

## Features

- Intel® Pentium® N4200/ Celeron® N3350 Processor SoC
- DDR3L 1866, Single Channel SODIMM x 1, Non-ECC (Max.8GB, up to 1600MHz)
- 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)



## 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,1.60GHz,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 1866, Single Channel SODIMM x 1, Non-ECC (Max.8GB, up to 1600MHz)
BIOS	UEFI
Wake on LAN	Yes
Watchdog Timer	255 Levels
Security	TPM 2.0 (Optional)
RTC Battery	Lithium Battery 3V/240mAh
Dimensions	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 (Audio function not available for WITAS SKU)
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)

SATA	SATA III x 1,+5V SATA Power Connector x 1
Audio	Audio Header x 1 (Audio function not available for WITAS SKU)
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 PCIe/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

## Packing List

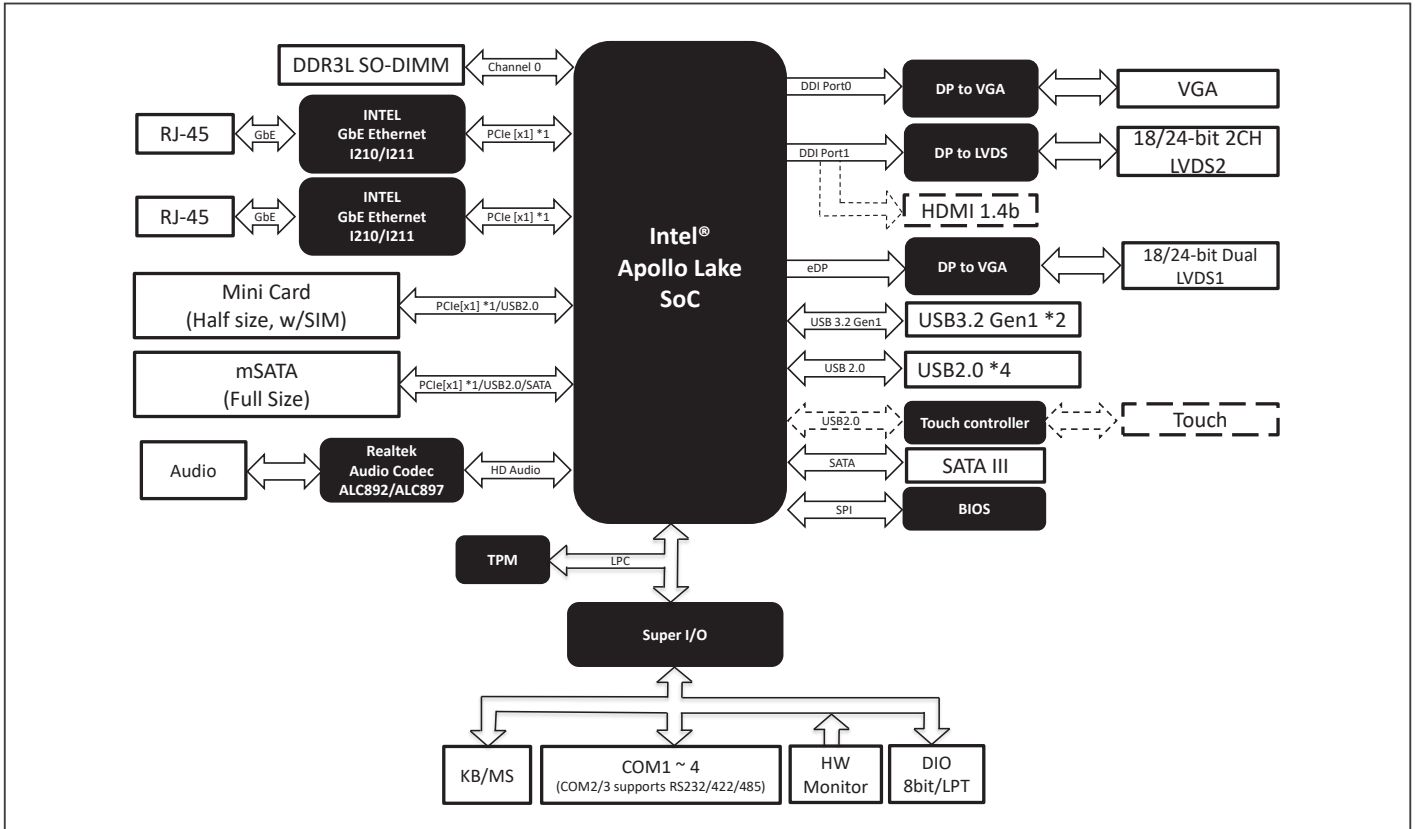
Part Number	Description	QTY
GENE-APL5	GENE-APL5 MB	1
M16BT07020	Heatsink	1

## 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

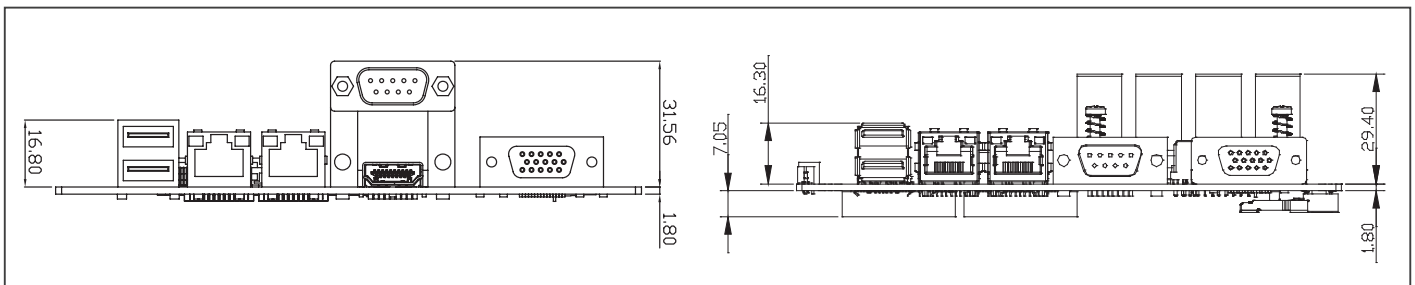


## Block Diagram



## 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-A13-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-A13-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-A13-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