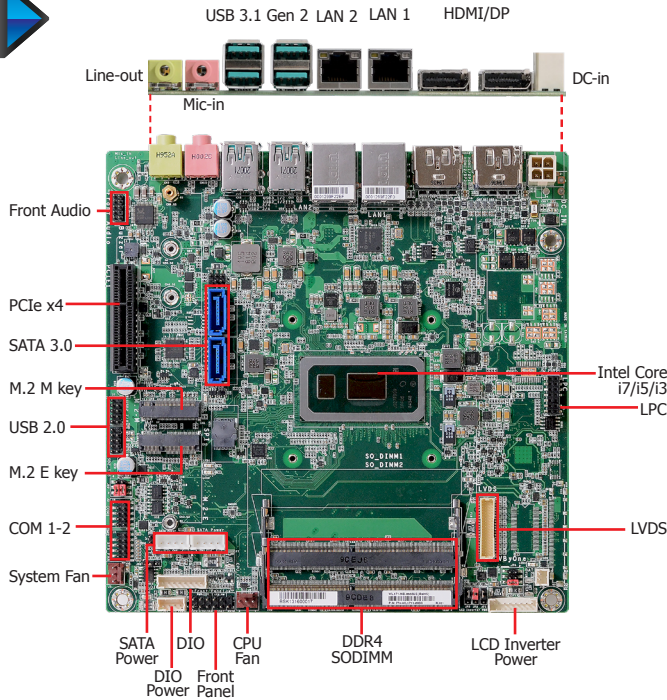


WL171/WL173

ULT



Features

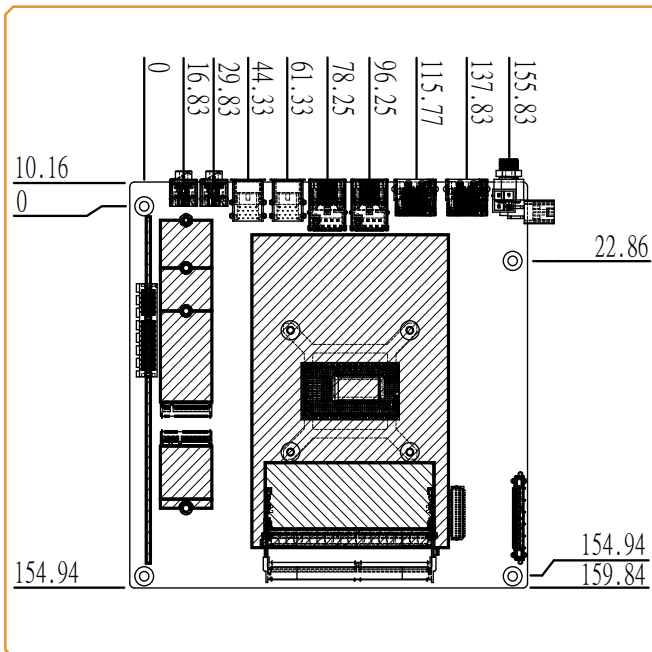
- **DDR4 2400MHz SODIMM up to 64GB**
- **Three independent displays: LVDS*/V By One + DP/HDMI + DP/HDMI (Auto-detecting)**
- **V By One resolution supports up to 4k x 2k (e.g. 3840 x 2160)**
- **Multiple expansion: 1 PCIe x4, 1 M.2 M Key (SATA/PCIe), 1 M.2 E key (PCIe/USB)**
- **Storage: 2 SATA 3.0**
- **Rich I/O: 2 Intel GbE, 4 USB 3.1, 4 USB 2.0**

* Populated by default

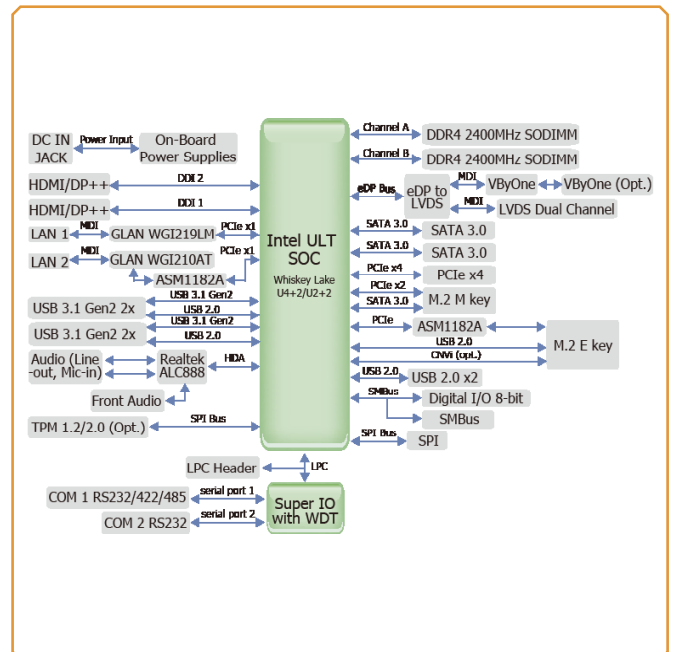


Note: If you would like to have the CPU configuration which is not listed on our ordering, please contact our sales representative.

Mechanical Drawing



Block Diagram



Specifications

SYSTEM	Processor	8th Generation Intel® Core™ Processors, BGA 1528 Intel® Core™ i7-8665UE, Quad Core, 8M Cache, 1.7GHz (4.4GHz), 15W Intel® Core™ i5-8365UE, Quad Core, 6M Cache, 1.6GHz (4.1GHz), 15W Intel® Core™ i3-8145UE, Dual Core, 4M Cache, 2.2GHz (3.9GHz), 15W Intel® Core™ Celeron® 4305UE, Dual Core, 2M Cache, 2.0GHz (2.0GHz), 15W		
	Memory	2 x 260-pin SODIMM up to 64GB	DDR4 2400MHz/DDR4 2133MHz (for Celeron 4305UE)	
	BIOS	AMI SPI 128Mbit		
	GRAPHICS	Controller	Intel® UHD Graphics 620/ Intel® UHD Graphics 610 (for Celeron 4305UE)	
	Feature	OpenGL 4.4, DirectX 12, OpenCL 2.1 HW Decode: AVC/H.264, MPEG2, VC1/WMV9, JPEG/MJPEG, HEVC/H265, VP8, VP9 HW Encode: AVC/H.264, MPEG2, JPEG, HEVC/H265, VP8, VP9		
	Display	1 x LVDS/V by One (Opt.) 2 x HDMI/DP	LVDS: resolution up to 1920x1200 @ 60Hz HDMI: resolution up to 4096x2160 @ 30Hz	
	Triple Displays	HDMI/DP++ + HDMI/DP++ + LVDS/V By One (Opt.)		
EXPANSION	Interface	1 x PCIe x4 (Gen 3)	1 x M.2 2242/2260/2280 M key (SATA3.0/PCIe x2) 1 x M.2 2230 E key (PCIe x2/USB 2.0)	
AUDIO	Audio Codec	Realtek ALC888S-VD2-GR		
ETHERNET	Controller	1 x Intel® I210AT PCIe (10/100/1000Mbps) 1 x Intel® I219LM PCIe with iAMT11.6 and vPro (10/100/1000Mbps) (only Core i7/i5 supports iAMT)		
REAR I/O	Ethernet	2 x GbE (RJ-45)		
	USB	4 x USB 3.1 Gen2		
	Display	2 x HDMI/DP		
	Audio	1 x Line-out	1 x Mic-in	
INTERNAL I/O	Serial	1 x RS-232/422/485 (RS-232 w/ power) (2.0mm pitch) 1 x RS-232 (2.0mm pitch)		
	USB	4 x USB 2.0 (2.0mm pitch)		
	Display	1 x LVDS Box Header 1 x V by One Connector		
	Audio	1 x S/PDIF	1 x Front Audio Header	
	SATA	2 x SATA 3.0 (up to 6Gb/s) 2 x SATA Power	RAID 0/1	
	DIO	1 x 8-bit DIO		
	LPC	1 x LPC		
	SMBus	1 x SMBus		
	WATCHDOG TIMER	Output & Interval	System Reset, Programmable via Software from 1 to 255 Seconds	
SECURITY	TPM	TPM 2.0 (Opt.)		
POWER	Type	Single 12V +/-10% DC (WL171)	Wide Range 9~36V (WL173)	
	Connector	DC-in Jack	Right Angle Connector (4-pin) (available upon request) Straight Type Connector (4-pin) (available upon request)	
	RTC Battery	CR2032 Coin Cell		
OS SUPPORT	Microsoft/Linux	Windows 10 IoT Enterprise 64-bit	Debian 8 (with VESA graphic driver) Fedora CentOS 7 (with VESA graphic driver) Yocto 2.6 Linux	
ENVIRONMENT	Temperature	Operating: TBD	Storage: TBD	
	Humidity	Operating: 5 to 90% RH		
	MTBF	TBD		
MECHANICAL	Dimensions	Mini-ITX Form Factor	170mm (6.7") x 170mm (6.7")	
	Height	PCB: 1.6mm	Top Side: 16.5mm, Bottom Side: 3.5mm	

Ordering Information

Model Name	P/N	Processor	HDMI/DP	LVDS/V by One	GbE	SATA3.0	COM	USB3.1 Gen2	USB2.0	Power Connector	TPM 2.0	Voltage	Temp.
WL171-NE-8665UE	770-WL1711-000G	i7-8665UE	2	LVDS	2	2	2	4	4	2x2 conn	Onboard	12V	-5 to 65°C
WL171-NB-8145UE	770-WL1711-200G	i3-8145UE	2	LVDS	2	2	2	4	4	DC jack	Onboard	12V	-5 to 65°C
WL173-NE-8365UE	770-WL1731-100G	i5-8365UE	2	LVDS	2	2	2	4	4	DC jack	Onboard	9-36V	-5 to 65°C
WL173-NB-4305UE	770-WL1731-300G	4305UE	2	LVDS	2	2	2	4	4	DC jack	Onboard	9-36V	-5 to 65°C
WL173-NE-8665UE	770-WL1731-500G	i7-8665UE	2	V by One	2	2	2	4	4	DC jack	Onboard	9-36V	-5 to 65°C

Packing List

• 1 WL171/WL173 motherboard	
• 1 COM port cable (Length: 250mm, 1 x COM ports)	A81-015011-001G
• 1 Serial ATA data with power cable (Length: 300mm)	A81-002013-000G
• 1 Heat sink (Height: 25mm)	

Optional Items

• USB 2.0 port cable (Length: 200mm)	A81-0010302-016G
• COM port cable (Length: 250mm, 1 x COM ports)	A81-015011-001G
• Serial ATA data with power cable (Length: 300mm)	A81-002013-000G
• I/O shield	A49-WL1710-000G
• Heat sink (Height: 32mm)	A71-010037-000G