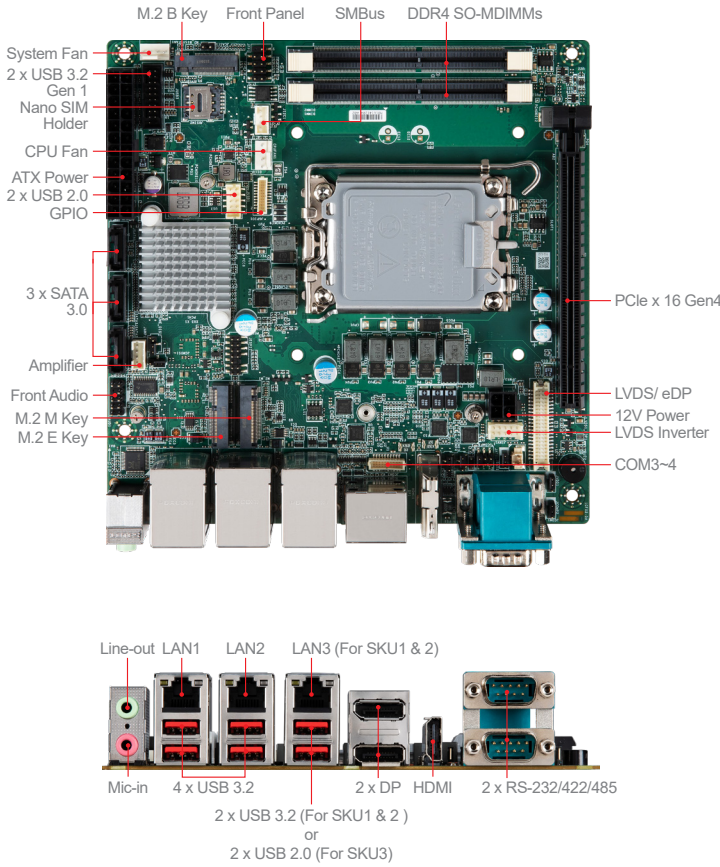


# MS-CF02

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

NEW



## Specifications

		SKU1	SKU2	SKU3
<b>System Processor</b>	CPU	13th Gen Intel® Raptor Lake-S i9/i7/i5/i3/ Pentium®/Celeron® IOTG Series Processor, Max 65W		
	Frequency	12th Gen Intel® Alder Lake-S i9/i7/i5/i3/Pentium®/Celeron® IOTG Series Processor, Max 65W		
	L2 Cache	1.6GHz~5.1GHz (Depends on CPU)		
	CPU Type	2MB~30MB (Depends on CPU)		
	Chipset	Socket (LGA 1700)		
<b>Memory</b>	Technology	Dual-channel DDR4 (ECC/ non-ECC) 3200MT/s	Dual-channel DDR4 (non-ECC) 3200MT/s	
	Max. Capacity	Up to 64GB		
	Socket	2 x 260-pin DDR4 SO-DIMMs		
	Controller	Intel® UHD Graphics		
<b>Graphic</b>	Graphic Memory	Depends on CPU		
	LVDS	1 x Dual channel 18/24-bit (Connector shared with eDP)		
	eDP	1 (Connector shared with LVDS)		
	HDMI	1		
	DisplayPort	2		
	Multiple Display	4 independent displays	3 independent displays	
	Display Interface	LVDS up to 1920 x 1200@60Hz eDP up to 4096 x 2304@60Hz HDMI up to 4096 x 2160@24Hz DP up to 4096 x 2304@60Hz		
<b>Ethernet</b>	Controller	3 x Intel® I225-LM 2.5GbE LAN	2 x Intel® I225-V 2.5GbE LAN	
	Audio	Realtek® ALC897 Audio Codec (Co-lay ALC888S)		
<b>Super I/O</b>	Controller	Fintek F81966AB-I		
	H/W Monitor	Watchdog Timer: 256-level Watchdog Timer Smart Fan: Yes		
<b>TPM</b>	Controller	Infineon SLB 9670VQ2.0		
	PCIe x16	1 x PCIe x16 (Gen 4)		
<b>Expansion Slot</b>	M.2	1 x M key (PCIe x4 NVMe), 2242/2280		1 x M key (PCIe x4 NVMe), 2242/2280
		1 x E key (PCIe x1, USB 2.0, CNVi), 2230		1 x E key (PCIe x1, USB 2.0, CNVi), 2230
<b>Storage</b>	SATA	3 x SATA 3.0 (Support RAID 0/1/5)		3 x SATA 3.0 (Support AHCI Mode)
		USB	6 x USB 3.2 Gen 2 (rear) 2 x USB 3.2 Gen 1 (internal) 2 x USB 2.0 (internal)	
<b>I/O Interface</b>	Serial		4 x COM ports COM1: RS-232/422/485, RI/5V/12V, Auto-flow Control COM2~4: RS-232/422/485, 0V/5V/12V, Auto-flow Control	
		GPIO		16-bits (8 x GPI; 8 x GPO), 5V
		DC Input		N/A
<b>Power Supply</b>	AC Input	ATX-Power 24P, 12V-4P		
		Operating Temperature: -10 ~ 60°C Note: Thermal w/ Airflow:0.7m/s		
<b>Environment</b>	Operating Humidity	10 ~ 90%, non-condensing		
	Storage Temperature	-20 ~ 80°C		
	Storage Humidity	10 ~ 90%, non-condensing		
<b>Physical characteristics</b>	Dimensions (WxDxH)	170 x 170 mm (Mini-ITX)		
	Weight	0.43 Kg	0.41 Kg	
<b>Certification</b>	EMC	CE, FCC Class B, BSMI, RCM, VCCI, UKCA		
	OS Support	Windows 10 IoT Enterprise 2021 LTSC (64-bit) Windows 11 IoT Enterprise 21H2 (64-bit) Linux Kernel 5.x (by request)		

## Features

- Intel® 13th/12th Gen Raptor Lake-S/Alder Lake-S Series with R680E/Q670E/H610E
- 2 DDR4 3200 MT/s ECC/non-ECC SODIMM slots up to 64GB
- Quadruple independent displays: 2DP, HDMI, LVDS/eDP
- 3/2 2.5GbE LAN with RJ-45
- 1 PCIe x16 (Gen 4) Slot, 1 M.2 E key (with CNVi), 1 M.2 B key (with SIM Holder) slots
- M.2 M key, 3 SATA 3.0 for storage
- SATA RAID 0/1/5
- 6 USB 3.2 Gen 2, 2 USB 3.2 Gen 1, 2 USB 2.0, 4 COM (4 RS-485), GPIO, Audio, System FAN
- Onboard TPM 2.0
- SMBus, iAMT 16.x
- ATX Power

## Ordering Information

Part Number	Description
Coming Soon	

## Packing List

Part Number	Description
Coming Soon	