

= 32X =

The 32X is an add on for the Mega Drive / Genesis video game console . Codenamed " Project Mars " , the 32X was designed to expand the power of the Genesis and serve as a transitional console into the 32 bit era until the release of the Sega Saturn . Independent of the Genesis , the 32X uses its own ROM cartridges and has its own library of games . The add on was distributed under the name Super 32X (Super 32X , Super 32X) in Japan , Genesis 32X in North America , Mega Drive 32X in the PAL region , and Mega 32X in Brazil .

Unveiled by Sega at June 1994 's Consumer Electronics Show , the 32X was presented as a low cost option for consumers looking to play 32 bit games . Developed in response to the Atari Jaguar and concerns that the Saturn would not make it to market by the end of 1994 , the product was first conceived as an entirely new console . At the suggestion of Sega of America executive Joe Miller and his team , the console was converted into an add on to the existing Genesis and made more powerful . The final design contained two 32 bit central processing units and a 3D graphics processor . To bring the new add on to market by its scheduled release date of November 1994 , development of the new system and its games were rushed . The console failed to attract third party video game developers and consumers because of the announcement of the Sega Saturn 's simultaneous release in Japan . Sega 's efforts to rush the 32X to market cut into available time for game development , resulting in a weak library of forty titles that could not fully use the add on 's hardware , including Genesis ports . By the end of 1994 , the 32X had sold 665 ,000 units . After price reductions in 1995 , it was discontinued in 1996 as Sega turned its focus to the Saturn .

Reception after the add on 's unveiling and launch was positive , highlighting the low price of the system and power expansion to the Genesis . Later reviews , both contemporary and retrospective , for the 32X have been mostly negative because of its shallow game library , poor market timing and the resulting market fragmentation for the Genesis .

= = History = =

The Sega Genesis , initially released in Japan as the Mega Drive in 1988 , was Sega 's entry into the 16 bit era of video game consoles . The console was then released as the Genesis in 1989 for the North American market , with releases in other regions following a year later .

Although the earlier release of the Sega CD add on had been commercially disappointing , Sega began to develop a stop gap solution that would bridge the gap between the Genesis and the Sega Saturn , serving as a less expensive entry into the 32 bit era . The decision to create a new system was made by Nakayama and broadly supported by Sega of America employees . According to former Sega of America producer Scot Bayless , Nakayama was worried that the Saturn would not be available until after 1994 , and about the recent release of the 64 bit Atari Jaguar . As a result , the direction given was to have this second release to market by the end of the year .

= = Development = =

At the Winter Consumer Electronics Show in January 1994 , Sega of America research and development head Joe Miller took a phone call from Nakayama , in which Nakayama stressed the importance of coming up with a quick response to the Jaguar . Included on this call were Bayless , Sega hardware team head Hideki Sato , and Sega of America vice president of technology Marty Franz . One potential idea for this came from a concept from Sega Enterprises in Japan , later known as " Project Jupiter " , an entirely new independent console . Project Jupiter was initially slated to be a new version of the Genesis , with an upgraded color palette and a lower cost than the upcoming Saturn , as well as with some limited 3D capabilities thanks to integration of ideas from the development of the Sega Virtua Processor chip . Miller suggested an alternative strategy , citing concerns with releasing a new console with no previous design specifications within six to nine

months . According to former Sega of America producer Michael Latham , Miller said , " Oh , that 's just a horrible idea . If all you 're going to do is enhance the system , you should make it an add @-@ on . If it 's a new system with legitimate new software , great . But if the only thing it does is double the colors " Miller , however , insists that the decision was made collectively to talk about alternative solutions . One idea was to leverage the existing Genesis as a way to keep from alienating Sega customers , who would otherwise be required to discard their Genesis systems entirely to play 32 @-@ bit games , and to control the cost of the new system . This would come in the form of an add @-@ on . From these discussions , Project Jupiter was discontinued and the new add @-@ on , codenamed " Project Mars " , was advanced .

At the suggestion from Miller and his team , Sega designed the 32X as a peripheral for the existing Genesis , expanding its power with two 32 @-@ bit SuperH @-@ 2 processors . The SH @-@ 2 had been developed in 1993 as a joint venture between Sega and Japanese electronics company Hitachi . The original design for the 32X add @-@ on , according to Bayless , was created on a cocktail napkin , but Miller insists that this was not the case . At the end of the Consumer Electronics show , with the basic design of the 32X in place , Sega Enterprises invited Sega of America to assist in development of the new add @-@ on .

Although the new unit was a stronger console than originally proposed , it was not compatible with Saturn games . This was justified by Sega 's statement that both platforms would run at the same time , and that the 32X would be aimed at players who could not afford the more expensive Saturn . Bayless praised the potential of this system at this point , calling it " a coder 's dream for the day " with its twin processors and 3D capabilities . Sega of America headed up the development of the 32X , with some assistance from Sato 's team at Sega Enterprises in Japan . Shortages of processors due to the same 32 @-@ bit chips being used in both the 32X and the Saturn hindered the development of the 32X , as did the language barrier between the teams in Japan and the United States .

Before the 32X could be launched , the release date of the Saturn was announced for November 1994 in Japan , coinciding with the 32X 's target launch date in North America . Sega of America now was faced with trying to market the 32X with the Saturn 's Japan release occurring simultaneously . Their answer was to call the 32X a " transitional device " between the Genesis and the Saturn , to which Bayless describes of the strategy , " [f] rankly , it just made us look greedy and dumb to consumers . "

= = = Pre @-@ launch promotion , release , and marketing = = =

The unveiling of the 32X to the public came at the Summer Consumer Electronics Show in June 1994 in Chicago . Promoted as the " poor man 's entry into ' next generation ' games " , 32X was marketed for its US \$ 159 price point as a less @-@ expensive alternative to the Saturn . However , Sega would not answer whether or not a Genesis console equipped with a Sega CD and a 32X would be able to run Saturn software . Founder of The 3DO Company , Trip Hawkins , was willing to point out that it would not , stating , " Everyone knows that 32X is a Band @-@ Aid . It 's not a ' next generation system . ' It 's fairly expensive . It 's not particularly high @-@ performance . It 's hard to program for , and it 's not compatible with the Saturn . " In response to these comments , Sega executive Richard Brudvik @-@ Lindner pointed out that the 32X would play Genesis titles , and had the same system architecture as the Saturn .

In August of that year , GamePro highlighted the advantages of the upcoming add @-@ on in its 32 @-@ bit processors and significantly lower price , noting that " [n] o doubt gotta @-@ get @-@ it @-@ now gamers will spend the big bucks to grab Saturn or PlayStation systems and games from Japan . For the rest of us , however , 32X may well be the system of choice in ' 94 . " In promotion for the new system , Sega promised 12 games available at launch and 50 games due for release in 1995 from third @-@ party developers .

The 32X was released on November 21 , 1994 in North America , in time for the holiday season that year . As announced , it retailed for \$ 159 @. @ 99 , and had a reasonably successful launch in the marketplace . Demand among retailers was high , and Sega could not keep up orders for the

system . Over 1 @, @ 000 @, @ 000 orders had been placed for 32X units , but Sega had only managed to ship 600 @, @ 000 units by January 1995 . Launching at about the same price as a Genesis console , the price of the 32X was less than half of what the Saturn 's price would be at launch . Despite Sega 's initial promises , only four titles were available at its North American launch ; Doom , Star Wars Arcade , Virtua Racing Deluxe , and Cosmic Carnage . Games were available at a retail price of \$ 69 @. @ 95 . Advertising for the system included images of the 32X being connected to a Genesis console to create an " arcade system " . Japan received the 32X on December 3 , 1994 , at a cost of JP ¥ 16 @, @ 800 . The system 's PAL release came in January 1995 , at a price of GB £ 169 @. @ 99 , and also experienced initial high demand .

= = = Decline = = =

Despite the lower price console 's positioning as an inexpensive entry into 32 @- @ bit gaming , Sega had a difficult time convincing third @- @ party developers to create games for the new system . Top developers were already aware of the coming arrival of the Sega Saturn , Nintendo 64 , and PlayStation , and did not believe the 32X would be capable of competing with any of those systems . The quick development time of the 32X also made game development difficult , according to Franz . Not wanting to create games for an add @- @ on that was " a technological dead @- @ end " , many developers decided not to make games for the system . Issues also plagued titles developed in @- @ house due to the time crunch to release the 32X . According to Bayless , " games in the queue were effectively jammed into a box as fast as possible , which meant massive cutting of corners in every conceivable way . Even from the outset , designs of those games were deliberately conservative because of the time crunch . By the time they shipped they were even more conservative ; they did nothing to show off what the hardware was capable of . "

Journalists were similarly concerned about Sega 's tactic of selling two similar consoles at different prices and attempting to support both , likening Sega 's approach to that of General Motors and segmenting the market for its consoles . In order to convince journalists that the 32X was a worthwhile console , Sega hosted a party for journalists in a nightclub , featuring live music and 32X games on exhibition . The event turned out to be a bust , however , as journalists attempted to leave the party due to its loud music and unimpressive games on display .

Though the system had a successful launch , demand soon disappeared . Over the first three months of 1995 , several of the 32X 's third party publishers , including Capcom and Konami , cancelled their 32X projects so that they could focus on producing games for the Saturn and PlayStation . The 32X failed to catch on with the public , and is considered a commercial failure . By 1995 , the Genesis had still not proven successful in Japan , where it was known as Mega Drive , and the Saturn was beating the PlayStation , so Sega CEO Hayao Nakayama decided to force Sega of America to focus on the Saturn and cut support for Genesis products , executing a surprise early launch of the Saturn in the early summer of 1995 . Sega was supporting five different consoles before this ? Saturn , Genesis , Game Gear , Pico , and the Master System ? as well as the Sega CD and Sega 32X add @- @ ons . Sales estimates for the 32X stood at 665 @, @ 000 units at the end of 1994 . Despite assurances from Sega that many games would be developed for the system , in early 1996 , Sega finally conceded that they had promised too much out of the add @- @ on and decided to discontinue the 32X in order to focus on the Saturn . In September 1995 , the retail price for the 32X dropped to \$ 99 , and later the remaining inventory was cleared out of stores at \$ 19 @. @ 95 .

= = = Sega Neptune = = =

The Sega Neptune was a two @- @ in @- @ one Genesis and 32X console which Sega planned to release in fall 1995 , with the retail price planned to be something less than US \$ 200 . The Neptune was delayed into 1996 , then canceled altogether with the discontinuation of 32X production . Electronic Gaming Monthly used the Sega Neptune as an April Fools ' Day prank in its April 2001 issue . The issue included a small article in which the writers announced that Sega had found a

warehouse full of old Sega Neptunes , and were selling them on a website for only \$ 50 .

= = Technical aspects and specifications = =

The 32X can be used only in conjunction with a Genesis system . It is inserted into the system like a standard game cartridge . The add @-@ on requires its own separate power supply , a connection cable linking it to the Genesis , and an additional conversion cable for the original model of the Genesis . As well as playing its own library of cartridges , the 32X is backwards @-@ compatible with Genesis games , and can also be used in conjunction with the Sega CD to play games that use both add @-@ ons . The 32X also came with a spacer so it would fit properly with the second model of the Genesis ; an optional spacer was offered for use with the Sega Genesis CDX system , but ultimately never shipped due to risks of electric shock when the 32X and CDX were connected . Installation of the 32X also requires the insertion of two included electromagnetic shield plates into the Genesis ' cartridge slot .

Seated on top of a Genesis , the 32X measures 115 mm × 210 mm × 100 mm (4 @. @ 5 in × 8 @. @ 3 in × 3 @. @ 9 in) . The 32X contains two Hitachi SH2 32 @-@ bit RISC processors with a clock speed of 23 MHz , which Sega claimed would allow the system to work 40 times faster than a stand @-@ alone Genesis . Its graphics processing unit is capable of producing 32 @, @ 768 colors and rendering 50 @, @ 000 polygons per second , which provides a noticeable improvement over the polygon rendering of the Genesis . The 32X also includes 256 Kilobytes of random @-@ access memory (RAM) , along with 256 Kilobytes of Video RAM . Sound is supplied through a pulse @-@ width modulation sound source . Input / output is supplied to a television set via a provided A / V cable that supplies composite video and stereo audio , or through an RF modulator . Stereo audio can also be played through headphones via a headphone jack on the attached Genesis .

= = Game library = =

The 32X 's game library consists of forty titles , including six that required both the Sega 32X and Sega CD . Among the titles for the 32X were ports of arcade games Space Harrier and Star Wars Arcade , a sidescroller with a hummingbird as a main character in Kolibri , and a 32X @-@ exclusive game in the Sonic the Hedgehog series titled Knuckles ' Chaotix . Several of the games released for the 32X are enhanced ports of Genesis games , including After Burner , NFL Quarterback Club , and World Series Baseball ' 95 . In a retrospective review of the console , Star Wars Arcade was considered the best game for the 32X by IGN for its cooperative play , soundtrack , and faithful reproduction of the experiences of Star Wars . In a separate review , IGN 's Buchanan praised the 32X title Shadow Squadron as superior to Star Wars Arcade . Retro Gamer writer Damien McFerran , however , praised Virtua Fighter as " the jewel in the 32X 's crown " , and GamesRadar named Knuckles ' Chaotix as the best game for the system .

Although the console used 32 @-@ bit processing and was capable of better graphics and sound than the Genesis alone , most games for the 32X did not take advantage of its hardware . Doom for the 32X received near perfect reviews from gaming magazines upon launch , but was later noted for being an inferior version of the game compared to releases for the PC and the Atari Jaguar , with the 32X version criticized for missing levels , poor graphic and audio quality , chuggy movement , and running within a window on the screen . Though the system had enhanced audio capabilities , 32X games did not use this , which Franz believes was due to developers being unwilling to invest in designing games to work with the new audio enhancements . One source of these issues was the rush to release games on time for the 32X 's launch ; former Sega of America executive producer Michael Latham explained , in reference to 32X launch title Cosmic Carnage , " We were rushed . We had to get games out for the 32X and it was going to be such a close cycle . When Cosmic Carnage showed up , we didn 't even want to ship it . It took a lot of convincing , you know , to ship that title . " Likewise with Doom , id Software 's John Carmack rushed to have the port ready for release at the 32X 's launch and had to trim out a third of the game 's levels in order to meet the deadline for the port to be published on time . Because of time limitations , game designs were

intentionally conservative and did not show what the 32X hardware was able to do . In an interview at the end of 1995 , Sega vice president of marketing Mike Ribero , while insisting that Sega was not abandoning the 32X , acknowledged that first party software support for the system had been lackluster : " I won 't lie to you , we screwed up with 32X . We overpromised and underdelivered . "

= = Reception and legacy = =

Initial reception to the 32X and its games upon the launch of the add @-@ on was very positive . Four reviewers from Electronic Gaming Monthly scored the add @-@ on 8 , 7 , 8 , and 8 out of 10 in their 1995 Buyer 's Guide , highlighting the add @-@ on 's enhancements to the Genesis but questioning how long the system would be supported . GamePro commented that the 32X 's multiple input and power cords make it " as complicated as setting up your VCR " and noted some performance glitches with the prototype such as freezes and overheating , but expressed confidence that the production models would perform well and gave the add @-@ on their overall approval . Reviews of its launch titles , such as Doom , were likewise positive . By 1996 , feedback to the add @-@ on had soured . In its 1996 Buyer 's Guide , Electronic Gaming Monthly 's four reviewers scored the add @-@ on 3 , 3 , 3 , and 2 out of 10 , criticizing the game library and Sega 's abandonment of the system in favor of the Saturn .

Retrospectively , the 32X is widely criticized as having been under @-@ supported and a poor idea in the wake of the release of the Sega Saturn . 1UP.com 's Jeremy Parish stated that the 32X " tainted just about everything it touched . " GamesRadar also panned the system , placing it as their ninth @-@ worst console with reviewer Mikel Reparaz criticizing that " it was a stopgap system that would be thrown under the bus when the Sega Saturn came out six months later , and everyone seemed to know it except for die @-@ hard Sega fans and the company itself . " Retro Gamer 's Damien McFerran offered some praise for the power increase of the 32X to offer ports of Space Harrier , After Burner , and Virtua Fighter that were accurate to the original arcade versions , as well as the add @-@ on 's price point , stating , " If you didn 't have deep enough pockets to afford a Saturn , then the 32X was a viable option ; it 's just a shame that it sold so poorly because the potential was there for true greatness . " Levi Buchanan , writing for IGN , saw some sense in the move for Sega to create the 32X but criticized its implementation . According to Buchanan , " I actually thought the 32X was a better idea than the SEGA CD ... The 32X , while underpowered , at least advanced the ball . Maybe it only gained a few inches in no small part due to a weak library , but at least the idea was the right one . "

In particular , the console 's status as an add @-@ on and poor timing after the announcement of the Saturn has been identified by reviewers as being responsible factors for fracturing the audience for Sega 's video game consoles in terms of both developers and consumers . Allgame notes that " [e] very add @-@ on whittled away at the number of potential buyers and discouraged third @-@ party companies from making the games necessary to boost sales . " GamePro criticized the concept of the add @-@ on , noting the expenses involved in purchasing the system . According to reviewer Blake Snow , " Just how many 16 @-@ bit attachments did one need ? All in all , if you were one of the unlucky souls who completely bought into Sega 's add @-@ on frenzy , you would have spent a whopping \$ 650 for something that weighed about as much as a small dog . " Writing for GamesRadar , Reparaz noted that " developers ? not wanting to waste time on a technological dead @-@ end ? abandoned the 32X in droves . Gamers quickly followed suit , turning what was once a promising idea into an embarrassing footnote in console history , as well as an object lesson in why console makers shouldn 't split their user base with pricey add @-@ ons . " Reparaz went on to criticize Sega 's decision to release the 32X , noting that " (u) ltimately , the 32X was the product of boneheaded short @-@ sightedness : its existence put Sega into competition with itself once the Saturn rolled out . " Writing for IGN , Buchanan also notes that " Notice that we haven 't seen many add @-@ ons like the 32X since 1994 ? I think the 32X killed the idea of an add @-@ on like this ? a power booster ? permanently . And that 's a good thing . Because add @-@ ons , if not implemented properly , just splinter an audience . "

Former executives at Sega have mixed opinions of the 32X . Bayless believes firmly that the 32X

serves as a warning to the video game industry not to risk splintering the market for consoles by creating add-ons, and was critical of the Kinect and PlayStation Move for doing so. Franz places the 32X's commercial failure on its inability to function without an attached Genesis and lack of a CD drive, despite its compatibility with the Sega CD, stating, "The 32X was destined to die because it didn't have a CD drive and was an add-on. An add-on device is never as well thought out as a built-in from scratch device." Miller, on the other hand, remembers the 32X positively, stating, "I think the 32X actually was an interesting, viable platform. The timing was wrong, and certainly our ability to stick with it, given what we did with Saturn, was severely limited. There were a whole bunch of reasons why we couldn't ultimately do what we had to do with that platform, without third party support and with the timing of Saturn, but I still think the project was a success for a bunch of other reasons. In hindsight, it was not a great idea for a whole bunch of other reasons."