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KOREA

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The Game Console 2.0 (Sample Chapter) © 2021 by Evan Amos

Sixth Generation

The sixth generation of consoles saw the number of hardware manufacturers shrink to three main players, as fewer and fewer companies could handle the massive cost of releasing and supporting a new system. Sony continued to dominate with its new PlayStation 2 console, which left everyone else to fight for second place. Sega, after suffering heavy financial losses with the Saturn and Dreamcast, left the console

market and became a third-party game developer. Microsoft, a newcomer, used its deep pockets to endure heavy financial losses to establish its Xbox console. As for Nintendo, its GameCube struggled to stand out against the PlayStation 2 and Xbox, which led the company to abandon direct competition and turn to new ideas and audiences as it moved onto the next console generation.

GameCube motherboard (above), PlayStation 2 Slim motherboard (opposite)

Dreamcast

1998

Launch price: \$199

Systems sold: 9+ million

CPU: Hitachi SH-4 RISC at 200 MHz

RAM: 16 MB **VRAM:** 8 MB

GPU: NEC PowerVR2 at 100 MHz

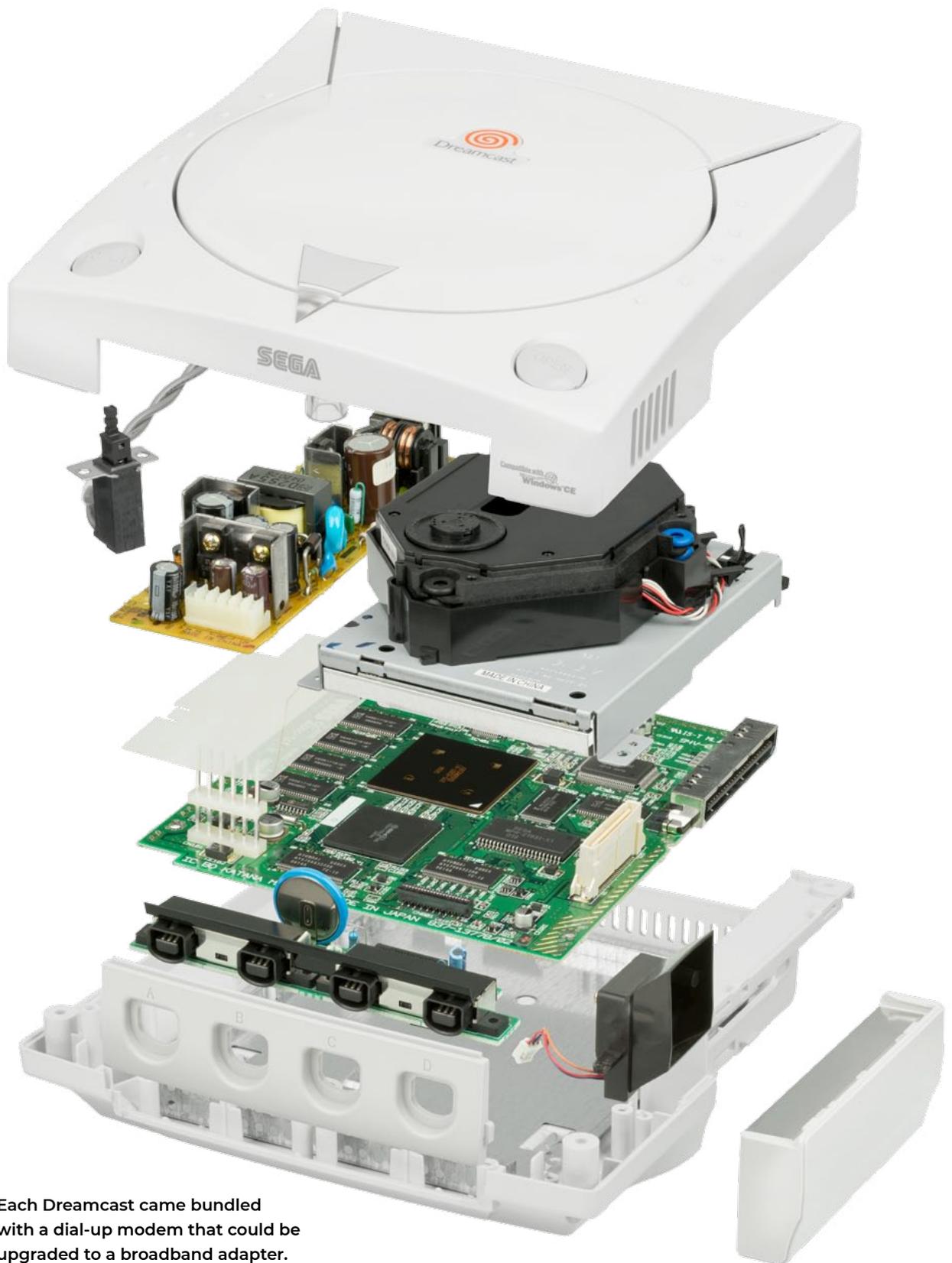
Games released: 600+

After the failure of its Saturn console, Sega lost much of its fanbase to the PlayStation. With the company hemorrhaging money, Sega could ill afford another failure. Its next console, the Dreamcast, would be a last-ditch effort to regain lost market share and return to profitability. At launch, the

system and its games were well received, but the Dreamcast was not the massive hit Sega needed to keep itself afloat. After disappointing sales in the 2000 holiday season, Sega announced it was leaving the hardware business to become a software developer and publisher for other systems.



In America, the Dreamcast launched on September 9th, 1999, or 9/9/99.



Each Dreamcast came bundled with a dial-up modem that could be upgraded to a broadband adapter.



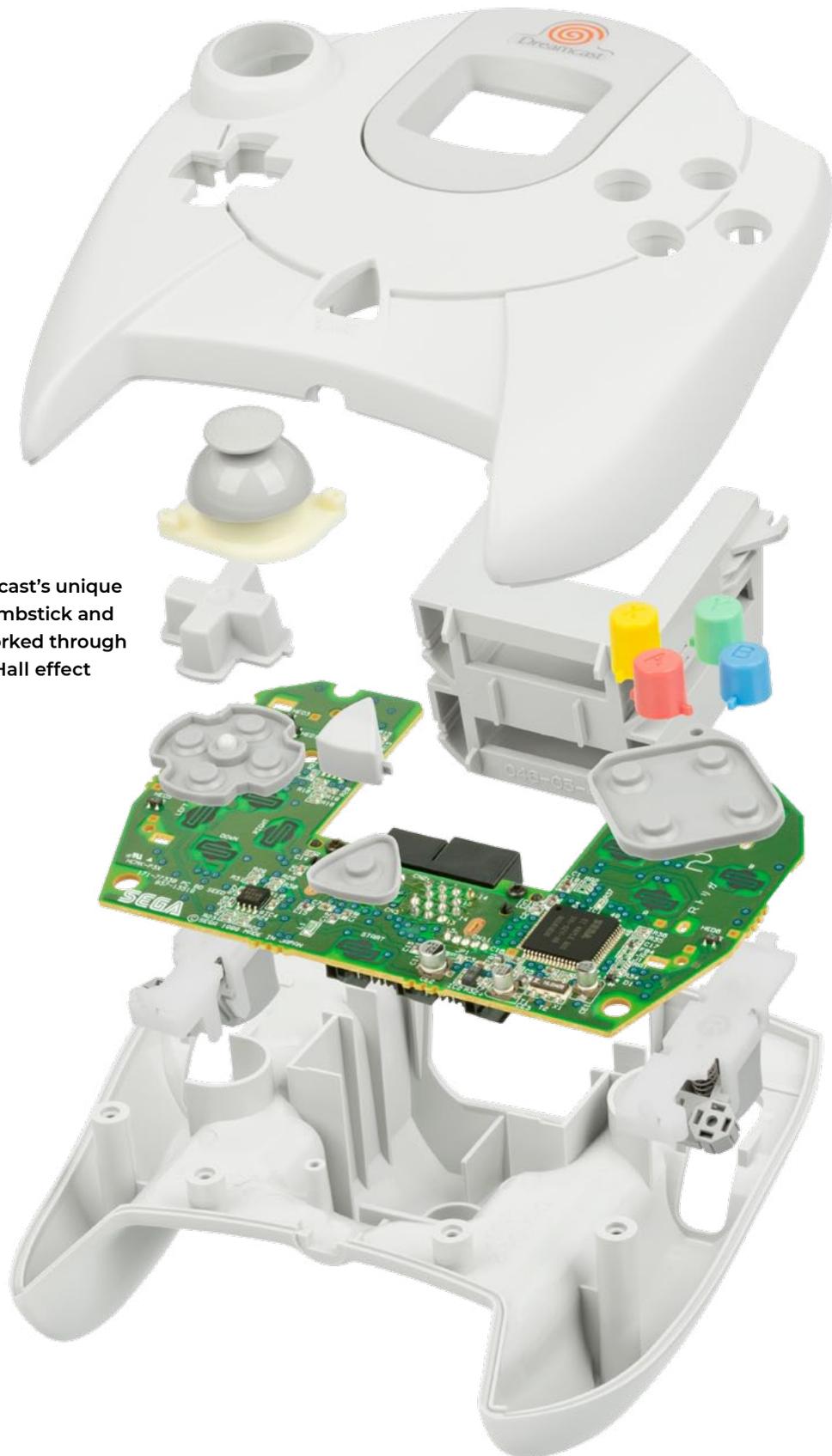
Visual Memory Unit

The Dreamcast's bulky controller housed two expansion slots that could be used for memory cards, a rumble pack, or a microphone. The memory card, called the Visual Memory Unit (VMU), was far more advanced than the N64's and incorporated a screen and controls for use independent

of the console. On their own, users could manage and transfer saves or play mini-games downloaded from select titles such as *Sonic Adventure*. When slotted into the controller during gameplay, the tiny screen could display information such as character health.



The Dreamcast's unique analog thumbstick and triggers worked through magnetic Hall effect sensors.



PlayStation 2

2000

Launch price: \$299

Systems sold: 155+ million

CPU: Custom “Emotion Engine” at 295 MHz

RAM: 32 MB

GPU: Custom “Graphics Synthesizer” at 147 MHz

Games released: 2,400+

As the best-selling video game system of all time, the PlayStation 2 dominated the sixth console generation, selling more than 155 million systems worldwide. The success of the original PlayStation helped build hype for the PS2, and the console sold out quickly to massive crowds at launch. With strong third-party support and an extensive

library of critically acclaimed games, the PS2 pushed the Sega Dreamcast out of the market and shrugged off competition from Nintendo’s GameCube and Microsoft’s Xbox. The console would remain popular throughout the decade, with slimmer, redesigned models selling well even years after the release of the PlayStation 3.



The PS2 was backward compatible with the original PlayStation’s games, controllers, and memory cards.



+ Sold separately, the PS2 remote made watching movies much easier.

DVD Movie Playback

At the time of the PlayStation 2's release, DVD players were still relatively new and expensive. Sony's ability to offer a gaming console that could also play DVD movies

(at a cost not much higher than that of stand-alone DVD players) was a big selling point for the system. For many gamers, the PS2 was their first and primary DVD player.



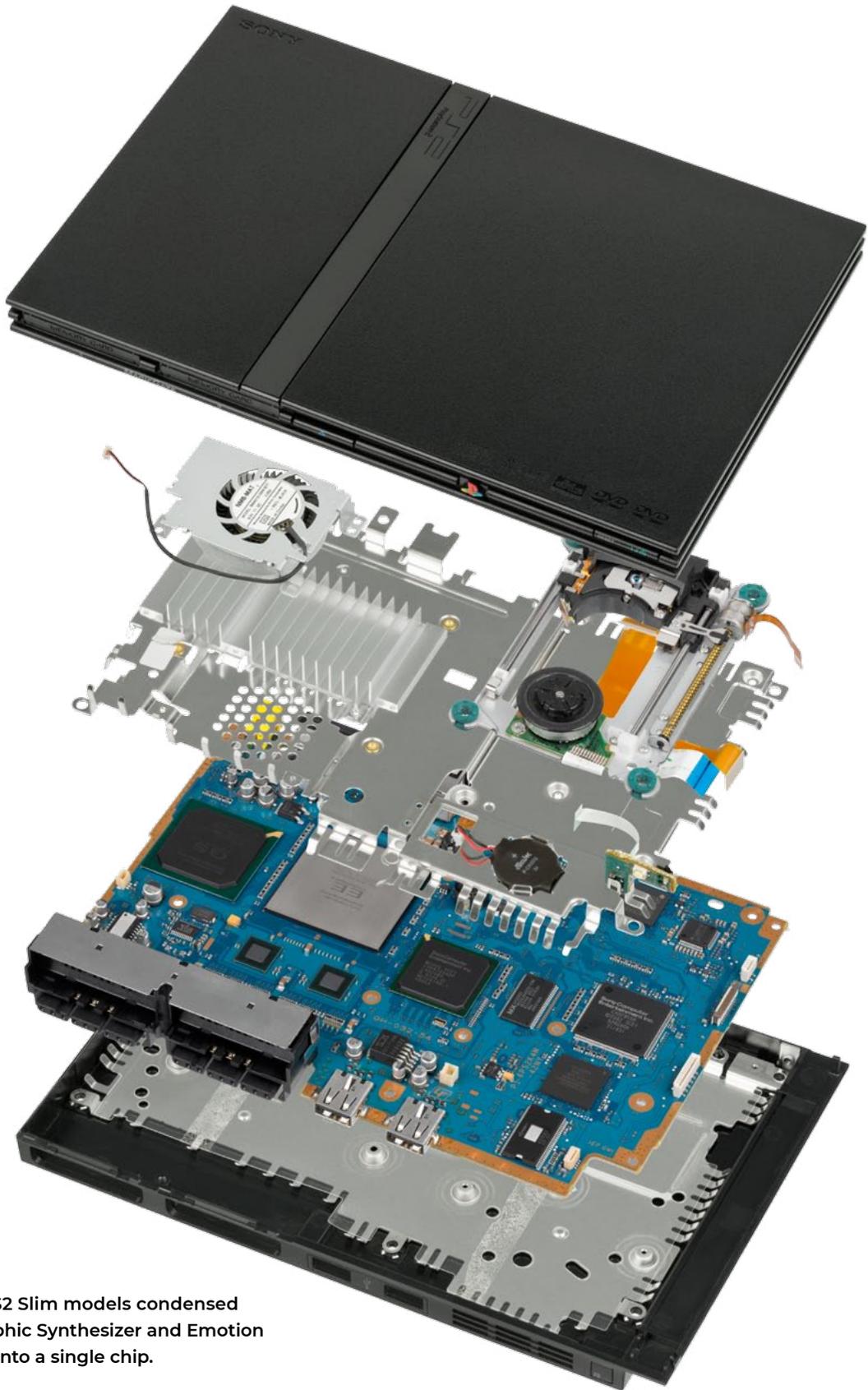
The PS2 Slim series had built-in infrared sensors for DVD remotes and a broadband adapter for online gaming.

PlayStation 2 Slim Series



Continuing the tradition that began with the original PlayStation, Sony updated its PlayStation 2 console in 2004 with a much smaller and more power-efficient design. Dubbed the “Slim,” this new PlayStation 2 (above right) offered a dramatic reduction in size and weight, partly achieved through

removing the internal 3.5" hard drive bay and externalizing the power supply. A new Slim model, released in 2007 (above left), shrunk the internal components enough to incorporate the power supply into the console and eliminate the external power supply entirely.



Later PS2 Slim models condensed the Graphic Synthesizer and Emotion Engine into a single chip.

Nuon

2000

Launch price: \$350

Systems sold: Unknown

Processor: Custom quad-core "Aries" chip

RAM: 32 MB (variable)

Manufacturers: Toshiba, Samsung, and RCA

Games released: 8

The Nuon was a short-lived, hybrid DVD player and video game platform released by VM Labs in 2000. The Nuon was based on a custom chip built by VM Labs that replaced the standard video decoder found in most DVD players and greatly improved the players' capabilities. With a Nuon chip installed, a DVD player was effectively

turned into a video game console, with 3D graphics on par with the Nintendo 64. However, most electronics manufacturers weren't interested due to the increased costs, and only a few Nuon models were produced. After the release of a handful of poorly received games, VM Labs filed for bankruptcy in late 2001.



Only four DVD movies use the Nuon's enhanced abilities: *Bedazzled*, *Dr. Dolittle 2*, *Planet of the Apes (2001)*, and *The Adventures of Buckaroo Banzai Across the 8th Dimension*.

GP32

2001**Launch price:** ₩ 179,000**Systems sold:** 30,000**Processor:** Samsung ARM920T**RAM:** 8 MB**Resolution:** 320 × 240 pixels**Games released:** 25+

The GP32 was an ARM-based handheld from the Korean company Game Park that sold in Korea and select European markets. Unlike traditional systems, the GP32 was an open source platform and used a standard memory card rather than proprietary game cartridges. While the system had a small library of official games and some notable

homebrew titles, many owners mainly used the GP32 as a portable emulator to play older 8- and 16-bit systems. After its release, multiple engineers from the GP32 project broke off to form a new company, which continued to develop open source handhelds that focused on emulation throughout the 2000s.



Three models of the GP32 were released. The first used a non-lit LCD, the second upgraded to a front-lit display, while the third "Blu" model, seen here, used a backlight.

Game Boy Advance

2001
Launch price: \$99

Systems sold: 80+ million

Processor: ARM7TDMI at 16.8 MHz

RAM: 32 KB + 256 KB **VRAM:** 96 KB

Resolution: 240 × 160 pixels

Games released: 1,000+

It took 12 years for Nintendo to create a true successor to its massively popular Game Boy handheld console. Released in 2001, the Game Boy Advance improved on the original Game Boy with a 32-bit processor, new shoulder buttons, and a larger, color screen. With an impressive game library that had strong third-party

support and first-party best sellers such as *Pokémon* and *Mario Kart*, the Advance became another hit for Nintendo, selling more than 80 million units in just six years. One major flaw of the handheld, however, was its non-backlit LCD screen, which was difficult to see without direct light and would be fixed in later redesigns.



The Game Boy Advance was backward compatible with original Game Boy games, doubling its total game library.



Nintendo replaced the SP's frontlit LCD screen with a backlit display in 2005, which drastically improved its brightness and vibrance.



Game Boy Advance SP and Micro

Two years after the launch of the Game Boy Advance, Nintendo updated the handheld with a clamshell design and released it as the Game Boy Advance SP. Almost half the size of the original, the SP had a

built-in, rechargeable battery and frontlit LCD screen. In 2005, Nintendo released the Game Boy Micro, a short-lived variant that was drastically smaller than the original and featured interchangeable faceplates.

Game Boy Advance e-Reader

With Nintendo's e-Reader add-on, Game Boy Advance users could unlock games and features through collectible cards. Players could load early NES-era games

such as *Balloon Fight*, *Tennis*, and *Urban Champion* by buying card packs and scanning specialized barcodes printed on the card's edge.



+

The e-Reader came bundled with sample cards that included a full version of the Game & Watch game *Manhole*.



Nintendo GameCube

2001
Launch price: \$199

Systems sold: 21+ million

CPU: Custom PowerPC "Gekko" at 485 MHz

RAM: 24 MB

GPU: Custom ATI "Flipper" at 162 MHz

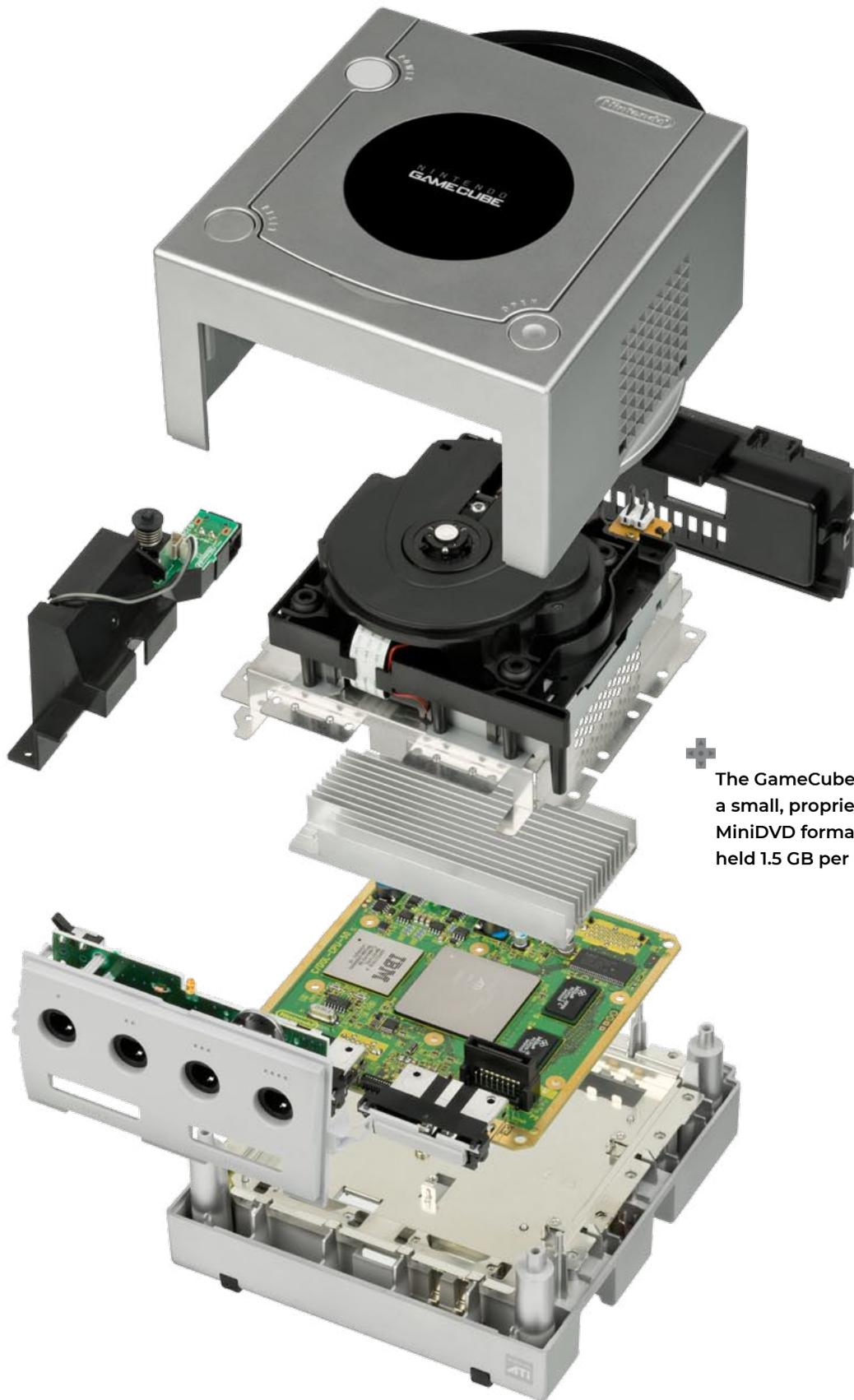
Games released: 650+

The GameCube was Nintendo's compact successor to the N64 and its first console to use optical media. It entered a fiercely competitive market, where it faced off against the established PlayStation 2 and the well-funded upstart Xbox. The GameCube emphasized fun, had quality graphics, and was backed by a strong

library of exclusive first- and third-party titles, but the boxy console suffered from a kid-friendly image that kept some older gamers away. Despite its loyal fanbase, the system continued a downward trend in console sales for Nintendo, which led the company to rethink its place in the market as it moved forward.



The GameCube's best-selling title is *Super Smash Bros. Melee*, which sold over 7 million copies worldwide.



✦ The GameCube used a small, proprietary MiniDVD format that held 1.5 GB per disc.

Panasonic Q

A major criticism of the GameCube was its inability to play DVD movies, a feature offered by its main rivals, the PlayStation 2 and Xbox. Nintendo nixed movie playback to avoid paying DVD-licensing fees, and DVDs couldn't even fit into the system due to the small-disc format chosen to combat piracy. However, a GameCube that could

play DVD movies did exist, but it was only released in Japan. Produced by Panasonic and simply named the "Q," the DVD player and console hybrid featured a steel chassis with direct audio/video outputs. The Q was an expensive and niche system that had a small production run, making it a rare and highly sought-out item for collectors today.



At the time of the Panasonic Q's release, an American gamer could expect to pay \$400 to \$500 for an imported, region-modded system.

Microsoft Xbox

2001

Launch price: \$299

Systems sold: 24+ million

CPU: Custom Intel Pentium III at 733 MHz

RAM: 64 MB

GPU: Custom Nvidia XGPU at 233 MHz

Games released: 1,000+

The massive success of Sony's PlayStation had caught the attention of software giant Microsoft, which began development of its own console in the late 1990s. The result was the Xbox, a powerhouse system that had more features and better graphics than both the PlayStation 2 and Nintendo GameCube. Microsoft took on heavy losses

to get a foothold into the market, paying for exclusive titles and pushing a massive advertising campaign while also selling the system at a loss. Microsoft's aggressive strategy worked, and while not as popular as the PS2, the Xbox beat out the veteran Nintendo for a second-place finish, largely due its performance in the United States.



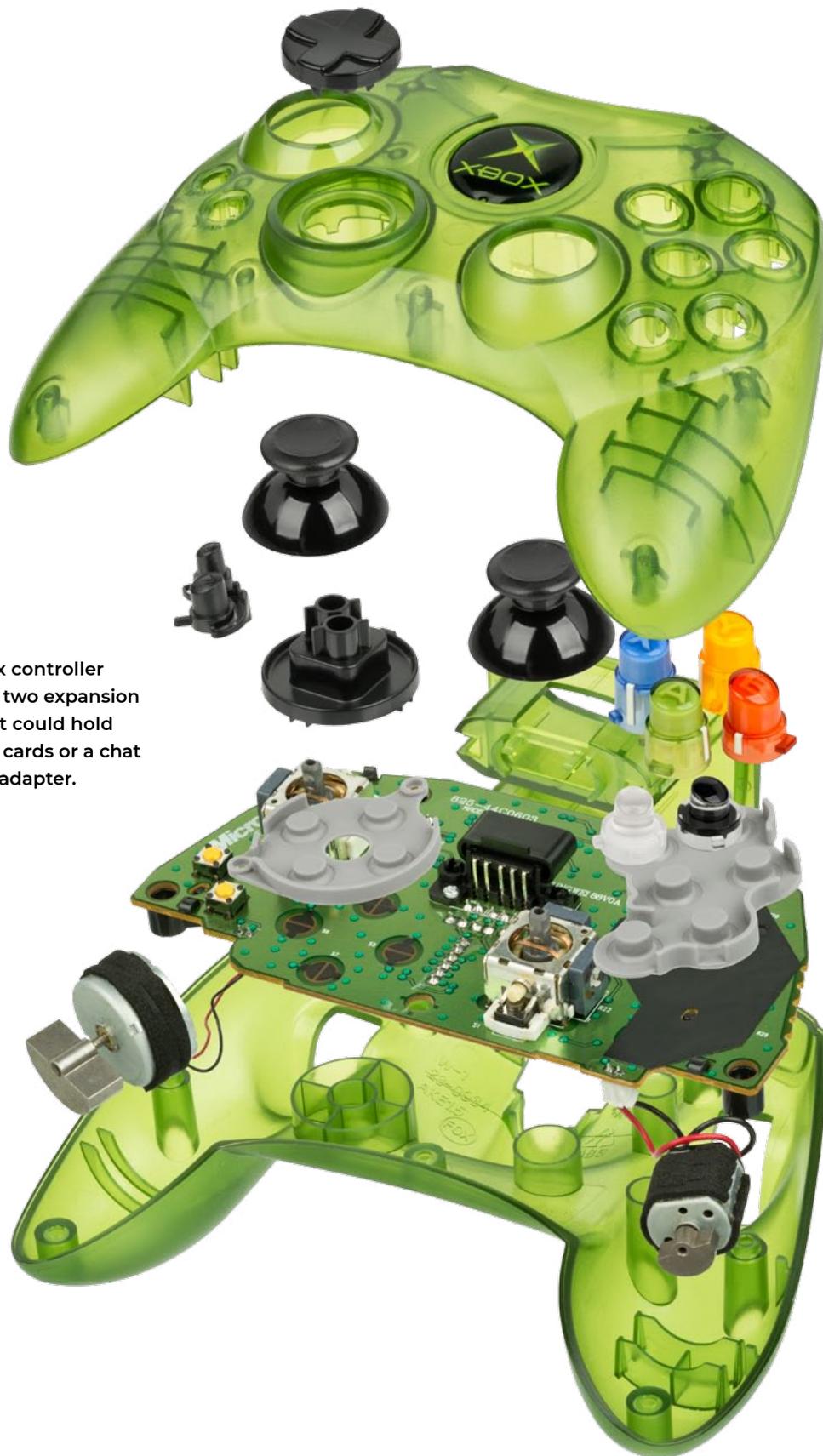
The Xbox had a built-in broadband adapter for local network and online gaming.



With its PC-based processor and built-in hard drive, the Xbox's hardware strongly resembled a home computer.



✦ After poor reception, the original Xbox "Duke" controller (above) was replaced by a smaller "S" variant in 2002.



The Xbox controller featured two expansion slots that could hold memory cards or a chat headset adapter.

Nokia N-Gage

2003
Launch price: \$299

Systems sold: 3 million

Processor: ARM920T at 104 MHz

RAM: 8 MB

Resolution: 176 × 208 pixels

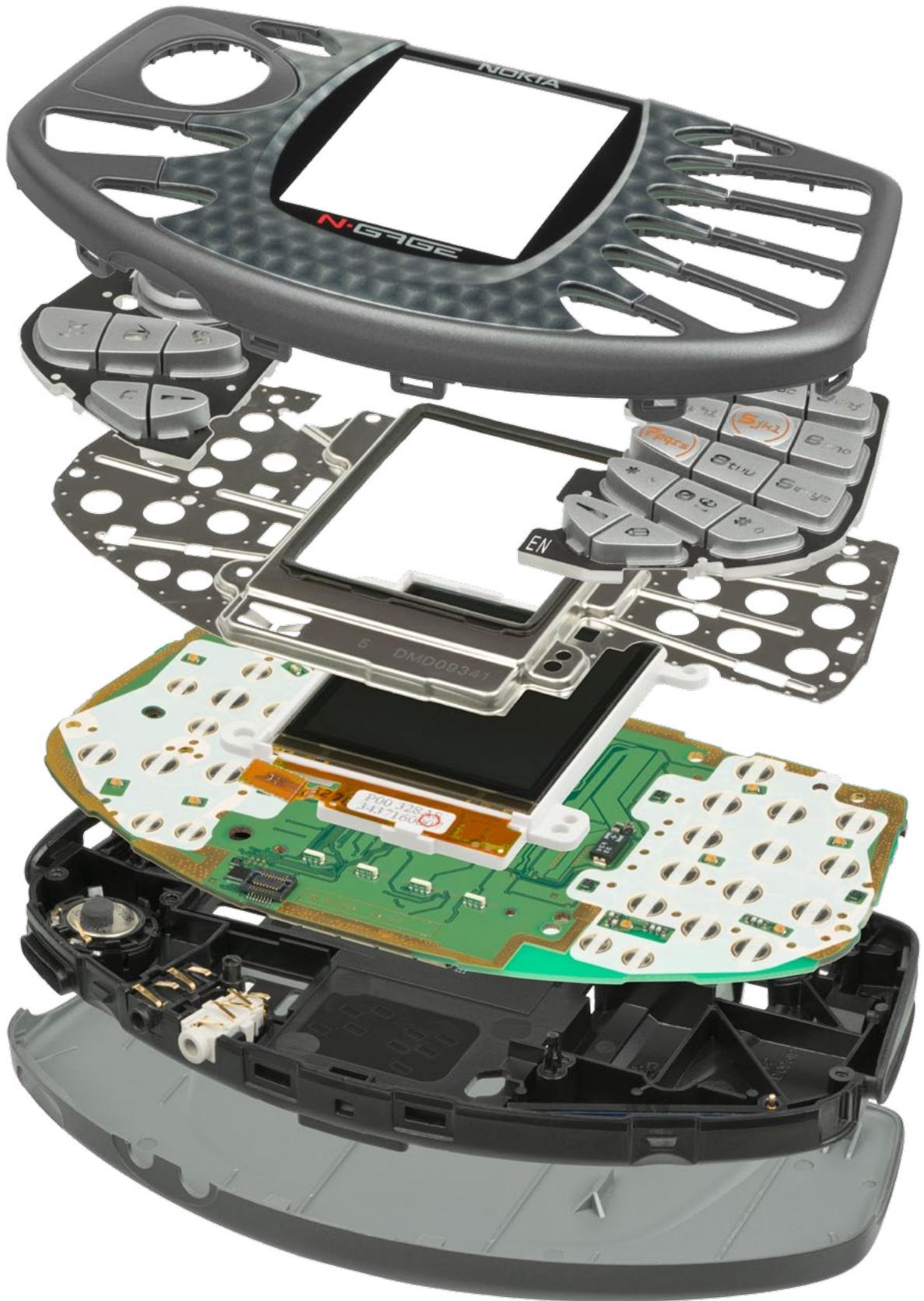
Games released: 50+

The N-Gage was a hybrid cell phone and handheld gaming console created by the mobile giant Nokia. At launch, the system was largely panned by reviewers, who criticized the N-Gage's awkward design, short battery life, and vertically-orientated screen that was ill-suited for most games. Sales of the N-Gage were far below Nokia's

expectations, as most gamers ignored the system in favor of dedicated handheld consoles such as the Game Boy Advance. Price drops and a 2004 "QD" remodel that fixed some of the original's design issues did little to increase sales, which led Nokia to discontinue the N-Gage in 2006.



In 2008, the N-Gage was revived as a digital-download gaming platform for select Nokia phones, but the service was discontinued by 2009.



Tapwave Zodiac

2003
Launch price: \$299 (32 MB), \$399 (128 MB)

Systems sold: 50,000+ (est.)

CPU: Motorola ARM9 at 200 MHz

RAM: 32 or 128 MB **VRAM:** 8 MB

Resolution: 480 × 320 pixels

Games released: 40+

The Zodiac was a high-end, adult-oriented handheld console that was released by Tapwave in late 2003. Based on Palm OS, the operating system that ran personal digital assistants (PDAs), the Zodiac was a hybrid device that combined a gaming handheld with PDA functionality. Press and reviews were positive at launch, as critics

praised the handheld's large color screen and multimedia capabilities. However, the Zodiac suffered from niche appeal, poor retail presence and low consumer awareness. When Sony unveiled its PSP in 2004, interest in the Zodiac as a game platform greatly diminished, and Tapwave discontinued the handheld in mid-2005.



The Zodiac had a small library of exclusive titles and could also play Palm OS 5 applications and games.

XaviXPORT

2004

Launch price: \$79

Systems sold: Unknown

Processor: Custom SuperXaviX (on cartridge)

RAM: N/A

Controllers: Bowling ball, bat, racket, fishing rod

Games released: 10+

The XaviXPORT was a console based on motion-controlled sports games that was released two years before Nintendo's *Wii Sports* popularized the idea. The XaviX-PORT used infrared motion tracking and wireless controllers shaped like real sports equipment to create physically interactive, living-room versions of tennis, bowling,

boxing, fishing, and baseball. Though it followed the same general idea as *Wii Sports*, the XaviXPORT's games were only 2D and its motion controls were much less accurate. Due to low retail presence and limited marketing from its Japanese creator SSD Company Limited, the system went by largely unnoticed.



The XaviXPORT had an optional weight scale that tracked a user's weight loss and offered exercise routines.



VTech V.Smile

2004

Launch price: \$59

Systems sold: 4+ million (all models, est.)

Processor: Suntech SPG2XX

RAM: N/A

Alt models: Pocket, Cyber Pocket, Baby, PC Pal

Games released: 70+

The V.Smile was an edutainment console from VTech, an electronics manufacturer known for learning toys, phones, and the 1988 Socrates. Rounded and colorful, the V.Smile system appealed to parents looking to give their young kids a cheaper and safer console than the more grown-up PlayStation 2 or Xbox. It featured simple,

inexpensive games with basic gameplay, cartoony 2D graphics, and educational elements such as counting and spelling. The series was popular enough that the V.Smile line was expanded with variant consoles, including the portable V.Smile Pocket series in 2005 and the motion-controller-based V-Motion in 2008.



The top of the V.Smile contains a storage compartment for holding extra game cartridges.



V.Smile V-Motion

In 2008, Vtech released the V-Motion, an updated V.Smile with a new case design and a motion-sensing controller. The system came packaged with *Action Mania*, a collection of mini-games all based on motion controls. These motion controls were limited, however, and mainly used controller tilting to move

a character left or right on screen. The V-Motion also included the new VLink port, which accepted a special USB stick that could save scores and transfer them to a computer. The VLink also worked in conjunction with the official VTech V.Smile website to unlock bonus, Flash-based web browser games.