

# MIC-770

## Compact Fanless System with 8<sup>th</sup> Gen Intel® Core™ i CPU Socket (LGA 1151)

**NEW**



### Features

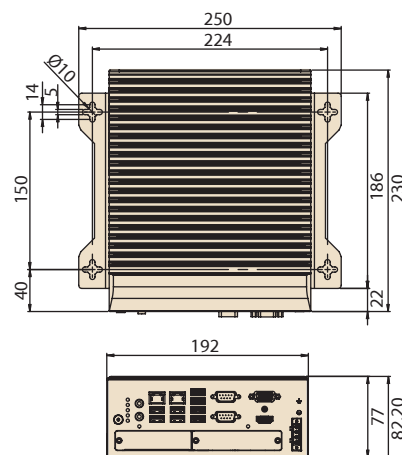
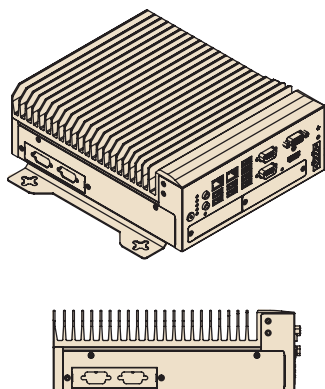
- Intel® 8<sup>th</sup> Gen Core™ i CPU socket-type (LGA1151) with Intel® Q370/H310 chipset
- Wide operating temperature (-10 ~ 50 °C)
- VGA and HDMI output
- 2 x GigaLAN, 2 x USB 3.1 and 6 x USB 3.0
- 2 x RS-232/422/485 and 4 x RS232 serial ports (Optional)
- 1 x 2.5" HDD/SSD, and 1 x mSATA
- 9 ~ 36 V<sub>DC</sub> input power range
- Supports FlexIO and iDoor technology, flexible configure additional HDMI, DVI, Comport, DIO, Remote switch IO
- Supports Advantech i-Modules
- Supports Advantech SUSI-API and embedded software APIs



### Specifications

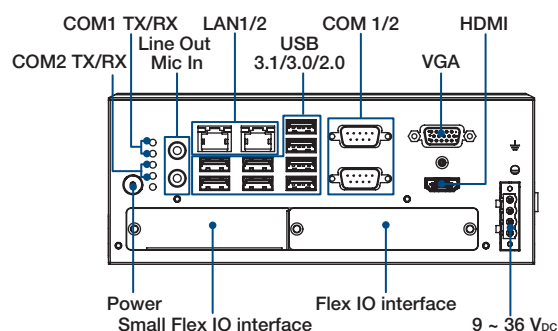
|                                                |                        |                                                                                                    |          |         |        |
|------------------------------------------------|------------------------|----------------------------------------------------------------------------------------------------|----------|---------|--------|
| 8 <sup>th</sup> Generation Processor (TDP 35W) | CPU                    | i7-8700T                                                                                           | i5-8500T |         |        |
|                                                | Core/Thread number     | 6/12                                                                                               | 6/6      |         |        |
|                                                | Base Frequency         | 2.4GHz                                                                                             | 2.1GHz   |         |        |
|                                                | Max Turbo Frequency    | 4.0GHz                                                                                             | 3.5GHz   |         |        |
|                                                | L3 Cache               | 12MB                                                                                               | 9MB      |         |        |
|                                                | Temperature            | -10 ~ 50 °C (with SSD)                                                                             |          |         |        |
|                                                | Chipset                | Q370/H310                                                                                          |          |         |        |
| 8 <sup>th</sup> Generation Processor (TDP 65W) | BIOS                   | AMI 256Mb SPI Flash                                                                                |          |         |        |
|                                                | CPU                    | i7-8700                                                                                            | i5-8500  | i3-8100 | G5400  |
|                                                | Core/Thread number     | 6/12                                                                                               | 6/6      | 4/4     | 2/4    |
|                                                | Base Frequency         | 3.2GHz                                                                                             | 3.0GHz   | 3.6GHz  | 3.7GHz |
|                                                | Max Turbo Frequency    | 4.6GHz                                                                                             | 4.1GHz   |         | 2.9GHz |
|                                                | L3 Cache               | 12MB                                                                                               | 9MB      | 6MB     | 4MB    |
|                                                | Temperature            | -10 ~ 40 °C (with SSD)                                                                             |          |         |        |
| Memory                                         | Chipset                | Q370/H310                                                                                          |          |         |        |
|                                                | BIOS                   | AMI 256Mb SPI Flash                                                                                |          |         |        |
|                                                | Technology             | Dual-channel DDR4 2400/2666 MHz (without ECC)                                                      |          |         |        |
| Display                                        | Socket                 | 2 x 260-pin DDR4 SODIMM (up to 16 GB per socket)                                                   |          |         |        |
|                                                | Maximum Capacity       | 32GB                                                                                               |          |         |        |
|                                                | Chipset                | Q370: Intel® HD Graphics 630, supports DirectX 12                                                  |          |         |        |
| Ethernet                                       | VGA                    | H310: Intel® HD Graphics 610, supports DirectX 12                                                  |          |         |        |
|                                                | HDMI                   | 1 x DB15, up to 1920 x 1200 maximum resolution                                                     |          |         |        |
|                                                | Multiple Display       | 1 x HDMI, up to 4096 x 2160@30Hz (with optional expansion cable for 2nd HDMI or 1 x DVI connector) |          |         |        |
|                                                |                        | Q370: 3 x independent displays (third display output via optional cable)                           |          |         |        |
| Storage                                        |                        | H310: 2 x independent displays                                                                     |          |         |        |
|                                                | Controller             | Q370 LAN1: Intel® i219LM, LAN2: Intel® i210IT                                                      |          |         |        |
| I/O                                            | Interface              | H310 LAN1: Intel® i219V, LAN2: Intel® i210IT                                                       |          |         |        |
|                                                | HDD                    | 2 x RJ45                                                                                           |          |         |        |
| Expansion                                      | mSATA                  | 1 x 2.5" HDD/SSD                                                                                   |          |         |        |
|                                                | RAID                   | 0/1/5/10 (MIC-770Q only)                                                                           |          |         |        |
| LED and Switch                                 | USB                    | Q370: 2 x USB3.1, 6 x USB3.0 and 1 x internal USB 2.0                                              |          |         |        |
|                                                | Serial Port            | H310: 4 x USB 3.0 and 4 x USB 2.0                                                                  |          |         |        |
| Power                                          | Audio                  | 2 x DB9, 2 x RS-232/422/485 support auto flow control; 4 x RS-232 (Optional)                       |          |         |        |
|                                                | Module                 | 2 (1 x line out and 1 x mic in)                                                                    |          |         |        |
| Watchdog Timer                                 | Mini PCIe              | Supports Advantech i-Modules                                                                       |          |         |        |
|                                                | LED                    | Q370: 1 x mini PCIe (via USIM), 1 x mini PCIe/mSATA                                                |          |         |        |
| Environment                                    | Button                 | H310: 1 x mini PCIe (via USIM), 1 x mSATA                                                          |          |         |        |
|                                                | Remote Switch          | 2 (1 x Storage and 1 x Power), 4 for COM1 TX/RX and COM2 TX/RX                                     |          |         |        |
| Mechanical                                     | Type                   | 1 x Power on/off switch                                                                            |          |         |        |
|                                                | Input Voltage          | Yes, 2pin terminal block (Optional)                                                                |          |         |        |
| Certifications                                 | Power consumption      | ATX/AT                                                                                             |          |         |        |
|                                                | Maximum                | 9 ~ 36 V <sub>DC</sub>                                                                             |          |         |        |
| Environment                                    | Temperature            | Typical: 32.062W                                                                                   |          |         |        |
|                                                | Humidity               | Maximum: 116.002W                                                                                  |          |         |        |
| Mechanical                                     | Vibration              | System reset                                                                                       |          |         |        |
|                                                | Shock                  | Interval                                                                                           |          |         |        |
| Mechanical                                     | Dimensions (W x H x D) | Programmable 1 ~ 255 sec/min                                                                       |          |         |        |
|                                                | Weight                 | 65W CPU w/ industrial SSD                                                                          |          |         |        |
| Certifications                                 | Installation           | 35W CPU w/ industrial SSD                                                                          |          |         |        |
|                                                | EMC                    | Non-operating                                                                                      |          |         |        |
| Certifications                                 | Safety                 | -10 ~ 50 °C                                                                                        |          |         |        |
|                                                |                        | -40 ~ 85 °C                                                                                        |          |         |        |
| Certifications                                 |                        | 95% @ 40 °C (non-condensing)                                                                       |          |         |        |
|                                                |                        | With SSD: 3 Grms @ 5 ~ 500 Hz, random, 1 hr/axis                                                   |          |         |        |
| Certifications                                 |                        | With 2.5" HDD: 1 Grms @ 5 ~ 500 Hz, random, 1 hr/axis                                              |          |         |        |
|                                                |                        | 2G                                                                                                 |          |         |        |
| Certifications                                 |                        | With SSD: 20G, IEC-68-2-27, half-sine wave, 11 ms duration                                         |          |         |        |
|                                                |                        | 50G 11 ms                                                                                          |          |         |        |
| Certifications                                 |                        | 77 x 192 x 230 mm (3.07" x 7.55" x 9.05")                                                          |          |         |        |
|                                                |                        | 2.8 kg (6.17 lbs)                                                                                  |          |         |        |
| Certifications                                 |                        | Desktop/wall mount                                                                                 |          |         |        |
|                                                |                        | CE/FCC Class A, CCC, BSMI                                                                          |          |         |        |
| Certifications                                 |                        | CB/UL, CCC, BSMI                                                                                   |          |         |        |
|                                                |                        |                                                                                                    |          |         |        |

## Dimensions

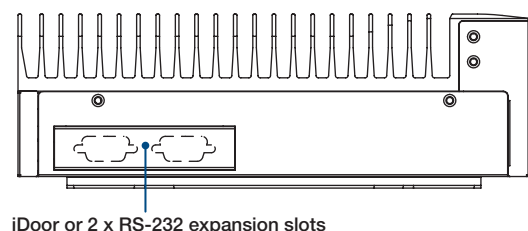


Unit: mm

## Front View



## Side View



## Ordering Information

| Part Number   | VGA | HDMI | 2.5" HDD/SSD | mSATA | USB 3.1 | USB 3.0 | USB 2.0 | GbE | COM                   | PCIe                 | Power                 |
|---------------|-----|------|--------------|-------|---------|---------|---------|-----|-----------------------|----------------------|-----------------------|
| MIC-770Q-00A1 | 1   | 1    | 1            | 1     | 2       | 6       | 0       | 2   | 2, up to 6 (Optional) | i-Module (optional)  | 9 ~ 36V <sub>DC</sub> |
| MIC-770H-00A1 | 1   | 1    | 1            | 1     | 0       | 4       | 4       | 2   | 2, up to 6 (Optional) | i-Module (optional)* | 9 ~ 36V <sub>DC</sub> |

\*MIC-770H does not support MIC-75M40 or MIC-75M20-01

## Packing List

| Part Number    | Description                        |
|----------------|------------------------------------|
| MIC-770        | MIC-770 bare system                |
| 2041077000     | MIC-770 startup manual (ENG+TC+SC) |
| 1652003234     | 4-pin Phoenix power connector      |
| 1960070543T001 | 2 x Mounting bracket               |
| 1700013095     | SATA cable                         |
| 1700024372-01  | SATA power cable                   |

## Optional i-Modules\*\*

| Part Number         | Description                                                                   |
|---------------------|-------------------------------------------------------------------------------|
| MIC-75M40 (Q370)    | 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 (Q370) | 2-slot expansion module (2 x PCIe slots)                                      |
| MIC-75M11           | 2-slot expansion module (1 x PCIe and 1 x PCI slots)                          |
| MIC-75M10           | 1-slot expansion module (1 x PCIe)                                            |
| MIC-75G20           | GPU Card expansion module (2 x PCIe and 2 x removable 2.5" storage bay)       |
| 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.

## 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        |
| AIIS-DIO32-00A1E *** | AIIS GPIO module (32 bit)                                |
| PCA-TPM-00B1E        | TPM 2.0 module                                           |
| 98R1750000E          | MIC DVI kit FIO                                          |
| 98R1750030E          | MIC HDMI kit FIO                                         |
| 98R1750060E          | MIC COMport kit FIO                                      |
| 98R1750070E          | MIC Remote Switch kit for SFIO                           |
| 98R1750080E          | MIC Reset/Remote Switch/5VDC kit FIO                     |
| 98R1750090E          | MIC GPIO kit                                             |
| 98R1750020E          | MIC Din Rail Mounting kit                                |
| 98R1750050E          | MIC Wall Mounting kit                                    |

Note:

\* Suggest to use for MIC-770 with i-Module added.

\*\* Suggest to use for MIC-770 without i-Module added.

\*\*\* AIIS-DIO32 requires a DB37 bracket (P/N: 1960068787N001)

1. MIC-770 supports Advantech iDoor modules (both MOS and PCM series), excluding the PoE model.

2. The PCM series module requires a bracket (P/N: 196006584N001) that must be ordered separately.

## Embedded OS

| Part Number    | Description                                              |
|----------------|----------------------------------------------------------|
| 20706WX9HS0005 | img MIC-770H Win10 IOT Enterprise 2019 LTSC 64b high end |
| 20706WX9VS0007 | img MIC-770H Win10 IOT Enterprise 2019 LTSC 64b value    |
| 20706WX9ES0010 | img MIC-770H Win10 IOT Enterprise 2019 LTSC 64b entry    |
| 20706WX9HS0004 | img MIC-770Q Win10 IOT Enterprise 2019 LTSC 64b high end |
| 20706WX9VS0006 | img MIC-770Q Win10 IOT Enterprise 2019 LTSC 64b value    |
| 20706WX9ES0009 | img MIC-770Q Win10 IOT Enterprise 2019 LTSC 64b entry    |



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- Поставка специализированных компонентов (Xilinx, Altera, Analog Devices, Intersil, Interpoint, Microsemi, Aeroflex, Peregrine, Syfer, Eurofarad, Texas Instrument, Miteq, Cobham, E2V, MA-COM, Hittite, Mini-Circuits, General Dynamics и др.);

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- Поставка образцов и прототипов;
- Техническая поддержка проекта;
- Защита от снятия компонента с производства.



#### Как с нами связаться

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