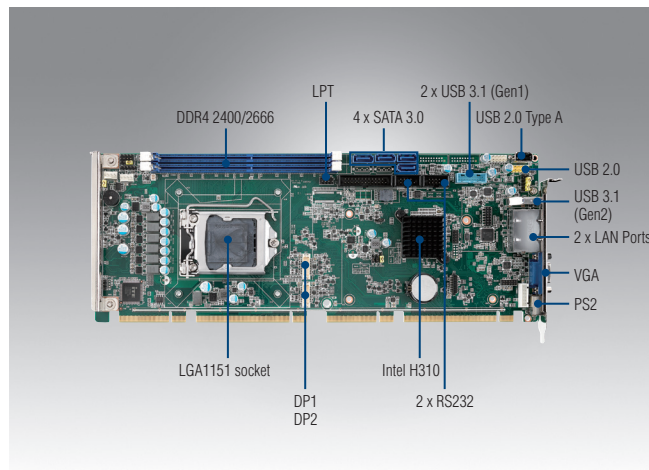


PCE-5031

LGA1151 8th and 9th Generation Intel® Core™ i7/i5/i3/Pentium/Celeron System Host Board with DDR4, SATA 3.0, USB 3.1, Dual GbE, and Dual Displays



Features

- Intel® Core™ i7/i5/i3 LGA1151 processor with H310 chipset
- Up to 64 GB of dual-channel (non-ECC) DDR4 2400/2666 MHz
- PCIe 3.0, USB 3.1, and SATA 3.0 slots
- Supports VGA and DVI-D/DP display (with optional cable)
- Supports Advantech's LPC modules, SUSIAccess, and embedded software APIs

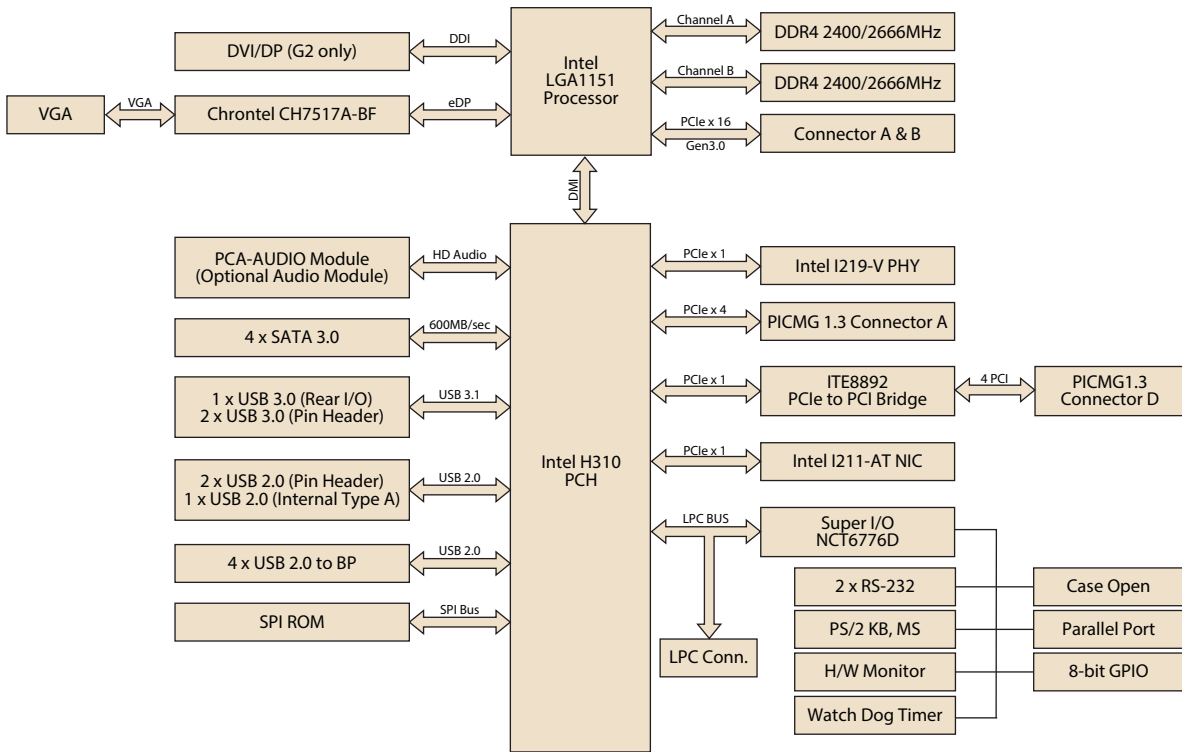
Note 1: Intel 8th and 9th generation processors only support Windows 10 (64-bit) (RS5 version).

CE FCC

Specifications

| | | | | | | | | | | | | | | | | | | | |
|--------------------|--------------------|--|---|---------|----------|----------|-----------|---------|----------|----------|-----------|---------|----------|---------|---------|---------|---------|------|--|
| Processor System | CPU | i7-9700E | i7-9700TE | i7-8700 | i7-8700T | i5-9500E | i5-9500TE | i5-8500 | i5-8500T | i3-9100E | i3-9100TE | i3-8100 | i3-8100T | G5400 | G5400T | G4900 | G4900T | | |
| | Speed | 2.6 GHz | 1.8 GHz | 3.2 GHz | 2.4 GHz | 3.0 GHz | 2.2 GHz | 3.0 GHz | 2.1 GHz | 3.1 GHz | 2.2 GHz | 3.6 GHz | 3.1 GHz | 3.7 GHz | 3.1 GHz | 3.1 GHz | 2.9 GHz | | |
| | L3 Cache | 12 MB | 12 MB | 12 MB | 12 MB | 9 MB | 9 MB | 9 MB | 9 MB | 6 MB | 6 MB | 6 MB | 6 MB | 4 MB | 4 MB | 4 MB | 2 MB | 2 MB | |
| | Cores | 8 | 8 | 6 | 6 | 6 | 6 | 6 | 6 | 4 | 4 | 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 | 58 W | 35 W | 54 W | 35 W | | |
| | Socket | LGA 1151 | | | | | | | | | | | | | | | | | |
| | Chipset | Intel H310 | | | | | | | | | | | | | | | | | |
| | BIOS | AMI 256Mbit SPI Flash | | | | | | | | | | | | | | | | | |
| | Bus | PCI-Express | 1 x PCIe x16 and 1 x PCIe x4 to backplane | | | | | | | | | | | | | | | | |
| | | PCI | 4 x PCI master to backplane, 32-bit, 33 MHz | | | | | | | | | | | | | | | | |
| Memory | Technology | Dual-channel (non-ECC) U-DIMM DDR4 2400/2666 MHz | | | | | | | | | | | | | | | | | |
| | Max. Capacity | up to 64GB (based on CPU) | | | | | | | | | | | | | | | | | |
| | Socket | 2 x DDR4 288-pin DIMM | | | | | | | | | | | | | | | | | |
| Graphics | Controller | Chipset integrated with Intel® HD Graphics | | | | | | | | | | | | | | | | | |
| | VRAM | Shared system memory is subject to OS | | | | | | | | | | | | | | | | | |
| | VGA | Supports resolutions of up to 1920 x 1200 pixel @ 60 MHz | | | | | | | | | | | | | | | | | |
| | DVI-D | Supports resolutions of up to 1920 x 1200 pixel @ 60 MHz | | | | | | | | | | | | | | | | | |
| | Display Port | Supports resolutions of up to 1920 x 1080 pixel @ 60 Hz | | | | | | | | | | | | | | | | | |
| | Dual Display | CRT+DP/CRT+DVI | | | | | | | | | | | | | | | | | |
| Ethernet | Interface | 10/100/1000 Mbps | | | | | | | | | | | | | | | | | |
| | Controller | LAN 1: Intel® I219-V LAN 2: Intel® I211-AT | | | | | | | | | | | | | | | | | |
| | Connector with LED | RJ45 x 2 | | | | | | | | | | | | | | | | | |
| Rear I/O | USB 3.1(Gen2) | 1 (G2 SKU) | | | | | | | | | | | | | | | | | |
| | Ethernet | 2 | | | | | | | | | | | | | | | | | |
| | VGA | 1 | | | | | | | | | | | | | | | | | |
| | PS/2 | 1 (PS/2 Y cable supports 1 x keyboard and 1 x mouse) | | | | | | | | | | | | | | | | | |
| | USB | 7 x USB 2.0 (pin header*2 + USB Type A*1 + 4 on backplane) 2 x USB 3.1(Gen1) (pin header) | | | | | | | | | | | | | | | | | |
| Internal Connector | SATA | 4 | | | | | | | | | | | | | | | | | |
| | DP/DVI-D | 1 (Pin header) | | | | | | | | | | | | | | | | | |
| | COM | 2 (G2 SKU) | | | | | | | | | | | | | | | | | |
| | Parallel | 1 | | | | | | | | | | | | | | | | | |
| | GPIO | 8 bits | | | | | | | | | | | | | | | | | |
| | Watchdog Timer | Output | System reset | | | | | | | | | | | | | | | | |
| Interval | | Programmable 1-255 sec | | | | | | | | | | | | | | | | | |
| Miscellaneous | Audio | Intel® High Definition audio interface (requires audio extension module PCA-AUDIO-HDB1E) | | | | | | | | | | | | | | | | | |
| Power Requirement | Test Environment | i7-6700, 3.4 GHz, 65 W, with 2 x 8-GB DDR4 2133 | | | | | | | | | | | | | | | | | |
| | Voltage | +12V +5V +3.3V | | | | | | | | | | | | | | | | | |
| | Current | 4.30A 2.15A 0.69A | | | | | | | | | | | | | | | | | |
| Environment | Temperature | Operating: 0 - 60 °C (dependent on CPU and cooler solution) Non-operating: -40 - 85 °C | | | | | | | | | | | | | | | | | |
| | Humidity | 40 °C @ 85% relative humidity (non-condensing) 60 °C @ 95% relative humidity (non-condensing) | | | | | | | | | | | | | | | | | |
| Physical | Dimensions (L x H) | 338 x 122 mm (13.3" x 4.8") | | | | | | | | | | | | | | | | | |

Block Diagram



Ordering Information

| Part Number | Chipset | Memory | Backplane | Display | USB 3.0 | USB 2.0 | COM | GbE LAN | AMT | SATA | SW RAID | Intelligent System Module Support |
|-----------------|---------|---------|-----------|---------------|---------|---------|-----|---------|-----|------|---------|-----------------------------------|
| PCE-5031G2-00A1 | H310 | Non-ECC | PCE-5BXX | VGA + DVI/DP* | 3 | 7 | 2 | 2 | No | 4 | No | Yes |

*Note: DP cable (P/N: PCE-DP10-00A1E) and DVI-D

Packing List

| Part Number | Description | Quantity |
|---------------|-------------------------------|----------|
| 1700003194 | Serial ATA HDD data cable | x2 |
| 1700022749-11 | Serial ATA HDD power cable | x1 |
| 1701260305 | COM + printer ports cable kit | x1 |
| 1700060202 | Keyboard and mouse Y-cable | x1 |
| 1700002204 | 2-port USB cable kit | x1 |
| 9689000068 | Jumper package | x1 |
| 2190000902 | Warranty card | x1 |
| 2001512910 | Startup manual | x1 |
| 2061512900 | Utility CD | x1 |

Optional Accessories

| Part Number | Description |
|-----------------------------------|--|
| 1700020277-01 | 2-port USB 3.0 cable w/ BKT (30 cm) |
| 1700002204 | 2-port USB 2.0 cable w/ BKT (27 cm) |
| 1700021831-01 | DP to DVI-D cable w/ BKT for G2 SKU |
| 1701090401 | Single COM cable (40 cm) |
| 1701092300 | Dual COM cable (28.5 cm) |
| 1960049408N001 | CPU cooler for 1U Chassis and 84W TDP |
| 1960047831N001/ 1960077101N001 | CPU cooler for 2U Chassis and 95W TDP |
| 1960052651N021 | CPU cooler for 2U/4U Chassis and 80W TDP |
| PCA-TPM-00A1E | TPM module |
| PCA-COM485-00A1E | 4-port RS-422/485 LPC module |
| PCA-COM232-00A1E | 4-port RS-232 LPC module |
| PCE-DP10-00A1E | DP redriver board (25 cm) for G2 SKU |
| PCA-AUDIO-HDB1E | Extension module for HD audio |
| PCA-TPM-00B1E | TPM 2.0 Module |

I/O View



PCE-5031G2-00A1E