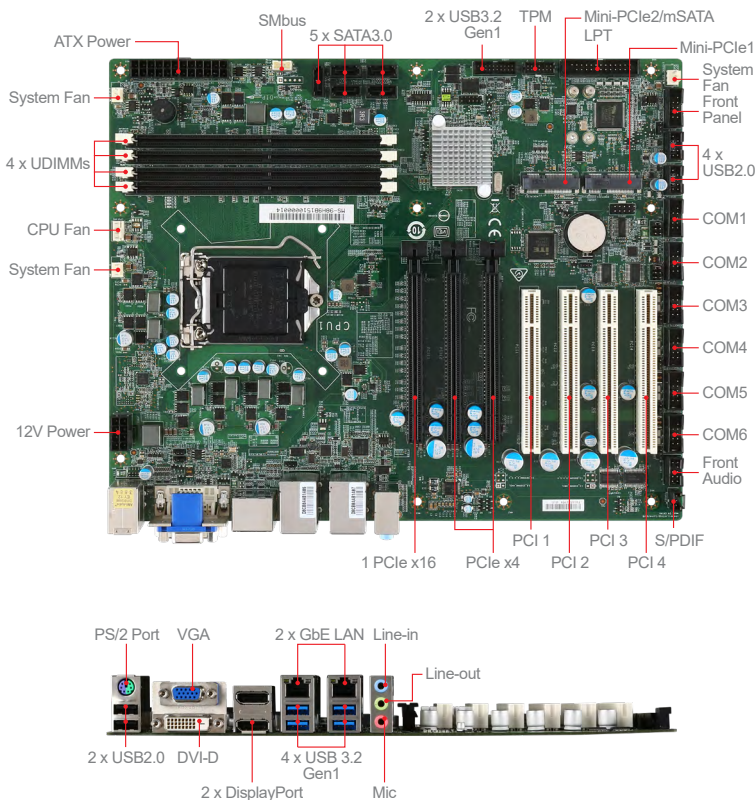


# MS-98H9

ATX with 7th/6th Gen Intel® Kaby Lake/Skylake Core™ Xeon®/i7/i5/i3, Pentium®, Celeron® Processor & Intel® C236/Q170/H110 for High-Performance Solution



## Features

- Intel® 7th/6th Gen Intel® Kaby Lake-S/Skylake-S Series with i7/i5/i3, Pentium®, Celeron®, Xeon® Processor & Intel® C236/Q170/H110
- 4 DDR4 2133 MHz ECC/non-ECC UDIMM slots up to 64GB
- Triple independent displays: VGA, DVI-D, 2DP
- 2 GbE LAN with RJ-45
- 1 PCIe x16 (Gen 3), 2 PCIe x4 (Gen 3), 4 PCI, 1 Mini-PCIe (Full-size, with mSATA), 1 Mini-PCIe (Full-size) slots
- mSATA, 5 SATA 3.0 for storage
- SATA RAID 0/1/5/10
- 6 USB 3.2 Gen 1, 6 USB 2.0, 6 COM (2 RS-485), GPIO, LPT, PS/2, Audio, S/PDIF, 3 System FAN
- SMBus, Chassis Intrusion
- ATX Power

## Ordering Information

Part Number	Description
919-98H9-001	MS-98H9 VER:10 Intel Kaby Lake-S/Skylake-S, Intel C236, 4*DDR4, 1*DVI-D+1*VGA+2*DP+6*USB3.2 Gen 1+6*USB 2.0+5*SATA 3.0+1*PCIe x16+2*PCIe x4+4*PCI+2*Mini-PCIe+1*mSATA+6*COM+2*LAN+ATX POWER
919-98H9-002	MS-98H9 VER:10 Intel Kaby Lake-S/Skylake-S, Intel Q170, 4*DDR4, 1*DVI-D+1*VGA+2*DP+6*USB3.2 Gen 1+6*USB 2.0+5*SATA 3.0+1*PCIe x16+2*PCIe x4+4*PCI+2*Mini-PCIe+1*mSATA+6*COM+2*LAN+ATX POWER
919-98H9-003	MS-98H9 VER:10 Intel Kaby Lake-S/Skylake-S, Intel H110, 2*DDR4, 1*DVI-D+1*VGA+2*DP+4*USB3.2 Gen 1+4*USB 2.0+4*SATA 3.0+1*PCIe x16+1*PCIe x4+4*PCI+6*COM+2*LAN+ATX POWER

## Packing List

Part Number	Description	Quantity
K1B-3008012-E06	USB 2.0 Cable, 330mm	1
K14-1018004-V03	COM Port Cable, 510mm	1
K39-3002004-E06	PS/2 Y-Cable, 190mm	1
K18-1025011-V03	LPT Cable, 300mm	1
K1D-1008261-V03	SATA Cable, 500mm	2
E21-98H9010-C22	I/O SHIELDING	1

## Specifications

		C236 SKU	Q170 SKU	H110 SKU
<b>Processor</b>	CPU	7th/6th Gen Intel® Desktop Kaby Lake/Skylake Xeon®/i7/i5/i3/Pentium®/Celeron® Series Processor, Max 95W	7th/6th Gen Intel® Desktop Kaby Lake/Skylake i7/i5/i3/Pentium®/Celeron® Series Processor, Max 95W	
	Frequency	2.6 GHz~4.5 GHz (Depends on CPU)		
	L2 Cache	2MB~8MB (Depends on CPU)		
	CPU Type	Socket (LGA 1151)		
	Chipset	Intel® C236 Express	Intel® Q170 Express	Intel® H110 Express
	BIOS	AMI UEFI		
<b>Memory</b>	Technology	Dual-channel DDR4 (ECC) 2133 MHz		Dual-channel DDR4 (non-ECC) 2133 MHz
	Max. Capacity	Up to 64GB		Up to 32GB
	Socket	4 x 288-pin UDIMMs		2 x 288-pin UDIMMs
<b>Display</b>	Controller	Intel® HD Graphics		
	Graphic Memory	Depends on CPU		
	VGA	1 (Non Hot Plug)		
	DVI	1 (DVI-D)		
	DisplayPort	2		
<b>Display</b>	Multiple Display	3 independent displays		2 independent displays
	Display Interface	VGA up to 1920 x 1080 @60Hz DVI-D up to 1920 x 1200 @60Hz DP up to 4096 x 2304 @60Hz		
<b>Ethernet</b>	Controller	1 x Intel® I219-LM GbE LAN PHY (Support Intel® AMT 11) 1 x Intel® I210-AT GbE LAN		
<b>Audio</b>	Controller	Realtek® ALC887 HD 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	Box header		
<b>I/O Interface</b>	USB	6 x USB 2.0 (2 x rear, 4 x internal) 6 x USB 3.2 Gen 1 (4 x rear, 2 x internal)	4 x USB 2.0 (2 x rear, 2 x internal) 4 x USB 3.2 Gen 1 (rear)	
	Serial	6 x COM ports (internal) COM1-2: RS-232/422/485, 0V/5V/12V COM3-6: RS-232, 0V/5V/12V		
	Parallel	1		
	PS/2	1 x PS/2 port by Y-cable for keyboard and mouse		
	GPIO	8-bits (4 x GPI; 4 x GPO), 5V		
<b>Expansion Slot</b>	PCIe x16	1		
	PCIe x4	2		1
	PCI	4		
	M.2	N/A		
	Mini-PCIe	2 x Full-size (one w/ mSATA)		N/A
<b>Storage</b>	SATA	5 x SATA 3.0 (RAID 0/1/5/10)		4 x SATA 3.0
	mSATA	1		N/A
<b>Power Supply</b>	DC	N/A		
	ATX	ATX-Power 24P, 12V-8P		
<b>Environment</b>	Operating Temperature	-10 ~ 60°C Note: Thermal w/ Airflow:0.7m/s		
	Operating Humidity	10 ~ 90%, non-condensing		
	Storage Temperature	-20 ~ 80°C		
	Storage Humidity	10 ~ 90%, non-condensing		
<b>Form Factor</b>	Dimensions	305 x 244 mm (ATX)		
	Weight	0.70 kg		
<b>Certification</b>	EMC	FCC, CE, RCM, VCCI, BSMI (Class B)		
<b>Software Platform</b>	OS Support	Windows 7 (32/64-bit) (Skylake-S Series CPU Only) Windows 8.1 (64-bit) (Skylake-S Series CPU Only) Windows 10 IoT Enterprise LTSC/SAC 1809 (64-bit, RS5) Linux Fedora 23 (by request) Linux Ubuntu 16.04 (by request)		