

Intel's Core 2 family - TOCK lines References

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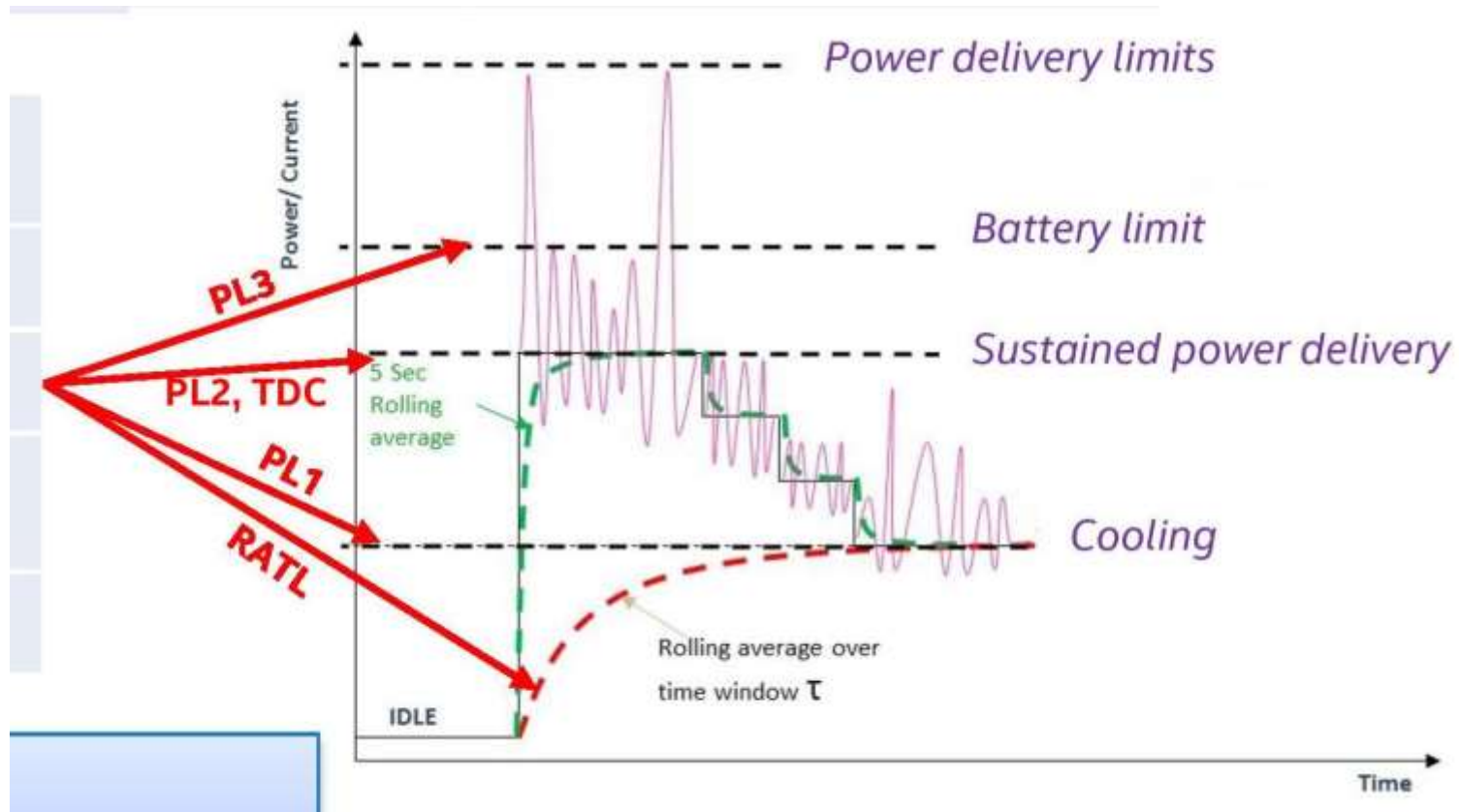
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 by Ian Cutress on October 19, 2018 9:00 AM EST

Here we have four horizontal lines from bottom to top: cooling limit (PL1), sustained power delivery (PL2), battery limit (PL3), and power delivery limit.

The bottom line, the cooling limit, is effectively the TDP value. Here the power (and frequency) is limited by the cooling at hand. It is the lowest sustainable frequency for the cooling, so for the most part TDP = PL1.

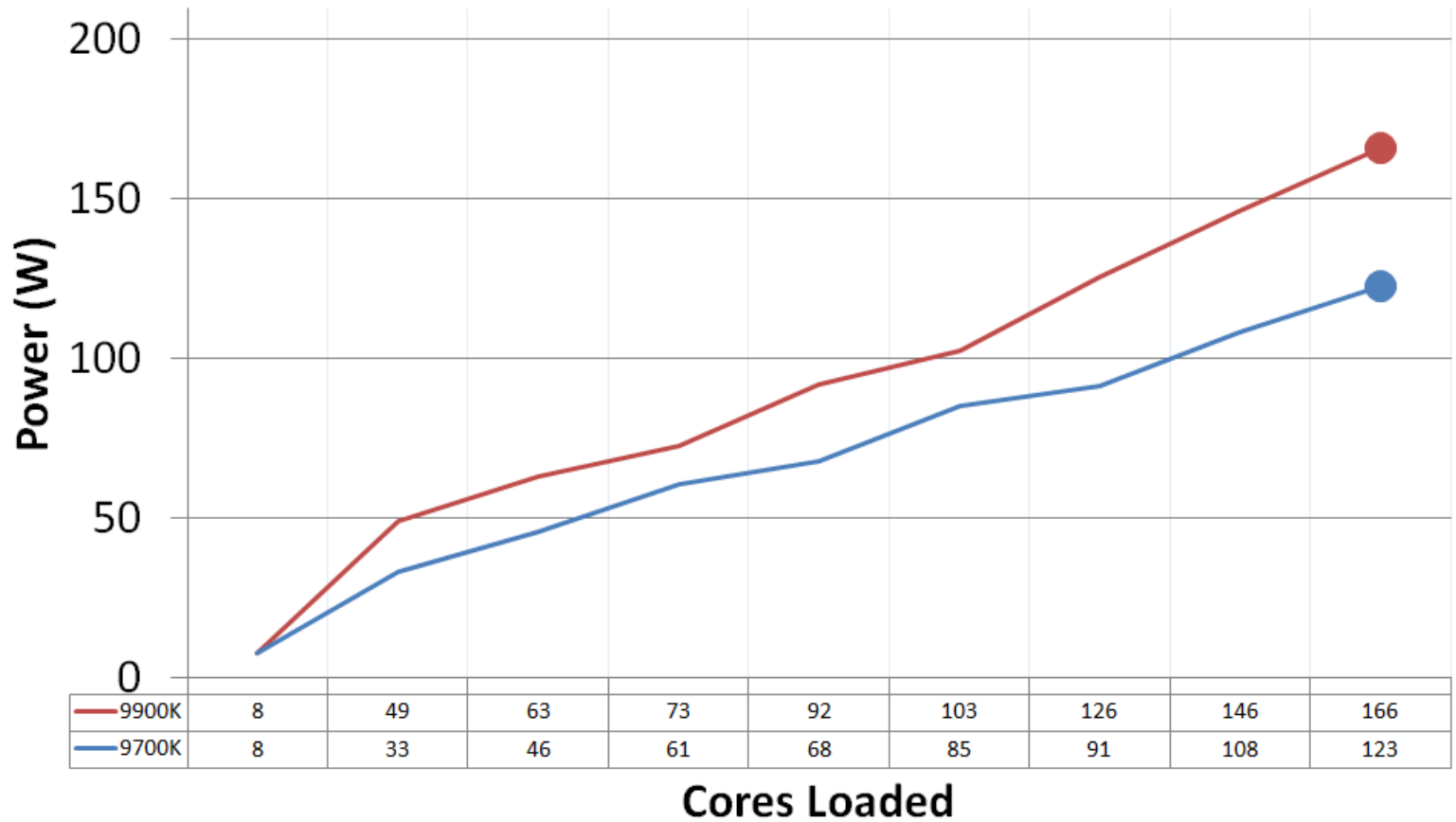
This is our '95W' value.

The PL2 value, or sustained power delivery, is what amounts to the turbo. This is the maximum sustainable power that the processor can take until we start to hit thermal issues.

When a chip goes into a turbo mode, sometimes briefly, this is the part that is relied upon. The value of PL2 can be set by the system manufacturer, however Intel has its own recommended PL2 values.

In this case, for the new 9 Generation Core processors, Intel has set the PL2 value to 210W. This is essentially the power required to hit the peak turbo on all cores, such as 4.7 GHz on the eight-core Core i9-9900K. So users can completely forget the 95W TDP when it comes to cooling. If a user wants those peak frequencies, it's time to invest in something capable and serious.

Intel Core 9th Gen Package Power Draw



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