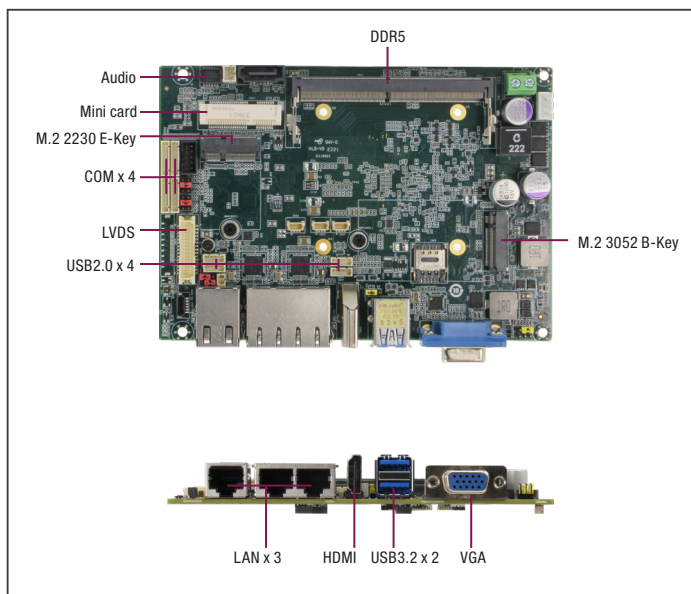


GENE-TWL6

3.5" SubCompact Board with Intel® Core™ Processor N-series



Specifications

System	
Form Factor	3.5" SubCompact Board
CPU	Intel® Processor N150 (4C/4T, up to 3.6 GHz, 6W) Intel® Core™ 3 Processor N355 (8C/8T, up to 3.90 GHz, 15W)
Chipset	Integrated with Intel® SoC
Memory Type	DDR5 4800, Single Channel SODIMM x 1, Max.16GB, Non-ECC
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), 0.94 lbs (0.43 kg)
OS Support	Windows 10 (64-bit), Windows 11 (64-bit) Ubuntu 24.04.2 / Kernel 6.11.0-26-generic
Power	
Power Requirement	+9V~36V (Optional: +12V), Support ERP
Power Supply Type	AT/ATX
Connector	Phoenix 2-pin Connector
Power Consumption	Intel® Core™ 3 Processor N355, DDR5 16GB x1, 4.15A@ +12V (TYPICAL) Intel® Core™ 3 Processor N355, DDR5 16GB x1, 5.06A@ +12V (MAX)
Display	
Controller	Intel® UHD Graphics
LVDS/eDP	LVDS x 1, Dual Channel 18/24-bit, up to 1920 x 1080 (Optional: eDP 1.4b HBR3, up to 3840 x 2160)
Display Interface	HDMI 1.4 x 1, up to 3840 x 2160 @30Hz VGA x 1, up to 1920 x 1080
Multiple Display	Up to 3 Simultaneous Displays
Audio	
Codec	Realtek ALC897
Audio Interface	Line-In / Line-Out / Mic (Audio function not available for WITAS SKU)
Speaker	—
External I/O	
Ethernet	Intel® Ethernet Controller I226, 2.5GbE RJ-45 x 3
USB	USB 3.2 Gen 2 x 2
Serial Port	—
Video	HDMI 1.4 x 1, VGA x 1
Internal I/O	
USB	USB 2.0 x 4
Serial Port	COM 1, COM 2 (RS-232/422/485, supports 5V/12V/RI) COM 3, COM 4 (RS-232)
Video	LVDS x 1, Inverter x 1 (12V/2A)
SATA	SATA 6Gb/s x 1 +5V SATA Power Connector x 1

Features

- Intel® Core™ Processor N-series, Intel® Processor N-series SoC
- DDR5 4800 SODIMM x 1, up to 16GB
- HDMI 1.4, VGA, LVDS
- 2.5GbE x 3, SATA 6Gb/s, GPIO 8-bit
- USB 3.2 Gen 2 x 2, RS-232/422/485 x 2, RS-232 x 2
- Mini PCIe x 1, M.2 2230 E-Key x 1, M.2 3052 B-Key x 1
- Wide 9V-36V DC Input



Audio	Audio Header x 1
DIO/GPIO	GPIO 8-bit
SMBus/I2C	SMBus / I2C x 1 (Default: SMBus)
Touch	—
Fan	4-pin Smart Fan x 1
Sim	Nano SIM x 1
Front Panel	HDD LED, PWR LED, Power Button, Buzzer, Reset
Others	—
Expansion	
Mini PCIe/mSATA	Full-size mSATA / mPCIe x 1 (Default: mSATA, select by BIOS)
M.2	M.2 2230 E-Key x 1 (PCIe 3.0 [x1] + USB 2.0) M.2 3052 B-Key x 1 (USB 3.2 Gen 2 + USB 2.0)
Others	—
Environment & Certification	
Operating Temp.	-4°F ~ 158°F (-20°C ~ 70°C)
Storage Temp.	-40°F ~ 185°F (-40°C ~ 85°C)
Operating Humidity	0% ~ 90% relative humidity, non-condensing
MTBF (Hours)	337,963
EMC	CE/FCC Class A

Packing List

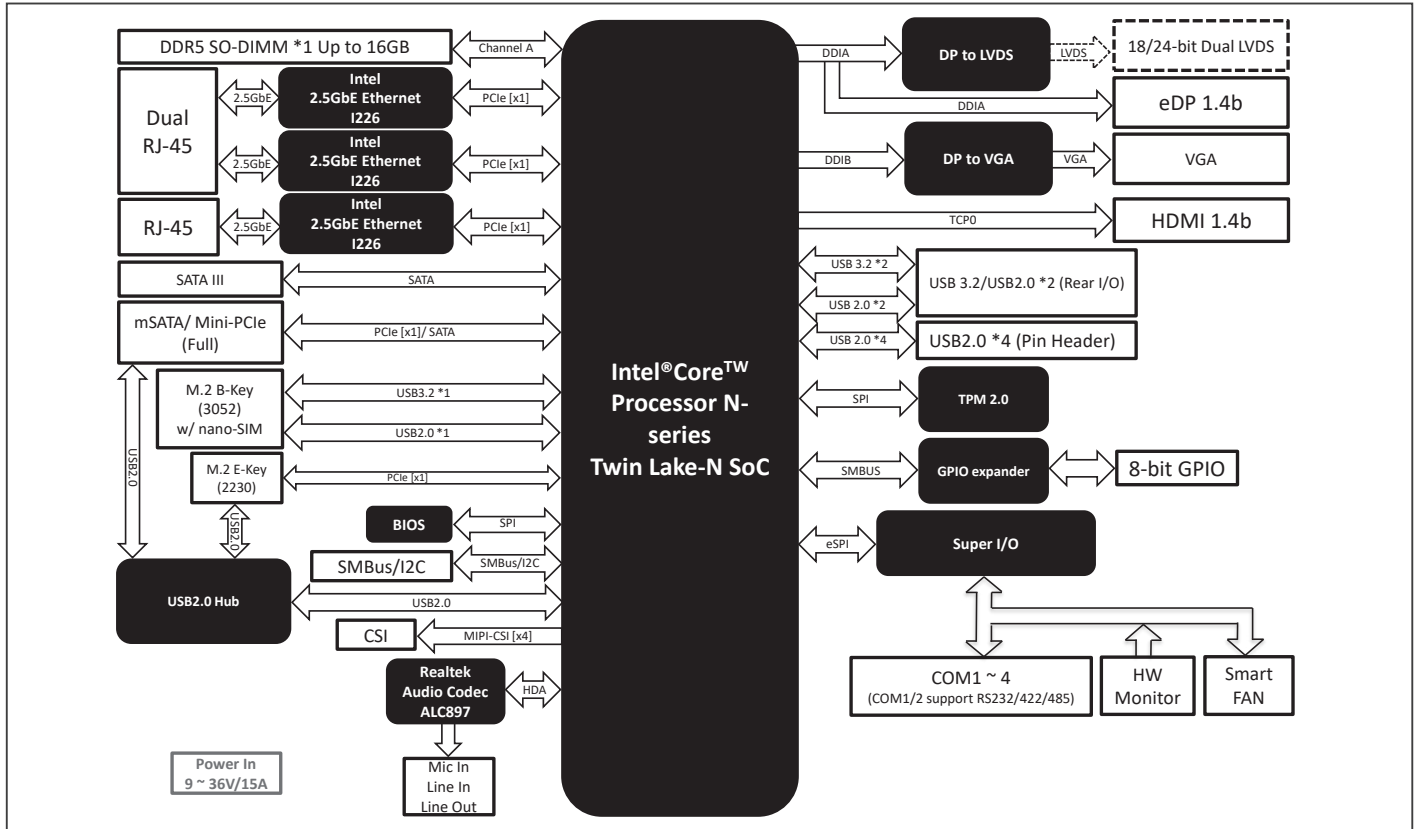
Part Number	Description	QTY
GENE-TWL6	GENE-TWL6 MB	1

Optional Accessories

Part Number	Description	QTY
GENE-ADN6-HSP01	Heat Spreader.100*72*8mm	1
GENE-ADN6-HSK01	Heat Sink.100*72*15.5mm.used with HSP	1
GENE-ADN6-HSK02	Heat Sink.146*78.6*18mm	1
1702150155	SATA HDD Power Cable, 15cm	1
170X000398	Power Cable, DC JACK, 30cm	1
170204010R	Power Cable, Double 4P, 10cm	1
170X000156	Audio Cable, 25cm	1
170X000287	Front Panel Cable, 10cm	1
1701090150	COM Port Cable, 15cm	4
1700050207	USB 2.0 Cable, 20cm	4

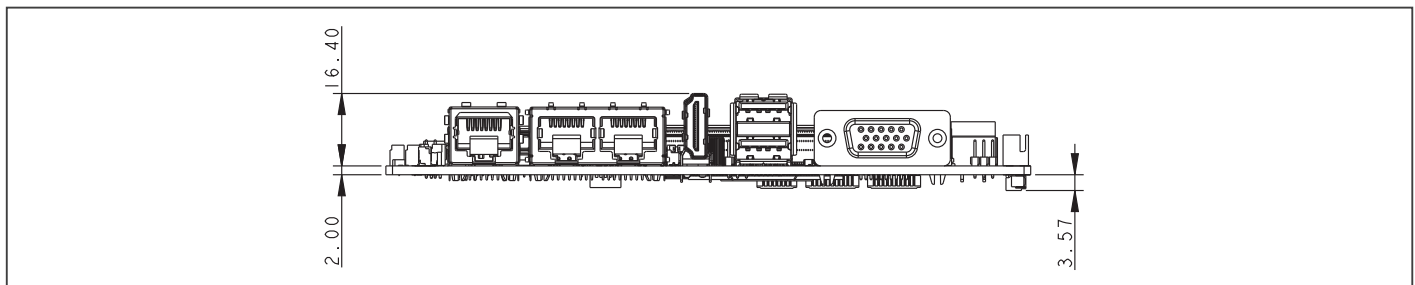


Block Diagram



Dimension

Unit: mm



Ordering Information

Part Number	CPU	Display	LAN	USB	RS-232	RS-232/422/485	Storage	Expansion Slot	TPM	Power	Temp	Others
GENE-TWL6-B11-0001	Intel® Processor N150	HDMI x1 VGA x1 LVDS x1	2.5GbE x3	USB 3.2 Gen 2 x2 USB 2.0 x4	2	2	SATA x1	M.2 3052 B-Key x1 M.2 2230 E-Key x1 MiniCard x1	2.0	9~36V	-20°C ~ 70°C	Audio, Nano SIM, DIO x8, SMBUS
GENE-TWL6-B11-0002	Intel® Processor N150	HDMI x1 VGA x1 eDP x1	2.5GbE x3	USB 3.2 Gen 2 x2 USB 2.0 x4	2	2	SATA x1	M.2 3052 B-Key x1 M.2 2230 E-Key x1 MiniCard x1	2.0	9~36V	-20°C ~ 70°C	Audio, Nano SIM, DIO x8, SMBUS
GENE-TWL6-B11-0003	Intel® Core™ 3 Processor N355	HDMI x1 VGA x1 LVDS x1	2.5GbE x3	USB 3.2 Gen 2 x2 USB 2.0 x4	2	2	SATA x1	M.2 3052 B-Key x1 M.2 2230 E-Key x1 MiniCard x1	2.0	9~36V	-20°C ~ 70°C	Audio, Nano SIM, DIO x8, SMBUS