

AirPods

(Redirected from Airpods)

AirPods are wireless Bluetooth earbuds designed by Apple Inc. They were first announced on September 7, 2016, alongside the iPhone 7. Within two years, they became Apple's most popular accessory.^{[4][5]} AirPods are Apple's entry-level wireless headphones, sold alongside the AirPods Pro and AirPods Max.

In addition to playing audio, the AirPods contain a microphone that filters out background noise as well as built-in accelerometers and optical sensors capable of detecting taps and pinches (e.g. double-tap or pinch to pause audio) and placement within the ear, which enables automatic pausing of audio when they are taken out.^[6]

On March 20, 2019, Apple released the second-generation AirPods, which feature the H1 chip, longer talk time, and hands-free "Hey Siri" support. An optional wireless charging case which costs extra was added in the offerings.

On October 26, 2021, Apple released the third-generation AirPods, which feature an external redesign with shorter stems similar to AirPods Pro, spatial audio, IPX4 water resistance, longer battery life, and MagSafe charging capability.

Models

1st generation



First generation AirPods

Apple announced the first generation AirPods on September 7, 2016, at an Apple Special Event alongside the iPhone 7 and Apple Watch Series 2. Apple originally planned to release the AirPods in late October,^[7] but delayed the release date.^[8] On December 13, 2016, Apple began taking online orders for AirPods. They were available at Apple Stores, Apple Authorized Resellers, and select carriers on December 20, 2016.^{[9][10]}

AirPods contain a proprietary Apple W1 SoC processor which helps optimize battery use as well as the Bluetooth 4.2 and audio connections. The advanced connectivity functions of the W1 requires devices running iOS 10, macOS Sierra, watchOS 3, or later.^[1] They can also function as standard Bluetooth headphones when connected to any device that supports Bluetooth 4.0 or higher, including Windows laptops and Android devices.^{[11][12][13][14]}

There are two microphones inside each AirPod, one facing outward at ear level and another at the bottom of the stem.^{[15][16]} Each AirPod weighs 0.14 oz (4.0 g), and its charging case weighs 1.34 oz (38 g). The AirPods are capable of holding a charge of around five hours. Charging them for fifteen minutes in the case gives three hours of listening time.^[16] The charging case provides 24 hours of total usage time.^[17] During a complete dismantling,

AirPods	
<div><div><div><div><div></div></div><div><div><div></div></div></div></div></div></div>	<div>AirPods</div>
Developer	Apple Inc.
Manufacturer	Luxshare (on contract) <div></div> GoerTek (on contract)
Product family	AirPods
Type	Wireless earbuds
Release date	1st generation <div>December 13, 2016</div> 2nd generation: <div>March 20, 2019</div> 3rd generation: <div>October 26, 2021</div>
Discontinued	1st generation: March 20, 2019
System on a chip	1st generation: Apple W1 <div></div> 2nd and 3rd generation: Apple H1
Input	AirPods (each) <div>Dual beam-forming microphones, dual optical sensors</div>
Connectivity	AirPods (each) <div>Bluetooth</div> Charging case <div>Lightning port^[1]<div></div>Qi (Wireless Charging Case for 1st and 2nd generation)<div></div>MagSafe (3rd generation)</div>
Current firmware	1st gen: 6.8.8 ^[2] (December 2019) ^[3] <div></div> 2nd gen: 5E135 ^[2] (May 2, 2023) <div></div> 3rd gen: 5E135 ^[2] (May 2, 2023)
Dimensions	AirPods (each)

each AirPods was found to contain a 93 milliwatt hour battery in its stem, while the charging case contains a 1.52 watt hour or 398 mAh at 3.81 V battery.^[18]

The model numbers for the first-generation AirPods are A1523 and A1722.^[19]

Production of the first-generation AirPods was discontinued on March 20, 2019, after the second generation was released.^[20]

2nd generation

Apple announced the second generation AirPods on March 20, 2019.^{[21][22]} They are the same design as the first generation, but have updated features.^[22] They include an H1 processor which supports hands-free "Hey Siri", Bluetooth 5 connectivity. Apple also claims 50% more talk time and faster device connection times.^[22] The "Announce Messages with Siri" feature was added in iOS 13.2, which allows the user to dictate text messages to Siri.^[23]

Second-generation AirPods can be purchased with the same charging case as the first generation, or for an additional price bundled with the Wireless Charging Case, which can be used with Qi chargers. The Wireless Charging Case can be purchased separately and is compatible with first-generation AirPods. It moves the charging indicator LED to the exterior of the case.^[24] The Wireless Charging Case was initially announced in September 2017 alongside the AirPower charging mat, but was delayed by AirPower's protracted development and eventual cancellation.^[25] The second generation AirPods remained on sale with a price cut following the release of the third generation in October 2021, but only available with the Lightning charging case.

The model numbers for the second-generation AirPods are A2032 and A2031.^[19]

3rd generation

Apple announced the third generation AirPods on October 18, 2021. They feature an external redesign with shorter stems, similar to AirPods Pro, and use similar force-touch controls. They include support for spatial audio and Dolby Atmos, IPX4 water resistance, skin detection and a case supporting MagSafe charging. Apple claims increased battery life, with AirPods lasting six hours and the charging case providing up to 30 hours.^[26] Preorders of the third generation AirPods began on October 18, 2021. The third generation AirPods were released on October 26, 2021, and are priced at \$179.^[27] In September 2022, Apple released a \$169 variant with a charging case lacking Qi and MagSafe charging compatibility.^[28]

The model numbers for the third-generation AirPods are A2565 and A2564.^[29]

Technical specifications

All of the electronics and circuitry responsible for the audio drivers and Bluetooth transmission are stored entirely within the head of the AirPods. The battery is stored in the stem. The battery and circuit boards are connected via flex/ribbon cable.

Compatibility

AirPods are compatible with any device that supports Bluetooth 4.0 or higher, including Android and Windows devices, although certain features such as automatic switching between devices are only available on Apple devices using iCloud.^[12]

The first-generation AirPods are fully compatible with iPhone, iPad, and iPod touch models with iOS 10 or later, Apple Watch models with watchOS 3 or later, and Mac models with macOS Sierra or later.^[30]

The second-generation AirPods are fully compatible with devices running iOS 12.2 or later, macOS Mojave 10.14.4 or later, and watchOS 5.2 or later.^[31]

	0.65 x 0.71 x 1.59 in (16.5 x 18.0 x 40.5 mm) <div>Charging case1.74 x 0.84 x 2.11 in (44.3 x 21.3 x 53.5 mm)^[1]</div>
Mass	AirPods (each)0.14 ounces (4.0 g) <div>Charging case1.34 ounces (38 g)^[1]</div>
Website	<u>apple.com/airpods</u> (https://apple.com/airpods)

The third-generation AirPods are fully compatible with devices running iOS 15.1 or later, iPadOS 15.1 or later, macOS Monterey 12.0 or later, and watchOS 8.1 or later.^[32]

Support

The lithium-ion batteries in AirPods can see significant degradation over time, with two-year-old sets lasting for less than half of the advertised five hours.^{[33][34]} Apple has a program to service batteries and purchase replacement individual AirPods and charging cases. The replacement of one or both AirPods or the charging case has a lower price with AppleCare+ than without.^[35] Apple offers battery servicing for free with AppleCare+ and for a fee without. However, this is just a replacement service, as AirPods batteries cannot be removed.^[35]

AirPods contain upgradeable firmware. Its original firmware was version 3.3.1. In February 2017, Apple released version 3.5.1,^[36] 3.7.2 in May 2017,^[37] and then 6.3.2 on March 26, 2019.^[38] In July 2019, version 6.7.8 was released and 6.8.8 followed in September 2019.^[3] In June 2020, firmware 2D15 was released (G2).^[39] In September 2020, firmware 3A283 (G2 and Pro) was released^[40] and in April 2021, firmware 3E751.^{[41][42]} AirPods automatically sync through Apple's iCloud service, allowing users to switch audio sources to other supported devices connected by the same Apple ID.^[43]

Comparative technical specifications of all AirPods models

	Still in production		Discontinued		<u>Vintage</u>		<u>Obsolete</u> ^[44]
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Model		<u>iPhone Bluetooth Headset</u>	<u>First-generation AirPods</u>	<u>Second-generation AirPods</u>	<u>First-generation AirPods Pro</u>	<u>AirPods Max</u>	<u>Third-generation AirPods</u>	[hide] <u>Second-generation AirPods Pro</u>
Timeline	Announced	January 9, 2007 [45]	September 7, 2016	March 20, 2019	October 28, 2019	December 8, 2020	October 18, 2021	September 7, 2022
	Released	June 29, 2007 [45]	December 13, 2016		October 30, 2019	December 15, 2020	October 26, 2021	September 23, 2022
	Discontinued	March 23, 2009 [45]	March 20, 2019	Still in production	September 7, 2022	Still in production	Still in production	In production
Model	Model number	A1221	A1722 (Left AirPods) A1523 (Right AirPods) A1602 (Lightning case) A1938 (Wireless case)	A2031 (Left AirPods) A2032 (Right AirPods) A1602 (Lightning case) A1938 (Wireless case)	A2084 (Left AirPods) A2083 (Right AirPods) A2190 (Case)	A2096	A2564 (Left AirPods) A2565 (Right AirPods) A2897 (Lightning case) A2566 (MagSafe case)	A2931, A2699, A2698 (AirPod serials) A2700 (Magsafe Case)
	Model identifier	[data unknown/missing]	AirPods1,1	AirPods2,1	iProd8,1	iProd8,6	AirPods1,3	AirPods Pro 2
	Order number	MA817AM (with iPhone Dual Dock) MB536AM (without iPhone Dual Dock)	MMEF2AM	MV7N2AM (Lightning case) MRXJ2AM (Wireless case)	MWP22AM	MGYJ3AM (Silver) MGYH3AM (Space Gray) MGYL3AM (Sky Blue) MGYM3AM (Pink) MGYN3AM (Green)	MME73AM	MQD83AM
Compatibility		Bluetooth 2.0	iPhone, iPad, and iPod touch models with iOS 10 or later, Apple Watch models with watchOS 3 or later, and Mac models with macOS Sierra or later. [46]	Devices running iOS 12.2 or later, macOS Mojave 10.14.4 or later, and watchOS 5.2 or later. [47]	Devices that support Bluetooth, including Android and Windows devices, although certain features such as Siri require an Apple device running iOS 13.2, watchOS 6.1, tvOS 13.2, and macOS Catalina 10.15.1	Devices that support Bluetooth, including Android and Windows devices, although certain features such as Siri require an Apple device running iOS 14.3, iPadOS 14.3, watchOS 7.2, tvOS 14 or macOS Big Sur. [48]	Devices running iOS 15.1 or later, iPadOS 15.1 or later, macOS Monterey 12.0 or later, and watchOS 8.1 or later. [49]	Devices running iOS 15.1 or later, iPadOS 15.1 or later, macOS Monterey 12.0 or later, and watchOS 8.1 or later. [50]
<u>System on a chip</u>		None	<u>Apple W1 chip</u>	<u>Apple H1 chip</u> (343500289, 343500290)	<u>Apple H1 chip</u>	<u>Apple H1 chip</u> (343500404)	<u>Apple H1 chip</u>	<u>Apple H2 chip</u>
Battery	Battery strength	[data unknown/missing]	1.52-watt-hour (Case) 0.093-watt-hour (each AirPods)		1.98-watt-hour (Case) 0.16-watt-hour (each AirPods)	2 x 2.53-watt-hour rechargeable lithium-ion	1.33-watt-hour (Case) 0.133-watt-hour	1.997-watt-hour (Case)

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						(right ear cup)	(each AirPods)	
	Battery capacity	No case	398 mAh (Case)		519 mAh (Case)	664 mAh (right ear cup)	345 mAh (Case)	523 mAh (Case)
Firmware	Original release	Not upgradable	3.3.1	6.3.2	2B584	3C16	3E751	5A374
	Latest / Final		6.8.8	5E135				

Sales

Analysts estimate Apple sold between 14 million and 16 million AirPods in 2017.^[51] In 2018, AirPods were Apple's most popular accessory product, with 35 million units sold.^{[52][53]} 60 million units were sold in 2019.^[54] Analysts estimate AirPods make up 60% of the global wireless headphone market and that Apple's entire Wearables products (Apple Watch, AirPods, and AirPods Pro) “is now bigger than 60% of the companies in the Fortune 500”.^{[55][56][54]} An estimated 5-7% of Apple's revenue from AirPods comes from replacement earbuds and cases.^[57] Analysts estimate Apple sold 120 million or so pairs in 2021.^[58]

Cultural impact

On announcement day, AirPods were compared to Apple's previously existing EarPods (2012–present), with *The Verge* noting "They look... just like the old EarPods, with the wires cut off."^[59] Initially mocked by many for their unfamiliar design (including CNN asking "Would people actually wear these?" in 2016),^[60] their popularity grew rapidly over the years and they were voted the most popular "hearable" brand of 2019.^[5]

At an Apple earnings call in 2019, CEO Tim Cook called AirPods "nothing less than a cultural phenomenon".^[61] AirPods had become a viral sensation with memes circulating across the internet about its appearance and its relation to the removal of the headphone jack in iPhones.^[62] However, as time wore on, AirPods became known as a status symbol.^{[58][63][64]}

Criticism

AirPods have been criticized for their high price; however, at launch they were actually priced less than most "true wireless" earbuds on the market (e.g. the Samsung Gear IconX and Bragi Dash) and remain competitively priced with similar products from other major brands.^{[65][66][67]}

Since AirPods can easily be worn for long periods of time, AirPods have also had an effect on how people interact with each other. Having earphones in is generally perceived as a "do not disturb" signal, and some AirPods users use this fact to strategically avoid awkward small talk.^[68] But in the collaborative workplace, constant use of AirPods has sometimes been interpreted as a sign of disrespect to fellow co-workers, causing conflict in the office.^[69]

Another prominent criticism was a problem that caused the charging case battery to deplete at a rapid rate despite the AirPods not being used. Users were reporting upwards of 30% idle discharge per day.^[70] In response, Apple released a firmware update (version 3.5.1) for the AirPods, which addressed connectivity and battery drain problems.^[71] Students and college professors from the George Washington University have commented that AirPods have decreased students' daily social interactions.^[72]

According to the *Financial Times*, AirPods are difficult if not impossible to recycle, and not designed to be repairable.^[73]

Replacement for hearing aids

In 2022, researchers at the Taipei Veterans General Hospital in Taiwan compared the performance of AirPods 2 and the original AirPods Pro using Live Listen on an iPhone or iPad to compare to medical hearing aids. Oticon Opn 1 was the high-end comparison, with Bernafon MD1 as the more affordable alternative. The performance of

the systems were at least assisting participants with Pro (including noise cancelling features) being better and approximating the hearing aids.^[74]

Competition

Some consumers expressed the viewpoint that there were better options for wireless earphones based on quality and cost.^{[75][76]} One of Apple's biggest competitors is Samsung, which markets wireless earbuds that are very similar to AirPods.^[77] Another similar product line is from Apple's Beats Electronics, which sells products such as the Powerbeats Pro wireless earbuds.^[78]

See also

- Apple headphones
 - EarPods
 - AirPods Pro
 - AirPods Max
- Pixel Buds
- Hearables
- Powerbeats Pro

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