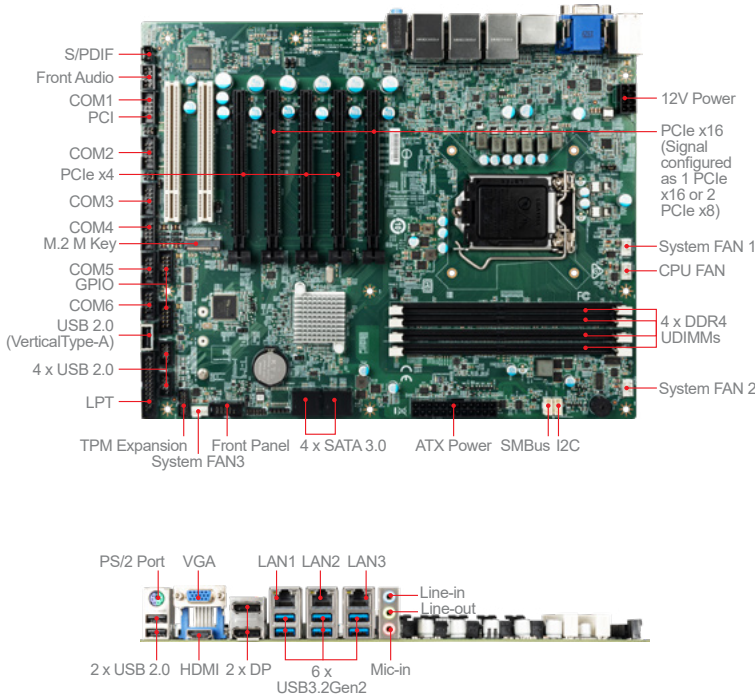


# MS-98K9 V2.1

ATX with 8th/9th Gen Intel® Coffee Lake-S & Coffee Lake Refresh-S Xeon®, Core™ i7/i5/i3, Pentium®, Celeron® Processor & Intel® C246/Q370 for High-Performance Solution

NEW



## Features

- Intel® 9th/8th Gen Coffee Lake Refresh-S/Coffee Lake-S Series with C246/Q370
- 4 DDR4 2666 MHz ECC/non-ECC UDIMMs up to 128GB
- Triple independent displays: VGA, 2 DP, HDMI
- 3 GbE LAN with RJ-45
- 2 PCIe x16 (Gen 3), 3PCIe x4 (Gen 3), 2 PCI slots
- M.2 M key, 4 SATA 3.0 for storage
- SATA RAID 0/1/5/10
- 6 USB 3.2 Gen 2, 7 USB 2.0, 6 COM (2 RS-485), GPIO, LPT, PS/2, Audio, S/PDIF, 3 System FAN
- Onboard TPM 2.0 (by option)
- SMBus, I2C, iAMT 12.x, Chassis Intrusion
- ATX-Power

## Ordering Information

Part Number	Description
159359	MS-98K9 V2.1-C246, ATX, Intel Coffee Lake-S Refresh, Intel C246, 4x DDR4, 1x VGA, 1x HDMI, 2x DP, 3x LAN, 6x USB3.2, 7x USB2.0, 4x SATA3.0, 1x M.2, 6x COM, 5x PCIe x16, 2x PCI, TPM2.0, 2x SATA cable, 1x COM cable, 1x USB 2.0 cable, 1x I/O shield, 1x Driver CD, single, for Channel
161668	MS-98K9 V2.1-Q370, ATX, Intel Coffee Lake-S Refresh, Intel Q370, 4x DDR4, 1x VGA, 1x HDMI, 2x DP, 3x LAN, 6x USB3.2, 7x USB2.0, 4x SATA3.0, 1x M.2, 6x COM, 5x PCIe x16, 2x PCI, TPM2.0, 2x SATA cable, 1x COM cable, 1x USB 2.0 cable, 1x I/O shield, 1x Driver CD, single, for Channel

## Packing List

Part Number	Description	Quantity
K1B-3008012-E06	USB2.0 Cable,330mm	1
K14-1018004-V03	COM Port Cable, 510mm	1
K1D-1008261-V03	SATA Cable, 550mm	2
E21-98K9010-C22	IO Shielding	1
G71-SEDC212-X03	Driver CD	1

## Specifications

		SKU1	SKU2
<b>System Processor</b>	CPU	9th/8th Gen Intel® Coffee Lake Refresh-S/ Coffee Lake-S Xeon®, Core™ i7/i5/i3, Pentium®, Celeron® Processor, Max 95W	
	Frequency	2.1GHz~4.7GHz (Depends on CPU)	
	L2 Cache	2MB~12MB (Depends on CPU)	
	CPU Type	Socket (LGA 1151)	
	Chipset	Intel® C246 Express	Intel® Q370 Express
	BIOS	AMI UEFI	
<b>Memory</b>	Technology	Dual-channel DDR4 (ECC/non-ECC) 2666 MHz	Dual-channel DDR4 (non-ECC) 2666 MHz
	Max. Capacity	Up to 128GB	
	Socket	4 x 288-pin UDIMMs	
<b>Display</b>	Controller	Intel® UHD Graphics	
	VGA	1	
	HDMI	1	
	DisplayPort	2	
	Multiple Display	3 independent displays	
	Display Interface	VGA up to 1920 x 1200 @60Hz HDMI up to 4096 x 2160 @24Hz DP up to 4096 x 2304 @60Hz	
	<b>Ethernet</b>	Controller	1 x Intel® I219-LM GbE LAN PHY 2 x Intel® I210-AT GbE LAN
<b>Audio</b>	Controller	Realtek® ALC887-VD2-CG Audio Codec	
<b>Super I/O</b>	Controller	Fintek F81866AD-I	
<b>H/W Monitor</b>	Watchdog Timer	256-level Watchdog Timer	
	Smart Fan	Yes	
<b>TPM</b>	Controller	Infineon SLB 9665TT2.0	
<b>I/O Interfaces</b>	USB	7 x USB 2.0 (2 x rear, 5 x internal with one Vertical Type-A) 6 x USB 3.2 Gen 1 (rear)	
	Serial	6 x COM ports (internal) COM1~2: RS-232/422/485, Ring/0V/5V/12V, Auto-flow Control COM3~6: RS-232, 0V/5V/12V	
	Parallel	Yes	
	PS/2	1 x PS/2 port by Y-cable for keyboard and mouse	
<b>Expansion Slot</b>	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	3 (PCIe x16 Slot Type; 2*PCIe x4 NVMe)	
	PCIe x1	N/A	
	M.2	1 x M.2 M key (PCIe x4 NVMe, Intel® Optane™ Memory Support, SATA 3.0), 2242/2260/2280	
<b>Storage</b>	Mini-PCIe	N/A	
	SATA	4 x SATA 3.0 (RAID 0/1/5/10, SATA port 4 share with M.2 M Key)	
<b>Power Supply</b>	ATX	ATX-Power 24P, 12V-8P	
<b>Environment</b>	Operating Temperature	-10 ~ 60°C	
	Operating Humidity	10 ~ 90%, non-condensing	
	Storage Temperature	-20 ~ 80°C	
<b>Form Factor</b>	Storage Humidity	10 ~ 90%, non-condensing	
	Dimensions (W x D x H)	305 x 244mm (ATX)	
<b>Certification</b>	Weight	0.70 kg	
	EMC	CE, FCC Class B, BSMI, RCM, VCCI	
<b>Software Platform</b>	OS Support	Windows 10 IoT Enterprise 2019 SAC (64-bit, RS5) Linux Kernel 4.x (by request)	