MS-98J8 3.5” SBC with Intel® Apollo Lake/Apollo Lake-I for High-Performance, Low-Power & Fanless 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, and LVDS outputs
- Supports 4 USB 3.0, 2 USB 2.0, and 4 COM ports
- Supports Dual GbE LAN, Mini-PCIe, SATA, mSATA, and M.2 E Key 2230
- Supports Wide-Range DC-in 9~36V

Ordering Information

<table>
<thead>
<tr>
<th>Part Number</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>919-98J8-001</td>
<td>MS-98J8 10 OPTB Intel Apollo Lake N3350 DDR3L DP+HDMI+LVDS, 1<em>SATA0.0+2</em>U.2E LAN+1<em>M.2=1</em>Mini-PCIe+2<em>USB2.0+4</em>USB3.0+4*COM, DC-in up to 9~36V, Single</td>
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<tr>
<td>919-98J8-002</td>
<td>MS-98J8 10 OPTB Intel Apollo Lake-E3940 DDR3L DP+HDMI+LVDS, 1<em>SATA0.0+2</em>U.2E LAN+1<em>M.2=1</em>Mini-PCIe+2<em>USB2.0+4</em>USB3.0+4*COM, DC-in up to 9~36V, Single</td>
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Packing List

<table>
<thead>
<tr>
<th>Part Number</th>
<th>Description</th>
<th>Quantity</th>
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<tbody>
<tr>
<td>K14-1009602-V03</td>
<td>COM PORT Cable, 250mm</td>
<td>1</td>
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<tr>
<td>K1B-3008034-V03</td>
<td>USB Cable, 150mm</td>
<td>1</td>
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<tr>
<td>K1D-1012064-V03</td>
<td>SATA Cable with Power, 200mm</td>
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<td>K1G-3004089-V03</td>
<td>DC Power Cable, 150mm</td>
<td>1</td>
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<tr>
<td>G71-8ED1C820-030568</td>
<td>Driver DVD</td>
<td>1</td>
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Optional Item

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<th>Part Number</th>
<th>Description</th>
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<tr>
<td>E31-0808191-K08</td>
<td>Heatspreader for Apollo Lake-I</td>
</tr>
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<td>Heatspreader for Apollo Lake</td>
</tr>
</tbody>
</table>

Specifications

Processor
- Intel® Pentium™ N4200 Processor, QC, 6W
- Intel® Atom™ X5-E3930 Processor, DC, 6.5W
- Intel® Atom™ X5-E3940 Processor, QC, 9.5W
- Intel® Atom™ X5-E3840 Processor, QC, 6.5W
- Intel® Atom™ X5-E3930 Processor, DC, 6.5W

Frequency
- N4200, 1.1 GHz, up to 2.5 GHz
- N3350, 1.1 GHz, up to 2.4 GHz
- E3940, 1.6 GHz, up to 1.8 GHz
- E3930, 1.3 GHz, up to 1.8 GHz

L2 Cache
- 2M

CPU Type
- BGA

Chipset
- Integrated in SoC

Memory
- Technology: Single Channel for DDR3L 1866/1600 MHz
- Max. Capacity: Up to 8GB

Socket
- 1 x 204pin SO-DIMM

Controller
- Intel® HD Graphics
- Graphical Memory: Shared system memory up to 1.7 GB SDRAM
- LVDS: Dual channel 18/24-bit

Display
- Display Interface: LVDS up to 1920 x 1200 @60Hz
- HDMI: Up to 3840 x 2160 (3D3Hz)
- DP: Up to 4096 × 2160 @60Hz

Ethernet
- Controller: 2 x Realtek® RT8111H GbE LAN

Audio
- Controller: Realtek® ALC887 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): Intel® SBIB668TT 2.0 (by BOM option)

USB
- 4 x USB 3.0 (4 x rear)
- 2 x USB 2.0 (2 x internal)

I/O Interface
- Serial: 4 x COM ports (Internal)
- COM1: RS-232/422/485, 0V/5V/12V
- COM2~4: RS-232
- Parallel: N/A
- PS/2: 1 (w/ connector)
- GPIO: 8-bit (4 x GPIO; 4 x GPIO; 5V)

Expansion Slot
- PCI x 16: N/A
- PCI x 4: N/A
- PCI x 1: N/A
- Mini-PCIe: 1 x Full-size (w/ mSATA)
- M.2: 1 x E Key (PCIe x 1, USB3.0, 2230)

Storage
- SATA: 1 x SATA 3.0
- eSATA: N/A
- CFast: N/A
- mSATA: 1 (Shared with Mini-PCIe)
- CompactFlash: N/A

Power Supply
- DC: DC-in 9~36V
- ATX: N/A

Environment
- Operating Temperature: -10 ~ 60°C
- Operating Humidity: 10 ~ 90%, non-condensing
- Storage Temperature: -30 ~ 80°C
- Storage Humidity: 10 ~ 90%, non-condensing

Form Factor
- Dimensions: 146 × 102mm (3.5”)
- Weight: 0.33 kg

Certification
- CE, FCC Class B, BSMI, VCCI, RCM

Software Platform
- OS Support: Windows 10 (64-bit)
- Linux Fedora 25 (by request)
- Linux Ubuntu 16.04 (by request)

MSI reserves the right to change the specifications without prior notices.