

Renoir Mobile Tuning User Manual

For Version 1.0.0 Release Candidates

For help, feel free to contact me either on GitHub or on the Ryzen Shine Discord server

<https://discord.gg/jNWJG5v>

For Release Candidates:

Please fill out this form: <https://forms.gle/ykex3V94vZHNtcj37>

It will help with understanding Renoir better and adjusting the program to work for every laptop.

Changes and Bug Fixes for Version 1.0.0:

- First release of what I want the program to start out as.
 - Updates and improvements will STILL be coming.
- Fixed a major bug relating to loading values on startup for certain laptops
- Added Show Sensors and Smart re-apply
 - Added 500+ sensors for power monitoring (dump of the Power Monitoring Table)
 - Smart Re-apply needs to have the sensors running as it is checking to see if any of the limits were changed and only applies settings when needed.
- Added About Tab
- Added the ability to save and load a preset
- All limits are enabled by default as it is loading the currently applied values on startup.
- PM Table Dumping on startup
- Added a decimal place for power limits and extended their min max values.

Frequently Asked Questions:

- Does this void my warranty?
 - If you are operating outside of official spec, this technically will void your warranty. I will say to use at your own risk. I have tried to make it as safe as possible and I personally use it every day on my Asus Zephyrus G14.
- Is this safe to run?
 - As long as you don't go crazy, Renoir's boosting algorithm is very intelligent and it will typically not cause damage to your system. Your motherboard's VRM's are what's at the largest risk of being damaged.
- How does this work?

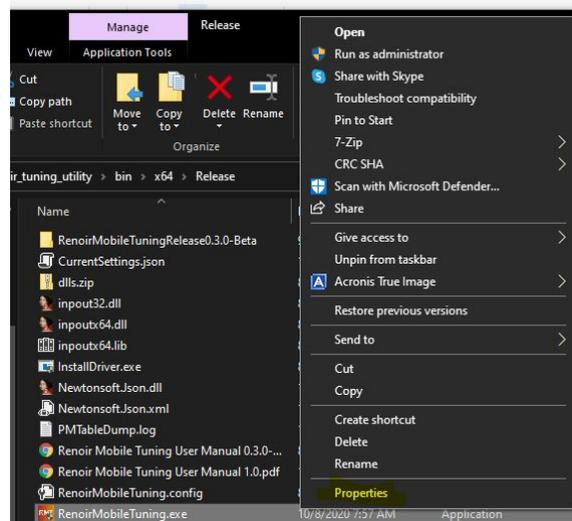
- Renoir Mobile Tuning on a technical level is pretty simple. It's just a `c#.net` program that sends the proper arguments to change the appropriate values inside of the System Management Unit. The System Management Unit (also known as the SMU) is what manages the system's power, thermals, boosting algorithm, and power monitoring systems. RMT is simply making requests to change limits.
- How is RMT different when compared to Ryzen Controller?
 - Ryzen Controller is a bit more complex and doesn't have the value checking that I have in RMT. I was the one who was able to get RyzenAdj updated to support Renoir. In the end, they both are just making service requests to the System Management Unit.
- I am not seeing performance gains. How do I know that it is working?
 - The best way to tell this is by lowering the power limits to well below stock and validating that the power draw was reduced. I recommend that you set your device into a high performance mode in the OEM's software if available. This typically will cause the system to avoid some limits that AMD's boosting algorithm may place onto the system.

Installation:

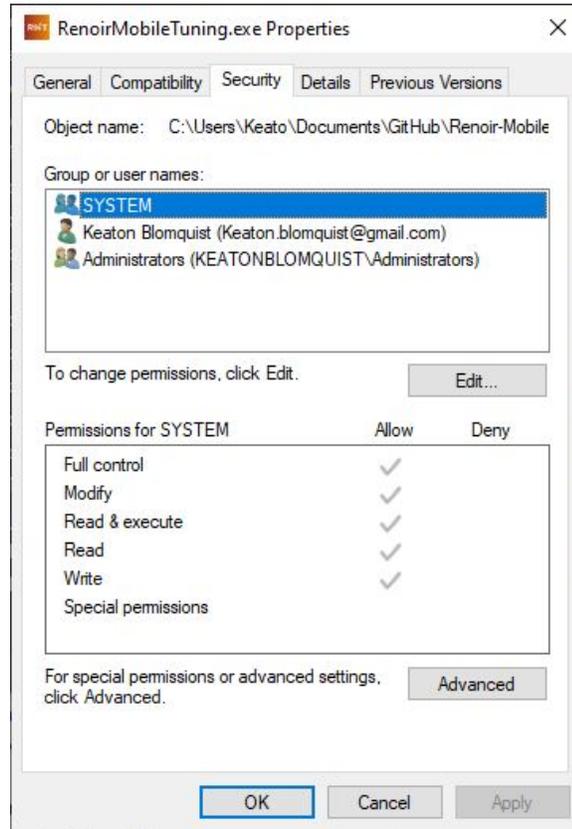
1. Just unzip the files and place the folder where you want it.
2. As of RC9, RMT does not need to install a driver into the `\system32\drivers` folder
3. Run Renoir Mobile Tuning and you are good to go!

Troubleshooting:

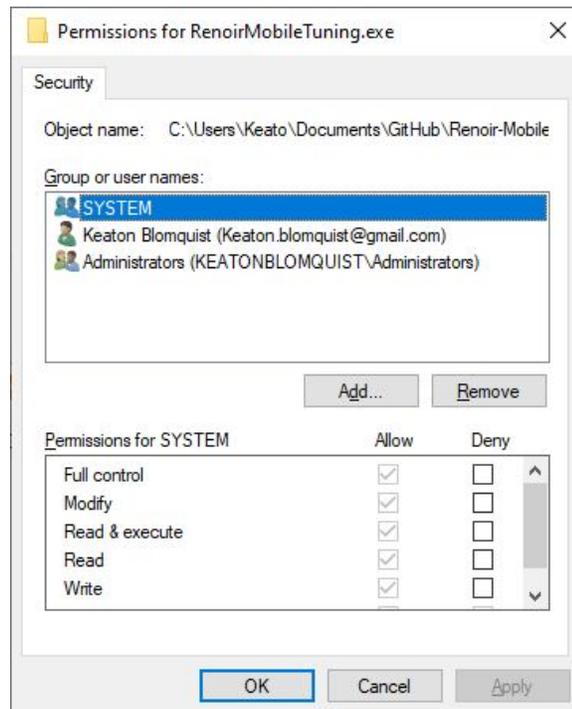
- Riot Vanguard (the anti cheat for Valerant) has issues with what allows me to access the physical memory. Exit Vanguard for testing.
- Some antivirus programs may have issues with RMT but it is not know to what extent.
- To remove an old inpoutx64 driver:
 - Restart your computer and do not open RMT
 - Navigate to \Windows\System32\drivers
 - Delete inpoutx64.sys
- If you are having issues you can do follow these steps:
 - Go to properties for RMT



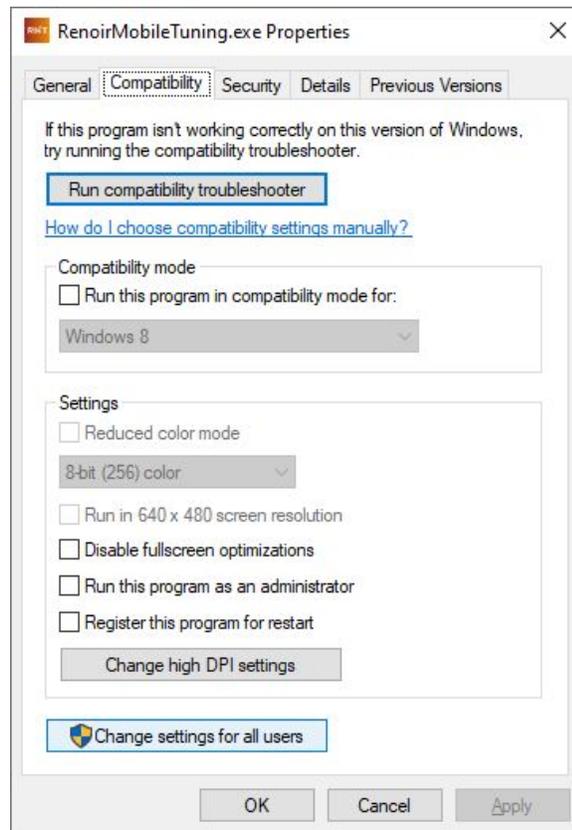
- Go to the security tab and click edit



- Make sure that Administrators have full control

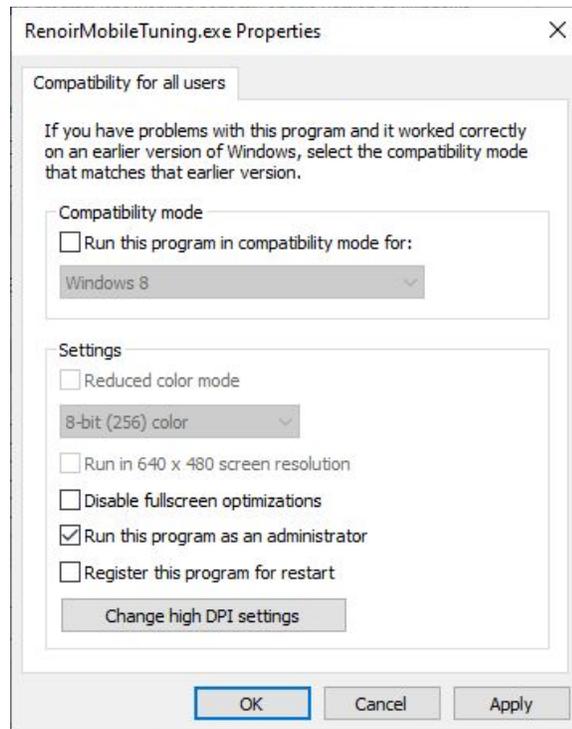


- Go back to Properties and select the Compatibility tab



Change Settings for all users

- Check “Run this program as an administrator”



Hit Apply

Known Issues/Bugs:

- Some laptops have a Skin Control Scalar that cannot currently be set. It will change the values being input by a percentage.
 - Asus Zephyrus G14 has a scalar of 80% when in silent mode.
 - If you were to set the power limit to 40w with an 80% scalar the effective wattage is 32w.
 - This is not accounted for with smart-reapply yet.
- There is also a Skin Temperature related commands that are still being experimented with. Full 1.0 Release will have these implemented.

What each of the limits do:

Please monitor your temperatures while using this tool and changing settings. Start with low values and work your way up.

- **Fast Power Limit:** It is the first level of boost. It has the highest power limit but the shortest duration. Must be greater than Slow Power Limit and STAPM Power Limit
 - **Fast Boost Duration:** Typically, this is between 1-10 seconds. After that duration expires, it moves to Slow Boost.
- **Slow Power Limit:** Longer duration boost. This is where most of the actual boosting
 - **Slow Boost Duration:** Slow Boost is active until the average power (calculated by a power average function and is internally called “STAPM Power” by AMD) gets close to the STAPM Power Limit. Stock is typically around 400 seconds.
- **STAPM Limit:** Skin Temperature Aware Power Management Limit. The maximum power that the CPU can draw for a thermally significant amount of time, This is the “TDP” of the CPU.
- **TCTL Temp:** Temperature that the CPU will actively start to throttle. Renoir’s boosting algorithm will very rarely get above this limit by more than a degree. TCTL is the hottest point of the CPU over an amount of time. AMD Spec says 105 degrees is safe and TCTL is the hottest point. Some laptops may have issues with very high TCTL temperature limits so it is limited to 97c.
- **Current Limit:** We are still not 100% sure how changing the current limit affects things but feel free to experiment. Default on the G14 is 51A. I recommend not going too high as it appears to have pretty diminishing returns on a G14. Should be between 1 and 1.5 times what your STAPM Power Limit is.
- **Maximum Current Limit:** The maximum amount of current the CPU is allowed to draw. If you cannot hit what wattages you are aiming for, try raising it a bit. Maximum Current Limit should be between what the Current Limit to 2 times the STAPM Power Limit is.