SECURITIES AND EXCHANGE COMMISSION

Washington, D.C. 20549

Schedule 13D/A

Under the Securities Exchange Act of 1934

(Amendment No. 2)

Simtek Corporation

(Name of Issuer)

Common Stock, par value \$0.01 per share

(Title of Class of Securities)

829204106

(CUSIP Number)

Cypress Semiconductor Corporation

198 Champion Court

San Jose, CA 95134-1599

Attn: Chief Financial Officer

(408) 943-2600

(Name, Address and Telephone Number of Person

Authorized to Receive Notices and Communications)

April 9, 2008

(Date of Event which Requires Filing of this Statement)

If the filing person has previously filed a statement on Schedule 13G to report the acquisition that is the subject of this Schedule 13D, and is filing this schedule because of Rule 13d-1(e), Rule 13d-1(f) or Rule 13d-1(g), check the following box.

CUSIP No. 829204106

1.	NAMES OF REPORTING PERSON/					
	I.R.S. IDENTIF	FICAT	TION NO. OF ABOVE PERSON (entities only).			
2.			ductor Corporation OPRIATE BOX IF A MEMBER OF A GROUP (See Instructions)			
	(a) "					
3.	(b) " SEC USE ONL	Υ				
4.	SOURCE OF F	UND	S (See Instructions)			
5.	WC 5. CHECK IF DISCLOSURE OF LEGAL PROCEEDINGS IS REQUIRED PURSUANT TO ITEMS 2(d) or 2(e)					
6.	6. CITIZENSHIP OR PLACE OF ORGANIZATION					
	Delaware	7.	SOLE VOTING POWER			
NUMBER OF						
	SHARES	8.	3,179,644 SHARED VOTING POWER			
BE	NEFICIALLY					
C	OWNED BY		0			
	EACH	9.	SOLE DISPOSITIVE POWER			
R	EPORTING					
	PERSON	10	3,179,644 SHARED DISPOSITIVE POWER			
	WITH	10.	SHARED DISH USHTIVE I OWER			

11	∆GGREG∆TE	AMOUNT RENEFICIALLY	OWNED BY EACH REPORTING PERSON
11.	AUUKLUAIL	AMOUNT DIMERCIALLY	OWNED DI LACII KLI OKTING I LKSON

3,179,644

- 12. CHECK BOX IF THE AGGREGATE AMOUNT IN ROW (11) EXCLUDES CERTAIN SHARES (See Instructions)
- 13. PERCENT OF CLASS REPRESENTED BY AMOUNT IN ROW (11)

19.2%*

14. TYPE OF REPORTING PERSON (SEE INSTRUCTIONS)

CO

* Based on 16,532,719 shares of common stock outstanding as of March 24, 2008 as reported in Simtek s Annual Report on Form 10-K for the year ended December 31, 2007.

This Amendment No. 2 amends the Schedule 13D originally filed on May 18, 2005 on behalf of Cypress Semiconductor Corporation, a Delaware corporation (Cypress).

Item 1. Security and Issuer

This Amendment No. 2 to Schedule 13D relates to the common stock (the Common Stock) of Simtek Corporation, a Delaware corporation (Issuer), with its principal executive offices located at 4250 Buckingham Drive, Suite 100, Colorado Springs, CO 80907.

Item 2. **Identity and Background**

Cypress designs, develops, manufactures and markets a broad line of high-performance digital and mixed-signal integrated circuits for a broad range of markets including networking, wireless infrastructure and handsets, computation, consumer, automotive, and industrial. Cypress principal executive offices are located at 198 Champion Court, San Jose, CA, 95134-1599.

Set forth below is the name, position and present principal occupation of each director and executive officer of Cypress. Except as otherwise indicated, the business address of each such person is 198 Champion Court, San Jose, CA, 95134-1599, and each such person is a citizen of the United States.

Directors

Name **Principal Occupation**

T.J. Rodgers President and Chief Executive Officer of Cypress Eric A. Benhamou Chairman of the Board of Cypress, 3Com Corporation and Palm,

James R. Long Former Executive Vice President of Nortel

W. Steve Albrecht Associate Dean and Andersen Alumni Professor of Accounting at the Marriot School of Management at Brigham Young University Chairman of the Board of ON Semiconductor and Virage Logic J. Daniel McCranie

Lloyd Carney Chief Executive Officer, Carney Global Ventures Evert van de Ven

Former Executive Vice President and Chief Technical Officer of

Novellus Systems

Executive Officers

Title Name

President, Chief Executive Officer and Director T. J. Rodgers Executive Vice President, Finance and Administration and Chief Brad W. Buss

Financial Officer Ahmad R. Chatila Executive Vice President, Memory and Imaging Division

Sabbas A. Daniel Executive Vice President, Quality

Paul D. Keswick Executive Vice President, New Product Development Executive Vice President, Data Communications Division Dinesh Ramanathan Christopher A. Seams Executive Vice President, Sales and Marketing and Operations

Shahin Sharifzadeh Executive Vice President, Manufacturing and Research and Development

Norman P. Taffe Executive Vice President, Consumer and Computation Division Thomas H. Werner Chief Executive Officer, SunPower

Hal Zarem Chief Executive Officer, Silicon Light Machines

Neither Cypress nor any of its directors or executive officers has, during the last five years, been convicted in a criminal proceeding (excluding traffic violations or similar misdemeanors).

Neither Cypress nor any of its directors or executive officers has, during the last five years, been a party to a civil proceeding of a judicial or administrative body of competent jurisdiction and as a result of such proceeding was or is subject to a judgment, decree or final order enjoining future violations of, or prohibiting or mandating activities subject to, federal or state securities laws or finding any violation with respect to such laws.

Item 3. Source and Amount of Funds

On May 5, 2005, Cypress purchased 6,740,816 shares of Common Stock for \$4,000,000 and was issued a warrant giving Cypress the right to acquire an additional 5,055,612 shares of Common Stock (the 2005 Warrant). On October 5, 2006, Issuer completed a one-for-ten reverse stock split. Following the reverse stock split, Cypress owned or had the right to acquire 1,179,644 shares of Common Stock.

On March 24, 2006, Cypress and Issuer entered into a License and Development Agreement (the License and Development Agreement) pursuant to which, among other things, Cypress agreed to license certain intellectual property from Issuer and to pay to Issuer \$4,000,000 in non-refundable pre-paid royalties. As part of the License and Development Agreement, Issuer agreed to issue Cypress warrants to purchase 2,000,000 shares of Common Stock, of which warrants to purchase 1,000,000 shares of Common Stock were issued on March 24, 2006, warrants to purchase 500,000 shares of Common Stock were issued on June 30, 2006 and warrants to purchase 500,000 shares of Common Stock were issued on December 18, 2006 (collectively the 2006 Warrants, and together with the 2005 Warrant, the Warrants).

Cypress funded these transactions with its working capital. Any additional funds required to acquire additional shares of Common Stock or otherwise purchase additional ownership interests in Issuer are expected to also come from Cypress working capital.

Item 4. Purpose of the Transaction

Cypress original purchase of the Common Stock and the Warrants was part of a joint product development relationship between Cypress and Issuer.

Cypress intends, at any time or from time to time, to monitor and assess its investment in Issuer including assessing (i) relevant business developments, competitive and strategic matters and prevailing industry and market conditions, (ii) the value and price of the Common Stock, (iii) the financial condition, operations, prospects, capital structure and management of Issuer, and (iv) other factors which Cypress, in its sole determination, believes may create the opportunity and/or desirability to alter the relationship between Cypress and Issuer. On the basis of such assessments (or such other factors as Cypress, in its sole discretion, deems appropriate), Cypress may at any time and from time to time take such actions with respect to its investment in Issuer as it deems appropriate, including, without limitation, (i) purchasing additional Common Stock or other securities of Issuer, (ii) selling some or all of any securities of Issuer held by Cypress, (iii) proposing a transaction that would result in a merger, reorganization, liquidation or change of control of Issuer or a sale or transfer of assets of Issuer to Cypress or otherwise (including, in connection therewith, causing the securities of Issuer to be delisted or ceased to be authorized to be quoted on applicable securities exchanges or inter-dealer quotation systems and/or becoming eligible for termination of registration pursuant to Section 12(g)(4) of the Securities Exchange Act of 1934, as amended), (iv) proposing changes to the present board of directors or management of Issuer, or (v) otherwise changing its intention with respect to any of the matters referenced in this Item 4. In this regard, on February 4, 2008, Cypress determined to explore a potential acquisition of Issuer or substantially all of its outstanding equity securities and contacted representatives of Issuer to discuss such a transaction. On April 9, 2008, Cypress delivered a letter to Issuer offering to acquire all outstanding shares of Common Stock of Issuer for a cash purchase price of \$2.20 per share on a fully diluted basis (the Offer Letter). Such letter and ensuing discussions could result in a transaction in which Cypress obtains control of Issuer through a merger, acquisition of stock or otherwise or could result in a purchase of a division or business of Issuer. However, there can be no assurance that any transaction will occur.

Item 5. Interest in Securities of the Issuer

- (a) As of the date of this Amendment No. 2 to Schedule 13D, Cypress beneficially owns 3,179,644 shares of Common Stock of which Cypress owns 647,082 shares outright and has the right to acquire 2,505,562 shares upon exercise of the Warrants. These shares represent approximately 19.2% of the shares of Common Stock issued and outstanding based on 16,532,719 shares of Common Stock outstanding as reported by Issuer.
- (b) Cypress has the sole power to vote or to direct the vote and to dispose or to direct the disposition of all of the shares reported herein.
- (c) Cypress has not effected any transactions in the Common Stock during the past sixty days.
- (d) No person (other than Cypress) is known to have the right to receive or the power to direct the receipt of dividends from, or the proceeds from the sale of, the Common Stock.
- (e) Not applicable.

Item 6. Contracts, Arrangements, Understandings or Relationships with Respect to Securities of the Issuer

As disclosed above, Issuer issued the Warrants to Cypress, which gives Cypress the right to acquire up to an additional 2,505,561 shares of Common Stock. Also as disclosed above, the Issuer and Cypress are parties to the License and Development Agreement, pursuant to which Issuer agreed to issue the 2006 Warrants to Cypress. In addition, Cypress and Issuer are parties to a Registration Rights Agreement, dated May 4, 2005, pursuant to which Issuer granted Cypress certain registration rights to facilitate the transfer of the Common Stock owned by Cypress.

Item 7. Material to Be Filed as Exhibits

Exhibit A	Share Purchase Agreement, dated May 4, 2005, between Cypress and Simtek (incorporated by reference to Exhibit A to Cypress Schedule 13D, as filed with the Securities and Exchange Commission on May 15, 2005)
Exhibit B	2005 Warrant (incorporated by reference to Exhibit B to Cypress Schedule 13D, as filed with the Securities and Exchange Commission on May 15, 2005)
Exhibit C	Registration Rights Agreement, dated May 4, 2005, between Cypress and Simtek (incorporated by reference to Exhibit C to Cypress Schedule 13D, as filed with the Securities and Exchange Commission on May 15, 2005)
Exhibit D	License and Development Agreement, dated March 24, 2006, between Cypress and Simtek (incorporated by reference to Exhibit 10.1 to Simtek s Current Report on Form 8-K, as filed with the Securities and Exchange Commission on March 30, 2006)
Exhibit E	2006 Warrants (incorporated by reference to Exhibit 10.1 to Simtek s Current Report on Form 8-K, as filed with the Securities and Exchange Commission on March 30, 2006)
Exhibit F	Offer Letter

SIGNATURES

After reasonable inquiry and to the best of my knowledge and belief, I certify that the information set forth in this statement is true, complete and correct.

Date: April 11, 2008

Cypress Semiconductor Corporation

By: /s/ Brad W. Buss Name: Brad W. Buss

Title: Executive Vice President, Finance and

Administration and Chief Financial Officer

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