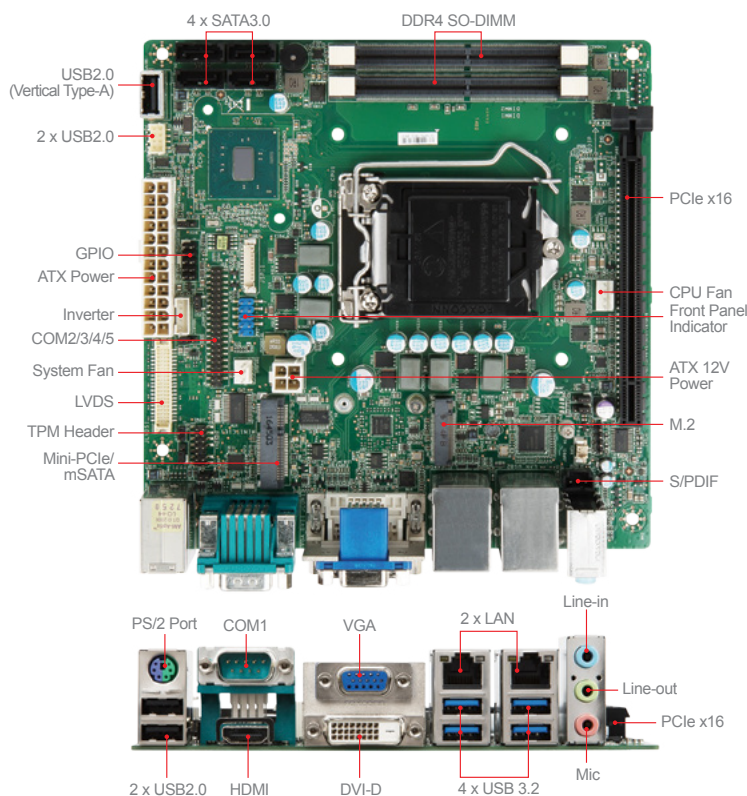


# MS-98E1

Mini-ITX with 7th/6th Gen Intel® Kaby Lake/Skylake Processor with Superior I/O & Expansion Capability for High-Performance Solution

NEW



## Features

- Intel® 7th/6th Gen Skylake-S/Kaby Lake-S Series with C236/H110
- 2 DDR4 2400 MHz SODIMM slots up to 32GB
- Triple independent displays: VGA, DVI-D, HDMI, LVDS
- 2 GbE LAN with RJ-45
- 1 PCIe x16 (Gen3), 1 Mini-PCle (Full size, with SIM Holder), 1 Mini-PCle (Half size) slots
- mSATA, M.2 M Key, 4 SATA 3.0 for storage
- SATA RAID 0/1/5/10
- 4 USB 3.2 Gen 1, 5 USB 2.0, 5 COM (1 RS-485), GPIO, PS/2, Audio, System FAN
- iAMT 11.x
- ATX Power

## Ordering Information

Part Number	Description
919-98E1-001	V1.1 Intel KabyLake-S/Skylake-S +C236+2*DDR4 LVDS+HDMI+DVI-D+VGA+4*SATAIII+2*GbE LAN+5*COM+1*mini-PCle +1*M.2+ATX, SINGLE
919-98E1-002	V1.1 OPT:A Intel KabyLake-S/Skylake-S +H110+2*DDR4 LVDS+HDMI+DVI-D+VGA+3*SATAIII+2*GbE LAN+5*COM+1*mini-PCle +ATX, SINGLE

## Packing List

Part Number	Description
K1D-1008261-V03	SATA Cable, 500mm
E21-98E1010-C22	I/O SHIELD

## Optional Item

Part Number	Description
K14-1036005-V03	COM Port Cable, 500mm

## Specifications

		C236 SKU	H110 SKU
			7th/6th Gen Intel® Desktop Kaby Lake/Skylake Xeon/i7/i5/i3/ Pentium®/Celeron® Series Processor, Max. 95W
<b>Processor</b>	CPU		
	Frequency	2.3GHz~4.0GHz (Depends on CPU)	
	L2 Cache	2M ~ 8M (Depends on CPU)	
	CPU Type	Socket (LGA 1151)	
	Chipset	Intel® C236 Express	Intel® H110 Express
<b>Memory</b>	BIOS	AMI	
	Technology	Dual-channel DDR4 (ECC) 2133/2400MHz	Dual-channel DDR4 (non-ECC) 2133/2400MHz
	Max. Capacity	Up to 32GB	
	Socket	2 x 260-pin SO-DIMMs	
	Controller	Intel® HD Graphics	
<b>Display</b>	Graphic Memory	Depends on CPU	
	LVDS	1 x Dual channel 18/24-bit	
	eDP	N/A	
	VGA	1	
	DVI	1 (DVI-D)	
	HDMI	1	
	DisplayPort	N/A	
	Multiple Display	3 independent displays	2 independent displays
	Display Interface	LVDS up to 1920 x 1200 @60Hz HDMI up to 4096 x 2160 @24Hz DVI-D up to 1920 x 1200 @60Hz VGA up to 1920 x 1200 @60Hz	
	<b>Ethernet</b>	Controller	1 x Intel® I219-LM GbE-PHY 1 x Intel® I211-AT PCIe GbE LAN(Co-lay I210-AT)
<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	Pin header	
<b>I/O Interface</b>	USB	5 x USB 2.0 (2 x rear, 3 x internal with one Vertical Type-A) 4 x USB 3.2 Gen 1 (rear)	
	Serial	5 x COM ports (COM1: rear, COM2~4: internal) COM1: RS-232/422/485, 0V/5V/12V COM2~5: RS-232, 0V/5V/12V	
	Parallel	N/A	
	PS/2	1	
	GPIO	8-bits (4 x GPI, 4 x GPO), 5V	
	PCIe x 16	1	
<b>Expansion Slot</b>	M.2	1 x M key (PCIe x4, SATA 3.0), 224	N/A
	Mini-PCle	1 x Full-size, mSATA	
<b>Storage</b>	SATA	4 x SATA 3.0	3 x SATA 3.0
	mSATA	1 (shared w/ Mini-PCle)	
<b>Power Supply</b>	DC	N/A	
	ATX	ATX-Power 24P, 12V-4P	
<b>Environment</b>	Operating Temperature	0 ~ 60°C	
	Operating Humidity	10 ~ 90%, non-condensing	
	Storage Temperature	-20 ~ 80°C	
	Storage Humidity	10 ~ 90%, non-condensing	
<b>Form Factor</b>	Dimensions	170 x 170mm (Mini-ITX)	
	Weight	0.37 kg	
<b>Certification</b>	EMC	FCC, CE, RCM, VCCI, BSMI	
<b>Software Platform</b>	OS Support	Windows 7 (32/64-bit) Windows 8.1 (64-bit) Windows 10 (64-bit) Linux Fedora 23 (by request) Linux Ubuntu 16.04 (by request)	