

## Accelerate to The Future

# PEMUX Introduction

The PEMUX allows users to deliver with maximum 56 lane of PCI Express 3.0 to PEMUX backplane while taking advantage of the speed and increased bandwidth of PCI Express.

### ■ What is PEMUX ?

- **Bringing PCI Express to your SBC with maximum lane signal quantity, increased speed and bandwidth**  
PEMUX is designed for AI computing usage. AI computing needs to expand accelerator card, and PEMUX can provide up to 56 lane PCIe signals to the backplane.  
All PCIe signal connect to CPU directly, this is perfect for applications that require minimal latency.
- **New pin definition for PCIe signal pass through to backplane**  
With the maximization of PCIe lane signal quantity, we need the brand new pin define for supporting all signals pass through to the backplane, we called PEMUX design which defined by IEI.

### ■ The Advantage of PEMUX

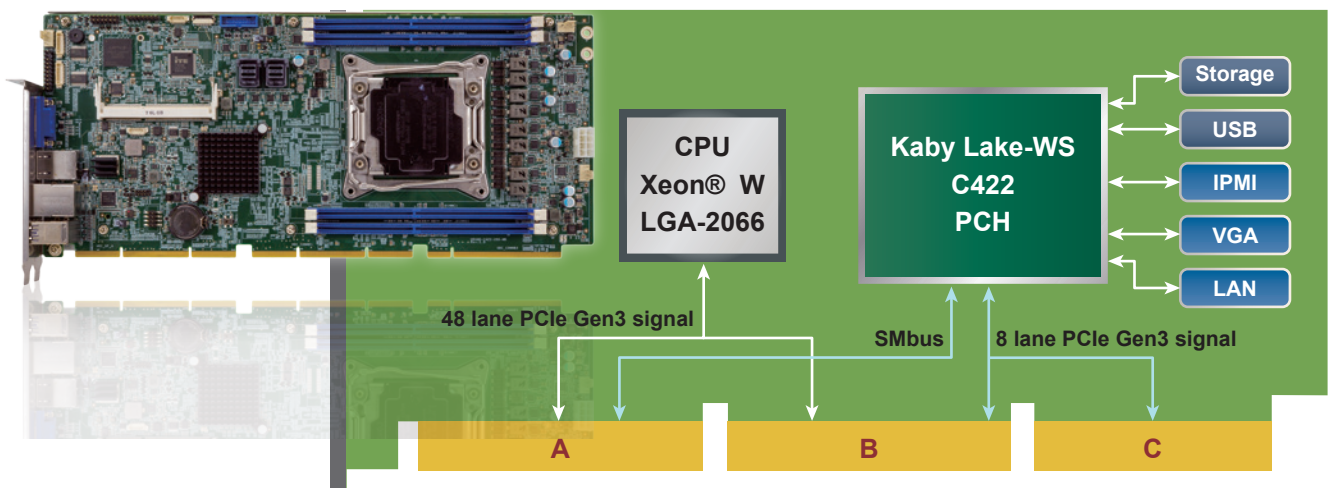
- Maximum 56 lane PCIe signals signals to fulfill AI deep learning or inference demand
- IPMI remote management

### ■ The Benefits of PEMUX

- With the backplane can expand up to 4 dual width graphics cards
- Use Intel® Xeon W High performance processor

### ■ Full-size PEMUX PCIe Slot Configuration

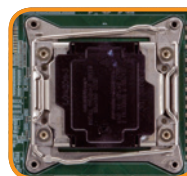
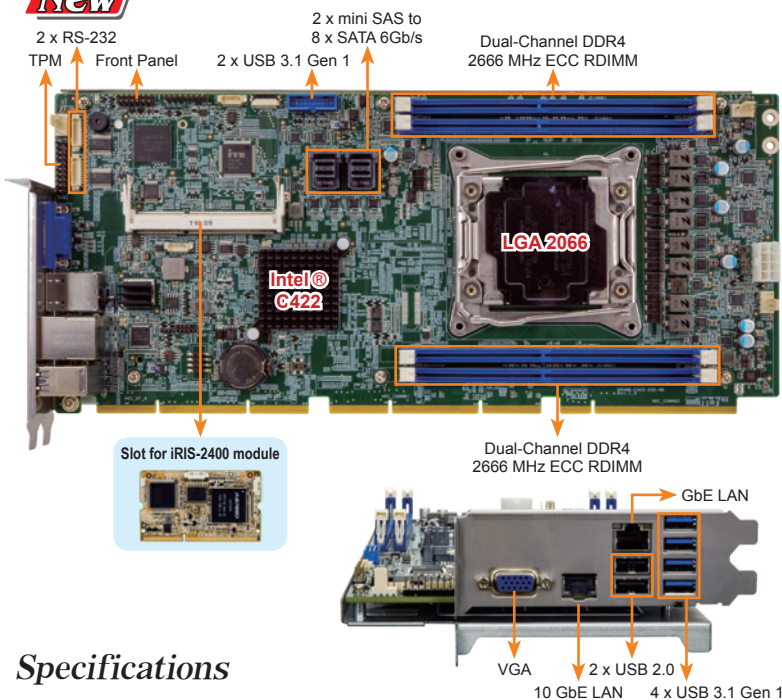
Full-size SBC Type			Server & Graphic Grade	
Combination			A	B
PCIe Slots Available (non switch)	CPU	x16		2
		x8	4	
		x4	4	4
	PCH	x4	2	2
Backplane Solution			PEMUX-DB series	



# PEMUX-XEW1

Full-size PEMUX CPU Card supports LGA2066 Intel® Xeon® W CPU per, Intel® C422, DDR4 ECC RDIMM, IPMI VGA output, Aquantia 10GbE, USB 3.1 Gen 1 (5Gb/s), SATA 6Gb/s, M.2 and RoHS

**New**



**LGA 2066**

Support Intel® Xeon W series CPU



**Four 288-pin DDR4 ECC RDIMM/LRDIMM Supported**

Four 288-pin 2666MHz dual-channel DDR4 SDRAM ECC RDIMM / LRDIMM (system max.256GB) supports in IEI full-size server grade CPU card.



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## Specifications

- ◆ Form Factor  
PEMUX Full-size CPU card (12 layers)
- ◆ CPU  
LGA2066 socket supports Intel® Xeon W processor
- ◆ Chipset  
Intel® C422
- ◆ Memory  
Four 288-pin Dual-Channel DDR4 ECC RDIMM/LRDIMM supported up to 256GB
- ◆ BIOS  
UEFI BIOS
- ◆ Super I/O  
Fintek F81216D
- ◆ EC  
iWDD
- ◆ Display Output  
1 x IPMI VGA display
- ◆ Ethernet  
LAN1: 1 GbE NIC: Intel® i210-AT with NCSI support  
LAN2: 10 GbE NIC: Aquantia AQC107
- ◆ External I/O Interface  
2 x USB 2.0  
4 x USB 3.1 Gen 1 (5Gb/s)
- ◆ Internal I/O Interface  
1 x M.2 2280  
1 x USB DOM header  
2 x mini SAS 8643 (for 8 x SATA 6Gb/s)  
2 x RS-232 by pin header  
2 x USB 3.1 Gen 1 (5Gb/s) pin header
- ◆ Front Panel  
1 x Front Panel (Power LED, HDD LED, Speaker, Power Button, Reset Button)
- ◆ Audio  
2 x 5-pin pin header
- ◆ TPM  
2 x 10-pin pin header
- ◆ SMBus  
1 x SMBus to backplane
- ◆ Expansion  
56-Lane PCIe signal via golden finger
- ◆ Watchdog Timer  
software Programmable support 1~255 sec. System reset
- ◆ Fan Connector  
1 x 4-pin Smart fan connector (CPU fan)  
2 x 4-pin Smart fan connector (System CPU fan)
- ◆ Power Supply  
5V/12V, AT/ATX support
- ◆ Operating Temperature  
-20°C ~ 40°C
- ◆ Operating Humidity  
5% ~ 95%, non-condensing
- ◆ Dimensions  
338.58 mm x 150.5 mm
- ◆ Weight  
700g



TPM 2.0 Support



## Features

- PEMUX full-size server / graphic grade solution
- LGA2066 socket supports Intel® Xeon W processor
- Four 288-pin Dual-Channel DDR4 ECC RDIMM/LRDIMM supports up to 256GB
- Supports IPMI VGA display.
- Supports M.2 2280 SSD
- Intel® PCIe GbE Intel® i210-AT with NCSI support
- Aquantia AQC107 10 GbE NIC
- Supports RAID function via SATA 6Gb/s
- TPM V2.0 hardware security function supported by TPM module

## Packing List

- 1 x PEMUX-XEW1 single board computer
- 1 x mini SAS to 4 SATA cable
- 1 x QIG (Quick Installation Guide)

## Ordering Information

Part No.	Description
PEMUX-XEW1-R10	Full-size PEMUX CPU Card supports LGA2066 Intel® Xeon® W C422, DDR4 ECC RDIMM/LRDIMM, VGA, Intel® PCIe GbE, Aquantia 10GbE, USB 3.1 Gen 1 (5Gb/s), USB 2.0, SATA 6Gb/s, HD Audio, IPMI and RoHS
32102-000100-200-RS	SATA Power Cable
CF-2011B-RS	High performance LGA1355/1356/2011 cooler kit, 130W
iRIS-2400-R10	IPMI 2.0 adapter card with AST2400 BMC chip for DDR3 SO-DIMM socket interface
32037-000600-100-RS	1 x mini SAS to 4 SATA Cable
32005-005000-100-RS	RS-232 cable