Advantech AE Technical Share Document

Date	2018 / 6 / 21	Release Note	□ Internal■ External
Category	■FAQ □SOP	Related OS	N/A
Abstract	Some PCIE slot can't work with i7 CPU in ASMB-813.		
Keyword	i7-5820K, i7-6800K		
Related Product	ASMB-813, ASMB-813I		

■ **Problem Description:**

While customer combined ASMB-813 with i7-6800K/5820K, they might encounter following phenomenon.

● PCI express card cannot be detected by PCIe x16_SLOT6.

● PCI express card only can be detected by PCIe x8_SLOT2 while user configured it as x4x4 under BIOS.

■ **Problem Analysis:**

1. Test various PCIe cards and get same results.
2. System detected PCIe cards when using XEON series CPU.
3. According to Intel specifications, XEON or other Core i CPU supported 40 PCI express Lanes, but i7-6800K or i7-5820K only supported 28 PCI express Lanes.

CPU model name	Max # of PCI express Lanes
Core i7-5820K	**28**
Core i7-5930K	40
Xeon E5-2680 V3	40
Core i7-6800K	**28**
Core i7-6900K	40
Xeon E5-2680 V4	40

4. In order to check PCI express Lanes allocation, AE installed PCIe cards on ASMB-813 and get following results.

PCI express Lanes	PCIe x8 SLOT2	PCIe x16 SLOT3	PCIe x16 SLOT4	PCIe x16 SLOT5	PCIe x16 SLOT6
40	x8	x8	x8	x8	x8
28	x4	x8	x8	x8	N/A

■ **Conclusion:**

i7-6800K or i7-5820K only supported 28 PCI express Lanes, so it is limited to use PCIe x8_SLOT2 and PCIe x16_SLOT6.

■ **Reference:**

https://ark.intel.com/

■ **Contact Window and File Link:**

If you have any questions, please contact Chiache.Chang #1341

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