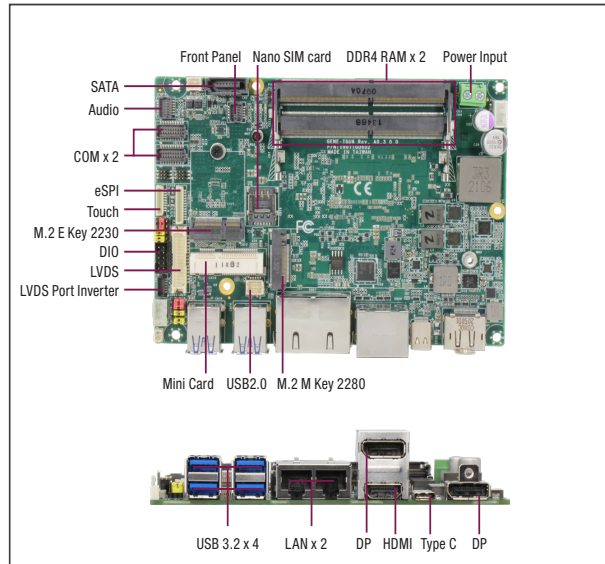


# GENE-TGU6

3.5" SubCompact Board with 11th Generation Intel® Core™ i7/i5/i3/Celeron CPU

SubCompact Boards



## Specifications

| FORM FACTOR       |                                                                                                                                                                                                                                                  |
|-------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| FORM FACTOR       | 3.5" SubCompact Board                                                                                                                                                                                                                            |
| CPU               | Intel® 11th Generation Core™/Celeron CPU:<br>i7-1185G7E (4C, 1.8GHz, up to 4.4GHz, TDP-up 28W)<br>i5-1145G7E (4C, 1.5GHz, up to 4.1GHz, TDP-up 28W)<br>i3-1115G4E (2C, 2.2GHz, up to 3.9GHz, TDP-up 28W)<br>Celeron® 6305E (2C, 1.8GHz, TDP 15W) |
| CHIPSET           | Integrated with Intel® SoC                                                                                                                                                                                                                       |
| MEMORY TYPE       | DDR4 3200MHz, Dual Channel SODIMM x 2, up to 64GB, Support IBCEC (select SKUs)                                                                                                                                                                   |
| BIOS              | UEFI                                                                                                                                                                                                                                             |
| WAKE ON LAN       | Yes                                                                                                                                                                                                                                              |
| WATCHDOG TIMER    | 255 Levels                                                                                                                                                                                                                                       |
| SECURITY          | TPM2.0                                                                                                                                                                                                                                           |
| RTC BATTERY       | Lithium Battery 3V/240mAh                                                                                                                                                                                                                        |
| DIMENSION         | 5.75" x 4" (146mm x 101.7mm)                                                                                                                                                                                                                     |
| OS SUPPORT        | Windows 10 (64bit)<br>Linux Ubuntu 20.04.2/Kernel 5.8                                                                                                                                                                                            |
| POWER             |                                                                                                                                                                                                                                                  |
| POWER REQUIREMENT | +9-36V (Optional: +12V)                                                                                                                                                                                                                          |
| POWER SUPPLY TYPE | AT/ATX                                                                                                                                                                                                                                           |
| CONNECTOR         | Phoenix 2-pin Connector                                                                                                                                                                                                                          |
| POWER CONSUMPTION | Intel® i7-1185G7E, DDR4 3200MHz 32GB x2, 4.96A@ +12V(TYPICAL)<br>Intel® i7-1185G7E, DDR4 3200MHz 32GB x2, 7.32A@ +12V(MAX)                                                                                                                       |
| DISPLAY           |                                                                                                                                                                                                                                                  |
| CONTROLLER        | Intel® Iris® Xe Graphics<br>Intel® UHD Graphics                                                                                                                                                                                                  |
| LVDS/eDP          | LVDS Dual Channel 18/24bit x 1, up to 1920 x 1080 (Option: eDP1.4b up to 3840 x 2160)                                                                                                                                                            |
| DISPLAY INTERFACE | HDMI 2.0b x 1, up to 4K x 2K 60Hz<br>DP1.4 x 2, up to 4K x 2K 60Hz<br>Type C DP1.4a x 1, up to 4K x 2K 60Hz                                                                                                                                      |
| MULTIPLE DISPLAY  | Up to 4 Simultaneous Displays                                                                                                                                                                                                                    |
| AUDIO             |                                                                                                                                                                                                                                                  |
| CODEC             | Realtek ALC897/892                                                                                                                                                                                                                               |
| AUDIO INTERFACE   | Line-in/Line-out/MIC                                                                                                                                                                                                                             |
| SPEAKER           | —                                                                                                                                                                                                                                                |
| EXTERNAL I/O      |                                                                                                                                                                                                                                                  |
| ETHERNET          | Intel® i219LM, 10/100/1000Base, RJ-45 x1<br>Intel® i225LM, 10/100/2500Base, RJ-45 x1                                                                                                                                                             |
| USB               | USB3.2 Gen 2 x 4<br>USB3.2 Gen 2 Type C x 1 (PD 5W/3A)                                                                                                                                                                                           |
| SERIAL PORT       | —                                                                                                                                                                                                                                                |
| VIDEO             | HDMI 2.0b x 1, DP1.4 x 2, Type C DP1.4a x 1                                                                                                                                                                                                      |

## Features

- DDR4 SODIMM Slot x 2, up to 64GB, support IBCEC
- HDMI 2.0b x 1, DP1.4 x 2, Type C DP x 1, LVDS/eDP x 1
- 2.5GbE x 1, GbE x 1
- USB 3.2 Gen2 x 4, USB2.0 x2, USB Type C x 1
- M.2 2280 M key x 1, M.2 2230 E key x 1
- Wide DC Input 9-36V (Optional: 12V Only)



| INTERNAL I/O                |                                                                                                    |
|-----------------------------|----------------------------------------------------------------------------------------------------|
| USB                         | USB2.0 x 2                                                                                         |
| SERIAL PORT                 | COM1, COM3, COM4 (RS232/422/485)<br>COM2 (RS232/422/485, supports 5V/12V/R)                        |
| VIDEO                       | LVDS/eDP x 1 (Default: LVDS)<br>eDP: up to 1080P@60Hz                                              |
| SATA                        | SATA III x 1<br>+5V SATA Power Connector x 1                                                       |
| AUDIO                       | Audio Header x 1                                                                                   |
| DIO/GPIO                    | 8-Bit                                                                                              |
| SMBus/I2C                   | SMBus/I2C x 1 (Default: SMBus)                                                                     |
| TOUCH                       | 4/5/8-wire Touch Controller x 1 (optional)                                                         |
| FAN                         | Smart Fan x 1                                                                                      |
| SIM                         | Nano SIM x 1                                                                                       |
| FRONT PANEL                 | HDD LED, PWR LED, Power Button, Buzzer, Reset                                                      |
| OTHERS                      | —                                                                                                  |
| EXPANSION                   |                                                                                                    |
| Mini PCI-E/mSATA            | Full-Sized mSATA/mPCIe x 1 (default: mSATA, select with BIOS)                                      |
| M.2                         | M-Key 2280 x 1 (PCIex4)<br>E-Key 2230 x 1 (PCIe, USB2.0)                                           |
| OTHERS                      | —                                                                                                  |
| ENVIRONMENT & CERTIFICATION |                                                                                                    |
| OPERATING TEMP.             | 32°F ~ 140°F (0°C ~ 60°C), WITAS1 -4°F ~ 158 °F (-20°C ~70°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)                | 329,884                                                                                            |
| EMC                         | CE/FCC Class A                                                                                     |

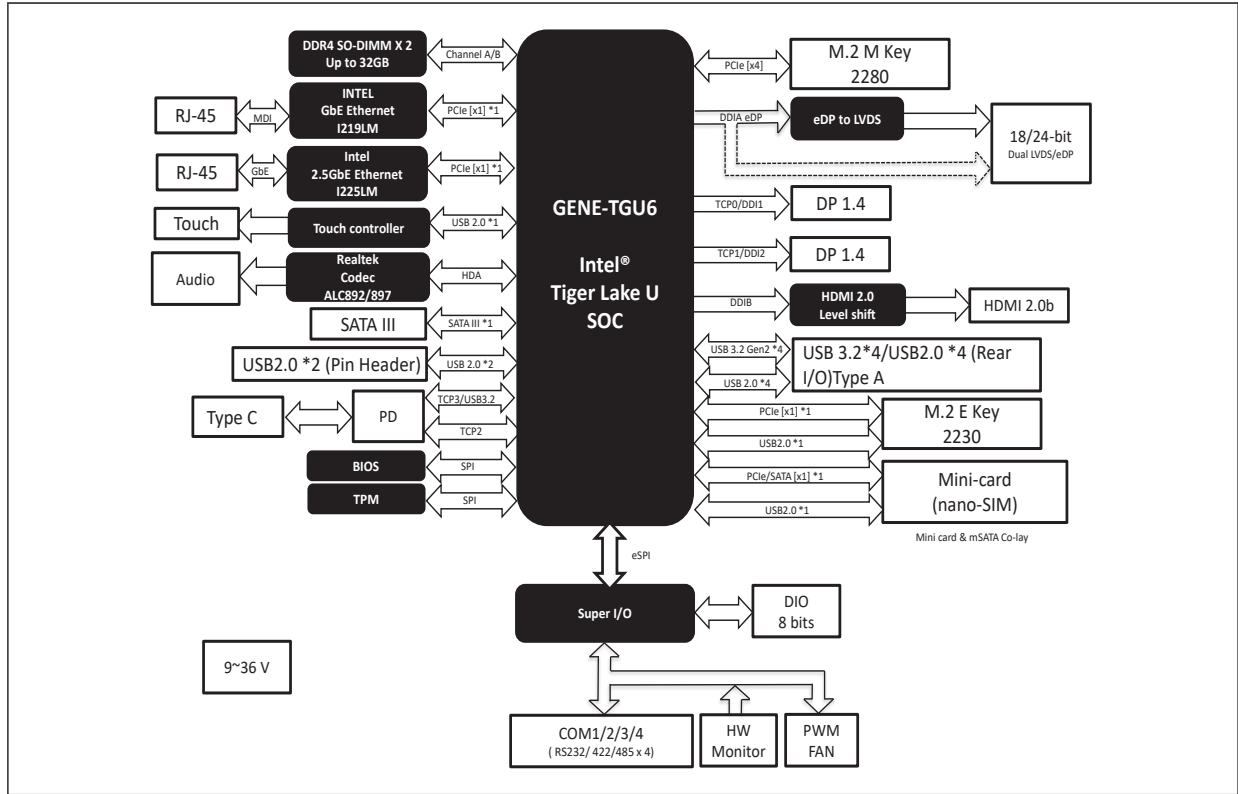
## Optional Accessories

| Part Number     | Description                    | QTY per Board |
|-----------------|--------------------------------|---------------|
| 1702150155      | SATA HDD Power, Cable 15cm     | 1             |
| 170204010R      | Power Cable, 10cm              | 1             |
| 170X000156      | Audio Cable, 25cm              | 1             |
| 170X000231      | COM Port Cable, 30cm           | 2             |
| 170010010D      | USB 2.0 Cable, 10cm            | 1             |
| GENE-TGU6-FAN01 | CPU Cooler, 3600RPM, Smart FAN | 1             |
| GENE-TGU6-HSK01 | Heatsink                       | 1             |
| GENE-TGU6-HSP01 | HeatSpreader                   | 1             |

## Packing List

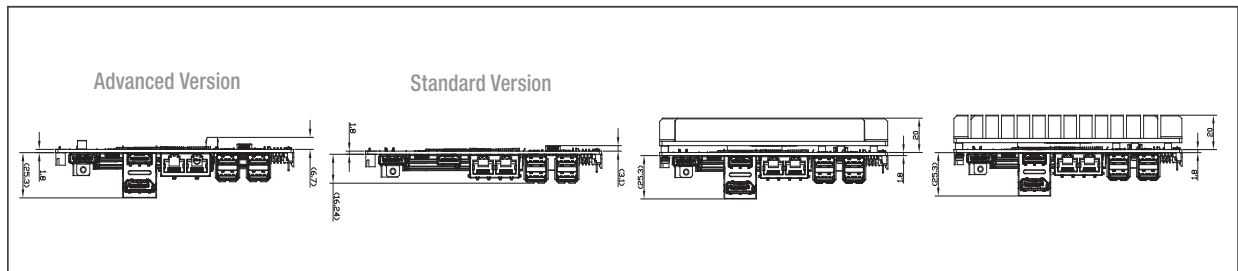
| Part Number | Description  | QTY |
|-------------|--------------|-----|
| GENE-TGU6   | GENE-TGU6 MB | 1   |

## 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-TGU6-A10-0011   | i7-1185G7E    | DP x2, TypeC DP x1<br>HDMI x1, LVDS x1 | GbE x 1<br>2.5GbE x1 | USB 3.2 Gen2 x 4<br>USB 3.2 Gen2 TypeC x1<br>USB 2.0 x 2 | —      | 4              | SATA x 1<br>mSATA (Full size)x 1 | M.2 M Key 2280 x 1<br>M.2 E Key 2230 x 1 | 2.0 | 9~36V | 0°C ~ 60°C       | DIO x 8, nano SIM,<br>Touch Controller  |
| GENE-TGU6-A10-0012   | i7-1185G7E    | DP x1, TypeC DP x1<br>HDMI x1, LVDS x1 | GbE x 1<br>2.5GbE x1 | USB 3.2 Gen2 x 4<br>USB 3.2 Gen2 TypeC x1<br>USB 2.0 x 2 | —      | 4              | SATA x 1<br>mSATA (Full size)x 1 | M.2 M Key 2280 x 1<br>M.2 E Key 2230 x 1 | —   | 12V   | 0°C ~ 60°C       | DIO x 8, nano SIM                       |
| GENE-TGU6-A10-0013   | i5-1145G7E    | DP x2, TypeC DP x1<br>HDMI x1, LVDS x1 | GbE x 1<br>2.5GbE x1 | USB 3.2 Gen2 x 4<br>USB 3.2 Gen2 TypeC x1<br>USB 2.0 x 2 | —      | 4              | SATA x 1<br>mSATA (Full size)x 1 | M.2 M Key 2280 x 1<br>M.2 E Key 2230 x 1 | 2.0 | 9~36V | 0°C ~ 60°C       | DIO x 8, nano SIM,<br>Touch Controller, |
| GENE-TGU6-A10-0014   | i5-1145G7E    | DP x1, TypeC DP x1<br>HDMI x1, LVDS x1 | GbE x 1<br>2.5GbE x1 | USB 3.2 Gen2 x 4<br>USB 3.2 Gen2 TypeC x1<br>USB 2.0 x 2 | —      | 4              | SATA x 1<br>mSATA (Full size)x 1 | M.2 M Key 2280 x 1<br>M.2 E Key 2230 x 1 | —   | 12V   | 0°C ~ 60°C       | DIO x 8, nano SIM                       |
| GENE-TGU6-A10-0015   | i3-1115G4E    | DP x2, TypeC DP x1<br>HDMI x1, LVDS x1 | GbE x 1<br>2.5GbE x1 | USB 3.2 Gen2 x 4<br>USB 3.2 Gen2 TypeC x1<br>USB 2.0 x 2 | —      | 4              | SATA x 1<br>mSATA (Full size)x 1 | M.2 M Key 2280 x 1<br>M.2 E Key 2230 x 1 | 2.0 | 9~36V | 0°C ~ 60°C       | DIO x 8, nano SIM,<br>Touch Controller  |
| GENE-TGU6-A10-0016   | i3-1115G4E    | DP x1, TypeC DP x1<br>HDMI x1, LVDS x1 | GbE x 1<br>2.5GbE x1 | USB 3.2 Gen2 x 4<br>USB 3.2 Gen2 TypeC x1<br>USB 2.0 x 2 | —      | 4              | SATA x 1<br>mSATA (Full size)x 1 | M.2 M Key 2280 x 1<br>M.2 E Key 2230 x 1 | —   | 12V   | 0°C ~ 60°C       | DIO x 8, nano SIM                       |
| GENE-TGU6-A10-0017   | Celeron 6305E | DP x2, TypeC DP x1<br>HDMI x1, LVDS x1 | GbE x 1<br>2.5GbE x1 | USB 3.2 Gen2 x 4<br>USB 3.2 Gen2 TypeC x1<br>USB 2.0 x 2 | —      | 4              | SATA x 1<br>mSATA (Full size)x 1 | M.2 M Key 2280 x 1<br>M.2 E Key 2230 x 1 | 2.0 | 9~36V | 0°C ~ 60°C       | DIO x 8, nano SIM,<br>Touch Controller  |
| GENE-TGU6W1-A10-0012 | i7-1185G7E    | DP x2, TypeC DP x1<br>HDMI x1, LVDS x1 | GbE x 1<br>2.5GbE x1 | USB 3.2 Gen2 x 4<br>USB 3.2 Gen2 TypeC x1<br>USB 2.0 x 2 | —      | 4              | SATA x 1<br>mSATA (Full size)x 1 | M.2 M Key 2280 x 1<br>M.2 E Key 2230 x 1 | —   | 12V   | W1(-20°C ~ 70°C) | DIO x 8, nano SIM                       |
| GENE-TGU6W2-A10-0018 | i7-1185GRE    | DP x2, TypeC DP x1<br>HDMI x1, LVDS x1 | GbE x 1<br>2.5GbE x1 | USB 3.2 Gen2 x 4<br>USB 3.2 Gen2 TypeC x1<br>USB 2.0 x 2 | —      | 4              | SATA x 1<br>mSATA (Full size)x 1 | M.2 M Key 2280 x 1<br>M.2 E Key 2230 x 1 | —   | 12V   | W2(-40°C ~ 85°C) | DIO x 8, nano SIM                       |

Note: All specifications are subject to change without notice.

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Assured Systems is a leading technology company with over 1,500 regular clients in 80 countries, deploying over 85,000 systems to a diverse customer base in 12 years of business. We offer high-quality and innovative rugged computing, display, networking and data collection solutions to the embedded, industrial, and digital-out-of-home market sectors.

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