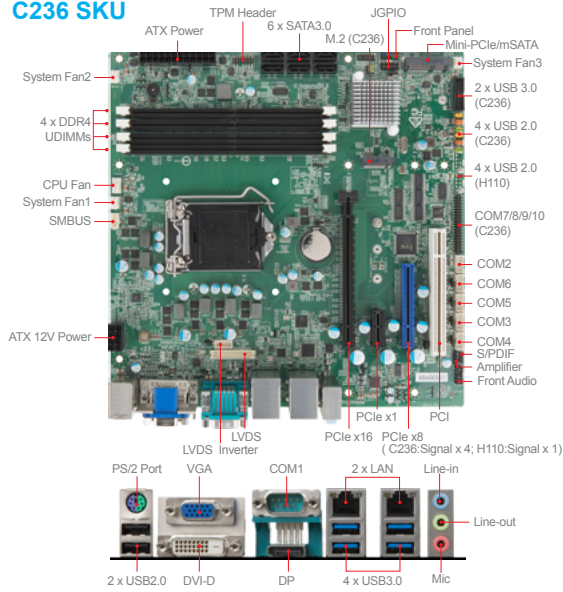


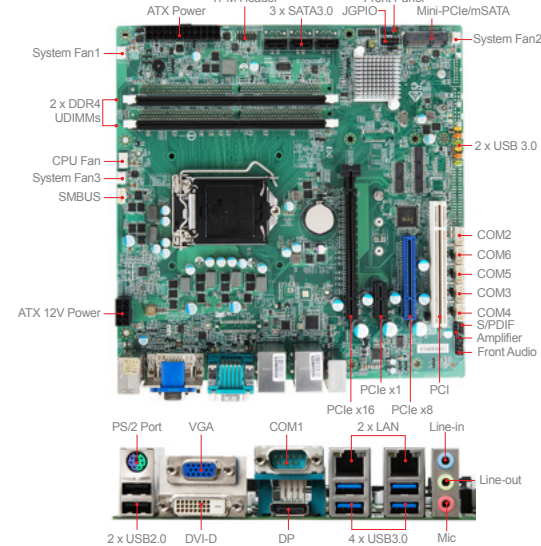
# MS-98E2

Micro-ATX with 7th/6th Gen Intel® Kaby Lake/Skylake, Superior I/O & Expansion Capability for High-Performance Solution

## C236 SKU



## H110 SKU



## Features

- 10 COM ports for flexible applications
  - Supports 3 system fans
  - Supports DirectX 11.1 and Intel® Clear Video Technology (up to 1080P)
  - 6 SATA 3.0 ports for RAID
  - M.2 supports high speed PCIe NVMe SSD storage
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- 6 COM ports for flexible applications
  - Supports 3 system fans
  - Supports DirectX 11.1 and Intel® Clear Video Technology (up to 1080P)
  - 3 SATA 3.0 ports for faster and high-capacity storage

## Ordering Information

Part Number	Description
919-98E2-001	VER 1.1 OPTA.9.6-INCH, Intel Skylake-S/KabyLake-S +C236,4*DDR4, DP, VGA, LVDS, DVI, 1*M.2, 1*Mini-PCIe, 2*LAN, 6*SATA3.0, 6*USB3.0, 6*USB2.0, 10*COM, ATX Power,single for channel
919-98E2-002	VER 1.1 OPTB.9.6-INCH, Intel Skylake-S/KabyLake-S +H110, 2*DDR4, DP, VGA, DVI, 1*Mini-PCIe, 2*LAN, 3*SATA3.0, 4*USB3.0, 6*USB2.0, 6*COM, ATX Power,single for channel

## Packing List

Part Number	Description
K1D-1008261-V03	SATA Cable, 500mm
K14-1018003-V03	COM PORT Cable, 300mm
E21-98E2010-C22	I/O SHIELD

## Specifications

	C236 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 Core™ i7/i5/i3/Pentium®/Celeron® Series Processor, Max 95W
	Frequency	2.3GHz~4.0GHz (Depends on CPU)	
	L2 Cache	2M ~ 8M (Depends on CPU)	
	CPU Type	Socket (LGA 1151)	
<b>Memory</b>	Chipset	Intel® C236 Express	Intel® H110 Express
	BIOS	AMI	
	Technology	Dual-channel DDR4 (ECC) 2133MHz/2400MHz (7th Gen)	Dual-channel DDR4 (non-ECC) 2133MHz/2400MHz (7th Gen)
	Max. Capacity	Up to 64 GB	Up to 32 GB
<b>Display</b>	Socket	4 x 288-pin Long-DIMMs	
	Controller	Intel® HD Graphics	
	Graphic Memory	Shared system memory up to 1.7 GB SDRAM	
	LVDS	1	N/A
<b>Ethernet</b>	eDP	N/A	
	VGA	1	
	DVI	1 (DVI-D)	
	DisplayPort	1	
<b>Audio</b>	Multiple Display	3 independent displays	2 independent displays
	Display Interface	LVDS up to 1920 x 1200 DP up to 3840 x 2160 DVI-D up to 1920 x 1200 VGA up to 1920 x 1200	DP up to 3840 x 2160 DVI-D up to 1920 x 1200 VGA up to 1920 x 1200
	Controller	1 x Intel® I219-LM GbE-PHY 1 x Intel® I210-AT PCIe GbE LAN	1 x Intel® I219-LM GbE-PHY 1 x Intel® I211-AT PCIe GbE LAN
	Controller	Realtek® ALC887 HD Audio Codec	
<b>Super I/O</b>	Controller	Fintek F81866AD-1 + F81216H	
	Watchdog Timer	256-level Watchdog Timer	
<b>H/W Monitor</b>	Smart Fan	Yes	
	TPM	Pin header	
<b>I/O Interface</b>	USB	6 x USB 3.0 (4 x rear; 2 x internal) 6 x USB 2.0 (2 x rear; 4 x internal)	4 x USB 3.0 (4 x rear) 6 x USB 2.0 (2 x rear; 4 x internal)
	Serial	10 x COM (1 x rear; 9 x internal) COM1: RS-232/422/485, 0V/5V/12V COM2-6: RS-232, 0V/5V/12V COM7~COM10: RS-232, without power	6 x COM (1 x rear; 5 x internal) COM1: RS-232/422/485, 0V/5V/12V COM2-6: RS-232, 0V/5V/12V
	Parallel	N/A	
	PS/2	1	
<b>Expansion Slot</b>	GPIO	8-bits (4 x GPI, 4 x GPO), 5V	
	PCIe x16	1	
	PCIe x8	1*PCIe x8 (x4 signal)	1*PCIe x8 (x1 signal)
	PCIe x4	N/A	
<b>Storage</b>	PCIe x1	1	
	PCI	1	
	M.2	1 x M Key (PCIe x4, SATA3.0), 2242/2280/2280	N/A
	Mini-PCIe	1 x Full-size, mSATA	
<b>Power Supply</b>	SATA	6 x SATA 3.0	
	mSATA	1	
<b>Environment</b>	DC	N/A	
	ATX	ATX-Power 24P, 12V-8P	
<b>Form Factor</b>	Operating Temperature	0 ~ 60°C	
	Operating Humidity	10 ~ 90%, non-condensing	
	Storage Temperature	-20 ~ 80°C	
	Storage Humidity	10 ~ 90%, non-condensing	
<b>Certification</b>	Dimensions	244 mm x 244 mm (uATX)	
	Weight	0.73 kg	
<b>Software Platform</b>	EMC	FCC, CE, RCM, VCCI, BSMI	
	OS Support	Windows 7 (32/64-bit) Windows 8.1 (64-bit) Windows 10 (64-bit) Linux Kernel 4.X, support Fedora 23(64Bit) & Ubuntu 16.04 (64Bit) of Skylake-S & KabyLake-S	

## Optional Items

Part Number	Description
K14-1036004-V03	COM Port Cable, 200mm
K1B-3008012-E06	USB 2.0 Cable, 330mm