

Modular IPCs

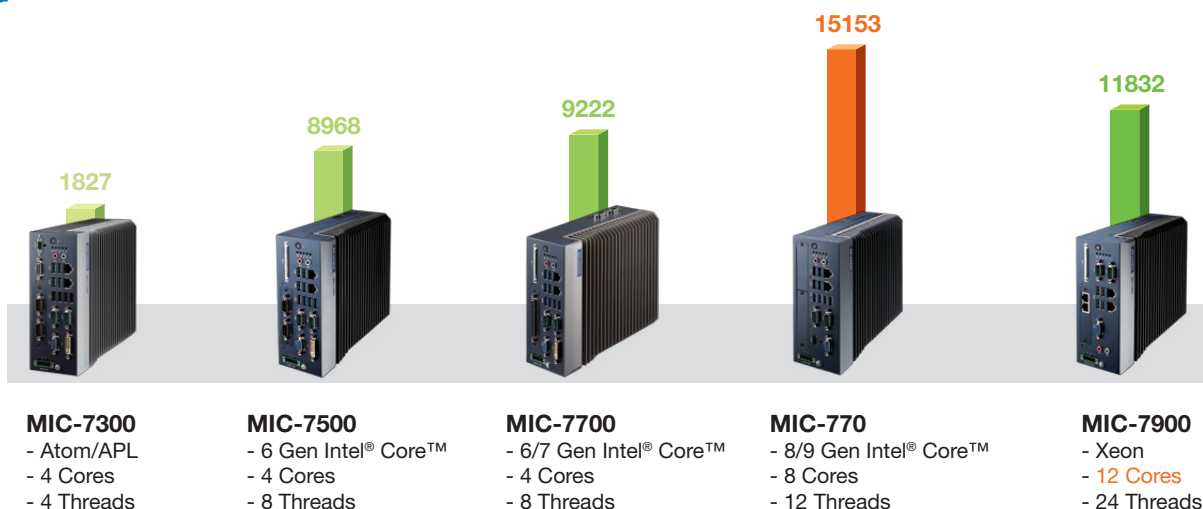
Fanless Modular System Introduction

Be flexible, be invincible: Fanless edge PCs for the industrial IoT era

To enable the realization of Industry 4.0, field-based edge intelligence is important for developing new IoT applications. Advantech's MIC-7 series PCs provide high-performance computing, multiple I/O interfaces, and flexible expandability with the integration of i-Modules and iDoor, and can be widely deployed to support various industrial IoT applications. The MIC-7 series can be equipped with a wide range of processors to provide custom entry-level and high-end solutions. With the provision of multiple I/O for connecting devices, MIC-7 systems can serve as a data gateway and industrial controller. Moreover, when integrated with an intelligent i-Module, various add-on cards can be installed for machine automation applications.



Diverse selection of CPUs for customized performance



Various expansion I/O for flexible communication



Innovative slot expansion for enhanced control



Be Flexible, Be Invincible

Fanless Edge Industrial PC for Industrial IoT Era

[Learn More](#)

Desktop CPU
 Various I/O
 Modular Slot



Learn More: <http://select.advantech.com/edge-intelligent-modular-ipc-mic-7-series/>

Modular IPCs Selection Guide

Fanless Modular System: MIC-7 Series



Model name		MIC-770	MIC-7700	MIC-7500
Form Factor		Compact	Compact	Compact
Processor System	Chipset	Q370/H310	Q170/H110	QM170
	CPU	Intel® 8th/9th Gen Core™ i socket-type (LGA1151)	Intel® 6th/7th Gen Core™ i socket-type (LGA1151)	Intel® Core™ i7-6820EQ/ i7-6822EQ/ i5-6442EQ/ i3-6102E/ Celeron® G3900E
	Core	Max. 8	Max. 4	Max. 4
	Cache	Max. 12 MB	Max. 8 MB	Max. 8 MB
	Memory	Dual DDR4 2400/2666 MHz SODIMM Max. 64 GB	Dual DDR4 2400 MHz SODIMM Max. 32 GB	Dual DDR4 2400 MHz SODIMM Max. 32 GB
Graphic	Graphics Controller	Intel® HD Graphics	Intel® HD Graphics	Intel® HD Graphics
	VRAM	Shared system memory is subject to OS	Shared system memory is subject to OS	Shared system memory is subject to OS
Expansion	PCIe x16	Supported via i-Module	Supported via i-Module	Supported via i-Module
	PCIe x8			
	PCIe x4			
	PCIe x1			
	PCI			
	Mini PCIe	2 (Q Sku) 1 (H Sku)	2 (Q Sku) 1 (H Sku)	2
Storage	Storage Bay	1 x 2.5" internal HDD/SSD bay	1 x 2.5" internal HDD/SSD bay	1 x 2.5" internal HDD/SSD bay
	M.2	-	-	-
	mSATA	1	1	1
	CFast	-	1	1
	RAID	0/1/5/10 (Q SKU only)	0/1/5/10 (Q SKU only)	0/1/5/10
Ethernet	Ethernet Interface	2 x RJ45 10/100/1000 Mbps	2 x RJ45 10/100/1000 Mbps	2 x RJ45 10/100/1000 Mbps
	Controller	Q370 LAN1: Intel® I219LM, LAN2: Intel® I210IT H310 LAN1: Intel® I219V, LAN2: Intel® I210IT	Q170 LAN1: Intel® I219LM, LAN2 Intel I210IT H110 LAN1: Intel® I219V, LAN2: I210IT	LAN 1: Intel® I219LM LAN 2: Intel® I210IT
Front I/O	Display	VGA+HDMI	VGA+DVI-D	VGA+DVI-D
	LAN	2	2	2
	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	Q170: 8 x USB 3.0 , 1 x internal USB 2.0 H110: 4 x USB 3.0, 4 x USB 2.0	8 x USB 3.0 1 x internal USB 2.0
	COM	2 x RS-232/422/485 supports auto flow control; 4 x RS-232 (Optional)	2 x RS-232/422/485 supports auto flow control + 4 x RS-232	2 x RS-232/422/485 supports auto flow control + 4 x RS-232
	PS/2	-	-	-
	Audio	Line out/mic in	Line out/mic in	Line out/mic in
Rear I/O	Display	-	-	-
	LAN	-	-	-
	USB	-	-	-
	COM	-	-	-
	PS/2	-	-	-
	Audio	-	-	-
Watchdog Timer	Output	System reset	System reset	System reset
	Interval	Programmable 1~ 255 s/min	Programmable 1~ 255 s/min	Programmable 1~ 255 s/min
Power Supply	Output Wattage	-	-	-
	Input Range	9 ~ 36 V _{DC}	9 ~ 36 V _{DC}	9 ~ 36 V _{DC}
	Remote Power Switch	△	△	△
Cooling	System Fan	-	-	-
	Air Filter	-	-	-
Physical Characteristics	Dimensions (W x H x D)	77 x 192 x 230 mm (3.07" x 7.55" x 9.05")	77 x 192 x 230 mm (3.07" x 7.55" x 9.05")	73 x 192 x 230 mm (2.91" x 7.55" x 9.05")
	Weight	2.9 kg	2.9 kg	2.9 kg

✓ : supported, - : not supported, △ : optional

1

IoT Software Solutions

2

Edge AI and SKY Servers

3

Intelligent Systems

4

Machine Vision Solutions

5

Intelligent HMI and Monitors

6

Automation Computers

7

DAQ and Communication Gateways

8

Industrial Communication

9

Remote I/O, Wireless Sensing Modules and Converters

10

Intelligent Motion Control Solutions

11

EtherCAT Solutions and Automation Controllers

12

Industrial I/O Solutions

13

Intelligent Transportation Platforms

14

Utility and Energy Solutions

Modular IPCs Selection Guide

Fanless Modular System: MIC-7 Series



Model name		MIC-7900	MIC-7300	MIC-7420
Form Factor		Compact	Compact	19" 2U Rack Mount
Processor System	Chipset	-	-	QM170
	CPU	Intel® Xeon® D-1559/D-1539 BGA-type	Intel® Celeron® N3350/Atom™ x7-E3950 BGA-type	Intel® Core™ i7-6822EQ/i3-6100E
	Core	Max. 12	Max. 4	Max. 4
	Cache	Max. 18 MB	2 MB	Max. 8 MB
	Memory	Dual DDR4 2400 MHz SODIMM (supports ECC) Max. 32 GB	Dual DDR3L 1867 MHz SODIMM Max. 8 GB	Dual DDR4 2400 MHz Onboard 8GB & 1 SODIMM slot Max. 24GB
Graphic	Graphics Controller	ASPEED AST1400 with 256 MB VGA memory provides basic 2D VGA function	Intel® HD Graphics	Intel® HD Graphics
	VRAM	Shared system memory is subject to OS	Shared system memory is subject to OS	Shared system memory is subject to OS
Expansion	PCIe x16	Supported via i-Module	-	-
	PCIe x8		-	-
	PCIe x4		-	2
	PCIe x1		Supported via i-Module	-
	PCI		Supported via i-Module	2
Storage	Mini PCIe	1	1	1
	Storage Bay	1 x 2.5" internal HDD/SSD bay	1 x 2.5" internal HDD/SSD bay	2 x 3.5" internal HDD bay
	M.2	22110 (2280 w/ bracket), M-Key	-	2260, M-Key
	mSATA	1	1	-
	CFast	1	-	-
Ethernet	RAID	-	-	0/1
	Ethernet Interface	2 x RJ45 10/100/1000 Mbps	2 x RJ45 10/100/1000 Mbps	10/100/1000 Mbps
Front I/O	Controller	4 x Intel® i210IT	2 x Intel® i210AT	LAN 1: Intel® i219LM LAN 2: Intel® i210IT
	Display	VGA	VGA+DVI-D	-
	LAN	4	2	-
	USB	4 x USB 3.0	2 x USB 3.0 6 x USB 2.0	2 x USB 2.0
	COM	2 x RS-232/422/485 supports auto flow control 2 x RS-232	2 x RS-232/422/485 supports auto flow control + 4 x RS-232	-
	PS/2	-	-	-
	Audio	Line out/mic in	Line out/mic in	-
Rear I/O	Display	-	-	DVI-I + DVI-D
	LAN	-	-	2
	USB	-	-	2 x USB 3.0 4 x USB 2.0
	COM	-	-	2 x RS-232/422/485 supports auto flow control
	PS/2	-	-	1
	Audio	-	-	Line out/mic in
Watchdog Timer	Output	System reset	System reset	System reset
	Interval	Programmable 1~ 255 s/min	Programmable 1~ 255 s/min	Programmable 1~ 255 s/min
Power Supply	Output Wattage	-	-	150W
	Input Range	9 ~ 36 V _{DC}	9 ~ 36 V _{DC}	100 ~ 240 V _{AC}
	Remote Power Switch	-	1	-
Cooling	System Fan	-	-	-
	Air Filter	-	-	-
Physical Characteristics	Dimensions (W x H x D)	73 x 192 x 230 mm (2.91" x 7.55" x 9.05")	73 x 192 x 230 mm (2.91" x 7.55" x 9.05")	427 x 88 x 325 mm (16.81" x 3.46" x 12.79")
	Weight	2.9 kg	2.9 kg	10 kg

✓ : supported, - : not supported, △ : optional

i-Module Expansion Slot for MIC-7 Series



i-Module	MIC-75M10	MIC-75M11	MIC-75M20	MIC-75M20-01	MIC-75M40	MIC-75M13	MIC-75S20	MIC-75G20	MIC-75G30
Slot 1	PCIe x16*	PCIe x16*	PCIe x4*	PCIe x8*	PCIe x4	PCIe x16*	PCIe x16*	PCIe x4	-
Slot 2	-	PCI	PCIe x16*	PCIe x8*	PCIe x8	PCI	PCIe x4*	-	PCIe x16 (signal PCIe x8) for GPU card
Slot 3	-	-	-	-	PCIe x4	PCI	-	PCIe x16	-
Slot 4	-	-	-	-	PCIe x4	PCI	-	-	PCIe x16 (signal PCIe x8) for GPU card
Slot 5	-	-	-	-	-	-	-	-	PCIe x4
SATA Port	-	-	-	-	1	-	-	-	1
SATA PWR	-	-	-	-	1	-	-	-	1
2.5" HDD/SSD Bay	-	-	1**	-	2	-	2 x Swappable + 2 x Internal	2 x Swappable	2 x 2.5" swappable
N.W. (kg)	0.64	-	0.87	-	1.16	-	1.60	2.99	5
G.W. (kg)	1.71	-	2.02	-	2.47	-	2.98	4.79	7
i-Module (W x H x D)	24 x 192 x 230	-	50 x 192 x 230	-	90 x 192 x 230	-	110 x 192 x 350	203 x 192 x 385	-
MIC-7000 + i-Module (W x H x D)	97 x 192 x 230	-	123 x 192 x 230	-	163 x 192 x 230	-	184 x 192 x 350	276 x 192 x 385	-
MIC-77X + i-Module (W x H x D)	101 x 192 x 230	-	127 x 192 x 230	-	167 x 192 x 230	-	187 x 192 x 350	280 x 192 x 385	-
System Fan	-	-	98R1752000E (Optional)***	-	98R1751300E (Optional)***	-	Embedded	Embedded	-
12V _{DC} Conn	-	-	-	-	1	-	-	-	-
12V _{DC} Conn. for GPU	-	-	-	-	-	-	2	4	-
PCI/PCIe Card Max. Length (with system fan)	-	-	190.2 mm	-	184.75 mm	-	287.35 mm	331 mm	-
PCI/PCIe Card Max. Length (without system fan)	-	-	210.4 mm	-	-	-	-	-	-

* If installed on MIC-7300, this slot will be a PCIe x1 signal.

** Need to order 98R1752010E (2.5" HDD/SSD kit for 2-slot i-Module)

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

Compatible Table

i-Modules MIC-7 System	1-Slot	2-Slot			4-Slot		Featured		
	MIC-75M10	MIC-75M11	MIC-75M20	MIC-75M20-01	MIC-75M40	MIC-75M13	MIC-75S20	MIC-75G20	MIC-75G30
MIC-7300	✓	✓	✓	-	-	✓	✓	-	-
MIC-7500	✓	✓	✓	✓	✓	✓	✓	✓	✓
MIC-770Q/7700Q	✓	✓	✓	✓	✓	✓	✓	✓	✓
MIC-770H/7700H	✓	✓	✓	-	-	✓	✓	✓	✓
MIC-7900	✓	✓	✓	✓	✓	✓	✓	✓	✓

Modular IPC Selection Guide

Flex I/O Expansion Kit for MIC-7 Series

Flex I/O series modules provide flexible expansion for MIC-7 Series so customers can enjoy display, more control, and better communication via Flex I/O. All Flex I/O are attached directly from connectors reserved on the MIC-7 series main board and installed on the front panel, making it easy to fulfill machine, factory automation, and IEM deployments.

Flex I/O Assembly Example

Small Flex I/O



Default MIC-770

Small Flex I/O
Remote Switch

After Assembly

Regular Flex I/O



Default MIC-770

Regular Flex I/O
DVI

After Assembly



Default MIC-770

Small Flex I/O
Remote SwitchRegular Flex I/O
DVI

After Assembly

Advanced Flex I/O



Default MIC-770

Advanced Flex I/O
NVME + 4x LAN

After Assembly



Default MIC-770

Regular Flex I/O
DVIAdvanced Flex I/O
NVME + 4x LAN

After Assembly



Default MIC-770

Advanced Flex I/O
4 x PoE

After Assembly

Compatible Table

Flex I/O	Function	Part Number	MIC-7300	MIC-7500	MIC-7700		MIC-770		MIC-7900
					MIC-7700Q	MIC-7700H	MIC-770Q	MIC-770H	
Small FIO									
	Remote Switch	98R1750070E	-	-	-	-	✓	✓	-
Regular FIO									
	DVI	98R1750000E	✓	✓	✓	✓	✓	✓	-
	HDMI & Remote Switch	98R1750010E	-	✓	✓	✓	✓	✓	-
	HDMI	98R1750030E	✓	✓	✓	✓	✓	✓	-
	Remote Switch	98R1750040E	-	✓	✓	✓	✓	✓	✓
	COM Port	98R1750060E	-	-	-	-	✓	✓	-
	Reset & Remote Switch & 5VDC	98R1750080E	✓	✓	✓	✓	✓	✓	✓
	8 bit GPIO	98R1750090E	-	✓	✓	✓	✓	✓	✓
	Dual LAN	9891790040E	-	-	✓	-	-	-	-
	GPIO module (32bit)	AIIS-DIO32-00A1E	-	✓	✓	✓	-	-	✓
	TPM module	PCA-TPM-00B1E	✓	✓	✓	✓	✓	✓	-
Advanced FIO									
	NVME+ 4x LAN	98910770300	-	-	-	-	✓	-	-
	NVME	98910770400	-	-	-	-	✓	-	-
	POE	98910770500	-	-	-	-	✓	-	-

1

IoT Software Solutions

2

Edge AI and SKY Servers

3

Intelligent Systems

4

Machine Vision Solutions

5

Intelligent HMI and Monitors

6

Automation Computers

7

DAQ and Communication Gateways

8

Industrial Communication

9

Remote I/O, Wireless Sensing Modules and Converters

10

Intelligent Motion Control Solutions

11

EtherCAT Solutions and Automation Controllers

12

Industrial I/O Solutions

13

Intelligent Transportation Platforms

14

Utility and Energy Solutions