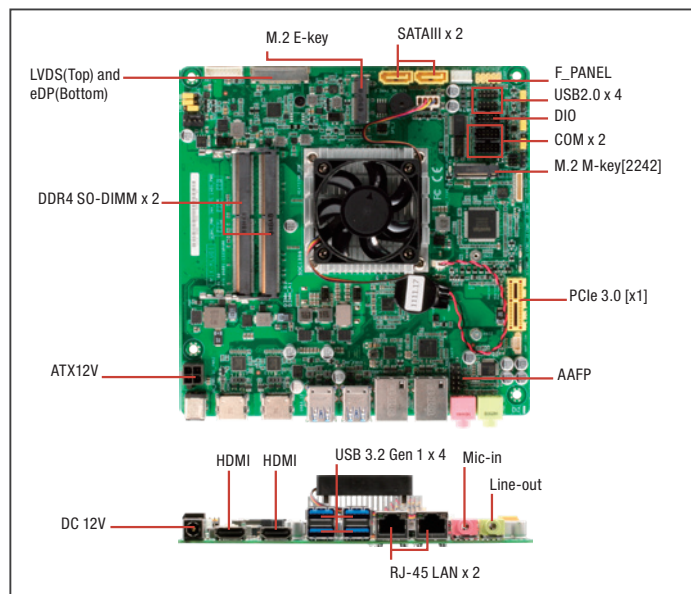


# MIX-KLUD1

Mini-ITX, 14nm, FCBGA1356 7th Gen Intel® Core™ processor family, 15~25W TDP

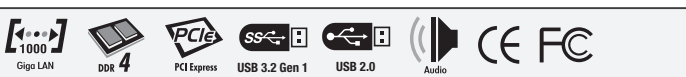


## Specifications

| System                   |                                                                                                                                                                                                                                                                                                                                                                                                         |
|--------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Processor                | Intel® 7th gen. 14nm KabyLake U, FCBGA1356<br>Core™ i7-7600U, 2C/4C, 2.8/3.9(turbo)GHz, 4M, 300MHz/1.15GHz (Turbo) GFX, ~15W TDP (Optional)<br>Core™ i5-7300U, 2C/4C, 2.6/3.5(turbo)GHz, 3M, 300MHz/1.10GHz (Turbo) GFX, ~15W TDP(Optional)<br>Core™ i3-7100U, 2C/4C, 2.4GHz, 3M, 300MHz/1.00GHz (Turbo) GFX, ~15W TDP<br>Celeron® 3965U, 2C, 2.2GHz, 2M, 300MHz/900MHz (Turbo) GFX, ~15W TDP(Optional) |
| Chipset                  | —                                                                                                                                                                                                                                                                                                                                                                                                       |
| Memory                   | SODIMM x 2, max. 32GB, DDR4-2133 non-ECC, un-buffered memory                                                                                                                                                                                                                                                                                                                                            |
| I/O Chipset              | NCT6793D                                                                                                                                                                                                                                                                                                                                                                                                |
| Ethernet                 | Intel® PCIe Gb LAN 219LM for vPro (i7-7600U/i5-7300U) x 1<br>Intel® PCIe Gb LAN 211AT x 1                                                                                                                                                                                                                                                                                                               |
| Audio                    | Realtek® ALC887 with Amp.                                                                                                                                                                                                                                                                                                                                                                               |
| TPM                      | NPCT650ABBYX TPM2.0 onboard (default: No)                                                                                                                                                                                                                                                                                                                                                               |
| Expansion Slots          | PCIe 3.0 [x1] x 1<br>M.2 M key (22 x 80 mm) x 1, SATA & PCIe [x4]<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 step 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   | HDMI x 2, eDP x 1 or LVDS x 1                                                                                                                                                                                                                                                                                                                                                                           |
| VGA                      | —                                                                                                                                                                                                                                                                                                                                                                                                       |
| DVI                      | —                                                                                                                                                                                                                                                                                                                                                                                                       |
| HDMI                     | HDMI 1.4 up to 4096 x 2340 @24Hz                                                                                                                                                                                                                                                                                                                                                                        |
| Display Port             | —                                                                                                                                                                                                                                                                                                                                                                                                       |
| LVDS                     | Up to 1920 x 1200 @ 60 Hz, Dual Channel 18/24 bit                                                                                                                                                                                                                                                                                                                                                       |
| eDP                      | UP to 4096 x 2304 @ 60Hz                                                                                                                                                                                                                                                                                                                                                                                |
| Backlight Control        | Voltage/PWM; Max 1A                                                                                                                                                                                                                                                                                                                                                                                     |
| Environment & Power & ME |                                                                                                                                                                                                                                                                                                                                                                                                         |
| Battery                  | Lithium battery                                                                                                                                                                                                                                                                                                                                                                                         |
| Power Requirement        | 12V DC                                                                                                                                                                                                                                                                                                                                                                                                  |
| Operating Temperature    | 32°F ~ 131°F (0°C ~ 55°C)                                                                                                                                                                                                                                                                                                                                                                               |
| Storage Temperature      | -40°F ~ 185°F (-40°C ~ 85°C)                                                                                                                                                                                                                                                                                                                                                                            |
| Operating Humidity       | 0% ~ 90%RH, non-condensing                                                                                                                                                                                                                                                                                                                                                                              |
| Certificate              | CE & FCC (Class A)                                                                                                                                                                                                                                                                                                                                                                                      |
| Form Factor              | Mini-ITX: 6.7" x 6.7" (170 mm x 170 mm)                                                                                                                                                                                                                                                                                                                                                                 |

## Features

- DDR4 SODIMM x 2, Up to 32GB
- Three Independent Display: VGA x 1 or HDMI x 1, eDP x 1 or LVDS x 1
- Intel® LAN i211AT x 1, 219LM for iAMT 12.0 x 1
- M.2 Slot (M-key) x 1
- M.2 Slot (E-key) x 1
- PCIe3.0 [x1] x 1
- 12V DC



| Weight                  | 1.1 lb (0.5 Kg)                                                                              |
|-------------------------|----------------------------------------------------------------------------------------------|
| MTBF (Hours):           | 400,330                                                                                      |
| Rear Panel I/O Ports    |                                                                                              |
| USB                     | USB 3.2 Gen 1 (5 Gbps) x 4                                                                   |
| Display I/O             | HDMI x 2                                                                                     |
| 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 Power Jack x 1                                                                            |
| Internal I/O Connectors |                                                                                              |
| Storage                 | M.2 M key (22 x 80mm) for PCIe [x4]/SATA storage x 1, SATA 6.0Gb/s x 2, 4-pin SATA power x 1 |
| USB                     | USB 2.0 pin header x 2 support additional 4 USB ports                                        |
| Display I/O             | 40-pin LVDS connector x 1, 40-pin eDP connector x 1, LCD backlight connector(inverter) x 1   |
| Audio I/O               | Speaker for 2W@4Ω x 1, AAFFP follow ASUS pin out x 1                                         |
| Serial Port             | Boxer header x 2 for COM (COM1: RS-232/422/485 supports 5V/12V/RI)                           |
| PS/2 Port               | —                                                                                            |
| Parallel Port           | —                                                                                            |
| DIO                     | 8-bit programmable (4-in/4-out) 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                                                                           |

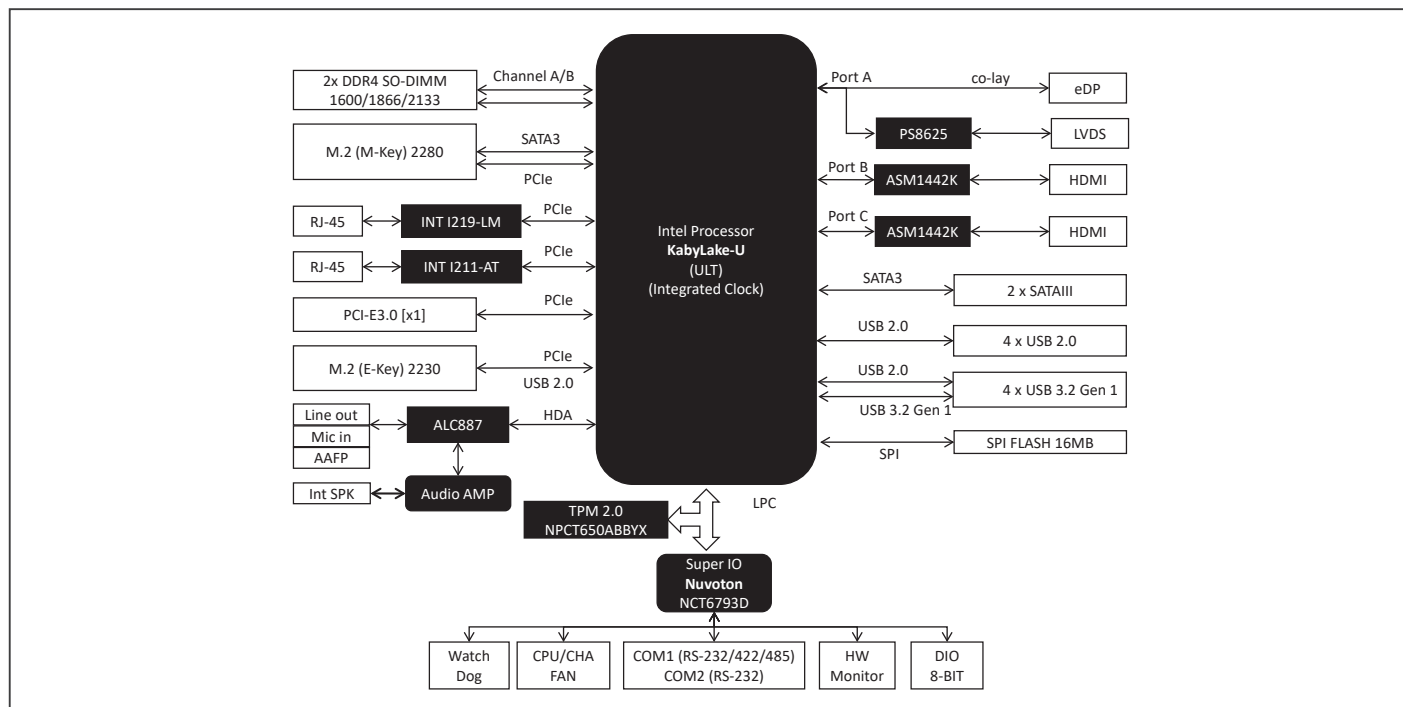
## Packing List

- Heatsink/CPU Fan
- SATA Cable
- SATA Power Cable
- I/O Shield
- MIX-KLUD1

## Optional Accessories

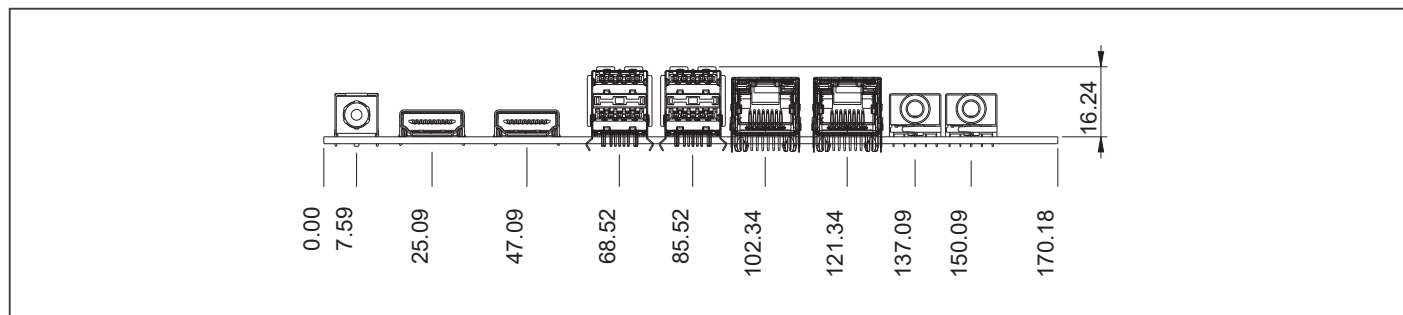
| Part Number | Description                                     |
|-------------|-------------------------------------------------|
| 1709100201  | USB 2.0 Cable (10P, 200MM, p=2.00mm, w/bracket) |
| 1700100491  | USB 2.0 Cable (2 x 5P, 490mm, p=2.00mm)         |
| 1709050201  | USB 2.0 Cable (5P, 220mm, 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)           |

### Block Diagram



### Dimension

Unit: mm



### Ordering Information

| PART NUMBER           | CPU      | RAM        | FAN/<br>FANLESS | DISPLAY        | STORAGE                | LVDS                   | LAN     | USB                           | RS-232 | RS-<br>232/422/485 | EXPANSION SLOT                               | POWER  | TPM | TEMP.                     |
|-----------------------|----------|------------|-----------------|----------------|------------------------|------------------------|---------|-------------------------------|--------|--------------------|----------------------------------------------|--------|-----|---------------------------|
| MIX-KLUD1-A10-7100-LV | i3-7100U | SODIMM x 2 | Fanless         | HDMI x 2, LVDS | SATA3 x 2, M.2 (M-key) | Dual Channel 18/24 bit | GbE x 2 | USB 3.2 Gen 1 x 4, USB2.0 x 4 | 1      | 1                  | PCIe[x1] x 1, M.2(M-key) x 1, M.2(E-Key) x 1 | 12V DC | —   | 32°F ~ 131°F (0°C ~ 55°C) |