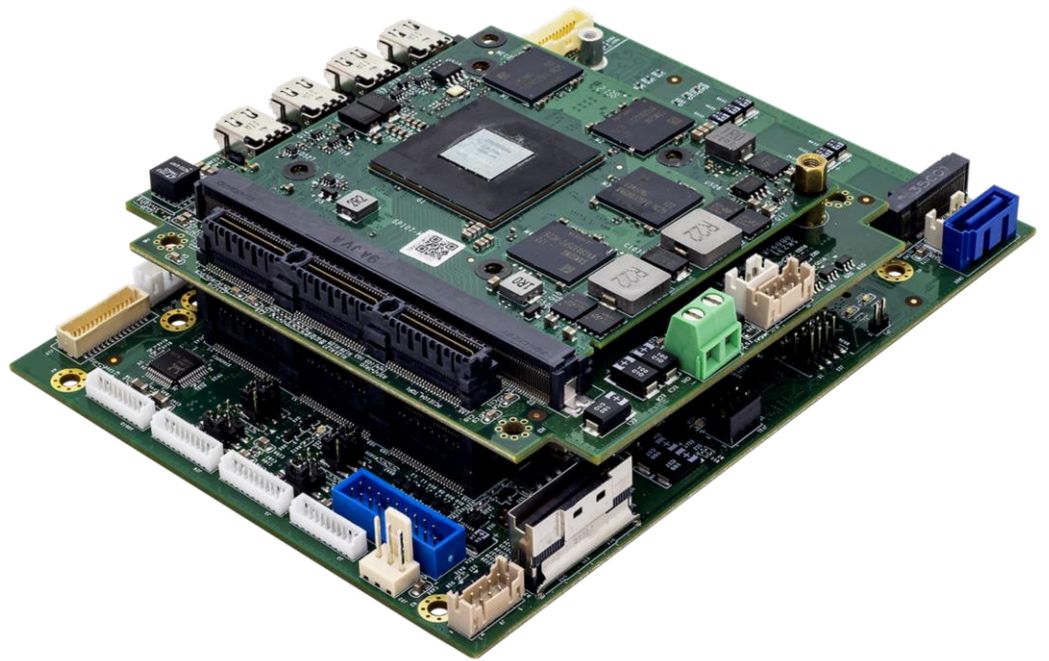




# **PCIe/104 - RH**

**PCIe/104 Processing Unit  
Intel 13th Raptor Lake (H)**



- **PCI/104 Express Type2 Slot for Open Modular Architecture**
- **Standard MXM Type 3.1 Support NVIDIA QUADRO®GPU**
- **Intel 13th Raptor Lake-H Core-I Processor**
- **Multi-Expansions include Dual Mini PCIe Express Slots**
- **GPU can be targeted for 4 Mini Display port outputs**
- **Extreme Temperature Support -40 to 85°C**

# Specifications

## System

CPU Options	Intel® Core™ i7-13800HRE 45W Raptor Lake 13th Gen, 14C , Freq. 2.5 /5.0 GHz, 24MB cache Intel® Core™ i7-13800HE 45W Raptor Lake 13th Gen, 14C , Freq. 2.5 /5.0 GHz, 24MB cache
GPU Options	NVIDIA® Ampere RTX A1000, 35W, 4GB GDDR6, 2,048 CUDA Cores NVIDIA® Ampere RTX A2000, 36W/80W, 8GB GDDR6, 2,560 CUDA Cores NVIDIA® Ampere RTX A4500, 80W/130W, 16GB GDDR6, 5,888 CUDA Cores
Memory	DDR5 4800MHz SO-DIMM up to 64GB
MXM Carrier	SK231

## Expansion

MiniPCIe Expansion	1x Full-size mini PCIe 1 1x Full-size mini PCIe 2 support m-SATA
PCIe/104 Expansion(Type2)	2x PCIe x4 ; 4x PCIe x1
M.2	1x M.2 2280, PCIe x4
SlimSAS	1x SlimSAS 8i connector

## Storage

SATAIII	1x SATAIII
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## Display

Mini DP	4x Mini Display Port outputs from GPU
VGA	1x VGA from GPU (SK231)(Option)
LVDS	1x Dual channel 18/24bit LVDS

## Ethernet

Ethernet	Intel® I226-LM GbE LAN (10/100/1000Mbit /2.5G) Ethernet ports
Ethernet	GbE LAN from CPU module

## I/O

USB	2x USB 3.0 2x USB2.0
COM Port	2x RS232/422/485

DIO	4x DI/ 4x DO
eSPI	1x 10Pin
Audio	1x Line-out, 1x Mic-In

## Power System

Input Power	9V~36V DC-IN 12V DC-IN for CPU FAN
Input Power by MXM carrier board	12V DC-IN for GPU FAN

## Mechanical and Environment

Dimensions	146mm x 110mm
Operating Temperature	0°C to 55°C -40°C to 85°C (By Option)
Storage Temperature	-40 to 85°C
Relative Humidity	10% to 90%, non-condensing

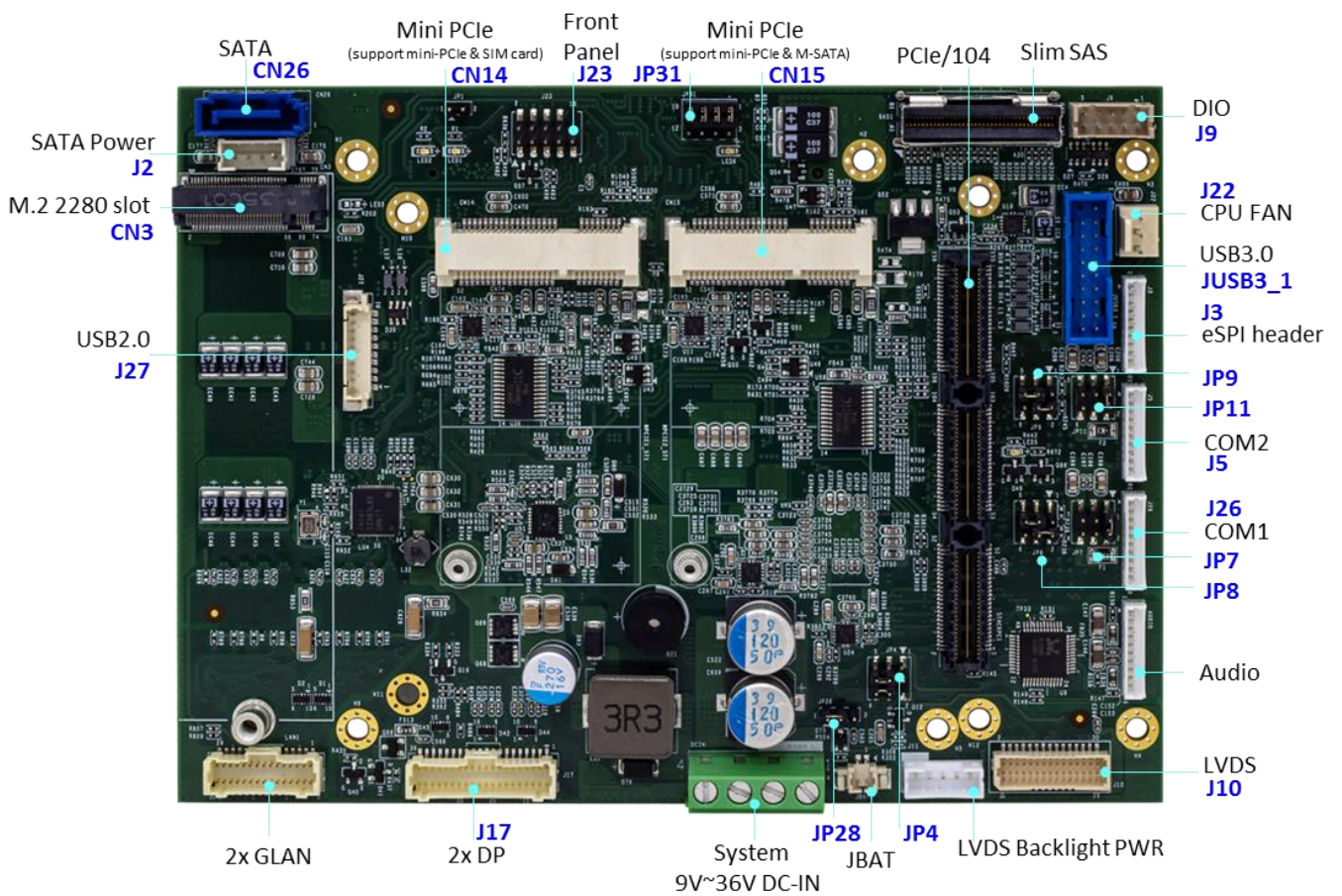
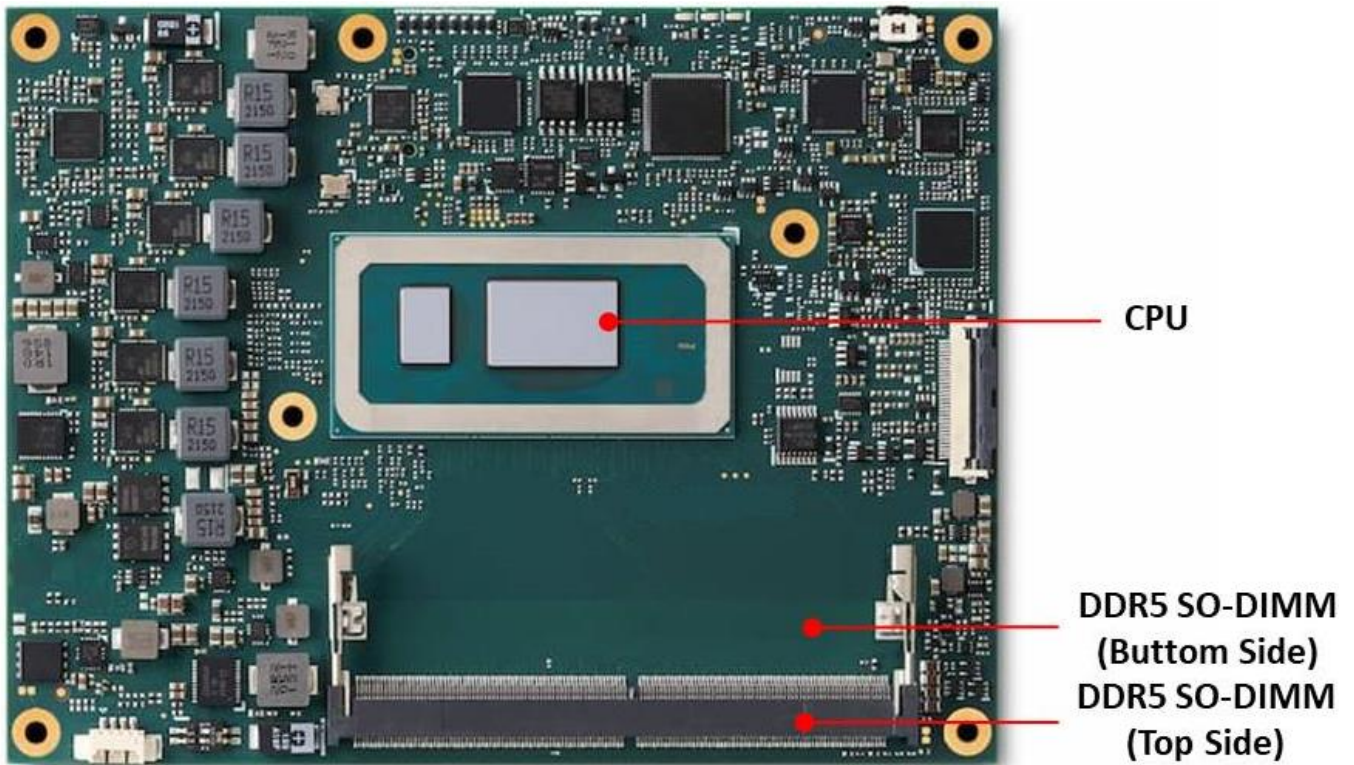
## Standard Compliance

Standard Compliance	CE/FCC
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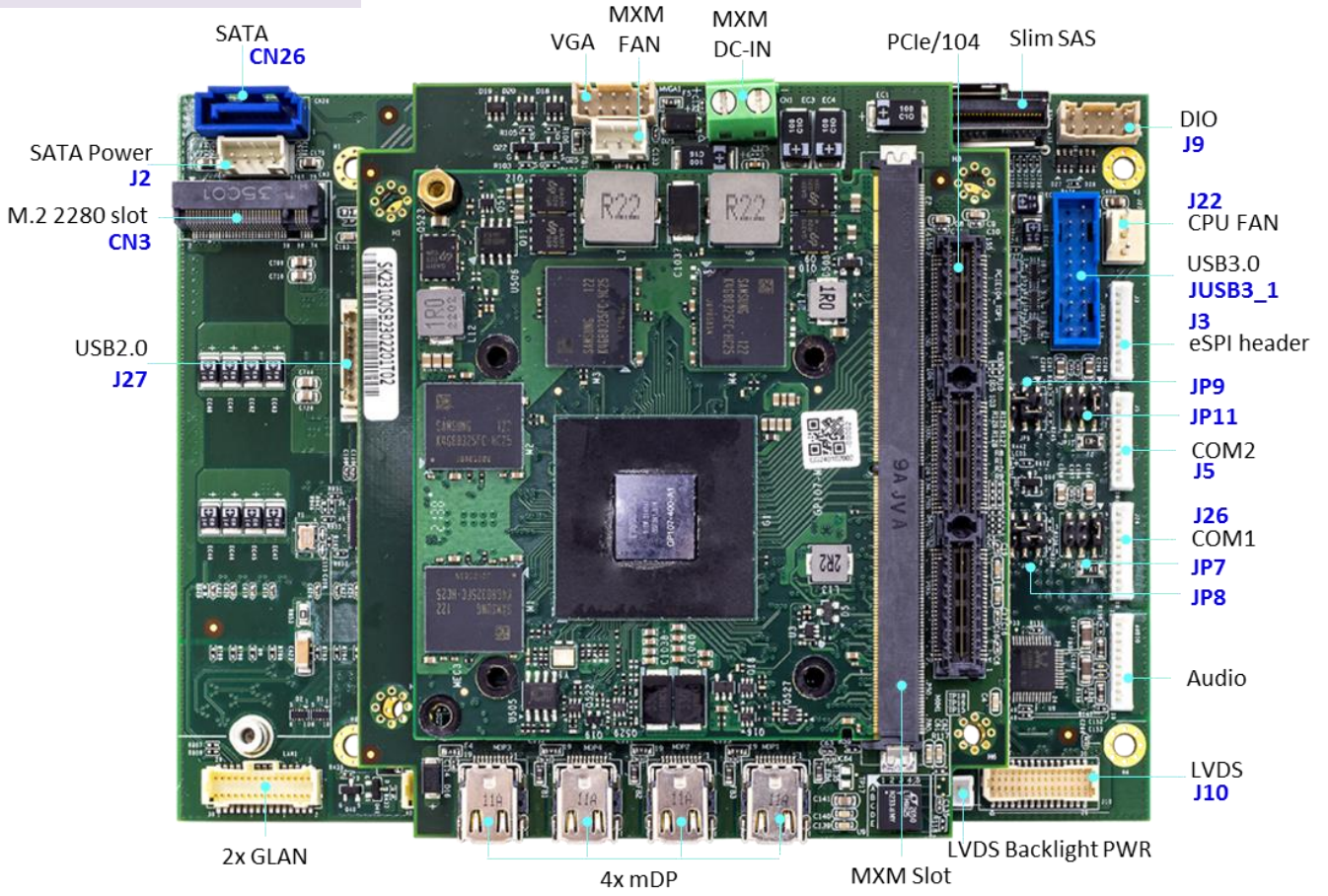
## OS

OS Support	Windows®10 64bit Linux(Support by request)
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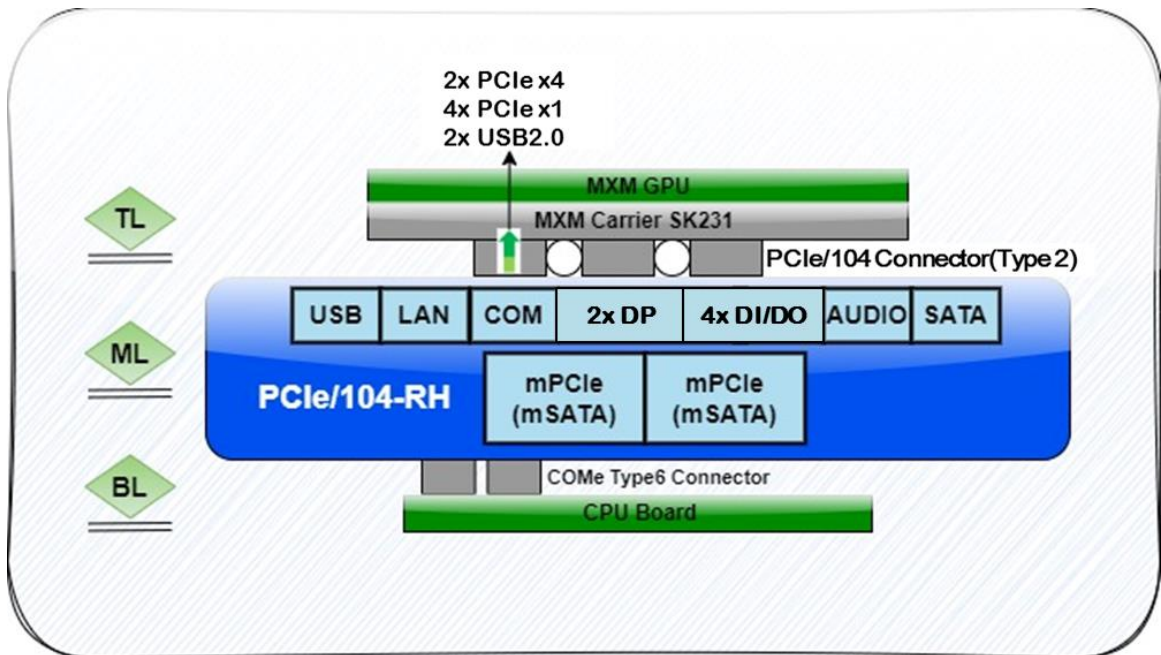
# I/O Placement



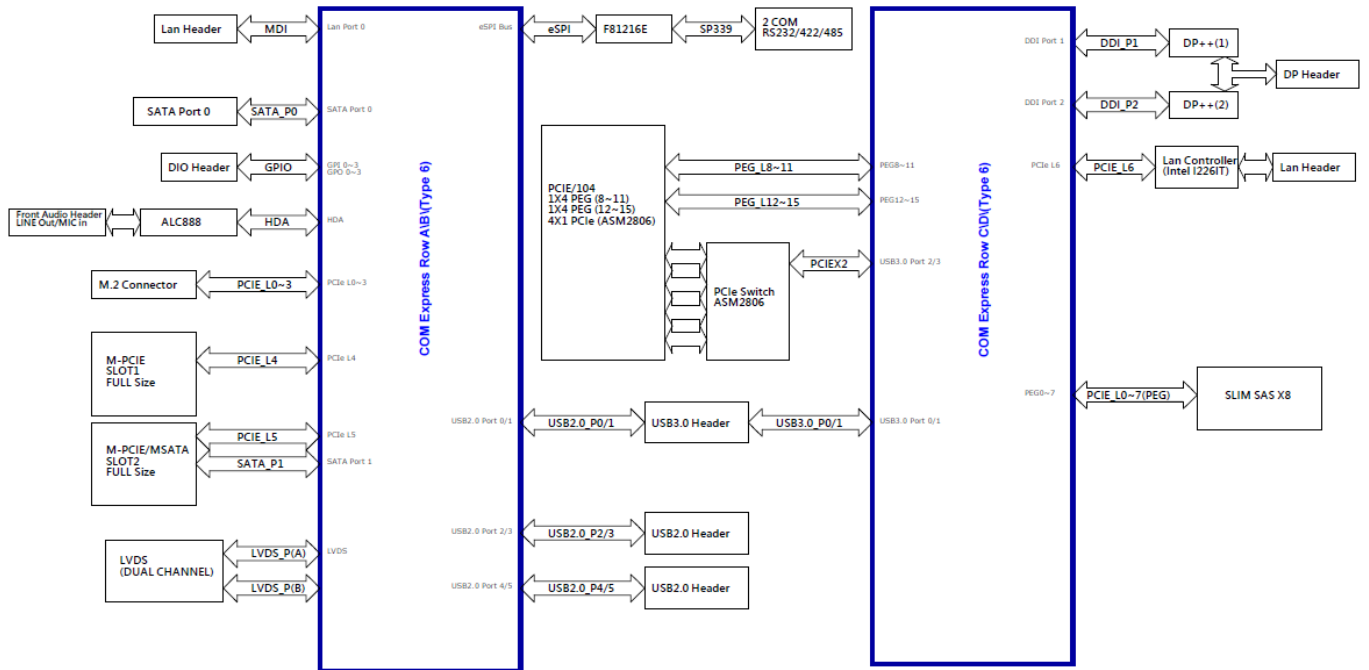
PCIe/104-RH with MXM



## Stack Concept



# Block Diagram



# Ordering Information

Model	PCle104-RH01A10			PCle104-RH01A20			PCle104-RH01A45		
Name Spec									
PCle/104 Form Factor	Type2								
CPU	13 <sup>th</sup> i7-13800HRE(45W)								
RAM	DDR5 SO-DIMM up to 64GB								
LAN	2x GbE								
GPU	RTX A1000			RTX A2000			RTX A4500		
LVDS	1x LVDS								
DP	2x DP from CPU 4x mDP from MXM GPU								
SATA	1x SATAIII								
COM	2x RS232/422/485								
Power	System : 9V~36V DC-IN GPU : 12V DC-IN								
Operation Temp	0°C to 55°C -40°C to 85°C (By Option)								