

Features

- DDR5 4800 MHz, Dual Channel SODIMM x 1, Up to 16GB
- LVDS x 2, DP x 1, HDMI x 1
- Intel® 2.5GbE x 2, SATA 6Gb/s x 1, GPIO x 8bit
- USB 3.2 Gen 2 x 2 port, USB 2.0 x 4
- Full size mPCIe/mSATA
- M.2280 M-Key x 1, M.2 2230 E-Key x 1



Audio	Audio Header x 1 (Line-in/Line-out/MIC)
DIO/GPIO	GPIO 8-Bit
SMBus/I2C	SMBus / I2C x1(Default: SMBus)
Touch	—
Fan	4-pin Smart Fan x 1
Sim	—
Front Panel	PWR LED, HDD LED, PWR button, HW Reset
Others	—
Expansion	
Mini PCIe/mSATA	Full-size Mini PCIe / mSATA x 1 (Default: PCIe [x1] x 1, USB 2.0, SATA select by BIOS)
M.2	M.2 2230 E-Key x 1 (PCIe [x1], USB 2.0) M.2 2280 M-Key x 1 (PCIe 3.0 [x2])
Others	—
Environment & Certification	
Operating Temp.	32°F ~ 140°F (0°C ~ 60°C)
Storage Temp.	-40°F ~ 185°F (-40°C ~ 85°C)
Operating Humidity	0% ~ 90% relative humidity, non-condensing
MTBF (Hours)	957,274
EMC	CE/FCC Class A

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 3.9 GHz, 15W)
Chipset	Integrated with Intel® SoC
Memory Type	DDR5 4800, SODIMM x 1, Max. 16GB, Non-ECC
BIOS	AMI UEFI 256Mbit
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. (0.3Kg)
OS Support	Windows® 11 (64-bit) Ubuntu 24.04.2 / Kernel 6.11.0-17-generic
Power	
Power Requirement	+12V, Support ERP
Power Supply Type	AT/ATX
Connector	2-pin Phoenix Connector 4-pin ATX Connector (optional)
Power Consumption	TBD
Display	
Controller	Intel® UHD Graphics
LVDS/eDP	LVDS 1: Dual Channel 18/24-bit, up to 1920 x 1080 (co-lay eDP, by BOM change) LVDS 2: Dual Channel 18/24-bit, up to 1920 x 1080
Display Interface	HDMI 1.4b x 1, up to 3840 x 2160 @144Hz DP 1.4a x 1, up to 3840 x 2160 @120Hz
Multiple Display	Up to 3 Simultaneous Displays
Audio	
Codec	C Media CM9825
Audio Interface	Line-in/Line-out/MIC
Speaker	—
External I/O	
Ethernet	Intel® Ethernet Controller I226, 2.5GbE x 2
USB	USB 3.2 Gen 2 x 2 port
Serial Port	—
Video	HDMI 1.4b x 1 DP x 1
Internal I/O	
USB	USB2.0 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 2, Inverter x 1 (12V/2A)
SATA	SATA 6Gb/s x 1 +5V SATA Power Connector x 1

Packing List

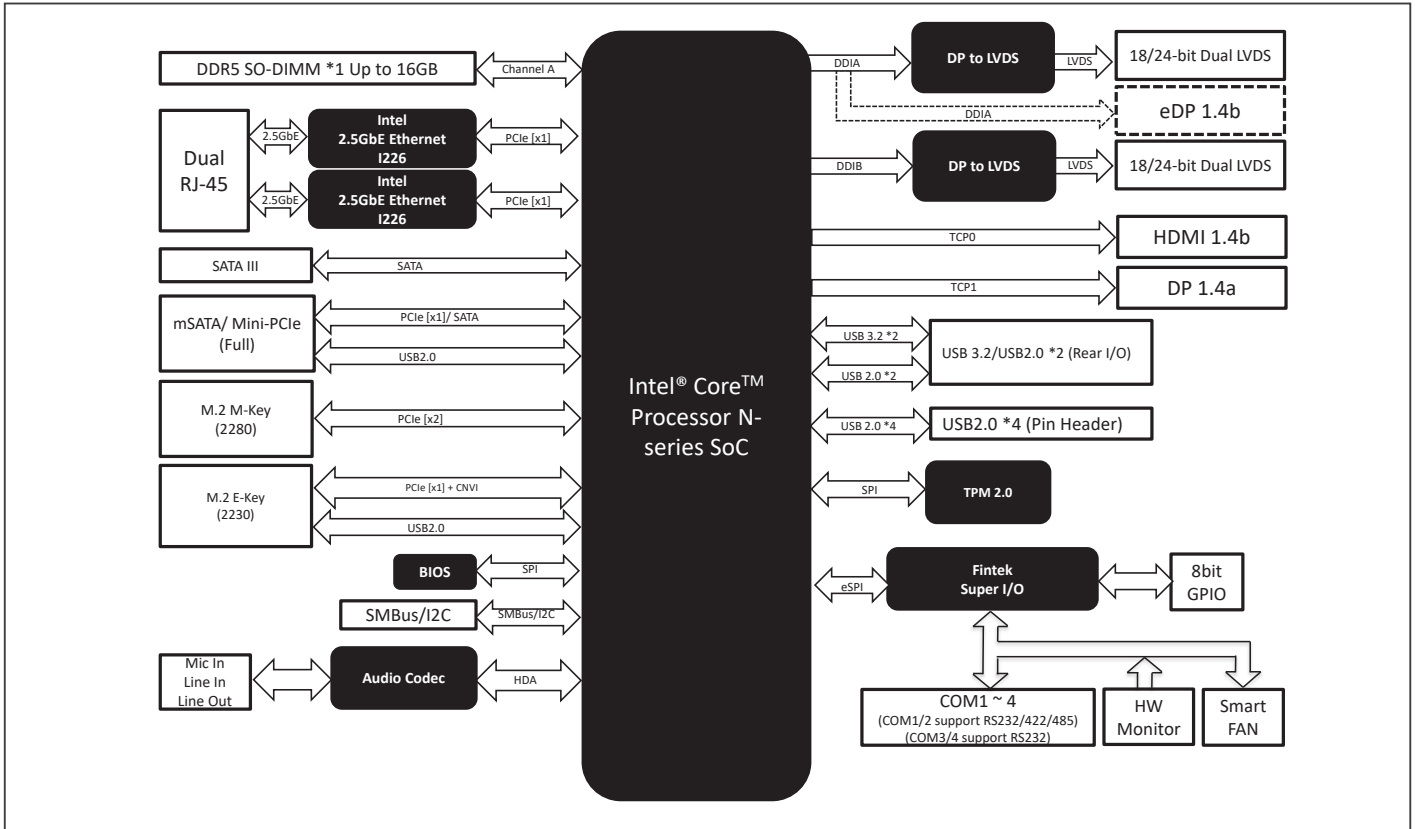
Part Number	Description	QTY
GENE-TWL7	GENE-TWL7 MB	1

Optional Accessories

Part Number	Description	QTY
GENE-APL7-HSK01	Heatsink.60*60*25mm	1
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
170X001132	ATX Power Cable, 20cm	1

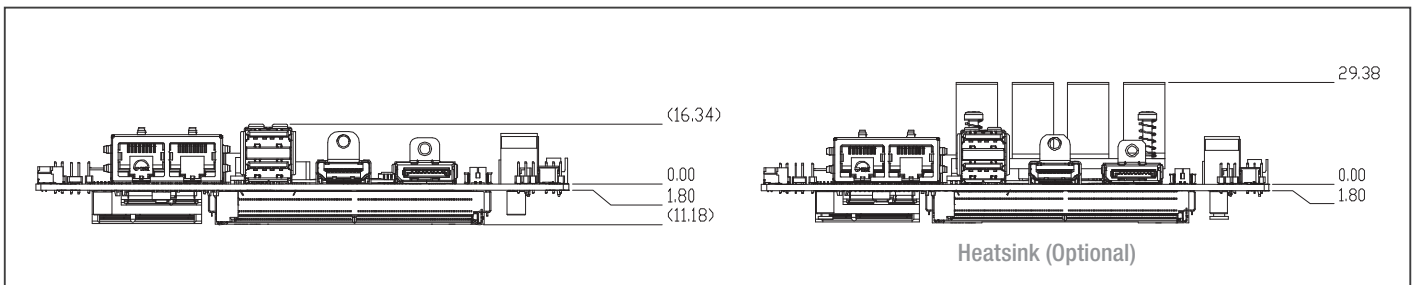


Block Diagram



Dimension

Unit: mm



Ordering Information

Part Number	CPU	Display	LAN	USB	AUDIO	COM	Storage	Expansion Slot	TPM	Power	Temp	Others
GENE-TWL7-A10-0002	Intel® Processor™ N150	LVDS x2 HDMI x1 DP x1	2.5GbE x 2	USB 3.2 Gen 2 x 2 USB 2.0 x 4	Line-in/Line-out/MIC	RS232/422/485 x 2 RS232 x 2	SATA x 1	M.2 2230 E-Key x 1 M.2 2280 M-Key x 1 Mini Card x 1	2.0	12V	0°C~60°C	GPIO x 8, SMBUS
GENE-TWL7-A10-0001	Intel® Core™ 3 Processor N355	LVDS x2 HDMI x1 DP x1	2.5GbE x 2	USB 3.2 Gen 2 x 2 USB 2.0 x 4	Line-in/Line-out/MIC	RS232/422/485 x 2 RS232 x 2	SATA x 1	M.2 2230 E-Key x 1 M.2 2280 M-Key x 1 Mini Card x 1	2.0	12V	0°C~60°C	GPIO x 8, SMBUS