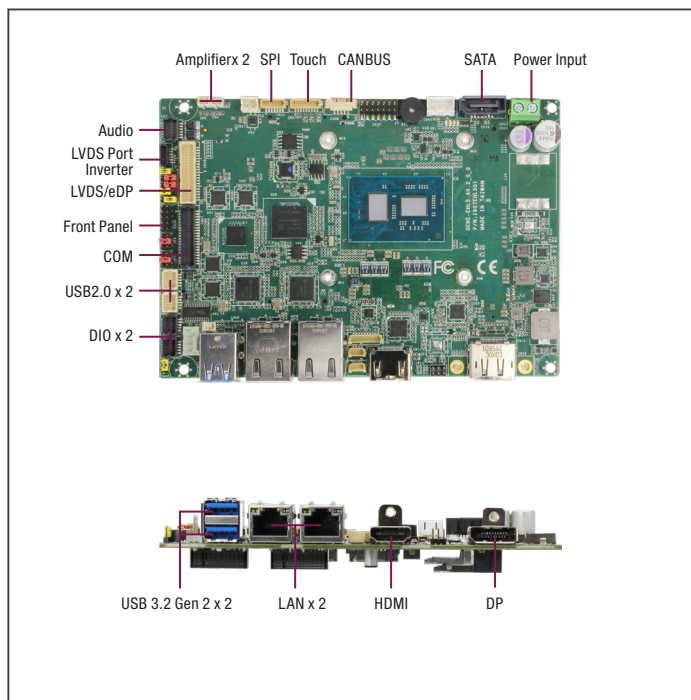


# GENE-EHL5

SubCompact Board with Intel Atom® x6000E Series, and Intel® Pentium® and Celeron® N and J Series Processors



## Specifications

SYSTEM	
FORM FACTOR	3.5" SubCompact Board
CPU	Intel® Atom™ x6000E series, Intel® Pentium®, and Celeron® N and J series processors: Intel® Atom™ x6425RE (4C, 1.9GHz, TDP-up 12W) Intel® Atom™ x6425E (4C, 2.0GHz, up to 3GHz, TDP-up 12W) Intel® Atom™ x6211E (2C, 1.2GHz, up to 3GHz, TDP-up 6W) Intel® Pentium® J6426 (4C, 2.0GHz, up to 3GHz, TDP-up 10W) Intel® Celeron® J6412 (4C, 2.0GHz, up to 3GHz, TDP-up 10W) Intel® Celeron® N6210 (2C, 1.2GHz, up to 3GHz, TDP-up 6.5W) (Intel® Atom™ x6414RE/x6413E/x6427FE/x6200FE/N6415 by customer's request)
CHIPSET	Integrated with Intel® SoC
MEMORY TYPE	DDR4 3200 MHz, SODIMM x 1, Up to 32GB, Support IBCEC (select SKUs)
BIOS	UEFI
WAKE ON LAN	Yes
WATCHDOG TIMER	255 Levels
SECURITY	TPM 2.0
RTC BATTERY	Lithium Battery 3V/240mAh
DIMENSION	5.75" x 4" (146mm x 101.7mm)
OS SUPPORT	Windows 10 (64bit) Linux Ubuntu 20.04.3(IOT)/Kernel 5.13
POWER	
POWER REQUIREMENT	+9-36V (Optional: +12V)
POWER SUPPLY TYPE	AT/ATX
CONNECTOR	Phoenix 2-pin Connector
POWER CONSUMPTION	Intel® Atom™ x6425E, DDR4 32GB, 3.26A@ +12V(balance), 3.26A@ +12V(TYPICAL) Intel® Atom™ x6425E, DDR4 32GB, 3.26A@ +12V(balance), 3.42A@ +12V(Max)
DISPLAY	
CONTROLLER	Intel® UHD Graphics for 10th Gen Intel® Processors
LVDS/eDP	LVDS Dual Channel 18/24bit x 1, up to 1920 x 1080 (Optional eDP 1.3, up to 1920X1200)
DISPLAY INTERFACE	HDMI2.0b x 1, up to 4K 60Hz DP1.4 x 1, up to 4K x 2K 60Hz (Optional: VGA x 1)
MULTIPLE DISPLAY	3 Simultaneous Displays
AUDIO	
CODEC	REALTEK ALC269
AUDIO INTERFACE	Line-in/Line-out/MIC
SPEAKER	2W Speaker

## Features

- DDR4 SODIMM Slot x 1, up to 32GB, support IBCEC
- LVDS/eDP x 1 (Default: LVDS), DP1.4 x 1 (Optional VGA x 1), HDMI 2.0b x 1
- SATA III x 1, eMMC x 1
- USB 3.2 Gen2 x 2 (Rear I/O), USB2.0 x 4 (Pin header)
- M.2 B Key 2280 PCIe x 1, M.2 B-Key 2242 PCIe x 1, M.2 E Key 2230 x 1, M.2 B Key 3052 x 1
- Wide DC Input 9-36V (Optional: 12V Only)



EXTERNAL I/O	
ETHERNET	Intel® i210, 10/100/1000Base x 2
USB	USB3.2 Gen 2 x 2
SERIAL PORT	—
VIDEO	HDMI 2.0b x 1, DP1.4 x 1 (Optional VGA x 1)
INTERNAL I/O	
USB	USB2.0 x 4
SERIAL PORT	RS-232/422/485 x 4
VIDEO	LVDS/eDP x 1
SATA	SATA3.0 x 1, +5V SATA Power Connector x 1
AUDIO	Audio Header x 1
DIO/GPIO	16 Bits (8 In/8 Out)
SMBus/I2C	SMBus/I2C x 1 (Default: SMBus)
TOUCH	4/5/8-wire Touch Controller x 1 (optional)
FAN	4 wire Smart Fan x 1
SIM	Nano SIM x 1
FRONT PANEL	HDD LED, PWR LED, Power Button, Buzzer, Reset
OTHERS	eMMC5.1 32GB CANBUS x 2, TX/RX (Celeron J6412 and Celeron N6210 don't support CANBUS)
EXPANSION	
Mini PCI-E/mSATA	—
M.2	E-Key 2230 x 1 (PCIe, USB2.0) B-Key 2242 x 1 (PCIe x 2/PCIe/SATA x 1, USB2.0) Default: PCIe x 2, PCIe x 1 select by BIOS, SATA select by BOM B-Key 2280 x 1 (PCIe x 1/PCIe x 2, USB2.0) Default: PCIe x 1, PCIe x 2 select by BIOS B-Key 3052 x 1 (USB3.2 Gen2)
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)	335,427
EMC	CE/FCC Class A

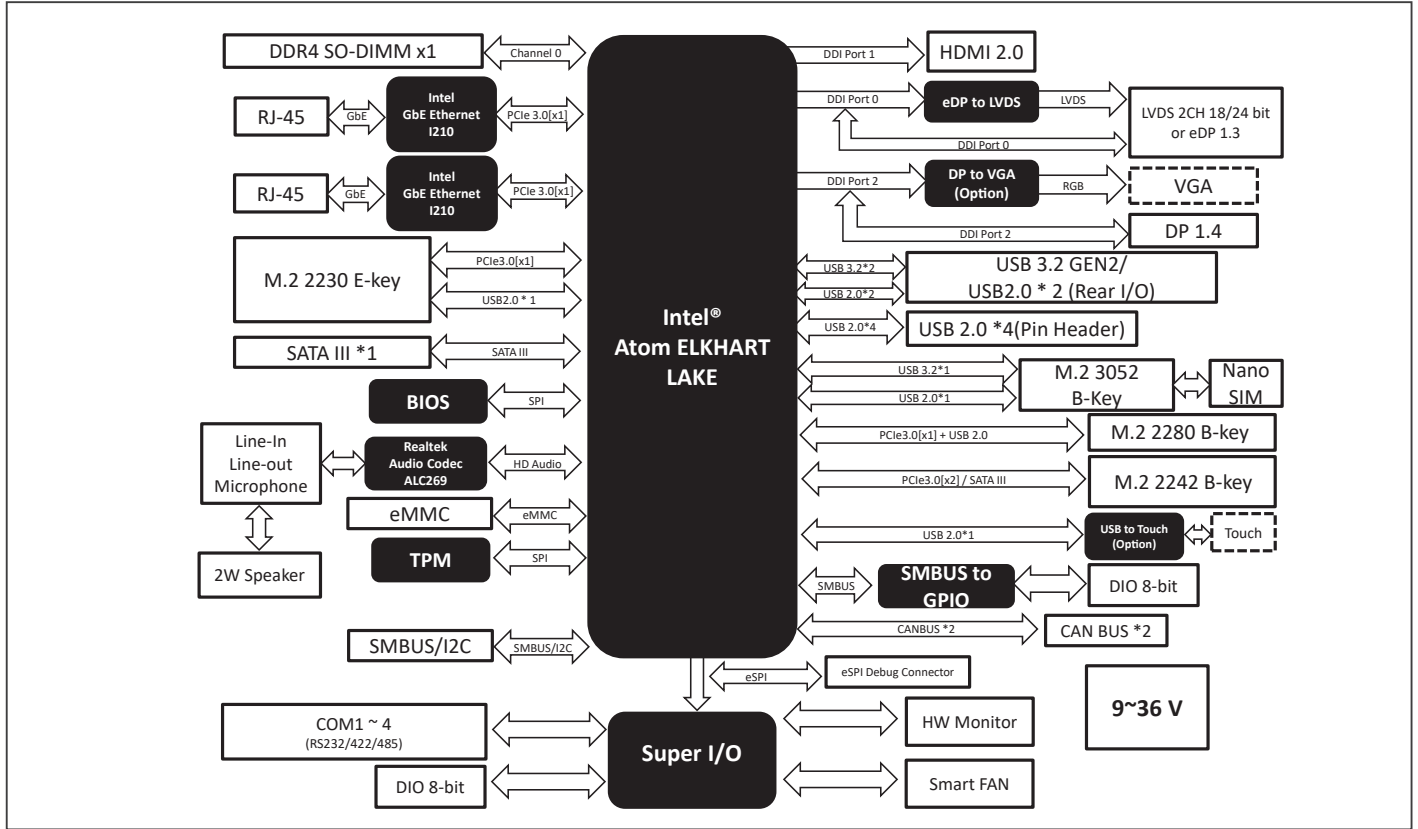
## Optional Accessories

Part Number	Description	QTY per Board
170X000156	Audio Cable, 25cm	1
1709070500	SATA Cable, 50cm	1
1702150155	SATA HDD Power, Cable 15cm	1
170010010D	USB 2.0 Cable, 10cm	2
170204010R	Power Cable, 10cm	1
170X000317	COM cable, 15cm	1
170220020B	ATX Power Cable, 20cm	1

## Packing List

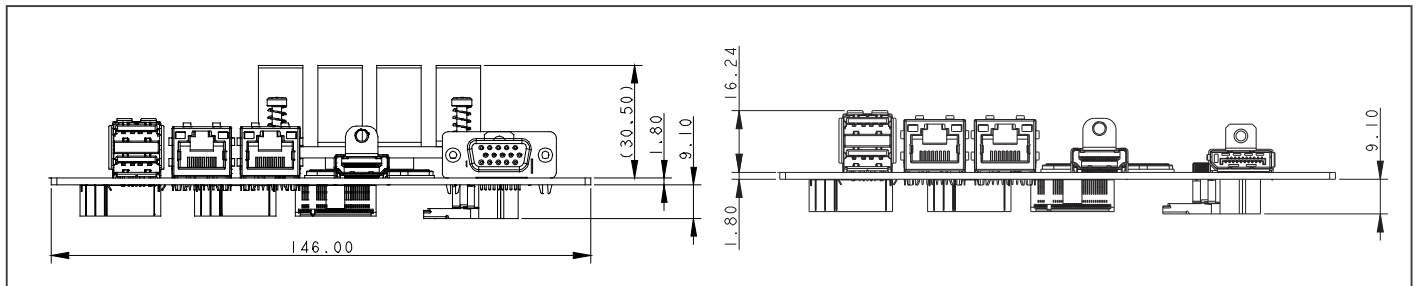
Part Number	Description	QTY
GENE-EHL5	GENE-EHL5 MB	1
M16BT07020	Heat Sink	1

## Block Diagram



## Dimension

Unit: mm



## Ordering Information

Part Number	CPU	Display	LAN	USB	RS-232/422/485	Storage	Expansion Slot	TPM	Power	Temp	Others
GENE-EHL5-A10-0001	Celeron N6210	DP++ x 1, HDMI x 1 LVDS x 1	GbE x 2	USB 3.2 Gen 2 x 2 USB 2.0 x 4	4	SATA x 1	M.2 B-Key 2280 x 1, M.2 B-Key 2242 x 1 M.2 E-Key 2230 x 1, M.2 B-Key 3052 x 1	2.0	9~36V	0°C ~ 60°C	DIO x 16, nano SIM, Touch Controller, SMBUS
GENE-EHL5-A10-0002	Celeron N6210	VGA x 1, LVDS x 1	GbE x 2	USB 3.2 Gen 2 x 2 USB 2.0 x 4	4	SATA x 1	M.2 B-Key 2280 x 1, M.2 B-Key 2242 x 1 M.2 E-Key 2230 x 1, M.2 B-Key 3052 x 1	NA	12V	0°C ~ 60°C	DIO x 16, nano SIM, SMBUS
GENE-EHL5-A10-0003	Celeron J6412	DP++ x 1, HDMI x 1 LVDS x 1	GbE x 2	USB 3.2 Gen 2 x 2 USB 2.0 x 4	4	SATA x 1 eMMC 32GB	M.2 B-Key 2280 x 1, M.2 B-Key 2242 x 1 M.2 E-Key 2230 x 1, M.2 B-Key 3052 x 1	2.0	9~36V	0°C ~ 60°C	DIO x 16, nano SIM, Touch Controller, SMBUS
GENE-EHL5-A10-0004	Celeron J6412	VGA x 1, LVDS x 1	GbE x 2	USB 3.2 Gen 2 x 2 USB 2.0 x 4	4	SATA x 1	M.2 B-Key 2280 x 1, M.2 B-Key 2242 x 1 M.2 E-Key 2230 x 1, M.2 B-Key 3052 x 1	NA	12V	0°C ~ 60°C	DIO x 16, nano SIM, SMBUS
GENE-EHL5-A10-0005	Pentium J6426	DP++ x 1, HDMI x 1 LVDS x 1	GbE x 2	USB 3.2 Gen 2 x 2 USB 2.0 x 4	4	SATA x 1	M.2 B-Key 2280 x 1, M.2 B-Key 2242 x 1 M.2 E-Key 2230 x 1, M.2 B-Key 3052 x 1	2.0	9~36V	0°C ~ 60°C	DIO x 16, nano SIM, Touch Controller, SMBUS, CANBUS x 2
GENE-EHL5-A10-0006	Atom x6211E	DP++ x 1, HDMI x 1 LVDS x 1	GbE x 2	USB 3.2 Gen 2 x 2 USB 2.0 x 4	4	SATA x 1	M.2 B-Key 2280 x 1, M.2 B-Key 2242 x 1 M.2 E-Key 2230 x 1, M.2 B-Key 3052 x 1	NA	12V	0°C ~ 60°C	DIO x 16, nano SIM, SMBUS
GENE-EHL5-A10-0007	Atom x6425E	DP++ x 1, HDMI x 1 LVDS x 1	GbE x 2	USB 3.2 Gen 2 x 2 USB 2.0 x 4	4	SATA x 1 eMMC 32GB	M.2 B-Key 2280 x 1, M.2 B-Key 2242 x 1 M.2 E-Key 2230 x 1, M.2 B-Key 3052 x 1	2.0	9~36V	0°C ~ 60°C	DIO x 16, nano SIM, Touch Controller, SMBUS, CANBUS x 2
GENE-EHL5-A10-0008	Atom x6425E	VGA x 1, LVDS x 1	GbE x 2	USB 3.2 Gen 2 x 2 USB 2.0 x 4	4	SATA x 1	M.2 B-Key 2280 x 1, M.2 B-Key 2242 x 1 M.2 E-Key 2230 x 1, M.2 B-Key 3052 x 1	NA	12V	0°C ~ 60°C	DIO x 16, nano SIM, SMBUS
GENE-EHL5W2-A10-0008	Atom x6425E	VGA x 1, LVDS x 1	GbE x 2	USB 3.2 Gen 2 x 2 USB 2.0 x 4	4	SATA x 1	M.2 B-Key 2280 x 1, M.2 B-Key 2242 x 1 M.2 E-Key 2230 x 1, M.2 B-Key 3052 x 1	NA	12V	-40°C ~ 85°C	DIO x 16, nano SIM, SMBUS
GENE-EHL5-A10-0009	Atom x6425RE	DP++ x 1, HDMI x 1 LVDS x 1	GbE x 2	USB 3.2 Gen 2 x 2 USB 2.0 x 4	4	SATA x 1	M.2 B-Key 2280 x 1, M.2 B-Key 2242 x 1 M.2 E-Key 2230 x 1, M.2 B-Key 3052 x 1	2.0	9~36V	0°C ~ 60°C	DIO x 16, nano SIM, Touch Controller, SMBUS, CANBUS x 2

Note: All specifications are subject to change without notice.