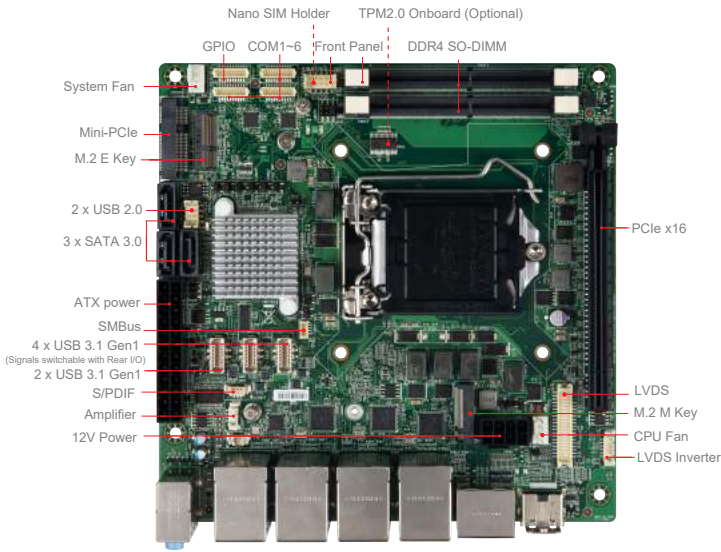


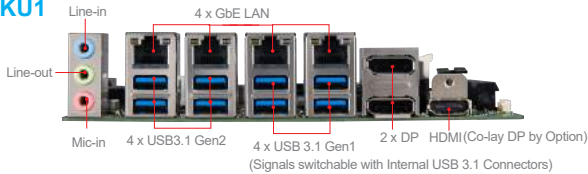
MS-98L1

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

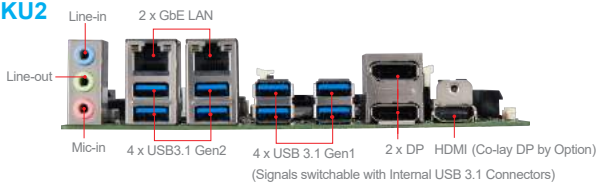
NEW



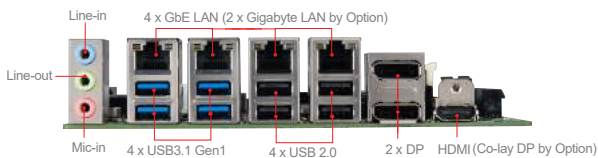
SKU1



SKU2



SKU3/SKU4



Features

- Intel® Coffee Lake-S & Coffee Lake Refresh-S Series CPU to maximize performance
- Support 3 or 2 independent displays with Dual DP, HDMI (DP by option) & LVDS
- Support maximum 4 Intel® GbE LAN & AMT 12.x
- Support 3 SATA-3.0 ports, M.2 M key 2242/2280 for storage & RAID 0/1/5/10 (RAID 10 Configured with M.2 M Key)
- Support maximum 4 USB 3.1 Gen2, 6 USB3.1 Gen1 (4 rear, Signal Share with Internal Box Header; 2 internal) & 2 USB 2.0 ports
- Support 6 COM ports (2 RS-232/422/485 or 6 RS-232/422/485 by option), SMBus & 16Bit DIO for flexible applications
- Support 1 PCIe x16 Slot, M.2 M key 2230 with CNVi & Mini-PCIe slot with SIM Holder

Ordering Information

Part Number	Description
919-98L1-005	MS-98L1 10 Intel® CLF-S & CFLR-S C246 2*DDR4 SO-DIMM, 4*LAN, 2*DP, 1*HDMI, 1*LVDS, 3*SATA-3.0, 2*M.2, 1*PCIe x16, 1*Mini PCIe, 6*COM, 12*USB (4*USB 3.1 Gen2), ATX Power
919-98L1-006	MS-98L1 10 OPT:A Intel® CLF-S & CFLR-S Q370 2*DDR4 SO-DIMM, 2*LAN, 2*DP, 1*HDMI, 1*LVDS, 3*SATA-3.0, 2*M.2, 1*PCIe x16, 1*Mini PCIe, 6*COM, 12*USB (4*USB 3.1 Gen2), ATX Power

Specifications

		SKU1	SKU2	SKU3	SKU4
Processor	CPU	8th Gen Intel® Desktop Coffee Lake-S Xeon®/ i7/i5/i3/Pentium®/Celeron® Series Processor, Max 95W 9th Gen Intel® Desktop Embedded IOTG Coffee Lake-S Refresh Xeon®/i7/i5/i3 Series 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	
Memory	BIOS	AMI UEFI			
	Technology	Dual-channel DDR4 (ECC/ non-ECC) 2666MHz		Dual-channel DDR4 (non-ECC) 2666MHz	
	Max. Capacity	Up to 32GB			
	Socket	2 x 260-pin DDR4 SO-DIMMs			
Display	Controller	Intel® HD Graphics			
	Graphic Memory	Shared system memory up to 1.7 GB SDRAM			
	LVDS	1 x Dual channel 18/24-bit		N/A	
	HDMI	1 (Co-layer 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
	Controller	Realtek® ALC887 Audio Codec (Co-layer ALC888S)			
Super I/O	Controller	Fintek F81866AD-I			
H/W Monitor	Watchdog Timer	256-level Watchdog Timer			
	Smart Fan	Yes			
TPM	Controller	Box header (Default) Infineon SLB9665TT2.0 (by BOM option)			
I/O Interface	USB	4 x USB 3.1 Gen2 (4 x rear), 6 x USB 3.1 Gen1 (4 x rear, signal share with internal connectors; 2 x internal) 2 x USB 2.0 (2 x internal)	4 x USB 3.1 Gen1 (4 x rear), 4 x USB 2.0 (4 x 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-232/422/4 85, RI/5V/12V, 5, RI/5V/12V, Auto-flow Control COM2-4: RS-232, 0V/5V/12V (RS-232/422/4 85 by option)	2 x COM ports COM1: RS-232/422/48 5, RI/5V/12V, 5, RI/5V/12V, Auto-flow Control COM2: RS-232, 0V/5V/12V (RS-232/422/4 85 by option)	
Expansion Slot	GPIO	16-bits (8 x GPI; 8 x GPO), 5V			
	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		
Storage	Mini-PCIe	1 x Full-size (w/SIM holder)		1 x Full-size	
	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	ATX	ATX-Power 24P, 12V-8P			
Environment	Operating Temperature	-10 ~ 60°C			
	Operating Humidity	10 ~ 90%, non-condensing			
	Storage Temperature	-20 ~ 80°C			
	Storage Humidity	10 ~ 90%, non-condensing			
Form Factor	Dimensions	170 x 170mm (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 (64-bit) Linux Kernel 4.x (by request)			

Optional Item

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