

# MIC-7700

## Compact Fanless System with 6<sup>th</sup>/7<sup>th</sup> Gen Intel® Core™ i CPU Socket (LGA 1151)



### Features

- Intel® 6<sup>th</sup>/7<sup>th</sup> Gen Core™ i CPU socket-type (LGA1151) with Intel® Q170/H110 chipset
- Wide operating temperature (-10 ~ 50 °C)
- VGA and DVI output
- 2 x GigaLAN and 8 x USB 3.0
- 1 x 2.5" HDD/SSD, 1 x CFast, and 1 x mSATA
- 2 x RS-232/422/485 and 4 x RS232 serial ports
- 9 ~ 36 V<sub>DC</sub> input power range
- IP40 dust proof for deployment in harsh environment
- Supports FlexIO and iDoor technology, flexible configure additional HDMI, DVI, DIO, Remote switch IO
- Supports Advantech i-Modules
- Supports Advantech SUSI API and embedded software APIs
- Supports Intel® vPro™/AMT and TPM technologies
- Microsoft Azure Certified



### Specifications

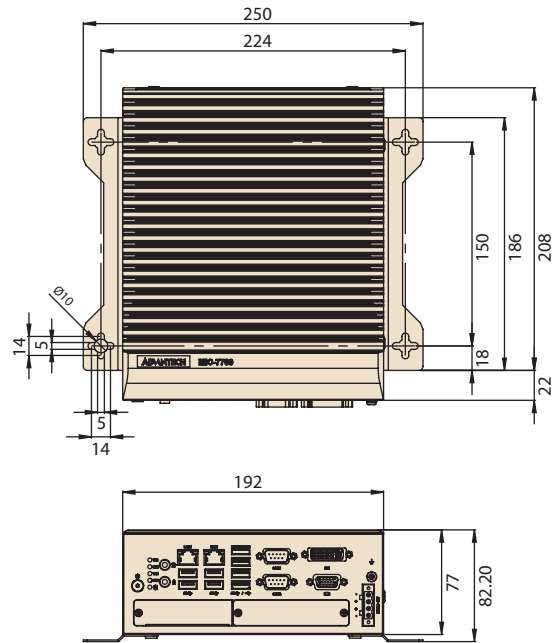
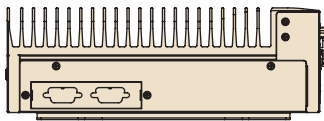
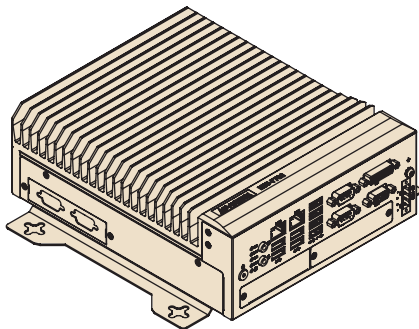
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|------------------------------------------------------------------|---------------------|--------------------------------------------------------------------------------------------------------------------------------------------------|-----------|-----------|---------|
| 6 <sup>th</sup> /7 <sup>th</sup> Generation Processor* (TDP 35W) | CPU                 | i7-6700TE                                                                                                                                        | i5-6500TE | i3-6100TE | G4400TE |
|                                                                  | Core Number         | 4                                                                                                                                                | 4         | 2         | 2       |
|                                                                  | Base Frequency      | 2.4 GHz                                                                                                                                          | 2.3 GHz   | 2.7 GHz   | 2.9 GHz |
|                                                                  | Max Turbo Frequency | 3.4 GHz                                                                                                                                          | 3.3 GHz   |           |         |
|                                                                  | L3 Cache            | 8 MB                                                                                                                                             | 6 MB      | 4 MB      | 3 MB    |
|                                                                  | Temperature         | -10 ~ 50 °C (w/ industrial SSD, 0.7 m/s air flow)                                                                                                |           |           |         |
|                                                                  | Chipset             | Q170/H110                                                                                                                                        |           |           |         |
|                                                                  | BIOS                | AMI 128Mb SPI Flash                                                                                                                              |           |           |         |
| 6 <sup>th</sup> /7 <sup>th</sup> Generation Processor* (TDP 65W) | CPU                 | i5-7500                                                                                                                                          | i3-7101E  | i5-6500   | i3-6100 |
|                                                                  | Core Number         | 4                                                                                                                                                | 2         | 4         | 2       |
|                                                                  | Base Frequency      | 3.4 GHz                                                                                                                                          | 3.9 GHz   | 3.2 GHz   | 3.7 GHz |
|                                                                  | Max Turbo Frequency | 4.0GHz                                                                                                                                           |           | 3.6GHz    |         |
|                                                                  | L3 Cache            | 6 MB                                                                                                                                             | 3 MB      | 6 MB      | 4 MB    |
|                                                                  | Temperature         | -10 ~ 40 °C (w/ industrial SSD, 0.7 m/s air flow)                                                                                                |           |           |         |
|                                                                  | Chipset             | Q170/H110                                                                                                                                        |           |           |         |
|                                                                  | BIOS                | AMI 128Mb SPI Flash                                                                                                                              |           |           |         |
| Memory                                                           | Technology          | Dual-channel DDR4 2133/2400 MHz (without ECC)                                                                                                    |           |           |         |
|                                                                  | Socket              | 2 x 260-pin DDR4 SODIMM (up to 16 GB per socket)                                                                                                 |           |           |         |
|                                                                  | Maximum Capacity    | 32GB                                                                                                                                             |           |           |         |
| Display                                                          | Chipset             | 7 <sup>th</sup> Gen. CPU: Intel HD Graphics 630, supports DirectX 12<br>6 <sup>th</sup> Gen. CPU: Intel HD Graphics 530/510, supports DirectX 12 |           |           |         |
|                                                                  | VGA                 | 1 x DB15, up to 2048 x 1152 maximum resolution                                                                                                   |           |           |         |
|                                                                  | DVI                 | 1 x DVI, up to 1920 x 1080 maximum resolution @ 30Mhz                                                                                            |           |           |         |
|                                                                  | Multiple Display    | Q170: 3 x independent displays (with Flex I/O for 2nd DVI, 1 x HDMI or 1 x DP)<br>H110: 2 x independent displays                                 |           |           |         |
| Ethernet                                                         | Controller          | Q170 LAN1: Intel® I219LM, LAN2: Intel® i210IT<br>H110 LAN1: Intel® I219V, LAN2: Intel® i210IT                                                    |           |           |         |
|                                                                  | Interface           | 2 x RJ45                                                                                                                                         |           |           |         |
| Storage                                                          | HDD                 | 1 x 2.5" HDD/SSD (up to 2 x 2.5" SSD by optional kit; 2 x 3.5" HDD by i-Module)                                                                  |           |           |         |
|                                                                  | mSATA               | 1                                                                                                                                                |           |           |         |
|                                                                  | RAID                | 0/1/5/10 (MIC-7700Q only)                                                                                                                        |           |           |         |
|                                                                  | SATA Conn.          | Q170: 3 x SATA signal, 3 x SATA power<br>H110: 1 x SATA signal, 1x SATA power                                                                    |           |           |         |
| I/O                                                              | USB                 | Q170: 8 x USB 3.0 and 1 x internal USB 2.0<br>H110: 4 x USB 3.0 and 4 x USB 2.0                                                                  |           |           |         |
|                                                                  | Serial Port         | 2 x DB9, 2 x RS-232/422/485 support auto flow control; 4 x RS-232 (with expansion cable)                                                         |           |           |         |
|                                                                  | Audio               | 2 (1 x line out and 1 x mic in)                                                                                                                  |           |           |         |
| Expansion                                                        | Module              | Supports Advantech i-Modules                                                                                                                     |           |           |         |
|                                                                  | Mini PCIe           | Q170: 1 x mini PCIe (via USIM), 1 x mini PCIe/mSATA<br>H110: 1 x mini PCIe (via USIM), 1 x mSATA                                                 |           |           |         |
| LED and Switch                                                   | LED                 | 2 (1 x Storage and 1 x Power), 4 for COM1 TX/RX and COM2 TX/RX                                                                                   |           |           |         |
|                                                                  | Button              | 1 x Power on/off switch                                                                                                                          |           |           |         |
| Power                                                            | Type                | ATX/AT                                                                                                                                           |           |           |         |
|                                                                  | Input Voltage       | 9 ~ 36 V <sub>DC</sub>                                                                                                                           |           |           |         |
|                                                                  | Power consumption   | 32.1W<br>116W                                                                                                                                    |           |           |         |
| Watchdog Timer                                                   | Output              | System reset                                                                                                                                     |           |           |         |
|                                                                  | Interval            | Programmable 1 ~ 255 sec/min                                                                                                                     |           |           |         |

## Specifications (Cont.)

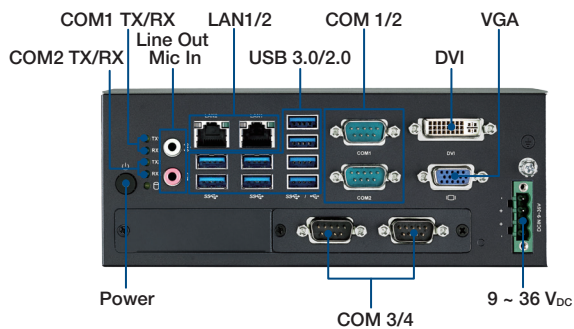
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|----------------|------------------------|-----------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------|------------------------------|
| Environment    | Temperature            | 65W CPU w/ industrial wide-temp SSD<br>-10 ~ 40 °C with 0.7 m/s air flow                                                          | 35W CPU w/ industrial wide-temp SSD<br>-10 ~ 50 °C with 0.7 m/s air flow | Non-operating<br>-40 ~ 85 °C |
|                | Humidity               | 95% @ 40 °C (non-condensing)                                                                                                      |                                                                          |                              |
|                | Vibration              | With SSD: 3 Grms @ 5 ~ 500 Hz, random, 1 hr/axis<br>With 2.5" HDD: 1 Grms @ 5 ~ 500 Hz, random, 1 hr/axis<br>2G                   |                                                                          |                              |
|                | Shock                  | With SSD: 20G, IEC-68-2-27, half-sine wave, 11 ms duration<br>50G 11 ms                                                           |                                                                          |                              |
| Mechanical     | Dimensions (W x H x D) | 77 x 192 x 230 mm (3.07" x 7.55" x 9.05")                                                                                         |                                                                          |                              |
|                | Weight                 | 2.8 kg (6.17 lbs)                                                                                                                 |                                                                          |                              |
|                | Installation           | Desktop/wall mount                                                                                                                |                                                                          |                              |
| Certifications | EMC                    | CE/FCC Class A, CCC, BSMI                                                                                                         |                                                                          |                              |
|                | Safety                 | UL, CCC, BSMI                                                                                                                     |                                                                          |                              |
| OS Support     |                        | 7th Gen. CPU: Windows 10, Windows 10 IoT<br>6th Gen. CPU: Windows 10, Windows 10 IoT, Windows 8.1 (64 bit), Windows 7<br>Linux OS |                                                                          |                              |

## Dimensions

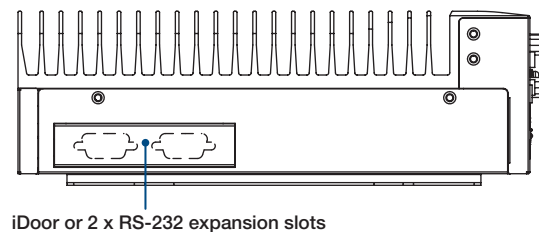
Unit: mm



## Front View



## Side View



## Ordering Information

| Part Number    | VGA | DVI | 2.5" HDD/SSD | mSATA | USB 3.0 | USB 2.0 | GbE | COM                   | PCIe                 | Power                 |
|----------------|-----|-----|--------------|-------|---------|---------|-----|-----------------------|----------------------|-----------------------|
| MIC-7700Q-00B1 | 1   | 1   | 1            | 1     | 8       | 0       | 2   | 4, up to 6 (Optional) | i-Module (optional)  | 9 ~ 36V <sub>DC</sub> |
| MIC-7700H-00B1 | 1   | 1   | 1            | 1     | 4       | 4       | 2   | 4, up to 6 (Optional) | i-Module (optional)* | 9 ~ 36V <sub>DC</sub> |

\*MIC-7700H does not support MIC-75M40, MIC-75M20-01 and MIC-75G30

## Packing List

| Part Number    | Description                                   | Quantity |
|----------------|-----------------------------------------------|----------|
| MIC-7700       | MIC-7700 bare system                          | 1        |
| 2061770010     | Driver CD                                     | 1        |
| 2001770030     | Startup manual EN/CN/TC for MIC-7700 1st Ed   | 1        |
| 1652003234     | 4-pin Phoenix power connector                 | 1        |
| 1960070543T005 | Mounting bracket                              | 2        |
| 1700013095-01  | SATA cable                                    | 1        |
| 1700024372-01  | SATA power cable                              | 1        |
| 1701200220     | Dual DB9 port cable (for COM5/COM6 expansion) | 1        |
| 2170000093-01  | CPU thermal grease                            | 1        |
| 1990019498N000 | RAM thermal pad                               | 2        |

## Optional i-Modules\*

| Part Number      | Description                                                                                       |
|------------------|---------------------------------------------------------------------------------------------------|
| MIC-75M10-00A2   | 1-slot expansion module (1 x PCIe)                                                                |
| MIC-75M11-00B1   | 2-slot expansion module (1 x PCIe and 1 x PCI slots)                                              |
| MIC-75M13-00B1   | 4-slot expansion module (1 x PCIe and 3 x PCI slots)                                              |
| MIC-75M20-00C1   | 2-slot expansion module (2 x PCIe slots)                                                          |
| MIC-75M20-01A2** | 2-slot expansion module (2 x PCIe slots)                                                          |
| MIC-75M40-00A2** | 4-slot expansion module (4 x PCIe slots)                                                          |
| MIC-75G20-10C1   | GPU card expansion module (2 x PCIe and 2 x removable 2.5" storage bay)                           |
| MIC-75G30-00C1** | Dual GPU card expansion module (3 x PCIe and 2 x removable 2.5" storage bay, 1 x HDMI, 1 x DP)    |
| MIC-75GF10-00A1  | MXM GPU expansion module (1 x MXM, 1 x PCIe and 2 x removable 2.5" storage bay, 1 x HDMI, 3 x DP) |
| MIC-75S00-00A1   | 2 x removable 2.5" storage bay                                                                    |
| MIC-75S20-00A2   | 2-slot expansion storage module (2 x PCIe and 2 x removable 2.5" storage bay)                     |
| 98R17520301      | 2 x 3.5" HDD kit                                                                                  |

\*Please refer to i-Module datasheet for more detail.

\*\* Q170 SKU only

## Embedded OS

| Part Number    | Description                         |
|----------------|-------------------------------------|
| 2070015330     | img WES7P MIC-7700H 64b 1701 10 MUI |
| 2070015331     | img WES7P MIC-7700Q 64b 1701 10 MUI |
| 20706WX9HS0008 | img W10 19HL MIC-7700H 64b 1809 ENU |
| 20706WX9VS0010 | img W10 19VL MIC-7700H 64b 1809 ENU |
| 20706WX9ES0013 | img W10 19EL MIC-7700H 64b 1809 ENU |
| 20706WX9HS0007 | img W10 19HL MIC-7700Q 64b 1809 ENU |
| 20706WX9VS0009 | img W10 19VL MIC-7700Q 64b 1809 ENU |
| 20706WX9ES0012 | img W10 19EL MIC-7700Q 64b 1809 ENU |

## Optional Accessories

| Part Number         | Description                                               |
|---------------------|-----------------------------------------------------------|
| <b>Adaptor</b>      |                                                           |
| 96PSA-A230W24P4-3*  | ADP A/D 100-240V 230W 24V C14 TERMINAL BLOCK 4P           |
| 96PSA-A150W19P4-3   | ADP A/D 100-240V 150W 19V C14 TERMINAL BLOCK 4P           |
| 1702002600          | Power cord (USA) UL/CSA, 3-pin, 10A, 125V, 1.83 M, 180 D  |
| 1700000237-31       | Power Cord PSE 3P 12A 125V 183cm                          |
| 1702002605          | Power Cord (EU), 3-pin, 10A, 250V 1.83M, 90D              |
| <b>Din Rail PSU</b> |                                                           |
| 96PSD-A240W24-MN    | A/D 100-240V 240W 24V NDR DIN RAIL                        |
| 1700031170-01       | DC-DC power cord, A cable TEM*4/TEM*4 UL2464 18AWG 150cm  |
| 1700029720-01       | AC-DC power cord (US), M cable AC CONN 3P 183cm           |
| 1700030520-01       | AC-DC power cord (CN), M cable conn 3P CCC 10A 250V 150cm |
| 1700034561-01       | AC-DC power cord (EU), M cable Type E 3P/TEMx3 80CM       |

\* Please use 230W adaptor when i-Module is added.

Note:

1. MIC-7700 supports Advantech iDoor modules (both MOS and PCM series), excluding the PoE model.
2. The **PCM** series module requires a bracket (P/N: **1960065854N021**) that must be ordered separately.

## Optional Flex I/O\* & Kits

| Part Number         | Description                                                 |
|---------------------|-------------------------------------------------------------|
| <b>Flex I/O</b>     |                                                             |
| AIIS-DIO32-00A1E**  | AIIS GPIO module (32 bit)                                   |
| PCA-TPM-00B1E       | TPM 2.0 module                                              |
| 98R17500001         | MIC DVI FIO                                                 |
| 98R17500101         | MIC HDMI/Remote power on/off FIO                            |
| 98R17500301         | MIC HDMI kit FIO                                            |
| 98R17500401         | MIC Remote power on/off FIO                                 |
| 98R17500801         | MIC Reset/Remote power on/off/5VDC kit FIO                  |
| 98R17500901         | MIC GPIO kit FIO                                            |
| 98R17501001         | MIC DP kit FIO                                              |
| 98R1790040E***      | MIC Dual LAN FIO                                            |
| <b>Storage Kit</b>  |                                                             |
| 98R1752010E         | 2nd 2.5" HDD/SSD kit (used in 2-slot i-Module)              |
| 98R1752020E         | 2 x 2.5" SSD kit (Thickness: 7mm, used insides of MIC-7700) |
| <b>Mounting Kit</b> |                                                             |
| 98R17500210         | MIC Din Rail Mounting kit                                   |
| 98R17500501         | MIC Wall Mounting kit                                       |
| <b>Fan Kit</b>      |                                                             |
| 98R17501303****     | MIC Fan Kit                                                 |

\* Please refer to Flex I/O datasheet for more detail.

\*\* Can only be placed in the small FIO location and can't be installed with other flex IO.

\*\*\* for MIC-7700Q (Q170) Sku only. Can't support PCA-TPM-00B1E when install 98R1790040E.

\*\*\*\*Only compatible with the MIC-770 series system without i-module.

Note: Decorative cover for regular Flex I/O P/N: 1960068779N004.