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| <b>PROCESSOR</b>          | Supports Intel® 12th/13th/14th* Generation Core™ i3/i5/i7/i9 series, Pentium®, and Celeron® 125W LGA 1700 CPU |                                                                                                                     |
| <b>MEMORY</b>             | DDR4 3200/2933/2666 MHz, dual channel up to 64GB (32GB x 2)                                                   |                                                                                                                     |
| <b>VIDEO GRAPHICS</b>     | Integrated Intel UHD graphics (depends on processor type used)                                                |                                                                                                                     |
| <b>VIDEO OUTPUT</b>       | HDMI + DisplayPort + VGA, Supports triple independent displays                                                |                                                                                                                     |
| <b>AUDIO</b>              | Realtek ALC662/ALC897/ALC888, 5.1 channel HD audio                                                            |                                                                                                                     |
| <b>ETHERNET</b>           | Intel i219LM<br>10/100/1000 MB/s operation                                                                    | Supports Wake on LAN function                                                                                       |
| <b>STORAGE INTERFACE</b>  | SATA 6 GB/s                                                                                                   |                                                                                                                     |
| <b>ONBOARD CONNECTORS</b> | (2) 4 pin fan connector<br>(1) USB 2.0 (4 pin) header                                                         | (1) RS232 header (2x5 pin)<br>Front connector for USB, audio, buttons, LEDs                                         |
| <b>FRONT PANEL</b>        | (1) Power Button<br>(1) Power LED<br>(1) HDD LED<br>(2) USB 3.2 Gen 1 port                                    | (1) MIC-in<br>(1) Headphone output                                                                                  |
| <b>BACK PANEL</b>         | (1) HDMI 2.0b<br>(1) DisplayPort 1.4<br>(1) VGA<br>(2) USB 3.2 Gen 1<br>(4) USB 2.0<br>(1) Clear CMOS button  | (1) MIC-in<br>(1) Line-in jack 1/8"<br>(1) Line out jack 1/8"<br>(1) Kensington Lock<br>(1) LAN<br>(3) Antenna hole |
| <b>DRIVE BAYS</b>         | (1) 5.25" ODD bay<br>(2) 3.5" HDD bay                                                                         | Supports up to 2.5" HDD/SSD x 3 if PHD3 HDD rack accessory is used                                                  |
| <b>DIMENSIONS</b>         | 13(L) x 8.5(W) x 7.75(H) inches                                                                               |                                                                                                                     |
| <b>POWER</b>              | Input: 100 - 240V AC, 3A-6A AC<br>Supports 80 PLUS Bronze                                                     | 80 PLUS 300W power supply                                                                                           |
| <b>ACCESSORIES</b>        | Quick Guide<br>CPU Thermal Grease<br>Screw Package                                                            | Driver DVD<br>Power Cord<br>SATA cable                                                                              |
| <b>EXPANSION SLOT</b>     | (1) PCI-E X16 Gen 5.0 slot<br>(1) PCI-E X1 Gen 3.0 slot                                                       | (1) M.2 MAX to 2230 Type E key socket<br>(1) M.2 MAX to 2280 Type M key socket                                      |
| <b>OS SUPPORT</b>         | Windows 10/11 64 bit, Linux                                                                                   |                                                                                                                     |
| <b>CERTIFICATION</b>      | Safety certification: CB, BSMI, cTUVus<br>EMI certification: FCC, CE, BSMI, RCM, VCCI, UKCA                   |                                                                                                                     |

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| <b>R4-CHASSIS</b>                                                                               | <p>Black aluminum chassis with acrylic front plate</p> <p>Easily customize front panel design by changing the mylar and adding a photo, graphics, or logo</p> <p>Drive bays: 1 x 5.25" ODD, 2 x 3.5" (internal) HDD</p> <p>Supports up to 2 x 2.5" HDD if PHD3 rack accessory x1 or x2 is used</p> <p>Dimensions: 13 (L) x 8.5 (W) x 7.79 (H) inches</p> <p>Weight: 7.5 LBS (net) / 9.9 LBS (gross)</p>                                                                                                                                                                                                            |                         |                                    |                                         |                                       |                         |                                                                            |                                                                                                 |                                                           |
| <b>MAINBOARD AND CHIPSET</b>                                                                    | <p>Mainboard w/ Shuttle form factor 275x195mm, proprietary design for XPC SH610R4</p> <p>Chipset/Southbridge: Intel® H610</p> <p>Passive chipset cooling with heatsink</p> <p>Solid capacitors for sensitive areas provide excellent heat resistance for enhanced system durability</p>                                                                                                                                                                                                                                                                                                                            |                         |                                    |                                         |                                       |                         |                                                                            |                                                                                                 |                                                           |
| <b>BIOS</b>                                                                                     | <p>AMI BIOS, SPI Interface, 32MB Flash-EPROM</p> <p>Supports Hardware Monitoring, Watch Dog</p> <p>Supports Power Fail Resume</p> <p>Supports Firmware TPM (fTPM) v2.0</p> <p>Supports boot up from external USB flash memory</p> <p>Supports Unified Extensible Firmware Interface (UEFI)</p>                                                                                                                                                                                                                                                                                                                     |                         |                                    |                                         |                                       |                         |                                                                            |                                                                                                 |                                                           |
| <b>POWER SUPPLY</b>                                                                             | <p>Built-in 300W mini switching power supply (model PC61J)</p> <p>AC input voltage: 100 - 240V, 50 - 60 Hz</p> <p>80 PLUS Bronze compliant: PSU provides at least 82/85/82% of efficiency at 20/50/100% load</p> <p>Active PFC Circuit (Power Factor Correction)</p> <p>ATX main power connectors: 2x10 and 2x2 pin</p> <p>Graphics power connector: 6 pin</p> <p>Other connectors: 4 x SATA, 2 x Molex, 1 x Floppy</p>                                                                                                                                                                                            |                         |                                    |                                         |                                       |                         |                                                                            |                                                                                                 |                                                           |
| <b>OPERATING SYSTEM</b>                                                                         | <p>The system comes without an operating system.</p> <p>Compatibility: Windows 10/11 64 bit, Linux 64 bit</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                         |                                    |                                         |                                       |                         |                                                                            |                                                                                                 |                                                           |
| <b>PROCESSOR SUPPORT</b>                                                                        | <p>LGA 1700 socket supports 12th/13th/14th generation Intel® Core® i3/i5/i7/i9, Pentium, and Celeron processors</p> <p>Max supported processor power consumption (TDP): 125W</p> <p>Intel 7 process technology (previously Intel 10 nm Enhanced SuperFin)</p> <p>The unlock function for Intel® K-Series processors is not supported with this model</p> <p>The processor integrates PCI-Express, the memory controller, and graphics engine on the same die (performance features depend on the processor type)</p> <p>Processors with "F" identifier do not support integrated graphics</p>                      |                         |                                    |                                         |                                       |                         |                                                                            |                                                                                                 |                                                           |
| <b>SYSTEM COOLING</b>                                                                           | <p>Shuttle I.C.E. (Integrated Cooling Engine) advanced heatpipe cooling technology, linear-controlled 92 mm fan</p> <p>Silent X cooling and noise reduction technology with Active Airflow</p>                                                                                                                                                                                                                                                                                                                                                                                                                     |                         |                                    |                                         |                                       |                         |                                                                            |                                                                                                 |                                                           |
| <b>MEMORY SUPPORT</b>                                                                           | <p>2 x 288 pin slots</p> <p>Supports DDR4 3200/2933/2666 MHz memory (PC4-25600/23466/21300) at 1.2V</p> <p>Supports Dual Channel mode</p> <p>Supports a max. of 32GB per DIMM, up to 64GB total</p>                                                                                                                                                                                                                                                                                                                                                                                                                |                         |                                    |                                         |                                       |                         |                                                                            |                                                                                                 |                                                           |
| <b>PCI-E SLOTS</b>                                                                              | <p>1 x PCI-Express x16 v5.0 slot</p> <p>1 x PCI-Express x1 v3.0 slot, open-ended</p> <p>Supports dual slot (double width) graphic cards (occupies the second PCI-Express slot)</p> <p>The maximum size acceptable for display cards is 10.7 x 3.9 x 1.5 inches</p> <p>6 pin power connector for graphic card</p>                                                                                                                                                                                                                                                                                                   |                         |                                    |                                         |                                       |                         |                                                                            |                                                                                                 |                                                           |
| <b>M.2 SLOTS</b>                                                                                | <p>This model features two M.2 expansion slots:</p> <table> <tr> <td>(1) M.2 2280 M SSD slot</td> <td>(2) M.2 2230 E slot for WLAN cards</td> </tr> </table><br><table> <tr> <td>-PCI-Express Gen. 4.0 X4, supports NVMe</td> <td>- PCI-Express Gen. 3.0 X1 and USB 2.0</td> </tr> <tr> <td>-SATA v3.0 (max 6 GB/s)</td> <td>-Supports M.2 cards with a width of 22mm and a length of 30 mm (type 2230)</td> </tr> <tr> <td>-Supports M.2 cards with a width of 22mm and a length of 42, 60, or 80 mm (type 2242/2260/2280)</td> <td>-Supports WLAN expansion cards (optional accessory WLN-M)</td> </tr> </table> | (1) M.2 2280 M SSD slot | (2) M.2 2230 E slot for WLAN cards | -PCI-Express Gen. 4.0 X4, supports NVMe | - PCI-Express Gen. 3.0 X1 and USB 2.0 | -SATA v3.0 (max 6 GB/s) | -Supports M.2 cards with a width of 22mm and a length of 30 mm (type 2230) | -Supports M.2 cards with a width of 22mm and a length of 42, 60, or 80 mm (type 2242/2260/2280) | -Supports WLAN expansion cards (optional accessory WLN-M) |
| (1) M.2 2280 M SSD slot                                                                         | (2) M.2 2230 E slot for WLAN cards                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                         |                                    |                                         |                                       |                         |                                                                            |                                                                                                 |                                                           |
| -PCI-Express Gen. 4.0 X4, supports NVMe                                                         | - PCI-Express Gen. 3.0 X1 and USB 2.0                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                         |                                    |                                         |                                       |                         |                                                                            |                                                                                                 |                                                           |
| -SATA v3.0 (max 6 GB/s)                                                                         | -Supports M.2 cards with a width of 22mm and a length of 30 mm (type 2230)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                         |                                    |                                         |                                       |                         |                                                                            |                                                                                                 |                                                           |
| -Supports M.2 cards with a width of 22mm and a length of 42, 60, or 80 mm (type 2242/2260/2280) | -Supports WLAN expansion cards (optional accessory WLN-M)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                         |                                    |                                         |                                       |                         |                                                                            |                                                                                                 |                                                           |

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| <b>INTEGRATED GRAPHICS (OPTIONAL)</b> | <p>Intel HD graphics function features depend on the processor type used<br/>PC features four video outputs (three can be used at the same time):</p> <p>This model has four video outputs:<br/>-HDMI v2.0b (4K Ultra HD, 2160p/60 supported)<br/>-DisplayPort v1.4 (4K Ultra HD, 2160p/60 supported) x 2<br/>-VGA / D-sub</p> <p>Certain processor models do not support integrated graphics<br/>Supports triple independent displays with integrated graphics function<br/>Supports more displays in combination with a discrete graphics card<br/>DisplayPort and HDMI supports multi-channel digital audio over the same cable</p> |                                                                                                                                                                                      |
| <b>HD AUDIO</b>                       | <p>Audio Codec: Realtek ALC888/ALC662/ALC897, 5.1 channel<br/>Three analog audio connectors (3.5mm) on the back panel: Line-in (blue), Line-out (green), MIC in (pink) shared with 5.1 channel line-out (front, rear, center/bass)<br/>Front panel: MIC in (input) and Headphone output (line-out)</p>                                                                                                                                                                                                                                                                                                                                 |                                                                                                                                                                                      |
| <b>GIGABIT LAN CONTROLLER</b>         | <p>Intel i219 Ethernet controller<br/>Supports 10/100/1000 MB/s operation<br/>Supports Wake-on-LAN<br/>Supports network boot by Preboot eXecution environment (PXE)</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                                                                                                                                                                      |
| <b>DRIVE CONNECTORS</b>               | <p>3x Serial ATA 6G ( rev. 3.0, max 6GB/s, color: blue), Storage bays: 1 x 5.25" ODD, 2 x 3.5" HDD</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                                                                                                                                                                                      |
| <b>FRONT PANEL CONNECTORS</b>         | <p>Microphone input (3.5 mm)<br/>Headphone output (3.5 mm)<br/>2x USB 3.2 Gen 1</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | <p>Power button<br/>Power indicator (Blue LED)<br/>Hard disk drive indicator (Yellow LED)</p>                                                                                        |
| <b>BACK PANEL CONNECTORS</b>          | <p>HDMI 2.0a (digital video &amp; audio)<br/>DisplayPort 1.4 (digital video &amp; audio)<br/>VGA (analog video)<br/>USB 2.0 x 4<br/>USB 3.2 Gen 1 x 2<br/>Audio line-out (3.5 mm)</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                  | <p>Audio line-in (3.5 mm)<br/>MIC in (3.5 mm)<br/>Clear CMOS button<br/>Gigabit LAN (RJ45)<br/>WLAN antenna holes (optional)<br/>Serial RS232 port (optional, H-RS232 accessory)</p> |
| <b>OTHER CONNECTORS (ONBOARD)</b>     | <p>Front panel: USB, audio, buttons, LEDs<br/>RS232 x 1 (serial interface, 5 pin)</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | <p>Fan connectors x 2 (4 pin)<br/>USB 2.0 interface x 1 (4 pin)</p>                                                                                                                  |
| <b>INCLUDED ACCESSORIES</b>           | <p>XPC installation guide<br/>Driver DVD<br/>Serial ATA cables x 2</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | <p>AC Power Cord (with protective earth contacts)<br/>Thermal paste, screw pack<br/>Protector cap for CPU socket (don't use if heatpipe/fan is mounted)</p>                          |
| <b>OPTIONAL ACCESSORIES</b>           | <p>Back panel adapter for serial RS232 port (PCP11)<br/>Wireless LAN 802.11ac kit and Bluetooth kit with two antennas (WLN-M) or WLAN 802.11 ax (WLN-M1)<br/>Adapter for 2.5" drives (PHD3 rack)<br/>850W power supply (PC850)</p>                                                                                                                                                                                                                                                                                                                                                                                                     |                                                                                                                                                                                      |
| <b>ENVIRONMENTAL CRITERIA</b>         | <p>Operating temperature: 0 - 40°C</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | <p>Humidity: 10 - 90%</p>                                                                                                                                                            |
| <b>CERTIFICATIONS</b>                 | <p>EMI: FCC, CE, BSMI, -Tick<br/>Safety: CB 60950/62368, cTUVus, BSMI</p> <p>Other: RoHS, Energy Star 5.0, ErP</p> <p>This model is classed as a technical information equipment (ITE) in class B and is intended for use in living rooms and offices. The CE mark approves conformity by the EU directives:<br/>(1) 2014/30/EC relating to electromagnetic compatibility (EMC)<br/>(2) 2014/35/EC relating to Electrical Equipment designed for use within certain voltage limits (LVD)<br/>(3) 2009/125/EC relating to eco-design requirements for energy related products (ErP)</p>                                                 |                                                                                                                                                                                      |

| Name    | Cores/Threads | CPU Clock/<br>Turbo | E-CORES | E-CORES<br>Clock/Turbo | Smart<br>Cache | TDP  | Memory    | Graphics (Max Clock) |
|---------|---------------|---------------------|---------|------------------------|----------------|------|-----------|----------------------|
| Core i9 | 8 / 16        | 3.2 - 6.0 GHz       | 16      | 2.4 - 4.3 GHz          | 36 MB          | 150W | DDR4-3200 | UHD 770 (1.65 GHz)   |
|         | 8 / 16        | 3.0 - 5.8 GHz       | 16      | 2.0 - 4.3 GHz          | 36 MB          | 125W | DDR4-3200 | UHD 770 (1.65 GHz)   |
|         | 8 / 16        | 3.0 - 5.8 GHz       | 16      | 2.0 - 4.3 GHz          | 36 MB          | 125W | DDR4-3200 | None                 |
|         | 8 / 16        | 2.0 - 5.2 GHz       | 16      | 1.5 - 4.2 GHz          | 36 MB          | 65W  | DDR4-3200 | UHD 770 (1.65 GHz)   |
|         | 8 / 16        | 2.0 - 5.2 GHz       | 16      | 1.5 - 4.2 GHz          | 36 MB          | 65W  | DDR4-3200 | None                 |
|         | 8 / 16        | 1.1 - 5.1 GHz       | 16      | 0.8 - 3.9 GHz          | 36 MB          | 35W  | DDR4-3200 | UHD 770 (1.65 GHz)   |
| Core i7 | 8 / 16        | 3.4 - 5.4 GHz       | 8       | 2.5 - 4.2 GHz          | 30 MB          | 125W | DDR4-3200 | UHD 770 (1.6 GHz)    |
|         | 8 / 16        | 3.4 - 5.4 GHz       | 8       | 2.5 - 4.2 GHz          | 30 MB          | 125W | DDR4-3200 | None                 |
|         | 8 / 16        | 2.1 - 5.1 GHz       | 8       | 1.5 - 4.1 GHz          | 30 MB          | 65W  | DDR4-3200 | UHD 770 (1.6 GHz)    |
|         | 8 / 16        | 2.1 - 5.1 GHz       | 8       | 1.5 - 4.1 GHz          | 30 MB          | 65W  | DDR4-3200 | None                 |
|         | 8 / 16        | 1.4 - 4.8 GHz       | 8       | 1.0 - 3.6 GHz          | 20 MB          | 35W  | DDR4-3200 | UHD 770 (1.6 GHz)    |
| Core i5 | 6 / 12        | 3.5 - 5.1 GHz       | 8       | 2.6 - 3.9 GHz          | 20 MB          | 125W | DDR4-3200 | UHD 770 (1.5 GHz)    |
|         | 6 / 12        | 3.5 - 5.1 GHz       | 8       | 2.6 - 3.9 GHz          | 20 MB          | 125W | DDR4-3200 | None                 |
|         | 6 / 12        | 2.7 - 5.0 GHz       | 8       | 2.0 - 3.7 GHz          | 24 MB          | 65W  | DDR4-3200 | UHD 770 (1.55 GHz)   |
|         | 6 / 12        | 1.8 - 4.8 GHz       | 8       | 1.3 - 3.4 GHz          | 24 MB          | 35W  | DDR4-3200 | UHD 770 (1.55 GHz)   |
|         | 6 / 12        | 2.5 - 4.8 GHz       | 8       | 1.8 - 3.5 GHz          | 24 MB          | 65W  | DDR4-3200 | UHD 770 (1.55 GHz)   |
|         | 6 / 12        | 1.6 - 4.6 GHz       | 8       | 1.2 - 3.2 GHz          | 24 MB          | 35W  | DDR4-3200 | UHD 770 (1.55 GHz)   |
|         | 6 / 12        | 2.5 - 4.6 GHz       | 4       | 1.8 - 3.3 GHz          | 20 MB          | 65W  | DDR4-3200 | UHD 730 (1.55 GHz)   |
|         | 6 / 12        | 2.5 - 4.6 GHz       | 4       | 1.8 - 3.3 GHz          | 20 MB          | 65W  | DDR4-3200 | None                 |
| Core i3 | 4 / 8         | 3.4 - 4.5 GHz       | -       | -                      | 12 MB          | 60W  | DDR4-3200 | UHD 730 (1.5 GHz)    |
|         | 4 / 8         | 3.4 - 4.5 GHz       | -       | -                      | 12 MB          | 58W  | DDR4-3200 | None                 |
|         | 4 / 8         | 2.5 - 4.2 GHz       | -       | -                      | 12 MB          | 35W  | DDR4-3200 | UHD 730 (1.5 GHz)    |