



EMX-R680P

Intel® 12th/13th Gen Core™
i9/i7/i5/i3/Pentium®/Celeron® Processor Mini ITX
Motherboard with Intel® R680E Chipset

- > Intel® 12th/13th Gen Core™ i9/i7/i5/i3/Pentium®/Celeron® Processor, Support LGA 1700 CPU Up to 35/65/125W Max
- > Intel® R680E Chipset
- > 2 x SODIMM up to 64GB Dual Channel DDR5 4800MHz
- > 4 x Intel® i226-LM 2.5 Gigabit Controller
- > Realtek ALC888S with Stereo Class D 2W4Ω x 2
- > 2 x DP++, 1 x HDMI 2.1b (LSPCON support): 8K@60Hz
- > 1 x 2CH LVDS or eDP
- > 2 x SATA III
- > 4 x USB 3.2 Gen 2 & 4x USB 3.2 Gen 1 in I/O, 2 x USB 3.2 Gen 1, 2 x USB 2.0 via headers
- > 1 x PCIe x 16 Gen 5
- > 1 x M.2 (2230) E-Key, supports Wi-Fi module with PCIe x 2 Gen 4 & USB 2.0
- > 2 x M.2 (2242/2280) M-Key, supports PCI-e x 4 Gen 4 SSD
- > 2 x RS232/422/485, 3 x RS232
- > 16-bits GPIO, support RAID 0, 1 ATX Power

+ Spec

-System Information-	
Processor	Intel® 12th Gen Core™ i9/i7/i5/i3/Pentium®/Celeron® Processor
Platform Controller Hub	Intel® R680E Chipset
System Memory	2 x SO-DIMM Up to 64GB Dual Channel DDR5 4800MHz
I/O Chipset	NuvoTon NCT6126D Ver.B (eSPI super IO)
BIOS Information	AMI uEFI BIOS, 256Mbit SPI Flash ROM
Watchdog Timer	H/W Reset, 5~255 seconds/5~255 minutes
H/W Status Monitor	CPU temperature monitoringt, Voltage monitoringt, CPU fan speed controlt
Board	Mini ITX Board
Expansion	
Expansion	1 x PCIe x 16 Gen 5 1 x M.2 (2230) E-Key, support Wi-Fi module with PCIe x 2 Gen 4 & USB 2.0 2 x M.2 (2242/2280) M-Key, support PCI-e x 4 Gen 4 SSD
I/O	
USB Port	4 x USB 3.2 Gen 2 & 4 x USB 3.2 Gen 1 2 x USB 3.2 Gen 1 by pin header 2 x USB 2.0 by pin header
COM Port	2 x RS232/422/485 by BIOS selection at I/O (COM1~2) 3 x RS232(COM3-5) without DB9 (pin9 without Power)
SATA	2 x SATA III
DIO	1 x 16-bit GPIO
Display	
Graphic Chipset	Intel® 12th Generation CPU Integrated
Spec. & Resolution	2 x DP++: 4096 x 2304@60Hz / 5120 x 3200@60Hz 1 x HDMI 2.1b (supported with LSPCON): 8K@60Hz 1 x LVDS: 1920 x 1080@60Hz Dual channel 18/24-bits LVDS (Chrontel CH7513A-BF eDP to LVDS) Or 1 x eDP 1920 x 1080@60Hz (2 Lanes)
Multiple Display	4 Independent Displays
LVDS	Dual channel 18/24-bits LVDS (Chrontel CH7513A-BF eDP to LVDS) Or 1 x eDP 1920 x 1080@60Hz (2 Lanes)
Ethernet	
LAN Chipset	4 x Intel® i226LM 2.5 Gigabit Controller
LAN Port	4 x 2.5 Gigabit Ethernet
Mechanical & Environmental	
Operating Temperature	0~55°C (32~131°F)
Storage Temperature	-40 ~ 75°C
Operating Humidity	40°C @ 95% Relative Humidity, Non-condensing
Weight	0.44 kg TBC
Power Requirement	+12V / +5V / 5VSB /+3.3V /-12V
ACPI	Single power ATX Support S0, S3, S4, S5
Power Mode	AT / ATX mode Switchable Through Jumper
Dimension (L x W)	6.7" x 6.7" (170mm x 170mm)