

Central Brain Identifier

Frequently Asked Questions v1.2

Questions:

Answers:

1. Why does CBId incorrectly show an OPN number of my processor?

In cases when the processor is overclocked CBId inaccurate determine its real OPN number. The AMD Athlon XP and Duron processors don't have any specific ID that can be used for the appropriate OPN identification. This number is build by CBId using the current CPU settings, like the Clock Ratio, Clock Frequency, etc.

2. CBId does not determine the CPU temperature.

Please, see the value of the I/O Chip descriptor, which is located in the left corner of the bottom side of CBId window. If it shows something like FFFFFFFF then the I/O Chip model of your motherboard was not determined at all. This happens when your motherboard's Vendor is ASUS. Very often these motherboards are equipped with the in-house design I/O Chips from ASUS. They do not support a classic LPC interface like Winbond or ITE I/O Chips for the CPU temperature and CPU VCore sensing.

3. CBId does not determine the CPU Voltage core.

See the answer to the question 2.

4. Why is the temperature of my processor incorrectly determined?

At first, specify the value of the I/O Chip descriptor. If it doesn't equal to the FFFFFFFF then you have to change the current CPU temperature sensing diode to another one. There are two methods to change it: a) double click on the field where the incorrect value is shown; b) open the CBIdCfg.ini configuration file and set an another value (1 or 0) to the TemperatureSensor parameter. Save the settings in the file. If you need to adjust the temperature indication open the CBIdCfg.ini configuration file and assign a new temperature correction value to the TemperatureCorrection parameter.

5. Why is the CPU Voltage core incorrectly determined?

At first, specify the value of the I/O Chip descriptor. If it doesn't equal to the FFFFFFFF then try to change the current VCore sensing diode to another one. There are two methods to change it: a) double click on the field where the incorrect value is shown; b) open the CBIdCfg.ini configuration file and set an another value (1 or 0) to the VCORESensor parameter. Save the new settings to the file.

6. Why does CBId detect my Barton like Thorton w/512K?

Activate the Processor tab and confirm the value of the Version field. All you need to know is that the classic Barton core with the unlocked multiplier has a Version of 2 or 12 and the newest desktop and mobile Barton Core has a Version of 15. A Thorton Core with the 512K L2 cache size has the Version numbers of 10 or 11. The range of CPU overclocking is also depended on the Version number. The highest the value the better CPU overclocking.

7. Glossary.

P-STATE TAB

- **Mobile VRM**

This field defines a type of processor voltage regulator installed on the motherboards. Default is 'yes' (mobile type).

- **V-Stabilization Time**

The **Voltage Stabilization Time** (VST) defines the amount of time in microseconds required for the processor's core voltage regulator to increase the processor's core voltage. The default is 100 µs.

- **Max. Voltage Step**

The **Maximum Voltage Step** (MVS) defines the maximum voltage increment the processor driver can use when changing from a lower voltage to a higher voltage. For the processor driver, when increasing core voltage, the next VID = CurrVID – 2^{MVS}. Default is 0.025 V.

- **PLL Lock Time**

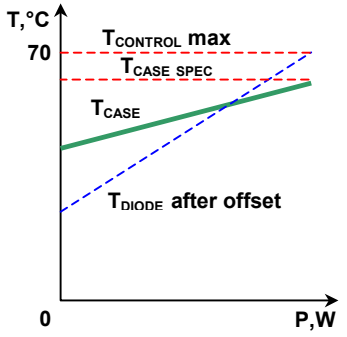
The **PLL Lock Time** value defines the time required for the processor PLLs to lock in microseconds. The PLL Lock Time value is specified in the processor data sheet and refers to all components of PLL lock including frequency lock, phase lock, and settling time.

- **Max. Temperature**

The **Maximum Temperature** determines a case temperature specification (T_{CASE} max) of the processor with revision D0 and higher and actually represents the highest temperature of the processor.

- **Thermal Offset**

The **Thermal Offset** field defines the thermal diode offset. It is used to correct the measurement made by an external temperature sensor. With the diode offset, the thermal diode can be used to ensure the processor is within its functional temperature limits. Each CPU has unique diode offset. For example, a temperature sensor reports 92°C, the thermal diode offset is 22°C, so the actual temperature of the processor is calculated by simple formula: 92-22=70°C. Note, that 70 is maximum even when case temperature specification is not 70°C (see illustration). When the thermal diode measurement minus diode offset equals the maximum control temperature ($T_{CONTROL}$ max), the processor has reached its case temperature specification (T_{CASE} max). The maximum control temperature is provided in the appropriate power and thermal data sheet. The relationship between T_{CASE} max and $T_{CONTROL}$ max is described in the appropriate functional data sheet.



CONTROLLER TAB

- **2T Timing Enable**

The use of 2T timing allows support of many DIMM combinations at the maximum DDR speeds. The 2T timing feature causes commands and addresses to be driven for two clock cycles and qualified with an associated chip select on the second clock cycle, allowing an extra clock of setup to accommodate heavy DIMM loading (such as double-rank DIMMs). Refer to the *BIOS and Kernel Developer's Guide for the AMD Athlon™ 64 and AMD Opteron™ Processors, order# 26094*, for the DIMM combinations that require 2T timing to operate at the full DRAM speed. 2T timing is supported in CG and later silicon revisions.