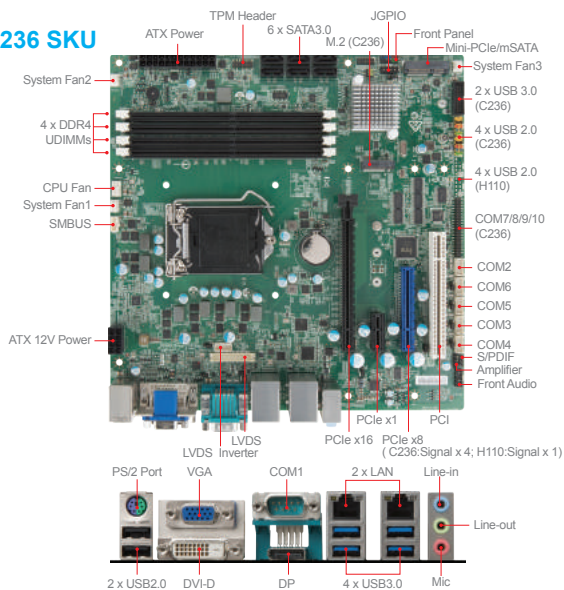


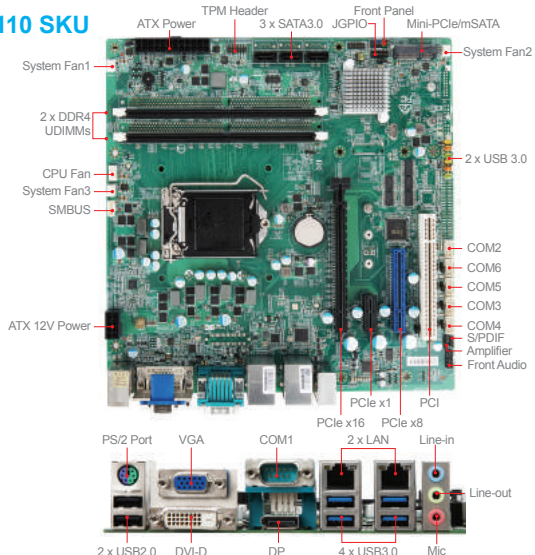
MS-98E2

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
 - 3 independent displays: LVDS, DP, DVI-D and VGA
 - Supports DirectX 11.1 and Intel® Clear Video Technology (up to 1080P)
 - Multiple expansion slots: PCIe x16, PCIe x8 (x4 signal), PCIe x1, and PCI
 - 6 SATA 3.0 ports for RAID
 - M.2 supports high speed PCIe NVMe SSD storage
 - Supports m-SATA function by Mini-PCIe slot
 - Plenty USB ports for more peripherals (6 USB 2.0, 6 USB 3.0)
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- 6 COM ports for flexible applications
 - Supports 3 System FANs
 - 2 independent displays: DP, DVI-D and VGA
 - Supports DirectX 11.1 and Intel® Clear Video Technology (up to 1080P)
 - Multiple expansion slots: PCIe x16, PCIe x1, PCIe x8 (x1 signal), and PCI
 - 3 SATA 3.0 ports for faster and high-capacity storage
 - Supports m-SATA function by Mini-PCIe slot
 - Plenty USB ports for more peripherals (6 USB 2.0, 4 USB 3.0)

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*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	
Processor	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)		
	Chipset	Intel® C236 Express	Intel® H110 Express	
Memory	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	
Display	Socket	4 x 288-pin Long-DIMMs	2 x 288-pin Long-DIMMs	
	Controller	Intel® HD Graphics		
	Graphic Memory	Shared system memory up to 1.7 GB SDRAM		
	LVDS	1	N/A	
	eDP	N/A		
	VGA	1		
	DVI	1 (DVI-D)		
	DisplayPort	1		
	Multiple Display	3 independent displays	2 independent displays	
	Display Interface	LVDS up to 1920 x 1200 @60Hz DP up to 4096 x 2304 @60Hz DVI-D up to 1920 x 1200 @60Hz VGA up to 1920 x 1200 @60Hz	DP up to 4096 x 2304 @60Hz DVI-D up to 1920 x 1200 @60Hz VGA up to 1920 x 1200 @60Hz	
Ethernet	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	
	Audio	Controller	Realtek® ALC887 HD Audio Codec	
Super I/O	Controller	Fintek F81866AD-1 + F81216H	Fintek F81866AD-I	
	H/W Monitor	Watchdog Timer	256-level Watchdog Timer	
I/O Interface	TPM	Controller Yes		
	USB	Controller	Pin header	
		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 ports (COM1: rear, COM2-5: 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	
	Expansion Slot	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	
PCIe x1		1		
Storage	PCI	1		
	M.2	1 x M Key (PCIe x4, SATA3.0), 2242/2280/2280	N/A	
	Mini-PCIe	1 x Full-size, mSATA		
Power Supply	SATA	6 x SATA 3.0	3 x SATA 3.0	
	mSATA	1		
Environment	DC	N/A		
	ATX	ATX-Power 24P, 12V-8P		
	Operating Temperature	0 ~ 60°C		
Form Factor	Operating Humidity	10 ~ 90%, non-condensing		
	Storage Temperature	-20 ~ 80°C		
	Storage Humidity	10 ~ 90%, non-condensing		
Certification	Dimensions	244 x 244 mm (uATX)		
	Weight	0.73 kg		
Software Platform	EMC	FCC, CE, RCM, VCCI, BSMI		
	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)		

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