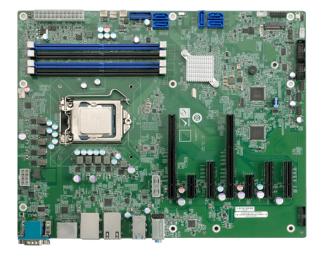


Ordenador integrado > Placas SBC > Placa CPU Industrial

# IMBA-Q471

ATX Motherboard Supports 10 th / 11 th Gen. LGA1200 Intel® Core™ i9/i7/i5/i3, Celeron® and Pentium® Processors, DDR4, Triple Independent Displays, Triple 2.5GbE, M.2, USB 3.2, SATA 6Gb/s, HD Audio and RoHS



#### **Features**

- 1. support HDMI, DP, VGA triple independent display output
- 2. support triple Intel® i225V 2.5GbE controller
- 3. support 2 x PCIe x16, 3 x PCIe x4, 2 x PCIe x1 and 1 x M.2 M key expansion slots
- 4. support 2 x USB 3.2 Gen2, 4 x USB 3.2 Gen1, 8 x USB 2.0, transfer rate up to  $10 \, \text{Gb/s}$
- 5. support 3 x RS-232, 1 x RS-232/422/485, 5 x SATA 6Gb/s connector

# **Specifications**

System								
CPU	10 th / 11 th Generation LGA1200 Intel® Core™ i9/i7/i5/i3, Celeron® and Pentium® process							
Chipset	Intel® Q470/Q470E							
Memory	Four 288-pin 2933 MHz dual-channel unbuffered DDR4 SDRAM DIMM slots, supporting up GB memory							
Memory Max.	up to 128 GB memory							
Cooling method / System Fan	1 x CPU fan connector (1x4 pin)							
	2 x System fan connector (1x3 pin)							
Storage								
Storage	1 x M.2(NGFF): M-key 2242/2280 (PCIe Gen3 x2, SATA)							
	5 x SATA: 6Gb/s (RAID 0/1/5/10 supported)							
I/O Interface								
Display Output	1 x Display Port: up to 4096 x 2304 @ 60 Hz							
	1 x HDMI: up to 4096 x 2304 @ 30 Hz							
	1 x VGA: up to 1920 x 1080 @ 60 Hz							
Ethernet	3 x LAN-							
	LAN1: Intel® I225V 2.5GbE controller							
	LAN2: Intel® I225V 2.5GbE controller							
	LAN3: Intel® I225V 2.5GbE controller							
Audio	1 x Front Audio: 2x5 pin, p=2.54							
	1 x HD Audio: Realtek ALC888S HD Audio codec supports 7.1-channel							
	1 x Line in(CD/DVD or other audio source input port)							
	1 x Line out(connect this port to headphone or speaker)							
	1 x Mic(connect this port to microphone)							
I/O Interface	1 x DIO: 12-bit digital I/O (2x7 pin, p=2.0)							
	1 x External RS-232: DB-9							
	2 x External USB 2.0: Type-A							
	2 x External USB 3.2 Gen1x1: 5Gb/s (Type-A)							
	2 x External USB 3.2 Gen2x1: 10Gb/s (Type-A)							
	2 x Internal RS-232: 2x5 pin, p=2.54							



	1 x Internal RS-422/485: 1x4 pin, p=2.0						
	6 x Internal USB 2.0: 2x4 pin, p=2.54						
	2 x Internal USB 3.2 Gen1x1: 2x10 pin, p=2.0						
Expansion	1 x M.2(NGFF): M-key 2242/2280 (PCIe x2, SATA)						
	2 x PCIe x1						
	2 x PCIe x16(x8 signal)						
	3 x PCIe x4						
Other Features							
TPM	Intel® PTT(TPM 2.0)						
Power							
Power Consumption	3.3V@1.1A, 5V@3.359A, 12V@2.18A, 5VSB@0.12A						
	(Intel® Core™ i5-10500TE CPU with four 8 GB 2933 MHz DDR4						
	DIMMs)						
Power Supply	ATX/AT power supply						
	Support AT/ATX mode						
	ErP/EuP compliant						
Environment							
Operating Temperature	0°C ~ 60°C						
Storage Temperature	-30°C ~ 70°C						

# **Ordering Information**

,	ATX motherboard supports LGA1200 Intel® 10th/11th Generation Core ™ i9/i7/i5/i3, Celeron® and Pentium® processor, DDR4, triple independent displays, triple 2.5GbE LAN, pure PCIe
	slots , M.2, USB 3.2, SATA 6Gb/s, HD Audio and RoHS

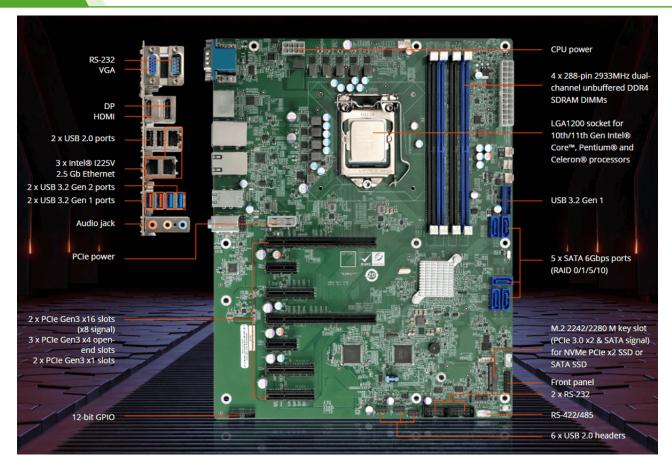
# Packing List

1 x IMBA-Q471 single board computer	2 x SATA cable				
1 x I/O shielding	1 x QIG				

# Built for High-performance Edge AI



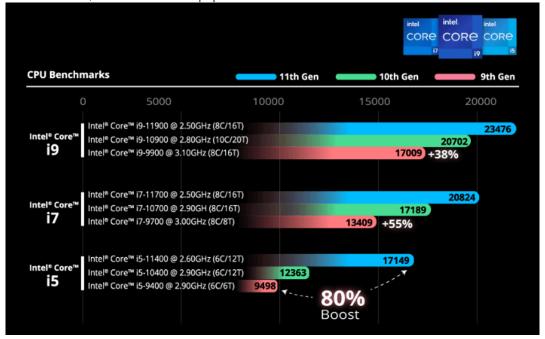




# **Enhanced CPU and Graphics Performance**

#### 10th Gen/11th Gen Intel® Core Processors

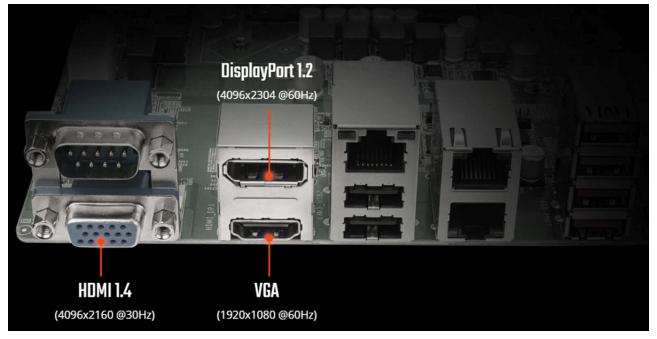
IEI's IMBA-Q471 motherboard supports both 10th and 11th Gen Intel® Core processors, and the performance boosts up to 80% better than the 9th Gen i5 processor. The 10th Gen Intel® Core platform supports up to 10 cores and improved performance over Coffee Lake-Refresh. With increased I/O capacity and the latest DDR4-2933 memory support, these processors deliver the performance required to consolidate industrial multiple workloads. Because of the above features, the IMBA-Q471 is suitable for edge computing, industrial automation, medical equipment, machine vision, automated test equipment and much more.







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Sockets	Brand	Process	Cores/Threads	СРИ	Processor Base Frequency	Cache	TDP	Processor Graphics	Graphics Base Frequency	Memory Types	Chipset
	CTM:0	CoreTM i9	10/20	19-10900E	2.8 GHz	20MB	65W	Intel® UHD Graphics 630	350 MHz	DDR4-2933	Q470/Q470E
	Core IM 19		10/20	19-10900TE	1.8 GHz	20MB	35W			DDR4-2933	
	6 71.7	CoreTM i7  CoreTM i5  CoreTM i5  CoreTM i3  CoreTM i3  Pentium®  Pentium®  Celeron®  Celeron®	8/16	17-10700E	2.9 GHz	16MB	65W			DDR4-2933	
FCLGA1200	CoreIM1/		8/16	17-10700TE	2.0 GHz	16MB	35W			DDR4-2933	
	CoreTM i5		6/12	I5-10500E	3.1 GHz	8MB	65W			DDR4-2666	
	CoreTM i5		6/12	I5-10500TE	2.3 GHz	8MB	35W			DDR4-2666	
	CoreTM i3		4/8	13-10100E	3.2 GHz	9МВ	65W			DDR4-2666	
	CoreTM i3		4/8	I3-10100TE	2.3 GHz	9МВ	35W			DDR4-2666	
	Pentium®		2/4	G6400E	3.8 GHz	4MB	58W			DDR4-2400	
	Pentium®		2/4	G6400TE	3.2 GHz	4MB	35W			DDR4-2400	
	Celeron®		2/2	G5900E	3.2 GHz	2МВ	58W			DDR4-2400	
	Celeron®		2/2	G5900TE	3.0 GHz	2МВ	35W			DDR4-2400	



# Stunning 4K Resolution and Triple Display

The IMBA-Q471 is equipped with Intel® UHD Graphics to display videos and images in stunning 4K resolutions. Among its three independent display ports (VGA+HDMI+DP), the HDMI and DisplayPort can both support up to 4K high resolution. The enhanced visual quality responses the high precision demand of users.

# **Leading Connectivity**





## Triple Intel® 2.5G Ethernety

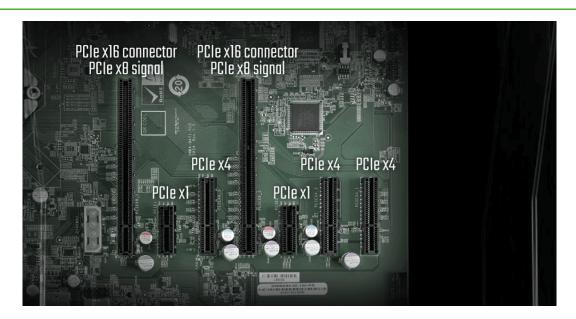
The IMBA-Q471 is equipped with triple Intel 2.5GbE controllers, which are ready for the latest-performance router. With triple 2.5GbE ports owning the benefits of low-latency, high-throughput and cost-effective, the IMBA-Q471 can meet the bandwidth-intensive requirements such as large file transfers and high resolution video streaming, which is ideal for machine vision and AI edge computing applications.



# Pure Speed USB 3.2 10 Gb/s

With twice of the bandwidth compared to its previous generation, and backwards compatible with USB 2.0 and 3.0, the much improved USB 3.2 protocol USB Type-A connector for better compatibility over a wider range of devices.

# Multiple Expansion Slots for Increased Functionality and Flexible Configuration

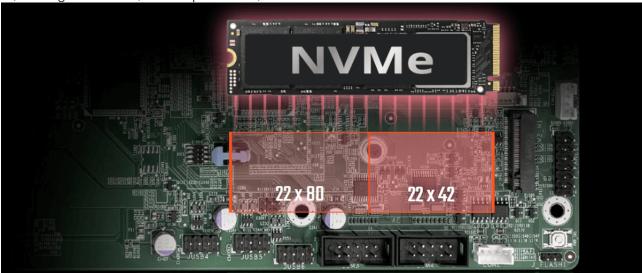






# Complete PCIe expansions make high speed transmission possible

There is an array of expansion interfaces on the IMBA-Q471 to meet different demands of each customer. It supports up to seven PCIe slots, which can be used to install a variety of high bandwidth interface cards, including network cards, frame grabber cards, video capture cards, and AI Accelerators.



# NVMe SSD Ready for Edge Intelligence

Combining the M.2 M-key interface with 2-lane NVMe PCIe can increase storage read/write speeds by up to 200% compared to a traditional SATA 3.0 SSD. Rapid data speeds enable more reflexive inference analysis at the edge.





#### Graphical interface

BIOS menus is transformed from text-based to graphical user interface, making it intuitive and easy to navigate.



#### Shortcut to boot device setup

The main menu provides quick access to the boot device configuration, helping users save time on boot option priority setting.

#### Easy-access function keys

The BIOS function keys are arranged vertically on the side of the screen and indicated by icons, so that users can access them without the need of using a keyboard

#### On-screen keyboard

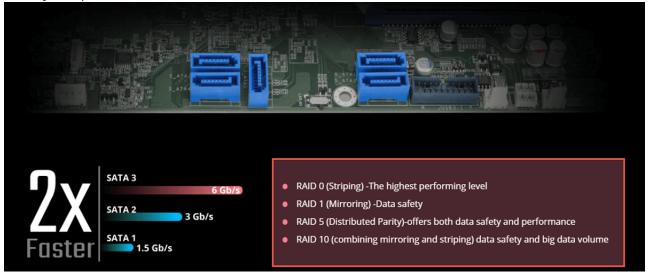
An on-screen keyboard is available when it is needed to enter text in BIOS, such as administration password setup.

#### Touch-enabled BIOS

The BIOS menu in the latest IEI products is re-designed to a touch-enabled user interface to eliminate excessive steps and unnecessary keyboard connection. It allows users to navigate with finger on a touch-enabled monitor to make BIOS configuration easily.

#### RAID 0/1/5/10 Protection

The IMBA-Q471 offers five high-speed SATA 6Gb/s interfaces with configurable RAID 0, 1, 5, 10 functionality that can increase system performance or ensure the maintenance of critical information.





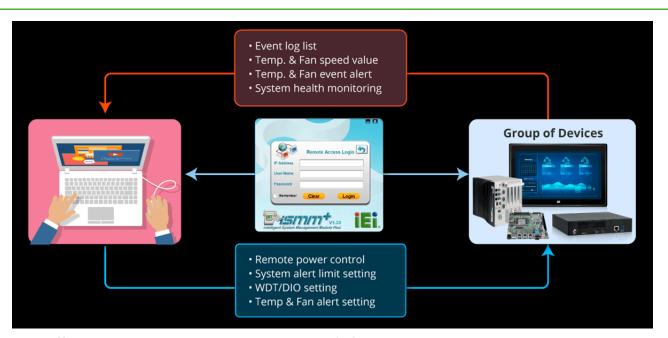
#### Data Protection with RAID and Intel® PTT



### Intel® PTT Security

IEI BIOS enables Intel firmware-based TPM function, Intel® PTT. TPM can be leveraged to encrypt your storage drive. This protects your data, including your identity and operating system files. Encryption also protects your data in the case of physical theft.

# **Intelligent System Management**



# IEI Intelligent System Management Module (iSMM+)

The IEI Intelligent System Management Module (iSMM+) is a system health supervision application which utilizes sensor chips on IEI motherboards to track CPU and system temperatures, fan speed, watchdog timer, digital I/O status and system event.