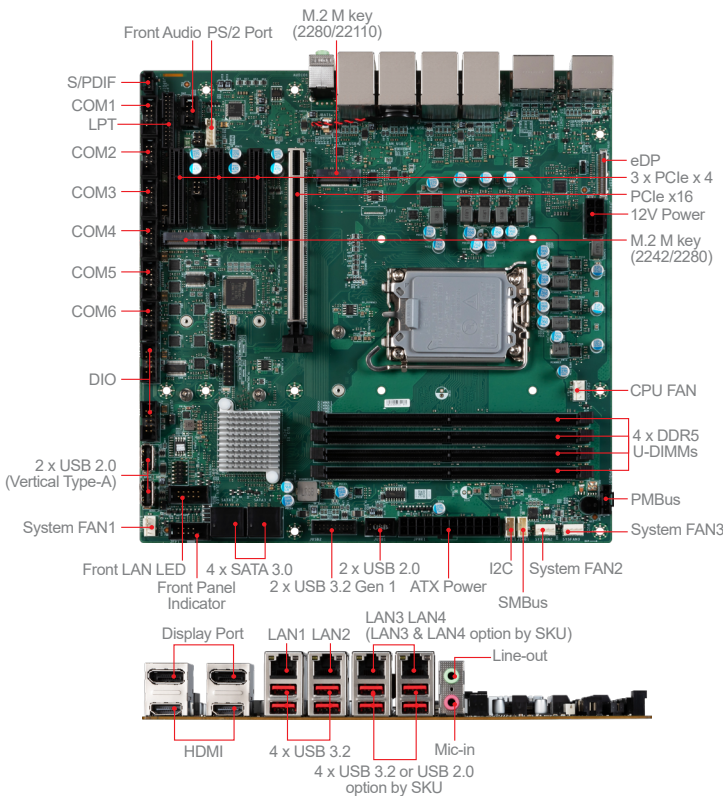


MS-CF09

Micro-ATX with 14th/13th/12th Gen Intel® Raptor Lake-S Refresh/Raptor Lake-S/Alder Lake-S, Core™ i9/i7/i5/i3, Pentium®, Celeron® Processor & Intel® R680E/Q670E/H610E for High-Performance Solution

NEW



Features

- Intel® 14th/13th/12th Gen Raptor Lake-S Refresh/Raptor Lake-S/Alder Lake-S Series with R680E/Q670E/H610E
- 4 DDR5 4400 MT/s ECC/non-ECC UDIMM slots up to 128GB
- Quadruple independent displays: 2DP, 2HDMI, eDP
- 4 2.5GbE LAN with RJ-45
- 1 PCIe x16 (Gen 5) Slot, 2 PCIe x4 (Gen 4), 1 PCIe x4 (Gen 3) slots
- 3 M.2 M key, 4 SATA 3.0 for storage
- SATA RAID 0/1/5/10
- 8 USB 3.2 Gen 2, 2 USB 3.2 Gen 1, 4 USB 2.0, 6 COM (6 RS-485), GPIO, PS/2, Audio, 3 System FAN
- Onboard TPM 2.0
- SMBus, I2C, PMBus, iAMT 16.x, Chassis Intrusion
- ATX Power

Ordering Information

Part Number	Description
911-CF09-001	MS-CF09\601-CF09-010\801-CF09-010 VER 10 OPT:STD Intel RPL-S,R680E,4*DDR5,HDMI+DP+eDP,3*M.2 M key,1*PCIe x16,3*PCIe x4,4*2.5GbE LAN,4*SATA 3.0,10*USB 3.2,4*USB 2.0,6*COM,T-PM2.0,Micro-ATX For Channel
911-CF09-002	MS-CF09\601-CF09-020\801-CF09-011 VER 10 OPT:A Intel RPL-S,Q670E,4*DDR5,HDMI+DP+eDP,2*M.2 M key,1*PCIe x16,3*PCIe x4,2*2.5GbE LAN,4*SATA 3.0,10*USB 3.2,4*USB 2.0,6*COM,T-PM2.0,Micro-ATX For Channel
911-CF09-003	MS-CF09\601-CF09-030\801-CF09-012 VER 10 OPT:B Intel RPL-S,H610E,2*DDR5,HDMI+DP+eDP,1*PCIe x16,1*PCIe x4,4*2.5GbE LAN,4*SATA 3.0,4*USB 3.2,6*USB 2.0,4*COM,T-PM2.0,Micro-ATX For Channel
911-CF09-004	MS-CF09\601-CF09-040\801-CF09-013 VER 10 OPT:C Intel RPL-S,H610E,2*DDR5,HDMI+DP+eDP,1*PCIe x16,1*PCIe x4,2*2.5GbE LAN,4*SATA 3.0,4*USB 3.2,6*USB 2.0,4*COM,T-PM2.0,Micro-ATX For Channel

Packing List

Part Number	Description	Quantity
K1D-1008261-V03	SATA Cable ,500mm	2
E21-CF09010-C22	I/O SHIELDING For R680E SKU	1
E21-CF09020-C22	I/O SHIELDING For H610E SKU	1
E21-CF09030-C22	I/O SHIELDING For Q670E 4LANs SKU	1
E21-CF09040-C22	I/O SHIELDING For Q670E 2LANs SKU	1

Specifications

		SKU1	SKU2	SKU3	SKU4
System Processor	CPU	12th Gen Intel® IOTG Alder Lake-S Processor Core i9/i7/i5/i3, Pentium, Celeron, Max 125W 13th Gen Intel® IOTG Raptor Lake-S Processor Core i9/i7/i5/i3, Pentium, Celeron, Max 125W 14th Gen Intel® Raptor Lake-S Refresh i9/i7/i5/i3/Pentium®/Celeron® IOTG Series Processor, Max 125W			
	Frequency	P-Core 1.1GHz~5.0GHz (Depends on CPU) E-Core 0.9GHz~3.8GHz (Depends on CPU)			
	L2 Cache	4MB~30MB (Depends on CPU)			
	CPU Type	Socket (LGA1700)			
Memory	Chipset	Intel® R680E Express	Intel® Q670E Express	Intel® H610E Express	
	BIOS	AMI UEFI			
Memory	Technology	Dual-channel DDR5 (ECC/non-ECC) 4400 MHz		Dual-channel DDR5 (non-ECC) 4400 MHz	
	Max. Capacity	Up to 128GB		Up to 64GB	
	Socket	4 x 288-pin UDIMMs		2 x 288-pin UDIMMs	
	Controller	Intel® UHD Graphics			
Graphic	Graphic Memory	Depends on CPU			
	LVDS	N/A			
	eDP	1			
	HDMI	2			
	DisplayPort	2			
	Multiple Display	4 independent displays		3 independent displays	
Graphic	Display Interface	HDMI up to 4096 x 2304 @60Hz DP up to 4096 x 2304 @60Hz eDP up to 4096 x 2160 @60Hz			
	Controller	4 x Intel® i226-LM 2.5GbE LAN	2 x Intel® i226-LM 2.5GbE LAN	4 x Intel® i226-V 2.5GbE LAN	2 x Intel® i226-V 2.5GbE LAN
Audio	Controller	Realtek® ALC897 Audio Codec			
Super I/O	Controller	Fintek F81966D-I			
H/W Monitor	Watchdog Timer	256-level Watchdog Timer			
TPM	Smart Fan	Yes			
	Controller	Infineon® SLB9672VU2.0			
Expansion Slot	PCIe x16	1		1	
	PCIe x4	3		1	
	M.2	1 x M.2 M key (PCIe x4 NVMe; Signal from CPU), 2280/22110 2 x M.2 M key (PCIe x4 NVMe; Signal from PCH), 2242/2280*	1 x M.2 M key (PCIe x4 NVMe; Signal from CPU), 2280/22110 1 x M.2 M key (PCIe x4 NVMe; Signal from PCH), 2242/2280*	N/A	
Storage	SATA	4 x SATA 3.0 (RAID 0/1/5/10)		4 x SATA 3.0	
I/O Interface	USB	8 x USB 3.2 Gen 2 x1 Ports (8 x rear) 2 x USB 3.2 Gen 1 Ports (2 x internal) 4 x USB 2.0 Ports (2 x internal, 2 x Vertical Type-A Connector)		2 x USB 3.2 Gen 2 x1 Ports (2 x rear) 2 x USB 3.2 Gen 1 Ports (2 x rear) 6 x USB 2.0 Ports (4 x rear, 2 x internal)	
	Serial	6 x COM ports (internal) COM1~2: RS-232/422/485 with Ring0V/5V/12V Auto-flow Control COM3~6: RS-232/422/485 with 0V/5V/12V Auto-flow Control	6 x COM ports (internal) COM1~2: RS-232/422/485 with Ring0V/5V/12V Auto-flow Control COM3~6: RS-232 with 0V/5V/12V	4 x COM ports (internal) COM1: RS-232/422/485 with Ring0V/5V/12V Auto-flow Control COM2~4: RS-232 with 0V/5V/12V	
Power Supply	Parallel	Yes			
	PS/2	1 x PS/2 port by Y-cable for keyboard and mouse			
	GPIO	16-bits (8 x GPI; 8 x GPO), 5V			
	DC Input	N/A			
Environment	AC Input	ATX-Power 24P, 12V-8P			
	Operating Temperature	0 ~ 60°C Note: Thermal Test w/ Airflow:0.7m/s			
	Operating Humidity	10 ~ 90%, non-condensing			
Physical Characteristics	Storage Temperature	-20 ~ 80°C			
	Storage Humidity	10 ~ 90%, non-condensing			
Physical Characteristics	Dimensions (WxDxH)	244 x 244mm (uATX)			
Certification	Weight	0.659 kg			
Software Platform	EMC	CE, FCC Class B, BSMI, RCM, VCCI, UKCA			
OS Support	OS Support	Windows 10 IoT Enterprise 2021 LTSC (64-bit, 21H2) Windows 11 IoT Enterprise LTSC (64-bit) Linux (Support by request)			