

# Driver glitch limits overclocking of Nvidia's GeForce 7800 GTX chip

By *srlinuxx*

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Modern hardware such as Nvidia's latest graphic chip generation support temperature monitoring features that automatically can decrease clock speed and even disable graphic cards when the chip gets too hot. This "software protection mode" however works in two directions.

The card is not only shut down when temperatures get too high, but also when they fall below a certain level. This is especially the case when GeForce 7800 GTX cards are prepared for overclocking with water or liquid nitrogen cooling systems.

Nvidia confirmed in an email to Tom's Hardware Guide that the graphic chip will switch into software protection mode when die temperatures reach a range of 30 to 35 degrees Celsius. "There is an issue with our thermal detection software that doesn't let you supercool the chip to run overclocking tests," Nvidia's Nick Stam said.

Nvidia did not provide more details on the glitch. Card manufacturers told us that effects of the activation of software protection mode can range from a decrease in clock speed or even a shutdown of the card. Usually, the card only slows down when temperatures climb above 115 degrees Celsius. Typical operation temperatures are between 55 and 75 degrees, Stam said.

According to Nvidia, the issue is based solely on software and will be corrected with a new driver version that is scheduled to be available by mid-July. Until then, there is a "quick/dirty fix" available from XFX for users who need to solve the problem right away. "But the driver fix will be best route" to enable overclocking through extreme cooling devices, Nvidia said.

By D. Polkowski & W. Gruener

Tom's Hardware Guide

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