

Optimizing Mouse Control

In typical keyboard-mouse control system, mouse movement is always used to control aiming and turning around. It is simple, but this is the core of FPS games.

Before going into details I'd like to introduce a formula:

$$\text{Mouse Movement in game} = \text{mouse DPI} \times \text{game Sensitivity} \times \text{Cross Hair HIP/ADS}$$

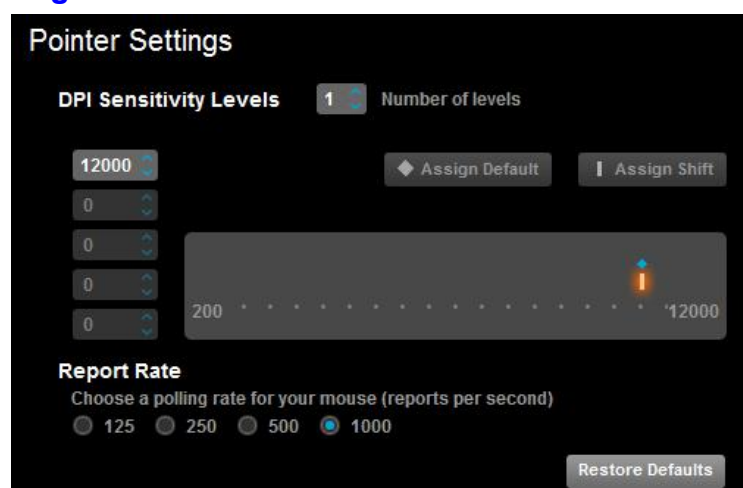
- If you have a configurable mouse, please follow Step 1.
- If you have a mouse which can not be configured, just skip Step 1.
- If your mouse is configurable but have no on-board memory in it that means your settings will be lost when the mouse is unplugged from PC, remember to set its DPI to maximum by using the DPI button on it every time you use the mouse with Cross Hair.

Step 1. Mouse DPI / CPI

Dots per inch (DPI) is a measurement of how sensitive a mouse is. The higher a mouse's DPI, the farther the cursor on your screen will move when you move the mouse. A mouse with a higher DPI can detect and react to smaller movements. While unstable signals might also be caused when some mouse is set to its MAX.

Normally, we recommend setting your mouse DPI to 4000~12000, USB report rate 500~1000HZ. As showed below:


Logitech:




Razer:

SENSITIVITY
The number of dots-per-inch (DPI) of mouse movement.

ENABLE X-Y SENSITIVITY CONFIGURE SENSITIVITY STAGES

100 5600


ACCELERATION
The rate of increase of speed in the cursor with respect to mouse movement.




0 1 2 3 4 5 6 7 8 9 10

POLLING RATE
The frequency of data updates for the device.

1000 ▾


Current DPI 5600 Sensitivity Stages



100 1000 2000 3000 4000 5000 5600

Enable independent X-Y Sensitivity
 Enable On-The-Fly Sensitivity On-Screen Display

Acceleration



1 2 3 4 5 6 7 8 9 10

Enable Acceleration

Polling Rate 125Hz 500Hz 1000Hz

Corsair:



Step 2. Game Sensitivity

In the options of different games, it is called by various names, such as : Look Sensitivity, Aim Sensitivity, Look-Around Sensitivity, or just Sensitivity. It's the speed of turning around in the game.

We also recommend you to set it as high as possible to harness all the potential of your game.

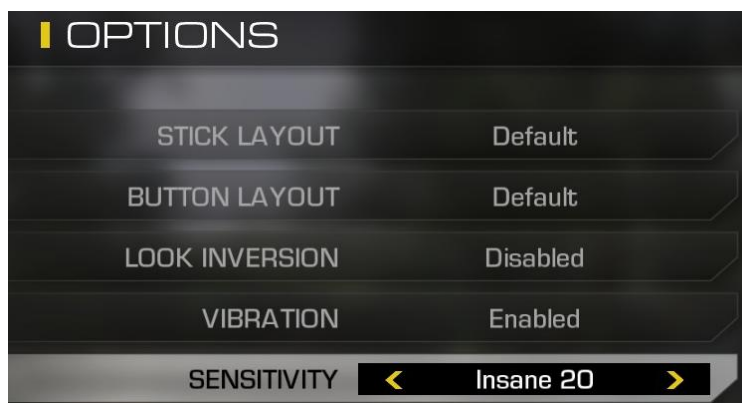
We have many demos of setting this option in game.

ReaSnow Cross Hair Changing Games Sensitivity:

https://www.youtube.com/playlist?list=PL_W7SvWDzBOgxdSxBsr11E7rg7czSpYV

The following figures are some examples:

Battle Field 4:



Call of Duty: Ghost



GTA5:



Destiny:



Kill zone: Shadow Fall:



Warframe:



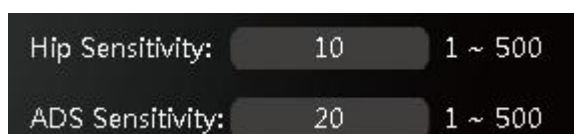
Step 3. Cross Hair HIP/ADS

After step 1 and 2, we now come to Cross Hair **HIP/ADS**.

And if you can accept the turning speed, please choose a value for HIP/ADS as small as possible to have a fine aiming.

There are **2 ways** to change Cross Hair **HIP/ADS**.

WAY ONE – using PC software (Manager):



Cross Hair has 2 parameters : HIP Sensitivity and ADS Sensitivity

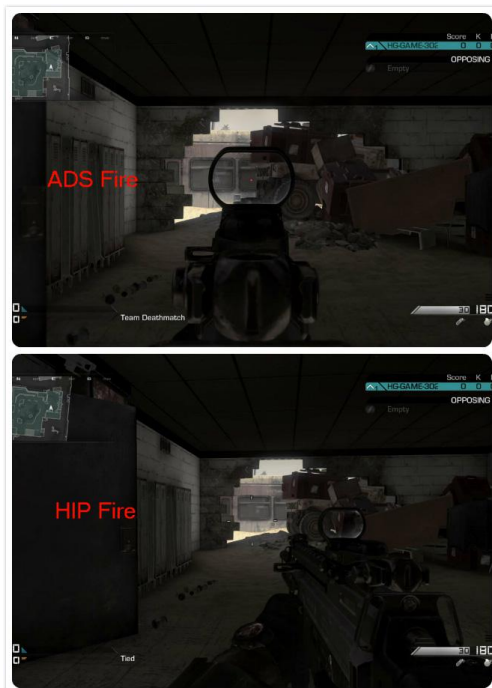
Normally, Cross Hair will activate ADS sensitivity, but when the ADS mode is enabled in game by a corresponding key, that will be your mouse right button by default. This is designed to improve the control of some weapons with optics.

The bigger the value, the faster the mouse movement. You can change them to a suitable value, according to your mouse and game.

HIP: Shooting without aiming optics

ADS: Shooting with aiming optics

ADS sensitivity is normally bigger than HIP to get a faster speed in ADS mode.



YX Ratio: 10 ~ 500

YX Ratio:

It's the ratio of mouse's speed in Y and X directions. Do not change it, unless you understand its meaning.

WAY TWO – using controller in Config Mode:



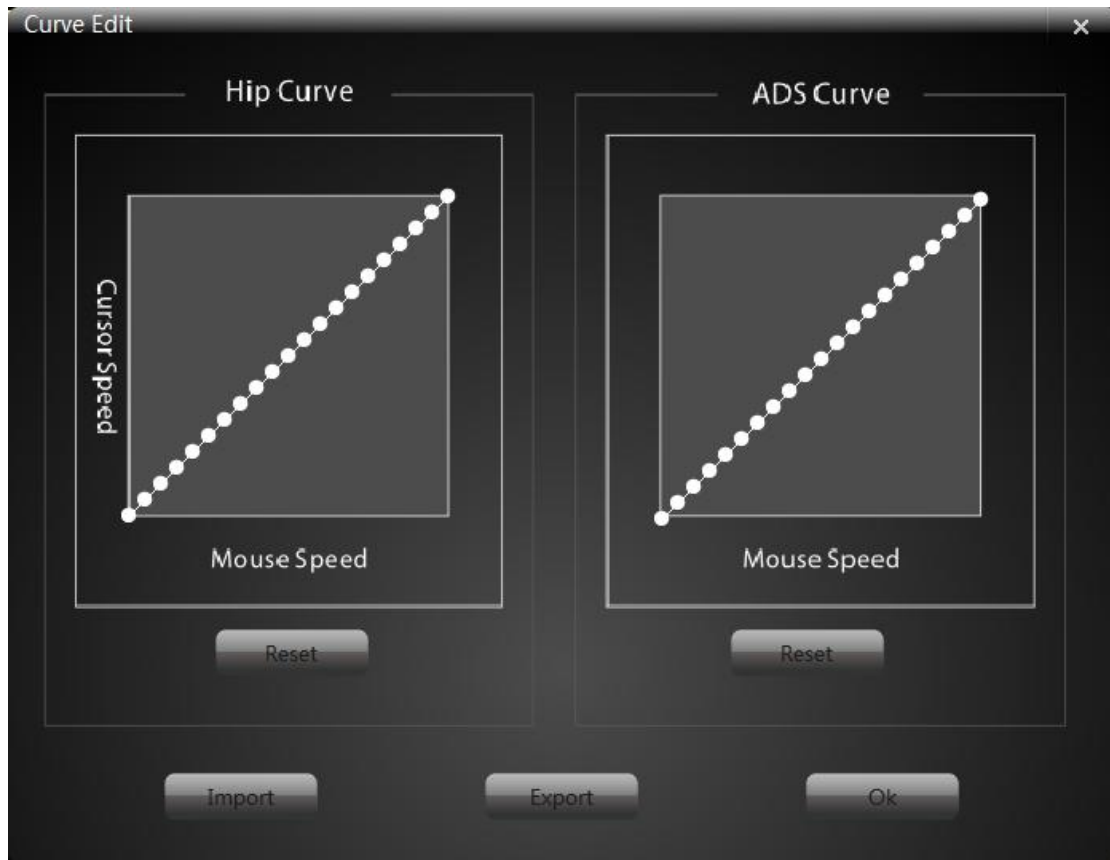
1. Any time in game(Cross Hair LOGO is breathing), just press SHARE+OPTIONS (PS4 platform) keys on your controller to enter **CONFIG MODE** and the LOGO's light will be turned off in this mode.
2. Use the Dpad keys on controller to change HIP and ADS sensitivity of Cross Hair.
3. After changing HIP and ADS to you liking, just press the combination keys (SHARE+OPTIONS for PS4 platform) again, and you will exit the **CONFIG MODE**, and return to **PLAY MODE**.

PS. We recommend you to use CONFIG MODE to change Cross Hair sensitivity, that's an easy and convenience way to do it. Please refer to User Manual for more details.

For video instructions, please visit the follow page:

ReaSnow Cross Hair Change mouse sensitivity in game
<http://youtu.be/o8opSkfV72Y>

PS1. Advanced Settings – Curve Editor

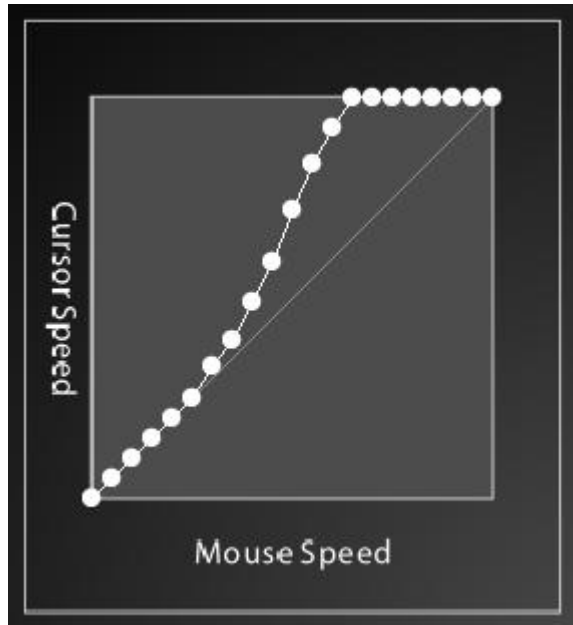


Relationship between Mouse Speed and Cursor Speed on screen in HIP and ADS modes can be changed separately by these two curves.

Generally speaking, we will provide a straight line in most default configs, it can provide 1:1 mouse movement and cursor movement on screen while using a mouse for aiming, so if cursor speed on screen is acceptable please use a straight line.

but you might need a different curve in some games or in some conditions.

For example, if you need faster turning speed to control a vehicle, or if turning speed of some games is limited, you can change the curve like this:



This curve means it will keep 1:1 nature while mouse speed is low and that makes aiming easy. And at the same time, when mouse speed is fast, the cursor speed will be boosted. That will help you to get a faster turning speed, but you will have no 1:1 control when these white dots are not on the straight line.

- **Reset:** curve will be reset to its default.
- **Import:** Import a curve which is exported by you or others.
- **Export:** Export a curve and save it in your PC.

PS2. More about Curve

Mouse Speed: it's the speed your hand moves the mouse.

Cursor Speed: it's the speed of cursor showed on screen, it can also be called Turning Speed in game.

d1 ~ d21, these 21 dots represent the relationship between mouse speed and cursor speed.

A1: Min mouse speed

A21: Max mouse speed

B1: Min cursor speed

B21: Max cursor speed

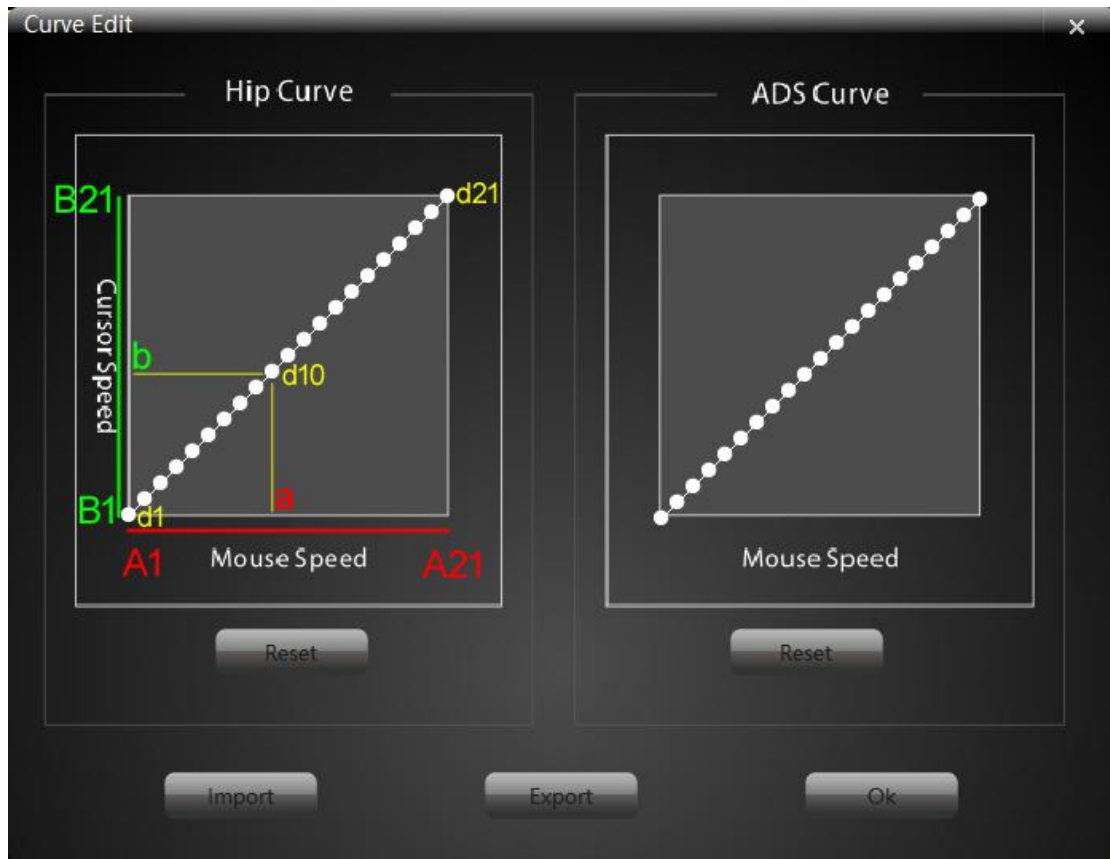


Figure 1:

In this figure, d10 represents if mouse speed = a, cursor speed = b.

Faster mouse speed will bring faster cursor speed, and they have linear relationship.

This straight-line relationship can provide 1:1 mouse movement and cursor movement, It is suitable for most of the situations.

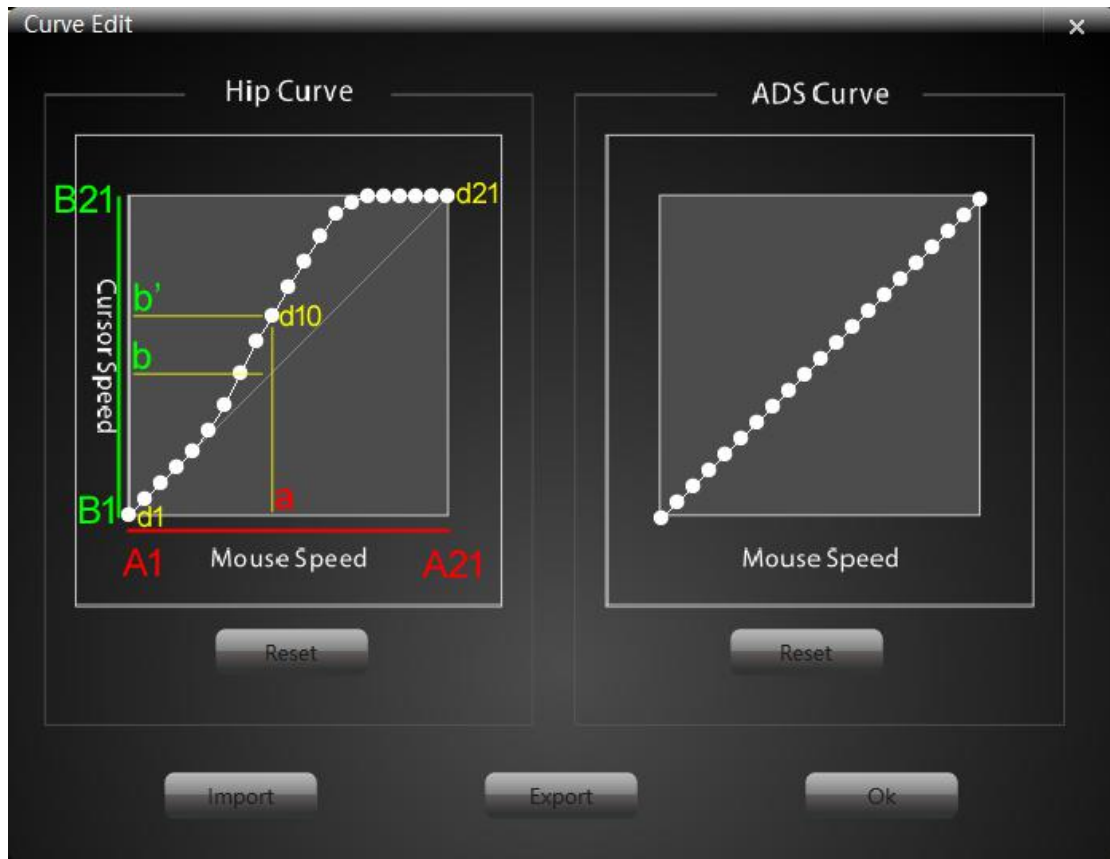


Figure 2:

In this figure, if mouse speed = a , cursor speed = b' , and $b' > b$.

So you will get a faster speed b' . cursor speed is boosted here.

This curve will help you to get a faster turning speed with the cost of sacrificing 1:1 control.

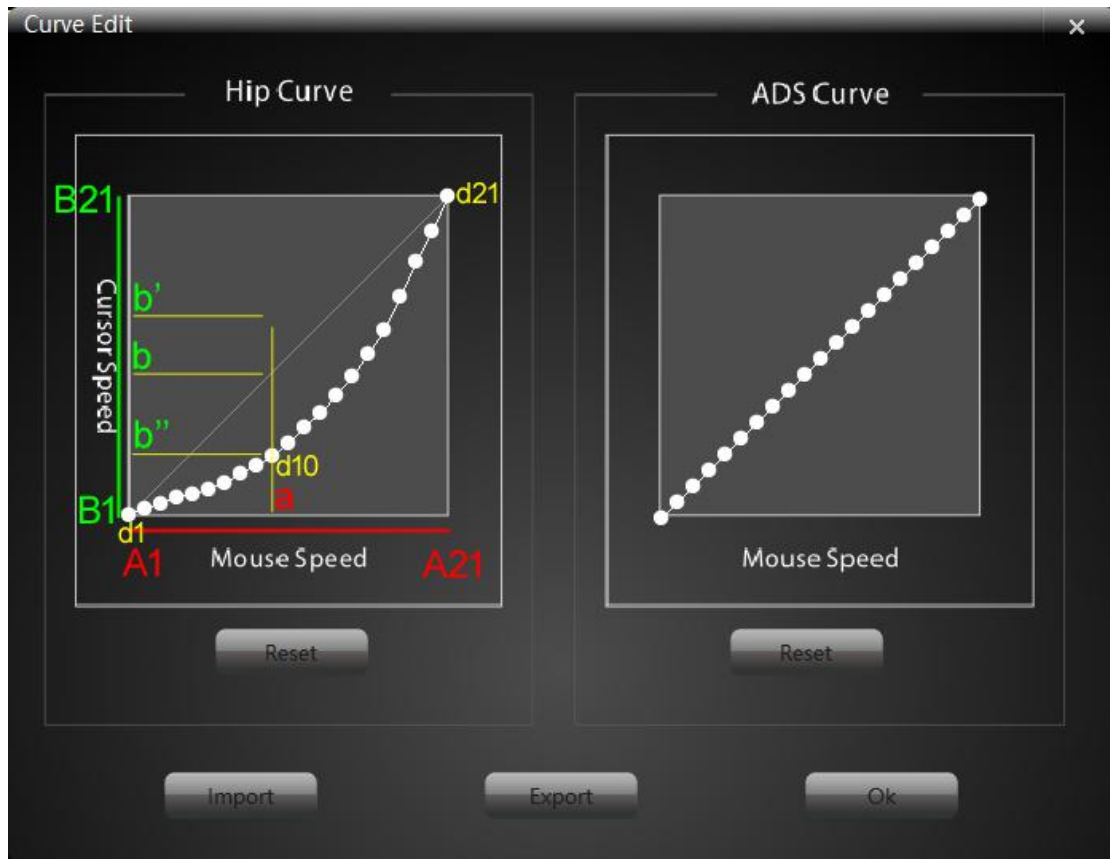


Figure 3:

In this figure, if mouse speed = a , cursor speed = b'' , and $b'' < b$.
 So you will get a slower speed b'' . cursor speed is reduced here.

But this curve might be helpful if you need a fine and stable aiming, some will need it for ADS curve.

And the 1:1 control will also be sacrificed.