

成果發表展示會

Training of Electronics Engineers in Industrial computers field

內容摘要

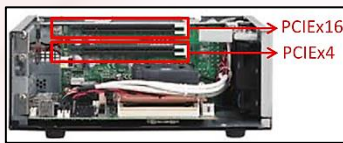
- ◆ Technology upgrade of replacing component/ high density IC/ multi-pin slot in the motherboards.
- ◆ Verification and Analysis of industrial products in wide range temperature environment.
- ◆ Selection/ Analysis/ Verification of alternative material for phase out components.
- ◆ Product debug in development and analysis of mass production quality problems.
- ◆ Product verification and system assembling during development stages.
- ◆ Participation in electrical training courses and technical workshops.
- ◆ PICMG 1.3 Half-size Backplanes design and develop.



實習成果

PICMG 1.3 Half-size Backplanes design and develop

- ◆ Recently, it is difficult to plan PCI Express x16 slot on the surrounding of backplane. Because this groups signals of PCI Express x16 belongs to native signals and support

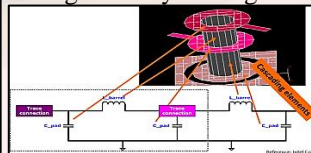


Graphic1



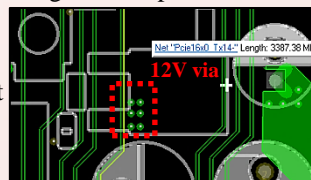
Graphic2

Gen3, Coupled with backplane is the limited of space. And so we need to consider several situations to achieve above goal during PCB layout stage.



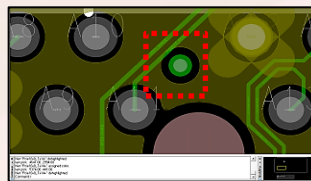
Graphic3

- ◆ The distance between high speed signals and power trace of high voltage is 20 mils at least. Compare with 3.3 Volt and 5 Volt, the noise of 12 Volt is larger than others. If 12 Volt is close to high speed signal, it would be influenced by power noise.



Graphic4

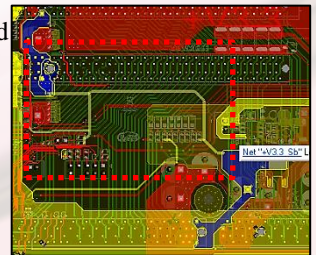
- ◆ Because high speed signal is very sensitive, the traces should completely reference ground in order to make the signal more stable.



Graphic5

- ◆ In order to let 3.3V Stand

By power (Blue area) transmission stably, we consider following factors to decide width of trace and how many via. Generally, In 1A current circumstances, Trace width of approximately 40 mil or one via. Therefore, It is recommended width of plane is at least 80 mils, and use two vias in the switch layers.



Graphic6

- ◆ After production, We arrange several tests to examine all of signals and functions. For example, Contain Design Quality Assurance, Signal Integrity, Power Integrity, Quality Assurance Laboratory etc.



Graphic7

- ◆ Summary : During this one-year intern, I have learnt many skills such as designing backplane and solving problems. In the beginning, this program is very challenging for me, but I finally achieved many difficult tasks assigned to me by teamwork with my colleagues and my efforts in the work.



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