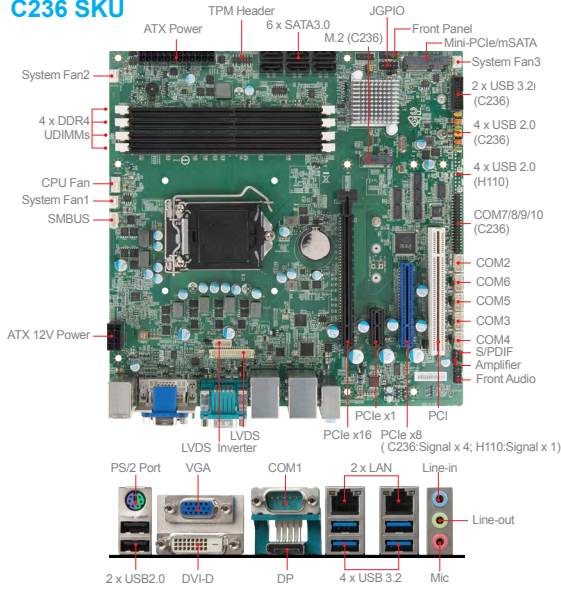


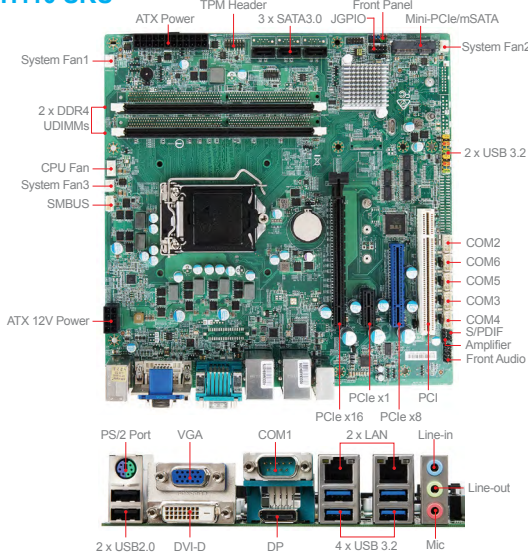
# MS-98E2

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

## C236 SKU



## H110 SKU



## Features

- Intel® 7th/6th Gen Skylake-S/Kaby Lake-S Series with C236/H110
- 4 DDR4 2666 MHz ECC/non-ECC UDIMM slots up to 64GB
- Triple independent displays: VGA, DVI-D, DP, LVDS
- 2 GbE LAN with RJ-45
- 1 PCIe x16 (Gen 3), 1 PCIe x8 (Gen 3), 1 PCIe x1 (Gen 3), 1 PCI, 1 Mini-PCIe (Full size, with mSATA) slots
- M.2 M Key, 6 SATA 3.0 for storage
- SATA RAID 0/1/5/10
- 6 USB 3.2 Gen 1, 5 USB 2.0, 10 COM (1 RS-485), GPIO, PS/2, Audio, S/PDIF, 3 System FAN
- SMBus, iAMT11.x
- ATX Power

## 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

## Specifications

		C236 SKU	H110 SKU	
<b>Processor</b>	CPU	7th/6th Gen Intel® Desktop Kaby Lake/Skylake Xeon/1715/i3/F Pentium®/Celeron® Series Processor, Max 95W	7th/6th Gen Intel® Desktop Kaby Lake/Skylake Core™ 1715/i3/F 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		
<b>Memory</b>	Technology	Dual-channel DDR4 (ECC) 2133/2400 MHz(7th Gen)	Dual-channel DDR4 (non-ECC) 2133/2400 MHz(7th Gen)	
	Max. Capacity	Up to 64 GB		
	Socket	4 x 288-pin UDIMMs	4 x 288-pin UDIMMs	
	Controller	Intel® HD Graphics		
<b>Display</b>	Graphics Memory	Depends on CPU		
	LVDS	1	N/A	
	eDP	N/A		
	VGA	1		
	DVI	1 (DVI-D)		
	DisplayPort	1		
	Multiple Display	3 independent displays	2 independent displays	
	<b>Display Interface</b>	LVDS up to 1920 x 1200 @60Hz	DP up to 4096 x 2304 @60Hz	
		DP up to 4096 x 2304 @60Hz	DVI-D up to 1920 x 1200 @60Hz	
	<b>Ethernet</b>	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>Audio</b>	Controller	Fintek F81866AD-I + F81216H		
	Controller	Fintek F81866AD-I		
<b>Super I/O</b>	Watchdog Timer	256-level Watchdog Timer		
	Smart Fan	Yes		
<b>TPM</b>	Controller	Pin header		
	Controller	Pin 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)	6 x USB 2.0 (2 x rear, 4 x internal) 4 x USB 3.2 Gen 1 (rear)	
	Serial	10 x COM ports (COM1: rear, COM2~9: internal) COM1: RS-232/422/485, 0V/5V/12V COM2~6: RS-232, 0V/5V/12V COM7~10: RS-232, without power	6 x COM ports (COM1: rear, COM2~5: 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)		
	PCIe x4	N/A		
	PCIe x1	1		
	PCI	1		
<b>Storage</b>	M.2	1 x M key (PCIe x4, SATA 3.0), 2242/2260/2280	N/A	
	Mini-PCIe	1 x Full-size (mSATA)		
	SATA	6 x SATA 3.0		
<b>Power Supply</b>	mSATA	1 (shared w/ Mini-PCIe)		
	DC	N/A		
<b>Environment</b>	ATX	ATX-Power 24P, 12V-8P		
	Operating Temperature	0 ~ 60°C Note: Thermal w/ Airflow:0.7rms		
	Operating Humidity	10 ~ 90%, non-condensing		
	Storage Temperature	-20 ~ 80°C		
<b>Form Factor</b>	Storage Humidity	10 ~ 90%, non-condensing		
	Dimensions	244 x 244 mm (uATX)		
<b>Certification</b>	Weight	0.73 kg		
	EMC	FCC, CE, RCM, VCCI, BSMI		
<b>Software Platform</b>	OS Support	Windows 7 (32/64-bit) Windows 8.1 (64-bit) Windows 10 IoT Enterprise LTSC/SAC 1809 (64-bit, RS5) Linux (Support by request)		

## Packing List

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

## Optional Item

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