

AM4 B450/X470 MOTHERBOARD Vcore VRM TIER LIST v1.3 (2019-03-29)				BY Cautilus#5912 (Discord) Cr1318 (Reddit)
	ASROCK	ASUS	GIGABYTE	MSI
TOP TIER Most suitable for extreme overclocking	X470 Taichi (Ultimate) 6 x 2 CSD87350 with 6x IR3598	Crosshair VII Hero 5 x 2 IR3555 with 5x IR3599	X470 Aorus Gaming 7 5 x 2 IR3553 with 5x IR3599	X470 Gaming M7 AC 6 x 2 (4C029N & 4C024N) with 6x IR3598
HIGH-END Most suitable for a highly-OC'd 2700X		Strix X470-F 6 x IR3555		B450I Gaming Plus (AC) 6 x IR3555
				X470 Gaming Pro Carbon AC 5 x 2 (4C029N & 4C024N)
MIDRANGE Okay for a highly OC'd 2700X				B450 Tomahawk 4 x (2x 4C029N & 2x 4C024N) B450M Mortar (Titanium) 4 x (2x SM4337 & 2x SM4503) B450M Bazooka Plus? 4 x ?
		Prime X470-Pro Strix X470-I Strix B450-I 6 x IR3553		X470 Gaming Plus X470 Gaming Pro B450 Gaming Pro Carbon (AC) 4 x 2 (4C029N & 4C024N) B450-A Pro B450(M) Gaming Plus? 4 x (2x 4C029N & 2x 4C024N)
	B450 Fatal1ty Gaming K4 B450(M) Pro4(-F) 3 x 2 (SM4337 & SM4336) or 3 x 2 (PZ09093PK & PK618BA)		B450I Aorus Pro WiFi 4 x IR3556	
LOWER END Would require airflow for a highly OC'd 2700X	B450 Fatal1ty Gaming-ITX/ac X470 Fatal1ty Gaming-ITX/ac 3 x 2 FDP5030 or SM7341EH X470 Master SLI(/AC) X470 Fatal1ty Gaming K4 B450(M) Steel Legend 4 x 2 (SM4337 & SM4336) or 4 x 2 (PZ09093PK & PK618BA)	TUF B450(M)-PRO GAMING Strix B450-E 4 x 2 (4C10B & 4C06B)	X470 Aorus Gaming 5 X470 Aorus Ultra Gaming 4 x 2 (4C10N & 4C06N)	B450M Bazooka? 4 x ?
		TUF X470 Plus Gaming TUF B450(M)-Plus Gaming Strix B450-F Prime B450-Plus 4 x (4C10B & 2x 4C06B)	B450 Aorus Elite B450 Aorus Pro (WiFi) B450 Aorus M B450M Gaming 4 x (4C10N & 2x 4C06N)	
	B450M-HDV 4 x (SM4337 & 2x SM4336) or 4 x (PZ09093PK & 2x PK618BA)		B450M DS3H B450M S2H 4 x (4C10N & 2x 4C06N)	B450M Pro-VDH? 4 x ?
GARBO TIER Not suitable for a OC'd 2700x		Prime B450M-K Prime B450M-A 4 x (4C10B & 2x 4C06B)		B450M Pro-M2 4 x ?

UNEVALUATED MOTHERBOARDS

ASROCK	ASUS	GIGABYTE	MSI
		B450 Gaming X	B450M BAZOOKA V2 B450M PRO-VDH PLUS B450M PRO-VDH V2 B450M PRO-M2 V2
Add mobos in a comment here if they're not in the unevaluated section or in the chart itself			

NOTES/FAQ:

- VRM data sourced from: <https://www.hardwareluxx.de/community/t12/pga-am4-mainboard-vmr-liste-1155146.html> - google "hardwareluxx am4 vrm list", it's the first result.
- What is a "highly-OC'd 2700X" exactly?
 - 4.1GHz manual all-core OC with 1.4V Vcore, under a highly stressful load for a prolonged duration, say Blender or P95 AVX. This is intended to be essentially a worst case scenario for the VRM, and for more normal workloads/OCs, you could probably shift the chart up by one slot (except for the Garbo Tier motherboards).
- How can I evaluate this chart if I have a 2600/2600X/2700 and/or if I don't OC my CPU?
 - 2600/2600X OC - you'll be fine on anything that isn't garbo tier.
 - 2700 OC - Pretty similar to the 2700X except you might only get 4.075GHz or something, so the list is still exactly the same.
 - 2600/2600X/2700 non-OC - all of the boards on the list should be able to handle any second-gen Ryzen CPU at stock.
- Have you actually tested all of these boards and how they perform?
 - Nope, I've just looked at and evaluated the VRM specs for each motherboard on the VRM list and pictures of their heatsinks and guessed how they would perform based on testing performed by actual reviewers/experts like Buildzoid from Actually Hardcore Overclocking and Steve from Gamers Nexus. Take this tier list with a slight grain of salt.
- Where a motherboard name has something in brackets, it means that version is exactly the same as the non-bracketed version.
 - E.g. the ASRock B450 Pro4 and B450M Pro4 have the same Vcore VRM and VRM heatsink.
- Phase counts written like "5 x 2" indicate phases which have double the mosfets and chokes per phase. However, only boards with the 'with Xx IRXXXX' suffix have phases with doublers. Phases without doublers but double the components are what I like to call "big phases".
 - "Big phases" generally have worse voltage regulation than actually doubled phases.
 - E.g. the ASUS Crosshair 7 Hero has a doubled five phase using IR3599 doublers, whilst the MSI X470 Gaming Pro Carbon AC has five phases with double the mosfets and chokes, but with no doublers.
- Motherboards with a question mark are guessed to be where they are since their VRM info is not confirmed on the hardwareluxx VRM list, but they're mostly accurate, give or take one tier slot.
- Where two mosfets are mentioned with an '8' symbol, the first one is the high-side mosfet, the second one is the low-side mosfet.
- This list only ranks motherboards by Vcore VRM and their heatsinking, and does not take into account:
 - BIOS features/user friendliness
 - Memory overclocking ability
 - Motherboard features (Rear I/O, M.2 slots, PCIe slots etc.)
 - Aesthetics
 - SOC VRM and heatsinking (please note: the mini-ITX boards sometimes have not-so-great SOC VRMs/VRM heatsinking and I would be careful when choosing them for APUs).

Reddit discussion here:

https://www.reddit.com/r/hardware/comments/9ucbva/am4_b450x470_vrm_tier_list/
https://www.reddit.com/r/Amd/comments/9uc6bi/am4_b450x470_vrm_tier_list/

REFERENCES:

All VRM data for motherboards except the below mobos: <https://www.hardwareluxx.de/community/t12/aga-amd-mainboard-vrm-liste-1155146.html>
ASUS TUF B450(M)-PRO GAMING: https://www.youtube.com/watch?v=ulwFG_SusEk&t=361s
ASRock B450(M) Steel Legend: <https://www.youtube.com/watch?v=9BNKYeyZUMU>
Gigabyte B450M GAMING: <https://www.youtube.com/watch?v=IVtRJCyU6D4>

Positioning for boards:
<https://www.youtube.com/watch?v=EgQcgwz1hYA>
<https://www.youtube.com/watch?v=N9s03mVW76s>
<https://www.youtube.com/watch?v=6qZW3-zEHg&t=464s>