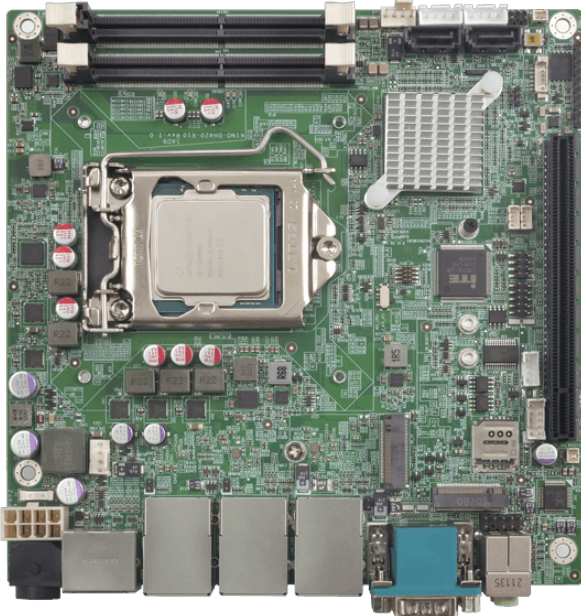


# KINO-DH420

Mini-ITX SBC supports LGA1200 Intel® 10th Generation Core™ i9/i7/i5/i3/ Pentium®/Celeron® processor, DDR4, dual independent displays, triple 2.5 GbE LAN, M.2, SATA 6Gb/s, HD Audio and RoHS



## Features

1. LGA1200 Intel® 10th Generation Core™ i9/i7/i5/i3, Celeron® and Pentium® processor
2. Support triple Intel® 2.5Gb Ethernet controller
3. Support HDMI™, DP display output
4. Support 1 x PCIe Gen3 x16, 1 x M.2 A key, 1 x M.2 B key expansion

## Specifications

<b>Form Factor</b>	
Form Factor	Mini-ITX Motherboard
<b>System</b>	
CPU	LGA1200 Intel® 10th Generation Core™ i9/i7/i5/i3, Celeron® and Pentium® processor
Chipset	Intel® H420E
Memory	Two 260-pin 2933 MHz Dual-Channel DDR4 SO-DIMMs supported up to 64GB
Memory Max.	up to 64GB
Cooling method / System Fan	1 x CPU fan connector (1x4 pin) 2 x System fan connector (1x4 pin)
<b>Physical Characteristics</b>	
Dimensions (LxWxH) (mm)	170mm x 170mm
Net Weight	400g
<b>Storage</b>	
Storage	2 x SATA : 6Gb/s (no RAID) 1 x M.2(NGFF) : B key (support NVME storage)
<b>I/O Interface</b>	
Display Output	1 x HDMI™ up to 4096 x 2160 @30Hz 1 x Display Port up to 4096 x 2304 @60Hz
Ethernet	3 x LAN - LAN1: Intel® i225LM GbE controller (colay i225v) LAN2: Intel® i225v GbE controller (colay i225LM) LAN3: Intel® i225v GbE controller (colay i225LM)
Audio	1 x Line out 1 x Mic 1 x Front Audio : 2x5 pin 1 x HD Audio : Realtek ALC888S HD codec
I/O Interface	2 x External RS-232 1 x Internal RS-232 : 2x5 pin, P=2.00

	1 x Internal RS-422/485 : RS-485 support AFC
	2 x External USB 2.0 : Type-A
	4 x External USB 3.2 Gen1x1 : 5Gb/s(Type-A)
	2 x Internal USB 2.0 : 2x4 pin, P=2.00
	1 x DIO : 8-bit digital I/O (2x5 pin)
Expansion	1 x PCIe x16
	2 x M.2(NGFF) - 1 x M.2 A key (2230) (PCIe Gen 3 x1/USB 2.0) 1 x M.2 B key (3042/3052/2242/2280) w/ SIM holder (PCIe Gen 3 x2/USB 2.0)
<b>Other Features</b>	
TPM	Intel® PTT(TPM 2.0)
<b>Power</b>	
Power Consumption	12V@12.408A (Intel® Core™ i9-10900E CPU with two 32 GB 2933 MHz DDR4 memory, EuP/ErP mode disabled)
Power Supply	DC 12V input
	1 x ATX power connector (2x4 pin)
	1 x DIN 4-pin DC Jack
	Support AT/ATX mode
	ErP/EuP Compliant
<b>Environment</b>	
Operating Temperature	0°C – 60°C
Storage Temperature	-30°C – 70°C
Humidity	5% ~ 95%, non-condensing
<b>Certifications</b>	
Safety & EMC	CE/FCC compliant

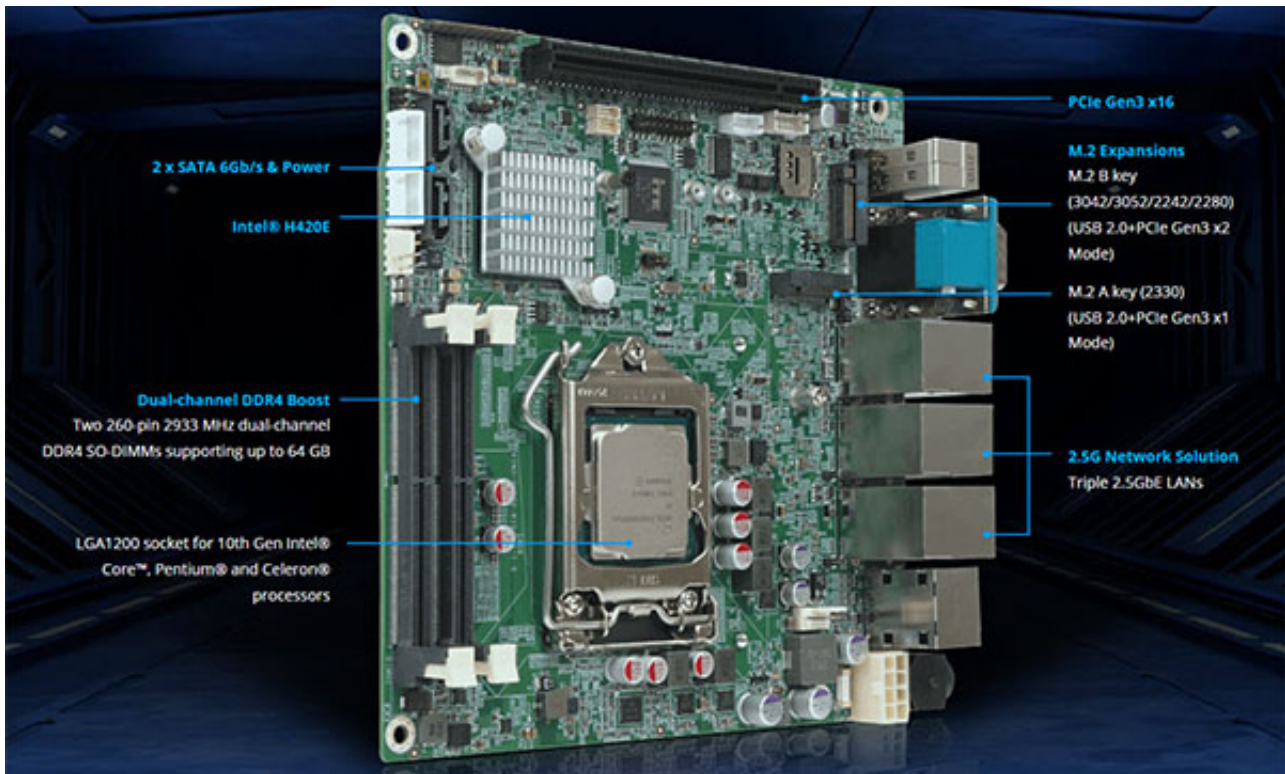
## Ordering Information

KINO-DH420-R10	Mini-ITX SBC supports LGA1200 Intel® 10th Generation Core™ i9/i7/i5/i3, Celeron® and Pentium® processor, DDR4, dual independent displays, triple 2.5GbE LAN, M.2, SATA 6Gb/s, HD Audio and RoHS
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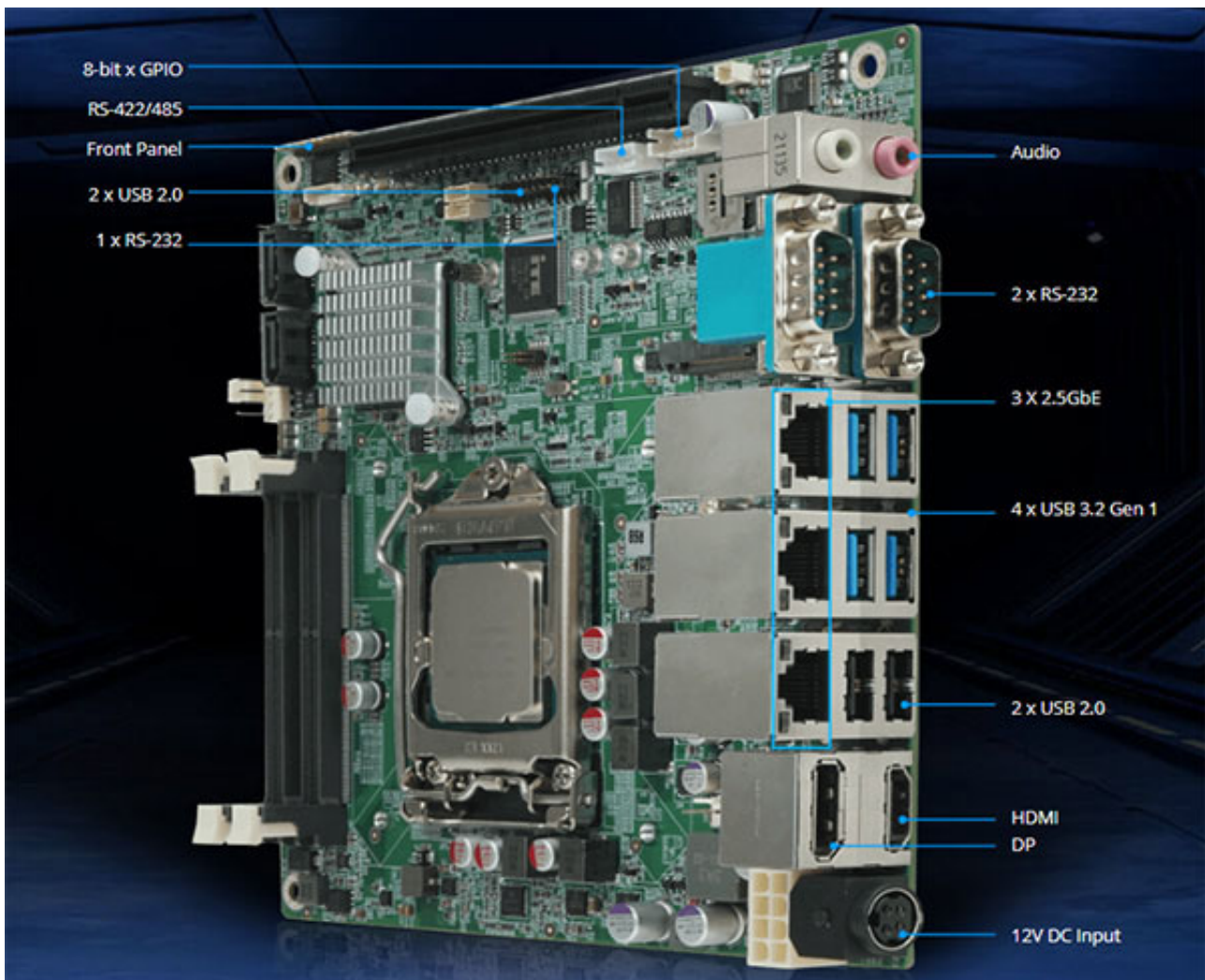
## Packing List

1 x KINO-DH420 single board computer	1 x SATA cable
1 x I/O shielding	1 x QIG

## High-speed Transmission and Expansions

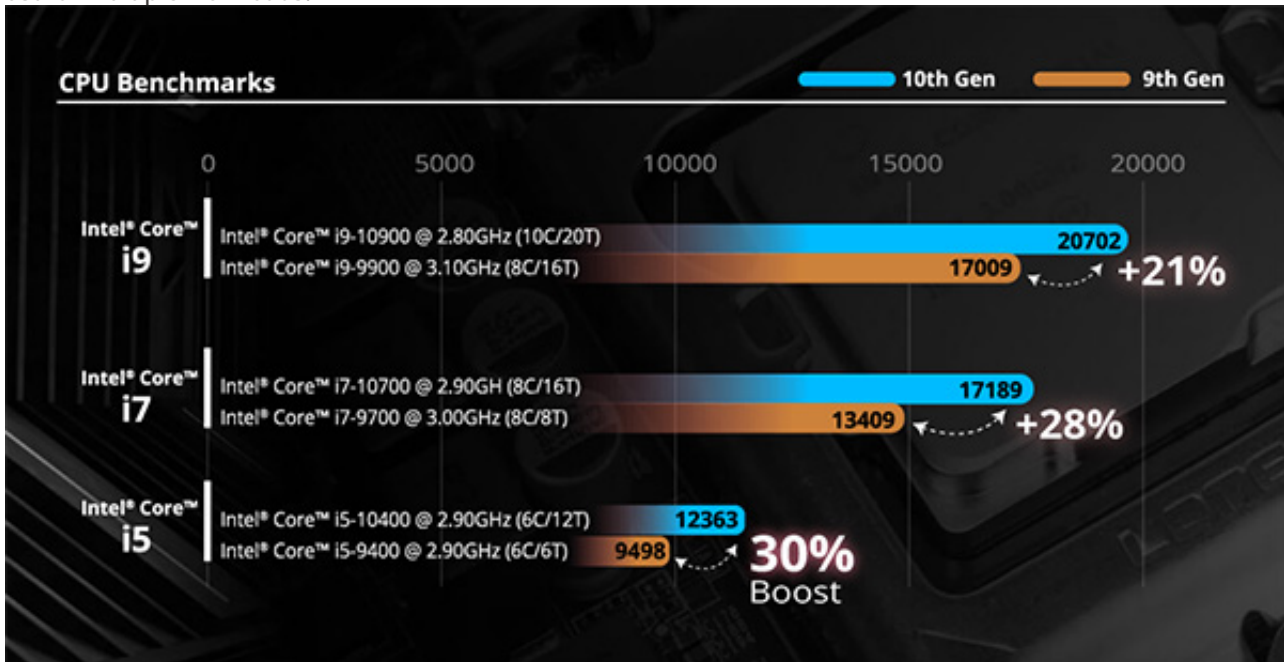


## Connectivity



## Enhanced Performance

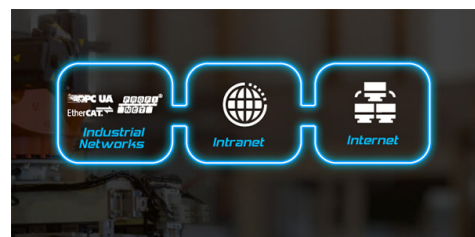
The performance boosts up to 80% better than previous generation on i5 processor. The 10th Gen Intel® Core platform supports up to 10 cores and improved performance over Coffee Lake-Refresh. With increased I/O capacity and the latest DDR4-2933 memory support, these processors deliver the performance required to consolidate industrial multiple workloads.



## High Speed Transmission

### Multi-tasking

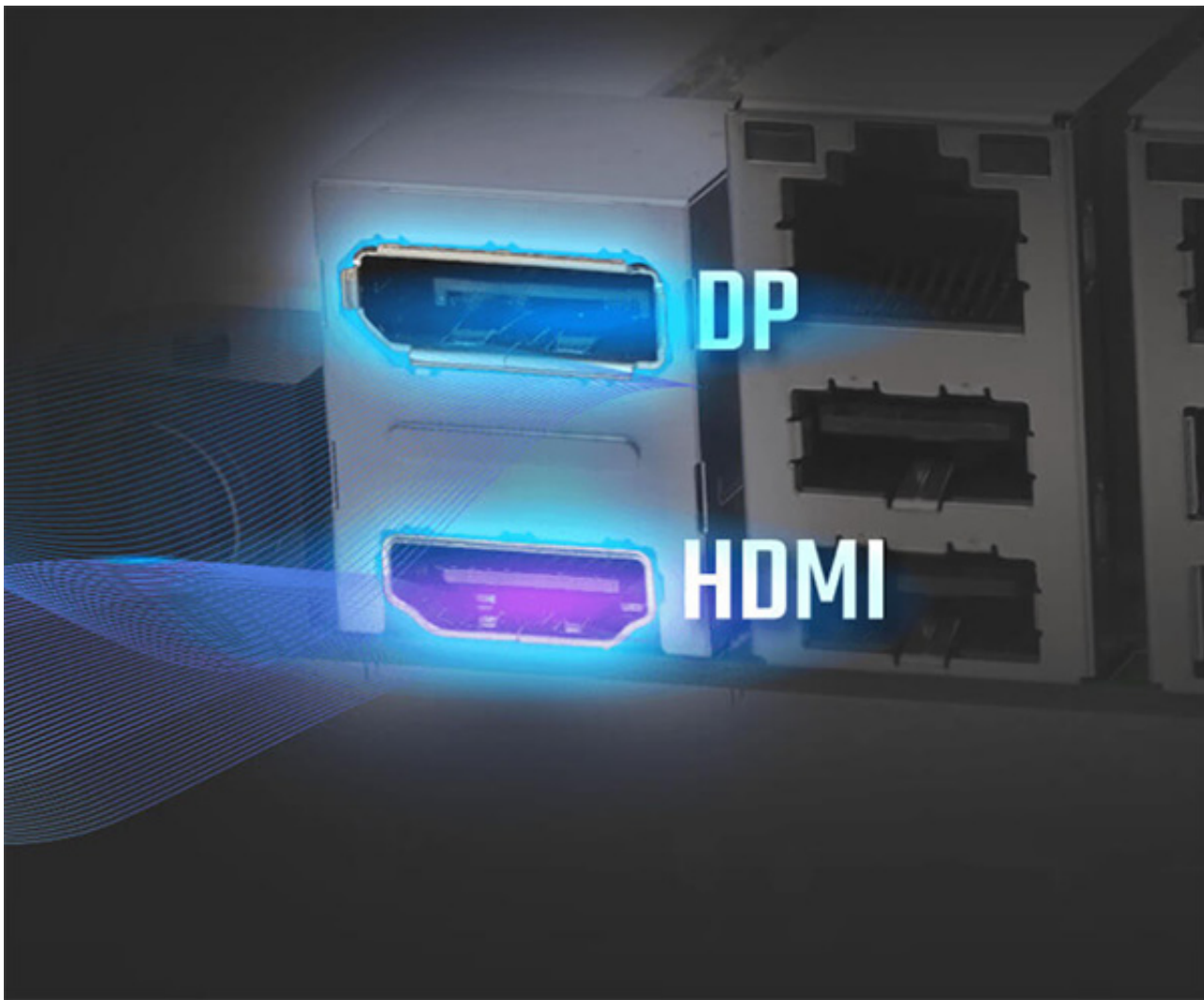
IEI KINO-DH420 features unprecedented network connectivity with three rear 2.5 Gigabit LAN ports, and it is small enough to fit into any space confined situations.



## Dual Independent Display

### Delivers HDMI™ + DP 4K Resolution for Real-time Monitoring

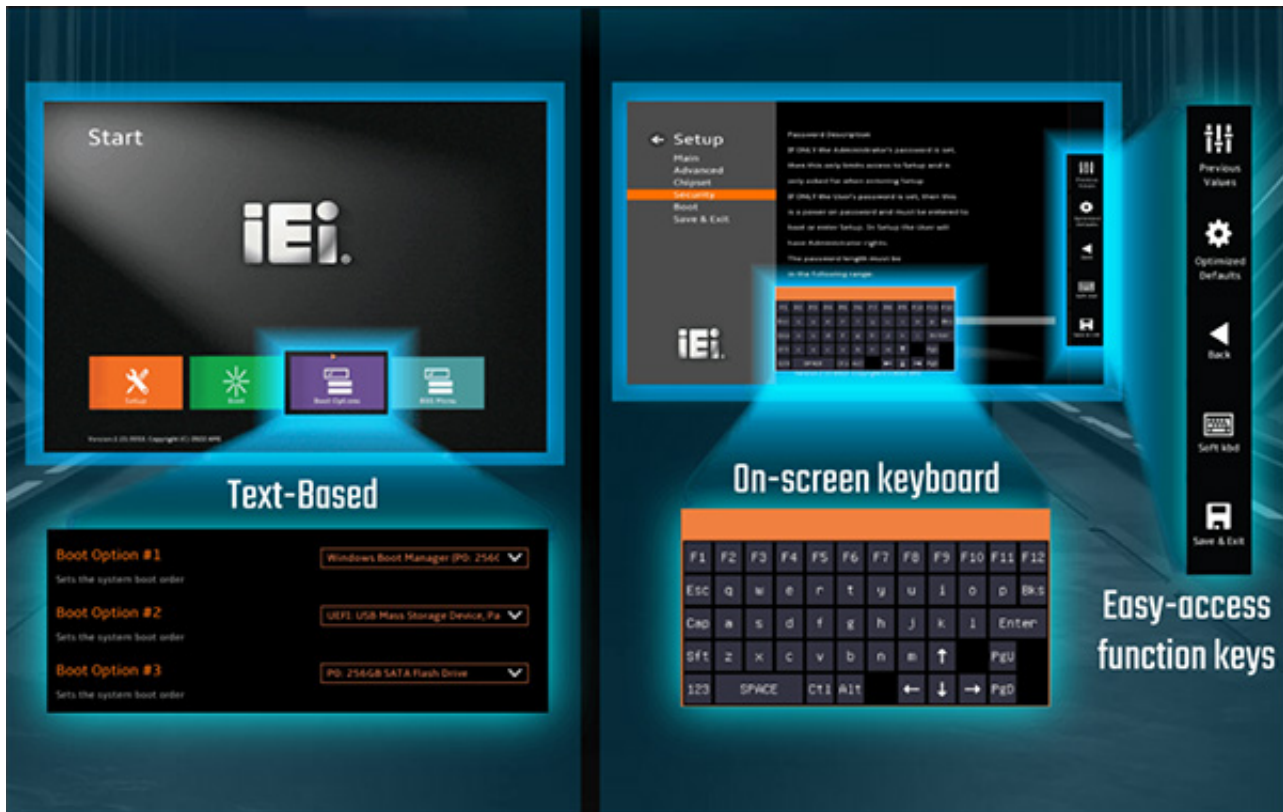
Running with Intel® UHD Graphics of 11th Gen processor at 800 MHz allows the system to display videos and images in stunning 4K resolution via HDMI™ 1.4b and DP 1.4 dual independent display. The enhanced visual quality responds the demand of high precision display.



## Touch-enabled BIOS

IEI's tBIOS allows users to navigate with finger on a touch-enabled monitor to make BIOS configuration easily.

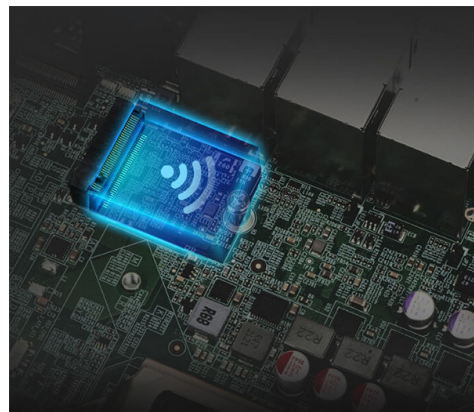




## Multiple Expansion Capabilities

### M.2 2230 A Key for Wi-Fi / Bluetooth

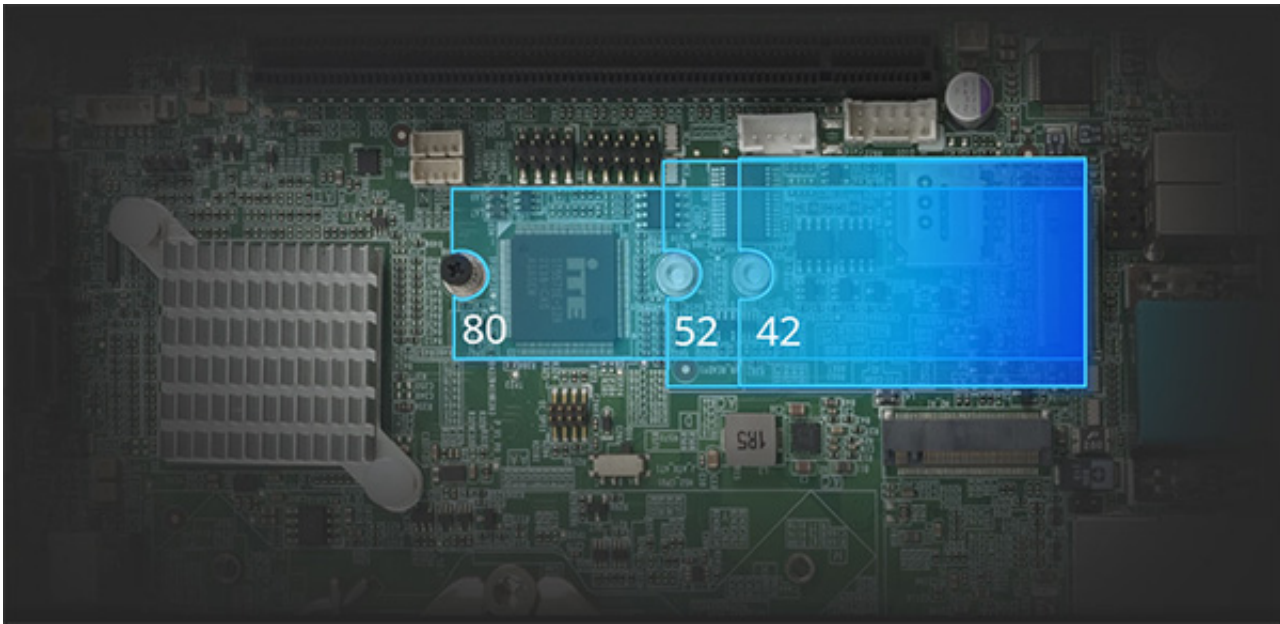
The M.2 2230 A key slot carrying with PCIe Gen3 x1 and USB 2.0 signals allows it to adopt the latest Wi-Fi 6E technology. Wi-Fi 6E enhances low latency and supports service levels that are equivalent to 5G networks.



### Multi-functional M.2 B Key Slot

The KINO-DH420 also offers one M.2 3042/3052/2242/2280 B key socket supporting AI accelerator / NVMe SSD as well as SIM card slot for LTE deployment.

\*Among the following three options (A, B & C), only one function can be adopted.



### M.2 B Key (3042/3052) with SIM Slot for LTE Communications

The M.2 B key (3042/3052) socket supporting PCIe Gen3 x2 and USB 2.0 signals allows you to use a dedicated LTE radio frequency to ensure secure and delay-free data transmission in smart manufacturing.



### M.2 2242/2280 B Key for NVMe SSD

The M.2 2242/80 B key socket with PCI Gen3 x2 bandwidth supports up to 16Gbps data-transfer speeds. The sequential read/write speed is 2.5 times faster than SATA 6Gb/s. It's the perfect choice for installing an operating system or application drive to provide fast data access.



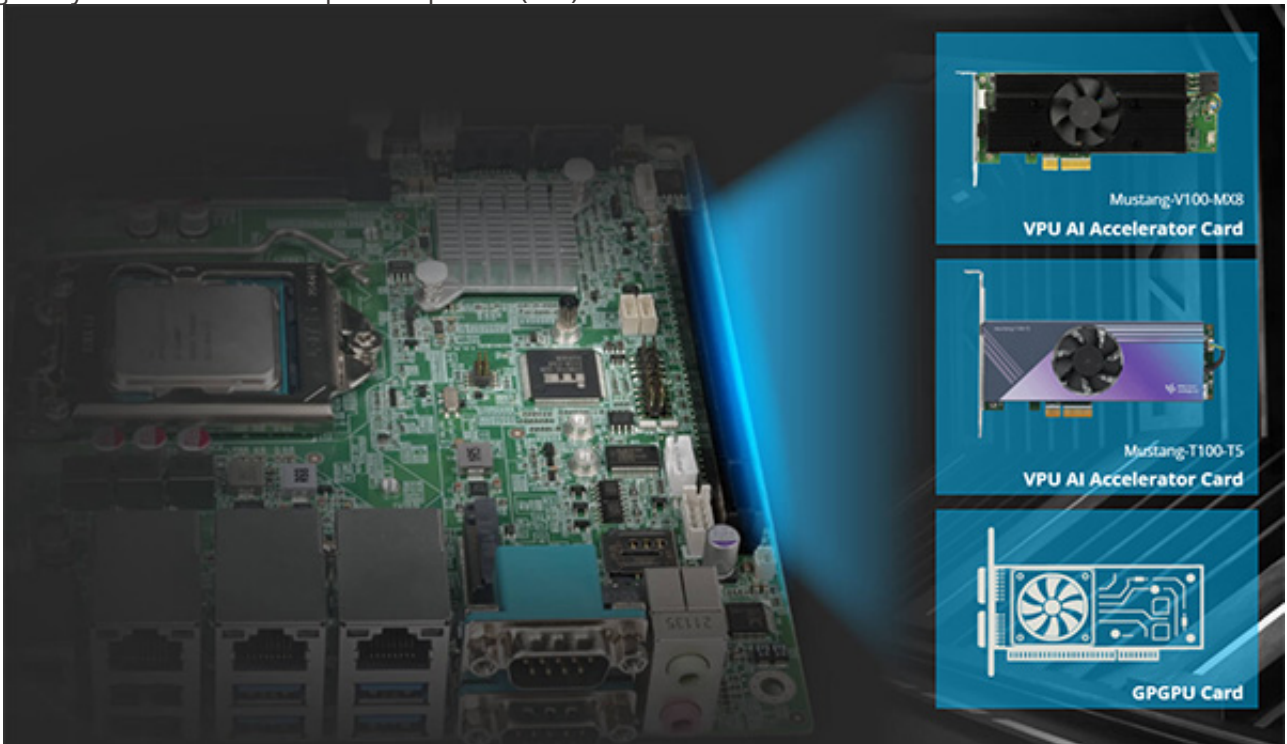
### M.2 2280 B Key Accelerates AI Deployment

With the M.2 2280 B-key socket and PCI Express® 3.0 x2 signals, system integrators could choose from IEI's Mustang-M2BM-MX2, AI accelerator card featuring the Intel® Movidius™ Myriad™ X VPU (Vision Processing Unit), and enhance all vision inference applications such as facial recognition, vehicle registration plate recognition, and many other machine vision applications.



### One PCIe Gen3 x16 Slot Easily Adds on GPGPU, AI Accelerator, Frame Grabber and More

The KINO-DH420 brings high performance industrial Edge with one PCIe x16 slot. This provides a greater range of support for GPGPU, frame grabber card and AI accelerators. It is designed for the most intensive applications from Edge AI system to automated optical inspection (AOI).



## Quality Assurance

With years of experience, IEI is continuously improving the design and production quality and aiming to achieve customer satisfaction.



