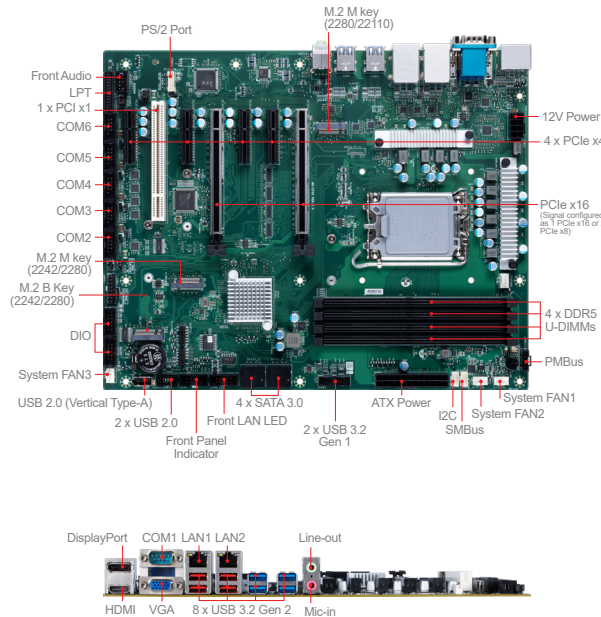


MS-CF05 V2.0

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® Q670E for High-Performance Solution

NEW


Features

- Intel® 14th/13th/12th Gen Raptor Lake-S Refresh/Raptor Lake-S/ Alder Lake-S Series with Q670E
- 4 DDR5 4400 MT/s ECC/non-ECC UDIMM slots up to 128GB
- Triple independent displays: VGA, DP, HDMI
- 4 2.5GbE LAN with RJ-45
- 1 PCIe x16 (Gen 5) Slot or 2 PCIe x8 (Gen 5), 1 PCIe x4 (Gen 4), 3 PCIe x4 (Gen 3), 1 PCI slot, 1 M.2 B key slot
- 2 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, 3 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
916-CF05-003	MS-CF05 20 OPTA ADL-S, RPL-S, Q670E, 4*DDR5, HDMI+DP+VGA, 2*M.2 M key, 1*M.2 B key, 1*PCIe x16, 1*PCIe x8, 4*PCIe x4, 1*PCI, 2*2.5GbE LAN, 4*SATA 3.0, 10*USB 3.2, 3*USB 2.0, 6*COM, TPM2.0, ATX, SINGLE

Packing List

Part Number	Description	Quantity
K1D-1008261-V03	SATA Cable 500mm	2
K1B-3008012-E06	USB 2.0 Cable, 330mm	1
E21-CF05020-C22	I/O SHIELDING For 2 LANs	1

Specifications

Processor	CPU	12th Gen Intel® Alder Lake-S i9/i7/i5/i3/ Pentium®/Celeron® IOTG Series Processor, Max 125W 13th Gen Intel® Raptor Lake-S i9/i7/i5/i3/ Pentium®/Celeron® IOTG Series Processor, 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 (LGA 1700)
	Chipset	Intel® Q670E Express
	BIOS	AMI UEFI
Memory	Technology	Dual-channel DDR5 (ECC/non-ECC) 4400 MT/s (ECC support will depend on CPU)
	Max. Capacity	Up to 128GB
Display	Socket	4 x 288-pin UDIMMs
	Controller	Intel® UHD Graphics
	Graphic Memory	Depends on CPU
	VGA	1
	HDMI	1
	DisplayPort	1
Ethernet	Multiple Display	3 independent displays
	Display Interface	VGA up to 1920 x 1200 @60Hz HDMI up to 4096 x 2160 @60Hz DP up to 4096 x 2304 @60Hz
Ethernet	Controller	2 x Intel® I226-LM 2.5GbE LAN
Audio	Controller	Realtek® ALC897 Audio Codec (Co-lay ALC888S)
Super I/O	Controller	FIITEK F81966D-I
H/W Monitor	Watchdog Timer	256-level Watchdog Timer
	Smart Fan	Yes
TPM	Controller	Infineon® SLB9672VU2.0
I/O Interface	USB	8 x USB 3.2 Gen 2 x1 (8 x rear) 2 x USB 3.2 Gen 1 Ports (2 x internal) 3 x USB 2.0 (3 x internal with one Vertical Type-A Connector)
	Serial	6 x COM ports (1 x rear, 5 x internal) COM1~2: RS-232/422/485, Ring/0V/5V/12V, Auto-flow Control (Default set to Ring) COM3~6: RS-232, 0V/5V/12V
	Parallel	Yes
	PS/2	1 x PS/2 port by Y-cable for keyboard and mouse
Expansion Slot	GPIO	16-bits (8 x GPI; 8 x GPO), 5V
	PCIe x16	2 (Signal configured as 1 PCIe x16 or 2 PCIe x8)
	PCIe x4	4
	PCI	1
Storage Power Supply	M.2	1 x M key (Signal from CPU) 2280/22110, 1 x M key (Signal Shared by PCIe Slot5) 2242/2280 1 x B key (PCIe x1), 2242/2280
	SATA	4 x SATA 3.0 (RAID 0/1/5/10)
Environment	ATX	ATX-Power 24P, 12V-8P
	Operating Temperature	0 ~ 60°C
	Operating Humidity	10 ~ 90%, non-condensing
	Storage Temperature	-20 ~ 80°C
Form Factor	Storage Humidity	10 ~ 90%, non-condensing
	Dimensions	305 x 244 mm (ATX)
Certification	Weight	0.779 Kg
Software Platform	EMC	CE, FCC Class B, BSMI, RCM, VCCI
	OS Support	Windows 10 IoT Enterprise 21H2 LTSC (64-bit) Windows 11 IoT Enterprise 24H2 LTSC (64-bit) Linux (Support by request) Noted : All driver base on Intel & chip vendor supported

Block Diagram

