

# MIC-770

## Compact Fanless System with 8<sup>th</sup>/9<sup>th</sup> Gen Intel® Core™ i CPU Socket (LGA 1151)

**NEW**



### Features

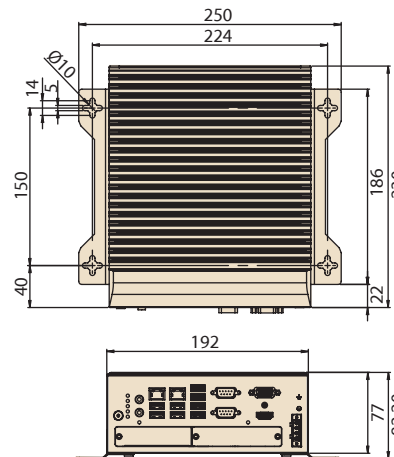
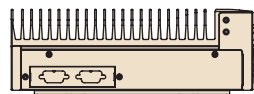
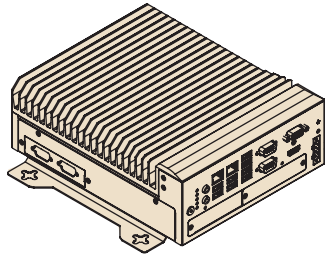
- Intel® 8<sup>th</sup>/9<sup>th</sup> Gen Core™ i CPU socket-type (LGA1151) with Intel® Q370/H310 chipset
- Wide operating temperature (-10 ~ 50 °C)
- VGA and HDMI output
- 2 x GigaLAN, 2 x USB 3.1 and 6 x USB 3.0
- 2 x RS-232/422/485 and 4 x RS232 serial ports (Optional)
- 1 x 2.5" HDD/SSD, and 1 x 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

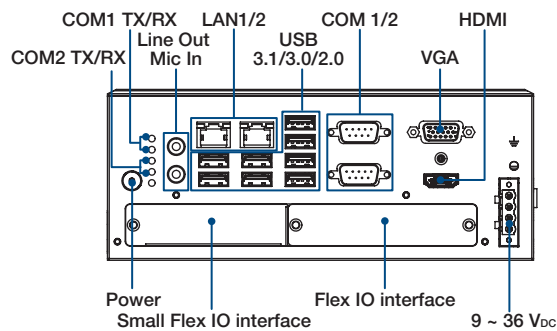
	CPU	I7-9700TE	I5-9500TE	I3-9100TE	I7-8700T	I5-8500T				
8 <sup>th</sup> /9 <sup>th</sup> Generation Processor (TDP 35W)	Core/Thread number	8/8	6/6	4/4	6/12	6/6				
	Base Frequency	1.8GHz	2.2GHz	2.2GHz	2.4GHz	2.1GHz				
	Max Turbo Frequency	3.8GHz	3.6GHz	3.2GHz	4.0GHz	3.5GHz				
	L3 Cache	12MB	9MB	6MB	12MB	9MB				
	Temperature	-10 ~ 50 °C (with SSD) (w/ industrial SSD, 0.7 m/s air flow)								
	Chipset	Q370/H310								
8 <sup>th</sup> /9 <sup>th</sup> Generation Processor (TDP 65W)	BIOS	AMI 256Mb SPI Flash								
	CPU	I7-9700E	I5-9500E	I3-9100E	I7-8700	I5-8500	I3-8100	G5400	G4900	
	Core/Thread number	8/8	6/6	4/4	6/12	6/6	4/4	2/4	2/2	
	Base Frequency	2.6GHz	3.0GHz	3.1GHz	3.2GHz	3.0GHz	3.6GHz	3.7GHz	2.9GHz	
	Max Turbo Frequency	4.4GHz	4.2GHz	3.7GHz	4.6GHz	4.1GHz	9MB	6MB	4MB	2MB
	L3 Cache	12MB	8MB	6MB	12MB	9MB	6MB	4MB	2MB	
Temperature	-10 ~ 40 °C (with SSD) (w/ industrial SSD, 0.7 m/s air flow)									
Chipset	Q370/H310									
BIOS	AMI 256Mb SPI Flash									
Memory	Technology	Dual-channel DDR4 2400/2666 MHz (without ECC)								
	Socket	2 x 260-pin DDR4 SODIMM (up to 32GB per socket)								
	Maximum Capacity	64GB								
Display	Chipset	Q370: Intel® HD Graphics 630, supports DirectX 12 H310: Intel® HD Graphics 610, supports DirectX 12								
	VGA	1 x DB15, up to 1920 x 1200 maximum resolution								
	HDMI	1 x HDMI, up to 4096 x 2160@30Hz (with optional expansion cable for 2nd HDMI or 1 x DVI connector)								
	Multiple Display	Q370: 3 x independent displays (third display output via optional cable) H310: 2 x independent displays								
Ethernet	Controller	Q370 LAN1: Intel® I219LM, LAN2: Intel® I210IT H310 LAN1: Intel® I219V, LAN2: Intel® I210IT								
	Interface	2 x RJ45								
Storage	HDD	1 x 2.5" HDD/SSD								
	mSATA	1								
	RAID	0/1/5/10 (MIC-770Q only)								
I/O	USB	Q370: 2 x USB3.1, 6 x USB3.0 and 1 x internal USB 2.0 H310: 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 (Optional)								
	Audio	2 (1 x line out and 1 x mic in)								
Expansion	Module	Supports Advantech i-Modules								
	Mini PCIe	Q370: 1 x mini PCIe (via USIM), 1 x mini PCIe/mSATA H310: 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								
	Remote Switch	Yes, 2pin terminal block (Optional)								
Power	Type	ATX/AT								
	Input Voltage	9 ~ 36 V <sub>DC</sub>								
	Power consumption	Typical: 32.062W Maximum: 116.002W								
Watchdog Timer	Output	System reset								
	Interval	Programmable 1 ~ 255 sec/min								
Environment	Temperature	65W CPU w/ industrial SSD -10 ~ 40 °C with 0.7 m/s air flow			35W CPU w/ industrial SSD -10 ~ 50 °C with 0.7 m/s air flow		Non-operating -40 ~ 85 °C			
	Humidity	95% @ 40 °C (non-condensing)								
	Vibration	With SSD: 3 Grms @ 5 ~ 500 Hz, random, 1 hr/axis With 2.5" HDD: 1 Grms @ 5 ~ 500 Hz, random, 1 hr/axis								
	Shock	With SSD: 20G, IEC-68-2-27, half-sine wave, 11 ms duration								
		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	CB/UL, CCC, BSMI								
OS Support		Windows 10, Windows 10 IoT, Windows Server 2016/2019 (with Win 10 drivers), Linux OS								

## Dimensions

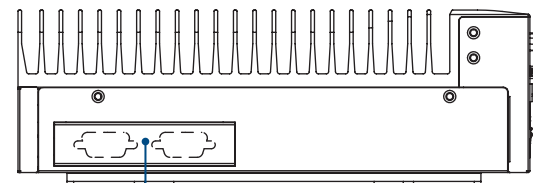


Unit: mm

## Front View



## Side View



iDoor or 2 x RS-232 expansion slots

## 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 ~ 36Vdc
MIC-770H-00A1	1	1	1	1	0	4	4	2	2, up to 6 (Optional)	i-Module (optional)*	9 ~ 36Vdc

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

## Packing List

Part Number	Description	Quantity
MIC-770	MIC-770 bare system	1
2041077000	MIC-770 startup manual (ENG+TC+SC)	1
1652003234	4-pin Phoenix power connector	1
1960070543T001	2 x Mounting bracket	2
1700013095	SATA cable	1
1700024372-01	SATA power cable	1
2170000093-01	CPU thermal grease	1
1990019498N000	RAM thermal pad	2

## 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)

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

## 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, 3M, DAC-ST01
1702002605	Power Cord (EU), 3-pin, 10A, 250V 1.83M, 90D
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.

- MIC-770 supports Advantech iDoor modules (both MOS and PCM series), excluding the PoE model.
- The **PCM** series module requires a bracket (P/N: **1960065854N001**) 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