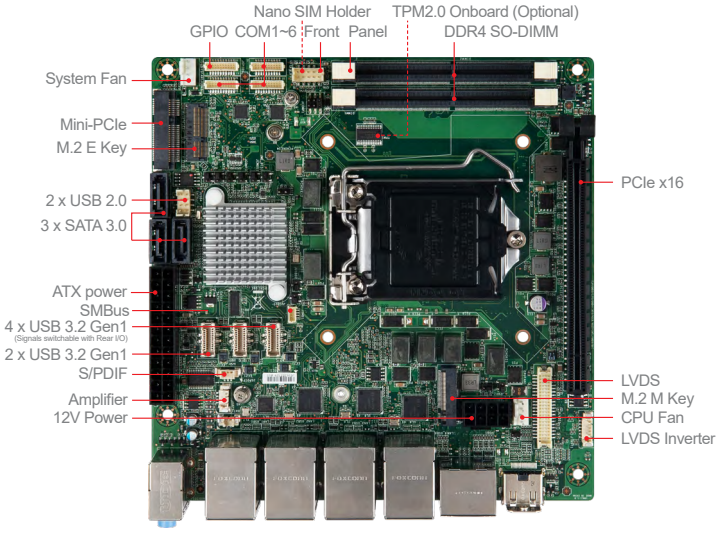
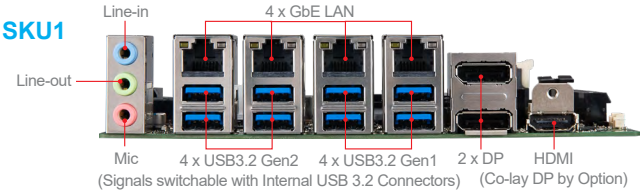
MS-98L1

Mini-ITX with 9th/8th Gen Intel® Coffee Lake Refresh-S/Coffee Lake-S Xeon®, Core™ i7/i5/i3, Pentium®, Celeron® Processor & Intel® C246/ Q370/H310 for High-Performance Solution



SKU1



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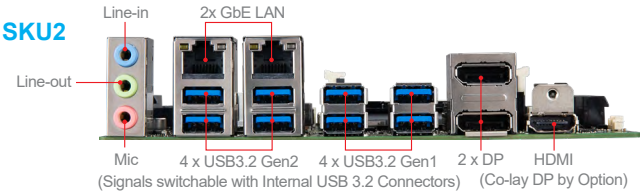
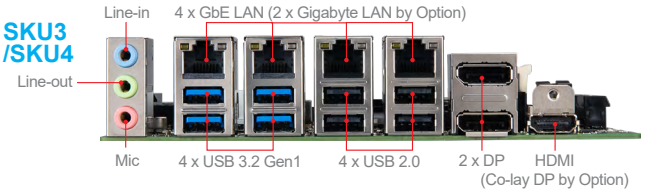


SKU3 /SKU4



Features

- Intel® 8th/9th Gen Coffee Lake-S/Coffee Lake Refresh-S Series with C246/Q370/H310
- 2 DDR4 2666 MHz ECC/non-ECC SODIMM slots up to 64GB
- Triple independent displays: 2DP, HDMI (DP by option), LVDS
- 4 GbE LAN with RJ-45
- 1 PCIe x16 (Gen 3) Slot, M.2 E key (with CNVi), 1 Mini-PCIe (Full-size, with SIM Holder) slots
- M.2 M key, 3 SATA 3.0 for storage
- SATA RAID 0/1/5/10 (RAID 10 Configured with M.2 M Key)
- 4 USB 3.2 Gen 2, 6 USB 3.2 Gen 1, 2 USB 2.0, 6 COM (2 RS-485), GPIO, Audio, S/PDIF, System FAN
- Onboard TPM 2.0 (by option)
- SMBus, iAMT 12.x
- ATX Power

Ordering Information

Part Number	Description
Please check MSI IPC website at http://ipc.msi.com for details.	

Packing List

Part Number	Description
Please check MSI IPC website at http://ipc.msi.com for details.	

Specifications

System Processor	CPU	SKU1: 8th Gen Intel® Coffee Lake-S Xeon®/i7/i5/i3/Pentium®/Celeron® Series Processor, Max 95W; 9th Gen Intel® Coffee Lake Refresh-S Xeon®/i7/i5/i3/Pentium®/Celeron® IOTG Processor, Max 65W	SKU2: 8th Gen Intel® Coffee Lake-S i7/i5/i3/Pentium®/Celeron® Series Processor, Max 95W; 9th Gen Intel® Coffee Lake Refresh-S i7/i5/i3/Pentium®/Celeron® IOTG Processor, Max 65W	SKU3: 8th Gen Intel® Coffee Lake-S i7/i5/i3/Pentium®/Celeron® Series Processor, Max 95W; 9th Gen Intel® Coffee Lake Refresh-S i7/i5/i3/Pentium®/Celeron® IOTG Processor, Max 65W	SKU4: 8th Gen Intel® Coffee Lake-S i7/i5/i3/Pentium®/Celeron® Series Processor, Max 95W; 9th Gen Intel® Coffee Lake Refresh-S i7/i5/i3/Pentium®/Celeron® IOTG Processor, Max 65W
	Frequency	2.0GHz~4.7GHz (Depends on CPU)			
	L2 Cache	2MB~16MB (Depends on CPU)			
	CPU Type	Socket (LGA 1151)			
	Chipset	Intel® C246 Express	Intel® Q370 Express	Intel® H310 Express	
	BIOS	AMI UEFI			
Memory	Technology	Dual-channel DDR4 (ECC/non-ECC) 2666MHz	Dual-channel DDR4 (non-ECC) 2666MHz		
	Max. Capacity	Up to 64 GB			
	Socket	2 x 260-pin DDR4 SO-DIMMs			
Display	Controller	Intel® UHD Graphics			
	Graphic Memory	Depends on CPU			
	LVDS	1 x Dual-channel 18/24-bit		N/A	
	HDMI	1 (Co-lay with DP by Optional)			
	DisplayPort	2			
	Multiple Display	3 independent displays		2 independent displays	
	Display Interface	LVDS up to 1920 x 1200 @60Hz HDMI up to 4096 x 2160 @24Hz DP up to 4096 x 2304 @60Hz		HDMI up to 4096 x 2160 @24Hz DP up to 4096 x 2304 @60Hz	
Ethernet	Controller	1 x Intel® I219-LM GbE LAN PHY 3 x Intel® I210-AT GbE LAN	1 x Intel® I219-LM GbE LAN PHY 1 x Intel® I210-AT GbE LAN	1 x Intel® I219-LM GbE LAN PHY 3 x Intel® I211-AT GbE LAN	1 x Intel® I219-LM GbE LAN PHY 1 x Intel® I211-AT GbE LAN
Audio	Controller	Realtek® ALC887 Audio Codec (Co-lay ALC888S)			
Super I/O	Controller	Fintek F81866AD-I			
H/W Monitor	Watchdog Timer	256-level Watchdog Timer			
	Smart Fan	Yes			
TPM	Controller	Infineon SLB9665TT2.0		Box header (Default) Infineon SLB9665TT2.0 (by BOM option)	
I/O Interfaces	USB	2 x USB 2.0 (internal) 6 x USB 3.2 Gen 1 (4 x rear, Signal Share with Internal Box Header; 2 x internal) 4 x USB 3.2 Gen 2 (rear)		4 x USB 2.0 (rear) 4 x USB 3.2 Gen1 (rear)	
	Serial	6 x COM ports COM1: RS-232/422/485, RI/5V/12V, Auto-flow Control COM2: RS-232/422/485, 0V/5V/12V, Auto-flow Control COM3~6: RS-232, 0V/5V/12V (RS-232/422/485 by option)		4 x COM ports COM1: RS-232/422/485, RI/5V/12V, Auto-flow Control COM2~4: RS-232, 0V/5V/12V (RS-232/422/485 by option)	2 x COM ports COM1: RS-232/422/485, RI/5V/12V, Auto-flow Control COM2: RS-232, 0V/5V/12V (RS-232/422/485 by option)
	GPIO	16-bits (8 x GPI; 8 x GPO), 5V			
Expansion Slot	PCIe x16	1			
	M.2	1 x M key (PCIe x4 NVMe, SATA), 2242/2280 1 x E key (PCIe x1, USB 2.0, CNVi), 2230		1 x M key (SATA), 2242/2280	
	Mini-PCIe	1 x Full-size (w/SIM holder)		1 x Full-size	
Storage	SATA	3 x SATA 3.0 (Support RAID 0/1/5/10, AHCI Mode, RAID 10 Configured with M.2 M Key)		3 x SATA 3.0 (Support AHCI Mode)	
Power Supply	AC Input	ATX-Power 24P, 12V-8P			
Environment	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			
Form Factor	Dimensions (W x D x H)	170 x 170 mm (Mini-ITX)			
	Weight	0.405 kg	0.375 kg	0.39 kg	0.375 kg
Certification	EMC	CE, FCC Class B, BSMI, RCM, VCCI			
Software Platform	OS Support	Windows 10 IoT Enterprise LTSC/SAC 1809 (64-bit, RS5) Linux (Support by request)			