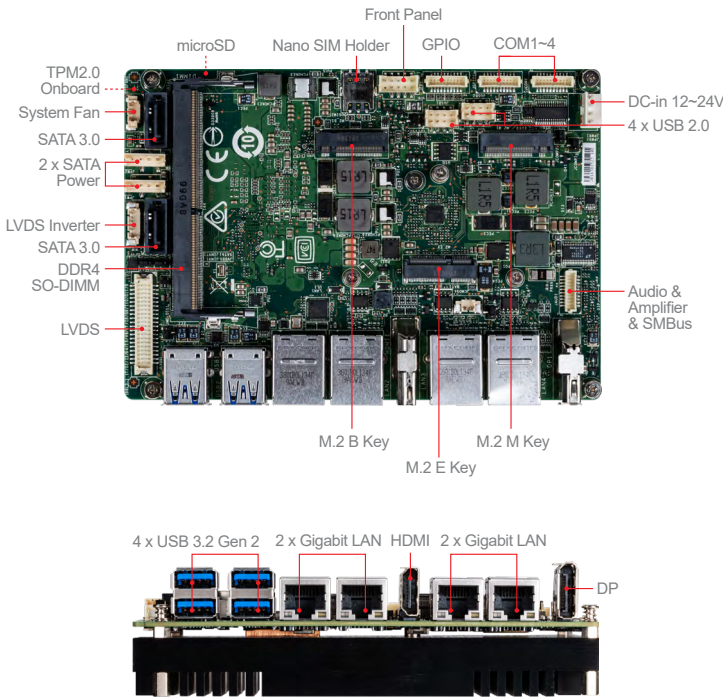


MS-98L3

3.5" SBC with Intel® Whiskey Lake-U for Fanless, Ultra Low-Power & High-Performance Solution



Features

- Intel® 8th Gen Whiskey Lake-U Series
- DDR4 2400 MHz SODIMM Slot up to 32GB
- Triple independent displays: DP++ , HDMI, LVDS
- 4 GbE LAN for RJ-45
- 1 M.2 B key (with NANO SIM-holder), 1 M.2 E key (with CNVI)
- M.2 M key, 2 SATA 3.0, Micro SD for storage
SATA RAID 0/1 (Supported by i7/i5 SKUs)
- 4 USB 3.2 Gen 2, 4 USB 2.0, 4 COM (4 RS-485), GPIO, Audio
- Onboard TPM 2.0
- Wide Voltage DC-IN 12~24V (OCP & OVP)

Ordering Information

Part Number	Description
919-98L3-001	MS-98L3\609-98L3-010\809-98L3-006 VER:12 OPT:A Intel Whiskey Lake-U, i7-8665UE, 1*DDR4, 1*DP, 1*HDMI, 1*LVDS, 3*M.2, 4*LAN, 2*SATA3.0, 4*USB3.2Gen2, 4*USB 2.0, 4*COM, 1*Micro SD, DC 12~24V, Single For Channel
919-98L3-002	MS-98L3\609-98L3-020\809-98L3-007 VER:12 OPT:B Intel Whiskey Lake-U, i5-8365UE, 1*DDR4, 1*DP, 1*HDMI, 1*LVDS, 3*M.2, 4*LAN, 2*SATA3.0, 4*USB3.2Gen2, 4*USB 2.0, 4*COM, 1*Micro SD, DC 12~24V, Single For Channel
919-98L3-003	MS-98L3\609-98L3-030\809-98L3-008 VER:12 OPT:C Intel Whiskey Lake-U, i3-8145UE, 1*DDR4, 1*DP, 1*HDMI, 1*LVDS, 3*M.2, 4*LAN, 2*SATA3.0, 4*USB3.2Gen2, 4*USB 2.0, 4*COM, 1*Micro SD, DC 12~24V, Single For Channel
919-98L3-004	MS-98L3\609-98L3-040\809-98L3-009 VER:12 OPT:D Intel Whiskey Lake-U, Celeron 4305UE, 1*DDR4, 1*DP, 1*HDMI, 1*LVDS, 3*M.2, 4*LAN, 2*SATA3.0, 4*USB3.2Gen2, 4*USB 2.0, 4*COM, 1*Micro SD, DC 12~24V, Single For Channel
919-98L3-102	MS-98L3\609-98L3-010\809-98L3-102 VER:12 OPT:E Intel Whiskey Lake-U, i7-8665UE, 1*DDR4, 1*DP, 1*HDMI, 1*LVDS, 3*M.2, 4*LAN, 2*SATA3.0, 4*USB3.2Gen2, 4*USB 2.0, 4*COM, 1*Micro SD, DC 12~24V, Bulk For Channel
919-98L3-103	MS-98L3\609-98L3-020\809-98L3-102 VER:12 OPT:F Intel Whiskey Lake-U, i5-8365UE, 1*DDR4, 1*DP, 1*HDMI, 1*LVDS, 3*M.2, 4*LAN, 2*SATA3.0, 4*USB3.2Gen2, 4*USB 2.0, 4*COM, 1*Micro SD, DC 12~24V, Bulk For Channel
919-98L3-104	MS-98L3\609-98L3-030\809-98L3-102 VER:12 OPT:G Intel Whiskey Lake-U, i3-8145UE, 1*DDR4, 1*DP, 1*HDMI, 1*LVDS, 3*M.2, 4*LAN, 2*SATA3.0, 4*USB3.2Gen2, 4*USB 2.0, 4*COM, 1*Micro SD, DC 12~24V, Bulk For Channel
919-98L3-105	MS-98L3\609-98L3-040\809-98L3-102 VER:12 OPT:H Intel Whiskey Lake-U, Celeron 4305UE, 1*DDR4, 1*DP, 1*HDMI, 1*LVDS, 3*M.2, 4*LAN, 2*SATA3.0, 4*USB3.2Gen2, 4*USB 2.0, 4*COM, 1*Micro SD, DC 12~24V, Bulk For Channel

Specifications

System Processor	CPU	8th Gen Intel® IOTG Mobile Whiskey Lake-U Core™ i7-8665UE/i5-8365UE, QC, 15W & i3-8145UE/Celeron® 4305UE, DC, 15W	
	Frequency	1.8GHz~4.6GHz (Depends on CPU)	
	L2 Cache	4MB~8MB (Depends on CPU)	
	CPU Type	BGA	
Memory	Chipset	N/A	
	BIOS	AMI	
	Technology	Single-channel DDR4 2400MHz	
Display	Max. Capacity	Up to 32GB	
	Socket	1 x 260-pin SO-DIMM	
	Controller	Intel® HD Graphics	
	Graphic Memory	Depends on CPU	
	LVDS	Dual Channel 18/24-Bit	
	HDMI	1	
Ethernet	DisplayPort	1 (Support DP++)	
	Multiple Display	3 independent displays	
	Display Interface	LVDS up to 1920 x 1200 @60 Hz HDMI up to 4096 x 2160 @24Hz DP up to 4096 x 2160 @60Hz	
Audio Super I/O	Controller	1 x Intel® i219LM GbE-PHY LAN (AMT 12.0 supported by i7/i5 SKUs) 3 x Intel® i210-AT GbE LAN	
	Controller	Realtek® ALC887-VD2-CG HD Audio Codec Fintek F81866AD-I	
H/W Monitor	Watchdog Timer	256-level Watchdog Timer	
	Smart Fan	Yes	
I/O Interfaces	TPM	Controller Infineon SLB9670TT2.0	
	USB	USB	4 x USB 2.0 (internal) 4 x USB 3.2 Gen 2 (rear)
		Serial	4 x COM ports (internal) COM1~4: RS-232/422/485, 0V/5V/12V, support auto flow control
		Parallel	N/A
	Expansion Slot	PS/2	N/A
		GPIO	16-bits (8 x GPI; 8 x GPO), 5V
PCIe x16		N/A	
PCIe x4		N/A	
Storage	M.2	1 x M.2 M key (SATA), 2242 1 x M.2 B key (PCIe x1, USB 3.1, USB 2.0 w/ NANO SIM-Holder), 2242/3042 1 x M.2 E key (PCIe x1, USB 2.0, w/CNVI), 2230	
	Mini-PCIe	N/A	
Power Supply	SATA	2 x SATA 3.0 (RAID 0/1 supported by i7/i5 SKUs)	
	DC Input	DC-in 12~24V (OCP & OVP)	
Environment	AC Input	N/A	
	Operating Temperature	-10 ~ 60°C Note: Thermal w/ Airflow:0.7m/s	
	Operating Humidity	10 ~ 90%, non-condensing	
	Storage Temperature	-20 ~ 80°C	
Form Factor	Storage Humidity	10 ~ 90%, non-condensing	
	Dimensions (W x D x H)	146 x 102 mm (3.5")	
Certification	Weight	0.64 kg	
	EMC	FCC, CE, RCM, VCCI, BSMI	
Software Platform	OS Support	Windows 10 IoT Enterprise LTSC/SAC 1809 (64-bit, RSS) Linux Fedora 29 (by request) Linux Ubuntu 18.04 (by request)	

Packing List

Part Number	Description	Quantity
K1G-3004069-V03	DC Power Cable, 150mm	1
K14-3018001-V03	COM Port Cable, 150mm	1
K1B-3008034-V03	USB Cable, 150mm	1
K1D-3012023-V03	SATA Cable with Power, 230mm	1

Optional Item

Part Number	Description
E31-0806460-K08	Heatspreader