How To Overclock A monitor To Increase FPS?

If your video games are blurry and choppy but your FPS is fine then, there could be a problem with your monitor's refresh rate.

While gaming, watching movies, or even carrying out a simple task, your monitor changes its pixels and frames. **These changes happen every millisecond** and play an important role in determining your system's visuals. The higher the refresh rate, the smoother and more realistic the experience.

What Is Refresh Rate?

The refresh rate is the rate at which a monitor refreshes an image per second. For instance, if your monitor has a refresh rate of 60 Hz, it can draw 60 images each second. Similarly, **if a monitor's refresh rate is 120 Hz, it can change/draw twice as many frames.**

This greatly reduces choppy gameplay and adds depth to your games and videos. For an FPS gamer, a higher refresh rate can give a significant advantage over their opponent.

But, if you are on a tight budget, you could select a low to mid-res monitor. This is because to run your 120 HZ to the fullest, you need an equally powerful PC.

Refresh Rate Vs FPS – What Is The Difference?

Refresh rate and FPS both make a great impact on your display quality. Although both seem to be similar, they are different concepts.

The refresh rate is measured in Hertz (Hz). It simply means the number of times your screen can reprint an image. This means the more the refresh rate, the smoother the experience

On the other hand, FPS is the number of frames your monitor can display in a second. Thus, we measure FPS in milliseconds (ms). **Unlike refresh rates, FPS depends on your CPU and GPU.**

Thus, if your monitor supports a higher refresh rate, but your GPU isn't allowing you a higher FPS, it will affect your monitor's quality. Hence, it's important to consider both refresh rate and FPS for a smoother monitor experience

When Should I Check My Monitor Refresh Rate?

Checking your monitor refresh rate gives you an idea of your CPU's performance. So, it's recommended to check it once in a while. Here are the following scenarios when it's best to examine the monitor refresh rate:

- When your game is **freezing or not working as desired**, it's probably because of a low refresh rate. In such cases, you can check your monitor's Hz and try to increase it, if

possible.

- Often, we experience **input lag.** To resolve such an issue, we can check our monitor refresh rate to ensure that this is the prime cause behind it.
- Lastly, you can check the monitor refresh rate when **keeping a record of how your apps perform on a certain Hertz.**

How Can I Check Monitor Refresh Rate?

Monitor refresh rate is simply the time taken by your screen to display the image of a window. Thus, the more the refresh rate, the better your GPU will perform.

Ideally, most modern displays use a 60 Hz refresh rate. However, some expensive and powerful gaming monitors shall have a powerful 144 Hz to 240 Hz.

Well, it's possible to increase your **monitor refresh rate by overclocking** it. However, we recommend not doing it unless it's very important.

For now, let's just focus on the various methods of checking the monitor refresh rate:

From Windows Settings

If you have an Intel or any other graphics card, checking the refresh rate is possible within the Windows settings. You can inspect the maximum Hz supported by your monitor using two methods.

Well, the first technique is from the in-built Windows settings:

1. Launch **Settings** from the **Start Menu**.
2. Then, navigate to **System** and **choose Display.**
3. Next, visit the **Advanced Display Settings** under Related Settings. Alternatively, right-click on the **desktop window** and choose **Display Settings.**
4. Make sure you select the right monitor from the Select a **display** to view or change its settings drop-down.
5. In the Display information section, you can find an option to choose a **refresh rate**. The selected one is your screen's current refresh rate. Well, you can simply expand the drop-down to select a new Hz.

Another technique is to view the refresh rate from the **Display adapter properties**. Here's how you can do just that:

1. Firstly, navigate to **Settings > Display > Advanced Display Settings.**
2. Now, click on the **Display adapter properties** for [Your Display].
3. After the Intel UHD Graphics Properties opens, select the **Monitor tab**.
4. Under **Monitor Settings**, check the **refresh rate** currently running on your monitor. To change it, expand the drop-down and choose your desired Hz.

If you want to set your monitor to 144 Hz, read our other article. However, you must ensure your display supports this refresh rate first.

From NVIDIA Control Panel

NVIDIA is probably one of the best and most popular dedicated GPUs. So, checking your monitor refresh rate is possible if you have an **NVIDIA graphics card** installed.

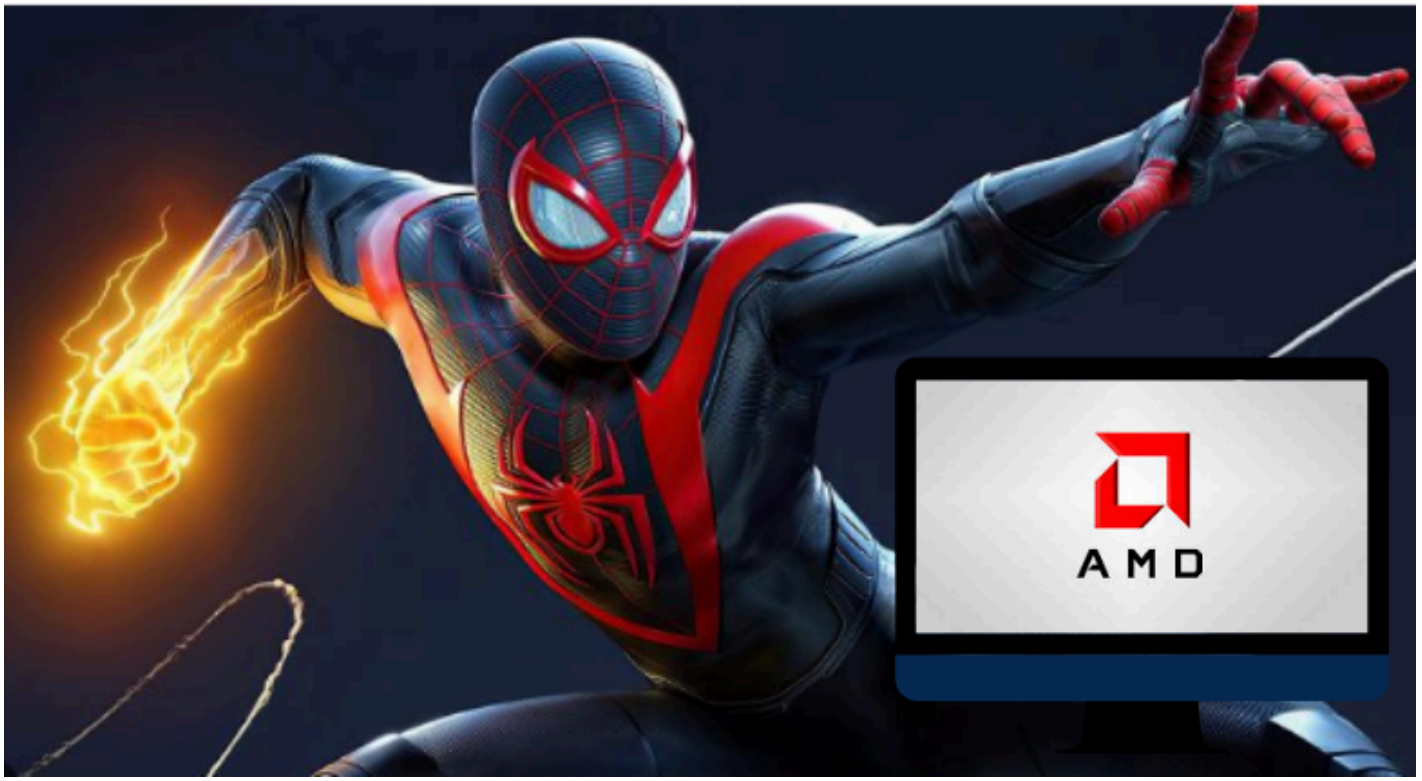
Well, most PCs are provided with a control panel if you have an NVIDIA GPU. But, if you can't find it, here are a few fixes to help you locate the control panel.

Now, without further delay, let's look into the simple steps that help you check your monitor refresh rate using the NVIDIA Control Panel:

1. Navigate to your **desktop** and **right-click anywhere**.

2. Then, select the **NVIDIA Control Panel.** Alternatively, you can launch the **control panel** from the **Start Menu**.
3. Once the **window opens,** check the **left panel** and expand the **Display drop-down**.
4. Then, choose **Change Resolution**.
5. Now, move to the right panel and find the **Refresh Rate drop-down**. Here, your refresh rate is clearly shown. If you wish to change it, simply expand and select a desirable Hz.

From AMD Catalyst Control Center



Like **NVIDIA**, AMD is another popular graphics card distributor. However, it is an integrated GPU attached to the main processor. Well, we have a different article that teaches you the difference between an integrated and dedicated GPU.

Moving on, **AMD graphics cards** also have a control panel of their own. But, this depends upon the AMD model you're using.

In this section, we will focus entirely on AMD Catalyst Control Center. Well, you do not need to worry about having different AMD settings on your PC. Whether you use **AMD Radeon Software** or **AMD Radeon Settings,** the functionalities are somewhat similar.

Now, let's dive into how you can check your monitor refresh rate on AMD Catalyst Control Center:

1. Search and **launch AMD Catalyst Center** from the **Start Menu**. Else, you can right-click on the desktop and click on the AMD Catalyst Center to navigate to the **GPU settings**.
2. As in NVIDIA, you can see two planes. First, expand the **Desktop Management drop-down**.
3. Next, click on **Desktop Properties** and move to the **right plane**.
4. Under **Settings**, you can find Refresh Rate where the current Hertz is set. This is your display's refresh rate.

To change the Hz, press the caret icon and choose an appropriate refresh rate.

From On-Screen Display Settings

From the on-screen display settings, you can check your monitor refresh rate on a few monitors, like MSI. However, this depends on the model you're using. Here's a general guideline on how you can do just that:

1. Firstly, **click on the button** that opens your **on-screen display settings**. Generally, this button is located at the back of your monitor.
2. You can see your **refresh rate in Hz** on the top window panel.

If your refresh rate is not visible, you may have to turn on its location. The following steps will help you with this:

1. Launch the **on-screen display settings.**
2. Next, choose the **Gaming tab**.
3. Then, go to the **Refresh Rate section**.
4. By default, the location may be turned off. Simply click on the **On option** and check if the refresh rate is now visible.

From Third-Party Software

If you do not want to navigate to the display settings or a graphics card control panel, you can directly check your monitor's refresh rate using third-party software.

Well, there are tons of utilities that help you check the refresh rate. Among them, the most popular is probably **Refresh Rate Check**. Interestingly, this online tool provides the live refresh rate of your monitor.

To check the refresh rate using third-party software, simply visit their website. Then, wait a few seconds for the utility to monitor the total Hz of your monitor. Some tools like Test UFO even display your frame rate along with the refresh rate.

What Affects Your Monitor Refresh Rates?

There are plenty of things that might affect your monitor refresh rates. In this section, we will discuss a few of them.

Monitor's Resolution

A higher resolution monitor provides better pixel information, producing a high-quality display. So, it's pretty sure that having a higher resolution can affect your monitor refresh rate.

For example, if you replace your **1080p 60Hz monitor** with a 1044p 120Hz display, you will notice drastic changes in your display. Similarly, if you use a 1044p 60Hz monitor instead of a 1080p 60Hz display, you will experience better quality and higher smoothness.

CPU

Well, it's important to get a compatible monitor and CPU if you want to experience a higher refresh rate.

Indeed, you need a processing unit that can handle rendering data well. Most importantly, the CPU must be able to provide necessary gaming instructions with the capability of handling game logic, along with **AI**.

Graphics Card

Besides the CPU, having a good graphics card can also enhance the monitor refresh rate. Well, you could use an integrated graphics card if you're not gaming often. But for gaming purposes, you can use a dedicated graphics card instead of an integrated one.

No matter the type of GPU you possess, it must execute instructions fast enough to illustrate graphics on your screen if you want a higher refresh rate.

RAM Speed

Besides a good CPU and GPU, your RAM speed can also affect the monitor refresh rate. The more the speed of your RAM, the higher the refresh rate you're going to experience.

Moreover, RAM speed can also affect your FPS. For a smoother gaming experience, you need a RAM speed of higher MHz. If you want to change your RAM speed, here's how you can do it through BIOS settings.

FAQ

Is Overclocking a Monitor Possible?

Overclocking a monitor is possible. It is the easiest way to make a monitor accept a higher refresh rate than intended.
Well, there are both pros and cons to overclocking a monitor refresh rate. To learn more, here's an article that guides you on how to overclock your monitor safely.

Can You Have Two Monitors With Different Refresh Rates?

It's possible to have two or more monitors with different refresh rates. This way, we can provide one task to the primary display and the other to the secondary display. Here, it's preferred to make the monitor with a higher refresh rate the primary one.

Can Having a Bad PC Affect the Monitor's Refresh Rate?

There are plenty of PC components to consider that might affect the monitor's refresh rate. For example, if you have issues with your PC monitor or cable, these can prevent you from using higher refresh rates.

Can Lower Refresh Rate Cause Screen Tearing?

Screen tearing can happen when your monitor's refresh rate and the FPS provided by the graphics card aren't synchronized. When the refresh rate is significantly less than the GPU's ability to provide more FPS, the monitor isn't ready to deal with the frame it's receiving. Thus, screen tearing can occur.
There are plenty of things that might affect your monitor refresh rates. In this section, we will discuss a few of them.