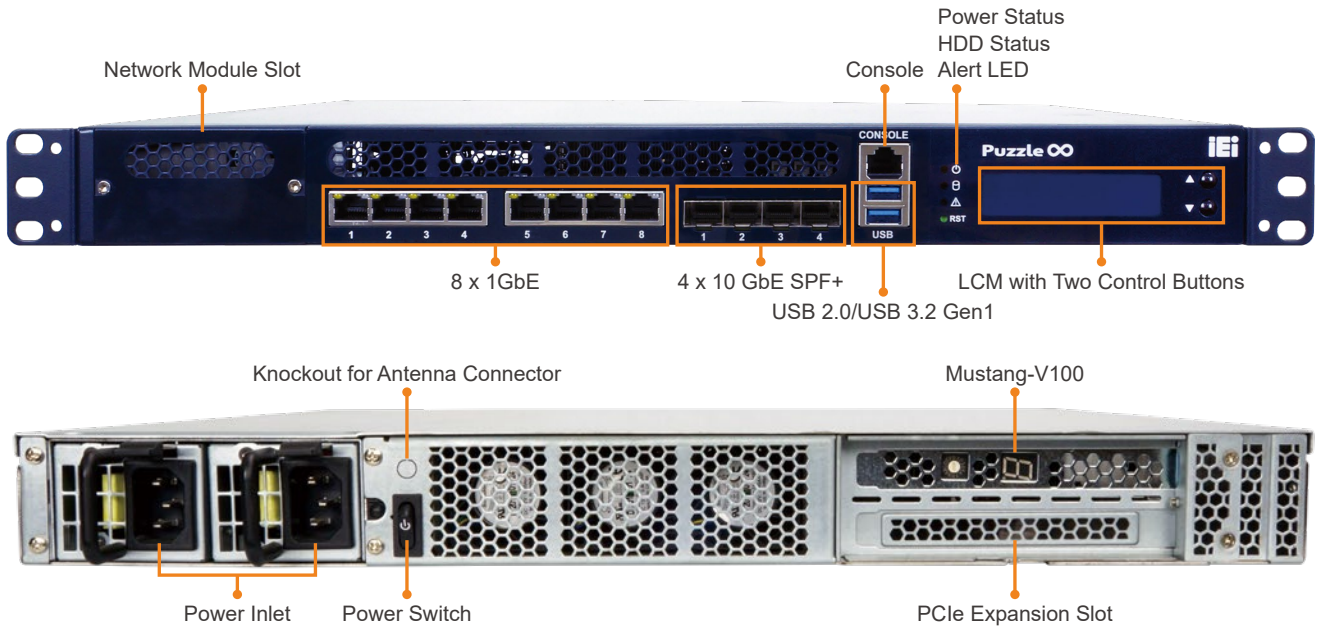
## Options

Part No.	Description
RAIL-B02	Rail kit for PUZZLE-IN004 Dev.Kit (for rackmount)
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
32005-005100-100-RS	Round cable, RS-232/422/485, PUZZLE RS-232 cable, 2, 500MM, 24AWG; (A) D-SUB 9P MALE+#4-40 Screw, (B) RJ-45 plug 8P8C, ONE PCS PKG, TC&C, RoHS
27563-000001-RS	LTE/WCDMA, HSPA+, Fibocom, L860-GL-00, INTEL XMM7560, PCI-E Interface, L860-GL (LTE, CAT16, M.2), Typical 3.3V, CCL, RoHS

## Packing List

2 x Power cord	1 x USB to console cable
2 x Rack mounting ears	RS-232 to console cable (option)
6 x Screws for rack mounting ears	Slide rail (option)

I/O Interface



Dimensions (Unit: mm)

