

= Master System =

The Sega Master System ( Japanese : ?????????? , Hepburn : Sega Masut? Shisutemu ) is a third @-@ generation home video game console that was manufactured by Sega . It was originally released in 1985 as the Sega Mark III in Japan . After being redesigned prior to its North American launch , the console was renamed Master System and released in 1986 in North America , 1987 in Europe , and 1989 in Brazil . The redesigned Master System was also released in Japan in 1987 . Both the Mark III and the original Master System models could play with both cartridges ( or " Mega Cartridges " , as they were officially called ) and the credit card @-@ sized Sega Cards , which retailed at lower prices than cartridges but had lower storage capacity ; the Master System II and later models did not have the card slot . The Master System also featured accessories such as a light gun and 3D glasses which were designed to work with a range of specially coded games .

Succeeding the SG @-@ 1000 , the Master System was released as a direct competitor to the Nintendo Entertainment System ( NES ) in the third generation of video game consoles . The Master System was constructed with hardware superior to that of the NES , but failed to overturn Nintendo 's significant market share advantage in Japan and North America . However , it attained significantly more success in Europe and Brazil . The hardware of the Master System also shared many similarities with Sega 's handheld game console , the Sega Game Gear . Compared to its competition from Nintendo , the Master System 's game library lacks a number of well @-@ received titles due to Nintendo 's licensing practices that restricted third @-@ party developers from creating games for any system other than the NES . Sales of the console have been estimated between 10 and 13 million units , not including recent Brazil sales , compared to 62 million NES units sold . Reception to the system given in retrospect gives credit to the system 's role in Sega 's development of the Sega Genesis , as well as for having a number of well @-@ received titles , particularly in PAL regions , but is generally critical of its smaller game library compared to the NES . As of 2015 , the Master System is the longest @-@ lived game console ( 30 years and continuing ) , due to its popularity in Brazil .

= = Background = =

In the early 1980s , Sega Enterprises , Inc . , then a subsidiary of the conglomerate Gulf and Western , was one of the largest arcade game manufacturers active in the United States , with company revenues of \$ 214 million by mid @-@ 1982 . A downturn in the arcade business starting in 1982 negatively impacted the company , leading Gulf and Western to sell the North American manufacturing and licensing of its arcade games to Bally Manufacturing . The company retained its Japanese subsidiary , Sega Enterprises , Ltd . , as well as Sega 's North American research and development division . With its arcade business in decline , Gulf and Western executives turned to Sega Enterprises , Ltd . ' s president , Hayao Nakayama , for advice on how to proceed . Nakayama advocated that the company leverage its hardware expertise gained through years working in the arcade industry to move into the home console market in Japan , which was in its infancy at the time . Nakayama received permission to proceed with this project , leading to the release of Sega 's first home video game system , the SG @-@ 1000 .

The SG @-@ 1000 was first released in Japan on July 15 , 1983 , at a price of JP ¥ 15 @,@ 000 . It was launched on the same day that Nintendo released the Famicom in Japan . Shortly after the launch of the SG @-@ 1000 , Gulf and Western began to divest itself of its non @-@ core businesses after the death of company founder , Charles Bluhdorn , so Nakayama and former Sega CEO David Rosen arranged a management buyout of the Japanese subsidiary in 1984 with financial backing from CSK Corporation , a prominent Japanese software company . Nakayama was then installed as CEO of the new Sega Enterprises , Ltd . Following the buyout , Sega released another console , the SG @-@ 1000 II , for ¥ 15 @,@ 000 . It featured a few hardware tweaks from the original model , including detachable controllers . The SG @-@ 1000 II did not sell well , however , leading to Sega 's decision to continue work on the video game hardware used for the system . This resulted in the release of the Sega Mark III in Japan in 1985 .

## == Development ==

Engineered by the same internal Sega team that had created the SG-1000, the Mark III was a redesigned iteration of the previous console. The CPUs in the SG-1000 and SG-1000 II were Zilog Z80s running at 3.58 MHz, while the Mark III, SC-3000, a computer version of the SG-1000, and Master System feature a Z80 running at 4 MHz. The Mark III and Master System also carried over the Sega Card slot used in the SG-1000. According to Edge, lessons from the SG-1000's lack of commercial success were used in the hardware redesign of the Mark III, and the console was designed to be more powerful than the Famicom.

For the console's North America release, Sega restyled and rebranded the Mark III under the name "Master System", similar to Nintendo's own reworking of the Famicom into the Nintendo Entertainment System. The "Master System" name was one of several proposals Sega's American employees considered, and was ultimately chosen by throwing darts against a whiteboard, although plans to release a cheaper console similarly referred to as the "Base System" also influenced the decision. Sega Enterprises Chairman Isao Okawa endorsed the name after being told it was a reference to the competitive nature of both the video game industry and martial arts, in which only one competitor can be the "Master". The futuristic final design for the Master System was intended to appeal to Western tastes.

## == Launch ==

The Sega Mark III was released in Japan in October 1985 at a price of ¥15,000. Despite featuring technically more powerful hardware than its chief competition, the Famicom, the Mark III did not prove to be successful at its launch. Difficulties arose from Nintendo's licensing practices with third-party developers at the time, whereby Nintendo required that titles for the Famicom not be published on other consoles. To overcome this, Sega developed its own titles and obtained the rights to port games from other developers, but they did not sell well. NEC later used the same strategy on some of Sega's titles when developing games for the TurboGrafx-16. In preparation for the launch, Mark Cerny has stated that "pressure was very, very high", with a typical game being allotted only three months of development time.

After being restyled the "Master System", the console was released in North America in 1986 at a price of US\$200 (equivalent to \$432 in 2015), including a multicart of the games Hang-On and Safari Hunt. It and Nintendo, which was similarly exporting the Famicom to the US as the Nintendo Entertainment System (NES), planned to spend \$15 million in fall and winter 1986 to market their consoles; Sega hoped to sell 400,000 to 750,000 consoles in 1986. By the end of 1986, the Master System had sold 125,000 consoles, more than the Atari 7800's 100,000 but less than Nintendo's 1.1 million. As in Japan, the Master System in North America had a limited game library that was not as well received as the NES. Against Nintendo's licensing practices, Sega only had two third-party American developers, Activision and Parker Brothers. By 1988, Nintendo commanded 83 percent of the North American video game market share. Sega claimed that "our system is the first one where the graphics on the box are actually matched by the graphics of the game", and marketing for the Master System was targeted at bringing home the arcade experience, but its marketing department was run by only two men, giving Sega a disadvantage in advertising.

The console was re-released as the Master System in Japan in October 1987 for ¥16,800. However, similar to the Mark III, this launch was not successful. The console in neither of its forms posed a serious challenge to Nintendo in Japan.

The European launch of the Master System occurred in 1987. It was distributed by Mastertronic in the United Kingdom, Master Games in France, and Bertelsmann in Germany. Mastertronic advertised the Master System as "an arcade in the home" and launched the system at £99 (equivalent to £251 in 2015). Advance orders from retailers were high, but Sega proved unable to deliver inventory until Boxing Day on December 26, causing many retailers to cancel their orders.

As a result , Master Games and Mastertronic both entered financial crises and Bertelsmann vowed never to work with Sega again . Mastertronic had already sold a minority interest to Richard Branson and the Virgin group to enter the console business and now sold the remainder of the company to avoid bankruptcy . The newly rebranded Virgin Mastertronic then took over all European distribution in 1988 . Virgin Mastertronic consequently focused marketing the Master System on ports of Sega 's arcade games and positioning it as a superior alternative to the Commodore 64 and the ZX Spectrum home computers in terms of video games . As a result of this marketing and of Nintendo 's less effective approaches in Europe , the Master System began to attract European @-@ based developers . The Master System held a significant part of the video game console market in Europe through the release of Sega 's succeeding console , the Mega Drive . Brazil was also a successful market for the Master System , where the console was released in 1989 and distributed by Tectoy .

= = = Transition to Genesis and decline = = =

Sega released the Mega Drive , a 16 @-@ bit video game console , in Japan on October 29 , 1988 . The final commercial release for the Mark III and Master System in Japan was Bomber Raid in 1989 . During the same year , Sega was preparing to release the new Mega Drive , relabeled as the " Genesis " , in North America . Displeased with Tonka 's handling of the Master System , Sega reacquired the marketing and distribution rights to the Master System for the United States . In 1990 , Sega released the remodeled Master System II , designed to be a lower @-@ cost version of the console which also removed the Sega Card slot . Sega promoted the new model themselves , but the console still sold poorly in the region despite Tonka no longer being involved with the Master System 's marketing . In 1991 , Nintendo was found guilty of violating United States antitrust law and forced to abandon some of its licensing practices , but the Master System had already been in decline long before . By early 1992 , Master System production ceased in North America . By the time of its discontinuation , Master System had sold between 1 @.@ 5 million and 2 million units in the United States , finishing behind both Nintendo and Atari , which controlled 80 percent and 12 percent of the market , respectively . The last licensed release in North America was Sonic the Hedgehog in 1991 .

Contrary to its performance in Japan and North America , the Master System was eventually a success in Europe , where it outsold the NES by a considerable margin . As late as 1993 , the Master System 's active installed user base in Europe was 6 @.@ 25 million units , larger than that of the Mega Drive 's 5 @.@ 73 million base that year . Combined with the Mega Drive , Sega represented the majority of the console user base in Europe that year . The Master System 's largest markets in the region were France and the United Kingdom , which had active user bases of 1 @.@ 6 million and 1 @.@ 35 million , respectively , in 1993 . The remodeled Master System II also proved to be successful and helped Sega to sustain the Master System 's significant market share in Europe . More new releases would continue into the 1990s in Europe , including Sonic the Hedgehog 2 , Streets of Rage 2 , and Mercs . The Master System has also had continued success in Brazil , where new variations have continued to be released long after the console was discontinued elsewhere . These include the Master System Compact and the Master System 3 . By 2012 , the Master System had sold 5 million units in Brazil . In 2015 , it was reported that the Master System sells around 150 @,@ 000 units per year in Brazil , a level that holds its own against modern systems such as the PlayStation 4 .

= = = Game Gear = = =

Developed under the name " Project Mercury " and designed based on the Master System 's hardware , the Game Gear is a handheld game console . It was first released in Japan on October 6 , 1990 , in North America and Europe in 1991 , and in Australia in 1992 . Originally retailing at JP ¥ 19 @,@ 800 in Japan , US \$ 149 @.@ 99 in North America , and GB £ 99 @.@ 99 in Europe , the Game Gear was designed to compete with the Game Boy , which Nintendo had released in 1989 . Despite the similarities the Game Gear shared with the Master System , the games of the latter were

not directly playable on the handheld , and were only able to be played on the handheld by the use of an accessory called the Master System Converter . A large part of the Game Gear 's game library consists of Master System ports . Because of the landscape orientation of the Game Gear 's screen and the similarities in hardware between the handheld console and the Master System , it was easy for developers to port Master System games to the handheld .

= = Technical specifications = =

The main CPU of the Master System is a Zilog Z80 , an 8-bit processor running at 4 MHz . It has 8 kB of ROM , 8 kB of RAM and 16 kB of video RAM . Video is provided through an RF switch and displays at a resolution of 256 × 192 pixels and up to 32 colors at one time from a total palette of 64 colors . Physically , the Master System measures 365 by 170 by 70 millimetres ( 14.4 in × 6.7 in × 2.8 in ) , while the Mark III measures 318 by 145 by 52 millimetres ( 12.5 in × 5.7 in × 2.0 in ) . Both the Mark III and the Master System possess two slots for game input : one for Mega Cartridges and one for Sega Cards , along with an expansion slot and 2 controller ports . Sound is provided by the SN76489 PSG chip . The Japanese version also integrates the YM2413 FM chip , which had been an optional feature on the Mark III . With few exceptions , Master System hardware is identical to the hardware in the Mark III . Titles for the console are playable on the Sega Genesis by use of an accessory known as the Power Base Converter , as well as on the Game Gear by use of the Master System Converter .

The Master System was designed with superior hardware when compared to the NES . It contains twice as much memory as its competitor from Nintendo . The CPU of the Master System runs at a faster clock rate than the processor in the NES , which is a Ricoh NMOS 6502 running at 1.79 MHz , though a Z80 requires more cycles to execute an instruction than the 6502 . The NES is capable of displaying 25 colors at a time from a master palette of 54 , in contrast to the 32 colors at a time from a 64 color master palette on the Master System .

A number of accessories were created for the Mark III and Master System , which are cross-compatible with one another . The controller for each console consists of a rectangular shape with a control pad and two buttons . Sega also introduced additional controllers , such as a bike handle controller and paddle controller , for the Mark III and a special sports controller for the Master System . A pair of 3D glasses known as SegaScope 3-D were also created for games such as Space Harrier 3D , although Mark III users need an additional converter to use them . The Mark III also had an optional RF transmitter accessory , allowing wireless play that broadcast the game being played on a UHF television signal . A light gun peripheral known as the Light Phaser was also released . Its design was based on the weapon of the same name from the Japanese anime Zillion .

The Master System was produced in several variations . Released in 1990 , the Master System II removed a number of components in order to reduce the cost of the console , including the Sega Card slot , reset button , power light , expansion port , and activation music and logo upon turning on the system . Several licensed variations of the console also exist in Brazil , created by Tectoy . A variation known as the Master System 3 Compact was capable of functioning wirelessly with an RF transmitter , while Tectoy also sought to appeal to female gamers in Brazil with the Master System Girl , which was molded in bright pink plastic . A more recent version , released in 2006 in Brazil known as the Master System 3 Collection , contains 120 built-in games . Another Master System , built as a handheld game console , was released under several brands including Coleco in 2006 .

= = Game library = =

Games for the Master System are in two formats : ROM cartridges are capable of holding up to 4 Mbit of game code , while Sega Cards can hold up to 256 kbit . Cards were cheaper to manufacture than the cartridges and included titles such as Spy vs. Spy and Super Tennis , but Sega Cards were eventually dropped due to their lack of memory . Some games manufactured for the system include

Psycho Fox , Golvellius , and Phantasy Star , which became a successful franchise for Sega and is considered one of the benchmark role @-@ playing games . The Master System also hosts games featuring Sega 's flagship character at the time , Alex Kidd , including Alex Kidd in Miracle World . Wonder Boy III : The Dragon 's Trap has garnered recognition as " a genuine milestone in video game design " due to its innovative blend of platforming gameplay with RPG elements . Built @-@ in titles are common in Master System hardware , including Snail Maze and Hang @-@ On , as well as Alex Kidd in Miracle World and Sonic the Hedgehog . Additional titles were also released in Brazil by Tectoy , including ports of Street Fighter II and Dynamite Headdy after the Master System was discontinued elsewhere .

A number of writers have criticized the game library for its lack of depth compared to the NES . Computer Gaming World compared new Sega titles to " drops of water in the desert " . Due to Nintendo 's licensing practices , few third @-@ party developers contributed games for the Master System . According to Damien McFerran , " Nintendo requested that developers keep their games ' NES exclusive ' , and given the unassailable position the console enjoyed , few had the will to defy this request . " In addition , according to game designer Mark Cerny , most of Sega 's early Master System titles were developed within a strict three @-@ month deadline , which negatively impacted game quality . Titles for the Master System , however , did take advantage of the advanced hardware of the console in comparison to the NES ; Alex Kidd in Miracle World , for example , showcases " blistering colors and more detailed sprites " than competing NES games . In addition , the Master System version of R @-@ Type has garnered retrospective praise for its quality , with its visuals considered comparable to those found in the TurboGrafx @-@ 16 port of the same title .

On the other hand , Retro Gamer praised the system 's PAL library , referring to it as a " superb library of interesting ports and excellent exclusives " and noting that it offered significantly greater depth than what was available in North America . They praised its " drip @-@ feed of quality titles " that continued to be released in Europe up until the mid @-@ 1990s . Such titles ranged from 8 @-@ bit entries of Mega Drive franchises such as Sonic the Hedgehog and Streets of Rage to dozens of exclusive PAL releases such as Lucky Dime Caper , Asterix , Ninja Gaiden , Master of Darkness and Power Strike II .

= = Reception and legacy = =

Sales of the Master System have been estimated between 10 million and 13 million units , not including recent Brazil sales , in contrast to the 62 million units sold by its chief competitor , the Famicom . Sega would later close the market share gap between itself and Nintendo in the next generation with the release of the Genesis , which sold 40 million consoles compared to the 49 million Super Nintendo Entertainment System consoles sold by Nintendo . The Master System saw much more continued success in Europe and Brazil than it did in Japan and North America . In 1989 , the Sega Master System was listed in the top 20 products of NPD Group 's Toy Retail Sales Tracking Service . However , reception in 1992 by Electronic Gaming Monthly indicated a souring interest in the console . Four reviewers scored the console 5 , 4 , 5 , and 5 out of a possible 10 points each in the magazine 's 1992 Buyer 's Guide , focusing on the better value of the Genesis and lack of quality titles for the Master System . By 1993 , reviewers scored the console 2 , 2 , 3 , and 3 out of 10 , noting its abandonment by Sega in North America and lack of new releases . According to Bill Pearce of Playthings , the NES gained an advantage over the Master System through the use of better software and stronger character identification .

Retrospective feedback of the console praises its support toward development of the Sega Genesis , but is generally critical of its smaller game library compared to the NES . Writing for AllGame , Dave Beuscher notes that " it was doomed by the lack of third party software support and all but disappeared from the American market by 1992 . " On the other hand , Retro Gamer praised the system 's PAL library as a " superb library of interesting ports and excellent exclusives " , noting that it was significantly larger than its North American library . Damien McFerran of Retro Gamer recognizes its value to the future success of the Genesis , stating , " Without this criminally undervalued machine , Sega would not have enjoyed the considerable success it had with the Mega

Drive . The Master System allowed Sega to experiment with arcade conversions , original IP and even create a mascot in the form of the lovable monkey @-@ boy Alex Kidd . " In 2009 , the Master System was named the 20th best video game console of all time by the video gaming website IGN , behind both of its main competitors , the Atari 7800 ( ranked 17th best ) and the Nintendo Entertainment System ( 1st ) . They praised it for having " plenty of great , original games " but criticized the Master System 's smaller games library compared to the NES , coupled with the sometimes uneven quality of the games that were released , as the console 's major issues , stating , " Months could go by between major releases and that made a dud on the Master System feel even more painful . "

The Master System and its software still retains some popularity . According to IGN , " Despite its narrow mass audience , the Master System had ? and still has ? a very loyal fan base . " In 2005 , Sega reached a deal with Chinese company AtGames to release Master System software in the form of emulation products in Taiwan , Hong Kong , and China . A number of Master System games are available for download on Nintendo 's Wii Virtual Console in North America , PAL territories and Japan . The first game released for this service was Fist of the North Star , on February 26 , 2008 , and later , Fantasy Zone , released on March 11 . Both were released in Japan . In North America , Wonder Boy was the first Master System game released for the service on March 31 , 2008 . Master System games have also been made available via the GameTap online service .