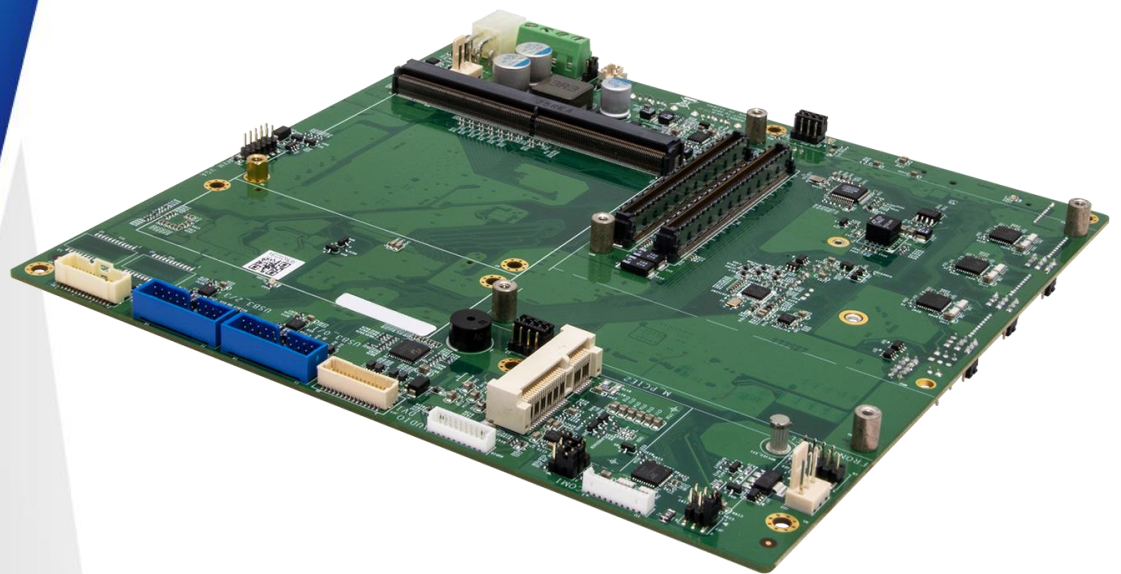




# SKYLAKE



## Key Feature

- COM Express Type 6 Support 14th Meteor Lake-H, 13th Raptor Lake-H, 12th Alder Lake-H, 11th Tiger Lake-H, 9th Coffee Lake-H, 7/6th Kaby/Sky Lake-H (Type6) Processor
- MXM Type 3.1 Support NVIDIA® GTX® / RTX® GPU
- Support MXM RTX 5000 Ada (9728 CUDA, 16GB RAM)
- PCI/104 Express Expansion Slot for Modular Open Structure
- Multi-Expansion Slots include Dual Mini PCIe Express Slots, 1x M.2 Slot
- 2x SATA, 4x DI/4x DO, 4x USB3.0, 2x USB2.0
- Wide Range DC 9V~36V Input
- Extreme Temperature Support -40°C to 85°C

# Specifications

## System

COM Express CPU	Intel® Core™ Ultra 7 Processor 165H, 20-45W, Meteor Lake 14th Gen, 14+2C, Freq. 0.9/1.4 Max. 5.0 GHz, 24MB cache
Options(Type6)	Intel® Core™ Ultra 7 Processor 155H, 20-45W, Meteor Lake 14th Gen, 14+2C, Freq. 0.9/1.4 Max. 4.8 GHz, 24MB cache Intel® Core™ Ultra 5 Processor 125H, 20-45W, Meteor Lake 14th Gen, 12+2C, Freq. 0.7/1.2 Max. 4.5 GHz, 18MB cache Intel® Core™ i7-13800HRE 45W Raptor Lake 13 <sup>th</sup> Gen, 14C, 2.5 /5.0 GHz, 24MB cache Intel® Core™ i7-13800HE 45W Raptor Lake 13 <sup>th</sup> Gen, 14C, 2.5 /5.0 GHz, 24MB cache Intel® Core™ i7-11850HE 45W Tiger Lake 11 <sup>th</sup> Gen, 8C, 2.6 /4.7 GHz, 24MB cache Intel® Xeon® W-11865MLE 45W Coffee Lake 11 <sup>th</sup> Gen, 8C, 1.5 /4.5 GHz, 12MB cache Intel® Xeon® E-2276ME 45W Coffee Lake 9 <sup>th</sup> Gen, 6C, 2.8 /4.5 GHz, 12MB cache Intel® Xeon® E-2276ML 25W Coffee Lake 9 <sup>th</sup> Gen, 6C, 2.0 / 4.2 GHz,12MB cache Intel® Core™ i7-9850HE 45W Coffee Lake 9 <sup>th</sup> Gen, 6C, 2.7 / 4.4 GHz, 9MB cache Intel® Core™ i7-9850HL 25W Coffee Lake 9 <sup>th</sup> Gen, 6C, 1.9 / 4.1 GHz, 9MB cache Intel® Core™ i7-7820EQ 45W Kaby Lake 7 <sup>th</sup> Gen, 4C, 3.0 / 3.7 GHz, 8MB cache Intel® Xeon® E3-1505L v5 25W Sky Lake 6 <sup>th</sup> Gen, 4C, 2.0 / 2.8 GHz, 8MB cache
GPU Module Options	NVIDIA® GeForce™ GTX 1660S, 95W, 6GB GDDR6, 1,048 CUDA Cores NVIDIA® GeForce™ RTX 2060S, 175W, 8GB GDDR6, 2,176 CUDA Cores NVIDIA® GeForce™ RTX 3080M, 135W, 16GB GDDR6, 6,144 CUDA Cores NVIDIA® Ampere RTX A2000, 80W, 8GB GDDR6, 2,560 CUDA Cores NVIDIA® Ampere RTX A4500, 80W/130W, 16GB GDDR6, 5,888 CUDA Cores NVIDIA® Ada Lovelace RTX 3500 Ada, 115W, 12GB GDDR6, 5,120 CUDA Cores NVIDIA® Ada Lovelace RTX 5000 Ada, 115W, 16GB GDDR6, 9,728 CUDA Cores
Compatibility	COM Express® TYPE 6

## Display

DP	2x Display Port outputs from GPU
VGA	1x output from COM Express
LVDS	1x dual channel 18/24-bit LVDS
DVI	1x

## Expansion

M.2	1x 2280 M key (SATA only)
mini PCIe	2x Full-size Mini PCIe (1 with mSATA supported)
PCIe/104	4x PCIe x 1, 1x PCIe x 4, 5x USB 2.0, 1x LPC. 1x SPI
SATA	2x SATA III

## Ethernet

Ethernet	2 x 10/100/1000/2.5G Ethernet Ports(One from CPU module)
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## I/O

USB	4x USB 3.0 + 2x USB2.0
Serial Pot	4x RS232/422/485
Audio	1x MIC-in, 1x Line-out
SATA Power	2x SATA Power
DI/DO	4x DI/ 4x DO
FAN Power	1x CPU FAN + 1x MXM FAN
Battery	1x Battery Header

## Power System

Input Power: SYS	9~36V (4P Terminal Block)
Input Power: MXM	12V (ATX 4P)
Power Consumption	Varies per COM Express /MXM with different CPU and GPU models
RTC Battery	3V CR2032

## Mechanical and Environmental

Dimension	190 x 180 mm
Operating Temp	-40°C to 85°C
Storage Temp	-40°C to 85°C
Relative	10% to 90%, non-condensing

Humidity

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## Standard Compliance

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Standard CE/FCC  
Compliance

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OS Support Windows®10 64bit, Linux(Support by request)

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\*All specifications and photos are subject to change without notice.

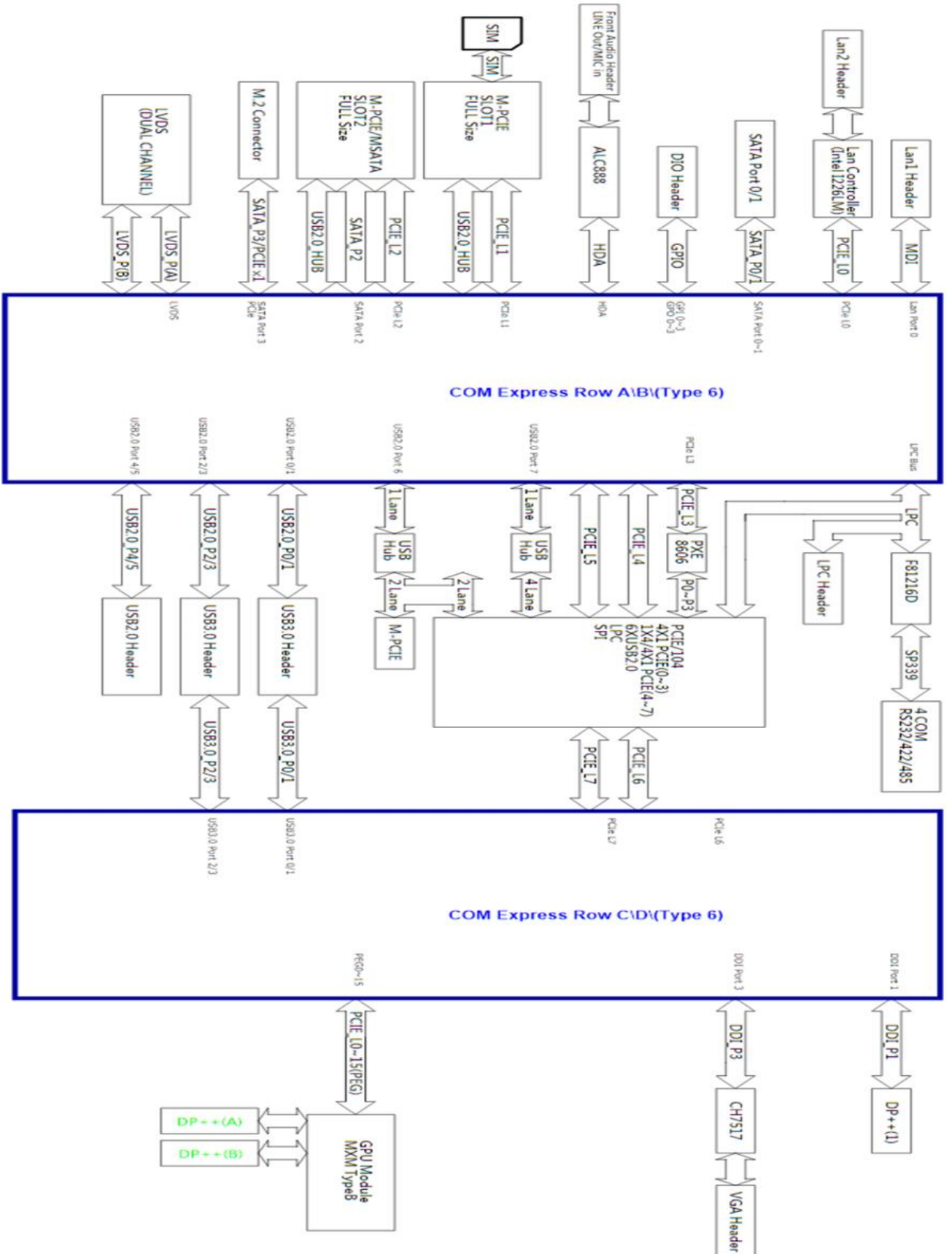
## Revision

Date	Description	Remark
2024/4/08	Initial version	
2024/4/09	Update MXM GPU with RTX3080M, RTX3500Ada, RTX5000 Ada & Ordering model No list	
2024/7/23	Add 14 <sup>th</sup> Meteor Lake-H CPU in list	

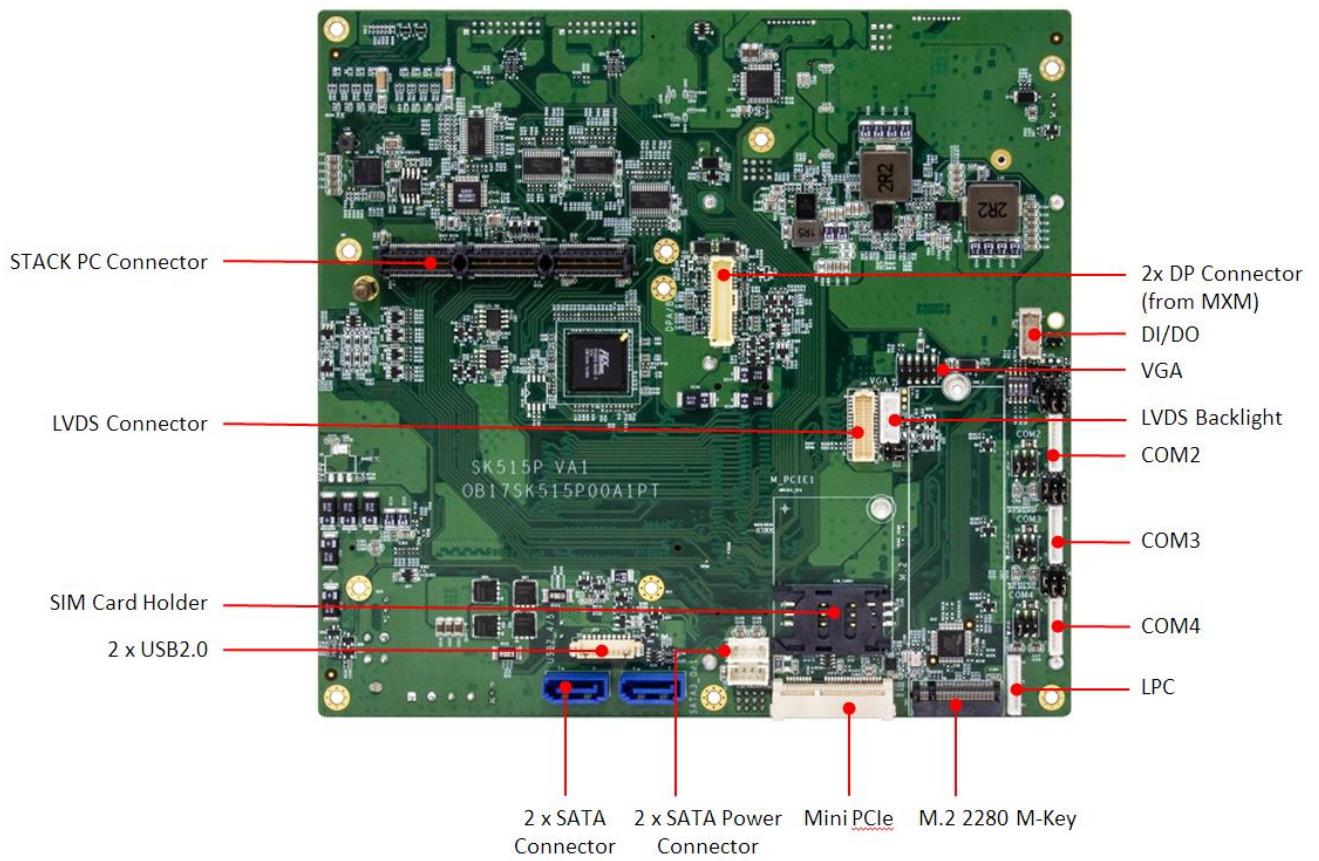
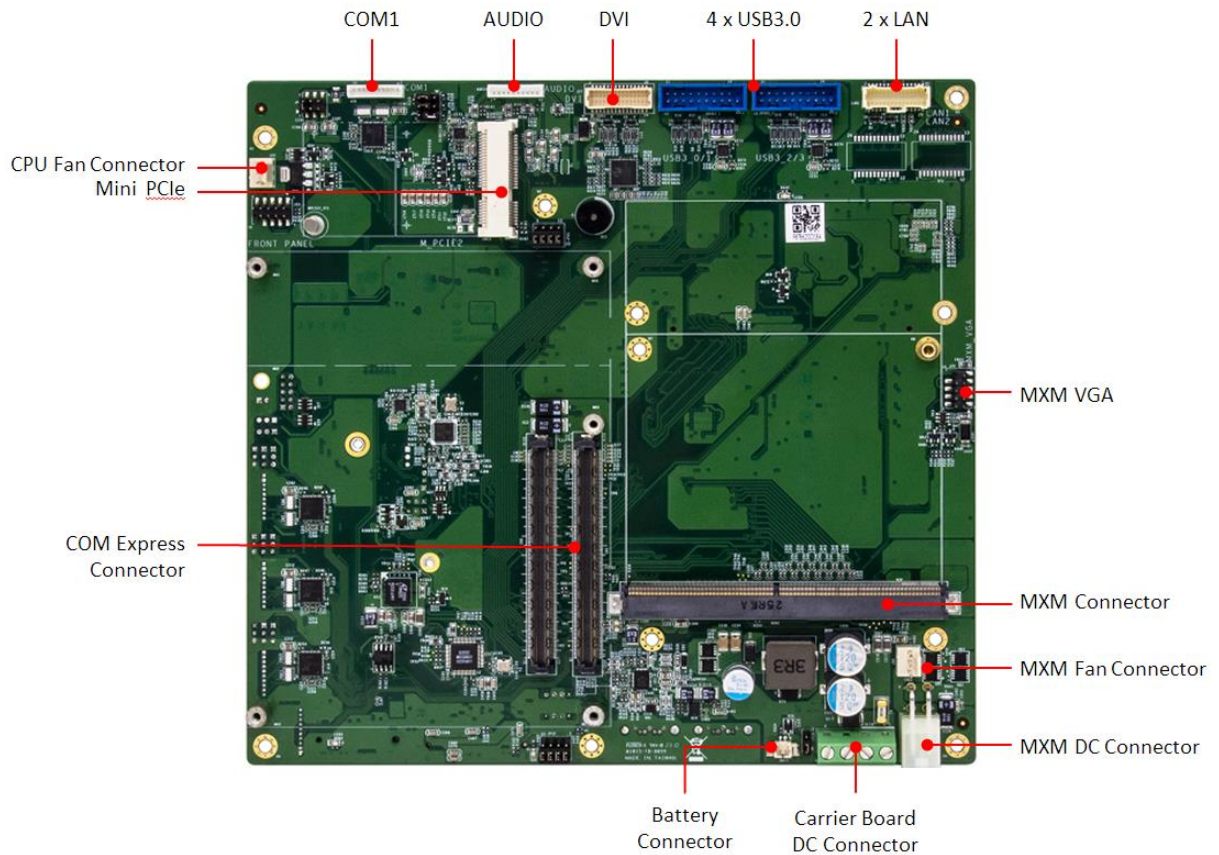
# Appearance



# Block Diagram



# Connector & Pin Header



## Ordering Information

### CPU/GPU Table

All Operating Temperature meet from 0°C to +55°C.

Could Customize the Operating Temperature from -40°C to +70°C.

#### CPU Products List

Type	CPU	Power	SPEC
14 <sup>th</sup> CPU	Intel® Core™ Ultra 7, 165H	20/45W	Meteor Lake 14 <sup>th</sup> Gen, 14+2C, Freq. 0.9/1.4 Max. 5.0 GHz,
14 <sup>th</sup> CPU	Intel® Core™ Ultra 7, 155H	20/45W	Meteor Lake 14 <sup>th</sup> Gen, 14+2C, Freq. 0.9/1.4 Max. 4.8 GHz,
14 <sup>th</sup> CPU	Intel® Core™ Ultra 5, 125H	20/45W	Meteor Lake 14 <sup>th</sup> Gen, 12+2C, Freq. 0.7/1.2 Max. 4.5 GHz,
13 <sup>th</sup> CPU	Intel® Core™ i7-13800HRE	45W	Raptor Lake 13 <sup>th</sup> Gen, 14C, Freq. 2.5 /5.0GHz, 24MB cache
13 <sup>th</sup> CPU	Intel® Core™ i7-13800HE	45W	Raptor Lake 13 <sup>th</sup> Gen, 14C, Freq. 2.5 /5.0GHz, 24MB cache
12 <sup>th</sup> CPU	Intel® Core™ i7-12800HE	45W	Alder Lake 12th Gen, 14C, Freq. 3.5 /4.6 GHz, 24MB cache
11 <sup>th</sup> CPU	Intel® Core™ i7-11850HE	45W	Tiger Lake 11th Gen, 8C, Freq. 2.6 /4.7 GHz, 24MB cache
11 <sup>th</sup> CPU	Intel® Xeon® W-11865MLE	25W	Tiger Lake 11th Gen, 8C, Freq. 1.5 /4.5 GHz, 12MB cache
9 <sup>th</sup> CPU	Intel® Xeon® E-2276ME	45W	Coffee Lake 9th Gen, 6C, Freq. 2.8 / 4.5 GHz, 129MB cache
9 <sup>th</sup> CPU	Intel® Xeon® E-2276ML	25W	Coffee Lake 9th Gen, 6C, Freq. 2.0 / 4.2 GHz, 12MB cache
9 <sup>th</sup> CPU	Intel® Core™ i7-9850HE	45W	Coffee Lake 9th Gen, 6C, Freq. 2.7 / 4.4 GHz, 9MB cache
9 <sup>th</sup> CPU	Intel® Core™ i7-9850HL	25W	Coffee Lake 9th Gen, 6C, Freq. 1.9 / 4.1 GHz, 9MB cache
7 <sup>th</sup> CPU	Intel® Core™ i7-7820EQ	45W	Kaby Lake 7th Gen, 4C, Freq. 3.0 / 3.7 GHz, 8MB cache
6 <sup>th</sup> CPU	Intel® Xeon® E3-1505L v5	25W	Sky Lake 6th Gen, 4C, Freq. 2.2 / 3.0 GHz, 8MB cache

#### GPU Products List

GPU	CUDA Cores	Max power	UL Benchmarks
NVIDIA® GeForce™ RTX 3080M	6,144 CUDA Cores	135W	11908
NVIDIA® Ampere RTX A2000	2,560 CUDA Cores	80W	5952
NVIDIA® Ampere RTX A4500	5,888 CUDA Cores	130W	12835
NVIDIA® Ada Lovelace RTX 3500 Ada,	5,120 CUDA Cores	115W	TBC
NVIDIA® Ada Lovelace RTX 5000 Ada	9,728 CUDA Cores	115W	TBC
NVIDIA® GeForce™ GTX 1050Ti	768 CUDA Core	75W	2338

#### Model No. List

COMe Type	Model Name	Configuration
Type6	SK515-138HR-A45	CPU Board: i7-13800HRE / MXM GPU: Quadro A4500
	SK515-138HE-A45	CPU Board: i7-13800HE / MXM GPU: Quadro A4500
	SK515-128HE-A45	CPU Board: i7-12800HE / MXM GPU: Quadro A4500
	SK515-1185H-A45	CPU Board: i7-11850HE / MXM GPU: Quadro A4500
	SK515-11865-A20	CPU Board: W-11865MLE / MXM GPU: Quadro A2000
	SK515-2276E-A45	CPU Board: E-2276ME / MXM GPU: Quadro A4500
	SK515-2276L-A20	CPU Board: E-2276ML / MXM GPU: Quadro A2000
	SK515-9850E-A45	CPU Board: i7-9850HE / MXM GPU: Quadro A4500
	SK515-9850L-A20	CPU Board: i7-9850HL / MXM GPU: Quadro A2000
	SK515-7820E-A20	CPU Board: i7-7820EQ / MXM GPU: Quadro A2000
	SK515-1505L-A20	CPU Board: E3-1505Lv5 / MXM GPU: Quadro A2000