

MIC-7900

Compact Fanless System with Intel® Xeon® SoC Processor



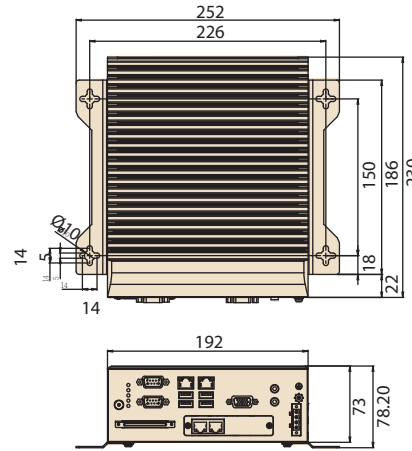
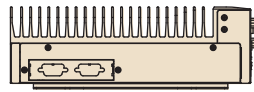
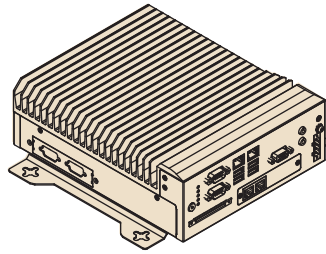
Features

- Intel® Xeon® D-1539/D-1559 SoC processor
- Wide operating temperature (-20 ~ 50 °C)
- 9 ~ 36 V_{DC} input power range
- 2 x RS-232/422/485 and 2 x RS232 serial ports (with expansion cable)
- 1 x 2.5" HDD/SSD, 1 x CFast, 1 x M.2
- 4 x GigaLAN and 4 x USB 3.0
- Supports Advantech i-Modules, SUSIAccess, and embedded software APIs
- Supports Windows Server 2016, Linux OS, and VMware

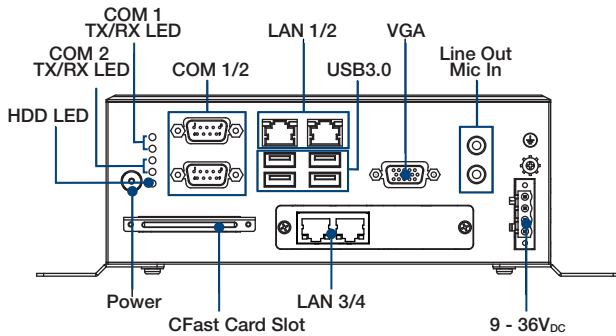
Specifications

| | | | | |
|----------------|------------------------|--|-----------------------------------|------------------------------|
| System Chipset | CPU | D-1539 | D-1559 | |
| | Maximum Speed | 1.6GHz | 1.5GHz | |
| | Max Turbo Frequency | 2.2GHZ | 2.1GHz | |
| | L3 Cache | 12M | 18M | |
| | Core Number | 8 | 12 | |
| Memory | BIOS | AMI® SPI 64 Mb | | |
| | Technology | Dual-channel DDR4 2133/2400 MHz (supports ECC) | | |
| | Socket | 2 x 260-pin SODIMM (up to 16 GB per socket) | | |
| Display | Maximum Capacity | 32 GB | | |
| | Chipset | ASPEED 1400 with 256MB VGA memory provides basic 2D VGA functoin | | |
| | VGA | 1 x DP15, up to 1920 x 1200 maximum resolution | | |
| Ethernet | Controller | LAN1: Intel® i210IT (supports wake-on-LAN) LAN2: Intel® i210IT (supports wake-on-LAN) LAN3: Intel® i210IT LAN4: Intel® i210IT | | |
| | Interface | 4 x RJ45 | | |
| Storage | HDD | 1 x 2.5" HDD/SSD (with MIC-75S20 i-Module, total storage room up to 5 x 2.5" HDD/SSD) | | |
| | CFast | 1 | | |
| | M.2 | 1 (Support PCIe signals; support M.2 22110; support M.2 2280 via optional bracket) | | |
| I/O | USB | 4 x USB 3.0 and 1 x internal USB 2.0 | | |
| | Serial Port | 2 x DB9, RS232/422/485 with automatic flow control and 2 x RS-232 (with optional cable expansion) | | |
| | Audio | 2 (1 x line out and 1 x mic in) | | |
| Security | TPM | Supports TPM 2.0 (Infineon SLB9665XQ2.0) | | |
| Expansion | Module | Supports Advantech i-Modules (MIC-75M13/MIC-75M40/MIC-75M20/MIC-75M20-01/MIC-75M11/MIC-75S20) | | |
| | Mini PCIe | 1 x mini PCIe (does not support m-SATA) | | |
| LED and Switch | LED | 2 x TX, 2 x RX, and 1 x Storage | | |
| | Button | 1 x Power on/off switch | | |
| Power | Type | ATX/AT | | |
| | Input Voltage | 9 ~ 36 V _{DC} | | |
| Watchdog Timer | Output | System reset | | |
| | Interval | Programmable 1 ~ 255 sec/min | | |
| Environment | Temperature | Operating (with industrial SSD) -20 ~ 50 °C with 0.7 m/s air flow | Operating (with HDD) 0 ~ 40 °C | Non-operating -40 ~ 85 °C |
| | Humidity | 95% @ 40 °C (non-condensing) | | |
| | Vibration | With SSD: 3 Grms @ 5 ~ 500 Hz, random, 1 hr/axis With MIC-75S20/5xSSD: 1 Grms @ 5 ~ 500Hz, random, 1 hr/axis With 2.5" HDD: 1 Grms @ 5 ~ 500 Hz, random, 1 hr/axis | | |
| | Shock | With SSD: 50G, IEC 60068-2-27, half-sine wave, 11 ms duration | | |
| Mechanical | Dimensions (W x H x D) | 73 x 192 x 230 mm (2.91" x 7.55" x 9.05") | | |
| | Weight | 2.9 kg (6.39 lbs) | | |
| | Installation | Desktop/wall mount | | |
| Certifications | EMC | CE/FCC Class B, CCC, BSMI | | |
| | Safety | UL, CCC, BSMI | | |

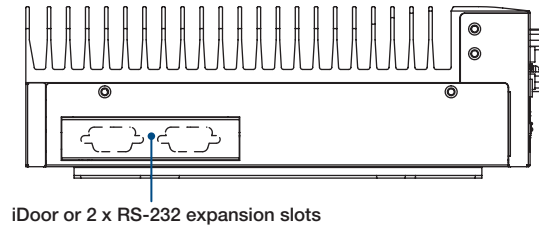
Dimensions



Front View



Side View



Ordering Information

| Part Number | CPU | VGA | 2.5" HDD/SSD | CFast | M.2 | USB 3.0 | GbE | COM | PCIe |
|----------------|--------|-----|--------------|-------|-----|---------|-----|----------------------|---------------------|
| MIC-7900-S5A1E | D-1559 | 1 | 1 | 1 | 1 | 4 | 4 | 4, up to 6 via cable | i-Module (optional) |
| MIC-7900-S6A1E | D-1539 | 1 | 1 | 1 | 1 | 4 | 4 | 4, up to 6 via cable | i-Module (optional) |

Packing List

| Part Number | Description |
|----------------|--|
| MIC-7900 | Fanless system with Intel® Xeon® SoC processor |
| 1652003234 | 4-pin Phoenix power connector |
| 1700013095 | SATA cable |
| 1700024372-01 | SATA power cable |
| 1701200220 | Dual DP9 port cable |
| 1960070543T001 | 2 x Mounting bracket |
| 2061790000 | CD-ROM |
| 2001790000 | MIC-7900 startup manual (ENG+CN) |
| 2001790010 | MIC-7900 startup manual (TC) |

Optional Accessories

| Part Number | Description |
|-------------------|--|
| 96PSA-A220W24P4-1 | Adaptor A/D, 100-240V, 220W, 24V |
| 96PSA-A150W19P4-1 | Adaptor A/D, 100-240V, 150W, 19V |
| 1702002600 | Power cord (USA) UL/CSA, 3-pin, 10A, 125V, 1.83 M, 180 D |
| 1700022940-01 | Power cord PSE, 3-pin, 7A, 125V, 3 m, DAC-ST01 |
| 1702002605 | Power cord (EU) 2-pin, 10/16A, 220V, 1.83 M, 90 D |
| 1700018704 | Power Cord UK BSI 2P 10A 250V 180cm 18AWG |
| AIIS-DIO32-00A1E | AIIS GPIO module (32 bit) |
| 98R1750020E | MIC-7000 series DIN rail accessory |

Note:

- MIC-7900 supports Advantech iDoor modules (both MOS and PCM series). Visit the Advantech website for more information.
- The PCM series module requires a bracket (P/N: 1960065854N001) that must be ordered separately.

Optional i-Modules*

| Part Number | Description |
|--------------|---|
| MIC-75M40 | 4-slot expansion module (4 x PCIe slots) |
| MIC-75M13 | 4-slot expansion module (1 x PCIe and 3 x PCI slots) |
| MIC-75M20 | 2-slot expansion module (2 x PCIe slots) |
| MIC-75M20-01 | 2-slot expansion module (2xPCIe slots) |
| MIC-75M11 | 2-slot expansion module (1 x PCIe and 1 x PCI slots) |
| MIC-75M10 | 1-slot expansion module (1xPCIe16) |
| MIC-75S20 | 2-slot expansion and storage module (2 x PCIe and 2 x 2.5 hot swappable HDDs) |

*Additional i-module details provided on the following page.

Embedded OS

| Part Number | Description |
|-------------|---------------------------------------|
| 2070014719 | WES7P MIC-7900 x64 V5.8.0 10MUI image |

i-Module Series

Expansion Module for MIC-7000 Series



Features

- Flexible expansion via PCIe/PCI slot
- MIC-7000 series compatible
- Optional smart fan for thermal optimization
- Provide additional 12Vdc power source for add-on card
- Maximum 85W for add-on card power consumption
- 2.5" storage bays for HDD/SSD expansion
- Hot Swappable HDD/SSD supported

Introduction

The i-Module series provide flexible expansion function for MIC-7000 series systems. MIC-7000 system accompanied with i-Module technology can fulfill diverse demands of customers.

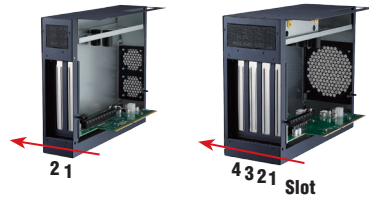
Compatible Table

| Model | MIC-7500 / MIC-7700 / MIC-7900 | | | MIC-7300 | |
|--------|---|--|--|--|--|
| 1-Slot | MIC-75M10  | | | - | |
| 2-Slot | MIC-75M20  | MIC-75M20-01*  | MIC-75M11  | MIC-73M20  | MIC-73M11  |
| 4-Slot | MIC-75M40*  | MIC-75M13  | MIC-75S20  | MIC-73M13  | |

*MIC-7700H doesn't support MIC-75M20-01 and MIC-75M40

Selection Table

i-Module slot number starts from the inner side, as the image on the right.



| i-Module | MIC-75M10 | MIC-75M11 | MIC-75M20 | MIC-75M20-01 | MIC-75M40 | MIC-75M13 | MIC-75S20 | MIC-73M20 | MIC-73M11 | MIC-73M13 |
|---|-----------------|-----------|---------------------|--------------|-----------|--------------------|-----------------------------|---------------------|-----------|--------------------|
| Slot 1 | PCIe x16 | PCIe x16 | PCIe x16 | PCIe x8 | PCIe x4 | PCIe x16 | PCIe x16 | PCIe x1 | PCIe x1 | PCIe x1 |
| Slot 2 | - | PCI | PCIe x4 | PCIe x8 | PCIe x8 | PCI | PCIe x4 | PCIe x1 | PCI | PCI |
| Slot 3 | - | - | - | - | PCIe x4 | PCI | - | - | - | PCI |
| Slot 4 | - | - | - | - | PCIe x4 | PCI | - | - | - | PCI |
| SATA Conn | - | - | - | - | - | - | 1 | - | - | - |
| SATA PWR | - | - | - | - | - | - | 1 | - | - | - |
| 2.5" Storage Bay | - | - | 1* | - | - | 2 | 2x Hot Swap + 2x Internal** | - | 1* | 2 |
| N.W. (kg) | 0.64 | - | 0.87 | - | - | 1.16 | 1.60 | - | 0.87 | 1.16 |
| G.W. (kg) | 1.71 | - | 2.02 | - | - | 2.47 | 2.98 | - | 2.02 | 2.47 |
| i-Module (W x H x D) | 24 x 192 x 230 | - | 50 x 192 x 230 | - | - | 90 x 192 x 230 | - | 50 x 192 x 230 | - | 90 x 192 x 230 |
| MIC-7000 + i-Module (W x H x D) | 97 x 192 x 230 | - | 123 x 192 x 230 | - | - | 163 x 192 x 230 | - | 123 x 192 x 230 | - | 163 x 192 x 230 |
| MIC-7700 + i-Module (W x H x D) | 101 x 192 x 230 | - | 127 x 192 x 230 | - | - | 167 x 192 x 230 | - | - | - | - |
| System Fan (Optional)*** | - | - | 4cm 98R17520000E | - | - | 8cm 98R1751300E | - | 4cm 98R17520000E | - | 8cm 98R1751300E |
| 12V _{DC} Conn | - | - | - | - | - | 1 | - | - | - | - |
| PCI/PCIe Card Max. Length (with fan) | - | - | - | - | - | 181mm | - | - | - | - |
| PCI/PCIe Card Max. Length (without fan) | - | - | - | - | - | 207mm | - | - | - | - |

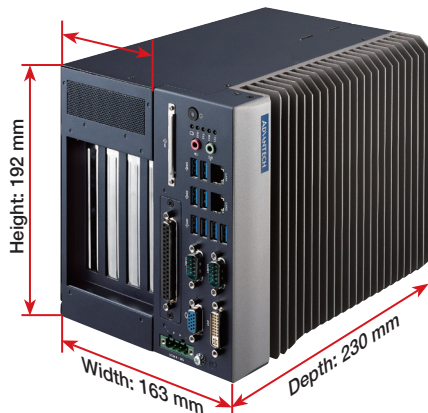
* Need to order 9891752010E

** MIC-7500 and MIC-7700H: 1x SATA Conn.; MIC-7700Q: 3x SATA Conn.; MIC-7900: 4x SATA Conn.

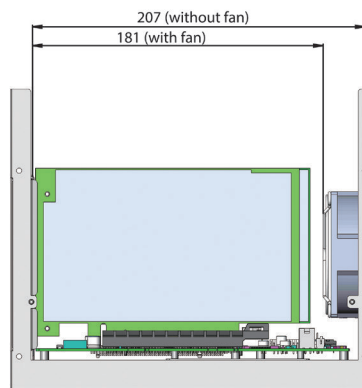
*** Suggest to add optional system fan if power consumption of add-on card is more than 45W for better thermal management.

Dimension Guide

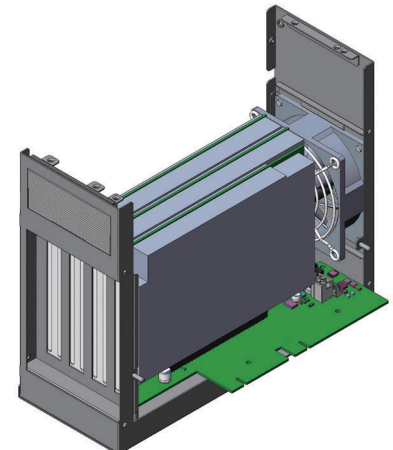
i-Module Width: 90 mm



Example: MIC-7500 + MIC-75M40



PCI/PCIe Card Max. Length Support

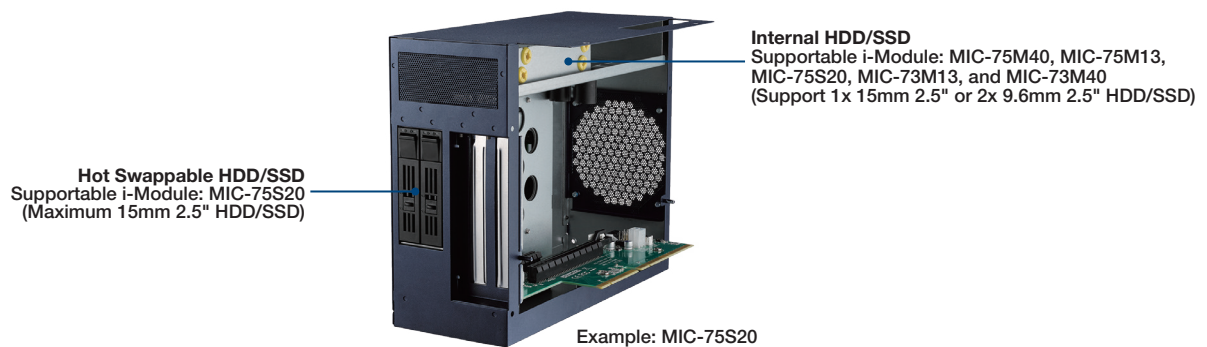


HDD / SSD Support Table

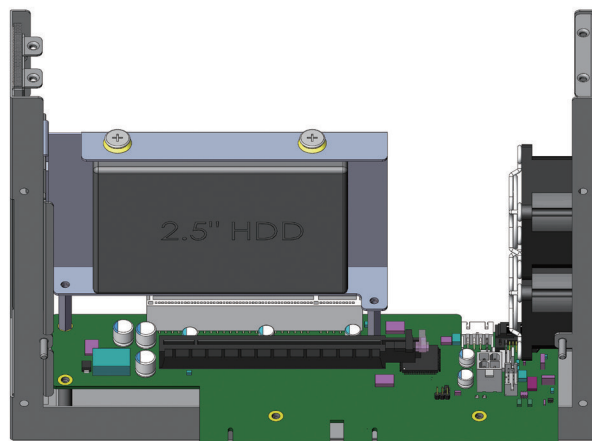
Every model of the MIC-7000 series can be installed with one HDD or SSD. With the i-Module, the numbers of supported HDD/SSD bay are as below:

| Model | In i-Module | In MIC-7000 | Max. No | Note |
|--|------------------------------|-------------|---------|---|
| MIC-75M10 | 0 | 1 | 1 | |
| MIC-75M20 MIC-75M20-01 MIC-75M11 MIC-73M20 MIC-73M11 | 1* | 1 | 2 | * Need to order 98R1752010E |
| MIC-75M40 MIC-75M13 MIC-73M13 | 2 | 1 | 3 | With MIC-7900 or MIC-7700Q, , it can support to 3 x HDD/SDDs. |
| MIC-75S20 | 2x Hot Swap + 2x Internal | 1 | 5 | With MIC-7900, it can support up to 5 x HDD/SDDs. With MIC-7700Q, it can support up to 4 x HDD/SDDs. |

Note: i-Module BUS has only one channel SATA signal between i-Module and MIC-7000 system.



2nd HDD bracket for 2-slot i-Module



Ordering information: 98R1752010E

Supportable i-Module: MIC-75M20, MIC-75M11, MIC-73M20, and MIC-73M11

Limitation: Slot 2 will be occupied

Ordering Information

| Part Number | Description |
|-----------------|--|
| MIC-75M13-00A1E | 4-slot expansion i-Module with 1 PCIe x16, 3 PCI |
| MIC-75M40-00A1E | 4-slot expansion i-Module with 1 PCIe x8, 3 PCIe x4 |
| MIC-75M11-00A1E | 2-slot expansion i-Module with 1 PCIe x16, 1 PCI |
| MIC-75M20-00A1E | 2-slot expansion i-Module with 1 PCIe x16, 1 PCIe x4 |
| MIC-75M20-01A1E | 2-slot expansion i-Module with 2 PCIe x 8 |
| MIC-75M10-00A1 | 1-slot expansion i-Module with 1 PCIe x16 |
| MIC-75S20-00A1E | 2-slot expansion i-Module with 1 PCIe x16, 1 PCIe x4, 2 2.5" HDD bay |
| MIC-73M13-00A1E | 4-slot expansion i-Module with 1 PCIe x1, 3 PCI |
| MIC-73M11-00A1E | 2-slot expansion i-Module with 1 PCIe x1, 1 PCI |
| MIC-73M20-00A1E | 2-slot expansion i-Module with 2 PCIe x1 |

Optional Accessories

| Part Number | Description |
|-------------|--|
| 98R1751300E | 8-cm fan for 4-slot i-Modules |
| 98R1752000E | 2 x 4-cm fan for 2-slot i-Modules |
| 98R1752010E | Secondary HDD bracket (for 2-slot i-Modules) |