# ASRock Blazing OC Tuner User Guide

Overview

Blazing OC Tuner allows AM5 CPUs to alternate automatically between boosting multi-threaded performance and boosting single-threaded performance, based on temperature and current.

Below a specified threshold current, Precision Boost Overdrive will be active. When the CPU reaches the threshold current, the system will switch to manual OC. When the CPU temperature rises due to the manual OC mode and it exceeds the specified threshold temperature, it will switch back to Precision Boost Overdrive mode.
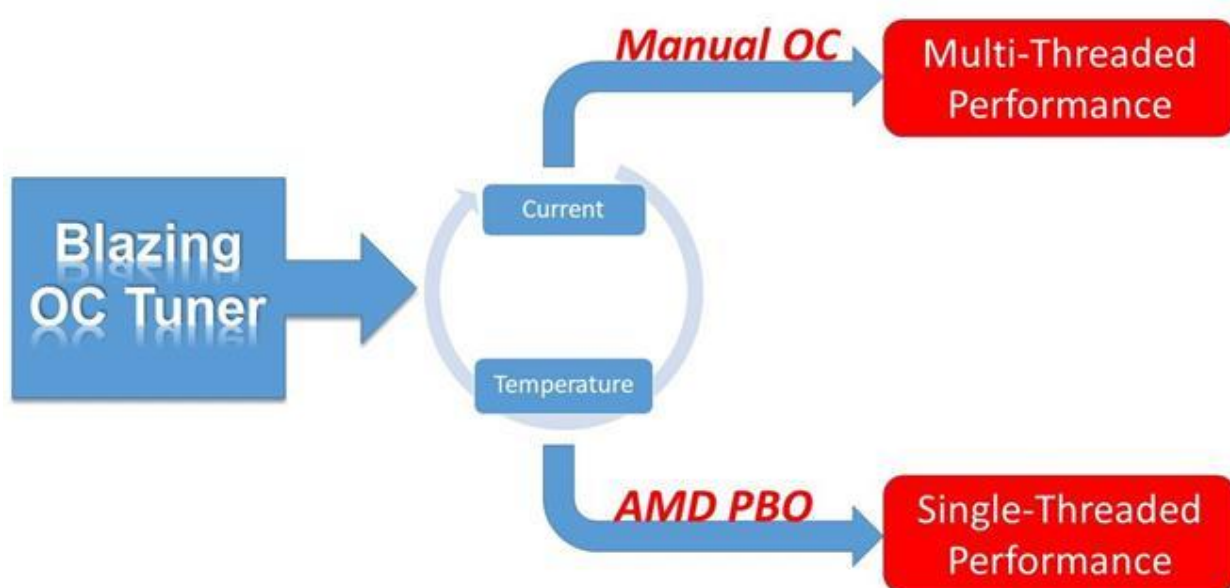
This idea is to combine overclocking of all cores and automatic boost of a single core to get the best performance out of your CPU.
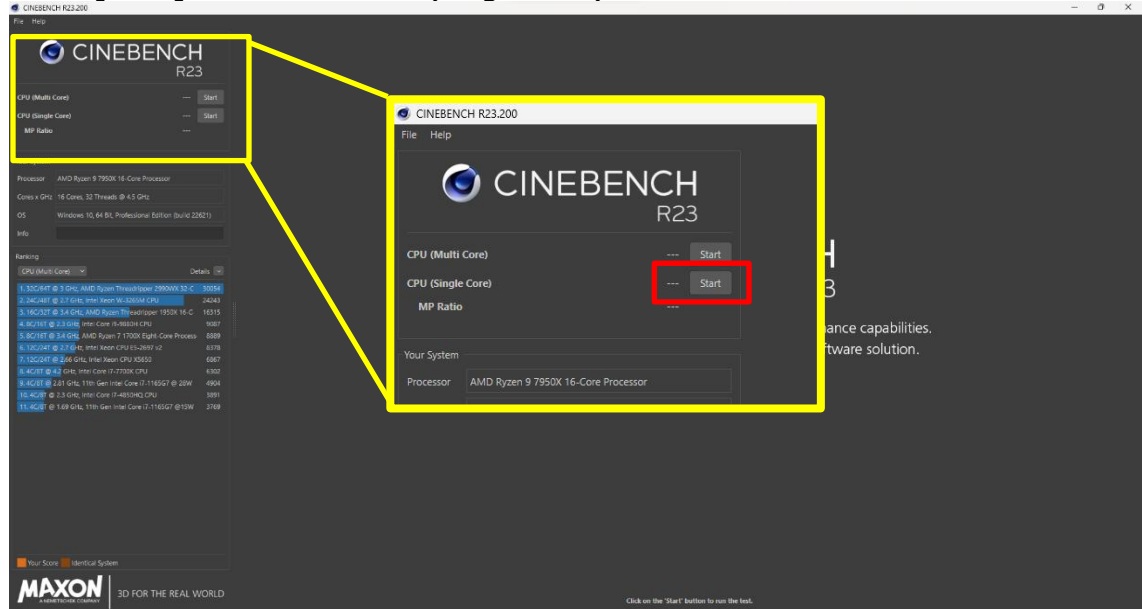
Storage Retention: 2 Years

Blazing OC Tuner Setup Procedure

**(A) <u>Enter BIOS setup and load default settings</u>**

(B) <u>Determining the reference value for the threshold current</u>
Boot into the OS and open Blazing OC Tuner. Go to the System Info tab. Install and run Cinebench R23.
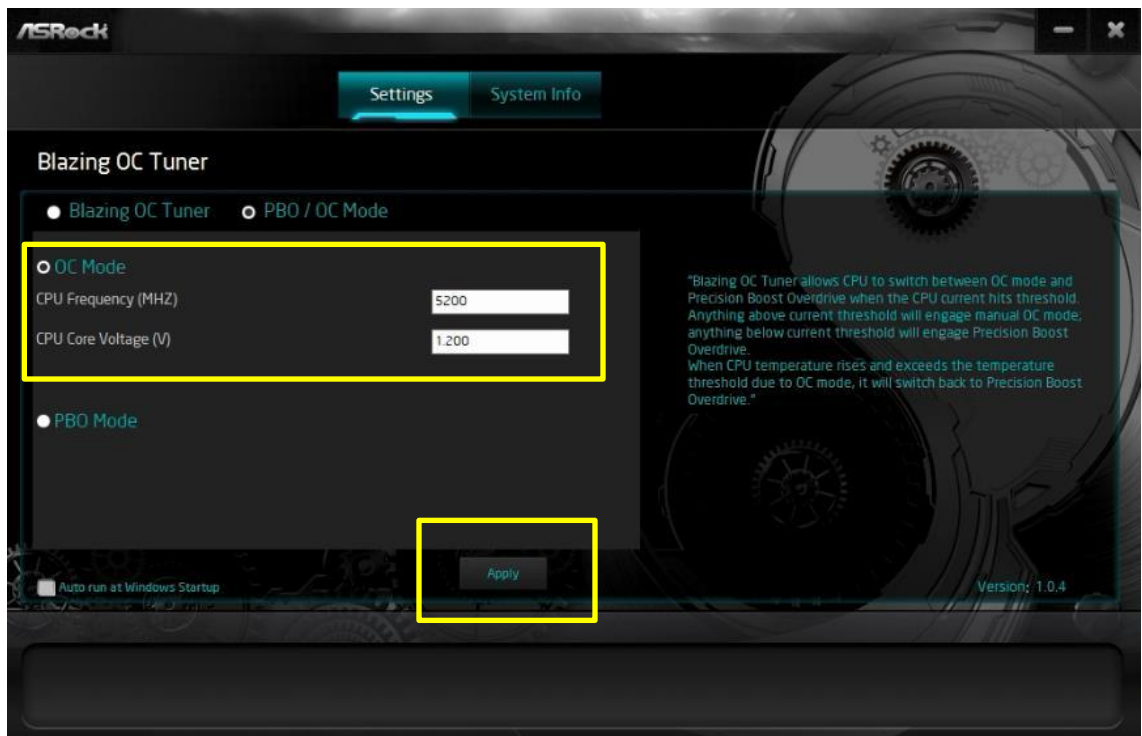1. Press [Start] to run the "CPU (Single core)" benchmark.

2. While the benchmark is running, monitor the "Current" shown on the System Info tab in Blazing OC Tuner. In our example here, the current ranged from 25A to 35.1A.
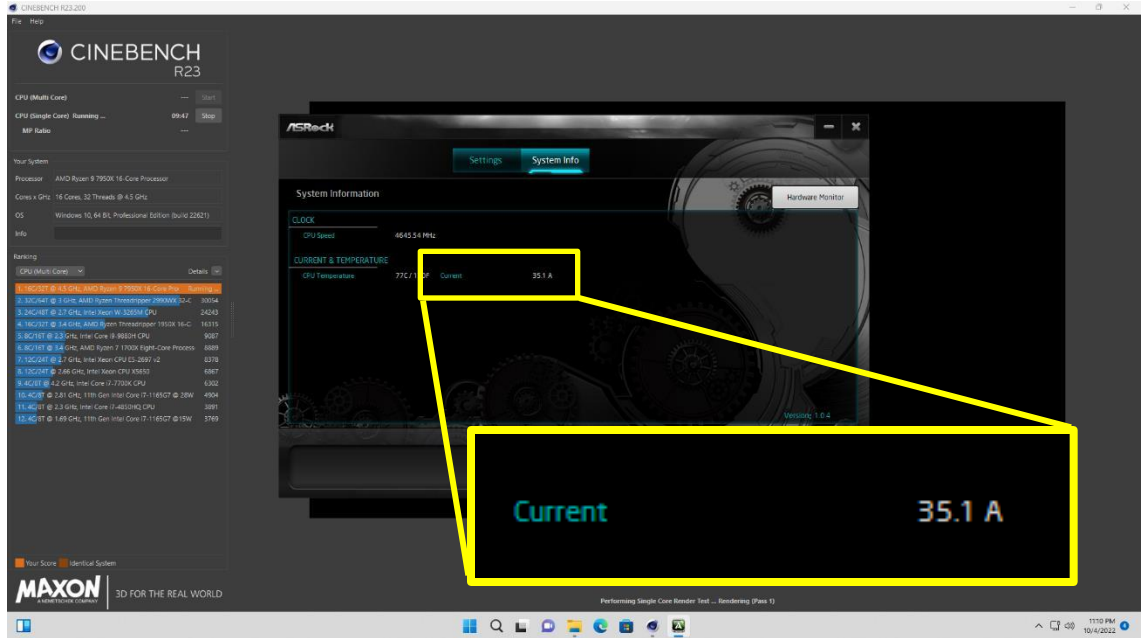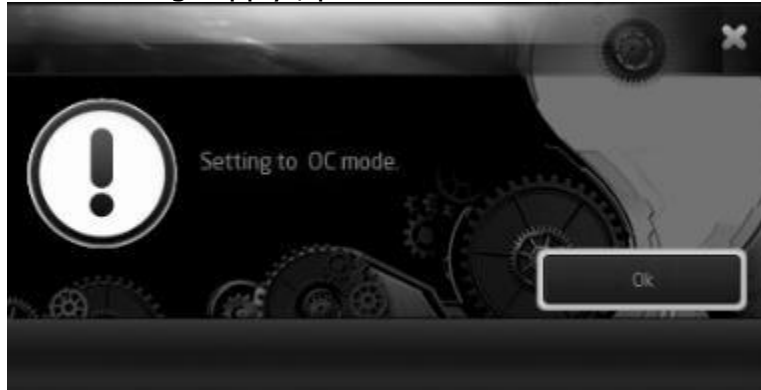
(C) Applying manual OC settings

Go to Settings tab and select PBO / OC mode.

1. Select OC mode and adjust the values. For our example we used a Ryzen 9 7950X. The default all-core turbo of this CPU is 4.9~5.1GHz. We tried a CPU frequency of 5.2GHz with Vcore at 1.2V. *These values cannot be used for every CPU! **

2. After clicking "Apply", please click "OK" to confirm the changes.

The limits for CPU OC Frequency and CPU Core Voltage depend on the AMD processor and the cooling solution that is used.

Please note that overclocking may affect the system stability, or even cause damage to components and devices. It should be done at your own risk and expense. We are not responsible for possible damage caused by overclocking.
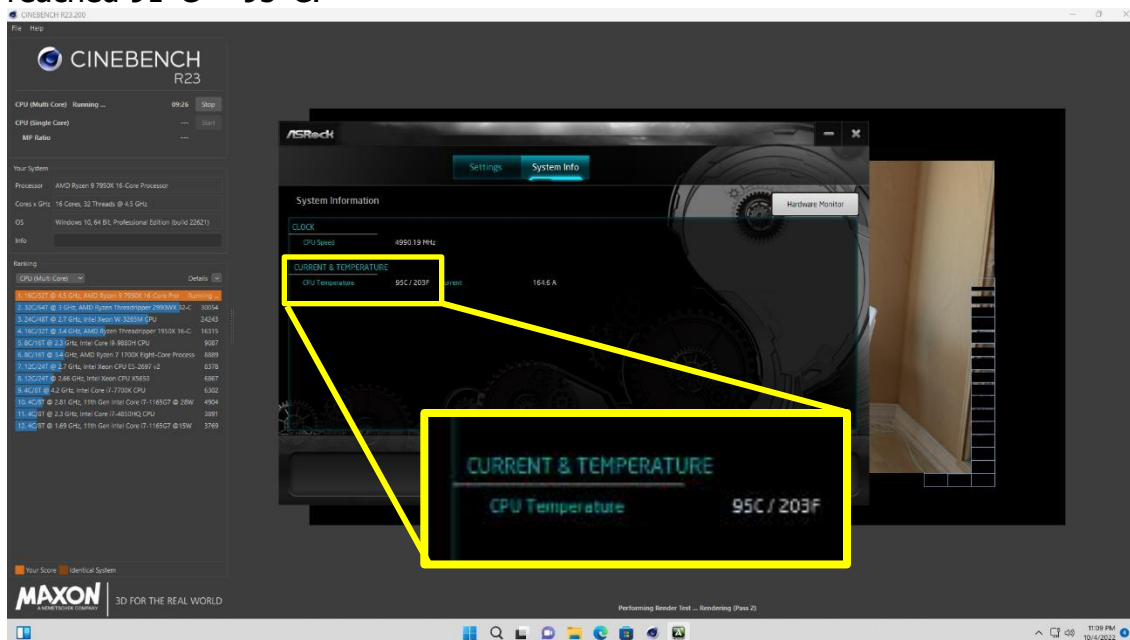
(D) <u>Determining the reference value for the threshold temperature</u>

Go to the System Info tab in Blazing OC Tuner and run Cinebench R23.

1. Press [Start] to run the "CPU (Multi core)" benchmark.
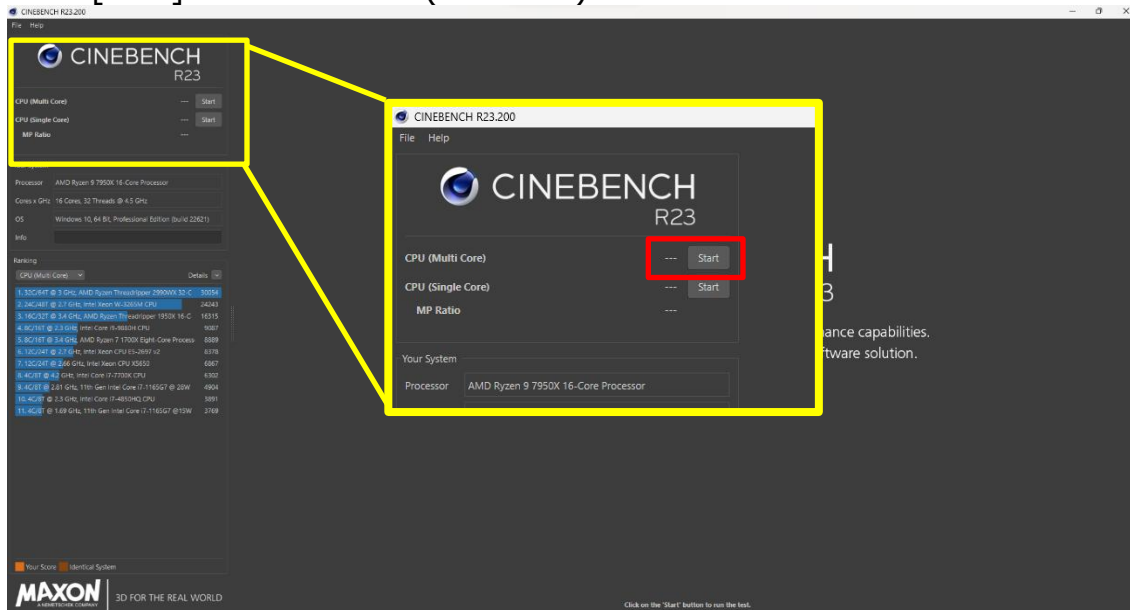
2. While the benchmark is running, monitor the "CPU Temperature" shown on the System Info tab in Blazing OC Tuner. In our example here, the CPU temperature reached 91°C ~ 95°C.


The temperature depends on your CPU cooling solution.
Fan settings can be changed in BIOS > HW monitor, in order to optimize the cooling.

(E) Optimizing the Blazing OC Tuner settings

Please select Blazing OC Tuner in the Settings tab. It shows four parameters:
- CPU Frequency (MHZ)
- CPU Core Voltage (V)
- Current Threshold to switch to OC mode
- Calibrated Temperature Threshold to switch to PBO

The CPU Frequency and CPU Core voltage will be the same as set for manual OC mode (Step C). Keep them unchanged.
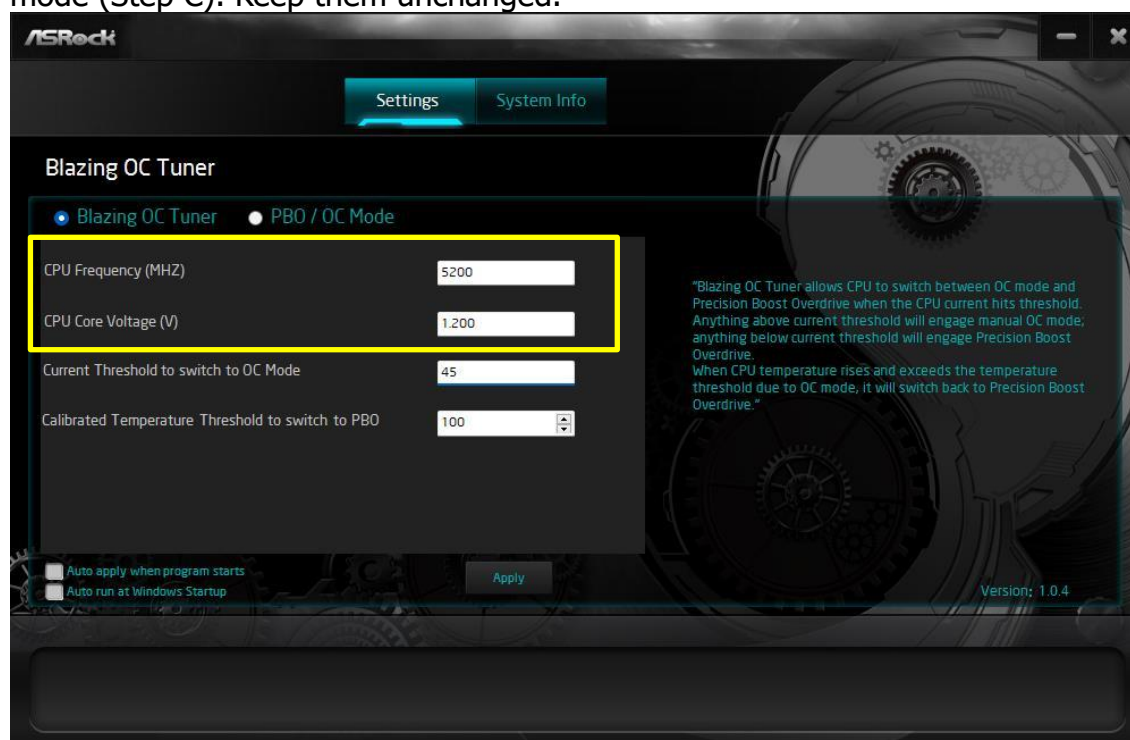
By following steps B and D, we have determined reference values for the thresholds: CPU current (35A) and CPU temperature (91°C ~95°C).

- Current Threshold to switch to OC mode
  This value must be more than the current seen in step B (35A).
  For example, in our test configuration, we add 10(A); 35 + 10 = 45A

- Temperature Threshold to switch to PBO
  Based on the test results in our example, the optimized value is around 100°C.
  Please run you own test to determine a suitable value for your system.
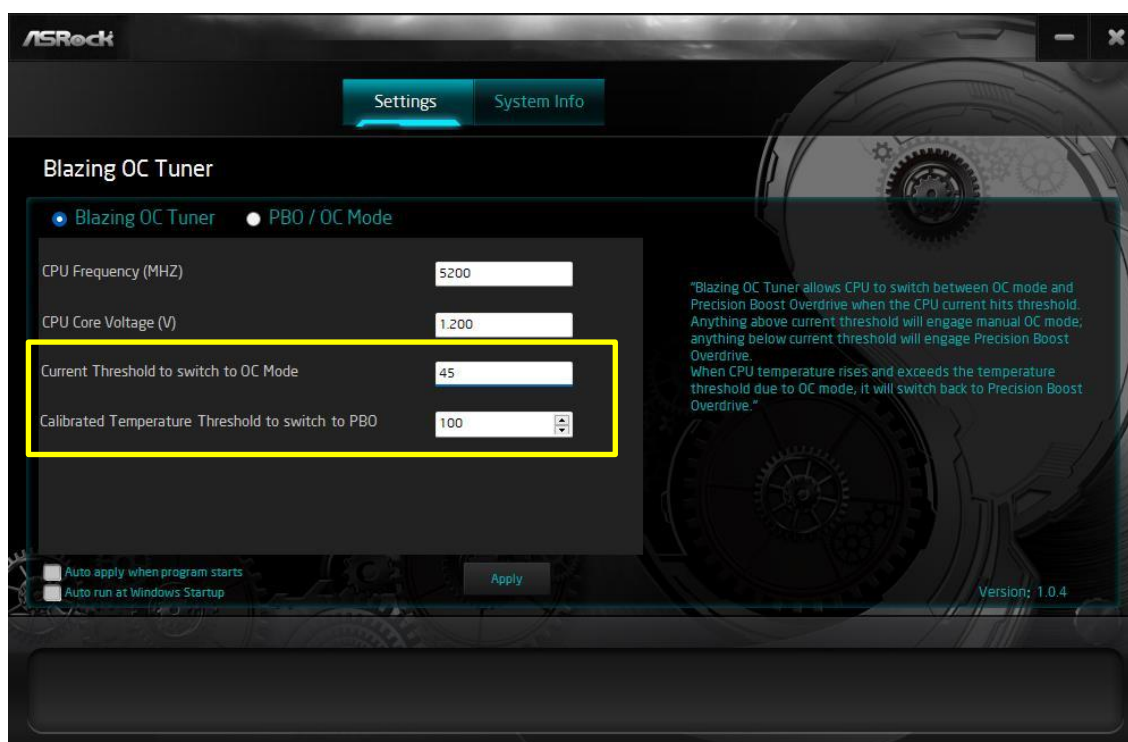
In this example, if the CPU current is under 45A and the temperature is below 100°C, the system will enter PBO mode to obtain a higher single core turbo and get better single-threaded performance.

If the CPU current is more than 45A and the temperature is below 100°C, the system will enter manual OC mode for an all-core turbo and get better multi-threaded performance.

If the temperature is 100°C (or higher), the system will directly enter PBO mode.

Temperature / Current	Under 100°C	Over 100°C
Under 45 (A)	PBO mode	PBO mode (Unlikely conditions)
Over 45 (A)	Manual OC mode	PBO mode