

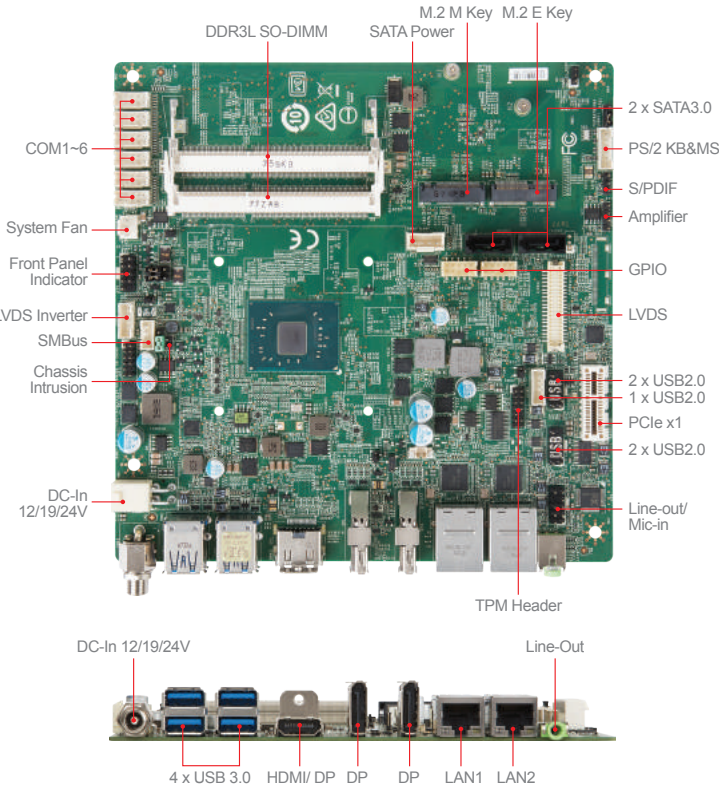
MS-98B1

Mini-ITX with Intel® Apollo Lake SoC Series for Fanless, Low-Power, High-Performance, Multi-Displays & Multi-Functions Solution

NEW

Specifications

Processor	CPU	Intel® Celeron® Processor N3350, DC, 6W Intel® Atom™ x5 Processor E3940, QC, 9.5 W
	Frequency	N3350, 1.1 GHz, up to 2.4 GHz E3940, 1.6 GHz, up to 1.8 GHz
	L2 Cache	2MB
	CPU Type	BGA
	Chipset	Integrated in SoC
Memory	BIOS	AMI
	Technology	Dual-channel DDR3L 1866 MHz
Display	Max. Capacity	Up to 8GB
	Socket	2 x 204-pin SO-DIMMs
	Controller	Intel® HD Graphics
	Graphic Memory	Shared system memory up to 1.7 GB SDRAM
	LVDS	1 x Dual channel 18/24-bit (Signal shared w/ eDP)
	eDP	1 (by BOM option)
	VGA	N/A
	DVI	N/A
	HDMI	1 (Co-lay DP)
	DisplayPort	2 (One Signal shared w/ eDP)
Display Interface	Multiple Display	3 independent displays
	Display Interface	LVDS up to 1920 x 1200 @60 Hz eDP up to 4096 x 2160 @60Hz HDMI up to 3840 x 2160 @30Hz DP up to 4096 x 2160 @60Hz
Ethernet	Controller	2 x Intel® I211-AT (colay I210-AT GbE LAN)
Audio	Controller	Realtek® ALC887-VD2-CG HD Audio Codec
Super I/O	Controller	Fintek F81867AD-I
H/W Monitor	Watchdog Timer	256-level Watchdog Timer
	Smart Fan	Yes
TPM	Controller	Pin header (default) Infineon SLB9665TT 2.0 (by BOM option)
I/O Interface	USB	4 x USB3.0 (rear) 5 x USB2.0 (internal)
	Serial	6 x COM ports (Internal) COM1~2: RS-232/422/485, 0V/5V/12V COM3~6: RS-232, w/o Power
	Parallel	N/A
	PS/2	1 (pin header)
	GPIO	16-bits (8 x GPI; 8 x GPO), 5V
	Expansion Slot	PCIe x16
Expansion Slot	PCIe x4	N/A
	PCIe x1	1
	PCI	N/A
Storage	M.2	1 x M Key (SATA 3.0), 2242 1 x E Key (PCIe x1, USB2.0), 2230
	Mini-PCIe	N/A
Storage	SATA	2 x SATA 3.0 (SATA2 share with M.2 M Key)
	mSATA	N/A
Power Supply	DC	DC-in 12/19/24V
	ATX	N/A
Environment	Operating Temperature	-10 ~ 60°C
	Operating Humidity	10 ~ 90%, non-condensing
	Storage Temperature	-20 ~ 80°C
	Storage Humidity	10 ~ 90%, non-condensing
Form Factor	Dimensions	170 x 170mm (Mini-ITX)
	Weight	0.37 kg
Certification	EMC	FCC, CE, RCM, VCCI, BSMI
Software Platform	OS Support	Windows 10 (64-bit) Linux Fedora 25 (by request) Linux Ubuntu 16.04 (by request)



Features

- Intel® Apollo Lake/Apollo Lake-I Series SoC
- 3 independent displays : 1 x LVDS/eDP, 2 x DP, 1 x HDMI (Co-lay DP) for flexible display applications
- Supports Dual DDR3L 1866MHz SO-DIMM memory up to 8GB
- Supports Dual SATA 3.0 ports, M.2 M Key 2242 for storage
- Supports Dual Intel® GbE LAN, PCIe x1 and M.2 E Key 2230
- Supports 6 COM ports, 9 USB ports & 16Bit GPIO
- TPM supported with onboard chip or pin header
- Supports DC-in 12/19/24V

Ordering Information

Part Number	Description
919-98B1-101	MS-98B1 10 OPT:A Intel E3940, DP+DP+HDMI+LVDS, 2*DDR3L SO-DIMMs, 2*LAN, 2*SATA 3.0, Audio, 2*M.2 Slot, 4*USB 3.0, 5*USB 2.0, PCIe x1, DC-in 12V/19V/24V, BULK
919-98B1-102	MS-98B1 10 OPT:C Intel N3350, DP+DP+HDMI+LVDS, 2*DDR3L SO-DIMMs, 2*LAN, 2*SATA 3.0, Audio, 2*M.2 Slot, 4*USB 3.0, 5*USB 2.0, PCIe x1, DC-in12V/19V/24V, BULK

Packing List

Part Number	Description	Quantity
K14-1009062-V03	COM Port Cable, 250mm	1
K1D-1012115-V03	SATA Cable with Power, 230mm	1
E21-98B1010-C22	I/O SHIELDING	1

Optional Item

Part Number	Description
K14-1018003-V03	COM port cable, 300mm
K1B-3008012-E06	USB 2.0 Cable, 330mm