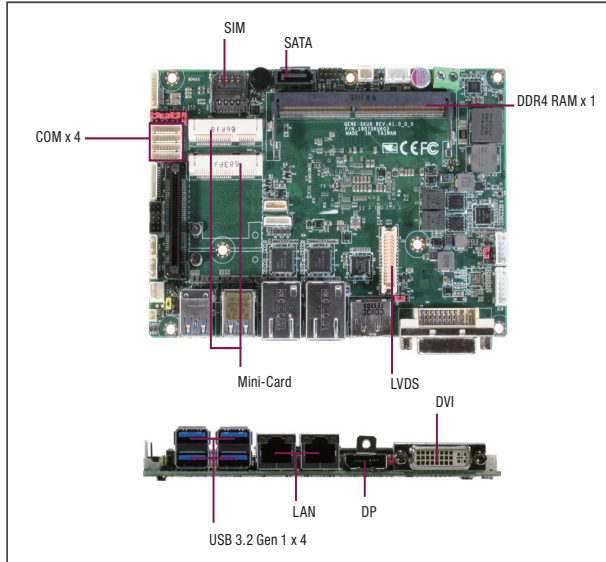


# GENE-KBU6

3.5" SubCompact Board with 7th Generation Intel® Core™ i7/i5/i3/Celeron® Processor SoC

SubCompact Boards



## Features

- DVI, 18/24-bit Dual-Channel LVDS
- SATA 6.0 Gb/s x 1 & mSATA (Share with Half-size Mini-Card and Selective by BIOS)
- Supports 8-bit Digital I/O, USB 2.0 x 2, USB 3.2 Gen 1 x 4
- Mini-Card Slot x 1 (Full size), TPM, SIM
- Wide DC Support 9~36V, +12V Only (Optional)
- BIO Connector for Daughter Board
- Solder Design for System Assembly and Thermal



## Specifications

| SYSTEM            |                                                                                                                                                                                                                                                                                    |
|-------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| FORM FACTOR       | 3.5" SubCompact Board                                                                                                                                                                                                                                                              |
| CPU               | Intel® 7th Generation Core™ /Celeron Processor:<br>Intel® i7-7600U (2C/4T, 2.80GHz, up to 3.90GHz, TDP-up 25W)<br>Intel® i5-7300U (2C/4T, 2.60GHz, up to 3.50GHz, TDP-up 25W)<br>Intel® i3-7100U (2C/4T, 2.40GHz, TDP-up 25W)<br>Intel® Celeron 3965U (2C/2T, 2.20GHz, TDP-up 15W) |
| CHIPSET           | Integrated with Intel® SoC                                                                                                                                                                                                                                                         |
| MEMORY TYPE       | DDR4 up to 2133MHz, SODIMM x 1, up to 16GB, Non-ECC                                                                                                                                                                                                                                |
| BIOS              | UEFI                                                                                                                                                                                                                                                                               |
| WAKE ON LAN       | Yes                                                                                                                                                                                                                                                                                |
| WATCHDOG TIMER    | 255 Levels                                                                                                                                                                                                                                                                         |
| SECURITY          | TPM 2.0 (Optional)                                                                                                                                                                                                                                                                 |
| RTC BATTERY       | Lithium Battery 3V/240mAh                                                                                                                                                                                                                                                          |
| DIMENSION         | 5.75" x 4" (146mm x 101.7mm)                                                                                                                                                                                                                                                       |
| OS SUPPORT        | Windows 10 (64bit)<br>Linux Ubuntu 21.04.0/Kernel 5.10                                                                                                                                                                                                                             |
| POWER             |                                                                                                                                                                                                                                                                                    |
| POWER REQUIREMENT | +9~36V (Optional: +12V)                                                                                                                                                                                                                                                            |
| POWER SUPPLY TYPE | AT/ATX                                                                                                                                                                                                                                                                             |
| CONNECTOR         | Phoenix 2-pin Connector                                                                                                                                                                                                                                                            |
| POWER CONSUMPTION | Intel® i7-7600U, DDR4 2666MHz 32GB, 3.26A@ +12V(TYPICAL)<br>Intel® i7-7600U, DDR4 2666MHz 32GB, 4.22A@ +12V(MAX)                                                                                                                                                                   |
| DISPLAY           |                                                                                                                                                                                                                                                                                    |
| CONTROLLER        | Intel® HD Graphics 610/620                                                                                                                                                                                                                                                         |
| LVDS/eDP          | LVDS Dual Channel 18/24bit x 1, up to 1920 x 1080                                                                                                                                                                                                                                  |
| DISPLAY INTERFACE | Default: DP1.2 x 1 (up to 3840 x 2160) + DVI-D x 1<br>Optional: DVI-I x 1 (with VGA signal)                                                                                                                                                                                        |
| MULTIPLE DISPLAY  | Up to 3 Simultaneous Displays                                                                                                                                                                                                                                                      |
| AUDIO             |                                                                                                                                                                                                                                                                                    |
| CODEC             | Realtek ALC897/892                                                                                                                                                                                                                                                                 |
| AUDIO INTERFACE   | Line-in/Line-out/MIC                                                                                                                                                                                                                                                               |
| SPEAKER           | —                                                                                                                                                                                                                                                                                  |
| EXTERNAL I/O      |                                                                                                                                                                                                                                                                                    |
| ETHERNET          | Intel® i210/i211, 10/100/1000Base-TX, RJ-45 x 2                                                                                                                                                                                                                                    |
| USB               | USB 3.2 Gen 1 x 4                                                                                                                                                                                                                                                                  |
| SERIAL PORT       | —                                                                                                                                                                                                                                                                                  |
| VIDEO             | DP1.2 x 1, DVI-D x 1                                                                                                                                                                                                                                                               |
| INTERNAL I/O      |                                                                                                                                                                                                                                                                                    |
| USB               | USB 2.0 x 2                                                                                                                                                                                                                                                                        |
| SERIAL PORT       | COM1(RS232), COM2, COM3, COM4(RS232/422/485, support 5V/12V/Ri)                                                                                                                                                                                                                    |
| VIDEO             | LVDS x 1                                                                                                                                                                                                                                                                           |
| SATA              | SATA III x 1, +5V SATA Power Connector x 1                                                                                                                                                                                                                                         |

| AUDIO                       | Audio Header x 1                                                                |
|-----------------------------|---------------------------------------------------------------------------------|
| DIO/GPIO                    | 8-bit                                                                           |
| SMBus/I2C                   | SMBus x 1                                                                       |
| TOUCH                       | 4/5/8-wire Touch Controller x 1 (optional)                                      |
| FAN                         | DC Fan x 1 (optional: Smart Fan)                                                |
| SIM                         | Micro SIM x 1 (Optional)                                                        |
| FRONT PANEL                 | HDD LED, PWR LED, Power Button, Buzzer, Reset                                   |
| OTHERS                      | —                                                                               |
| EXPANSION                   |                                                                                 |
| Mini PCI-E/mSATA            | Full-size mPCIe x 1<br>Half size mSATA/mPCIe x 1(Default mSATA, select by BIOS) |
| M.2                         | —                                                                               |
| OTHERS                      | BIO x 1                                                                         |
| ENVIRONMENT & CERTIFICATION |                                                                                 |
| OPERATING TEMP.             | 32°F ~ 140°F (0°C ~ 60°C)                                                       |
| STORAGE TEMP.               | -40°F ~ 185°F (-40°C ~ 85°C)                                                    |
| OPERATING HUMIDITY          | 0% ~ 90% relative humidity, non-condensing                                      |
| MTBF (HOURS)                | 375,577                                                                         |
| EMC                         | CE/FCC Class A                                                                  |

## Optional Accessories

| Part Number     | Description                               | QTY per Board |
|-----------------|-------------------------------------------|---------------|
| 1700050207      | USB Cable, 20cm                           | 2             |
| 1701090150      | Com Cable, 15cm                           | 4             |
| 1709100254      | PHONE JACK Cable, 25cm                    | 1             |
| 1702150155      | SATA Power Cable, 15cm                    | 1             |
| 1702200208      | ATX Power Cable, 20cm                     | 1             |
| 170204010R      | Power Cable, 10cm                         | 1             |
| GENE-KBU6-FAN01 | CPU Cooler, 3P, 5000RPM                   | 1             |
| GENE-KBU6-HSK02 | Heatsink, 146 x 101.6 x 29mm              | 1             |
| GENE-KBU6-HSK03 | Heatsink for DDR4 SO-DIMM.72 x 28 x 10mm. | 1             |

## Packing List

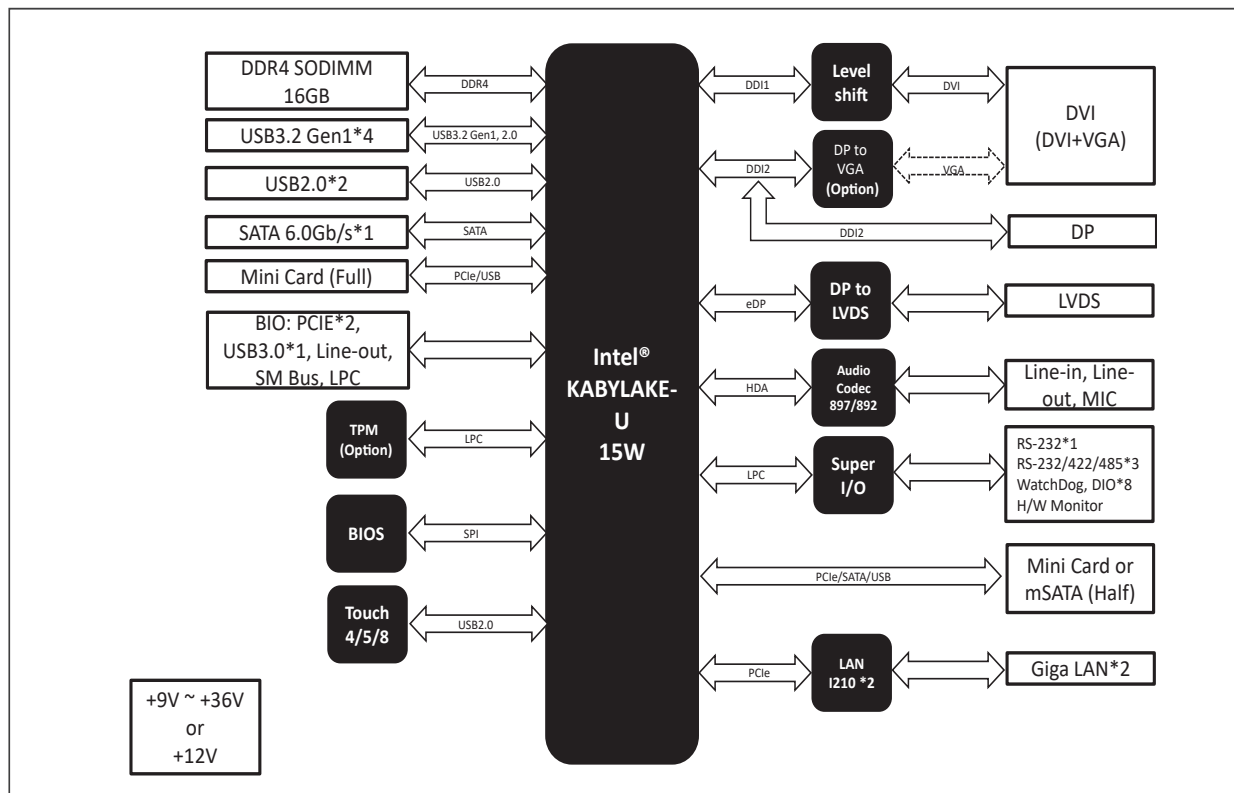
| Part Number | Description   | QTY |
|-------------|---------------|-----|
| GENE-KBU6   | GENE-KBU6 MB  | 1   |
| M10SKU6000  | Heat Spreader | 1   |

# GENE-KBU6

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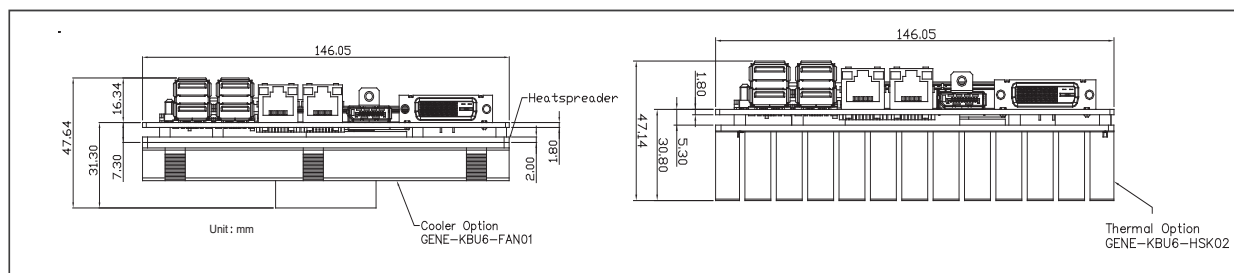
SubCompact Boards

## Block Diagram



## Dimension

Unit: mm



## Ordering Information

| Part Number        | CPU                   | Display       | LAN     | USB                             | RS-232 | RS-232/422/485 | Storage                           | Expansion Slot      | TPM | Power | Operating Temp | Others                                |
|--------------------|-----------------------|---------------|---------|---------------------------------|--------|----------------|-----------------------------------|---------------------|-----|-------|----------------|---------------------------------------|
| GENE-KBU6-A11-0001 | Intel® Core™ i7-7600U | DP+LVDS+DVI-D | GbE x 2 | USB3.0(Gen1) x 4<br>USB 2.0 x 2 | 1      | 3              | SATA x 1<br>mSATA x 1 (half size) | MiniCard x 1 (Full) | 2.0 | 9~36V | 0°C ~ 60°C     | Touch Controller, SIM, DIO x 8, SMBUS |
| GENE-KBU6-A11-0002 | Intel® Core™ i5-7300U | DP+LVDS+DVI-D | GbE x 2 | USB3.0(Gen1) x 4<br>USB 2.0 x 2 | 1      | 3              | SATA x 1<br>mSATA x 1 (half size) | MiniCard x 1 (Full) | 2.0 | 9~36V | 0°C ~ 60°C     | Touch Controller, SIM, DIO x 8, SMBUS |
| GENE-KBU6-A11-0003 | Intel® Core™ i3-7100U | DP+LVDS+DVI-D | GbE x 2 | USB3.0(Gen1) x 4<br>USB 2.0 x 2 | 1      | 3              | SATA x 1<br>mSATA x 1 (half size) | MiniCard x 1 (Full) | 2.0 | 9~36V | 0°C ~ 60°C     | Touch Controller, SIM, DIO x 8, SMBUS |

## Assured Systems

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