

MIC-770

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

NEW



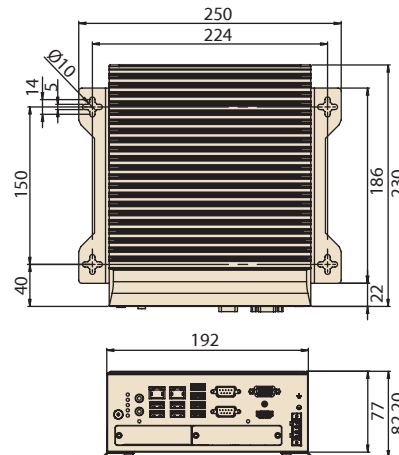
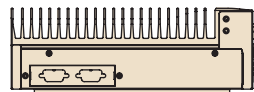
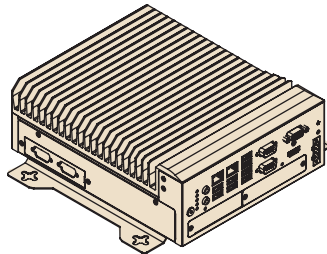
Features

- Intel® 8th 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
- 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

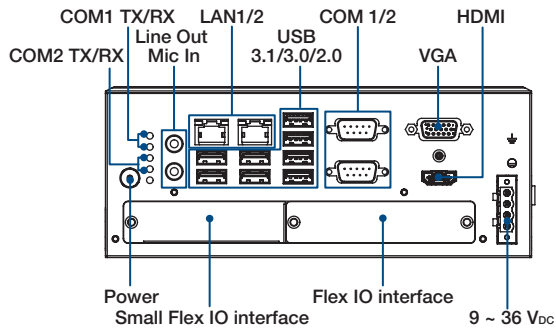
8 th Generation Processor (TDP 35W)	CPU	i7-8700T	i5-8500T			
	Core/Thread number	6/12	6/6			
	Base Frequency	2.4GHz	2.1GHz			
	Max Turbo Frequency	4.0GHz	3.5GHz			
	L3 Cache	12MB	9MB			
	Temperature	-10 ~ 50 °C (with SSD)				
	Chipset	Q370/H310				
BIOS	AMI 256Mb SPI Flash					
8 th Generation Processor (TDP 65W)	CPU	i7-8700	i5-8500	i3-8100	G5400	G4900
	Core/Thread number	6/12	6/6	4/4	2/4	2/2
	Base Frequency	3.2GHz	3.0GHz	3.6GHz	3.7GHz	2.9GHz
	Max Turbo Frequency	4.6GHz	4.1GHz			
	L3 Cache	12MB	9MB	6MB	4MB	2MB
	Temperature	-10 ~ 40 °C (with SSD)				
	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 16 GB per socket)				
	Maximum Capacity	32GB				
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)				
	Module	Supports Advantech i-Modules				
Expansion	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	2 (1 x Storage and 1 x Power), 4 for COM1 TX/RX and COM2 TX/RX 1 x Power on/off switch				
Power	Remote Switch	Yes, 2pin terminal block (Optional)				
	Type	ATX/AT				
	Input Voltage	9 ~ 36 V _{DC}				
Watchdog Timer	Power consumption	Typical: 32.062W Maximum: 116.002W				
	Output Interval	System reset Programmable 1 ~ 255 sec/min				
Environment	Temperature	65W CPU w/ industrial SSD		35W CPU w/ industrial SSD		Non-operating
		-10 ~ 40 °C		-10 ~ 50 °C		-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				
Mechanical	Shock	With SSD: 20G, IEC-68-2-27, half-sine wave, 11 ms duration				
	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)				
Certifications	Installation	Desktop/wall mount				
	EMC	CE/FCC Class A, CCC, BSMI				
	Safety	CB/UL, CCC, BSMI				

Dimensions

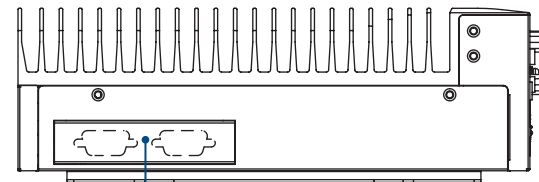


Unit: mm

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 ~ 36V _{DC}
MIC-770H-00A1	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 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-DI032-00A1E ***	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-DI032 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: 1960065854N001) that must be ordered separately.

Embedded OS

Part Number	Description
TBD	img Win10 IOT MIC-770Q 64b 10MUI
TBD	img Win10 IOT MIC-770H 64b 10MUI

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.

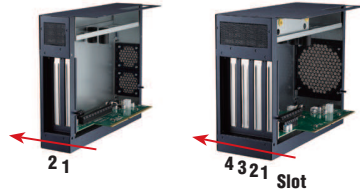
Compatible Table

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 x4	PCIe x8	PCIe x4	PCIe x16	PCIe x16	PCIe x1	PCIe x1	PCIe x1
Slot 2	-	PCI	PCIe x16	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 98R1752000E	-	8cm 98R1751300E	-	4cm 98R1752000E	8cm 98R1751300E	-	-
12V _{dc} Conn	-	-	-	-	1	-	-	-	-	-
PCI/PCIe Card Max. Length (with fan)	-	-	-	-	181mm	-	-	-	-	-
PCI/PCIe Card Max. Length (without fan)	-	-	-	-	207mm	-	-	-	-	-

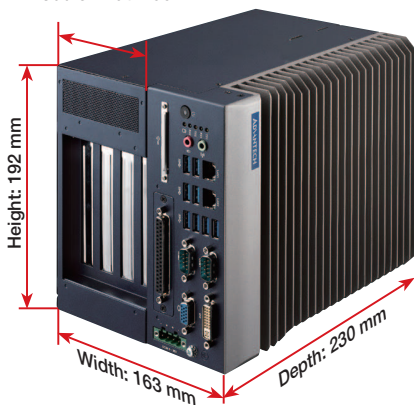
* Need to order 98R1752010E

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

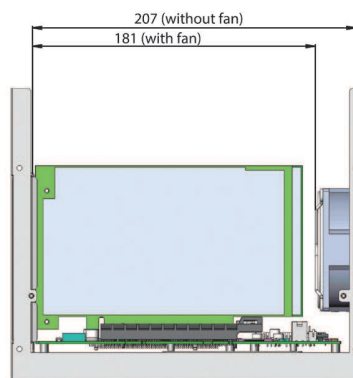
*** Suggest to add optional system fan if power consumption of add-on card is more than 45W for better thermal management.

Dimension Guide

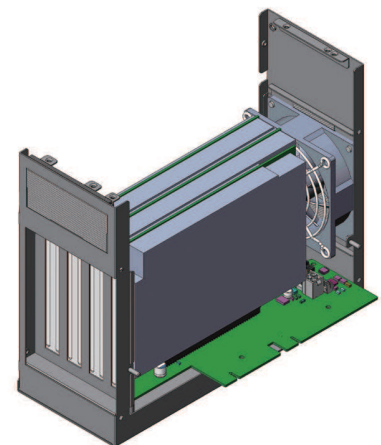
i-Module Width: 90 mm



Example: MIC-7500 + MIC-75M40



PCI/PCIe Card Max. Length Support

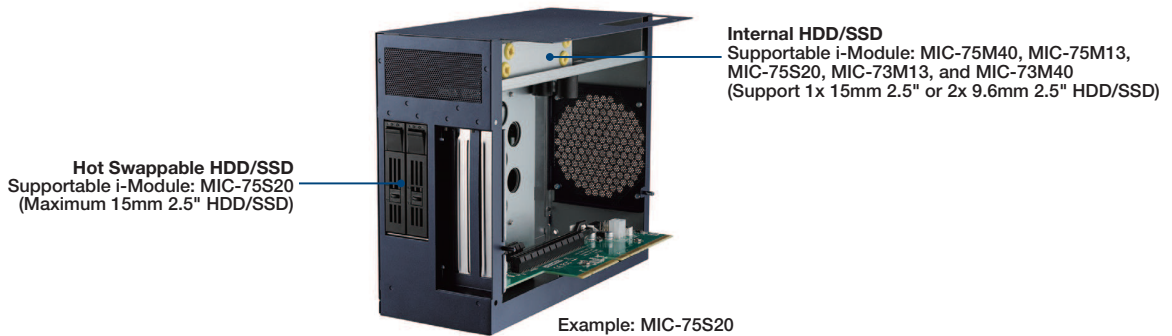


HDD / SSD Support Table

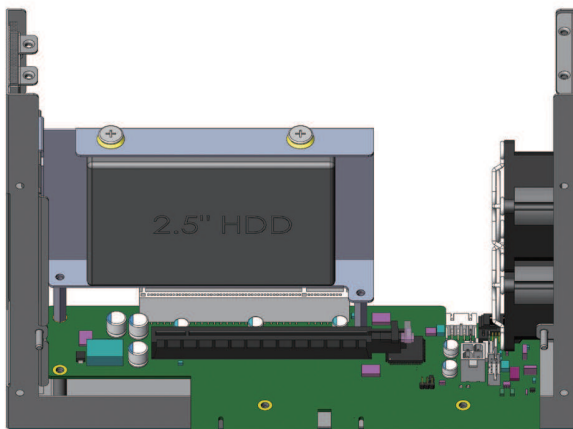
Every model of the MIC-7000 series can be installed with one HDD or SSD. With the i-Module, the numbers of supported HDD/SSD bay are as below:

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/SSD
MIC-75S20	2x Hot Swap + 2x Internal	1	5	With MIC-7900, it can support up to 5 x HDD/SSD With MIC-7700Q, it can support up to 4 x HDD/SSD

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-75M20-00B1	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)
1700024858-01	4-pin 12V _{DC} power cable (15cm)