

## NemosMiner relies on the 3rd party tool HWiNFO64 to read power usage from the miner devices

The following document describes the necessary integration steps:

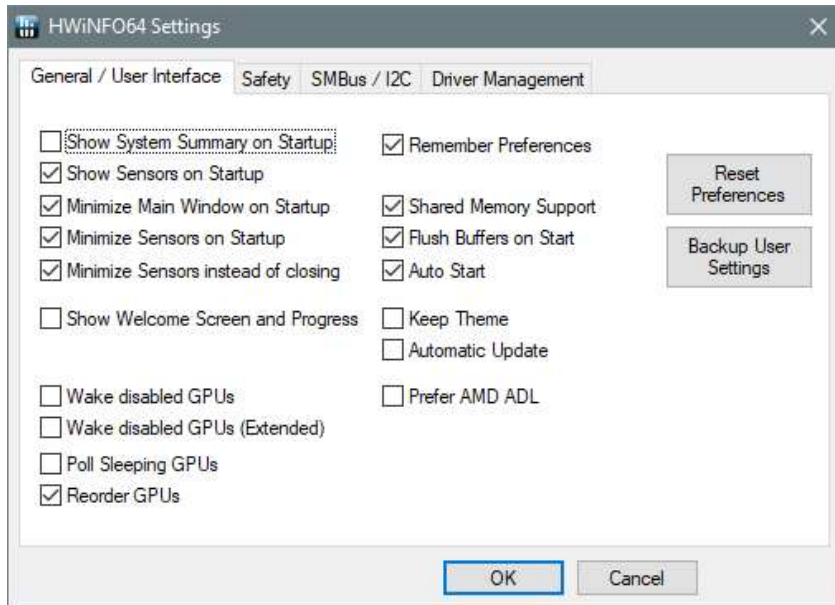
### 1. Download and install HWiNFO64

<https://www.hwinfo.com/download/>

Both variants (Installer & Portable) will do, just ensure you are using the x64 version.

Accept the default installation directory (any other directory will be fine too).

### 2. Run HWiNFO64 and configure like this

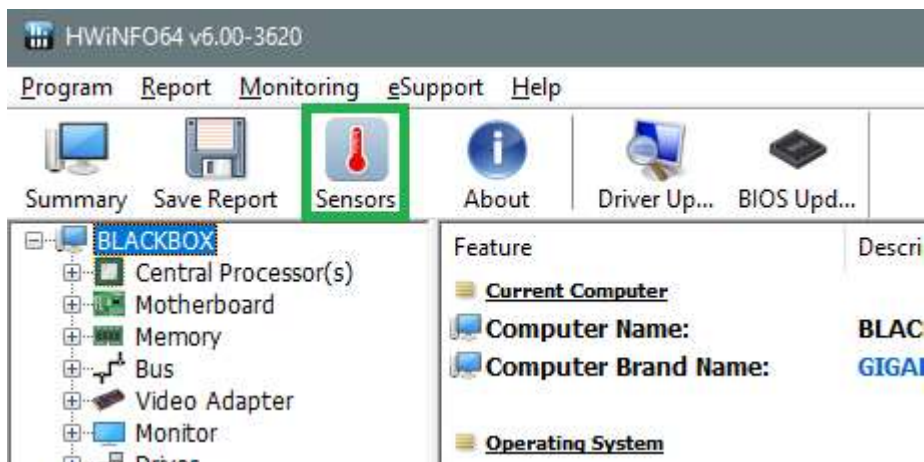


This will autostart HWiNFO64 on each boot and will keep it running in the task bar.

#### Important:

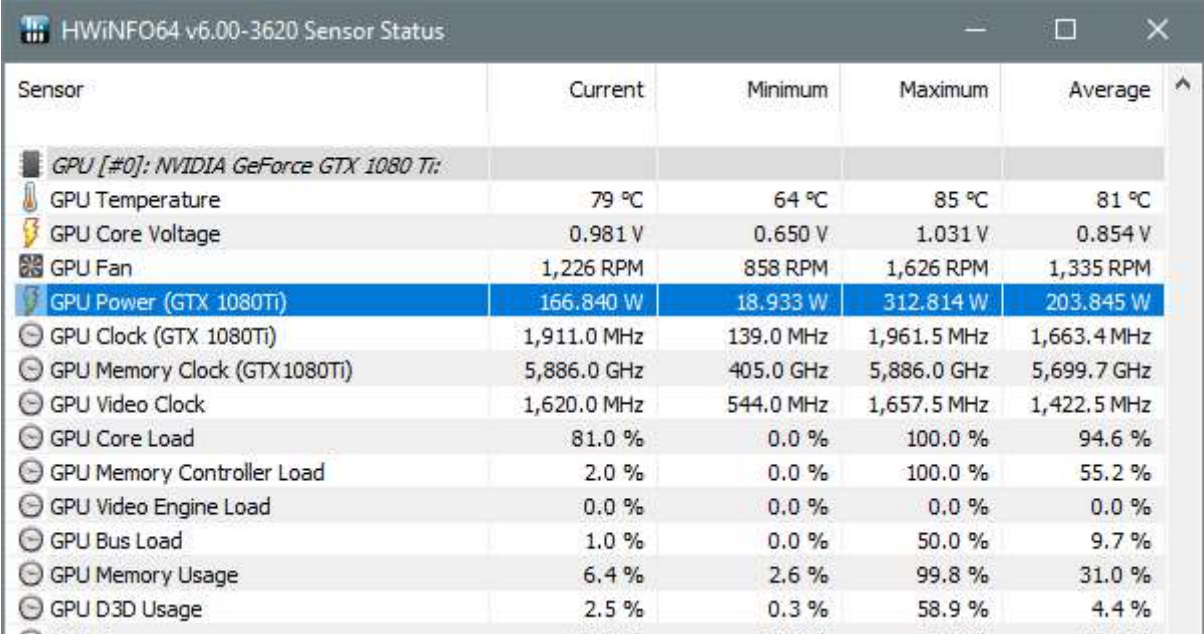
HWiNFO64 needs to be left running while MPM is running, otherwise the power usage readout will fail.

### 3. Configure the hardware sensors



#### 4. Identify the power usage relevant sensors

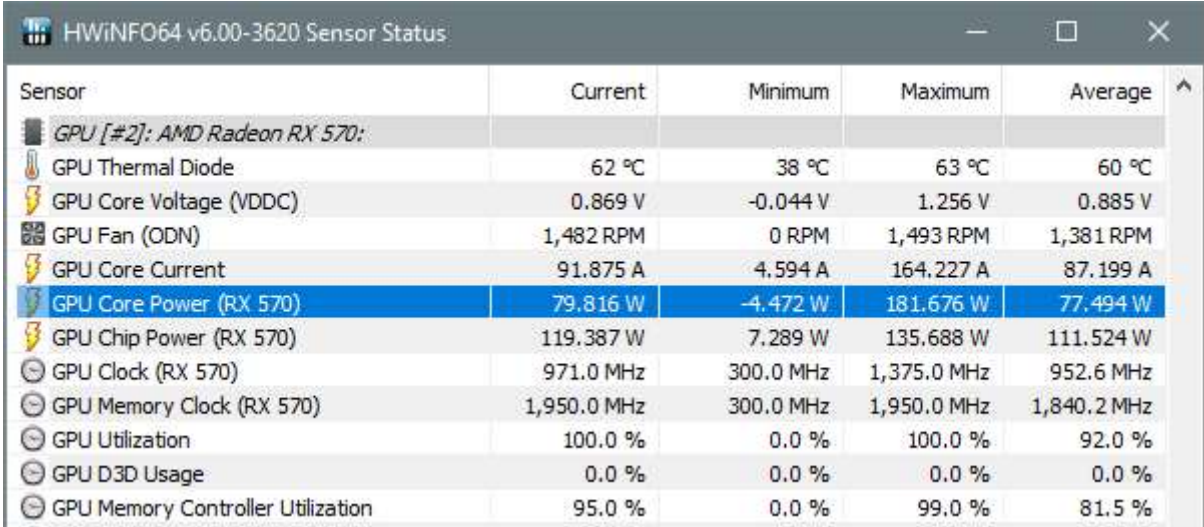
E.g. for a Nvidia GTX 1080ti



The screenshot shows the HWINFO64 v6.00-3620 Sensor Status window for a NVIDIA GeForce GTX 1080 Ti. The table lists various sensors with their current, minimum, maximum, and average values. The 'GPU Power (GTX 1080Ti)' sensor is highlighted in blue.

Sensor	Current	Minimum	Maximum	Average
<b>GPU [#0]: NVIDIA GeForce GTX 1080 Ti:</b>				
GPU Temperature	79 °C	64 °C	85 °C	81 °C
GPU Core Voltage	0.981 V	0.650 V	1.031 V	0.854 V
GPU Fan	1,226 RPM	858 RPM	1,626 RPM	1,335 RPM
<b>GPU Power (GTX 1080Ti)</b>	<b>166.840 W</b>	<b>18.933 W</b>	<b>312.814 W</b>	<b>203.845 W</b>
GPU Clock (GTX 1080Ti)	1,911.0 MHz	139.0 MHz	1,961.5 MHz	1,663.4 MHz
GPU Memory Clock (GTX 1080Ti)	5,886.0 GHz	405.0 GHz	5,886.0 GHz	5,699.7 GHz
GPU Video Clock	1,620.0 MHz	544.0 MHz	1,657.5 MHz	1,422.5 MHz
GPU Core Load	81.0 %	0.0 %	100.0 %	94.6 %
GPU Memory Controller Load	2.0 %	0.0 %	100.0 %	55.2 %
GPU Video Engine Load	0.0 %	0.0 %	0.0 %	0.0 %
GPU Bus Load	1.0 %	0.0 %	50.0 %	9.7 %
GPU Memory Usage	6.4 %	2.6 %	99.8 %	31.0 %
GPU D3D Usage	2.5 %	0.3 %	58.9 %	4.4 %

or for a AMD RX 570:

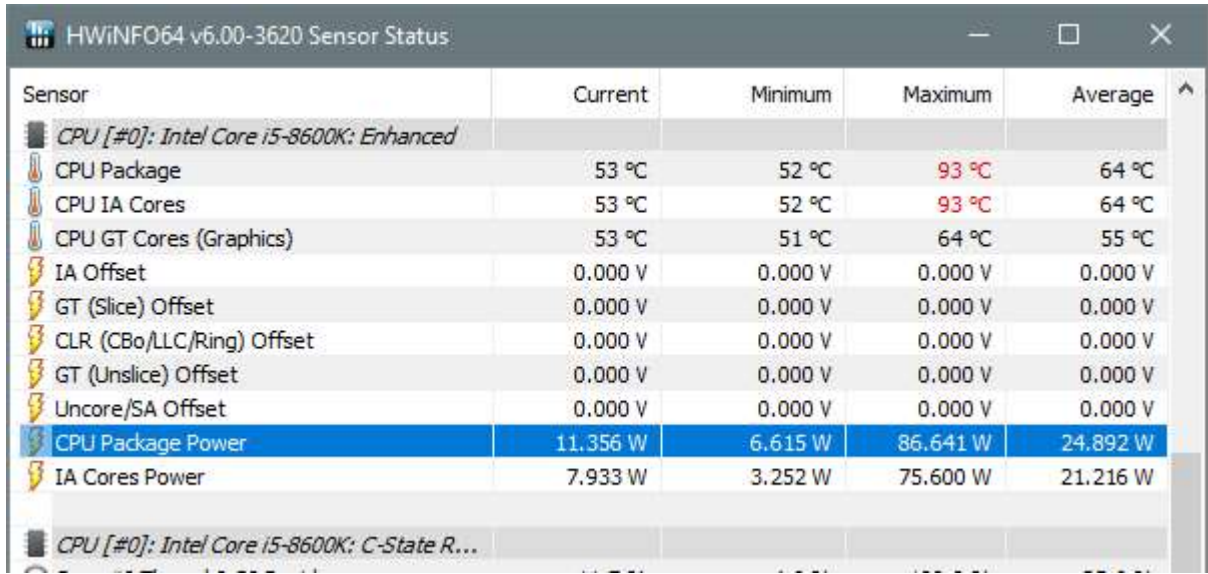


The screenshot shows the HWINFO64 v6.00-3620 Sensor Status window for an AMD Radeon RX 570. The table lists various sensors with their current, minimum, maximum, and average values. The 'GPU Core Power (RX 570)' sensor is highlighted in blue.

Sensor	Current	Minimum	Maximum	Average
<b>GPU [#2]: AMD Radeon RX 570:</b>				
GPU Thermal Diode	62 °C	38 °C	63 °C	60 °C
GPU Core Voltage (VDDC)	0.869 V	-0.044 V	1.256 V	0.885 V
GPU Fan (ODN)	1,482 RPM	0 RPM	1,493 RPM	1,381 RPM
GPU Core Current	91.875 A	4.594 A	164.227 A	87.199 A
<b>GPU Core Power (RX 570)</b>	<b>79.816 W</b>	<b>-4.472 W</b>	<b>181.676 W</b>	<b>77.494 W</b>
GPU Chip Power (RX 570)	119.387 W	7.289 W	135.688 W	111.524 W
GPU Clock (RX 570)	971.0 MHz	300.0 MHz	1,375.0 MHz	952.6 MHz
GPU Memory Clock (RX 570)	1,950.0 MHz	300.0 MHz	1,950.0 MHz	1,840.2 MHz
GPU Utilization	100.0 %	0.0 %	100.0 %	92.0 %
GPU D3D Usage	0.0 %	0.0 %	0.0 %	0.0 %
GPU Memory Controller Utilization	95.0 %	0.0 %	99.0 %	81.5 %

**Important:** for AMD make sure you select 'GPU Core Power' and NOT 'GPU Chip Power'!

for your CPU:



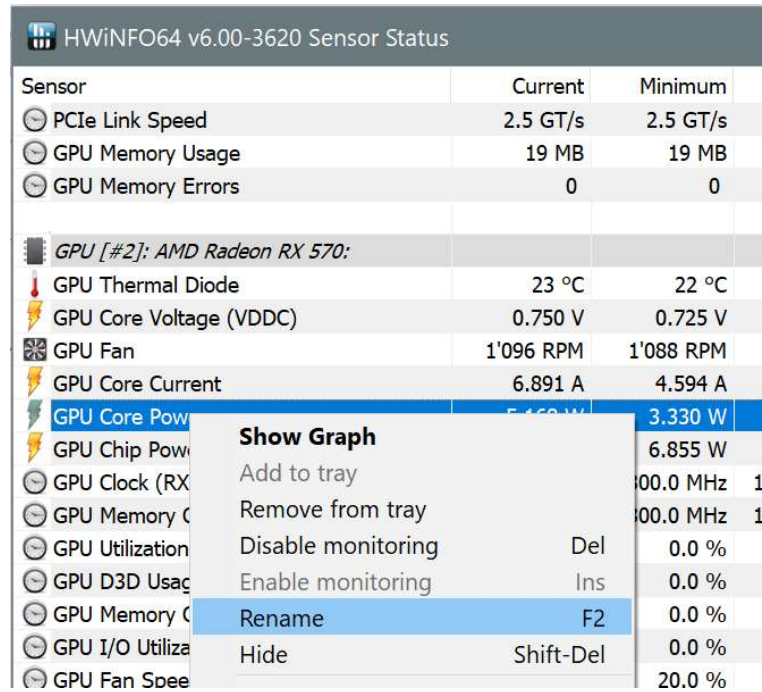
Sensor	Current	Minimum	Maximum	Average
<b>CPU [#0]: Intel Core i5-8600K: Enhanced</b>				
CPU Package	53 °C	52 °C	93 °C	64 °C
CPU IA Cores	53 °C	52 °C	93 °C	64 °C
CPU GT Cores (Graphics)	53 °C	51 °C	64 °C	55 °C
IA Offset	0.000 V	0.000 V	0.000 V	0.000 V
GT (Slice) Offset	0.000 V	0.000 V	0.000 V	0.000 V
CLR (CBo/LLC/Ring) Offset	0.000 V	0.000 V	0.000 V	0.000 V
GT (Unslice) Offset	0.000 V	0.000 V	0.000 V	0.000 V
Uncore/SA Offset	0.000 V	0.000 V	0.000 V	0.000 V
CPU Package Power	11.356 W	6.615 W	86.641 W	24.892 W
IA Cores Power	7.933 W	3.252 W	75.600 W	21.216 W
<b>CPU [#0]: Intel Core i5-8600K: C-State R...</b>				

5. Rename the sensor (optional but very helpful in steps 8 & 9)

**Important:** Steps 5 and 6 need to be done for each and every possible mining device (including CPU even when you are not enabling CPU )!!!

Select the sensor, then right-click and select 'Rename F2':

Then add the GPU name and device number, e.g (RX570#2):



Sensor	Current	Minimum
<b>PCIe Link Speed</b>		
PCIe Link Speed	2.5 GT/s	2.5 GT/s
<b>GPU Memory Usage</b>		
GPU Memory Usage	19 MB	19 MB
<b>GPU Memory Errors</b>		
GPU Memory Errors	0	0
<b>GPU [#2]: AMD Radeon RX 570:</b>		
GPU Thermal Diode	23 °C	22 °C
GPU Core Voltage (VDDC)	0.750 V	0.725 V
GPU Fan	1'096 RPM	1'088 RPM
GPU Core Current	6.891 A	4.594 A
GPU Core Power	5.460 W	3.330 W
GPU Chip Power		6.855 W
GPU Clock (RX)		100.0 MHz
GPU Memory C		100.0 MHz
GPU Utilization		0.0 %
GPU D3D Usag		0.0 %
GPU Memory C		0.0 %
GPU I/O Utiliza		0.0 %
GPU Fan Spee		20.0 %

**Show Graph**

- Add to tray
- Remove from tray
- Disable monitoring
- Enable monitoring
- Rename**
- Hide

Rename Sensor Reading

Current Name:  
GPU Core Power (RX 570)

Original Name:  
GPU Core Power

OK

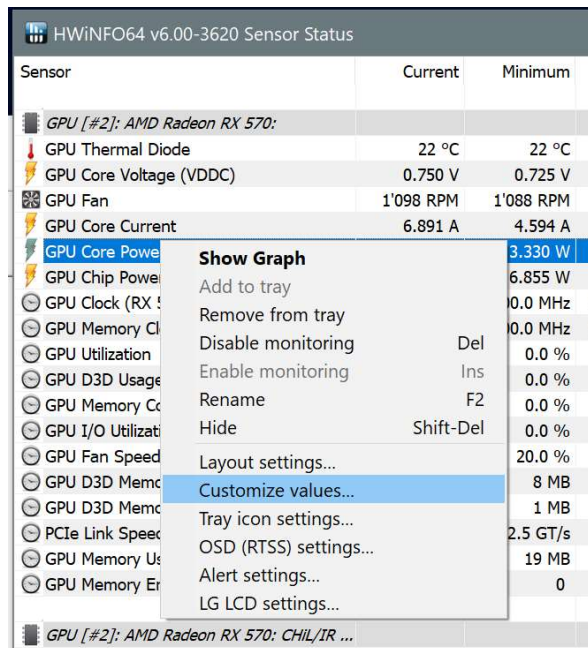
Set Original

Cancel

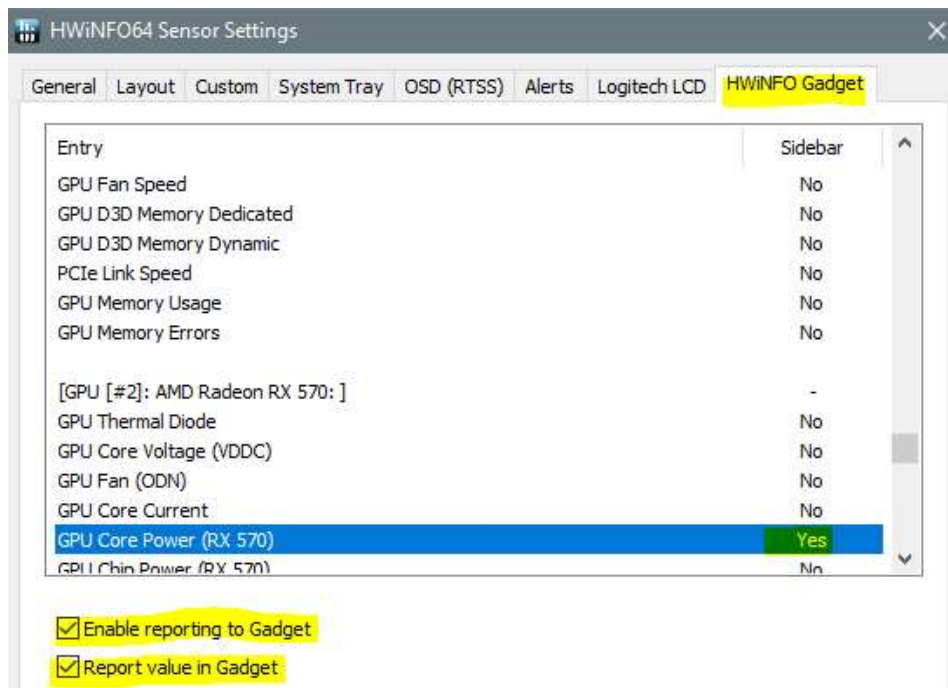
## 6. Configure each relevant power usage sensor

**Important:** This step needs to be done for each possible mining device (also CPU even if you are not using CPU mining)

Select the sensor, then right-click and select 'Customize values...':



then select the tab 'HWiNFO Gadget':



and tick both checkboxes:

- Enable reporting to Gadget
- Report value in Gadget

This will tell HWiNFO64 to constantly update the sensor values to the following registry key  
`Computer\HKEY_CURRENT_USER\Software\HWiNFO64\VSB`

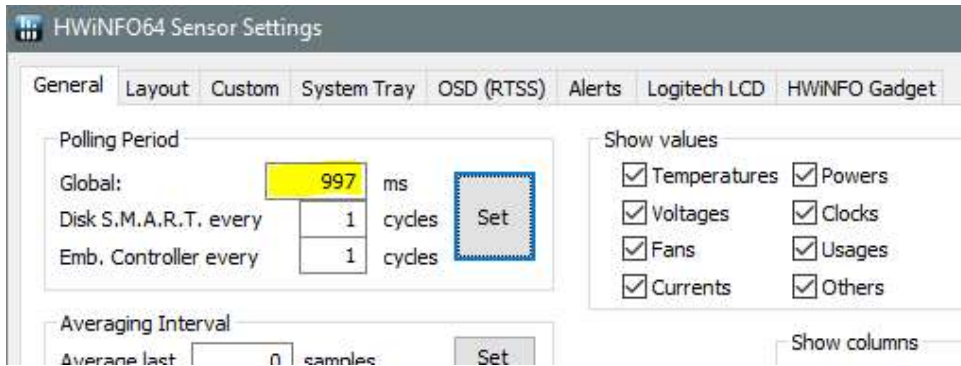


## 7. Configure the sensor polling interval

In the sensors dialog click on

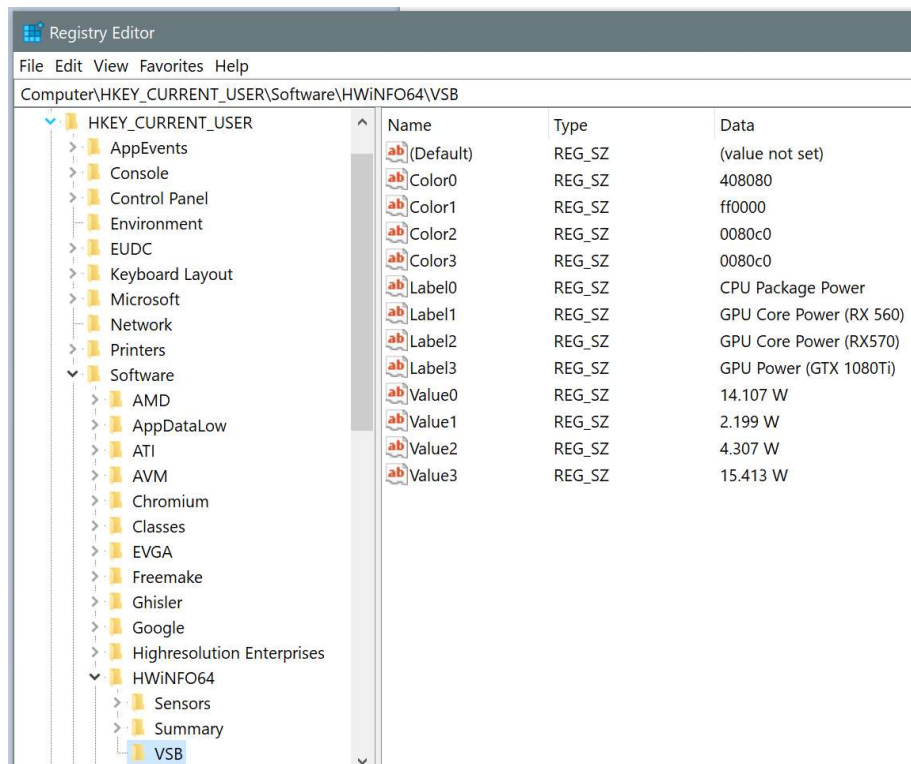


Then configure the polling period to something small like 997ms



Important: The polling period should be smaller than 2 seconds to ensure that MPM will have access to current data

## 8. Run Regedit.exe and verify that the sensor mapping information is available



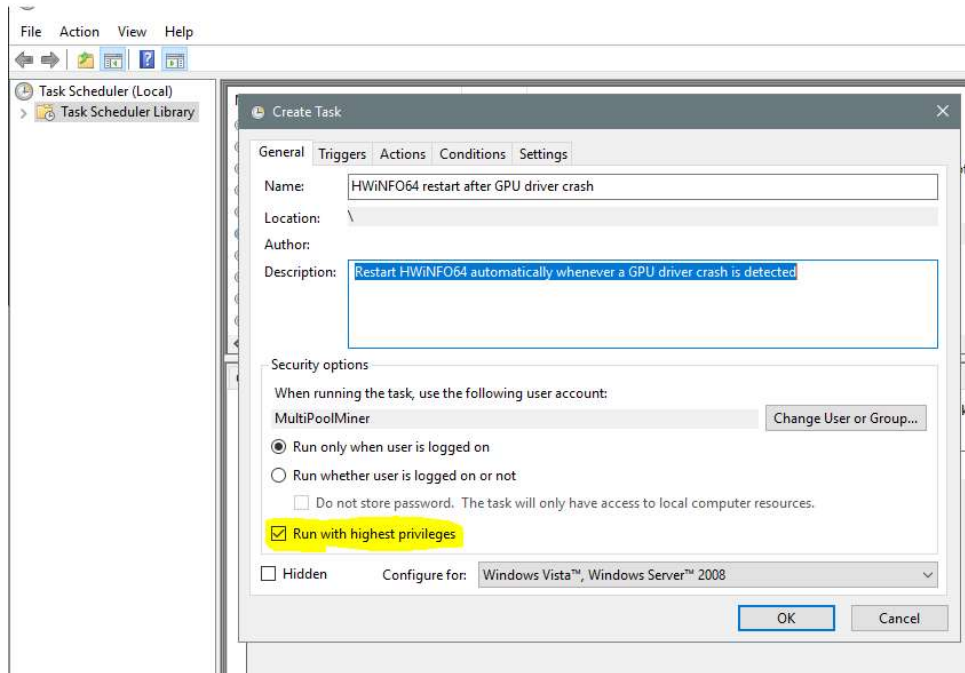
(press F5 repeatedly to verify that the values will get updated periodically)

Note that for each configured sensor there is a 'LabelX' and 'ValueX' entry. In the above example the value in 'Value1' contains the current power usage of the RX 560 card.

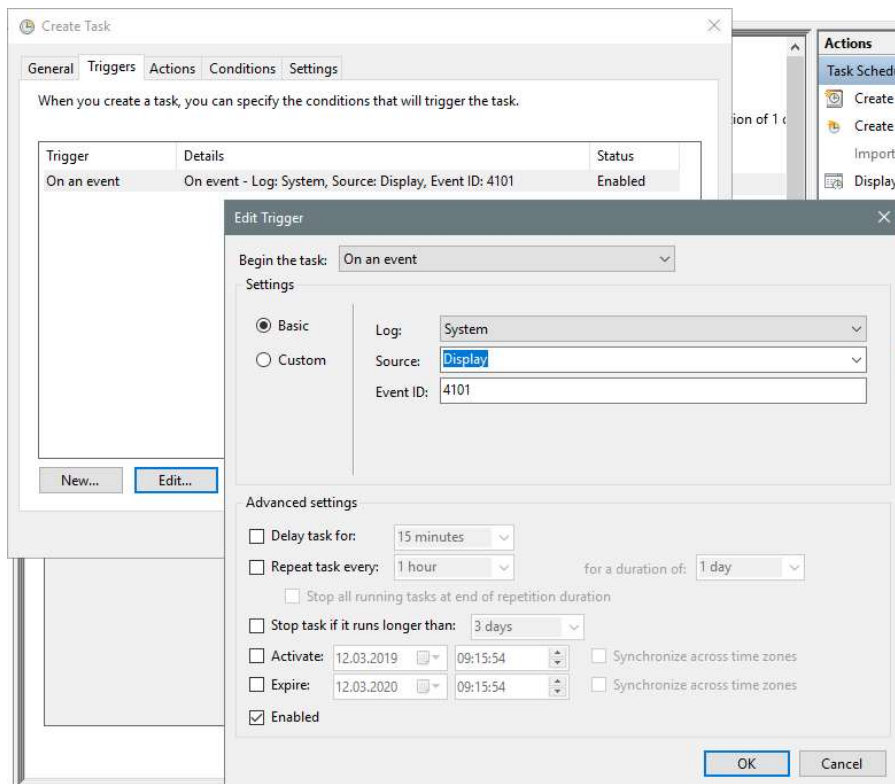
## 9. Create scheduled task to restart HWiNFO64 after a driver crash (optional)

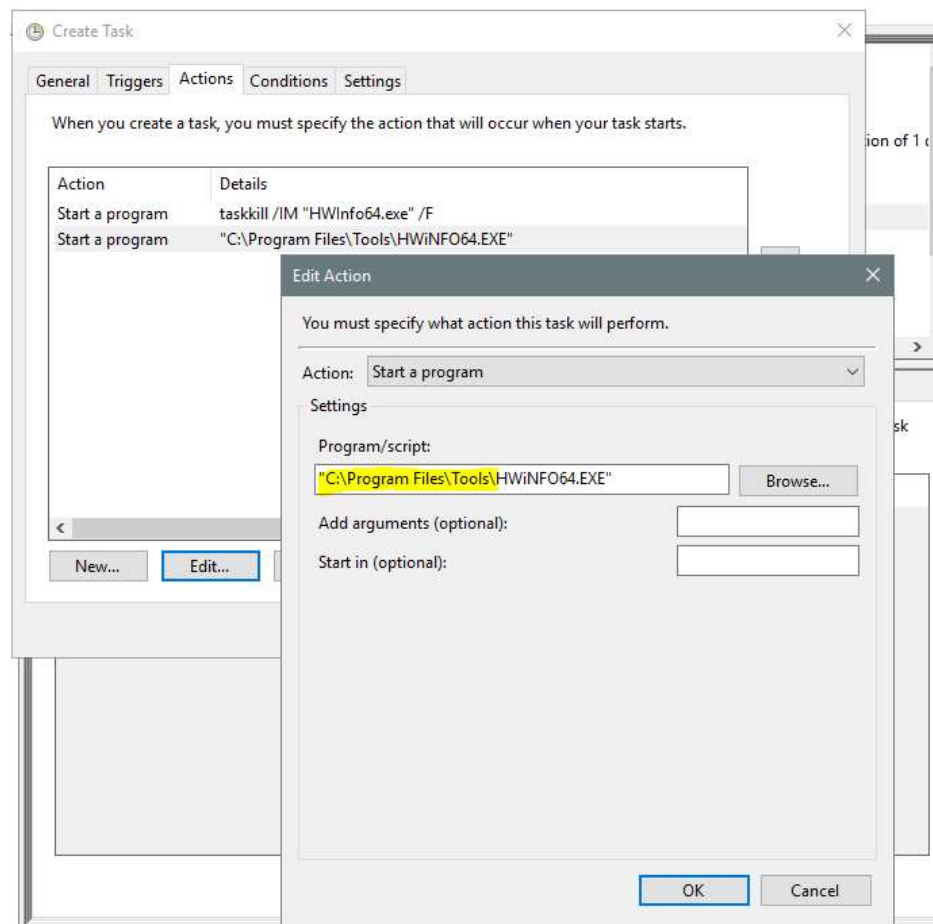
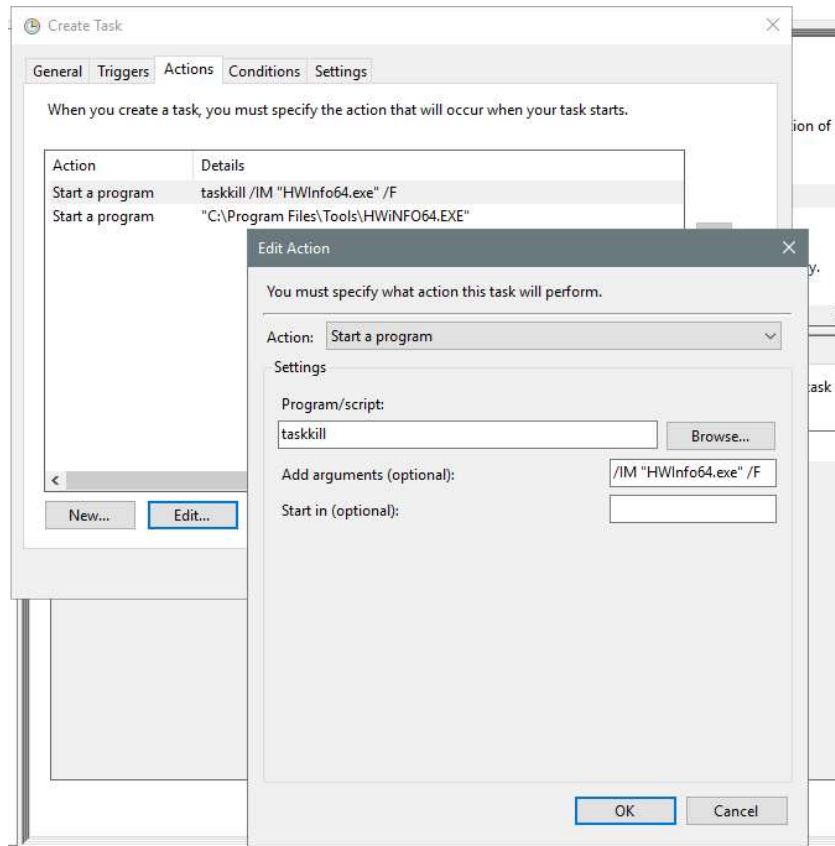
Under some circumstances HWiNFO64 needs to be restarted after a GPU driver crash. The following scheduled task takes care of this.

1. the scheduled task editor: CMD -> schtasks.exe
2. Create a new scheduled task as shown



Make sure you tick 'Run with highest privileges'





Create Task

General Triggers Actions **Conditions** Settings

Specify the conditions that, along with the trigger, determine whether the task should run. The task will not run if any condition specified here is not true.

Idle

☐ Start the task only if the computer is idle for: 10 minutes

Wait for idle for: 1 hour

☐ Stop if the computer ceases to be idle

☐ Restart if the idle state resumes

Power

☐ Start the task only if the computer is on AC power

☐ Stop if the computer switches to battery power

☐ Wake the computer to run this task

Network

☐ Start only if the following network connection is available:

Any connection

OK Cancel

Create Task

General Triggers Actions Conditions **Settings**

Specify additional settings that affect the behavior of the task.

☒ Allow task to be run on demand

☒ Run task as soon as possible after a scheduled start is missed

☐ If the task fails, restart every: 1 minute

Attempt to restart up to: 3 times

☐ Stop the task if it runs longer than: 3 days

☒ If the running task does not end when requested, force it to stop

☐ If the task is not scheduled to run again, delete it after: 30 days

If the task is already running, then the following rule applies:

Stop the existing instance

OK Cancel