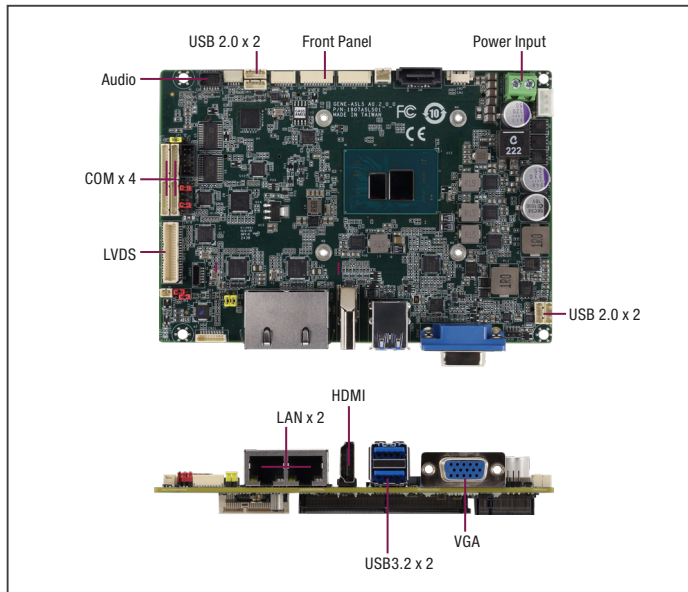


GENE-TWL5

3.5" SubCompact Board with Intel® Core™ Processor N-series, Intel® 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 3.90GHz, 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
RTC Battery	Lithium Battery 3V/240mAH
Dimensions	5.75" x 4" (146mm x 101.7mm), 1.1 lb. (0.5Kg)
OS Support	Windows 10 (64-bit) Windows 11 (64-bit) Ubuntu 24.04.2/ kernel 6.11.0-17-generic
Power	
Power Requirement	+9V~36V (Optional: +12V), support ERP
Power Supply Type	AT/ATX, support 3pin ATX
Connector	Phoenix 2-pin Connector (Colay 4 pin connector)
Power Consumption	Intel® Core™ 3 Processor N355, DDR5 16GB x 1, 3.43A @+12V (Typical) Intel® Core™ 3 Processor N355, DDR5 16GB x 1, 5.13A @+12V (Max)
Display	
Controller	Intel® UHD Graphics
LVDS/eDP	LVDS x 1, Dual-Channel 18/24-bit, up to 1920 x 1080 eDP HBR3 x 1, up to 1920 x 1200 (Optional)
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 x 2
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 eDP x 1 Inverter x 1 (12V/2A)

Features

- Intel® Core™ Processor N-series, Intel® Processor N-series
- DDR5 4800 MHz, Dual Channel SODIMM x 1, Up to 16GB
- LVDS Dual Channel 18/24 bit x 1, VGA x 1, HDMI x 1
- Intel® 2.5GbE x 2, SATA III x 1, GPIO x 8bit
- USB 3.2 Gen2 x 2, USB2.0 x 4
- Full size mPCIe/msATA
- M.2 3052 B-Key x 1, M.2 2230 E-Key x 1
- DC Input 9-36V
- Supports WITAS



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: SMBus)
Touch	4/5/8 wire Touch Controller x 1
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: mPCIe, select by BIOS)
M.2	M.2 3052 B-Key x 1 (PCIe 3.0 [x1] + USB 3.2 Gen 2/PCIe 3.0 [x2] + USB 2.0, default: PCIe [x1] + USB 3.2 Gen 2, selected by BIOS) M.2 2230 E-Key x 1 (PCIe 3.0 [x1] + USB 2.0, support CNVi)
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)	1,284,701
EMC	CE/FCC Class A

Packing List

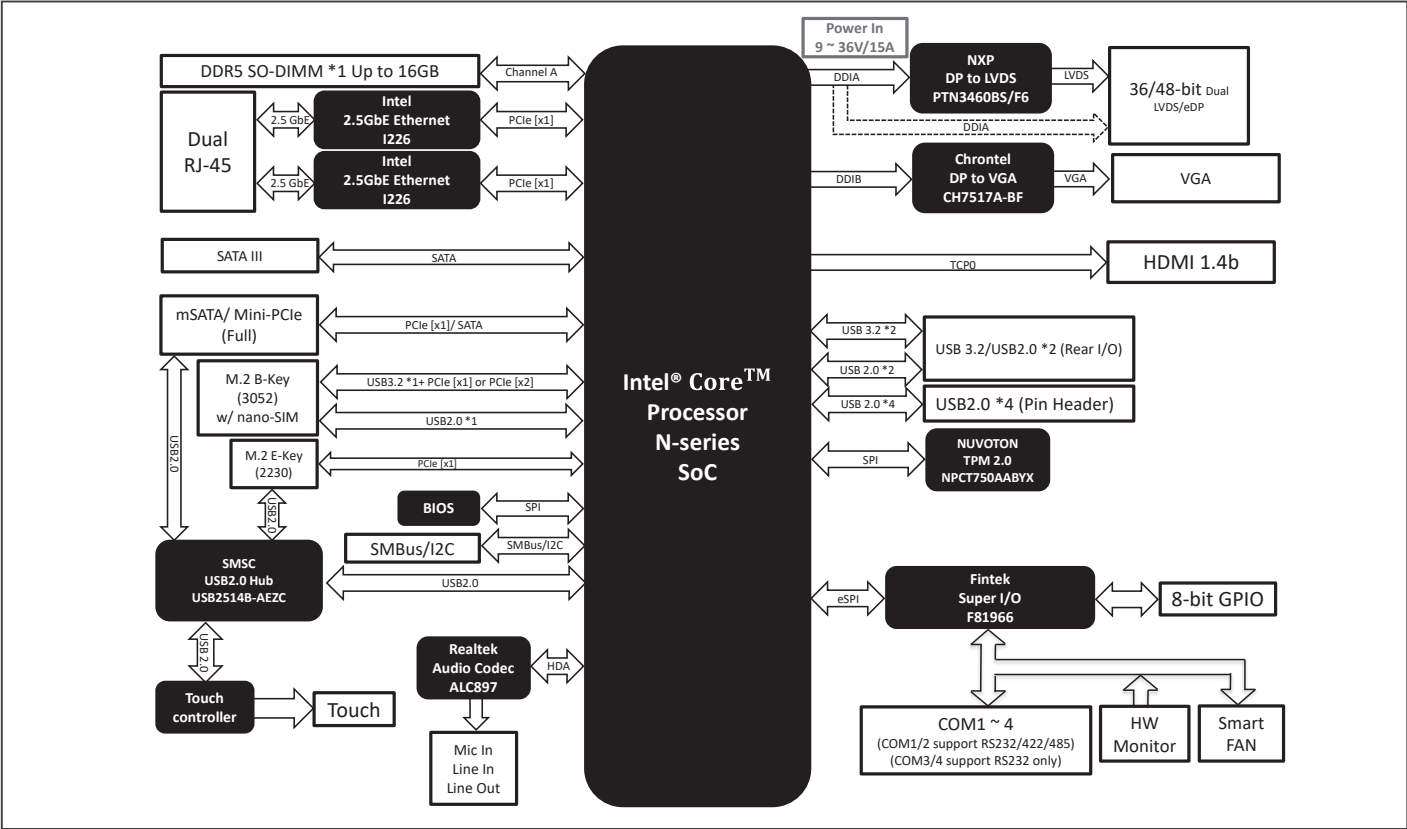
Part Number	Description	QTY
GENE-TWL5	GENE-TWL5 MB	1
M16BT07020	Heat Sink	1

Optional Accessories

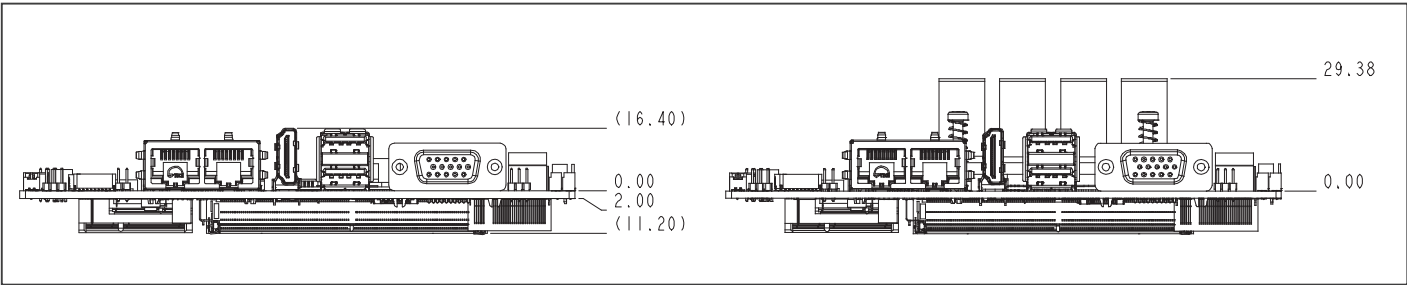
Part Number	Description	QTY
1702150155	SATA HDD Power Cable, 15cm	1
170204010R	Power Cable.Double 4P , 10cm	1
170X000398	Power Cable, DC JACK, 30cm	1
170X000287	Front Panel Cable , 10cm	1
170X000156	Audio Cable, 25cm	1
1700050207	USB 2.0 Cable, 20cm	4
1701090150	COM Port Cable, 15cm	4
170220020B	ATX Power Cable, 20cm	1



Block Diagram



Dimension Unit: mm



Ordering Information

Part Number	CPU	Display	LAN	COM	Storage	Expansion Slot	TPM	Power	Temp	Others
GENE-TWL5-A10-0001	Intel® Processor™ N150	VGA x 1 HDMI x 1 LVDS x 1	2.5GbE x 2	4	SATA x 1	M.2 B-Key 3052 x 1 M.2 E-Key 2230 x 1 MiniCard x 1	2.0	9~36V	-20°C ~ 70°C	GPIO x 8, Touch Controller, SMBUS
GENE-TWL5-A10-0002	Intel® Core™ 3 Processor N355	VGA x 1 HDMI x 1 LVDS x 1	2.5GbE x 2	4	SATA x 1	M.2 B-Key 3052 x 1 M.2 E-Key 2230 x 1 MiniCard x 1	2.0	9~36V	-20°C ~ 70°C	GPIO x 8, Touch Controller, SMBUS