ATI Tray Tools

This help for internal use only.

Reset clocks on exit

Check this option to reset GPU and Memory clock after ATT exit. This can help you to aviod problems with suspend mode.

Mipmap Detail

The **Mipmap Detail** Level slider enables you to adjust the 3D mipmap quality level. Mipmaps are a set of texture maps of differing size and resolution used to represent a given texture. The texture map used for a 3D object is determined by the application, how close you are to an object and the **Mipmap Detail** Level slider setting. Maximize overall 3D performance by moving the slider to the left. Enhance overall 3D image quality by moving the slider to the right.

Texture Preference

The **Texture Preference** slider enables you to select the 3D texture quality level. Maximize overall 3D performance by moving the slider to the left. Enhance overall 3D image quality by moving the slider to the right.

OpenGL Settings

Configures the OpenGL settings of your graphics processor

Wait for Vertical Sync.

Dissable this allows 3D applications to run at their highest possible frame rate
Setting to **Application Preference** gives 3D applications the ability to enable **Wait for Vertical Sync**. If an application does not specify, then **Wait for Vertical Sync** is disabled.

TRUFORM™

TRUFORM™ uses Higher Order Surface geometry to generate more detailed and realistic terrain and character models for applications that support **TRUFORM™** technology. Selecting **Application Preference** gives 3D applications the ability to enable **TRUFORM™**. If an application does not specify, then **TRUFORM™** is not enabled. Selecting **Always Off** disables **TRUFORM™**

Anti-aliasing

SMOOTHVISION™/Anti-Aliasing enhances 3D image quality by softening the jagged edges found in 3D scenes, providing smoother, more realistic 3D objects. Increasing.the number of samples results in better image quality.

Anisotropic Filtering

Anisotropic Filtering enhances 3D image quality by increasing the number of texture samples taken per pixel, resulting in highly detailed 3D scenes. Increasing the number of samples results in better image quality.

Performance Anisotropic Filtering

Check this to enable **Performance Anisotropic Filtering**. This offers enhanced image quality while maintaining high 3D performance levels

Quality Anisotropic Filtering

Check this to enable **Quality Anisotropic Filtering**. This uses an advanced anisotropic filtering technique to provide the best possible image quality

Quality with Trilinear

Check this to enable advanced **Anisotropic Filtering** which means - "enable filtering on all texture stages".

Z-Buffer depth

Enables you to explicitly set the **Z-Buffer depth**. Most applications will work best with the **Disabled** setting

Triple Buffering

Enabling **Triple Buffering** will improve the frame rate of games when vertical sync is enabled, only if the frame rate is less than the vertical sync refresh rate. In low-memory situations, enabling **Triple Buffering** may decrease application performance as there will be less frame-buffer memory available for texture and geometry data. If there is insufficient memory available to support **Triple Buffering**, it will be automatically disabled

Refresh Rate Override

Refresh Rate Override enables you to set the display rate for full-screen applications or games utilizing OpenGL. These applications may have a default refresh rate lower than optimal. This control allows you to explicitly set the desired refresh rate. But I recommend to use RefreshLock feature because it has more options to configure.

Refresh Rate Override

Refresh Rate Override enables you to set the display rate for full-screen applications or games utilizing Direct3D. These applications may have a default refresh rate lower than optimal. This control allows you to explicitly set the desired refresh rate. But I recommend to use RefreshLock feature because it has more options to configure.

Profiles

Here you can Save/Load or delete profiles. If you want to override any profiles, just enter same name. ATT will ask you any way if you ant to overwrite existing profile.

Alternate Pixel Centers

May eliminate problems with certain Direct3D games that display vertical and horizontal lines around textures or display text incorectly.
(For example Need Foir Speed 5 (Porshe Unleashed)

Support Bump Mapping

Check this to enable application to use Bump Mapping technique.
Bump Mapping is a process for simulating enhanced depth without requiring additional geometry. This takes several forms, e.g. Dot3 & Environment Bump Mapping, though they must be specifically supported by an application.

Support DXT texture format

Check this to enable Application to use DirectX texture compression.
Always enable it! Disable this options is not recommended for either compatibility or performance reasons, nor should it be necessary for troubleshooting purposes either.

Enable Trilinear Filtering Optimization

Enable Trilinear Filtering Optimization. Can boost performance in applications with trilinear filtering. Together with Anisotropic Filtering Optimization, you can gain additional 10-15% of performance.

Enable Anisotropic Filtering Optimization

Check this options to enable specific Anisotropic Filtering Optimization. This offers enhanced image quality while maintaining high 3D performance levels (like **Performance** type) but with better quality than Performance.

Overclocking

This window allow you to set cloks for GPU and Memory. Edit memory timings. Save and load overclocking profiles.

Clocks

Show information about default clock for your card and current clocks.

Show as DDR

Check this options to show Memory clock as DDR.

Set Default Cloks

Click this button to set default clocks.

GPU Clock

Use this slider to adjust GPU clocks.The maximum and minimum clocks can be adjusted in atitray.ini .
ovr_perc_up=
ovr_perc_down=
Put percent from default clocks. The value for maximum clocks calculated as Default BIOS Clock+(ovr_perc_up% from Default BIOS Clock), and for minumum clocks as Default BIOS Clock-(ovr_perc_down% from Default BIOS Clock).

Clock frequencies are usually derived from 13500 / 14318 / 27000 kHz oscillator . Most integer clocks cannot be derived from the crystal frequency, therefore you will not be able to adjust a clock frequency in precise 1MHz increments. When you try to select any clock frequency, the closest value that can be generated is selected instead

Memory Clock

Use this slider to adjust Memory clocks.The maximum and minimum clocks can be adjusted in atitray.ini .
ovr_perc_up=
ovr_perc_down=
Put percent from default clocks. The value for maximum clocks calculated as Default BIOS Clock+(ovr_perc_up% from Default BIOS Clock), and for minumum clocks as Default BIOS Clock-(ovr_perc_down% from Default BIOS Clock).

Clock frequencies are usually derived from 13500 / 14318 / 27000 kHz oscillator . Most integer clocks cannot be derived from the crystal frequency, therefore you will not be able to adjust a clock frequency in precise 1MHz increments. When you try to select any clock frequency, the closest value that can be generated is selected instead

Apply clock values at startup

Check this to load values at start up.

Restore after suspended mode

Check this to restore clocks after suspend modes.

Save

Click this button to save selected clocks. These values will be loaded at start up time if check **Apply clock values at startup** option.

Saved Clocks

This clocks will be loaded at start up.

Artifact tester

"Artifact Tester" is a small window with 3D render with abulity to check for artifacts.
- Be notified, that procedure to find real maximum clocks is not as simple as you can think. It is a very huge job and I never will create such options in ATI Tray Tools. The given procedure is intended to find clock, when no artifact detected during given time, while rendering a simple scene. (The space ship have about 26 000 triangles.). So it is up to you, how to use this Tester. 8-)

Find Max GPU

Click **Find Max GPU** button to run procedure to find maximum stable clocks for GPU. Procedure will increase GPU clocks step by step and check for artifacts. This can take a long time!

Find Max MEM

Click **Find Max MEM** button to run procedure to find maximum stable clocks for Memory. Procedure will increase Memory clocks step by step and check for artifacts. This can take a long time!

Show 3D Render

Click this button to show 3D render window. You must do this before try to use Artifact Tester.

Scan for Artifacts

Run procedure to find artifacts. In this mode, 3D render only check for artifacts and doesn't change any values for GPU or Memory clocks. In caption of 3D render window, you will **"No artifacts for xx.xxx"**. If value resets to 0, you have artifacts and should decrease GPU or Memory clocks.

Timings 1

Here you can change timings for Group 1.

WR Latency - Memory write latency
CAS latency - Programs the CAS Latency
CMD latency - Command Latency
Strobe latency.

The memory controller can be programmed to meet a wide range of SDRAM component's timing requirements and clock frequencies. Typically,these requirements are specified in the SDRAM manufacturer's data sheet.

Note!
Be careful when changing timings or you can destroy your card!

Timings 2

Here you can change timings for Group 2.

TRCDRD - Activate to Read, RAS to CAS Read delay
TRCDWR - Activate to Write, RAS to CAS Write delay
TRP - Precharge to Activate/Refresh, Row Precharge Time
TRAS - Activate to Precharge, ROW active time
TRRD - Activate to Activate (other bank), Row active to row active command period
TR2W - Read to Write Turnaround Time
TWR - Write to Precharge, Write Recovery Time
TW2R - Write to Read Turnaround Time
TW2RSame Bank - Write to Read Turnaround Time for the same Bank
TR2R - Read to Read Turnaround Time

The memory controller can be programmed to meet a wide range of SDRAM component's timing requirements and clock frequencies. Typically,these requirements are specified in the SDRAM manufacturer's data sheet.
-
If you lower values you can raise performance but lost some overclocking abilities. Increasing values insteed can give you more ability to overclock your memory.

Note!
Be careful when changing timings or you can destroy your card!

Timings 3

Here you can change timings for Group 3.
Memory Refresh Rate - Value between 0 and 255.
TRFC - Refresh Row Cycle Time

Note!
Be careful when changing timings or you can destroy your card!

Read

Read current timings values.

Include in Profile

Check this to include timings in profile. **Very dangerously!**

Set

Set timings.

R

Reset values (Values stored at startup time)

RefreshLock

This window allows to enable/disable/cutomize **RefreshLock** system.
What RefreshLock system is?

Due to Windows 2K/XP kernel specific all full screen applications set first refresh rate from list of supported rates when switch to full screen mode. If game or program doesn't allow you to select refresh rate, or doesn't take maximum available value automatically, you always will have minimum value, in most cases 60Hz. ATI Tray Tools can help you to change this behavior. ATI Tray Tools monitor system and detect any resolution changes and just after switching to full screen, it's immediately set new refresh rate.

Enable Refresh Lock

Check this to enable or disable RefreshLock.

Refresh rate rules

This is a list of selected resolutions for which ATT will change refresh rate. You can set separate values for 16bit modes and 32bit modes.

Available Resolutions

This is a list of available resolutions and refresh rates.

Apply hardware settings at start up

Check this to apply General Hardware settings at start up.

Restore after suspended mode

Check this to restore all hardware settings after suspended mode.

Video Card PCI Latency

You can set PCI Latency for your card. Sometimes this can help to fix problems with lags in games.

List game profiles

Here you can select game profile.

New

Click this button to create new game profile.

Save

Save current game profile.

Delete

Delete selected game profile.

Profile Name

Enter name for game profile. Try to avoid using restricted characters. **/ \ ? | " * < > :**

Executable

Type here full path to game executable or click  to locate it.

Tip. ATT will automatically detect when game starts, and apply all corresponded settings, so no needs to create any shortcuts for game any more.

Game Paramaters

Type here any parameters for game executable.

For exmaple, if you run Half-Life in developer mode, you should run it using this command **hl2.exe -steam**. So put -steam as a paramater for hl2.exe.

Set 3D to

Check this to load Direct3D profile or set individual 3D configuration before running game.

Note. If **ATI Control Center** is installed this option allow to load 3D profile or set 3D setting whouse will be applied to both Direct3D and OpenGL API.

Restore previous settings after game end

Check this to restore old 3D settings after game end.

Load OpenGL Profile

Check this to load OpenGL Profile before starting the game.

Load overclocking before

Check this to load overclocking profile before starting game.

Load overclocking after

Check this to load overclocking profile after game end.

Force to use Color Profile

If you force using color profiles in game ATT will scan palette during game (each 1 second) and set it, if its differ from selected

Create desktop shotcut

Click this button to create desktop short cut for selected game profile.Be informed, if you use **Autodetect Starting Games** option, no need to create any short-cuts! ATI Tray Tools will automaticaly detect game when you run it from any source and apply coresponding settings.

Auto overclocking

Enabled this option to automaticaly overclock your card, when an application required 3D mode.
If you enable 2d/3d overclocking you must set which profile shoukd be loaded when application enter 3d mode and which profile load after this application finished. ATT some times can not detect when game use 3d mode. If you find such kind of game, create profile for it.

For applications required 3D mode load this profile

Select overclocking profile for 3D mode.

After application finished, load this profile for 2D mode

Select overclocking profile for 2D mode.

Play sound when entering 3D

Select sound file to play when an application enters 3D mode.

Play sound when entering 2D

Select sound file to play when system enters 2D mode.

Browse for file

Click this button to browse for file.

Overclocking before game start

Select type of action before game start. You can select 3 type:
- Take no action - ATT will do nothing for this game even if 2d/3d overclocking is enabled and this game required 3D mode.
- Manual Overclocking - Manualy select overclocking profile
- Use auto 2d/3d overclocking - Use global auto 2d/3d mode overclocking. If global mode is disabled, this mode has no effect.

Overclocking after game end

Select type of action before game start. You can select 3 type:
- Take no action - ATT will do nothing for this game even if 2d/3d overclocking is enabled and this game required 3D mode.
- Manual Overclocking - Manualy select overclocking profile
- Use auto 2d/3d overclocking - Use global auto 2d/3d mode overclocking. If global mode is disabled, this mode has no effect.

List of available overclocking profiles

Here you can select from list of all overclocking profiles you created before.

List of available color profiles

Here you can select from list of all color profiles you created before.

Exit from ATT after game end

Check this option to terminate ATT after game end.

Runtime plugins

Using this form you can start/stop or configure RunTime plugins. The Run Time plugins will be executed at ATI Tray Tools start up time. One example included in installation package. **CPU Load Metter**. This plugin shows current CPU usage in system tray. Full source code included as an example of *"How to write run times plugins"*

Enable/Disable autostart for plugin

By clicking this button, you can enable or disable autostart mode for selected plugin. If plugin currently active and you trying to dissable it, plugin will be terminated.

Start plugin

Click this button to start selected plugin. If plugin disabled, you must enable it first!

Stop Plugin

Click this button to stop selected plugin.

Configure Plugin

Click this button to open configuration window for selected plugin. Some runtime plugins has no configurations, so no window can be opened for them.

List of installed plugins

Here is a list of all runtime plugins installed. If you install new one when ATI Tray Tools is active, you must restart ATT, before new plugin will be available to operate with it.

Switch desktop resolution to

Use this option to change desktop resolution before starting game. After game end, previous resolution will be activated automaticaly.

Clock generation method

ATI Tray Tools can operate with clocks in two modes:
1. (Default) High precision. In this mode GPU/MEM post dividers and reference divider will be calculated by ATT to archive best accuracy.
2. Low precision. In this mode ATT will use BIOS default reference divider and calculate only GPU/MEM feedback dividers. If you have problems with Default method, try to use Low precision mode.

General Settings

Using this window you can change General Settings for ATI Tray Tools. Including StartUp Mode, Overclocking limits and so on.

Load with windows

Check this option to enable ATI Tray Tools load itself with Windows.

Use skinned menu

If this option checked, ATT will use OfficeXP skin for main menu, uncheck it if you want to use standard Windows style.

Swap Left and right mouse buttons for tray menus

Enabling this option you can swap popup menus in system tray between left and right mouse buttons

Use new Apply 3D settings mode

Check this option to use new fast Apply 3D Settings without monitor flicker. This method will work only on Radeon 9500 and higher! For old card ATT automaticaly will use old method.

Use limits for overclocking

Check this option to limit track bars in Overclocking module.

Upper limit

Upper limit for GPU and Memory clocks. Upper limit will be calculated as percentage from default clock + default clock.

Downclock limit

Lower limit for GPU and Memory clocks. Lower limit will be calculated as default clock - percentage from default clock .

Dont ask for refresh rate

When you set new desktop resolution using ATI Tray Tools, you can check this option to disable ATT to show **Select refresh rate** dialog box**.** In this case resfresh rate will be depended on **Always select maximum refresh rate** option , when on ATT will select maximum possible value for refresh rate or lowest possible if off.

Always select maximum refresh rate

Check this option to tell ATT select maximum posible resfresh rate when switching desktop resolution.

Dont wait 10 seconds before change resolution

Tells ATI Tray Tools do not wait 10 second when applying new desktop resoltuion.

Audio Recorder

Here you can change setting for audio recorder.

Audio Recorder intended for recodring music / sounds when playing games. You can assign HotKey in Global HotKey Editor. Before use this tool you must select Codec and format for audio files. Click on **Change** button to select these options. In addition you must provide folder to store recorded files.

Unlimited

Check this option to record unlimited number of seconds

Storage Folder

Folder to store recorded files.

Codec and Format

Shows selected type of codec and format for audio recorder.

Record up to

Check this option to record up to provided number of seconds. ATT will automaticaly create new file if reached time limit.

Screen Shots

Here you can change options for ScreenShot system. Only a few option are available:

Storage Folder - Folder to store screen shot files
Add current time to file name - Check this option if you want to add current time to the file name of screen shot.

Display

Here you can change any settings for Displays and TV. Enable and set mode for monitors and TV Out. Change settings for TV , Theater Mode.

ATT allow to enable TV Out even if you didn't connect any TV to the TV Out port. If you are not using a TV for your computer's display, it is recommended that you disable TV display for optimal performance (higher refresh rates). You can re-enable TV display at a later date.

Primary

Set Monitor/TV as Primary.

Clone

Set Monitor/TV as Clone.

TV Properties

Here you can change any TV related properties.

- You can not change any display scheme if you are running extended desktop!

Advanced Options

Click this button to access additional options for your monitors.

Divider Restriction

By default ATT, in High precision mode, calculate best reference divider, set nearest desired clocks using range between 2 and 16. Sometimes the bigger divider gives most desired clocks, but use of bigger divider is a way to unstable overclocking. You can reach better overclocking values with better stability using smaller dividers, but in this case you will not be able to set accurate clocks.
You can use "Calculate" button to see which of the dividers will be used for obtaining desired clocks.
Just for example we want to set GPU of 380Mhz and Memory of 340 MHz. Lets have a look which clocks we will have with different restrictions:

Clocks	Restriction	Calculated Divider	Total Difference in MHz (GPU+Mem)
379.80/340.20	16	15	0.40
380.25/339.75	14	12	0.50
380.70/340.20	11	10	0.50
381.00/339.00	9	9	2.00
381.38/340.88	8	8	2.26
378.00/339.43	7	7	2.43
382.50/337.50	6	6	5.00

and so on. As you can see small difference is achieved using higher "Calculated Divider".
So if you want to have accurate clocks you should increase restriction or if it doesn't matter you can use lower restriction.

3D Settings for Renderer

You can set 3D mode to High Quality or High Speed before opening 3D Renderer

Monitor Type

Here you can select what kind of monitoring types you want to display in single monitor window
Supported these sources:
- GPU Clocks (MHz)
- Memory Clocks (MHz)
- GPU Temperature
- Environment Temp.
- Fan Duty Cycle
- Main CPU Usage

You can select different colors for each monitoring source.

Apply theme

You can apply predefined colors themes for General Monitor Properties.

Minimum value

Set here minimum value for selected monitor type

Maximum value

Set here maximum value for selected monitor type

Update interval

Set desired update interval for selected monitor type. Value of 1000 if equals 1 second.

Height

Set here height for monitor window.

Line Color

Select line color for monitoring source.

OnScreen Display

Using OnScreen Display (OSD) you can see FPS counter in any 3D application and also show some useful information about current GPU/Memory speeds, temperatures and so on.

Log to file

Check this option to log all history to text file.

Log file location

Set where to store log file for monitor.

Recreate log file

If you check this option. Log file for monitor will be recreated each time monitor starts.

Monitoring Graps

You can use this window to monitor a lot of events. Use **Add** button to add new monitor to list. Click **Start All** or **Stop All** buttons to start or stop all monitors. Click **Clear History** button to cleat history in all monitors.

FPS Metter

Here you can set options for in game FPS Metter. ATT can update FPS in two modes
1. **Continuous** - This is calculated FPS , not real Frames per seond
2. **Every Second** - This is real FPS value calculated each second.
Also you can select visuall appearence of FPS digits.
Standard - Fastest Font
Digits - fast font.
If you board is power enought to render frames at high speed , you can use "Digits" format :).

Flash OSD

Flash OSD can show a lot of information about speeds, temperatures and so on. You can select 3 modes to show Flash OSD
1. Auto Flash - ATT will show Flash OSD each X minutes for XX seconds
2. Show all time - Flash OSD always will be visible in game.
3. Manual - Flash OSD will be displayed only by HotKey.

Aggressive 3D detection

Bu default ATT uses Aggressive 3D decetion routine . This can guaranty that ATT will be able to detect any kind of 3D software. But if you have probelms with starting some applications, you can dissable this option. But be informed , if you turn this option off you will not be able to use "Force Triple Buffer" option.