

# MIC-770 V2

## Compact Fanless System with 10<sup>th</sup> Gen Intel® Xeon®/Core™ i CPU Socket (LGA 1200)

NEW



### Features

- Intel® 10<sup>th</sup> Gen Xeon®/Core™ i CPU socket-type (LGA1200) with Intel® W480E/H420E chipset
- Wide operating temperature (-10 ~ 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, and 1 x mSATA
- 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, DVI, Comport, DIO, Remote switch IO
- Supports Advantech i-Modules
- Supports Advantech SUSI API and embedded software APIs
- Supports Intel® vPro™/AMT and TPM technologies
- Advantech iBMC remote out-of-band power management solution with WISE-DeviceOn
- Microsoft Azure PnP, AWS IoT Greengrass, Ubuntu Certified



### Specifications

	CPU	W-1290TE*	W-1270TE*	W-1250TE*	i9-10900TE	i7-10700TE	i5-10500TE	i3-10100TE	G6400TE	G5900TE	
10 <sup>th</sup> Generation Processor (TDP 35W)	Core/Thread number	10/20	8/16	6/12	10/20	8/16	6/12	4/8	2/4	2/2	
	Base Frequency	1.80 GHz	2.00 GHz	2.40 GHz	1.80 GHz	2.00 GHz	2.30 GHz	2.30 GHz	3.20 GHz	3.00 GHz	
	Max Turbo Frequency	4.50 GHz	4.40 GHz	3.80 GHz	4.50 GHz	4.40 GHz	3.70 GHz	3.60 GHz			
	L3 Cache	20 MB	16 MB	12 MB	20 MB	16 MB	12 MB	6 MB	4 MB	2 MB	
	Temperature	-10 ~ 60 °C (w/ industrial wide-temp SSD, 0.7m/s air flow)									
	Chipset	W480E/H420E *Xeon CPU supported by W480E SKU. G6400TE/G5900TE CPU supported by H420E only.									
	BIOS	AMI SPI Flash 256Mb for W480E SKU, 128Mb for H420E SKU									
10 <sup>th</sup> Generation Processor (TDP 65W)	CPU	i9-10900E	i7-10700E	i5-10500E	i3-10100E	G6400E (58W)	G5900E (58W)				
	Core/Thread number	10/20	8/16	6/12	4/8	2/4	2/2				
	Base Frequency	2.80 GHz	2.90 GHz	3.10 GHz	3.20 GHz	3.80 GHz	3.20 GHz				
	Max Turbo Frequency	4.70 GHz	4.50 GHz	4.20 GHz	3.80 GHz						
	L3 Cache	20 MB	16 MB	12 MB	6 MB	4 MB	2 MB				
	Temperature	-10 ~ 50 °C (w/ industrial wide-temp SSD, 0.7m/s air flow)									
Memory	Chipset	W480E/H420E *G6400E/G5900E CPU supported by H420E only.									
	BIOS	AMI SPI Flash 256Mb for W480E SKU, 128Mb for H420E SKU									
	Technology	Dual-channel DDR4 2933/2666 MHz (W480E SKU with W and i3 CPU supports ECC)									
Display	Socket	2 x 260-pin DDR4 SODIMM (up to 32GB per socket)									
	Maximum Capacity	64GB									
Ethernet	Chipset	Xeon and Core i: Intel® HD Graphics 630, supports DirectX 12 Pentium/Celeron: Intel® HD Graphics 610, supports DirectX 12									
	VGA	1 x DB15, up to 1920 x 1200 maximum resolution									
	HDMI	1 x HDMI, up to 3840 x 2160 @30Hz (with Flex I/O for 2nd HDMI, 1 x DVI or 1 x DP)									
	Multiple Display	W480E: 3 x independent displays (third display output via Flex I/O) H420E: 2 x independent displays									
Storage	Controller	W480E LAN1: Intel® I219LM, LAN2: Intel® i210IT (iBMC supported) H420E LAN1: Intel® I219V, LAN2: Intel® i210IT									
	Interface	2 x RJ45									
	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)									
I/O	mSATA	1									
	RAID	0/1/5/10 (W480E SKU only)									
	SATA Conn.	W480E: 3 x SATA signal, 3 x SATA power H420E: 2 x SATA signal, 2 x SATA power									
	USB	W480E: 2 x USB3.2 (Gen2), 6 x USB3.2 (Gen1), 1 x USB 2.0 (Internal) H420E: 4 x USB3.2 (Gen1), 4 x USB2.0									
Expansion	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									
LED and Switch	Mini PCIe/mSATA	W480E: 1 x mini PCIe (via Nano-SIM), 1 x mini PCIe/mSATA H420E: 1 x mini PCIe (via Nano-SIM), 1 x mSATA									
	LED	2 (1 x Storage and 1 x Power), 4 for COM1 TX/RX and COM2 TX/RX									
Power	Button	1 x Power on/off switch									
	Remote Switch	Yes, 2pin terminal block (Optional)									
	Type	ATX/AT									
Watchdog Timer	Input Voltage	9 ~ 36 V <sub>DC</sub>									
	Power consumption	Typical: 35.3W Maximum: 112W									
Watchdog Timer	Output	System reset									
	Interval	Programmable 1 ~ 255 sec/min									

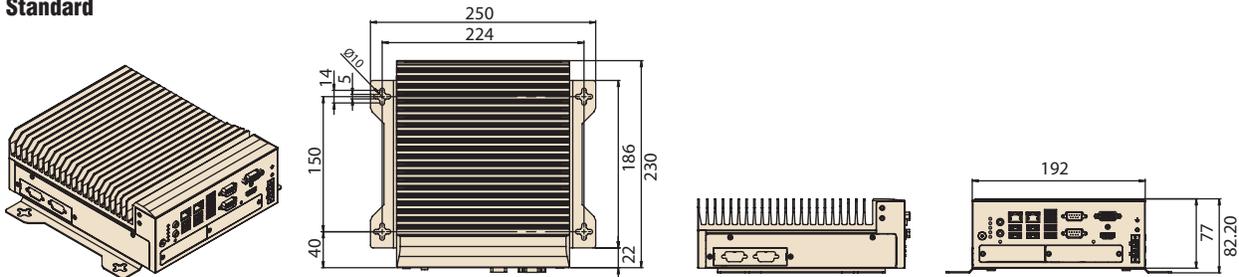
## Specifications (Cont.)

Environment	Temperature	65W CPU w/ industrial wide Temp. SSD -10 ~ 50 °C with 0.7 m/s air flow	35W CPU w/ industrial wide Temp. SSD -10 ~ 60 °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		2G
	Shock	With SSD: 20G, IEC-68-2-27, half-sine wave, 11 ms duration		50G 11 ms
	Dimensions (W x H x D)	77 x 192 x 230 mm (3.07" x 7.55" x 9.05")		FAN Kit: 120 x 200 x 230mm (4.73" x 7.87" x 9.05")
Mechanical	Weight	2.8 kg (6.17 lbs)		FAN Kit: 4.4kg (9.48 lbs)
	Installation	Desktop/wall mount		
Certifications	EMC	CE/FCC Class A, CCC, BSMI		
	Safety	CB/UL, CCC, BSMI, RED Compliance Note: RED Compliance is bundled with MIC-770W-20A1 (standard unit), <b>EXM-CMPF1-M2E01E</b> (Mini-PCIe to M.2 adapter), and <b>EWM-W192K1</b> (Intel WiFi-AC9260 M.2 2230 module+cable+antenna), i-Module is not included. EWM-W192K1 includes Module: EWM-W192M201E*1, Cable: 1750007965-01*2, and Dipole antenna: 1750008717-01*2.		
	OS Support	Windows 10, Windows 10 IoT, Linux OS, Ubuntu 20.04		

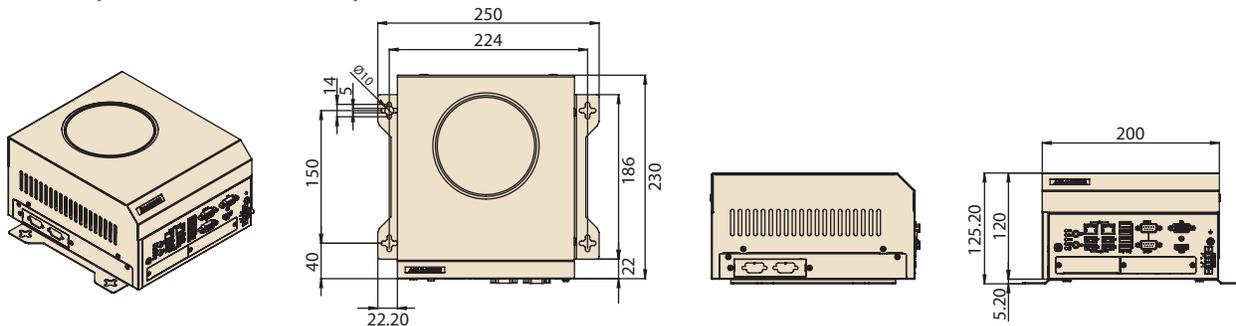
## Dimensions

Unit: mm

### Standard

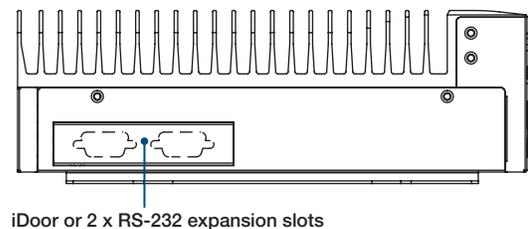
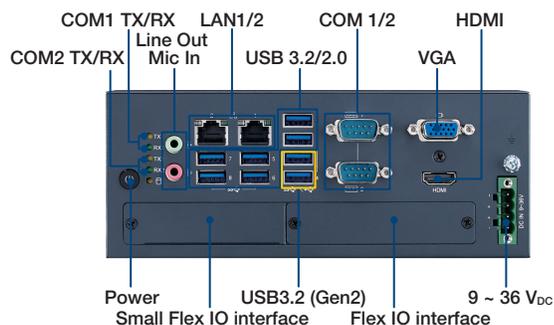


### Fan Kit (MIC-770V + 98R17501303)\*



\*98R17501303 fan kit can only be equipped with the MIC-770V3 standard SKU; Extreme and i-Module are not supported.

## Front View



## Ordering Information

Part Number	COO	VGA	HDMI	2.5" HDD/SSD	mSATA	USB3.2 (Gen2)	USB3.2 (Gen1)	USB 2.0	GbE	COM	PCIe	Power
MIC-770W-20A1	China	1	1	1	1	2	6	0	2	2, up to 6 (Optional)	i-Module (optional)	9 ~ 36V <sub>DC</sub>
MIC-770W-20A1U	Taiwan	1	1	1	1	2	6	0	2	2, up to 6 (Optional)	i-Module (optional)	9 ~ 36V <sub>DC</sub>
MIC-770H-20A1	China	1	1	1	1	0	4	4	2	2, up to 6 (Optional)	i-Module (optional)*	9 ~ 36V <sub>DC</sub>

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

## Packing List

Part Number	Description	Quantity
MIC-770 V2	MIC-770 V2 barebone system	1
2041077030	MIC-770 V2 startup manual (EN+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-75G20-10C1	GPU card expansion module (2 x PCIe and 2 x removable 2.5" storage bay)
MIC-75G20-10C1U	GPU card expansion module (2 x PCIe and 2 x removable 2.5" storage bay)
MIC-75G30-00C1**	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)
MIC-75S20-01A2	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.

\*\* W480E SKU only

## Embedded OS

Part Number	Description
20706WX9HS0120	img MIC-770V2H Win10 IoT Ent 2019 64b 1809, High End
20706WX9VS0124	img MIC-770V2H Win10 IoT Ent 2019 64b 1809, Value
20706WX9ES0134	img MIC-770V2H Win10 IoT Ent 2019 64b 1809, Entry
20706WX9HS0121	img MIC-770V2W Win10 IoT Ent 2019 64b 1809, High End
20706WX9VS0125	img MIC-770V2W Win10 IoT Ent 2019 64b 1809, Value
20706WX9ES0135	img MIC-770V2W Win10 IoT Ent 2019 64b 1809, Entry
20706U20DS0015	img Ubuntu20.4 MIC-770V2W 64b 2004 ENU

## Optional Accessories

Part Number	Description
<b>Adaptor</b>	
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
<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

\* Please use 230W adaptor when i-Module is added.

Note:

- MIC-770 V2 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-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
98R17501001	MIC DP kit FIO
<b>Small Flex IO</b>	
98R17502000	MIC HDMI kit for SFIO
98R17503000	MIC Display Port kit for SFIO
98R17504000	MIC DVI kit for SFIO
98R17500701	MIC Remote Switch kit for SFIO
98R17500803	MIC Reset/Remote power on/off/5VDC kit FIO (SATA) for SFIO
<b>Advanced Flex I/O***</b>	
98910770320	2 x 1GbE Ethernet Ports (IntelR i210-AT)
98910770330	4 x 1GbE Ethernet Ports (IntelR i210-AT), 1 x M.2 NVMe Slot
98910770340	2 x 2.5GbE Ethernet Ports (IntelR i226-V)
98910770350	4 x 2.5GbE Ethernet Ports (IntelR i226-V), 1 x M.2 NVMe Slot
98910770401	1 x M.2 NVMe Slot
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 (7mm thick SSD, used insides of MIC-770 V2)
<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 IO.

\*\*\* W480E SKU only.

\*\*\*\* Can't be installed with other flex IO.

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