= IPhone 5S =

The iPhone 5S (marketed with a stylized lowercase ' s ' as iPhone 5s) is a smartphone designed and marketed by Apple Inc . Part of the iPhone series , the device was unveiled on September 10 , 2013 at Apple 's Cupertino headquarters . It was released on September 20 , 2013 along with its mid @-@ range counterpart , the iPhone 5C .

The iPhone 5S maintains almost the same design to its predecessor , the iPhone 5 . A redesigned home button with Touch ID , a fingerprint recognition system which can be used to unlock the phone and authenticate App Store and iTunes Store purchases , has been introduced . The camera has been updated with a larger aperture and a dual @-@ LED flash optimized for different color temperatures . It also introduced the A7 dual @-@ core processor , which the company proclaimed to be the first 64 @-@ bit processor to be used on a smartphone , accompanied by the M7 " motion co @-@ processor " . Unlike previous models , the iPhone 5S shipped in a white / gold color scheme in addition to white / silver and gray / black .

The iPhone 5S was the first Apple device to ship with iOS 7 , which introduced a revamped visual appearance and other new features . Designed by Jonathan Ive , iOS 7 departs from skeuomorphic elements used by previous versions of iOS in favor of a flat , colorful design . Among new software features introduced to the iPhone 5S include AirDrop , an ad @-@ hoc Wi @-@ Fi sharing platform , Control Center , a control panel containing a number of commonly used functions , and iTunes Radio , an internet radio service . Earphones known as EarPods are included with the iPhone 5S . Apple has released accessories including a case and a dock for the iPhone 5S .

Reception towards the device was generally positive , with some outlets considering it to be best smartphone available on the market due to its upgraded hardware , Touch ID , and other changes introduced by iOS 7 . However , others criticized the iPhone 5S for being too similar to its predecessors , while others expressed security concerns about the Touch ID system . Nine million units of the iPhone 5S and iPhone 5C were sold on their weekend of release , breaking Apple 's sales record for iPhones . The iPhone 5S was the best selling phone on all major U.S. carriers in September 2013 .

The iPhone 5S was succeeded as Apple 's flagship smartphone by the larger iPhone 6 . On March 21 , 2016 , the 5S received a direct replacement with the announcement of the iPhone SE , which incorporates internal hardware similar to the iPhone 6S , but retains the smaller form factor and design of the 5S .

= = History = =

Before its official unveiling , media speculation primarily centered on reports that the next iPhone would include a fingerprint scanner ; including Apple 's July 2012 acquisition of AuthenTec , a developer of mobile security products , references to a fingerprint sensor on the home button in the beta release of iOS 7 and leaked packaging for an iPhone 5S showing that the traditional home button now had a metallic " ring " around it . Similar ring @-@ based imagery was seen on the official invitation to Apple 's iPhone press event in September 2013 , where the new device was unveiled . Shortly before its official unveiling , The Wall Street Journal also reported the rumor .

Apple announced the iPhone 5C and the iPhone 5S during a media event at its Cupertino headquarters on September 10 , 2013 . While the iPhone 5C became available for preorder on September 13 , 2013 , the iPhone 5S was not available for preorder . Both devices were released on September 20 , 2013 . While most of the promotion focused on Touch ID , the 64 @-@ bit Apple A7 processor was also a highlight during the event .

This is the first @-@ ever 64 @-@ bit processor in a phone of any kind . I don ? t think the other guys are even talking about it yet . Why go through all this ? The benefits are huge . The A7 is up to twice as fast as the previous @-@ generation system at CPU tasks , and up to twice as fast at graphics tasks , too .

Schiller then showed demos of Infinity Blade III to demonstrate the A7 's processing power and the device 's camera using untouched photographs . The release of iOS 7 on September 18 , 2013 was

also announced during the keynote .

The iPhone 5S was released on September 20 , 2013 , in the United States , United Kingdom , Canada , China , France , Germany , Australia , Japan , Hong Kong , and Singapore . It was released in 25 additional countries on October 25 , 2013 , and in 12 countries on November 1 , 2013 . Indonesia was the last country to receive the iPhone 5S , on January 26 , 2014 .

On September 19 , 2014 , the iPhone 5S was succeeded as Apple 's flagship smartphone by the iPhone 6 and iPhone 6 Plus , but the older model remains available for purchase at a reduced price , while the 64GB version was discontinued . The gold edition of the iPhone 5S was discontinued on September 9 , 2015 , when Apple revealed the iPhone 6S and iPhone 6S Plus

The iPhone 5S was discontinued on March 21 , 2016 , and succeeded by the iPhone SE , which continues the same form factor but features vastly upgraded internals similar to the flagship iPhone 6S . This was a break with Apple 's product positioning trend (in North America and Western Europe) , starting with iPhone 4S released in September 2011 , which gave each newly released model one year as the flagship phone , then moving it to midrange for its second year of production , with the third and final year as the entry @-@ level offering before discontinuation . While iPhone 5S was expected to continue on sale until September 2016 , replacing it and its A7 processor early means that Apple " just reduced its long @-@ term chip support window by a year " for iOS . In addition , a new iPhone launch was meant to stimulate demand , as sales of iPhone 6S and 6S Plus had not met expectations since their September 2015 release and the iPhone family may suffer its first ever negative growth quarter in 2016 .

= = Specifications = =

= = = Design = = =

The iPhone 5S maintains a similar design to the iPhone 5 , with a 4 in (10 cm) LCD multi @-@ touch Retina display and a screen resolution of 640 × 1136 at 326 ppi . Its home button has been updated with a new flat design using a laser @-@ cut sapphire cover surrounded by a metallic ring ; the button is no longer concave , nor does it contain the familiar squircle icon seen on previous models . The phone itself is 0 @.@ 30 in (7 @.@ 6 mm) thick and weighs 112 grams (4 @.@ 0 oz) . The phone uses an aluminum composite frame . The device is available in three color finishes ; " space @-@ gray " (replacing black with slate trim on the iPhone 5) , white with silver trim , and white with gold trim . The iPhone 5S was the first iPhone to be available in gold color ; this decision was influenced by the fact that gold is seen as a popular sign of a luxury product among Chinese customers .

= = = Hardware = = =

The iPhone 5S is powered by the Apple A7 system @-@ on @-@ chip , which the company proclaimed to be the first 64 @-@ bit processor ever used on a smartphone . The device 's operating system and pre @-@ loaded software were optimized to run in 64 @-@ bit mode , promising increased performance , although third @-@ party app developers would need to optimize their apps to take advantage of these enhanced capabilities . The A7 processor is designed by Apple and manufactured by Samsung . The A7 processor is accompanied by a new M7 " motion co @-@ processor " , a dedicated processor for processing motion data from the iPhone 's accelerometer and gyroscopes without requiring the attention of the main processor , which integrates with iOS 7 's new CoreMotion APIs . The same A7 SoC and M7 motion co @-@ processor are also found in the iPad Air and iPad Mini 2 which were released in the same quarter as the iPhone 5S .

The phone includes a 1560 mAh battery , which provides 10 hours of talk time and 250 hours of standby time .

While the camera is still 8 megapixels in resolution with the image capture size of 3264 × 2448 (4 :

3) , the lens has a larger aperture (f / 2 @.@ 2) and larger sized pixels in its image sensor than previous iPhone models . The flashlight has dual " True Tone " flashes , consisting of an amber LED and a white LED , which are variably used based on the color temperature of the photo to improve color balancing . The camera also includes automatic image stabilization , dynamic tone mapping , 10 fps burst mode , " best shot " mode and slow motion video at 120 fps .

The home button on the iPhone 5S incorporates a fingerprint recognition system known as Touch ID , based on technology from AuthenTec , a company which Apple had acquired in 2012 . The sensor uses a capacitive CMOS @-@ based sensor which can detect the " sub @-@ epidermal layers " of fingers at 500 pixels per inch , and uses a 360 @-@ degree design that can read the print at any angle . The sensor itself is activated by a touch @-@ sensitive metallic ring surrounding the button . Touch ID can be used for various authentication activities within the operating system , such as unlocking the device or authenticating App Store and iTunes purchases instead of an Apple ID password . The sensor can be trained to recognize the fingerprints of multiple fingers and multiple users . Fingerprint data is stored in an encrypted format within a " secure enclave " of the A7 chip itself , and is not accessible to any other apps or servers (including iCloud) .

= = = Operating system and software = = =

The iPhone 5S is supplied with iOS 7 , released on September 20 , 2013 . Jonathan Ive , the designer of iOS 7 's new elements , described the update as " bringing order to complexity " , highlighting features such as refined typography , new icons , translucency , layering , physics , and gyroscope @-@ driven parallaxing as some of the major changes to the design . The design of both iOS 7 and OS X Mavericks (version 10 @.@ 9) noticeably depart from skeuomorphic elements such as green felt in Game Center , wood in Newsstand , and leather in Calendar , in favor of flat , colorful design .

iOS 7 adds AirDrop , an ad @-@ hoc Wi @-@ Fi sharing platform . Users can share files with the iPhone 5 onwards , the iPod Touch (5th generation) , iPad (4th generation) onwards , or iPad Mini (1st generation) onwards . The operating system also adds Control Center , a control panel accessed by swiping up from the bottom of the screen . Control Center contains a number of commonly used functions , such as volume and brightness controls , along with toggles for enabling Wi @-@ Fi , Bluetooth , Airplane mode , and for using the rear camera 's flash LED as a flashlight .

iTunes Radio , an Internet radio service , is also included on the iPhone 5S . It is a free , ad @-@ supported service available to all iTunes users , featuring Siri integration on iOS . Users are able to skip tracks , customize stations , and purchase the station 's songs from iTunes Store . Users can also search through their history of previous songs .

= = = Accessories = = =

Earphones known as Apple EarPods are included with the iPhone 5S . According to technology commentators , the design of the earphones is aimed to improve sound quality by allowing air to travel in and out more freely . Apple states that the design of their earphones allows it to " rival high @-@ end headphones that cost hundreds of dollars more " . Reviews by Gizmodo and TechRadar reported that although the earphones sounded better than its predecessor , reviewers felt that quality of sound produced is poor . TechRadar further opined that the EarPods are inferior to other earphones of a similar price .

= = Apple accessories = =

Apple announced during the keynote a case for the iPhone 5S that is made of soft microfiber on the inside and leather on the outside . This case was announced along with iPhone 5C 's case , both of which are the first cases Apple has announced since the iPhone 4 Bumpers .

Docks for both the iPhone 5S and 5C were found on the Apple Online Store after the announcement . Because of the casing difference between the iPhone 5S and 5C , they have

separate docks , each made specifically for each respective phone .

= = Reception = =

= = = Critical reception = = =

The iPhone 5S received a mostly positive reception from reviewers and commentators . Walt Mossberg of All Things Digital gave the phone a favorable review , saying that Touch ID " sounds like a gimmick , but it ? s a real advance , the biggest step ever in biometric authentication for everyday devices , " and labeled it " the best smartphone on the market . " David Pogue of The New York Times praised Touch ID , but said that the innovation of the smartphone market has been saturated , and " maybe the age of annual mega @-@ leaps is over . " He focused much of his review on iOS 7 , which he believed was the biggest change of the device over previous generations , eulogizing new Siri features , Control Center , and AirDrop . In an editorial , Pogue stated that iOS 7 was the biggest change in the iPhone series , citing utilitarian interface changes as the main contributor to this . Scott Stein of CNET criticized the lack of design change over iPhone 5 and said that although the iPhone 5S " is not a required upgrade , but it 's easily the fastest and most advanced Apple smartphone to date . " Although praised the new iPhone for its camera , 64 @-@ bit A7 chip , M7 motion @-@ chip , and fingerprint scanning capabilities , some investors thought that the iPhone 5S , although a notable improvement over the iPhone 5 , was still relatively unchanged from its predecessor , and worried that the iPhone line had become a stagnant , dull product . Apple 's share price fell 5 @.@ 4 % after the launch to close at a month low of $ 467 @.@ 71 on the NASDAQ .

Darrell Etherington of TechCrunch who praised the iPhone 5S as the best smartphone available said " looks may not be different from the iPhone 5 , but the internal components have a dramatic impact on day @-@ to @-@ day activities normal for a smartphone user , " and went into detail explaining the impact of the improved camera and specifications on the phone . Etherington suggested that the 64 @-@ bit A7 processor will not reach its full potential until developers create applications supporting it . Myriam Joire of Engadget found that the iPhone 5S could benefit significantly from the A7 if developers created applications optimized for the 64 @-@ bit processor . Anand Lal Shimpi of AnandTech praised the phone 's A7 processor , describing it as " seriously impressive " , and stated that it was the most " futureproof of any iPhone ever launched . As much as it pains me to use the word futureproof , if you are one of those people who likes to hold onto their device for a while - the iPhone 5S is as good a starting point as any . " Scott Lowe of IGN also speaking highly of its 64 @-@ bit processor , " which has a substantial lead in processing power over the HTC One and Samsung Galaxy S4 , accounting for a graphics boost of up to 32 % and 38 % in CPU benchmarks . " The debut of Apple 's 64 @-@ bit A7 processor took rival Android smartphone makers by surprise , particularly Qualcomm whose own 64 @-@ bit system @-@ on @-@ chip was not released until 2015 .

Most reviewers recommended the iPhone 5S over the iPhone 5C which was released at the same time . The 5C retained almost the same hardware as the discontinued iPhone 5 , while the iPhone 5S featured substantially improved performance / features thanks to its new 64 @-@ bit A7 processor , as well as extra storage space , all for a relatively small additional upfront cost over the iPhone 5C (US $ 650 versus US $ 550 in March 2014) . This was especially the case when iOS 8 was released and both iPhone 5S and iPhone 5C were move to the mid and low end of the iPhone range , respectively ; the iPhone 5S still had 16 or 32 GB storage available while the iPhone 5C had to make do with 8 GB storage with only 4.9GB available to the user after installing iOS 8 . Furthermore , the 5C 's polycarbonate exterior received a mixed reception and seen as a cost @-@ cutting downgrade compared to the iPhone 5 's aluminum / glass case ; the 5S retained the latter design and looked even more premium due its additional gold finish .

As of 2015 ? 16 , there were still a significant number of customers who preferred the 4 @-@ inch screen size of iPhone 5S , which remained the second @-@ most popular iPhone after the iPhone 6

and ahead of the iPhone 6S . Apple stated in their event that they sold 30 million 4 @-@ inch iPhones in 2015 , even as that form factor was succeeded as the flagship iPhone by the redesigned larger display 4 @.@ 7 / 5 @.@ 5 @-@ inch iPhone 6 and 6 Plus back in September 2014 . Furthermore , the 5 and 5S design was regarded as " long been the golden child of Apple phone design and a benchmark for phones in general " (with the 5S 's gold finish adding a premium touch to the 5 's already well @-@ regarded look) , while the succeeding 6 and 6S design was less critically acclaimed as it " felt a little bit wrong , as though you were holding a slick $ 650 bar of soap " . The iPhone 5 was described as " elegance rooted in the way the aluminum and glass work together . It felt streamlined , yet substantial , which is different from iPhone 6 , which feels substantial in size alone . Plus , unlike the ubiquitous rounded corners of the 6 , iPhone 5 didn ? t really look like anything else on the market at the time " . However , the iPhone 5 / 5S design was not suited to scaling up , in contrast to the iPhone 6 / 6S which could better accommodate the growing consumer trend towards larger screen sizes and indeed spawned the 6 / 6S Plus phablet models . When Apple discontinued the iPhone 5S , it was replaced by the iPhone SE which outwardly appears almost identical to the 5S even as the SE 's internal hardware has been upgraded significantly .

= = = Commercial reception = = =

 The iPhone 5S and 5C sold over nine million units in the first three days , which sets a record for first weekend smartphone sales , with the 5S selling three times more units than iPhone 5C . After the first day of release , 1 % of all iPhones in the US were iPhone 5Ss , while 0 @.@ 3 % were iPhone 5Cs . Gene Munster of Piper Jaffray reported that the line at the Fifth Avenue Apple Store contained 1 @,@ 417 people on release day , compared to 1 @,@ 300 for the iPhone 4 in 2010 , and 549 for the iPhone 3G in 2008 on their respective release days . This was the first time that Apple launched two models simultaneously . The first @-@ day release in China also contributed to the record sales result .
 On launch day , major stock shortages were reported in most stores , across all countries where the iPhone 5S initially went on sale . A great many customers in line outside Apple Stores worldwide were left disappointed due to severe shortages across all 5S models , with the gold model in particular being in highly limited supply . While this situation eased in the US in the days following the launch , other countries have reported receiving very little restocks . Some commentators have questioned how Apple have handled the initial release , as online pre @-@ orders were not offered for the iPhone 5S , meaning large numbers of people queuing outside physical stores , with most in line not receiving a unit . In the US , Apple has offered an online reservation system , so customers can keep checking units available at their local Apple Stores , and order for pickup . Online orders have also been in short supply on launch day , with the shipping date across all model sizes and colors , changing from " 7 @-@ 10 working days " to sometime " October " in all countries , within hours of online orders being taken .
 The iPhone 5S was the best selling phone on AT & T , Sprint , Verizon , and T @-@ Mobile in September 2013 in the United States , outselling the iPhone 5C and Samsung Galaxy S4 . According to Consumer Intelligence Research Partners , the iPhone 5S outsold the 5C by a two @-@ to @-@ one margin during its September release , confirming Apple CEO Tim Cook 's view that the high @-@ end smartphone market was not reaching a point of market saturation . While commentators viewed iPhone 5C as a flop because of supply chain cuts signifying a decline in demand , the iPhone 5S was viewed as a massive success . Apple admitted that it had failed to anticipate the sales ratio between the iPhone 5C and the iPhone 5S , leading to an overstocking of the 5C and shortages of the 5S .
 Six months after the release of the iPhone 5S , on March 25 , 2014 , Apple announced that sales of the iPhone brand has crossed 500 million units . By May 2014 , despite being on the market for 8 months , the iPhone 5S reportedly outsold the newly released Samsung Galaxy S5 by 40 % , with 7 million iPhone 5S units versus 5 million Galaxy S5 units . The Galaxy S5 's failure to oust the iPhone 5S from the top selling spot was major setback for Samsung Mobile , as the preceding Samsung

Galaxy SIII and Samsung Galaxy S4 , in the first quarter of their releases , had outsold the iPhone 4S and iPhone 5 , respectively .

= = = Impact of Touch ID = = =

 A number of technology writers , including Adrian Kingsley @-@ Hughes and Kevin Roose of New York believed that the fingerprint scanning functionality of the iPhone 5S could help spur the adoption of the technology as an alternative to passwords by mainstream users (especially in " bring your own device " scenarios) , as fingerprint @-@ based authentication systems have only enjoyed wider usage in enterprise environments . However , citing research by biometrics engineer Geppy Parziale , Roose suggested that the CMOS @-@ based sensor could become inaccurate and wear out over time unless Apple had designed the sensor to prevent this from occurring . Brent Kennedy , a researcher of the United States Computer Emergency Readiness Team , recommended that users not immediately rely on the technology , citing the uncertainty over whether the system could properly reject a spoofed fingerprint .

 Following the release of the iPhone 5S , the German Chaos Computer Club announced on September 21 , 2013 that they had bypassed Apple 's new Touch ID fingerprint sensor by using " easy everyday means " . The group explained that the security system had been defeated by photographing a fingerprint from a glass surface and using that captured image to make a latex model thumb which was then pressed against the sensor to gain access . The spokesman for the group stated , " We hope that this finally puts to rest the illusions people have about fingerprint biometrics . It is plain stupid to use something that you can 't change and that you leave everywhere every day as a security token . " However , in 2013 , 39 % of American smartphone users used no security measures at all to protect their smartphone . Others have also used Chaos Computer Club 's method , but concluded that it is not an easy process in either time or effort , given that the user has to use a high resolution photocopy of a complete fingerprint , special chemicals and expensive equipment , and because the spoofing process takes some time to achieve .

= = = Problems = = =

 Several problems were experienced with the iPhone 5S 's hardware after its release . The most widely reported issue is that the angle reported by the phone 's level sensor had drifted by several degrees , which caused the gyroscope , compass , and accelerometer to become inaccurate . Reports suggested that this is a hardware @-@ induced problem . Some encountered other problems such as crashing with a blue screen and then restarting , the power button making a rattling noise when the phone was shaken , overheating , the microphone not working , and Touch ID not working for iTunes purchases . Some of these issues have been fixed by software updates .

= = Timeline of models = =