
**UNITED STATES
SECURITIES AND EXCHANGE COMMISSION**
Washington, D.C. 20549

FORM 11-K

(Mark One):

- ANNUAL REPORT PURSUANT TO SECTION 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934.**

For the fiscal year ended December 31, 2004

OR

- TRANSITION REPORT PURSUANT TO SECTION 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934.**

For the transition period from _____ to _____

Commission file number 0-24612

- A. Full title of the plan and the address of the plan, if different from that of the issuer named below:

ADTRAN, INC. 401(k) RETIREMENT PLAN

- B. Name of issuer of the securities held pursuant to the plan and the address of its principal executive office:

ADTRAN, INC.
901 Explorer Boulevard
Huntsville, Alabama 35806-2807

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REQUIRED INFORMATION

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Exhibit

<u>Designation</u>	<u>Description</u>	<u>Method of Filing</u>
Exhibit 23	Consent of PricewaterhouseCoopers LLP	Filed with this Report

SIGNATURE

Pursuant to the requirements of the Securities Exchange Act of 1934, the trustees (or other persons who administer the employee benefit plan) have duly caused this Annual Report to be signed on its behalf by the undersigned hereunto duly authorized.

ADTRAN, INC 401(k) RETIREMENT PLAN

By: /s/ James E. Matthews

James E. Matthews
Senior Vice President – Finance and
Chief Financial Officer

Date: June 27, 2005

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EXHIBIT INDEX

<u>Designation</u>	<u>Description</u>
Exhibit 23	Consent of PricewaterhouseCoopers LLP

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ADTRAN, Inc. 401(k) Retirement Plan Contents December 31, 2004 and 2003

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Note: Other schedules required by 29 CFR 2520.103-10 of the Department of Labor's Rules and Regulations for Disclosure under the Employee Retirement Income Security Act of 1974 have been omitted because they are not applicable.

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Report of Independent Registered Public Accounting Firm

To the Participants and Administrator of the
ADTRAN, Inc. 401(k) Retirement Plan

In our opinion, the accompanying statements of net assets available for plan benefits and the related statement of changes in net assets available for plan benefits present fairly, in all material respects, the net assets available for plan benefits of the ADTRAN, Inc. 401(k) Retirement Plan (the "Plan") at December 31, 2004 and 2003, and the changes in net assets available for plan benefits for the year ended December 31, 2004 in conformity with accounting principles generally accepted in the United States of America. These financial statements are the responsibility of the Plan's management. Our responsibility is to express an opinion on these financial statements based on our audits. We conducted our audits of these statements in accordance with the standards of the Public Company Accounting Oversight Board (United States). Those standards require that we plan and perform the audit to obtain reasonable assurance about whether the financial statements are free of material misstatement. An audit includes examining, on a test basis, evidence supporting the amounts and disclosures in the financial statements, assessing the accounting principles used and significant estimates made by management, and evaluating the overall financial statement presentation. We believe that our audits provide a reasonable basis for our opinion.

Our audits were conducted for the purpose of forming an opinion on the basic financial statements taken as a whole. The supplemental Schedule of Assets (Held at End of Year) is presented for the purpose of additional analysis and is not a required part of the basic financial statements but is supplementary information required by the Department of Labor's Rules and Regulations for Reporting and Disclosure under the Employee Retirement Income Security Act of 1974. This supplemental schedule is the responsibility of the Plan's management. The supplemental schedule has been subjected to the auditing procedures applied in the audits of the basic financial statements and, in our opinion, is fairly stated in all material respects in relation to the basic financial statements taken as a whole.

/s/ PricewaterhouseCoopers LLP

PricewaterhouseCoopers LLP
Birmingham, Alabama
June 23, 2005

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**ADTRAN, Inc. 401(k) Retirement Plan
Statements of Net Assets Available for Plan Benefits
December 31, 2004 and 2003**

	2004	2003
Assets		
Investments, at market value (note 3)	\$62,145,300	\$51,148,064
Employer contributions receivable	92,434	63,040
Employee contributions receivable	253,984	170,200
	<hr/>	<hr/>
Total assets	62,491,718	51,381,304
	<hr/>	<hr/>
Net Assets Available for Plan Benefits		
Net assets available for plan benefits	\$62,491,718	\$51,381,304
	<hr/>	<hr/>

The accompanying notes are an integral part of these financial statements.

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ADTRAN, Inc. 401(k) Retirement Plan Statement of Changes in Net Assets Available for Plan Benefits For the Year Ended December 31, 2004

Investment gain

Interest and dividend income	\$ 1,634,471
Net appreciation in market value of investments	2,784,369
	<hr/>
Total investment gain	4,418,840
	<hr/>

Contributions

Employee contributions	6,411,419
Rollover contributions	193,271
Employer contributions	2,680,718
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Total contributions	9,285,408
	<hr/>
Total additions	13,704,248
	<hr/>

Benefits payments	2,564,195
Administrative expenses	22,297
Corrective distributions	7,342
	<hr/>
Total deductions	2,593,834
	<hr/>

Net increase	11,110,414
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Net assets available for plan benefits

Beginning of year	51,381,304
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End of year	\$62,491,718
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The accompanying notes are an integral part of these financial statements.

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ADTRAN, Inc. 401(k) Retirement Plan Notes to Financial Statements For the Years Ended December 31, 2004 and 2003

1. Description of the Plan

The following description of the ADTRAN, Inc. 401(k) Retirement Plan (the “Plan”) provides only general information. Participants should refer to the Plan Document and related Adoption Agreement for a more complete description of the Plan’s provisions.

General

ADTRAN, Inc. (the “Company” and the “Employer”) formed the Plan effective January 1, 1990 to provide certain retirement benefits for its employees. ADTRAN, Inc. designs, develops, manufactures, markets, and services a broad range of high-speed network access products utilized by providers of telecommunications services and corporate end-users to implement advanced digital services over public and private networks. The Plan is a defined contribution plan subject to the provisions set forth in the Employee Retirement Income Security Act of 1974 (“ERISA”) and the provisions of Internal Revenue Service (“IRS”) Code Sections 401(a) and 401(k). The Plan is funded by discretionary employee contributions as well as nondiscretionary employer contributions. The plan assets are held by Fidelity Management Trust Company (“Fidelity”) which executes investment transactions, receives the plan contributions, credits participants’ individual accounts and pays benefits to participants and their beneficiaries in accordance with the provisions of the Plan. The Plan was amended, effective July 1, 1997, to allow the Company’s common stock to be purchased by the Plan.

Effective January 1, 2001, the Company’s Board of Directors adopted various revisions to the Plan. The revisions included changing the name of the Plan to the ADTRAN, Inc. 401(k) Retirement Plan and adopting various amendments to bring the Plan into compliance with the provisions of IRS Code Section 401(k)(12)(c) as a “design-based safe harbor” plan for nondiscrimination purposes. As amended, the Plan provides that the Company will make nonelective contributions of 3% of each eligible participant’s annual compensation. In addition, the Plan no longer requires (or permits) the Company to make matching contributions for employee elective deferrals. Under the Plan as amended, there is no minimum age requirement for employees to be eligible to participate, and there is no minimum service requirement for employees to be eligible to make elective deferrals under the Plan. However, employees must complete one year of service to be eligible for the “safe harbor” contribution of 3% of their eligible compensation. As amended, the Plan permits participants to change their contribution rate as of the first payroll period of each quarter.

Effective March 1, 2001, the Plan was further amended in connection with the appointment of Fidelity as Trustee and recordkeeper of the Plan. This amendment also permitted participants to elect to receive a distribution from the Plan in the form of company stock, and the Plan’s loan provisions were modified to limit outstanding loans to two at a time.

The Plan was amended a third time during 2001. This amendment, effective December 1, 2001, excluded co-op employees hired on or after December 1, 2001 from participation in the Plan.

Effective for the plan year beginning January 1, 2002, the Plan elected to implement the “catch-up” provision provided for in Section 414 (v) of the Internal Revenue Code. This provision enables applicable employer plans to allow eligible participants who are age 50 or over to make additional deferrals, beginning in 2002.

Effective January 3, 2003, the Plan Document was restated in order to comply with the IRS deadline for GUST (G eneral Agreement on Tariffs and Trade – 1994, U niform Services Employment and Reemployment Rights Act of 1994, S mall Business Job Protection Act of 1996 and T axpayer Relief Act of 1997) adoption by prototype plans.

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ADTRAN, Inc. 401(k) Retirement Plan Notes to Financial Statements For the Years Ended December 31, 2004 and 2003

Eligibility

All regular employees are eligible to participate in the elective deferral portion of the Plan immediately upon hire, and in the safe harbor nonelective portion of the Plan following the completion of one year of service (except seasonal and co-op employees, leased employees, and nonresident aliens with no U.S.-source income).

Contributions

Effective January 1, 2003, the restated Plan allows for contributions up to 60% of a participant's eligible compensation (as defined in the Plan Document and subject to the IRS limit of \$13,000 and \$12,000 per participant in 2004 and 2003, respectively).

Under the terms of the Plan, the Company is required to make nonelective contributions of 3% of each eligible participant's compensation.

Participant Accounts

Each participant's account is credited with the employee's contribution and the Company's nonelective contribution, plus plan earnings. Allocations of earnings are based on account balances, as defined more fully in the Plan Document. Each participant directs how contributions made to the Plan on his/her behalf are to be invested among the investment options available under the Plan. The Plan currently offers twenty-one investment options including a Company stock fund. Contributions to the Company stock fund are limited to 20% of a participant's total contributions to the Plan. Allocations of Company contributions each year are based on each participant's compensation, as defined in the Plan Document. The benefit to which a participant is entitled is the benefit that can be provided from the participant's account.

Vesting

Employees are always 100% vested under the Plan.

Retirement Date

The normal retirement date is the first day of the calendar month following the date a participant reaches age 62. Early retirement is permitted after a participant reaches age 59 ¹/₂.

Distribution of Benefits

Benefits commence upon one of several dates: normal retirement, early retirement, date of disability, pre-retirement death and upon termination other than described above. Benefits are distributed by means of either a lump sum payment or partial distribution. Corrective distributions are for excess deferrals and contributions.

Other

The Plan allows for participant hardship withdrawals at any time from the pre-tax, rollover and matching portions of a participant's account if certain conditions are met. The Plan also allows for in-service withdrawals at age 59 ¹/₂ from the pre-tax, rollover and matching portions of a participant's account.

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ADTRAN, Inc. 401(k) Retirement Plan Notes to Financial Statements For the Years Ended December 31, 2004 and 2003

Participant Loans

Participants may borrow a minimum of \$1,000 from their fund accounts up to a maximum equal to the lesser of \$50,000 or 50% of their account balance. Loan transactions are treated as transfers between the investment fund and the participant loan fund. Loan terms range from one to five years unless such loan is used to acquire a principal residence, in which case the loan term can be up to ten years. The Plan's outstanding loans at December 31, 2004 are collateralized by the balances in the participants' accounts and bear interest at rates commensurate with local prevailing rates as determined quarterly by the plan administrator. Interest rates range from 5% to 10.5% for loans that were outstanding as of December 31, 2004.

Administrative Expenses

All expenses incident to the functioning of the Plan may be paid out of plan assets unless paid by the Company. On behalf of the Plan, the Company paid the Trustee \$42,466 for administrative fees incurred during the plan year ended December 31, 2004. This amount is not included in the financial statements of the Plan.

Plan Termination

While it is the intention of the Company to permanently continue the Plan, the Company has the right to amend or terminate the Plan at any time upon written notice to the plan administrator and Trustee. No amendment may permit any plan assets to revert to the Employer or be used for any purpose other than to provide benefits to participants and their beneficiaries. Upon termination of the Plan, the plan assets will be distributed to participants and their beneficiaries in accordance with the Plan and subject to IRS and ERISA guidelines.

2. Summary of Significant Accounting Policies

The following is a summary of accounting policies utilized in the financial statements which were prepared in accordance with accounting principles generally accepted in the United States of America.

Basis of Accounting

The accompanying financial statements of the Plan are maintained on the accrual basis of accounting.

Valuation of Investments

The investments are valued at market value based on quoted market prices. Quoted market prices are based on the last reported sales price on the last business day of the plan year as reported by the principal securities exchange on which the security is traded. Participant loans are valued at their outstanding balances, which approximate market value.

Purchases and sales of investments are reflected as of the trade date. Dividend and interest income is recorded when earned.

The Plan presents, in the statement of changes in net assets available for plan benefits, the net appreciation (depreciation) in the market value of its investments which consists of the realized gains or losses and the unrealized appreciation (depreciation) on those investments.

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ADTRAN, Inc. 401(k) Retirement Plan Notes to Financial Statements For the Years Ended December 31, 2004 and 2003

Contributions

Contributions from the Employer are accrued based on amounts declared by the Company. Contributions from employees are recorded in the period in which the Company makes the deductions from the participants' payroll.

Risks and Uncertainties

The Plan provides for various investment options which in turn invest in any combination of stocks, bonds and other investment securities. Investment securities are exposed to various risks such as interest rate, market and credit risks. Due to the level of risk associated with certain investment securities and the level of uncertainty related to changes in the value of investment securities, it is at least reasonably possible that changes in risks in the near term could materially affect participants' account balances and the amounts reported in the statements of net assets available for plan benefits and the statement of changes in net assets available for plan benefits.

Use of Estimates

The preparation of financial statements in conformity with accounting principles generally accepted in the United States of America requires management to make estimates and assumptions that affect the reported amounts of assets and liabilities and disclosure of contingent assets and liabilities at the date of the financial statements and the reported amounts of additions and deductions during the reporting periods. Actual results could differ from those estimates.

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ADTRAN, Inc. 401(k) Retirement Plan Notes to Financial Statements For the Years Ended December 31, 2004 and 2003

3. Investments

Investment information as of December 31, 2004 and 2003 and for the year ended December 31, 2004 is as follows:

<u>Description</u>	<u>2004</u>	<u>2003</u>
Fidelity Managed Income Portfolio Fund	\$ 4,007,071	\$ 3,549,879
Fidelity Retirement Money Market Fund	1,323,843	1,132,030
Fidelity Equity Income Fund	6,022,482	5,126,200
Fidelity Fund	5,964,419	5,579,953
MSI Small Company Growth B Fund	8,170,817	6,624,432
Fidelity Government Income Fund	2,197,199	2,200,811
Fidelity Balanced Fund	5,396,409	4,270,496
Fidelity US BD Index Fund	1,771,755	1,493,221
Fidelity Freedom 2000 Fund	1,936,786	1,506,692
Fidelity Freedom 2010 Fund	1,393,576	1,230,295
Fidelity Freedom 2020 Fund	3,254,758	2,854,519
Spartan US Equity Index Fund	3,866,678	3,167,900
Fidelity Aggressive Growth Fund	2,672,426	2,074,344
Fidelity Blue Chip Fund	1,895,854	1,543,300
Fidelity Divers International Fund	2,589,494	1,171,143
Fidelity Growth Company Fund	1,141,473	713,093
Fidelity Freedom Income Fund	50,513	23,902
Fidelity Freedom 2030 Fund	378,180	213,044
Fidelity Freedom 2040 Fund	263,890	114,058
Fidelity Freedom 2005 Fund	4,112	—
Fidelity Freedom 2015 Fund	24,830	—
Fidelity Freedom 2025 Fund	3,626	—
Fidelity Freedom 2035 Fund	17,937	—
Fidelity Low Price Stock Fund	4,252,836	2,508,060
ADTRAN Stock Fund	2,181,357	3,036,013
Participant Loans	1,362,979	1,014,679
Total investments	<u>\$62,145,300</u>	<u>\$51,148,064</u>
Interest and dividend income	<u>\$ 1,634,471</u>	
Net appreciation in market value of investments	<u>\$ 2,784,369</u>	

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ADTRAN, Inc. 401(k) Retirement Plan

Notes to Financial Statements

For the Years Ended December 31, 2004 and 2003

The following is a summary of assets held in excess of 5% of the Plan's net assets available for plan benefits at December 31, 2004 and 2003:

	<u>2004</u>	<u>2003</u>
Fidelity Managed Income Portfolio Fund	\$4,007,071	\$3,549,879
Fidelity Equity Income Fund	\$6,022,482	\$5,126,200
Fidelity Fund	\$5,964,419	\$5,579,953
MSI Small Company Growth B Fund	\$8,170,817	\$6,624,432
Fidelity Low Price Stock Fund	\$4,252,836	
Fidelity Balanced Fund	\$5,396,409	\$4,270,496
Fidelity Freedom 2020 Fund	\$3,254,758	\$2,854,519
Spartan US Equity Index Fund	\$3,866,678	\$3,167,900
ADTRAN Stock Fund		\$3,036,019

The Plan's investments (including investments bought and sold, as well as held, during the year) appreciated in value by \$2,784,369 during the year ended December 31, 2004, as follows:

Mutal funds	\$ 3,997,612
ADTRAN stock fund	(1,213,243)
	<u>\$ 2,784,369</u>

4. Related Party Transaction

The Plan allows for transactions with certain parties who may perform services or have fiduciary responsibilities to the Plan, including the Company. The Plan invests in common stock of the Company and issues loans to participants, which are secured by the balances in the participants' accounts. During the year ended December 31, 2004, the Plan purchased 21,749 units of ADTRAN, Inc. Stock Fund for \$502,176 and disposed of 5,373 units for \$125,549. Quarterly dividends of \$0.08 per share were declared and paid by the Company on various dates throughout the year. The Plan received \$31,802 in dividend payments related to the common stock of the Company for the year ended December 31, 2004. These transactions qualify as party-in-interest transactions.

5. Income Tax Status

The Plan obtained its latest determination letter on June 8, 1995 from the Internal Revenue Service stating that the Plan, as then designed, was in compliance with the applicable requirements of the IRS. Although the Plan has since been amended, the Plan administrator believes that the Plan is operating in such a manner so as not to jeopardize its favorable tax status. The IRS has ruled that the prototype standardized 401(k) plan, after which the Plan is now modeled, qualifies under Section 401(a) of the Internal Revenue Code. Accordingly, no provision for income taxes has been included in the Plan's financial statements.

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**ADTRAN, Inc. 401(k) Retirement Plan
Notes to Financial Statements
For the Years Ended December 31, 2004 and 2003**

6. Reconciliation to Form 5500

Reconciliation of the Plan's financial statements to Form 5500:

	Financial Statements	Form 5500	Difference
Contributions receivable current year	346,418		346,418
Contributions receivable prior year	233,240		233,240
Changes in net assets	11,110,414	10,997,236	113,178

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**ADTRAN, Inc. 401(k) Retirement Plan
Plan 001 – EIN 63-0918200
Schedule H, line 4i – Schedule of Assets (Held at End of Year)
As of December 31, 2004**

Supplemental Schedule 1

(a)	(b) Identity of issue, borrower, lessor or similar party	(c) Description of investment including maturity date, rate of interest, collateral, par, or maturity value	(d) Cost**	(e) Current Value
*	Fidelity Retirement Money Market Fund	Money market fund, 1,323,843 shares		\$ 1,323,843
*	Fidelity Managed Income Portfolio Fund	Commingled trust fund - Stable fund, 4,007,071 shares		4,007,071
*	Fidelity Equity Income Fund	Mutal fund - Value and income fund, 114,105 shares		6,022,482
*	Fidelity Fund	Mutal fund - Growth and income fund, 199,612 shares		5,964,419
*	MSI Small Company Growth B Fund	Mutal fund - Special equity fund, 679,769 shares		8,170,817
*	Fidelity Government Income Fund	Mutal fund - Intermediate government, 214,570 shares		2,197,199
*	Fidelity Balanced Fund	Mutal fund - Balanced fund, 302,829 shares		5,396,409
*	Fidelity US BD Index Fund	Mutal fund - Government/Corporate bond fund 159,045 shares		1,771,755
*	Fidelity Freedom 2000 Fund	Mutal fund - Short horizon SAF fund, 160,330 shares		1,936,786
*	Fidelity Freedom 2010 Fund	Mutal fund - Intermediate horizon SAF fund 102,318 shares		1,393,576
*	Fidelity Freedom 2020 Fund	Mutal fund - Inter/Long horizon SAF fund 233,149 shares		3,254,758
*	Spartan US Equity Index Fund	Mutal fund - Stock index fund, 90,217 shares		3,866,678
*	Fidelity Aggressive Growth Fund	Mutal fund - Aggressive equity fund, 160,990 shares		2,672,426
*	Fidelity Blue Chip Fund	Mutal fund - Equity growth fund, 45,453 shares		1,895,854
*	Fidelity Divers International Fund	Mutal fund - International fund, 90,415 shares		2,589,494
*	Fidelity Growth Company Fund	Mutal fund - Growth company fund, 20,358 shares		1,141,473
*	Fidelity Freedom Income Fund	Mutal fund - Freedom income fund, 4,482 shares		50,513
*	Fidelity Freedom 2030 Fund	Mutal fund - Freedom 2030, 26,860 shares		378,180
*	Fidelity Freedom 2040 Fund	Mutal fund - Freedom 2040, 31,909 shares		263,890
*	Fidelity Freedom 2005 Fund	Mutal fund - Freedom 2005, 381 shares		4,112
*	Fidelity Freedom 2015 Fund	Mutal fund - Freedom 2015, 2,247 shares		24,830
*	Fidelity Freedom 2025 Fund	Mutal fund - Freedom 2025, 322 shares		3,626
*	Fidelity Freedom 2035 Fund	Mutal fund - Freedom 2035, 1,568 shares		17,937
*	Fidelity Low Price Stock Fund	Mutal fund - Low priced stock, 105,661 shares		4,252,836
*	ADTRAN Stock Fund	ADTRAN, Inc. Common Stock, 131,154 units		2,181,357
*	Fidelity Management Trust Company	Participant loans - rate of interest: 5.00% - 10.5%		1,362,979
				\$ 62,145,300

* Party-in-interest to the Plan

** Cost information has not been disclosed as all investments are participant directed

Consent of Independent Registered Public Accounting Firm

We hereby consent to the incorporation by reference in the Registration Statement on Forms S-8 (Nos. 333-66000, 333-41458, 333-78417, 333-30375 and 333-29899) of ADTRAN, Inc. of our report dated June 23, 2005 relating to the financial statements and supplemental schedule of ADTRAN, Inc. 401(k) Retirement Plan as of December 31, 2004 and 2003, and for the year ended December 31, 2004, which appears in this Form 11-K.

/s/ PricewaterhouseCoopers LLP

PricewaterhouseCoopers LLP
Birmingham, Alabama
June 27, 2005