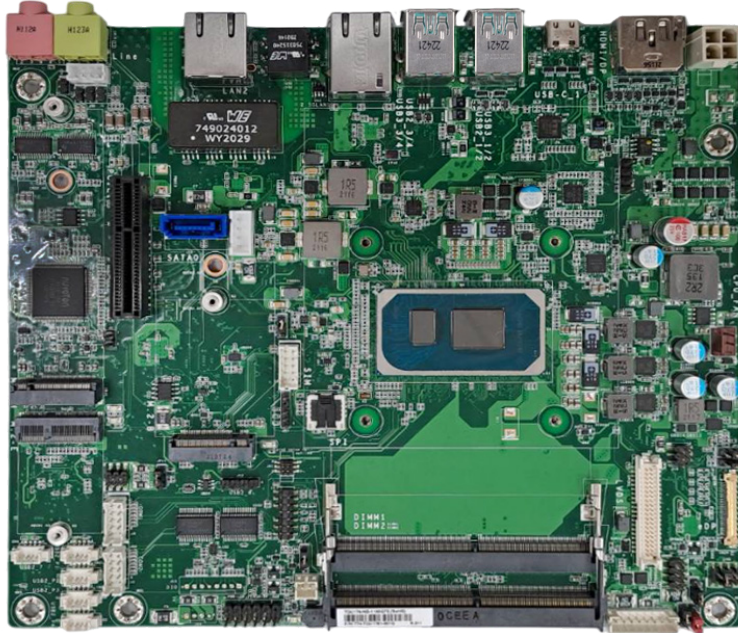


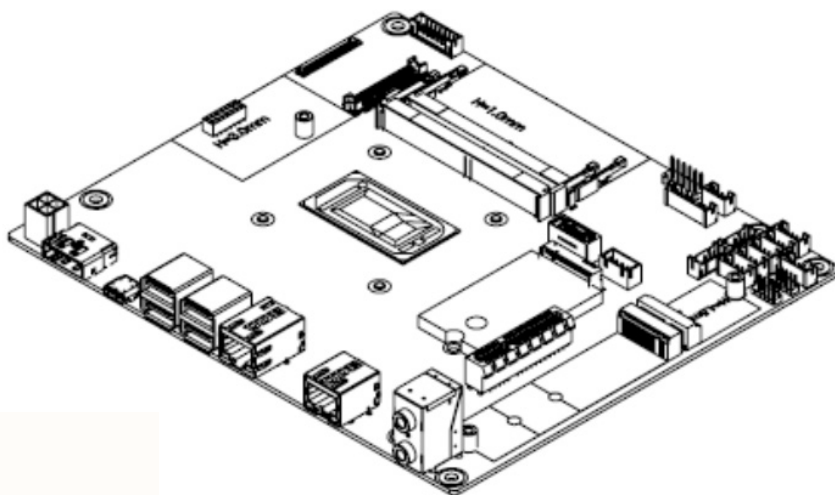
TGU176

11th Gen Intel® Processors
Mini-ITX

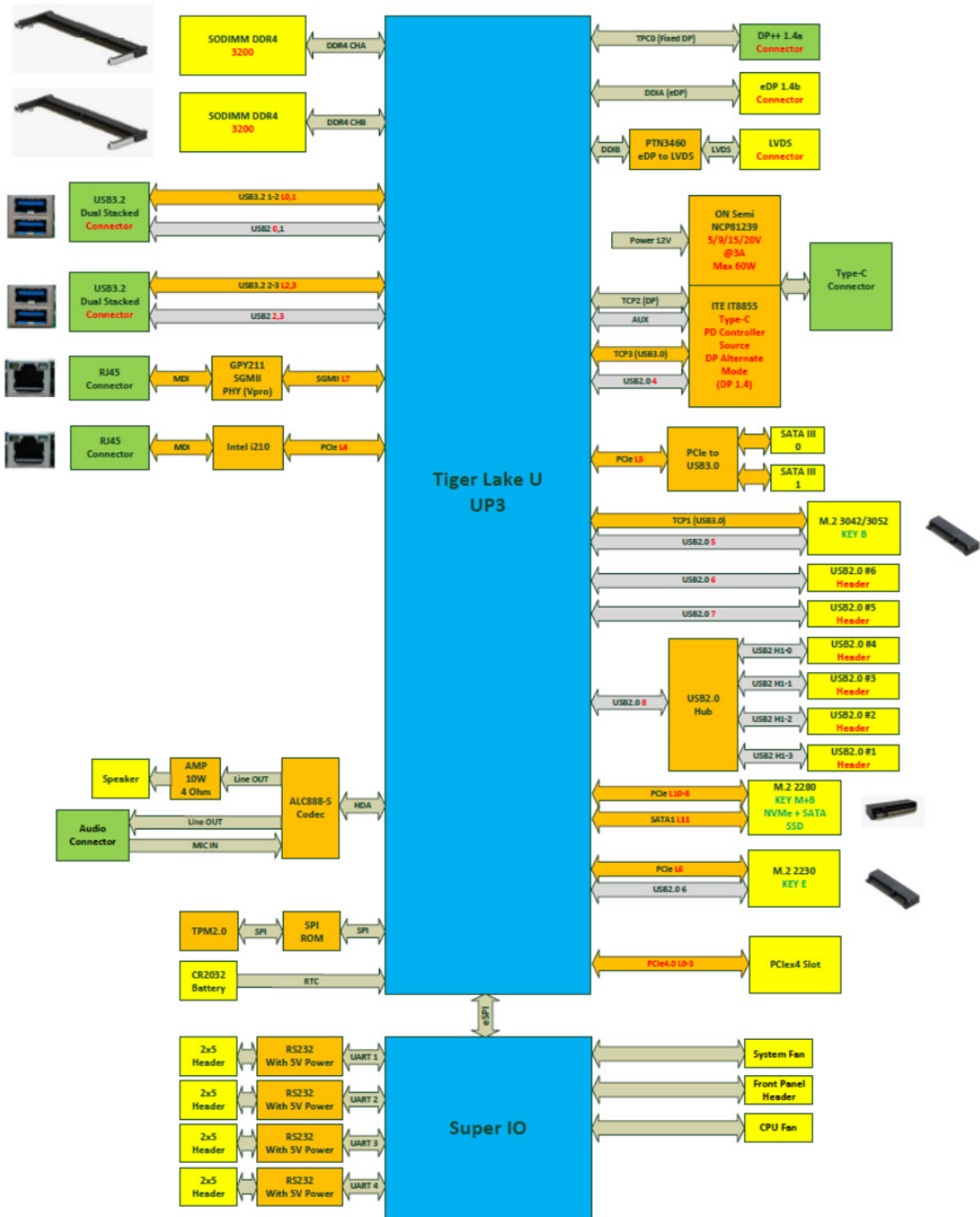


Top View

MECHANICAL DRAWING



BLOCK DIAGRAM



ID	
Edge Connector	
Main IC	Peripheral IC
On board Connector Socket/Slot	

ACL Tiger Lake-U Block Diagram Without DP Alt mode

SPECIFICATION

FORM FACTOR	ODM size	PCB size 170 x 196 mm, add 26mm compared to Mini ITX 170 x 170 mm size. Fix on 8Layer Use Mini ITX screw hole define, will add two more screw on right extended area for M/B ME point of view.
INPUT POWER RANGE	Power input	12VDC in +- 5%, 4 pin vertical type only.
CPU SUPPORT LIST	Intel TGU	11th Gen Intel® processor, TDP up to 28W i7-1185G7E, 4 core / 8 Thread, 1.8Ghz(4.4GHz Turbo), Commercial 0~100C i5-1145G7E, 4 core / 8 Thread, 1.5Ghz(4.1GHz Turbo), Commercial 0~100C Celeron 6305E, 2 core / 2 Thread, 1.8Ghz, Commercial 0~100C
MEMORY SLOT SPEC	DDR4 SO-DIMM	2 DDR4 SO-DIMM slot, horizontal type Support DDR4 3200 MHz, up to 64GB
RTC SPEC	Battery	CR2032 coin cell by holder.
BIOS SPEC	ROM	SPI interface, support BIOS ROM socket
	BIOS	Vendor: AMI
SECURITY SPEC	TPM 2.0	Default dTPM2.0: Infineon SLB 9670(121-009670-404G)
DISPLAY INTERFACE SPEC	DP	1 DP++ connector on rear I/O. Support DP++(DP 1.4/HDMI2.0) Resolution up to 4096x2304 @60Hz
	DP on USB type C	1 USB type C(DP) on rear I/O. Support DP 1.4 Resolution up to 4096x2304 @60Hz
	LVDS Backlight	1 LVDS connector Dual channel converted by NXP PTN3460, support 3.3V, 5V, 10V, 12V. 1 Backlight header , support 12V, 2.6A max.
	eDP	1 eDP connector, not close to M/B edge side, reserve some space for eDP cable inlay distance. Support voltages 3.3V, 5V, 10V, 12V. Use 341-610400-201G source, COAXIAL CONNECOTR 40pin,90D,0.5mm,GF,20455-040E-76(I-PEX)HF eDP resolution support up to 4096x2304 @ 60Hz pin define follow panel: LG LM270WR2-SPA1
ETHERNET INTERFACE SPEC	LAN 1	1 GbE RJ45 connector, with isolation note with UL60601 grounding design. LAN phy: GPHY211, support vPro.
	LAN 2	1 RJ45 connector LAN controller:I210AT.
EXPANSION INTERFACE SPEC	PCIe x4 slot	1 PCIe G4 x4 slot
	M.2 Key-E slot	1 M.2 2230 Key-E slot Support PCIe x1 and USB2 signal Support Intel® CNVi module and Intel® vPro (Partial SKU support only)
	M.2 Key-B slot	1 M.2 3042/3052 Key-B slot , w/SIM header 2x5 pin. Support PCIe Gen3 x1 and USB3/2.
	M.2 Key-M slot	1 M.2 2280 Key-M slot Support PCIe Gen3 x4/ USB2/ SATA
	Others	M.2 slot not prefer stacked architecture All M.2 use M3 screw hole.
USB INTERFACE SPEC	USB Type C	1 USB type C on rear I/O. Support USD3.2 Gen2 / DP1.4(a) / PD(max 60W,5/9/15/20V, @3A) PD controller: ITE IT8855 & ON Semi NCP81239.
	USB3.1 Gen2	4 USB3.1 Gen2 on rear I/O
	USB2.0 header	6 internal USB2. (PN 346-510401-130G) USB2 hub: 141-025140-400G USB2 Hub USB2514B-AEZG/QFN36(SMSC) Each USB2 with its individual header One USB2 pw control by GPIO (GPIO active low, so USB is active if no signal is connected, GPIO high --> USB is OFF)
AUDIO SPEC	Internal audio header	Codec IC: Realtek ALC888 1 Line out / 1 Mic on rear I/O, 344-005283-101G 1 speaker out header for 2x 10W Mono speaker, 20/36 dB, Jumper selected for output gain. Speaker header: 346-510420-140G BOX HEADER 1*4P/2mm, F, 180D, DIP, White, B4B-PH-K-S(JST) RoHS

SPECIFICATION

OTHERS AND INTERNAL HEADER	SATA 3.0	1 SATA3.0 connector, support RAID 0/1. From 141-010610-400G PCIE 2.0 to SATA 6Gbps Controller ASM1061
	COM 1/2 port	2 or 4 COM port RS232, 346-520521-120G Both COM with power 5V
	LPC header	1 14pins 2.00 pitch female header, SMD type with post to fix LPC module. Header will be black color
	DIO power header	1 1x4 pin 2.00mm pitch DIP type pin header, 346-510420-110G Support 12 V/5V/5VSB. DIO IC Power select: Use 5VDU , keep resistor, to switch 5V, default 5VSB DIO Output State: Use 5VDU , keep resistor, to switch GND, default 5VSB
	Front panel header	1 2x6 2.54mm pitch DIP type pin header, 346-120601-000G
	Buzzer	1 Buzzer
	Clear CMOS	1x3 DIP, 2.0pitch, blue cap, Normal (Default)
	Auto power on	Header removed. Control by BIOS setup items
	SMBus	1x SMBus for smart battery, 346-120322-201G
OS SUPPORT	OS support	Linux
TEMPERATURE	Operating temp	0~70C