CPUFSB Main Help Index

CPUFSB is a tool for changing the CPU speed while running Windows. This is done by altering the <u>FrontSideBus</u>

<u>Explaination of the Buttons and Fields</u>
<u>Working with CPUFSB</u>
<u>Trouble Shooting</u>
<u>Frequently Asked Questions</u>

Please visit my home page at
http://www.podien.de
for updates of my software and to see my other programs!

You can access CPUCooLs powerfull options quickly via the <u>right mouse button menu</u>   located in the tray.

Please be fair and register. It will help future development of this little program. Remember it costs a lot to buy the latest motherboards.

Dear Hackers!

I am aware of you, so I decided to make an easy registration number, not to mention. I sell my programs inexpensively. If you make cracks of my program or make a public registered version you might cause me to have to stop developing future versions, and that would not be good for that hardware depending on this program. Remember it costs a lot of money to have the latest hardware supported. As a matter of fact I have not made any money with that program, all the money I get goes to new hardware. As you know there are not that many interesting programs as cost effective as this one, so if you can restrain yourselves form cracking an easy registration number, it will ensure the production future of this and other programs to come.

FrontSideBus

The FrontSideBus is the main Bus system. It connects the CPU with the memory. Mostly there is a constant divisor to the PCI Bus, so that the change of the FrontSideBus also alters the PCI Bus speed. And last not least the SMBUS speed is altered also.
Normal FrontSideBus speeds are
66 MHz for intel Celeron (modern versions also have 100 MHz)
100 MHz for intel PII / old PIII
133 MHz for newer PIII
66 / 100 MHz for AMD K6(-2,-3)(+)
100 / 133 MHz for AMD Athlon

SMBUS

The SMBUS is a system bus, developed by intel. It connects with a speed of up to 100 KBit/sec all devices that are connected to this bus. It is a two (three) wire connection, mostly compatible to the i2c bus.
Devices that are connected are mostly

- SPD of SDRAM
- PLL
- Hardware monitors for temperature, voltage and fan speed
- LCD Displays
- Akku voltage monitors
- Notebook control

PLL's

PLL's are the devices that create the CPU frequeny. PLL stands for Phase Locked Loop.
Here is an example:

Where do I find these PLL's on my mainboard??

Mostly it is near by a crystal which has the frequency of 14.3... MHz. Look at you mainboard and you will find a silver part that is about 1 cm long (it looks like a metal stick) and has the numbers 14.318 on top of the case. Nearby this crystal there is the PLL (Phase Locked Loop) that generates all frequencies of the mainboard. There are only six manufacturers of PLL IC's:

CMedia

Cypress

IC Works

ICS

IMI

Pericom

PLL

Winbond

If you have found the IC you may see some parts of the graphics above on the top of the IC. Then you coose the manufacturer, and all PLL's of that manufacturer are displayed here. If your numbers match this means you have chosen the correct PLL.

It is dangerous to change this frequency. It will be done at your own risk!

You can choose that PLL. Then it is advisable to take the frontbusspeed you have switched with jumpers and set this frequency first. If you succeed, you can try other frequencies as well. If you fail, you computer has to be powered off to recover. After some tries you will find the frequencies your hardware will work with.

Sometimes there are two or more versions of the same PLL listed with the same name but with an ' A' or ' B' next to it. This is for write only PLL's. They could not be read out before setting the frequency. So since it was necessary to suggest the contents of the PLL I switched on every output. Also on some PLL's I was not sure whether the frequency was 24 MHz or 48 MHz. or if the spectrum of the PLL was switched on or not, so I had to program different versions to choose from.

You can easily switch the frequencies by clicking on the tray symbol. If you have defined some values for the tray it is easy to switch the frequencies without entering the main dialog. It is better to take only tested frequencies for the

tray display

The actual frequency is shown in a small box. It is not very accurate (about .5%). But it will change if you are successful with changing the frequency.

You can read out the parameters of some read/write PLL's. That is good for finding the values programmed in that PLL. Send me these values and you will get a version of CPUCooL in return that has the unknown PLL. If you have a write only PLL on the mainboard, your computer could crash.

There is a list of implemented PLL's in the internet. And there is a table with mainboards and PLL's as well. Check if you find your mainboard there. If will speed up the process of finding the correct PLL.
Please give me an e-mail with your mainboard and your PLL and I will add it as soon as possible.

Working with CPUFSB

The most difficult and first thing is to find out the PLL. There are some details for finding it in the link.

Alternatively you can use the mainboard selection for finding out the PLL. The problem is that the mainboard manufactures sometimes change the PLL while producing the mainboards without notice. So it is the best to have a look at the mainboard.

Any PLL selection will overwrite the mainboard preselection!!!

If you have found the PLL, please make a backup of your system partition. Norton Ghost and Drive Image are good tools for that. Or use an extra small partition of your harddisk and install another version of Windows.

It is dangerous to change this frequency. It will be done at your own risk!

After selecting the PLL either via mainboard preselection or direct input please first try to set the current system FrontSideBusspeed. If the system crashes, the might be a bug or a wrong PLL definition in CPUFSB. If you succeed you can increase the FSB speed, till the computer crashes. **Keep a watching eye on the CPU temperature.**

If the computer has crashed, please switch off the power supply. Nothing else would help. On ATX systems you could not use the normal power switch as it is only a switch to the mainboard. Please use the switch in the power supply or unplug   the computer.

If you have problems, please read the FAQ section first.

After all you should select some frequencies for the tray display. You could activate it by clicking with the right mouse button on the tray icon of CPUFSB.

If you have found a new mainboard / pll combination please give me an e-mail so I can add that combination for other users.

Registration

Payment :   30 DM or 15 EUR or US$13
to
Wolfram Podien
Rohöfe 3
28832 Achim
Germany
Kto 1368364 at Bank 24 BLZ 38070724

You can get the current version at http://www.podien.de
Support at support@podien.de

Please buy my other product CPUCooL! The registration you get is the same
as for CPUCooL and you could use both tools!

Please send this form per e-mail or letter:

Operating system :

Mainboard manufacturer and type

How did you become acquainted with CPUFSB:

Anything ideas for improvement:

Any suggestions:

Put a personal check or a note into an envelope or send/wire the money directly to my bank. Every payment is welcomed and will help me to continue with this project.

Shareware

License Agreement

You should carefully read the following terms and conditions before using this software.   Unless you have a different license agreement signed by Wolfram Podien, your use of this software indicates your acceptance of this license agreement and warranty.

Evaluation and Registration
This is not free software.   Subject to the terms below, you are hereby licensed to use this software for evaluation purposes without charge for a period of 21 days.   If you use this software after the 30 day evaluation period a registration fee is required (See Registration). Payments must be in US dollars or Euro drawn on a German bank, and should be sent to the AUTHOR

Wolfram Podien
Rohöfe 3
28832 Achim
Germany.

When payment is received you will be sent a registration key for the last version of this program.

Governing Law
This agreement shall be governed by the laws of the Germany.

Disclaimer of Warranty
THIS SOFTWARE AND THE ACCOMPANYING FILES ARE SOLD "AS IS" AND WITHOUT WARRANTIES AS TO PERFORMANCE OR MERCHANTABILITY OR ANY OTHER WARRANTIES WHETHER EXPRESSED OR IMPLIED.
Provided that you verify that you are distributing the evaluation version you are hereby licensed to make as many copies of the evaluation version of this software and documentation as you wish for private purpose; give exact copies of the original evaluation version to anyone.   There is no charge for any form of a copy.
You are specifically prohibited from charging, or requesting donations, for any such copies, however made.

SPECIAL TERMS AND CONDITIONS

- **Distribution by BBS, on-line Services, FTP, FSP, News, WWW, Satellite, Other File Transfer Protocols**: The SOFTWARE and associated files may be copied, used and posted without charge and permission as long as the "Licence Agreement" set forth above are complied with.
- **Distribution on Floppy Disk / CD-ROM / DVD / Other Disk Types in a non-retail environment**: The SOFTWARE and associated files may be copied, and used and posted without charge and permission as long as the "Licence Agreement" set forth above are complied with.
- **Distribution on Floppy Disk / CD-ROM / DVD / Other Disk Types by Anonymous access FTP/WWW Shareware Archives**: (e.g., WinSite, SimTel, Windows95, etc.) The SOFTWARE and associated files may be copied, used and posted without charge and permission as long as the "Licence Agreement" set forth above are complied with.
- **Distribution on Magazine Companion Disk / CD-ROM / Other Disk Types**: The program and associated files may be copied, used and posted without charge and permission as long as the "Licence Agreement"   set forth above are complied with. I would greatly appreciate if you would inform me about any review(s) you write about the SOFTWARE. Thanks.
- **Distribution in a Retail Environment, Book Companion Disk / CD-ROM / Other Disk Types (Book):** You may not distribute the program without obtaining explicit permission from AUTHOR. I would greatly appreciate if you would inform me about any CD-ROM on which you put the SOFTWARE. Thanks.
- **Other (e.g. Retail not covered above) CD-ROM Shareware Distribution**: You may not distribute the

program without obtaining explicit permission from AUTHOR. I would greatly appreciate if you would inform me about any Shareware Distribution on which you put the SOFTWARE. Thanks.

- **Internet Providers Disk / CD-ROM / Demo Disks / Connection Kits / etc.**: You may distribute this SOFTWARE on your disk/CD only as bundled shareware with other programs without charge and permission as long as the "General Terms and Conditions" set forth above are complied with. If you intent to provide the program for your own diagnostic purposes then you may not distribute the program without obtaining explicit permission from the AUTHOR.
- **Software/Hardware Manufacturers & Suppliers**: You may not distribute the program pre-installed or otherwise on the machines you manufacture/distribute/etc. or bundled with your own products without obtaining explicit permission from AUTHOR.
- **Other Type of Distribution:** Please contact AUTHOR for details.

BY DISTRIBUTING THE SOFTWARE YOU ACKNOWLEDGE THAT YOU HAVE READ AND UNDERSTOOD THIS AGREEMENT AND YOU AGREE TO BE BOUND BY THIS AGREEMENT'S TERMS AND CONDITIONS. YOU ALSO AGREE THAT THIS AGREEMENT IS THE COMPLETE AND EXCLUSIVE STATEMENT OF THE RIGHTS AND LIABILITIES OF THE PARTIES AND SUPERSEDES ALL PROPOSALS OR PRIOR AGREEMENTS, ORAL OR WRITTEN AND ANY OTHER COMMUNICATION BETWEEN THE PARTIES RELATING TO THE SUBJECT MATTER OF THIS AGREEMENT.

Copyright: Wolfram Podien

=

Trouble shooting

PLEASE READ IT BEFORE STATING!!!

If Windows starts it executes CPUFSB, and it hangs.

Please boot Windows in the secure mode. Run RESET.EXE once, that comes with the package, and then you could boot it in the normal way again. RESET.EXE clears all entries of CPUFSB out of the registry. So the startup frequency and the other settings are lost. You can now adjust it as you like.

My computer hangs?!?

Please unplug the computer. Mostly the frequency was too high. If you press the reset button, mostly the frequency stays as it is, too high for the CPU. In most cases the frequency is not set by BIOS. If you unplug it, there is a total reset and the PLL is initialized by the power on signal. The RESET button mostly does not work either, because the PLL is not initialized at reset. So please unplug the whole system.

FAQ

My computer has a Winbond W83977 EF PLL. Is this supported?
No, this IC would never be supported as it is not a PLL but a floppy / peripherials controller. Have a look at <u>PLL</u> section to find the correct PLL

CPUFSB has detected the 9148-04 PLL. This is not going.
There is not build in PLL detection in CPUFSB. The PLL above is the first PLL I have added to the list. There is no way to detect PLL's but having a look at the <u>PLL</u> page.

CPUFSB only gives the error message "Your PLL is a write only PLL ...".
This is a normal message, no error. There are some PLL's you could only write to. The PLL manufacturer does not implement the read back functionality to save money. But what do you want? Mainly you want to set the new frequency and that should go without any further error, as this is a write operation to the PLL. There is not read necessary.

I only find the W211*H* PLL on my mainboard. It is supported?
Yes, I drop the last letter, as this is only tha packaging info. So W211 would be the   PLL you desire. **That is not only for the W211 but for all PLL's!**

But there is only a W211 A and W211 B in your list?
The W211 is a write only PLL. So I could not detect the state of one output. That may vary from mainboard to mainboard. So I implemented two PLL's for one device. You have to check out, which PLL is going. Mostly that output is not used. So both PLL's are working.

My PLL is from IC Works. Is it not listed?
IC Works was bought by cypress. I have put all PLL's into the cypress section.

My PLL has 3 settings for 100 MHz, with 33.2 MHz, 33.3 MHz and 33.4 MHz PCI Bus frequency. Which one should I take?
As a matter of fact there is in reality only one PCI bus frequency, the 33.3 MHz for the 100 MHz setting. The difference ist the SDRAM speed. With the lowest PCI bus frequency comes the lowest SDRAM frequency. With the highest PCI bus frequency comes the highest SDRAM frequency. So there is always the same 33.3 MHz PCI bus frequeny but there are differnt SDRAM speeds. And not all SDRAM speeds might work with your system.

TRAY Display

You can aktivate CPUFSB by clicking on the tray symbol with the right mouse button. Then a menu appears. You can coose up to 4 frequencies. These frequencies has to be selected in the main menu on the left side.

There is an additonal menu item to end the programme.

Buttons and Fields

The main menu of CPUFSB is divided into two parts, the right and the left part. The left part is for testing the PLL's and the right part is for setting up the frequencies CPUFSB could set.

Left Part

Mainboard Manufacturer / Mainboard type
This selection is for a quick access to the PLL's. If there is a user of that mainboard, who has mailed the mainboard / PLL combination to me before, the mainboard is added to a list. So the next user with the same mainboard must not have a look at the mainboard to find the PLL. It is only a **preselection**. If there is another PLL on your mainboard, please select the PLL found. This would overwrite any mainboard selection.

PLL manufacturer / PLL type
Here you could select the PLL of your mainboard.
If your PLL manufacturer is ICWorks have a look at the cypress menu item, as cypress has bought ICWorks. For details how to find the PLL have a look at the PLL section.

Frequency to set
Here you could select the desired frequency. Only the frequencies shown are available.

Get frequency
With this button you could read out the PLL (if it is a read/write PLL). If not a message is displayed. This is normal for write only PLL's.
Mostly the answer is wrong in the frist time, because the PLL must be set once to answer correctly.

Set frequency
You could set the new frequency with this button. **It is on your own risk!** Have a look at the Trouble Shooting section to see what you could do if it fails. And have a look at the Working with CPUFSB section to see the preparations and hints.

Actual frequency
Here is the actual frequency displayed. It has a tolerance of 0.5 %. It is only updated it you press the get / set frequeny or the Get PLL button. It is not updated periodically.

Multiplier
The multiplier is displayed correctly only for the AMD processors, as the multiplier id for intel processors is not implemented yet. The multiplier is set for intel processors when you have set one frequency. I will try to implement the intel multiplier soon.

PLL output string
Here you could see the current PLL settings. Only for read / write PLL's. You must press the Get PLL button to get the results. On some write only PLL's the computer might crash. Have a look at the trouble shooting section for help

Exit CPUFSB after call from the autostart folder
With this button you could leave CPUFSB immediately after CPUFSB has changed the frequency when it is called from the autostart folder. So you don't waste memory. But you could not change the frequencies via tray menu any longer.

Right Part

Tray frequencies

Here you could select the frequencies to be displayed when you click on the tray symbol with the right mouse button. Up to four different frequencies could be selected. Please use one frequency for the standard frequency to have a reference if there is an error condition.

Set FSB on next CPUFSB start

Here you could select the frequency that is selected after CPUFSB is started. It is for both, start in the autostart foulder and start via start menu. Please do not select the highest frequency possible in this item. The CPU may alter...

Set frequency at shutdown

If windows is shut down this frequency is set. It is for both shutdown to DOS mode and complete shutdown.