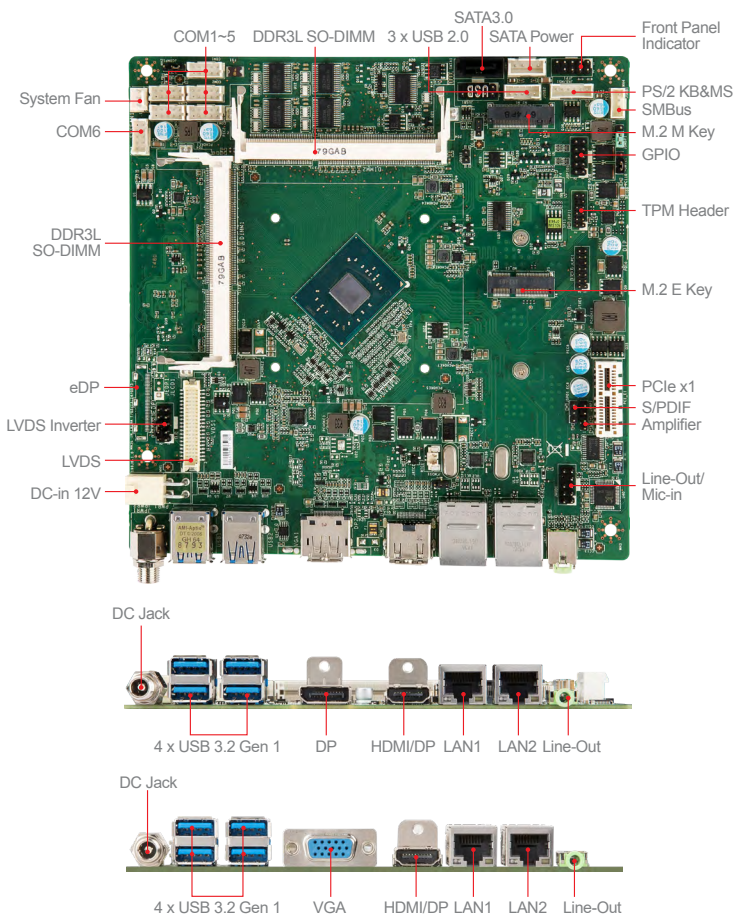


MS-98J0

Mini-ITX with Intel® Apollo Lake SoC Series for Fanless, Low-Profile & Multi-Displays Solution



Features

- Intel® Apollo Lake/Apollo Lake-I Series SoC
- 2 DDR3L 1866MHz SODIMM slots up to 8GB
- Triple independent displays : VGA (DP by option), HDMI (DP by option), LVDS (eDP by option)
- 2 GbE LAN with RJ-45
- 1 PCIe x1 (Gen 2), 1 M.2 E Key slots
- M.2 M Key, 1 SATA 3.0 for storage
- 4 USB 3.2 Gen 1, 3 USB 2.0, 6 COM (1 RS485), GPIO, PS/2, Audio, S/PDIF, System FAN
- Onboard TPM 2.0 (by option)
- SMBus, Chassis Intrusion
- DC-IN 12V

Ordering Information

| Part Number | Description |
|--------------|---|
| 919-98J0-103 | MS-98J0 10 Intel Apollo Lake-I E3940, F1 stepping, DP2+HDMI+LVDS, 2*DDR3L SO-DIMM, 2*LAN, 1*SATA-3.0, Audio, 2*M.2 Slot, 4*USB 3.2 Gen 1, 3*USB 2.0, DC-in12V |
| 919-98J0-104 | MS-98J0 10 Intel Apollo Lake J3455, F1 stepping, VGA+HDMI+LVDS, 2*DDR3L SO-DIMM, 2*LAN, 1*SATA-3.0, Audio, 2*M.2 Slot, 4*USB 3.0, 3*USB 2.0, DC-in12V |
| 919-98J0-105 | MS-98J0 10 Intel Apollo Lake N3350, F1 stepping, DP2+HDMI+LVDS, 2*DDR3L SO-DIMM, 2*LAN, 1*SATA-3.0, Audio, 2*M.2 Slot, 4*USB 3.0, 3*USB 2.0, DC-in12V |

Optional Item

| Part Number | Description |
|-----------------|-----------------------|
| K14-1009062-V03 | COM Port Cable, 250mm |
| K14-1018003-V03 | COM port cable, 300mm |
| K1B-3008012-E06 | USB 2.0 Cable, 330mm |

Specifications

| | | | | | |
|--------------------------|-------------------------|--|---|---|--|
| Processor | CPU | Intel® Celeron® Processor J3455, QC, 10W | Intel® Celeron® Processor N3350, DC, 6W | Intel® Atom™ x5 Processor E3940, QC, 9.5W | |
| | Frequency | J3455, 1.5 GHz, up to 2.3 GHz | 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 | | | |
| | Max. Capacity | Up to 8GB | | | |
| | Socket | 2 x 204-pin SO-DIMMs | | | |
| | Controller | Intel® HD Graphics | | | |
| Display | Graphic Memory | Depends on CPU | | | |
| | LVDS | 1 x Dual channel 18/24-bit | | | |
| | eDP | N/A (by option) | | | |
| | VGA | 1 | N/A (by BOM option) | | |
| | DVI | N/A | | | |
| | HDMI | 1 | | | |
| | DisplayPort | N/A (by option) | 1 | | |
| | 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 | | | |
| VGA | up to 1920 x 1080 @60Hz | | | | |
| Ethernet | Controller | 2 x Realtek® RTL8111H-CG GbE LAN | | | |
| Audio | Controller | Realtek® ALC887-VD2-CG HD Audio Codec | | | |
| Super I/O | Controller | Fintek F81867D-I | | | |
| H/W Monitor | Watchdog Timer | 256-level Watchdog Timer | | | |
| | Smart Fan | Yes | | | |
| TPM | Controller | Pin header (default) Infineon SLB9665T 2.0 (by BOM option) | | | |
| I/O Interface | USB | 3 x USB 2.0 (internal) 4 x USB 3.2 Gen 1 (rear) | | | |
| | Serial | 6 x COM ports (internal) COM1: RS-232/422/485, 0V/5V/12V COM2-6: RS-232, w/o Power | | | |
| | Parallel | N/A | | | |
| | PS/2 | 1 (pin header) | | | |
| | GPIO | 8-bits (4 x GPI; 4 x GPO), 5V | | | |
| Expansion Slot | PCIe x 16 | N/A | | | |
| | PCIe x 4 | N/A | | | |
| | PCIe x 1 | 1 | | | |
| | PCI | N/A | | | |
| | M.2 | 1 x M Key (SATA 3.0), 2242 1 x E Key (PCIe x1, USB2.0), 2230 | | | |
| Storage | Mini-PCIe | N/A | | | |
| | SATA | 1 x SATA 3.0 | | | |
| | IDE | N/A | | | |
| | eSATA | N/A | | | |
| | CFast | N/A | | | |
| Power Supply | mSATA | N/A | | | |
| | CompactFlash | N/A | | | |
| | DC | DC-in 12V | | | |
| Environment | ATX | 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 | 170 x 170 mm (Mini-ITX) | | | |
| Certification | Weight | 0.37 kg | | | |
| | EMC | FCC, CE, RCM, VCCI, BSMI | | | |
| Software Platform | OS Support | Windows 10 IoT Enterprise LTSC/SAC 1809 (64-bit, RS5) Linux (Support by request) | | | |

Packing List

| Part Number | Description | Quantity |
|-----------------|------------------------------|----------|
| K1D-1012115-V03 | SATA Cable with Power, 230mm | 1 |
| E21-98J0010-C22 | I/O SHIELDING | 1 |