



ECO-1829

ATX Structure Motherboard

ECO-1829 motherboard follows the standard ATX specification and utilizes the Intel Q670E/R680E chipset. It supports LGA 1700 Intel® 12th/13th/14th Core™ i9/i7/i5/i3, and Pentium®/Celeron® series processors, with a maximum TDP of 125W and vPro functionality. It provides 4 x DDR5 UDIMM memory slots, expandable up to 192 GB. The motherboard supports high-speed USB 3.2 Gen2 ports with a bandwidth rate of 10Gb/s. It also supports a combination of PCI and PCIe expansions, multiple serial ports, and multiple USB ports, along with AMT remote management functionality. This product will be widely used in industrial automation, machine vision, deep learning, security monitoring, intelligent transportation, environmental protection, communication, and other fields.

2. Product Specifications:

Item	Description
Processor	Intel® 12th/13 th/14th Core™ i9/i7/i5/i3, and Pentium®/Celeron® series, LGA 1700 pin processor, TDP up to 125W, support Vpro function.
Chipset	Intel®Q670E/R680E
System Memory	Provide 4 x DDR5 3600(2DPC-2DIMM2R),4000(2DPC-2DIMM 1R), 4400(2DPC-1DIMM 1R&2R)MHz, 288pin UDIMM, single slot supports up to 48GB, motherboard supports up to 192GB; R680E platform motherboard supports ECC memory, Q670E motherboard cannot support ECC memory.
Storage Configuration	4 x SATA3.0, support RAID 0,1,5,10 Q670E: 1 x M.2 key-M, support Nvme (PCIex4 Gen4) (size: 2242/2280) R680E: 1 x M.2 Key-M, support Nvme (PCIex4 Gen4) (size: 2280) 1 x M.2 Key-M, support Nvme (PCIex4 Gen3) (size: 2242/2280)
Display Ports	VGA+DP1.2+HDMI2.0 triple displays, motherboard has 1 built-in EDP port VGA maximum resolution 1920 x 1200 @60 Hz DP maximum resolution 4096 x 2340 @60 Hz HDMI maximum resolution3840 x 2160 @60 Hz
USB Ports	Onboard: 2 x USB3.2 Gen2, 2 x USB3.2 Gen1, 4 x USB2.0 Motherboard built-in: 2 x USB3.2 Gen1, 2 x USB2.0, 2 x USB2.0 TYPE-A
LAN Configuration	2 x Gigabit Ethernet (Intel network port chip), LAN1 supports Wake-on-LAN Q670E: I219-LM+I226-V;R680E: I219-LM+I226-LM
Audio configuration	Onboard: 1 set of audio port, MIC-IN/LINE-OUT
IO Ports	6 x COM, among them COM1/COM2 supports RS232/422/485selection; COM1 onboard, COM2-6 motherboard built-in 1 x I2C port: Provide access to external modules, can be equipped with LCM module on the front of the chassis, pin interface, need to make matching wires; 1 x TPM port



	<p>1 x LPC port, can add 4 more COM ports by inserting an LPC adapter card</p> <p>1 x LPT motherboard built-in</p> <p>1 x PS2 built-in</p>
Digital I/O	8-channel digital I/O: 4-channel input, 4-channel output
Bus Expansion:	<p>1 x PCI 5V/32 bit</p> <p>1 x PCIe x4 (Gen3)</p> <p>3 x PCIe x4 (Gen4)</p> <p>1 x PCIe x16 (Gen4)</p> <p>1 x PCIe x16 (x8 link, Gen4)</p>
Power Supply:	<p>Use ATX power supply, support S0, S4, S5;</p> <p>The motherboard must support the automatic power-on function when powered on by AC</p>
Environmental Requirements:	<p>Motherboard operating temperature: (-10) °C ~ (60) °C</p> <p>PC operating temperature:</p> <p>0 °C ~ 40 °C (Configure HDD or graphics card)</p> <p>0 °C ~ 50 °C (Configure SSD)</p> <p>0 °C ~ 35 °C (Configure two high-power graphics cards)</p>
	<p>Motherboard storage temperature: (-40) °C ~ (85) °C;</p> <p>PC storage temperature: (-20) °C ~ (60) °C;</p>
	Constant moist heat: (40) °C (95) %RH non- condensing
Operating System:	<p>Support: WIN10 (21H1 and higher), WIN11, Cent OS, Ubuntu and other high-kernel versions of LINUX systems. (For Linux system, 12th generation processor, kernel 5.15 and higher is required, and for 13th/14th generation processor, kernel 5.19 and higher is required)</p> <p>The R680E motherboard also supports Windows Server 2019/2022 operating system.</p> <p>Support AMT remote management function</p>
Size	305mm x 244 mm



3. Ordering Information

Part No.	Model	Description
0030-025251	ECO-1829-01	<p>ATX structure motherboard/Q670E chipset/support Intel 12/13/14th Core™ i9/i7/i5/i3/Pentium®/Celeron® LGA1700 pin processor/provide 4 x DDR5 (Non-ECC)UDIMM memory slot, support up to 192GB/ VGA+DP+HDMI2.0 triple display/4 x SATA3.0, support Raid 0,1,5,10/1 x M.2 key-M (PCIex4) (size: 2242/2280) /2 x Gigabit Ethernet (I219-LM+I226-V)/2 x USB 3.2 Gen 2, 4 x USB 3.2 Gen 1, 6 x USB 2.0, 2 x USB 2.0 Type-A/6 x COM, among them COM1/COM2 support RS232/422/485 selection/MIC-IN/LINE-OUT /1 x 8-channel GPIO/1 x TPM/1 x LPC port/1 x PCI, 1 x PCIe x4 (Gen3), 3 x PCIe x4 (Gen4), 1 x PCIe x16 (Gen4), 1 x PCIe x16 (x8 link, Gen4)</p> <p>Note: When two PCIe x16 slots are used simultaneously, the speed will be reduced to PCIe x8.</p>
0030-025261	ECO-1829-02	<p>ATX structure motherboard/R680E chipset/support Intel 12/13/14th Core™ i9/i7/i5/i3/Pentium®/Celeron® LGA1700 pin processor/provide 4 x DDR5 (Non-ECC or ECC) UDIMM memory slot, support up to 192GB/VGA+DP+HDMI2.0 triple display/4 x SATA3.0, support Raid 0,1,5,10/2 x M.2 key-M (PCIex4) (size: 2242/2280)/2 x Gigabit Ethernet (I219-LM+I226-LM)/2 x USB 3.2 Gen 2, 4 x USB 3.2 Gen 1, 6 x USB 2.0, 2 x USB 2.0 Type-A/6 x COM, among them COM1/COM2 support RS232/422/485 selection/MIC-IN/LINE-OUT/1 x 8-channel GPIO/1 x TPM/1 x LPCport/1 x PCI, 1 x PCIe x4 (Gen3), 3 x PCIe x4 (Gen4), 1 x PCIe x16 (Gen4), 1 x PCIe x16 (x8 link, Gen4)</p> <p>Note: When two PCIe x16 slots are used simultaneously, the speed will be reduced to PCIe x8.</p>
0020-068731	IPC-810/E CO-1829-01/300W	<p>Equipped with ECO-1829-01 motherboard /ATX300W power supply/ with radiator, exposed port: 2 x Gigabit Ethernet/1 x COM/8 x USB/VGA+DP+HDMI2.0 triple display/MIC-IN/LINE-OUT/1 x PCI, 1 x PCIe x4 (Gen3), 3 x PCIe x4 (Gen4), 1 x PCIe x16 (Gen4), 1 x PCIe x16 (Gen4, x8 link)</p> <p>Note: When two PCIe x16 slots are used simultaneously, the speed will be reduced to PCIe x8.</p>
0020-068741	IPC-710/E CO-1829-01/300W	<p>Equipped with ECO-1829-01 motherboard/ATX300W power supply/with radiator, exposed port: 2 x Gigabit Ethernet/1 x COM/8 x USB/VGA+DP+HDMI2.0 triple display/MIC-IN/LINE-OUT/1 x PCI, 1 x PCIe x4 (Gen3), 3 x PCIe x4 (Gen4), 1 x PCIe x16 (Gen4), 1 x PCIe x16 (Gen4, x8 link)</p> <p>Note: When two PCIe x16 slots are used simultaneously, the speed will be reduced to PCIe x8.</p>
0020-068751	IPC-6207/ ECO-1829-01/350W	<p>Equipped with ECO-1829-01 motherboard/350W power supply/with radiator, exposed port: 2 x Gigabit Ethernet/1 x COM/8 x USB/VGA+DP+HDMI2.0 triple display/MIC-IN/LINE-OUT/1 x PCI, 1 x PCIe x4 (Gen3), 3 x PCIe x4 (Gen4), 1 x PCIe x16 (Gen4), 1 x PCIe x16 (Gen4, x8 link)</p> <p>Note: When two PCIe x16 slots are used simultaneously, the speed will be reduced to PCIe x8.</p>



0020-068761	IPC-720/E C0-1829-02/ 1000W	Equipped with EC0-1829-02 motherboard/ATX1000W power supply/with radiator, exposed port: 2 x Gigabit Ethernet/1 x COM/8 x USB/VGA+DP+HDMI2.0 triple display /MIC-IN/LINE-OUT/1 x PCI, 1 x PCIe x4 (Gen3), 3 x PCIe x4 (Gen4), 1 x PCIe x16 (Gen4), 1 x PCIe x16 (Gen4, x8 link) Note: When two PCIe x16 slots are used simultaneously, the speed will be reduced to PCIe x8.
0010-217611	IPC-810E/ EC0-1829-01/i7-14700/16G/ 2T/300W	Equipped with EC0-1829-01 motherboard/i7-14700/16G memory/2T hard disk/ATX 300W power supply/exposed port: 2 x Gigabit Ethernet/6 x COM/10 x USB (front: 2 x USB2.0, rear: 2 x USB 3.2 Gen 2, 2 x USB 3.2 Gen 1, 4 x USB 2.0/VGA+DP+HDMI2.0 triple display/1group of audio port/expansion ports: 1 x PCI, 1 x PCIe x4 (Gen3), 3 x PCIe x4 (Gen4), 1 x PCIe x16 (Gen4), 1 x PCIe x16 (Gen4, x8 link) Note: When two PCIe x16 slots are used simultaneously, the speed will be reduced to PCIe x8.
0010-217621	IPC-820/E C0-1829-01/i9-14900K/16G/ 2T/300W	Equipped with EC0-1829-01 motherboard/i9-14900K/16G memory/2T hard disk/ATX 300W power supply/exposed port: 2 x Gigabit Ethernet/6 x COM/10 x USB (front: 2 x USB2.0, rear: 2 x USB 3.2 Gen 2, 2 x USB 3.2 Gen 1, 4 x USB 2.0/VGA+DP+HDMI2.0 triple display/1group of audio port/expansion ports: 1 x PCI, 1 x PCIe x4 (Gen3), 3 x PCIe x4 (Gen4), 1 x PCIe x16 (Gen4), 1 x PCIe x16 (Gen4, x8 link) Note: When two PCIe x16 slots are used simultaneously, the speed will be reduced to PCIe x8.