㈜넥스코시스템

GPU HPC System

HNT-4810P

Overview

넥스코시스템의 GPU HPC System HNT-4810P 시스템은 4U Rack 타입으로 Dual Intel Xeon E5 2600시리즈 CPU를 지원하며 최대 3TB의 시스템 메모리 지원 및 최대100Gbps의 네트워크 통신이 가능하여 대규모 시뮬레이션 과학계산 금융계산에 필요한 최고의 환경을 제공 합니다.

GPU HPC클러스터에 필요한 NVIDIA GPU를 1~10EA까지 장착이 가능하며 GPU간 GPUs under Single-Root complex RDMA P2P를 지원하는 시스템 입니다.

GPU HPC Products

HNT-4810P

- GPUs under Single-Root complex
- Supports RDMA

1. Dual socket R3 (LGA 2011) supports Intel® Xeon® processor E5-2600 v4†/ v3 family; QPI up to 9.6GT/s
2. Up to 3TB† ECC 3DS LRDIMM , up to DDR4- 2400†MHz ; 24x DIMM slots
3. Expansion slots, Single Root Complex,
   11 PCI-E 3.0 x16 (FH, FL) slots
   1 PCI-E 3.0 x8 (in x16) slots
4. 2 GbE LAN with Intel® i350
5. 24 Hot-swap 2.5" drive bays
6. 8 Hot-Swap 92mm cooling fans
7. 2000W Redundant (2+2) Power Supplies; Titanium Level (96%+)

- 10GPU Support

NVIDIA TESLA P100 GPUs

- Linux OS Install
- Open MP / MPI / Intel MPI Install
- GNU / PGI / Intel / Microsoft
- LSF / PBS / Open PBS / Torque / SGE
- Lustre / GPFS / Gluster / IBRIX

10GPU SYSTEM / 2 CPU

1. Processors

supports dual Intel E5-2600 v3/v4 series processors in LGA 2011 sockets (Socket R3). Each processor supports dual Intel QuickPath Interconnect (QPI) links of up to 9.6 GT/s per QPI. Refer to the motherboard description pages on our web site for a complete listing of supported processors

2. Memory

The motherboard has 24 DIMM slots that can support up to 3 TB of Load Reduced (LRDIMM) or 1.5 TB of Registered (RDIMM) DDR4 ECC, 288-pin, at 2400/2133/1866/1600/1333 MHz. DIMMs up to 64 GB at 1.2V. See Chapter 5 for details.

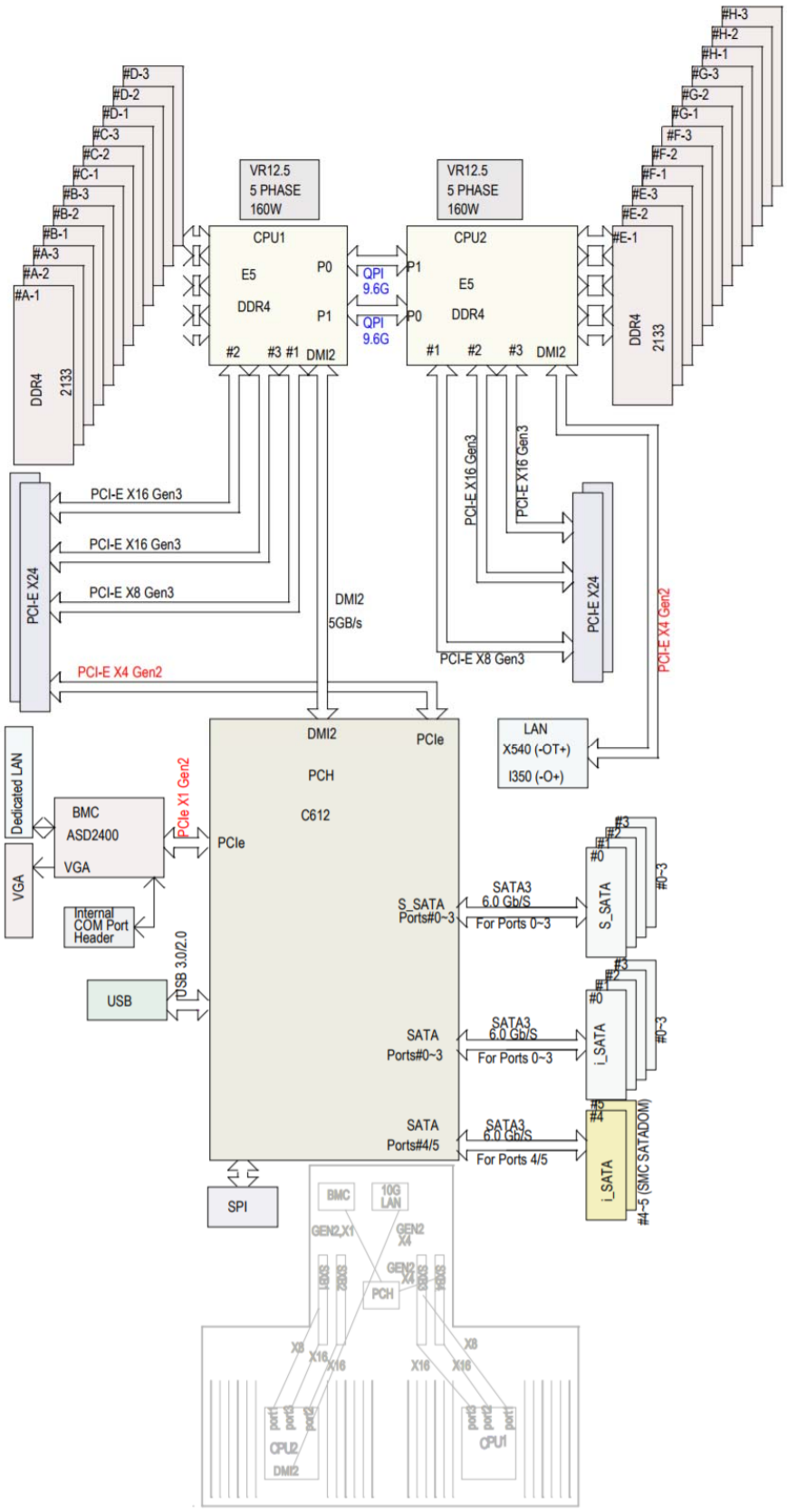
3. Serial ATA

The motherboard supports a ten SATA 3.0 ports. That is four I-SATA, two more I-SATA with SuperDOM support, and four S-SATA. RAID 0, 1, 5 and 10 can beenabled.

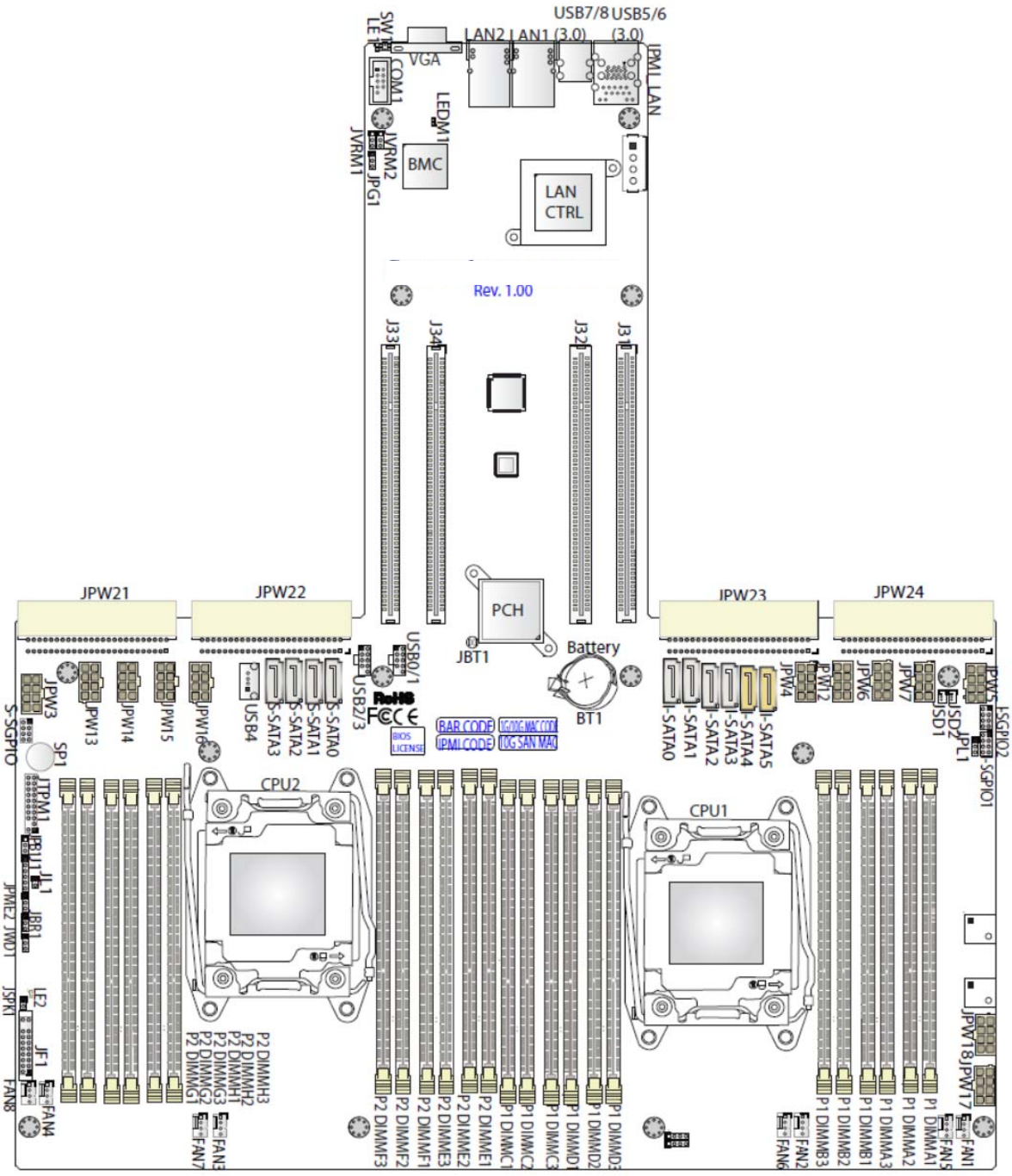
4. PCI Expansion Slots

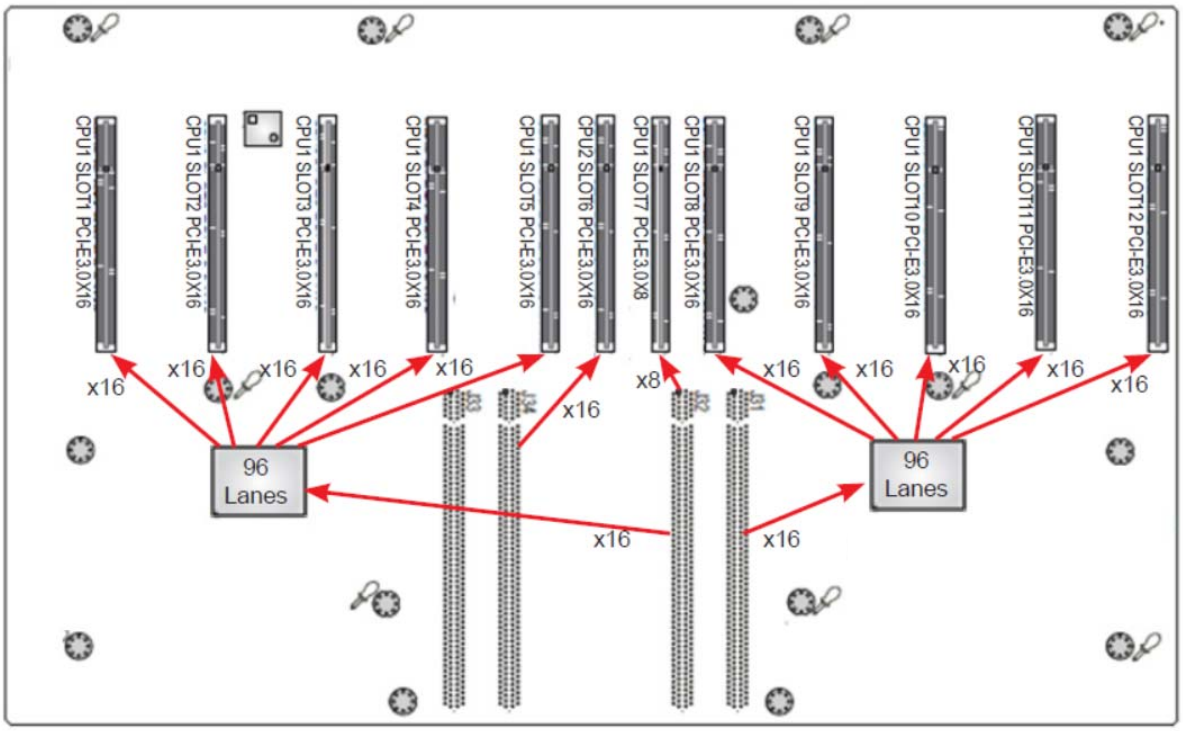
supports up to ten double-width GPUs with x16 full signal slots, or eight double width GPUs with hree PCI-E 3.0 x16 and one PCI-E 3.0 x8 expansion cards The daughter boards are further described in Chapter 5. Note that both CPUs must be installed to enable use of all PCI-E slots.

DNT-4810P / DNG-4810A System Block Diagram



Motherboard Details





5. IPMI

Intelligent Platform Management Interface (IPMI) 2.0 is a hardware-level interface specification that provides remote access, monitoring and administration for Supermicro servers. IPMI enables administrators to view a server hardware status remotely, receive an alarm automatically if a failure occurs, and power cycle a system that is non-responsive.

6. System Power

The chassis features a 2+2 redundant power supply system composed of four hotplug, high efficiency power modules.

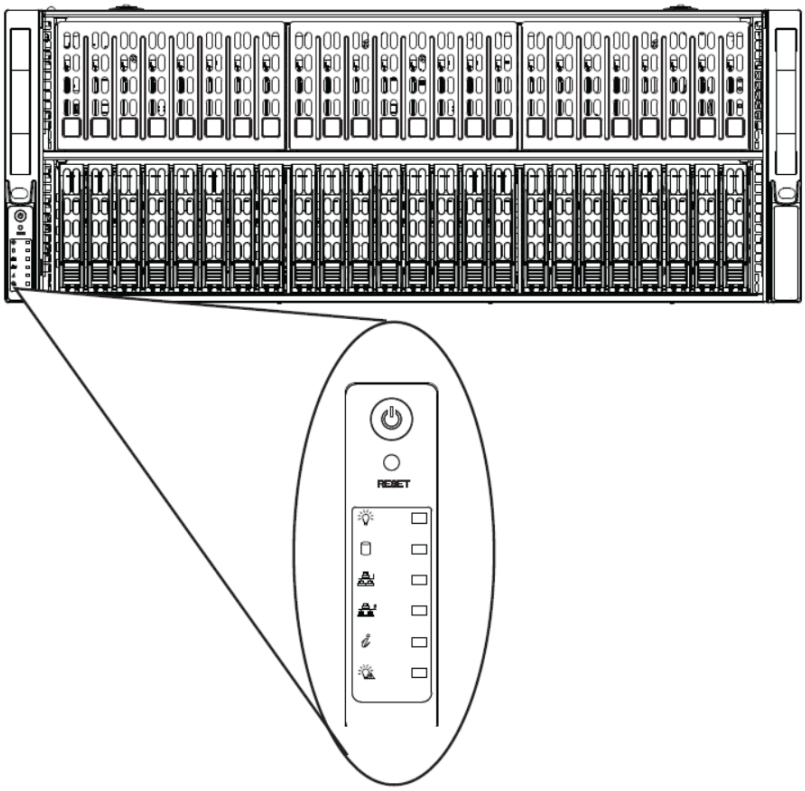
7. Storage Drives

The chassis includes twenty-four 2.5" drive bays, which house hot-swappable SATA drives (Option In 3.5” drive x3)

8. Cooling System

The chassis has an innovative cooling design that includes eight 9-cm heavy-duty fans. They offer status monitoring through IPM, dual cooling zones, fan speed control, and Pulse Width Modulation (PWM) control. In addition, an air shroud helps channel air over the motherboard and PCI slots for maximum cooling. The power supply modules also include a cooling fan. All chassis and power supply fans operate continuously

System Interface



1. Control Panel Buttons

Power

The main power switch applies or removes primary power from the power supply to the server but maintains standby power. To perform most maintenance tasks, unplug the system to remove all power.

Reset

The reset button is used to reboot the system.

Power LDE

Indicates power is being supplied to the system power supply units.This LED is illuminated when the system is operating normally.

HDD

Indicates activity on the hard disk drive when flashing.

NIC2

Indicates network activity on GLAN2 when flashing.

NIC1

Indicates network activity on GLAN1 when flashing.

Information LED

Alerts operator to several states, as noted in the table below.

Information LED	
Status	**Description**
Continuously on and red	An overheat condition has occured. (This may be caused by cable congestion.)
Blinking red (1Hz)	Fan failure, check for an inoperative fan.
Blinking red (0.25Hz)	Power failure, check for a non-operational power supply.
Solid blue	Local UID has been activated. Use this function to locate the server in a rack mount environment.
Blinking blue	Remote UID is on. Use this function to identify the server from a remote location.

Power Fail

Indicates a power supply module has failed.

	LED Color	Blinking Pattern	Behavior for Device
Activity LED	Blue	Solid On	SAS/NVMe drive installed
	Blue	Blinking	I/O activity
Status LED	Red	Solid On	Failure of drive with RSTe support
	Red	Blinking at 1 Hz	Rebuild drive with RSTe support
	Red	Blinking with two blinks and one stop at 1 Hz	Hot spare for drive with RSTe support
	Red	On for five seconds, then off	Power on for drive with RSTe support
	Red	Blinking at 4 Hz	Identify drive with RSTe support

Input/Output Ports

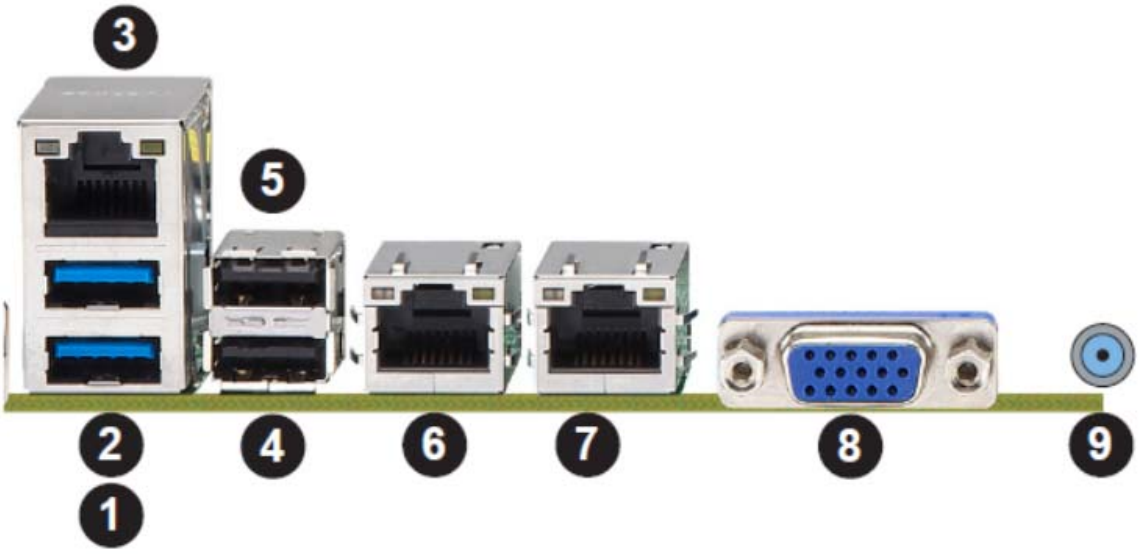


Figure 5-1. I/O Ports

IO Ports			
1.	USB 3.0 Port 5	6.	LAN Port 1
2.	USB 3.0 Port 6	7.	LAN Port 2
3.	IPMI Dedicated LAN	8.	VGA Port
4.	USB 3.0 Port 7	9.	UID Switch
5	USB 3.0 Port 8		