

## Specifications

| System                   |  |
|--------------------------|--|
| Processor                | 8th/9th Gen. Intel® Core™ LGA 1151 socket Processor (formerly Coffee Lake-S), Max. 65W TDPs                                    |
| Chipset                  | Intel® H310 Express Chipset  |
| Memory                   | DDR4 2666 MHz SODIMM x 2, Up to 32GB, Non-ECC, Un-buffered Memory, Dual channel memory architecture                            |
| I/O Chipset              | NCT6793D   |
| Ethernet                 | Realtek® PCIe Gb LAN RTL8111H  |
| Audio                    | Realtek® ALC897  |
| TPM                      | Firmware TPM   |
| Expansion Slots          | PCIe3.0 [x4] x 1<br>M.2 E-key(22 x 30 mm) x 1 for Wireless-wifi module ( PCIe+USB)   |
| BIOS                     | 128Mbit Flash ROM, AMI BIOS  |
| H/W Monitor              | Temperature Monitor on CPU/Chassis, Voltage Monitor on Vcore/5V/12V, Fan Monitor on CPU/Chassis                                |
| WatchDog Timer           | 1~255 steps by software program  |
| Smart Fan Control        | CPU Fan/ Chassis Fan   |
| Wake On LAN/ PXE         | Yes (WOL / PXE)  |
| Power State              | S3, S4, S5   |
| Graphics                 |  |
| Graphics Chipset         | Intel® UHD Graphics  |
| Graphics Multi Display   | HDMI1+HDMI2, HDMI1+DP2, DP1+HDMI2, HDMI1+LVDS, HDMI2+LVDS, HDMI1+eDP, HDMI2+eDP, DP1+DP2, DP1+LVDS, DP2+LVDS, DP1+eDP, DP2+eDP |
| VGA                      | —  |
| DVI                      | —  |
| HDMI                     | Up to 4096 x 2304@24Hz (HDMI 1.4b)   |
| Display Port             | Up to 4096 x 2304@60Hz   |
| LVDS                     | Up to 1920 x 1200 @ 60 Hz, dual-channel 18/24 bit (via CH 7511)  |
| eDP                      | UP to 4096 x 2304 @ 60Hz   |
| Backlight Control        | Voltage/PWM  |
| Environment & Power & ME |  |
| Battery                  | Lithium battery  |
| Power Requirement        | 12V DC   |
| Operation Temperature    | 32°F ~140°F (0°C ~ 60°C)   |
| Storage Temperature      | -40°F ~185°F (-40°C ~85°C)   |
| Operation Humidity       | 0%~90%RH, non-condensing   |
| Certificate              | CE & FCC   |
| Form Factor              | Mini-ITX: 6.7" x 6.7" (170 mm x 170 mm)  |
| Weight                   | 1.1 lb (0.5 kg)  |
| MTBF (Hours)             | 246,210  |

## Features

- 8th/9th Gen. Intel® Core™ LGA1151 Processor
- DDR4 SODIMM x 2, Up to 32 GB
- Two Independent Display: DP, HDMI, eDP, LVDS
- M.2 Slot (M-key, 2242) x 1, M.2 Slot (E-key) x 1
- PCIe [x4] x 1
- Low Profile
- 12V DC Power Input
- USB 3.2 Gen 1 x 4, USB 2.0 x 5



### Rear Panel I/O Ports

|             |   |
|-------------|---|
| USB         | USB 3.2 Gen 1 (5 Gbps) x 4                                |
| Display I/O | HDMI x 2, DP x 1 + HDMI x 1 (Optional), DP x 2 (Optional) |
| Audio I/O   | Mic-in x 1, Line-out x 1                                  |
| LAN I/O     | LAN (RJ-45) port x 2                                      |
| Serial Port | —   |
| PS/2 Port   | —   |
| Others      | DC Jack   |

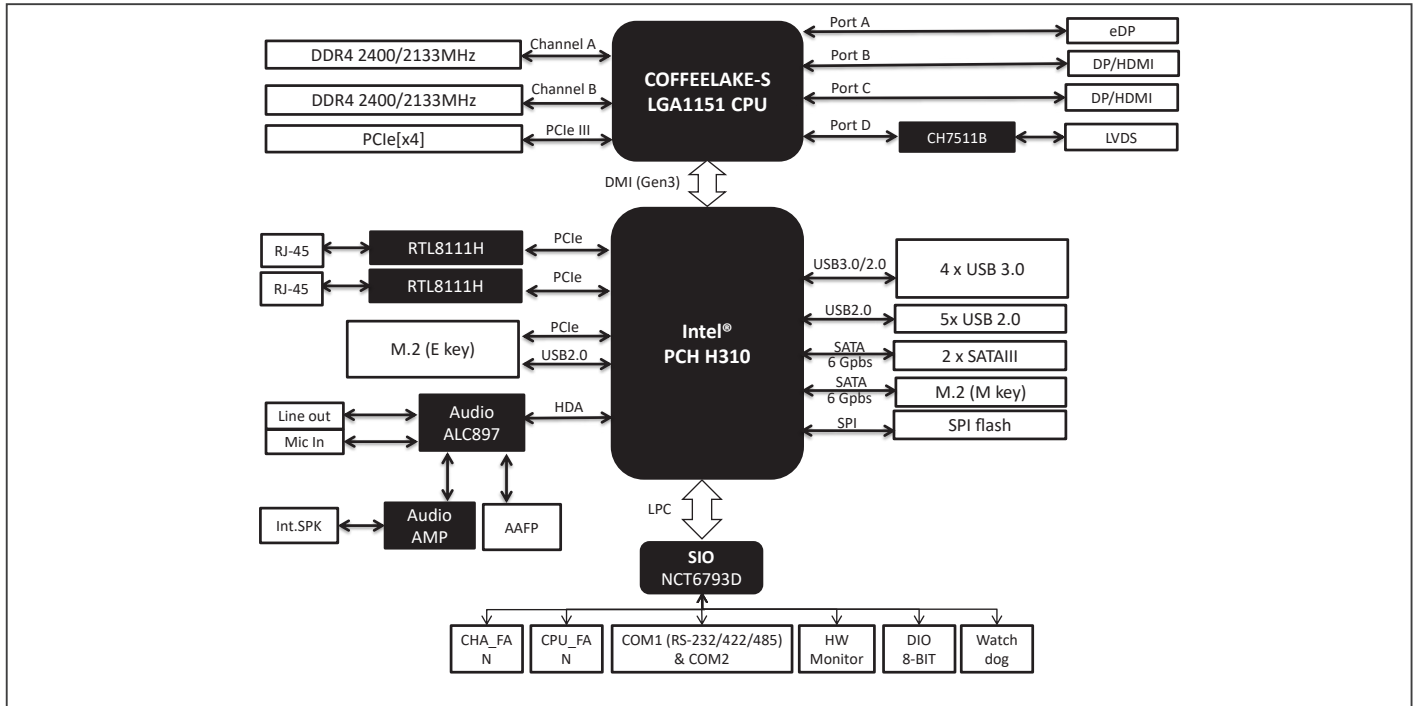
### Internal I/O Connectors

| Storage       | SATA3.0 (6.0Gb/s) x 2<br>M.2 M-key (SATA) (22 x 42mm) x 1                             |
|---------------|---|
| USB           | USB 2.0 (2 x 5-pin, 2.00mm) x 3 ports support additional 5 USB.                       |
| Display I/O   | —   |
| Audio I/O     | AAFP x 1, Speaker header x 1  |
| Serial Port   | Box header for COM (RS-232/422/485) x 1<br>Box header for COM (RS-232) x 1            |
| PS/2 Port     | —   |
| Parallel Port | —   |
| DIO           | Digital I/O box header x 1  |
| FAN           | 4-pin CPU Fan connector x 1, 4-pin Chassis Fan connector x 1                          |
| Power         | —   |
| Others        | Front Panel connector x 1, Chassis Intrusion x 1, Buzzer onboard x 1, CMOS jumper x 1 |
| OS            |   |
| OS Support    | Windows® 10 64-bit<br>Linux Ubuntu 18.04 LTS  |

## Packing List

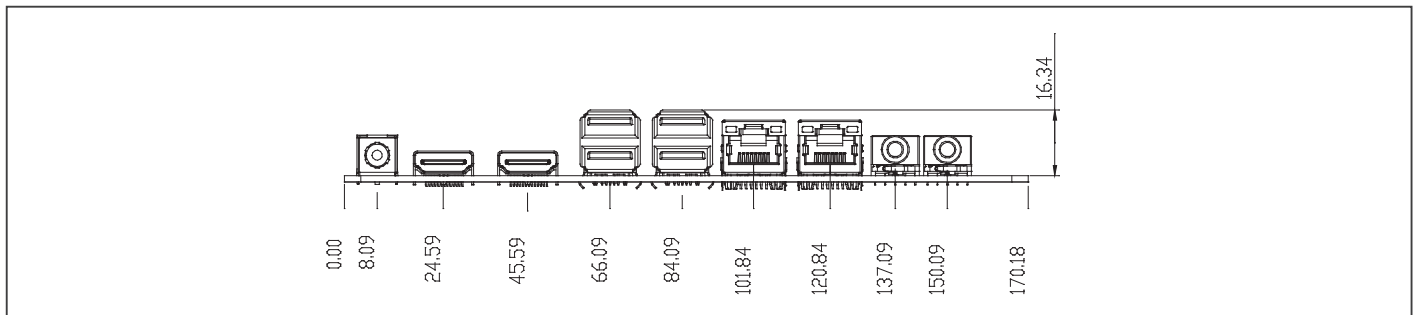
- SATA Cable
- SATA Power Cable
- I/O Shield
- MIX-H310D1

## Block Diagram



## Dimension

Unit: mm



## Ordering Information

| Part number       | CPU    | RAM        | Fan/Fanless | Display              | Storage                      | LVDS                   | LAN     | USB                             | RS-232 | RS-232/422/485 | Expansion Slot                   | Power  | TPM | Temp.                       |
|-------------------|--------|------------|-------------|----------------------|------------------------------|------------------------|---------|---------------------------------|--------|----------------|----------------------------------|--------|-----|-----------------------------|
| MIX-H310D1-A13-HH | Socket | SODIMM x 2 | Fan         | Dual HDMI, eDP, LVDS | SATA3 x 2, M.2 (M-key; SATA) | Dual Channel 18/24 bit | GbE x 2 | USB2.0 x 5<br>USB 3.2 Gen 1 x 4 | 1      | 1              | PCIe3.0[x4] x 1, M.2 (E-Key) x 1 | 12V DC | TPM | 32°F ~140°F<br>(0°C ~ 60°C) |

## Optional Accessories

| Part Number   | Description   |
|---------------|---|
| 1759200172    | (TF)CPU Cooler Fan, LGA 1156 socket, 4P, 12V, 2-Ball Bearing, Dynatron, K785, (2U cooler) |
| 175921156B    | (TF)CPU Cooler Fan, LGA 1156 socket, 12V, 4P, 2Ball (Tray), Dreamer, DSA-00273            |
| COOLER-65W-01 | CPU Cooler, LGA 1156, 12V, 65W, 4P, Kingcooler, 0571-1463R                                |
| 1709100201    | USB 2.0 Cable (10P, 200mm, p=2.00mm, w/bracket)   |
| 1700100491    | USB 2.0 Cable (2 x 5P, 490mm, p=2.00mm)   |
| 1709050201    | USB 2.0 Cable (5P, 220mm, p=2.00mm)   |
| 1701100206    | COM Cable (200mm, p=2.00mm)   |
| 1702150300    | SATA Power Cable (4P, 300mm p=2.54mm)   |
| 1702151201    | SATA Power Cable (4P, 120mm, p=2.5mm)   |