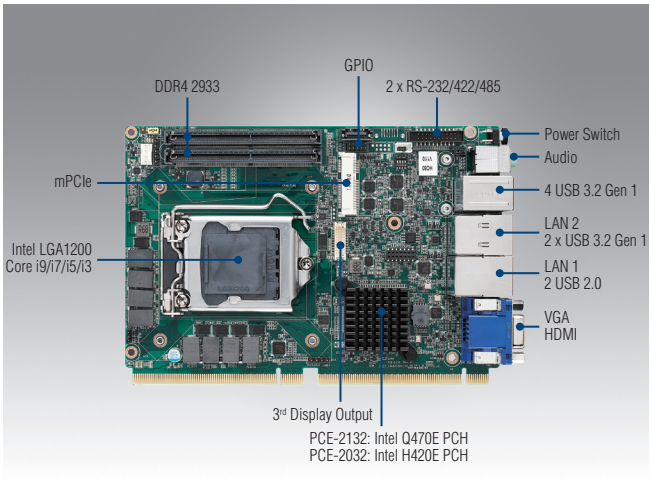
# PCE-2032/2132

## LGA1200 10th Generation Intel® Core™ i9/i7/i5/i3 & Pentium®/Celeron® CPU Board for IPC-2 Series Chassis




## Features

- Intel® 10th Gen Core™ i CPU socket-type (LGA1200) with Intel® Q470E/ H420E chipset
- 3 x independent displays (third display output via optional cable)
- 2 x GigaLan and 6 x USB3.2
- 2 x RS-232/422/485 and 2 x RS232 serial ports
- 1 x NVMe M.2 (PCE-2132 Only), 2 x 2.5" HDD/SSD, and 1 x mSATA

CE FCC

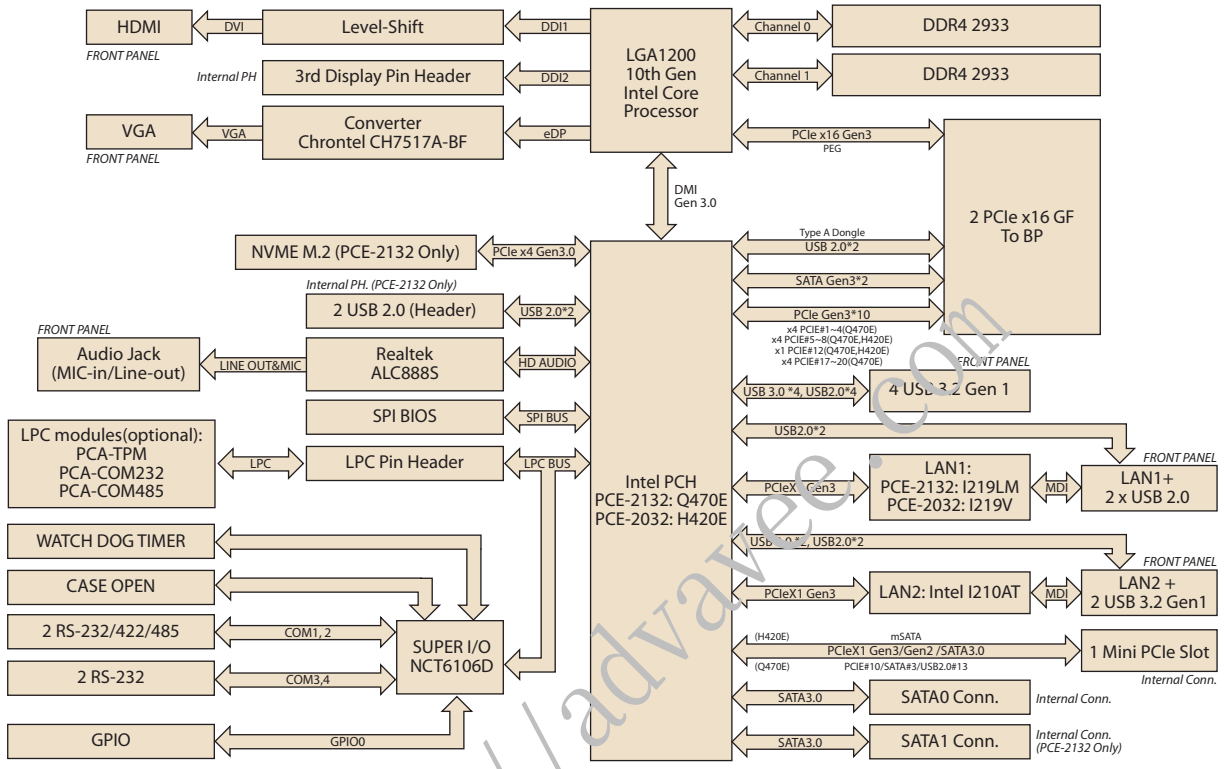
Quiet

## Specifications

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 10th Generation Processor | CPU | i9-10900E | i9-10900TE | i7-10700E | i7-10700TE | i5-10500E | i5-10500TE | i3-10100E | i3-10100TE | G6400E | G6400TE | G5900E | G5900TE |
| | Base Frequency | 2.8 GHz | 1.8 GHz | 2.9 GHz | 2.0 GHz | 3.1 GHz | 2.3 GHz | 3.2 GHz | 2.3 GHz | 3.8 GHz | 3.2 GHz | 3.2 GHz | 3.0 GHz |
| | L3 Cache | 20 MB | 20 MB | 16 MB | 16 MB | 12 MB | 12 MB | 6 MB | 6 MB | 4 MB | 4 MB | 2 MB | 2 MB |
| | Cores | 10 | 10 | 8 | 8 | 6 | 6 | 4 | 4 | 2 | 2 | 2 | 2 |
| | TDP | 65 W | 35 W | 65 W | 35 W | 65 W | 35 W | 65 W | 35 W | 65 W | 35 W | 65 W | 35 W |
| | Socket | LGA1200 | | | | | | | | | | | |
| | Chipset | PCE-2132: Q470E<br>PCE-2032: H420E | | | | | | | | | | | |
| | BIOS | PCE-2132: AMI 256Mbit SPI<br>PCE-2032: AMI 128Mbit SPI | | | | | | | | | | | |
| Memory | Technology | Dual Channel (Non-ECC) DDR4 2933 | | | | | | | | | | | |
| | Max. Capacity | 64GB/ 32GB per DIMM | | | | | | | | | | | |
| | Socket | 2 x 260 pin DDR4 SODIMM | | | | | | | | | | | |
| Graphics | VGA | Up to 1920 x 1080 @ 60Hz | | | | | | | | | | | |
| | HDMI | Up to 3840 x 2160 @ 30 Hz or 1920 x 1080 @60Hz | | | | | | | | | | | |
| | DP | Up to 4096 x 2160 @ 60 Hz via optional cable | | | | | | | | | | | |
| | Multiple Display | 3 x independent displays (third display output via optional cable) | | | | | | | | | | | |
| Ethernet | Controller | PCE-2132 LAN1: Intel® I219LM, LAN2: Intel® I210AT<br>PCE-2032 LAN1: Intel® I219V, LAN2: Intel® I210AT | | | | | | | | | | | |
| | Connector | 2 x RJ-45 | | | | | | | | | | | |
| SATA | Max. Data Transfer Rate | 600MB/s | | | | | | | | | | | |
| | Channel | 2 | | | | | | | | | | | |
| | RAID | 0/1/5/10 (PCE-2132 Only) | | | | | | | | | | | |
| Front I/O | VGA | 1 | | | | | | | | | | | |
| | HDMI | 1 | | | | | | | | | | | |
| | Ethernet | 2 | | | | | | | | | | | |
| | USB | 6 x USB3.2, 2 x USB2.0 | | | | | | | | | | | |
| | Audio | 2 (Line-out, Mic-in) | | | | | | | | | | | |
| Internal Connectors | USB | 2 USB 2.0 (PCE-2132 Only) | | | | | | | | | | | |
| | Serial | 2 x RS-232/422/485 support auto flow control and 2 x RS232 serial ports | | | | | | | | | | | |
| | M.2 | 1 (PCIe x4 M-key 2280 type, PCE-2132 Only) | | | | | | | | | | | |
| | mPCIe | 1, PCE-2132 supports PCIe, mSATA, and USB signal<br>1, PCE-2032 supports only mSATA signal | | | | | | | | | | | |
| | GPIO | 8-bit | | | | | | | | | | | |
| Watchdog Timer | Output | System reset | | | | | | | | | | | |
| | Interval | Programmable 1 ~ 255 sec | | | | | | | | | | | |
| Environment | | Operating | | | | | | Non-Operating | | | | | |
| | Temperature | 0 ~ 60 °C (32 ~ 140 °F), depends on CPU speed and system thermal solution | | | | | | -40 ~ 85 °C (-40 ~ 185 °F) | | | | | |
| | Humidity | 40 °C @ 95% RH Non-condensing | | | | | | 60 °C @ 95% RH Non-condensing | | | | | |
| Physical Characteristics | Dimensions (L x H) | 186 x 127mm | | | | | | | | | | | |

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## Block Diagram




## Ordering Information

| CPU Board Part number | Intel CPU Support | Chipset | USB 3.2 | USB 2.0 | GbE | NVMe M.2 | miniPCIe | COM |
|---|---|---|---|---|---|---|---|---|
| PCE-2133-00A1 | 12th/13th Gen | C[illegible]70E | 8 | 0 | 2 | 1 (PCIe x4 M Key) | 1 (Full-Size) | 2 |
| PCE-2033-00A1 | 12th/13th Gen | H[illegible]10E | 4 | 4 | 2 | 0 | 1 (mSATA Only) | 2 |
| PCE-2132-00A1 | 10th Gen | [illegible]470E | 6 | 2 | 2 | 1 (PCIe x4 M Key) | 1 (Full-Size) | 2 |
| PCE-2032-00A1 | 10th Gen | H420E | 6 | 2 | 2 | 0 | 1 (mSATA Only) | 2 |

| Chassis Part Number | Compatible CPU Board Model | PCIe x16 | PCIe x4 | PCI | HDD/SSD | Power | Internal USB (2.0 Type A) | ErP Compliance |
|---|---|---|---|---|---|---|---|---|
| IPC-220-20A1 | PCE-2132 / PCE-2133 | 1 | 1 | 0 | 2 x 2.5" | 19-24 $V_{DC}$ | 2 | No |
| | PCE-2032 / PCE-2033 | 1 | 1 | 0 | 2 x 2.5" | 19-24 $V_{DC}$ | 2 | No |
| IPC-240-20A1 | PCE-2132 / PCE-2133 | 1 | 3 | 0 | 2 x 2.5" | 19-24 $V_{DC}$ | 2 | No |
| IPC-240-21A1 | PCE-2132 / PCE-2133 | 1 | 1 | 2 | 2 x 2.5" | 19-24 $V_{DC}$ | 2 | No |
| | PCE-2032 / PCE-2033 | 1 | 1 | 2 | 2 x 2.5" | 19-24 $V_{DC}$ | 2 | No |
| IPC-220-20B1 | PCE-2132 / PCE-2133 | 1 | 1 | 0 | 2 x 2.5" | 19-24 $V_{DC}$ | 2 | Yes |
| | PCE-2032 / PCE-2033 | 1 | 1 | 0 | 2 x 2.5" | 19-24 $V_{DC}$ | 2 | Yes |
| IPC-240-20B1 | PCE-2132 / PCE-2133 | 1 | 3 | 0 | 2 x 2.5" | 19-24 $V_{DC}$ | 2 | Yes |
| IPC-240-21B1 | PCE-2132 / PCE-2133 | 1 | 1 | 2 | 2 x 2.5" | 19-24 $V_{DC}$ | 2 | Yes |
| | PCE-2032 / PCE-2033 | 1 | 1 | 2 | 2 x 2.5" | 19-24 $V_{DC}$ | 2 | Yes |

## Packing List

| Item | Description |
|---|---|
| PCE-2032/2132 | 10th Gen Intel® Core™ i CPU (LGA 1151) CPU board |
| 1950023035N021 | Front IO Panel |
| - | Startup Manual for PCE-2032/2132 |

## Embedded OS

| Item | Description |
|---|---|
| 20706WX9HS0119 | img Win 10 IoT 19HL PCE-2132 64b 1809 ENU |
| 20706WX9VS0123 | img Win 10 IoT 19VL PCE-2132 64b 1809 ENU |
| 20706WX9ES0133 | img Win10 IoT 19EL PCE-2132 64b 1809 ENU |
| 20706WX9HS0126 | img Win 10 IoT 19HL PCE-2032 64b 1809 ENU |
| 20706WX9VS0130 | img Win 10 IoT 19VL PCE-2032 64b 1809 ENU |
| 20706WX9ES0140 | img Win10 IoT 19EL PCE-2032 64b 1809 ENU |

## Optional Accessories

| Part Number | Description |
|---|---|
| 1960053207N001 | CPU Cooler LGA1155 S-95W 92.9x92.9x46 4400RPM |
| 1700008762 | COM3/4 (RS-232) Cable+PCIe Bracket |
| 98R12200010 | Display port kit iDoor |
| 98R12200030 | HDMI port kit iDoor |
| 98R12200040 | DVI port kit iDoor |
| PCA-TPM-00B1E | TPM 2.0 module |

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