



STORM REPORT

SPECIAL EDITION REPORT: CES® 2021
JANUARY 11-14, 2021
AVAILABLE ONLINE THROUGH FEB 15, 2021





We are thrilled to present this special edition of The STORM Report, cataloguing our experience at the first-ever virtual **CES®**. We always say that CES is a preview of what to expect in the year ahead, and this year was no exception. Not only was CES 2021 filled with exciting and innovative new product announcements, it also encapsulated how the global pandemic forced the rapid acceleration of numerous fields in consumer electronics.

Of course, many were disappointed to not have the opportunity to walk the show floor this year. Gone was the exhilaration of discovering a breakthrough gadget at Eureka Park. Gone were the late night networking events and client dinners. And actual sales opportunities as a result of exhibiting at the event are still questionable, with a large number of large exhibitors skipping the show this year altogether.

But it's important to consider that this new virtual platform opened up the event to the world for the first time in its history. Gone were the marathon days of walking and traversing from the Convention Center to the Sands, navigating the smoky casinos, and catching the inevitable after-show cold. Instead, we found ourselves in the safety of our homes, "binging" CES until February 15 on demand.

We missed the camaraderie of the in-person event, but appreciate how this new format evolved what we expect, and how we experienced, CES. And also what we discovered, regardless of how we found it.

Jennifer Sullivan, Ken Hertz, & Liz Heller

memBrain LLC

THE STORM REPORT @ CES 2021

CES® is the world's gathering place for exploring innovation and previewing technologies that will shape our near and imminent future. Since its humble start in 1967, the event has grown to become a massive platform for brands and product inventors to showcase their most exciting new products. From the camcorder and CD player in the '70s and '80s to 3D Printers, Driverless Cars, and 4K UHD in the 2010s, it is always exciting to walk the floor of CES to see “what’s next.”

Each year, memBrain attends CES® to gather intelligence on hot new products and to identify emerging trends and industries. This special edition of **The STORM Report** is a compilation of memBrain’s observations from the CES® show floor combined with the most “buzzed about” products according to leading industry publications, including the CES® 2021 Innovation Award winners.

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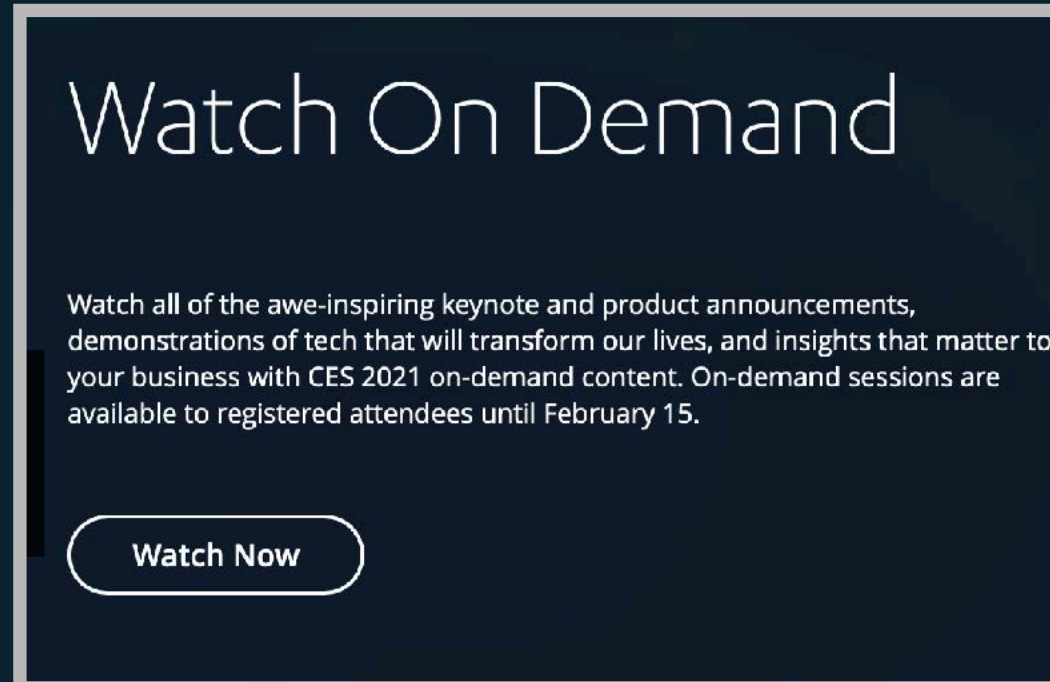


GOING VIRTUAL (WASN'T ALL BAD)



AFFORDABLE EXHIBITS

Costs for the event were reduced significantly with a virtual “exhibit space” starting around \$1,800. That, coupled with no booth building expenses or travel costs resulted in a **kind of leveling of the playing field** between larger companies and emerging brands – with video storytelling leading marketing efforts.



CES ON DEMAND

CES didn't end in January! The digital venue will remain open until February 15, empowering registered attendees to replay programming on demand, extending the event experience for those who prefer a content “binge” on their own schedule.



STAR POWER

Access to high(er) profile marquee speakers and performers was also more manageable with the remote format. What would have normally been evening performances, became part of the MainStage at CES 2021

ELECTRIFYING WITH STAR POWER



CHANCE THE RAPPER
(Intel)



ZARA LARSSON
(Sony)



KEITH URBAN
(JBL)



BLACK PUMAS
(Verizon)



COLD WAR KIDS
(Panasonic)



DUA LIPA
(iHeartMedia)



BILLIE EILISH
(iHeartMedia)



MADISON BEER
(Sony)

CES® 2021 INNOVATION AWARDS

The other stars of the show were the **CES® Innovation Awards** winners and honorees – products singled out as the most unique and forward-thinking of the year. “Best of Innovation” award winners are the highest-rated products in each category and “Honorees” are products that score above the threshold for any specific category.

KEY CATEGORIES INCLUDED:

3D Printing

Accessibility

Computer Hardware

Computer Peripherals

Cybersecurity

Digital Imaging

Drones

Embedded Technologies

Fitness & Sports

Gaming,

Headphones

Health & Wellness

Home A/V

Home Appliances

In-Vehicle Entertainment

Mobile Devices

Portable Media Players

Robotics

Smart Cities

Smart Home

Software & Mobile Apps

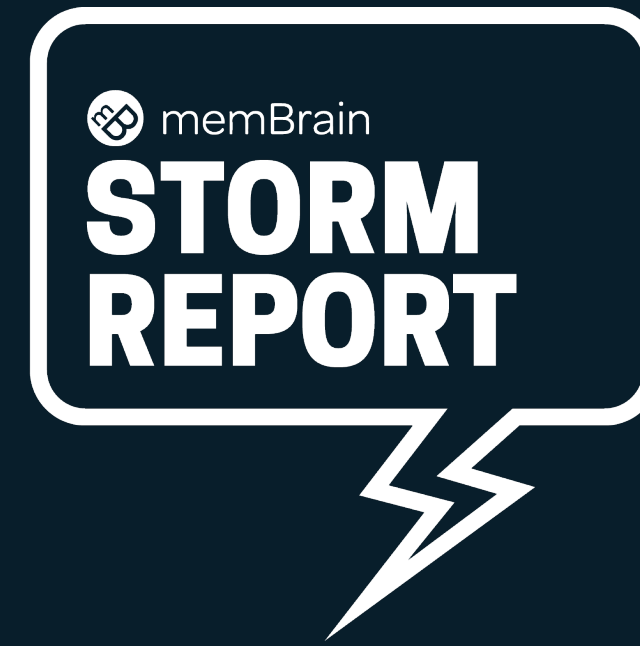
Streaming

Sustainability

Vehicle Intelligence

Click [here](#) for the full list of CES 2021 winners and honorees.





SOURCES

Media played an even more important role this year - with products shared with the media leading up to the event to ensure they had other outlets for reaching consumers and buyers, alike. Below are some of the other sources we referenced for trending highlights:



DIGITAL TRENDS



Mashable

medgadget

MOTORTREND

Popular
Mechanics

THE VERGE

Washington Post

THE WALL STREET JOURNAL.

TIME

WIRED



KEY TRENDS & BUZZWORTHY PRODUCTS

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AI & ROBOTICS

ROBOTS TO THE RESCUE

Like many categories we have covered this year, the field of “rescue robots” has evolved dramatically due to the impact of the COVID-19 pandemic. Once more often deployed to assist in disaster situations, robots now are helping with more day-to-day support functions like autonomous grocery delivery, indoor sanitizing (ADIBOT, Samsung’s JetBot 90 AI+) and even touch-less cooking (see Moley Robotic Kitchen).

Steve Koenig, VP of Research for CTA highlighted that Robotic Process Automation will become a \$2B global industry in 2021, growing with double figures through 2024. The exponential demand for **contactless shopping** and **delivery** has become a major driver for this growth in automation. From food delivery robots to medical supply delivery drones, the robots are here – and they are navigating traffic, weather, and federal regulations to ensure we have what we need, when we need it.

And of course, we are still turning to robots for companionship – particularly amid social distancing orders. From furry AI pets (see Moflin) to humanoid hosts and assistants (see Samsung’s Bot Handy and Bot Care), robots today can not only perform certain household duties, but also learn and understand a person’s behavior to provide comfort.

EMBODIED: MOXIE

WHAT IT IS

Moxie is an animate companion that helps children build social, emotional, and cognitive skills through everyday play-based learning. It provides content created by children development and education experts to help build necessary emotional and social skills while keeping children entertained.

MSRP: \$1,699

WHY IT MATTERS

The importance of technological advancements in at-home learning and emotional development are paramount priorities, now more than ever. Using machine learning, Moxie can perceive, process, and respond to behaviors making it more sophisticated and the shape of things to come in this sector.



LG VIRTUAL INFLUENCER

WHAT IT IS

While not a product announcement, we were compelled to note how LG used AI to bring introduce their products on the CES virtual stage. Reah Keem is a virtual influencer created by LG. LG introduced the LG CLOi UV-C Robot (a robot designed for disinfecting high trafficked areas) and the LG Gram laptop with a different kind of social influencer this year - one they created.

WHY IT MATTERS

Reah may not be real (and virtual influencers are nothing new), but it's interesting to see LG making moves in this space. Reah already has 6,000 followers and a song on SoundCloud, so it will be interesting to see if LG will do more with their homegrown star.



MOLEY ROBOTIC KITCHEN

WHAT IT IS

This kitchen gadget features two robotic arms that move smoothly along a track installed in your kitchen, replacing the movements of professional chefs. With sensors and cameras, Moley Robotics Kitchen fully prepares meals from scratch with accuracy. Moley Kitchen includes an IoT refrigerator and storage facilities, allowing it to map the oven, sink, and more. MSRP: \$335,000

WHY IT MATTERS

While this solution will be too expensive for the mainstream, accessible models are in development. It's an interesting industrial solution in the meantime.



ORCAM READ

WHAT IT IS

OrCam Read is a first-of-its-kind handheld device that reads text aloud from any printed surface (newspapers, books, product labels) or digital screen (computers, smartphones) in real time. It is the size of a pen, wireless, and powered by AI. High-intensity LEDs automatically illuminate reading in dimly-lit environments. MSRP: \$28.67

WHY IT MATTERS

The world's first and only personal AI reader, this product opens the door for many who have reading challenges. This is a game changer for the reading-impaired and opens the door for a host of other accessibility technologies.



SKYDIO X2

WHAT IT IS

This new autonomous drone pairs Skydio's already world-renowned flight autonomy AI engine with a new foldable frame and thermal sensor designed to meet the needs of military and other government organizations. . Skydio X2 provides the premier aerial data collection on the market, taking into account situation awareness, asset inspection, and security patrol. MSRP: TBD

WHY IT MATTERS

Manufactured in the USA, Skydio refers to this as "the ultimate solution for military and defense to perform reconnaissance, search and rescue, and security patrol missions." It's an ultimate rescue robot!



SAMSUNG BOT CARE5 AND HANDY6

WHAT IT IS

Samsung Bot Care5 uses AI to recognize and respond to human behavior – acting as both a robotic assistant and as a companion. The Samsung Bot Handy6 uses AI to help collect and move things around the house – a virtual handy person! It can even bring you a drink! MSRP: TBD

WHY IT MATTERS

Samsung is making a big push in AI and there is a distinctive human and home-first approach with this new range of products. Now that more people are working from home as well, it is more important than ever to find ways to be better organized and efficient with time.



SAMSUNG JETBOT 90 AI+ VACUUM

WHAT IT IS

The JetBot 90 AI+ is the world's first smart robotic vacuum powered by Intel® AI, which uses a combination of sensors and AI-enhanced object recognition technology to clean floors. When it finishes cleaning, it automatically heads back to the clean station, Samsung's signature disposal system. It also connects via the Samsung SmartThings app.

MSRP: TBD

WHY IT MATTERS

While robotic vacuums are nothing new, the JetBot's key advantage is that it mixes AI smarts with object recognition to clean. It's advanced tech similar to what is used in self-driving cars, on a much smaller scale.

INTERESTING NOTE:

Samsung was the most awarded company at the virtual show, with 4 "Best of Innovation" awards, the most awarded to a single company this year (not to mention their 37 Honoree awards).



ROBOSEN K1 INTERSTELLAR SCOUT

WHAT IT IS

Essentially a programmable humanoid robot focused on STEM education for children, teens and adults alike, this programmable bot has base 17 servo motors at the joints, giving it very human-like movements. It follows voice commands or can be driven through an app. There are multiple ways to make K1 perform a wide variety of actions – including backflips – using a free app, voice commands, or by RC that will capture the curiosity of any kid (or kid at heart). MSRP: \$300

WHY IT MATTERS

With the technology sector booming with new jobs for engineers and programmers, STEM and STEAM are key areas of focus for educators and parents.



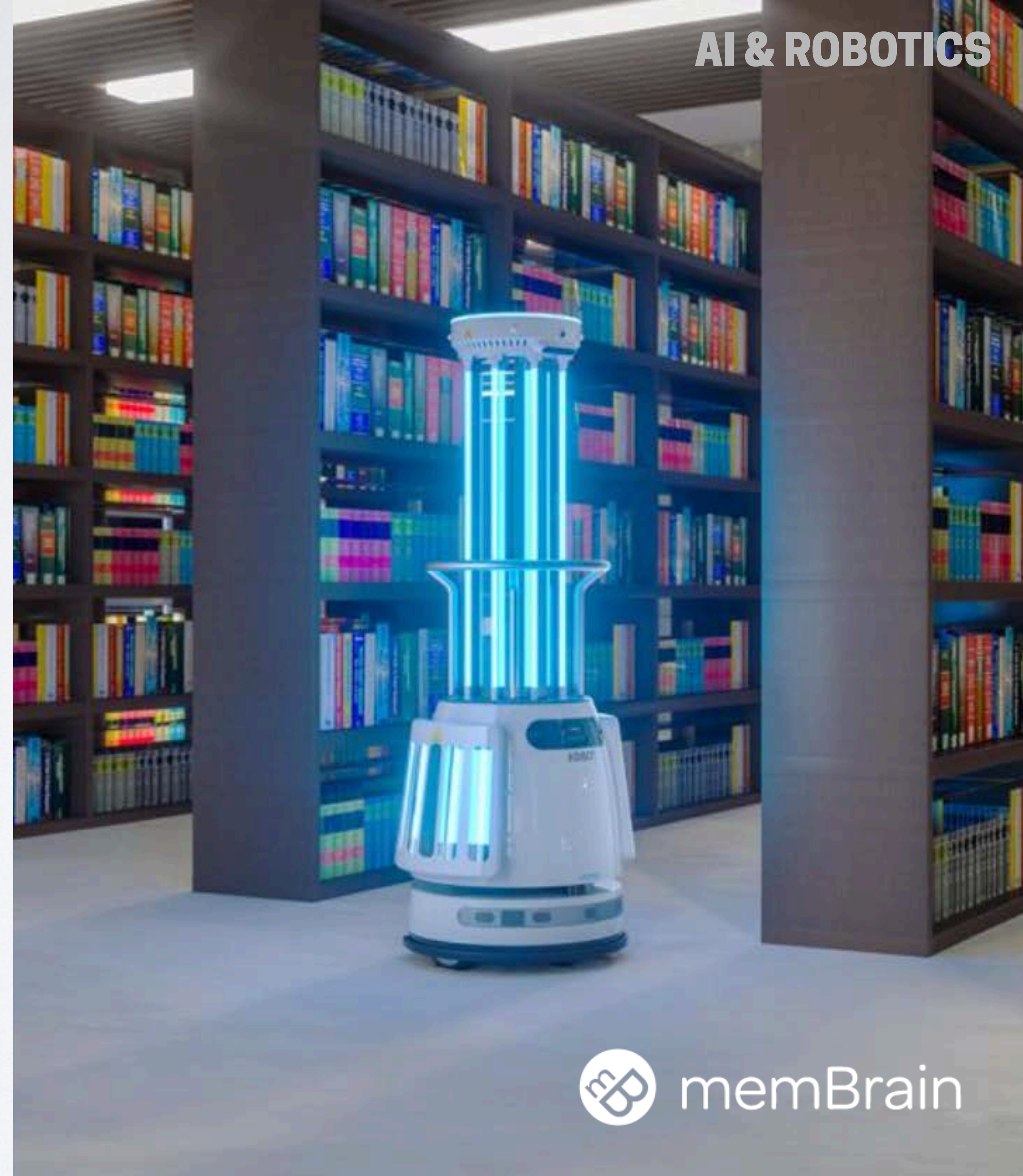
UBTECH ADIBOT

WHAT IT IS

Primarily aimed at small businesses and schools, Ubtech is rolling out two models of the Adibot this year. The Adibot-S is a stationary model designed to be wheeled from room to room, and the Adibot-A which can pilot autonomously using a Lidar sensor. MSRP: Adibot-S: \$20,000, Adibot-A: \$40,000

WHY IT MATTERS

This is obviously an industrial product, but the fact that it is capable of hospital-grade disinfection at the same cost of more expensive industrial bots (which are typically closer to \$100K/each) is meaningful - particularly for schools and businesses that are reluctant to be back in person in the midst of the pandemic.



VANGUARD INDUSTRIES

MOFLIN AI PET

WHAT IT IS

This AI Pet possesses emotional capabilities that grow over time, emulating those of a living animal. Its unique algorithm comes from a nature inspired approach, giving it the ability to learn from interactions, determine patterns, and evaluate surroundings with sensors. MSRP: \$400


WHY IT MATTERS

This is the most realistic AI Pet to date. With infinite mobile and sound pattern combinations to respond and express feelings, this innovation is the closest thing to interacting with a live pet.





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AUDIO

PUMP UP THE VOLUME

A major trend in 2020 was **escapism**, with consumers immersing themselves in entertainment, gaming, and music to find respite from reality.

Audio streaming is set to represent \$10 billion in the US alone in 2021, which is double-digit growth over 2020. And so it is no surprise that headphones are the fastest-selling personal electronic device on the market. True Wireless Stereo (TWS) products with multiple improved mics for improved voice pickup and Active Noise Cancellation (ANC) were most notable this year, with various manufacturers vying to take some market share from Apple's AirPods.

Another trend related to escapism are advancements in high-end home audio, with sound bars and home audio speakers becoming more powerful and streamlined in design. HARMAN (now a Samsung company) won a record 20 Innovation Awards at CES 2021, leading the charge with its sleek, minimalist designed Radiance 2400 ultra-slim floor-standing speakers. LG's ECLAIR QP5 and Samsung's Q950A soundbar are other exciting home audio products that fuse form and function to bring the quality of immersive surround sound to the home.

ABSOLUTE AUDIO LABS PYOUR AUDIO HEARING 2.0

WHAT IT IS

This new and powerful suite of audio algorithms enable not only TWS Hearables, but also OTC Hearing Aids and Class 2 Hearing Aids to be built from premium consumer audio components. It combines an extremely high quality of hearing support with a very low memory and power consumption and accommodates all the way up to severe hearing loss.

MSRP: TBC

WHY IT MATTERS

This is the first high end hearing aid product to support mild to severe hearing loss built with consumer audio components.



AMPERE SHOWER POWER

WHAT IT IS

The Ampere Shower Power is a Bluetooth speaker that attaches to shower heads and is completely powered by the water flowing through it! By running the water through a small generator, the speaker turns on to play music while simultaneously charging a battery that can run for up to 20 hours *even when the water is turned off*. Shower Power's construction is completely made up of recycled ocean plastic, further shrinking the product's environmental footprint. MSRP: \$100

WHY IT MATTERS

An affordable and useful step towards more sustainable energy - and better showers.



BINATONE MASKFONE

WHAT IT IS

MaskFone is a bluetooth headset in a mask. It combines protection, convenience, and technology and embodies this in one stylish, high-quality package. Serving mainly as a face mask, it provides the necessary protection that you would need, while allowing you to go about your day uninterrupted. MSRP: \$49.99 (N95 or PM2.5 Filters Sold Separately)

WHY IT MATTERS

Addresses issues with the voice sounding muffled behind a mask, as it is essentially a Bluetooth headset and earbuds sewn into a fabric mask that takes N95 inserts. It's an interesting direction and certainly represents the shape of things to come.



HARMAN KARDON SOUNDSTICKS 4

WHAT IT IS

The Harman Kardon SoundSticks 4 speaker system has a transparent sculptural design that blends into its surrounding environment. Beyond its beautiful design, it has impressive audio features, with a 2.1 audio configuration, stunning satellites, and a subwoofer. MSRP: \$299.95

WHY IT MATTERS

As an evolution from the original, world-renowned Harman Kardon SoundSticks audio system, this new design achieves bold transformation in form and function at a relatively affordable price.



HARMAN KARDON RADIANCE 2400

WHAT IT IS

These CES Innovation Award-winning speakers are premium in both technology and design. They are ultra-slim and come with a powerful subwoofer to create an impressive soundscape. They also feature a digital hub that can connect to a TV, and have Wi-Fi connectivity to make it easy to stream music. MSRP: \$349

WHY IT MATTERS

This is the latest in sound technology without the boxy speakers and complicated wires. With Constant Beamwidth Technology (CBT), these speakers fill the room giving everyone the same immersive experience.



LG ÉCLAIR QP5

WHAT IT IS

This innovative 3.1.2-channel speaker system is designed for customers craving 3D audio quality without the traditional sound bar design. Supports Dolby Atmos as well as DTS:X for more immersive audio experiences. Also comes with a wireless “small space-friendly” subwoofer featuring bi-directional drivers. MSRP: TBC (will be available in late June)

WHY IT MATTERS

Ultra-compact sound bars have been gaining in popularity for a while, but none have managed to pack in the ability to support both Dolby Atmos and DTS:X, until now.



SAMSUNG GALAXY BUDS+ BTS EDITION

WHAT IT IS

These earbuds offer studio-quality audio at an accessible price point. With a two-way speaker system, Ambient Sound technology, and three-microphone system, they provide an incredibly clear sound. MSRP: \$199.99

WHY IT MATTERS

They generate an hour of charge in just minutes and come in signature BTS purple, bringing function and aesthetics together. The company has leveraged the group's involvement in a marketing stunt where the BTS members propose, "Say Yes to Galaxy Buds," already garnering over 100M on YouTube.



SAMSUNG Q950A SOUND BAR

WHAT IT IS

The Q950A calibrates the sound of a room and uses its AI capabilities and smart connectivity to create immersive surround sound leveraging true Dolby Atmos 11.1.4 channel sound. It's a massive bar with numerous side-firing speakers inside to bounce sound off of the walls, alongside traditional sound speakers. MSRP: \$1,400

WHY IT MATTERS

As Samsung's first soundbar to produce true Dolby Atmos 11.1.4 channel sound, it creates a three-dimensional audio experience that fills any space. This soundbar not only analyzes the room in which you place your soundbar for EQ optimization, but it also syncs the system with the company's newest Q-Symphony TVs, tuning for better clarity and reducing latency between the two devices.



SONY

SRS-RA5000 (AND RA3000)

WHAT IT IS

This new wireless speaker features a trio of speakers on the top (finished in copper or silver color variants), fire audio upwards to give music a sense of height and depth to ensure a feeling of 360 audio. MSRP: \$700 (the smaller, slimmer SRS-RA3000 model will be, appropriately, \$360).

WHY IT MATTERS

Until now, generating the sense of “spacial” or “immersive” 3D sound has relied on multichannel installations using multiple speakers surrounding the user. Based on Immersive Audio Enhancement and 360 Reality Audio technologies, both models are able to fill a room with sound vertically and horizontally to create a broad and wide sweet spot, all-encompassing spacial sound.





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DISPLAYS

SMALL IS BIG

As it was with exploring the new audio technology debuting at CES®, it was odd reviewing the latest TV and monitor announcements this year without having the ability to see them in person. Based on the announcements and specs we've reviewed, however, there are a few interesting trends emerging in the display category worth mentioning - and it isn't all about size this time.

While 8K remains a feature that many are excited for, and "rollable" continues to be explored, the biggest leap in 2021 seems to be that **mini-LED technology is going mainstream.**

As background, almost all LCD TVs now use LED backlights and so mini-LED (not to be confused with MicroLED which Samsung introduced with The Wall and it's latest large scale TVs) allows a TV vendor to put many more individual LED lights behind the screen, thus giving it much more control over brightness. Most of the major manufacturers are now incorporating mini LED into their premium and mid-range sets. TCL claims it was the first company to introduce mini-LED in the US (in 2019), and this year introduced OD Zero mini LED with "tens of thousands" of mini LEDs and thousands of local dimming zones.

Small is the new big! Except for when it comes to screen size. 75" are the new 65"!

LG ROLLABLE

WHAT IT IS

The LG Rollable has a unique resizable screen that extends from a phone into a small tablet display. The screen slides in and out of place to provide a bigger screen area. MSRP: \$2,359

WHY IT MATTERS

For those who can't decide between using their smartphone and using a tablet, now you don't have to! This advancement means the best of both worlds without carrying around more than one device.



LG TRANSPARENT TV

WHAT IT IS

LG is continuing its trend of reimagining the future of screens with their new transparent TV. A few examples of how it can be used include: at the end of a smart bed, as a restaurant partition, or a subway train window. It has a 55-inch OLED panel, but its transparent design lets you see through it even when the TV is turned on and displaying an image. MSRP: \$7,200

WHY IT MATTERS

The screen achieves 40 percent transparency which is an improvement over past transparent LCDs – previous companies achieved only 10 percent transparency.



SAMSUNG MICROLED TV

WHAT IT IS

This massive 110" MicroLED Home Screen mounts on the wall like any other TV. With MicroLED, this TV delivers perfect black levels and high brightness using millions of tiny LEDs to create the image directly, for picture quality that's potentially better than OLED (the best currently available). MSRP: \$156,000

WHY IT MATTERS

Samsung continues to showcase these enormous screens (see The Wall from 2019/2020), but this new option has an ease of installation component which makes it seem more accessible. It's still expensive, but with the Multi-View feature viewers watch four sources of content simultaneously, making the battle for the remote less of an issue!



SAMSUNG SMART TV ACCESSIBILITY

WHAT IT IS

Samsung is incorporating sign language into the viewing experience, improved voice guidance, and multi-audio output so that multiple viewers can experience different volumes simultaneously.

Samsung's 2021 Smart TV Accessibility features can be found on all 2021 QLED models. MSRP: \$1,500

WHY IT MATTERS

These updates utilize the latest technology to improve accessibility for the hearing and visually impaired.



SONY SPATIAL REALITY DISPLAY

WHAT IT IS

Sony's Spacial Reality Display creates 3D optics that are viewable to the naked eye. Using eye-sensing technology, these displays sense the position of the users eyes and delivers a bright, clear 3D image to each one. MSRP: Starting at \$4,999.99

WHY IT MATTERS

Designed to stimulate the imaginations of creators in various disciplines, the Spatial Reality Display is a radical new expression of 3D and a new medium for artistic innovation.



TCL 8K 6-SERIES

WHAT IT IS

TCL has announced the 6-series Roku TV which featuring 8K at an affordable price, making it more accessible than competitors. MSRP: \$1,599

WHY IT MATTERS

Although TVs with 8K resolution have been around since 2018, they have been cost prohibitive. The TCL 8K is an affordable option – and it comes with Roku.





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COMPUTERS + GAMING

BETTER FASTER STRONGER

memBrain

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With the world spending more time at home in 2020, households took up video games more than ever before. In the third quarter of 2020 alone, industry consumer spending hit \$11.2B – an increase of 24% over the previous year. And with the biggest game releases of 2020 eclipsing movie releases, gaming was unsurprisingly a major category at CES 2021.

CES 2021 was also dominated with PC manufacturers announcing new laptops and desktops across many categories, primarily driven by new component platform launches. Intel, AMD, and Nvidia all announced new processors. PC makers, in turn, updated their most popular products and introduced all-new products built with these new, higher-performing offerings. Intel alone announced that these new platforms would be responsible for powering more than 500 new PC laptop and desktop designs coming this year alone.

We predict that the name of the game for computers and gaming in 2021, and for years to come, will be “performance.”

Suggested listening: Daft Punk’s “Better Faster Stronger.”

AMD RYZEN™ 5000 SERIES

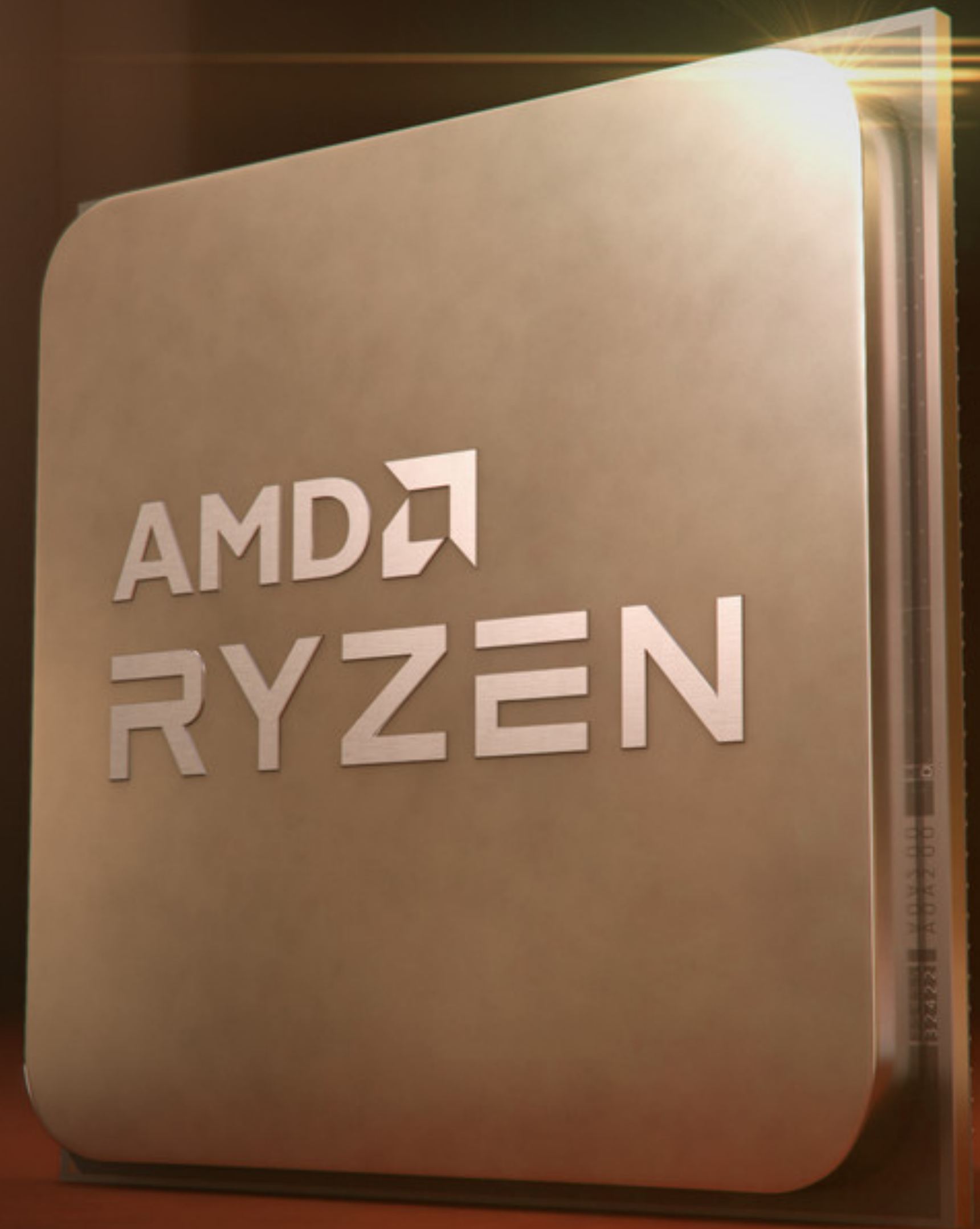
WHAT IT IS

AMD's newest line of products, the Ryzen 5000 Series desktop processors, are built on "Zen 3" technology to provide incredible performance-per-watt and are designed to be the fastest gaming processors on the market.

MSRP: \$299

WHY IT MATTERS

With its ground-breaking 7nm architecture, these chips were named "Best in Innovation" at the CES Innovation Awards in the category of Computer Hardware and Components. As PC gaming continues to grow, speed and performance will be areas of growth to watch.



ANALOGUE POCKET

WHAT IT IS

The Analogue Pocket is a multi video game system portable handheld with a built-in synthesizer and sequencer. The Pocket is compatible 2,780+ aftermarket Game Boy, Game Boy Color, and Game Boy Advance game cartridge library, not to mention adapters for Game Gear, Atari Lynx, and more. It is also multiplayer, up to four players. MSRP: \$199.99

WHY IT MATTERS

The Analogue Pocket is a new way to play favorite portable console games all on the same device. It replaces the older handhelds in favor of one universal option, and feels very retro for 80s and 90s gaming console fans.



APPLE'S ANNOUNCEMENT

WHAT IT IS

Last year, Apple committed \$100M dollars to a new effort it's calling REJI—the Racial Equity and Justice Initiative. During CES 2021, the company announced that it will be contributing \$25M to the Propel Center, a physical and virtual hub for resources for historically black colleges and universities. It is also contributing millions to Harlem Capital and Siebert Williams Shank's Clear Vision Impact Fund and will open a coding academy in Detroit, Michigan.

WHY IT MATTERS

Apple always makes announcements without actually participating in CES. This year, consistent with the actions of many other global brands, the brand announced their social good efforts rather than a new product. More of this to come.



ASUS ZENBOOK DUO

WHAT IT IS

The ZenBook Duo is in its second generation and has been redesigned to be smaller (14"), lighter, run cooler, and have faster performance with new Nvidia GPUs and 11th-gen Intel processors. The second display, ScreenPad Plus, can be used for anything and has a variety of utilities available through an onscreen touch bar. MSRP: Starting at \$1,000

WHY IT MATTERS

2-in-1s aren't new, but this takes the concept to another level with far more utilities available for content creation and other work. The ScreenPad Plus panels are brighter than last-gen models, and so it is also easier to see with reduced glare and reflections.



ASUS ROG ZEPHYRUS G15

WHAT IT IS

Designed for gaming, the ROG Zephyrus G15 laptop, from ASUS' "Republic of Gamers" gaming brand, includes multiple configurations, with a 15.6" screen, 1440p resolution, and 165Hz refresh rate. This laptop is light and smaller than its earlier model and its battery lasts up to 10 hours. MSRP: Starting at \$1,049

WHY IT MATTERS

Many companies have stepped up to the challenge, of creating high performance devices with the gamer market in mind. This laptop balances portability with performance. In fact, The VERGE named this the "Best Laptop of CES 2021."



ASUS ROG STRIX XG43UQ

WHAT IT IS

The ASUS ROG Strix XG43UQ measures 43 inches diagonally, making it the largest display in ASUS' robust lineup of HDMI 2.1 supported gaming monitors. It's essentially a small TV for the desk, supporting 4K resolution and a number of features designed for gamers and creatives. MSRP: \$1,099

WHY IT MATTERS

While many living rooms became game rooms during the pandemic, many gamers still do all of their gaming at a desk - which is why HDMI 2.1 gaming monitors were a big trend at CES this year. These monitors allow gamers to play at 4K in 120Hz, regardless of playing on a PC or a console.



BRINK BIONICS IMPULSE NEURO-CONTROLLER

WHAT IT IS

Brink Bionics has come out with a neural mouse interface that allows its user wearing it to control their mouse cursor with their mind. Impulse is worn by the user like a glove and registers actions before the user's finger presses the mouse button. MSRP: \$177

WHY IT MATTERS

This is a huge advancement in the Esports world, giving competitive gamers a potentially massive advantage. The few seconds saved by this controller could make all of the difference between a win and a loss when it comes to the high pressure world of gaming.



GALAXY NOTE20 ULTRA 5G

WHAT IT IS

Samsung's newest addition to the Galaxy family, the Note20 works like a gaming computer. With the biggest and best smartphone display Samsung has made to date, this takes performance to a whole new level. MSRP: \$1,299.99

WHY IT MATTERS

This smartphone is a game changer for gamers on the go. Thanks to Samsung's partnership with Xbox and the 5G connectivity, users can instantly access some of the world's most popular games.



HP ENVY 14 LAPTOP

WHAT IT IS

The Envy 14 has a lightweight and sleek design that features a 14' WUXGA IPS screen alongside Intel 11th-gen Core i5 processor and up to NVIDIA GeForce GTX 1650 Ti GPU. It also comes with Bang & Olufsen audio in addition to dual speakers and a backlit keyboard. The laptop is backed up by a 4-cell 63.3 Wh Li-ion battery. MSRP: \$999

WHY IT MATTERS

The price point is what is so striking about this product – with so many features and high-end components, consumers are getting a lot of “Bang” for the buck at only \$999.



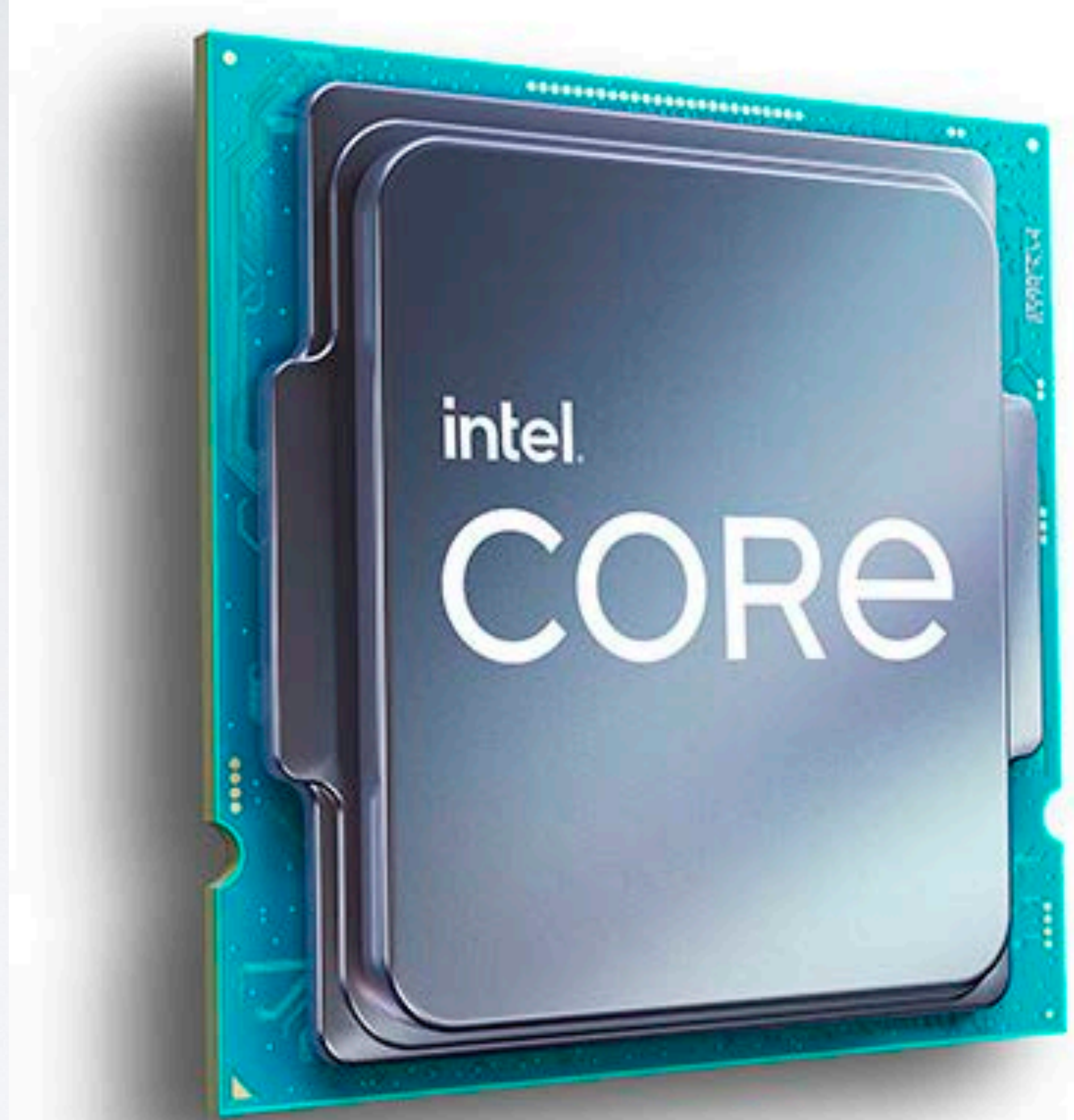
INTEL ROCKET LAKE + ALDER LAKE CPUS

WHAT IT IS

Rocket Lake-S is a next-generation desktop technology for gamers and enthusiasts coming to market in 11th Gen Intel Core S-series desktop processors. Alder Lake is an extension of Intel's leveraging multiple core architectures in a single processor with high-performance and high-efficiency cores working together, coming to marketing in 2H 2021. MSRP: TBD

WHY IT MATTERS

With gaming continuing to boom, customers seeking higher out-of-the-box memory configurations will be excited to these new chips from Intel, still the market and revenue leader in CPUs.



LG OLED 4K TV

WHAT IT IS

The latest 4K OLED model from LG is made with gamers in mind. With fast response time, much lower input lag, and 4K HFR technology, users can expect the ultimate home entertainment experience. MSRP: Starting at \$1,319.99

WHY IT MATTERS

With speed, visuals, and less lag, this TV is a game changer for both gamers and home entertainment enthusiasts alike.



NVIDIA GEFORCE RTX 3000 GRAPHICS CARD

WHAT IT IS

Powered by Ampere, the 2nd gen RTX architecture from NVIDIA, the RTX 3000 series features many firsts. They include is the first gaming-class graphics cards with up to 24G of new GDDR6X VRAM, the first GPUs with HDMI 2.1 (for 4K high refresh rate and 8K gaming), and the first discrete GPUs with support for the AV1 codec. MSRP: \$499-1500

WHY IT MATTERS

Tech Radar said it best, “We can now confirm that this really is the biggest generational leap in PC graphics we’ve seen in years – perhaps ever.”



OTTERBOX CONTROLLER SHELL

WHAT IT IS

Otterbox, most known for their mobile phone cases, has released an easy grip controller shell, which serves as a case as well. It snaps on and off, leaving plenty of room to add the gaming clip, access to the controllers buttons and ports, and provides an extra level of protection from accidental drops. MSRP: \$40

WHY IT MATTERS

Otterbox has become a trusted brand for protecting devices, and so this is a natural brand extension for the company. Providing both protection and superior grip to improve your gaming experience, it's another great example of how performance and peripherals are taking center stage in the world of gaming.



RASPBERRY PI OS

WHAT IT IS

Raspberry Pi 400 is a complete personal computer built into a compact keyboard. Featuring a quad-core 64-bit processor, 4GB of RAM, wireless networking, dual-display output, and 4K video playback, it is the most powerful and easy-to-use Raspberry Pi computer yet. Includes a Kensington lock making it a perfect configuration for use in public and education settings. MSRP: \$40

WHY IT MATTERS

By incorporating the board into a keyboard, it removes the need for a case and other accessories normally needed to run a computer, making it a more clean configuration.



RAZER

PROJECT BROOKLYN

WHAT IT IS

This may only be a concept at the moment, but the Project Brooklyn gaming chair from Razer takes immersive gaming to another level. The chair features a pull-down 180-degree transparent screen, modular pull-out trays (that resemble a high-chair), and haptic vibration via Razer's HyperSense on the carbon fiber and leather bucket seats. MSRP: N/A

WHY IT MATTERS

This may only be a concept, but it's certainly an exciting glimpse at what the company has in store for continuing to evolve its gamer gear.





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FAMILY TECH

EDTECH + LIFESTYLE TECH



Education technology (EdTech) took on even more relevance at CES 2021, with over 150 exhibitors in the virtual exhibit hall with a product or service that related to education in some way. Sessions on the main stage included “New Technologies Accelerating Education,” “The Classroom of the Future,” and “From School to Work.” Not a single session during CES 2020, by comparison, involved education – demonstrating the fundamental shifts in priorities for technology.

Beyond the classroom, CES 2021 also featured the latest innovations in family technology, with a new crop of lifestyle products designed for enhancing the lives of babies, kids, and all members of the family (including pets).

Family tech has long been part of the toy industry, with digital solutions even being integrated and retrofitted into many of our classic favorites – but technology products are also becoming more kid-friendly. From tablets to headphones, tech gadgets are evolving to offer a tech-savvy younger generation access to a connected, educational and entertaining lifestyle.

ARCADE1UP INFINITY GAME TABLE

WHAT IT IS

A 24-inch or 32-inch screen, Infinity Game Table enables consumers to have a wide range of digital boardgames, puzzles, card games, coloring books, comic books, and more - all without game pieces or cards - at home.

Arcade1UP has partnerships with Hasbro and Asmodee and has plans to open up the platform for other content developers. With haptic feedback, wifi connectivity, online play, and removable legs, it's a must for the family game night of the future MSRP: \$499 - \$1,558

WHY IT MATTERS

With stay-at-home orders and social distancing protocols keeping everyone indoors, products like this game table bring the fun home in an a safe(r) interactive way.



BOXINE GMBH

TONIES TONIEBOX

WHAT IT IS

The Toniebox is an imagination-building screen-free digital listening experience designed for children. An audio player most akin to a cassette player, the child places a character (a “TONIE”) on top of a 5-inch speaker cube and it plays the character’s story. The library includes tales from Disney, bedtime songs, birthday songs, and more. It also comes with a Creative Tone to record and store up to 90 minutes of your own stories (set up through an app). MSRP: \$99

WHY IT MATTERS

With data security, screen time, and digital privacy becoming rising concerns for parents, Toniebox provides a closed ecosystem experience that does not rely on WiFi connectivity, yet is still entertaining for kids.



AINENNE

WHAT IT IS

Ainenne is the first baby-friendly bedside lamp with sleep training capabilities. It uses 'cry pattern analysis' based on the studies of cry patterns of 150,000 babies across 150 countries to provide recommendations on when is the best time to wake up a baby. MSRP: \$400

WHY IT MATTERS

During the first year, newborn babies are active a few hours a day at most. Many parents struggle with putting babies to sleep or babies crying at night. With Ainenne's in-house algorithm, it can determine why a baby is crying with 80% accuracy and provide recommendations tailored to the baby's sleeping pattern.



CRADLEWISE SMART CRIB

WHAT IT IS

Cradlewise is the world's first 'AI Powered, self-learning crib.' Designed for babies and toddlers from 0 to 24 months, Cradlewise is a 3-in-1 bassinet, crib and sleep monitor packed with sensors and motors. Its AI learns a baby's sleeping habits and favorite songs. It also detects when the baby is about to wake up and gently bounces them back to sleep. MSRP: \$1,499

WHY IT MATTERS

This is another great advancement for parents working on sleep training infants. It is also a longer-term solution for parents vs. traditional bassinet as the mattress may be lowered after 6 months to become a mini crib for use until the baby turns 2 years old.



ENGAGELI

WHAT IT IS

From the founders of Coursera comes Engageli, a web-based platform that lets teachers build and run both synchronous (live) and asynchronous (recorded) remote lessons. The platform features “tables” where students sit together in smaller groups where they can work together, all without requiring students to install software. The company is also building analytics to monitor how well audio and video are working and other kinds of engagement info. MSRP: TBD

WHY IT MATTERS

With a sudden shift to online school this year, many teachers have had to adapt to existing video conference technology. This platform solves for providing a quality experience while reducing bandwidth requirements, a common challenge in delivering equitable learning.



FILO TATA

WHAT IT IS

Filo, an Italian startup, created a baby alarm that is placed in or on the car seat to prevent adults forgetting babies in cars. Tata is a Bluetooth-connected cushion that is placed on the car seat or attached to its straps. An alert will pop up on your phone if the sensor loses connection to your phone while your child is still in the car to avoid leaving your baby behind. MSRP: \$59.90

WHY IT MATTERS

Since 1998, more than 800 children have died in the US after being forgotten in cars. This safety measure means parents won't make a mistake that could potentially endanger their baby's life.



ONANOFF BUDDYPHONES SCHOOL+

WHAT IT IS

The BuddyPhones School+ is a dedicated educational headphones line with built-in SafeAudio for early learners. Includes a high-performance beam microphone for capturing crisp and clear voices, making them the ideal companion for any educational programs, school conferencing and online collaborations. MSRP: \$29.99

WHY IT MATTERS

With a kid-friendly design, the School+ line provides an optimal experience for students, as it helps protect their hearing and provides ultimate comfort for studying.



SEGWAY NINEBOT S KIDS

WHAT IT IS

The Ninebot S Kids is Segway's next generation of self-balancing transportation devices, and it's designed specifically for children. It has both a Bluetooth speaker function and a Bluetooth remote control function, turning the vehicle into a RC gameplay vehicle. The Ninebot S Kids is an eco-friendly and sustainable alternative mode of transportation, carrying riders up to 13.7 miles per charge. MSRP: Starting at \$489

WHY IT MATTERS

Electric scooters have been hugely popular over the last couple years and so it was only a matter of time that Segway made a device with children in mind.



SKOOG CUBE

WHAT IT IS

Skoog was originally started to help children with disabilities express themselves through music. It recently collaborated with *Sesame Street* to debut a sensory cube that doesn't require any screens at all. Parents are able to control the soft, squeezable, glowing RFID buttons that allow kids to play interactive songs, games, and stories through an app. MSRP: Starting at \$195.99

WHY IT MATTERS

Screen-free tech advancements for children are becoming less and less frequent, but many parents are still looking for less digital ways to keep their kids entertained. The Skoog Cube is interactive without requiring children to look at a screen.



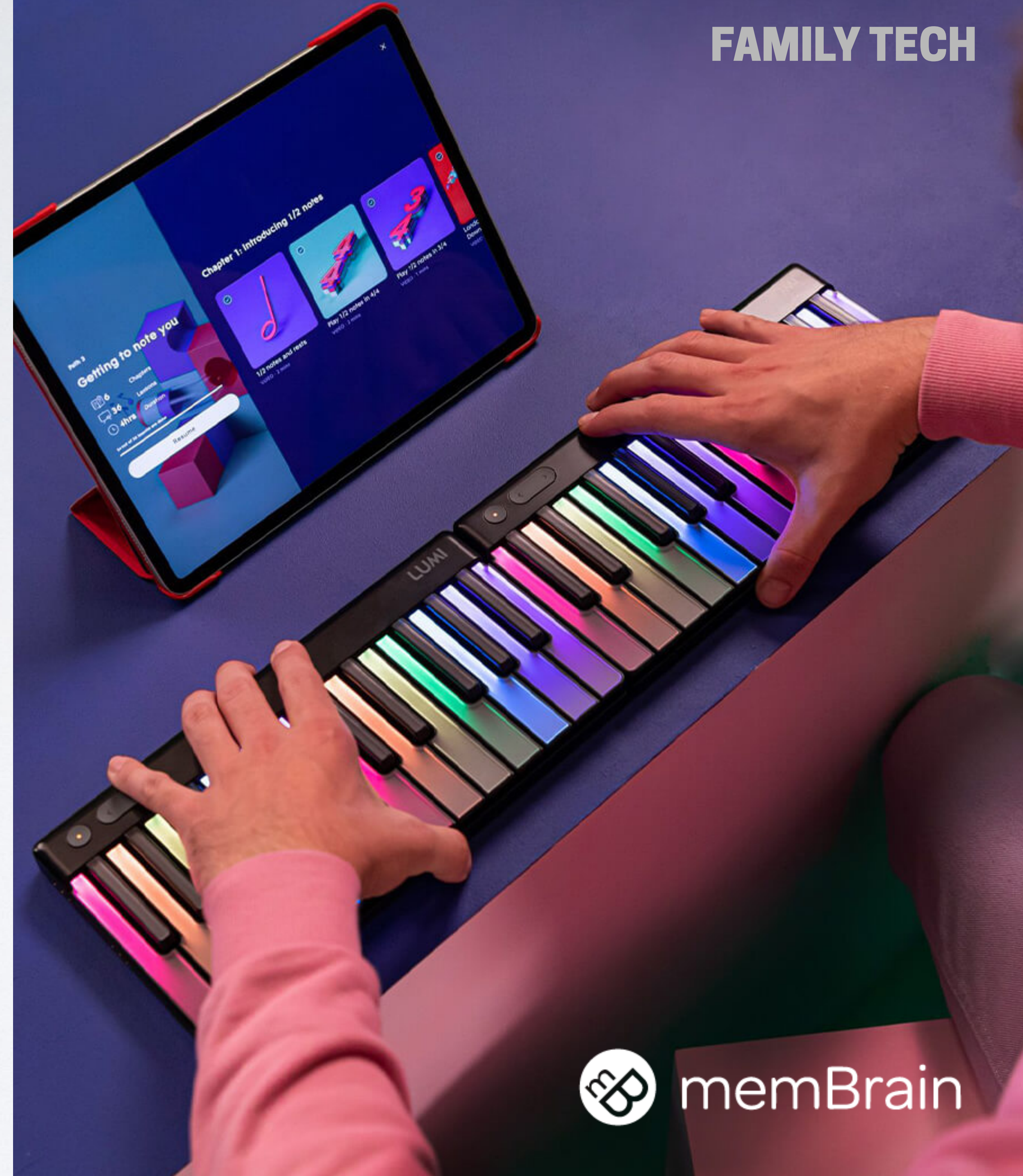
ROLI LUMI KEYS 1

WHAT IT IS

LUMI was created to make learning piano from home easy and accessible. With a library of popular songs from Beyonce to Beethoven, and an illuminated keyboard to help you follow along, LUMI makes learning a brand new instrument seem like a casual and fun activity. MSRP: \$299.99

WHY IT MATTERS

The LUMI is the first integrated hardware, software, and content platform for learning music. Not only is it unique, but it's easy and convenient, opening the door for many people to learn a new skill that would have otherwise been inaccessible.



VAONIS VESPERA

WHAT IT IS

Vespera is a new smart telescope that makes astrophotography more accessible than ever. In lieu of an eyepiece, Vespera displays images on a mobile device with the telescope controlled by a mobile app. Requiring very little setup, Vespera stands at 15 inches tall making it a compact and portable option for star and galaxy-gazers. MSRP: \$1,499

WHY IT MATTERS

Astronomy and astrophotography, which were previously only accessible to those with specific resources, devices, and vast knowledge, are now more accessible with Vespera.



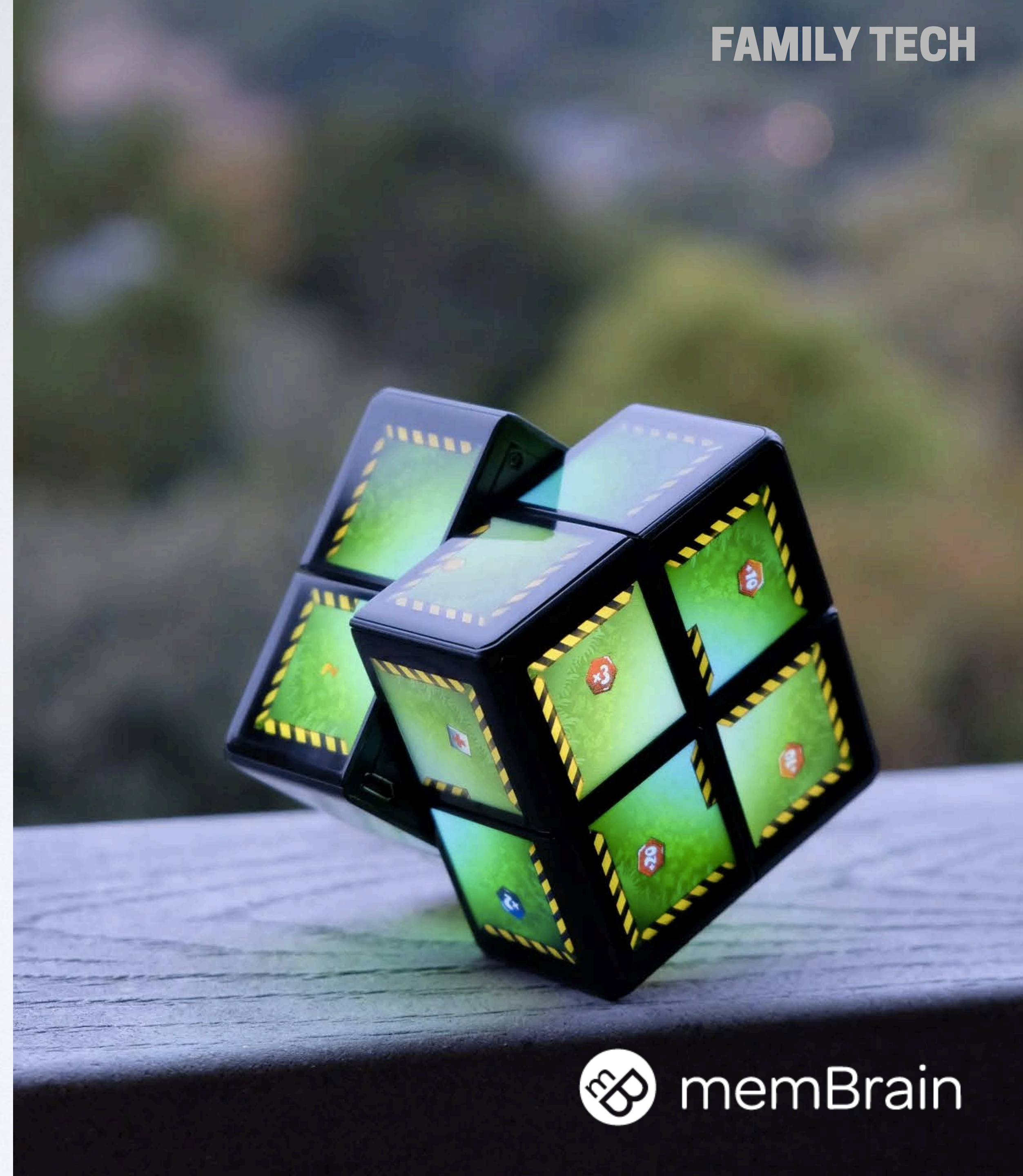
WOWCUBE

WHAT IT IS

WOWCube® System is an innovative entertainment platform that looks like a 2x2 version of traditional cube puzzles. This device is mixed reality with a tangible interface that combines classic 3D puzzles and video games. Consumers make moves and controls by physically tilting, twisting, and shaking the device. MSRP: Starting at \$149

WHY IT MATTERS

Putting a twist on the classic cube games, this shows consumers how old favorites can be reinvented with mixed reality. And thanks to the digital aspect, one cube holds hours and hours of varying entertainment options.





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HEALTH & WELLNESS

PROACTIVE HEALTH

We anticipated that there would be masks and other antibacterial introductions at this year's event in response to the COVID-19 pandemic. But what we didn't expect was how these would fit so seamlessly into the wearable technology trend that has been growing over the past decade. Devices like BioIntelliSense's BioButton which were originally designed for wellness tracking, have now proven useful for identifying early signs of COVID-19 inflection. And beyond wearables, technologies like UV-C were prevalent at the event with consumers seeking effective and affordable ways to stay safe.

There were lots of very specific new products released that addressed specific medical concerns and conditions, but from digital pajamas to snoring prevention, **sleep** was back as a top trend at CES 2021. As with the other health-related trackers, personalization was a top trend in sleep-enhancing technologies this year, with numerous AI-enabled devices providing valuable details about ways to have a better sleep. There was also a decided shift away from passive sleep tracking towards devices that actively intervene with circadian lighting, aromatherapy, and more. Sleep is still a serious business in 2021.

AIRPOP ACTIVE PLUS

WHAT IT IS

Airpop designed The Active Plus mask to allow for physical activity and safe breathing. It comes with a sensor that connects via Bluetooth and monitors everything from breaths per minute to outside air quality to the health of the mask's filter so it can alert you when it needs replacing. MSRP: \$149.99

WHY IT MATTERS

AirPop has invented a way for consumers to wear a mask, exercise vigorously, and monitor surrounding air quality. All without losing your breath.



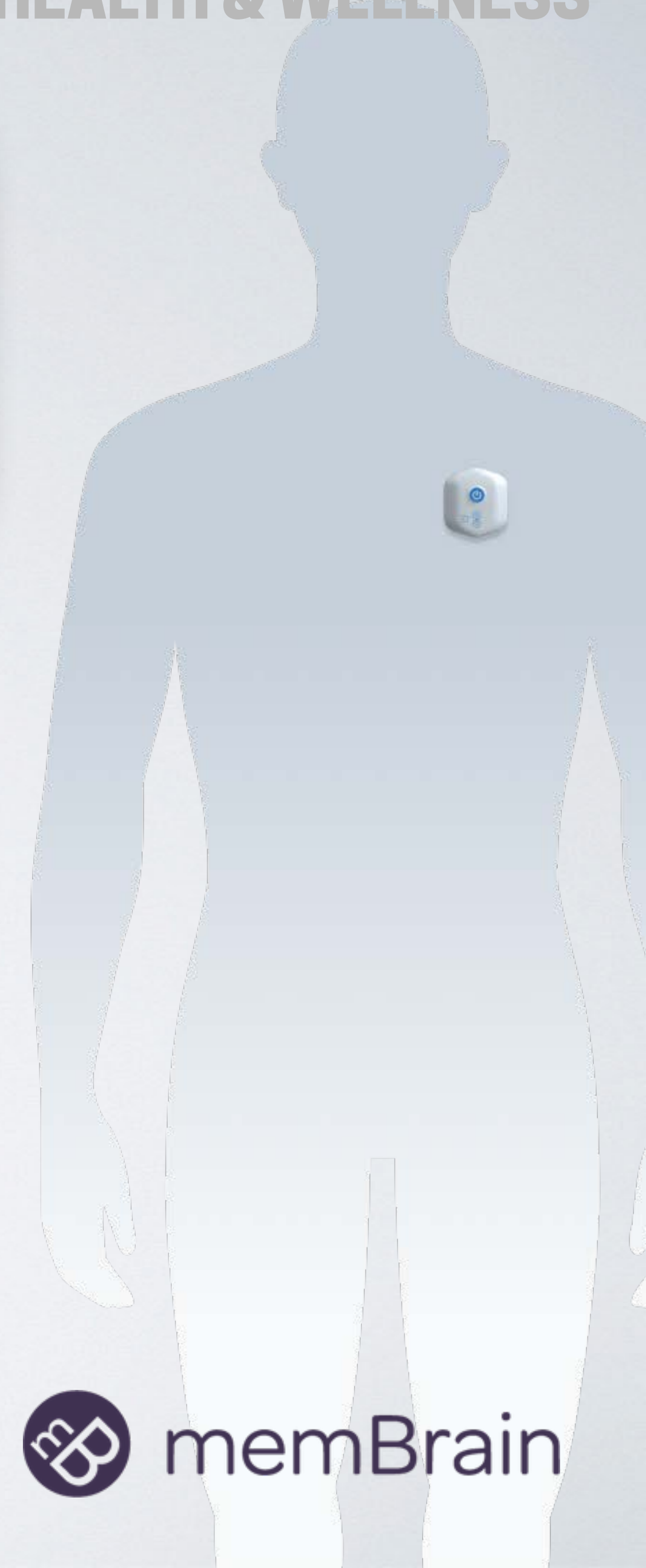
BIOINTELLISENSE BIOBUTTON™

WHAT IT IS

The BioIntelliSense BioButton is a coin-sized disposable wearable that measures temperature, heart rate, and respiratory rate at rest to offer early detection of adverse vital sign trends through its proprietary biosensor technology and advanced analytics. MSRP: TBD

WHY IT MATTERS

This project was funded and accelerated in response to the global pandemic. It may be able to indicate the signs and symptoms of an early COVID-19 infection. It is designed to aid in the safe return to normal activities, when used with scalable health screening and contact tracing.



COVE

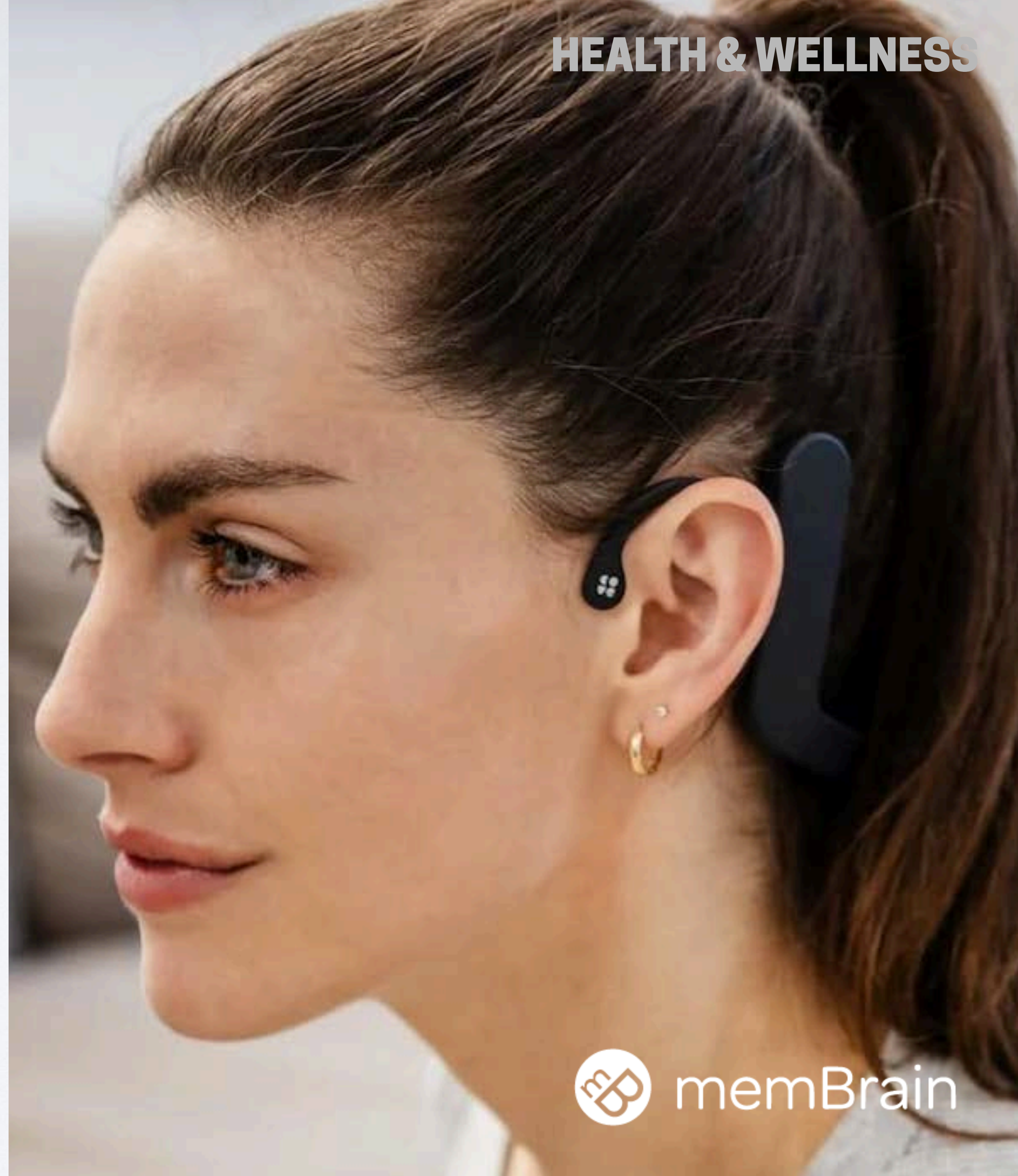
WHAT IT IS

Cove is part of a new wave of 'neuroscience-based' wearables that claim to be able to reduce stress, which in turn can improve your sleep. A headband that silently applies gentle vibrations behind the ears, Cove is designed to stimulate a region of the brain called the posterior insular cortex which is involved in the modulation of stress. Meant to be worn 20 min/day.

MSRP: \$490

WHY IT MATTERS

We all need stress reduction! And while competitive brands rely on EEG sensors and meditation programs to achieve relaxation, Cove uses a technique called neuromodulation, which aims to target specific neural circuits in the brain by stimulating nerves in the body, resulting in improved sleep and resilience to stress.



EINOVA MUNDUS PRO

WHAT IT IS

This box takes all of the viruses and bacteria off of phones, keys, jewelry, and whatever else fits inside – in 8 minutes. The Mudus Pro UV-C Disinfecting Tray is also a wireless charger and so it will boost a phone's battery if placed on top. It also has a USB port on one side to charge wired devices. MSRP: \$119

WHY IT MATTERS

Now, more than ever, consumers are concerned about preventative measures to avoid getting sick. These kinds of products are likely to continue to evolve to become more useful and part of our everyday lives.



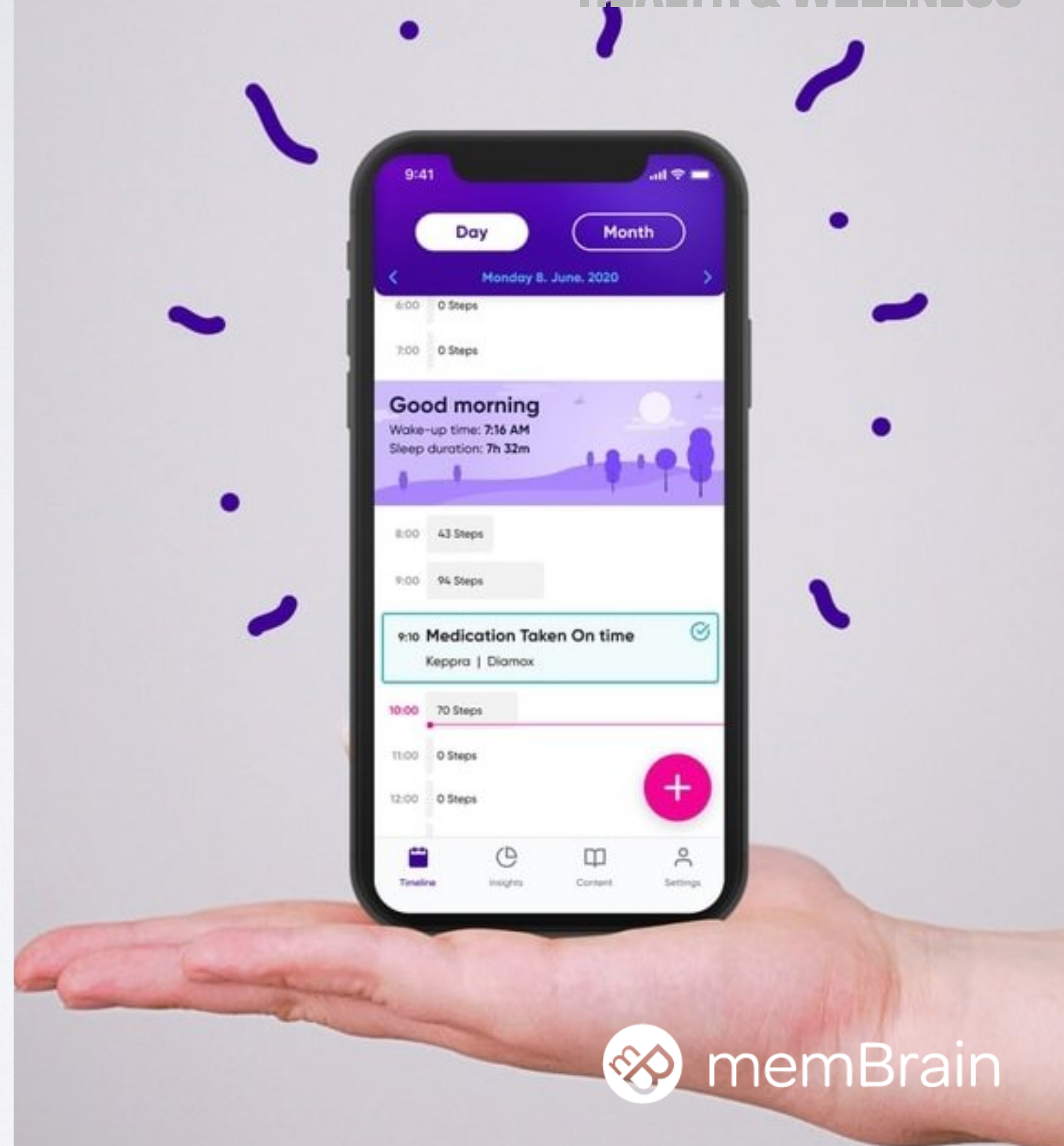
EPSY

WHAT IT IS

Epsy is the leading digital health platform for managing epilepsy. It was created for patients, caregivers, and healthcare professionals alike. The Epsy app simplifies managing epilepsy for patients, across the board helping people manage symptoms and care. MSRP: FREE

WHY IT MATTERS

Epsy empowers patients and professionals in the management of epilepsy, using a diary to help easily track seizures, triggers, and medications and taking it a step further to analyze behavior for trends and patterns. This provides new insights for patients and their healthcare teams.



KOHLER STILLNESS BATH

WHAT IT IS

While this could be classified as a smart home device, it is really a wellness product. Inspired by Japanese forest bathing, the Stillness Bath is designed to relax the mind, soothe the body, and renew the spirit with its water, light, fog, and aroma features. Each element of the experience can be customized using the Kohler Connect app. MSRP: \$16,000

WHY IT MATTERS

The Stillness Bath transforms bathrooms into a spa-like environment for quiet mindfulness and offers a sanctuary for self-care.



LG PURICARE AIR PURIFYING MASK

WHAT IT IS

A PuriCare personal-sized air purifier has two filters that capture up to 99.95% of viruses, bacteria, and allergens from entering the respiratory system. The smart mask, which has a rechargeable battery for 2–8 hours of wear, also adjusts its two fans to the user's breathing. MRSP: TBD

WHY IT MATTERS

While there isn't a US release date for this mask yet, LG has noted that it not only protects the wearer but also people around them – a claim that current approved masks (N95, KN95) do not currently make.



MARISLEEP

SNORING SUPPRESSION

WHAT IT IS

Thanks to a Japanese health-tech outfit, there is a whole new way to combat snoring. This bedside device first detects you snoring and then, using a built-in loud speaker, emits bass frequencies lower than the range of human hearing. These won't wake you up, but will gently stimulate your body into shifting positions, hence interrupting you from snoring. MSRP: TBD

WHY IT MATTERS

This system is testament to the seemingly never-ending innovation in the sleep tech space. Snoring is a huge global problem, and unsurprisingly there are countless products on the market that claim to relieve you and your partner from the sleep disturbances it causes, but this is an entirely new and unobtrusive concept.



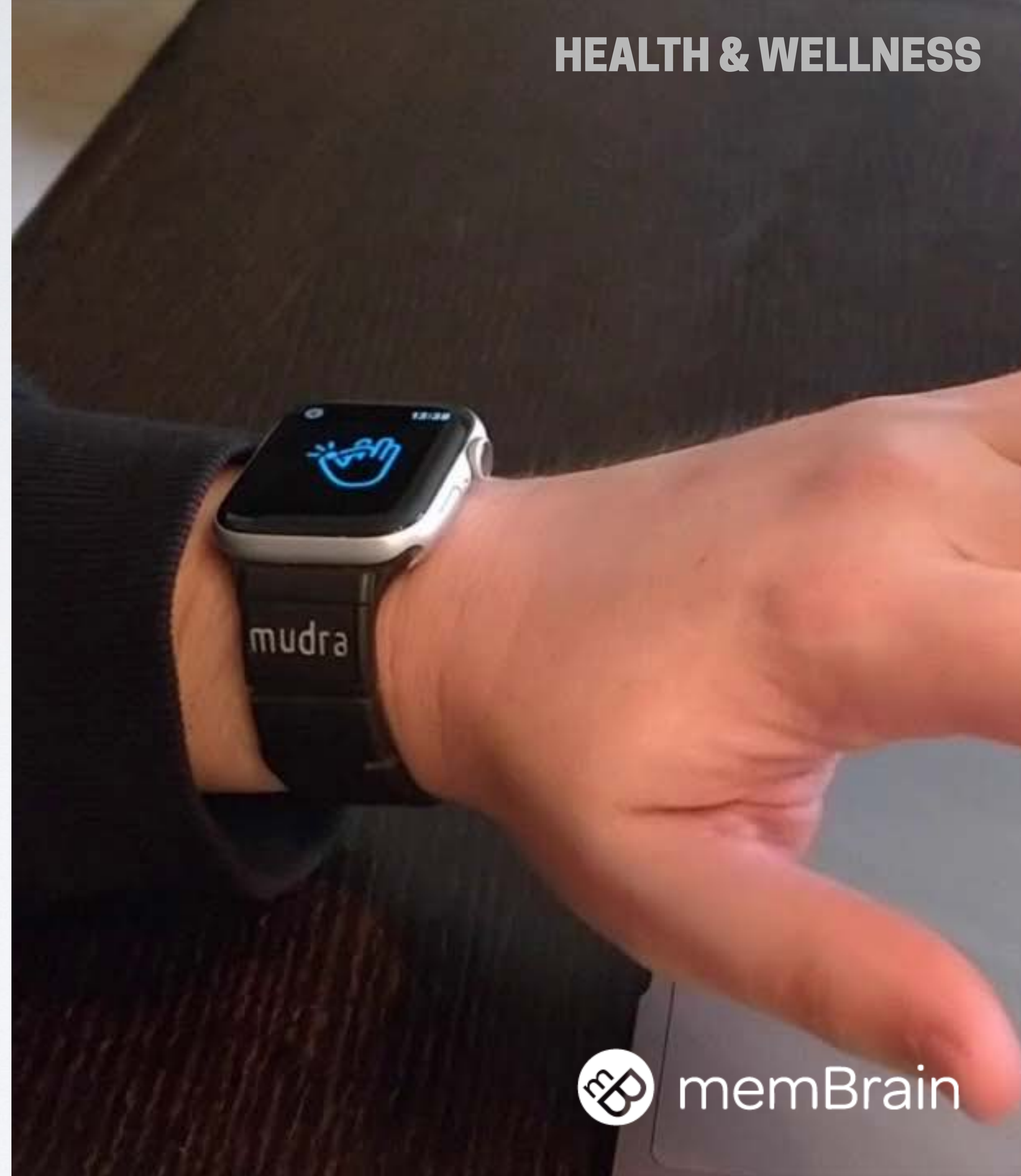
MUDRA BAND™

WHAT IT IS

This Apple Watch-compatible band allows its users to control the watch through finger movements of the same hand that wears the watch. With the Mudra Band™, users are able to manage calls, control music, take selfies, activate Siri, and more. MSRP: \$246.50

WHY IT MATTERS

For the on-the-go Apple Watch user who doesn't always have both hands free to operate the device, enter the Mudra band. Using finger movements eliminates the need to actually engage with the touchscreen.



OURA RING

WHAT IT IS

A wedding band-like sleep tracker that collects data about your body, activity, and sleep using optical heart rate monitoring. Made of titanium, the Oura Ring uses data boings, along with an accelerometer to detect movement, track sleep and activity, transmitting results to an accompanying app. MSRP: \$300

WHY IT MATTERS

Digital health wearables continue to evolve beyond the wrist. Originally marketed as a wellness ring focused mainly on sleep, Oura is worth revisiting now as it can measure body temperature or respiratory rate, and generate a health score on the data collected throughout the day, make it a potential tool for early detection of COVID-19 symptoms.



RAZER PROJECT HAZEL

WHAT IT IS

Razer is best known for its gaming products, but its latest product introduction Project Hazel, is dubbed “the most intelligent mask ever created.” Classified as an N95 Surgical Respirator, the mask boasts filtering out 95% of particles while protecting against droplets. It also has a transparent design to make facial cues visible for social situations and with a built-in mic and amp combo, it keeps speech from being muffled. These are also customizable with 16.8M different colors to choose from from two Razer Chroma RGB lighting zones. MSRP: TBD

WHY IT MATTERS

PPE isn't going anywhere soon, so this is indicative of companies seeking ways to make these products more comfortable and part of our everyday lives.



QUANTUM OPERATION GLUCOSE MONITOR

WHAT IT IS

This Quantum wearable can accurately scan and measure blood sugar from the wrist. The secret behind this product is Quantum's patented spectroscopy materials which are built into the watch and its band. After 20 seconds of the user putting on the watch and activating it, data will be displayed. MSRP: TBD

WHY IT MATTERS

This provides a constant glucose monitor without the need for blood samples and multiple checkpoints throughout the day. It takes managing Diabetes to a whole new level.



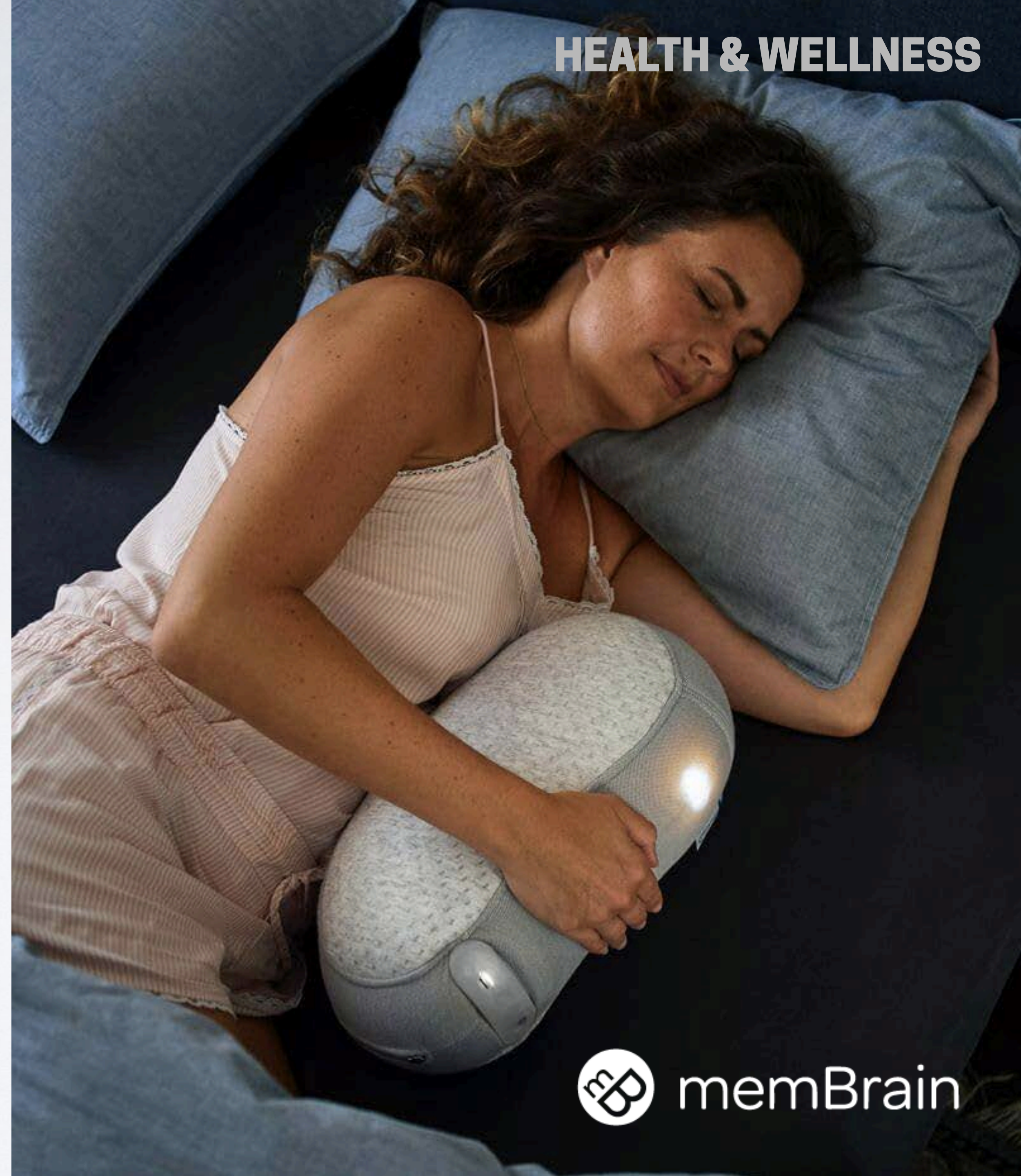
SOMNOX SLEEP ROBOT

WHAT IT IS

The Somnox Sleep Robot guides consumers towards relaxed breathing and helps people fall asleep faster. The robot produces a rhythm that slows down breathing and relaxes the individual holding it. It also produces white noise and other soothing audio effects. MSRP: \$100

WHY IT MATTERS

Sleep deprivation is a growing problem that impacts millions of people across the world. Current treatments often include pharmaceuticals, which can have harmful side-effects and are potentially addictive. This affordable alternative acts almost like a breathing coach, helping you lull yourself to sleep.



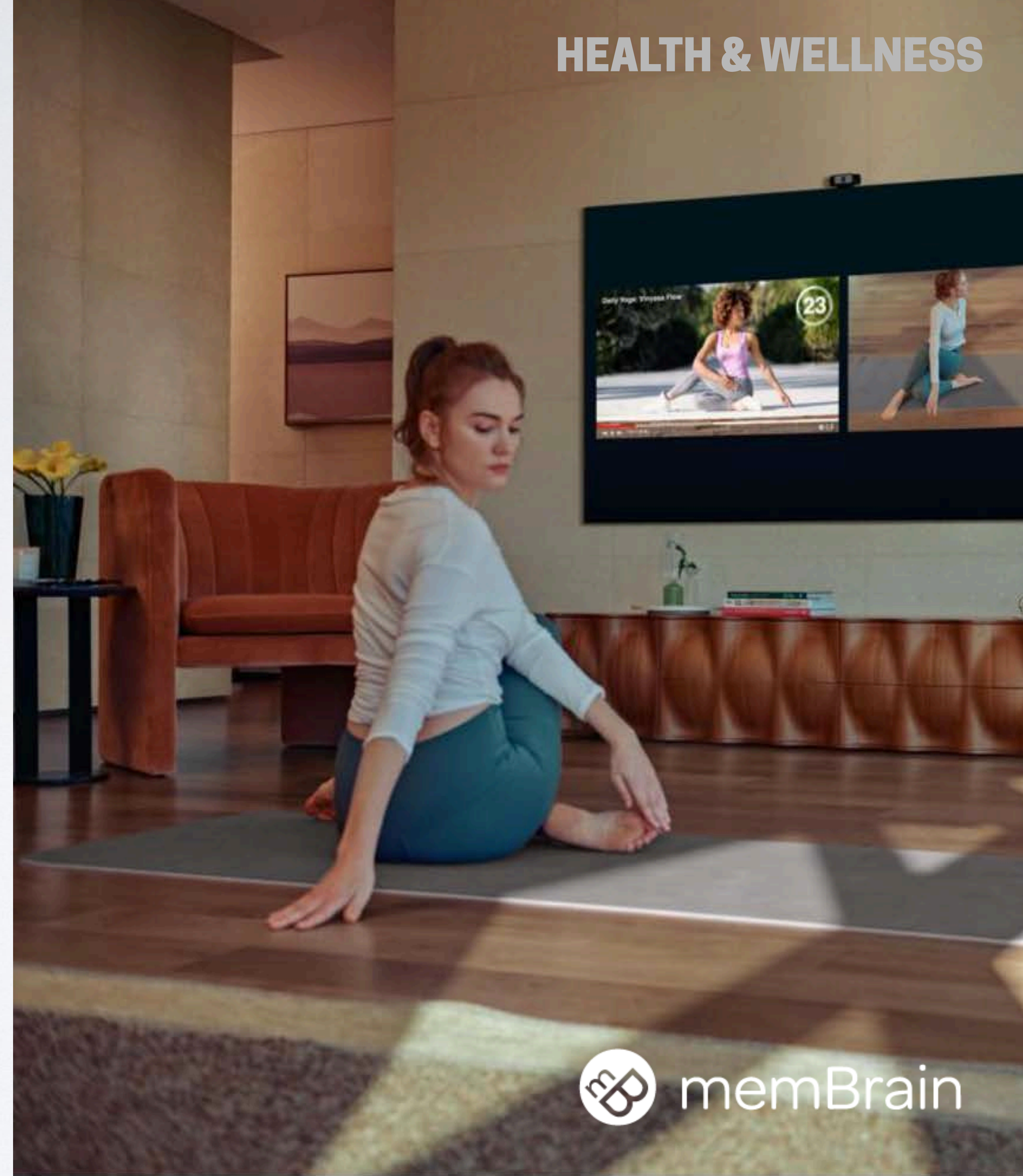
SAMSUNG SMART TRAINER

WHAT IT IS

Smart Trainer is a new feature on Samsung's 2021 televisions. By attaching a webcam (the brand recommends Logitech webcams), an app on the screen will recognize users working out, tracking progress and offering encouragement and coaching. Part of the Samsung Health app, Smart Trainer offers personal training with fitness gurus like Jillian Michaels using motion-recognition AI algorithm in the TV. MSRP: TBD

WHY IT MATTERS

Taking on Apple Fitness+, Samsung continues to build more features into their ecosystem with a complete lifestyle approach.



SUNRISE

WHAT IT IS

Sunrise has brought a new approach to home-based sleep diagnostics. By placing the small sensor on the chin, Sunrise is able to track the motion of the user's jaw at night and analyze the user's sleep. It is the only fully automated, certified medical device that demonstrates above 90% agreement with in-lab sleep studies, at a fraction of the cost. MSRP: TBD

WHY IT MATTERS

Using jaw movements to analyze sleep is less invasive and much less expensive than attending a sleep study, and yields very similar results. This means more people can have access to sleep healthcare and understand their own potential sleep disorders.



TARGUS UV-C LED DISINFECTION LIGHT

WHAT IT IS

The Targus UV-C Disinfection Light provides safe and consistent no-touch ultraviolet solution to help reduce pathogens with UV-C light by incorporating state-of-the-art UC-C LED and automation technology. The light turns on and runs for 5 minutes, every hour, to break down the DNA of microorganisms. MSRP: \$299

WHY IT MATTERS

With a year so focused on hygiene and the management of pathogens, this light is a no-brainer. Devices in the disease management sector are quite popular this year for obvious reasons, and this light offers a different kind of “cleaning” solution.



TATCH

WHAT IT IS

Tatch is part of a new generation of sleep analysis tool that enables simple but accurate assessments of sleep patterns. It is a 3-inch patch that is worn on the skin. Tatch can analyze different aspects of sleep and then connects the user to sleep specialists to make further analyses based on results. MSRP: TBD

WHY IT MATTERS

Sleep health continues to be a hot-button issue. This not only provides important insights, but connects the users to professionals who can interpret the data and explain how to achieve better sleep.



VOY TUNABLE GLASSES

WHAT IT IS

These tunable glasses let the wearer adjust their prescription strength level using a small wheel hidden in the front of the frame, adjusting away from the nose for a more negative power or towards the nose for more positive power. They can change focus from -5D to +2D in a matter of seconds. MSRP: \$59 - \$79

WHY IT MATTERS

This is a solution for people suffering from both farsightedness and moderate nearsightedness, eliminating the need to carry several pairs of glasses.





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SMART HOME

“STAY SAFE”



Perhaps one of the most commonly used phrases of 2020 was “Stay Safe.” From the ever-looming threat of the pandemic to cybersecurity attacks, safety and security have become increasingly important to consumers in 2021. Touch-free, motion-activated, and voice-controlled are all trends that we are watching as we become more sensitive to avoiding illnesses (see LG ThinQ refrigerator and U by Moen Smart Faucet).

With many people forced to shelter in place and work from home, there have been huge security challenges ranging from IoT hacks to ransomware. Privacy has always been a major area of focus for smart home technology. With numerous instances of hackers taking over cameras, security cameras, and smart speakers, technology for the home must also now come with a healthy dose of trustworthiness. Product features like physical lens shields, or shutters, are now becoming standardized in new smart home devices. Engineered Electromagnetic Surfaces were also introduced this year as a result of the rapid worldwide adoption of 5G technologies.

And so while there were still plenty of nifty technologies for convenience in the home akin to the Jetsons coming to reality (see Kohler’s Intelligent Toilet and the ColdSnap rapid freezing appliance), when it comes to smart homes in 2021, it’s all about staying safe.

ALARM.COM

WHAT IT IS

[alarm.com](https://www.alarm.com)'s touches doorbell option supports social distancing requirements while bringing connectivity to any area that can receive LTE signals through a sensor. Anyone who comes to the front door will stand on a doormat placed at a safe distance to ring the doorbell. MSRP: \$250

WHY IT MATTERS

Home security is an ongoing issue, with many advancements from the consumer tech industry. This affordable option provides home security while also taking personal health and safety into account.



CASÉTA OUTDOOR SMART PLUG

WHAT IT IS

The Caséta Outdoor Smart Plug has an IP-65 water and dust resistance plug that can be used during any season and any weather, even in the rain. The plug can be controlled through an app and can be used for holiday lights, string lighting, some motors and pumps, and other lighting options. MSRP: \$79.95

WHY IT MATTERS

The smart plug and smart home experience can now extend outside of the home! Safe for use in the elements, this plug allows for integration of lights and appliances that regularly sit outdoors.



CHAMBERLAIN MYQ PET PORTAL

WHAT IT IS

MyQ Pet Portal, the newest addition to the myQ Smart Ecosystem, is a smart doggy door in the form of a hidden smart-panel. Designed to replace an existing exterior door, the myQ Pet Portal comes integrated in a select offering of Kolbe doors with materials and color options to fit pet owners' homes. It syncs with the Pet Portal app which leverages two 1080p cameras on either side of the door, as well as a pair of mics for 2-way audio, to keep owners connected with their pet throughout the day.

MSRP: Starting at \$2,999

WHY IT MATTERS

The Pet Portal allows pets to move in and out safely. With live video streaming and 2-way communication, pet parents can monitor while they're away providing additional comfort for all.



ENGINEERED ELECTROMAGNETIC SURFACES

WHAT IT IS

ESS or Engineered Electromagnetic Surfaces is a material developed for the rapidly improving 5G world and the future of smart cities. These semi-transparent plastic sheets reflect, redirect, or block specific radio-frequency waves. MSRP: TBD

WHY IT MATTERS

These are a low-cost option for indoor or outdoor use that can augment, direct, or inhibit specific telecom services. This means an accessible advancement for smart cities, and a controlled environment in a world where radio-frequency waves may be everywhere.

KOHLER INNATE INTELLIGENT TOILET

WHAT IT IS

The newest addition to Kohler's portfolio of intelligent products is Innate, – the touchless toilet. It includes all the comfort, convenience, and cleanliness features consistent with Kohler products with a more sanitary touch-free offering. The Innate has an easy, ready-lock installation and comes with a heated seat, auto open and close, and a personal bidet functionality. MSRP: \$3,100

WHY IT MATTERS

A clean, comfortable lifestyle is vital today as consumers navigate the new normal way of life resulting from the COVID-19 global pandemic. Kohler continues to demonstrate innovations that can make people's daily lives cleaner and healthier.



LG INSTAVIEW THINQ REFRIGERATOR

WHAT IT IS

LG's InstaView Refrigerator already had Alexa and Google Assistant integration, but now they've taken voice control to a new level. This refrigerator opens with the sound of the owner's voice. The display is also larger, and there is a UV nano tap to keep the water dispenser germ-free. MSRP: \$6,999

WHY IT MATTERS

This is one more advancement in the smart kitchen family, one that makes leaps in hygiene and allows consumers to open the fridge even when their hands are full.



NETGEAR NIGHTHAWK RAXE500 WIFI 6E

WHAT IT IS

Wifi 6E is a new industry standard for routers and the Nighthawk RAXE500 is a great example of it. It's the equivalent of adding a whole new lane to the home's information superhighway. MSRP: \$599.99

WHY IT MATTERS

6E routers and devices can access a new wireless spectrum that was previously off-limits to WiFi. This new band is far less crowded, meaning the connection should be more reliable.



NOBI FALL-SENSING CEILING LAMP

WHAT IT IS

The Nobi Fall-Sensing Ceiling Lamp is an AI powered gadget that senses if users are sitting, standing, or laying down, and will reach out for help if they fall down. The lamp has motion sensors and will cast a dim upward glow if users wake up at an odd hour. It even brightens to illuminate the path if users get up to go to the bathroom. MSRP: Starting at \$2,499

WHY IT MATTERS

This lamp could provide additional safety to senior citizens while maintaining their autonomy. Almost like an eye in the sky, this lamp allows users to go about their day knowing that if any falls should occur, help is on the way!



U BY MOEN SMART FAUCET

WHAT IT IS

U by Moen is the Smart Faucet that offers completely touchless functionality thanks to intuitive voice-controlled technology. It can be controlled three other ways: touchless sensor control, handle control, and app control. MSRP: \$450

WHY IT MATTERS

The touchless smart faucet means increase in ease and hygiene. It also makes understanding daily water consumption easy, an important first step in conservation.



SIGMA PHASE COLDSNAP

WHAT IT IS

The ColdSnap is a rapid freezing appliance that produces single servicing of frozen confections and frozen beverages in less than 2 minutes. In other words, it's the "Keurig of ice cream." This product will have a beta launch in 2021, with a full launch in 2022. MSRP: \$500-\$1,000 (pods will cost \$2.99/each).

WHY IT MATTERS

Simple: Ice Cream!



SECURITY BLUE BY ADT SMART HOME HUB

WHAT IT IS

The Blue home hub is part of a fully customizable DIY smart home security solutions to design a smart home security system while simultaneously securing professional support through ADT's monitoring capabilities. Consumers can choose to self-monitor or select ADT's 24/7 professional monitoring service for even greater peace of mind MSRP: \$300

WHY IT MATTERS

Just like we are working towards integrates smart plumbing and appliances in homes, consumers are seeking fully integrated smart security systems as well.



YSL BEAUTÉ ROUGE SUR MESURE LIPSTICK

WHAT IT IS

The iconic luxury beauty brand, Yves Saint-Laurent, is entering the world of Beauty Tech and artificial intelligence with Perso, a new device from L'Oréal. This smart at-home device allows consumers to create thousands of bespoke lipstick shades with a single touch. MSRP: \$299

WHY IT MATTERS

Yves Saint-Laurent Sur Mesure Powered by Perso is an innovation that shows consumers that beauty can be perfectly tailored to each individual's expectations, complexion, or outfit. It opens a lot of doors when it comes to smart technology and everyday beauty routines.





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SUSTAINABILITY

THE FUTURE IS BRIGHT

We were pleasantly surprised to note how many products in our report this year have included some kind of consideration to sustainability and renewable resources. From smart water faucets to electronic vehicles, companies are taking sustainability into serious consideration when bringing new products to market.

Beyond making sustainability a talking point in brand messaging, brands are now developing products and services that empower their customers to take an active role in living more sustainable lives.

With products designed for promoting sustainability at home, like Samsung's solar charged remote control to innovative products including the Lasso automated recycling machine, consumers now have increasing amounts of digital solutions at their disposal.

The future is bright!



BIOMILQ

WHAT IT IS

Per infant-fed formula in the US, 5,700 metric tons of CO₂ are produced and 4300 gallons of freshwater are consumed each year. BioMilq reproduces a mother's breast milk in a lab. When the cells are ready, they are simulated to produce personalized human milk for the infant. The company aims to provide better nutrition to 84% of the babies in the US who were switched to formula in their first 6 months of life, also reducing the impacts of animal agriculture on the planet. MSRP: TBD

WHY IT MATTERS

BioMilq offers a consistent milk solution tailored to the infant so that breastfeeding is more accessible. It also helps reduce the carbon footprint from the global infant formula market.



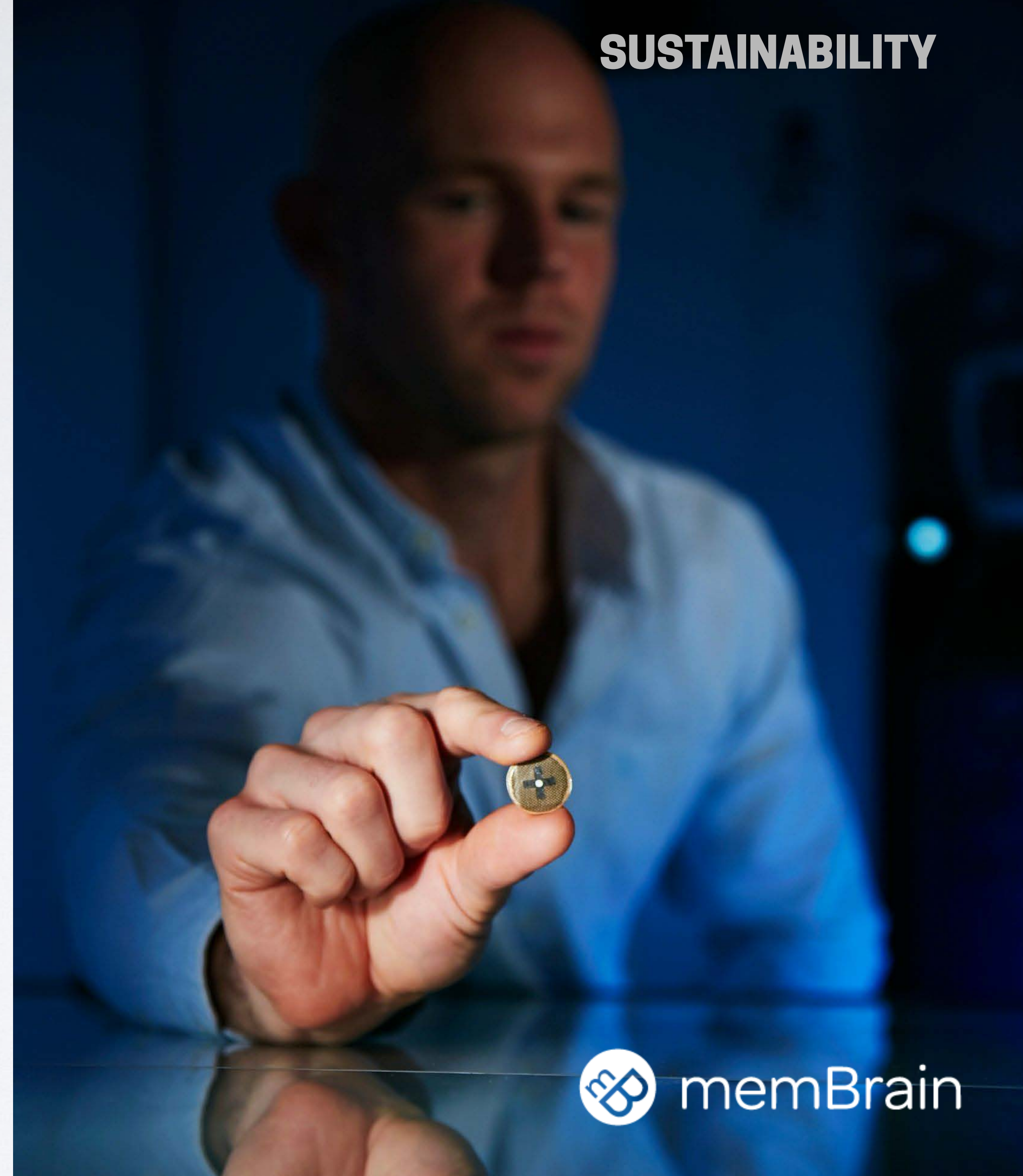
BIOENZYMATIC FUEL CELLS

WHAT IT IS

The Bioenzymatic Fuel Cells are sustainable and eco-friendly paper-based energy sources for low power electronics. On average 97% of conventional batteries end up in landfill. Bioenzymatic fuel cells reduce environmental impact and also reduce recycling/disposal costs. Using patented technology, these paper-based, ultra-thin, and flexible bioenzymatic fuel cells convert natural fuels via enzymes to produce energy for low-power devices. MSRP: TBD

WHY IT MATTERS

Batteries contribute a massive amount of pollution to our planet, and we use them in all sorts of small electronics.



GARDYN

WHAT IT IS

Gardyn is a plug-in home gardening machine designed to let prospective growers cultivate fresh leafy greens indoors with the help of artificial intelligence. Gardyn uses AI to monitor vegetation, manage its temperature, and control the light through an app. Seeds are housed in “yCubes,” similar to Keurig cups, and the vertical tower holds up to 30 plant varieties. MSRP: Starting at \$799

WHY IT MATTERS

With its AI capabilities and accommodating set-up, consumers can grow enough to feed a family of four. Previously, growing your own food required a decent amount of labor and knowledge, but Gardyn simplifies the process. This is a huge leap in food sustainability.



JOHN DEERE X-SERIES COMBINE

WHAT IT IS

The X-Series Combine is a harvester with some shockingly advance features. Among the most impressive are the ActiveVision cameras which can help farmers see inside the grain tank and artificial intelligence for self-driving capabilities. MSRP: Starting at \$380,000

WHY IT MATTERS

The world must eat! Agriculture is one of the most high-stakes industries when it comes to technology. With these advancements, farmers can monitor crops remotely, increasing productivity and ultimately quantity.



LASSO

WHAT IT IS

The Lasso is a robot that accepts, identifies, and prepares recycling for proper use. It is built to automatically recycle glass and plastic. Users will drop an item into the machine, the machine analyzes the item, and if it is recyclable, it will grind up the item and prepare it for disposal. MSRP: \$3,500

WHY IT MATTERS

Many consumers wonder how much of their blue bin waste is truly recycled. Lasso takes out the guesswork, ensuring that recyclables are ready to be repurposed.



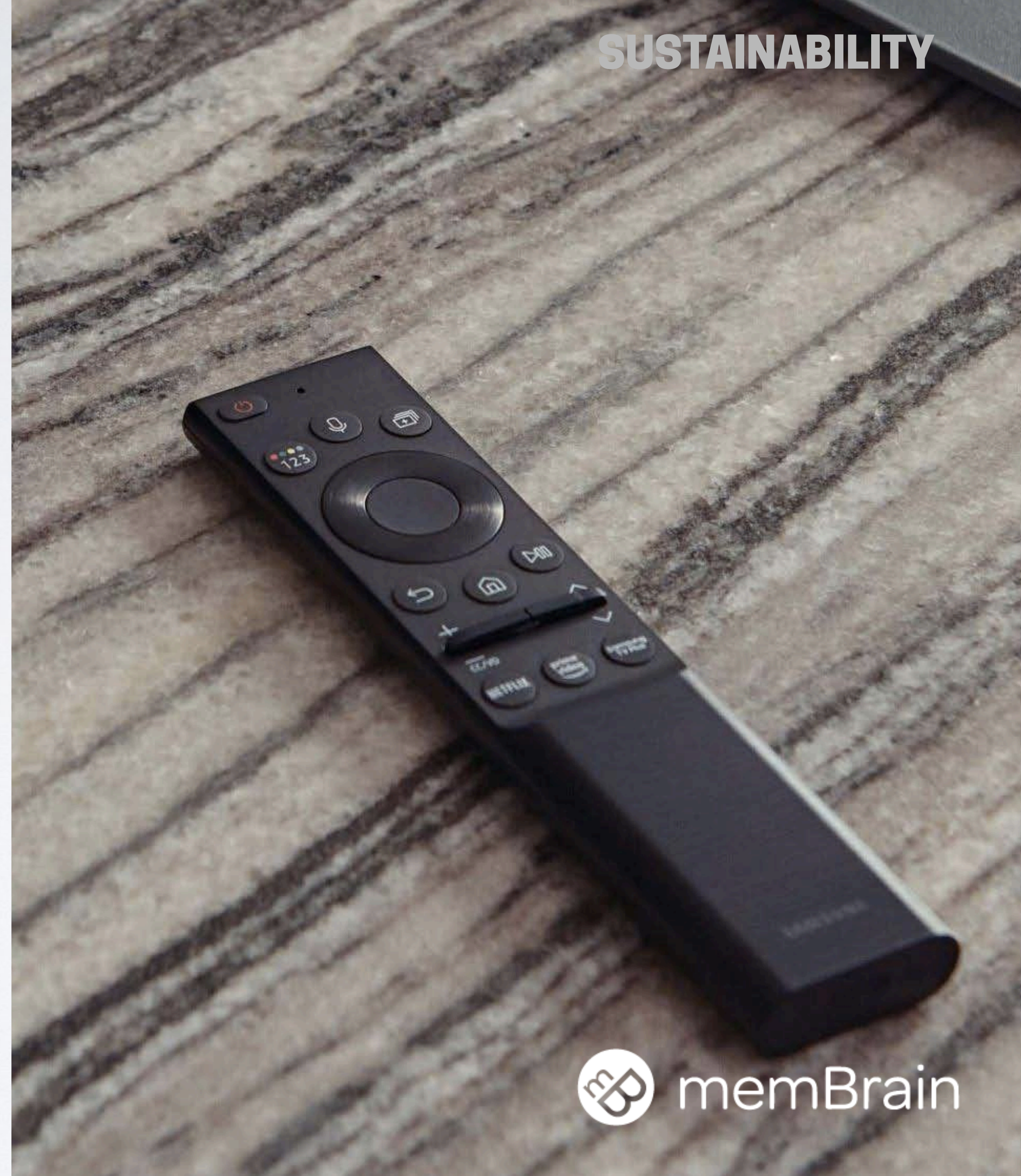
SAMSUNG TV SOLAR-POWERED REMOTE

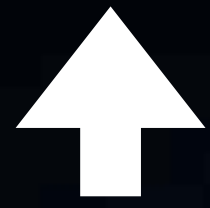
WHAT IT IS

No need to replace the batteries on Samsung TV remote controls with Samsung's new solar-powered remotes. The new solar cell panel takes up about half of the back side of the remote and requires very little power, so it's able to gather enough ambient light from the room. MSRP: Included with all 2021 Samsung TVs

WHY IT MATTERS

The shift to solar-powered remotes will prevent waste from a projected 99 million AAA batteries over seven years. There's an environmental cost to creating, recycling, and disposing the rechargeable batteries, one that this product aims to reduce one remote at a time.





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VEHICLES

IT'S ELECTRIC!

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The automotive category has become one of the most exciting categories at CES each year, as our vehicles have now become powerful computers featuring HD entertainment/infotainment centers, touchscreens, and other advanced technologies. CES 2021 was no exception, and a breakout year for electric vehicles (EVs), 5G connectivity, digital cockpit, artificial intelligence (AI), and autonomous vehicles (AVs).

GM made several groundbreaking announcements at the event, including flying cars, electric sports cars, and a commitment to spending \$27B on EVs and AVs, targeting to launch 30 EV models by 2025. They are also working on a battery technology call Ultium which features a single cell design and provides 60% more energy than current cells. Even the Hummer is back with an electric twist (see GMC Hummer EV).

Beyond GM's lineup, there were plenty of other exciting developments in the category, particularly related to the industry's commitments to sustainability and alternate fuel sources. Audi (a VW brand) announced that the company has committed to achieving a "carbon-neutral balance" by 2050, which they are primarily proposing to do by reducing CO2 emissions. The Hyperion XP-1 leverages hydrogen ion fuel cells rather than lithium ion battery power (another major trend in EVs), bringing a formidable competitive offering to Tesla's long-awaited Roadster (which has delayed production again until 2022).

AUDI RS E-TRON GT

WHAT IT IS

The AUDI RS e-Tron GT (Gran Turismo) is a 4-door car employing technology that was initially developed for motorsports, first with Audi's hybrids at Le Mans, and now with Formula-E. The GT's shape features flush rocker panels, a streamlined greenhouse, and Audi's LED distinguished new taillamp band in the back. The e-tron GT will be Audi's first leather-free interior, with seats made from recycled fabric, carpets made from recycled nylon, and a microfiber-covered dashboard and steering wheel. MSRP: \$75,000 (anticipated)

WHY IT MATTERS

This vehicle is consistent with reflecting Audi's goal of achieving carbon neutral balance by 2050.



CADILLAC VTOL

WHAT IT IS

The Cadillac VTOL (Vertical Take Off and Landing) appears to be a cross between a drone and a helicopter and is designed to make aero-mobility a reality - combining electric power in an autonomous personal transportation vehicle designed for speed. The vehicle features a 90 kWh EV motor to power four rotors. MSRP: TBD

WHY IT MATTERS

The flying cars are here! Well, almost. This is still a concept vehicle, but it is getting closer to becoming a reality and that is exciting.



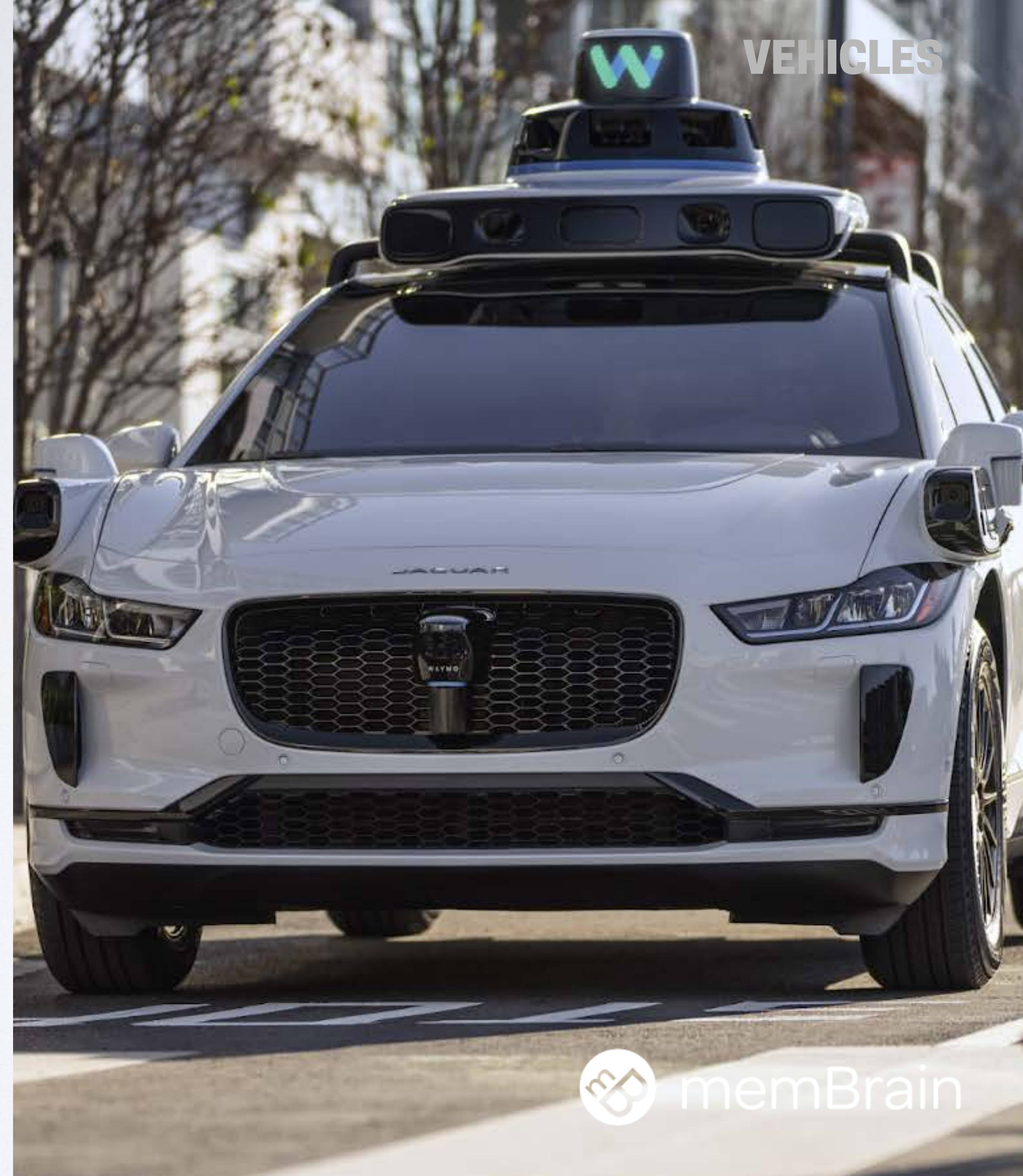
FIFTH-GENERATION WAYMO DRIVER

WHAT IT IS

Waymo's self-driving technology was created in the pursuit of safety. This fifth generation driver has a variety of uses including ride-hailing, trucking, local delivery, and personal car ownership. MSRP: TBD

WHY IT MATTERS

The Waymo driver promises to offer mobility solutions to millions of people and increase vehicular safety. This generation is more powerful than before and designed to demonstrate the incredible self-driving possibilities in the near future.



GENERAL MOTORS BRIGHT DROP

WHAT IT IS

GM has come out with electric delivery vans and trucks in a new business unit called Bright Drop. This product reimagines commercial delivery and logistics for an all-electric future of smart connected products and software-enabled services. MSRP: TBD

WHY IT MATTERS

This year more than ever we have seen the importance of timely and safe delivery options. Bright Drop brings smart technology to package delivery, offering a sustainable alternative to existing methods.



GMC HUMMER EV

WHAT IT IS

GM's all-electric pickup, the Hummer EV, redeems itself as an enviro-friendly super truck that does a zero-to-60 MPH sprint in 3 seconds, bristles with 1,000 hp and churns a combined axle 11,500 lbs of electric torque, all with an estimated 360 miles of range. MSRP: TBD

WHY IT MATTERS

Just as Beyond Meat has made hamburgers something you can enjoy again without the guilt of eating meat, the Hummer is back and this time it's not a gas-guzzling abomination that would shame any self-respecting environmentalist.



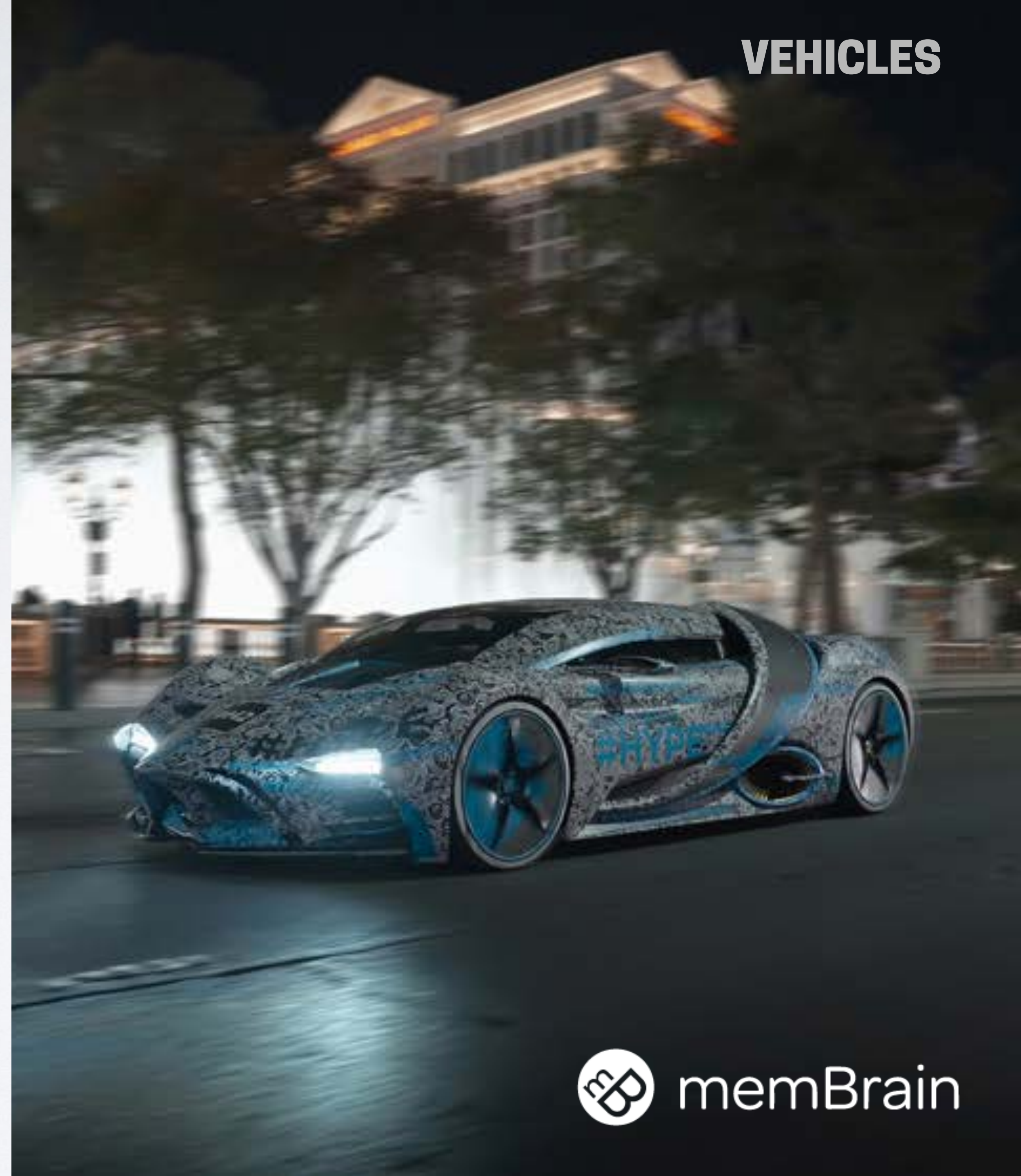
HYPERION XP-1 HYPERCAR

WHAT IT IS

Based on hydrogen fuel-cell (rather than lithium ion battery) technology, the Hyperion XP-1 Hypercar is an all-wheel-drive vehicle that features permanent magnet electric motors mated to a three-speed transmission. But here's what is amazing: the XP-1 does zero to 60 in less than 2.2 seconds, a top speed of 221 MPH and has a range of 1,016 miles (which the company claims can be replenished in 5 minutes).

WHY IT MATTERS

Hyperion is a company worth keeping an eye on as the race between hydrogen fuel cells and lithium ion batteries in our cars heats up.



IBM MAYFLOWER AUTONOMOUS SHIP

WHAT IT IS

IBM, in partnership with non-profit ProMare, built the Watson-powered “AI Captain” which will self-navigate the Mayflower Autonomous Ship (MAS) across the Atlantic Ocean later this year. The autonomous ship’s technology is ahead of the curve, achieving what IBM calls “level-5 autonomy,” which means that the ship can operate without any human intervention. The AI Captain is made possible by the ship’s 6 AI cameras and over 30 sensors across its body.

WHY IT MATTERS

The development of zero-emission, crew-less and autonomous ships will be a major boost to oceanography research (making scientific missions more affordable and efficient) and sea transport (which accounts for 90% of global trade).



SONO MOTORS SION SOLAR CAR

WHAT IT IS

Sweden's Sono Motors, with more than 12,000 reservations, is hoping to put a solar car on the road in Europe as early as 2022. The polymer-bodied Sion is not solely powered by the sun, but it has a panoply of solar panels integrated into the body panels that can extend the battery range by about 20 miles on a sunny day.

MSRP: \$35,000

WHY IT MATTERS

While it can currently only go about 158 miles on its battery alone, only comes and black, and will require a full week for a complete recharge, the Sono Sion is an interesting step towards leveraging renewable energy for transportation.



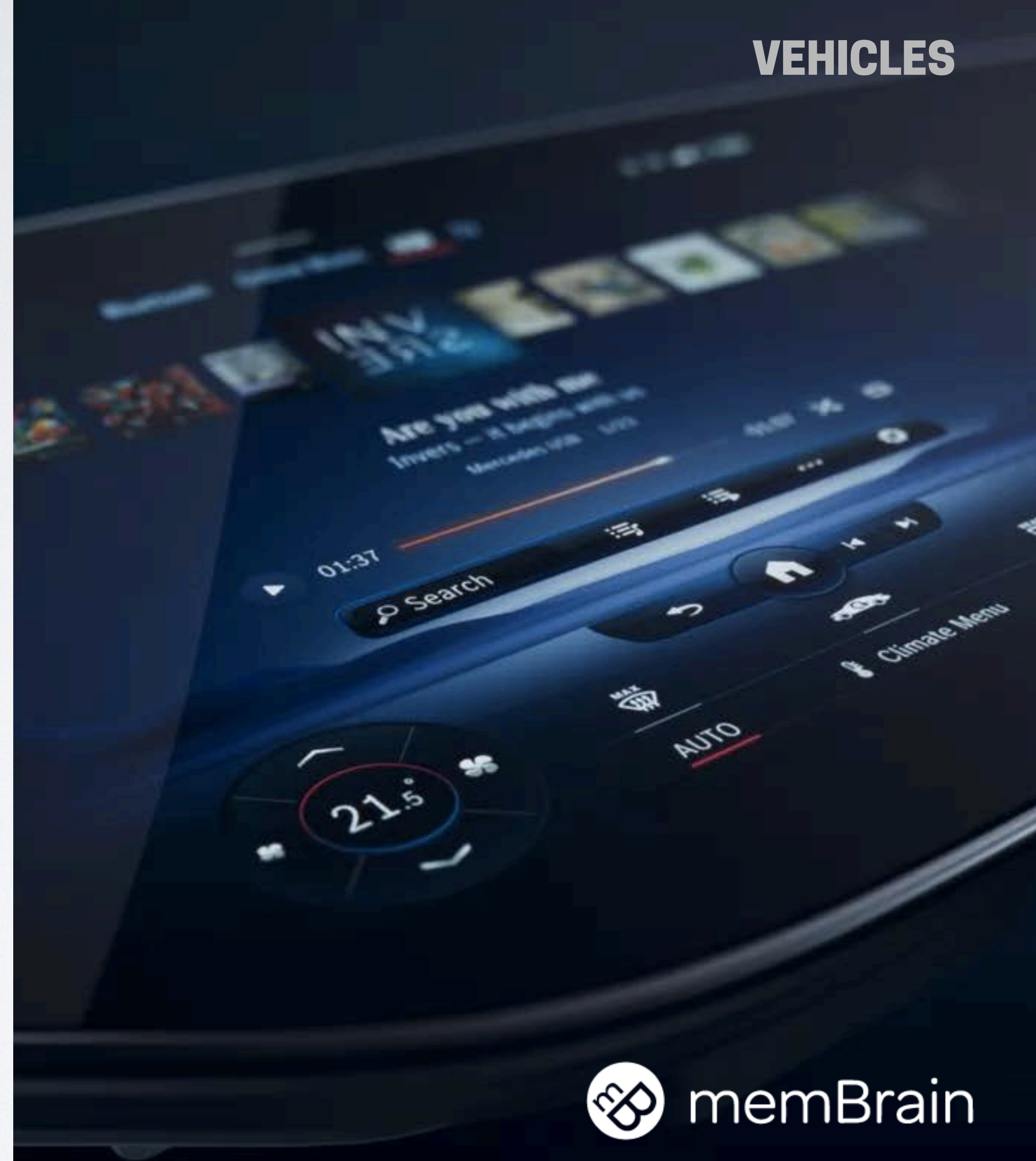
MERCEDES-BENZ MBUX HYPERSCREEN

WHAT IT IS

This unique screen unit consists of three seamlessly merged displays which connect and communicate with all components of the vehicle. The MBUX Hyperscreen will be launched in the fully electric EQS. MSRP: TBD

WHY IT MATTERS

This is a window into the future of car displays and touchscreen capabilities. With a sleek design and a whole host of features, cars are more than just transportation now.





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VR/AR

THE FOMO EFFECT

With the pandemic inhibiting our ability to go out and experience the world in real life, one of the first places many people turned was to AR, VR, and XR technologies. Worldwide spending on AR/VR is forecast to accelerate due to the pandemic – growing from just over \$12B in 2020 to \$72B in 2024 (according to IDC).

Devices will account for 2/3 of AR/VR spending by 2024, but a lack of affordable VR hardware from consumer-focused tech companies (like Facebook and Apple) have dampened consumer interest in VR. This has not been helped by Facebook's antitrust investigation which has hampered the introduction of products like the smart glasses they had planned for 2021.

AR, on the other hand, is booming. 90.9M people in the US will use AR at least once per month in 2021 on devices ranging from smartphones, tablets, desktops/laptops, head-up displays, and glasses (according to eMarketer). By 2022, this number will rise to 95.1M. Enterprise adoption of AR continues to accelerate amid the pandemic, highlighting the technology's value proposition for training and field maintenance applications. And perhaps most interesting, education.

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IMVERSE LIVE3D

WHAT IT IS

Imverse Live3D's rendering engine and volumetric holograms are the latest in streaming technology - trueing people into live 3D holograms using depth cameras and real-time graphics video technology. Imverse video technology software captures, compresses, streams, and renders 3D holograms in separate places, with no latency, capturing, editing, and streaming Live 3D Holograms of multiple people simultaneously. MSRP : TBD

WHY IT MATTERS

Volumetric telepresence simulates real-life face-to-face interactions remotely which could be a game changer - particularly for remote working and learning.



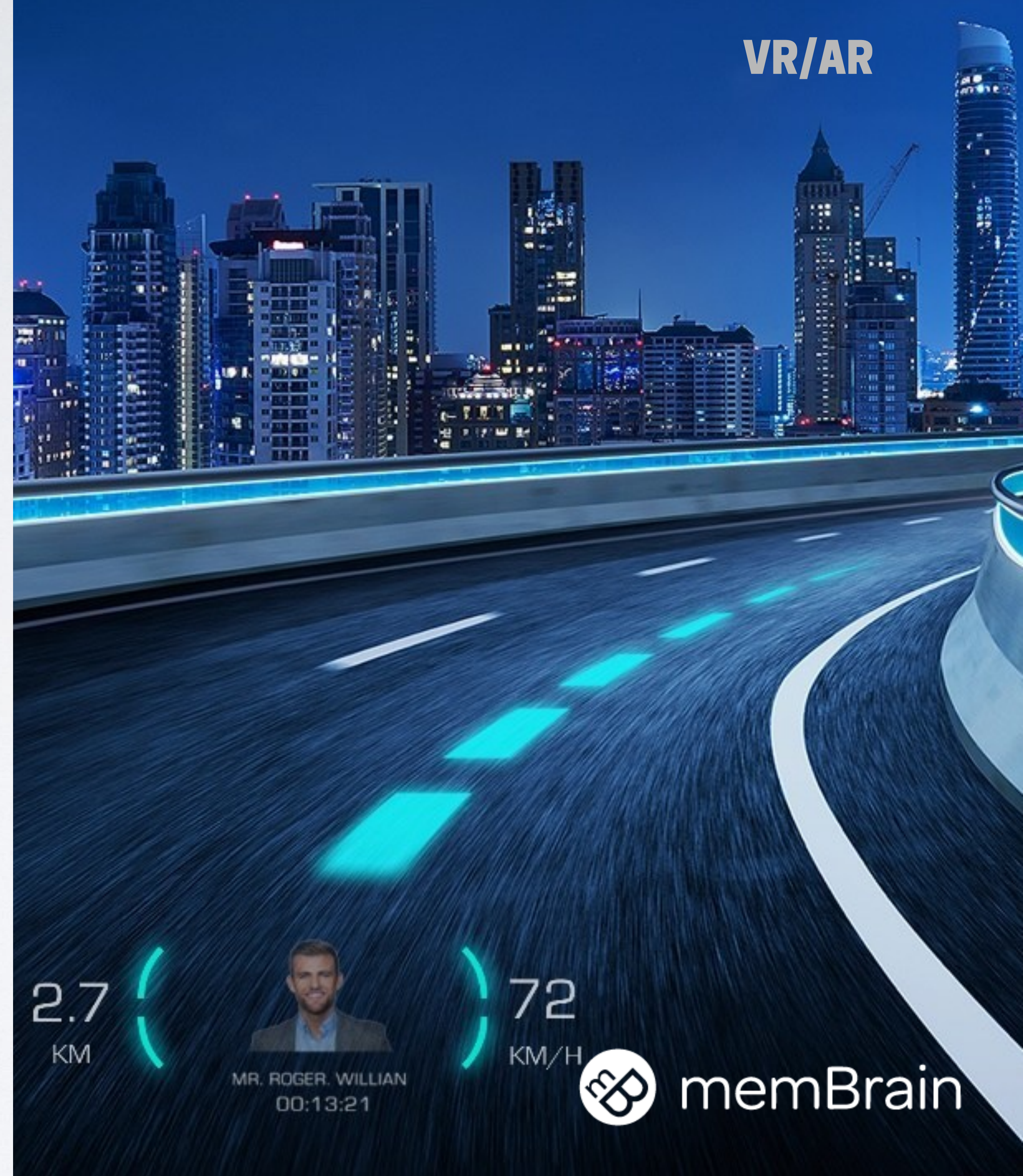
FIC INTELLIGENT AR HUD

WHAT IT IS

This commercial vehicle HUD (Heads Up Display) uses AR and laser beam-scanning technology to improve driver safety by projecting virtual images in from of the commercial vehicle windshield. The image size is more than 100 inches and is shown without having to add anything between the driver and the windshield. MSRP: TBD

WHY IT MATTERS

FIC's HUD can identify several different important happenings on the road, including highlighting nearby bikers to prevent collisions, and can eliminate the need to look elsewhere for directions, meaning the focus is all on the road.

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MOJO VISION LENS

WHAT IT IS

The Mojo Vision Lens uses AR data to power your potential. It is a smart contact lens created with microelectronics and a tiny display to obtain critical information. The lens can present notes before your eyes without looking down at your phone, provide directions as you walk, and much more. MSRP: TBD

WHY IT MATTERS

We've seen several iterations of smart glasses and headsets that incorporate AR technology, but these lenses are the most discreet option out there. This marks a move towards more body-integrated VR and AR.



POLLEN ROBOTICS

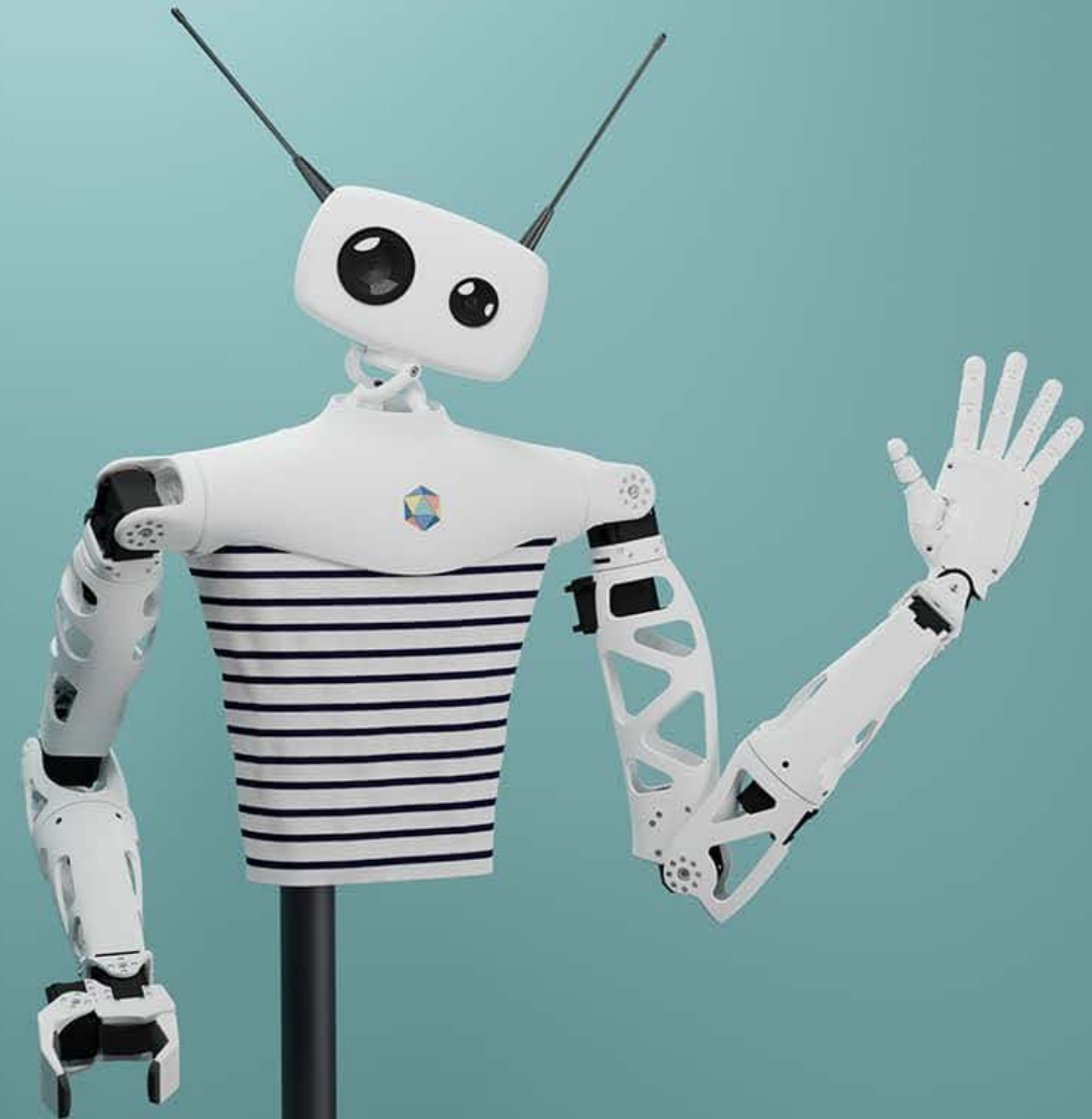
REACHY THE ROBOT

WHAT IT IS

Reachy is an open-source humanoid robot capable of performing a variety of tasks – from traditional R&D to product demonstrations and food serve. Rather than program Reachy's movements, users control the robot by donning a VR headset. Once paired to Reachy, the user can see what the Robot sees through its front cameras and control the robot via VR controllers. MSRP: \$17,000

WHY IT MATTERS

Rather than traditional programming, Reachy learns by doing – he can be trained for delicate tasks requiring fine motor control. Converging VR experiences with robotics is an interesting space as it relates to automation and gaming.



TACTSUIT X40

WHAT IT IS

The Tactsuit X40 is a wireless haptic vest that provides tactile feedback to users when playing VR/AR, console, and PC content. Users gain access to 30+ popular VR content as well as movies and music. The 40 vibration motors of the vest and latency-free wireless control provides a more immersive and realistic feeling to users. MSRP: \$499

WHY IT MATTERS

The Tactsuit X40 is the next step in fully immersive VR. Thanks to this wearable, the entire gaming experience is more realistic.



TGO ETEE VR CONTROLLER

WHAT IT IS

This button-free VR controller uses a built-in sensor surface to capture gestures, pressure, touch, and finger proximity. The TGO etee is a new kind of game controller which gives users free, fluid, mesmerizing VR and AR experiences powered by patented proximity touch, gesture, and pressure-sensing tech. MSRP: \$355 USD

WHY IT MATTERS

This completely buttonless controller simplifies and enhances the experience by prioritizing human intuition.



VERIZON 5G LABS SMITHSONIAN OPEN ACCESS

WHAT IT IS

Verizon 5G Labs recently partnered with the Smithsonian to create virtual museum exhibitions to inspire and educate students learning from home. Equipped with 2.8M 2D and 3D assets from the Smithsonian's Open Access program, the 5G Labs team used AR exhibitions to combine teachable moments with playful interactions. MSRP: FREE

WHY IT MATTERS

Overall spending on augmented, virtual and mixed reality tech rose in 2020 to \$12B annually and is expected to grow by 50% annually to 2024. With the simultaneous acceleration of remote learning and 5G, XR is becoming a major trend in the education sector.



VNOLO 6DOF CLOUD VR

WHAT IT IS

Nolo's newest VR headset is designed for brands, mobile networks, and other companies hoping to get into the market by supporting brand customization. It uses SodarTraq ultrasonic positioning technology and dual-camera SLAM solution for its 6DOF tracking. The headset also comes with matching controllers. MSRP: \$200

WHY IT MATTERS

This headset is sold at a lower price point making it the perfect choice for companies who are looking to integrate VR experiences and want a custom headset. This speaks to the future of branded content.



VROR EYE DR

WHAT IT IS

With the use of a VR headset, VROR Eye Dr gives an ophthalmic examination and generates a report to be reviewed on the patient's mobile phone. MSRP: TBD

WHY IT MATTERS

Not only does this mean more people could potentially have access to eye exams, it serves as a record book for patients, curating a thorough history of ophthalmic examination. This is a game changer for optometry and another medical application for VR worth watching.





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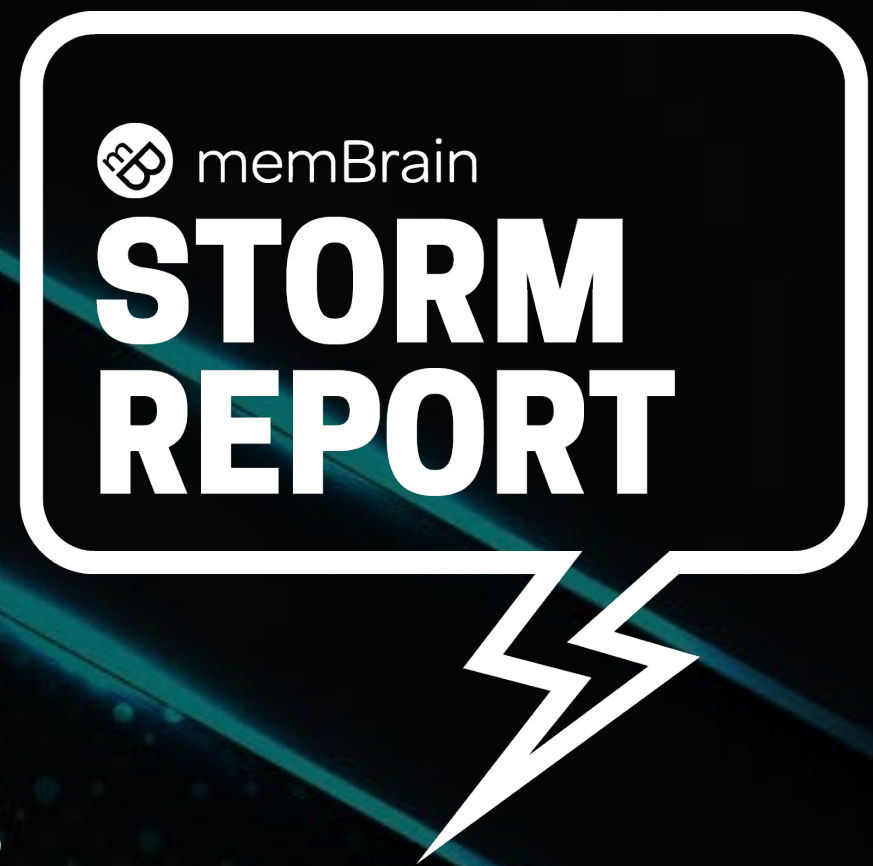
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GOING FORWARD

UNCHARTED WATERS



According to a [report by McKinsey](#) in 2020, global technology adoption experienced a “fast forward” in 2020. This, as there were more e-commerce deliveries in 8 weeks in 2020 than in the previous 10 years. Telemedicine virtual appointments increased 10x in 15 days. Streaming video platform Disney+ reached 50M subscribers in 5 months, a number that took Netflix 7 years to achieve. And 250M students, teachers, and parents switched to remote learning - within 2 weeks.

These are uncharted waters. The rapid acceleration of innovation in technology isn't new, but these shifts in consumer behavior have had a seismic impact on every industry, the aftershocks we are still experiencing. We've come to learn, quickly, that technology is an inevitable part of our evolution. It has become part of us.

A global pandemic, a damaged economy, extraordinary levels of social discourse, and an environment in peril have caused a wrinkle in time. History teaches of such moments: Japan transforming itself into a tech powerhouse after World War II - or the New Deal pulling millions out of poverty amid the Great Depression. This is such a moment.

Emerging technologies are enabling people around the world to augment, enhance, and optimize their lives; from autonomous vehicles to connected homes to remote learning. We don't just live with our machines, we now have immersive partnership with them. We are writing a new chapter in technology-led human progress, one that has the potential to drive higher productivity, sustainability, and greater work-life harmony.



STORM REPORT



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ABOUT MEMBRAIN

Headquartered in Los Angeles, California, memBrain creates, develops, and executes programs on behalf of leading global brands and retailers, talent, and emerging industry innovators.

Founded in 1999, memBrain's executive team are marketing, media, and communications **thought leaders** at the intersection of entertainment, technology, social enterprise, and business.

We find **practical solutions** to company challenges and bring ideas to life through marketing and business innovation. Passionate champions of innovators, disruptors, and creators, memBrain's multidisciplinary expertise spans strategic partnerships, marketing solutions, and business development.

Like the world we live in, we are constantly evolving what we do – it's part of what makes our uniquely qualified team able to provide our partners with a **powerful toolbox of services** and new business opportunities.

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