MIC-780

Compact Fanless System with Intel® Core™ Ultra (LGA1851)



Features

- Intel® Core™ Ultra Processors (Series 2) socket-type (LGA1851) with W880/H810 chipset
- Wide operating temperature (-20 ~ 60 °C)
- 2 x HDMI and 1 x DP
- 4 x GbE and 4 x USB 3.2
- 2 x RS-232/422/485 and 4 x RS232 serial ports (Optional)
- 2 x 2.5" HDD/SSD and 1 x NVMe M.2
- 12 ~ 36 V_{DC} input power range
- IP40 dust proof for deployment in harsh environment
- Supports FlexIO and iDoor technology
- 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

Intel® Core™ Ultra Processors	CPU	Ultra 9 285	Ultra 9 285T	U7-265	U7-265T	U7-265F	U5-225	U5-225F
	P-core Base Frequency	2.5 GHz	1.4 GHz	2.4 GHz	1.5 GHz	2.4 GHz	3.3 GHz	3.3 GHz
	L3 Cache	36 MB	36 MB	30 MB	30 MB	30 MB	20 MB	20 MB
	Cores	24	24	20	20	20	10	10
	Processor Base Power	65 W	35 W	65 W	35 W	65 W	65 W	65 W
Memory	Technology	Dual-channel DDR5 6400 MHz (W880 SKU supports ECC)						
	Socket	2 x 262-pin DDR5 SODIMM (up to 64GB per socket)						
	Maximum Capacity	128GB						
Display	Chipset	Chipset integrated Intel Xe LPG Graphics						
	DP	1 x DP, up to 4096 x 2160@30Hz						
	HDMI	2 x HDMI, up to 4096 x 2160@30Hz						
	Multiple Display	3 x independent displays						
Ethernet	Controller	W880 Ethernet 1: Intel® I219LM, Ethernet 2 - 4: Intel® i210IT H810 Ethernet 1: Intel® I219V, Ethernet 2: Intel® i210IT						
	Interface	W880: 4 x RJ45 H810: 2 x RJ45						
Storage	HDD	2 x 2.5" 7mm SSD/HDD or 1 x 2.5" 15mm HDD (2 x 3.5" HDD by i-Module)						
	NVMe M.2	1 x M Key 2280 with PCIe Gen 4 x 4 (W880 SKU, operating temp. -20 ~ 50 °C)						
I/O	USB	W880: 2 x USB 3.2 (Gen2), 2 x USB 3.2 (Gen1), 1 x USB 2.0 (Internal) H810: 2 x USB 3.2 (Gen2), 2 x USB 3.2 (Gen1)						
	Serial Port	2 x DB9, RS-232/422/485 support auto flow control; 4 x RS-232 (Optional 98R17500601)						
	Audio	2 (1 x line out and 1 x mic in)						
Expansion	Module	Supports Advantech MIC-78 series i-Module						
	Mini PCIe	1 x mini PCIe (PCIe/ USB2.0)						
	M.2	W880: 1x M.2 3042/3052/2242 B-key (PCIe x1, USB 3.0, USB 2.0) for 5G & iDoor H810: 1x M.2 3042/3052/2242 B-key (PCIe x1, USB 2.0) for 5G & iDoor						
LED and Switch	LED	2 (1 x Storage and 1 x GPIO)						
	Button	1 x Power on/off switch						
	Remote Switch	Yes, 2pin terminal block (Optional 98R17500701)						
Power	Type	ATX/AT						
	Input Voltage	12 ~ 36 V_{DC}						
	Power consumption	Maximun: 115W						
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 ~ 45°C with 0.7 m/s air flow* FAN SKU: -20 ~ 50°C with 0.7 m/s air flow -20 ~ 40°C without air flow			Standard: -20 ~ 60°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						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)	Standard: 195 x 80 x 240 mm (7.6" x 3.1" x 9.5") / FAN SKU: 195 x 94.2 x 240 mm (7.6" x 3.7" x 9.5")						
	Bare-bone Weight	Standard: 3.8 KG (8.4 lbs) / FAN SKU: 4.1 KG (9 lbs)						
	Installation	Desktop, Wall mount (optional 98R17500210), Din rail mount (optional 98R17500210)						
Certifications	EMC	CE/FCC Class A, CCC, BSMI						
	Safety	CB/UL, CCC, BSMI						
OS Support		Windows10/11, Linux OS						

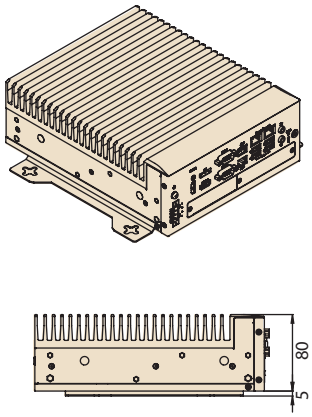
Note 1: The CPU PCIe slot can support graphic cards only due to Intel design specification. Other types of add-on cards will have no function installed on this slot.
Note 2: For the 65W CPU, the operating temperature could support up to 50 degrees and may cause thermal throttling when continued system full-loading which could adjust the CPU power config from BIOS to increase the operating temperature.
*Supports operating temperatures up to 45°C when equipped with M.2 NVMe.

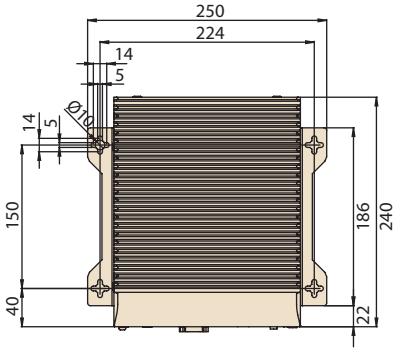
All product specifications are subject to change without notice.

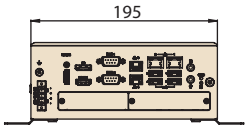
Dimensions

Unit: mm

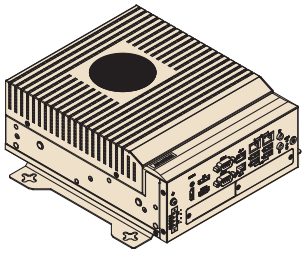
Standard

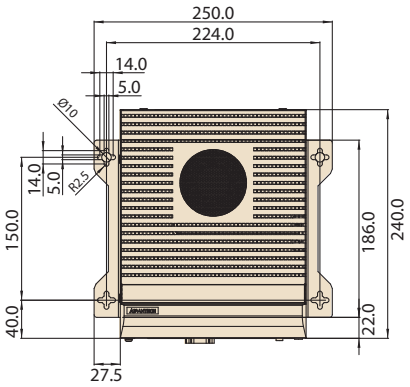


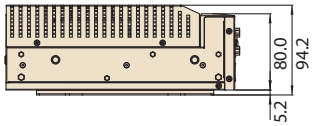


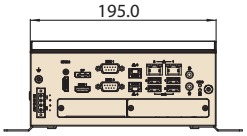


FAN SKU

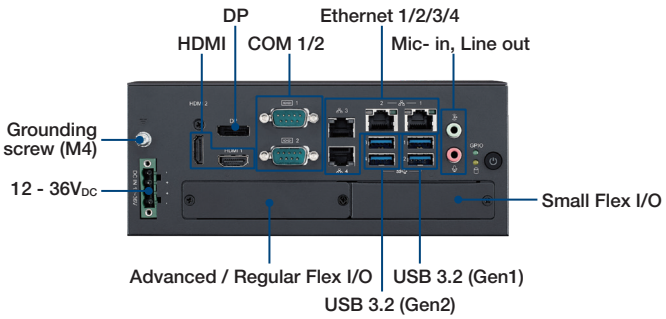








Front View



Rear View



iDoor module or 2 x DB9 connectors from optional (98R17500601 or 98R17500901)

Ordering Information

Part Number	COO	HDMI	DP	2.5" SSD	mPCIe	M.2 M Key	USB3.2 (Gen2)	USB3.2 (Gen1)	M.2 B Key	GbE	COM	PCIe	Power
MIC-780W-00A1	China	2	1	2	1	1	2	2	1	4	2, up to 6 (Optional)	i-Module (optional)*	12 ~ 36V_{DC}
MIC-780H-00A1	China	2	1	2	1	0	2	2	1	2	2, up to 6 (Optional)	i-Module (optional)*	12 ~ 36V_{DC}
MIC-780W-F0A1	China	2	1	2	1	1	2	2	1	4	2, up to 6 (Optional)	i-Module (optional)*	12 ~ 36V_{DC}
MIC-780H-F0A1	China	2	1	2	1	0	2	2	1	2	, up to 6 (Optional)	i-Module (optional)*	12 ~ 36V_{DC}

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

Packing List

Part Number	Description	Quantity
MIC-780	MIC-780 bare-bone system	1
2041078000	MIC-780 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
1990019498N000	RAM thermal pad	2

Optional i-Modules*

Part Number	Description
MIC-78M10-00A1	1 slot expansion iModule (PCIex16 slots)
MIC-78M11-00A1	2 slot expansion iModule (PCIex16, PCI slots)
MIC-78M20-00A1	2 slot expansion iModule (PCIex16, PCIex4 slots)
MIC-78M20-01A1	2 slot expansion iModule (2x PCIex8 slots)
MIC-78M13-00A1	4 slot expansion module (PCIex16, 3x PCI slots)
MIC-78M40-01A1	4 slot expansion module (4 x PCIe slots)
MIC-78MG30-00A1	3 slot expansion module (3 x PCIe slots, GPU 250 watt)
MIC-78G30-00A1	3 slot expansion module (3 x PCIe slots, GPU 600 watt)

* Please refer to MIC-78 series i-Module datasheet for more detail.

Embedded OS

Part Number	Description
20706WLH1S0108	img W11 24HL MIC-780W 64b 24H2 ENU
20706WLV1S0108	img W11 24VL MIC-780W 64b 24H2 ENU
20706WLE1S0108	img W11 24EL MIC-780W 64b 24H2 ENU
20706U24DS0029	img UbuntuD MIC-780W 64b 24.04 ENU
20706WLH1S0110	img W11 24HL MIC-780H 64b 24H2 ENU
20706WLV1S0110	img W11 24VL MIC-780H 64b 24H2 ENU
20706WLE1S0110	img W11 24EL MIC-780H 64b 24H2 ENU
20706U24DS0028	img UbuntuD MIC-780H 64b 24.04 ENU

Optional Flex I/O* & Kits

Part Number	Description
	Flex I/O
AIIS-DIO32-00A1E**	AIIS GPIO module (32 bit)
PCA-TPMSPI-00A1	TPM 2.0 module (SPI)
98R17500401	MIC Remote power on/off FIO
98R17500601	MIC COM port 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
98R17500803	Reset/Remote Switch/5VDC kit SFIO
98R17511000	2 x LAN + 2 x DB9 BKT, Full FIO, 432C
98R17512000	4 x LAN + 2 x DB9 BKT, Full FIO, 432C
	Advanced Flex I/O* **
98910770320	2 x 1GbE Ethernet Ports (Intel® i210-AT)
98910770330	4 x 1GbE Ethernet Ports (Intel® i210-AT), 1 x M.2 NVMe Slot
98910770340	2 x 2.5GbE Ethernet Ports (Intel® I226-V)
98910770350	4 x 2.5GbE Ethernet Ports (Intel® i226-V), 1 x M.2 NVMe Slot
98910770401	1 x M.2 NVMe Slot
98910770501****	4 x 1GbE Ethernet Ports with PoE (Intel® I350-AM4)
98917701000	4 x 5 Gbps USB port
98917701100	8 x 5 Gbps USB port
	Mounting Kit
98R17500210	MIC Din Rail Mounting kit
98R17500501	MIC Wall Mounting 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.
*** W880 SKU only.
**** Can't be installed with other flex IO

Optional Accessories

Part Number	Description
	Adaptor
96PSA-A230W24P4-3	ADP A/D 100-240V 230W 24V 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

Note:
1. MIC-780 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.