MIC-770

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



Features

- Intel® 8th/9th 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_{DC} input power range
- IP40 dust proof for deployment in harsh environment
- Supports FlexIO and iDoor technology, flexible configure additional HDMI, DVI, Comport, DIO, Remote switch IO
- Supports Advantech i-Modules
- Supports Advantech SUSIAPI and embedded software APIs
- Supports IntelR vPro™/AMT and TPM technologies
- Microsoft Azure PnP Certified

Specifications

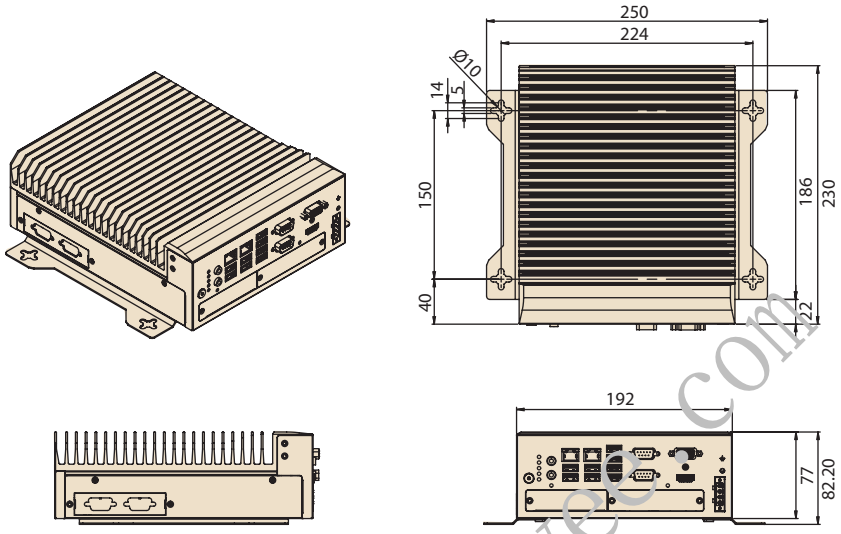
8th/9th Generation Processor (TDP 35W)	CPU	I7-9700TE	I5-9500TE	I3-9100TE		i7-8700T		i5-8500T
	Core/Thread number	8/8	6/6	4/4		6/12		6/6
	Base Frequency	1.8GHz	2.2GHz	3.0GHz		2.4GHz		2.1GHz
	Max Turbo Frequency	3.8GHz	3.6GHz	3.2GHz		4.0GHz		3.5GHz
	L3 Cache	12MB	9MB	6MB		12MB		9MB
	Temperature	-10 ~ 50 °C (w/ industrial wide-temp SSD, 0.7m/s air flow)						
	Chipset	Q370/H310						
	BIOS	AMI 256Mb SPI Flash						
8th/9th Generation Processor (TDP 65W)	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	3.4GHz	4.6GHz	4.1GHz			
	L3 Cache	12MB	8MB	6MB	12MB	9MB	6MB	4MB	2MB
	Temperature	-10 ~ 40 °C (w/ industrial wide-temp SSD, 0.7m/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							
	Multiple Display	Q370: 3 x independent displays (with Flex I/O for 2nd HDMI, 1 x DVI or 1 x DP) 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 (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 (Q370 SKU only)							
	SATA Conn.	Q370: 3 x SATA signal, 3 x SATA power H310: 2 x SATA signal, 2 x SATA power							
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_{DC}							
	Power consumption	Typical: 32.1W Maximum: 116W							
Watchdog Timer	Output	System reset							
	Interval	Programmable 1 ~ 255 sec/min							
Environment	Temperature	65W CPU w/ industrial wide-temp SSD			35W CPU w/ industrial wide-temp SSD			Non-operating	
		-10 ~ 40 °C with 0.7 m/s air flow			-10 ~ 50 °C with 0.7 m/s air flow			-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						2G	
	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, Linux OS							

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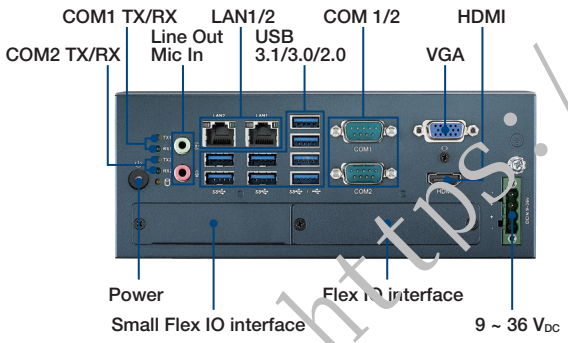
All product specifications are subject to change without notice.

Dimensions

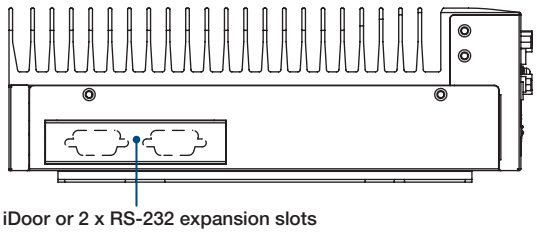
Unit: mm



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-00A2	1	1	1	1	2	6	0	2	2, up to 6 (Optional)	i-Module (optional)	9 ~ 36V_{DC}
MIC-770H-00A2	1	1	1	1	0	4	4	2	2, up to 6 (Optional)	i-Module (optional)*	9 ~ 36V_{DC}

*MIC-770H does not support MIC-75M40, MIC-75M20-01 and MIC-75G30

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Packing List

Part Number	Description	Quantity
MIC-770	MIC-770 barebone system	1
2041077000	MIC-770 startup manual (ENG+TC+SC)	1
1652003234	4-pin Phoenix power connector	1
1960070543T005	2 x Mounting bracket	2
1700013095-01	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-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-75G20-10B1	GPU card expansion module (2 x PCIe and 2 x removable 2.5" storage bay)
MIC-75G30-00B1**	Dual GPU card expansion module (3 x PCIe and 2 x removable 2.5" storage bay)
MIC-75GF10-00A1	MXM GPU expansion module (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 and 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.
** Q370 SKU only

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

Optional Accessories

Part Number	Description
	Adaptor
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
	Din Rail PSU
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-770 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
	Flex I/O
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
98R17500601	MIC COMport kit FIO (4x COM RS-232 via 2x dual DB9 cable)
98R17500701	MIC Remote power on/off kit for SFIO
98R17500801	MIC Reset/Remote power on/off/5VDC kit FIO
98R17500901	MIC GPIO kit FIO
	Advanced Flex I/O* **
98910770301	MIC NVMe + 4 LAN Advanced FIO
98910770401	MIC NVMe Advanced FIO
98910770501****	MIC 4 PoE Advanced FIO
	Storage Kit
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-770 V2)
	Mounting Kit
98R17500210	MIC Din Rail Mounting kit
98R17500501	MIC Wall Mounting kit
	Fan Kit
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.
*** Q370 SKU only
**** Can't be installed with other flex IO.

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