

## Edge Servers, Industrial Motherboards & Wallmount Rackmount IPC Systems

Our Innovative Embedded Boards  
for Intelligent Applications, Our Durable  
Embedded Systems for Your Industrial-grade  
Applications



## Server Board



ERX810

Processor	Platform	Chipset	Model	Index
5th/4th Gen Intel® Xeon® Scalable Family	Server- Grade	C741	ERX810-C741	P13
3rd Gen Intel® Xeon® Scalable Family		C621A	IS-5222	
2nd/1st Gen Intel® Xeon® Scalable Family		C622	PR811-C622 PR810-C622	
5th/4th Gen Intel® Xeon® Scalable Family	Server- Grade	C741	ERX610-C741	P14
3rd Gen Intel® Xeon® Scalable Family		C621A	ICX610-C621A	
2nd/1st Gen Intel® Xeon® Scalable Family		C621	PR611-C621 PR610-C621	
AMD Siena EPYC 8004	Server- Grade	-	SNA610	P15
AMD® EPYC™ 3000 Series	Server- Grade	-	SO630	

## Server System



RM645-ERX810

Processor	Model	Chassis Form Factor	Index
5th/4th Gen Intel® Xeon® Scalable Family	RM811-ERX610	1U Rackmount	P16
	RM811-ERX810	1U Rackmount	
	RM646-ERX810	4U Rackmount	
	RM645-ERX610	4U Rackmount	
	RM645-ERX810	4U Rackmount	
3rd Gen Intel® Xeon® Scalable Family	RM645-ICX610	4U Rackmount	P17
2nd/1st Gen Intel® Xeon® Scalable Processor Family	RM840-PR810	4U Rackmount	
AMD Siena EPYC 8004	RM645-SNA610	4U Rackmount	

## Mini-ITX



RPS101/RPS103



RPP171/RPP173

Processor	Platform	Chipset	Model	Index	
Intel® Core™ Ultra	ULT/Mobile	-	PTH171/PTH173	P19	
Intel® Core™ Ultra	Workstation	W880	ARS101/ARS103-W880		
	Desktop	Q870	ARS101/ARS103-Q870		
		H810	ARS101/ARS103-H810		
BTL-S/14th/13th/12th Gen Intel® Core™	Workstation	R680E	RPS101/RPS103-R680E	P20	
			RPS100-R680E		
			ADS101/ADS103-R680E		
	Desktop	Q670E	Q670E	RPS183-Q670E	P21
				RPS101/RPS103-Q670E	
				RPS100-Q670E	
				ADS101/ADS103-Q670E	
		H610E	H610E	RPS183-H610E	P22
				RPS101/RPS103-H610E	
				RPS100-H610E	
ADS101/ADS103-H610E					
Intel® Core™ Ultra	ULT/Mobile	-	ARH171/ARH173	P23	
13th Gen Intel® Core™	ULT/Mobile	-	RPP171/RPP173		
11th Gen Intel® Core™	ULT/Mobile	-	TGU171/TGU173		

### Mini-ITX



ADN171/ADN173



ASL171/ASL173



HPT171/HPT173

Processor	Platform	Chipset	Model	Index	
10th Gen Intel® Core™	Workstation	W480E	CMS101/CMS103-W480E	P24	
			CMS100-W480E		
	Desktop	Q470E	CMS171/CMS173-Q470E	P25	
			CMS101/CMS103-Q470E		
			CMS100-Q470E		
		H420E	CMS101/CMS103-H420E	P26	
CMS100-H420E					
9th/8th Gen Intel® Core™	Workstation	C246	CS170-C246	P27	
			CS101-C246		
			CS103-C246		
			CS100-C246		
	Desktop	Q370		CS181-Q370	P28
				CS170-Q370	
				CS103-Q370	P29
				CS101-Q370	
		H310		CS181-H310	P30
				CS170-H310	
				CS103-H310	P31
				CS101-H310	
	8th Gen Intel® Core™	ULT	-	WL171/WL173	P32
	Intel® Atom® Amston Lake	Atom	-	ASL171/ASL173	
Intel® Atom® Alder Lake-N	Atom	-	ADN171/ADN173		
Intel® Atom X Series	Atom	-	EHL171/EHL173		
Intel® Atom E3900	Atom		AL170	P33	
			AL171/AL173		
Intel® Atom E3800	Atom		BT100	P34	
			BT101/BT103		
AMD® Ryzen™ Embedded 8000 Series	AMD		HPT193	P34	
			HPT171		
AMD® Ryzen™ Embedded V2000 Series	AMD	-	RNO171	P34	
AMD® Ryzen Embedded V1000/R1000 Series	AMD	-	GH171		

### PICMG 1.3



RPSPIC-R680E/H610E

Processor	Platform	Chipset	Model	Index
BTL-S/14th/13th/12th Gen Intel® Core™	Workstation	R680E	RPSPIC-R680E	P35
	Desktop	H610E	RPSPIC-H610E	

microATX



RPS310



RAP310

Processor	Platform	Chipset	Model	Index
Intel® Core™ Ultra	Workstation	W880	ARS310-W880	P36
	Desktop	Q870	ARS310-Q870	
BTL-S/14th/13th/12th Gen Intel® Core™	Workstation	R680E	RPS310-R680E	P37
			ADS310-R680E	
	Desktop	Q670E	RPS310-Q670E	
			ADS310-Q670E	
		RPS330-Q670E		
		H610E	RPS330-H610E	
10th Gen Intel® Core™	Desktop	W480E	CMS310-W480E	P38
	Desktop	Q470E	CMS310-Q470E	
			CMS330-Q470E	
		H420E	CMS330-H420E	
9th/8th Gen Intel® Core™	Workstation	C246	CS350-C246	P39
			CS332-C246	
			CS331-C246	
	Desktop	Q370	CS350-Q370	
			CS332-Q370	
			CS331-Q370	
			CS330-Q370	
		H310	CS330-H310	
AMD® Ryzen™ 9000/7000/ EPYC™ 4005 Series	AMD	B650	RAP310-B650	

EATX/ATX



ERX810



RPS630

Processor	Platform	Chipset	Model	Index
5th/4th Gen Intel® Xeon® Scalable Family	Server-Grade	C741	ERX810-C741	P40
3rd Gen Intel® Xeon® Scalable Family		C621A	IS-5222	
2nd/1st Gen Intel® Xeon® Scalable Family		C622	PR811-C622	
			PR810-C622	
5th/4th Gen Intel® Xeon® Scalable Family	Server-Grade	C741	ERX610-C741	P41
3rd Gen Intel® Xeon® Scalable Family		C621A	ICX610-C621A	
2nd/1st Gen Intel® Xeon® Scalable Family		C621	PR611-C621	
			PR610-C621	
Intel® Core™ Ultra	Workstation	W880	ARS630-W880	P42
	Desktop	Q870	ARS630-Q870	
BTL-S/14th/13th/12th Gen Intel® Core™	Workstation	R680E	W680	BTS610-W680
				BTS610-R680E
				RPS630-R680E
			ADS630-R680E	
	Desktop	Q670E	BTS610-Q670E	
			RPS630-Q670E	
		ADS630-Q670E		
Desktop	H610	RPS631-H610		

## EATX/ATX



ICX610

Processor	Platform	Chipset	Model	Index	
10th Gen Intel® Core™	Workstation	W480E	CMS632-W480E	P43	
			CMS630-W480E		
	Desktop	Q470E	CMS632-Q470E	P44	
			CMS630-Q470E		
			CMS631-Q470E		
		H420E	CMS631-H420E		
9th/8th Gen Intel® Core™	Workstation	C246	CS650-C246	P45	
			CS632-C246		
			CS631-C246		
	Desktop	Q370	Q370	CS650-Q370	P45
				CS632-Q370	
				CS631-Q370	
				CS630-Q370	
		H310	H310	CS630-H310	P46
				CS620-H310	
AMD Siena EPYC 8004	Server-Grade	-	SNA610	P46	
AMD® EPYC™ 3000 Series	Server-Grade	-	SO630		

## Peripherals



EXT-10GbE



T100-2E

Type	Model	Index
Proprietary I/O Cards	EXT-100GbE	P48
	EXT-10GbE	
	NCT203	
Riser Cards	H300-2E	P48
	H300-2P1E	
	H300-3P1M	
	RISER-2PE4	
	RISER-PE16	
	X100-2P1M	
	X100-3PE2	
	T100-2E	
	T200-1E	
DC to DC Converters	X102-DC12	P49
	X102-DC24	
	X102-DC30	
	X103-DC36	
Proprietary Expansion Modules	EXT-RS232	P49
	EXT-RS485	
	MPE-EXTB	
	MPE-EXTF	
	MPE-SATA	
	MPE-SIM2	

Peripherals



M2A-OOB



EXT-OOB



M2A-Display



EXT-Display

Type	Model	Index
M.2 Expansion Modules	M2A-M21	P49
	M.2-eMMC	
	M.2-1LAN/2LAN	
	M.2-1PSE/2PSE	
	MPE-M2M/M2E	
	M.2-COM4	
	M.2-SATA2	
	M.2-USB314	
Remote Management	EXT-OOB	P49
	RM101-OOB	
	M2A-OOB	
	SEM2500/2510	
GNSS module	M2-GNSS	
CAN module	M2-CAN2	
	MPE-CAN2	
Audio Amplifier	KS-AUD2	
Gaming I/O control board	GM903	
Add-on Display	EXT-VGA	P50
	EXT-DP	
	EXT-HDMI	
	M2A-eDP/LVDS	
	M2A-VGA	
	M2A-HDMI	
	M2A-DP	
SDVO-LVDS		

### Wallmount / Rackmount IPC System



**Slim Desktop**  
SF101-ADS



**Wall Mount**  
WM343-RPS



**Rack Mount**  
RM645-ERX610



**Rack Mount**  
RM840-PR810

Processor	Model	Form Factor-Motherboard	Chassis Form Factor	Index
14th/13th/12th Gen Intel® Core™ Processor	WM646-ADS	ATX	Wall Mount	P57
	WM343-RPS	Micro-ATX	Wall Mount	P55
	WM130-RPS	mini-ITX	Wall Mount	P54
	SF101-ADS	mini-ITX	Slim Desktop	P56
10th Gen Intel® Core™ Processor	WM120-CMS171/CMS173	mini-ITX	Wall Mount	P55
	WM343-CMS	Micro-ATX	Wall Mount	P55
9th/8th/7th/6th Gen Intel® Core™ Processor	WM343-CS330	Micro-ATX	Wall Mount	P56
	WM343-CS331	Micro-ATX	Wall Mount	P56
	WM343-CS332	Micro-ATX	Wall Mount	P56
	WM343-CS350	Micro-ATX	Wall Mount	P56
	ST102-CS	mini-ITX	Desktop/Stand	P54
	RM641-CS	ATX	4U Rack Mount	P57
5th/4th Gen Intel® Xeon® Scalable Family Socket Dual	RM811-ERX810	EATX	1U Rack Mount	P58
	RM645-ERX610	ATX	4U Rack Mount	P59
	RM811-ERX610	ATX	1U Rack Mount	P58
	RM645-ERX810	EATX	4U Rack Mount	P59
	RM646-ERX810	EATX	4U Rack Mount	P59
3rd Gen Intel® Xeon® Scalable Processor Family	RM645-ICX610	ATX	4U Rack Mount	P58
2nd/1st Gen Intel® Xeon® Scalable Processor Family	RM840-PR810	EATX	4U Rack Mount	P57
AMD® Ryzen™ Embedded 8000 Series	WM130-HPT	mini-ITX	Wall Mount	P54
AMD® Ryzen™ Embedded V1000/R1000 Series	DT122-GH	mini-ITX	Desktop	P55

# Industrial Motherboards, Edge Servers & IPC Systems

## High-Performance Platforms for Every Industrial Application



### Industrial Motherboards

EATX / ATX



Micro ATX



Mini-ITX



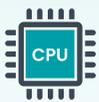
PICMG 1.3



Peripherals



### Highlights



#### Latest Embedded Technology

Powered by Intel® and AMD embedded processors, delivering high-performance and efficient computing for industrial use.



#### Comprehensive Form Factors

A full range of form factors and peripherals supports diverse applications and faster time-to-market.



#### Conformal Coating (Optional)

Optional protective coating enhances resistance to moisture, dust, and chemical contaminants, improving motherboard reliability in demanding industrial or outdoor environments.



#### Flexible Customization

Tailored designs and certifications meet unique customer needs, with support for wide temperature, wide voltage, and conformal coating to ensure reliability in harsh environments.



Smart Medical



Smart Transportation



Gas / Energy / Oil

## Edge Servers

Server Board



Server System



## IPC Systems

Wall-mount IPC



Desktop PC



1/4U Rack-Mount



Stand IPC



### Rich I/O and Connectivity

Leveraging superior connectivity, the industrial IPC system provides a range of diverse and adaptable I/O interfaces, ensuring smooth integration and dependable operation with surrounding systems and devices.



### Flexible & Scalable

Designed with flexibility and scalability to meet diverse customer requirements and support a wide range of industrial applications.



### Fast Time-to-Market

Leveraging a commercial off-the-shelf (COTS) concept, we deliver rapid time-to-market solutions without compromising performance or reliability.



### AI-Ready with GPU Expansion

Supports MXM and M.2 GPU modules, enabling AI acceleration and future-proof computing capabilities.

## Rugged Design

- Industrial-rated components with high MTBF over 100,000 hrs
- Extended operating temperatures
- High ESD protection for I/O ports
- Signal integrity measurement
- Wide range power design
- 100% Japanese-made solid capacitor
- Power hot plug protection for DC-in type SBC and Industrial Motherboards



## Software Integration

- Embedded BIOS and OS customization services
- Windows licensing offerings
- Android, Linux distribution (Yocto/Ubuntu/CentOS/Debian)
- Embedded API  
(Hardware Monitor, SMBus, I<sup>2</sup>C, Brightness Control, GPIO, Watchdog)
- Remote management utility



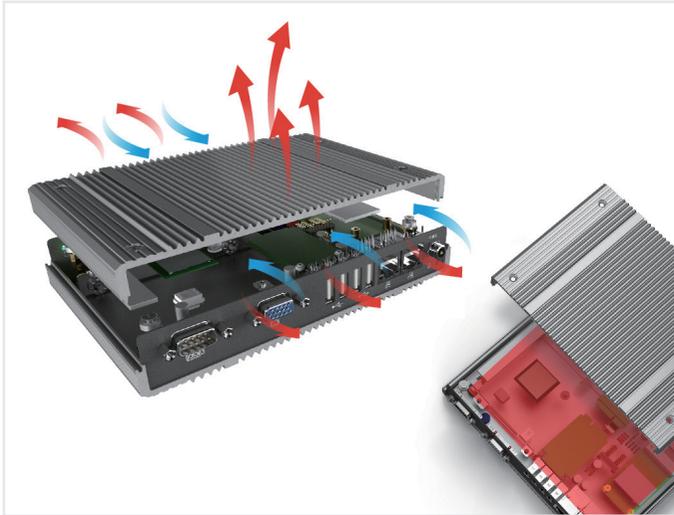
## Embedded Total Solution

- Express customization service: 30 days (NRE cost: project based)
- Strict revision control
- Long product life cycle support
- High volume OEM/ODM production capabilities



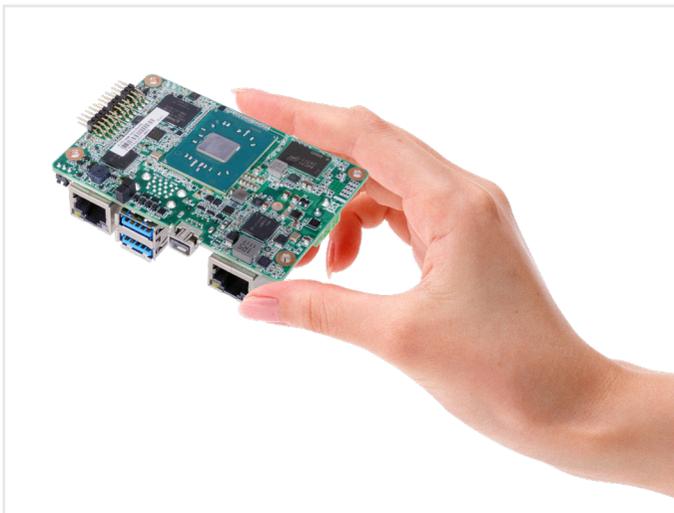
## We Provides a Total Solution Designed for Your Embedded Applications





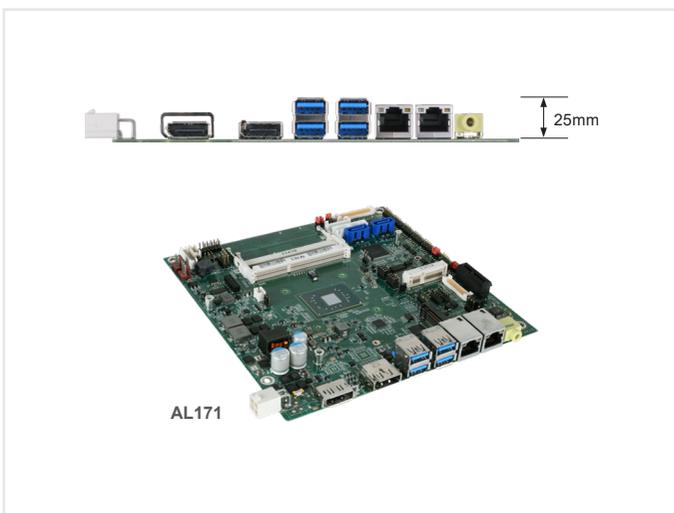
### Easy System Integration

- Optional peripheral: DC power module, Wi-Fi, Cellular, GPS module
- Optimized low profile thermal solution: fanless for ULT and Atom based platform
- Optional heatspreader for 4", 3.5", Pico-ITX SBC with efficient thermal dissipation
- Unified mechanical design for rear I/O location, screw hole, and connector type



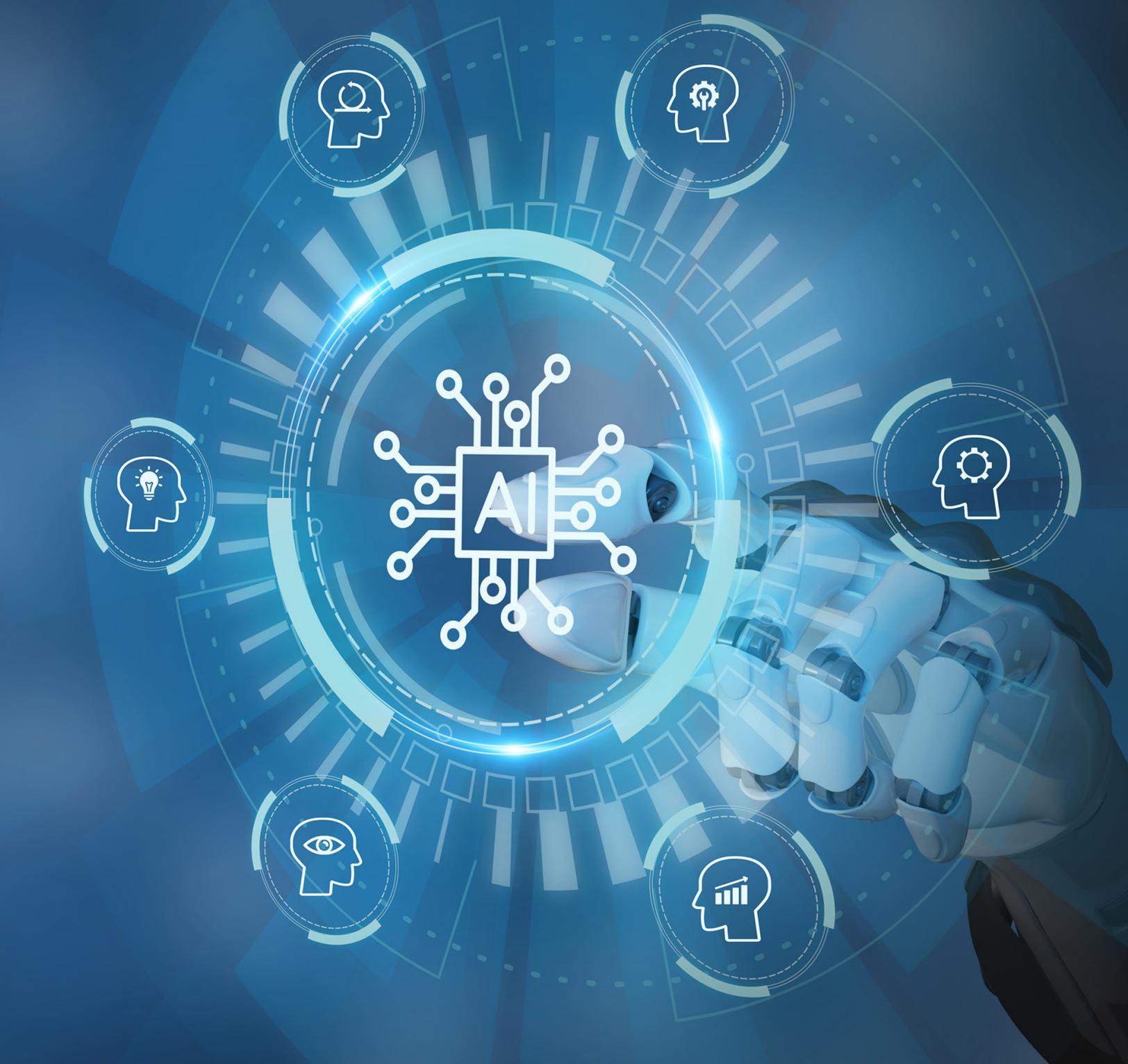
### The Smallest Our 1.8" SBC

- 1.8" small form factor fits space-limited applications
- All-in-one 100% readiness standalone SBC
- Ultra low power Fanless embedded SBC
- Perfectly fits gateway application with a few I/O requirements



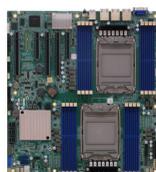
### Thin Mini-ITX

- Thinner than general Mini-ITX, and only 25mm in height
- Equipped with a variety of I/O connectivity
- Features mSATA, Mini PCIe, LVDS and built-in DC power connector
- Designed for slim panel PCs, POS systems, portable medical devices, and All-in-One systems



# Edge Server

# Edge Server Board



C741

C621A

C622

C622

Model Name		ERX810-C741	IS-5222	PR811-C622	PR810-C622
Platform		Server-Grade	Server-Grade	Server-Grade	Server-Grade
System	Processor	5th/4th Gen Intel® Xeon® Scalable Family	3rd Gen Intel® Xeon® Scalable Family	2nd/1st Gen Intel® Xeon® Scalable Family	2nd/1st Gen Intel® Xeon® Scalable Family
	Socket	Dual LGA 4677	LGA 4189	Dual LGA 3647	Dual LGA 3647
	Max. Speed	3.4~4.1GHz	3.1~3.6GHz	up to 3.9GHz	up to 3.9GHz
	TDP	115~270W	up to 205W	70~165W	70~165W
	Cache	22.5~60M	12~48M	11~35.75MB	11~35.75MB
	Chipset	Intel® C741	Intel® C621A	Intel® C622	Intel® C622
	BIOS	Insyde	AMI 64Mb SPI	Insyde	Insyde
Memory	Technology	DDR5 Max. 5600MHz	DDR4 Max. 3200MHz	DDR4 Max. 2933MHz	DDR4 Max. 2933MHz
	Max. Capacity	2048GB	1024GB	768GB	768GB
	Socket	16 ECC-RDIMM	16 ECC-RDIMM	12 ECC-RDIMM	12 ECC-RDIMM
Graphics	Connector	1 DP	1 VGA	1 VGA (Opt.)	1 VGA (Opt.)
Expansion	PCIe, PCI	4 PCIe x16, 2 PCIe x8	3 PCIe x16, 2 PCIe x8	5 PCIe x16, 1 PCIe x8	4 PCIe x16, 1 PCIe x8, 1 PCI
	Mini PCIe / M.2	1 M.2 M key 2280	1 M.2 M key 2280	1 M.2 M key 2280	1 M.2 M key 2280
	SIM / Other	-	-	1 BMC Module for SEM2500/2510*	1 BMC Module for SEM2500/2510* (IPMI)
Audio	Audio Codec	ALC888S	-	ALC887	ALC887
Ethernet	Controller	4 Intel® I210AT, IPMI: RTL8211F	-	1 Intel® x557-AT2, 2 Intel® I210AT	1 Intel® x557-AT2, 2, Intel® I210AT, 1 100GbE Module**(Opt.)
Rear I/O	Ethernet	4 GbE, 1 IPMI LAN	2 10GbE, 1 IPMI LAN	2 GbE, 2 10GbE, 1 IPMI LAN	2 GbE, 2 10GbE, 1 IPMI LAN (Opt.)
	Serial	1 RS-232/422/485	-	1 RS-232	1 RS-232
	USB	4 USB 3.2 Gen1	2 USB 3.2 Gen1	4 USB 3.2 Gen1, 2 USB 2.0	4 USB 3.2 Gen1
	Display	1 DP	1 VGA	1 VGA (Opt.)	1 VGA (Opt.)
	Audio	-	-	-	-
	PS/2	1	-	-	-
Internal I/O	Serial	1 RS-232/422/485	2 RS-232	1 RS-232	1 RS-232
	USB	2 USB 3.2 Gen1, 2 USB 2.0, 1 Vertical USB 2.0	2 USB 3.1 Gen1, 4 USB 2.0	2 USB 3.2 Gen1, 2 USB 2.0, 1 USB 2.0 Vertical	1/2 USB 3.2 Gen1, 2 USB 2.0, 1 USB 2.0 Vertical
	Audio	1 Front Audio	-	-	-
	Storage	4 SATA 3.0, (RAID 0/1/5/10)	2 SATA 3.0, (RAID 0/1)	8 SATA 3.0, (RAID 0/1/5/10)	8 SATA 3.0, (RAID 0/1/5/10)
	DIO	16-bit DIO	-	-	-
	LPC**	1	-	1	1
	SMBus	1	-	1	1
TPM / iAMT	TPM 2.0	-	TPM 2.0	TPM 2.0 (Opt.)	
Power	ATX	ATX	ATX	ATX	
Operating Temperature		0°C~45°C	0°C~40°C	0°C~40°C	0°C~40°C

\*SEM2500/2510: DFI proprietary peripheral for IPMI/VGA card.

\*\*100GbE Module: DFI proprietary peripheral for LAN Extension Module Card (EXT-100GbE)



C741



C621A



C621

Model Name		ERX610-C741	ICX610-C621A	PR611-C621
Platform		Server-Grade	Server-Grade	Server-Grade
System	Processor	5th/4th Gen Intel® Xeon® Scalable Family	3rd Gen Intel® Xeon® Scalable Family	2nd/1st Gen Intel® Xeon® Scalable Family
	Socket	LGA 4677	LGA 4189	LGA 3467
	Max. Speed	3.4~4.1GHz	up to 3.6GHz(Turbo)	up to 3.9GHz(Turbo)
	TDP	115~270W	Max. 205W	Max. 150W
	Cache	22.5~160M	Max 48M	Max. 35.75MB
	Chipset	Intel® C741	Intel®C621A	Intel® C621
	BIOS	Insyde	Insyde SPI 128Mbit	Insyde SPI 128Mbit
Memory	Technology	DDR5 Max. 5600MHz	DDR4 Max. 3200MHz	DDR4 Max. 2933 MHz
	Max. Capacity	1024GB	512GB	384GB
	Socket	8 ECC-RDIMM	8 ECC-RDIMM	6 ECC-RDIMM
Graphics	Connector	1 DP	1 VGA	1 VGA (Opt.)
Expansion	PCIe / PCI	3 PCIe x16, 3 PCIe x8	3 PCIe x16, 3 PCIe x8	3 PCIe x16, 3 PCIe x8
	Mini PCIe / M.2 / SIM	2 M.2 M key 2280	1 M.2 M key 2280	1 M.2 M key 2280, 1 M.2 E key 2230
Audio	Audio Codec	ALC888S	ALC888S	ALC887
Ethernet	Controller	2 Intel® I210AT, 2 Intel® E610-XAT2, IPMI: RTL8211F	2 Intel® I210AT, 2 Intel® x550-AT2, IPMI: RTL8211F	2 Intel® I210AT, IPMI: RTL8211F (Opt.)
Rear I/O	Ethernet	2 GbE, 2 10GbE, 1 IPMI LAN	2 GbE, 2 10GbE, 1 IPMI LAN	2 GbE, 1 IPMI LAN(Opt.)
	Serial	1 RS-232/422/485	1 RS-232	1 RS-232
	USB	4 USB 3.2 Gen1	4 USB 3.2 Gen1, 2 USB 2.0	4 USB 3.2 Gen1, 2 USB 2.0
	Display	1 DP	1 VGA	1 VGA (Opt.)
	Audio	-	-	-
	PS/2	-	-	-
Internal I/O	Serial	1 RS-232/422/485	1 RS-232	-
	USB	2 USB 3.2 Gen1, 2 USB 2.0, 1 Vertical USB 2.0	2 USB 3.2 Gen1, 2 USB 2.0, 1 Vertical USB 2.0	2 USB 3.2 Gen1, 2 USB 2.0, 1 Vertical USB 2.0
	Audio	Front Audio	Front Audio	Front Audio
	Storage	4 SATA 3.0, (RAID 0/1/5/10)	6 SATA 3.0, (RAID 0/1/5/10)	6 SATA 3.0, (RAID 0/1/5/10)
	DIO	16-bit DIO	16-bit DIO	-
	LPC	-	1	-
	eSPI	-	-	-
	SMBus	1	1	1
	PS/2	-	-	-
TPM / iAMT	TPM 2.0	Infineon dTPM 2.0	TPM 2.0 (Opt.)	
Power	ATX	ATX	ATX	
Operating Temperature	0°C~60°C	0°C~55°C	-5°C~65°C	

# Edge Server Board



C621

C621A

C621

Model Name		PR610-C621	SNA610	SO630
Platform		Server-Grade	Server-Grade	Server-Grade
System	Processor	2nd/1st Gen Intel® Xeon® Scalable Family	AMD Siena EPYC 8004	AMD® EPYC™ 3000 Series
	Socket	LGA 3647	LGA 4844	BGA
	Max. Speed	up to 3.9GHz(Turbo)	3~3.1GHz	3.0GHz
	TDP	Max. 150W	125~225W	Max. 100W
	Cache	Max. 35.75MB	Max 128MB	Max. 32MB
	Chipset	Intel® C621	-	-
	BIOS	Insyde SPI 128Mbit	Insyde	Insyde SPI
Memory	Technology	DDR4 Max. 2933 MHz	DDR5 Max. 4800MHz	DDR4 2666 MHz
	Max. Capacity	384GB	576GB	256GB
	Socket	6 ECC-RDIMM	6 ECC-RDIMM	8 RDIMM/UDIMM
Graphics	Connector	1 VGA (with SEM2500/2510*)	1 DP	-
Expansion	PCIe / PCI	2 PCIe x16, 2 PCIe x8, 1 PCI	3 PCIe x16, 3 PCIe x8, 1 PCIe x4	3 PCIe x16 (up to 6 PCIe x8), 1 PCI
	Mini PCIe / M.2 / SIM	1 M.2 M key 2280	2 M.2 M key 2280	2 M.2 M key
Audio	Audio Codec	ALC887	HS-100B	-
Ethernet	Controller	2 Intel® I210AT, IPMI: RTL8211F (with SEM2500*)	1 Intel® I210AT, 1 Intel® I226LM, 2 Intel® E610-XAT2	2 Intel® I210AT
Rear I/O	Ethernet	2 GbE, 1 IPMI LAN (with SEM2500*)	2 GbE, 2 10GbE, 1 IPMI LAN	2 GbE
	Serial	-	1 RS-232/422/485	1 RS-232/422/485, 1 RS-232
	USB	4 USB 3.2 Gen1, 2 USB 2.0	4 USB 3.2 Gen1	6 USB 3.2 Gen1
	Display	1 VGA (with SEM2500/2510*)	1 DP	-
	Audio	-	-	-
	PS/2	-	-	-
Internal I/O	Serial	2 RS-232	1 RS-232/422/485	-
	USB	2 USB 3.2 Gen1, 2 USB 2.0, 1 Vertical USB 2.0	2 USB 3.2 Gen1, 2 USB 2.0, 1 USB 2.0 Vertical	2 USB 3.2 Gen1
	Audio	-	Front Audio	-
	Storage	6 SATA 3.0, (RAID 0/1/5/10)	4 SATA 3.0, (RAID 0/1/5/10)	3 SATA 3.0, 2 SATA 3.0 (RAID 0/1)
	DIO	-	16-bit DIO	-
	LPC	-	-	-
	eSPI	-	-	-
	SMBus	1	1	-
PS/2	-	-	-	
TPM / iAMT	TPM 2.0 (Opt.)	TPM 2.0	TPM 2.0 (Opt.)	
Power	ATX	-	ATX	
Operating Temperature	0°C~60°C	0°C~60°C	-5°C~65°C	

# Edge Server System

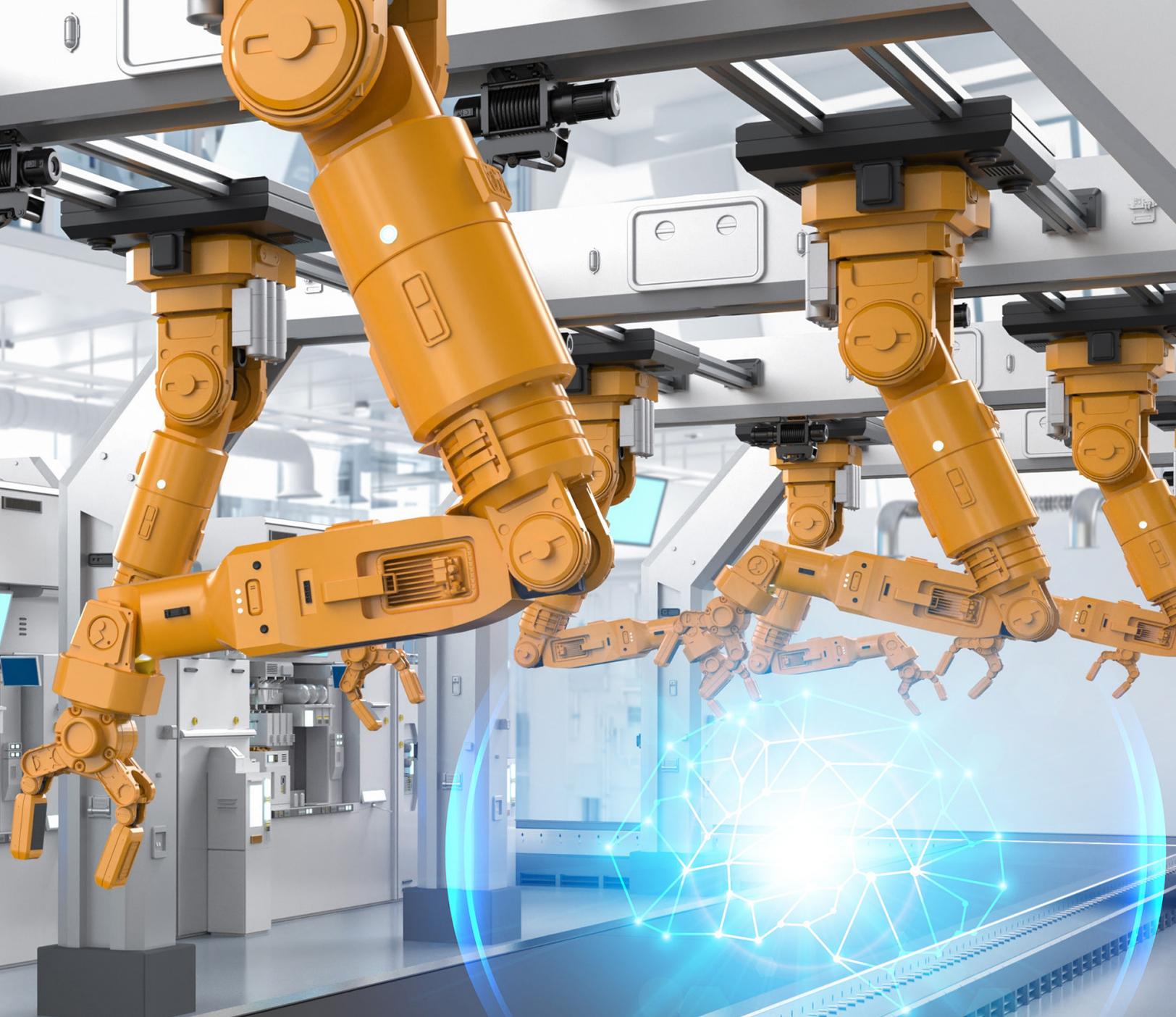


Model Name		RM811-ERX610	RM811-ERX810	RM646-ERX810	RM645-ERX610
Platform		Rack Mount IPC	Server-Grade	Server-Grade	Server-Grade
System	Processor	Single 5th/4th Gen Intel® Xeon® Scalable Processor Family	5th/4th Gen Intel® Xeon® Scalable Processor Family	Dual 5th/4th Gen Intel® Xeon® Scalable Family	Single 5th/4th Gen Intel® Xeon® Scalable Processor Family
	Socket	LGA 4677	LGA 4677 Socket	LGA 4677	LGA 4677
	Max. Speed	~4.1GHz	~4.1GHz	up to 4.1GHz (Turbo)	~4.1GHz
	CPU TDP	Max. 165W	Max. 165W	up to 270W	Max. 250W
	Cache	Max. 22.5M	Max. 22.5M	up to 60M	-
	Chipset	Intel® C741	Intel® C741	Intel® C741	Intel® C741
	BIOS	Insyde	Insyde	Insyde	Insyde
Memory	Technology	DDR5 Max. 5600 MHz	DDR5 Max. 5600MHz	Single Channel DDR5 Max. 5600 MHz	DDR5 Max. 5600 MHz
	Max. Capacity	1024GB	2048GB	2048GB	1024GB
	Socket	8 ECC-RDIMM	16 ECC-RDIMM	16 ECC-RDIMM	8 ECC-RDIMM
Storage		2 x M.2 M key 2280	4 x 3.5"/2.5" hot-swap 1 M.2 2280 M Key	4 E.1.s SSD (Opt.) 1 M.2 2280 M key, 4 x 2.5 hot-swap	2 x M.2 M key 2280 4 SATA 3.0, (RAID 0/1/5/10)
Expansion	PCIe, PCI, Mini PCIe	1 PCIe x16	1 PCIe x16	3 PCIe x16	3 x PCIe x16 (Gen 5) 3 x PCIe x8 (Gen5)
	M.2	2 x M.2 M key 2280	1 M.2 M key 2280	1 M.2 M key 2280	2 x M.2 M key 2280
	SIM, Other	-	-	-	-
Audio	Audio Codec	ALC888S	ALC888S	ALC888S	ALC888S
Ethernet	Controller	1 x Intel® I210AT + 2 x Intel® E610-XAT2 IPMI: RTL8211F	4 Intel® I210AT, IPMI: RTL8211F	4 Intel® I210, IPMI: RTL8211F	2 x Intel® I210AT + 2 x Intel® E610-XAT2 IPMI: RTL8211F
LED	Indicators	Power, HDD LED	Power, HDD LED	Power, HDD LED	Power, HDD LED
I/O	Ethernet	1 x GbE + 2 x 10GbE 1 x Dedicated IPMI LAN	3 GbE, 1 IPMI LAN	4 GbE, 1 Dedicated IPMI LAN	2 x GbE + 2 x 10GbE 1 x Dedicated IPMI LAN
	Serial	1 RS-232/422/485 (DB-9)	1 RS-232/422/485	1 RS-232/422/485 (DB-9)	1 RS-232/422/485 (DB-9)
	USB	2 x USB 3.2 Gen1	2 USB 3.2 Gen1	4 USB 3.2 Gen1	4 x USB 3.2 Gen1
	Display	1 DP	1 DP	1 DP	1 DP
	DIO	-	-	-	-
	Buttons	Power, Reset	Power, Reset	Power	Power
	PS/2	-	-	-	-
	Antenna	-	-	-	-
Audio	Internal: Front Audio	Onboard Front Audio Pin Header	1 Front Audio Header	Internal: Front Audio	
Power	Redundant/FlexATX	FlexATX or Redundant PSU	ATX PS2/ Mini Redundant (Opt.)	ATX PS2/ Redundant (Opt.)	
Cooling	5 x 4CM Fan	5 x 4CM Fan	2 x 12CM system Fan	2 x 12CM system Fan	
OS Support		Windows 11 LTSC Widows server 2022 LTSC	Windows 11 LTSC Widows server 2022 LTSC	Windows 11 LTSC Widows server 2022 LTSC	Windows 11 LTSC Widows server 2022 LTSC
Mechanism	Construction	Heavy Industrial Steel	Heavy Industrial Steel	Heavy Industrial Steel	Heavy Industrial Steel
	Mounting	Rack mount kit	Rackmount kit	Flexible hold down bar	Rack mount kit
	Dimensions (W x H x D)	438 x 44 x 673.2mm	438 x 44 x 673.2mm	431.8 x 175.6 x 449.8mm	481.6 x 175.6 x 470.8mm
Environment	Operating Temp.	0°C~40°C	0°C~40°C	0°C~40°C	0°C~40°C
Support MB		ERX810-C741/ERX610-C741	ERX810	ERX810-C741	ERX810-C741/ERX610-C741

## Edge Server System



Model Name		RM645-ERX810	RM645-ICX610	RM840-PR810	RM645-SNA610
Platform		Server-Grade	Server-Grade	Server-Grade	Server-Grade
System	Processor	Dual 5th/4th Gen Intel® Xeon® Scalable Processor Family	3rd Gen Intel® Xeon® Scalable Processor Family	2nd/1st Gen Intel® Xeon® Scalable Processor Family	AMD Siena EPYC 8004
	Socket	LGA 4677	LGA 4189	LGA 3647	LGA 4844
	Max. Speed	~4.1GHz	3.1~3.6GHz	3.0~3.9GHz	3~3.1GHz
	CPU TDP	Max. 250W		70~150W	125~225W
	Cache		12~48M	11~35.75M	Max. 128MB
	Chipset	Intel® C741	Intel® C621A	Intel® C622	-
	BIOS	Insyde	Insyde SPI 128Mbit	Insyde SPI 256Mbit	Insyde
Memory	Technology	DDR5 Max. 5600 MHz	Single Channel DDR4 up to 3200 MHz	Single Channel DDR4 2133/2400/2666/2933 MHz	DDR5 Max. 4800MHz
	Max. Capacity	1024GB	512GB	384GB	576GB
	Socket	16 ECC-RDIMM	8 ECC-RDIMM	12 RDIMM	6 ECC-RDIMM
Storage		1 M.2 M key 2280 4 SATA 3.0, (RAID 0/1/5/10)	6 SATA 3.0 (RAID 0/1/5/10), 1 M.2 2280 M key	2x 5.25" (1x 2.5"), 1x 3.5" (1x 2.5"), 1 M.2 2280	2 M.2 M key 2280 4 2.5" hotswap
Expansion	PCIe, PCI, Mini PCIe	4 x PCIe x16 (Gen 5) 2 x PCIe x8 (Gen5)	3 PCIe x16, 3 PCIe x8	4 PCIe x16, 1 PCIe x8, 1 PCI	3 PCIe x16, 3 PCIe x8, 1 PCIe x4
	M.2	1 M.2 M key 2280	-	1 M.2 2280 M key	-
	SIM, Other	-	-	1 BMC Module slot for SEM2500/2510 (IPMI), 1 100GbE slot (x4 + x8)	-
Audio	Audio Codec	ALC888S	ALC888S	ALC888	HS-100B
Ethernet	Controller	4 Intel® I210AT, IPMI: RTL8211F	2 Intel® I210, 2 Intel® X550-AT2, 1 IPMI: RTL8211F	2 Intel® I210AT, 1 Intel® x557-AT2	1 Intel® I210AT, 1 Intel® I226LM, 2 Intel® E610-XAT2
LED	Indicators	Power, HDD LED	Power, HDD LED	Power, HDD LED	Power, HDD LED
I/O	Ethernet	4 x GbE 1 x Dedicated IPMI LAN	2 GbE, 2 10GbE, 1 Dedicated IPMI LAN (Opt.)	2 GbE, 2 10GbE x557-AT2, IPMI 2.0 (Opt.)	2 GbE, 2 10GbE, 1 IPMI LAN
	Serial	1 RS-232/422/485 (DB-9)	1 RS-232	1 RS-232	1 RS-232/422/485
	USB	4 x USB 3.2 Gen1	4 USB 3.2, 2 USB 2.0	4 USB 3.2, 2 USB 2.0	4 USB 3.2 Gen1
	Display	1 DP	1 VGA (opt.)	1 VGA (opt.)	1 DP
	DIO	-	-	-	-
	Buttons	Power	Power	Power, Reset	Power
	PS/2	-	-	-	-
	Antenna	-	-	-	-
Audio	Internal: Front Audio	-	Line-out, Mic-in	Internal: Front Audio	
Power	ATX PS2/ Redundant (Opt)	ATX PS/2 or Mini Redundant PSU	ATX PS/2 Power Supply 650W	ATX PS2/ Redundant (Opt)	
Cooling	2 x 12CM system Fan	2 x 12CM Fan	2 Fans (90mm = 51CFM)	2 x 12CM system Fan	
OS Support	Windows 11 LTSC Widows server 2022 LTSC	Win10 IoT, Windows Server 2019, Linux Ubuntu 20.04	Win10 IoT, Windows Server 2016 & 2019, Linux	Windows 11 LTSC Widows server 2022 LTSC	
Mechanism	Construction	Heavy Industrial Steel	Heavy Industrial Steel	Heavy Industrial Stee	Heavy Industrial Steel
	Mounting	Rack mount kit	Flexible hold down bar	Flexible Hold Down Bar	Rack mount kit
	Dimensions (W x H x D)	481.6 x 175.6 x 470.8mm	481.6 x 175.6 x 470.8mm	483 x 177 x 510mm	481.6 x 175.6 x 470.8mm
Environment	Operating Temp.	0°C~40°C	0°C~40°C	0°C~40°C	0°C~40°C
Support MB	ERX810-C741/ERX610-C741	ICX610-C621A	PR810-C622	ERX810-C741/ERX610-C741	



# Industrial Motherboards



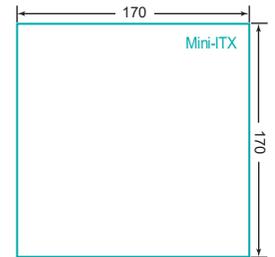
# Mini-ITX

## Compact & High-Performance Solutions



### Features

Our embedded Mini-ITX motherboard is designed with a variety of I/O connectors, passive cooling option, and DC input features in a small form factor measuring to only 170 x 170 mm. This compact and highly integrated platform delivers low power consumption of less than 100 Watts and provides the reserved expansion slot; which makes it an ideal solution for the computing-intensive markets such as POS, gaming, and digital signage, etc.



Thin Mini-ITX



W880



Q870



H810

Model Name		PTH171/PTH173	ARS101/ARS103-W880	ARS101/ARS103-Q870	ARS101/ARS103-H810
Platform		ULT/Mobile	Workstation	Desktop	Desktop
System	Processor	Next Gen of Intel® Core™ Ultra	Intel® Core™ Ultra	Intel® Core™ Ultra	Intel® Core™ Ultra
	Socket	BGA2540	LGA 1851	LGA 1851	LGA 1851
	Max. Speed	4.5~5.1GHz	4.9~5.6GHz	4.9~5.6GHz	4.9~5.6GHz
	TDP	25W	35/65W	35/65W	35/65W
	Cache	12~18M	20~36M	20~36M	20~36M
	Chipset	-	Intel® W880	Intel® Q870	Intel® H810
BIOS		AMI SPI 256Mbit	AMI SPI 256Mbit	AMI SPI 256Mbit	AMI SPI 256Mbit
Memory	Technology	Dual Channel DDR5 7200MHz	Dual Channel DDR5 5600MHz (ECC/non-ECC)	Dual Channel DDR5 5600MHz (non-ECC)	Dual Channel DDR5 5600MHz (non-ECC)
	Max. Capacity	128GB	96GB	96GB	96GB
	Socket	2 SODIMM	2 SODIMM	2 SODIMM	2 SODIMM
Graphics	Connector	1 DP++, 1 HDMI, 1 USB Type C, M2A-Display (Opt.)	1 HDMI, 1 DP++, 1 USB Type-C, 1 eDP, 1 M.2 A key	1 HDMI, 1 DP++, 1 USB Type-C, 1 eDP, 1 M.2 A key	1 HDMI, 1 DP++, 1 eDP, 1 eDP, 1 M.2 A key
	PCIe, PCI	1 PCIe x4	1 PCIe x16	1 PCIe x16	1 PCIe x16
Expansion	Mini PCIe / M.2	1 M.2 M key 2242/2280, 1 M.2 B key 2242/3042/3052, 1 M.2 E key 2230, 1 M.2 A key 3042	1 M.2 B key 2242/3042/3052, 1 M.2 E key 2230, 1 M.2 M key 2280, 1 M.2 A key 3030	1 M.2 B key 2242/3042/3052, 1 M.2 E key 2230, 1 M.2 M key 2280, 1 M.2 A key 3030	1 M.2 B key 2242/3042/3052, 1 M.2 E key 2230, 1 M.2 M key 2280, 1 M.2 A key 3030
	SIM / Other	1 Nano SIM	1 Nano SIM	1 Nano SIM	1 Nano SIM
	Audio	Audio Codec	ALC888S	ALC888	ALC888
Ethernet	Controller	2 Intel® I226V/IT, 1 Intel® I226LM/IT	1 Intel® I226LM, 1 Intel® I226V	1 Intel® I226LM, 1 Intel® I226V	2 Intel® I226V
	Ethernet	Up to 3 2.5GHz	2 2.5GbE	2 2.5GbE	2 2.5GbE
Rear I/O	Serial	-	-	-	-
	USB	4 USB 3.2 Gen2, 1 USB Type C	6 USB 3.2 Gen2, 1 USB Type-C	6 USB 3.2 Gen2, 1 USB Type-C	2 USB 3.2 Gen2, 1 USB 3.2 Gen1, 3 USB 2.0
	Display	1 HDMI, 1 DP++, 1 USB Type-C	1 HDMI, 1 DP++, 1 USB Type-C	1 HDMI, 1 DP++, 1 USB Type-C	1 HDMI, 1 DP++
	Audio	-	-	-	-
Internal I/O	Serial	2 RS-232/422/485, 1 RS-232, 1 RS-232/DIO	2 RS-232/422/485	2 RS-232/422/485	2 RS-232/422/485
	USB	5 USB 2.0	4 USB 2.0	4 USB 2.0	2 USB 2.0
	Display	1 M.2 A key	1 eDP, 1 M2A-Display	1 eDP, 1 M2A-Display	1 eDP, 1 M2A-Display
	Audio	Line-out, Mic-in	1 Front Audio (Line-out, Mic-in)	1 Front Audio (Line-out, Mic-in)	1 Front Audio (Line-out, Mic-in)
	Storage	2 SATA 3.0	2 SATA 3.0 (RAID 0/1/5/10)	2 SATA 3.0 (RAID 0/1/5/10)	2 SATA 3.0 (RAID 0/1/5/10)
	DIO	8-bit DIO	8-bit DIO	8-bit DIO	8-bit DIO
	LPC**	-	-	-	-
	SMBus	1	1	1	1
TPM / iAMT	dTPM (default) / fTPM (Opt.)	Nuvoton TPM 2.0.	Nuvoton TPM 2.0.	Nuvoton TPM 2.0.	
Power	12V / 12~28V DC-In	12V / 12~28V DC-In	12V / 12~28V DC-In	12V / 12~28V DC-In	
Operating Temperature	-20°C~70°C or -5°C~65°C	-5°C~65°C	-5°C~65°C	-5°C~65°C	
Support Chassis	WM130	WM130	WM130	WM130	

\*\*Supports LPC EXT-RS232/RS485 module

## Industrial Motherboards - Mini-ITX



R680E



R680E



R680E

Model Name		RPS101/RPS103-R680E	RPS100-R680E	ADS101/ADS103-R680E
Platform		Workstation	Workstation	Workstation
System	Processor	BTL-S/14th/13th/12th Gen Intel® Core™	BTL-S/14th/13th/12th Gen Intel® Core™	14th/13th/12th Gen Intel® Core™
	Socket	LGA 1700	LGA 1700	LGA 1700
	Max. Speed	2.4~5.8GHz	2.4~5.8GHz	2.4~5.8GHz
	TDP	35~65W	35~65W	35~65W
	Cache	4~36M	4~36M	4~36M
	Chipset	Intel® R680E	Intel® R680E	Intel® R680E
BIOS	AMI SPI 256Mbit	AMI SPI 256Mbit	AMI SPI 256Mbit	
Memory	Technology	Dual Channel DDR5 5600MHz (support ECC)	Dual Channel DDR5 4800MHz (support ECC)	Dual Channel DDR4 3200MHz (support ECC)
	Max. Capacity	64GB	64GB	64GB
	Socket	2 SODIMM	2 SODIMM	2 SODIMM
Graphics	Connector	1 HDMI, 1 DP++, 1 USB Type-C, 1 eDP/LVDS, 1 DFI EXT-Display Port	1 DP++, 1 VGA, 1 HDMI, 1 M2A-Display (Opt.)	2 DP++, 1 LVDS/eDP, 1 DFI EXT-Display Port
	PCIe, PCI	1 PCIe x16	1 PCIe x16	1 PCIe x16
Expansion	Mini PCIe / M.2	1 M.2 B key 2242/3042/3052, 1 M.2 E key 2230, 1 M.2 M key 2280	1 M.2 E key 2230, 1 M.2 M key 2280, 1 M.2 A key 3060 (Opt.)	1 M.2 B key 2242/3042/3052, 1 M.2 E key 2230, 1 M.2 M key 2280
	SIM / Other	1 Nano SIM	-	1 Nano SIM
Audio	Audio Codec	ALC888	ALC888S	ALC888
Ethernet	Controller	1 Intel® I226LM, 1 Intel® I226V	1 Intel® I226LM, 1 Intel® I226V	1 Intel® I226V, 1 Intel® I210AT, 1 Intel® I219LM
Rear I/O	Ethernet	2 2.5GbE	2 2.5GbE	1 2.5GbE, 1/2 GbE
	Serial	-	2 RS-232/422/485	-
	USB	5 USB 3.2 Gen2, 1 USB Type-C	2 USB 3.2 Gen2, 4 USB 3.2 Gen1	4~6 USB 3.2 Gen2
	Display	1 HDMI, 1 DP++, 1 USB Type-C	1 DP++, 1 VGA, 1 HDMI	2 DP++, 1 DFI EXT-Display Port
	Audio	-	-	-
Internal I/O	Serial	2 RS-232/422/485	-	2 RS-232/422/485
	USB	4 USB 2.0	2 USB 2.0	2 USB 3.2 Gen1, 4 USB 2.0
	Display	1 eDP/LVDS, 1 DFI EXT-Display Port	1 M.2 A key, support M2A-Display (Opt.)	1 LVDS, 1 eDP
	Audio	1 Front Audio (Line-out, Mic-in)	1 Front Audio (Line-out, Mic-in)	1 Front Audio (Line-out, Mic-in)
	Storage	2 SATA 3.0, 2 SATA Power, (RAID 0/1/5/10)	2 SATA 3.0	2 SATA 3.0, 1 SATA Power, (RAID 0/1/5/10)
	DIO	8-bit DIO	8-bit DIO	8-bit DIO
	LPC**	-	-	-
SMBus	1	1	-	
TPM / iAMT		Nuvoton TPM 2.0, iAMT	dTPM (default) / fTPM (Opt.)	dTPM 2.0, iAMT 12.0
Power		12V / 12~28V DC-In	ATX	12V / 15~36V DC-In
Operating Temperature		-5°C~65°C	-5°C~65°C	-5°C~65°C
Support Chassis		WM130	WM140/DT122	WM130

# Industrial Motherboards - Mini-ITX



Q670E



Q670E



Q670E



H610E

Model Name		RPS183-Q670E	RPS101/RPS103-Q670E	RPS100-Q670E	ADS101/ADS103-Q670E
Platform		Desktop	Desktop	Desktop	Desktop
System	Processor	BTL-S/14th/13th/12th Gen Intel® Core™	BTL-S/14th/13th/12th Gen Intel® Core™	BTL-S/14th/13th/12th Gen Intel® Core™	14th/13th/12th Gen Intel® Core™
	Socket	LGA 1700	LGA 1700	LGA 1700	LGA 1700
	Max. Speed	2.4~5.8GHz	2.4~5.8GHz	2.4~5.8GHz	2.4~5.8GHz
	TDP	35/46/60/65W	35~65W	35~65W	35~65W
	Cache	4~36M	4~36M	4~36M	4~36M
	Chipset	Intel® Q670E	Intel® Q670E	Intel® Q670E	Intel® Q670E
	BIOS	AMI SPI 256Mbit	AMI SPI 256Mbit	AMI SPI 256Mbit	AMI SPI 256Mbit
Memory	Technology	Dual Channel DDR5 4800MHz (ECC supported)	Dual Channel DDR5 5600MHz	Dual Channel DDR5 4800MHz	Dual Channel DDR4 3200MHz
	Max. Capacity	64GB	64GB	64GB	64GB
	Socket	2 SODIMM	2 SODIMM	2 SODIMM	2 SODIMM
Graphics	Connector	2 DP++, 1 USB Type C (DP Alt-mode), 1 eDP, 1 HDMI	1 HDMI, 1 DP++, 1 USB Type-C, 1 eDP/LVDS, 1 DFI EXT-Display Port	1 DP++, 1 VGA, 1 HDMI, 1 M2A-Display (Opt.)	2 DP++, 1 LVDS/eDP, 1 DFI EXT-Display Port
	PCIe, PCI	1 PCIe x4	1 PCIe x16	1 PCIe x16	1 PCIe x16
Expansion	Mini PCIe / M.2	1 M.2 B key 2242/3042/3052, 1 M.2 E key 2230, 1 M.2 M key 2280	1 M.2 B key 2242/3042/3052, 1 M.2 E key 2230, 1 M.2 M key 2280	1 M.2 E key 2230, 1 M.2 M key 2280, 1 M.2 A key 3060 (Opt.)	1 M.2 B key 2242/3042/3052, 1 M.2 E key 2230, 1 M.2 M key 2280
	SIM / Other	1 Nano SIM, 1 MXM Type-A/B/B+	1 Nano SIM	-	1 Nano SIM
Audio	Audio Codec	ALC888S	ALC888	ALC888S	ALC888
Ethernet	Controller	1 Intel® I226LM, 1 Intel® I226V	1 Intel® I226LM, 1 Intel® I226V	1 Intel® I226LM, 1 Intel® I226V	1 Intel® I226V, 1 Intel® I210AT, 1 Intel® I219LM
	Ethernet	2 2.5GbE	2 2.5GbE	2 2.5GbE	1 2.5GbE, 1/2 GbE
Rear I/O	Serial	-	-	2 RS-232/422/485	-
	USB	4 USB 3.2 Gen2 or 3 USB 3.2 Gen2 + 1 USB Type C	5 USB 3.2 Gen2, 1 USB Type-C	6 USB 3.2 Gen1	4~6 USB 3.2 Gen2
	Display	2 DP++, 1 USB Type C (DP alt-mode)	1 HDMI, 1 DP++, 1 USB Type-C	1 DP++, 1 VGA, 1 HDMI	2 DP++, 1 DFI EXT-Display Port
	Audio	1 Audio Jack (Line-out, Mic-in)	-	-	-
	Storage	1 SATA 3.0	2 SATA 3.0, 2 SATA Power, (RAID 0/1/5/10)	2 SATA 3.0	2 SATA 3.0, 1 SATA Power, (RAID 0/1/5/10)
Internal I/O	Serial	2 RS-232/422/485	2 RS-232/422/485	-	2 RS-232/422/485
	USB	2 USB 3.2 Gen1, 1 USB 2.0	4 USB 2.0	2 USB 2.0	2 USB 3.2 Gen1, 4 USB 2.0
	Display	1 eDP, 1 HDMI	1 eDP/LVDS, 1 DFI EXT-Display Port	1 M.2 A key, support M2A-Display (Opt.)	1 LVDS, 1 eDP
	Audio	-	1 Front Audio (Line-out, Mic-in)	1 Front Audio (Line-out, Mic-in)	1 Front Audio (Line-out, Mic-in)
	Storage	1 SATA 3.0	2 SATA 3.0, 2 SATA Power, (RAID 0/1/5/10)	2 SATA 3.0	2 SATA 3.0, 1 SATA Power, (RAID 0/1/5/10)
	DIO	8-bit DIO	8-bit DIO	8-bit DIO	8-bit DIO
TPM / iAMT	LPC**	-	-	-	-
	SMBus	SMBus	1	1	-
	TPM / iAMT	dTPM / fTPM (Opt.)	Nuvoton TPM 2.0, iAMT	dTPM (default) / fTPM (Opt.)	dTPM 2.0, iAMT 12.0
Power	19~24V DC-In	12V / 12~28V DC-In	ATX	12V / 15~36V DC-In	
Operating Temperature	-5°C~65°C	-5°C~65°C	-5°C~65°C	-5°C~65°C	
Support Chassis	Project support	WM130	WM140/DT122	WM130	

# Industrial Motherboards - Mini-ITX



H610E



H610E



H610E



H610E

Model Name		RPS183-H610E	RPS101/RPS103-H610E	RPS100-H610E	ADS101/ADS103-H610E
Platform		Desktop	Desktop	Desktop	Desktop
System	Processor	BTL-S/14th/13th/12th Gen Intel® Core™	BTL-S/14th/13th/12th Gen Intel® Core™	BTL-S/14th/13th/12th Gen Intel® Core™	14th/13th/12th Gen Intel® Core™
	Socket	LGA 1700	LGA 1700	LGA 1700	LGA 1700
	Max. Speed	2.4~5.8GHz	2.4~5.8GHz	2.4~5.8GHz	2.4~5.8GHz
	TDP	35/46/60/65W	35~65W	35~65W	35~65W
	Cache	4~36M	4~36M	4~36M	4~36M
	Chipset	Intel® H610E	Intel® H610E	Intel® H610E	Intel® H610E
	BIOS	AMI SPI 256Mbit	AMI SPI 256Mbit	AMI SPI 256Mbit	AMI SPI 256Mbit
Memory	Technology	Dual Channel DDR5 4800MHz (ECC supported)	Dual Channel DDR5 5600MHz	Dual Channel DDR5 4800MHz	Dual Channel DDR4 3200MHz
	Max. Capacity	64GB	64GB	64GB	64GB
	Socket	2 SODIMM	2 SODIMM	2 SODIMM	2 SODIMM
Graphics	Connector	2 DP++, 1 USB Type C (DP Alt-mode), 1 eDP, 1 HDMI	1 HDMI, 1 DP++, 1 eDP/LVDS, 1 DFI EXT-Display Port	1 DP++, 1 VGA, 1 HDMI, 1 M2A-Display (Opt.)	2 DP++, 1 LVDS/eDP, 1 DFI EXT-Display Port
	PCIe, PCI	-	1 PCIe x16	1 PCIe x16	1 PCIe x16
Expansion	Mini PCIe / M.2	1 M.2 B key 2242/3042/3052 1 M.2 E key 2230, 1 M.2 M key 2280	1 M.2 B key 2242/3042/3052, 1 M.2 E key 2230, 1 M.2 M key 2280	1 M.2 E key 2230, 1 M.2 M key 2280, 1 M.2 A key 3060 (Opt.)	1 M.2 B key 2242/3042/3052, 1 M.2 E key 2230, 1 M.2 M key 2280
	SIM / Other	1 Nano SIM, 1 MXM Type-A/B/B+	1 Nano SIM	-	1 Nano SIM
	Audio Codec	ALC888S	ALC888	ALC888S	ALC888
Ethernet	Controller	1 Intel® I219V, 1 Intel® I226V	2 Intel® I226V	2 Intel® I226V	1 Intel® I226V, 1 Intel® I210AT, 1 Intel® I219V
	Ethernet	2 2.5GbE	2 2.5GbE	2 2.5GbE	1 2.5GbE, 1/2 GbE
Rear I/O	Serial	-	-	2 RS-232/422/485	-
	USB	2 USB 3.2 Gen2, 2 USB 2.0 / 1 USB Type C	2 USB 3.2 Gen2, 1 USB 3.2 Gen1, 2 USB 2.0	4 USB 3.2 Gen1, 2 USB 2.0	2 USB 3.2 Gen2, 1 USB 3.2 Gen1, 1 USB 2.0
	Display	2 DP++, 1 USB Type C (DP alt-mode)	1 HDMI, 1 DP++	1 DP++, 1 VGA, 1 HDMI	2 DP++, 1 DFI EXT-Display Port
	Audio	1 Audio Jack (Line-out, Mic-in)	-	-	-
	Serial	2 RS-232/422/485	2 RS-232/422/485	-	2 RS-232/422/485
Internal I/O	USB	2 USB 3.2 Gen1, 1 USB 2.0	2 USB 2.0	2 USB 2.0	4 USB 2.0
	Display	1 eDP, 1 HDMI	1 eDP/LVDS, 1 DFI EXT-Display Port	1 M.2 A key, support M2A-Display (Opt.)	1 LVDS, 1 eDP
	Audio	-	1 Front Audio (Line-out, Mic-in)	1 Front Audio (Line-out, Mic-in)	1 Front Audio (Line-out, Mic-in)
	Storage	1 SATA 3.0	2 SATA 3.0, 2 SATA Power, (RAID 0/1/5/10)	2 SATA 3.0	2 SATA 3.0, 1 SATA Power
	DIO	8-bit DIO	8-bit DIO	8-bit DIO	8-bit DIO
	LPC**	-	-	-	-
	SMBus	SMBus	1	1	-
TPM / iAMT	dTPM / fTPM (Opt.)	Nuvoton TPM 2.0	dTPM (default) / fTPM (Opt.)	dTPM 2.0	
Power	19~24V DC-In	12V / 12~28V DC-In	ATX	12V / 15~36V DC-In	
Operating Temperature	-5°C~65°C	-5°C~65°C	-5°C~65°C	-5°C~65°C	
Support Chassis	TBD	WM130	WM140/DT122	WM130	

## Industrial Motherboards - Mini-ITX



Model Name		ARH171/ARH173	RPP171/RPP173	TGU171/TGU173
Platform		ULT/Mobile	ULT	ULT
System	Processor	Intel® Arrow Lake H/U Processors, Intel® Meteor Lake H/U Processors	13th Gen Intel® Core™	11th Gen Intel® Core™
	Socket	BGA2049	BGA1744	BGA1499
	Max. Speed	5GHz	4.3~4.9GHz	1.8~4.4GHz
	TDP	28W	15W~28W	15W~28W
	Cache	24M	10~24M	4~12M
	Chipset	-	-	-
	BIOS	AMI SPI 256Mbit	AMI SPI 256Mbit	AMI SPI 256Mbit
Memory	Technology	Dual Channel DDR5 5600/6400MHz	Dual Channel DDR5 5200MHz	Dual Channel DDR4 3200MHz (support ECC)
	Max. Capacity	96GB	64GB	64GB
	Socket	2 SODIMM	2 SODIMM	2 SODIMM
Graphics	Connector	1 DP++, 1 HDMI, 1 USB Type C, 1 M2A Modular	2 DP++, 1 USB Type C, M2A-Display (Opt.)	1 LVDS, 1 eDP, 1 DP++, 1 HDMI, 1 USB Type C
	PCIe, PCI	1 PCIe x4	1 PCIe x4	1 PCIe x4
Expansion	Mini PCIe / M.2	1 M.2 M Key 2242/2280, 1 M.2 A Key 3060/3042, 1 M.2 B key 2242/3042/3052, 1 M.2 E Key 2230	1 M.2 M key 2242/2280, 1 M.2 B key 2242/3042/3052, 1 M.2 E key 2230, 1 M.2 A key 3042	1 M.2 M key 2242/2280, 1 M.2 B key 2242/3042/3052, 1 M.2 E key 2230
	SIM / Other	1	1 Nano SIM	1 Nano SIM
Audio	Audio Codec	ALC888S	ALC888S	ALC888
Ethernet	Controller	2 I226-V, 1 I226LM/IT	2 Intel® I226V/IT, 1 Intel® I226LM/IT	1 Intel® I225LM/IT, 2 Intel® I211AT/I210IT
		Ethernet	3 2.5GHz	Up to 3 2.5GHz
Rear I/O	Serial	-	-	-
	USB	4 USB 3.2 Gen2, 1 USB Type C	4 USB 3.2 Gen2, 1 USB Type C	4 USB 3.2 Gen2, 1 USB Type C
	Display	1 DP++, 1 HDMI	2 DP++	1 DP++
	Audio	-	-	-
	Internal I/O	Serial	2 RS-232/422/485, 1 RS-232, 1 RS-232/DIO	2 RS-232/422/485, 1 RS-232, 1 RS-232/DIO
Internal I/O	USB	4 USB 2.0	4 USB 2.0	4 USB 2.0
	Display	1 M.2 A key, support M2A-Display(Opt.)	1 M.2 A key (Opt.)	1 LVDS, 1 eDP
	Audio	Line-out, Mic-in	Line-out, Mic-in	1 Front Audio
	Storage	2 SATA 3.0	2 SATA 3.0	2 SATA 3.0, (RAID 0/1), 2 SATA Power
	DIO	8-bit DIO	8-bit DIO	8-bit DIO, 1 DIO Power
	LPC**	-	-	-
	SMBus	1	1	1
TPM / iAMT	dTPM (default) / fTPM (Opt.)	dTPM (default) / fTPM (Opt.)	fTPM (default) / dTPM (Opt.)	
Power	12V / 12~28V	12V / 9~36V DC-In	12V / 9~36V DC-In	
Operating Temperature	-20°C~70°C or -5°C~65°C	-20°C~70°C or -5°C~65°C	-20°C~70°C or -5°C~65°C	
Support Chassis	WM130	WM130	WM130	



W680E



W680E

Model Name		CMS101/CMS103-W480E	CMS100-W480E
Platform		Workstation	Workstation
System	Processor	10th Gen Intel® Core™	10th Gen Intel® Core™
	Socket	LGA1200	LGA1200
	Max. Speed	3.0~4.7GHz	3.0~4.8GHz
	TDP	35/65W	35~125W
	Cache	-	-
	Chipset	Intel® W480E	Intel® W480E
BIOS		AMI SPI 256Mbit	AMI SPI 256Mbit
Memory	Technology	Dual Channel DDR4 2933MHz	Dual Channel DDR4 2933MHz (support ECC)
	Max. Capacity	64GB	64GB
	Socket	2 SODIMM	2 SODIMM
Graphics	Connector	1 LVDS/eDP, 2 DP++	1 DP++, 1 DP++ or HDMI, 1 LVDS/eDP, 1 DVI-I
Expansion	PCIe, PCI	1 PCIe x16	1 PCIe x16
	Mini PCIe / M.2	1 M.2 B key 2242/3042/3052, 1 M.2 E key 2230, 1 M.2 M key 2280	1 M.2 M key 2280, 1 M.2 B key 2242/3042, 1 M.2 E key 2230
	SIM / Other	1 Nano SIM	1 Nano SIM
Audio	Audio Codec	ALC888/887	ALC888
Ethernet	Controller	1 Intel® I225LM, 1 Intel® I210AT, 1 Intel® I219LM	1 Intel® I225LM, 1 Intel® I219LM
Rear I/O	Ethernet	1 2.5GbE, 2 GbE	1 2.5GbE, 1 GbE
	Serial	-	2 RS-232/422/485
	USB	4 USB 3.2 Gen2	6 USB 3.2 Gen2
	Display	2 DP++	1 DP++, 1 DP++ or HDMI, 1 DVI-I
Internal I/O	Audio	-	-
	Serial	2 RS-232/422/485, 2 RS-232	-
	USB	4 USB 2.0	4 USB 2.0
	Display	1 LVDS, 1 eDP	1 LVDS, 1 eDP
	Audio	1 Front Audio	1 Front Audio
	Storage	2 SATA 3.0, (RAID 0/1/5/10), 1 SATA Power	2 SATA 3.0, (RAID 0/1/5/10)
	DIO	8-bit DIO, 1 DIO Power	8-bit DIO, 1 DIO Power
	LPC**	1	1
SMBus	1	-	
TPM / iAMT		fTPM (default) / dTPM 2.0. (Opt.), iAMT 12.0	fTPM (Default) / dTPM (Opt.)
Power		12V / 15~36V DC-In	ATX
Operating Temperature		-5°C~65°C	-5°C~65°C
Support Chassis		WM130	WM140/DT122

## Industrial Motherboards - Mini-ITX



Q470E



Q470E



Q470E

Model Name		CMS171/CMS173-Q470E	CMS101/CMS103-Q470E	CMS100-Q470E
Platform		Desktop	Desktop	Desktop
System	Processor	10th Gen Intel® Core™	10th Gen Intel® Core™	10th Gen Intel® Core™
	Socket	LGA1200	LGA1200	LGA1200
	Max. Speed	3.0~4.7GHz	3.0~4.7GHz	3.0~4.7GHz
	TDP	35~65W	35/65W	35~125W
	Cache	2~20M	-	-
	Chipset	Intel® Q470E	Intel® Q470E	Intel® Q470E
BIOS		AMI SPI 256Mbit	AMI SPI 256Mbit	AMI SPI 256Mbit
Memory	Technology	Dual Channel DDR4 2933MHz	Dual Channel DDR4 2933MHz	Dual Channel DDR4 2933MHz
	Max. Capacity	64GB	64GB	64GB
	Socket	2 SODIMM	2 SODIMM	2 SODIMM
Graphics	Connector	2 DP++	1 LVDS/eDP, 2 DP++	1 DP++, 1 DP++ or HDMI, 1 LVDS/eDP, 1 DVI-I
Expansion	PCIe, PCI	1 PCIe x16	1 PCIe x16	1 PCIe x16
	Mini PCIe / M.2	1 M.2 B key 3042/3052, 1 M.2 E key 2230, 1 M.2 M key 2280	1 M.2 B key 2242/3042/3052, 1 M.2 E key 2230, 1 M.2 M key 2280	1 M.2 M key 2280, 1 M.2 B key 2242/3042, 1 M.2 E key 2230
	SIM / Other	1 Nano SIM	1 Nano SIM	1 Nano SIM
Audio	Audio Codec	ALC888	ALC888/887	ALC888
Ethernet	Controller	1 Intel® I211AT, 1 Intel® I219LM	1 Intel® I225LM, 1 Intel® I210AT, 1 Intel® I219LM	1 Intel® I225LM, 1 Intel® I219LM
Rear I/O	Ethernet	2 GbE	1 2.5GbE, 2 GbE	1 2.5GbE, 1 GbE
	Serial	1 RS-232/422/485	-	2 RS-232/422/485
	USB	8 USB 3.2 Gen2, 4 USB 3.2	4 USB 3.2 Gen2	6 USB 3.2 Gen2
	Display	2 DP++	2 DP++	1 DP++, 1 DP++ or HDMI, 1 DVI-I
	Audio	-	-	-
Internal I/O	Serial	1 RS-232/422/485	2 RS-232/422/485, 2 RS-232	-
	USB	-	4 USB 2.0	4 USB 2.0
	Display	-	1 LVDS, 1 eDP	1 LVDS, 1 eDP
	Audio	1 Front Audio	1 Front Audio	1 Front Audio
	Storage	2 SATA 3.0, 1 SATA Power, (RAID 0/1)	2 SATA 3.0, (RAID 0/1/5/10), 1 SATA Power	2 SATA 3.0, (RAID 0/1/5/10)
	DIO	8-bit DIO	8-bit DIO, 1 DIO Power	8-bit DIO, 1 DIO Power
	LPC**	1	1	1
	SMBus	1	1	-
TPM / iAMT	Infineon TPM 1.2/2.0 (Opt.), iAMT 12.0	fTPM (default) / dTPM 2.0. (Opt.), iAMT 12.0	fTPM (Default) / dTPM (Opt.)	
Power	12V / 15~36V DC-In	12V / 15~36V DC-In	ATX	
Operating Temperature	-5°C~65°C	-5°C~65°C	-5°C~65°C	
Support Chassis	WM130	WM130	WM140/DT122	



H420E



H420E

Model Name		CMS101/CMS103-H420E	CMS100-H420E
Platform		Desktop	Desktop
System	Processor	10th Gen Intel® Core™	10th Gen Intel® Core™
	Socket	LGA1200	LGA1200
	Max. Speed	3.0~4.7GHz	3.0~4.7GHz
	TDP	35/65W	35~125W
	Cache	-	-
	Chipset	Intel® H420E	Intel® H420E
BIOS		AMI SPI 256Mbit	AMI SPI 256Mbit
Memory	Technology	Dual Channel DDR4 2933MHz	Dual Channel DDR4 2933MHz
	Max. Capacity	64GB	64GB
	Socket	2 SODIMM	2 SODIMM
Graphics	Connector	1 LVDS/eDP, 2 DP++	1 DP++, 1 DP++ or HDMI, 1 LVDS/eDP, 1 DVI-I
Expansion	PCIe, PCI	1 PCIe x16	1 PCIe x16
	Mini PCIe / M.2	1 M.2 B key 2242/3042/3052, 1 M.2 E key 2230, 1 M.2 M key 2280	1 M.2 M key 2280, 1 M.2 B key 2242/3042, 1 M.2 E key 2230
	SIM / Other	1 Nano SIM	1 Nano SIM
Audio	Audio Codec	ALC888/887	ALC888
Ethernet	Controller	1 Intel® I225LM, 1 Intel® I210AT, 1 Intel® I219LM	1 Intel® I225LM, 1 Intel® I219V
Rear I/O	Ethernet	1 2.5GbE, 2 GbE	1 2.5GbE, 1 GbE
	Serial	-	2 RS-232/422/485
	USB	4 USB 3.2 Gen1	5 USB 3.2 Gen1, 1 USB 2.0
	Display	2 DP++	1 DP++, 1 DP++ or HDMI, 1 DVI-I
	Audio	-	-
Internal I/O	Serial	2 RS-232/422/485, 2 RS-232	-
	USB	4 USB 2.0	2 USB 2.0
	Display	1 LVDS, 1 eDP	1 LVDS, 1 eDP
	Audio	1 Front Audio	1 Front Audio
	Storage	2 SATA 3.0, 1 SATA Power	2 SATA 3.0
	DIO	8-bit DIO, 1 DIO Power	8-bit DIO, 1 DIO Power
	LPC**	1	1
SMBus	1	-	
TPM / iAMT	fTPM (default) / dTPM 2.0. (Opt.), iAMT 12.0		fTPM (Default) / dTPM (Opt.)
Power	12V / 15~36V DC-In		ATX
Operating Temperature	-5°C~65°C		-5°C~65°C
Support Chassis	WM130		WM140/DT122

## Industrial Motherboards - Mini-ITX



Thin Mini-ITX

C246



Thin Mini-ITX

C246



Thin Mini-ITX

C246



C246

Model Name		CS170-C246	CS103-C246	CS101-C246	CS100-C246
Platform		Workstation	Workstation	Workstation	Workstation
System	Processor	9th/8th Gen Intel® Core™	9th/8th Gen Intel® Core™	9th/8th Gen Intel® Core™	9th/8th Gen Intel® Core™
	Socket	LGA1151	LGA1151	LGA1151	LGA1151
	Max. Speed	3.1~5.0GHz	3.1~4.6GHz	3.1~4.6GHz	3.1~4.7GHz
	TDP	35~95W	35~65W	35~95W	35~80W
	Cache	-	-	-	-
	Chipset	Intel® C246	Intel® C246	Intel® C246	Intel® C246
	BIOS	AMI SPI 128Mbit	AMI SPI 128Mbit	AMI SPI 128Mbit	AMI SPI 128Mbit
Memory	Technology	Dual Channel DDR4 2400/2666MHz (support ECC)	Dual Channel DDR4 2400/2666MHz (support ECC)	Dual Channel DDR4 2666MHz (support ECC)	Dual Channel DDR4 2400/2666MHz (support ECC)
	Max. Capacity	32GB	32GB	32GB	32GB
	Socket	2 SODIMM	2 SODIMM	2 SODIMM	2 SODIMM
Graphics	Connector	1 LVDS, 2 DP++, 1 VGA	1 LVDS, 2 DP++	1 LVDS/eDP, 1 HDMI, 2 DP++	1 LVDS, 2 DP++, 1 VGA
	PCIe, PCI	1 PCIe x16	1 PCIe x4	1 PCIe x4	1 PCIe x16
Expansion	Mini PCIe / M.2	1 M.2 M key 2280, 1 M.2 E key 2230	1 M.2 M key 2280, 1 M.2 E key 2230	1 M.2 M key 2280, 1 M.2 E key 2230, 1 Full mPCIe	1 Full mPCIe
	SIM / Other	-	2 DFI proprietary extension bus for PCIe/PCI	-	-
	Audio Codec	ALC888/887	ALC888S	ALC888S	ALC888S
Ethernet	Controller	1 Intel® I210AT PCIe, 1 Intel® I219LM PHY	1 Intel® I210AT PCIe, 1 Intel® I219LM PHY	1 Intel® I219LM PHY, 1 Intel® I210AT PCIe	1 Intel® I219LM, 1 Intel® I210AT
	Ethernet	2 GbE	2 GbE	2 GbE	2 GbE
Rear I/O	Serial	2 RS-232	-	-	1 RS-232
	USB	2 USB 3.2 Gen2, 4 USB 3.2 Gen1	4 USB 3.2 Gen2	4 USB 3.2 Gen2	2 USB 3.2 Gen2, 2 USB 3.2 Gen1, 4 USB 2.0
	Display	2 DP++, 1 VGA	2 DP++	2 DP++, 1 HDMI	2 DP++, 1 VGA
	Audio	1 Audio Jack (Lin-out/Mic-in/Line-in)	-	-	1 Audio Jack (Lin-out/Mic-in/Line-in(Opt.))
	Serial	-	2 RS-232/422/485, 2 RS-232	2 RS232/422/485, 2 RS232	1 RS-232
Internal I/O	USB	2 USB 2.0	4 USB 2.0	4 USB 2.0	-
	Display	1 LVDS, 1 LCD/Inverter Power	1 LVDS	1 LVDS/eDP	1 LVDS, 1 LCD/Inverter Power
	Audio	1 Front Audio	1 Front Audio	1 Front Audio	1 S/PDIF, 1 Front Audio
	Storage	2 SATA 3.0, (RAID 0/1/5)	2 SATA 3.0, (RAID 0/1/5), 1 SATA Power	2 SATA 3.0, (RAID 0/1/5), 1 SATA Power	3 SATA 3.0, (RAID 0/1/5)
	DIO	8-bit DIO, 1 DIO Power	8-bit DIO	8-bit DIO, DIO Power	8-bit DIO
	LPC**	1	1	1	1
	SMBus	1	1	1	-
TPM / iAMT	dTPM 2.0, iAMT 12.0	dTPM 2.0, iAMT 12.0	dTPM 2.0, iAMT 12.0	dTPM 2.0 (Opt.), iAMT 12.0	
Power	ATX	9~36V DC-In	12V DC-In	ATX	
Operating Temperature	-5°C~65°C	-5°C~65°C	0°C~60°C	0°C~60°C	
Support Chassis	WM130	WM130	ST102/WM130/WM120	DT122	

## Industrial Motherboards - Mini-ITX



Thin Mini-ITX



Q370

Thin Mini-ITX



Q370

Thin Mini-ITX

Q370

Model Name		CS181-Q370	CS170-Q370	CS103-Q370
Platform		Desktop	Desktop	Desktop
System	Processor	9th/8th Gen Intel® Core™	9th/8th Gen Intel® Core™	9th/8th Gen Intel® Core™
	Socket	LGA1151	LGA1151	LGA1151
	Max. Speed	3.1~4.6GHz	3.1~5.0GHz	3.1~4.6GHz
	TDP	35~65W	35~95W	35~65W
	Cache	-	-	-
	Chipset	Intel® Q370	Intel® Q370	Intel® Q370
BIOS		AMI SPI 128Mbit	AMI SPI 128Mbit	AMI SPI 128Mbit
Memory	Technology	Dual Channel DDR4 2400/2666MHz	Dual Channel DDR4 2400/2666MHz	Dual Channel DDR4 2400/2666MHz
	Max. Capacity	64GB	32GB	32GB
	Socket	2 SODIMM	2 SODIMM	2 SODIMM
Graphics	Connector	1 eDP, 1 DP++, 4 DP by MXM module	1 LVDS, 2 DP++, 1 VGA	1 LVDS, 2 DP++
	PCIe, PCI	-	1 PCIe x16	1 PCIe x4
Expansion	Mini PCIe / M.2	1 M.2 M key 2280, 1 M.2 E key 2230, 1 M.2 B key 3042/3052	1 M.2 M key 2280, 1 M.2 E key 2230	1 M.2 M key 2280, 1 M.2 E key 2230
	SIM / Other	1 MXM Type-A/B/B+/C	1 PCIe x16	1 PCIe x4
	Audio	Audio Codec	ALC888S	ALC888/887
Ethernet	Controller	3 Intel® I210AT, 1 Intel® I219LM	1 Intel® I210AT, 1 Intel® I219LM	1 Intel® I210AT, 1 Intel® I219LM
	Ethernet	4 GbE	2 GbE	2 GbE
Rear I/O	Serial	-	2 RS-232	-
	USB	4 USB 3.2 Gen2	2 USB 3.2 Gen2, 4 USB 3.2 Gen1	4 USB 3.2 Gen2
	Display	1 DP++	2 DP++, 1 VGA	2 DP++
	Audio	-	1 Audio Jack (Lin-out/Mic-in/Line-in)	-
	Serial	2 RS-232/422/485	-	2 RS-232/422/485, 2 RS-232
Internal I/O	USB	2 USB 2.0	2 USB 2.0	4 USB 2.0
	Display	1 eDP, 1 LCD/Inverter Power	1 LVDS, 1 LCD/Inverter Power	1 LVDS
	Audio	1 Front Audio	1 Front Audio	1 Front Audio
	Storage	2 SATA 3.0, (RAID 0/1/5)	2 SATA 3.0, (RAID 0/1/5)	2 SATA 3.0, (RAID 0/1/5), 1 SATA Power
	DIO	8-bit DIO, 1 DIO Power	8-bit DIO, 1 DIO Power	8-bit DIO
	LPC**	1	1	1
	SMBus	1	1	1
TPM / iAMT		dTPM 2.0.	dTPM 2.0, iAMT 12.0	dTPM 2.0, iAMT 12.0
Power		19V DC-In	ATX	9~36V DC-In
Operating Temperature		-5°C~65°C	-5°C~65°C	-5°C~65°C
Support Chassis		DT200	ST102/WM130/WM120	ST102/WM130/WM120

## Industrial Motherboards - Mini-ITX



Thin Mini-ITX



Q370

Q370

Model Name		CS101-Q370	CS100-Q370
Platform		Desktop	Desktop
System	Processor	9th/8th Gen Intel® Core™	9th/8th Gen Intel® Core™
	Socket	LGA1151	LGA1151
	Max. Speed	3.1~4.6GHz	3.1~4.7GHz
	TDP	35~95W	35~80W
	Cache	-	-
	Chipset	Intel® Q370	Intel® Q370
	BIOS	AMI SPI 128Mbit	AMI SPI 128Mbit
Memory	Technology	Dual Channel DDR4 2666MHz	Dual Channel DDR4 2400/2666MHz
	Max. Capacity	32GB	32GB
	Socket	2 SODIMM	2 SODIMM
Graphics	Connector	1 LVDS/eDP, 1 HDMI, 2 DP++	1 LVDS, 2 DP++, 1 VGA
	PCIe, PCI	1 PCIe x4	1 PCIe x16
Expansion	Mini PCIe / M.2	1 M.2 M key 2280, 1 M.2 E key 2230, 1 Full mPCIe	1 Full mPCIe
	SIM / Other	1 PCIe x4	1 PCIe x16
	Audio	ALC888S	ALC888S
Ethernet	Controller	1 Intel® I219LM, 1 Intel® I210AT	1 Intel® I219LM, 1 Intel® I210AT
	Ethernet	2 GbE	2 GbE
Rear I/O	Serial	-	1 RS-232
	USB	4 USB 3.2 Gen2	2 USB 3.2 Gen2, 2 USB 3.2 Gen1, 4 USB 2.0
	Display	2 DP++, 1 HDMI	2 DP++, 1 VGA
	Audio	-	1 Audio Jack (Lin-out/Mic-in/Line-in(Opt.))
	Internal I/O	Serial	2 RS232/422/485, 2 RS232
Internal I/O	USB	4 USB 2.0	-
	Display	1 LVDS/eDP	1 LVDS, 1 LCD/Inverter Power
	Audio	1 Front Audio	1 S/PDIF, 1 Front Audio
	Storage	2 SATA 3.0, (RAID 0/1/5), 1 SATA Power	3 SATA 3.0, (RAID 0/1/5)
	DIO	8-bit DIO	8-bit DIO
	LPC**	1	1
	SMBus	1	-
	TPM / iAMT	dTPM 2.0, iAMT 12.0	dTPM 2.0 (Opt.), iAMT 12.0
Power	12V DC-In	ATX	
Operating Temperature	0°C~60°C	0°C~60°C	
Support Chassis	ST102/WM130/WM120	DT122	

## Industrial Motherboards - Mini-ITX



Thin Mini-ITX



H310

Thin Mini-ITX



H310

Thin Mini-ITX

H310

Model Name		CS181-H310	CS170-H310	CS103-H310
Platform		Desktop	Desktop	Desktop
System	Processor	9th/8th Gen Intel® Core™	9th/8th Gen Intel® Core™	9th/8th Gen Intel® Core™
	Socket	LGA1151	LGA1151	LGA1151
	Max. Speed	3.1~4.6GHz	3.1~5.0GHz	2.9~4.6GHz
	TDP	35~65W	35~95W	35~65W
	Cache	-	-	-
	Chipset	Intel® H310	Intel® H310	Intel® H310
BIOS		AMI SPI 128Mbit	AMI SPI 128Mbit	AMI SPI 128Mbit
Memory	Technology	Dual Channel DDR4 2400/2666MHz	Dual Channel DDR4 2400/2666MHz	Dual Channel DDR4 2666MHz
	Max. Capacity	64GB	32GB	32GB
	Socket	2 SODIMM	2 SODIMM	2 SODIMM
Graphics	Connector	1 eDP, 1 DP++, 4 DP by MXM module	1 LVDS, 2 DP++, 1 VGA	1 LVDS, 2 DP++
Expansion	PCIe, PCI	-	1 PCIe x16	1 PCIe x4
	Mini PCIe / M.2	1 M.2 M key 2280, 1 M.2 E key 2230, 1 M.2 B key 3042/3052	1 M.2 M key 2280, 1 M.2 E key 2230	1 M.2 M key 2280, 1 M.2 E key 2230
	SIM / Other	1 MXM Type-A/B/B+/C	-	2 DFI proprietary extension bus for PCIe/PCI
Audio	Audio Codec	ALC888S	ALC888/887	ALC888S
Ethernet	Controller	3 Intel® I210AT, 1 Intel® I219V	1 Intel® I210AT, 1 Intel® I219V	1 Intel® I210AT, 1 Intel® I219LM
Rear I/O	Ethernet	4 GbE	2 GbE	2 GbE
	Serial	-	2 RS-232	-
	USB	4 USB 3.2 Gen1	4 USB 3.2 Gen1, 2 USB 2.0	4 USB 3.2 Gen1
	Display	1 DP++	2 DP++, 1 VGA	2 DP++
	Audio	-	1 Audio Jack (Lin-out/Mic-in/Line-in)	-
Internal I/O	Serial	2 RS-232/422/485	-	2 RS-232/422/485, 2 RS-232
	USB	2 USB 2.0	2 USB 2.0	4 USB 2.0
	Display	1 eDP, 1 LCD/Inverter Power	1 LVDS, 1 LCD/Inverter Power	1 LVDS
	Audio	1 Front Audio	1 Front Audio	1 Front Audio
	Storage	2 SATA 3.0	2 SATA 3.0	2 SATA 3.0, 1 SATA Power
	DIO	8-bit DIO, 1 DIO Power	8-bit DIO, 1 DIO Power	8-bit DIO
	LPC**	1	1	1
	SMBus	1	1	1
TPM / iAMT	dTPM 2.0.	dTPM 2.0	dTPM 2.0	
Power	19V DC-In	ATX	9~36V DC-In	
Operating Temperature	-5°C~65°C	-5°C~65°C	-5°C~65°C	
Support Chassis	DT200	ST102/WM130/WM120	ST102/WM130/WM120	



Thin Mini-ITX



H310

H310

Model Name		CS101-H310	CS100-H310
Platform		Desktop	Desktop
System	Processor	9th/8th Gen Intel® Core™	9th/8th Gen Intel® Core™
	Socket	LGA1151	LGA1151
	Max. Speed	3.1~4.6GHz	3.1~4.7GHz
	TDP	35~95W	35~80W
	Cache	-	-
	Chipset	Intel® H310	Intel® H310
BIOS		AMI SPI 128Mbit	AMI SPI 128Mbit
Memory	Technology	Dual Channel DDR4 2666MHz	Dual Channel DDR4 2400/2666MHz
	Max. Capacity	32GB	32GB
	Socket	2 SODIMM	2 SODIMM
Graphics	Connector	1 LVDS/eDP, 1 HDMI, 2 DP++	1 LVDS, 2 DP++, 1 VGA
	PCIe, PCI	1 PCIe x4	1 PCIe x16
Expansion	Mini PCIe / M.2	1 M.2 M key 2280, 1 M.2 E key 2230, 1 Full mPCIe	-
	SIM / Other	-	1 mSATA
	Audio	Audio Codec	ALC888S
Ethernet	Controller	1 Intel® I219V, 1 Intel® I210AT	1 Intel® I219V, 1 Intel® I210AT
	Ethernet	2 GbE	2 GbE
Rear I/O	Serial	-	1 RS-232
	USB	4 USB 3.2 Gen1	4 USB 3.2 Gen1, 4 USB 2.0
	Display	2 DP++, 1 HDMI	2 DP++, 1 VGA
	Audio	-	1 Audio Jack (Lin-out/Mic-in/Line-in(Opt.))
	Internal I/O	Serial	2 RS232/422/485, 2 RS232
Internal I/O	USB	4 USB 2.0	-
	Display	1 LVDS/eDP	1 LVDS, 1 LCD/Inverter Power
	Audio	1 Front Audio	1 S/PDIF, 1 Front Audio
	Storage	2 SATA 3.0, 1 SATA Power	3 SATA 3.0, (RAID 0/1/5)
	DIO	8-bit DIO, DIO Power	8-bit DIO
	LPC**	1	1
	SMBus	1	-
	TPM / iAMT	dTPM 2.0	dTPM 2.0 (Opt.)
Power	12V DC-In	ATX	
Operating Temperature	0°C~60°C	0°C~60°C	
Support Chassis	ST102-CS	DT122	

## Industrial Motherboards - Mini-ITX



Thin Mini-ITX



ULT



Atom



Atom

Atom

Model Name		WL171/WL173	ASL171/ASL173	ADN171/ADN173	EHL171/EHL173
Platform		ULT	Atom	Atom	Atom
System	Processor	8th Gen Intel® Core™	Intel® Atom® Amston Lake	Intel® Atom® Alder Lake-N	Intel® Atom X Series
	Socket	BGA1528	-	BGA1264	BGA1493
	Max. Speed	2.0~4.4GHz	3.2~3.6GHz	3.2~3.8GHz	3.0GHz
	TDP	15W	6~12W	6~15W	6~12W
	Cache	2~8M	-	6M	1.5M
	Chipset	-	-	-	-
	BIOS	AMI SPI 128Mbit	AMI SPI 256Mbit	AMI SPI 256Mbit	AMI SPI 256Mbit (supports UEFI boot only)
Memory	Technology	Dual Channel DDR4 2133/2400MHz	Single Channel DDR5 4800MHz	Single Channel DDR5 4800MHz	Dual Channel DDR4 3200MHz (support ECC)
	Max. Capacity	32GB	16GB	16GB	32GB
	Socket	2 SODIMM	1 SODIMM	1 SODIMM	2 SODIMM
Graphics	Connector	1 LVDS/eDP, 2 DP++	1 DP++ or VGA, 1 DP++ or HDMI, 1 USB Type C	1 DP++ or VGA, 1 DP++ or HDMI, 1 USB Type C	1 DP++ or VGA, 1 DP++ or HDMI, 1 eDP/LVDS
Expansion	PCIe, PCI	1 PCIe x4	1 PCIe x4	1 PCIe x4	1 PCIe x4
	Mini PCIe / M.2	1 M.2 M key 2242/2260/2280, 1 M.2 E key 2230	1 M.2 B Key 2242/3042/3052, 1 M.2 E Key 2230, 1 M.2 A Key 3060	1 M.2 B Key 2242/3042/3052, 1 M.2 E Key 2230, 1 M.2 A Key 3060	1 M.2 B key 2242/2280/3052, 1 M.2 E key 2230
	SIM / Other	-	1 Nano SIM	1 Nano SIM	1 Nano SIM
Audio	Audio Codec	ALC888S	ALC888S	ALC888S	ALC888
Ethernet	Controller	1 Intel® I210AT, 1 Intel® I219LM	2 Intel® I226IT	2 Intel® I226V	2 Intel® I225IT/LM
Rear I/O	Ethernet	2 GbE	2 2.5GbE	2 2.5GbE	2 2.5GbE
	Serial	-	-	-	-
	USB	4 USB 3.2 Gen2	4 USB 3.2 Gen2 or 3 USB 3.2 Gen2 + 1 USB 2.0 or 3 USB 3.2 Gen2 + 1 USB Type C	4 USB 3.2 Gen2 or 3 USB 3.2 Gen2 + 1 USB 2.0 or 3 USB 3.2 Gen2 + 1 USB Type C	2 USB 3.2 Gen2, 2 USB 3.2 Gen1
	Display	2 DP++	1 DP++ or VGA, 1 DP++ or HDMI, 1 USB Type C	1 DP++ or VGA, 1 DP++ or HDMI, 1 USB Type C	1 DP++ or VGA, 1 DP++ or HDMI
	Audio	Line-out, Mic-in	1 Line-out	1 Line-out	1 Line-out
Internal I/O	Serial	1 RS-232/422/485, 1 RS-232	2 RS-232/422/485, 4 RS-232	2 RS-232/422/485, 4 RS-232	2 RS-232/422/485, 4 RS-232
	USB	4 USB 2.0	4 USB 2.0 or 3 USB 2.0 + 1 Vertical USB 2.0 (Opt.)	4 USB 2.0 or 3 USB 2.0 + 1 Vertical USB 2.0 (Opt.)	4 USB 2.0 or 2 USB 2.0 + 1 Vertical USB 2.0 (Opt.)
	Display	1 LVDS/eDP	-	-	1 eDP/LVDS, 1 LCD/Inverter Power
	Audio	1 Front Audio	1 S/PDIF, 1 Line-out/Mic-in	1 S/PDIF, 1 Line-out/Mic-in	1 S/PDIF, 1 Line-in/Mic-in
	Storage	2 SATA 3.0, 2 SATA Power, (RAID 0/1/5)	2 SATA 3.0	2 SATA 3.0	2 SATA 3.0
	DIO	8-bit DIO, DIO Power	8-bit DIO	8-bit DIO	8-bit DIO
	LPC**	1	-	-	-
	SMBus	1	1	1	1
TPM / iAMT	dTPM 2.0, iAMT 11.6	dTPM (default) / fTPM (Opt.)	dTPM (default) / fTPM (Opt.)	fTPM (default) / dTPM (Opt.)	
Power	12V / 9~36V DC-In	12V / 9~36V DC-In	12V / 9~36V DC-In	12V / 9~36V DC-In	
Operating Temperature	-5°C~65°C / -20°C~70°C	-40°C~85°C	-5°C~65°C	-5°C~65°C / -40°C~85°C	
Support Chassis	ST102/WM130/WM120	ST102/WM130/WM120	ST102/WM130/WM120	ST102/WM130/WM120	

## Industrial Motherboards - Mini-ITX



Thin Mini-ITX



Atom



Atom



Thin Mini-ITX

Atom

Model Name		AL170	AL171/AL173	BT100	BT101/BT103
Platform		Atom		Atom	
System	Processor	Intel® Atom E3900	Intel® Atom E3900	Intel® Atom E3800	Intel® Atom E3800
	Socket	BGA1296	BGA1296	BGA1170	BGA1170
	Max. Speed	1.8~2.5GHz	1.8~2.5GHz	1.46~2.41GHz	1.33~2.41GHz
	TDP	6~12W	6~12W	5/10W	5~10W
	Cache	2M	2M	0.5/2M	0.5~2M
	Chipset	-	-	-	-
	BIOS	SPI 64Mbit (supports UEFI boot only)	Insyde SPI 128Mbit (supports UEFI boot only)	AMI SPI 64Mbit	AMI SPI 64Mbit
Memory	Technology	Dual Channel DDR3L 1867MHz	Dual Channel DDR3L 1867MHz	Single channel DDR3L 1066MHz / Dual channel DDR3L 1333MHz	Single Channel DDR3L 1066MHz / Dual Channel DDR3L 1333/1066MHz
	Max. Capacity	8GB	8GB	4G / 8G	4G / 8G
	Socket	2 SODIMM	2 SODIMM	1 or 2 SODIMM	1 or 2 SODIMM
Graphics	Connector	1 VGA/DP++, 1 DP++, 1 LVDS/eDP	1 VGA/DP++, 1 DP++, 1 LVDS/eDP	1 DVI-D, 1 VGA, 1 LVDS	1 DVI-I, 1 LVDS
	PCIe, PCI	1 PCIe x1	1 PCIe x1	1 PCIe x4	1 PCIe x1
Expansion	Mini PCIe / M.2	1 M.2 M key 2242/2280, 1 Full mPCIe	1 M.2 B key 2242/2280, 1 Full mPCIe	1 mPCIe	1 mPCIe
	SIM / Other	-	-	-	1 Nano SIM
Audio	Audio Codec	ALC888	ALC888S	ALC888	ALC888
Ethernet	Controller	2 Intel® I210IT/AT	2 Intel® I211IT/I210IT or I211AT/I210AT	2 Intel® I210AT	2 Intel® I210AT
Rear I/O	Ethernet	2 GbE	2 GbE	2 GbE	2 GbE
	Serial	2 RS-232/422/485	-	1 RS-232/422/485, 1 R-S232	-
	USB	4 USB 3.2 Gen1	4 USB 3.2 Gen1	1 USB 3.2 Gen1, 3 USB 2.0	1 USB 3.2 Gen1, 2 USB 2.0
	Display	1 DP++, 1 VGA/DP++	1 DP++, 1 VGA/DP++	1 DVI-I (DVI-D signal), 1 VGA	1 DVI-I
Internal I/O	Audio	1 Line-out, 1 Line-in, 1 Mic-in	1 Line-out	1 Line-out, 1 Mic-in	1 Line-out
	Serial	4 RS-232	2 RS-232/422/485, 4 RS-232	1 RS-232/422/485, 3 RS-232	1 RS-232/422/485, 3 RS-232
	USB	6 USB 2.0	4 USB 2.0, 1 USB 2.0 (Vertical, Opt.)	3 USB 2.0	4 USB 2.0
	Display	1 LVDS/eDP, 1 LCD/inverter Power	1 LVDS/eDP, 1 LCD/inverter Power	1 LVDS	1 LVDS
	Audio	1 S/PDIF	1 Line-out, 1 Mic-in, 1 S/PDIF	1 Line-out, 1 Mic-in, 1 S/PDIF	1 Line-out, 1 Mic-in, 1 S/PDIF
	Storage	2 SATA 3.0	2 SATA 3.0	2 SATA 2.0	2 SATA 2.0
	DIO	8-bit DIO	8-bit DIO	8-bit DIO	8-bit DIO
	LPC**	1	1	1	1
SMBus	1	1	1	1	
TPM / iAMT	dTPM 2.0 (Opt.)	dTPM 2.0 (Opt.)	TPM (Opt.)	TPM (Opt.)	
Power	ATX	12V / 15~36V DC-In	ATX	12V / 19~24V DC-In	
Operating Temperature	0°C~60°C / -40°C~85°C	0°C~60°C / -40°C~85°C	0°C~60°C / -20°C~70°C / -40°C~85°C	0°C~60°C / -20°C~70°C / -40°C~85°C	
Support Chassis	ST102/WM130/WM120	ST102/WM130/WM120	DT122	ST102/WM130/WM120	

## Industrial Motherboards - Mini-ITX



AMD



AMD



AMD



AMD

Model Name		HPT193	HPT171	RNO171	GH171
Platform		AMD	AMD	AMD V-Series	AMD R-Series
System	Processor	AMD® Ryzen™ Embedded 8000 Series	AMD® Ryzen™ Embedded 8000 Series	AMD® Ryzen™ Embedded V2000 Series	AMD® Ryzen™ Embedded V1000/R1000/R2000 Series
	Socket		-	FP6	-
	Max. Speed	4.9~5.1GHz	4.9~5.1GHz	3.95~4.25GHz	3.2~3.8GHz
	TDP	15~30W / 35~54W	15~30W / 35~54W	15/45W	12W~54W
	Cache	6/8M	6/8M	3/4M	1~4M
	Chipset	-	-	-	-
BIOS		AMI SPI 256Mbit	AMI SPI 256Mbit	AMI BIOS	AMI BIOS
Memory	Technology	Dual Channel DDR5 5600/5200/4800MHz (support ECC)	Dual Channel DDR5 5600/5200/4800MHz (support ECC)	Dual Channel DDR4 3200MHz (support ECC)	Dual Channel DDR4 3200MHz (support ECC)
	Max. Capacity	96GB	96GB	64GB	32GB
	Socket	2 SODIMM	2 SODIMM	2 SODIMM	2 SODIMM
Graphics	Connector	4 DP++	"4 DP++ or 3 DP++ + 1 M.2 A display"	4 DP++	4 DP++
Expansion	PCIe, PCI	1 PCIe x16	1 PCIe x16	1 PCIe x16	1 PCIe x16
	Mini PCIe / M.2	1 M.2 M Key 2280	1 M.2 M Key 2280, 1 M.2 A Key 3030	1 M.2 M key 2280	1 M.2 M key 2280
	SIM / Other	GIO1, GIO2	eMMC B2B header, GIO1, GIO2	-	-
Audio	Audio Codec	ALC888S	1 ALC888S, 1 ALC105(3W)	ALC888S	ALC887
Ethernet	Controller	2 Intel® I226V	2 Intel® I226V	2 Realtek RTL8119-CG	2 Realtek RTL8111HN-CG
	Ethernet	2 2.5GbE	2 2.5GbE	2 GbE	2 GbE
Rear I/O	Serial	1 RS-232, 1 RS-232/RS422/RS485	1 RS-232, 1 RS-232/RS422/RS485	1 RS-232, 1 RS-232/RS422/RS485	1 RS-232/422/485, 1 RS-232
	USB	1 USB 3.2 Gen2, 2 USB 2.0	1 USB 3.0 Gen2, 2 USB 2.0	2 USB 3.2 Gen1, 2 USB 2.0	2 USB 3.2 Gen1, 2 USB 2.0
	Display	4 DP++	4 DP++ or 3 DP++ + 1 M.2 A display	4 DP++	3 or 4 DP++
	Audio	1 Front audio (Line-out, Line-in, Mic-in)	1 Front audio (Line-out, Line-in, Mic-in)	1 Audio Jack (Lin-out/Mic-in/Line-in)	1 Audio Jack (Lin-out/Mic-in/Line-in)
Internal I/O	Serial	2 RS-232 (TTL), 2 RS-232 (ccTalk)	2 RS-232 (TTL), 2 RS-232 (ccTalk)	4 RS-232	4 RS-232
	USB	4 USB 2.0, 1 USB 2.0 vertical	4 USB 2.0, 1 USB 2.0 vertical	3 USB 2.0 + 1 USB 2.0 Vertical Type A or 4 USB 2.0 (Opt.)	4 USB 2.0, 1 USB 3.2/2.0 Vertical
	Display	-	-	-	-
	Audio	1 S/PDIF	1 3W Speaker L/R header, 1 S/PDIF	1 Front Audio (Mic-in/Line-out), 1 S/PDIF	1 Front Audio (Mic-in/Line-out), 1 S/PDIF
	Storage	2 SATA 3.0	2 SATA 3.0	2 SATA 3.0	2 SATA 3.0, 2 SATA Power
	DIO	8-bit DIO	8-bit DIO	-	-
	LPC**	-	-	-	-
SMBus	2 I2C, 1 SPI	2 I2C, 1 SPI	-	-	
TPM / iAMT	dTPM 2.0, fTPM (Opt.)	dTPM 2.0, fTPM (Opt.)	TPM 2.0 (Opt.)	TPM 2.0	
Power	12~24V DC-in/Straight Type	12V DC-In	12V DC-In	12V DC-In	
Operating Temperature	-5°C~65°C	-5°C~65°C	-5°C~65°C	0°C~60°C	
Support Chassis	WM130	WM130	WM130	WM130	

# PICMG 1.3

Multiple I/O & Easy Expandable Solutions



## Features

Our PICMG 1.3 boards are built with versatile I/O ports and plenty of backplanes to achieve flexibility and expansion capability. With comprehensive backplane and high performance boards, we can offer a great solution for expandable industrial application.



R680E

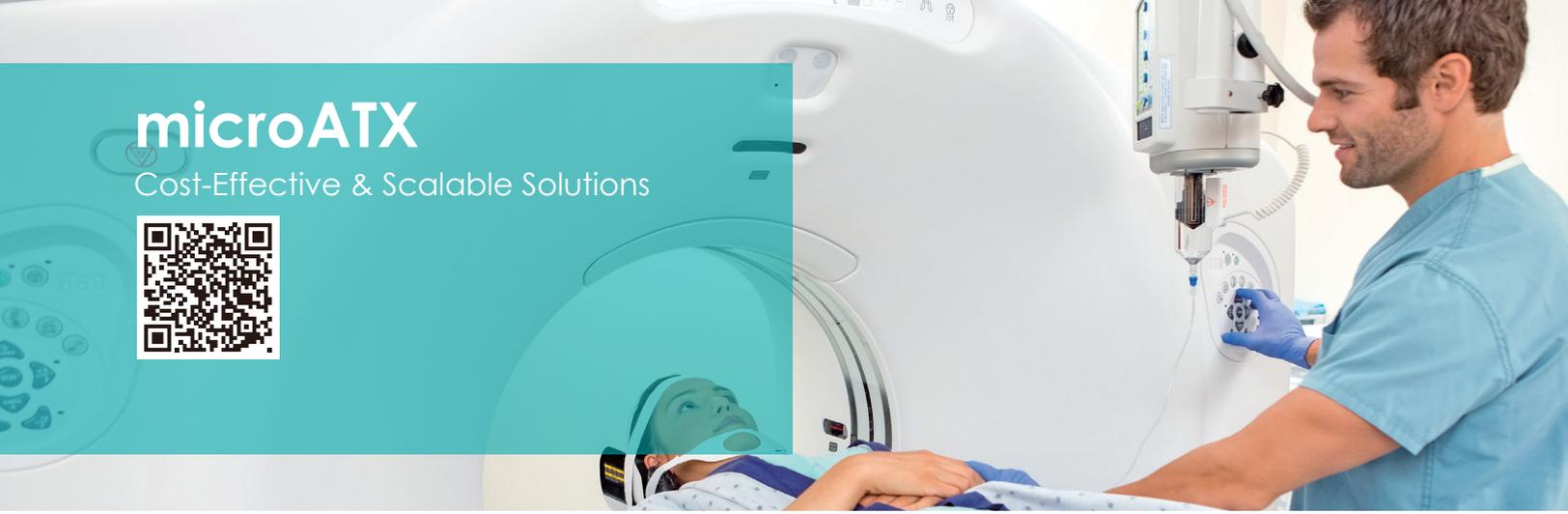


H610E

Model Name		RPSPIC-R680E	RPSPIC-H610E
Platform		Workstation	Desktop
System	Processor	BTL-S/14th/13th/12th Gen Intel® Core™	BTL-S/14th/13th/12th Gen Intel® Core™
	Socket	LGA 1700	LGA 1700
	Max. Speed	2.4~5.8GHz	2.4~5.8GHz
	TDP	35~65W	35~65W
	Cache	4~36M	4~36M
	Chipset	Intel® R680E	Intel® H610E
Memory		Dual Channel DDR5 5600MHz (support ECC)	Dual Channel DDR5 5600MHz
Memory	Max. Capacity	192GB	96GB
	Socket	4 UDIMM	2 UDIMM
Graphics		1 VGA, 2 DFI EXT-Display Port	1 VGA, 2 DFI EXT-Display Port
Expansion	PCIe, PCI	-	-
	Mini PCIe / M.2	1 M.2 E key 2230, 1 M.2 M key 2280, 1 M.2 A key 3042 for M2A-OOB	1 M.2 E key 2230, 1 M.2 A key 3042 for M2A-OOB
	SIM	-	-
Audio	Audio Codec	ALC888S	ALC888S
Ethernet		1 Intel® I226LM, 1 Intel® I226V/I210AT	2 Intel® I226V/I210AT
Rear I/O	Ethernet	2 2.5GbE	2 2.5GbE
	Serial	-	-
	USB	2 USB 3.2 Gen2, 1 USB 2.0	2 USB 3.2 Gen2, 1 USB 2.0
	Display	1 VGA	1 VGA
	Audio	-	-
Internal I/O	Serial	2 RS-232/422/485, 2 RS-232	2 RS-232/422/485, 2 RS-232
	USB	4 USB 3.2 Gen2, 2 USB 2.0	4 USB 2.0
	Display	2 DFI EXT-Display Port	2 DFI EXT-Display Port
	Audio	1 Front Audio (Line-out, Mic-in)	1 Front Audio (Line-out, Mic-in)
	Storage	6 SATA 3.0 (RAID 0/1/5/10)	4 SATA 3.0 (RAID 0/1/5/10)
	DIO	8-bit DIO (4 IN 4 OUT)	8-bit DIO (4 IN 4 OUT)
	LPT	1	1
	PS/2	-	-
TPM / iAMT		Nuvoton TPM 2.0, iAMT	Nuvoton TPM 2.0
Power		ATX	ATX
Operating Temperature		-5°C~65°C	-5°C~65°C
Support Chassis		Project support	Project support

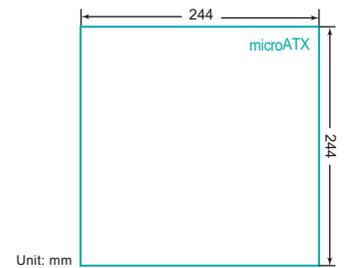
# microATX

Cost-Effective & Scalable Solutions



## Features

microATX ( $\mu$ ATX) motherboards (measuring 244 x 244 mm) offer high performance and cost efficiency with a smaller footprint when compared to ATX. our microATX boards are equipped with up to 4 expansion slots (combination of PCI and PCI Express) and rich I/O ports that are ideally suited for space/cost sensitive applications such as medical, industrial automation, and surveillance applications.



W880



Q870



R680E

Model Name		ARS310-W880	ARS310-Q870	RPS310-R680E
Platform		Workstation	Desktop	Workstation
System	Processor	Intel® Core™ Ultra	Intel® Core™ Ultra	BTL-S/14th/13th/12th Gen Intel® Core™
	Socket	LGA 1851	LGA 1851	LGA 1700
	Max. Speed	4.9~5.6GHz	4.9~5.6GHz	2.4~5.9GHz
	TDP	35~125W	35~125W	35~125W
	Cache	20~36M	20~36M	4~36M
	Chipset	Intel® W880	Intel® Q870	Intel® R680E
BIOS		AMI SPI 256Mbit		AMI SPI 256Mbit
Memory	Technology	Dual Channel DDR5 up to 5600 MHz (support ECC)	Dual Channel DDR5 up to 5600 MHz	Dual Channel DDR5 up to 4400 MHz (support ECC)
	Max. Capacity	256GB	256GB	192GB
	Socket	4 UDIMM	4 UDIMM	4 UDIMM
Graphics	Connector	1 VGA, 2 DP++, 1 HDMI	1 VGA, 2 DP++, 1 HDMI	1 VGA, 2 DP++, 1 HDMI
	PCIe / PCI	2 PCIe x16, 2 PCIe x4	2 PCIe x16, 2 PCIe x4	2 PCIe x16, 2 PCIe x4
Expansion	Mini PCIe / M.2 / SIM	2 M.2 M key 2242/2260/2280, 1 M.2 E key 2230	2 M.2 M key 2242/2260/2280, 1 M.2 E key 2230	2 M.2 M key 2242/2260/2280, 1 M.2 E key 2230
	Audio	Audio Codec	ALC888S	ALC888S
Ethernet	Controller	1 Intel® I226LM, 1 Intel® I226V, 1 Intel® E610-XAT2	1 Intel® I226LM, 1 Intel® I226V	1 Intel® I226LM, 3 Intel® I226V
	Ethernet	2 2.5GbE, 2 10GbE	2 2.5GbE	2 or 4 2.5GbE
Rear I/O	Serial	-	-	-
	USB	4 USB 3.2 Gen2, 4 USB 3.2 Gen1	4 USB 3.2 Gen2, 4 USB 3.2 Gen1	4 USB 3.2 Gen2, 4 USB 3.2 Gen1
	Display	1 VGA, 2 DP++, 1 HDMI	1 VGA, 2 DP++, 1 HDMI	1 VGA, 2 DP++, 1 HDMI
	Audio	Line-out, Mic-in, Line-in (Opt.)	Line-out, Mic-in, Line-in (Opt.)	Line-out, Mic-in, Line-in (Opt.)
	PS/2	-	-	-
	Internal I/O	Serial	2 RS-232/422/485, 4 RS-232	2 RS-232/422/485, 4 RS-232
USB	2 USB 3.2 Gen1, 3 USB 2.0 (1 Vertical Opt.)	2 USB 3.2 Gen1, 3 USB 2.0 (1 Vertical Opt.)	2 USB 3.2 Gen1, 3 USB 2.0 (1 Vertical Opt.)	
Audio	1 Front Audio, 1 S/PDIF	1 Front Audio, 1 S/PDIF	1 Front Audio, 1 S/PDIF	
Storage	4 SATA 3.0, (RAID 0/1/5/10)	4 SATA 3.0, (RAID 0/1/5/10)	4 SATA 3.0, (RAID 0/1/5/10)	
DIO	4-IN / 8-OUT DIO	4-IN / 8-OUT DIO	4-IN / 8-OUT DIO	
LPC**	-	-	-	
SMBus	1	1	1	
PS/2	1	1	1	
TPM / iAMT	TPM 2.0, iAMT	TPM 2.0, iAMT	TPM 2.0, iAMT	
Power	ATX	ATX	ATX	
Operating Temperature	-5°C~65°C	-5°C~65°C	-5°C~65°C	
Support Chassis	WM342/WM343	WM342/WM343	WM342/WM343	

\*\*Supports DFI Peripherals card.

# Industrial Motherboards - microATX



R680E



Q670E



Q670E

Model Name		ADS310-R680E	RPS330-Q670E	RPS310-Q670E
Platform		Workstation	Desktop	Desktop
System	Processor	BTL-S/14th/13th/12th Gen Intel® Core™	BTL-S/14th/13th/12th Gen Intel® Core™	BTL-S/14th/13th/12th Gen Intel® Core™
	Socket	LGA 1700	LGA 1700	LGA 1700
	Max. Speed	2.4~5.9GHz	2.4~5.9GHz	2.4~5.9GHz
	TDP	35~125W	35~125W	35~125W
	Cache	4~36M	4~36M	4~36M
	Chipset	Intel® R680E	Intel® Q670E	Intel® Q670E
BIOS		AMI SPI 256Mbit	AMI SPI 256Mbit	AMI SPI 256Mbit
Memory	Technology	Dual Channel DDR4 3200 MHz (support ECC)	Dual Channel DDR5 up to 4400MHz	Dual Channel DDR5 up to 4400MHz
	Max. Capacity	128GB	192GB	192GB
	Socket	4 UDIMM	4 UDIMM	4 UDIMM
Graphics	Connector	1 VGA, 2 DP++, 1 HDMI	1 DP++, 1 VGA, 1 HDMI	1 VGA, 2 DP++, 1 HDMI
Expansion	PCIe / PCI	1 PCIe x16, 3 PCIe x4	1 PCIe x16, 1 PCIe x4, 2 PCI	2 PCIe x16, 2 PCIe x4
	Mini PCIe / M.2 / SIM	2 M.2 M key 2242/2260/2280, 1 M.2 E key 2230	2 M.2 M key 2242/2260/2280, 1 M.2 E key 2230	2 M.2 M key 2242/2260/2280, 1 M.2 E key 2230
Audio	Audio Codec	ALC888S	ALC888S	ALC888S
Ethernet	Controller	1 Intel® I226LM, 1 Intel® I226V, 1 Intel® E610-XAT2	1 Intel® I226LM / I219LM, 1 Intel® I226V	1 Intel® I226LM, 1 Intel® I226V
	Ethernet	2 2.5GbE, 2 10GbE	2 2.5GbE or 1 2.5GbE + 1 GbE	2 2.5GbE
	Serial	-	1 RS-232/422/485	-
	USB	4 USB 3.2 Gen2, 4 USB 3.2 Gen1	4 USB 3.2 Gen2, 2 USB 2.0	4 USB 3.2 Gen2, 4 USB 3.2 Gen1
	Display	1 VGA, 2 DP++, 1 HDMI	1 DP++, 1 VGA, 1 HDMI	1 VGA, 2 DP++, 1 HDMI
	Audio	Line-out, Mic-in, Line-in (Opt.)	Line-out, Mic-in, Line-in (Opt.)	Line-out, Mic-in, Line-in (Opt.)
	PS/2	-	1	-
Internal I/O	Serial	2 RS-232/422/485	1 RS-232/422/485, 4 RS-232	2 RS-232/422/485, 2 RS232
	USB	2 USB 3.2 Gen2, 3 USB 2.0 (Vertical Opt.)	2 USB 3.2 Gen1, 4 USB 2.0, 1 Vertical USB 2.0	2 USB 3.2 Gen1, 3 USB 2.0 (1 Vertical Opt.)
	Audio	1 Front Audio, 1 S/PDIF	1 Front Audio, 1 S/PDIF	1 Front Audio, 1 S/PDIF
	Storage	4 SATA 3.0, (RAID 0/1/5/10)	4 SATA 3.0, (RAID 0/1/5/10)	4 SATA 3.0, (RAID 0/1/5/10)
	DIO	8-bit DIO	4-IN / 8-OUT DIO	4-IN / 8-OUT DIO
	LPC**	-	-	-
	SMBus	1	1	1
	PS/2	1	-	1
TPM / iAMT	TPM 2.0, iAMT	TPM 2.0, iAMT	TPM 2.0, iAMT	
Power	ATX	ATX	ATX	
Operating Temperature	-5°C~65°C	-5°C~65°C	-5°C~65°C	
Support Chassis	WM342/WM343	WM342/WM343	WM342/WM343	

\*\*Supports DFI Peripherals card.



Q670E



H610E



W480E

Model Name		ADS310-Q670E	RPS330-H610E	CMS310-W480E
Platform		Desktop	Desktop	Workstation
System	Processor	BTL-S/14th/13th/12th Gen Intel® Core™	BTL-S/14th/13th/12th Gen Intel® Core™	10th Gen Intel® Core™
	Socket	LGA 1700	LGA 1700	LGA 1200
	Max. Speed	2.4~5.9GHz	2.4~5.9GHz	3.6~4.8GHz
	TDP	35~125W	35~125W	35~125W
	Cache	4~36M	4~36M	6~20M
	Chipset	Intel® Q670E	Intel® H610E	Intel® W480E
BIOS		AMI SPI 256Mbit	AMI SPI 256Mbit	Insyde SPI 128Mbit
Memory	Technology	Dual Channel DDR4 3200MHz	Dual Channel DDR5 up to 4400MHz	Dual Channel DDR4 2400/2666/2933MHz (support ECC)
	Max. Capacity	128GB	192GB	128GB
	Socket	4 UDIMM	2 UDIMM	4 UDIMM
Graphics	Connector	1 VGA, 2 DP++, 1 HDMI	1 DP++, 1 VGA, 1 HDMI	1 DP++, 1 VGA, 1 HDMI
Expansion	PCIe / PCI	1 PCIe x16, 2 PCIe x4, 1 PCIe x4	1 PCIe x16, 1 PCIe x4, 2 PCI	2 PCIe x16, 2 PCIe x4
	Mini PCIe / M.2 / SIM	2 M.2 M key 2242/2260/2280, 1 M.2 E key 2230	2 M.2 M key 2242/2260/2280	1 M.2 E key 2230, 1 M.2 M key 2242/2260/2280
Audio	Audio Codec	ALC888S	ALC888S	ALC888S
Ethernet	Controller	1 Intel® I226LM, 1 Intel® I226V, 1 Intel® E610-XAT2	1 Intel® I219V, 1 Intel® I226V	1 Intel® I219LM, 1 Intel® I210AT, 2 Intel® I210AT (Opt.)
	Ethernet	2 2.5GbE, 2 10GbE	1 2.5GbE + 1 GbE	2 or 4 GbE
	Serial	-	1 RS-232/422/485	-
	USB	4 USB 3.2 Gen2, 4 USB 3.2 Gen1	2 USB 3.2 Gen2, 2 USB 3.2 Gen1, 2 USB 2.0	2 USB 3.2 Gen2, 4 USB 3.2 Gen1
	Display	1 VGA, 2 DP++, 1 HDMI	1 DP++, 1 VGA, 1 HDMI	1 DP++, 1 VGA, 1 HDMI
	Audio	Line-out, Mic-in, Line-in (Opt.)	Line-out, Mic-in, Line-in (Opt.)	Line-out, Mic-in, Line-in (Opt.)
	PS/2	-	1	-
Internal I/O	Serial	2 RS-232/422/485	1 RS-232/422/485, 4 RS-232	2 RS-232/422/485, 2 RS-232
	USB	2 USB 3.2 Gen2, 3 USB 2.0 (Vertical Opt.)	3 USB 2.0, 1 Vertical USB 2.0	2 USB 3.2 Gen2, 4 USB 2.0 (1 USB 2.0 Vertical Opt.)
	Audio	1 Front Audio, 1 S/PDIF	1 Front Audio, 1 S/PDIF	1 Front Audio, 1 S/PDIF
	Storage	4 SATA 3.0, (RAID 0/1/5/10)	4 SATA 3.0	4 SATA 3.0, (RAID 0/1/5/10)
	DIO	8-bit DIO	4-IN / 8-OUT DIO	16-bit DIO
	LPC**	-	-	1
	SMBus	1	1	1
	PS/2	1	-	1
TPM / iAMT	TPM 2.0, iAMT	TPM 2.0	TPM 2.0, iAMT	
Power	ATX	ATX	ATX	
Operating Temperature	-5°C~65°C	-5°C~65°C	-5°C~65°C	
Support Chassis	WM342/WM343	WM342/WM343	WM342/WM343	

\*\*Supports DFI Peripherals card.

# Industrial Motherboards - microATX



Q470E



Q470E



H420E

Model Name		CMS310-Q470E	CMS330-Q470E	CMS330-H420E
Platform		Desktop	Desktop	Desktop
System	Processor	10th Gen Intel® Core™	10th Gen Intel® Core™	10th Gen Intel® Core™
	Socket	LGA 1200	LGA 1200	LGA 1200
	Max. Speed	3.0~4.8GHz	3.0~4.7GHz	3.0~4.7GHz
	TDP	35~125W	35~125W	35~125W
	Cache	2~20M	2~20M	2~20M
	Chipset	Intel® Q470E	Intel® Q470E	Intel® H420E
BIOS		Insyde SPI 128Mbit	AMI SPI 256Mbit	AMI SPI 256Mbit
Memory	Technology	Dual Channel DDR4 2400/2666/2933MHz	Dual Channel DDR4 2400/2666/2933MHz	Dual Channel DDR4 2400/2666/2933MHz
	Max. Capacity	128GB	128GB	64GB
	Socket	4 UDIMM	4 UDIMM	2 UDIMM
Graphics	Connector	1 DP++, 1 VGA, 1 HDMI	1 VGA, 1 DP++, 1 HDMI	1 VGA, 1 DP++, 1 HDMI
Expansion	PCIe / PCI	2 PCIe x16, 2 PCIe x4	1 PCIe x16, 1 PCIe x4, 2 PCI	1 PCIe x16, 1 PCIe x4, 2 PCI
	Mini PCIe / M.2 / SIM	1 M.2 E key 2230, 1 M.2 M key 2242/2260/2280	1 M.2 M key 2242/2260/2280, 1 M.2 E key 2230	-
Audio	Audio Codec	ALC888S	ALC888S	ALC888S
Ethernet	Controller	1 Intel® I219LM, 1 Intel® I210AT, 2 Intel® I210AT (Opt.)	1 Intel® I219LM, 1 Intel® I210AT	1 Intel® I219LM, 1 Intel® I210AT
	Ethernet	2 or 4 GbE	2 GbE	2 GbE
	Serial	-	1 RS-232/422/485	1 RS-232/422/485
	USB	2 USB 3.2 Gen2, 4 USB 3.2 Gen1	2 USB 3.2 Gen2, 2/6 USB 3.2 Gen1, 2 USB 2.0	4 USB 3.2 Gen1, 2 USB 2.0
	Display	1 DP++, 1 VGA, 1 HDMI	1 VGA, 1 DP++, 1 HDMI	1 VGA, 1 DP++, 1 HDMI
	Audio	Line-out, Mic-in, Line-in (Opt.)	Line-out, Mic-in, Line-in (Opt.)	Line-out, Mic-in, Line-in (Opt.)
Internal I/O	PS/2	-	1	1
	Serial	2 RS-232/422/485, 2 RS-232	9 RS-232	9 RS-232
	USB	2 USB 3.2 Gen2, 4 USB 2.0(1 USB 2.0 Vertical Opt.)	2 USB 3.2 Gen1, 4 USB 2.0 (Vertical Opt.)	2 USB 3.2 Gen1, 2 USB 2.0 (Vertical Opt.)
	Audio	1 Front Audio, 1 S/PDIF	1 Front Audio, 1 S/PDIF	1 Front Audio, 1 S/PDIF
	Storage	4 SATA 3.0, (RAID 0/1/5/10)	4 SATA 3.0, (RAID 0/1/5/10)	4 SATA 3.0
	DIO	16-bit DIO	16-bit DIO	16-bit DIO
	LPC**	1	1	1
	SMBus	1	1	1
	PS/2	1	-	-
TPM / iAMT	TPM 2.0, iAMT	TPM 2.0, iAMT	TPM 2.0	
Power	ATX	ATX	ATX	
Operating Temperature	-5°C~65°C	-5°C~65°C	-5°C~65°C	
Support Chassis	WM342/WM343	WM342/WM343	WM342/WM343	

\*\*Supports DFI Peripherals card.



C246



C246



C246

Model Name		CS350-C246	CS332-C246	CS331-C246
Platform		Workstation	Workstation	Workstation
System	Processor	9th/8th Gen Intel® Core™	9th/8th Gen Intel® Core™	9th/8th Gen Intel® Core™
	Socket	LGA 1151	LGA 1151	LGA 1151
	Max. Speed	2.9~4.7 GHz	2.9~4.6 GHz	2.9~4.7 GHz
	TDP	35~95W	35~95W	35~80W
	Cache	2~16M	2~12M	2~16M
	Chipset	Intel® C246	Intel® C246	Intel® C246
BIOS		AMI SPI 128Mbit	AMI SPI 128Mbit	AMI SPI 128Mbit
Memory	Technology	Dual Channel DDR4 2400/2666 MHz (support ECC)	Dual Channel DDR4 2400/2666 MHz (support ECC)	Dual Channel DDR4 2400/2666 MHz (support ECC)
	Max. Capacity	128GB	128 GB	128GB
	Socket	4 DIMM	4 DIMM	4 DIMM
Graphics	Connector	1 HDMI, 1 DP++, 1 DVI-I	1 VGA, 2 DP++	1 HDMI, 1 DVI-I, 1 DP++
Expansion	PCIe / PCI	2 PCIe x16, 2 PCIe x4	1 PCIe x16, 2 PCIe x4, 1 PCI	2 PCIe x16, 2 PCIe x4
	Mini PCIe / M.2 / SIM	1 M.2 E key 2230, 1 M.2 M key 2242/2260/2280	1 mPCIe, 1 M.2 M key 2242/2280, 1 M.2 E key 2230	1 mPCIe, 1 M.2 M key 2242/2260/2280
Audio	Audio Codec	ALC888S	ALC888S	ALC888S
Ethernet	Controller	1 Intel® I210AT, 1 Intel® I219LM	1 Intel® I219LM, 3 Intel® I210AT	1 Intel® I210AT, 1 Intel® I219LM
	Ethernet	2 GbE	2 or 4 GbE	2 GbE
	Serial	1 RS-232/422/485	1 RS-232/422/485	1 RS-232/422/485
	USB	2 USB 3.2 Gen2, 2 USB 3.2 Gen1, 2 USB 2.0	2 USB 3.2 Gen1, 4 USB 2.0	2 USB 3.2 Gen2, 2 USB 3.2 Gen1, 2 USB 2.0
	Display	1 HDMI, 1 DP++, 1 DVI-I	1 VGA, 2 DP++	1 HDMI, 1 DVI-I, 1 DP++
	Audio	Line-out, Mic-in, Line-in (Opt.), S/PDIF, Front Audio	Line-out, Mic-in, Line-in (Opt.)	Line-out, Mic-in, Line-in (Opt.)
Internal I/O	PS/2	1	1	1
	Serial	1 RS-232/422/485, 2 RS-232	3 RS-232	1 RS-232/422/485, 2 RS-232
	USB	2 USB 3.2 Gen2, 4 USB 2.0 (1 USB 2.0 Vertical Opt.)	2 USB 3.2 Gen1, 4 USB 2.0	2 USB 3.2 Gen2, 4 USB 2.0 (1 USB 2.0 Vertical Opt.)
	Audio	-	Front Audio, S/PDIF	Front Audio, S/PDIF
	Storage	6 SATA 3.0, (RAID 0/1/5/10)	4/5 SATA 3.0, (RAID 0/1/5/10)	6 SATA 3.0, (RAID 0/1/5/10)
	DIO	8-bit DIO	8-bit DIO	8-bit DIO
	LPC**	1	1	1
	SMBus	1	1	1
	PS/2	-	-	-
TPM / iAMT	TPM 2.0, iAMT	TPM 2.0, iAMT	TPM 2.0, iAMT	
Power	ATX	ATX	ATX	
Operating Temperature	-5°C~65°C	-5°C~65°C	-5°C~65°C	
Support Chassis	WM342/WM343	WM342/WM343	GM831-CSF/WM342/WM343	

\*\*Supports DFI Peripherals card.

# Industrial Motherboards - microATX



Q370



Q370



Q370

Model Name		CS350-Q370	CS332-Q370	CS331-Q370	
Platform		Desktop	Desktop	Desktop	
System	Processor	9th/8th Gen Intel® Core™	9th/8th Gen Intel® Core™	9th/8th Gen Intel® Core™	
	Socket	LGA 1151	LGA 1151	LGA 1151	
	Max. Speed	2.9~4.6 GHz	2.9~4.6 GHz	2.9~4.6 GHz	
	TDP	35~95W	35~95W	35~65W	
	Cache	2~12M	2~12M	2~12M	
	Chipset	Intel® Q370	Intel® Q370	Intel® Q370	
	BIOS	AMI SPI 128Mbit	AMI SPI 128Mbit	AMI SPI 128Mbit	
Memory	Technology	Dual Channel DDR4 2400/2666 MHz	Dual Channel DDR4 2400/2666 MHz	Dual Channel DDR4 2400/2666 MHz	
	Max. Capacity	128GB	128GB	128GB	
	Socket	4 DIMM	4 DIMM	4 DIMM	
Graphics	Connector	1 HDMI, 1 DP++, 1 DVI-I	1 VGA, 2 DP++	1 HDMI, 1 DVI-I, 1 DP++	
Expansion	PCIe / PCI	2 PCIe x16, 2 PCIe x4	1 PCIe x16, 2 PCIe x4, 1 PCI	2 PCIe x16, 2 PCIe x4	
	Mini PCIe / M.2 / SIM	1 M.2 E key 2230, 1 M.2 M key 2242/2260/2280	1 mPCIe, 1 M.2 M key 2242/2280, 1 M.2 E key 2230	1 mPCIe, 1 M.2 M key 2242/2260/2280	
Audio	Audio Codec	ALC888S	ALC888S	ALC888S	
Ethernet	Controller	1 Intel® I211AT, 1 Intel® I219LM	1 Intel® I219LM, 3 Intel® I210AT	1 Intel® I210AT, 1 Intel® I219LM	
	Ethernet	2 GbE	2 or 4 GbE	2 GbE	
Rear I/O	Serial	1 RS-232/422/485	1 RS-232/422/485	1 RS-232/422/485	
	USB	2 USB 3.2 Gen2, 2 USB 3.2 Gen1, 2 USB 2.0	2 USB 3.2 Gen1, 2 USB 2.0	2 USB 3.2 Gen2, 2 USB 3.2 Gen1, 2 USB 2.0	
	Display	1 HDMI, 1 DP++, 1 DVI-I	1 VGA, 2 DP++	1 HDMI, 1 DVI-I, 1 DP++	
	Audio	Line-out, Mic-in, Line-in (Opt.)	Line-out, Mic-in, Line-in (Opt.)	Line-out, Mic-in, Line-in (Opt.)	
	PS/2	1	1	1	
	Internal I/O	Serial	1 RS-232/422/485, 2 RS-232	3 RS-232	1 RS-232/422/485, 2 RS-232
	USB	2 USB 3.2 Gen2, 4 USB 2.0 (1 USB 2.0 Vertical Opt.)	2 USB 3.2 Gen1, 4 USB 2.0	2 USB 3.2 Gen2, 4 USB 2.0 (1 USB 2.0 Vertical Opt.)	
Audio	Front Audio, S/PDIF	Front Audio, S/PDIF	Front Audio, S/PDIF		
Storage	6 SATA 3.0, (RAID 0/1/5/10)	4/5 SATA 3.0, (RAID 0/1/5/10)	5 SATA 3.0, (RAID 0/1/5/10)		
DIO	8-bit DIO	8-bit DIO	8-bit DIO		
LPC**	1	1	1		
SMBus	1	1	1		
PS/2	-	-	-		
TPM / iAMT	TPM 2.0, iAMT	TPM 2.0, iAMT	TPM 2.0, iAMT		
Power	ATX	ATX	ATX		
Operating Temperature	-5°C~65°C	-5°C~65°C	-5°C~65°C		
Support Chassis	WM342/WM343	WM342/WM343	GM831-CSF/ WM342/WM343		

\*\*Supports DFI Peripherals card.



Q370



H310



B650

Model Name		CS330-Q370	CS330-H310	RAP310-B650	
Platform		Desktop	Desktop	AMD Desktop	
System	Processor	9th/8th Gen Intel® Core™	9th/8th Gen Intel® Core™	AMD® Ryzen™ 9000/7000/EPYC™ 4005	
	Socket	LGA 1151	LGA 1151	AM5	
	Max. Speed	2.9~4.6 GHz	2.9~4.6 GHz	5.4GHz	
	TDP	35~65W	35~65W	65W	
	Cache	2~12M	2~12M	up to 64MB	
	Chipset	Intel® Q370	Intel® H310	AMD B650	
	BIOS	AMI SPI 128Mbit	AMI SPI 128Mbit	AMI SPI 256Mbit	
Memory	Technology	Dual Channel DDR4 2400/2666 MHz	Dual Channel DDR4 2400/2666 MHz	Dual Channel DDR5 5200 MHz	
	Max. Capacity	128 GB	64 GB	128GB	
	Socket	4 DIMM	2 DIMM	4 UDIMM	
Graphics	Connector	1 VGA, 1 DP++, 1 DVI-I	1 VGA, 1 DP++, 1 DVI-I	1 VGA, 1 DP++, 1 HDMI	
Expansion	PCIe / PCI	1 PCIe x16, 1 PCIe x4, 2 PCI	1 PCIe x16, 1 PCIe x4, 2 PCI	2 PCIe x16, 2 PCIe x4	
	Mini PCIe / M.2 / SIM	1 Full mPCIe	-	1 M.2 M key 2242/2260/2280, 1 M.2 E key 2230	
Audio	Audio Codec	ALC888S	ALC888S	ALC888S	
Ethernet	Controller	1 Intel® I210AT, 1 Intel® I219LM	1 Intel® I210AT, 1 Intel® I219V	2 Intel® I226V	
	Ethernet	2 GbE	2 GbE	2 2.5GbE	
Rear I/O	Serial	1 RS-232/422/485	1 RS-232/422/485	1 RS-232	
	USB	2 USB 3.2 Gen2, 2 USB 3.2 Gen1, 2 USB 2.0	4 USB 3.2 Gen1, 2 USB 2.0	6 USB 3.2 Gen2, 2 USB 2.0	
	Display	1 VGA, 1 DP++, 1 DVI-I	1 VGA, 1 DP++, 1 DVI-I	1 VGA, 1 DP++, 1 HDMI	
	Audio	Line-out, Mic-in, Line-in (Opt.)	Line-out, Mic-in, Line-in (Opt.)	Line-out, Mic-in, Line-in (Opt.)	
	PS/2	1	1	-	
	Internal I/O	Serial	1 RS-232/422/485, 4 RS-232	1 RS-232/422/485, 4 RS-232	1 RS-232/422/485, 2 RS-232
	USB	2 USB 3.2 Gen1, 4 USB 2.0	4 USB 2.0	2 USB 3.2 Gen1, 4 USB 2.0 (Vertical Opt.)	
Audio	Front Audio, S/PDIF	Front Audio, S/PDIF	1 Front Audio, 1 S/PDIF		
Storage	4 SATA 3.0, (RAID 0/1/5/10)	4 SATA 3.0	4 SATA 3.0, (RAID 0/1/5/10)		
DIO	8-bit DIO	8-bit DIO	8-bit DIO		
LPC**	1	1	-		
SMBus	1	1	1		
PS/2	-	-	1		
TPM / iAMT	TPM 2.0, iAMT	TPM 2.0	TPM 2.0		
Power	ATX	ATX	ATX		
Operating Temperature	-5°C~65°C	-5°C~65°C	-5°C~65°C		
Support Chassis	WM342/WM343	WM342/WM343	WM342/WM343		

\*\*Supports DFI Peripherals card.

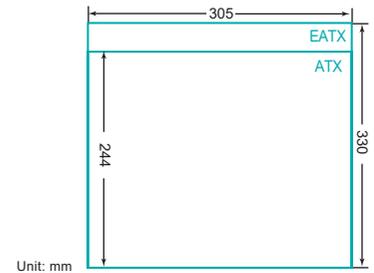
# EATX/ATX

Fast Computing & Highly Reliable Solutions



## Features

Our EATX/ATX embedded motherboards feature a high computing capability, rich I/O connectivity, high integration, and expansibility which support up to 7 expansion slots (ATX). The form factors of EATX/ATX boards are 330 x 305 mm for EATX and 305 x 244 mm for ATX, making both motherboards an ideal solution for industrial automation, server, and transportation applications that require a 24/7 operation reliability.



## Industrial Motherboards - EATX



C741



C621A



C622



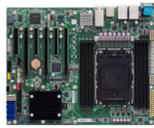
C622

Model Name		ERX810-C741	IS-5222	PR811-C622	PR810-C622
Platform		Server-Grade	Server-Grade	Server-Grade	Server-Grade
System	Processor	5th/4th Gen Intel® Xeon® Scalable Family	3rd Gen Intel® Xeon® Scalable Family	2nd/1st Gen Intel® Xeon® Scalable Family	2nd/1st Gen Intel® Xeon® Scalable Family
	Socket	Dual LGA 4677	LGA 4189	Dual LGA 3647	Dual LGA 3647
	Max. Speed	3.4~4.1GHz	3.1~3.6GHz	up to 3.9GHz	up to 3.9GHz
	TDP	115~270W	up to 205W	70~165W	70~165W
	Cache	22.5~60M	12~48M	11~35.75MB	11~35.75MB
	Chipset	Intel® C741	Intel® C621A	Intel® C622	Intel® C622
Memory	BIOS	Insyde	AMI	Insyde	Insyde
	Technology	DDR5 Max. 5600MHz	DDR4 Max. 3200MHz	DDR4 Max. 2933MHz	DDR4 Max. 2933MHz
	Max. Capacity	1024GB	1024GB	768GB	768GB
Graphics	Socket	16 ECC-RDIMM	16 ECC-RDIMM	12 ECC-RDIMM	12 ECC-RDIMM
	Connector	1 DP	1 VGA	1 VGA (Opt.)	1 VGA (Opt.)
Expansion	PCIe, PCI	4 PCIe x16, 2 PCIe x8	3 PCIe x16, 2 PCIe x8	5 PCIe x16, 1 PCIe x8	4 PCIe x16, 1 PCIe x8, 1 PCI
	Mini PCIe / M.2	1 M.2 M key 2280	1 M.2 M key 2280	1 M.2 M key 2280	1 M.2 M key 2280
	SIM / Other	-	-	1 BMC Module for SEM2500/2510*	1 BMC Module for SEM2500/2510* (IPMI)
Audio	Audio Codec	ALC888S	-	ALC887	ALC887
Ethernet	Controller	4 Intel® I210AT, IPMI: RTL8211F	-	1 Intel® x557-AT2, 2 Intel® I210AT	1 Intel® x557-AT2, 2 Intel® I210AT, 1 100GbE Module**(Opt.)
Rear I/O	Ethernet	4 GbE, 1 IPMI LAN	2 10GbE, 1 IPMI LAN	2 GbE, 2 10GbE, 1 IPMI LAN	2 GbE, 2 10GbE, 1 IPMI LAN (Opt.)
	Serial	1 RS-232/422/485	-	1 RS-232	1 RS-232
	USB	4 USB 3.2 Gen1	2 USB 3.2 Gen1	4 USB 3.2 Gen1, 2 USB 2.0	4 USB 3.2 Gen1
	Display	1 DP	1 VGA	1 VGA (Opt.)	1 VGA (Opt.)
	Audio	-	-	-	-
	PS/2	1	-	-	-
Internal I/O	Serial	1 RS-232/422/485	2 RS-232	1 RS-232	1 RS-232
	USB	2 USB 3.2 Gen1, 2 USB 2.0, 1 Vertical USB 2.0	2 USB 3.1 Gen1, 4 USB 2.0	2 USB 3.2 Gen1, 2 USB 2.0, 1 USB 2.0 Vertical	1/2 USB 3.2 Gen1, 2 USB 2.0, 1 USB 2.0 Vertical
	Audio	1 Front Audio	-	-	-
	Storage	4 SATA 3.0, (RAID 0/1/5/10)	2 SATA 3.0, (RAID 0/1)	8 SATA 3.0, (RAID 0/1/5/10)	8 SATA 3.0, (RAID 0/1/5/10)
	DIO	16-bit DIO	-	-	-
	LPC**	1	-	1	1
	SMBus	1	-	1	1
TPM / iAMT	TPM 2.0	-	TPM 2.0	TPM 2.0 (Opt.)	
Power	ATX	ATX	ATX	ATX	
Operating Temperature	0°C~60°C	0°C~40°C	0°C~40°C	0°C~40°C	
Support Chassis	RM645/RM646/RM811	RM645/RM646/RM811	RM840	RM840	

\*SEM2500/2510: DFI proprietary peripheral for IPMI/VGA card.

\*\*100GbE Module: DFI proprietary peripheral for LAN Extension Module Card (EXT-100GbE)

# Industrial Motherboards - ATX



C741



C621A



C622

Model Name		ERX610-C741	ICX610-C621A	PR611-C621
Platform		Server-Grade		
System	Processor	5th/4th Gen Intel® Xeon® Scalable Family		
	Socket	LGA 4677		
	Max. Speed	3.4~4.1GHz		
	TDP	115~270W		
	Cache	22.5~160M		
	Chipset	Intel® C741		
Memory	BIOS	Insyde		
	Technology	DDR5 Max. 5600MHz		
	Max. Capacity	1024GB		
Graphics	Socket	8 ECC-RDIMM		
	Connector	1 DP		
Expansion	PCIe / PCI	3 PCIe x16, 3 PCIe x8		
	Mini PCIe / M.2 / SIM	2 M.2 M key 2280		
Audio	Audio Codec	ALC888S		
Ethernet	Controller	2 Intel® I210AT, 2 Intel® E610-XAT2, IPMI: RTL8211F		
Rear I/O	Ethernet	2 GbE, 2 10GbE, 1 IPMI LAN		
	Serial	1 RS-232/422/485		
	USB	4 USB 3.2 Gen1		
	Display	1 DP		
	Audio	-		
	PS/2	-		
Internal I/O	Serial	1 RS-232/422/485		
	USB	2 USB 3.2 Gen1, 2 USB 2.0, 1 Vertical USB 2.0		
	Audio	Front Audio		
	Storage	4 SATA 3.0, (RAID 0/1/5/10)		
	DIO	16-bit DIO		
	LPC	-		
	eSPI	-		
	SMBus	1		
TPM / iAMT		TPM 2.0		
Power		ATX		
Operating Temperature		0°C~60°C		
Support Chassis		RM645/RM646/RM811		

\*\*Supports DFI Peripherals card.



C621



W880

Model Name		PR610-C621	ARS630-W880
Platform		Server-Grade	
System	Processor	2nd/1st Gen Intel® Xeon® Scalable Family	
	Socket	LGA 3647	
	Max. Speed	up to 3.9GHz(Turbo)	
	TDP	Max. 150W	
	Cache	Max. 35.75MB	
	Chipset	Intel® C621	
Memory	BIOS	Insyde SPI 128Mbit	
	Technology	DDR4 Max. 2933 MHz	
	Max. Capacity	384GB	
Graphics	Socket	6 ECC-RDIMM	
	Connector	1 VGA (with SEM2500/2510*)	
Expansion	PCIe / PCI	2 PCIe x16, 2 PCIe x8, 1 PCI	
	Mini PCIe / M.2 / SIM	1 M.2 M key 2280	
Audio	Audio Codec	ALC887	
Ethernet	Controller	2 Intel® I210AT, IPMI: RTL8211F (with SEM2500*)	
Rear I/O	Ethernet	2 GbE, 1 IPMI LAN (with SEM2500*)	
	Serial	-	
	USB	4 USB 3.2 Gen1, 2 USB 2.0	
	Display	1 VGA (with SEM2500/2510*)	
	Audio	-	
	PS/2	-	
Internal I/O	Serial	2 RS-232	
	USB	2 USB 3.2 Gen1, 2 USB 2.0, 1 Vertical USB 2.0	
	Audio	-	
	Storage	6 SATA 3.0, (RAID 0/1/5/10)	
	DIO	-	
	LPC	-	
	eSPI	1	
	SMBus	1	
TPM / iAMT		TPM 2.0 (Opt.)	
Power		ATX	
Operating Temperature		0°C~60°C	
Support Chassis		RM645/EM646/RM641	

\*\*Supports DFI Peripherals card.

# Industrial Motherboards - ATX



Q870



W680



R680E

Model Name		ARS630-Q870	BTS610-W680	BTS610-R680E
Platform		Desktop	Workstation	Workstation
System	Processor	Intel® Core™ Ultra	BTL-S/14th/13th/12th Gen Intel® Core™	BTL-S/14th/13th/12th Gen Intel® Core™
	Socket	LGA 1851	LGA 1700	LGA 1700
	Max. Speed	4.9~5.6GHz	2.4~5.9GHz	2.4~5.9GHz
	TDP	35~125W	35~125W	35~125W
	Cache	20~36M	4~36M	4~36M
	Chipset	Intel® Q870	Intel® W680	Intel® R680E
	BIOS	AMI SPI 256Mbit	AMI SPI 256Mbit	AMI SPI 256Mbit
Memory	Technology	Dual Channel DDR5 up to 5600 MHz	Dual Channel DDR5 up to 4400 MHz (support ECC)	Dual Channel DDR5 up to 4400 MHz (support ECC)
	Max. Capacity	192GB	192GB	192GB
	Socket	4 UDIMM	4 UDIMM	4 UDIMM
Graphics	Connector	1 VGA, 2 DP++, 1 HDMI	1 VGA, 2 DP++, 1 HDMI	1 VGA, 2 DP++, 1 HDMI
	PCIe / PCI	2 PCIe x16, 4 PCIe x4 (3 x4, 1 x1), 1 PCI	2 PCIe x16, 5 PCIe x4	2 PCIe x16, 5 PCIe x4
Expansion	Mini PCIe / M.2 / SIM	2 M.2 M key 2242/2260/2280, 1 M.2 A key for M2-OOB	2 M.2 M key 2242/2260/2280, 1 M.2 A key for M2-OOB	2 M.2 M key 2242/2260/2280, 1 M.2 A key for M2-OOB
	Audio	Audio Codec	ALC888S	ALC888S
Ethernet	Controller	1 Intel® I226LM, 1 Intel® I210AT/I226V	1 Intel® I226LM, 1 Intel® I210AT/I226V, 2 Intel® I226V	1 Intel® I226LM, 1 Intel® I210AT/I226V, 2 Intel® I226V
	Ethernet	1 2.5GbE, 1 2.5GbE or 1GbE	3 2.5GbE, 1 2.5GbE or 1GbE	3 2.5GbE, 1 2.5GbE or 1GbE
Rear I/O	Serial	-	-	-
	USB	4 USB 3.2 Gen2, 4 USB 3.2 Gen1	8 USB 3.2 Gen2	8 USB 3.2 Gen2
	Display	1 VGA, 2 DP++, 1 HDMI	1 VGA, 2 DP++, 1 HDMI	1 VGA, 2 DP++, 1 HDMI
	Audio	Line-out, Mic-in, Line-in (Opt.)	Line-out, Mic-in, Line-in (Opt.)	Line-out, Mic-in, Line-in (Opt.)
	PS/2	-	-	-
	Serial	2 RS-232/422/485, 4 RS-232	2 RS-232/422/485, 4 RS-232	2 RS-232/422/485, 4 RS-232
Internal I/O	USB	2 USB 3.2 Gen1, 1 Vertical USB 2.0, 2 USB 2.0	2 USB 3.2 Gen1, 2 Vertical USB 2.0	2 USB 3.2 Gen1, 2 Vertical USB 2.0
	Audio	Front Audio, S/PDIF	Front Audio, S/PDIF	Front Audio, S/PDIF
	Storage	4 SATA 3.0, (RAID 0/1/5/10)	4 SATA 3.0 (RAID 0/1/5/10)	4 SATA 3.0 (RAID 0/1/5/10)
	DIO	4-IN / 8-OUT DIO	4-IN / 8-OUT DIO	4-IN / 8-OUT DIO
	LPC	-	-	-
	eSPI	1	1	1
	SMBus	1	1	1
	PS/2	1	1	1
TPM / iAMT	TPM 2.0, iAMT	TPM 2.0, iAMT	TPM 2.0, iAMT	
Power	ATX	ATX	ATX	
Operating Temperature	-5°C~65°C	-5°C~65°C	-5°C~65°C	
Support Chassis	RM645/RM641/WM646	RM645/RM641/WM646	RM645/RM641/WM646	

\*\*Supports DFI Peripherals card.



R680E



R680E



Q670E

Model Name		RPS630-R680E	ADS630-R680E	BTS610-Q670E
Platform		Workstation	Workstation	Desktop
System	Processor	BTL-S/14th/13th/12th Gen Intel® Core™	BTL-S/14th/13th/12th Gen Intel® Core™	BTL-S/14th/13th/12th Gen Intel® Core™
	Socket	LGA 1700	LGA 1700	LGA 1700
	Max. Speed	2.4~5.9GHz	2.4~5.9GHz	2.4~5.9GHz
	TDP	35~125W	35~125W	35~125W
	Cache	4~36M	4~36M	4~36M
	Chipset	Intel® R680E	Intel® R680E	Intel® Q670E
	BIOS	AMI SPI 256Mbit	AMI SPI 256Mbit	AMI SPI 256Mbit
Memory	Technology	Dual Channel DDR5 up to 4400 MHz (support ECC)	Dual Channel DDR4 3200 MHz (support ECC)	Dual Channel DDR5 up to 4400 MHz
	Max. Capacity	192GB	128GB	192GB
	Socket	4 UDIMM	4 UDIMM	4 UDIMM
Graphics	Connector	1 VGA, 2 DP++, 1 HDMI	1 VGA, 2 DP++, 1 HDMI	1 VGA, 2 DP++, 1 HDMI
	PCIe / PCI	2 PCIe x16, 4 PCIe x4, 1 PCI	1 PCIe x16, 4 PCIe x4, 2 PCI	2 PCIe x16, 4 PCIe x4
Expansion	Mini PCIe / M.2 / SIM	2 M.2 M key 2242/2260/2280, 1 M.2 A key for M2-OOB, 1 M.2 E key 2230	2 M.2 M key 2242/2260/2280, 1 M.2 E Key 2230 (Opt.)	2 M.2 M key 2242/2260/2280, 1 M.2 A key for M2-OOB
	Audio	Audio Codec	ALC888S	ALC888S
Ethernet	Controller	1 Intel® I226LM, 1 Intel® I210AT/I226V, 2 Intel® I226V	1 Intel® I226LM, 1 Intel® I226V, 1 Intel® E610-XAT2	1 Intel® I226LM, 1 Intel® I210AT/I226V, 2 Intel® I226V
	Ethernet	3 2.5GbE, 1 2.5GbE or 1GbE	2 2.5GbE, 2 10GbE	3 2.5GbE, 1 2.5GbE or 1GbE
Rear I/O	Serial	-	-	-
	USB	4 USB 3.2 Gen2, 4 USB 3.2 Gen1	4 USB 3.2 Gen2, 4 USB 3.2 Gen1	8 USB 3.2 Gen2
	Display	1 VGA, 2 DP++, 1 HDMI	1 VGA, 2 DP++, 1 HDMI	1 VGA, 2 DP++, 1 HDMI
	Audio	Line-out, Mic-in, Line-in (Opt.)	Line-out, Mic-in, Line-in (Opt.)	Line-out, Mic-in, Line-in (Opt.)
	PS/2	-	-	-
	Serial	2 RS-232/422/485, 4 RS-232	2 RS-232/422/485, 4 RS-232	2 RS-232/422/485, 4 RS-232
Internal I/O	USB	2 USB 3.2 Gen1, 2 Vertical USB 2.0	2 USB 3.2 Gen2, 1 Vertical USB 2.0, 2 USB 2.0 (Vertical Opt.)	2 USB 3.2 Gen1, 2 Vertical USB 2.0
	Audio	Front Audio, S/PDIF	Front Audio, S/PDIF	Front Audio, S/PDIF
	Storage	4 SATA 3.0, (RAID 0/1/5/10)	4 SATA 3.0 (RAID 0/1/5/10)	4 SATA 3.0 (RAID 0/1/5/10)
	DIO	4-IN / 8-OUT DIO	8-bit DIO	4-IN / 8-OUT DIO
	LPC	-	-	-
	eSPI	1	-	1
	SMBus	1	1	1
	PS/2	1	1	1
TPM / iAMT	TPM 2.0, iAMT	TPM 2.0, iAMT	TPM 2.0, iAMT	
Power	ATX	ATX	ATX	
Operating Temperature	-5°C~65°C	-5°C~65°C	-5°C~65°C	
Support Chassis	RM645/RM641/WM646	RM645/RM641/WM646	RM645/RM641/WM646	

\*\*Supports DFI Peripherals card.

# Industrial Motherboards - ATX



Q670E



Q670E



H610

Model Name		RPS630-Q670E	ADS630-Q670E	RPS631-H610
Platform		Desktop	Desktop	Desktop
System	Processor	BTL-S/14th/13th/12th Gen Intel® Core™	BTL-S/14th/13th/12th Gen Intel® Core™	BTL-S/14th/13th/12th Gen Intel® Core™
	Socket	LGA 1700	LGA 1700	LGA 1700
	Max. Speed	2.4~5.9GHz	2.4~5.9GHz	2.4~5.9GHz
	TDP	35~125W	35~125W	35~125W
	Cache	4~36M	4~36M	4~36M
	Chipset	Intel® Q670E	Intel® Q670E	Intel® H610
	BIOS	AMI SPI 256Mbit	AMI SPI 256Mbit	AMI SPI 256Mbit
Memory	Technology	Dual Channel DDR5 up to 4400 MHz	Dual Channel DDR4 3200 MHz	Dual Channel DDR5 up to 5600 MHz
	Max. Capacity	192GB	128GB	96GB
	Socket	4 UDIMM	4 UDIMM	4 UDIMM
Graphics	Connector	1 VGA, 2 DP++, 1 HDMI	1 VGA, 2 DP++, 1 HDMI	1 VGA, 1 HDMI
Expansion	PCIe / PCI	2 PCIe x16, 4 PCIe x4, 1 PCI	1 PCIe x16, 4 PCIe x4, 2 PCI	1 PCIe x16, 2 PCIe x4, 4 PCI
	Mini PCIe / M.2 / SIM	2 M.2 M key 2242/2260/2280, 1 M.2 E key 2230	2 M.2 M key 2242/2260/2280, 1 M.2 E Key 2230 (Opt.)	1 M.2 M key 2242/2260/2280
Audio	Audio Codec	ALC888S	ALC888S	ALC888S
Ethernet	Controller	1 Intel® I210AT/I226V, 2 Intel® I226V	1 Intel® I226LM, 1 Intel® I226V	1 Intel® I226V, 1 Intel® I219V
Rear I/O	Ethernet	2 2.5GbE	2 2.5GbE	1 2.5GbE, 1 GbE
	Serial	-	-	2 RS-232/422/485
	USB	4 USB 3.2 Gen2, 4 USB 3.2 Gen1	4 USB 3.2 Gen2, 4 USB 3.2 Gen1	4 USB 3.2 Gen1, 2 USB 2.0
	Display	1 VGA, 2 DP++, 1 HDMI	1 VGA, 2 DP++, 1 HDMI	1 VGA, 1 HDMI
	Audio	Line-out, Mic-in, Line-in (Opt.)	Line-out, Mic-in, Line-in (Opt.)	Line-out, Mic-in, Line-in (Opt.)
	PS/2	-	-	1
	Internal I/O	Serial	2 RS-232/422/485, 4 RS-232	2 RS-232/422/485, 4 RS-232
USB	2 USB 3.2 Gen1, 2 USB 2.0 (Vertical Opt.), 1 Vertical USB 2.0	2 USB 3.2 Gen1, 1 Vertical USB 2.0, 2 USB 2.0 (Vertical Opt.)	2 USB 2.0, 2 USB 2.0 (Vertical Opt.)	
Audio	Front Audio, S/PDIF	Front Audio, S/PDIF	Front Audio, S/PDIF	
Storage	4 SATA 3.0, (RAID 0/1/5/10)	4 SATA 3.0 (RAID 0/1/5/10)	4 SATA 3.0	
DIO	4-IN / 8-OUT DIO	8-bit DIO	4-IN / 8-OUT DIO	
LPC	-	-	-	
eSPI	1	-	1	
SMBus	1	1	1	
PS/2	1	1	-	
TPM / iAMT		TPM 2.0, iAMT	TPM 2.0, iAMT	TPM 2.0
Power		ATX	ATX	ATX
Operating Temperature		-5°C~65°C	-5°C~65°C	-5°C~65°C
Support Chassis		RM645/RM641/WM646	RM645/RM641/WM646	RM645/RM641/WM646

\*\*Supports DFI Peripherals card.



W480E



W480E



Q470E

Model Name		CMS632-W480E	CMS630-W480E	CMS632-Q470E
Platform		Workstation	Workstation	Desktop
System	Processor	Intel® Xeon® /10th Gen Intel® Core™	Intel® Xeon® / 10th Gen Intel® Core™	10th Gen Intel® Core™
	Socket	LGA 1200	LGA 1200	LGA 1200
	Max. Speed	3.6~4.8GHz	3.6~4.8GHz	3.0~4.7GHz
	TDP	35~125W	35~125W	35~125W
	Cache	6~20M	6~20M	2~20M
	Chipset	Intel® W480E	Intel® W480E	Intel® Q470E
	BIOS	AMI SPI 128Mbit	Insyde SPI 128Mbit	AMI SPI 128Mbit
Memory	Technology	Dual Channel DDR4 2400/2666/2933MHz (support ECC)	Dual Channel DDR4 2400/2666/2933MHz (support ECC)	Dual Channel DDR4 2400/2666/2933MHz
	Max. Capacity	128GB	128GB	128GB
	Socket	4 UDIMM	4 UDIMM	4 UDIMM
Graphics	Connector	1 VGA, 1 DP++, 1 HDMI	1 VGA, 1 DP++, 1 HDMI	1 VGA, 1 DP++, 1 HDMI
Expansion	PCIe / PCI	2 PCIe x16, 4 PCIe x4, 1 PCI	2 PCIe x16, 3 PCIe x4, 2 PCI	2 PCIe x16, 4 PCIe x4, 1 PCI
	Mini PCIe / M.2 / SIM	2 M.2 M key 2242/2260/2280, 1 M.2 E key 2230 (Opt.)	2 M.2 M key 2242/2260/2280, 1 M.2 E key 2230 (Opt.)	2 M.2 M key 2242/2260/2280, 1 M.2 E key 2230 (Opt.)
Audio	Audio Codec	ALC888S	ALC888S	ALC888S
Ethernet	Controller	1 Intel® I210AT, 1 Intel® I219LM	1 Intel® I210AT, 1 Intel® I219LM	1 Intel® I210AT, 1 Intel® I219LM
Rear I/O	Ethernet	2 GbE	2 GbE	2 GbE
	Serial	1 RS-232/422/485	1 RS-232/422/485	1 RS-232/422/485
	USB	2 USB 3.2 Gen2, 2 USB 3.2 Gen1, 4 USB 2.0	2 USB 3.2 Gen2, 2 USB 3.2 Gen1, 4 USB 2.0	2 USB 3.2 Gen2, 2 USB 3.2 Gen1, 4 USB 2.0
	Display	1 VGA, 1 DP++, 1 HDMI	1 VGA, 1 DP++, 1 HDMI	1 VGA, 1 DP++, 1 HDMI
	Audio	Line-out, Mic-in, Line-in (Opt.)	Line-out, Mic-in, Line-in (Opt.)	Line-out, Mic-in, Line-in (Opt.)
	PS/2	-	-	-
	Internal I/O	Serial	1 RS-232/422/485, 4 RS-232	1 RS-232/422/485, 4 RS-232
USB	2 USB 3.2 Gen2, 2 USB 2.0 (Vertical Opt.), 1 Vertical USB 2.0	2 USB 3.2 Gen2, 2 USB 2.0 (Vertical Opt.), 1 Vertical USB 2.0	2 USB 3.2 Gen2, 2 USB 2.0 (Vertical Opt.), 1 Vertical USB 2.0	
Audio	Front Audio, S/PDIF	Front Audio, S/PDIF	Front Audio, S/PDIF	
Storage	4 SATA 3.0, (RAID 0/1/5/10)	4 SATA 3.0, (RAID 0/1/5/10)	4 SATA 3.0, (RAID 0/1/5/10)	
DIO	16-bit DIO	16-bit DIO	16-bit DIO	
LPC	1	1	1	
eSPI	-	-	-	
SMBus	1	1	1	
PS/2	1	1	1	
TPM / iAMT		TPM 2.0, iAMT	TPM 2.0, iAMT	TPM 2.0, iAMT
Power		ATX	ATX	ATX
Operating Temperature		-5°C~65°C	-5°C~65°C	-5°C~65°C
Support Chassis		RM645/RM641/WM646	RM645/RM641/WM646	RM645/RM641/WM646

\*\*Supports DFI Peripherals card.

# Industrial Motherboards - ATX



Q470E



Q470E



H420E

Model Name		CMS631-Q470E	CMS630-Q470E	CMS631-H420E
Platform		Desktop	Desktop	Desktop
System	Processor	10th Gen Intel® Core™	10th Gen Intel® Core™	10th Gen Intel® Core™
	Socket	LGA 1200	LGA 1200	LGA 1200
	Max. Speed	3.0~4.7GHz	3.0~4.7GHz	3.0~4.7GHz
	TDP	35~125W	35~125W	35~125W
	Cache	2~20M	2~20M	2~20M
	Chipset	Intel® Q470E	Intel® Q470E	Intel® H420E
Memory	BIOS	AMI SPI 128Mbit	Insyde SPI 128Mbit	AMI SPI 128Mbit
	Technology	Dual Channel DDR4 2400/2666/2933MHz	Dual Channel DDR4 2400/2666/2933MHz	Dual Channel DDR4 2400/2666/2933MHz
	Max. Capacity	128GB	128GB	64GB
Graphics	Socket	4 UDIMM	4 UDIMM	4 UDIMM
	Connector	1 VGA, 1 DP++, 1 HDMI	1 VGA, 1 DP++, 1 HDMI	1 VGA, 1 DP++, 1 HDMI
Expansion	PCIe / PCI	1 PCIe x16, 1 PCIe x4, 5 PCI	2 PCIe x16, 3 PCIe x4, 2 PCI	1 PCIe x16, 1 PCIe x4, 5 PCI
	Mini PCIe / M.2 / SIM	1/2 M.2 M key 2242/2260/2280, 1 M.2 E key 2230 (Opt.)	2 M.2 M key 2242/2260/2280, 1 M.2 E key 2230 (Opt.)	1 M.2 M key 2242/2260/2280
Audio	Audio Codec	ALC888S	ALC888S	ALC888S
Ethernet	Controller	1 Intel® I210AT, 1 Intel® I219LM/I219V	1 Intel® I210AT, 1 Intel® I219LM	1 Intel® I210AT, 1 Intel® I219LM/I219V
	Ethernet	2 GbE	2 GbE	2 GbE
Rear I/O	Serial	1 RS-232/422/485	1 RS-232/422/485	1 RS-232/422/485
	USB	2 USB 3.2 Gen2, 2 USB 3.2 Gen1, 2 USB 2.0	2 USB 3.2 Gen2, 2 USB 3.2 Gen1, 4 USB 2.0	4 USB 3.2 Gen1, 2 USB 2.0
	Display	1 VGA, 1 DP++, 1 HDMI	1 VGA, 1 DP++, 1 HDMI	1 VGA, 1 DP++, 1 HDMI
	Audio	Line-out, Mic-in, Line-in (Opt.)	Line-out, Mic-in, Line-in (Opt.)	Line-out, Mic-in, Line-in (Opt.)
	PS/2	-	-	-
	Internal I/O	Serial	1 RS-232/422/485, 4 RS-232	1 RS-232/422/485, 4 RS-232
USB		2 USB 3.2 Gen1, 4 USB 2.0 (Vertical Opt.), 1 Vertical USB 2.0	2 USB 3.2 Gen2, 2 USB 2.0 (Vertical Opt.), 1 Vertical USB 2.0	2 USB 3.2 Gen1, 2 USB 2.0 (Vertical Opt.)
Audio		Front Audio, S/PDIF	Front Audio, S/PDIF	Front Audio, S/PDIF
Storage		6 SATA 3.0, (RAID 0/1/5/10)	4 SATA 3.0, (RAID 0/1/5/10)	4 SATA 3.0
DIO		16-bit DIO	16-bit DIO	16-bit DIO
LPC		1	1	1
eSPI		-	-	-
SMBus		1	1	1
PS/2	1	1	1	
TPM / iAMT	TPM 2.0, iAMT	TPM 2.0, iAMT	TPM 2.0	
Power	ATX	ATX	ATX	
Operating Temperature	-5°C~65°C	-5°C~65°C	-5°C~65°C	
Support Chassis	RM645/RM641/WM646	RM645/RM641/WM646	RM645/RM641/WM646	

\*\*Supports DFI Peripherals card.



C246



C246



C246

Model Name		CS650-C246	CS632-C246	CS631-C246
Platform		Workstation	Workstation	Workstation
System	Processor	Intel® Xeon® / 9th/8th Gen Intel® Core™	Intel® Xeon® / 9th/8th Gen Intel® Core™	Intel® Xeon® / 9th/8th Gen Intel® Core™
	Socket	LGA 1151	LGA 1151	LGA 1151
	Max. Speed	2.9~4.7GHz	2.9~4.7 GHz	2.9~4.7 GHz
	TDP	35~95W	35~80W	35~80W
	Cache	2~16M	2~16M	2~16M
	Chipset	Intel® C246	Intel® C246	Intel® C246
Memory	BIOS	AMI SPI 128Mbit	AMI SPI 128Mbit	AMI SPI 128Mbit
	Technology	Dual Channel DDR4 2400/2666 MHz (support ECC)	Dual Channel DDR4 2400/2666 MHz (support ECC)	Dual Channel DDR4 2400/2666 MHz (support ECC)
	Max. Capacity	128GB	128 GB	128 GB
Graphics	Socket	4 DIMM	4 DIMM	4 DIMM
	Connector	1 VGA, 2 DP++	1 VGA, 2 DP++	1 VGA, 2 DP++
Expansion	PCIe / PCI	2 PCIe x16, 3 PCIe x4, 1 PCIe x1, 1 PCI	1 PCIe x16, 3 PCIe x4, 2 PCI	2 PCIe x16, 3 PCIe x4, 1 PCIe x1 Gen3, 1 PCI
	Mini PCIe / M.2 / SIM	1 Full mPCIe, 1 M.2 M key 2242/2260/2280	1 mPCIe, 1 M.2 M key 2242/2280	2 Full mPCIe, 1 M.2 M key 2242/2260/2280
Audio	Audio Codec	ALC888S	ALC888S	ALC888S
Ethernet	Controller	1 Intel® I210AT, 1 Intel® I219LM	1 Intel® I210AT, 1 Intel® I219LM	1 Intel® I210AT, 1 Intel® I219LM
	Ethernet	2 GbE	2 GbE	2 GbE
Rear I/O	Serial	1 RS-232/422/485	1 RS-232/422/485	1 RS-232/422/485
	USB	2 USB 3.2 Gen2, 2 USB 3.2 Gen1, 2 USB 2.0	4 USB 3.2 Gen1, 2 USB 2.0	2 USB 3.2 Gen2, 2 USB 3.2 Gen1, 2 USB 2.0
	Display	1 VGA, 2 DP++	1 VGA, 2 DP++	1 VGA, 2 DP++
	Audio	Mic-in, Line-out, Line-in (Opt.)	Mic-in, Line-out, Line-in (Opt.)	Mic-in, Line-out, Line-in (Opt.)
	PS/2	1	1	1
	Internal I/O	Serial	1 RS-232/422/485, 4 RS-232	5 RS-232
USB		2 USB 3.2 Gen1, 4 USB 2.0 (1 Vertical Opt.)	2 USB 3.2 Gen2, 4 USB 2.0, 1 USB 2.0 Vertical	2 USB 3.2 Gen1, 4 USB 2.0 (1 Vertical Opt.)
Audio		Front Audio, S/PDIF	Front Audio, S/PDIF	Front Audio, S/PDIF
Storage		4 SATA 3.0 (RAID 0/1/5/10)	4 SATA 3.0 (RAID 0/1/5/10)	5 SATA 3.0 (RAID 0/1/5/10)
DIO		8-bit DIO	8-bit DIO	8-bit DIO
LPC		1	1	1
eSPI		-	-	-
SMBus		1	1	1
PS/2	-	-	-	
TPM / iAMT	TPM 2.0, iAMT	TPM 2.0, iAMT	TPM 2.0, iAMT	
Power	ATX	ATX	ATX	
Operating Temperature	-5°C~65°C	0°C~60°C	0°C~60°C	
Support Chassis	RM645/RM641/WM646	RM645/RM641/WM646	RM645/RM641/WM646	

\*\*Supports DFI Peripherals card.

# Industrial Motherboards - ATX



Q370



Q370

Model Name		CS650-Q370	CS632-Q370
Platform		Desktop	Desktop
System	Processor	9th/8th Gen Intel® Core™	9th/8th Gen Intel® Core™
	Socket	LGA 1151	LGA 1151
	Max. Speed	2.9~4.6GHz	2.9~4.6 GHz
	TDP	35~95W	35~65W
	Cache	2~12M	2~12M
	Chipset	Intel® Q370	Intel® Q370
	BIOS	AMI SPI 128Mbit	AMI SPI 128Mbit
Memory	Technology	Dual Channel DDR4 2400/2666 MHz	Dual Channel DDR4 2400/2666 MHz
	Max. Capacity	128GB	128 GB
	Socket	4 DIMM	4 DIMM
Graphics	Connector	1 VGA, 2 DP++	1 VGA, 2 DP++
Expansion	PCIe / PCI	2 PCIe x16, 3 PCIe x4, 1 PCIe x1, 1 PCI	1 PCIe x16, 3 PCIe x4, 2 PCI
	Mini PCIe / M.2 / SIM	1 Full mPCIe, 1 M.2 M key 2242/2260/2280	1 mPCIe, 1 M.2 M key 2242/2280
Audio	Audio Codec	ALC888S	ALC888S
Ethernet	Controller	1 Intel® I210AT, 1 Intel® I219LM	1 Intel® I210AT, 1 Intel® I219LM
Rear I/O	Ethernet	2 GbE	2 GbE
	Serial	1 RS-232/422/485	1 RS-232/422/485
	USB	2 USB 3.2 Gen2, 2 USB 3.2 Gen1, 2 USB 2.0	4 USB 3.2 Gen1, 2 USB 2.0
	Display	1 VGA, 2 DP++	1 VGA, 2 DP++
	Audio	Mic-in, Line-out, Line-in (Opt.)	Mic-in, Line-out, Line-in (Opt.)
	PS/2	1	1
	Internal I/O	Serial	1 RS-232/422/485, 4 RS-232
USB	2 USB 3.2 Gen1, 4 USB 2.0 (1 Vertical Opt.)	2 USB 3.2 Gen2, 4 USB 2.0, 1 USB 2.0 Vertical	
Audio	Front Audio, S/PDIF	Front Audio, S/PDIF	
Storage	4 SATA 3.0 (RAID 0/1/5/10)	4 SATA 3.0 (RAID 0/1/5/10)	
DIO	8-bit DIO	8-bit DIO	
LPC	1	1	
eSPI	-	-	
SMBus	1	1	
PS/2	-	-	
TPM / iAMT		TPM 2.0, iAMT	TPM 2.0, iAMT
Power		ATX	ATX
Operating Temperature		-5°C~65°C	0°C~60°C
Support Chassis		RM645/RM641/WM646	RM645/RM641/WM646

\*\*Supports DFI Peripherals card.



Q370



Q370

Model Name		CS631-Q370	CS630-Q370
Platform		Desktop	Desktop
System	Processor	9th/8th Gen Intel® Core™	9th/8th Gen Intel® Core™
	Socket	LGA 1151	LGA 1151
	Max. Speed	2.9~4.6 GHz	2.9~4.6 GHz
	TDP	35~65W	35~95W
	Cache	2~12M	2~12M
	Chipset	Intel® Q370	Intel® Q370
	BIOS	AMI SPI 128Mbit	AMI SPI 128Mbit
Memory	Technology	Dual Channel DDR4 2400/2666 MHz	Dual Channel DDR4 2400/2666 MHz
	Max. Capacity	128 GB	128 GB
	Socket	4 DIMM	4 DIMM
Graphics	Connector	1 VGA, 2 DP++	1 VGA, 1 DVI-I, 1 DP++
Expansion	PCIe / PCI	2 PCIe x16, 3 PCIe x4, 1 PCIe x1 Gen3, 1 PCI	1 PCIe x16, 1 PCIe x4, 5 PCI
	Mini PCIe / M.2 / SIM	2 Full mPCIe, 1 M.2 M key 2242/2260/2280	1 mPCIe, 1 M.2 M key 2260/2280
Audio	Audio Codec	ALC888S	ALC888S
Ethernet	Controller	1 Intel® I210AT, 1 Intel® I219LM	1 Intel® I210AT, 1 Intel® I219LM
Rear I/O	Ethernet	2 GbE	2 GbE
	Serial	1 RS-232/422/485	1 RS-232/422/485
	USB	2 USB 3.2 Gen2, 2 USB 3.2 Gen1, 2 USB 2.0	4 USB 3.2 Gen1, 2 USB 2.0
	Display	1 VGA, 2 DP++	1 VGA, 1 DVI-I, 1 DP++
	Audio	Mic-in, Line-out, Line-in (Opt.)	Mic-in, Line-out, Line-in (Opt.)
	PS/2	1	1
	Internal I/O	Serial	1 RS-232/422/485, 4 RS-232
USB	2 USB 3.2 Gen1, 4 USB 2.0 (1 Vertical Opt.)	2 USB 3.2 Gen2, 4 USB 2.0	
Audio	Front Audio, S/PDIF	Front Audio, S/PDIF	
Storage	5 SATA 3.0 (RAID 0/1/5/10)	5 SATA 3.0 (RAID 0/1/5/10)	
DIO	8-bit DIO	16-bit DIO	
LPC	1	1	
eSPI	-	-	
SMBus	1	1	
PS/2	-	-	
TPM / iAMT		TPM 2.0, iAMT	TPM 2.0, iAMT
Power		ATX	ATX
Operating Temperature		0°C~60°C	0°C~60°C
Support Chassis		RM645/RM641/WM646	RM645/RM641/WM646

\*\*Supports DFI Peripherals card.

# Industrial Motherboards - ATX



H310



H310

Model Name		CS630-H310	CS620-H310
Platform		Desktop	Desktop
System	Processor	9th/8th Gen Intel® Core™	9th/8th Gen Intel® Core™
	Socket	LGA 1151	LGA1151
	Max. Speed	2.9~4.6 GHz	2.9~4.6 GHz
	TDP	35~95W	35~95W
	Cache	2~12M	2~12M
	Chipset	Intel® H310	Intel® H310
	BIOS	AMI SPI 128Mbit	AMI SPI 128Mbit
Memory	Technology	Dual Channel DDR4 2400/2666 MHz	Dual Channel DDR4 2400/2666 MHz
	Max. Capacity	64 GB	64GB
	Socket	2 DIMM	2 UDIMM
Graphics	Connector	1 VGA, 1 DVI-I, 1 DP++	1 VGA, 1 DVI-I, 1 DP++
Expansion	PCIe / PCI	1 PCIe x16, 1 PCIe x4, 5 PCI	1 PCIe x 16, 1 PCIe x 4, 4 PCI, 2 ISA
	Mini PCIe / M.2 / SIM	1 M.2 M key 2260/2280	-
Audio	Audio Codec	ALC888S	ALC888S
Ethernet	Controller	1 Intel® I210AT, 1 Intel® I219V	1 Intel® I210AT, 1 Intel® I219V
Rear I/O	Ethernet	2 GbE	2 GbE
	Serial	1 RS-232/422/485	1 RS232/422/485
	USB	4 USB 3.2 Gen1, 2 USB 2.0	4 USB 3.2 Gen1, 2 USB 2.0
	Display	1 VGA, 1 DVI-I, 1 DP++	1 VGA, 1 DVI-I, 1 DP++
	Audio	Mic-in, Line-out, Line-in (Opt.)	Mic-in, Line-out (colay Line-in as opt.)
	PS/2	1	1
	Internal I/O	Serial	1 RS-232/422/485, 4 RS-232
USB	4 USB 2.0	4 USB 2.0 (1 Vertical Opt.)	
Audio	Front Audio, S/PDIF	Front Audio, S/PDIF	
Storage	4 SATA 3.0	4 SATA 3.0, 1 mSATA	
DIO	16-bit DIO	8-bit DIO	
LPC	1	1	
eSPI	-	-	
SMBus	1	1	
PS/2	-	-	
TPM / iAMT		TPM 2.0	TPM 2.0
Power		ATX	ATX
Operating Temperature		0°C~60°C	-5°C~65°C
Support Chassis		RM645/RM641/WM646	RM645/RM641/WM646

\*\*Supports DFI Peripherals card.



AMD

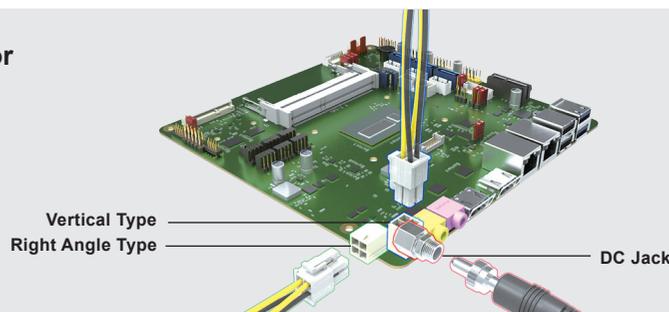


AMD

Model Name		SNA610	SO630
Platform		Server-Grade	Server-Grade
System	Processor	AMD® Siena EPYC™ 8004	AMD® EPYC™ 3000 Series
	Socket	LGA 4844	BGA
	Max. Speed	3~3.1GHz	3.0GHz
	TDP	125~225W	Max. 100W
	Cache	Max. 128MB	Max. 32MB
	Chipset	-	-
	BIOS	Insyde	Insyde SPI
Memory	Technology	DDR5 Max. 4800MHz	DDR4 2666 MHz
	Max. Capacity	576GB	256GB
	Socket	6 ECC-RDIMM	8 RDIMM/UDIMM
Graphics	Connector	1 DP	-
Expansion	PCIe / PCI	3 PCIe x16, 3 PCIe x8, 1 PCIe x4	3 PCIe x16 (up to 6 PCIe x8), 1 PCI
	Mini PCIe / M.2 / SIM	2 M.2 M key 2280	2 M.2 M key
Audio	Audio Codec	HS-100B	-
Ethernet	Controller	1 Intel® I210AT, 1 Intel® I226LM, 2 Intel® E610-XAT2	2 Intel® I210AT
Rear I/O	Ethernet	2 GbE, 2 10GbE, 1 IPMI LAN	2 GbE
	Serial	1 RS-232/422/485	1 RS-232/422/485, 1 RS-232
	USB	4 USB 3.2 Gen1	6 USB 3.2 Gen1
	Display	1 DP	-
	Audio	-	-
	PS/2	-	-
	Internal I/O	Serial	1 RS-232/422/485
USB	2 USB 3.2 Gen1, 2 USB 2.0, 1 USB 2.0 Vertical	2 USB 3.2 Gen1	
Audio	Front Audio	-	
Storage	4 SATA 3.0, (RAID 0/1/5/10)	3 SATA 3.0, 2 SATA 3.0 (RAID 0/1)	
DIO	16-bit DIO	-	
LPC	-	-	
eSPI	-	-	
SMBus	1	-	
PS/2	-	-	
TPM / iAMT		TPM 2.0	TPM 2.0 (Opt.)
Power		ATX	ATX
Operating Temperature		0°C~60°C	-5°C~65°C
Support Chassis		RM645/RM641/WM646	RM645/RM641/WM646

\*\*Supports DFI Peripherals card.

## Flexible Power Connector



### Our Applicable Boards:

Processor	Form Factor	Model
Intel® Core™ Ultra Processors	SBC	MTH556, MTH253, ARH171/ARH173, ARS101/ARS103
12th /13th /14th Gen Intel® Core™	Mini-ITX	ADP253, ADS101/ADS103, RPS101/RPS103
11th Gen Intel® Core™	Mini-ITX	TGU171/TGU173, RPP171/RPP173
10th Gen Intel® Core™	Mini-ITX	CMS101/CMS103
9th/8th Gen Intel® Core™	Mini-ITX	WL551, CS551
7th Gen Intel® Core™	Mini-ITX	KD171, KU171/173
	SBC	KU551, KU553
6th Gen Intel® Core™	Mini-ITX	SD101/SD103-Q170, SD101/SD103-H110, SU171/SU173
	SBC	SU551
Intel® Atom® Amston Lake Processors	SBC	ASL553, ASL253, ASL171/ASL173
Intel® Atom® Alder Lake-N Processors	Mini-ITX	ADN553, ADN253, ADN171/ADN173
Intel Atom® Processor X Series	Mini-ITX	EHL556, EHL253, EHL171/EHL173
Intel Atom® E3900	Mini-ITX	AL171/AL173
	SBC	AL551, AL553
AMD® Ryzen™ Embedded V2000 Series	Mini-ITX	RNO171
AMD® Ryzen™ Embedded V1000/R1000/R2000 Series	Mini-ITX	GH551, GH171
AMD® Ryzen™ Embedded 8000 Series	Mini-ITX	HPT171

Connector Type	P/N
4P Vertical Angle Type	347-104007-106S
4P Right Angle Type	347-202041-100G

## Our Proprietary LPC Modules



EXT-RS232



EXT-RS485



Proprietary Card

4 COM ports

1. Two proprietary cards for expanding extra 4 COM ports via a LPC interface
2. Provides flexibility and system integration on our newest platforms

### Our Applicable Boards:

Processor	Form Factor	Model
Intel® Core™ Ultra Processors	SBC	MTH556, MTH253
12th /13th /14th Gen Intel® Core™	Mini-ITX	ADS101/ADS103, RPS101/RPS103
	SBC	ADP253
11th Gen Intel® Core™	Mini-ITX	TGU171/TGU173
10th Gen Intel® Core™	Mini-ITX	CMS101/CMS103
9th/8th Gen Intel® Core™	Mini-ITX	WL171/WL173, CS103-Q370/C246/H310, CS101-Q370/C246/H310
	SBC	WL551, CS551
7th Gen Intel® Core™	Mini-ITX	KD171, KU171/173
	SBC	KU551, KU553
6th Gen Intel® Core™	Mini-ITX	SD101/SD103-Q170, SD101/SD103-H110, SU171/SU173
	SBC	SU551
Intel® Atom® Amston Lake Processors	SBC	ASL553, ASL253
Intel® Atom® Alder Lake-N Processors	Mini-ITX	ADN171/ADN173
	SBC	ADN553, ADN253
Intel Atom® Processor X Series	Mini-ITX	EHL171/173
	SBC	EHL556, EHL253
Intel Atom® E3900	Mini-ITX	AL171/AL173
	SBC	AL551, AL553
AMD® Ryzen™ Embedded V2000 Series	Mini-ITX	RNO171
AMD® Ryzen™ Embedded V1000/R1000/R2000 Series	Mini-ITX	GH171
	SBC	GH551

# Peripherals

Providing Expansibility & High Flexibility



Proprietary I/O Cards

Model Name	EXT-100GbE	EXT-10GbE	NCT203
Chip	E810-CAM2	XL710-BM1	Intel® XL710-AT2
Mode	100GbE	10GbE	10GbE
Interface	DFI Proprietary	PCIe x8	PCIe x8
Dimension	167.7 x 68.9 mm	161.04 x 100.15 mm	146.95 x 68.90 mm
Applicable Models	PR810-C622	All DFI systems and boards with PCIe interface	All DFI systems and boards with PCIe interface



Riser Cards

Model Name	H300-2E	H300-2P1E	H300-3P1M
Expansion Slots	2 PCIe x8	1 PCIe x16, 2 PCI	3 PCI, 1 Mini PCIe
Interface	2 DFI Proprietary Extension Bus	2 DFI Proprietary Extension Bus	2 DFI Proprietary Extension Bus
Dimensions	170 x 37 mm	170 x 64 mm	170 x 64 mm
Applicable Models	HR100-CRM, CR100-CRM, CM100-C	HR100-CRM, CR100-CRM, CM100-C	HR100-CRM, CR100-CRM, CM100-C



Riser Cards

Model Name	RISER-2PE4	RISER-PE16	X100-2P1M	X100-3PE2	T100-2E	T200-1E
Expansion Slots	2 PCIe x4	1 PCIe x16	2 PCI, 1 Mini PCIe	1 PCIe x1, 1 PCI, 1 Mini PCIe	2 PCIe x16 (PCIe x8 signal)	1 PCIe x16 (PCIe x16 signal)
Interface	PCIe x8	PCIe x16	PCIe x1	PCIe x1	PCIe x16	PCIe x16
Dimensions	170 x 52.7 mm	137.1 x 31.3 mm	170 x 52.7 mm	170 x 52.7 mm	170 x 52.7 mm	140 x 51 mm
Applicable Models	All DFI systems and boards with PCIe interface					



DC to DC Converters

Model Name	X102-DC12				X102-DC24		X102-DC30		X103-DC36
Input Voltage	11.4V~12.6V				20.4V~25.2V		6V~30V		9V~36V
Output Voltage	Output Voltage	Output Current	Power Output	Test Result 125.9W	Output Voltage	Output Current (maximum)	Output Voltage	Output Current (maximum)	12V/24V
	+3.3V	5A	16.5W		+3.3V ±5%	5.0A	+3.3V ±5%	6.0A	
	+5V	5A	25W		+5V ±5%	8.0A	+5V ±5%	6.0A	
	5VSB	2A	10W		5VSB ±5%	2.0A	5VSB ±5%	1.5A	
	+12V	6A	72W		+12V ±5%	6.0A	+12V ±5%	5A	
	-12V	0.2A	2.4W	-12V ±10%	0.2A	-12V ±10%	0.15A		
Maximum Output	130W				140W		120W		70W
Ports	One DC 12V Jack, One 4-pin ATX +12V Power Connector, One 20-pin ATX Power Connector				One 3-pin DC-in Connector, One 4-pin ATX 12V Power Connector, One 20-pin ATX Power Connector, Two 4-pin FDD Power Connector		One 3-pin DC-in Connector, One 4-pin ATX 12V Power Connector, One 20-pin ATX Power Connector, One 4-pin FDD Power Connector		One DC-in Jack(default) or One 4-pin Power Connector
Dimensions	146 x 50 mm				146 x 50 mm		146 x 50 mm		146 x 55 mm



Proprietary Expansion Modules

Model Name	EXT-RS232	EXT-RS485	MPE-EXTB
Chip	NCT5104	NCT5104	-
Ports	4 RS232 Serial Connector	4 RS485 Serial Connector	1 Full-size Mini PCIe
Interface	LPC	LPC	Half-size Mini PCIe
Dimensions	48 x 30 mm	48 x 30 mm	30 x 26.8 mm
Applicable Models	All DFI systems and boards with PCIe interface		

\*Available upon project request & MOQ required

Proprietary Expansion Modules



Model Name	MPE-EXTF	MPE-SATA	MPE-SIM2
Chip	-	-	-
Expansion Slots/Ports	1 Full-size Mini PCIe	1 SATA Connector	2 SIM slots
Interface	Half-size Mini PCIe	mSATA	Mini PCIe (USB 3.2 Gen 1/ USB 2.0, PCIe)
Dimensions	30 x 26.8 mm	35 x 25 mm	61.45 x 30 mm
Applicable Models	-	-	-

M.2 Expansion Modules



Model Name	M2A-M21	M.2-eMMC	M.2-1LAN/2LAN	M.2-1PSE/2PSE
Chip	-	-	-	-
Expansion Slots/Ports	M.2 A/E Key	-	1 RJ45 / 2 RJ45	1 RJ45 / 2 RJ45
Interface	M.2 B Key with SIM (PCIEx1/USB3/USB2) Up to 2 USB 3, 4 USB 2	M.2 Key B & Key M Supports PCIe 5Gbps NVME 1.3a	PCIe x1	PCIe x1
From Factor	30 x 60 mm (Stand off at 30 x 30 mm)	M.2 2230/2242/2260/2280	M.2 B-M key (22 x 42 mm)	M.2 B-M key (22 x 42 mm)
Applicable Models	-	All DFI systems and boards with M.2 interface	All DFI systems and boards with M.2 interface	All DFI systems and boards with M.2 interface

M.2 Expansion Modules



Model Name	MPE-M2M/M2E	M.2-COM4	M.2-SATA2	M.2-USB314
Chip	-	-	-	uPD720201
Expansion Slots/Ports	1 M.2 M key / 1 M.2 E key	RS232/RS422/RS485	2 SATA 3.0	4 USB 3.2 Gen1
Interface	PCIe, SATA, USB (based on motherboard input)	PCIe x1	PCIe	PCIe
From Factor	Mini PCIe for both full and half sizes	M.2 B-M key (22 x 80 mm)	M.2 B-M key (22 x 80 mm)	M.2 B-M key (22 x 80 mm)
Applicable Models	All DFI systems and boards with Mini PCIe.	All DFI systems and boards with M.2 interface	All DFI systems and boards with M.2 interface	All DFI systems and boards with M.2 interface

Remote Management



GNSS module



Model Name	EXT-OOB	RM101-OOB	M2A-OOB	SEM-2500/2510
Chip	NUC980	NUC980	NUC980	AST2500/2510
Mode	OUT OF BAND	OUT OF BAND	OUT OF BAND	SEM2500: IPMI & VGA SEM2510: VGA
Interface	-	-	Proprietary M.2 A key	DFI Proprietary
Dimension	89.80 x 45.60 mm	89.80 x 45.60 x 27 mm	30 x 42 mm	69.6 x 45 mm
Applicable Models	All DFI systems and boards with M.2-A key OOB interface			PR610-C621, PR810-C622

Model Name	M2-GNSS
Controller	Ublox NEO-M9V Module
Receiver Type	GPS/QZSS L1 C/A, GLONASS L10F, BeiDou B1I, Galileo E1B/C
Form Factor	M.2 2230 E1 Key
Input Interface	USB 2.0
Dimensions	22 x 30 mm
Operating Temp.	-40°C~85°C

CAN module



CAN module



Model Name	MPE-CAN2
Ports	1 DB9 connector includes Dual CAN Bus and 1 J1708 ports
Interface	Mini PCIe / USB (Opt.)
Dimensions	50.59 x 30 mm
Operating Temp.	-40°C~85°C

Model name	M2-CAN2
Board Form Factor	M.2 3042 B+M Key
Input	PCIe or USB 2.0 by different sku
Output	Dual port by DB9
Physical	CAN 2.0A/2.0B/FD
	Arbitration bit rate up to 1Mbit/s
	Data bit rate up to 5Mbit/s
Protocol	Provide J1939 SDK for Windows and Linux (User guide, driver, demo application, API)
	Provide CANopen SDK for Windows and Linux (User guide, driver, demo application, API)
Dimension	30 x 42 mm
Temperature	Op. temp: -40 to 85°C
	Storage temp.: -40 to 85°C

Audio Amplifier



Model Name	KS-AUD2
CHIP	MAX9736
Audio	Audio Amplifiers Mono/ Stereo High-Power Class D Amplifier
Port	1 audio in header, 1 audio in jack, 1 audio out header
Power Input	12V
Dimensions	51 x 51 mm
Operating Temp.	-40°C~85°C

Gaming I/O control board



Model Name		GM903
Processor	FPGA + MCU	FPGA & MCU implementation of the Infotainment features controller
Internal I/O	USB	Pin header for USB 2.0 signal input
	UART	Pin header for UART signal input
	I2C	Pin header for I2C signal input
	Host Interface	High/low speed connector, 1 PCIe x1 slot (Gold finger)
Infotainment	Intrusion Detection	8 intrusion detection
	DI/DO	32-bit Digital Input, 32-bit OC output
	iButton	Support iButton 1-wire protocol, ds1996 device
	Meter Power	8 ports can be set as meter output with disconnect detect
	Serial	2 RS232/CCTalk (TX/RX)
	Audio	Stereo 6W+6W Class D Audio AMP Output
	Security	SHA-256 or AES-256, 128B RBG (Opt.)
	SRAM (NVRAM)	Support 2pcs SRAM (BGA type)
	EEPROM	EEPROM 2KB
	Coin battery	1 CR2032 Lithium 3V/220mAh with socket type, 1 header for cable type
Hardware	Dimension	170 x 113 mm
Power		12V DC-in

Add-on Display



Model Name	EXT-VGA	EXT-DP	EXT-HDMI	M2A-eDP/LVDS
Chip	IT6516B	SN75DP130	PI3HDX1204B	PTN3460
Ports	VGA Connector LCD/Inverter Power connector	DP Connector LCD/Inverter Power Connector	1 HDMI	M.2 A Key
Interface	1 VGA	1 DP	1 HDMI	eDP/LVDS
Dimensions	50 x 40 mm	50 x 40 mm	50 x 40 mm	30 x 42 mm (Stand off at 30 x 30 mm)
Applicable Models	ADS101/ADS103	ADS101/ADS103, HU171/HU173, HU101/HU103, HM100/HM101/HM103-QM87/ HM86	ADS101/ADS103, RPS101/RPS103, RPSPIC	RPP171/RPP173, RPS100, ADN171/ADN173, ASL171/ASL173, HPT171/HPT173, ARH171/ARH173

Add-on Display



Model Name	M2A-VGA	M2A-HDMI	M2A-DP	SDVO-LVDS
Chip	CH7517	PI3HDX1204B1ZHE	-	Chrontel CH7308B
Ports	M.2 A Key	M.2 A Key	M.2 A Key	LVDS LCD Panel Connector LCD/Inverter Power Connector
Interface	VGA	-	DP++	LVDS
Dimensions	30 x 42 mm (Stand off at 30 x 30 mm)	30 x 42 mm (Stand off at 30 x 30 mm)	30 x 42 mm (Stand off at 30 x 30 mm)	45 x 38 mm
Applicable Models	RPP171/RPP173, RPS100, ADN171/ADN173	RPP171/RPP173, RPS100, ADN171/ADN173ARH171/173,HPT171	RPP171/RPP173, RPS100, ADN171/ADN173	SB102-D, SB300-C, SB630-CRM, SB600-C, SB601-C

Expansion Modules



EXT-100GbE



M.2-1LAN/2LAN



MPE-SIM2



MPE-M2M/M2E



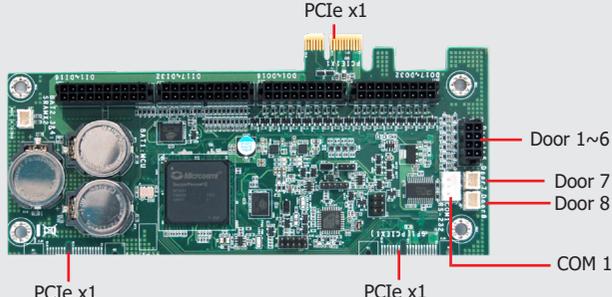
M.2-COM4



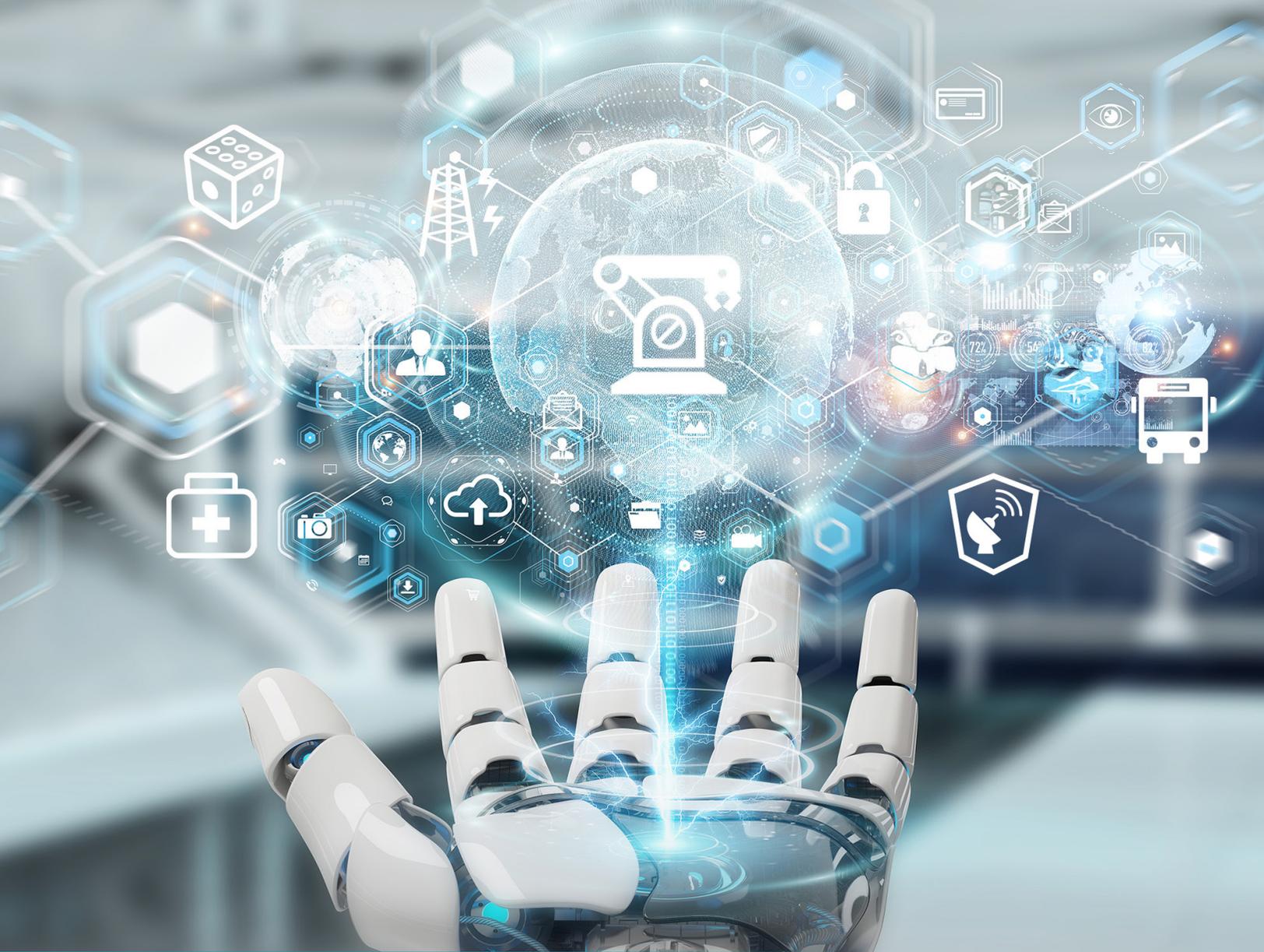
M.2-SATA2

Enjoy greater scalability in networking, storage, video or signal transmission with additional standard-compliant interfaces

Gaming I/O Board



Gaming IO	<ul style="list-style-type: none"> <li>Intrusion switch inputs:                             <ul style="list-style-type: none"> <li>- 6 via 2x4 micro-fit connector</li> <li>- 2 via 2-pin box headers</li> </ul> </li> </ul>
Digital IO	<ul style="list-style-type: none"> <li>32 ESD-protected inputs</li> <li>32 ESD-protected outputs</li> </ul>
Security ROM	<ul style="list-style-type: none"> <li>2 x SRAM (BGA type):                             <ul style="list-style-type: none"> <li>64K x16, 512K x16, 1M x16, 2M x16, 4M x16</li> </ul> </li> </ul>



# Wallmount/ Rackmount IPC Systems

# Wallmount/ Rackmount IPC Systems



## Features

DFI offers a variety of rack-mount and wall-mount industrial chassis that support DFI's EATX, ATX, MicroATX, and Mini-ITX motherboards. These chassis are aligned with our integrated system design, service, and performance, making them optimized for combined motion, vision, and I/O applications. Customers can select the appropriate products based on space requirements, critical embedded applications, or expansion needs.

## IPC selection guide

Explore DFI's range of Embedded and IoT Chassis



Chassis Model	ST102	DT122	WM120
Chassis Dimensions(mm)	219 x 75.2 x 229.7	300 x 75 x 217	224 x 88 x 206
DFI MB Form	mini-ITX	mini-ITX	mini-ITX
Type	Desktop/Stand(Opt.)	Desktop	Wall-Mount
Drive Bays	1 x 2.5" Storage	2 x 2.5" Storage or 1 x 3.5" storage	1 x 2.5" Storage
Power Supply	DC-In w/o PSU	FlexATX	DC-In w/o PSU
Expansion Slots	0	1(Opt)	1(Opt)
PCIe Card Selection	NA	lower TDP I/O card	lower TDP I/O card
Bezel I/O	2 x USB 2.0, 2 x Audio Jack	NA	NA
I/O Reserved Holes	1 x optional slim ODD bay(Opt.)	1 x DB25 ports, 3 x DB9 ports	2 x DB9 ports
Button	Power	Power/Reset	Power/Reset
Indicators	Power/Storage	Power/Storage	Power/Storage

## Explore DFI's range of Embedded and IoT Chassis



Chassis Model	WM130	WM342	WM343
Chassis Dimensions(mm)	200 x 145.8 x 210.6	306.6 x 132.1 x 301.9	349 x 140.2 x 290.9
DFI MB Form	mini-ITX	micro-ATX	micro-ATX
Type	Wall-Mount	Wall-Mount	Wall-Mount
Drive Bays	1 x 2.5" Storage	2 x 2.5" Storage	1 or 2 2.5/3.5 storage
Power Supply	DC-In w/o PSU	FlexATX	FlexATX
Expansion Slots	1	2	4
PCIe Card Selection	Single slot up to 75W	FH/9.5" GPU cards	FH/9.5" GPU cards
Bezel I/O	NA	NA	NA
I/O Reserved Holes	2 x 2 USB ports, 3 x DB9 ports 1 x Terminal block(4 pins)	1 x 2 USB ports 3 x DB9 ports	2 x DB-9 ports 4 x 2 USB 2.0 ports
Button	Power	Power/Reset	Power/Reset
Indicators	Power	Power/Storage	Power/Storage



Chassis Model	WM646	RM641	RM645
Chassis Dimensions(mm)	332 x 345.5 x 173	483 x 177 x 451	481.5 x 175.6 x 470.8
DFI MB Form	ATX	ATX	ATX/EATX
Type	Wall-Mount	Rack-Mount	Rack-Mount
Drive Bays	3 x 3.5" Storage	3 x 5.25" & 1 x 3.5" Storage	Max. 8 x 2.5" Storage
Power Supply	FlexATX	PS/2 ATX	PS/2 ATX or Redundant
Expansion Slots	7	7	7
PCIe Card Selection	FH/9.5" GPU cards	FH/10.5" GPU card	FH/10.5" GPU card
Bezel I/O	2 x USB 2.0	2 x USB 2.0(Opt.)	NA
I/O Reserved Holes	1 x optional slim ODD bay(Opt.)	2 x USB 2.0 , 2 x DB9	NA
Button	Power	Power/Reset	Power
Indicators	Power	Power/Storage	Power/Storage



Chassis Model	RM646	RM840	RM811
Chassis Dimensions(mm)	431.8 x 449.8 x 175.6	483 x 177 x 510	438 x 44 x 673.2
DFI MB Form	ATX/ETAX	ATX/ETAX	ATX/ETAX
Type	Rack-Mount	Rack-Mount	Rack-Mount
Drive Bays	Max 5 x 2.5"/3.5" Storage	2 x 5.25" & 1 x 3.5" Storage	4 x 3.5"/2.5" Storage
Power Supply	PS/2 ATX or Redundant	PS/2 ATX	FlexATX/Redundant
Expansion Slots	3	7	1
PCIe Card Selection	Dual FH/10.5" GPU card	FH/10.5" GPU card	Single slot up to 75W
Bezel I/O	2 x USB 2.0	NA	2 x USB 2.0
I/O Reserved Holes	NA	1 x 2 USB ports, 3 x DB9 ports	NA
Button	Power	Power/Reset	Power/Reset
Indicators	Power/Storage	Power/Storage	Power/Storage

## IPC Chassis Series



Model Name		WM130-RPS	WM130-HPT	SF101-ADS	ST102-CS
Platform		Wallmount IPC	Wallmount IPC	Desktop IPC	Stand IPC
System	Processor	14th/13th/12th Gen Intel® Core™ Processor	AMD® Ryzen™ Embedded 8000 Series	14th/13th/12th Gen Intel® Core™ Processor	9th/8th Gen Intel® Core™ Processor
	Socket	LGA 1700	Onboard	LGA 1700	LGA 1151
	Max. Speed	2.4~5.8GHz	4.9~5.1GHz	2.4~5.5GHz	2.9~4.0GHz
	CPU TDP	35~65W	15~30W / 35~54W	35W	35W
	Cache	4~36M	6/8M	4~36M	2~12M
	Chipset	Intel® R680E/Q670/H610E	-	Intel® R680E	Intel® H310/Q370
	BIOS	AMI SPI 256Mbit	AMI SPI 256Mbit	AMI SPI 128Mbit	AMI SPI 128Mbit
Memory	Technology	Dual DDR5 5600MHz	Dual Channel DDR5 5600/5200/4800MHz (support ECC)	Dual Channel DDR4 3200 MHz (ECC/Non-ECC)	Dual Channel DDR4 2666 MHz
	Max. Capacity	64GB	96GB	64GB	32GB
	Socket	2 SODIMM	2 SODIMM	2 SODIMM	2 SODIMM
Storage		1x 2.5" SATA 3.0 SSD, 1 M.2 2280 M Key	1x 2.5" SATA bay, 1 M.2 2280 M Key	1x 2.5" SATA bay, 1 M.2 2280 M Key	1x 2.5" SATA 3.0 Drive bay
Expansion	PCIe, PCI, Mini PCIe	1 PCIe x16	1 x PCIe Gen4 x16 slot (x8 Signal)	-	1 Full mPCIe
	M.2	1 M.2 2230 E Key, 1 M.2 2242/3042/3052 B Key, 1 M.2 2280 M Key	1 x M.2 M Key 2280 slot	1 M.2 2230 E Key, 1 M.2 2280 M Key, 1 M.2 2242/3042/3052 B Key	1 M.2 2280 M Key, 1 M.2 2230 E Key
	SIM, Other	-	-	-	-
Audio	Audio Codec	Realtek ALC888	ALC888S	Realtek ALC888S	Realtek ALC888S
Ethernet	Controller	1 Intel® I226-LM/V, 1 Intel® I226-V	2 Intel® I226V	1 Intel® I226V PCIe, 1 Intel® I219LM PHY	1 Intel® I210AT, 1 Intel® I219LM
LED	Indicators	Power LED	Power LED	Power, HDD LED	Power, HDD LED
I/O	Ethernet	2 2.5GbE	2 2.5GbE	1 2.5GbE, 1 GbE	2 GbE
	Serial	2 COM	1 RS-232, 1 RS-232/RS422/RS485	2 COM	-
	USB	6 USB 3.2	1 USB 3.2 Gen2, 2 USB 2.0	6 USB 3.2 Gen2, 2 USB 2.0	4 USB 3.2, 2 USB 2.0
	Display	1 HDMI, 1 DP++, 1 USB Type-C	4 DP++	2 DP++	2 DP++, 1 HDMI
	DIO	-	by project	-	-
	Buttons	Power	Power	Power	Power
	PS/2	-	-	-	-
	Antenna	-	-	-	2
Audio	-	Line-out	Line-out	Line-out, Mic-in	
Power		12~28V DC-in	12V / 19~24V DC-In	15~36V DC-in	12V DC-In Jack
Cooling		1x 8cm System Fan	1x 8cm System Fan	-	1 System Fan, 1 CPU Fan
OS Support		Win11 LTSC	Win11 LTSC	Win10 IoT, Linux	Win10 IoT
Mechanism	Construction	Sheet Metal	Sheet Metal	Metal chassis + Aluminum front bezel	Metal chassis + Aluminum front bezel, Kensington lock
	Mounting	Wall Mount	Wall Mount	Wall Mount, Rack Mount	Wall Mount
	Dimensions (W x H x D)	200 x 145.8 x 210.6 mm	200 x 145.8 x 210.6 mm	220 x 43 x 197.2 mm	219 x 75.15 x 229.7 mm (without of stand holder)
Environment	Operating Temp.	-5°C~45°C	-5°C~45°C	-5°C~45°C	-5°C~55°C
Support MB		RPS103-R680E/Q670/H610E	HPT193/HPT171	ADS101/ADS103	CS101-Q370/H310

## IPC Chassis Series



Model Name		DT122-GH	WM120-CMS171/CMS173	WM343-RPS	WM343-CMS
Platform		Desktop IPC	Wallmount IPC	Wallmount IPC	Wallmount IPC
System	Processor	AMD® Ryzen™ Embedded V1000/ R1000 Series	10th Gen Intel® Core™ Processor	14th/13th/12th Gen Intel® Core™ Processor	10th Gen Intel® Core™ Processor
	Socket	Onboard	LGA 1200	LGA 1700	LGA 1200
	Max. Speed	3.2~3.8GHz	3.0~4.5GHz	2.4~5.8GHz	3.0~4.7GHz
	CPU TDP	12~25 or 35~54W	35/65W	35~65W	35~125W
	Cache	1/2M	2~20M	4~36M	2~20M
	Chipset	-	Intel® Q470E	Intel® Q670E/H610E	Intel® Q470E/H420E
	BIOS	AMI BIOS 64Mbit	AMI SPI 128Mbit	AMI SPI 256Mbit	AMI SPI 256Mbit
Memory	Technology	Dual Channel DDR4 3200 MHz	Dual Channel DDR4 2933 MHz	Dual Channel DDR5 up to 4400 MHz	Dual Channel DDR4 2400/2666/2933 MHz
	Max. Capacity	32GB	64GB	192GB	64/128GB
	Socket	2 SODIMM	2 SODIMM	4 UDIMM	2 or 4 UDIMM
Storage		1x 3.5" or 2x 2.5" SATA 3.0 Drive Bay, 1 M.2 2280 NVME SSD	1x 2.5" SATA 3.0 SSD, 1 M.2 2280 M Key	1/2x 3.5"/2.5" SATA 3.0 drive bays, 1x 5.25" Optical drive bay, 2 M.2 2242/2260/2280 M Key, 1 M.2 2230 E Key	1 or 2x 3.5"/2.5" SATA 3.0 drive bays, 1x 5.25" Optical drive bay
Expansion	PCIe, PCI, Mini PCIe	1 PCIe or 1 PCI	1 PCIe x16	1 PCIe x16, 1 PCIe x4, 2 PCI	1 PCIe x16, 1 PCIe x4, 2 PCI
	M.2	-	1 M.2 2230 E Key, 1 M.2 2280 M Key, 1 M.2 3042/3052 B Key	2 M.2 M key 2242/2260/2280, 1 M.2 E key 2230	1 M.2 2242/2260/2280 M Key, 1 M.2 2230 E Key
	SIM, Other	-	1 SIM	-	-
Audio	Audio Codec	Realtek Audio Codec	Realtek ALC888	Realtek ALC888	Realtek ALC888
Ethernet	Controller	2 Realtek Ethernet	1 Intel® I219LM PHY, 1 Intel® I211AT PCIe	1 Intel® I219-LM/V, 1 Intel® I226-V	1 Intel® I211AT PCIe, 1 Intel® I219LM PHY
LED	Indicators	Power, HDD LED	Power, HDD LED	Power, HDD LED	Power, HDD LED
I/O	Ethernet	2 GbE	2 GbE	2 2.5GbE	2 GbE
	Serial	1 RS-232/422/485, 1 RS-232	-	1 RS-232/422/485	1 RS-232/422/485
	USB	2 USB 3.2, 2 USB 2.0	12 USB 3.2	4 USB 3.2, 2 USB 2.0	2 USB 3.2 Gen2, 2~6 USB 3.2 Gen1, 2 USB 2.0
	Display	3 or 4 DP++	2 DP++	1 VGA, 1 DP++, 1 HDMI	1 VGA, 1 DP++, 1 HDMI
	DIO	-	-	-	-
	Buttons	Power, Reset	Power, Reset	Power, Reset	Power, Reset
	PS/2	-	-	1 PS/2 (mini-DIN-6)	1 PS/2 (mini-DIN-6)
	Antenna	-	-	-	-
Audio	Line-out, Mic-in, Line-in	-	Line-out, Mic-in, Line-in (Opt.)	Line-out, Mic-in, Line-in (Opt.)	
Power		150W FLEX ATX	12V DC-in / 15~36V DC-in	Flex ATX 400/650W	250W FLEX ATX (up to 500W)
Cooling		1 System Fan, 1 CPU Fan	1 8cm System Fan	1x 12cm System Fan	1x 12cm System Fan
OS Support		Win10, Linux	Win10 IoT	Win11 LTSC	Win10, Linux
Mechanism	Construction	Front Bezel aluminum + Chassis Sheet Metal	Sheet Metal	Sheet metal	Sheet Metal
	Mounting	Wall Mount	Wall Mount	Wall Mount	Wall Mount
	Dimensions (W x H x D)	300 x 75 x 217 mm	224 x 88 x 206 mm	349 x 140.2 x 290.9 mm	349 x 140.2 x 290.9 mm
Environment	Operating Temp.	0°C~45°C	-5°C~45°C	0°C~45°C	0°C~45°C
Support MB		GH171	CMS171/CMS173	RPS330-Q670E/H610E	CMS330-Q470E/H420E



Model Name		WM343-CS330	WM343-CS331	WM343-CS332	WM343-CS350
Platform		Wallmount IPC	Wallmount IPC	Wallmount IPC	Wallmount IPC
System	Processor	9th/8th Gen Intel® Core™ Processor	9th/8th Gen Intel® Core™ Processor	9th/8th Gen Intel® Core™ Processor	9th/8th Gen Intel® Core™ Processor
	Socket	LGA 1151	LGA 1151	LGA 1151	LGA 1151
	Max. Speed	2.9~5.0GHz	2.9~5.0GHz	2.9~5.0GHz	2.9~5.0GHz
	CPU TDP	35~95W	35~95W	35~95W	35~95W
	Cache	2~16M	2~16M	2~16M	2~16M
	Chipset	Intel® H310/Q370	Intel® Q370/C246	Intel® Q370/C246	Intel® Q370/C246
	BIOS	AMI SPI 128Mbit	AMI SPI 128Mbit	AMI SPI 128Mbit	AMI SPI 128Mbit
Memory	Technology	Dual Channel DDR4 2400/2666 MHz	Dual Channel DDR4 2400/2666 MHz	Dual Channel DDR4 2400/2666 MHz	Dual Channel DDR4 2400/2666 MHz
	Max. Capacity	64 or 128GB	64 or 128GB	64 or 128GB	64 or 128GB
	Socket	2 or 4 DIMM	2 or 4 DIMM	2 or 4 DIMM	2 or 4 DIMM
Storage		1 or 2x 3.5"/2.5" SATA 3.0 drive bays, 1x 5.25" Optical drive bay, 1 mSATA	1 or 2x 3.5"/2.5" SATA 3.0 Drive Bays, 1x 5.25" Optical Drive Bay, 1 mSATA, 1 M.2 2280	1 or 2x 3.5"/2.5" SATA 3.0 Drive Bays, 1x 5.25" Optical Drive Bay, 1 M.2 2280	1 or 2x 3.5"/2.5" SATA 3.0 Drive Bays, 1x 5.25" Optical Drive Bay, 1 M.2 2280
Expansion	PCIe, PCI, Mini PCIe	1 PCIe x16, 1 PCIe x4, 2 PCI, 1 Full mPCIe	2 PCIe x16, 2 PCIe x4, 1 mPCIe	1 PCIe x16, 2 PCIe x4, 1 PCI	2 PCIe x16, 2 PCIe x4
	M.2	-	1 M.2 2242/2260/2280 M Key	1 M.2 2242/2280 M Key, 1 M.2 2230 E Key	1 M.2 2242/2260/2280 M Key, 1 M.2 2230 E Key
	SIM, Other	-	-	-	-
Audio	Audio Codec	Realtek ALC888	Realtek ALC888	Realtek ALC262-VC2	Realtek ALC888
Ethernet	Controller	1 Intel® I211AT, 2 Intel® I219V	1 Intel® I219LM, 1 Intel® I211AT	1 Intel® I219LM, 1 or 3 Intel® I211AT (Opt.)	1 Intel® I219LM, 1 Intel® I211AT
LED	Indicators	Power, HDD LED	Power, HDD LED	Power, HDD LED	Power, HDD LED
I/O	Ethernet	2 GbE	2 GbE	2 or 4 GbE	2 GbE
	Serial	1 RS-232/422/485	1 RS-232/422/485	1 RS-232/422/485	1 RS-232/422/485
	USB	4 USB 3.2 Gen1, 2 USB 2.0	2 USB 3.2 Gen2, 2 USB 3.2 Gen1, 2 USB 2.0	4 USB 3.2 Gen1, 2 USB 2.0	2 USB 3.2 Gen2, 2 USB 3.2 Gen1, 2 USB 2.0
	Display	1 VGA, 1 DVI-I (DVI-D signal), 1 DP++	1 DVI-I (DVI-D signal), 1 DP++, 1 HDMI	1 VGA, 2 DP++	1 DVI-I (DVI-D signal), 1 HDMI, 1 DP++
	DIO	-	-	-	-
	Buttons	Power, Reset Button	Power, Reset Button	Power, Reset Button	Power, Reset Button
	PS/2	1 PS/2 (mini-DIN-6)	1 PS/2 (mini-DIN-6)	1 PS/2 (mini-DIN-6)	1 PS/2 (mini-DIN-6)
	Antenna	-	-	-	-
	Audio	Line-out, Mic-in, Line-in (Opt.)	Line-out, Mic-in, Line-in (Opt.)	Line-out, Mic-in, Line-in (Opt.)	Line-out, Mic-in, Line-in (Opt.)
Power		250W FLEX ATX (up to 500W)	250W FLEX ATX (up to 500W)	250W FLEX ATX (up to 500W)	250W FLEX ATX (up to 500W)
Cooling		1x 12cm System Fan	1x 12cm System Fan	1x 12cm System Fan	1 x 12cm System Fan
OS Support		Win10, Linux	Win10, Linux	Win10, Linux	Win10, Linux
Mechanism	Construction	Sheet Metal	Sheet Metal	Sheet Metal	Sheet Metal
	Mounting	Wall Mount	Wall Mount	Wall Mount	Wall Mount
	Dimensions (W x H x D)	349 x 140.2 x 290.9 mm	349 x 140.2 x 290.9 mm	349 x 140.2 x 290.9 mm	349 x 140.2 x 290.9 mm
Environment	Operating Temp.	0°C~45°C	0°C~45°C	0°C~45°C	0°C~45°C
Support MB		CS330-H310/Q370	CS331-Q370/C246	CS332-Q370/C246	CS350-Q370/C246



Model Name		WM646-ADS	RM641-CS	RM840-PR810
Platform		Wallmount IPC	Rackmount Box PC	Rack Mount IPC
System	Processor	14th/13th/12th Gen Intel® Core™ Processor	9th/8th Gen Intel® Core™ Processors	Dual 2nd/1st Gen Intel® Xeon® Scalable Processor Family
	Socket	LGA 1700	LGA 1151	LGA 3647
	Max. Speed	1.1~5GHz	2.9GHz~4.7GHz	3.0~3.9GHz
	CPU TDP	35~65W	up to 80W	70~150W
	Cache	4~36M	2~12M	11~35.75M
	Chipset	Intel® R680E/Q670E	Intel® C246	Intel® C622
	BIOS	AMI SPI 256Mbit	Insyde SPI 128Mbit	Insyde SPI 256Mbit
Memory	Technology	Dual Channel DDR4 3200 MHz (ECC/Non-ECC)	Dual Channel DDR4 2400/2666 MHz (ECC/non-ECC)	Single Channel DDR4 2133/2400/2666/2933 MHz
	Max. Capacity	128GB	128GB	384GB
	Socket	4 UDIMM	4 UDIMM	12 RDIMM
Storage		3 3.5" HDD, 1 Slim ODD	3x 5.25" Optical drive bays, 1x 3.5" SATA 3.0 drive bay	2x 5.25" (1x 2.5"), 1x 3.5" (1x 2.5"), 1 M.2 2280
Expansion	PCIe, PCI, Mini PCIe	1 PCIe x16, 4 PCIe x4, 2 PCI	1 PCIe x16, 3 PCIe x4, 2 PCI, 1 mPCIe	4 PCIe x16, 1 PCIe x8, 1 PCI
	M.2	1 M.2 2230 E Key, 2 M.2 2242/2260/2280 M Key	1 M.2 2242/2280 M key	1 M.2 2280 M key
	SIM, Other	-	-	1 BMC Module slot for SEM2500/2510 (IPMI), 1 100GbE slot (x4 + x8)
Audio	Audio Codec	Realtek ALC888	Realtek ALC887 / ALC888 (Opt.)	ALC888
Ethernet	Controller	1 Intel® I226-LM, 1 Intel® I226-V, 2 Intel® x550-AT2	1 Intel® I211AT, 1 Intel® I219LM	2 Intel® I210AT, 1 Intel® x557-AT2
LED	Indicators	Power, HDD LED	Power, HDD LED	Power, HDD LED
I/O	Ethernet	2 2.5GbE, 2 10GbE (Opt.)	2 GbE	2 GbE, 2 10GbE x557-AT2, IPMI 2.0 (Opt.)
	Serial	2 RS-232/422/485, 4 RS-232	1 RS-232/422/485	1 RS-232
	USB	6 USB 3.2 Gen2, 6 USB 3.2 Gen1, 3 USB 2.0	4 USB 3.2, 2/4 USB 2.0	4 USB 3.2, 2 USB 2.0
	Display	1 VGA, 2 DP++, 1 HDMI	1 VGA, 2 DP++	1 VGA (opt.)
	DIO	8-bit DIO	-	-
	Buttons	Power	Power, Reset	Power, Reset
	PS/2	1 PS/2 (2.54mm pitch)	1 PS/2 (mini-DIN-6)	-
	Antenna	-	-	-
Audio	1 Front Audio Header, 1 S/PDIF	Line-out, Mic-in, Line-in(Opt.)	Line-out, Mic-in	
Power		Flex ATX up to 650W	500W ATX AC Power Input: 90~264V	ATX PS/2 Power Supply 650W
Cooling		1 x 12cm Fan, 1x 8cm Fan	2 x 92cm System Fan	2 Fans (90mm = 51CFM)
OS Support		Win11 LTSC	Win10 IoT, Linux	Win10 IoT, Windows Server2016 & 2019, Linux
Mechanism	Construction	Sheet metal, SGCC	SECC	Heavy Industrial Steel
	Mounting	Wall Mount	Rack mount kit	Rack mount kit
	Dimensions (W x H x D)	332 x 345.5 x 173 mm	483 x 177 x 451 mm	483 x 177 x 510 mm
Environment	Operating Temp.	0°C~45°C	0°C~45°C	0°C~40°C
Support MB		ADS630-R680E/Q670E	CS632-C246	PR810-C622



Model Name		RM645-ICX610	RM811-ERX810	RM811-ERX610
Platform		Rack Mount IPC	Rack Mount IPC	Rack Mount IPC
System	Processor	Single 3rd Gen Intel® Xeon® Scalable Processor Family	Dual 5th/4th Gen Intel® Xeon® Scalable Processor Family	Single 5th/4th Gen Intel® Xeon® Scalable Processor Family
	Socket	LGA 4189	LGA 4677	LGA 4677
	Max. Speed	3.1~3.6GHz	~4.1GHz	~4.1GHz
	CPU TDP		Max. 165W	Max. 165W
	Cache	12~48M	Max. 22.5M	Max. 22.5M
	Chipset	Intel® C621A	Intel® C741	Intel® C741
	BIOS	Insyde SPI 128Mbit	Insyde	Insyde
Memory	Technology	Single Channel DDR4 up to 3200 MHz	DDR5 Max. 5600 MHz	DDR5 Max. 5600 MHz
	Max. Capacity	512GB	1024GB	1024GB
	Socket	8 ECC-RDIMM	16 ECC-RDIMM	8 ECC-RDIMM
Storage		6 SATA 3.0 (RAID 0/1/5/10), 1 M.2 2280 M key	1 M.2 M key 2280 4 3.5"/2.5" Hot Swap	2 x M.2 M key 2280 4 3.5"/2.5" Hot Swap
Expansion	PCIe, PCI, Mini PCIe	3 PCIe x16, 3 PCIe x8	1 PCIe x16	1 PCIe x16
	M.2	-	1 M.2 M key 2280	2 x M.2 M key 2280
	SIM, Other	-	-	-
Audio	Audio Codec	ALC888S	ALC888S	ALC888S
Ethernet	Controller	2 Intel® I210, 2 Intel® X550-AT2, 1 IPMI: RTL8211F	3 Intel® I210AT, IPMI: RTL8211F	1 x Intel® I210AT + 2 x Intel® E610-XAT2 IPMI: RTL8211F
LED	Indicators	Power, HDD LED	Power, HDD LED	Power, HDD LED
I/O	Ethernet	2 GbE, 2 10GbE, 1 Dedicated IPMI LAN (Opt.)	3 x GbE 1 x Dedicated IPMI LAN	1 x GbE + 2 x 10GbE 1 x Dedicated IPMI LAN
	Serial	1 RS-232	1 RS-232/422/485 (DB-9)	1 RS-232/422/485 (DB-9)
	USB	4 USB 3.2, 2 USB 2.0	2 USB 3.2 Gen1	2 x USB 3.2 Gen1
	Display	1 VGA (opt.)	1 DP	1 DP
	DIO	-	-	-
	Buttons	Power	Power, Reset	Power, Reset
	PS/2	-	-	-
	Antenna	-	-	-
Audio	-	Internal: Front Audio	Internal: Front Audio	
Power		ATX PS/2 or Mini Redundant PSU	Redundant/FlexATX	Redundant/FlexATX
Cooling		2x 12CM Fan	5 x 4CM Fan	5 x 4CM Fan
OS Support		Win10 IoT, Windows Server 2019, Linux Ubuntu 20.04	Windows 11 LTSC Windows server 2022 LTSC	Windows 11 LTSC Windows server 2022 LTSC
Mechanism	Construction	Heavy Industrial Steel	Heavy Industrial Steel	Heavy Industrial Steel
	Mounting	Rack mount kit	Rack mount kit	Rack mount kit
	Dimensions (W x H x D)	481.6 x 175.6 x 470.8 mm	438 x 44 x 673.2 mm	438 x 44 x 673.2 mm
Environment	Operating Temp.	0°C~40°C	0°C~40°C	0°C~40°C
Support MB		ICX610-C621A	ERX810-C741/ERX610-C741	ERX810-C741/ERX610-C741



Model Name		RM646-ERX810	RM645-ERX810	RM645-ERX610
Platform		Rack Mount IPC	Rack Mount IPC	Rack Mount IPC
System	Processor	Dual 5th/4th Gen Intel® Xeon® Scalable Family	Dual 5th/4th Gen Intel® Xeon® Scalable Processor Family	Single 5th/4th Gen Intel® Xeon® Scalable Processor Family
	Socket	LGA 4677	LGA 4677	LGA 4677
	Max. Speed	up to 4.1GHz (Turbo)	~4.1GHz	~4.1GHz
	CPU TDP	Max. 250W	Max. 250W	Max. 250W
	Cache	up to 60M	-	-
	Chipset	Intel® C741	Intel® C741	Intel®C741
	BIOS	Insyde	Insyde	Insyde
Memory	Technology	DDR5 Max. 5600 MHz	DDR5 Max. 5600 MHz	DDR5 Max. 5600 MHz
	Max. Capacity	1024GB	1024GB	1024GB
	Socket	16 ECC-RDIMM	4 E1.s SSD	8 ECC-RDIMM
Storage		1 M.2 2280 M key, 4 SATA 3.0(RAID 0/1/5/10)	1 M.2 M key 2280 4 2.5" Hot Swap	2 x M.2 M key 2280 4 SATA 3.0, (RAID 0/1/5/10)
Expansion	PCIe, PCI, Mini PCIe	3 PCIe x16	4 x PCIe x16 (Gen 5) 2 x PCIe x8 (Gen5)	3 x PCIe x16 (Gen 5) 3 x PCIe x8 (Gen5)
	M.2	1 M.2 M key 2280	1 M.2 M key 2280	2 x M.2 M key 2280
	SIM, Other	-	-	-
Audio	Audio Codec	ALC888S	ALC888S	ALC888S
Ethernet	Controller	4 Intel® I210, IPMI: RTL8211F	4 Intel® I210AT, IPMI: RTL8211F	2 x Intel® I210AT + 2 x Intel® E610-XAT2 IPMI: RTL8211F
LED	Indicators	Power, HDD LED	Power, HDD LED	Power, HDD LED
I/O	Ethernet	4 x GbE, 1 x Dedicated IPMI LAN	4 x GbE, 1 x Dedicated IPMI LAN	2 x GbE + 2 x 10GbE 1 x Dedicated IPMI LAN
	Serial	1 RS-232/422/485 (DB-9)	1 RS-232/422/485 (DB-9)	1 RS-232/422/485 (DB-9)
	USB	4 USB 3.2 Gen1	4 x USB 3.2 Gen1	4 x USB 3.2 Gen1
	Display	1 DP	1 DP	1 DP
	DIO	-	-	-
	Buttons	Power	Power	Power
	PS/2	-	-	-
	Antenna	-	-	-
Audio	1 Front Audio Header	Internal: Front Audio	Internal: Front Audio	
Power	ATX PS2/ Mini Redundant (Opt.)	ATX PS2/ Redundant (Opt)	ATX PS2/ Redundant (Opt.)	
Cooling	2x 12CM system Fan	2x 12CM system Fan	2x 12CM system Fan	
OS Support	Windows 11 LTSC Windows server 2022 LTSC	Windows 11 LTSC Windows server 2022 LTSC	Windows 11 LTSC Windows server 2022 LTSC	
Mechanism	Construction	Heavy Industrial Steel	Heavy Industrial Steel	Heavy Industrial Steel
	Mounting	Rack mount kit	Rack mount kit	Rack mount kit
	Dimensions (W x H x D)	431.8 x 175.6 x 449.8 mm	481.6 x 175.6 x 470.8 mm	481.6 x 175.6 x 470.8 mm
Environment	Operating Temp.	0°C~40°C	0°C~40°C	0°C~40°C
Support MB	ERX810-C741	ERX810-C741/ERX610-C741	ERX810-C741/ERX610-C741	



### Headquarters DFI Inc.

10F, No.97, Sec.1, Xintai 5th Rd.  
Xizhi Dist., New Taipei City 221416  
Taiwan (R.O.C.)  
Tel: +886 (2) 2697-2986  
Fax: +886 (2) 2697-2168  
[www.dfi.com](http://www.dfi.com)  
[estore.dfi.com](http://estore.dfi.com)

### DFI AMERICA, LLC.

960 Riverside Parkway, Suite 10, West  
Sacramento, CA 95605, U.S.A.  
Tel: +1 (916) 378-4166  
Fax: +1 (916) 371-8419  
[us.dfi.com](http://us.dfi.com)  
[www.dfi-itox.com/estore](http://www.dfi-itox.com/estore)

### DFI Co., Ltd.

5F Dai2 Denpa Bldg. 2-14-10 Sotokanda  
Chiyoda-ku, Tokyo, 101-0021, Japan  
Tel: +81 (3) 5209-1081  
Fax: +81 (3) 5209-1082  
[www.dfi.com](http://www.dfi.com)

### Diamond Flower Information (NL) B.V.

Klompemakerstraat 89, 3194 DD  
Rotterdam Hoogvliet, The Netherlands  
Tel: +31 (10) 313-4100  
Fax: +31 (10) 313-4101  
[www.dfi.com](http://www.dfi.com)

### Yan Ying Hao Trading Co., Ltd. (Shenzhen)

1819, 18F, Hongyu Building, Longguan  
Road, Shitouling, Yucui Community, Longhua  
Street, Longhua District, Shenzhen, China  
Tel: +86 (0755) 2372-9390/2372-9391  
[www.dfi.com](http://www.dfi.com)

## Value-Added Services



### Sales and Quotation

Discuss with DFI's sales experts  
for your business needs.



### Online Technical Service

Real-Time / Professional / 24/7  
Resolves your technical questions on the spot.

