

# MIC-770 V3

## Compact Fanless System with 12<sup>th</sup>/13<sup>th</sup>/14<sup>th</sup> Gen Intel® Core™ i CPU Socket (LGA 1700)

**NEW**



### Features

- Intel® 12<sup>th</sup>/13<sup>th</sup>/14<sup>th</sup> Gen Core™ i CPU socket-type (LGA1700) with Intel® R680E/H610E chipset
- Wide operating temperature (-20 ~ 60 °C)
- VGA and HDMI output
- 2 x GigaLAN, 2 x USB 3.2 (Gen2) and 6 x USB 3.2 (Gen1)
- 2 x RS-232/422/485 and 4 x RS232 serial ports (Optional)
- 1 x 2.5" HDD/SSD, 1 x mSATA, and 1 x NVMe M.2
- 9 ~ 36 V<sub>DC</sub> input power range
- IP40 dust proof for deployment in harsh environment
- Supports FlexIO and iDoor technology, flexible configure additional HDMI, DP, DVI, COM port, DIO, Remote switch IO
- Supports Advantech i-Modules
- Supports Advantech SUSI-API and embedded software APIs
- Supports Intel® vPro™/AMT and TPM technologies
- Supports Advantech iBMC 1.2 remote out-of-band power management solution on DeviceOn



### Specifications

	CPU	i9-14900	i7-14700	i5-14500	i5-14400	i5-14400F	i3-14100	300	i9-14900T	i7-14700T	i5-14500T	i5-14400T	i3-14100T	300T	
14 <sup>th</sup> Generation Processors	P-core Base Frequency	2.0 GHz	2.1 GHz	2.6 GHz	2.5 GHz	2.5 GHz	3.5 GHz	3.9 GHz	1.1 GHz	1.3GHz	1.7 GHz	1.5 GHz	2.7 GHz	3.4 GHz	
	L3 Cache	36 MB	33 MB	24 MB	20 MB	20 MB	12 MB	6 MB	36 MB	33 MB	24 MB	20 MB	12 MB	6 MB	
	Cores	24	20	14	10	10	4	2	24	20	14	10	4	2	
	Processor Base Power	65 W	65 W	65 W	65 W	65 W	60 W	46 W	35 W	35 W	35 W	35 W	35 W	35 W	
13 <sup>th</sup> Generation Processors	CPU	i9-13900(E)	i7-13700(E)	i5-13500(E)	i5-13400(E)	i3-13100(E)	i9-13900TE	i7-13700TE	i5-13500TE	i3-13100TE					
	P-core Base Frequency	2.0 GHz	2.1 GHz	2.5 GHz	2.5 GHz	3.4 GHz	1.00 GHz	1.40 GHz	1.60 GHz	2.50 GHz					
	L3 Caches	36 MB	30 MB	24 MB	20 MB	12 MB	36 MB	30 MB	24 MB	12 MB					
	Cores	24	16	14	10	4	24	16	14	4					
Processor Base Power	65W	65W	65W	65W	60W	35W	35W	35W	35W						
12 <sup>th</sup> Generation Processor (TDP 35W)	CPU	i9-12900TE	i7-12700TE	i5-12500TE	i3-12100TE	Pentium G7400TE	Celeron G6900TE								
	Core/Thread number	16/24	12/20	6/12	4/8	2/4	2/2								
	Base Frequency	1.10 GHz	1.40 GHz	1.90 GHz	2.10 GHz	3.00 GHz	2.4 GHz								
	Max Turbo Frequency	4.80 GHz	4.60 GHz	4.30 GHz	4.00 GHz										
	L3 Cache	30 MB	16 MB	12 MB	6 MB	2.5MB	2.5MB								
	Temperature	-20 ~ 60 °C (w/ industrial wide-temp SSD, 0.7m/s air flow)													
	Chipset	R680E/H610E													
	BIOS	AMI 256Mb SPI Flash													
12 <sup>th</sup> Generation Processor (TDP 65W)	CPU	i9-12900(E)	i7-12700(E)	i5-12500(E)	i3-12100(E)	G7400E (46W)	G6900E (46W)								
	Core/Thread number	16/24	12/20	6/12	4/8	2/4	2/2								
	Base Frequency	2.30 GHz	2.10 GHz	2.90 GHz	3.20 GHz	3.60 GHz	3.00 GHz								
	Max Turbo Frequency	5.00 GHz	4.80 GHz	4.50 GHz	4.20 GHz										
	L3 Cache	30 MB	25 MB	18 MB	5 MB	2.5 MB	2.5 MB								
	Temperature	-20 ~ 50 °C (w/ industrial wide-temp SSD, 0.7m/s air flow)													
	Chipset	R680E/H610E													
	BIOS	AMI 256Mb SPI Flash													
Memory	Technology	Dual-channel DDR5 4800 MHz (R680E SKU supports ECC)													
	Socket	2 x 262-pin DDR5 SODIMM (up to 32GB per socket)													
	Maximum Capacity	64GB													
Display	Chipset	Core i: Intel® UHD Graphics 770 Pentium/Celeron: Intel® HD Graphics 710													
	VGA	1 x DB15, up to 1920 x 1200 maximum resolution													
	HDMI	1 x HDMI, up to 4096 x 2160@30Hz													
	Multiple Display	R680E: 4 x independent displays (third and fourth display output via optional cable) H610E: 3 x independent displays (third display output via optional cable)													
Ethernet	Controller	R680E LAN1: Intel® I219LM, LAN2: Intel® i210IT H610E 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													
	NVMe M.2	1 x M Key 2280 with PCIe Gen 4 x 4 (R680E SKU, operating temp. -20 ~ 50 °C)													
	RAID	0/1/5/10 (R680E SKU only)													
I/O	USB	R680E: 2 x USB3.2 (Gen2), 6 x USB3.2 (Gen1), 1 x USB 2.0 (Internal) H610E: 4 x USB3.2 (Gen1), 4 x USB2.0													
	Serial Port	2 x DB9, 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	Module	Supports Advantech i-Modules													
	Mini PCIe/mSATA	R680E: 1 x mini PCIe, 1 x mini PCIe/mSATA H610E: 1 x mini PCIe, 1 x mSATA													

Note 1: The CPU PCIe slot can support graphic cards only due to Intel design specification. Other types of add-on cards will have no function installed on this slot.

Note 2: For the 65W CPU, the operating temperature could support up to 50 degrees and may cause thermal throttling when continued system full-loading which could adjust the CPU power config from BIOS to increase the operating temperature.

## Specifications (Cont.)

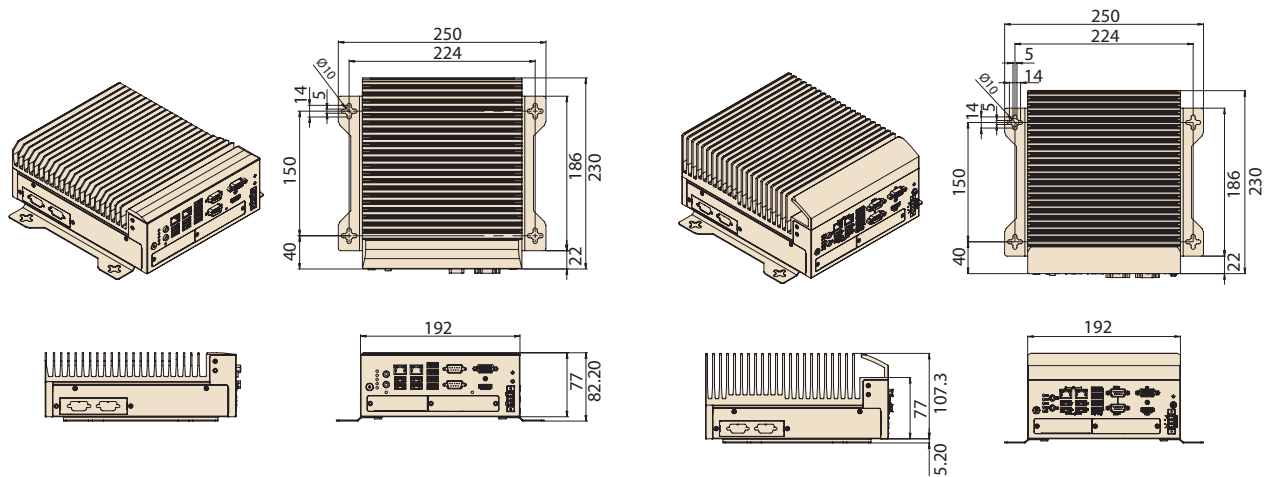
LED and Switch	LED	2 (1 x Storage and 1 x Power), 4 for COM1 TX/RX and COM2 TX/RX		
	Button	1 x Power on/off switch		
	Remote Switch	Yes, 2pin terminal block (Optional)		
Power	Type	ATX/AT		
	Input Voltage	9 ~ 36 V <sub>DC</sub>		
	Power consumption	Typical: 45.7W Maximum: 108W		
Watchdog Timer	Output	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
		Standard: -20 ~ 50°C with 0.7 m/s air flow	Standard: -20 ~ 60°C with 0.7 m/s air flow	-40 ~ 85°C
		Extreme: -20 ~ 35°C without air flow	Extreme: -20 ~ 50°C without air flow	-40 ~ 85°C
	Humidity	95% @ 40 °C (non-condensing)		
	Vibration	With SSD: 3 Grms @ 5 ~ 500 Hz, random, 1 hr/axis		2G
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)	Standard: 77 x 192 x 230 mm (3.07" x 7.55" x 9.05")	Extreme: 107.3 x 192 x 230 mm (4.22" x 7.55" x 9.05")	
	Weight	Standard: 2.8 kg (6.17 lbs)	Extreme: 4.5 kg (9.92 lbs)	
	Installation	Desktop/wall mount		
Certifications	EMC	CE/FCC Class A, CCC, BSMI		
	Safety	CB/UL, CCC, BSMI		
OS Support	Windows 11, Windows 10, Windows 10 IoT, Linux OS			

## Dimensions

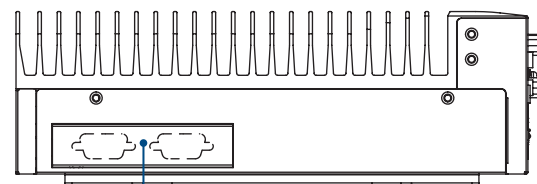
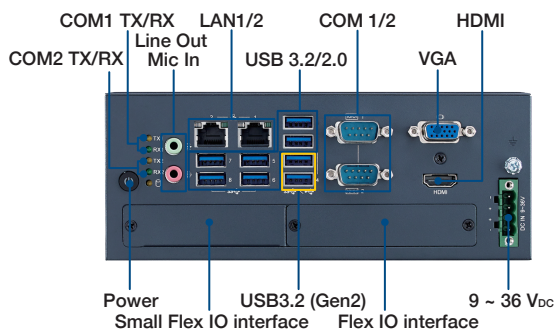
Unit: mm

### Standard (MIC-770V3x-00A1)

### Extreme (MIC-770V3x-E0A1)



## Front View



iDoor or 2 x RS-232 expansion slots

## Ordering Information

Part Number	VGA	HDMI	2.5" HDD/SSD	mSATA	NVMe M.2	USB3.2 (Gen2)	USB3.2 (Gen1)	USB 2.0	GbE	COM	PCIe	Power
MIC-770V3W-00A1	1	1	1	1	1	2	6	0	2	2, up to 6 (Optional)	i-Module (optional)*	9 ~ 36V <sub>DC</sub>
MIC-770V3W-E0A1	1	1	1	1	1	2	6	0	2	2, up to 6 (Optional)	i-Module (optional)*	9 ~ 36V <sub>DC</sub>
MIC-770V3H-00A1	1	1	1	1	0	0	4	4	2	2, up to 6 (Optional)	i-Module (optional)*	9 ~ 36V <sub>DC</sub>
MIC-770V3H-E0A1	1	1	1	1	0	0	4	4	2	2, up to 6 (Optional)	i-Module (optional)*	9 ~ 36V <sub>DC</sub>

\* MIC-770V3H does not support MIC-75M20-01 and MIC-75G30

\*\* Please use the wide-temperature NVMe module without the heatsink.

## Packing List

Part Number	Description	Quantity
MIC-770 V3	MIC-770 V3 bare system	1
2041077050	MIC-770 V3 startup manual (ENG+TC+SC)	1
1652003234	4-pin Phoenix power connector	1
1960070543T00A	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-75M40-01A2**	3-slot expansion module (3 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, 1 x HDMI, 1 x DP)
MIC-75GF10-00A1	MXM GPU expansion module (1 x MXM, 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 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.

\*\* R680E SKU only

## Embedded OS

Part Number	Description
20706WLH1S0038	img W11 24HL MIC-770V3W 64b 24H2 ENU
20706WL1S0038	img W11 24VL MIC-770V3W 64b 24H2 ENU
20706WLE1S0038	img W11 24EL MIC-770V3W 64b 24H2 ENU
20706WLH1S0041	img W11 24HL MIC-770V3H 64b 24H2 ENU
20706WL1S0041	img W11 24VL MIC-770V3H 64b 24H2 ENU
20706WLE1S0041	img W11 24EL MIC-770V3H 64b 24H2 ENU
20706WX1HS0024	img W10 21HL MIC-770V3W 64b 21H2 ENU
20706WX1VS0024	img W10 21VL MIC-770V3W 64b 21H2 ENU
20706WX1ES0024	img W10 21EL MIC-770V3W 64b 21H2 ENU
20706WX1HS0058	img W10 21HL MIC-770V3H 64b 21H2 ENU
20706WX1VS0058	img W10 21VL MIC-770V3H 64b 21H2 ENU
20706WX1ES0058	img W10 21EL MIC-770V3H 64b 21H2 ENU
20706U22DS0021	img UbuntuD MIC-770V3W 64b 22.04 ENU

## Optional Accessories

Part Number	Description
<b>Adaptor</b>	
96PSA-A230W24P4-3	ADP A/D 100-240V 230W 24V C14 TERMINAL BLOCK 4P
1702002600	Power cord (USA) UL/GSA, 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
<b>Din Rail PSU</b>	
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

Note:

- MIC-770 V3 supports Advantech iDoor modules (both MOS and PCM series), excluding the PoE model.
- The **PCM** series module requires a bracket (P/N: **1960065854N021**) that must be ordered separately.

## Optional Flex I/O\* & Kits

Part Number	Description
<b>Flex I/O</b>	
AIIS-DIO32-00A1E**	AIIS GPIO module (32 bit)
PCA-TPMSPI-00A1	TPM 2.0 module (SPI)
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
98R17500802	MIC Reset/Remote power on/off/5VDC kit FIO (SATA)
98R17500901	MIC GPIO kit FIO
98R17501001	MIC DP kit FIO
98R17501101	COM and HDMI kit
<b>Advanced Flex I/O***</b>	
98910770301	MIC NVMe + 4 LAN Advanced FIO
98910770401	MIC NVMe Advanced FIO
98910770501****	MIC 4 PoE Advanced FIO
<b>Storage Kit</b>	
98R1752010E	2nd 2.5" HDD/SSD kit (used in 2-slot i-Module)
98R1752020E	2 x 2.5" SSD kit (Thickness: 7mm)
<b>Mounting Kit</b>	
98R17500210	MIC Din Rail Mounting kit
98R17500501	MIC Wall Mounting kit
<b>Fan Kit</b>	
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 I/O.

\*\*\* R680E SKU only.

\*\*\*\* Can't be installed with other flex I/O.

\*\*\*\*\*Only compatible with the MIC-770 series system without i-module.