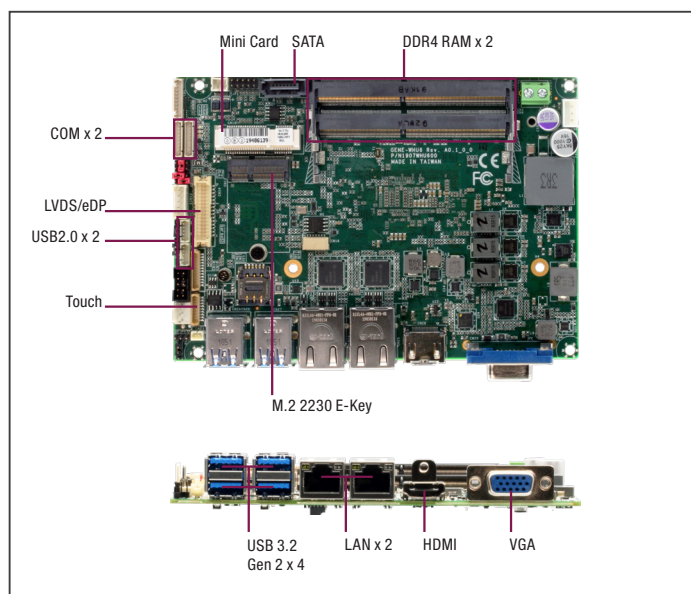


# GENE-WHU6

3.5" SubCompact Board with 8th Generation Intel® Core™ i7/i5/i3/Celeron® Processor SoC



## Features

- LVDS/eDP x 1 (Default: LVDS), VGA x 1, HDMI 2.0 x 1
- GbE x 2, SATA III x 1, GPIO x 8bit
- USB 3.2 Gen 2 x 4 (Up to Gen 2), RS-232/422/485 x 2
- Full size mSATA/mPCIe Slot x 1 (With Nano-SIM)
- M.2 2280 B-Key x 1, M.2 2230 E-Key x 1
- Wide DC Input 9-36V (Optional: 12V Only)



Serial Port	COM1 (RS232/422/485, support RI) COM2 (RS232/422/485, support 5V/12V/RI)
Video	LVDS / eDP x 1 (Default: LVDS)
SATA	SATA 6.0 Gb/s x 1 +5V SATA Power Connector x 1
Audio	Audio Header x 1 (Optional, Audio function not available for WITAS SKU)
DIO/GPIO	GPIO 8-bit
SMBus/I2C	SMBus / I2C x 1 (Default: I2C)
Touch	4/5/8 wire Touch Controller x 1 (Optional)
Fan	DC Fan x 1 (Option: Smart Fan x 1)
Sim	Nano SIM x 1
Front Panel	HDD LED, PWR LED, Power Button, Buzzer, Reset
Others	—
<b>Expansion</b>	
Mini PCIe/mSATA	Full-size mSATA / mPCIe x 1 (Default: mSATA, select by BIOS)
M.2	M.2 2280 B-Key x1 (PCIe 3.0 [x2], SATA, USB2.0), Default: selected by BIOS M.2 2230 E-Key x 1 (PCIe 3.0 [x1], USB2.0)
Others	—
<b>Environment &amp; Certification</b>	
Operating Temp.	32°F ~ 140°F (0°C ~ 60°C) WITAS 2: -40°F ~ 185°F (-40°C ~ 85°C) on selected CPU SKU
Storage Temp.	-40°F ~ 185°F (-40°C ~ 85°C)
Operating Humidity	0% ~ 90% relative humidity, non-condensing
MTBF (Hours)	354,194
EMC	CE/FCC Class A

## Specifications

<b>System</b>	
Form Factor	3.5" SubCompact Board
CPU	Intel® 8th Generation Core™ / Celeron® Processors: i7-8665UE (4C/8T, 1.70GHz, 15W) i5-8365UE (4C/8T, 1.60GHz, 15W) i3-8145UE (2C/4T, 2.20GHz, 15W) 4305UE (2C/2T, 2.00GHz, 15W)
Chipset	Integrated with Intel® SoC
Memory Type	DDR4 2400, Dual Channel SODIMM x 2, Max.64GB, Non-ECC
BIOS	UEFI
Wake on LAN	Yes
Watchdog Timer	255 Levels
Security	—
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
<b>Power</b>	
Power Requirement	+9V~36V (Optional: +12V)
Power Supply Type	AT/ATX
Connector	Phoenix 2-pin Connector
Power Consumption	Intel® i7-8665UE, DDR4 2400MHz 16GB x2, 4.83A@ +12V (TYPICAL) Intel® i7-8665UE, DDR4 2400MHz 16GB x2, 7.3A@ +12V (MAX)
<b>Display</b>	
Controller	Intel® UHD Graphics 610/620
LVDS/eDP	LVDS x 1, Dual Channel 18/24bit, up to 1920 x 1080 eDP 1.4 x 1, , up to 1920 X 1200 (Optional)
Display Interface	HDMI 2.0 x 1, up to 3840 x 2160 VGA x 1, up to 2560 x 1440
Multiple Display	Up to 3 Simultaneous Displays
<b>Audio</b>	
Codec	Realtek ALC897
Audio Interface	Line-In / Line-Out / Mic (Audio function not available for WITAS SKU)
Speaker	—
<b>External I/O</b>	
Ethernet	Intel® I210 1GbE, RJ45 x1 Intel® I219, 1GbE, RJ45 x1
USB	USB 3.2 Gen2 x 4
Serial Port	—
Video	HDMI 2.0 x 1, VGA x 1
<b>Internal I/O</b>	
USB	USB 2.0 x 2

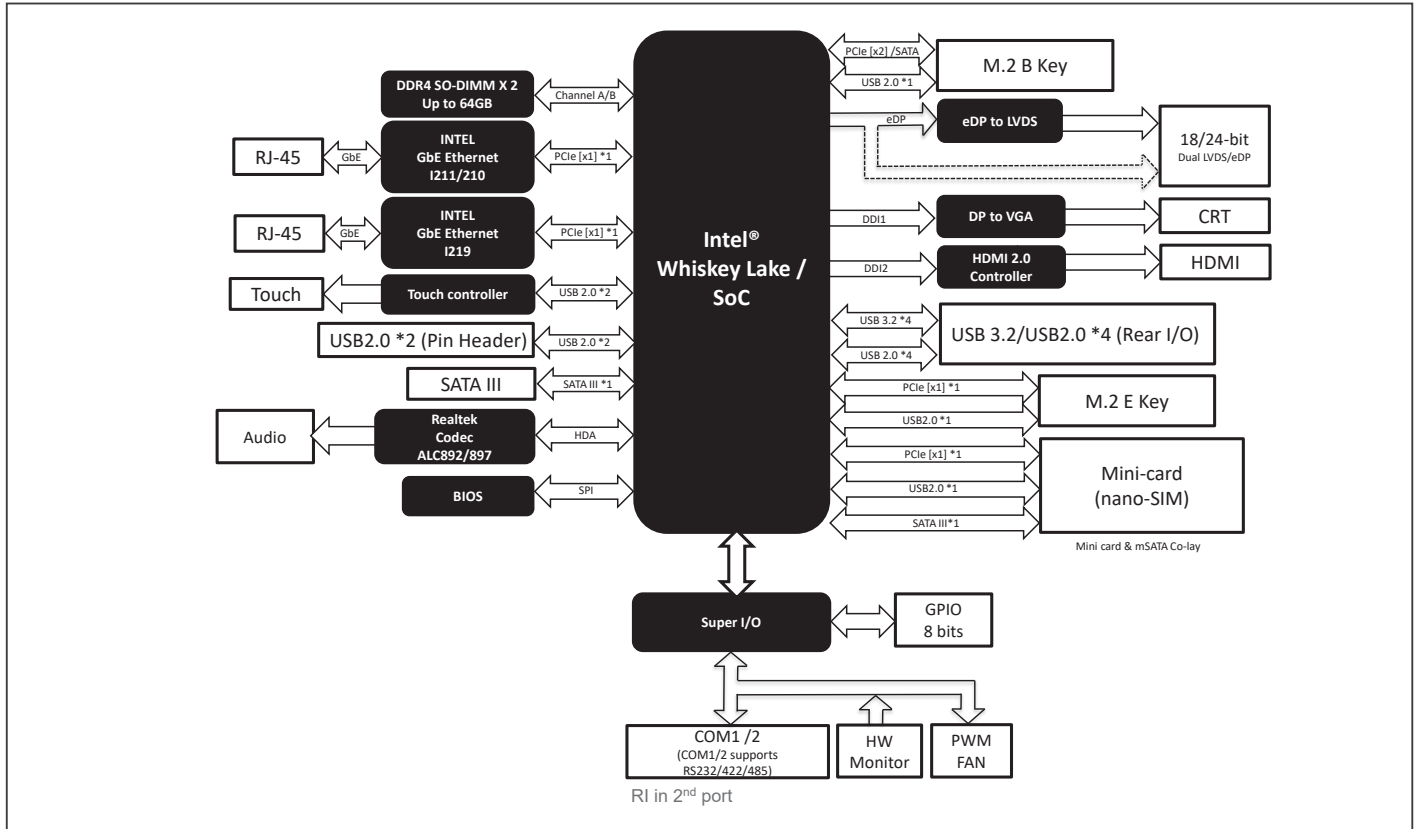
## Optional Accessories

Part Number	Description	QTY per Board
1702150155	SATA Power Cable, 15cm	1
1709070500	SATA CABLE, 50cm	1
170204010R	Power Cable, 10cm	1
1709100254	Audio JACK Cable, 25cm	1
170220020B	ATX Power Cable, 20cm	1
1701090150	COM Cable, 15cm	2
1700050207	USB CABLE, 20cm	2
GENE-WHU6-FAN01	CPU Cooler.146x78.6x23.5mm.3P.3600RPM	1
GENE-WHU6-FAN02	CPU Cooler.146x75.54x17.5mm.3P.4800RPM	1
GENE-WHU6-HSK01	Heatsink.146x101.6x32.5mm.Silver.for i3 & Celeron	1
GENE-WHU6-HSK02	Heat Sink.72x28x10mm.SODIMM DDR4	1
GENE-WHU6-HSK03	Heat sink.146x101.6x45.5mm	1

## Packing List

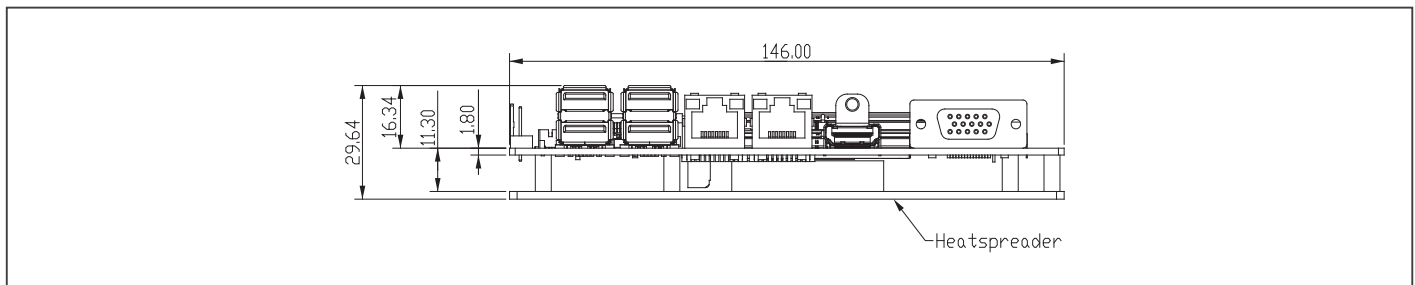
Part Number	Description	QTY
GENE-WHU6	GENE-WHU6 MB	1
M10WHU6000	Heat spreader	1

## Block Diagram



## Dimension

Unit: mm



## Ordering Information

Part Number	CPU	Display	LAN	USB	RS-232/422/485	Storage	Expansion Slot	Power	Operating Temp	Others
GENE-WHU6-A11-0001	Intel® i7-8665UE	VGA+HDMI+LVDS	GbE x 2	USB 3.2 Gen 2 x 4	2	SATA x 1 mSATA (Full size)x 1	M.2 2280 B Key x1 M.2 2230 E Key x1	9~36V	0°C ~ 60°C	Audio, GPIO x 8, nano SIM, Touch Controller
GENE-WHU6-A11-0002	Intel® i5-8365UE	VGA+HDMI+LVDS	GbE x 2	USB 3.2 Gen 2 x 4	2	SATA x 1 mSATA (Full size)x 1	M.2 2280 B Key x1 M.2 2230 E Key x1	9~36V	0°C ~ 60°C	Audio, GPIO x 8, nano SIM, Touch Controller
GENE-WHU6-A11-0003	Intel® i3-8145UE	VGA+HDMI+LVDS	GbE x 2	USB 3.2 Gen 2 x 4	2	SATA x 1 mSATA (Full size)x 1	M.2 2280 B Key x1 M.2 2230 E Key x1	9~36V	0°C ~ 60°C	Audio, GPIO x 8, nano SIM, Touch Controller
GENE-WHU6-A11-0004	Intel® Celeron 4305UE	VGA+HDMI+LVDS	GbE x 2	USB 3.2 Gen 2 x 4	2	SATA x 1 mSATA (Full size)x 1	M.2 2280 B Key x1 M.2 2230 E Key x1	9~36V	0°C ~ 60°C	Audio, GPIO x 8, nano SIM, Touch Controller
GENE-WHU6W2-A11-0001	Intel® i7-8665UE	VGA+HDMI+LVDS	GbE x 2	USB 3.2 Gen 2 x 4	2	SATA x 1 mSATA (Full size)x 1	M.2 2280 B Key x1 M.2 2230 E Key x1	12V	WiTAS2 (-40~85°C)	GPIO x 8, nano SIM, Touch Controller