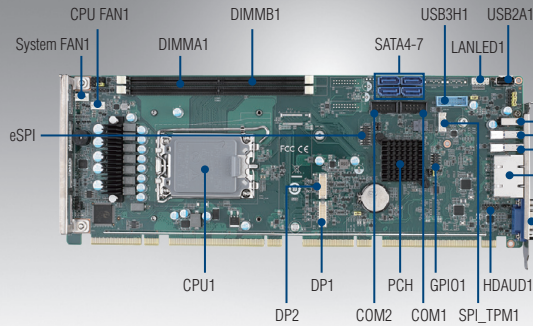


# PCE-5033

## LGA1700 12th Generation Intel® Core™ i9/i7/i5/i3/Pentium® System Host Board with DDR5, SATA 3.0, USB 3.2, Dual 2.5GbE, and Triple Displays

### Preliminary



### Features

- Intel® Core™ i9/i7/i5/i3/Pentium LGA1700 processor with H610E chipset
- Up to 64 GB of dual-channel (Non-ECC) DDR5 4800 MHz
- PCIe 3.0, USB 3.2, SATA 3.0, and Dual 2.5GbE LAN
- Supports VGA and 2 x DVI-D/DP/HDMI display (with optional cable)
- Supports Advantech's TPM and COM modules, SUSI 4.0, and embedded software APIs

Note: Legacy platform is not supported.

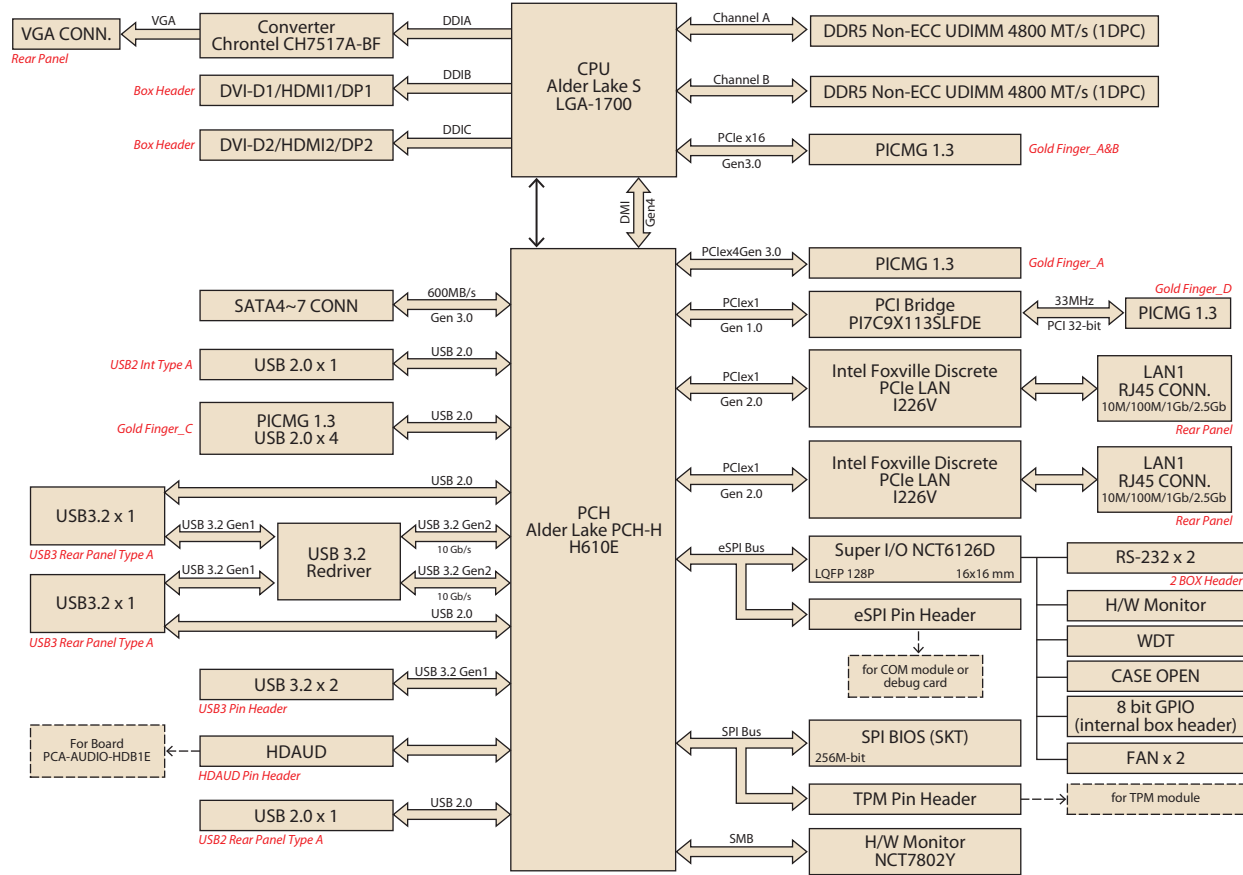


### Specifications

|                    |                       |                                                                                          |            |             |            |             |            |             |            |                |                 |                |                 |
|--------------------|-----------------------|------------------------------------------------------------------------------------------|------------|-------------|------------|-------------|------------|-------------|------------|----------------|-----------------|----------------|-----------------|
| Processor System   | CPU                   | i9-12900(E)                                                                              | i9-12900TE | i7-12700(E) | i7-12700TE | i5-12500(E) | i5-12500TE | i3-12100(E) | i3-12100TE | Pentium G7400E | Pentium G7400TE | Celeron G6900E | Celeron G6900TE |
|                    | P-core Base Frequency | 2.3GHz                                                                                   | 1.1GHz     | 2.1GHz      | 1.4GHz     | 2.9GHz      | 1.9GHz     | 3.2GHz      | 2.1GHz     | 3.6GHz         | 3.0GHz          | 3.0GHz         | 2.4GHz          |
|                    | L3 Cache              | 30MB                                                                                     | 30MB       | 25MB        | 25MB       | 18MB        | 18MB       | 12MB        | 12MB       | 6MB            | 6MB             | 4MB            | 4MB             |
|                    | Cores                 | 16                                                                                       | 16         | 12          | 12         | 6           | 6          | 4           | 4          | 2              | 2               | 2              | 2               |
|                    | Processor Base Power  | 65W                                                                                      | 35W        | 65W         | 35W        | 65W         | 35W        | 65W         | 35W        | 46W            | 35W             | 46W            | 35W             |
|                    | Socket                | LGA 1700                                                                                 |            |             |            |             |            |             |            |                |                 |                |                 |
|                    | Chipset               | H610                                                                                     |            |             |            |             |            |             |            |                |                 |                |                 |
| Bus                | BIOS                  | AMI 256MB SPI Flash                                                                      |            |             |            |             |            |             |            |                |                 |                |                 |
|                    | PCI-Express           | 1 x PCIe x16/2 x PCIe x8 and 1 x PCIe x4 to backplane                                    |            |             |            |             |            |             |            |                |                 |                |                 |
| Memory             | PCI                   | 4 x PCI master to backplane, 32-bit, 33 MHz                                              |            |             |            |             |            |             |            |                |                 |                |                 |
|                    | Technology            | Dual-channel (Non-ECC) U-DIMM DDR5 4800 MHz                                              |            |             |            |             |            |             |            |                |                 |                |                 |
|                    | Max. Capacity         | Up to 64GB (based on CPU)                                                                |            |             |            |             |            |             |            |                |                 |                |                 |
| Graphics           | Socket                | 2 x DDR5 288-pin DIMM                                                                    |            |             |            |             |            |             |            |                |                 |                |                 |
|                    | Controller            | Chipset integrated with Intel® UHD Graphics                                              |            |             |            |             |            |             |            |                |                 |                |                 |
|                    | VRAM                  | Shared system memory is subject to OS                                                    |            |             |            |             |            |             |            |                |                 |                |                 |
|                    | VGA                   | Supports resolutions of up to 2048 x 1152 pixel @ 60 MHz                                 |            |             |            |             |            |             |            |                |                 |                |                 |
|                    | DVI-D                 | Supports resolutions of up to 1920x 1200 @ 60 MHz                                        |            |             |            |             |            |             |            |                |                 |                |                 |
|                    | Display Port          | Supports resolutions of up to 4096 x 2160 @ 60 MHz                                       |            |             |            |             |            |             |            |                |                 |                |                 |
|                    | HDMI                  | Supports resolutions of up to 1920 x 1080 @ 60MHz                                        |            |             |            |             |            |             |            |                |                 |                |                 |
| Ethernet           | Triple Display        | 1st: VGA, 2nd DP/DVI-D/HDMI, 3rd DP/DVI-D/HDMI (2nd and 3rd display via optional cable)  |            |             |            |             |            |             |            |                |                 |                |                 |
|                    | Interface             | 10/100/1000/2500 Mbps                                                                    |            |             |            |             |            |             |            |                |                 |                |                 |
|                    | Controller            | LAN 1: Intel® I226V<br>LAN 2: Intel® I226V                                               |            |             |            |             |            |             |            |                |                 |                |                 |
| Rear I/O           | Connector with LED    | 2 x RJ45                                                                                 |            |             |            |             |            |             |            |                |                 |                |                 |
|                    | USB 3.2 Gen1          | 2                                                                                        |            |             |            |             |            |             |            |                |                 |                |                 |
|                    | USB2.0                | 1                                                                                        |            |             |            |             |            |             |            |                |                 |                |                 |
|                    | Ethernet              | 2                                                                                        |            |             |            |             |            |             |            |                |                 |                |                 |
| Internal Connector | VGA                   | 1                                                                                        |            |             |            |             |            |             |            |                |                 |                |                 |
|                    | USB                   | 5 x USB 2.0 ( 1 USB Type A + 4 to backplane), 4 x USB 3.2                                |            |             |            |             |            |             |            |                |                 |                |                 |
|                    | SATA                  | 4                                                                                        |            |             |            |             |            |             |            |                |                 |                |                 |
|                    | M.2 (2280 Type M)     | N/A                                                                                      |            |             |            |             |            |             |            |                |                 |                |                 |
|                    | DP/DVI-D/HDMI         | 2 (Pin header)                                                                           |            |             |            |             |            |             |            |                |                 |                |                 |
|                    | COM                   | 2 x RS232                                                                                |            |             |            |             |            |             |            |                |                 |                |                 |
| Watchdog Timer     | GPIO                  | 8bit                                                                                     |            |             |            |             |            |             |            |                |                 |                |                 |
|                    | Output                | System reset                                                                             |            |             |            |             |            |             |            |                |                 |                |                 |
| Miscellaneous      | Interval              | Programmable 1-255 sec                                                                   |            |             |            |             |            |             |            |                |                 |                |                 |
|                    | Audio                 | Intel® High Definition audio interface (requires audio extension module PCA-AUDIO-HDB1E) |            |             |            |             |            |             |            |                |                 |                |                 |
| Power Requirement  | Test Environment      | Intel i9-12900E, Memory *2 DDR5 16GB                                                     |            |             |            |             |            |             |            |                |                 |                |                 |
|                    | Voltage               | +3.3V, +5V, +12V                                                                         |            |             |            |             |            |             |            |                |                 |                |                 |
|                    | Current               | 1.15A, 1.54A, 1.38A                                                                      |            |             |            |             |            |             |            |                |                 |                |                 |
| Environment        | Operating             | Non-Operating                                                                            |            |             |            |             |            |             |            |                |                 |                |                 |
|                    | Temperature           | 0 ~ 60 °C (dependent on CPU and cooler solution)                                         |            |             |            |             |            |             |            |                |                 |                |                 |
| Physical           | Humidity              | -40 ~ 85 °C                                                                              |            |             |            |             |            |             |            |                |                 |                |                 |
|                    | Dimensions (L x H)    | 40 °C @ 85% relative humidity (non-condensing)                                           |            |             |            |             |            |             |            |                |                 |                |                 |
| Physical           | Dimensions (L x H)    | 60 °C @ 95% relative humidity (non-condensing)                                           |            |             |            |             |            |             |            |                |                 |                |                 |
|                    | Dimensions (L x H)    | 338 x 122 mm (13.3" x 4.8")                                                              |            |             |            |             |            |             |            |                |                 |                |                 |

Note: Power must be turned off to before installing any expansion modules

## Block Diagram



## Ordering Information

| Part Number     | PCH   | Memory  | Backplane | LAN | VGA | DP/DVI-D/HDMI | COM | SATA III | M.2 | USB 2.0 | USB 3.2 (Gen1) | USB 3.2 (Gen2) | S/W Raid | AMT |
|-----------------|-------|---------|-----------|-----|-----|---------------|-----|----------|-----|---------|----------------|----------------|----------|-----|
| PCE-5033G2-00A1 | H610E | Non-ECC | PCE-5BXX  | 2   | Yes | 2*            | 2   | 4        | N/A | 2       | 4              | N/A            | N/A      | N/A |

Note: DP/DVI/HDMI cable is optional

## Packing List

| Part Number | Description                   | Quantity |
|-------------|-------------------------------|----------|
| 1700003194  | Serial ATA HDD data cable     | x2       |
| 1701260305  | COM + printer ports cable kit | x1       |
| 2190000902  | Warranty card                 | x1       |
| TBD         | Startup manual                | x1       |

## I/O View



PCE-5033G2-00A1

## Optional Accessories

| Part Number      | Description                                                                |
|------------------|----------------------------------------------------------------------------|
| 1970005349T000   | CPU cooler for 2U, 4U, and dwall-mount chassis (for CPUBase Power=35~125W) |
| TBD              | CPU Cooler 1.5U (TBD)                                                      |
| PCA-AUDIO-HDB1E  | Audio module                                                               |
| PCA-COM232-ESPA1 | 4-port RS-232 eSPI module                                                  |
| PCA-COM485-ESPA1 | 4-port RS-422/485 eSPI module                                              |
| 1700002204       | 2-port USB2.0 cable w/BKT (27 cm)                                          |
| 1700020277-01    | 2-port USB 3.0 cable w/ BKT (30 cm)                                        |
| 1700031719-01    | 4-port USB 3.0 cable w/ BRK (30 cm)                                        |
| 1700021831-01    | DP to DVI-D cable w/ BKT                                                   |
| 1701090401       | 1-port COM cable kit                                                       |
| 1701092300       | 2-port COM cable kit                                                       |
| PCE-DP10-00A1E   | DP to DP cable w/ BKT                                                      |
| TBD              | DP to HDMI cable w/ BKT                                                    |
| TBD              | TPM 2.0                                                                    |
| TBD              | PCE-5033 win 10 embedded OS (high-end)                                     |
| TBD              | PCE-5033 win 10 embedded OS (value)                                        |
| TBD              | PCE-5033 win 10 embedded OS (entry)                                        |