AL-10

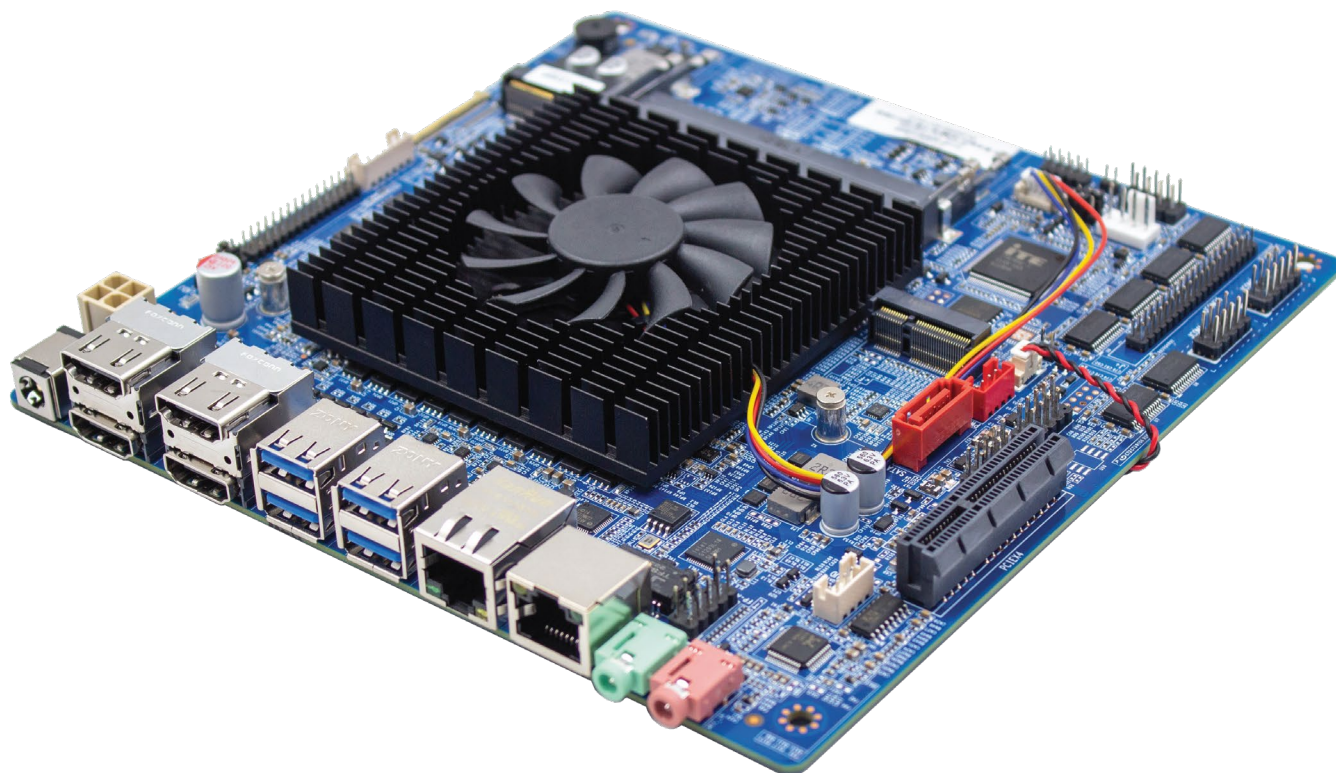## Intel® Alder Lake-U/P Series Processor based Mini ITX Motherboard

Features

- CPU: Intel® Alder Lake-U/P series processor
- Memory: Dual channel SO-DIMM DDR4 up to 64GB
- GPU: Intel Iris® Xe Graphics eligible/UHD Graphics depends on CPU
- Ethernet Controller: Intel i225/i226 + Intel i219
- Storage: 1xM.2 for NVMe 2280 SSD, 1xSATA
- Expansion: M.2 for WiFi, PCIe 4X
- Power: 19V DC-in

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MAXIMIZING YOUR COMPUTING PRODUCTIVITY

Introduction

Maxtang AL-10 is designed with the 12th Gen Intel Alder Lake P series and U series processor, up to 12 cores and 16 threads, 2.47x times faster graphics performance than the previous. Based on a small form factor design great for IoT deployments that require high-performance, enhanced graphics density. Supports 2xSO-DIMM DDR4 up to 64GB, features 4xHDMI2.0, 6xCOM, 4xUSB3.2+4xUSB2.0, 2xLAN, 1xSATA, 2xM.2 connector, PCIe4X, GPIO and optional TPM2.0 for added security.

The AL-10 drives more values for IoT use cases with differentiated capabilities, offers an immersive experience by Intel Xe Graphics/UHD graphics (varies on CPU), and supports 4K independent displays through 4xHDMI+1xLVDs/eDP+1x eDP/DP/HDMI. The motherboard is suitable for surveillance, digital signage, electronic gaming machine, and thin client.

Linux™

ubuntu Linux

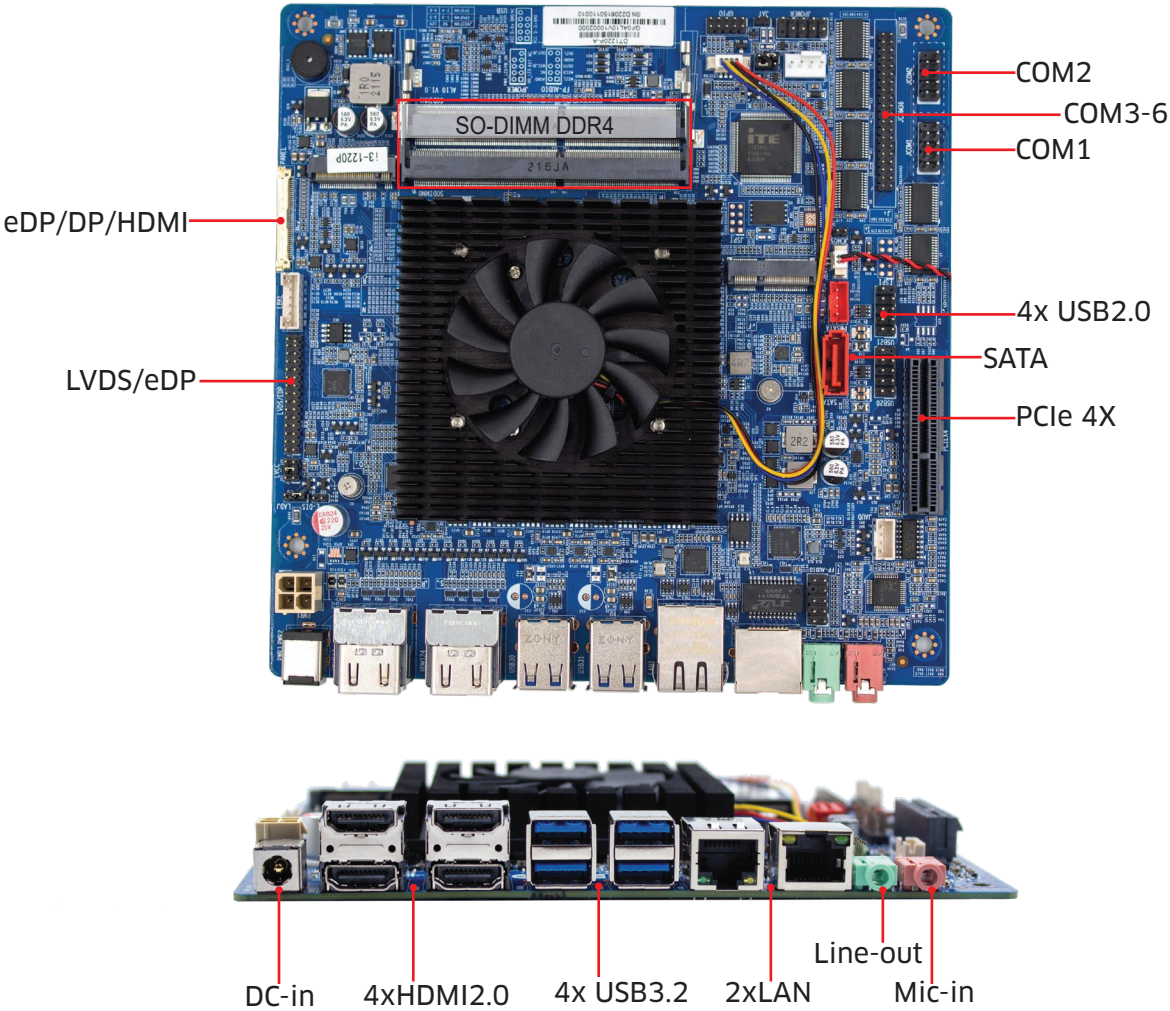Windows 11

H/W Monitor   Watchdog

GPIO   Brightness

I/O Interfaces

COM2
COM3-6
COM1

eDP/DP/HDMI

SO-DIMM DDR4

4x USB2.0
SATA
PCIe 4X

LVDS/eDP

DC-in   4xHDMI2.0   4x USB3.2   2xLAN   Line-out   Mic-in

Technical Specifications

Processor	Alder Lake P Series	i7-1260P	i5-1240P	i3-1220P
	Total Cores/Threads	12C/16T	12C/16T	10C/12T
	# of Performance-cores	4	4	2
	# of Efficient-cores	8	8	8
	P-core Max Turbo Frequency	4.70 GHz	4.40 GHz	4.40 GHz
	E-core Max Turbo Frequency	3.40 GHz	3.30 GHz	3.30 GHz
	Cache	18 MB	12 MB	12 MB
	Processor base Power	28 W	28 W	28 W
Processor	Alder Lake U Series	i7-1255U	i5-1235U	i3-1215U
	Total Cores/Threads	10C/12T	10C/12T	6C/8T
	# of Performance-cores	2	2	2
	# of Efficient-cores	8	8	4
	P-core Max Turbo Frequency	4.70 GHz	4.40 GHz	4.40 GHz
	E-core Max Turbo Frequency	3.50 GHz	3.30 GHz	3.30 GHz
	Cache	12 MB	12 MB	10 MB
	Processor base Power	15 W	15 W	15 W
	BIOS	AMI UEFI BIOS		
Memory	Type	Dual Channel SO-DIMM DDR4		
	Max.Capacity	64GB		
Display	GPU	Intel Iris® Xe Graphics eligible/UHD Graphics depends on CPU		
	Interface	4x HDMI2.0+1x LVDS/eDP+1x eDP/DP/HDMI2.0		
		Multiple displays up to four screens only.		
Ethernet	Controller	1x Intel i225/226 Data Rate Per Port: 2.5GbE		
		1x Intel i219 Data Rate Per Port: 1.0GbE		
	Interface	2xRJ45		
	Wake on LAN	Yes		
Audio	Audio Codec	Realtek HD		
	Interface	1xLine-out, 1xMic-in, supports audio header and amplifier header		
Hardware		CPU system temperature, onboard voltage, watchdog, and auto power on		
Storage	M.2	1×M.2 for NVMe 2280 SSD		
	SATA	1		
Expansion	M.2	1x M.2 for WiFi, support Intel® Integrated Connectivity (CNVi)		
	PCIe4X	1		
I/O Interface	LAN	2		
	COM	6xCOM: 6*RS232(default) or 5*RS232+1*RS485(COM1)		
	USB3.2	4		
	USB2.0	4*header		
	GPIO	8		
	Audio	1×Line-out, 1×Mic-in		
	TPM2.0	Onboard, optional		
Dimension	Size	170mm×170mm		
	Board Type	Mini-ITX		
Power	Standard Port	19V DC-in		
	Peripheral Input	For Fan and SATA		
	Operating Temp.	-20°C ~60°C		
	Storage Temp.	-40°C ~80°C		
Operating System		Win10/11 64 bit, Linux 64 bit		

Functional Block Diagram

Block diagram elements:

- 1x eDP/DP/HDMI2.0
- 1xLVDS/eDP
- 4x HDMI2.0
- PCIe 4x
- Dual Channel SO-DIMM DDR4
- Line-out MIC-in Speaker
- Realtek HDA
- Intel® Alder Lake-U/P Series Processor
- 1xSATA
- 1xM.2 for SSD NVMe
- 1xM.2 for Wi-Fi
- Intel i219 → RJ45
- Intel i225/226 → RJ45
- TPM (optional)
- 6xCOM 6*RS232(default) or (5*RS232+ 1*RS485(COM1))
- IT8772E
- Onboard DC/DC
- DC-in
- 4xUSB3.2
- 4xUSB 2.0 (header)
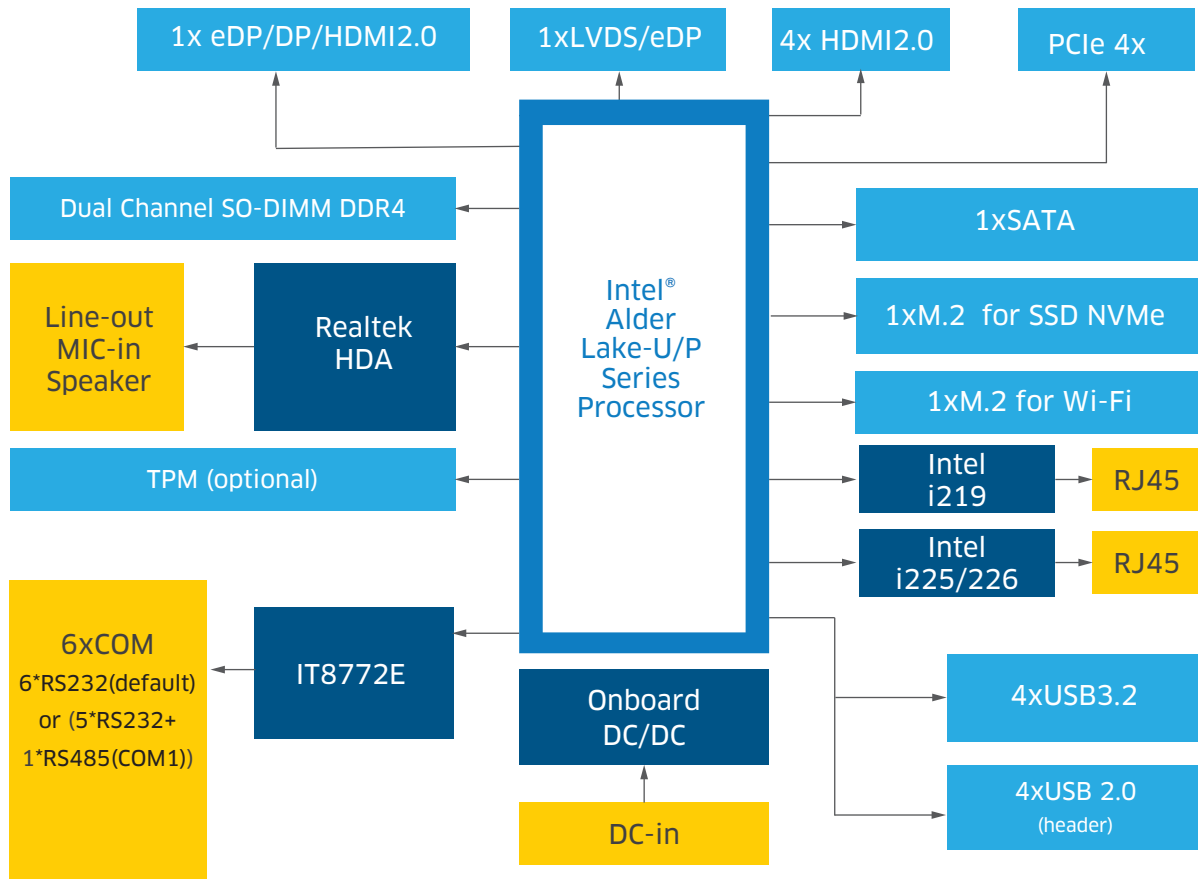
Order Information

Model Name	Description
DT1250P-A	DT MINI-ITX Intel Core i5-1250P AL10 2LAN 6*RS232 4HDMI+LVDS
DT1235U-A	DT MINI-ITX Intel Core i5-1235U AL10 2LAN 6*RS232 4HDMI+LVDS
DT1255U-A	DT MINI-ITX Intel Core i7-1255U AL10 2LAN 6*RS232 4HDMI+LVDS

*For customized options, please consult regional sales. And please confirm the model name and description before purchasing. *The model name and description might vary due to inventory changes.