



KEY FEATURES

- Intel®10th Gen (Comet Lake-S) Core™ Processors with H420E chipset
- 2 x 260-pin SO-DIMM up to 64GB (32GB per DIMM)
- 1 x PCIe x16 (Gen 3), 1 x M.2 Key M, 1 x M.2 Key B, 1 x M.2 Key E, 2 x Mini PCIe
- 4 x USB 3.2 Gen1, 3 x USB 2.0, 6 x COM, 2 x SATA3, 8 x DI, 8 x DO
- 3 x Intel Gigabit LAN

SPECIFICATIONS

Processor System

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|---------|---|
| CPU | Intel® 10th Gen (Comet Lake-S) Core™ Processors |
| Chipset | Intel® H420E |
| Socket | LGA 1200 |

Memory

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|------------|--|
| Technology | Dual Channel DDR4 2933 / 2666 / 2400 MHz, - Intel Core i9 / i7 CPUs support DDR4 up to 2933 MHz - Intel Core i5 / i3 CPUs support DDR4 up to 2666 MHz - Intel Pentium / Celeron CPU support DDR4 up to 2400 MHz |
| Capacity | 64GB (32 GB per DIMM) |
| Socket | 2 x 260-pin SO-DIMM |

Graphics

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|--------------|--|
| Controller | Intel® UHD Graphics |
| DisplayPort | DisplayPort 1.2, DP++ Max resolution up to 4096x2160@60Hz |
| VGA | Max resolution up to 1920x1200@60Hz |
| MultiDisplay | Dual Display |

Expansion Slot

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|------------|--|
| PCIe | 1 x PCIe x16 |
| Mini-PCIe | 1 x Full/Half size with PCIe x1 and USB 2.0 1 x Full/Half size with PCIe x1 |
| M.2 | 1 x M.2 (Key E, 2230) with PCIe x1 and USB 2.0 for Wireless 1 x M.2 (Key B, 2280/3042/3052) with PCIe x1, USB 3.2 for 4G / 5G |
| SIM Socket | 2 (1 connected to Mini PCIe, 1 connected to M.2 Key B) |

Audio

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|-----------|--|
| Interface | Realtek ALC897, High Definition Audio. |
|-----------|--|

Ethernet

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|-------------------|----------------------|
| Controller/ Speed | 2x I210IT + 1x I219V |
| Connector | 3 x RJ45 |

Storage

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|-------|---|
| M.2 | 1 x M.2 (Key M, 2230/2242/2280) with SATA for SSD |
| SATA | 2 x SATA3 (6Gb/s) 2 x 2.5" HDD/SSD Tray |
| CFast | 1 x Type II socket (Shared SATA) |

Rear I/O

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|-------------|--|
| DisplayPort | 2 |
| VGA | 1 |
| Ethernet | 3 x 1 Gigabit LAN |
| USB | 4x USB 3.2 Gen1, 3 x USB 2.0 (1 x internal connector w/ lock function) |
| Audio | 1 x Mic-in, 1 x Line-out |
| COM | 6 x COM (2 x RS-232, 4 x RS-232/422/485) |
| DIO | 8-ch DI and 8-ch DO |

Watchdog Timer

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|----------|----------------------------------|
| Output | From Super I/O to drag RESETCON# |
| Interval | 256 Segments, 0, 1, 2, ...255sec |

Power Requirements

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| Input PWR | 9V-36V VDC with Ignition control and remote power on/off switch. 80V Surge Protection, OVP, UVP, OCP and reverse protection |
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Environment

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|--------------------|--|
| Operating Temp | 35W CPU: -40°C~75°C (-40°F~167°F) 65W CPU: -40°C~55°C (-40°F~131°F) 80W CPU: -40°C~45°C (-40°F~113°F) (with FAN inside) |
| Storage Temp | -40°C~85°C (-40°F~185°F) |
| Operating Humidity | 95% @ 40°C (non-condensing) |
| Storage Humidity | 95% @ 40°C (non-condensing) |
| Shock | Operating: 50 Grms, half sine 11ms duration (w/ 2.5" SSD/CFast) |
| Vibration | Operating: 5 Grms, 5-500 Hz, 3 axes (w/ 2.5" SSD/CFast) Operating: 0.3 Grms, 5-500 Hz, 3 axes (w/ HDD) |
| ESD | Contact +/-4kV, Air +/-8kV |
| EMC | EN61000-6-4/-2, CE & FCC Class A |
| Safety | CB, UL |

Mechanical

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|------------------------|--|
| Construction | Aluminum heatsink + Metal chassis |
| Mounting | Wall Mount |
| Dimensions (W x H x D) | 202mm (W) x 290mm (D) x 209.3mm (H) (7.95" x 11.42" x 8.24") |
| Weight | TBD |

Others

| | |
|------------|-----------------------------|
| OS Support | Windows 10 & Linux (Ubuntu) |
| TPM | TPM 2.0 |