

Specifications

| SYSTEM | |
|-------------------|---|
| FORM FACTOR | 3.5" SubCompact Board |
| CPU | Intel® Atom™/Celeron®/Pentium® Processor: Pentium N4200 (4C/4T, 1.10GHz, up to 2.50GHz, 6W) Celeron N3350 (2C/2T, 1.10GHz, up to 2.40GHz, 6W) Atom E3950 (4C/4T, 1.66GHz, up to 2.00GHz, 9.5W) Atom E3940 (4C/4T, 1.60GHz, up to 1.80GHz, 9.5W) Atom E3930 (2C/2T, 1.30GHz, up to 1.80GHz, 6.5W) |
| CHIPSET | Integrated with Intel® SoC |
| MEMORY TYPE | DDR3L up to 1866MHz, SODIMM x 1, up to 8GB, 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) Linux Ubuntu 21.04.0/Kernel 5.10 |
| POWER | |
| POWER REQUIREMENT | +12V (Optional: +9-19V) |
| POWER SUPPLY TYPE | AT/ATX |
| CONNECTOR | Phoenix 2-pin Connector |
| POWER CONSUMPTION | Intel® E3950, DDR3L 1866MHz 8GB, 2.03A @+12V(TYPICAL) Intel® E3950, DDR3L 1866MHz 8GB, 2.45A @+12V(MAX) |
| DISPLAY | |
| CONTROLLER | Intel® HD Graphics 500/505 |
| LVDS/eDP | LVDS1 Dual Channel 18/24bit x 1, up to 1920 x 1080 LVDS2 Dual Channel 18/24bit x 1 (Optional: HDMI1.4b, up to 3840 x 2160) |
| DISPLAY INTERFACE | VGA x 1, up to 1920 x 1200 |
| 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, RJ-45 x 2 |
| USB | USB3.2 Gen 1 x 2 |
| SERIAL PORT | COM1 (RS232, supports RI) |
| VIDEO | VGA x 1 |
| INTERNAL I/O | |
| USB | USB2.0 x 4 |
| SERIAL PORT | COM2, COM3 (RS232/422/485, supports 5V/12V/RI), COM4 (RS232, supports RI) |
| VIDEO | LVDS1 x 1, LVDS2/HDMI x 1 (Default: LVDS2) |

Features

- Intel® Pentium® N4200/ Celeron® N3350 Processor SoC
- DDR3L 1866 MHz SODIMM x 1, up to 8 GB
- VGA/LVDS/LVDS2 (HDMI Co-layout with LVDS2 Optional)
- 2 CH Audio, SATA 6.0 Gb/s x 1
- Supports 8-bit Digital I/O , USB 2.0 x 4 , USB 3.2 Gen 1 x 2 , COM x 4
- Mini Card x 1 (Half-size), mSATA x 1 (Full size)
- DC 12V Only or +9~19V (Optional), AT/ATX Mode
- Supports TPM (Optional)
- 4/5/8-wire Resistive Touch Screen Controller (Optional)



| SATA | SATA III x 1, +5V SATA Power Connector x 1 |
|-----------------------------|--|
| AUDIO | Audio Header x 1 |
| DIO/GPIO | 8-bit |
| SMBus/I2C | I2C x1, 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 | Parallel Port(SPP/EPP/ECP) x 1 (optional, select by BIOS) |
| EXPANSION | |
| Mini PCI-E/mSATA | mSATA x 1 (Full-Size), Mini Card x 1 (Half-Size) |
| M.2 | — |
| OTHERS | — |
| ENVIRONMENT & CERTIFICATION | |
| OPERATING TEMP. | 32°F ~ 140°F (0°C ~ 60°C), WiTAS2 -40°F ~ 185°F (-40°C ~ 85°C) |
| STORAGE TEMP. | -40°F ~ 185°F (-40°C ~ 85°C) |
| OPERATING HUMIDITY | 0% ~ 90% relative humidity, non-condensing |
| MTBF (HOURS) | 365,976 |
| EMC | CE/FCC Class A |

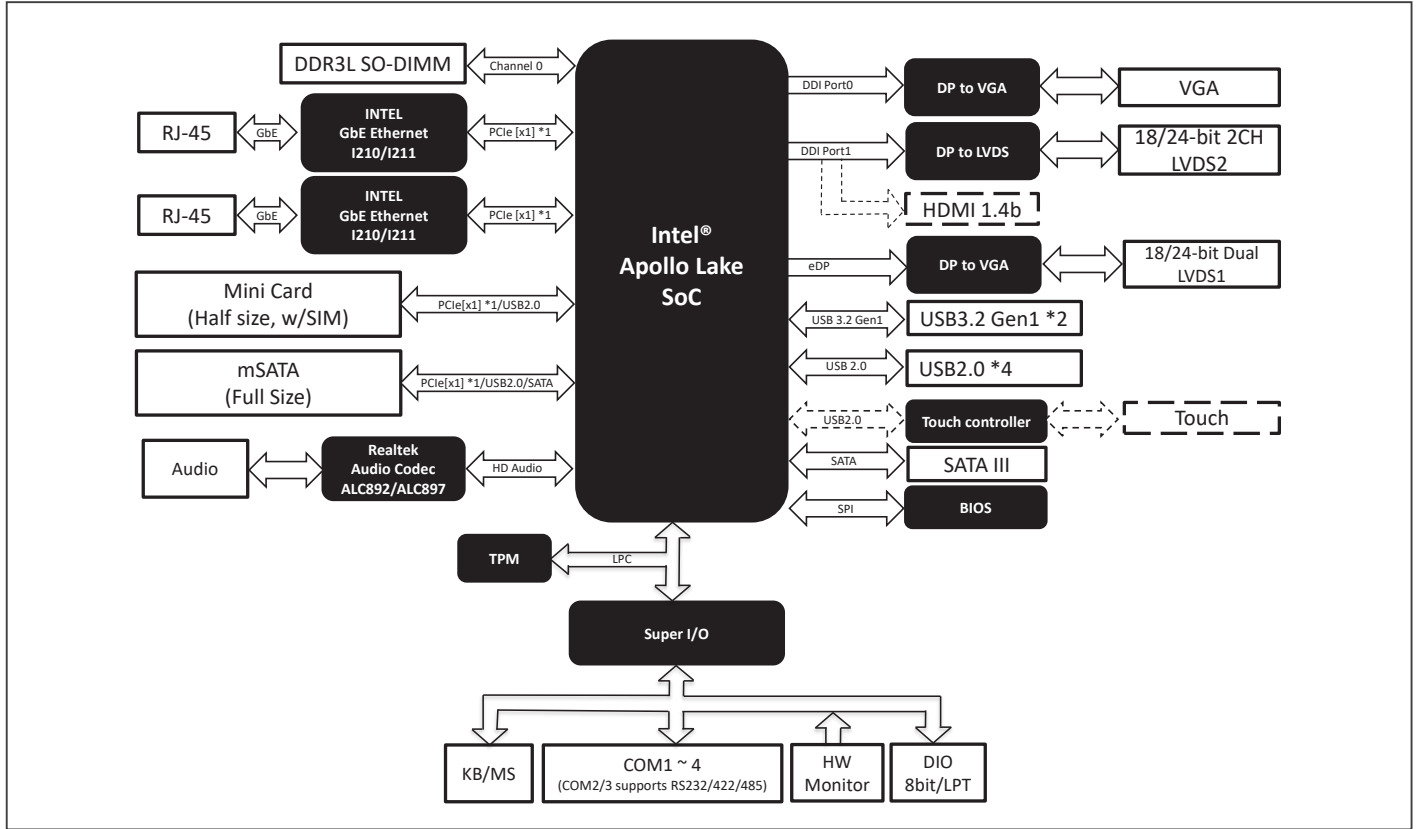
Optional Accessories

| Part Number | Description | QTY per Board |
|-------------|------------------------|---------------|
| 1700050207 | USB Cable, 20cm | 2 |
| 1701090150 | COM Cable, 15cm | 3 |
| 1709100254 | Audio Jack Cable, 25cm | 1 |
| 1709070500 | SATA CABLE, 50cm | 1 |
| 170204010R | Power Cable, 10cm | 1 |
| 1702150155 | SATA Power Cable, 15cm | 1 |
| 170220020B | ATX Power Cable, 20cm | 1 |

Packing List

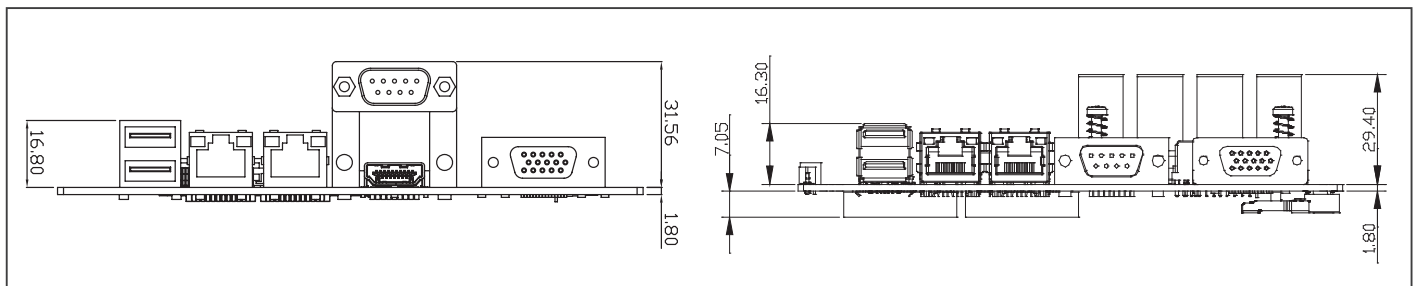
| Part Number | Description | QTY |
|-------------|--------------|-----|
| GENE-APL5 | GENE-APL5 MB | 1 |
| M16BT07020 | Heatsink | 1 |

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-APL5-A12-F001 | N3350 | VGA/LVDS | GbE x 2 | USB 3.2 Gen 1 x 2, USB 2.0 x 4 | 2 | 2 | SATA x 1, mSATA x 1(Full-size) | MiniCard x 1 (Half-size) | — | 12V | 0°C ~ 60°C | DIO x 8 |
| GENE-APL5-A12-F002 | N3350 | VGA/LVDS/LVDS2 | GbE x 2 | USB 3.2 Gen 1 x 2, USB 2.0 x 4 | 2 | 2 | SATA x 1, mSATA x 1(Full-size) | MiniCard x 1 (Half-size) | 2.0 | 9~19V | 0°C ~ 60°C | Touch Controller, SIM, DIO x 8 |
| GENE-APL5-A12-F003 | N4200 | VGA/LVDS/LVDS2 | GbE x 2 | USB 3.2 Gen 1 x 2, USB 2.0 x 4 | 2 | 2 | SATA x 1, mSATA x 1(Full-size) | MiniCard x 1 (Half-size) | 2.0 | 9~19V | 0°C ~ 60°C | Touch Controller, SIM, DIO x 8 |
| GENE-APL5W2-A12-F004 | E3950 | VGA/LVDS/LVDS2 | GbE x 2 | USB 3.2 Gen 1 x 2, USB 2.0 x 4 | 2 | 2 | SATA x 1, mSATA x 1(Full-size) | MiniCard x 1 (Half-size) | 2.0 | 12V | -40°C ~ 85°C | Touch Controller, SIM, DIO x 8 |