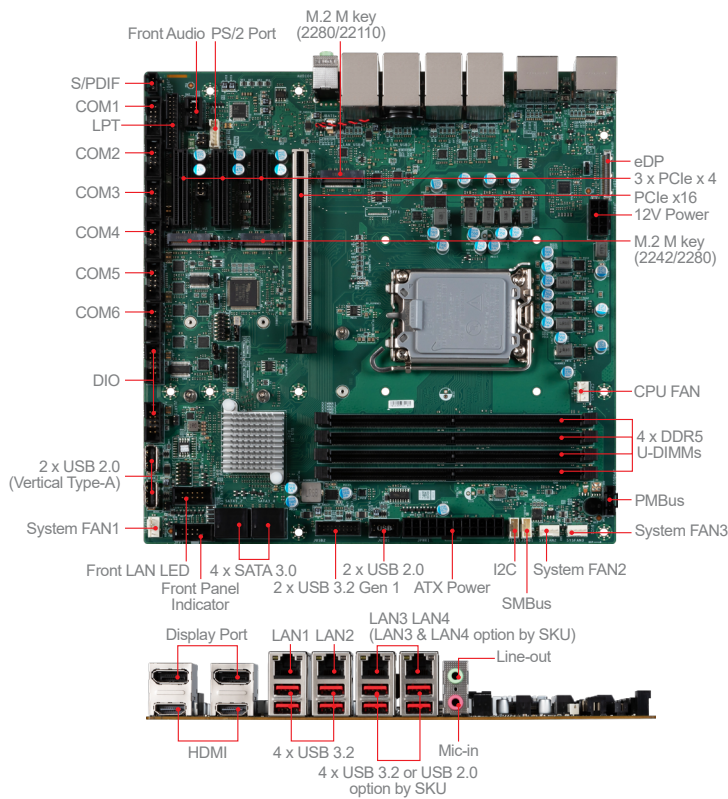


MS-CF09

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



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, TPM2.0, 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, TPM2.0, 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, TPM2.0, 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, TPM2.0, 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 Q670E 2LANs SKU	1
E21-CF09030-C22	I/O SHIELDING For H610E 4LANs SKU	1
E21-CF09040-C22	I/O SHIELDING For H610E 2LANs SKU	1

Specifications

System Processor	CPU	SKU1		SKU2		SKU3		SKU4	
		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)						
Memory	CPU Type	Socket (LGA1700)							
	Chipset	Intel® R680E Express		Intel® Q670E Express		Intel® H610E Express			
	BIOS	AMI UEFI							
	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			
Graphic	Controller	Intel® UHD Graphics							
	Graphic Memory	Depends on CPU							
	LVDS	N/A							
	eDP	1							
	HDMI	2							
	DisplayPort	2							
	Multiple Display	4 independent displays				3 independent displays			
	Display Interface	HDMI up to 4096 x 2160 @60Hz DP up to 4096 x 2304 @60Hz eDP up to 4096 x 2160 @60Hz							
	Ethernet	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		Realtek® ALC897 Audio Codec							
Super I/O	Controller	Fintek F81966D-I							
H/W Monitor	Watchdog Timer	256-level Watchdog Timer							
	Smart Fan	Yes							
TPM	Controller	Infineon® SLB9672VU2.0							
	PCIe x16	1							
Expansion Slot	PCIe x4	3				1			
	M.2	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 CPU), 2280/22110		N/A			
		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 PCH), 2242/2280*					
	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 x 1 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 x 1 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)			
		6 x COM ports (internal) COM1~2: RS-232/422/485 with Ring/0V/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 Ring/0V/5V/12V Auto-flow Control COM3~6: RS-232 with 0V/5V/12V		4 x COM ports (internal) COM1: RS-232/422/485 with Ring/0V/5V/12V Auto-flow Control COM2~4: RS-232 with 0V/5V/12V			
	Serial								
	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							
	Power Supply	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							
	Storage Temperature	-20 ~ 80°C							
Physical haracteristics	Dimensions (WxDxH)	244 x 244mm (uATX)							
	Weight	0.659 kg							
Certification	EMC	CE, FCC Class B, BSMI, RCM, VCCI, UKCA							
Software Platform	OS Support	Windows 10 IoT Enterprise 2021 LTSC (64-bit, 21H2) Windows 11 IoT Enterprise LTSC 24H2 (64-bit) Linux (Support by request)							