Actel

Actel Corporation

ISIN	US0049341052
Industry	Integrated Circuits
Successor	Microsemi
Founded	1985
Headquarters	San Jose, California, United States
Products	FPGAs, Embedded Processors
Revenue	▲US$191 Million (*FY 2009*)[1]
Operating income	▼US$-21.3 Million (*FY 2009*)[1]
Net income	▼US$-46.2 Million (*FY 2009*)[1]
Total assets	▼US$307 Million (*FY 2009*)[2]
Total equity	▼US$233 Million (*FY 2009*)[2]
Number of employees	500+[3]
Parent	Microsemi
Website	www.actel.com www.microsemi.com

Actel Corporation (formerly NASDAQ:ACTL) (now Microsemi) was an American manufacturer of nonvolatile, low-power field-programmable gate arrays (FPGAs),[4] mixed-signal FPGAs,[5] and programmable logic solutions.[6][7][8] It was headquartered in Mountain View, California, with offices worldwide.

Actel Corporation has been acquired by Microsemi.

Contents

History and competition

Actel was founded in 1985 and became known for its high-reliability and antifuse-based FPGAs, used in the military and aerospace markets.[9]

In 2000, Actel acquired GateField which expanded Actel's antifuse FPGA offering to include flash-based FPGAs. In 2004, Actel announced it had shipped the one-millionth unit of its flash-based ProASIC^{PLUS} FPGA.[10]

In 2005, Actel introduced a new technology known as Fusion to bring FPGA programmability to mixed-signal solutions. Fusion was the first technology to integrate mixed-signal analog capabilities with flash memory and FPGA fabric in a monolithic device.[11]

In 2006, to address the tight power budgets of the portable market, Actel introduced the IGLOO FPGA. The IGLOO family of FPGAs was based on Actel's nonvolatile flash technology and the ProASIC 3 FPGA architecture.[12] Two new IGLOO derivatives were added in 2008: IGLOO PLUS FPGAs with enhanced I/O capabilities, and IGLOO nano FPGAs, a low power solution at 2 µW. A nano version of ProASIC3 also became available in 2008.

In 2010, Actel introduced the SmartFusion line of FPGAs. SmartFusion includes both analog components and a programmable flash-based logic fabric within the same chip. SmartFusion was the first FPGA product to additionally include a hard ARM processor core.[13]

Altera and Xilinx are the other key players in the market, however their main focus is on SRAM FPGAs. Lattice Semiconductor is another competitor.[14][15]

In November 2010, Actel Corporation was acquired by Microsemi.[16][17][18]

Technologies

Actel's portfolio of FPGAs is based on two types of technologies: antifuse-based FPGAs (Axcelerator, SX-A, eX, and MX families) and flash-based FPGAs (Fusion, PolarFire, IGLOO, and ProASIC3 families).

Actel's antifuse FPGAs have been known for their nonvolatility, live at power-up operation[citation needed], single-chip form factor[clarification needed][citation needed], and security[citation needed]. Actel's flash-based FPGA families include these same characteristics[citation needed] and are also reprogrammable and low power.[citation needed]

Actel also develops system-critical FPGAs (RTAX and ProASIC3 families), including extended temperature automotive, military, and aerospace FPGAs, plus a wide variety of space-class

radiation-tolerant devices. These flash and antifuse FPGAs have high levels of reliability[*citation needed*] and firm-error immunity[*clarification needed*][*citation needed*].

Controversy

In March 2012, researchers from Cambridge University discovered that a backdoor exists in the JTAG interface of the ProASIC3 family of low-powered FPGAs.[19] They defended their theory at a cryptography workshop held in Belgium in September 2012.[20]