Ah yes, can it run Crysis!

This is a fun thought experiment actually. The minimum CPU spec for Crysis is a Pentium 4 @ 2.8GHz. This actually makes figuring stuff out a little easier since the P4 is a single core CPU. We do have to make a few guesses here. Crysis is power hungry, so let’s assume that on a P4, CPU usage will average 90%. That means that Crysis is performing around 2.5 billion calculations per second. That should yield around 30 FPS, which is about 83 million calculations per frame. With a resolution of 1920 x 1080, that’s 2,073,600 pixels. That means it’s roughly 40 calculations per pixel.

But, now we have to think about bus widths. If we boil a single calculation down to just moving a 32-bit value from one location to another, the P4 can do that in a single shot because it has a 32-bit wide bus. The UE14500 only has a 1-bit wide bus, so that same operation takes 32 distinct operations on the UE14500. Which means that the UE14500 needs to do roughly 1,280 calculations per pixel.

And now we’re up to speed. I don’t know for sure at this point, but I think it’s possible to push the UE14500 to 100Hz. That means it’ll take 12.8 seconds to calculate one pixel. Working out from there, that’s 26,542,080 seconds to calculate a full frame. That’s 442,368 minutes, or 7,372 hours, or 307 days.

So, sure, it could run Crysis, but only at a blistering frame rate of 1.2 frames per year!