NOV. 2021, EDITION 5

# RCHC TECH BUZZ

A MONTHLY TECH NEWSLETTER

TAKE A PEEK AT WHAT'S INSIDE:



## NOVEMBER 2021, EDITION 5

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This month's edition covers up the stories of Metaverse

Apples New M1 Max Chips

Intel's New 12th Gen Core, Alder Lake

And the RGB Mask to fight COVID developed by Razer.

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## FIRST WINDOWS 11 UPDATE DEGRADES RYZEN CPU PERFORMANCE BUT FIXES ARE COMING .. AND THEY ARE HERE

**AMD and Microsoft identified and publicized the issue with Windows 11 and Ryzen processors last week around launch, noting that a bug is causing high L3 cache latency, thus reducing performance. This week, the first Windows 11 update began rolling out and according to some users, it has made the latency worse and it has also stopped the UEFI-CPPC2 (preferred cores mechanism) from working.**

**In its own tests, TechPowerUp found that the Ryzen 7 2700X, which typically has an L3 cache latency of 10ns, has risen to 31.9ns following the latest update. Before the new Windows 11 patch, latency was sitting around 17ns.**
**AMD has responded to this news already, stating that a patch for the preferred cores bug will be coming on the 21st of October, and Microsoft will be fixing the L3 cache latency bug through a Windows Update on the 19th of October**

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| Intel 12th Gen Core, Alder Lake | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| AnandTech | Cores P+E/T | E-Core Base | E-Core Turbo | P-Core Base | P-Core Turbo | IGP | Base W | Turbo W | Price $1ku |
| i9-12900K | 8+8/24 | 2400 | 3900 | 3200 | 5200 | 770 | 125 | 241 | $589 |
| i9-12900KF | 8+8/24 | 2400 | 3900 | 3200 | 5200 | - | 125 | 241 | $564 |
| i7-12700K | 8+4/20 | 2700 | 3800 | 3600 | 5000 | 770 | 125 | 190 | $409 |
| i7-12700KF | 8+4/20 | 2700 | 3800 | 3600 | 5000 | - | 125 | 190 | $384 |
| i5-12600K | 6+4/20 | 2800 | 3600 | 3700 | 4900 | 770 | 125 | 150 | $289 |
| i5-12600KF | 6+4/20 | 2800 | 3600 | 3700 | 4900 | - | 125 | 150 | $264 |

# INTEL 12TH GEN CORE ALDER LAKE FOR DESKTOPS: TOP SKUS ONLY, COMING NOVEMBER 4TH

**The first things we'll go into are the new CPUs that Intel announced on October 27th: the overclockable models of Intel 12th Gen Core. As with previous launches, we have Core i9, Core i7, and Core i5, with the key highlights including new support for DDR5, PCIe Gen 5, new overclocking features, and a change in how Intel is promoting its Thermal Design Power (TDP).**

**All processors will come with 16 lanes of PCIe 5.0 from the processor, and an additional 4 lanes of PCIe 4.0 for storage. Memory support is listed as both DDR5-4800 and DDR4-3200, although systems will only support one or the other, for a maximum of 128 GB. The K processors also feature 32 EUs of Intel's Xe-LP graphics, designated as UHD Graphics 770. Prices will start at $264 for the base Core i5 model, up to $589 for the top Core i9 model. Inside each processor, alongside the 16x PCIe 5.0 lanes for add-in cards and 4x PCIe 4.0 lanes for storage, is an additional link to the chipset. Intel lists this as a DMI 4.0 x8 link, as they use a custom protocol over an effective PCIe physical connection – we asked Intel, and they said the link is rated for 15.76 GB/s, which means the chipset can take two PCIe 4.0 x4 drives at peak before getting near to that limit. This is doubled compared to Z590, which was only 7.88 GB/s.**

**Today Intel is only announcing its Z690 chipset, build on Intel's 14nm, and the motherboard manufacturers have about 60+ models to launch in the upcoming week. The processors use a new LGA1700 socket, which means everyone buying the new CPUs also need a new motherboard.**

**By far the most powerful processors for current market**

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# THE NVIDIA RTX 3090 TI COULD DRAW WAY MORE POWER THAN THE RTX 3090

**Nvidia's RTX 40-series graphics cards are already in the works, but it seems Nvidia has a few more cards to release before the next-gen GPUs arrive. According to a new rumor from VideoCardz, Nvidia is working on an RTX 3090 Ti that features PCIe 5.0 support, extra cores, and a PSU-shredding 450W rated power draw. The RTX 3090 Super has been rumored for a while, but the most recent rumors suggest Nvidia is sticking with RTX 3090 Ti as the name. The card could feature as high as a 450W TDP, which is 100W higher than the RTX 3090. Multiple leakers have pointed to higher power draw on next-gen Nvidia cards, but it seems the RTX 3090 refresh will have a higher power draw, too.**

**That's a lot of power. The RTX 3090 already demands at least an 800W power supply — Nvidia recommends 750W, but that's cutting it really close — and the card can jump up to 400W for brief moments. The recent reports of New World bricking RTX 3090 graphics cards seem related to power, too. You'll need one of the best power supplies around if you want the RTX 3090 Ti. To deliver this power, Nvidia is reportedly using a new power connector. RTX 30-series cards use a 12-pin Molex Microfit connector, but the RTX 3090 Ti is rumored to come with a 16-pin Molex Microfit connector. This is reportedly behind an embargo for electrical specs of PCIe 5.0 motherboards, which should launch later this year with the release of Intel Alder Lake processors.**

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# FIGHTING COVID WITH RGB....

**RazerCon 2021 has happened, and with it Razer unleashed a slew of new products, including the launch of the Razer Zephyr face mask, and a Halo Infinite-themed AMD Radeon RX 6900 XT graphics card.**

**To kick off with, Razer announced that its Zephyr, a wearable air purifier – to be precise, a fancy face mask with N95 grade filters and much more besides – is now available to order (you may have seen this previously, as Razer first unveiled it back at CES at the start of the year, and the wearable was beta-tested in August).**

**We've known since E3 that Razer was planning to ship its Project Hazel N95 mask, a concept design that debuted to much enthusiasm earlier this year at CES, this month, but didn't have many details about what the final product would be called, which features it would keep or how much it would cost.**

**The concept has evolved into the Razer Zephyr, a $99 mask that's designed to be more comfortable for long-term wear with cooling two-way fans, transparent so people can see your mouth, uses replaceable filters to avoid the waste of disposable masks and of course, look cool with RGB lighting. Because: Razer.**

**Available now on Razer's site, the Zephyr ships with three pairs of filters tested to last about three days each for a full day's use; a pack with 10 sets of replacement filters will run $30. You can also buy it in a starter pack with the mask and 33 sets of filters -- roughly 3 months worth -- for $150.**

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# FACEBOOK REBRANDS COMPANY NAME BECAUSE THAT'LL FIX THINGS

**The company formerly known as Facebook is all in on building a metaverse with its VR and AR products, but the consulting chief technology officer of its VR division doesn't think that's the way to go about it.**

**In a keynote address at yesterday's Facebook Connect event (as posted to VR Upload's YouTube channel), Oculus consulting CTO John Carmack prefaced his metaverse remarks by saying he really does care about the idea and buys into the vision behind it. "But that leaves many people pretty surprised to find out that I have been pretty actively arguing against every single metaverse effort that we have tried to spin up internally in the company, from even pre-acquisition times," Carmack says. "I want it to exist, but I have pretty good reasons to believe that setting out to build the metaverse is not actually the best way to wind up with the metaverse."**

**Carmack then called the metaverse "a honeypot trap for architecture astronauts," explaining that architecture astronauts is his "chidingly pejorative term for a class of programmers or designers who only want to talk about things from the highest level."**

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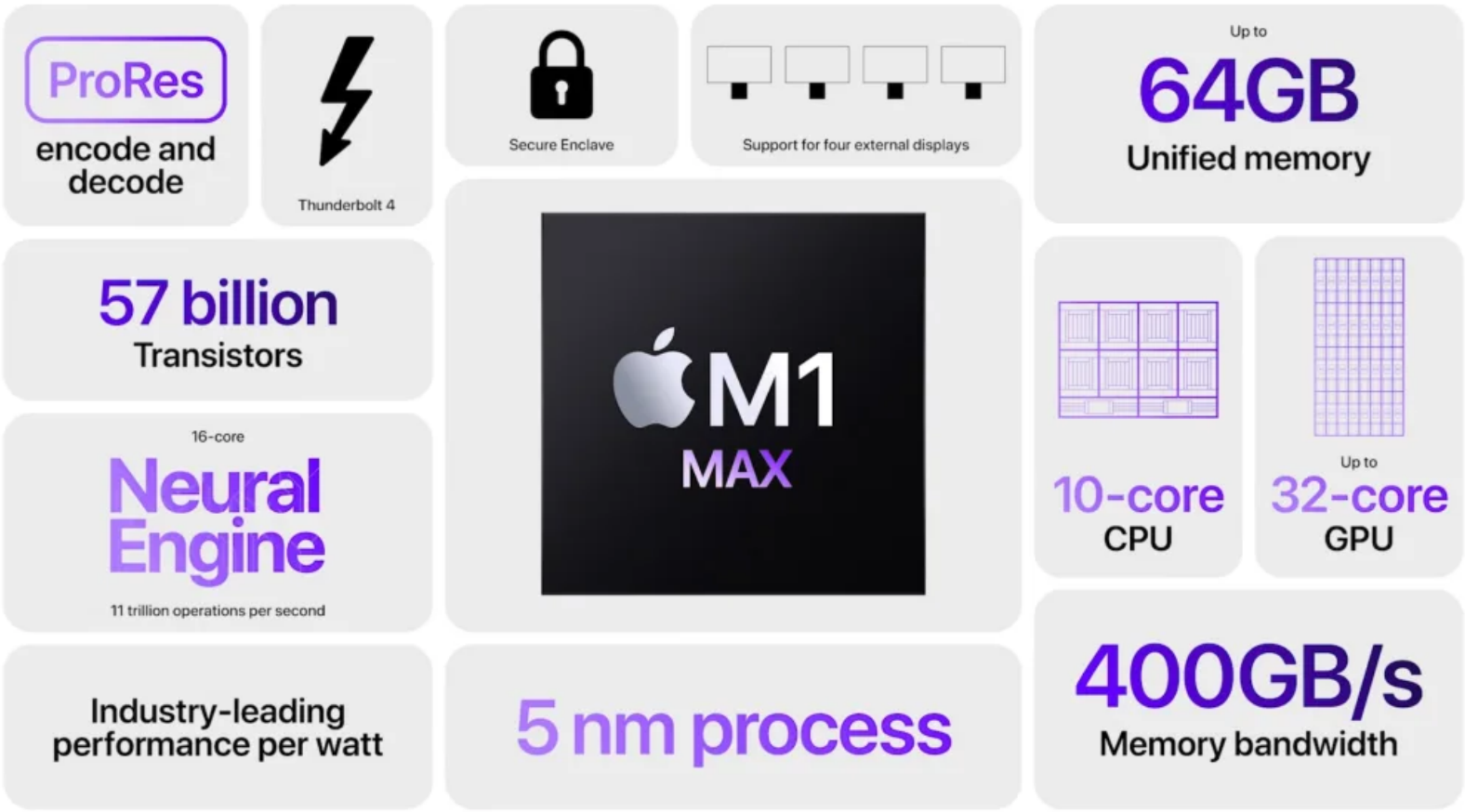


# MAXIMUM MAC: M1 MAX TURBO BOOST

**The new 16-inch MacBook Pro with the M1 Max Apple Silicon chip will feature a new High Power Mode for intensive, sustained workloads, according to Apple.**

***MacRumors* contributor Steve Moser discovered references to High Power Mode in the macOS Monterey beta, and we've now confirmed with Apple that this feature will indeed be included on the highest-end configurations of the new machine.**

**This new setting is the opposite of "Low Power Mode," which aims to decrease system performance to prolong battery life. The new mode will only be available on the 16-inch MacBook Pro with the M1 Max chip, not the 14-inch model or models with the M1 Pro.**

**Text within the macOS Monterey beta reads, "Your Mac will optimize performance to better support resource-intensive tasks. This may result in louder fan noise." The new mode is not likely to be used in typical work cases, but instead when users may be rendering larger files or graphically intensive tasks that require an added boost of performance.**

**The new 14-inch and 16-inch MacBook Pros both include improved thermal architecture, but Apple says the new and improved fans are not likely to be used by most users in day-to-day use. Geekbench scores of Apple's newest high-end M1 Max Apple Silicon chip show that it's over 3x times faster than the M1 chip in the MacBook Pro in GPU tasks. In multi-core performance, the M1 Max is up to 2x faster than M1.**

**But can it beat Intel's 12th Gen Processor coming out this month?**