

CEX – D3634-S mITX

Intel®H310 Express Chipset and

Intel®8th/9th Gen Core™ i3/i5/i7/i9 Processors



Features

- cTDP – Easy & flexible reduction of CPU TDP
- Cost-effective iH310 Industrial Platform
- Dual channel LVDS & eDP
- M.2 SSD & Mini-PCIe Socket
- ATX PSU or Single 12 V Supply

Specifications

| System | |
|---------------------------------|---|
| Processor | Intel® Core™ i9 / i7 / i5 / i3 (8th/9th Gen) processor series Intel® Pentium®/Intel® Celeron® processor series Socket LGA1151, max. 95 W TDP |
| Chipset Memory | Intel® H310 Chipset DDR4-2666, Dual Channel 2 SO DIMM sockets, up to 64 GByte memory |
| Video | |
| Graphics | Intel® UHD Graphics, DX12 |
| Audio | |
| Audio Codec | Realtek ALC671 |
| Audio Interface | 5.1-channel, High-Definition Audio Codec |
| Network Connection | |
| Ethernet | Intel® i219LM & i210AT with 10/100/1000 MBit/s, Wake-on-LAN (WoL) by interesting Packets, Link Status Change and Magic Packet™, PXE Support, BIOS MAC Address Display, Teaming Support |
| Peripheral Connection | |
| USB | 3x USB 2.0, 2x USB 2.0 (by header), 2x USB 3.1 Gen1, 2x USB 3.1 Gen1 (by header) |
| Serial Port | 1x RS232, 1x RS232/422/485 (by header) |
| Other I/Os | GPIO (by header) |
| Storage & Expansion | |
| SATA | 4x Serial ATA III 600 Interface (up to 6Gbit/s), NCQ, AHCI, 1x M.2 PCIe (2242/2260/2280), 1x Mini PCIe (halfsize/fullsize) |
| PCIe/PCI Slots | PCIe x16: 1x Gen3 |
| Power | |
| Connector | ATX Power Supply |
| Input Voltage | ATX (Multirail) or Single 12 V |
| Firmware | |
| BIOS | AMI Aptio 5.x (UEFI) BIOS modified and adapted by Fujitsu Technology Solutions; Recovery BIOS, SM-BIOS (DMI), BIOS and CPU Microcode Update, Quick Boot, Logo Boot, Quiet Boot, Plug & Play, Automatic DRAM and PCIe Configuration, BIOS Support for S.M.A.R.T., Advanced Power Management, ACPI S3/S4, Wake on time from S5. HW Watchdog support & BIOS integrated HW Diagnostic Tool. No legacy OS support, |

| | no MBR installation (UEFI only due to Intel restrictions) | | | | |
|--|--|--------------|-----------------------|-----------------------------|--------------------------|
| Watchdog | 3-level Watchdog (BIOS/BIOS Post/OS HW) | | | | |
| Real Time Clock | Integrated | | | | |
| TPM | Intel® integrated TPM V2.0 | | | | |
| System Control | | | | | |
| FP HEADER | 1x Header for Reset button, HDD LED, Power button, Power LED | | | | |
| Security | Recovery BIOS, System and BIOS Password, Boot Sequence Control, Serial-/USB-Port Access Protection, Write Protection for Flash BIOS, EraseDisk (BIOS Feature), Intel integrated TPM V2.0 | | | | |
| Cooling | | | | | |
| Fan | 2x PWM fan (CPU/System) | | | | |
| Software | | | | | |
| OS Support | MS Windows 10 Linux-64 | | | | |
| Mechanical | | | | | |
| Dimensions (L x W) | Mini-ITX: 6.7" x 6.7" (170 x 170 mm) | | | | |
| Certifications | | | | | |
| EMC & Safety | FCC-B verified cTÜVus acc. IEC62368-1, CE Class B | | | | |
| Power Supply Requirements | | | | | |
| Source* | Voltage | Min. PS Load | Max Voltage Tolerance | Motherboard Capacitive Load | Motherboard Max. Current |
| Main Power Supply (Multi Rail) | + 12 V | 0.05 A | ± 5% | 1.300µF | 10A/18A** |
| | - 12 V | A | | - | Not used |
| | + 5 V | 0 A | ± 5% | 900µF | 4.5 A |
| | + 3.3 V | 0.2 A | ±5% | 350µF | 0.5 A |
| | + 5 Vaux | A | + 5% | 330µF | 2.5 A |
| | | 0 A | /-3% | | |
| | | 0 A | | | |
| Single 12 V DC | + 12 V | 0 A | ± 5 % | 1.300µF | 11A/19A*** |
| <p>*) ATX PSU (multi rail) or single 12 V DC Supply</p> <p>**) Processor 95 W TDP: Max. Cont. Current = 10 A; max. Surge Current = 16 A (< 100 sec) / 18 A (< 10 ms)</p> <p>Processor 65 W TDP: Max. Cont. Current = 7 A; max. Surge Current = 14 A (< 100 sec) / 18 A (< 10 ms)</p> <p>Processor 35 W TDP: Max. Cont. Current = 4 A; max. Surge Current = 10 A (< 100 sec) / 14 A (< 10 ms)</p> <p>***) Max. load for single 12 V DC supply: approx. +1 A compared to multi rail supply</p> | | | | | |
| Technical Information | | | | | |

| | | |
|----------------------------|---|---|
| Features | Chipset Board Size VGA / DVI-I / DVI-D / DP V1.2 / 2nd DP V1.2 / LVDS / eDP Buzzer / int. Speaker Support / 5.1 Multichannel Audio Dual LAN Gbit / 100 Mbit / 10 Mbit / WoL / LAN Boot / Teaming iAMT 12.0 vPro / Intel Standard Manageability / DASH V1.1 SATA / SATA-RAID / eSATA-Support / mSATA / M.2 SSD (PCIe) USB 2.0 / USB 3.1 (gen1) / USB 3.1 (gen2) FAN monitored & controlled PSU / CPU / AUX1 / AUX2 TEMP monitored CPU / onboard sensors / external sensor | iH310 Mini-ITX - / - / + / + / - / + / + + / + / + + / + / + / + / + / + - / - / - + / - / + / - / + + / + / - - / + / + / - + / + / - |
| Special Features | Silent Fan / System Guard / cTDP Recovery BIOS / Desk Update / Multi Boot HDD Password / EraseDisk / TPM V2.0 BIOS POST- / BIOS Boot- / OS HW Watchdog Logo Boot Option High Efficiency Core Voltage Regulator Design Operating Mode 24-7 / 8-5 (hrs per day - days per week) Motherboard operating temperature range (chassis inside)* | + / + / + + / + / + + / + / + + / + / + + + + / - 0 °C – 60 °C |
| Internal Connectors | SO DIMM Sockets (DDR4 2666) PCI Express x16 (Gen2) / Support for lane split (8+8 or 8+4+4) mSATA / Mini PCI Express Slot (halfsize / fullsize, incl.USB 2.0) SATA-600 / M.2 SSD 2280 (supports 2280/2260/2242, Key-M, PCIe/NVME) S/PDIF (digital Audio) OUT / IN Frontpanel Audio (9-Pin, HD Audio) USB 2.0 / USB 3.1 (Gen1) / USB 3.1 (Gen2) / USB Stick Socket** Serial (COM2, RS-232 / RS-422 / RS-485) / Parallel Port Connector LVDS / LVDS Backlight (PWM controlled) / Embedded DisplayPort FAN PSU / CPU / AUX1 / AUX2 Intrusion (Case Open) / GPIO (8Bit) / SMBus (Case Temp.) | 2 1 / - - / 1 4 / 1 1 / 0 1 1 / 1 / - / - 1 / - 1 / 1 / 1 0 / 1 / 1 / 0 1 / 1 / - |

| | | |
|----------------------------|---|---------------|
| | Front Panel (Power Switch, Reset Switch, LEDs, Intel 10 pin compatible) | 1 |
| | ATX Power Supply (24 pin + 4 pin) / single 12 V PSU*** | 1 / 1 |
| External Connectors | VGA Sub D / DVI-I / DVI-D / DisplayPort V1.2 D3634-S Audio | - / - / 1 / 1 |
| | Mic. In / Line in / Line out (or driver configuration) | - / 1 / 1 |
| | LAN (RJ-45) | 2 |
| | PS/2 Mouse / Keyboard | 1 / 1 |
| | USB 2.0 / USB 3.1 Gen1 / USB 3.1 Gen2 | 3 / 2 / - |
| | Serial (COM1, R232) | 1 |

*) Forced cooling required, see technical documentation for detailed requirements

**) Each internal USB connector (pin header) provides two USB ports (except for USB stick socket)

***) Alternatives: Powered by ATX (multi rail) PSU or single 12 V DC