

Desknote O/C Project Part II: IHS Removal

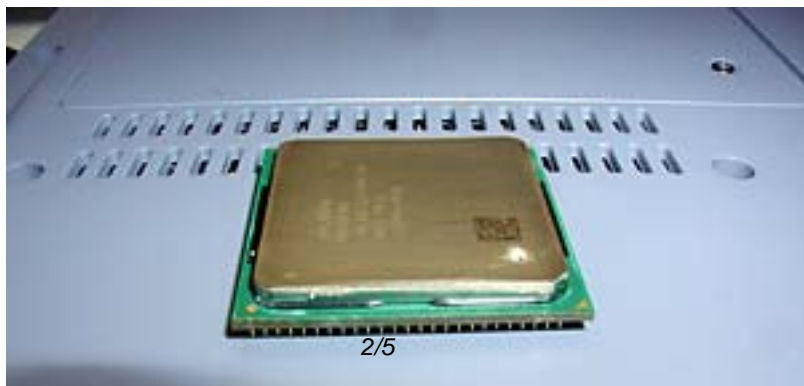
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Part I of my overclocking project resulted in reduced temperatures and taught me a little about lapping. However, since I didn't get to 2.4Ghz with my P4 1.8A (which was my goal if you missed [Part I](#)), it was not a total success. I decided I might be able to reduce the temperature a bit more by removing the Integrated Heat Spreader (IHS) from my Pentium 4, in order to directly cool the CPU. The main principle behind this is that the metal of the heatsink is a better conductor than thermal paste: the fewest layers of thermal paste (one) would therefore be ideal.

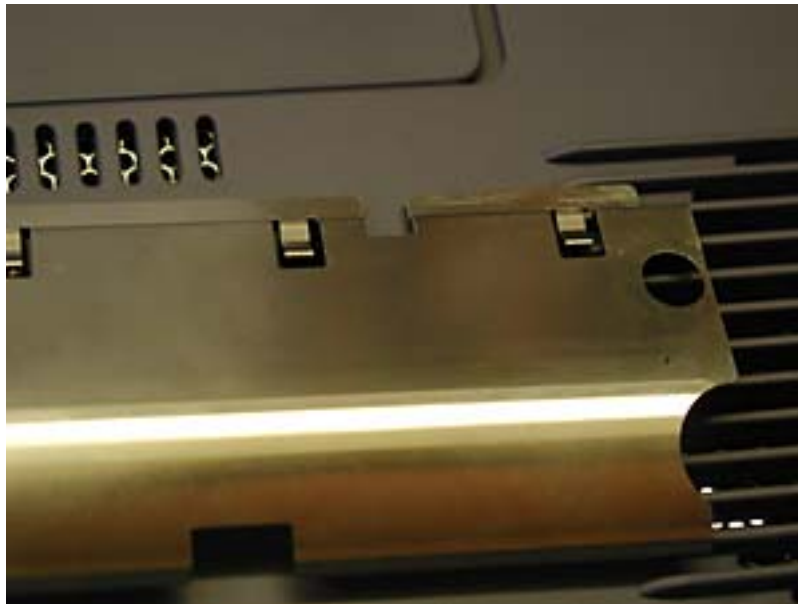
So I surfed around and found a post by someone (in the [H] [Forums](#) I think) who removed his IHS by sliding a piece of thread back and forth, using it as a saw around the edges, until he could lift it off. I thought this was a good idea, simply because I won't have to worry about scratching the surface of the cpu, and wrecking it. So off I went and started back and forth movements with a piece of thread and slowly cut away at the black glue holding the IHS in place. In the picture below you can see me making some progress, about 20 minutes into the project.



I figured once I got through the glue on the corner, it would just be a matter of sliding the string along to remove the IHS. Unfortunately, I'm impatient, the camera had to be returned in an hour, and the process would probably have taken longer than that. So unless I didn't want pictures of the mod for the article, I had to think of something fast. I had heard of people using razors to remove the IHS by starting at the opening in the glue, which you can see below, then sliding the razor along until it can be lifted off.



To aid in the removal of the IHS, you need a really thin and sharp razor. This makes it easier to do and less likely you will screw up. You slide a corner of the razor into the small opening in the glue, and then slowly and very carefully slide it all the way around the IHS. Unfortunately for me, I didn't have a razor available, and all of the knives in the kitchen were too fat. I was getting desperate when I remembered that the cover for my ram in my laptop was very thin and also pretty sharp. It was pretty sharp simply because of how thin it was, it had not been sharpened.



After switching to my makeshift razor, the procedure was done in about 15 seconds. After the glue was all removed, I had to twist the top and pull a bit to get it off because there was some thermal paste between the core and the IHS. It appeared to be just generic white silicon paste. You can see the IHS off and the paste still on the IHS and core in the next picture. If you look closely at the top right corner you will see how far I got with the thread idea before I gave up. I think it would have worked, it would just have taken a long time.



After a bit of work with Kleenex to remove the thermal paste from the core, I got what you can see below: a very shiny, very tiny core. It appears black when seen from above, but if you view it at an angle, it is just like looking in a mirror. In the picture is a 5p coin (I was in England at the time). For you North Americans, its about the same size as a 10 cent coin. So it is pretty small.



Well, what you're probably waiting for are the results, so here they are... I was unfortunately unable to reach my goal of running my 1.8A at 2.4B. I'm beginning to think that temperature is not my limiting factor, but rather the overclocked pci that leads to hard drive corruption. I see this regularly when trying to overclock my laptop. I did, however, notice a very small decrease in operating temperatures after performing the mod. This varied from 1-2C depending on load and ambient temperature. Not really the results I was looking for, but a decrease nonetheless. And I didn't fry my chip! So I guess the conclusion would have to be that you have to be one crazy mofo to attempt this mod. The gain was not very significant, but the risk was very real.

Since the goal of this project still eludes me, I am currently looking into other options. I've had a few suggestions from readers, one of which is that my power supply is too weak. I've also thought of getting a new hard drive that handles a higher PCI frequency better, but am unsure of which hard drive to get. If you have any ideas, about a good laptop harddrive or anything else that might help me reach my goal, feel free to email me about it.

Here is my email. I hope there will be a Part 3 to this series, since I want to hit 2.4Ghz with this chip. With your help, maybe I can achieve my goal!

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