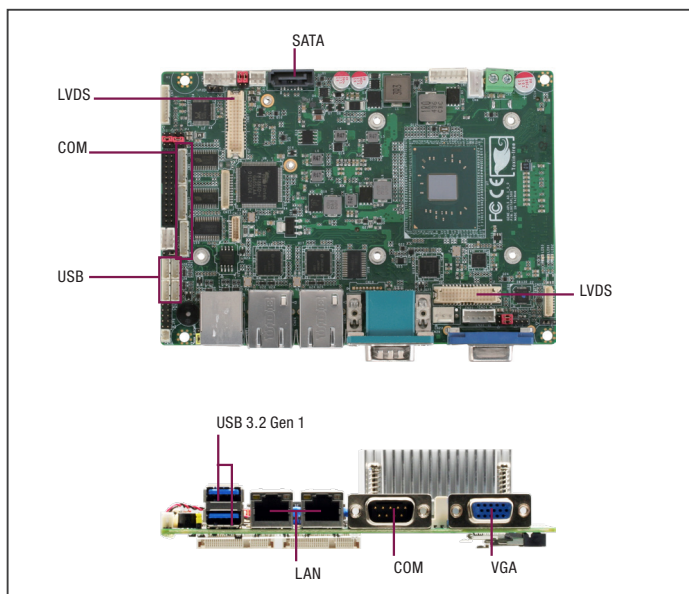


3.5" SubCompact Board with Intel® Pentium® N4200/ Celeron® N3350 Processor SoC



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,1.66GHz,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 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
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: HDMI.1.4b, 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)

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

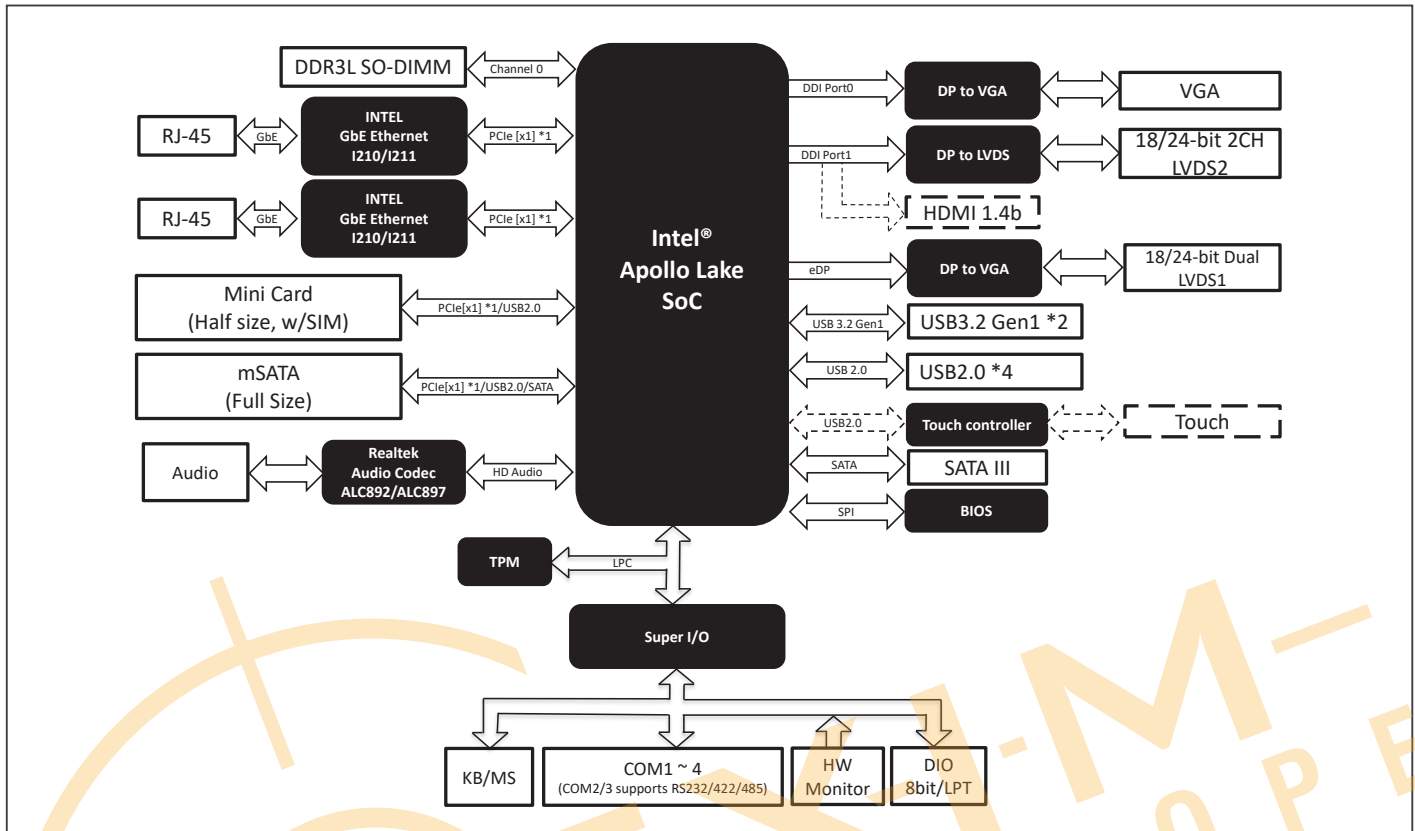
Optional Accessories

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

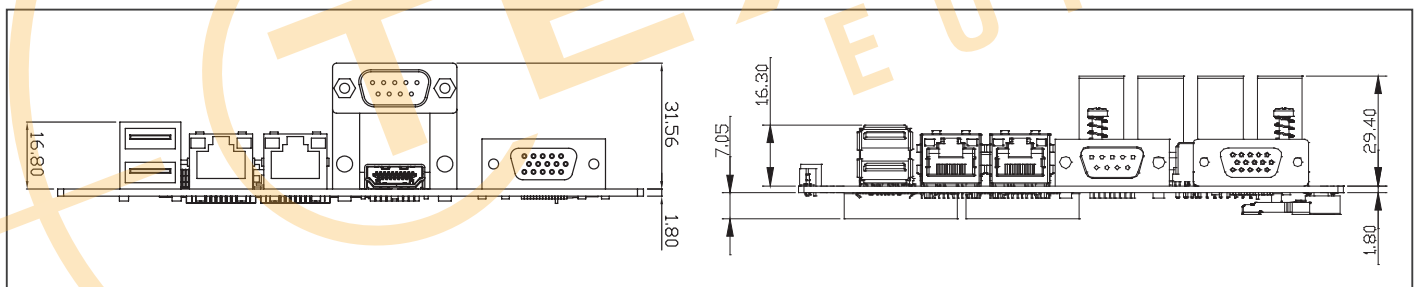
Part Number	Description	QTY
GENE-APL5	GENE-APL5 MB	1
M16BT07020	Heatsink	1

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

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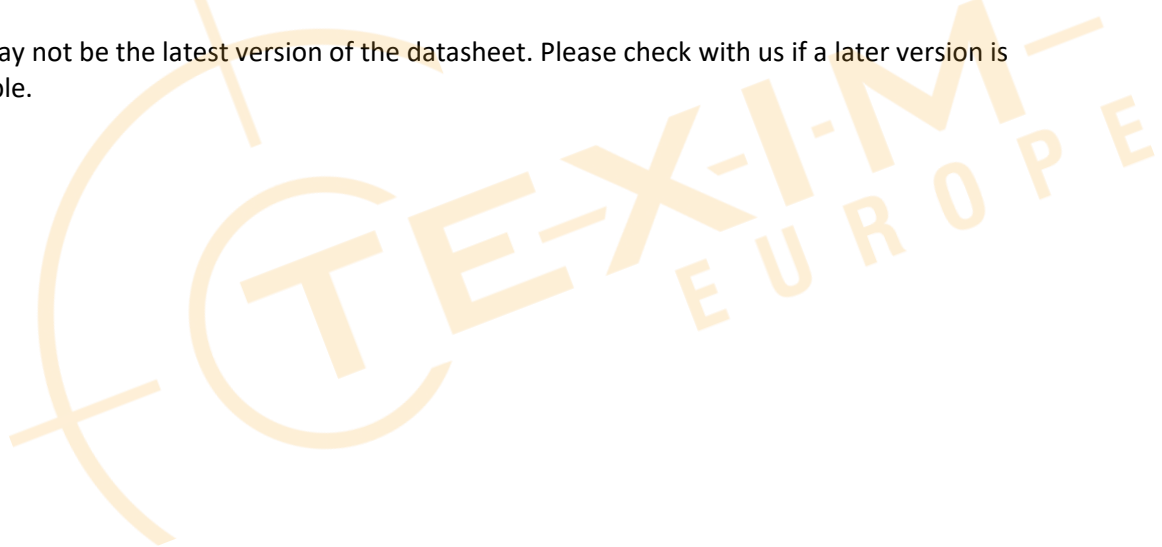
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Parameters provided in datasheets and / or specifications may vary in different applications and performance may vary over time.

All operating parameters, including typical parameters, must be validated for each customer application by the customer's technical experts.

Please contact us if you have any questions about the contents of the datasheet.

This may not be the latest version of the datasheet. Please check with us if a later version is available.





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