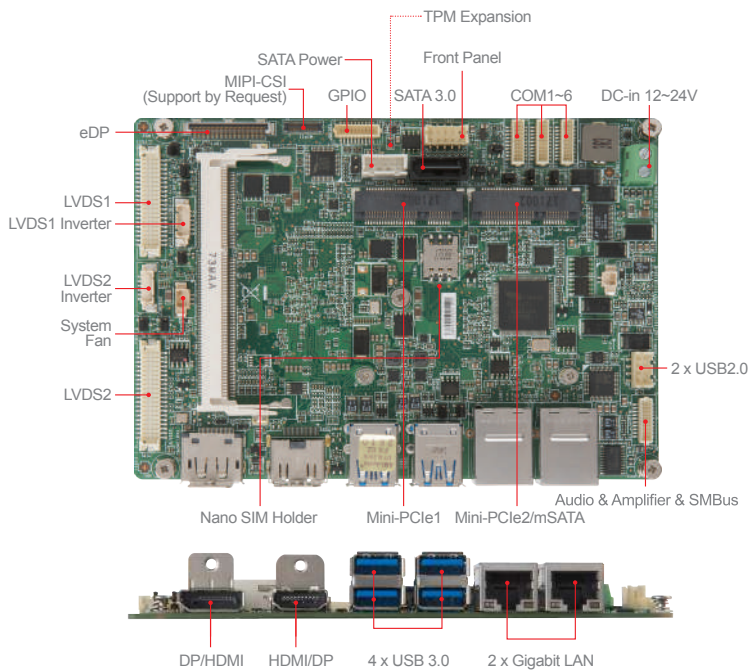


MS-98E6

3.5" SBC with Intel® Apollo Lake/Apollo Lake-I for Fanless, Low-Power, High-Performance & Wide Temperature Solution



Features

- Intel® Apollo Lake/Apollo Lake-I Series SoC
- Supports DDR3L 1866/1600 MHz SO-DIMM memory up to 8GB
- 3 independent displays: HDMI, DP, eDP and LVDS
- 4 USB 3.0, 2 USB 2.0, and 6 COM ports
- Dual Mini-PCIe, SATA3.0, mSATA, NANO SIM-Holder, Dual GbE LAN and Micro SD slot
- Supports MIPI-CSI2.0 interface for Camera
- Apollo Lake-I Series support operating temperature : -40 ~ 85°C
- Supports DC-in 12~24V

Ordering Information

Part Number	Description
919-98E6-001	MS-98E6 11 Intel Apollo Lake N4200,DDR3L SO DIMM+DP+HDMI+2LVDS+eDP+2Mini-PCIe+2LAN+SATA3.0+4USB3.0+2USB 2.0+6COM+MIPI+Micro SD,DC 12V~24V,Non-WT, SINGLE
919-98E6-002	MS-98E6 11 OPT:A Intel Apollo Lake N3350,DDR3L SO DIMM+DP+HDMI+2LVDS+eDP+2Mini-PCIe+2LAN+SATA3.0+4USB3.0+2USB 2.0+6COM+MIPI+Micro SD,DC 12V~24V,Non-WT, SINGLE
919-98E6-003	MS-98E6 11 OPT:B Intel Apollo Lake-I E3940,DDR3L SO DIMM+DP+HDMI+2LVDS+eDP+2Mini-PCIe+2LAN+SATA3.0+4USB3.0+2USB 2.0+6COM+MIPI+Micro SD,DC 12V~24V,Non-WT, SINGLE
919-98E6-004	MS-98E6 11 OPT:C Intel Apollo Lake-I E3950,DDR3L SO DIMM+DP+HDMI+2LVDS+eDP+2Mini-PCIe+2LAN+SATA3.0+4USB3.0+2USB 2.0+6COM+MIPI+Micro SD,DC 12V~24V,WT, SINGLE
919-98E6-005	MS-98E6 11 OPT:D Intel Apollo Lake-I E3940,DDR3L SO DIMM+DP+HDMI+2LVDS+eDP+2Mini-PCIe+2LAN+SATA3.0+4USB3.0+2USB 2.0+6COM+MIPI+Micro SD,DC 12V~24V,WT, SINGLE
919-98E6-006	MS-98E6 11 OPT:E Intel Apollo Lake-I E3930,DDR3L SO DIMM+DP+HDMI+2LVDS+eDP+2Mini-PCIe+2LAN+SATA3.0+4USB3.0+2USB 2.0+6COM+MIPI+Micro SD,DC 12V~24V,WT, SINGLE

Packing List

Part Number	Description	Quantity
K1B-3008034-V03	USB Cable, 150mm	1
K1D-1012064-V03	DC Power Cable, 150mm	1
K14-3018001-V03	COM PORT Cable, 150mm	1
K1B-3008034-V03	DC Power Cable, 150mm (For 919-98E6-001/002/003)	1
K1G-3002031-V03	DC Power Cable, 150mm (For 919-98E6-004/005/006)	1
G71-SEDC172-X03	Driver DVD	1

Optional Item

Part Number	Description
E31-0805840-K08	Heatspreader For Apollo Lake-I
E31-0805850-K08	Heatspreader For Apollo Lake

Specifications

	Apollo Lake SKUs		Apollo Lake-I SKUs	
		Intel® Pentium® Processor N4200, QC, 6W Intel® Celeron® Processor N3350, DC, 6W		Intel® Atom™ x7 Processor E3950, QC, 12W Intel® Atom™ x5 Processor E3940, QC, 9.5W Intel® Atom™ x5 Processor E3930, DC, 6.5W
Processor				
CPU				
Frequency	N4200, 1.1 GHz, up to 2.5 GHz N3350, 1.1 GHz, up to 2.4 GHz		E3950, 1.6 GHz, up to 2.0 GHz E3940, 1.6 GHz, up to 1.8 GHz E3930, 1.3 GHz, up to 1.8 GHz	
L2 Cache	1M~2M (Depends on CPU)			
CPU Type	BGA			
Chipset	Integrated in SoC			
BIOS	AMI			
Memory				
Technology	Single-channel DDR3L 1866/1600 MHz			
Max. Capacity	Up to 8GB			
Socket	1 x 204-pin SO-DIMM			
Controller	Intel® HD Graphics			
Graphic Memory	Shared system memory up to 1.7 GB SDRAM			
LVDS	2 x Dual Channel 18/24-bit (LVDS1 Share with eDP Signal, LVDS2 Share with DP1 Signal)			
eDP	1 (Share with LVDS1 Signal)			
VGA	N/A			
DVI	N/A			
HDMI	1(HDMI1 Co-lay DP1/LVDS2 & HDMI2 Co-lay DP2 by option)			
DisplayPort	1(DP1 Co-lay HDMI1/LVDS2 & DP2 Co-lay HDMI2 by option)			
Multiple Display	3 independent displays			
Display Interface	LVDS1/LVDS2 up to 1920 x 1200 @60Hz eDP up to 4096 x 2160 @60Hz HDMI1/HDMI2 up to 3840 x 2160 @30Hz DP1/DP2 up to 4096 x 2160 @60Hz			
Ethernet				
Controller	2 x Intel® I211-AT GbE LAN		2 x Intel® I210-IT 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			
I/O Interface				
USB	4 x USB 3.0 (4 x Rear) 2 x USB 2.0 (2 x Internal)			
Serial	6 x COM ports (Internal) COM1: RS-232/422/485, 0V/5V/12V, support auto flow control COM2~6: RS-232, 0V/5V/12V (RS-422/485 by Optional)			
Parallel	N/A			
PS/2	N/A			
GPIO	16-bits (8 x GPI; 8 x GPO), 5V			
PCIe x16	N/A			
PCI	N/A			
Expansion Slot				
M.2	N/A			
Mini-PCIe	2 x Full-size (Mini-PCIe1 Slot w/ NANO SIM-Holder) (Mini-PCIe2 Slot w/ mSATA)			
Storage				
SATA	1 x SATA 3.0			
mSATA	1 (Shared with Mini-PCIe2)			
Power Supply				
DC	DC-in 12~24V (Box header with 4pin)		DC-in 12~24V (Phoenix connector with 2pin)	
ATX	N/A			
Environment				
Operating Temperature	-10 ~ 60°C		-40 ~ 85°C	
Operating Humidity	10 ~ 90%, non-condensing			
Storage Temperature	-20 ~ 80°C		-40 ~ 85°C	
Storage Humidity	10 ~ 90%, non-condensing			
Form Factor				
Dimensions	146 x 102mm (3.5")			
Weight	0.34 kg		0.59 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)			
	*1 x MIPI-CSI 2.0 (by request) *1 x microSD slot			

Semi-rugged Terminal
POS System
HMI Panel PC
Embedded System
Embedded Board
COM Express Board
Oseven Board
Pico-ITX Board
3.5" Board
EPC Board
PICMG 1.0 Board
Mini-ITX Board
Micro-ATX Board
ATX Board
Mini-PCIe Module