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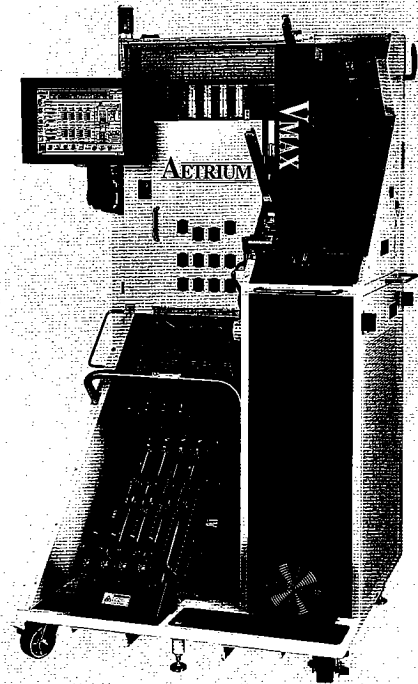
AETRIUM[®]

ABOUT THE COMPANY

AETRIUM IS A LEADING SUPPLIER OF GRAVITY TEST HANDLERS AND RELIABILITY TEST SYSTEMS USED BY THE GLOBAL SEMICONDUCTOR INDUSTRY.

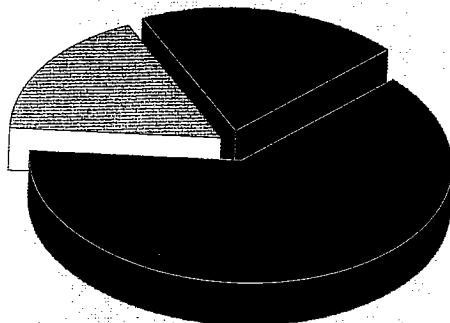


RELIABILITY TESTER
MODEL 1164



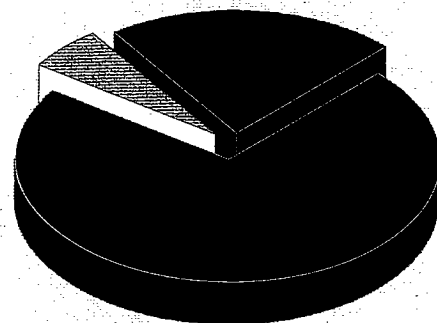
GRAVITY HANDLER
MODEL VMAX

NET SALES BY PRODUCT
Historic Average (%)



■ HANDLERS ■ TESTERS ■ KITS & SPARES

NET SALES BY REGION
Historic Average (%)



■ ASIA ■ EUROPE ■ U.S.



TO OUR SHAREHOLDERS

2010 WAS A YEAR OF 88% GROWTH FOR AETRIUM. WE KEPT PACE WITH THE INDUSTRY'S CHARGE BACK TO STRONG CAPITAL SPENDING AFTER TWO YEARS OF DOUBLE DIGIT DECREASES IN WORLDWIDE SPENDING.

2010—A YEAR OF GROWTH

We maintained a strong critical mass in our organization and at local suppliers to allow for fast ramping of production. This coupled with maintaining an appropriate level of inventory allowed us to meet our customers' quick delivery needs, nearly doubling our revenue year over year.

We accelerated product development in 2010, spending 19% in R&D as a percent of revenue. These efforts are providing dividends as our customers begin evaluations of our new reliability tester modules and Vmax gravity handler.

Our strong product positions allowed Aetrium to add new customers in 2010: four in our reliability tester product line and two in our gravity handler product line. We also diversified into two new markets of medical applications with our reliability tester and MEMS pressure sensing with our gravity handler.

Our balance sheet is very strong with no debt and \$10 million in cash at year-end. This provides us the resources to continue our aggressive R&D strategy and weather future industry down cycles.

STRONG COMPETITIVE POSITION

Our additional 1164 tester modules introduced in 2010 address reliability life analysis for new materials, wafer line width shrinkage down to 22 nanometers and below, and wafer level packages as well as the newest packaging technology of 3D stacked die. These new modules are drawing significant industry attention as we start 2011 with four system evaluations in process or being readied.

Our evolutionary next generation gravity handler model Vmax provides maximum octal test site capability resulting in maximum output especially at short test times. Our competitive advantage with the world's shortest index time for gravity handlers coupled with significantly improved uptime has allowed us to pique customers' interests in evaluating the Vmax gravity handler.

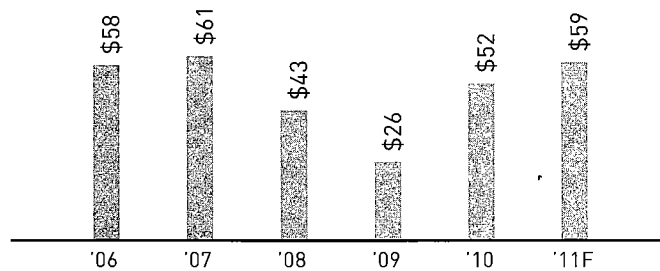
LOOKING FORWARD

After two very negative industry growth years and last year's triple digit industry growth, industry forecasters are predicting a more typical long term average growth rate in 2011 (see chart).

The demand for investment in capital spending is being driven by continued strong worldwide growth in computers, cell

phones and other mobile devices. Such applications continue to be rich with analog devices that account for almost half of all IC units manufactured and are typically packaged in a form factor suited to gravity handlers like our Vmax.

WORLDWIDE IC CAPITAL SPENDING
(\$ in billions)



Source: IC Insights

We are listening to our customers who are asking for increased test efficiencies and new testing capabilities. Our strategy is to grow through internal product evolution and acquisition of new technology or product lines. Our emphasis is on large key accounts as we implement our plan to gain market share at the top IC manufacturers worldwide. We believe this strategy has us well positioned for meaningful growth in future periods.

IN CLOSING

Aetrium's CEO Joe Levesque retired on December 31, 2010 after 25 years of distinguished leadership and outstanding contributions to Aetrium. Joe will continue to provide guidance to Aetrium as he continues on as Chairman of the Board. It is my honor to have been chosen by Joe and the board of directors to lead Aetrium in its next generation of growth. I have learned a great deal from Joe and the board about the market and managing through industry cycles that can be steep and deep. Thanks to our dedicated employees, our supportive suppliers, our loyal customers and you our shareholders I am confident we will meet the challenges to emerge stronger in 2011.

John J. Pollock
President and Chief Executive Officer

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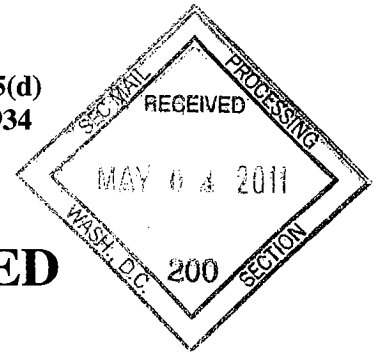
UNITED STATES SECURITIES AND EXCHANGE COMMISSION
Washington, D.C. 20549
FORM 10-K

ANNUAL REPORT PURSUANT TO SECTION 13 OR 15(d)
OF THE SECURITIES EXCHANGE ACT OF 1934

For the fiscal year ended December 31, 2010
Commission file number 000-22166

AETRIUM INCORPORATED

(Exact name of registrant as specified in its charter)



MINNESOTA
(State of incorporation)

41-1439182
(I.R.S. employer identification no.)

2350 Helen Street
North St. Paul, Minnesota
(Address of principal executive
offices)

55109
(Zip code)

(651) 770-2000
(Registrant's telephone number)

Securities registered pursuant to Section 12(b) of the Act:

<u>Title Of Each Class</u>	<u>Name Of Each Exchange On Which Registered</u>
COMMON STOCK, PAR VALUE \$.001 PER SHARE	The NASDAQ Stock Market LLC

Securities registered pursuant to Section 12(g) of the Act: NONE

Indicate by check mark if the Registrant is a well-known seasoned issuer, as defined in Rule 405 of the Securities Act. Yes No

Indicate by check mark if the Registrant is not required to file reports pursuant to Section 13 or 15(d) of the Exchange Act. Yes No

Indicate by check mark whether the Registrant (1) has filed all reports required to be filed by Section 13 or 15(d) of the Securities Exchange Act of 1934 during the preceding 12 months (or for such shorter period that the Registrant was required to file such reports), and (2) has been subject to such filing requirements for the past 90 days. Yes No

Indicate by check mark whether the registrant has submitted electronically and posted on its corporate Web site, if any, every Interactive Data File required to be submitted and posted pursuant to Rule 405 of Regulation S-T (§232.405 of this chapter) during the preceding 12 months (or for such shorter period that the registrant was required to submit and post such files). Yes No

Indicate by check mark if disclosure of delinquent filers pursuant to Item 405 of Regulation S-K is not contained herein, and will not be contained, to the best of Registrant's knowledge, in definitive proxy or information statements incorporated by reference in Part III of this Form 10-K or any amendment to this Form 10-K.

Indicate by check mark whether the registrant is a large accelerated filer, an accelerated filer, a non-accelerated filer, or a smaller reporting company. See the definitions of "large accelerated filer," "accelerated filer" and "smaller reporting company" in Rule 12b-2 of the Exchange Act. Large accelerated filer Accelerated filer Non-accelerated filer Smaller reporting company

Indicate by check mark whether the Registrant is a shell company (as defined in Exchange Act Rule 12b-2). Yes No

As of June 30, 2010 (the last business day of the Registrant's most recently completed second fiscal quarter), the aggregate market value of the Common Stock of the Registrant (based upon the closing price of the Common Stock at that date as reported by The Nasdaq Stock Market), excluding outstanding shares beneficially owned by directors and executive officers, was \$33,492,000.

As of March 11, 2011, 10,781,451 shares of Common Stock of the Registrant were outstanding.

Part III of this Annual Report on Form 10-K incorporates by reference information (to the extent specific sections are referred to herein) from the Registrant's definitive Proxy Statement for its 2011 Annual Meeting of Stockholders to be held May 18, 2011 (the "2011 Proxy Statement").

Form 10-K

For the fiscal year ended December 31, 2010

TABLE OF CONTENTS

PART I

ITEM 1.	BUSINESS.....	1
ITEM 1A.	RISK FACTORS.	7
ITEM 1B.	UNRESOLVED STAFF COMMENTS.....	9
ITEM 2.	PROPERTIES.	9
ITEM 3.	LEGAL PROCEEDINGS.....	10
ITEM 4.	RESERVED	10
ITEM 4A.	EXECUTIVE OFFICERS OF THE REGISTRANT.	10

PART II

ITEM 5.	MARKET FOR REGISTRANT'S COMMON EQUITY, RELATED STOCKHOLDER MATTERS AND ISSUER PURCHASES OF EQUITY SECURITIES.....	12
ITEM 6.	SELECTED FINANCIAL DATA	12
ITEM 7.	MANAGEMENT'S DISCUSSION AND ANALYSIS OF FINANCIAL , CONDITION AND RESULTS OF OPERATIONS.	13
ITEM 8.	FINANCIAL STATEMENTS AND SUPPLEMENTARY DATA.....	19
ITEM 9.	CHANGES IN AND DISAGREEMENTS WITH ACCOUNTANTS ON ACCOUNTING AND FINANCIAL DISCLOSURE.....	19
ITEM 9A.	CONTROLS AND PROCEDURES.....	20
ITEM 9B.	OTHER INFORMATION.....	20

PART III

ITEM 10.	DIRECTORS, EXECUTIVE OFFICERS AND CORPORATE GOVERNANCE.....	21
ITEM 11.	EXECUTIVE COMPENSATION.	21
ITEM 12.	SECURITY OWNERSHIP OF CERTAIN BENEFICIAL OWNERS AND MANAGEMENT AND RELATED STOCKHOLDER MATTERS.....	21
ITEM 13.	CERTAIN RELATIONSHIPS AND RELATED TRANSACTIONS, AND DIRECTOR INDEPENDENCE.....	22
ITEM 14.	PRINCIPAL ACCOUNTANT FEES AND SERVICES.	22

PART IV

ITEM 15.	EXHIBITS AND FINANCIAL STATEMENT SCHEDULES.....	23
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PART I

This Annual Report on Form 10-K contains certain forward-looking statements within the meaning of the Private Securities Litigation Reform Act of 1995. For this purpose, any statements contained in this Annual Report on Form 10-K that are not statements of historical fact may be deemed to be forward-looking statements. Without limiting the foregoing, words such as “may,” “will,” “expect,” “believe,” “anticipate,” “estimate” or “continue” or comparable terminology are intended to identify forward-looking statements. These statements by their nature involve substantial risks and uncertainties, and actual results may differ materially depending on a variety of factors, including those set forth under Item 1A below. We undertake no obligation to correct or update any forward-looking statements, whether as a result of new information, future events or otherwise. You are advised, however, to consult any future disclosures we may make on related subjects in future filings with the Securities and Exchange Commission. References in this Annual Report on Form 10-K to “Aetrium,” “the company,” “we” and “our,” unless the context otherwise requires, refer to Aetrium Incorporated and its consolidated subsidiary and their respective predecessors.

ITEM 1. BUSINESS.

Overview

We design, manufacture and market a variety of electromechanical equipment used in the handling and testing of integrated circuits, or ICs, which constitute the highest revenue component of the semiconductor industry. Our primary focus is on high volume ICs and on the latest IC package designs. Our products are purchased primarily by semiconductor manufacturers and their assembly and test subcontractors. Our products are used in the test, assembly and packaging, or TAP, segment of semiconductor manufacturing. Our products automate critical functions to improve manufacturing yield, raise quality levels, increase product reliability and reduce manufacturing costs.

We have two principal equipment product lines:

- **Test Handler Products.** In terms of revenue, this is our largest product line. Our broad line of test handler products incorporates thermal conditioning, contacting and automated handling technologies to provide automated handling of ICs during production test cycles. We also offer change kits to adapt our test handlers to different IC package configurations or to upgrade installed equipment for enhanced performance. Change kits can represent a significant part of our revenue.
- **Reliability Test Equipment.** The primary focus of our reliability test equipment is to provide semiconductor manufacturers with structural performance data to aid in the evaluation and improvement of IC designs and manufacturing processes to increase IC yield and reliability.

Test handler products accounted for 61% and 48% of our net sales in 2010 and 2009, respectively. Reliability test equipment accounted for 22% and 17% of our net sales in 2010 and 2009, respectively. Change kits and spare parts accounted for 17% and 35% of our net sales in 2010 and 2009, respectively.

The worldwide financial collapse that became apparent by the end of the third quarter in 2008 resulted in one of the steepest declines ever in the semiconductor industry. The industry posted its largest sequential percentage declines of IC unit sales ever in the fourth quarter of 2008 and the first quarter of 2009. Notwithstanding continuation of the worldwide financial crisis, and undoubtedly due in part to the

semiconductor industry's quick and dramatic action to reduce production as the financial crisis began, by second quarter of 2009 the industry began to recover some of its lost ground. In fact the second and third quarters of 2009 produced the largest sequential percentage increases of IC unit sales ever. However, by the end of 2009 the industry had not yet returned to peak unit production levels of 2008. As a result, the TAP segment of the semiconductor equipment industry continued its decline throughout 2009. According to SEMI, a semiconductor equipment industry trade association, revenues for test related equipment in 2009 were almost 70% below 2007 revenues.

Our performance closely followed our industry segment. As a result of the worldwide financial crisis, our 2009 revenues were also almost 70% below our 2007 revenues.

By the end of the first quarter of 2010, the semiconductor industry surpassed its peak production levels of 2008, and conditions in the test related segment of the semiconductor equipment industry improved for the first three quarters of 2010. However, demand slowed for semiconductors in the fourth quarter and production of semiconductors declined from third quarter to fourth quarter. As a result, revenues as reported by SEMI for test related equipment in fourth quarter of 2010 declined by more than 25% from reported third quarter revenues.

Our performance also followed our industry segment in 2010. Additionally, one of our largest customers is transitioning from four site testing to eight site testing, and we believe that its extended eight site handler evaluations in the fourth quarter of 2010 delayed handler orders from that customer, which contributed to a substantially sharper drop in our fourth quarter revenues than was experienced generally in our industry segment.

Analysts of the semiconductor industry are forecasting resumed growth of ICs by the second quarter of 2011, and moderate growth of up to 10% for the year. We believe that our line of product offerings, including our newest product introductions, coupled with our lean cost structure and our strong working capital base, places us in a strong position to outperform our industry segment as conditions improve.

Our strategy has focused on revenue growth through product line expansion, by both internally developing and acquiring complementary technologies, businesses or product lines. Technologies, businesses and product lines that we have acquired in the past pursuant to this strategy have since been assimilated and consolidated into our current operations.

We were incorporated in Minnesota in December 1982. Our executive offices are located at 2350 Helen Street, North St. Paul, Minnesota 55109. Our telephone number is (651) 770-2000. Our website address is www.aetrium.com. We make available free of charge through our website our Annual Reports on Form 10-K, Quarterly Reports on Form 10-Q, Current Reports on Form 8-K, and all amendments to those reports, as soon as is reasonably practicable after such material is electronically filed with or furnished to the Securities and Exchange Commission. Our website is not intended to be a part of, nor are we incorporating it by reference into, this Annual Report on Form 10-K.

Test Handler Products

Test handlers are electromechanical systems interfaced with a tester to form a test system designed to handle, thermally condition, contact and sort ICs automatically during the final test stage of the manufacturing process. ICs are loaded into the test handler from bowls, tubes or trays and then, if required, transported to a temperature chamber within the test handler where they are thermally conditioned to the required testing temperature. The ICs are then inserted into a contactor, which provides an electrical connection between the IC and the tester. After testing, the test handler sorts the ICs

according to test performance as provided by the tester. In some cases, additional process steps are completed by the test handler system. These include marking or inspection of the IC packages, and automatic placement of the ICs into a tube, tray or tape for shipment to the end user. Test handlers must meet industry criteria for thermal conditioning, contactor integrity and minimization of damage to the IC during the test handling cycle.

ICs are multi-function semiconductor devices that may contain millions of individual transistors, and include microprocessors, digital signal processors and analog and memory devices. ICs come in a wide range of sizes and package types, depending upon their application.

In the testing of ICs, the device package type being tested often dictates the type of test handler used. Small outline packages, or SOPs, constituting the largest IC package segment, have leads, or electrical contacts, extending from two sides and are typically tested with gravity feed test handlers. Micro leadless packages, or MLPs (and sometimes referred to as DFNs or QFNs), have electrical contact pads flush with the sides and bottoms of the ICs. MLPs are typically tested with gravity feed test handlers, particularly for analog and linear applications, but may also be tested with turret based or pick-and-place test handlers. MLPs constitute one of the fastest growing new IC package types.

More complex ICs are sometimes packaged in IC package families with leads more easily damaged in handling, such as ball grid arrays with electrical contact bumps on the bottoms. These package families are typically tested with pick-and-place test handlers.

Our current test handler product lines are all gravity feed test handlers. Analog devices constitute almost half of all ICs produced, and because of their relatively small size and low lead count are typically packaged as SOPs and MLPs, and thus typically tested on gravity feed handlers. Accordingly, manufacturers of analog devices are a primary target set for our test handlers.

Gravity Feed Test Handlers

Traditionally, test handlers have used gravity to move ICs from tubes or trays through the handler system and back into tubes or trays. Typically, in gravity feed systems ICs are halted at necessary points in the handling process by stopping against other ICs or singulation mechanisms, which can result in lead damage to IC packages with more fragile leads. Accordingly, gravity feed handlers are best suited for leadless packages and IC packages with more rugged leads, which include MLPs and most SOPs.

Our gravity feed test handlers compete most favorably in high-volume applications and their high throughput rates are an added advantage in relatively short test time applications. These handlers adapt to third party contactors, as well as our internally developed proprietary contactors, providing cost-effective solutions to a wide range of customer test requirements. Our gravity feed test handlers can heat or cool the ICs being tested to test temperatures ranging from -55 degrees Celsius to +155 degrees Celsius. They use mechanical refrigeration to cool ICs, which is more economical and less dangerous than liquid nitrogen, commonly used as a refrigerant in competing handlers.

Our V_{MAX} Series is our newest line of gravity feed test handlers, introduced in 2010. The principal advance of the V_{MAX} Series over our other gravity feed test handler lines and our competition is a significant improvement in up time and equipment efficiency. The V_{MAX} Series focuses on analog and logic IC applications and addresses a wide range of IC packages, including SOPs and MLPs. The V_{MAX} Series offers a small footprint, a vertical backplane that can accommodate nearly any size of test head, and our high speed test site actuator that we believe offers significant throughput advantages over our competition, depending upon device test times and thermal conditioning requirements. We offer the V_{MAX} Series in four and eight test site configurations.

Our V_{MAX} test handler has been in evaluation at one of our largest customers since the second half of 2010. That customer is transitioning from four site to eight site testing and is evaluating our handler and two competing handlers across a broad range of applications. We believe our handler has performed very well thus far in the evaluations, and we received our first orders for the V_{MAX} test handler from that customer in the first quarter of 2011. We expect the evaluations to conclude by early in the second quarter of 2011. We expect to undertake evaluations of our V_{MAX} test handler at other key customer and potential customer sites during the course of 2011.

Our 55V Series is our other principal line of gravity feed test handlers. The 55V Series focuses on the same IC applications, addresses the same wide range of IC packages, and offers the same small footprint, vertical backplane and high speed test site actuator as our V_{MAX} Series. We offer the 55V Series in one, two, four and eight test site configurations.

Each of our V_{MAX} Series and 55V Series multi-site test handlers can simultaneously test devices in each of their sites to increase productivity and reduce testing costs in certain applications.

Change Kits and Spare Parts

We have an ongoing demand for IC package change kits for our installed test handler products, including test handlers no longer in our active product lines. Change kits consist of the parts necessary to reconfigure a test handler for another type or size of device package. We sell a variety of change kits to accommodate the growing variety of device packages used in the semiconductor industry. The demand for change kits is primarily driven by the introduction of new IC package types and increased production volumes experienced by our end customers. We sell spare parts with new equipment orders as kits or separately as piece parts or in kit form as required.

Reliability Test Equipment

The IC industry's demand for higher performance devices through smaller circuit geometries has led to significant technological changes in the materials and processes used to manufacture ICs, including a continuing migration to copper materials for the increasingly minute circuitry of devices, now down to 22 nanometers in line width. These changes in technology, along with IC user demand for increased reliability, have created a need for increasingly sophisticated reliability testing of IC designs and manufacturing processes. Our reliability test equipment product line enables IC manufacturers to force and measure precise levels of voltage and current through structures designed to exemplify IC failure modes, collect and analyze relevant data, and predict lifetime performance of ICs. This equipment can be utilized to perform reliability testing of packaged and wafer level test structures.

In 1998, we introduced our 1164 Series of reliability test equipment, including a suite of applications for customers to perform a variety of tests. We have since added many new features, including the full reliability test functionality necessary for testing an IC manufacturer's entire copper process. The 1164 Series features a modular design that allows for great flexibility in performing reliability tests, and can test up to 4,096 devices at a time and perform numerous simultaneous tests on batches of ICs. Nine of the top 10 semiconductor manufacturers in the world are using our 1164 Series of reliability test equipment for copper and related advanced process technologies.

Competition

The semiconductor capital equipment market is highly competitive. In the market for test handler products, we compete with a number of companies ranging from very small businesses to large companies, some of which have substantially greater financial, manufacturing, marketing and product

development resources than we have. Some of these companies manufacture and sell both testers and test handlers. The particular companies with which we compete vary with our different test handler product lines, with no one company dominating the overall test handler market. The companies with which we compete most directly in the test handler market include Multitest Electronic Systems GmbH (a Dover Corporation company), Rasco (a division of Cohu, Inc.) and Yokogawa (a division of TESEC Corporation).

We compete for test handler sales primarily on the basis of effective handler throughput, cost of ownership, temperature accuracy and other performance characteristics of our products, price, delivery, the breadth of our product lines, the effectiveness of our sales and distribution channels, the effectiveness of our post-sale support and our customer relationships. We believe we compete favorably on all of these factors.

The market for our reliability test equipment is also highly competitive and our competitors include QualiTau, Ltd., Chiron Technology Pte. Ltd., ESPEC Corp. and Reedholm Instruments Co. We compete for reliability test system sales on the basis of technology, price, delivery, system flexibility and overall system performance. We believe we compete favorably on all of these factors.

Manufacturing and Supplies

Our manufacturing operations consist of procurement and inspection of components and subassemblies, assembly and extensive testing of finished products.

We emphasize quality and reliability in both the design and manufacture of our products. We or our suppliers inspect all components and subassemblies for mechanical and electrical compliance to our specifications. We test all finished products against our specifications, and customer specifications where applicable, and fully assembled test handler products are tested at all temperatures for which they are designed and with all the IC packages to be accommodated.

A significant portion of the components and subassemblies used in our products, including machined parts, printed circuit boards, refrigeration systems, vacuum pumps and contactor elements, are manufactured by third parties on a subcontract basis. As a part of our total quality management program, we have an ongoing supplier quality program under which we select, monitor and rate our suppliers, and recognize suppliers for outstanding performance.

Certain components used in our products, including certain contactor components, printed circuit boards and refrigeration systems, are currently available from only a limited number of sources. We do not maintain long-term supply agreements with most of our suppliers, and we purchase most of our components through individual purchase orders. We may not always be able to replace all of our suppliers within a time period consistent with our business requirements. We attempt to keep an adequate supply of critical components in our inventory to minimize any significant impact the loss of a supplier may cause.

Customers

We rely on a limited number of customers for a substantial percentage of our net sales. In 2010, our top three customers accounted for 38%, 23% and 11% of our net sales, respectively. In 2009, our top two customers accounted for 58% and 20% of our net sales, respectively. The loss of or a significant reduction in orders by these or other significant customers, including reductions due to market, economic or competitive factors in the semiconductor industry, would likely have a negative impact on our financial condition and results of operations.

Sales and Marketing

We market our products through a combination of direct salespeople, independent sales representatives and international distributors. Our direct sales organization is responsible for most domestic sales, and coordinates the activities of our independent sales representatives and international distributors and actively participates with them in selling efforts. This enables us to establish strong direct ties with our customers.

We maintain sales and service locations in North St. Paul, Minnesota, Morgan Hills, California, and Kuala Lumpur and Penang, Malaysia. As of December 31, 2010, we had domestic independent sales representatives located in New Hampshire and California, and international independent sales representatives or distributors located in the United Kingdom, France, Germany, Italy, Republic of Korea, Japan, Taiwan, China, Thailand, Malaysia, Singapore and the Philippines.

Our marketing efforts include participation in industry trade shows and production of product literature and sales support tools. These efforts are designed to generate sales leads for our independent sales representatives, international distributors and direct salespeople.

International shipments accounted for 88% and 85% of our net sales in 2010 and 2009, respectively. In addition, it is not uncommon for U.S. customers to take delivery of products in the United States for subsequent shipment to international sites. Most of our international shipments are made to international sites of U.S. semiconductor manufacturers, although there is a growing foreign customer base included in our international sales.

We invoice all of our international sales in U.S. dollars and, accordingly, have not historically been subject to fluctuating currency exchange rates. We establish credit limits, if appropriate, on our international distributors, who purchase products from us and resell to end-users. We may also require irrevocable letters of credit from our end-user international customers to minimize credit risk and to simplify the purchasing/payment cycle.

Research and Development

We believe we must continue to enhance, broaden and modify our existing product lines to meet the constantly evolving needs of the semiconductor equipment market. To date, we have relied both on internal development and acquisitions of technology and product lines to extend our product lines, increase our customer base and avoid reliance on any single semiconductor equipment market segment. We focus our new product development efforts on what we believe to be the most compelling requirements in the largest and fastest growing segments of the IC side of the semiconductor industry, with emphasis on near term revenue potential.

Product development expenses include new product development and continuation engineering. Our continuation engineering efforts include the development of additional change kits to meet the expanding families of IC package types, further advancement of contactor technologies, and the addition of features and performance options for existing equipment.

In 2010 and 2009, our expenses relating to research and development were approximately \$3.0 million and \$2.2 million, respectively, or 19% and 25% of our net sales, respectively. Over time, our objective is to invest approximately 12% to 15% of our net sales in research and development. However, the percentage may be higher in periods of relatively low sales such as 2010 and 2009.

Intellectual Property

We attempt to protect the proprietary aspects of our products with patents, copyrights, trade secret law and internal nondisclosure safeguards. We currently hold several U.S. patents ranging in remaining terms from one to seven years covering certain features of our handling systems and reliability test systems, the contactor elements incorporated in certain of our test handlers, and elements of our proprietary conductive thermal technology. The source code for the software contained in our products is considered proprietary, and we typically do not furnish source code to our customers. We have also entered into confidentiality agreements with our employees. Despite these restrictions, it may be possible for competitors or users to copy aspects of our products or to obtain information that we regard as a trade secret.

There is a rapid pace of technological change in the semiconductor industry, which in turn compels us to continually enhance and extend our product lines. We believe that patent, trade secret and copyright protection is less significant to our competitive position than factors such as the knowledge, ability and experience of our personnel, new product development, frequent product enhancements, name recognition and ongoing, reliable product maintenance and support.

Employees

As of December 31, 2010, we had 68 employees, one of whom was part-time. They consisted of 28 in manufacturing, 17 in engineering and product development, 15 in sales, marketing and customer service, and 8 in general administration and finance. None of our employees are represented by a labor union or are subject to any collective bargaining agreement. We have never experienced a work stoppage, and we believe that our employee relations are satisfactory.

ITEM 1A. RISK FACTORS.

Several important risks and uncertainties exist that could have an impact on our future operating results. These factors could cause our actual results to differ materially from our anticipated results or results that are reflected in any forward-looking statements in this Annual Report on Form 10-K. These factors, and their impact on the success of our operations and our ability to achieve our goals, include the following:

Market Fluctuations in the Semiconductor Industry

Our business and results of operations depend upon capital expenditures by manufacturers of ICs. As a result, our operating results are materially dependent upon economic and business conditions in the semiconductor industry. This industry has been subject to significant market fluctuations and has experienced periodic downturns, which often have had a disproportionate effect on capital equipment suppliers, such as Aetrium. In periods of excess capacity, the semiconductor industry sharply reduces purchases of capital equipment, such as our products. The worldwide financial collapse that became apparent by the end of the third quarter of 2008 resulted in an unprecedented downturn in the semiconductor industry and in the semiconductor equipment industry. The semiconductor industry grew significantly in 2010, but ended with a sequential decline in revenues in the fourth quarter. While there are currently indications that there will be improving conditions in the semiconductor industry in 2011, there can be no assurance that this trend will occur or continue and result in self-sustaining levels of revenues for the company.

Successful Development and Introduction of New Products and Product Improvements

We operate in an industry that is highly competitive with respect to timely product innovations. The market for our products is characterized by rapid technological change and evolving industry standards. The development of more complex ICs has driven the need for new equipment and processes to produce such devices at an acceptable cost. We believe that our future success will depend in part upon our ability to anticipate and respond rapidly to changes in technologies, IC package types, market trends and industry standards. If we cannot successfully develop and introduce new and enhanced cost-effective products on a timely basis that are accepted in the marketplace, our business and operating results will likely suffer.

Reliance on Significant Customers

We rely on a limited number of customers for a substantial percentage of our net sales. A reduction, delay or cancellation of orders from one or more of these significant customers, or the loss of one or more of these customers, would likely have a negative impact on our operating results. Our new V_{MAX} test handler is currently in evaluation at one of our largest customers together with two competing test handlers. While we believe our test handler has performed very well thus far in the evaluations, currently expected to conclude early in the second quarter of 2011, there can be no assurance that we will be successful in maintaining our position with this customer.

Impact of Competitive Markets

The markets for our main product lines are highly competitive. Some of our competitors have substantially greater financial, manufacturing, marketing and product development resources than we have. For most of our customers, we are not the sole supplier of our type of equipment. In addition, it is common for customers to evaluate more than one supplier's equipment for their emerging requirements, which is the case with the ongoing evaluation of our V_{MAX} test handler at one of our largest customers. Accordingly, we are at significant risk to lose orders to competing suppliers, and even to being displaced as a supplier to potentially significant customers, which would likely have a negative impact on our operating results.

Fixed Cost Constraints on Reduction of Expenses

Many of our expenses, particularly those relating to properties, capital equipment and certain manufacturing overhead items, are fixed in the short term. Reduced demand for our products and services causes our fixed production costs to be allocated across reduced production volumes, which negatively affects our gross margins and profitability. Our ability to reduce expenses is further constrained because we must continue to invest in research and development to maintain our competitive position and to maintain service and support for our existing customer base. Accordingly, in the event of a reduction in our revenues, resulting from an industry slowdown as occurred in fourth quarter of 2010 or otherwise, we may not be able to maintain profitable operations.

Impact of Cost Reduction Actions

In the event of a sustained downturn and continuing decline in our revenues, we may implement cost reduction actions, such as workforce reductions, pay freezes and reductions, and reductions in other expenditures. In doing so, we would attempt to maintain the necessary infrastructures to allow us to take full advantage of subsequent improvements in conditions. However, there can be no assurance that reductions we may have made in personnel and expenditure levels and the loss of the capabilities of personnel we may have terminated would not inhibit us in the timely completion of product development

efforts, the effective service of and responsiveness to customer requirements, and the timely ramp up of production in response to improving market conditions.

Risk Potential of Future Acquisitions

We have in the past and may in the future pursue acquisitions of complementary technologies, product lines or businesses. In addition to the risks associated with any such business that may be acquired, future acquisitions may result in potentially dilutive issuances of equity securities, the use of our cash or incurrence of debt that may reduce our ability to meet future capital expenditure and working capital requirements, the incurrence of amortization expense and/or valuation adjustments associated with goodwill and intangible assets that would reduce our profitability, difficulties in the assimilation of the operations and products of the acquired business, and diversion of management's attention from other business concerns.

Reduction in the Sales Efforts by our Current Distributors

We market and sell our test handlers and reliability test products outside of the United States primarily through international distributors that are not under our direct control. We have limited internal sales personnel. A reduction in the sales efforts by our current distributors, or the termination of one or more of these relationships with us, could negatively affect our operating results.

Risks Inherent in our International Sales

We expect that international sales will continue to account for a significant portion of our net sales. As a result, our operations are subject to a number of risks inherent in conducting business internationally, which if any of them develops could negatively impact our operating results.

Supply of Significant Components for our Products

Certain significant components used in our products, including certain contactor components, printed circuit boards and refrigeration systems, are currently available only from sole or limited sources. We do not maintain long-term supply agreements with most of our suppliers, and we purchase most of our components through individual purchase orders. Our inability to obtain components in required quantities or of acceptable quality could result in delays or reductions in our product introductions or shipments, which could damage our relationships with our customers and cause our operating results to suffer.

ITEM 1B. UNRESOLVED STAFF COMMENTS.

None.

ITEM 2. PROPERTIES.

We conduct our corporate functions and manufacturing, product development, sales, marketing and field service activities in North St. Paul, Minnesota. We currently occupy approximately 45,000 square feet in North St. Paul under a lease that expires in August 2015, at which time we have an option to extend the lease for an additional five-year term. We consider our present facilities to be sufficient for our current operations.

ITEM 3. LEGAL PROCEEDINGS.

We are not a party to, and none of our property is the subject of, any material pending legal, governmental, administrative or other proceedings.

ITEM 4. RESERVED

ITEM 4A. EXECUTIVE OFFICERS OF THE REGISTRANT.

Our executive officers, their ages and the offices they held as of March 1, 2011 are as follows:

<u>Name</u>	<u>Age</u>	<u>Position</u>
John J. Pollock	51	President, Chief Executive Officer and Director
Douglas L. Hemer	64	Chief Administrative Officer, Secretary and Director
Paul H. Askegaard	59	Treasurer
Timothy G. Foley	51	Vice President — Manufacturing
W. Charles Sletten, II	59	Vice President — Engineering
Dean K. Hedstrom	61	Vice President — Technology
Timothy A. McMullen	43	Vice President — Reliability Test Systems
Gary A. Quasabart	51	Vice President — Worldwide Sales

Mr. Pollock was elected as one of our directors in March 2010 and has served as our president since October 2009 and our chief executive officer since January 1, 2011. Mr. Pollock served as our chief operating officer from August 2010 through December 2010. From December 2001 to October 2009, Mr. Pollock served as vice president and general manager of our North St. Paul operations. From August 1998 to December 2001, Mr. Pollock served as our vice president of product development and marketing. From April 1998 to August 1998, Mr. Pollock served as interim general manager of our North St. Paul operations. From November 1997 to May 1998, Mr. Pollock served as interim general manager of a test handler product line we had recently acquired. From September 1996 to August 1997, Mr. Pollock served as a business unit manager.

Mr. Hemer has served as one of our directors since 1986, and has served as our secretary since May 2000 and as our chief administrative officer since March 2001. He served as our group vice president from August 1998 to March 2001, as the president of our former Poway, California operations from February 1997 to August 1998 and as our chief administrative officer from May 1996 until February 1997. Mr. Hemer was a partner in the law firm of Oppenheimer Wolff & Donnelly LLP for more than 15 years before joining Aetrium in May 1996.

Mr. Askegaard has served as our treasurer since February 1992. From October 1986 to February 1992, Mr. Askegaard served as our corporate controller.

Mr. Foley has served as our vice president — manufacturing of our North St. Paul operations since December 2001. Prior to that, he served at our North St. Paul operations as vice president — operations from August 1998 to December 2001, vice president — manufacturing from October 1996 to August 1998, and in various other positions since joining us in 1988.

Mr. Sletten has served as our vice president – engineering since joining us in January 2008. Prior to that, he served as president of EnergyFlo Corporation from 2003 to 2007, as vice president, general manager of Goodall Mfg. LLC from 2002 to 2003, and in various capacities including chief engineer, vice president and senior vice president at Nilfisk-Advance from 1984 to 2001.

Mr. Hedstrom has served as our vice president – technology since June 2007. Prior to that, he served as the vice president – engineering of our North St. Paul operations since joining us in September 2004. From 1993 to 1998 Mr. Hedstrom was a co-founder, director, and later president of CariTech, Inc., a manufacturer of carrier tape materials for the IC industry. Following the acquisition of CariTech by Illinois Tool Works in August 1998, he served as engineering manager – worldwide operations for Illinois Tool Works until May 2001. Prior to founding CariTech and subsequent to his retirement from Illinois Tool Works, Mr. Hedstrom served as president and a principal of Hedstrom Engineering Co., a consulting firm specializing in industrial automation and controls.

Mr. McMullen has served as our vice president – reliability test systems since April 2007. Prior to that, he served at our North St. Paul operations as vice president – marketing/applications from February 2002 until April 2007, as product director of our reliability test equipment from March 2000 until February 2002, and as an electrical engineer since joining us in 1994.

Mr. Quasabart has served as our vice president - worldwide sales since August 2010. In March 2011, his responsibilities were expanded to include customer service activities. From July 1994 to August 2010, Mr. Quasabart served in various sales positions at the company and most recently as director of sales.

PART II

ITEM 5. MARKET FOR REGISTRANT'S COMMON EQUITY, RELATED STOCKHOLDER MATTERS AND ISSUER PURCHASES OF EQUITY SECURITIES

Market Information

Our common stock is quoted on The Nasdaq Global Market under the symbol "ATRM." The following table summarizes the high and low closing sale prices per share of our common stock for the periods indicated, as reported on The Nasdaq Global Market. These prices do not include adjustments for retail mark-ups, markdowns or commissions.

		<u>First Quarter</u>	<u>Second Quarter</u>	<u>Third Quarter</u>	<u>Fourth Quarter</u>
Fiscal 2010	High	\$ 3.35	\$ 3.75	\$ 3.25	\$ 2.70
	Low	\$ 2.36	\$ 2.40	\$ 2.19	\$ 1.65
Fiscal 2009	High	\$ 1.93	\$ 1.75	\$ 2.65	\$ 2.99
	Low	\$ 0.91	\$ 0.99	\$ 1.37	\$ 2.05

Holder

As of March 11, 2011, there were 114 shareholders of record. We estimate that an additional 2,400 shareholders beneficially own stock held for their accounts at brokerage firms and financial institutions.

Dividends

We have never paid cash dividends on our common stock. We currently intend to retain any earnings for use in our operations and do not anticipate paying cash dividends in the foreseeable future.

Recent Sale of Unregistered Securities

We did not have any unregistered sales of equity securities during fiscal year 2010.

Issuer's Purchases of Equity Securities

We did not make any purchases of our common stock during the fourth quarter of fiscal 2010.

ITEM 6. SELECTED FINANCIAL DATA

As a Smaller Reporting Company as defined by Rule 12b-2 of the Exchange Act and in Item 10(f)(1) of Regulation S-K, we are electing scaled disclosure reporting obligations and therefore are not required to provide the information requested by this Item.

ITEM 7. MANAGEMENT'S DISCUSSION AND ANALYSIS OF FINANCIAL CONDITION AND RESULTS OF OPERATIONS

Overview:

Aetrium designs, manufactures and markets a variety of electromechanical equipment used in the handling and testing of integrated circuits, or ICs, which constitute the highest revenue component of the semiconductor industry. Our primary focus is on high volume ICs and on the latest IC package designs. Our test handler products are purchased primarily by semiconductor manufacturers and their assembly and test subcontractors and are used in the test, assembly and packaging, or TAP, segment of semiconductor manufacturing. Our reliability test products are used to validate IC designs and monitor semiconductor wafer fabrication processes. Our products automate critical functions to improve manufacturing yield, raise quality levels, increase product reliability and reduce manufacturing costs.

As an equipment supplier to the semiconductor industry, Aetrium's results are driven primarily by worldwide demand for ICs, which in turn depends on end-user demand for electronic products. The demand for our products can fluctuate significantly from period to period due to the direct or indirect impact of numerous factors, including but not limited to changes in the supply and demand for ICs, changes in IC manufacturing capacity, advancements in industry technologies, changes in U.S. and worldwide economic conditions and competitive factors.

Like many suppliers in the TAP segment of the semiconductor equipment industry, Aetrium's business was severely impacted by the global recession and turmoil in the financial credit markets that began in fiscal year 2008 and continued into 2009. Significant decreases in the sales of electronic products led to reduced demand for ICs and IC manufacturing equipment during this period and resulted in one of the most abrupt and severe downturns ever in our industry. According to SEMI, a semiconductor equipment industry trade association, 2008 revenues for test related equipment declined approximately 32% from the prior year. General economic conditions began to improve in mid-2009 and the semiconductor industry began to recover as the demand for ICs increased. IC manufacturers increased production levels, although by the end of the year they had not returned to their recent peak levels of third quarter 2008. As a result, the TAP segment of the semiconductor equipment industry continued its decline through 2009. According to SEMI, 2009 revenues for test related equipment declined approximately 55% from 2008 levels.

Aetrium's operating results generally followed the semiconductor equipment industry trend. Our net sales decreased to \$1.8 million and \$1.2 million in the first and second quarters of 2009, respectively. In mid-year we began to see signs of increased demand for our customers' products and generally improving equipment utilization rates. Accordingly, our net sales increased to \$3.0 million and \$2.7 million in the third and fourth quarters of 2009, respectively. Despite an improvement in business conditions in the second half of fiscal year 2009, our total net sales for the year were \$8.6 million compared with \$17.2 million in 2008, a decrease of 50%.

General economic and industry business conditions continued to improve in 2010 and our operating results improved as well. Our net sales increased to \$4.6 million, \$5.0 million and \$5.0 million in the first, second and third quarters of 2010, respectively. However, our net sales decreased significantly in the fourth quarter of 2010 due in part to a general slowdown in the semiconductor industry that developed late in the year and also due to significantly lower sales to one of our largest customers. This customer, in addition to being impacted by the industry slowdown, is transitioning from four-site testing to eight-site testing, and we believe extended eight-site handler evaluations in the fourth quarter of 2010 resulted in delayed orders from that customer. As a result of these factors, our net sales decreased to \$1.7 million in the fourth quarter of 2010. Despite the drop off in net sales in the fourth quarter of 2010, we

experienced significant growth for the full year as sales reached \$16.3 million compared with \$8.6 million in 2009, an increase of 88%. Industry forecasters are generally projecting that business conditions will remain soft through the first quarter of 2011 and will improve as the year progresses. However, there can be no assurance that economic and/or industry conditions will improve or that changes in semiconductor industry conditions, general domestic and global economic conditions, and/or other factors will not adversely impact Aetrium's future operating results.

Off-Balance Sheet Arrangements:

We did not have any off-balance sheet arrangements as of December 31, 2010 or 2009.

Critical Accounting Policies and Estimates:

Management's discussion and analysis of our financial condition and results of operations are based upon our consolidated financial statements, which have been prepared in accordance with accounting principles generally accepted in the United States of America. The preparation of these financial statements requires us to make estimates and judgments that affect the reported amounts of assets, liabilities, revenues and expenses, and related disclosure of contingent assets and liabilities. We base our estimates on historical experience and on various other assumptions that we believe are reasonable under the circumstances, the results of which form the basis for making judgments about the carrying values of assets and liabilities. Actual results may differ from these estimates under different assumptions or conditions. We believe the critical accounting policies that require the most significant judgments and estimates used in the preparation of our consolidated financial statements are those related to share-based compensation, revenue recognition, accounts receivable, inventories, warranty obligations and income taxes.

Share-Based Compensation

We account for share-based compensation in accordance with the provisions of Accounting Standards Codification (ASC) 718, "Compensation – Stock Compensation," which requires the measurement and recognition of all share-based compensation using the fair value method.

We determine the fair value of share-based awards on the grant date by using the Black-Scholes option valuation model. We also use the Black-Scholes model to determine the fair value of modifications to awards by determining and comparing the fair value of the modified award with the fair value of the award immediately before the modification. Option valuation models, including Black-Scholes, require the input of subjective assumptions, and changes in the assumptions used can materially affect the calculation of the fair value of an award. These assumptions include expected stock price volatility, risk-free interest rate, expected dividend yield, and the expected life of the award. We estimate future stock price volatility based primarily on historical daily stock price observations of our common stock. Risk-free interest rate is estimated based on U.S. Treasury bill rates consistent with the expected term of an award. We assume an expected dividend yield of zero based on our intention to retain any future earnings for use in our operations. Expected life of an award is estimated primarily based on vesting provisions, the contractual term of the award, and historical experience of previous awards with similar terms or, for situations in which historical experience is not available or is deemed unreliable, we use the simplified method for estimating the expected life of an award, as permitted by ASC 718. ASC 718 also requires that estimated forfeitures be considered in the calculation of future compensation expense at the date of grant. We use historical data, as adjusted if deemed appropriate, to estimate future option forfeiture rates for purposes of recognizing share-based compensation expense.

Revenue Recognition

We recognize revenue on product sales when there is persuasive evidence of an arrangement, the sales price is fixed or determinable, title and risk of loss have passed to the customer, contractual obligations have been substantially met, and collection of the related receivable is reasonably assured. Revenue on spare parts and change kits is generally recognized upon shipment. In some circumstances, revenue on equipment sales is recognized subsequent to shipment. For example, equipment sales contracts may specify that customer acceptance criteria be met. In such cases, revenue for established equipment products that have previously met a customer's acceptance criteria is generally recognized upon shipment, provided the equipment meets our final test requirements that we believe substantially demonstrate conformance to the customer's acceptance criteria. However, revenue for equipment products that are newly designed or otherwise lack a reliable history of customer acceptance is deferred until objective evidence of customer acceptance has been obtained. In situations where equipment contracts include significant post-shipment obligations to be performed by us, revenue for the entire transaction is deferred until such obligations have been completed or, if applicable, the transaction is accounted for as a multiple-element arrangement. For arrangements containing multiple elements, the amounts allocated to delivered and undelivered elements are based on their fair value and revenue is recognized upon delivery of each element. Due to the high selling prices of certain types of equipment, the timing of revenue recognition of a relatively small number of transactions may have a significant impact on our reported operating results.

Accounts Receivable

We maintain an allowance for doubtful accounts that reflects our estimate of losses that may result from the uncollectability of accounts receivable. Our allowance for doubtful accounts is based primarily on an analysis of individual accounts for which we have information indicating the customer may not be able to pay amounts owed to us. In these cases, based on the available facts and circumstances, we estimate the amount that will be collected from such customers. We also evaluate the collectability of our accounts receivable in the aggregate based on factors such as the aging of receivable amounts, customer concentrations, historical experience, and current economic trends and conditions. We adjust our allowance for doubtful accounts when additional information is received that impacts the amount reserved. If circumstances change, our estimates of the recoverability of accounts receivable could be reduced or increased by a material amount. Such a change in estimated recoverability would be accounted for in the period in which the facts that give rise to the change become known.

Inventories

We adjust our inventories for estimated excess and obsolete items by reducing their carrying values to estimated realizable value based upon assumptions about future product demand and market conditions. If actual product demand or market conditions are less favorable than those projected by management, additional inventory adjustments may be required.

Warranty Obligations

We accrue estimated warranty costs in the period that the related revenue is recognized. Our warranty cost estimates and warranty reserve requirements are determined based upon product performance, historical warranty experience and costs incurred in addressing product performance issues. Should product performance or cost factors differ from our estimates, adjustments to our warranty accrual may be required.

Income Taxes

We record income tax benefit (expense) based on our estimate of the effective tax rates for the jurisdictions in which we do business. We record the benefit we will derive in future accounting periods from tax losses and credits and deductible temporary differences as “deferred tax assets” which are included in the caption “Deferred income taxes” on our consolidated balance sheet. If, based on all available evidence, it is more likely than not that some or all of the deferred tax assets will not be realized, we record a valuation allowance to reduce the carrying value of our deferred tax assets to the estimated realizable amount. If the valuation allowance is increased, we record additional income tax expense in the period the valuation allowance is increased. If the valuation allowance is reduced, we record an income tax benefit. We make significant estimates and judgments in determining our income tax provision, deferred tax assets and valuation allowance recorded against our deferred tax assets. Actual results may differ significantly from those reflected in management estimates and could result in adjustments that have a material impact on our results of operations.

Results of Operations:

Selected statement of operations data as a percentage of our net sales for 2010 and 2009 were as follows:

	2010	2009
Net sales	100.0%	100.0%
Cost of goods sold	57.9	63.9
Gross profit	42.1	36.1
Operating expenses:		
Selling, general and administrative	36.0	59.8
Research and development	18.6	25.4
Total operating expenses	54.6	85.2
Loss from operations	(12.5)%	(49.1)%

Net Sales:

Our net sales by product line as a percentage of total sales for 2010 and 2009 were as follows:

	2010	2009
Test handler products	61%	48%
Reliability test equipment products	22	17
Change kits and spare parts	17	35
Total	100%	100%

Net sales were \$16.3 million in 2010 compared with \$8.6 million in 2009, an 88% increase. Equipment sales increased significantly in 2010 as a result of improved economic conditions and a semiconductor industry recovery that began in the second half of 2009 and continued into 2010. Net sales of test handlers were \$10.0 million in 2010 compared with \$4.1 million in 2009, an increase of 141%. Net sales of reliability test equipment were \$3.5 million in 2010 compared with \$1.5 million in 2009, an increase of 142%. Net sales of change kits and spare parts were \$2.8 million in 2010 compared with \$3.1 million in 2009, a decrease of 10%. The decrease in sales of change kits and spare parts resulted primarily from relatively high demand for these items in the second half of 2009 as our customers moved to increase the utilization of their existing equipment as business conditions improved. In fiscal year 2010, sales of change kits and spare parts decreased slightly to more normal levels as customers increased purchases of new equipment to expand their production capacity as industry conditions continued to improve.

Gross Profit:

Aetrium's gross profit as a percentage of net sales can fluctuate based on a number of factors, including but not limited to the mix of products sold, distribution channel mix, price discounting, product maturity, inventory write downs, and the utilization of manufacturing capacity associated with varying production levels. Gross profit was 42.1% of net sales in 2010 compared with 36.1% in 2009. Our gross margin increased in 2010 primarily due to significant efficiencies associated with the 88% increase in net sales over the prior year, partially offset by a less favorable product mix and higher charges for excess and obsolete inventories. Test handler sales, which are generally lower margin sales than our other product lines, represented 61% of total net sales in 2010 compared with 48% in 2009. Reliability test equipment sales represented 22% of total net sales in 2010 compared with 17% of net sales in 2009 and sales of change kits and spare parts represented 17% of net sales in 2010 compared with 35% in 2009. Charges for excess and obsolete inventories amounted to \$0.4 million and \$0.2 million in 2010 and 2009, respectively. The charges in 2010 resulted primarily from product design changes in 2010 and anticipated changes in future product sales mix in favor of newer products. The mix of discounted sales to distributors was comparable in 2010 and 2009, representing 29% and 26% of total net sales, respectively.

Selling, General and Administrative Expenses:

Selling, general and administrative, or SG&A, expenses consist primarily of employee compensation and related costs, sales commissions, travel, warranty and no-charge equipment improvement costs. SG&A expenses were \$5.9 million in 2010 compared with \$5.2 million in 2009, an increase of 13%. Employee compensation increased \$0.2 million in 2010 in part because employee wages that had been at reduced levels during the economic and industry downturn in 2009 were restored in 2010. Commissions and travel expenses increased \$0.4 million and \$0.2 million, respectively, as a result of significantly increased sales and service activity. In addition, SG&A expenses included a charge of \$0.6 million related to deferred compensation retirement benefits approved by our Compensation Committee in November 2010 for our then chief executive officer and our current chief administrative officer. This charge was partially offset by a credit of \$0.2 million that had been recorded in March 2010 related to the settlement of a legal dispute with a former subtenant. In 2009, we recorded a \$0.4 million charge to reserve for a loss on the sublease contract with this subtenant, and we were able to recover a portion of our reserved losses in 2010. See notes 6 and 8 to our consolidated financial statements for more information related to these unusual items.

Research and Development Expenses:

Research and development expenses were \$3.0 million in 2010 compared with \$2.2 million in 2009, an increase of 38%. Employee compensation, contract services, and materials costs increased \$0.2 million, \$0.4 million, and \$0.2 million, respectively. Employee compensation increased in part because employee wages that had been at reduced levels during the economic and industry downturn in 2009 were restored in 2010. Contract services and materials expenses increased in 2010 over 2009 levels as we accelerated development activities for both our test handler and reliability test equipment product lines. Research and development expenses represented 18.6% of total net sales in 2010 compared with 25.4% of total net sales in 2009. New product development is an essential part of our strategy to gain market share. Over time, we expect to invest approximately 12% to 15% of our revenues in research and development, although we may exceed this range in periods of relatively low revenues as was the case in 2010 and 2009.

Interest Income, Net:

Interest income, net, amounted to approximately \$71,000 and \$135,000 in 2010 and 2009, respectively. These amounts consisted primarily of interest income from the investment of excess funds. The decrease in interest income in 2010 reflects generally declining short-term interest rates and lower average invested cash balances.

Income Tax Benefit (Expense):

We recorded an income tax benefit of \$57,000 in 2010 related to a carryback claim filed in 2010 for a refund of federal alternative minimum taxes paid in prior years. We recorded income tax expense of \$2.6 million in 2009, which resulted primarily from reestablishing a full valuation allowance on our deferred tax assets. See Note 12 to our consolidated financial statements for a full discussion of our income tax benefit (expense), valuation allowance and other income tax matters.

Financial Condition, Liquidity and Capital Resources:

Cash and cash equivalents increased by approximately \$0.6 million in the year ended December 31, 2010. We generated \$0.2 million of cash from operating activities, which included our net loss of \$1.9 million, offset by \$1.0 million in non-cash expenses and \$1.2 million in working capital changes. Non-cash expenses included depreciation expense of \$0.1 million, share-based compensation expense of \$0.5 million, and inventory obsolescence charges of \$0.4 million. Working capital changes contributing to cash consisted primarily of a \$1.3 million decrease in accounts receivable and a \$0.3 million net increase in other accrued liabilities, partially offset by a \$0.3 million increase in inventories and a \$0.2 million decrease in accounts payable. Accounts receivable decreased due to a significant decrease in net sales in the fourth quarter of 2010 compared with the fourth quarter of 2009. The net increase in other accrued liabilities includes \$0.6 million in accrued retirement benefits partially offset by slight decreases in accrued commissions, warranty and health insurance costs. Inventories increased primarily to support customer evaluations and initial shipments anticipated for our new V_{MAX} test handler. Accounts payable decreased as we reduced expenses and inventory purchases in response to a reduction in net sales in the fourth quarter of 2010. Net cash flows from investing activities were not significant in fiscal year 2010. Net cash provided by financing activities in 2010 consisted of \$0.3 million in net proceeds from employee stock option exercises.

Cash and cash equivalents decreased by approximately \$2.2 million in the year ended December 31, 2009. We used \$2.2 million of cash to fund operating activities, which included our net loss of \$6.7 million, partially offset by \$3.5 million of non-cash expenses and \$1.0 million in working capital changes. Non-cash expenses included depreciation expense of \$0.1 million, share-based compensation expense of \$0.6 million, deferred income taxes of \$2.6 million and inventory obsolescence charges of \$0.2 million. Working capital changes contributing to cash consisted primarily of a \$1.5 million decrease in inventories, partially offset by a \$0.6 million increase in accounts receivable. Inventories decreased primarily due to significantly reduced inventory purchases in 2009 compared with 2008 in response to lower sales levels. Accounts receivable increased primarily because shipments in the fourth quarter of 2009 were concentrated in the latter part of the period. Net cash flows from investing activities and financing activities were not significant in fiscal year 2009.

Historically we have supported our capital expenditure and working capital needs with cash generated from operations and our existing cash and cash equivalents. We believe our cash and cash equivalents of \$10.0 million at December 31, 2010 will be sufficient to meet capital expenditure and working capital requirements at least through 2011. In addition, we have a revolving credit line agreement with a bank that provides for borrowings up to \$2.0 million. Advances under the agreement are at the sole

discretion of the bank. Therefore, there can be no assurance that funds will be available to us under the agreement. The credit agreement expires in December 2011. As discussed above, Aetrium has been impacted by an industry slowdown that began in the fourth quarter of 2010 and has continued into early 2011. Although we believe industry conditions will improve during 2011, there can be no assurance that changes in semiconductor industry conditions, general domestic and global economic conditions, and/or other factors will not adversely impact Aetrium's future operating results. Also, we may acquire other companies, product lines or technologies that are complementary to our business, and our working capital needs may change as a result of such acquisitions.

Recent Accounting Pronouncements:

In January 2010, the Financial Accounting Standards Board (FASB) issued authoritative guidance for fair value measurements that requires additional disclosures and clarifications to existing disclosures. This authoritative guidance requires a reporting entity to disclose separately the amounts of significant transfers in and out of Level 1 and Level 2 investments and describe the reasons for these transfers. This authoritative guidance also requires enhanced disclosure of activity in Level 3 investments. The new disclosures and clarifications of existing disclosures for Level 1 and Level 2 investments became effective for Aetrium in the first quarter of fiscal year 2010 and had no impact on our consolidated financial position or results of operations. Disclosure requirements regarding activity in Level 3 investments will become effective for Aetrium at the beginning of fiscal year 2011 and are not expected to impact our consolidated financial position or results of operations.

In October 2009, the FASB issued authoritative guidance for revenue recognition with multiple deliverables. This authoritative guidance impacts the determination of when the individual deliverables included in a multiple-element arrangement may be treated as separate units of accounting. Additionally, this guidance modifies the manner in which the transaction consideration is allocated to separately identified deliverables by no longer permitting the residual method of allocating arrangement consideration. This new guidance is effective for Aetrium in the first quarter of fiscal year 2011. The implementation of this guidance is not expected to have a material impact on our consolidated financial position or results of operations.

In October 2009, the FASB issued new accounting guidance for the accounting for certain revenue arrangements that include software elements. The new guidance amends the scope of pre-existing software revenue guidance by removing from the guidance non-software components of tangible products and certain software components of tangible products. The new guidance is effective prospectively for revenue arrangements entered into or materially modified in fiscal years beginning on or after June 15, 2010, and will be effective for us in the first quarter of fiscal year 2011. The implementation of this guidance is not expected to have a material impact on our consolidated financial position or results of operations.

ITEM 8. FINANCIAL STATEMENTS AND SUPPLEMENTARY DATA.

The information required by this Item is included in our Consolidated Financial Statements and the report of our independent registered public accounting firm, which are included in this Annual Report on Form 10-K beginning on page F-1. The index to this report and the financial statements is included in Item 15(a)(1) below.

ITEM 9. CHANGES IN AND DISAGREEMENTS WITH ACCOUNTANTS ON ACCOUNTING AND FINANCIAL DISCLOSURE.

None.

ITEM 9A. CONTROLS AND PROCEDURES

Disclosure Controls and Procedures:

Our chief executive officer, our chief administrative officer and our treasurer conducted an evaluation of the effectiveness of the design and operation of our disclosure controls and procedures (as defined in Securities Exchange Act Rules 13a-15(e) and 15d-15(e)). Based on their evaluation, they concluded that our disclosure controls and procedures were effective as of December 31, 2010, the end of the period covered by this annual report.

Management's Report on Internal Control over Financial Reporting:

Aetrium's management is responsible for establishing and maintaining adequate internal control over financial reporting, as such term is defined in Exchange Act Rules 13a-15(f) and 15d-15(f). Under the supervision and with the participation of our chief executive officer, our chief administrative officer and our treasurer, our management conducted an evaluation of the effectiveness of our internal control over financial reporting based on the framework in *Internal Control – Integrated Framework* issued by the Committee of Sponsoring Organizations of the Treadway Commission. Based on that evaluation, our management concluded that our internal control over financial reporting was effective as of December 31, 2010.

Changes in Internal Control over Financial Reporting:

There were no changes in our internal control over financial reporting that occurred during the fourth quarter of 2010 that have materially affected, or are reasonably likely to materially affect, Aetrium's internal control over financial reporting.

Inherent Limitations of Disclosure Controls and Procedures and Internal Control over Financial Reporting:

It should be noted that any system of controls, however well designed and operated, can provide only reasonable, and not absolute, assurance that the objectives of the system will be met. In designing and operating a control system, one must consider the potential benefits of controls relative to their costs and the reality of limited resources available to allocate to control activities, particularly in smaller companies. In addition, the design of any control system is based in part upon certain assumptions about the likelihood of future events and there can be no assurance that any control will meet its objectives under all potential future conditions. Because of such inherent limitations in any control system, there can be no absolute assurance that control issues, misstatements, and/or fraud will be prevented or detected.

ITEM 9B. OTHER INFORMATION.

None.

PART III

ITEM 10. DIRECTORS, EXECUTIVE OFFICERS AND CORPORATE GOVERNANCE.

Directors of the Registrant

The information under the captions “Election of Directors — Information About Nominees” and “Election of Directors—Additional Information About the Board and Its Committees” in our 2011 Proxy Statement is incorporated in this Annual Report on Form 10-K by reference.

Executive Officers of the Registrant

The information under the caption “Item 4A. Executive Officers of the Registrant” located elsewhere in this Annual Report on Form 10-K is incorporated herein by reference.

Compliance with Section 16(a) of the Exchange Act

The information under the caption “Section 16(a) Beneficial Ownership Reporting Compliance” in our 2011 Proxy Statement is incorporated in this Annual Report on Form 10-K by reference.

Identification of Audit Committee; Audit Committee Financial Experts

The information under the caption “Audit Committee Report – Membership and Role of the Audit Committee” in our 2011 Proxy Statement is incorporated in this Annual Report on Form 10-K by reference.

Code of Ethics

The information under the caption “Code of Ethics” in our 2011 Proxy Statement is incorporated in this Annual Report on Form 10-K by reference.

ITEM 11. EXECUTIVE COMPENSATION.

The information under the captions “Election of Directors — Compensation of Non-Employee Directors” and “Executive Compensation and Other Benefits” in our 2011 Proxy Statement is incorporated in this Annual Report on Form 10-K by reference.

ITEM 12. SECURITY OWNERSHIP OF CERTAIN BENEFICIAL OWNERS AND MANAGEMENT AND RELATED STOCKHOLDER MATTERS.

The information under the caption “Security Ownership of Certain Beneficial Owners and Management” in our 2011 Proxy Statement is incorporated in this Annual Report on Form 10-K by reference.

Securities Authorized for Issuance under Equity Compensation Plans

The following table summarizes information about our equity compensation plans as of December 31, 2010:

EQUITY COMPENSATION PLAN INFORMATION

<u>Plan Category</u>	<u>Number of securities to be issued upon exercise of outstanding options, warrants and rights(1)</u>	<u>Weighted average exercise price of outstanding options, warrants and rights</u>	<u>Number of securities remaining available for future issuance under equity compensation plans (excluding securities reflected in the first column) (2)</u>
Equity compensation plans approved by security holders	1,895,437	\$2.38	260,853
Equity compensation plans not approved by security holders	None	Not applicable	None
Total	<u>1,895,437</u>	<u>\$2.38</u>	<u>260,853</u>

- (1) The Aetrium Incorporated 2003 Stock Incentive Plan is the only equity compensation plan approved by security holders.
- (2) The number of shares available for issuance under the Aetrium Incorporated 2003 Stock Incentive Plan is equal to 20% of the aggregate number of shares of our common stock outstanding less the total number of shares of common stock issuable upon the exercise or conversion of any outstanding stock options, warrants or other stock rights.

ITEM 13. CERTAIN RELATIONSHIPS AND RELATED TRANSACTIONS, AND DIRECTOR INDEPENDENCE.

The information under the captions “Election of Directors—Additional Information About the Board and Its Committees” in our 2011 Proxy Statement is incorporated in this Annual Report on Form 10-K by reference.

ITEM 14. PRINCIPAL ACCOUNTANT FEES AND SERVICES.

The information concerning principal accountant fees and services and the audit committee’s pre-approval policies and procedures under the captions “Independent Registered Public Accounting Firm—Audit and Non-Audit Fees” and “Independent Registered Public Accounting Firm—Pre-approval Policies and Procedures” in our 2011 Proxy Statement is incorporated in this Annual Report on Form 10-K by reference.

PART IV

ITEM 15. EXHIBITS AND FINANCIAL STATEMENT SCHEDULES.

(a) 1. Financial Statements of Registrant.

The following Consolidated Financial Statements of Aetrium Incorporated and the Independent Registered Public Accounting Firm's Report thereon are included herein:

<u>Description</u>	<u>Page(s)</u>
Report of Independent Registered Public Accounting Firm	F-1
Consolidated Financial Statements:	
Consolidated Statements of Operations.....	F-2
Consolidated Balance Sheets.....	F-3
Consolidated Statements of Changes in Shareholders' Equity	F-4
Consolidated Statements of Cash Flows	F-5
Notes to Consolidated Financial Statements.....	F-6 – F-17

(a) 2. Financial Statement Schedule of Registrant.

Schedule II - Valuation and Qualifying Accounts	S-1
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All other schedules are omitted as the required information is inapplicable or the information is presented in the financial statements or related notes.

(a) 3. Exhibits.

The exhibits to this Annual Report on Form 10-K are listed in the Exhibit Index beginning on page E-1 of this Annual Report on Form 10-K.

If you were one of our shareholders on March 23, 2011 and you want a copy of any of the exhibits listed or referred to in the Exhibit Index, we will furnish it to you at a reasonable cost upon your written request sent to Aetrium Incorporated, 2350 Helen Street, North St. Paul, Minnesota 55109, Attn.: Shareholder Relations.

The following is a list of each management contract or compensatory plan or arrangement we are required to file as an exhibit to this Annual Report on Form 10-K pursuant to Item 15(b):

1. 2003 Stock Incentive Plan (incorporated by reference to Exhibit 10.18 to our Annual Report on Form 10-K for the year ended December 31, 2002) (File No. 0-22166).
2. Form of Non-Statutory Stock Option Agreement (filed herewith electronically as Exhibit 10.3).
3. Form of Change of Control Agreement (incorporated by reference to Exhibit 10.19 to our Annual Report on Form 10-K for the year ended December 31, 2003) (File No. 0-22166).
4. Form of Amendments to Change of Control Agreement (incorporated by reference to Exhibit 10.18 to our Annual Report on Form 10-K for the year ended December 31, 2007) (File No. 0-22166).
5. Sales Incentive Program (incorporated by reference to Exhibit 10.21 to our Annual Report on Form 10-K for the year ended December 31, 2003) (File No. 0-22166).
6. Executive Officer Profit Sharing Program (incorporated by reference to Exhibit 10.1 to our Current Report on Form 8-K dated January 23, 2007) (File No. 0-22166).
7. Letter Agreement with Joseph C. Levesque dated November 17, 2010 (incorporated by reference to Exhibit 10.1 to our Current Report on Form 8-K dated November 19, 2010) (File No. 0-22166).
8. Letter Agreement with Douglas L. Hemer dated November 17, 2010 (incorporated by reference to Exhibit 10.2 to our Current Report on Form 8-K dated November 19, 2010) (File No. 0-22166).

FINANCIAL STATEMENTS OF REGISTRANT

Report of Independent Registered Public Accounting Firm

Board of Directors and Shareholders
Aetrium Incorporated

We have audited the accompanying consolidated balance sheets of Aetrium Incorporated (a Minnesota corporation) and subsidiary as of December 31, 2010 and 2009, and the related consolidated statements of operations, changes in shareholders' equity and cash flows for each of the two years in the period ended December 31, 2010. Our audits of the basic financial statements included the financial statement schedule listed in the index appearing under Item 15. These financial statements and financial statement schedule are the responsibility of the Company's management. Our responsibility is to express an opinion on these financial statements and financial statement schedule based on our audits.

We conducted our audits 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. The Company is not required to have, nor were we engaged to perform an audit of its internal control over financial reporting. Our audit included consideration of internal control over financial reporting as a basis for designing audit procedures that are appropriate in the circumstances, but not for the purpose of expressing an opinion on the effectiveness of the Company's internal control over financial reporting. Accordingly, we express no such opinion. An audit also 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, as well as evaluating the overall financial statement presentation. We believe that our audits provide a reasonable basis for our opinion.

In our opinion, the consolidated financial statements referred to above present fairly, in all material respects, the financial position of Aetrium Incorporated and subsidiary as of December 31, 2010 and 2009, and the results of their operations and their cash flows for each of the two years in the period ended December 31, 2010 in conformity with accounting principles generally accepted in the United States of America. Also, in our opinion, the related financial statement schedule, when considered in relation to the basic financial statements taken as a whole, presents fairly, in all material respects, the information set forth therein.

/s/GRANT THORNTON LLP

Minneapolis, Minnesota
March 30, 2011

AETRIUM INCORPORATED
Consolidated Statements of Operations

Year Ended December 31,	2010	2009
Net sales	\$ 16,257,902	\$ 8,648,515
Cost of goods sold	9,412,992	5,527,531
Gross profit	6,844,910	3,120,984
Operating expenses:		
Selling, general and administrative	5,852,593	5,168,783
Research and development	3,021,784	2,195,026
Total operating expenses	8,874,377	7,363,809
Loss from operations	(2,029,467)	(4,242,825)
Interest income, net	70,720	135,449
Loss before income taxes	(1,958,747)	(4,107,376)
Income tax benefit (expense)	57,000	(2,621,000)
Net loss	\$ (1,901,747)	\$ (6,728,376)
Loss per share – basic and diluted	\$ (0.18)	\$ (0.63)
Weighted average common shares outstanding – basic and diluted	10,713,000	10,599,000

The accompanying notes are an integral part of the consolidated financial statements.

AETRIUM INCORPORATED
Consolidated Balance Sheets

December 31,	2010	2009
ASSETS		
Current assets:		
Cash and cash equivalents	\$ 10,032,660	\$ 9,475,871
Accounts receivable, net of allowance for doubtful accounts of \$30,000 and \$40,000 at December 31, 2010 and 2009, respectively	862,516	2,114,109
Inventories	7,381,986	7,472,261
Other current assets	67,108	233,548
Total current assets	18,344,270	19,295,789
Property and equipment:		
Furniture and fixtures	521,450	521,450
Equipment	1,240,224	1,177,785
Less accumulated depreciation and amortization	(1,663,856)	(1,601,398)
Property and equipment, net	97,818	97,837
Other asset	41,067	—
Total assets	\$ 18,483,155	\$ 19,393,626
LIABILITIES AND SHAREHOLDERS' EQUITY		
Current liabilities:		
Trade accounts payable	\$ 502,148	\$ 707,310
Accrued compensation	361,013	268,269
Other accrued liabilities	353,541	400,600
Total current liabilities	1,216,702	1,376,179
Noncurrent accrued liabilities	376,700	—
Commitments and contingencies		
Shareholders' equity:		
Common stock, \$.001 par value; 30,000,000 shares authorized; 10,781,451 and 10,605,631 shares issued and outstanding at December 31, 2010 and 2009, respectively	10,781	10,606
Additional paid-in capital	65,085,003	64,311,125
Accumulated deficit	(48,206,031)	(46,304,284)
Total shareholders' equity	16,889,753	18,017,447
Total liabilities and shareholders' equity	\$ 18,483,155	\$ 19,393,626

The accompanying notes are an integral part of the consolidated financial statements.

AETRIUM INCORPORATED
Consolidated Statements of Changes in Shareholders' Equity

	Common Stock		Additional Paid- in Capital	Accumulated Deficit	Total Shareholders' Equity
	Shares	Amount			
Balance, December 31, 2008	10,598,131	\$ 10,598	\$ 63,665,060	\$ (39,575,908)	\$ 24,099,750
Exercise of stock options	7,500	8	16,736	—	16,744
Share-based compensation expense	—	—	629,329	—	629,329
Net loss	—	—	—	(6,728,376)	(6,728,376)
Balance, December 31, 2009	10,605,631	10,606	64,311,125	(46,304,284)	18,017,447
Exercise of stock options	363,084	363	820,437	—	820,800
Repurchase of shares in connection with exercise of stock options	(187,264)	(188)	(547,235)	—	(547,423)
Share-based compensation expense	—	—	500,676	—	500,676
Net loss	—	—	—	(1,901,747)	(1,901,747)
Balance, December 31, 2010	10,781,451	\$ 10,781	\$ 65,085,003	\$ (48,206,031)	\$ 16,889,753

The accompanying notes are an integral part of the consolidated financial statements.

AETRIUM INCORPORATED
Consolidated Statements of Cash Flows

Year Ended December 31,	2010	2009
Cash flows from operating activities:		
Net loss	\$ (1,901,747)	\$ (6,728,376)
Adjustments to reconcile net loss to net cash provided by (used in) operating activities:		
Depreciation and amortization	62,458	70,243
Share-based compensation expense	500,676	629,329
Deferred income taxes	—	2,616,000
Provision for bad debts	(10,000)	—
Provision for excess and obsolete inventories	423,000	155,000
Changes in assets and liabilities:		
Accounts receivable	1,261,593	(574,764)
Inventories	(332,725)	1,534,579
Other current assets	55,246	99,816
Other assets	(41,067)	1,761
Trade accounts payable	(205,162)	136,086
Accrued compensation	92,744	(18,106)
Other accrued liabilities	329,641	(160,133)
Net cash provided by (used in) operating activities	234,657	(2,238,565)
Cash flows from investing activities:		
Purchase of property and equipment	(62,439)	(25,396)
Collection of note receivable	111,194	105,804
Net cash provided by investing activities	48,755	80,408
Cash flows from financing activities:		
Proceeds from exercise of stock options	314,605	16,744
Repurchase of shares in connection with exercise of stock options	(41,228)	—
Payments on long-term debt	—	(11,678)
Net cash provided by financing activities	273,377	5,066
Net increase (decrease) in cash and cash equivalents	556,789	(2,153,091)
Cash and cash equivalents at beginning of year	9,475,871	11,628,962
Cash and cash equivalents at end of year	\$ 10,032,660	\$ 9,475,871
Supplemental cash flow information:		
Cash paid for:		
Interest	\$ —	\$ 948
Income taxes	\$ 3,209	\$ 1,004

The accompanying notes are an integral part of the consolidated financial statements.

AETRIUM INCORPORATED

Notes to Consolidated Financial Statements

NOTE 1: BUSINESS DESCRIPTION

Aetrium Incorporated designs, manufactures and markets a variety of electromechanical equipment used by the semiconductor industry to handle and test integrated circuits, or ICs. Our products are sold primarily to semiconductor manufacturers and their assembly and test subcontractors located in the United States and in foreign locations. References in the Notes to Consolidated Financial Statements to "Aetrium," "the company," "we" or "our," unless the context otherwise requires, refer to Aetrium Incorporated and its consolidated subsidiary and their respective predecessors.

NOTE 2: SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES

Basis of Presentation: The consolidated financial statements include the accounts of Aetrium Incorporated and its wholly owned subsidiary. All intercompany accounts and transactions have been eliminated in consolidation.

Use of Estimates: The preparation of the consolidated 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 amounts reported in the financial statements and accompanying notes. Actual results could differ from those estimates.

Fair Value of Financial Instruments: The carrying amounts of financial instruments, including cash equivalents, accounts receivable, other current assets, trade accounts payable, accrued expenses and other current liabilities approximate fair value due to the short term maturities of these instruments.

Cash and Cash Equivalents: Cash equivalents consist of highly liquid investments with a maturity of three months or less when purchased. At December 31, 2009, cash equivalents included investments in certificates of deposit (CDs) of \$4.0 million. In accordance with ASC 820, "Fair Value Measurements and Disclosures," CDs are classified as held-to-maturity Level 2 investments for which fair value is based on observable inputs other than quoted prices in active markets. We recorded our CDs at cost, which at December 31, 2009, approximated fair value. We maintain our cash and cash equivalents in accounts that, at times, may exceed the insurance limits of the Federal Deposit Insurance Corporation.

Accounts Receivable and Allowance for Doubtful Accounts: Trade accounts receivable are recorded at the invoiced amount and do not bear interest. The allowance for doubtful accounts is our best estimate of losses that may result from uncollectable accounts receivable. We determine the allowance based primarily on an analysis of individual accounts. We also evaluate the collectability of our accounts receivable in the aggregate based on factors such as the aging of receivable amounts, customer concentrations, historical experience, and current economic trends and conditions. Account balances are charged off against the allowance when we feel it is probable the receivable will not be recovered. We do not have any off-balance-sheet credit exposure related to our customers.

Inventories: Inventories are valued at the lower of cost or market, with cost determined on a first-in, first-out basis. We adjust our inventories for estimated excess and obsolete items by reducing their carrying values to estimated realizable value based upon assumptions about future product demand and market conditions.

AETRIUM INCORPORATED

Notes to Consolidated Financial Statements

Property and Equipment: Furniture, fixtures and equipment are recorded at cost and are depreciated using the double declining balance method over estimated useful lives ranging from three to seven years. When assets are retired or disposed of, the cost and accumulated depreciation are removed from the accounts. Depreciation expense was \$0.1 million for each of the years ended December 31, 2010 and 2009. Maintenance and repairs are charged to expense as incurred.

Valuation of Long-Lived Assets: Aetrium reviews its long-lived assets for impairment whenever an event or change in circumstances indicates that the carrying value of an asset may not be recoverable. If such an event or change in circumstances occurs and potential impairment is indicated because the carrying values exceed the estimated future undiscounted cash flows, we would measure the impairment loss as the amount by which the carrying value of the asset exceeds its fair value. There were no impairment charges during the years ended December 31, 2010 and 2009.

Revenue Recognition: We recognize revenue on product sales when there is persuasive evidence of an arrangement, the sales price is fixed or determinable, title and risk of loss have passed to the customer, contractual obligations have been substantially met, and collection of the related receivable is reasonably assured. Revenue on spare parts and change kits is generally recognized upon shipment. In some circumstances, revenue on equipment sales is recognized subsequent to shipment. For example, equipment sales contracts may specify that customer acceptance criteria be met. In such cases, revenue for established equipment products that have previously met a customer's acceptance criteria is generally recognized upon shipment, provided the equipment meets our final test requirements that we believe substantially demonstrate conformance to the customer's acceptance criteria. However, revenue for equipment products that are newly designed or otherwise lack a reliable history of customer acceptance is deferred until objective evidence of customer acceptance has been obtained. In situations where equipment contracts include significant post-shipment obligations to be performed by us, revenue for the entire transaction is deferred until such obligations have been completed or, if applicable, the transaction is accounted for as a multiple-element arrangement. For arrangements containing multiple elements, the amounts allocated to delivered and undelivered elements are based on their fair value and revenue is recognized upon delivery of each element. Sales tax billed to customers is excluded from revenue. In situations where equipment is shipped but revenue and the related receivable are not recognized, the cost of the equipment is included in inventories in our consolidated balance sheet. We often receive payments from customers prior to recognizing revenue. For example, we may receive partial payments prior to shipment, which we record as "customer deposits," or we may receive partial payments after shipment but prior to recognizing revenue, which we record as "deferred revenue." Customer deposits and deferred revenue are recorded as liabilities and included as a component of "Other accrued liabilities" in our consolidated balance sheet.

Advertising Costs: Advertising costs are expensed as incurred and were immaterial for each of the years ended December 31, 2010 and 2009.

AETRIUM INCORPORATED

Notes to Consolidated Financial Statements

Warranty Costs: Our products are sold with warranty periods that vary by item and range up to two years. Estimated warranty costs are accrued in the period that the related revenue is recognized. The following table summarizes product warranty expense accruals and settlements for the two years ended December 31, 2010 (in thousands):

	Accrual balance at beginning of year	Accruals for warranties	Settlements made	Accrual balance at end of year
2009	\$ 115	\$ 29	\$ (62)	\$ 82
2010	82	85	(103)	64

Accrued warranty costs are included in the caption "Other accrued liabilities" in our consolidated balance sheet. See Note 6.

Research and Development: Research and development expenditures, which include software development costs, are expensed as incurred. Accounting Standards Codification (ASC) 730, "Research and Development" requires the capitalization of certain software development costs once technological feasibility is established, which we define as the completion of a working model. To date, the period between achieving technological feasibility and the general availability of such software that is embedded in our equipment has been short and software development costs qualifying for capitalization have been insignificant. Accordingly, we have not capitalized any software development costs.

Income Taxes: Income taxes are accounted for in accordance with ASC 740, "Income Taxes." We record income tax expense or benefit based on our estimate of the effective tax rates for the jurisdictions in which we do business. Deferred tax assets are recognized for deductible temporary differences and tax credit carryforwards and deferred tax liabilities are recognized for taxable temporary differences. Deferred tax assets are reduced by a valuation allowance when, in the opinion of management, it is more likely than not that some portion or all of the deferred tax assets will not be realized. We assess our income tax positions for all years subject to examination based upon our evaluation of the facts, circumstances and information available at the reporting dates. For those tax positions where it is more likely than not that a tax benefit will be sustained, we record the largest amount of tax benefit with a greater than 50 percent likelihood of being realized upon ultimate settlement with a taxing authority that has full knowledge of all relevant information. For those income tax positions where it is not more likely than not that a tax benefit will be sustained, no tax benefit is recorded. Interest expense associated with income taxes, if any, is classified as income tax expense. See Note 12 for additional information regarding income taxes.

Loss Per Common Share: Basic and diluted loss per common share is computed by dividing net loss by the weighted-average number of common shares outstanding during each period. The computation of diluted loss per share excludes the impact of stock options because they would be antidilutive. As of December 31, 2010 and 2009, there were 1,895,437 and 1,721,521 stock options outstanding, respectively, that could have potentially impacted diluted income per share.

Share-Based Compensation: We accounted for share-based compensation in accordance with the provisions of ASC 718, "Compensation – Stock Compensation," which requires the measurement and

AETRIUM INCORPORATED

Notes to Consolidated Financial Statements

recognition of all share-based compensation under the fair value method. See Note 10 for additional information regarding share-based compensation and our stock incentive plan.

NOTE 3: NOTE RECEIVABLE

In connection with the sale of our Dallas, Texas operations to WEB Technology, Inc. (WEB) in 2006, we received a promissory note from WEB. The note balance was \$26,179 and \$137,373 at December 31, 2010 and 2009, respectively, which amounts are included in the caption "Other current assets" in our consolidated balance sheet.

NOTE 4: RECENT ACCOUNTING PRONOUNCEMENTS

In January 2010, the Financial Accounting Standards Board (FASB) issued authoritative guidance for fair value measurements that requires additional disclosures and clarifications to existing disclosures. This authoritative guidance requires a reporting entity to disclose separately the amounts of significant transfers in and out of Level 1 and Level 2 investments and describe the reasons for these transfers. This authoritative guidance also requires enhanced disclosure of activity in Level 3 investments. The new disclosures and clarifications of existing disclosures for Level 1 and Level 2 investments became effective for Aetrium in the first quarter of fiscal year 2010 and had no impact on our consolidated financial position or results of operations. Disclosure requirements regarding activity in Level 3 investments will become effective for Aetrium at the beginning of fiscal year 2011 and are not expected to impact our consolidated financial position or results of operations.

In October 2009, the FASB issued authoritative guidance for revenue recognition with multiple deliverables. This authoritative guidance impacts the determination of when the individual deliverables included in a multiple-element arrangement may be treated as separate units of accounting. Additionally, this guidance modifies the manner in which the transaction consideration is allocated to separately identified deliverables by no longer permitting the residual method of allocating arrangement consideration. This new guidance is effective for Aetrium in the first quarter of fiscal year 2011. The implementation of this guidance is not expected to have a material impact on our consolidated financial position or results of operations.

In October 2009, the FASB issued new accounting guidance for the accounting for certain revenue arrangements that include software elements. The new guidance amends the scope of pre-existing software revenue guidance by removing from the guidance non-software components of tangible products and certain software components of tangible products. The new guidance is effective prospectively for revenue arrangements entered into or materially modified in fiscal years beginning on or after June 15, 2010, and will be effective for us in the first quarter of fiscal year 2011. The implementation of this guidance is not expected to have a material impact on our consolidated financial position or results of operations.

AETRIUM INCORPORATED

Notes to Consolidated Financial Statements

NOTE 5: INVENTORIES

Inventories are comprised of the following (in thousands):

December 31,	2010	2009
Purchased parts and completed subassemblies	\$ 4,004	\$ 4,550
Work-in-process	2,190	896
Finished goods, including saleable demonstration equipment	1,164	2,026
Equipment shipped, subject to revenue deferral	24	—
Total inventories	\$ 7,382	\$ 7,472

We recorded charges for excess and obsolete inventories of \$423,000 and \$155,000 in fiscal years 2010 and 2009, respectively. Our reserve for excess and obsolete inventories was \$1.3 million and \$0.9 million at December 31, 2010 and 2009, respectively.

NOTE 6: OTHER ACCRUED LIABILITIES:

Other accrued liabilities are comprised of the following (in thousands):

December 31,	2010	2009
Accrued commissions	\$ 12	\$ 59
Accrued warranty	64	82
Accrued retirement benefits – current portion	207	—
Accrued health insurance benefits	—	79
Subtenant deposits	—	21
Other	71	160
Total other accrued liabilities	\$ 354	\$ 401

In November 2010, our Compensation Committee approved arrangements to provide retirement benefits for our then chief executive officer and our current chief administrative officer. Based on the terms of these agreements, we recorded a deferred compensation charge of \$588,000, which is included in “Selling, general and administrative expenses” in our consolidated statement of operations for the year ended December 31, 2010. As of December 31, 2010 accrued retirement benefits amounted to \$583,628 of which \$206,928 was classified as a current liability and \$376,700 was classified as a noncurrent liability.

NOTE 7: CREDIT AGREEMENT

Aetrium has a revolving credit line agreement with a bank that provides for borrowings up to \$2.0 million and bears interest at the prime rate plus 1.0% with a minimum interest rate of 4.5%. The agreement is collateralized by substantially all of our assets and expires in December 2011. Advances under the agreement are at the sole discretion of the bank. Therefore, there can be no assurance that funds will be available to us under the agreement. At December 31, 2010 and 2009, there were no borrowings under line of credit agreements.

NOTE 8: LEGAL SETTLEMENT

In 2000, we vacated a leased facility in Poway, California for which the lease term ended on January 31, 2010. From 2006 through the end of the lease term, a portion of the facility was subleased to a party that

AETRIUM INCORPORATED

Notes to Consolidated Financial Statements

defaulted on its sublease agreement with us during fiscal year 2009 for non-payment of rents. In September 2009, we filed a legal action against the subtenant in the State of California to recover amounts owed to us. During the fourth quarter of 2009, the subtenant vacated the facility. As of December 31, 2009 the receivable from the subtenant for past-due rents and related costs amounted to \$318,000. In late March 2010, we reached an accord with the subtenant under which we agreed to settle our claim for a cash payment of \$175,000 if received by April 21, 2010. The settlement agreement provided if we did not receive the cash payment by that date, we would be awarded a default judgment against the subtenant in the amount of approximately \$423,000. At the time of the settlement, we determined that there was substantial doubt as to whether the subtenant would make the agreed upon cash payment or that we would be able to collect any amount on a default judgment if awarded. Therefore, we recorded a charge of \$318,000 to fully reserve the receivable balance at December 31, 2009. In addition, we recorded a charge of \$54,000 for the unpaid January 2010 rent and estimated related costs we expected to incur. The total charge of \$372,000 is included in "Selling, general and administrative expenses" in our consolidated statement of operations for the year ended December 31, 2009.

On April 21, 2010, we received the \$175,000 payment from the subtenant. Based on the receipt of this payment, we reduced the receivable loss reserve by this amount. In addition, we reduced a related accrual for estimated legal costs by \$15,000. A credit of \$190,000 related to this settlement is included in "Selling, general and administrative expenses" in our consolidated statement of operations for the year ended December 31, 2010.

NOTE 9: LEASE OBLIGATIONS

We lease our facility in North St. Paul, Minnesota from a limited liability company controlled by a shareholder of Aetrium. The shareholder is neither a director nor officer of Aetrium, and, to our knowledge, does not own more than five percent of our common stock. In August 2010, we entered into an agreement to extend our lease that was scheduled to expire in January 2011. The new agreement provides for a five year term beginning September 1, 2010 and includes base rents that average \$21,943 per month over the term of the lease, including \$21,734 per month for the first three years with slight increases in the fourth and fifth years. The agreement expires on August 31, 2015, at which time we have an option to extend the lease for an additional five-year term. In connection with the lease renewal, we agreed to pay a third-party consulting fee obligation of the lessor in exchange for reduced rent payments. The \$56,000 payment was recorded as a prepaid expense and is being amortized to rent expense over the term of the lease. As of December 31, 2010, the prepaid rent balance was \$52,267, of which \$11,200 is included in "Other current assets" and the remaining \$41,067 is classified as "Other asset" in our consolidated balance sheet.

As of December 31, 2010, future minimum annual lease payments under operating leases were as follows (in thousands):

2011	\$ 270
2012	261
2013	262
2014	266
2015	180
<u>Total minimum lease payments</u>	<u>\$ 1,239</u>

AETRIUM INCORPORATED

Notes to Consolidated Financial Statements

Rent expense, including facility and various short-term equipment operating leases, was as follows (in thousands):

Year ended Dec. 31,	2010	2009
Paid to company controlled by shareholder	\$ 276	\$ 291
Paid to others	80	547
Sublease/assigned lease income	(25)	(403)
Total net rent expense	\$ 331	\$ 435

NOTE 10: STOCK INCENTIVE PLAN AND SHARE-BASED COMPENSATION

In May 2003, Aetrium's shareholders approved the adoption of the 2003 Stock Incentive Plan (Plan). Employees, officers, directors, consultants and independent contractors providing services to us are eligible to receive awards under the Plan. The number of shares available for issuance under the Plan is equal to 20% of the aggregate number of shares of common stock outstanding less the total number of shares of common stock issuable upon the exercise or conversion of any outstanding stock options, warrants or other stock rights. The Plan is administered by the Compensation Committee of our board of directors and provides for the granting of: (a) stock options; (b) stock appreciation rights; (c) restricted stock; (d) performance awards; and (e) stock awards valued in whole or in part by reference to or otherwise based upon our stock. Options granted under the Plan may be incentive stock options or nonqualified stock options. To date, nonqualified stock options are the only awards that we have granted under the Plan. The Plan will terminate on February 28, 2013. The Plan provides that the Compensation Committee may, at its discretion, allow the exercise price of stock options to be paid, in whole or in part, by tendering previously acquired shares that have been held by the option holder for at least six months.

The following table summarizes activity under the Plan for the year ended December 31, 2010:

	Number Of Shares	Weighted Average Exercise Price	Weighted Average Remaining Contract Term	Aggregate Intrinsic Value (in thousands)
Outstanding, January 1, 2010	1,721,521	\$ 2.34		
Granted	610,000	2.41		
Exercised	(363,084)	2.26		
Forfeited	(21,459)	2.27		
Expired	(51,541)	2.26		
Outstanding, December 31, 2010	1,895,437	\$ 2.38	2.4 years	\$ 84
Options at December 31, 2010:				
Exercisable and expected to become exercisable	1,857,528	\$ 2.38	2.4 years	\$ 83
Exercisable	1,160,282	\$ 2.40	1.4 years	\$ 51

The aggregate intrinsic values in the table above represent the total pretax intrinsic values (the difference between Aetrium's closing stock price on December 31, 2010 and the option exercise price) of all in-the-money stock options that would have been received by the option holders had they exercised their options on December 31, 2010. The aggregate intrinsic value of options exercised during the years ended December 31, 2010 and 2009 was approximately \$269,000 and \$1,000, respectively. Total compensation

AETRIUM INCORPORATED

Notes to Consolidated Financial Statements

expense recognized for options vested during the years ended December 31, 2010 and 2009 was approximately \$501,000 and \$629,000 respectively.

During fiscal year 2010, in connection with certain stock option exercises, employees surrendered 173,307 shares (\$506,195 fair market value) and 13,957 shares (\$41,228 fair market value) of common stock as payment for the exercise prices and related withholding tax obligations, respectively, of such options.

We determine the fair value of share-based awards on the grant date using the Black-Scholes option valuation model. We also use the Black-Scholes model to determine the fair value of modifications to awards by determining and comparing the fair value of the modified award with the fair value of the award immediately before the modification. Option valuation models, including Black-Scholes, require the input of subjective assumptions, and changes in the assumptions used can materially affect the determination of the fair value of an award. These assumptions include expected stock price volatility, risk-free interest rate, expected dividend yield, and the expected life of the award. We estimate future stock price volatility based primarily on historical daily stock price observations of our common stock. Risk-free interest rate is estimated based on U.S. Treasury bill rates consistent with the expected term of an award. We assume an expected dividend yield of zero based on our intention to retain any future earnings for use in our operations. Expected life of an award is estimated primarily based on vesting provisions, the contractual term of the award, and historical experience of previous awards with similar terms or, for situations in which historical experience is not available or is deemed unreliable, we use the simplified method for estimating the expected life of an award, as permitted by ASC 718. ASC 718 also requires that estimated forfeitures be considered in the calculation of future compensation expense at the date of grant. We use historical data, as adjusted if deemed appropriate, to estimate future option forfeiture rates for purposes of recognizing share-based compensation expense.

Using the Black-Scholes option valuation model, the weighted-average fair value of options granted in 2010 and 2009 was determined to be \$0.90 and \$0.46, respectively. Weighted average assumptions used in applying the Black-Scholes option-pricing model to estimate the fair value of options granted were as follows:

Year ended December 31,	2010	2009
Expected dividend yield	0%	0%
Expected stock price volatility	50%	48%
Risk-free interest rate	1.2%	1.2%
Expected life of options (years)	3.5	3.5

In May 2009, Aetrium shareholders approved the re-pricing of certain outstanding stock options that had been previously granted pursuant to the Plan. The modified options were held by 48 option holders, including Aetrium officers, directors and employees. A total of 1,536,249 options with exercise prices ranging from \$3.095 to \$4.33 per share were modified to provide for exercise prices ranging from \$2.2175 to \$2.34 per share. The new exercise prices were determined based on a formula tied to the fair market value of our common stock on the modification date, which was \$1.34 per share. The incremental fair value of the option modifications, using the Black-Scholes valuation model, was determined to be approximately \$117,000. Of this amount, approximately \$63,000 was related to vested options and was expensed on the modification date. The remaining expense is being recognized over the remaining vesting periods of the applicable options.

AETRIUM INCORPORATED

Notes to Consolidated Financial Statements

Share-based compensation expense included in our consolidated statements of operations was as follows (in thousands):

Year ended December 31,	2010	2009
Cost of goods sold	\$ 70	\$ 90
Selling, general and administrative	330	423
Research and development	101	116
Total share-based compensation expense	\$ 501	\$ 629

As of December 31, 2010, we had approximately \$0.7 million of unrecognized pretax share-based compensation expense, which is expected to be recognized over a weighted average period of 2.9 years.

NOTE 11: EMPLOYEE SAVINGS 401(k) PLAN

Aetrium has a 401(k) employee savings plan, which covers full-time employees who are at least 21 years of age. Our contributions to the savings plan are at the discretion of management. We contributed \$26,893 to the plan in 2010 and made no contributions in 2009.

NOTE 12: INCOME TAXES

Income tax expense (benefit) consists of the following components (in thousands):

Year ended December 31,	2010	2009
Current tax expense (benefit):		
Federal	\$ (57)	\$ —
State	—	5
Total current expense (benefit)	(57)	5
Deferred tax expense:		
Federal	—	2,471
State	—	145
Total deferred expense	—	2,616
Total income tax expense (benefit)	\$ (57)	\$ 2,621

A reconciliation of income tax expense (benefit) computed using the federal statutory rate to the income tax expense (benefit) in our consolidated statements of operations is as follows (in thousands):

Year ended December 31,	2010	2009
Tax computed at federal statutory rate	\$ (666)	\$ (1,397)
State taxes, net of federal benefit	(14)	(66)
Increase (decrease) in tax from:		
Business meals and entertainment	8	13
Tax credits	(114)	—
Valuation allowance change	731	4,064
Other, net	(2)	7
Total income tax expense (benefit)	\$ (57)	\$ 2,621

AETRIUM INCORPORATED

Notes to Consolidated Financial Statements

Deferred tax assets are comprised of the following (in thousands):

December 31,	2010	2009
Accounts receivable	\$ 11	\$ 15
Inventories	546	389
Employee compensation and benefits	899	622
Amortization of intangibles	126	327
NOL and tax credit carryforwards	24,842	24,169
Warranty accrual	23	30
Reserve for loss on sublease contract	—	134
Other, net	27	57
Deferred tax assets	\$ 26,474	\$ 25,743
Less, valuation allowance	(26,474)	(25,743)
Net deferred tax assets	\$ —	\$ —

We record the benefit we will derive in future accounting periods from tax losses and credits and deductible temporary differences as “deferred tax assets,” which are included in the caption “Deferred income taxes” on our consolidated balance sheet. In accordance with Accounting Standards Codification (ASC) 740, “Income Taxes,” we record a valuation allowance to reduce the carrying value of our deferred tax assets if, based on all available evidence, it is more likely than not that some or all of the deferred tax assets will not be realized.

At December 31, 2009, we assessed our ability to realize our deferred tax assets and the amount of our valuation allowance. We determined there was not sufficient positive evidence regarding our potential for future profits to outweigh the negative evidence of our three year cumulative loss position at that date under the guidance provided in ASC 740. Therefore, we determined that our valuation allowance should be increased to \$25.7 million to fully reserve our deferred tax assets at December 31, 2009. As a result of our loss in fiscal year 2010, we determined that we should continue to maintain a full reserve against our deferred tax assets. Accordingly, we increased our valuation allowance to \$26.5 million at December 31, 2010. We expect to continue to maintain a full valuation allowance until we determine that we can sustain a level of profitability that demonstrates our ability to realize these assets. To the extent we determine that the realization of some or all of these benefits is more likely than not based upon expected future taxable income, a portion or all of the valuation allowance will be reversed. Such a reversal would be recorded as an income tax benefit and, for some portion related to deductions for stock option exercises, an increase in shareholders' equity.

Aetrium has federal net operating loss carryforwards of approximately \$68 million that will begin to expire in 2020 if not utilized. We also have state net operating loss carryforwards of approximately \$23 million that will expire at various times, beginning in 2011, if not utilized. We also have federal and state research tax credit and alternative minimum tax credit carryforwards of approximately \$1.4 million that will expire at various times, beginning in 2013, if not utilized. The utilization of net operating loss carryforwards and research tax credit carryforwards may be subject to annual limitations in the event of future changes in ownership pursuant to the requirements of Section 382 of the Internal Revenue Code. Such limitations could result in the expiration of net operating loss and tax credit carryforwards before utilization.

Our federal and state operating loss carryforwards include windfall tax deductions from stock option exercises. The amount of windfall tax benefit recognized in additional paid-in capital is limited to the

AETRIUM INCORPORATED

Notes to Consolidated Financial Statements

amount of benefit realized currently in income taxes payable. As of December 31, 2010, Aetrium had suspended additional paid-in capital credits of \$1.3 million related to windfall tax deductions. Upon realization of the net operating loss carryforwards from such windfall tax deductions, we would record a benefit of up to \$1.3 million in additional paid-in capital.

We assessed our income tax positions at December 31, 2010 and 2009 for all years subject to examination and determined that our unrecognized tax positions were immaterial at those dates.

Aetrium is subject to income tax examinations in the U.S. federal and certain state jurisdictions. There are currently no income tax examinations in progress. Federal and state income tax returns are subject to review for fiscal years 2007 through 2010.

NOTE 13: PRODUCT LINE, GEOGRAPHIC, SIGNIFICANT CUSTOMER AND CONCENTRATION OF CREDIT RISK DATA

The following table sets forth the various components of net sales by product line as a percentage of total sales:

Year ended December 31,	2010	2009
Test handler products	61%	48%
Reliability test equipment products	22	17
Change kits and spare parts	17	35
Total	100%	100%

All of our long-lived assets are located in the United States. Sales by geographic area based on product shipment destination were as follows (in thousands):

Year ended December 31,	2010	2009
United States	\$ 1,936	\$ 1,317
Thailand	6,589	2,661
Philippines	1,737	2,187
Korea	1,714	597
Malaysia	1,299	300
Singapore	1,263	944
China	641	2
Other foreign countries	1,079	641
Total	\$ 16,258	\$ 8,649

AETRIUM INCORPORATED

Notes to Consolidated Financial Statements

Sales to customers comprising more than 10% of our total net sales and accounts receivable from customers comprising more than 10% of our total accounts receivable are summarized below:

	<u>Percent of total sales for year ended December 31,</u>		<u>Percent of total accounts receivable as of December 31,</u>	
	2010	2009	2010	2009
Customer A	38%	58%	29%	60%
Customer B	23%	20%	*	35%
Customer C	11%	*	*	*
Customer D	*	*	45%	*

* Percent was less than 10% of the total.

We sell our products principally to manufacturers of integrated circuits. Our accounts receivable balance is concentrated with customers principally in one industry. We regularly monitor the creditworthiness of our customers to manage this collection risk. A reduction, delay or cancellation of orders from one or more of these significant customers, or the loss of one or more of these customers, would likely have a significant adverse impact on our operating results.

SIGNATURES

Pursuant to the requirements of Section 13 or 15(d) of the Securities Exchange Act of 1934, the registrant has duly caused this report to be signed on its behalf by the undersigned, thereunto duly authorized.

AETRIUM INCORPORATED

Date: March 30, 2011

By: /s/ John J. Pollock
John J. Pollock
President and Chief Executive Officer

Pursuant to the requirements of the Securities Exchange Act of 1934, this report has been signed below on March 30, 2011 by the following persons on behalf of the registrant and in the capacities indicated.

Signature

Title

/s/ John J. Pollock
John J. Pollock

President and Chief Executive Officer
(principal executive officer)

/s/ Paul H. Askegaard
Paul H. Askegaard

Treasurer
(principal financial and accounting officer)

Directors:

/s/ Joseph C. Levesque
Joseph C. Levesque

Chairman of the Board

/s/ Darnell L. Boehm
Darnell L. Boehm

Director

/s/ Terrence W. Glarner
Terrence W. Glarner

Director

/s/ Daniel A. Carr
Daniel A. Carr

Director

/s/ Charles B. Westling
Charles B. Westling

Director

/s/ John J. Pollock
John J. Pollock

Director

/s/ Douglas L. Hemer
Douglas L. Hemer

Director

AETRIUM INCORPORATED
EXHIBIT INDEX TO ANNUAL REPORT ON FORM 10-K
FOR THE FISCAL YEAR ENDED DECEMBER 31, 2010

<u>Item No.</u>	<u>Item</u>	<u>Method of Filing</u>
3.1	Our Restated Articles of Incorporation, as amended.	Incorporated by reference to Exhibit 3.1 to our Registration Statement on Form SB-2 (File No. 33-64962C).
3.2	Amendment to Restated Articles of Incorporation	Incorporated by reference to Exhibit 3.2 to our Quarterly Report for the quarter ended September 30, 1998 (File No. 0-22166).
3.3	Our Bylaws, as amended.	Incorporated by reference to Exhibit 3.1 to our Form 8-K dated October 20, 2009 (File No. 0-22166).
4.1	Specimen Form of our Common Stock Certificate.	Incorporated by reference to Exhibit 4.1 to our Registration Statement on Form SB-2 (File No. 33-64962C).
10.1	Standard Industrial/Commercial Single-Tenant Lease, dated September 18, 1998, between W.H. Pomerado, LLC and us, including addendum and material exhibits to lease.	Incorporated by reference to Exhibit 10.16 to our Annual Report on Form 10-K for the year ended December 31, 1999 (File No. 0-22166).
10.2	2003 Stock Incentive Plan.	Incorporated by reference to Exhibit 10.18 to our Annual Report on Form 10-K for the year ended December 31, 2002 (File No. 0-22166).
10.3	Form of Non-Statutory Stock Option Agreement	Filed herewith electronically.
10.4	Form of Change of Control Agreement.	Incorporated by reference to Exhibit 10.19 to our Annual Report on Form 10-K for the year ended December 31, 2003 (File No. 0-22166).
10.5	Form of Amendments to Change of Control Agreement	Incorporated by reference to Exhibit 10.18 to our Annual Report on Form 10-K for the year ended December 31, 2007 (File No. 0-22166).
10.6	Sales Incentive Program.	Incorporated by reference to Exhibit 10.21 to our Annual Report on Form 10-K for the year ended December 31, 2003 (File No. 0-22166).
10.7	Commercial Lease dated August 20, 2010 between Triple Shot, LLC and us.	Incorporated by reference to Exhibit 10.1 to our Quarterly Report on Form 10-Q for the quarter ended September 30, 2010 (File No. 0-22166).

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|-------|---|---|
| 10.8 | Asset Purchase Agreement, dated December 28, 2006, between WEB Technology, Inc. and us. | Incorporated by reference to Exhibit 10.1 to our Current Report on Form 8-K dated January 5, 2007 (File No. 0-22166). |
| 10.9 | Executive Officer Profit Sharing Program. | Incorporated by reference to Exhibit 10.1 to our Current Report on Form 8-K dated January 23, 2007 (File No. 0-22166). |
| 10.10 | Business Loan Agreement, dated December 3, 2009, between Bremer Bank and us. | Incorporated by reference to Exhibit 10.10 to our Annual Report on Form 10-K for the year ended December 31, 2009 (File No. 0-22166). |
| 10.11 | Note, dated December 10, 2010, issued by us to Bremer Bank. | Filed herewith electronically. |
| 10.12 | Letter Agreement with Joseph C. Levesque dated November 17, 2010 | Incorporated by reference to Exhibit 10.1 to our Current Report on Form 8-K dated November 19, 2010 (File No. 0-22166). |
| 10.13 | Letter Agreement with Douglas L. Hemer dated November 17, 2010 | Incorporated by reference to Exhibit 10.2 to our Current Report on Form 8-K dated November 19, 2010 (File No. 0-22166). |
| 14.1 | Code of Business Conduct and Ethics. | Incorporated by reference to Exhibit 14.1 to our Annual Report on Form 10-K for the year ended December 31, 2003 (File No. 0-22166). |
| 21.1 | Subsidiaries of the Registrant. | Incorporated by reference to Exhibit 21.1 to our Annual Report on Form 10-K for the year ended December 31, 2007 (File No. 0-22166). |
| 23.1 | Independent Registered Public Accounting Firm's Consent. | Filed herewith electronically. |
| 31.1 | Certification of Chief Executive Officer pursuant to Section 302 of the Sarbanes-Oxley Act of 2002. | Filed herewith electronically. |
| 31.2 | Certification of Chief Administrative Officer pursuant to Section 302 of the Sarbanes-Oxley Act of 2002. | Filed herewith electronically. |
| 31.3 | Certification of Treasurer pursuant to Section 302 of the Sarbanes-Oxley Act of 2002. | Filed herewith electronically. |
| 32.1 | Certification pursuant to 18 U.S.C. Section 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002. | Filed herewith electronically. |

SCHEDULE II

Valuation and Qualifying Accounts Allowance for Doubtful Accounts (in thousands)

<u>Description</u>	<u>Balance at beginning of year</u>	<u>Additions</u>	<u>Deductions credited to costs and expenses</u>	<u>Balance at end of year</u>
2009	\$ 40	\$ 0	\$ 0	\$ 40
2010	40	0	(10)	30

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CORPORATE INFORMATION

BOARD OF DIRECTORS

Joseph C. Levesque
Chairman of the Board

Darnell L. Boehm
Principal of Darnell L. Boehm
& Associates

Terrence W. Glarner
President, West Concord Ventures, Inc.

Daniel A. Carr
President, The Collaborative

Charles B. Westling
Chief Executive Officer,
Computype, Inc.

John J. Pollock
President and Chief Executive Officer,
Aetrium Incorporated

Douglas L. Hemer
Chief Administrative Officer and
Secretary, Aetrium Incorporated

AETRIUM INCORPORATED

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North St. Paul, MN 55109 U.S.A.
651.770.2000
www.aetrium.com
investorrelations@aetrium.com

STOCK LISTING

NASDAQ: ATRM

TRANSFER AGENT AND REGISTRAR

Computershare Trust Company
Golden, CO
303.262.0600

EXECUTIVE OFFICERS

John J. Pollock
President and Chief Executive Officer

Douglas L. Hemer
Chief Administrative Officer
and Secretary

Paul H. Askegaard
Treasurer

Timothy G. Foley
Vice President, Manufacturing

W. Charles Sletten, II
Vice President, Engineering

Dean K. Hedstrom
Vice President, Technology

Timothy A. McMullen
Vice President, Reliability
Test Systems

Gary A. Quasabart
Vice President of Worldwide
Sales & Service

LEGAL COUNSEL

Oppenheimer Wolff & Donnelly LLP
Minneapolis, MN

INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM

Grant Thornton LLP
Minneapolis, MN

ANNUAL MEETING

Wednesday, May 18, 2011, 4:00 PM
Aetrium Corporate Headquarters
2350 Helen Street
North St. Paul, MN 55109

AETRIUM[®]
Experience, Technology, Solutions

NASDAQ: ATRM