

Atmel

Atmel Corporation



Former type	Subsidiary
ISIN	US0495131049
Industry	Semiconductors
Fate	Acquired by Microchip Technology
Founded	1984
Defunct	2016
Headquarters	San Jose, California , United States
Products	Microcontrollers Flash memory Touchscreen controllers Touch sensors Wireless/RF transceivers
Revenue	▼ US\$1.17B (FY 2015) ^[1]
Operating income	▲ US\$136M (FY 2015) ^[1]
Net income	▲ US\$26M (FY 2015) ^[1]
Total assets	▼ US\$1.26B (FY 2015) ^[1]
Total equity	▼ US\$876M (FY 2015) ^[1]
Number of employees	4700
Website	www.microchip.com

Atmel Corporation was a designer and manufacturer of [semiconductors](#) before being acquired by [Microchip Technology](#) in 2016. It was founded in 1984. The company focuses on embedded systems built around [microcontrollers](#). Its products include microcontrollers ([8-bit AVR](#), [32-bit AVR](#), 32-bit [ARM](#)-based, automotive grade, and 8-bit [Intel 8051](#) derivatives) radio frequency (RF) devices including [Wi-Fi](#), [EEPROM](#), and [flash memory](#) devices, symmetric and asymmetric security chips, touch sensors and controllers, and application-specific products. Atmel supplies its devices as standard products, [application-specific integrated circuits](#) (ASICs), or application-specific standard product (ASSPs) depending on the requirements of its customers.

Atmel serves applications including [consumer](#), [communications](#), [computer networking](#), [industrial](#), [medical](#), [automotive](#), [aerospace](#) and [military](#). It specializes in microcontroller and touch systems, especially for [embedded systems](#).

Atmel's corporate headquarters is in [San Jose, California](#), in the [North San Jose Innovation District](#). Other locations include [Trondheim, Norway](#); [Colorado Springs, Colorado](#); [Chennai, India](#); [Shanghai, China](#); [Taipei, Taiwan](#); [Rousset, France](#); [Nantes, France](#); [Patras, Greece](#); [Heilbronn, Germany](#); [Munich, Germany](#); [Whiteley, United Kingdom](#); [Cairo, Egypt](#). Atmel makes much of its product line at vendor fabrication facilities. It owns a facility in [Colorado Springs, Colorado](#) that manufactures its XSense line of flexible touch sensors.

In 2016, [Microchip](#) agreed to buy Atmel for US\$3.6 (equivalent to \$3.84 in 2019) billion in a deal brokered by [JPMorgan Chase](#) and [Qatalyst](#).^{[2][3]}

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History



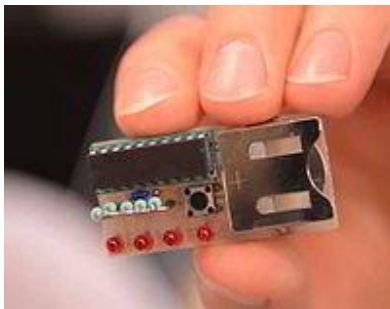
Logo from 1984 to 2012

Founding and 1980s growth

Atmel Corporation was founded in 1984, by George Perlegos.^[4] Atmel was an acronym for “advanced technology for memory and logic”. Perlegos had worked in the memory group of [Intel](#) in the 1970s and had co-founded [Seeq Technology](#) to manufacture [EPROM](#) memory. Using only US\$30,000 in capital, Atmel was initially operated as a fabless company, using [Sanyo](#) and [General Instrument](#) to make the chip wafers.^[5] The first Atmel memory products used less power than competitors. Customers included [Motorola](#), [Nokia](#), and [Ericsson](#). In 1987, Intel sued Atmel for patent infringement.^[6] Rather than fight the patent claim, Atmel redesigned its products to use different intellectual property. These had better performance and even lower power consumption. In addition, Atmel then entered the [flash memory](#) business that Intel had focused on. Atmel used US\$60 million in venture capital for the 1989 purchase of a fabrication facility from [Honeywell](#) in Colorado Springs.^[6] Atmel then invested another US\$30 million in manufacturing technology.

1990s expansion

The first Atmel AVR prototype demo board



Front side



Back side

In 1991, Atmel expanded the Colorado facility after acquiring Concurrent Logic, a [field-programmable gate array](#) (FPGA) manufacturer. The company made its [initial public offering](#) (IPO) in 1991 which yielded more than US\$65 million. 1994 saw Atmel enter the microprocessor market. The first Atmel flash memory microcontroller was based on the [Intel 8051](#).^[7] The controller executed an instruction for every clock cycle, as opposed to the 12 cycles that legacy 8051 parts required.^[8] In 1994, Atmel purchased the EEROM assets of Seeq

Technology ([LSI Corporation](#) acquired the rest of Seeq in 1999) . In 1995, Atmel was among the first companies to license the [ARM architecture](#), creating initially its AT91 family of devices, followed by the SAM family, and more recently a full selection of Cortex-based solutions, including ones based on the ultra-low-power [ARM Cortex-M4](#).^[9] Atmel now has dozens of families of ARM-based devices. In 1995, Atmel acquired the pan-European chipmaker European Silicon Structures (ES2) and thus gained a fabrication facility in [Rousset](#), France. Atmel built a new fab alongside the existing ES2 fab. This business unit was named Atmel-ES2. Atmel acquired Digital Research in Electronic Acoustics and Music (DREAM) in 1996. Atmel formed a design team in [Trondheim, Norway](#) to develop the [Atmel AVR](#) line of [RISC](#) microcontrollers. This team combined technology of former students at the [Norwegian University of Science and Technology](#) with Atmel's expertise in flash memory. These 8-bit [Harvard architecture](#) chips were first developed in 1996. The AVR chip is the basis of most [Arduino open-source](#) development boards. In 1998, Atmel purchased part of TEMIC from [Vishay Intertechnology](#), which provided them with a fab in Germany as well as part of MHS from Vishay that gave them a fab in [Nantes, France](#).^[10]

In September 2000, Atmel acquired a fabrication plant in [North Tyneside, England](#), from [Siemens](#), via a £28 million grant from the UK government and paying Siemens around US\$35 million.^[11]

Streamlining

Atmel streamlined operations with a strategy called "fab-lite". This started in 2005 when Atmel sold the MHS fab in Nantes France to Xbybus. In February 2006, Steven Laub became a director and in August president and chief executive officer.^[12] Under Laub Atmel divested more manufacturing plants and business lines.^[13] Atmel announced the sale of its North Tyneside facility (Fab9) on October 8, 2007. The manufacturing equipment was sold to Taiwan Semiconductor Manufacturing Company, Ltd. ([TSMC](#)) and the property and associated land to Highbridge Business Park Limited. In 2008, Atmel sold their fab in Germany to Tejas semiconductor. In 2010, Atmel received approval from the French government to sell its fab to Germany-based LFoundry GmbH, while retaining their design center there.^[14] Atmel completed the sale of their Secure Microcontroller Solutions smart card business to INSIDE Secure. In February 2011, Atmel sold its Digital Research in Electronics, Acoustics and Music (DREAM) business, which sold products for karaoke and other entertainment machines, for US\$2.3 million. Atmel's [DataFlash](#) serial interface flash memory products were sold to [Adesto Technologies](#) in October 2012.^[15]

Acquisitions



Atmel corporate headquarters in San Jose California

As Atmel divested several fabs and ancillary business lines, Laub also oversaw acquisitions. One strategy was to participate in the touch screen market, both in the semiconductor chips and the sensors themselves. In 2008, Atmel bought [Queens Award winning](#) Quantum Research Group Ltd. (now known as Atmel Technologies Ireland Limited, a wholly owned subsidiary), a supplier of capacitive sensing technology.^[16] Work done at Quantum, led to the 2012 release of Atmel's XSense product line, a flexible touch screen based on copper mesh electrodes.^[17]

Atmel moved into [Internet of things](#) technology. They completed the acquisition of Advanced Digital Design S.A, a Spanish company that develops [power line communication](#). Ozmo Devices, which developed products for [Wi-Fi Direct](#), was acquired by Atmel in December 2012. Ozmo was founded in 2004 as H-Stream Wireless by Kateljin Vleugels and Roel Peeters, and was based in [Palo Alto](#), California.^[18]

In 2012, Atmel had approximately US\$1.4 billion in annual revenue, with over 60% of their revenue from microcontrollers, and net income of US\$30 million.^[12]

Atmel purchased the [smart metering](#) product lines of [IDT Corporation](#) in March 2013.^[19]

Atmel purchased Newport Media in July 2014. This will provide Atmel further capability in wireless Bluetooth and Wi-Fi.^[20]

Acquisition by Microchip Technology

In October 2008, Atmel received an unsolicited offer from [Microchip Technology](#) and [ON Semiconductor](#), estimated at US\$2.3 billion.^{[21][22]} The offer was eventually rejected and the companies gave up on their [hostile takeover](#) attempt.^{[23][24]}

However, in 2016, [Microchip](#) agreed to buy Atmel for \$3.6 billion.^{[2][3]} [JPMorgan Chase](#) and [Qatalyst Partners](#) served as financial advisers to Microchip and Atmel, respectively. The company had previously heard offers from [Cypress Semiconductor](#) and [Dialog Semiconductor](#) in 2015,^{[25][26]} and the deal with Microchip was expected to be finalized at the end of Q2 2016.^[27]

Atmel finally merged with [Microchip Technology](#) on July 2016 after prolonged negotiations for US\$3.56 billion.^{[28][29]}

The end of Atmel Way

Apple Computer purchased the old cul-de-sac where Atmel's HQ office sat. Paperwork was filed with the city of San Jose to change the name from "Atmel Way" to "Orchard Place."^[30]

Products

Microcontrollers



Atmel AT90S2333 microcontroller



Atmel ATMEGA32 microcontroller

A large part of Atmel's revenue is from microcontrollers. These include the [AVR](#) 8- and 32-bit microcontrollers, [ARM architecture](#) microprocessors, and ARM-based flash microcontrollers. In addition Atmel still makes microcontrollers that use the [8051](#) architecture, albeit improved to do single-cycle instructions. Supporting the microcontrollers is the Atmel Studio 7 [integrated development environment](#) which Atmel offers for free. They also provide an Atmel Software Framework.^[31]

Wireless / RF

To provide for the [Internet of Things](#) (IoT), Atmel offers dual-band 2.4 GHz/5 GHz a/b/g Wi-Fi chips from its Ozmo acquisition. Also, Atmel offers 2.4 GHz b/g/n Wi-Fi chips WILC1000/WILC3000 and WINC1500 from its Newport Media, Inc acquisition. WINC1500 provide a full 802.11 b/g/n network controller with full ip stack TCP/IP, UDP with upper layer protocols as DHCP, DNS, HTTP, SNMP, TLS etc. Also, Atmel makes wireless transceivers using regional 700/800/900 MHz, as well as global 2.4 GHz frequency bands, Some chips are standalone transceivers while others are integrated with a microcontroller. They also sell the Zigbit module that comes with FCC certifications. Atmel also makes remote control RF products using the license-free [ISM band](#) (industrial scientific medical) frequencies (5.8 GHz, 2.4 GHz, 868 to 928 MHz, 433 MHz, and 315 MHz). The wireless segment also provides [RFID](#) chips for tracking, access and identification. Finally, Atmel offers a line of IR controllers that can support infrared as well as RF wireless.^[citation needed]

Touchscreen



Atmel XSense is a flexible touchscreen film that uses a copper mesh instead of indium tin oxide (ITO).

Atmel makes both touchscreen controller ICs and its XSense flexible touchscreen.^[17] The company makes sensor hubs that manage accelerometers, gyroscopes, [inertial measurement units](#) and magnetometers. These sensors give consumer products and embedded systems [context awareness](#). The sensor hub offloads the main application processor and allows product functionality without the need to power the main processor. Atmel also makes simple touch controller chips for buttons, sliders, and wheels used on industrial and consumer products. The touch wheel interface became popularized by the Apple [iPod](#). To support the application of its touch controller chips, Atmel provides a free QTouch library of software routines.^[citation needed]

Memory

Atmel's original business was in memory, and it still sells several memory products. It offers serial and parallel EEPROM, as well as one-time programmable (OTP) EPROM. In addition, it offers secure memory with its CryptoMemory product line of EEPROMS in capacities from 1 to 256 kbits.^[citation needed]

Security

In addition to the secure memory mentioned above, they have the CryptoAuthentication product lines that provide hardware authentication capability with both symmetric and [asymmetric-key algorithm](#) authentication. These ICs are used in many applications, including secure access, communications, control, and to prevent cloned products like batteries or ink cartridges not approved by the product manufacturer. Atmel's CryptoRF products add hardware encrypted security to RFID applications. Finally Atmel offers a trusted platform module that gives strong hardware-based public key ([RSA algorithm](#)) security for both personal computers and embedded processors on a single chip.^[citation needed]

Analog

Atmel makes [LED](#) driver chips. It also has a line of digital-output temperature sensors. The company also makes power management and analog companions (PMAAC) that combine a group of discrete ICs often used in handheld or battery-powered products. Integrated functions

include audio [codecs](#) (compressor-decompressor), [lithium-ion](#) battery chargers, and stereo [digital-to-analog converters](#).^{[[citation needed](#)]}

Custom

These products include custom integrated circuits designed to meet specialized single-customer requirements. Products include [FPGAs](#), products with military and aerospace applications, and application-specific standard products (ASSP) for space applications, power management, and secure cryptographic memory products.^{[[citation needed](#)]}

Automotive

Atmel modified or specialized many of its products for the automotive market. These products often have a wider temperature range or are specially qualified for automotive applications. These products include car access, touch control, radio, CAN, VAN, and LIN Bus networking, battery management, high-temperature drivers, and serial EEPROMs.^{[[citation needed](#)]}

Smart energy

Atmel also has chips specialized for the smart energy and smart metering markets. These chips combine microprocessors with tamper-proof hardware security and power line communication modems. The parts also integrate [analog front-ends](#) for accurate metrology.^{[[citation needed](#)]}