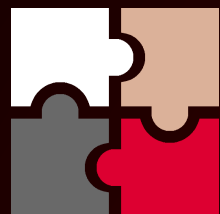


PROJECT HYDRA

OC-SANDBOX FOR ZEN3+ PROCESSORS

HYDRA 1.1F PRO IS ALREADY AVAILABLE FOR PATREON SUBSCRIBERS

1USMUS 2022



PROJECT HYDRA – AMD PBO2 GUIDE

STEP 1:

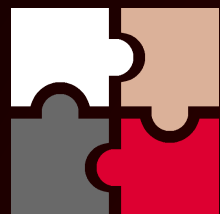
In **UEFI**, in the **AMD Overlocking** menu, set the maximum possible frequency for **Max CPU Boost Clock Override (+)**. In my case I know that I have a good CPU sample, good motherboard and cooling, so I chose **+200**. If you are not sure about something, start with **+100**.

I would also advise you not to use any other custom values in this menu as you will not get much performance.

The screenshot shows the MSI Click BIOS 5 interface. At the top, it displays 'msi CLICK BIOS 5' and 'EZ Mode (F7)'. The system information section shows: CPU Core Temperature: 42°C, Motherboard Temperature: 39°C, VCore: 1.416V, DDR Voltage: 1.380V, BIOS Mode: CSM/UEFI, MB: MEG B550 UNIFY-X (MS-7D13), CPU: AMD Ryzen 9 5950X 16-Core Processor, Memory Size: 32768MB, BIOS Ver: E7D13AMS.A51, and BIOS Build Date: 03/21/2022. The 'GAME BOOST' section includes CPU, A-XMP Profile 1, and A-XMP Profile 2. The 'Boot Priority' section shows a sequence of boot devices. The 'AMD Overlocking' menu is highlighted, showing the following settings:

Precision Boost Overdrive	[Advanced]
PBO Limits	[Auto]
Precision Boost Overdrive Scalar	[Auto]
CPU Boost Clock Override	[Enabled (Positive)]
Max CPU Boost Clock Override (+)	200 MHz
Platform Thermal Throttle Limit	Auto
> Curve Optimizer	
CPU CCD Control	[Auto]
CPU Core Control	[Auto]
SMT Control	[Auto]
LN2 Mode 2	[Auto]
NUMA nodes per socket	[Auto]
LCLK DPM	[Auto]
LCLK DPM Enhanced PCIe Detection	[Auto]

The 'OC' (Overclocking) menu is highlighted in red. The 'M-FLASH' section at the bottom indicates 'Use USB to flash BIOS'. The right sidebar contains a 'HELP' section with the text: 'Increases the maximum CPU frequency that may be automatically achieved by the Precision Boost 2 algorithm.' and a 'HOT KEY' section with the following instructions: '↑ ↓ → ←: Move', 'Enter: Select', '+/-: Value', 'ESC: Exit', and 'F1: General Help'.



PROJECT HYDRA – AMD PBO2 GUIDE

STEP 2:

Start **HYDRA** and go to **AMD PBO2** menu.

GET CO is that automatic diagnostic which will allow to find CO (Curve Optimizer) values for each of the cores without visiting UEFI.

By default, everything is set automatically, the user does not need to make changes to any parameters.

Powerful customization is available for advanced users, and if any parameter is unclear, you just have to hover over it.

When you're ready press **LET'S GO!** .

NOTE 1 : diagnostic process can take several hours. No need to worry.

NOTE 2 : tooltips are available when you hover your mouse cursor over the item of interest.

HYDRA 1.1F PRO
OC-SANDBOX FOR ZEN3

AMD Ryzen 9 5900X 12-Core Processor Stepping 0
MSI MEG B550 UNIFY-X (MS-7D13) BIOS ver. A.40 SMU ver. 56.65.00
NVIDIA GeForce RTX 3070 Microsoft Windows NT 6.2.9200.0 04/30/2022 13:47:50

###	C01	C02	-	C03	C04	-	C05*	C06*
CPPC	162	158	0	170	166	0	174	174
AMD CO	0	0	0	0				
FREQ_EFF	0	73	0	3				
DLDO_VID	0.909	0.913	0	0.90				
SC_CAC	0	0.4	0	0				

###	C07	C08	-	C09	-	C10	C11	C12
CPPC	141	145	0	154	0	133	150	137

CORE#	ON/OFF	CORE#	ON/OFF	TEST#	ON/OFF	FFT	FFT	TIME	SMT
C01	<input checked="" type="checkbox"/>	C07	<input checked="" type="checkbox"/>	1	<input checked="" type="checkbox"/>	4	4	30	<input type="checkbox"/>
C02	<input checked="" type="checkbox"/>	C08	<input checked="" type="checkbox"/>	2	<input checked="" type="checkbox"/>	84	84	30	<input type="checkbox"/>
C03	<input checked="" type="checkbox"/>	C09	<input checked="" type="checkbox"/>	3	<input checked="" type="checkbox"/>	84	84	30	<input type="checkbox"/>
C04	<input checked="" type="checkbox"/>	C10	<input checked="" type="checkbox"/>	4	<input checked="" type="checkbox"/>	1344	1344	30	<input type="checkbox"/>
C05	<input checked="" type="checkbox"/>	C11	<input checked="" type="checkbox"/>	5	<input checked="" type="checkbox"/>	1344	1344	30	<input type="checkbox"/>
C06	<input checked="" type="checkbox"/>	C12	<input checked="" type="checkbox"/>						

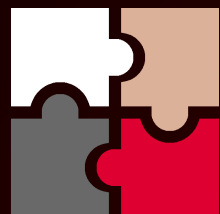
MC test MC auto VID MC test VID 0
SC test SC auto VID SC test VID 1375

CCD#1 CO -10 CCD#2 CO -15 CO step 2 Compare CO Turn off PC

LIGHT NORMAL HEAVY **LET'S GO!** CANCEL

GET CO CHECK CO

HYBRID OC DIAGNOSTIC **AMD PBO2** LOGGING COMPARE BOOST TEST SETTINGS



PROJECT HYDRA – AMD PBO2 GUIDE

STEP 3:

At the end of the diagnosis **HYDRA** will display a message about the end of the diagnosis and the values obtained **will be automatically saved** in the profiles.

To activate **AMD PBO2** use the **Using PBO2** switcher.

With each subsequent start of **HYDRA**, the **AMD PBO2** settings will automatically be activated only when **Using PBO2** is enabled. The user also has the ability to manually enter **CO** values in **UEFI**.

NOTE 1 : the current **CO** values are displayed in the monitoring tables.

NOTE 2 : when the “Using PBO2” switcher is on, the values are applied instantly, but are not saved automatically. Don't forget to save the profile (bottom right corner).

HYDRA 1.1F PRO
OC-SANDBOX FOR ZEN3

AMD Ryzen 9 5900X 12-Core Processor Stepping 0
MSI MEG B550 UNIFY-X (MS-7D13) BIOS ver. A.40 SMU ver. 56.65.00
NVIDIA GeForce RTX 3070 Microsoft Windows NT 6.2.9200.0 04/30/2022 13:53:29

CCD1									CCD2								
###	C01	C02	-	C03	C04	-	C05*	C06*	###	C07	C08	-	C09	-	C10	C11	C12
CPPC	162	158	0	170	166	0	174	174	CPPC	141	145	0	154	0	133	150	137
AMD CO	0	0	0	0	0	0	0	0	AMD CO	0	0	0	0	0	0	0	0
FREQ_EFF	25	191	0	27	26	0	1933	46	FREQ_EFF	14	19	0	101	0	591	28	20
DLDO_VID	0.93	0.979	0	0.93	0.93	0	1.071	0.927	DLDO_VID	0.925	0.925	0	0.923	0	1.046	0.922	0.925
SC_CAC	0	0.8	0	0	0	0	4.8	0	SC_CAC	0	0	0	0	0	3.7	0	0

CPU usage	CPU TEL/VID	THM/LIMIT	TDC/LIMIT	EDC/LIMIT	PPT/LIMIT	EDC throttler	FCLK effective	MEMCLK/UCLK	UMC RD/WR
0	1.218 / 1.294 5.9%	35.7 / 90	11.2 / 95	134.1 / 140	47.3 / 142	4.8	1900	1900 / 1900	0.22 / 0.1

CCD1 CURVE TUNER **CCD2 CURVE TUNER** **PBO2 PARAMETERS** **DYNAMIC PBO2**

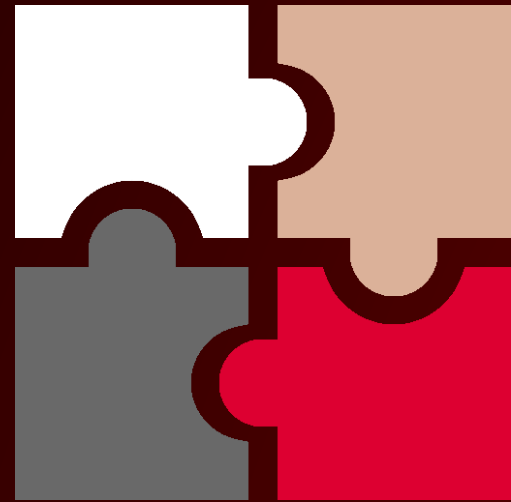
Using PBO2

EDC limit: 140
PPT limit: 142
TDC limit: 95
THM limit: 90
FIT scalar: 1
Max frequency: 5250

Dynamic PBO2
Dynamic CO offset: 10
Normal load CAC threshold: 8

GET CO CHECK CO

HYBRID OC DIAGNOSTIC **AMD PBO2** LOGGING COMPARE BOOST TEST SETTINGS



PROJECT HYDRA

OC-SANDBOX FOR ZEN3+ PROCESSORS

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