# RZEN

# **RYZEN Master** 2.9 – Reference Guide

**APRIL 2022** 



#### PREFACE

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## **RYZEN MASTER INSTALLATION AND CONFIGURATION**



#### PREPARING TO INSTALL RYZEN MASTER

- The Ryzen Master application installer is available to download from AMD <u>here</u>
  - Along with this Quick Reference Guide
- Ryzen Master will only install on a Microsoft Windows 10 PC running an AMD Ryzen Threadripper or AMD Ryzen processor
- Before installing Ryzen Master
  - AMD recommends upgrading the system motherboard to the latest BIOS offered by the motherboard manufacturer
  - AMD recommends selecting the motherboard BIOS's default settings
  - Windows 10 Virtualization-Based Security (VBS) must be disabled for Ryzen Master to function
- Ryzen Master installation on non-OC supported/enabled systems:
  - In this case, Ryzen Master will install, but launching it will only display the Home page for monitoring purposes
  - If the APU/CPU is restricted from overclocking, Ryzen Master will indicate that limitation and will not install

#### INSTALLING RYZEN MASTER

- The Ryzen Master installer will install the appropriate version of Ryzen Master for the Ryzen processor in the system
  - Not all features will be available to systems with legacy processors.
- In During the installation process, a legal disclaimer and click-through license agreement must be accepted
  - Ryzen Master allows the user to configure the processor beyond stock operating conditions which may result in system instability, loss of or corruption of data from open applications, processor failure and system damage
  - The user must accept these risks to proceed with the installation
- If Ryzen Master fails to uninstall or upgrade properly when a new version is being installed
  - Use the Microsoft install/uninstall troubleshooter to clean up the Ryzen Master elements so that Ryzen Master can be cleanly installed
  - See Microsoft application installation troubleshooter

#### USING RYZEN MASTER

- On the first use after installation, Ryzen Master copies the current processor parameters to create default reset parameters
  - If the processor is first configured in BIOS to other than default parameters, these changes will be reflected in the Ryzen Master default settings
  - If the processor is changed after Ryzen Master installation, Ryzen Master will notice and will advise that the default configuration will be reset to the new processor
  - If the system BIOS is updated, please uninstall then re-install Ryzen Master to link supporting BIOS elements for Ryzen Master to use
    - If you have favorite profiles set up, use the profiles Export feature to save them, then Import them after re-installing Ryzen Master
  - These steps will assure that Ryzen Master is accessing the correct information for the new processor and new BIOS

#### Ryzen Master checks for updates

- After installation, Ryzen Master checks for new updates every 15 days automatically
- Users can check manually by starting Ryzen Master under the Settings > Updates section and click on the "Check for Updates" button



#### A NOTE ON RYZEN MASTER GENERAL USAGE

- AMD Ryzen processors are designed for outstanding performance out-of-the-box, on first use, with any Windows application, without needing AMD Ryzen Master
- ▲ AMD Ryzen Master is a tool for enthusiast users who:
  - Use the controls to experiment with processor and system configurations
  - May with to use their system outside of the normal warrantied range of operation
  - Attempt to further optimize general performance or performance of a specific application or set of tasks
  - Accept the risk that some control settings may result in lower performance or system instability
- The Ryzen Master 'Game Mode' profile is offered as a preconfigured group of settings
  - Intended only for Ryzen processors offering more than 8 cores when running games
  - Not necessary for Ryzen 3, Ryzen 5, and Ryzen 7 processors
  - Only use Game Mode if the stock processor settings, also pre-configured as the 'Creator Mode' profile, produce less-than-expected game performance

#### RYZEN MASTER USAGE TIPS

- AMD recommends the following Windows 10 Power Options settings when using Ryzen Master to maximize performance
  - High Performance power plan selected
  - Uncheck "Turn on fast startup" under Power Options > Choose what the power buttons do > Shutdown Settings

For a Ryzen Master configuration change that requires a restart or shutdown

- Ryzen Master will always tell you if a restart requires you to push the system power button and restart Ryzen Master
- If Ryzen Master causes the system to power off, you must restart using the power button, and then restart Ryzen Master after booting to Windows
- If Ryzen Master doesn't prompt the user to power off the system, the system will restart without user intervention, and Ryzen Master will automatically start; wait for it

In this case, it may take on the order of 10 seconds for Ryzen Master to appear, depending on core and performance settings

#### RYZEN MASTER – SYSTEM RESTARTS AND PERSISTENCE OF SETTINGS

- Ryzen Master will automatically restart the system and re-open when certain features are Applied
- Some Ryzen Master configurations do not persist after a user-initiated restart or BIOS actions

The cha	ese Ryzen Master configuration anges	Require this system change and user action.			State of processor configuration after reboot to Windows				
•	Control Mode set to Precision Boost Overdrive <sup>(1)</sup> or Manual Set Core speed, core voltage	No restart or shutdown required, activated on Apply	Ту	pe of reboot	Active cores, SMT setting	Control Mode & frequency	Memory speed and parameters		
•	Control Mode changed to or from Eco-		Ryz	en Master restart	Per profile Applied	Per profile Applied	Per profile if Included		
•	Mode (3000-Series CPUs only excluding Threadripper) Control Mode changed to or from Auto Overclocking mode		Ryz shu cor	en Master utdown to enable res or SMT	Per profile Applied	Default. Please re-apply the profile.	No change		
•	Control Mode changed from Manual mode (except 3000-Series CPUs) Disabling any cores	Ryzen Master initiates a system restart and Ryzen Master self-starts, no user action required	User-initiated Windows Restart Shutdown		No change	Default (stock)	No change		
•	Disabling Simultaneous Multithreading Disabling or Enabling Memory Access Mode or Legacy Compatibility Mode		Use def	er loads BIOS aults & restarts	Default (stock)	Default (stock)	Default (stock)		
•	Any Memory Voltage or Memory Control change		1)	If "Persistent PCD V	/alues" option is "on"	in Settings, system r	estart will be requeste		
•	Enabling all cores Enabling Simultaneous Multithreading	Ryzen Master-initiated shutdown then user must power on system and re-start Ryzen Master <sup>(2)</sup>	2)	Required for older I 1000, 2000 Series C features.	Ryzen 200, 1000, 200 CPUs. Newer product	0 Series CPU/APUs a s requests restart be	nd Ryzen Threadrippe fore enabling these		

#### CONFIGURATION CHANGES, RESTARTS AND SHUTDOWNS

#### CONFIGURATION PERSISTENCE

## AMD RYZEN MASTER 2.9 FEATURE REVIEW

#### **NEW TO RYZEN MASTER 2.9**

#### ▲ RELEASE HIGHLIGHTS:

- Includes all previous AMD Ryzen<sup>™</sup> Master V2.6 features
- Adds support for Desktops utilizing AMD Ryzen<sup>™</sup> 5000 processors
- Adds Memory Overclocking support for AMD Ryzen<sup>™</sup> 7 5800X3D
- Adds support for AMD Ryzen<sup>™</sup> Threadripper<sup>™</sup> PRO 5000WX processors
- Added Bug Reporting Tool for easy feedback and issue reporting
- Introducing both Auto-Curve optimizer and Manual Curve optimizer for AMD Ryzen<sup>™</sup> 5000 processors and AMD Ryzen<sup>™</sup> PRO 5000WX processors

#### ▲ RELEASE LIMITATIONS:

Not all features are visible on Legacy Processors

- Bug Reporting Tool:
- Ryzen Master now supports AMD Bug Reporting tool
- User can now report issues or concerns directly by clicking on the icon shown





- Curve Optimizer:
- Updated dashboard for Curve
   Optimizer in both All Core mode and
   Per Core mode
- When All Cores option is selected, curve optimizer algorithm is run on all cores simultaneously
- When Per Core option is selected, curve optimizer algorithm is run on each core optimizing for best performance



- Curve Optimizer:
- In the advanced view both autocurve optimizer and manual curve-optimizer can be done
- On the right, image shows "Auto Offset" selected, curve optimizer algorithm can be run in both per core and all core mode
- Algorithm automatically finds the stable value and asks the user if they wish to apply

AMDZI RYZEN M	ASTER - AMD Ryzen Threadrippe	er PRO 5975WX 32-Cores			·····································
A Home	✓ Control ModeIncluded				
Creator Mode Game Mode	Defa	ult	Precision Boost Overdrive	Auto Overcl	ocking
Profile 1 Profile 2	Boost Override CPU 100	<ul> <li>∧ PPT</li> <li>✓ 1,000</li> <li>CCD Foregroups 0 at inside</li> </ul>	<ul> <li>↓ TDC</li> <li>↓ 300</li> <li>↓ 500 Factorization of the interval</li> </ul>	✓ EDC ✓ 400	~ ~
Curve Optimizer	PBO Scalar	OFF ON 100	v 100	V 100	
	CCD Frequency Optimizer 3 100 ✓ Curve Optimizer Control	cluded Auto Offset —			
	Curve Optimizer Mode	Off	All Cores	Per Core	Start Optimizing
	Memory Control     Induded     Coupled Mode     OFF ON	Push All Auto Push All Memory Clock 1333 Fabric Clock 1333	Manual		
*	MEM VDDIO Auto		CLDO VDDP Auto		
	CLDO VDDG CCD 0 Auto	CLDO VDDG CCD 1 Auto	CLDO VDDG CCD 2 Auto		D3
	CLDO VDDG IOD 0 Auto	CLDO VDDG IOD 1 Auto	CLDO VDDG IOD 2 Auto	CLDO VDDG IO Auto	D3
	CAS Latency Auto	Row Precharge Delay Auto	Read Row-Column Delay Auto	Write Row-Cole Auto	ımn Delay
Basic View	Row Cycle Time	RAS Active Time	CAS Write Latency		
写 Import/Export	∩ Trfc2	∩ Trfc4	☐ Tfaw		
☐ Reset	Auto	Auto	Auto	Auto	
₀© Settings ? Help	Auto	Auto	Auto	Auto	
i About	🗸 Apply	√	Save Profile	Reset Profile	Copy Current

- Curve Optimizer:
- This is snapshot of a result after curve optimizer operation is done on per core
- Based on the stability, each value is derived. This derived value can be applied or manually changed to test a different offset.

RYZEN M	A S T E R - AMD Ryzen Threadripper PR	O 5975WX 32-Cores		× _ D
☆ Home	✓ Control Mode Included —			
Creator Mode	Default		Precision Boost Overdrive	Auto Overclocking
Game Mode				
Profile 1	Curve Optimizer Control Include	d Auto Offset		
Profile 2	Curve Optimizer Mode	Off	All Cores	Per Core Start Optimizing
Curve Optimizer	CO Coro 1 Value	CO Corp 2 Value	CO Coro 2 Valua	CO Coro 4 Valuo
	-8	-8	-4	-8
			·	
	-8	-8	-s	-R
	LO Core 9 Value		CO Core II Value	LO Core 12 Value
	CO Core 13 Value	CO Core 14 Value	CO Core 15 Value	CO Core 16 Value
	-2	-10	-1	-10
	CO Core 17 Value	CO Core 18 Value	CO Core 19 Value	CO Core 20 Value
*	( -9	-10	-10	-10
	CO Core 21 Value	CO Core 22 Value	CO Core 23 Value	CO Core 24 Value
	-10	-12	-10	-10
	CO Core 25 Value	CO Core 26 Value	CO Core 27 Value	CO Core 28 Value
	-10	-10	-10	-10
	CO Core 29 Value	CO Core 30 Value	CO Core 31 Value	CO Core 32 Value
	-10	-10	-10	-10
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	0			
Desis View	✓ Memory Control Included	Push All Auto Push All Manua		
Basic view	Coupled Mode Men	ory Clock 1333		
Import/Export	OFF ON Fa	bric Clock 1333		
∏ Reset	<ul> <li>Voltage Controls</li> </ul>			
Settings				
? Help	Auto	Auto	Auto	Auto
i About	Apply	🔨 Discard	Save Profile	🐼 Reset Profile 🗧 Copy Current

- Curve Optimizer:
- After offset values are derived, user can choose to use a different offset.
- Snapshot shows a scenario in which "All Cores" mode is selected and offset value selected is -2.
- User can validate this offset and test the stability before applying.

1DZI RYZEN M	ASTER - AMD Ryzen Threadrip	per PRO 5975W	X 32-Cores						×	×
A Home	Control Mode Included									
Creator Mode		Goult		Dro	isies Roost Overdrive			Auto Overda	elian -	57
Game Mode					ISION BOOSE OVERUITVE			Auto Overcio	king	
Profile 1	Curve Optimizer Control	Included	Manual Offset							
Profile 2	Curve Optimizer Mode		Off				Per Core		Validate Offset	
Curve Optimizer	CO All Core Value									
	-2									
	Memory Control Included	Push A	ll Auto Push Ali	Manual						
	Coupled Mode	Memory Clock	1333							
	OFF ON	Fabric Clock	1333							
	Voltage Controls		1000							
	Auto		Auto		Auto			Auto		
						CD 2			3	
	Auto		Auto		Auto			Auto		
	CLDO VDDG IOD 0					OD 2			3	
	Auto		Auto		le Auto			le Auto		
	<ul> <li>DRAM Timing Configuration</li> </ul>		C. D Delau		O Bred Berry Cr			Contraction Design		
	CAS Latency		Row Precharge Delay		Read Row-Co	lumn Delay		Write Row-Colum	in Delay	
	O Row Orde Time		O PAS Active Time		O CAS Write La	topor		O Trfc		
	Auto		Auto		Auto	lency		Auto		
	O Trfc2				○ Tfaw					
	Auto		Auto		Auto			Auto		
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Basic View	Auto		Auto		Auto			Auto		
G Import/Export			∩ Trtp							
🛱 Reset	Auto		<ul> <li>Auto</li> </ul>		Auto			Auto		
o <sup>®</sup> Settings	☐ TrdrdSd									
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i About	🗸 Apply		✓ Discard		✓ Save Profile		Reset Profile		🖻 Copy Current	

#### RYZEN MASTER FEATURE SUPPORT FOR RYZEN PROCESSORS

Feature	Ryzen Threadrip per 5000 Series CPU Processors	Ryzen 5000 Series CPU Processors	Ryzen Threadrip per 3000- Series CPU Processors	Ryzen 3000-Series CPU Processors	Ryzen 3000-Series APU Processors	Ryzen Threadrip per 2000- Series CPU Processors	Ryzen 2000- Series CPU Processors	Ryzen 2000- Series APU Processor S	Ryzen Threadripp er 1000-Series CPU Processors
Core speed overclocking	Per-core	Per-core	Per-core	Per-core	Per-core	Per-core	Per-core	All cores	All cores
Precision Boost Overdrive Mode	Yes	Yes	Yes	Yes	Yes	Yes	No	No	No
Auto Overclocking Mode	Yes	Yes	Yes	Yes	Yes	No	No	No	No
Fastest cores indicators (★ and ●) – OC Method Fastest pair indicators (★) – OS Method	Yes Yes	Yes Yes	Yes Yes	Yes Yes	Yes Yes	Yes No	Yes No	No No	No No
Manual to Default mode change without restart	Yes	Yes	Yes	Yes	No	No	No	No	No
Integrated GPU overclocking	NA	NA	NA	NA	Yes	NA	NA	Yes	NA
Core and Memory stress test	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	No
Power and current monitoring	Yes	Yes	Yes	Yes	Yes	Yes (No EDC)	Yes	Yes	No
Dynamic Local Mode memory control	No	NA	No	NA	NA	Yes	NA	NA	NA
Eco-Mode	No	Yes	No	Yes	No	No	No	No	No
Extended memory parameters control	Yes	Yes	Yes	Yes	No	No	No	No	No
Auto and Manual Curve Optimizer	Yes	Yes	No	No	No	No	No	No	No

#### WELCOME TO AMD RYZEN MASTER 2.3 AND ABOVE WITH BASIC VIEW

#### SUPPORTING AMD 3RD GEN RYZEN PROCESSORS WITH NEW PROFILES CONTROL INTERFACE

As AMD Ryzen Master has evolved to support an increasingly diverse set of CPU products and features, the user interface has also grown increasingly complex. It could useful to develop a "basic view" that provides quick access to the most essential features and telemetry.

The new basic view provides you a quick snapshot of your system:

- CPU Temperature showing the current temperature and the maximum advisable temperature.
- CPU Clock Speed showing the current frequency of the CPU core cluster and the maximum allowable in the present control mode.
- CPU Core Voltage showing the current average core voltage and the maximum allowable voltage set by the present control mode.

Select which control mode you wish to use:

- Manual overclocking allows you to set the CPU frequency and CPU voltage control
- Auto OC enables the Automatic Overclocking of your system. If you wish to use Precision Boost Overdrive, select that option within Advanced View.
- Default returns your system to a non-overclocked state.



#### AMD RYZEN MASTER 2.3 WITH BASIC VIEW – MANUAL MODE NEW PROFILE CONTROL INTERFACE



Manual Control Mode allows you to select the clock speed and voltage for the CPU:

Select the clock speed in MHz by either typing in a value (e.g., 3800) or by pressing the Plus (+) or Minus (-) keys until the desired clock speed is reached.

Select the CPU voltage in Volts either typing in a value (e.g., 3800) or by pressing the Plus (+) or Minus (-) keys until the desired clock speed is reached

> n occur if this setting is not use software. GD-26

Select Apply & Test to help determine if your system will be

## DASHBOARD PERFORMANCE MONITORING AND SETTINGS AT A GLANCE

## HOME – THE DASHBOARD

- The new dashboard view supporting AMD 5000-Series
   CPUs and APUs now organizes more information for the user
- Use the expand/collapse controls for any section to view only the information of interest.
  - Updated to add expand/collapse on a per-CCD basis.

AMDZI RYZEN M	ASTER - AMD Ryzen Thread	lripper 3990X	64-Core Processor					_ C	) ×
A Home	🗹 Temperature, Speed, Pow	er & Current							
Creator Mode	1 1		<b>Ovnamic Perfo</b>	manc	e and Power (	ริลมุยค	s /		
Game Mode	32.33 °C	357 MHz	22 % of 280 W	- 2.211 W	– 13.799 W –	24496	1% #215A	1%	
Profile 1	Temperature P	eak Speed	PPT	CPU Power	soc Power	π	XC (CPU)	EDC (CPU)	
Profile 2	N Control Mada								$\dashv$
Home	OC Mode		nt control mo	de the	processor is c	operat	ing in		
and	Cores Section		Preferred	Core	toggle (OC/OS	5)			
Profiles	Active CCD Mode	8							
tabo	CCX 0 430		CCD 0		CCX 0 4 30	> (	CCD 1		-
Labs	195 Sleep	namic	c behavior of c	ores b	y Core, Core (	Compl	ex (CCX)		leep
			and Core	Com	plex Die (CCD)	> (	CCD 3		
	CCX.0 4,30 Sleep Sleep Sleep		CCX 1 4,300 Sleep Sleep Sleep	Sleep	CCX 0 4,300 Sleep Sleep Sleep		CCX 1 Sleep Sleep	4,300 Sleep S	leep
			CCD 4				CCD 5		
	CCX 0 4,3	iach C	ore Complex D	oie (CC	CD) can expand	d/colla	apse to		-
	Sleep Sleep Sleep	adiust	view and deta	ails of	each Core Cor	nnlex			leep
	CCX 0 4,30		CCX 1 4,300		CCX 0 4,300		CCX1	4,300	5
	Sleep 219 Sleep	Sleep	Sleep Sleep Sleep	Sleep	Sleep Sleep Sleep	Sleep	Sleep Sleep	Sleep S	leep
	Voltage Control								
	Peak Core(s) Voltage	0.800889	Average Core Voltage	0.228915	ntrol settings				
	✓ Additional Control		Additio		introi settings				
Other	Simultaneous Multithreading	ON	Memory Access Mode	Auto	Legacy Compatibility Mode	OFF			$\rightarrow$
control	Coupled Mode	ON	Memory Clock	1,333	Fabric Clock	1,333			
8. info	Voltage Controls								
	MEM VDDIO		MEM VTT		VDDCR SOC	0.888	CLDO VDDP		9002
tabs	CLDO VDDG	0.8973	MEM VPP	0					
-	Market Configuration		Static	Memo	ory Settings				
Import/Export	CAS Latency		Row Precharge Delay		Read Row-Column Delay		Write Row-Column Delay		
Settings	Row Cycle Time		RAS Active Time		CAS Write Latency		Trfc		467
? Help	Trfc2	347	Trfc4		Tfaw		TrrdS		
i About	TrrdL.	8	Twr	20	TwtrS	4	TwtrL.		10

#### RYZEN MASTER – UNDERSTANDING PROCESSOR POWER DOMAINS



- The CPU Voltage setting influences how far the CPU Cores frequency can be driven to a point of instability
- Platform Power Threshold (PPT) is the total power capacity in Watts at the processor socket and includes Memory controller power for a CPU (not for an APU)
- Thermal Design Current (TDC) is the total current capacity in Amps at the thermal throttling limit of the processor
- Electrical Design Current (EDC) is the total current capacity in Amps that can be supplied to the socket

- The SOC Voltage setting drives the overclocking potential for the memory controller and, if an APU, for the APU Graphics (GFX)
  - The APU GFX Voltage is derived from the SOC Voltage and determines how far the GFX frequency can be driven to the point of instability
- Power information is separated for CPU and SOC for APUs
  - Total System Power (TSP) replaces PPT CPU and SOC power are reported separately
  - TDC and EDC are reported for the SOC domain separately from CPU

#### HOME- DYNAMIC PERFORMANCE GAUGES FOR CPUS



#### Parameter sampling rate controlled in Settings

#### HOME- DYNAMIC PERFORMANCE GAUGES FOR APUS



#### Parameter sampling rate controlled in Settings

## **PROFILES FOR SETTING PROCESSOR OPERATION**

#### RYZEN MASTER 2.3 AND ABOVE PROFILES

AMD

#### SUPPORTING AMD 3RD GEN RYZEN PROCESSORS

The Game Mode profile may be useful for legacy games that cannot run on more than 8 cores, 16 threads, such as on the AMD Ryzen 9 3900X

Precision Boost Overdrive and Auto Overclocking modes may extend performance while the processor remains under automatic control

New, compact cores control interface includes Core Complex Die (CCD), Core Complex (CCX) and per-die control of core activation and frequency

Independent control of memory and fabric clocks for enthusiast memory overclocking

Extended memory voltage and DRAM timing parameter control – every BIOS memory parameter now available in Ryzen Master

Toggle to return to Basic View. Return to the most essential features and telemetry

Full parameter Export and Import allows users to share memory configurations, processor configurations, or both

A Homo	Control Mode Include	d				
·n· nome						
Lreator Mode	Defaul	t J	Precision Boost Overdrive	Auto Overclocking	M	anual
Game Mode	PPT		TDC	A EDC		^
Profile 1	395		✓ 255	✓ 255		~
Profile 2	Cores Section Include	d 0C —				
		Active CCD Mod	e		1 2	
		> CCD 0			> CCD1	
	CCX 0	1	CCX 1	CCX 0		CCX1
	3,800 3,800	3,800	3,800 3,800 3,800	3,800 3,800	3,800 3,800	3,800 3,800
	Voltage Control Indu	ded				
	Peak Core(s) Voltage	~				
	1.36875 Volt					
	V Additional Control	cluded				
	Simultaneous Multith	reading	OFF ON	Legacy Compatibility Mode		OFF ON
	✓ Memory Control Indu	Ided Push All Auto	Push Ali Manual			
	Coupled Mode	Memory Clock 180				
	OFF ON	Fabric Clock 180	0			
	✓ Voltage Controls					
			MVTT	VDDCR SOC		
	Auto	- Au	to	Auto	Auto	
	O Auto					
	✓ DRAM Timing Configuration —		w Precharge Delay	O Read Row-Column Delay	O Write Row-Column	Delay
- 	Auto		to	Auto	Auto	JCIDY
Basic view	Row Cycle Time	∩ R4	S Active Time	CAS Write Latency	∩ Trfc	
Import/Export	Auto	O Au	to	Auto	Auto	
∏ Reset	∩ Trfc2		c4	Tfaw		
Settings	Auto	au	to	Auto	Auto	
? Help			r	∩ TwtrS		
i About		- Apply & To				Copy Current

See the Quick Reference Guide for feature and functional details

### GETTING AROUND THE PROFILES INTERFACE

- Profiles are where the user creates groups of settings for performance optimization.
- Different profiles can be created for different applications.

MDA RYZEN M	A S T E R - AMD Ryzen Threadripper 3990X 64	Core Processor		×
Creator Mode	Default	Contro		Manual
Game Mode	Uclebit	Preciatori bodat Overdrive	Auto Overciocking	I'NDI INDI
Profile 1	Cores Section Included OC -			
Profile 2	Active CCD	1ode		3 4 6 8
	> ccd			CCD 1
	CCX 0		CCX 0	CCX1
	2,900 2,900 2,900 2,900 C	ores overclocking	g frequency control	2,900 2,900 2,900 2,900 S CCD 3
	CCX 0	CCX 1	CCX 0	CCX 1
	2,900 2,900 2,900 2,900	2,900 2,900 2,900 2,900 CD CCX and per-	2,900 2,900 2,900 2,900 2,900	2,900 2,900 2,900 2,900
	CCX 0		ccx0	cox1
	2,900 2,900 2,900 2,900	2,900 2,900 2,900 2,900	2,900 2,900 2,900 2,900	2,900 2,900 2,900 2,900
	> CCD			CCD 7
	CCX 0	CCX 1	CCX 0	CCX 1
	2,900 2,900 2,900 2,900	2,900 2,900 2,900 2,900	2,900 2,900 2,900 2,900	2,900 2,900 2,900 2,900
	Voltage Control Included			
	Peak Core(s) Voltage     0.86875 Volt	A .1.1*1**		
	Additional Control Included	Addition	al controls	
	Simultaneous Multithreading	OFF ON	Legacy Compatibility Mode	OFF ON
	Memory Control Included Push	All Auto Push All Manual —		
	Voltage Controls	lage, frequency a	and timing paramet	ers controis
		VDDCR SOC Auto		CLDO VDDG Auto
		Note: Not al	motherboards	
	Auto	suppor	t access to	
5 <b>7</b>	DRAM Timing Configuration	Row Precharge Delay memor		O Write Row-Column Delay
Import/Export	Auto	Auto -the second Ref	V CONTENOIS	Auto
Lu Reset	Row Cycle Time	RAS Active Time		
2 Holo	le Auto	Auto	Auto	Auto
i About		Test Irest Discard		Reset Profile Copy Current
	Actions		Prome runcti	ions

#### PROFILE USAGE DETAILS

- The "Included" buttons determine whether the control group is considered for changes when Applied
  - Selected (green): Apply group on Apply
  - De-selected (gray): Ignore group on Apply
  - This can be useful when you have multiple changes across groups but wish to apply them one group at a time to test for effect
- Changes to the following parameters require a system restart:
  - Auto Overclocking
  - Cores disabled or enabled, SMT, any Memory setting
- Ryzen Master presents the comprehensive memory over-clocking parameters
  - Support of memory overclocking from Ryzen Master depends on motherboard BIOS enablement
  - Parameters that are not active indicate the BIOS does not support them at the application level
  - The BIOS also controls how many memory training attempts are made with the overclocked settings before reverting to a default setting
- Influence of Windows Power Options/Power Plans
  - In High Performance mode, cores will run at the top, overclocked power-state speed they are set for This mode is key for the Copy Current function to capture the top speeds
  - In Balanced mode, cores will modulate between the top, overclocked speed and the lower-speed power states.

Using Copy Current in this mode may result in sampling lower power-state speeds

T nome														
reator Mode	Default			Precision E	Boost Overdri	ve		Auto Ovi	erclocking			Manu	al	
Same Mode	Cores Section	00	Ŋ											
Profile 1														
Profile 2		Active (	CCD Mode						4	2 3	4 6	8		
			CCD 0							> (	CCD 1			
	CCX 0			CC	X1			cc	2X 0			CC	X1	
	2,900 2,900 2,900	2,900	2,900	2,900	2,900	2,900	2,900	2/900	2,900	2,900	2,900	2,900	2,900	2,90
		>	CCD 2							> (	CCD 3			
	CCX 0				X 1							CCX 1		
	2,900 2,900 2,900	2,900	2,900	2,900	2,900	2,900	2,900	2,900	2,900	2,900	2,900	2,900	2,900	2,90
		>	CCD 4					-		> (	CCD 5	COV 1		
	CCX 0	2 000	2 000	2 000	2.000	2 000	2 000	2 000	2.000	2 000	2 000	000	2000	1
	2,900 2,900 2,900	2,900	2,900	2,500	2,900	2,900	2,900	2,900	2/900	2,900	2,900	2,900	2,900	2,91
	CCXD	>	CCD 6		YI.				~x.o	> (	CD 7		¥1	
	2000 2000 2000	2 000	2 000	2,000	2 000	3 000	2,000	2 000	2.000	2 000	2 000	2 020	2 000	
	Additional Control	cluded												
	Simultaneous Multithre	ading		OFF	ON			Legacy Comp	oatibility Mode	e		OFF	ON	
	🛛 Memory Control 🦲 Indu	ded	Push All Auto	Pu	ish All Manua	al —								
	Coupled Mode	M	emory Clock	1333										
	OFF ON		Fabric Clock											
	Voltage Controls													
			Auto	SOC			Auto	DDP				DDG		
			1 Auto				- Auto				Hoto			
	Auto													
	DRAM Timing Configuration —													
Import/Export	CAS Latency		Row Pre	charge Delay			Read Ro	w-Column D	elay		Write R	tow-Column D	elay	
<del>.</del>	Auto		O PACE				Auto				O Tuto			
LI Reset			L L RAS AC	we nime			CAS Wri	te Latency			Inc			
Settings	Auto		Auto				Auto				Auto			
Settings	Auto		Auto				Auto				Auto			

- After selecting Manual Control Mode and setting the speed of all or some CPU cores
  - Always set or confirm the core voltage THEN Apply
  - A core voltage too low for the frequency requested will be instable
- For Ryzen APUs, the GFX Voltage is referenced to the SOC Voltage
  - The GFX Voltage can be raised above the SOC Voltage without reset
  - If the GFX Voltage is lowered below the SOC Voltage, the GFX Voltage will be automatically set to the SOC Voltage
  - If SOC Voltage is raised, a restart will then reset GFX Voltage to the new SOC Voltage 30

#### **PROFILE ACTIONS**

Four profiles provide user configurations to edit, save and apply now or later

- Profiles 1 & 2 are general purpose.
- Creator Mode enables all cores and stock • processor configuration
- For processors with more than 8 cores, Game Mode reduces cores by half and constrains memory access such that some legacy games may perform better.
- All profiles can be renamed just click the • name and enter a new name

\_ 🗆 × AMDZ RYZEN MASTER - AMD Ryzen Threadripper 3990X 64-Core Processor Included Control Mode ጽ Home Creator Mode Default Precision Boost Overdrive Auto Overclocking Manual Game Mode Cores Section Included Profile 1 Active CCD Mode 1 2 3 4 6 8 Profile 2 > CCD 0 > CCD1 2.900 2,900 2,900 2,900 2.900 2.900 2,900 2,900 2.900 2.900 2,900 2.900 2.900 2,900 2.900 2.900 > CCD2 > CCD 3 2,900 2,900 2,900 2,900 2,900 2,900 2,900 2,900 2,900 2,900 2,900 2,900 2,900 2,900 2,900 2,900 > CCD4 > CCD 5 2.900 2.900 2,900 2,900 2,900 2,900 2.900 2.900 2.900 2.900 2,900 2.900 2.900 2.900 2.900 2.900 > CCD 6 > CCD7 2.900 2.900 2.900 2.900 2.900 2.900 2.900 2.900 2.900 2.900 2.900 2.900 2.900 Copies the current Saves the profile of Resets the profile to conditions to the focus. Does not the processor's The most important profile of focus. This This button Apply the profile. condition when This button Action control: The is a very useful Applies the discards If you switch to Ryzen Master was 'Apply' button feature when starting ush All Aut changes to the another view installed. This will profile and with the settings of applies the profile's mory Clock profile of focus without saving your include BIOS-level initiates the settings to the another profile that profile work, the since the saved settings that were stress tests as abric Clock has been applied as a processor and profile reverts to configured in the version of the active at install that reports the status starting point to Auto Settings profile **Ryzen Master also** the last saved of the Apply below. create the new version when you controls. Does not profile. Does not Apply the profile. return. Apply the profile. Resets the system to the default configuration C Row F Auto Auto Auto Auto Ci Reset Row Cycle Time ∩ RAS Active Time CAS Write Latency ) Trfc Settings Opens the application Auto Auto Auto Auto ? Help O Treds O Trie? ∩ Trfc4 O Tfaw Settings page

Apply & Test

Apply

1 About

Ex Discard

Save Profile

Reset Profile

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Copy Current

#### IN CASE OF INSTABILITY AFTER APPLY

- Ryzen Master can usually sense if an applied profile was not stable, such as if the display locks or the system crashes.
  - The user will be told that the last profile was unstable and will not be applied when Ryzen Master is opened.
- Some overclocking conditions can be marginally stable such that Ryzen Master can't tell and opens then loops trying to re-apply an unstable profile.
- If you get into such a loop, use the ? button on the opening warning page to stop Ryzen Master from applying the profile and break the loop.

#### AMDA RYZEN MASTER

?

#### Warning

AMD processors, including chipsets, CPUs, APUs and GPUs (collectively and individually "AMD processor"), are intended to be operated only within their associated specifications and factory settings. Operating your AMD processor outside of official AMD specifications or outside of factory settings, including but not limited to the conducting of overclocking (including use of this overclocking software, even if such software has been directly or indirectly provided by AMD or an entity otherwise affiliated in any way with AMD), may damage your processor, affect the operation of your processor or the security features therein and/or lead to other problems, including but not limited to damage to your system components (including your motherboard and components thereon (e.g., memory)), system instabilities (e.g., data loss and corrupted images), reduction in system performance, shortened processor, system component and/or system life, and in extreme cases, total system failure. It is recommended that you save any important data before using the tool. AMD does not provide support or service for issues or damages related to use of an AMD processor outside of official AMD specifications or outside of factory settings. You may also not receive support or service from your board or system manufacturer. Please make sure you have saved all important data before using this overclocking software

DAMAGES CAUSED BY USE OF YOUR AMD PROCESSOR OUTSIDE OF OFFICIAL AMD SPECIFICATIONS OR OUTSIDE OF FACTORY SETTINGS ARE NOT COVERED UNDER ANY AMD PRODUCT WARRANTY AND MAY NOT BE COVERED BY YOUR BOARD OR SYSTEM MANUFACTURER'S WARRANTY.

ОК

Cancel

#### SETTINGS CONTROL BEHAVIOR OF FEATURES



#### PRECISION BOOST OVERDRIVE (PBO)

- Precision Boost Overdrive allows the processor to automatically use the power design margin reported by the motherboard above warrantied CPU limits, potentially increasing maximum and average core speed.
- This feature works best with a premium overclocking motherboard, a premium cooler, and a cool ambient environment.
- With the AMD 5000-Series CPUs, the user can return to Default without a system restart if Persistent PCD Values is set of OFF. In ON, then a restart will be requested



AMDA

#### AUTO OVERCLOCKING (AOC) – WITH A 3000-SERIES CPU

RYZEN MASTER - AMD Ryzen Threadripper 3990X 64-Core Processor

- Auto Overclocking allows the processor to automatically manage to a boost frequency higher than the stock value while remaining under automatic control.
- This feature works best with a premium overclocking motherboard, a premium cooler, and a cool ambient environment.
  - This feature requires a system restart initiated by Ryzen Master on Apply.



#### AUTO OVERCLOCKING (AOC) – WITH A 3000-SERIES APU

• Auto Overclocking for 3000-Series APUs includes automatically managing to an increased APU GFX clock

A Home						
Creator Mode	Default	Prec	ision Boost Overdrive	Auto Overclocking	Manual	
Game Mode	Boost Override CPU	A Boost Override APU	GFX A PPT		TDC (CPU)	
Profile 1	100	✓ 200	✓ 1,000		✓ 114	
Profile 2	EDC (CPU) 168		✓ EDC (SO ✓ 75	c) /		
	✓ Cores Section Included		050			
	C 01 3700 C 02 3700 C 03 3700 C 04 3700 Voltage Control Included Peak Core(s) Voltage 1.40625 Volt Additional Control Included Simultaneous Multithreading	• \$	The auto-overclocked graphic equal to the processor's stoc frequency plus the Boost Ove frequency setting in MHz. The Ryzen Master default is + button Apply convenience. Note: this default setting doe stability.	cs boost frequency is k graphics boost erride APU GFX -200MHz for one- es not guarantee		
	V APU GFX Control Included				APU GFX Voltage	
	APU GFX Clock 200				0.90375	

#### MANUAL OVERCLOCKING WITH A 3000-SERIES CPU

hese symbols control which ores react to a frequency etting on any one core. he frequency set for one	MAS	TER - A Control M	MD Ryzen ode 💽	<ul> <li>auton</li> <li>Frequ</li> <li>New: autor</li> </ul>	natic ma iency car With the nation co	nageme n be set e AMD 3 ontrol w	anows tr ent. at the co 8000-Ser rithout a	ore, CCX ies CPUs system	, CCD or , the us restart.	all-core	es level. eturn to	the PB	O or Def	fault mod	les unde	er	<b>S</b>
ore can apply de			D	efault			Precision Bo	ost Overdrive			Auto Ove	rclocking			Manu	Jal	
• to only that CCX		Cores Sect	tion 🦲	ncluded	<u> </u>										-		
• to only that CCD					Active CCD	Mode							2 3	4 6	8		
to all cores					- > ¢	CD 0								CCD 1			
his feature simplifies setting			CC	CX 0			cc	X 1			Q	CX 0			0	CX1	
wels of core grouping		2,900	2,900	2,900	2,900	2,900	2,900	2,900	2,900	2,900	2,900	2,900	2,900	2,900	2,900	2,900	2,900
vers of core grouping.			2	~~~~	> 0	CD 2	~	-v -		-	0	~~ 0	$\sim$ $ $	CCD 3	0	~1	
		2,900	2,900	2 900	2,900	2 900	2,900	2.90	2,900	2.900	2.900	2.900		2,900	2.900	2.900	2,900
			C	CX 0	> 0	:CD 4	C	×1	CPU fr mouse	requenc e or key	cy can be board up	set by down	dragging or scrol	g the bar I wheel c	left and ontrols,	right, b or by er	y using Itering a
		2,900	2,900	2,900	2,900	2,900	2,900	2,900	specif	ic value	in the fr	equenc	y field.				
PU voltage MUST be considered					> 0	CD 6		•	Frequ	ency val	lues are	limited	to incre	ments th	at the pi	rocessor	will set
nd typically set when manually			C	CX 0			co	X 1	on Ap	ріу							
verclocking the cores.		2,900	2,900	2,900	2,900	2,900	2,900	2,900	2,900	2,900	2,900	2,900	2,900	2,900	2,900	2,900	2,900
ne displayed setting is sampled	<u> </u>	Voltage Co	ontrol 📒	Included													
om the state of automatic control	Pe	ak Core(s) Vo	oltage														
hen Manual mode is selected.	3.0	6875 Volt	C. I.I.I		_ ~ _												
ne sampled value may or may not		Additional	Control	Included													
e appropriate for a manual setting.		Simu	iltaneous Mi	ultithreading			OFF	ON			Legacy Comp	atibility Mod	le.		OF	CIN	
	~	Memory C	ontrol	Excluded	Pus	h All Auto	Pus	h All Manual			• Note	that the	e Precisi	ion Boost	Overdri	ive para	meters
											are n	ot appli	icable w	hen using	g Manua nower r	al overclo	ocking. at the
											manu	ial s <u>etti</u>	ngs <u>up t</u>	o th <u>e poi</u>	nt o <u>f ins</u>	tabi <u>lity.</u>	

#### MANUAL OVERCLOCKING WITH A 3000-SERIES APU

	N MA	STER	- AMD Ryzen	5 3400G with R	A system restart is required	when changing mod	des when using the AMD 30	000-Series APUs.			
A Home		✓ Cont	rol Mode 🗾	ncluded							
Creator Mode				Default	Precision Boost O	verdrive	Auto Overclocking Manual				
Game Mode		Course	- Castian (								
Profile 1	1	<ul> <li>Core</li> </ul>	s Section	nciuded		0000					
Profile 2		C 01	2700	_		CCXU					
		• 002	3700								
		0.02	3700								
			2700								
		Frequ on Ap	iency values	are limited to	o increments that the process	or will set to	but not lower.				
		✓ APU	GFX Control	Included							
		APU (	GFX Clock 200					APU GFX Voltage 0.89375			
	»	∽ Mem	ory Control [	Included	Push All Auto Push All Manu	al					
		Memo	ory Clock 1067								
		Memo	ory Clock 1067 je Controls								

#### CORE SPEED INDICATORS

• *New:* Toggle option added to switch between Ryzen Master method (OC) or Window Preferred Core method (OS).



- Cores with the least overclocking margin can be disabled to potentially increase core speeds from the remaining active cores
- Be careful many multi-threaded applications run best on a full CCX
- Consider disabling the slower CCX instead of cores from each CCD
  - Disabling entire CCX is only supported on 2000 Series CPU and 2000 Series Threadripper CPU

#### DISABLING CORES AND CCXS<sup>(1)</sup>



## MEMORY OVERCLOCKING CONTROL

- New for 3000-Series processors
- Extensive memory parameter settings for enthusiast use – typically all BIOS memory parameters are now available in Ryzen Master
- Simple memory overclocking remains – just enter the module's label parameters, use 'Auto' settings for the rest



#### RYZEN 3000-SERIES CPUS – MEMORY AND FABRIC OVERCLOCKING

- Ryzen 3000-Series CPU's Zen2 architecture allows for independent overclocking of the Infinity Fabric and the Memory clock
  - Typical memory overclocking performance up to 1866 MHz is most efficient with the fabric and memory clocks coupled at 1:1 ratio
  - Above a memory clock of 1866 MHz, turning Coupled Mode off and setting Fabric Clock to half the Memory Clock will likely be necessary for further memory timing parameter optimization toward system stability\*

AMDA RYZEN	MASTER - AMD Ryzen Threadripp	er 3990X 64-Core Processor		_ 🗆 ×
A Home	🖂 Additional Control 🚺 Included			
Creator Mode	Simultaneous Multithreading	OFF ON	Legacy Compatibility Mode	OFF ON
Game Mode		Gastient		
Profile 1	Memory Control Included	Push All Auto Push All Manual		
Profile 2	Coupled Mode OFF ON	Memory Clock 1333		
	MEM VDDIO Auto MEM VPP Auto DRAM Timing Configuration CAS Latency Auto	<ul> <li>VDDCR SOC</li> <li>Typical memory over most efficient in Control</li> <li>Memory and Fabric decoupled for memory overclocking above</li> </ul>	erclocking is upled Mode clocks can be nory pelay 1850 MHz	CLDO VDDG Auto Write Row-Column Delay Auto

\* Memory overclocking not supported by AMD product warranty

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## MANAGING MEMORY PARAMETER APPLICATION IN PROFILES

AMDZI RYZEN M	A S T E R - AMD Ryzen Threadripper	3990X 64-Core Processor	<ul> <li>Memory param but all memory</li> </ul>	neters set by the parameters car	user are applied as be reset <u>to Auto by</u>	entered, the
Creator Mode			'Push All Auto'	command to all	ow the BIOS's autom	nation to
Game Mode	Simultaneous Multithreading	OFF ON	chaosa tha par		ow the bloos station	
Profile 1	Memory Control Included	Push All Auto Push All Ma				
Profile 2	Coupled Mode OFF ON Voltage Controls MEM VDDIO Auto MEM VPP Auto CAS Latency Auto Row Cycle Time Auto Trifc2 Auto Trifc2 Auto Trifc2 Auto Trifc2 Auto Trifc2 Auto Trifc2 Auto	Memory Clock 1333 Fabric Clock 1333 VDDCR SOC Auto Row Precharge Delay Auto RAS Active Time Auto Trc4 Auto Trc4 Auto Trcp Auto	<ul> <li>For very detaile user may wish t applied exactly parameters defa</li> <li>Use the 'Push A all parameters f</li> <li>The user can all parameter to use</li> </ul>	ed memory over to insure that all as entered in Ry aulting to a BIOS aulting to a BIOS aulting to a BIOS aulting to a BIOS aulting to a BIOS aution for explicity use ways choose to se an Auto value	clocking optimization memory parameter vzen Master with no S automatic setting. mand to display and on Apply. individually set any e.	n, the is are prepare
	Auto Auto TwrwrScL Auto Twrrd Auto CRAM Contoller Configuration Craft*	Auto Twrwr5d Auto	Auto TwrwrDd Auto	Auto Auto Auto		
	Auto Cata Bus Configuration User Controls RttNom Auto Cata Bus Timing User Controls	Auto	Auto			
Import/Export	CsOdtSetup	AddrCmdSetup				
🖬 Reset	Auto	Auto	Auto			
Settings	CAD Bus Drive Strength	0.000		O disc		
7 Helo	Auto	AddrCmdDrvStren	CsOdtCmdDrvStren	CkeDrvStren		
About	Apply	Apoly & Test	Discard Auto	Reset Profile	Copy Current	
1 ADOUL	C rippi				and applications	

#### ECO-MODE – LOWER-POWER OPERATION FOR 3000-SERIES CPUS



- Eco-Mode is a new feature for 3000-Series CPUs, subject to motherboard support.
- Applying Eco-Mode lowers the processor's power consumption from default stock to AMD's lower, standard AM4 infrastructure power level (TDP).
  - 105W and 95W TDP models shift to 65W
  - 65W TDP models shift to 45W
- The processor continues to manage core voltage and frequency automatically to the reduced power levels - expect frequencies may be lower
- PBO, AOC and Manual overclocking are not supported when in Eco-Mode
- Expect to see lower peak frequencies from the cores under heavy multi-threaded workloads, though at lower power consumption.
- Eco-Mode may be useful when trading off Ryzen processor power for more graphics card power at the system level.
- Exit Eco-Mode by selecting and Applying any other control mode.



#### **PROFILE EXPORT**

- User's may wish to save profiles to load later or share
- Each profile tab offers export of
  - All profiles or specific profiles
  - All parameters or user-selected parameters
  - With a field for describing the profiles
- Use the Export button to complete the profile export
- The exported file is encrypted to discourage tampering

RYZEN MAST	TER - AMD Ryzen Threadripper 3990	IX 64-Core Processor		_ U ×
Import / Export				
Import			Export Profile	
Export				
	Select RM Profile File			
	C:/test_profile.rmpf			Browse
	Profile Info			
	Select profile for export			
	All profiles	Single profile	Profile 1	
	Select Components to export			
	Include Preferences			
	Cores Section Included			
	Active CCD Mode	Core Speed	Peak Core(s) Voltage	
	Control Mode Included			
	Eco-Mode	OC Mode	РРТ [РВО]	TDC [PBO]
	EDC [PBO]	PPT [Auto OC]	TDC [Auto OC]	EDC [Auto OC]
	Boost Override CPU			
	Multional Control Included			
	Simultaneous Multithreading	Memory Access Mode	Legacy Compatibility Mode	Dynamic Local Mode
	Memory Clock Included			
	Memory Clock	Fabric Clock		
	Voltage Control Included -			
	MEM VDDIO	MEM VTT	VDDCR SOC	
	CLDO VDDG	MEM VPP		
	🗹 DRAM Timing Configuration 🦲 Inclu	ded		
le exported will be saved Any unsaved changes will	CAS Latency	Row Precharge Delay	Read Row-Column Delay	Write Row-Column Delay
considered for export.	Dow Curla Tima	DAS Activa Tima	CAC Write I stency	Trife
				Export Cancel

#### PROFILE IMPORT

- A profile file can be loaded for the user to Apply
- After selecting the profile file to load, the user can select which parameters to load
- Use the Import button to load the profile's parameters and insert them into the current profile
- The user select the profile's tab and 'Apply' for the imported profile to take effect

MDA RYZEN MAST	E R - AMD Ryzen Threadripper 399	0X 64-Core Processor		_ 🗆 ×
Import / Export				
Import			Import Profile	
Capit	Select RM Profile File			
	C:/test_profile.rmpf			Browse
	Profile Info			
	Select profile for import			
	All profiles	Single profile	Profile 1	
	Select Components to import			
	Include Preferences			
	Cores Section Included			
	Active CCD Mode	Core Speed	Peak Core(s) Voltage	
	Control Mode Included —			
	Eco-Mode	OC Mode	PPT [PBO]	TDC [PBO]
	EDC [P80]	PPT [Auto OC]	TDC [Auto OC]	EDC [Auto OC]
	Boost Override CPU			
	Multional Control Included			
	Simultaneous Multithreading	Memory Access Mode	Legacy Compatibility Mode	Dynamic Local Mode
	Memory Clock Included			
	Memory Clock	Fabric Clock		
	Voltage Control Included			
	MEM VDDIO	MEM VTT	VDDCR SOC	CLDO VDDP
TE: rofile imported is automatically	CLDO VDDG	MEM VPP		
ed but not applied. troked/Disabled (if any)	DRAM Timing Configuration	uded		
ponents are not available to ort due to compatibility issue lata corruption.	CAS Latency	Row Precharge Delay	Read Row-Column Delay	Write Row-Column Delay
	Dow Curla Tima	DAC Active Time	CAC Write I stenny	Trfe.
				Import Cancel

## **PRE-DEFINED PROFILES**

#### GAME MODE PROFILE – FOR RYZEN PROCESSORS > 8 CORES

- The Game Mode profile is only useful if a legacy game will not run with a processor of more than 8 cores supporting SMT (16 logical processors)
- Try all applications first before using Game Mode
- The Game Mode profile is a preconfigured setting that enables Legacy Compatibility Mode for processors with more than 8 cores (such as the Ryzen 9 3900X)
- Applying the profile reduces the active cores count
- All other controls can be used as with any profile
- For example, the user may choose to be more aggressive with core and memory overclocking set in Game Mode for a legacy game

itor Mode	Default	Precision Boost Overdrive	Auto Overclocking	Manual		
ne Mode	Cores Section Included	OC .				
rofile 1	Cores section	× (CD)		~ CCD4		
ofile 2	CCX 0	CCX1	CCX 0	CCX1		
	C 17 2900	C 21 2900	C 33 2900	C 37 2900		
	C 18 2900	C 22 2900	C 34 2900	C 38 2900		
	<ul> <li>C 19 2900</li> </ul>	<ul> <li>C 23 2900</li> </ul>	• C 35 2900	• C 39 2900		
	★ C 20 2900	🛨 C 24 2900	★ C 36 2900	🛨 C 40 2900		
	Voltage Control Included					
	Peak Core(s) Voltage	~				
	0.86875 Volt	<b>~</b>				
	Additional Control Included					
	Simultaneous Multithreading	OFF. ON	Legacy Compatibility Mode	OFF ON		
	Memory Control Included	Push All Auto Push All Manual				
	Coupled Mode	Memory Clock 1333				
	OFF ON	Fabric Clock 1333				
	Voltage Controls					
	MEM VDDIO	VDDCR SOC	CLDO VDDP	CLDO VDDG		
	U Auto	Auto	C Auto	Auto		
	Auto     DRAM Timing Configuration					
	E Disarri Tining Conngolación	Row Precharge Delay	O Read Pour Column Delay	Write Row-Column Delay		
	CAS Latency		I I NEGU NUWFLUIUITII DEIdy			
	CAS Latency Auto	Auto	Auto	Auto		
	CAS Latency Auto	Auto	Auto	● Auto		
	CAS Latency Auto Row Cycle Time Auto	Auto RAS Active Time Auto	Auto	Auto Trfc Auto		
	CAS Latency Auto Row Cycle Time Auto O Trfc2	Auto RAS Active Time Auto O Trfc4	Auto	Auto Trfc Auto O TrrdS		
	CAS Latency Auto Row Cycle Time Auto Trfc2 Auto	Auto RAS Active Time Auto Trfc4 Auto	Auto CAS Write Latency Auto Tfaw Auto	Auto Trfc Auto TrrdS Auto		
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#### CREATOR MODE PROFILE – FOR ANY RYZEN PROCESSOR

- The Creator Mode profile is simply a pre-defined profile with all processor resources enabled
  - Legacy Compatibility Mode is hard-wired off
- All other controls can be used as with any profile
- For example, the user may choose to be less aggressive with core and memory overclocking when using content creation applications and multi-tasking in favor of system stability

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#### ABOUT

- The Ryzen Master About tab is a convenient place for system and software information
  - CPU model and core resources
  - Motherboard BIOS version
  - Windows version
  - Ryzen Master version and build number
- A snapshot of this About information is helpful to AMD if you need to report an issue

Syste	em Information	Overview
Syste Provider: CPU Type: Package Type: CPU Cores: CPU Cores: CPU Architecture: L1 Data Cache: L1 Instruction Cache: L2 Cache: L3 Cache: BIOS Vendor: BIOS Version: BIOS Date:	Advanced Micro Devices, Inc. Advanced Micro Devices, Inc. AMD Ryzen Threadripper 3990X 64- Core Processor Socket SP3r2 64\128 (Physical\Logical) x86_64 64 x 32 KB 64 x 32 KB 64 x 32 KB 64 x 512 KB 262144 KB American Megatrends Inc. 0021 2019/12/30	Configure your CPU - AMD Ryzen Threadripper 3990X 64-Core Processor AMD Ryzen and Ryzen Threadripper processors are designed to function to high levels of performance with power efficiency and stability. AMD Ry Master is an application to monitor and configure an AMD Ryzen or Ryzen Threadripper processor to potentially higher performance but at the risk of stability and power efficiency. Major control features allow changes to CPU core performance and configuration, integrated graphics and memory control parameters to change to care performance and and in small increments and be prepared for cases of system instability failure. Please review AMD documentation on the installation, features and use of Ryzen Master before changing parameters.
Windows Version: PBO Scalar: Product Name: AMD Ryzen N Version: 2.1.1.1472 ©2020 Advanced Micro Devi	Windows 10 (10.0.18363) 1 <u>About</u> Master ices, Inc.	

## AMDA RYZEN Master

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