

IPC-220 / 240

Compact Industrial Computer System with 12th/13th/14th Gen Intel® Core™ i CPU Socket (LGA 1700)



Features

- Intel® 12th/13th/14th Gen Core™ i CPU socket-type (LGA1700) with Intel® Q670E/H610E chipset
- 3 x independent displays (third display output via optional cable)
- 2 x GigaLan and up to 8 USB 3.2 Gen2
- 2 x RS-232/422/485
- 1 x NVMe M.2 (Q670E Only), 2 x 2.5" HDD/SSD, and 1 x mSATA
- Built-in TPM module (TPM 2.0)
- 19 ~ 24 V_{DC} input power range
- Support Power Out 12V/5V - 2A
- Supports Advantech i-Door
- Versatile LED for system status and alarm



Specifications

14th Generation Processors	CPU	I9-14900	I9-14900T	I7-14700	I7-14700T	I5-14500	I5-14500T	I5-14400	I5-14400T	I5-14400F	I3-14100	I3-14100T		
	P-core Base Frequency	2.0 GHz	1.1 GHz	2.1 GHz	1.3GHz	2.6 GHz	1.7 GHz	2.5 GHz	1.5 GHz	2.5 GHz	3.5 GHz	2.7 GHz		
	L3 Cache	36 MB	36 MB	33 MB	33 MB	24 MB	24 MB	20 MB	20 MB	20 MB	12 MB	12 MB		
	Cores	24	24	20	20	14	14	10	10	10	4	4		
	Processor Base Power	65 W	35 W	65 W	35 W	65 W	35 W	65 W	35 W	65 W	60 W	35 W		
13th Generation Processors	CPU	i9-13900(E)	i9-13900TE	i7-13700(E)	i7-13700T(E)	i5-13500(E)	i5-13500T(E)	i5-13400(E)	i3-13100(E)	i3-13100T(E)				
	P-core Base Frequency	2.0 GHz	1.1 GHz	2.1 GHz	1.4 GHz	2.5 GHz	1.6 GHz	2.5 GHz	3.4 GHz	2.5 GHz				
	L3 Cache	36 MB	36 MB	30 MB	30 MB	24 MB	24 MB	20MB	12 MB	12 MB				
	Cores	24	24	16	16	14	14	10	4	4				
	Processor Base Power	65 W	35 W	65 W	35 W	65 W	35 W	65W	60 W	35 W				
12th Generation Processors	CPU	i9-12900(E)	i9-12900TE	i7-12700(E)	i7-12700TE	i5-12500(E)	i5-12400	i5-12500TE	i3-12100(E)	i3-12100TE	Pentium G7400E	Pentium G7400TE	Celeron G6900E	Celeron G6900TE
	P-core Base Frequency	2.4 GHz	1.1 GHz	2.1 GHz	1.4 GHz	3.0 GHz	2.5 GHz	1.9 GHz	3.3 GHz	2.1 GHz	3.6 GHz	3.0 GHz	3.0 GHz	2.4 GHz
	L3 Cache	30 MB	30 MB	25 MB	25 MB	18 MB	18 MB	18 MB	12 MB	12 MB	6 MB	6 MB	4 MB	4 MB
	Cores	16	16	12	12	6	6	6	4	4	2	2	2	2
	Processor Base Power	65 W	35 W	65 W	35 W	65 W	65 W	35 W	60 W	35 W	46 W	35 W	46 W	35 W
Processor System	Socket	LGA 1700												
	Chipset	Q670E / H610E												
	BIOS	AMI 256Mbit SPI Flash												
Memory	Technology	Dual-channel DDR5 4800 MHz												
	Socket	2 x 262 pin DDR5 SODIMM (Up to 32GB per socket)												
	Maximum Capacity	64GB												
	Chipset	PCE-2133: Q670E PCE-2033: H610E												
Display	VGA	Up to 1920 x 1080 @ 60Hz												
	HDMI	Up to 3840 x 2160 @ 60Hz												
	DP	Up to 4096 x 2160 @ 60Hz via optional cable												
	DVI	Up to 1920 x 1080 @ 60Hz via optional cable												
	Multiple Display	3 x independent displays (third display output via optional cable)												
Ethernet	Controller	PCE-2133 LAN1: Intel® I219LM, LAN2: Intel® I226V PCE-2033 LAN1: Intel® I219V, LAN2: Intel® I226V												
	Interface	LAN1: 10/100/1000 Mbps; LAN2: 10/100/1000/2500 Mbps												
	Connector	2 x RJ45												
Storage	NVMe M.2	1 (PCIe x4 M-key 2280 type, Q670E Only)												
	HDD/SSD	2 x 2.5" HDD/SSD (Max 15mm Height each)												
	mSATA	1												
	RAID	0/1 (Q670E Only)												
I/O	USB	Q670E: 8 x USB 3.2 Gen2 H610E: 4 x USB 3.2 Gen1 + 4 USB 2.0												
	Serial Port	2 x RS-232/422/485 support auto flow control												
	Audio	2 (Line-out, Mic-in)												
Expansion	I/O Module	Support Advantech i-Door												
	Expansion slots					PCIex16				PCIex4				PCI
		IPC-220-20B1				1				1				0
		IPC-240-20B1				1				3				0
		IPC-240-21B2				1				1				2
	Support card size	111.15mm(Full height) x 179mm (Half length)												
LED and Switch	Button	Power												
	LED	CPU FAN Alarm, System Temp. Alarm, Watch Dog, CPU Temp. Alarm, Power, HDD Disk												

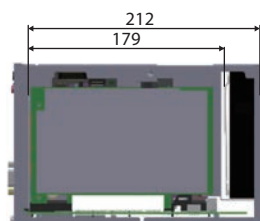
Specifications (Cont.)

Power	Type	ATX(Default) / AT	
	Input Voltage	19 ~ 24 V _{oc} , 8A ~ 6.5A	
	Remote Power Switch	Support Remote Power Switch	
	Power consumption	150W (Without Add on card)~230W (With Add on card)	
Watchdog Timer	Output	System reset	
	Interval	Programmable 1 ~ 255 sec/min	
Environment		Operating	Non-operating
	Temperature	0 ~ 45 °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: 0.5Grms @ 5 ~ 500 Hz, random, 1 hr/axis	2G
	Shock	With SSD: 10G, IEC-68-2-27, half-sine wave, 11 ms duration	
Mechanical	Dimensions (W x D x H)	IPC-220: 155 x 230 x 150 mm (6.1" x 9.05" x 5.9") IPC-240: 195 x 230 x 150 mm (7.68" x 9.05" x 5.9")	
	Weight	IPC-220: 3.1kg IPC-240: 3.3kg	
	Installation	Desktop/wall mount	
Certifications	EMC	CE/FCC Class A, CCC	
	Safety	UL, CCC	

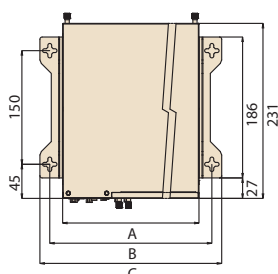
Dimensions

Unit: mm

Add on card Max. length 179mm



Side View



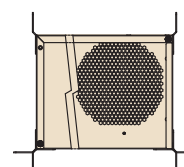
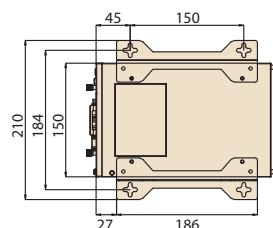
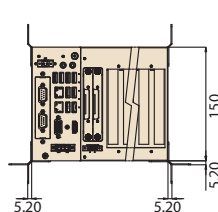
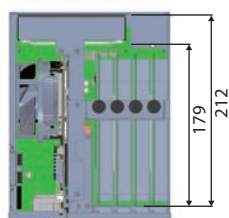
Dimension (mm)	IPC-220-20B1	IPC-240-20B1	IPC-240-21B2
A	155	195	195
B	189	229	229
C	215	255	255

IPC-220

IPC-240



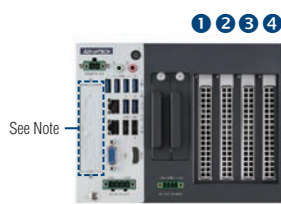
Top View



Front View



IPC-220-20B1



IPC-240-20B1
IPC-240-21B2

Expansion Slot Order	IPC-220-20B1	IPC-240-20B1	IPC-240-21B2
1	PCIe x 16	PCIe x 16	PCIe x 16
2	PCIe x 4	PCIe x 4	PCI
3	-	PCIe x 4	PCIe x 4
4	-	PCIe x 4	PCI

Note: 2-port D-sub 9-pin COM cable to be assembled upon request

Ordering Information

Part Number	Compatible Mother Board	PCIe x16	PCIe x4	PCI	Gbe	HDD/SSD	COM	Internal USB (2.0 Type A)
IPC-220-20B1	PCE-2133	1	1	0	2	2 x 2.5"	2	2
	PCE-2033	1	1	0	2	2 x 2.5"	2	2
IPC-240-20B1	PCE-2133	1	3	0	2	2 x 2.5"	2	2
	PCE-2133	1	1	2	2	2 x 2.5"	2	2
IPC-240-21B2	PCE-2133	1	1	2	2	2 x 2.5"	2	2
	PCE-2033	1	1	2	2	2 x 2.5"	2	2

Part Number	Chipset	TPM 2.0	USB 3.2	USB 2.0	Internal USB 2.0 (Box header)	NVMe M.2	miniPCle
PCE-2133-00A1	Q670E	TPM 2.0	8	0	2	1	1 (mSATA, PCle, USB)
PCE-2033-00A1	H610E	TPM 2.0	4	4	0	0	1 (mSATA Only)

IPC-220/240 Packing List

Item	Description
IPC-220/240	Compact Industrial Computer Chassis
1960070543T005	Mounting Bracket
2001022010	User Manual for IPC-220/240
1652003234	4-pin Phoenix power connector
1652002205	Remote SW 2 pin Phoenix connector
1652007894-01	4-Pin Plug in 3.5mm 90D(F) DC output connector
1700019968	F Cable 2*10P-2.0/D-SUB 9P(M)*2 15CM ARK-2120
1960068789N105	IDOOR COMX2 COVER FOR IPC-240 877C
1700024926-01	A CABLE 1*2P-2.0/PLUG-IN 2P-5.08 16cm
1700019968	2-port D-sub 9-pin COM cable
1960068789N105	IDOOR COM x2 COVER

Note: 2-port D-sub 9-pin COM cable to be assembled upon request

PCE-2033/2133 Packing List

Item	Description
PCE-2033/2133	12th/13th/14th Gen Intel® Core™ i CPU (LGA 1700) CPU board
1950023035N022	Front IO Panel
-	Startup Manual for PCE-2033/2133

Optional Accessories

Part Number	Description
96PSA-A230W24P4-3	ADP A/D 100-240V 230W 24V TB 4P
96PSA-A150W19P4-4	Adaptor A/D 100-240V 150W 19V TB 4P
96PSD-A240W24-MN	DIN RAIL Adapter A/D 100-240V 240W 24V
1970005354T001	CPU Cooler LGA1700 S-65W 110x110x45.4
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
1700024858-01	Power cable for add-on card, 4P(2x2)
170304015K	Power cable for add-on card, 4P(1x4)
98R12200010	Display Port accessory kit
98R12200030	HDMI port kit iDoor
98R12200040	DVI port kit iDoor
1700031170-01	4-PIN DC to DC Power cable, DIN Rail Adapter, 150cm
1700029720-01	Power Cord (USA), 3 Pin, DIN Rail Adapter, 183cm
1700030520-01	Power Cord (CN), 3 Pin, DIN Rail Adapter, 150cm

Embedded OS

PN	Description
Coming soon	img W11 2024HL LTSC PCE-2133 64b
Coming soon	img W11 2024VL LTSC PCE-2133 64b
Coming soon	img W11 2024EL LTSC PCE-2133 64b
Coming soon	img W11 2024HL LTSC PCE-2033 64b
Coming soon	img W11 2024VL LTSC PCE-2033 64b
Coming soon	img W11 2024EL LTSC PCE-2033 64b
20706WX1HS0053	img W10 21HL PCE-2133 64b 21H2 ENU
20706WX1VS0053	img W10 21VL PCE-2133 64b 21H2 ENU
20706WX1ES0053	img W10 21EL PCE-2133 64b 21H2 ENU
20706WX1HS0056	img W10 21HL PCE-2033 64b 21H2 ENU
20706WX1VS0056	img W10 21VL PCE-2033 64b 21H2 ENU
20706WX1ES0056	img W10 21EL PCE-2033 64b 21H2 ENU
20706U22DS0007	img UbuntuD PCE-2133 64b 22.04 ENU
20706U22DS0005	img UbuntuD PCE-2033 64b 22.04 ENU

Supported iDoor Module

P/N	Description	Signal Interface
MOS-1110Y-0101E	Isolated 16 DI / 8 DO, 1-Ch, DB37, PCle I/F	PCle
MOS-1120Y-0202E	Isolated RS-232, 2-Ports, DB9, PCle I/F	PCle
MOS-1120Y-1402E	Non-Isolated RS-232, 4-Ports, DB9, PCle I/F	PCle
MOS-1121Y-0202E	Isolated RS-422/485, 2-Ports, DB9, PCle I/F	PCle
MOS-1121Y-1402E	Non-Isolated RS-422/485, 4-Ports, DB9, PCle I/F	PCle
MOS-1130Y-0201E	Isolated CANBus, 2-Ch, DB9, PCle I/F	PCle
MOS-2110Z-1201E	USB Port iDoor Module	PCle
MOS-2120-Z1101E	Giga LAN Ethernet iDoor Module	PCle
MOS-2220-X1101E	Parallel Port iDoor Module	USB
MOS-2220-Z1101E	High Speed Serial COM iDoor Module	USB
MOS-2230-Z1201E	CANBus iDoor Module	USB
PCM-26D2CA-BE	SJA1000 CANBus, DB9 x 2	PCle
PCM-26D2CA-CE	USB CANBus, DB9 x 2	USB
PCM-24D2R2-BE	2-Port Isolated RS-232 mPCle, DB9 x 2	USB
PCM-24D2R4-BE	2-Port Isolated RS-422/485 mPCle, DB9 x 2	USB
PCM-24D4R2-BE	4-Port Non-Isolated RS-232 mPCle, DB37 x 1	USB
PCM-24D4R4-BE	4-Port Non-Isolated RS-422/485 mPCle, DB37 x 1	USB
PCM-27D24DI-AE	24-Channels Isolated Digital I/O with counter mPCle, DB37	PCle
PCM-24S34G-CE	EG-25G LTE/HSPA+/GPRS, mPCle, Ant	PCle
PCM-24S2WF-CE	802.11 a/b/g/n/ac 2T2R w/BT4.1, Intel AC9260	WiFi: PCI-E BT: USB
PCM-24R2GL-AE	2 Port Giga LAN Intel i350 PCle mini card	PCle
PCM-24R1TP-BE	Intel I225, 2.5Gb/s, IEEE 1588, TSN, RJ45*1	PCle
PCM-23U1DG-CE	USB Slot w/ Lock for USB Dongle	USB
PCM-2300MR-BE	MR4A16B MRAM, 4MByte, Lattice	PCle
PCM-26R2PN	2Port, PROFINET, Hilscher FieldBus mPCle	PCle
PCM-26R2EC-MAE	2Port, EtherCAT, Hilscher FieldBus mPCle, Master	PCle
PCM-26R2EC-SAE	2Port, EtherCAT, Hilscher FieldBus mPCle, Slave	PCle

Note: The PCM series module requires a bracket (P/N : 1960065854N001) that must be ordered separately.