TTM TECHNOLOGIES INC
Form 10-K
February 29, 2012
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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, 2011

Commission file number 0-31285

TTM TECHNOLOGIES, INC.

(Exact Name of Registrant as Specified in Its Charter)

Delaware	**91-1033443**
(State or Other Jurisdiction of Incorporation or Organization)	*(I.R.S. Employer Identification No.)*
2630 South Harbor Boulevard, Santa Ana, California	**92704**
(Address of Principal Executive Offices)	*(Zip Code)*

(714) 327-3000

(Registrant s telephone number, including area code)

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

Title of Each Class	**Name of Each Exchange on Which Registered**
Common Stock, $0.001 par value	Nasdaq Global Select Market

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

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

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 þ 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 during the preceding 12 months (or for such shorter period that the registrant was required to submit and post such files). Yes þ 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. þ

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. (Check one):

Large accelerated filer þ Accelerated filer ¨ Non-accelerated filer ¨ Smaller reporting company ¨
(Do not check if a smaller reporting company)

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

The aggregate market value of Common Stock held by non-affiliates of the registrant (based on the closing price of the registrant s Common Stock as reported on the Nasdaq Global Select Market on June 27, 2011, the last business day of the most recently completed second fiscal quarter), was $800,263,555. For purposes of this computation, all officers, directors, and 10% beneficial owners of the registrant are deemed to be affiliates of the registrant. Such determination should not be deemed to be an admission that such officers, directors, or 10% beneficial owners are, in fact, affiliates of the registrant.

As of February 22, 2012, there were outstanding 81,339,105 shares of the registrant s Common Stock, $0.001 par value.

DOCUMENTS INCORPORATED BY REFERENCE

Portions of the registrant s definitive Proxy Statement for its 2012 Annual Meeting of Stockholders are incorporated by reference into Part III of this report.

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TTM TECHNOLOGIES, INC.

ANNUAL REPORT ON FORM 10-K

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PART I

Statement Regarding Forward-Looking Statements

This report on Form 10-K contains forward-looking statements regarding future events or our future financial and operational performance. Forward-looking statements include statements regarding markets for our products; trends in net sales, gross profits and estimated expense levels; liquidity and anticipated cash needs and availability; and any statement that contains the words anticipate, believe, plan, forecast, foresee, estimate, project, expect, seek, target, intend, goal and other similar expressions. The forward-looking statements included reflect our current expectations and beliefs, and we do not undertake publicly to update or revise these statements, even if experience or future changes make it clear that any projected results expressed in this annual report or future quarterly reports to stockholders, press releases or company statements will not be realized. In addition, the inclusion of any statement in this report does not constitute an admission by us that the events or circumstances described in such statement are material. Furthermore, we wish to caution and advise readers that these statements are based on assumptions that may not materialize and may involve risks and uncertainties, many of which are beyond our control, that could cause actual events or performance to differ materially from those contained or implied in these forward-looking statements. These risks and uncertainties include the business and economic risks described in Item 1A, Risk Factors.

Unless otherwise indicated or unless the context requires otherwise, all references in this document to TTM, our company, we, us, our, and similar names refer to TTM Technologies, Inc. and its subsidiaries.

ITEM 1. *BUSINESS*
General

We are a leading global provider of time-critical and technologically complex printed circuit board (PCB) products and backplane assemblies (PCBs populated with electronic components), which serve as the foundation of sophisticated electronic products. We are the largest PCB manufacturer in North America and one of the top five PCB manufacturers in the world, based on revenues, according to a 2010 report by N.T. Information, a PCB industry research firm, and generated approximately $1.4 billion in net sales in 2011. We had approximately 16,300 employees worldwide as of December 31, 2011, and we operate a total of 15 specialized and integrated facilities in the United States and China. We focus on providing time-to-market and advanced technology products and offer a one-stop manufacturing solution to our customers from engineering support to prototype development through final volume production. This one-stop solution allows us to align technology development with the diversified needs of our customers, many of whom are based in high growth markets, and to enable them to reduce the time required to develop new products and bring them to market. We serve a diversified customer base consisting of approximately 1,220 customers in various markets throughout the world, including manufacturers of networking/communications infrastructure products, touch screen tablets and mobile media devices (e-readers and smartphones). We also serve the high-end computing, aerospace/defense, and industrial/medical industries. Our customers include both original equipment manufacturers (OEMs) and electronic manufacturing services (EMS) providers.

In April 2010, we acquired from Meadville Holdings Limited (Meadville) all of the issued and outstanding capital stock of four of its subsidiaries. These four companies and their respective subsidiaries, collectively referred to as the PCB Subsidiaries, comprised Meadville s PCB manufacturing and distribution business. Prior to the acquisition, the PCB Subsidiaries made Meadville one of the leading PCB manufacturers in China by revenue, with a focus on producing high-end PCB products. Our April 2010 acquisition of the PCB Subsidiaries greatly increased our global production capacity, expanded our presence in the touch screen tablet and mobile media device markets, and enhanced our flexible, rigid-flex, high-density interconnect (HDI) and substrate product capabilities.

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Prior to our acquisition of the PCB Subsidiaries, we had two operating segments, PCB Manufacturing and Backplane Assembly, consistent with the nature of our operations. Due to the acquisition, we reassessed our operating segments and now manage our worldwide operations based on two geographic operating segments: (1) *North America*, which consists of seven domestic PCB fabrication plants, including a facility that provides follow-on value-added services primarily for one of the PCB fabrication plants, and one backplane assembly plant in Shanghai, China, which is managed in conjunction with our U.S. operations, and its related European sales support infrastructure; and (2) *Asia Pacific*, which consists of the PCB Subsidiaries and their seven PCB fabrication plants, which include a substrate facility. Each segment operates predominantly in the same industry with production facilities that produce similar customized products for our customers and use similar means of product distribution in their respective geographic regions.

Industry Overview

PCBs are manufactured in panels from sheets of laminated material. Each panel is typically subdivided into multiple PCBs, each consisting of a pattern of electrical circuitry etched from copper to provide an electrical connection between the components mounted to it. PCBs serve as the foundation for virtually all electronic products, ranging from consumer electronics products (such as cellular phones, smartphones, touch screen tablets and personal computers) to high-end commercial electronic equipment (such as medical equipment, data communications routers, switches and servers) and aerospace/defense electronic systems.

High-end commercial equipment and aerospace/defense products require customized, multilayer PCBs using advanced technologies. Most high-end commercial and aerospace/defense end markets have low volume requirements that demand a highly flexible manufacturing environment. Traditionally, consumer electronics products utilized commodity-type PCBs with lower layer counts, less complexity and larger production runs. However, recent advances in consumer electronics products are driving a transition to higher layer count, more complex PCBs.

According to Prismark Partners LLC, a PCB industry research firm, the worldwide market for PCBs was approximately $55.4 billion in 2011, with the Americas producing 7% (approximately $3.8 billion), China producing 40% (approximately $22.0 billion) and the rest of the world producing 53% (approximately $29.6 billion). According to Prismark Partners, worldwide PCB revenue is expected to increase at a rate of 5% to 7% in 2012.

Demand for increasing functionality in electronic products has increased the complexity of PCBs, and this trend is expected to continue. Consumers desire more capacity in their devices in other words, the demand for the same or smaller size devices with more features is on the rise. Products designed to offer faster data transmission, thinner and more lightweight features, and reduced power consumption generally require increasingly complex PCBs to meet these criteria. By using HDI technology, circuit densities can be increased, thereby providing for smaller products with higher packaging densities. According to a September 2011 report by Jefferies & Company, Inc., an investment banking firm, the total mobile phone market will grow to 3.1 billion units in 2020. Jefferies predicts that smartphones will represent 81% of this total (2.5 billion units), up from 26% (0.4 billion units) in 2011. This translates to a 23% compound annual growth rate (CAGR) in smartphones sold through 2020.

Following a similar upward trend, the global substrate market, which represents approximately 15% of the global PCB market, is expected to grow at a CAGR of 7% by 2015 according to BPA Consulting, a PCB industry research firm. This growth is driven by increasing demand for end products containing highly advanced semiconductors. The Chinese substrate market alone is expected to grow at a CAGR of 16% due to both China s increased production of semiconductors and the continuing growth in end-products containing highly advanced semiconductors. Substrate manufacturing requires deployment of large amounts of resources and strong engineering services. For this reason, we believe that the number of competitors is much smaller compared to standard PCB manufacturers.

The PCB manufacturing market is highly fragmented with relatively few large scale companies. According to a report by N.T. Information, a PCB industry research firm, in 2011 and 2012, there were approximately 2,600 manufacturers worldwide in 2011, with the top 20 suppliers representing approximately 43% of the global market. As a result of global economic trends, the number of PCB producers operating in China has increased significantly since 2000. This corresponds with a significant decline of North American and European PCB producers during the same time period.

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Industry Trends

We believe that several trends are impacting the PCB manufacturing industry. These trends include:

Shorter electronic product life cycles. Continual advances in technology have shortened the life cycles of complex commercial electronic products, placing greater pressure on OEMs to quickly bring new products to market. The accelerated time-to-market and ramp-to-volume needs of OEMs for high-end commercial equipment create opportunities for PCB manufacturers that can offer engineering support in the prototype stage and manufacturing scalability throughout the production life cycle.

Increasing complexity of electronic products. OEMs continue to design higher performance electronic products, which in turn require technologically complex PCBs that can accommodate higher speeds and component densities, including HDI PCBs. These complex PCBs can require very high layer counts, advanced manufacturing processes and materials, and high-mix production capabilities, which involve processing small lots in a flexible manufacturing environment. OEMs increasingly rely upon larger PCB manufacturers, which possess the financial resources necessary to invest in advanced manufacturing process technologies and sophisticated engineering staff, often to the exclusion of smaller PCB manufacturers that do not possess such technologies or resources. Even the low end of the PCB market (less than four layers) continues to transition to higher layer counts as consumer products increase in complexity. Advances in chip technology continue to drive market share growth in HDI, substrate and flex PCB categories.

Increasing concentration of global PCB production in Asia. In recent years, many electronics manufacturers have moved their commercial production to Asia to take advantage of its exceptionally large, low-cost labor pool. In particular, the trend has favored China, which had the largest PCB market in terms of both revenue and number of suppliers in 2010 according to Prismark Partners and N. T. Information. The overall technical capability of suppliers in China has improved dramatically in recent years and China has emerged as a global production center for cellular phones, smartphones, touch screen devices, computers and computer peripherals, and high-end consumer electronics. According to N.T. Information, approximately 59% of the world s PCB production will be generated from China, Hong Kong and Taiwan by 2014. The continued outsourcing of production to China should result in additional commercial market share potential for PCB manufacturers with a strong presence and reputation in China.

Decreased reliance on multiple PCB manufacturers by OEMs. OEMs traditionally have relied on multiple PCB manufacturers to provide different services as an electronic product moves through its life cycle. The transfer of a product among different PCB manufacturers often results in increased costs and inefficiencies due to incompatible technologies and manufacturing processes and production delays. In addition, OEMs generally find it easier and less costly to manage fewer PCB manufacturers. As a result, OEMs are reducing the number of PCB manufacturers and backplane assembly service providers on which they rely, presenting an opportunity for those that can offer one-stop manufacturing capabilities from prototype to volume production.

Increased requirements for aerospace/defense products. The aerospace/defense market is characterized by increasingly time-consuming and complex certification processes, long product life cycles, and a demand for leading-edge technology with extremely high reliability and durability. While the US Department of Defense (DoD) budget faces increasing scrutiny as part of overall US budget deficit reduction efforts, we anticipate that a continued DoD commitment and upgrades, incorporating leading-edge PCB technology in products for intelligence, surveillance and reconnaissance, communications and weapon systems combined with Foreign Military Sales (FMS) programs and a recovering global commercial aerospace industry, will support a significant long-term market for these products.

Our Strategy

Our goal is to be the leading global provider of time-critical, one-stop manufacturing services for highly complex PCBs. In our Asia Pacific segment, we intend to primarily target the smartphone, touch screen tablet and networking infrastructure markets; increase our high technology conventional, HDI, flex and rigid-flex capabilities and capacities; and enhance our current niche position in substrates. In our North America segment, we intend to continue to capitalize on our advanced technology, high mix/low volume and quick turnaround

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(QTA) service capabilities; enhance our commercial PCB capacity; expand our strategic account management model to strengthen our customer relationships; and leverage our market leadership and niche positions. More generally, our strategy includes:

Emphasize advanced technological capabilities and manufacturing processes. As the demand for more high-end PCBs increases across all markets, production of sophisticated PCBs becomes more complex. We address this growing market by delivering time critical and highly complex manufacturing services. We manufacture PCBs with layer counts in excess of 30 layers and believe that our HDI, flex and rigid-flex, substrate and other high technology capabilities provide an attractive market niche for our company. Our Asia Pacific segment has been a leader in HDI PCBs and IC substrate manufacturing and, accordingly, we believe that we have an early-mover advantage over many of our competitors. With rising requirements for faster data transmission, shrinking features (lightweight and thin) and lower power consumption, more PCB designs have migrated to more complex HDI PCBs from conventional multi-layer PCBs. This is especially true of portable devices such as smartphones and tablet PCs. As a leading manufacturer, we continually evaluate and invest in advanced production equipment, new manufacturing processes, engineering and process technology capabilities in order to further reduce our delivery times, improve quality, increase yields and decrease costs.

Focus on early stages of product life cycle. We work to service our customers needs from the earliest stages of product development, including design services, engineering support and prototype development. By building alliances with our customers early in the development process, we are able to gain advantages in our core markets through the sharing and transfer of technologies and know-how. These alliances, often the result of strategic account management efforts, frequently allow us to gain access to new product pipelines and technologies we may not be able to otherwise obtain, or to obtain them more rapidly, thereby enhancing our leadership position in our targeted markets. Our expertise with new product development is enhanced by our ability to deliver highly complex PCBs to customers in significantly compressed lead times. This rapid delivery service enables OEMs to develop sophisticated electronic products more quickly and reduce their time to market. In addition, our QTA services provide us with an opportunity to cross-sell our other services, including high-mix and volume production in our targeted end markets.

Pursue new customers in higher growth end markets. We continue to pursue new customers with high growth characteristics and target additional high growth end markets that are characterized by rapid product introduction cycles and demand for time-critical services. In that regard, our 2010 Meadville acquisition provided significant opportunities in high growth end markets such as the networking/communications infrastructure, touch screen tablet, mobile media device (cellular phones and smartphones) and high-end computing markets. Over the last several years, China has emerged as a global production center for these products. This trend has driven the growth of the PCB market, particularly in China. Our strategic focus on these fast-growing markets, together with our reputation and network of China facilities, has enabled us to generate strong sales growth. Our ability to serve these markets is enhanced by our technological capabilities, as these markets require PCB products with higher layer counts, feature miniaturization, and higher circuit density. In addition, we intend to pursue high-end commercial and defense customers that demand flexible and advanced manufacturing processes, expertise with high-performance specialty materials assembly and testing capabilities, and expertise in other high-mix and complex technologies. We regularly evaluate and pursue internal initiatives aimed at adding new customers and better serving existing customers within our markets.

Capitalize on our significant presence in China. We believe that our Asia Pacific operating segment provides a key strategic and competitive advantage. Many key suppliers, direct OEM customers, and EMS customers manufacturing on behalf of OEMs are located in China. China s increasing dominance in electronics supply chain management is particularly evident in desktop computers, notebook computers, servers, cellular phones, smartphones, touch screen tablets, and communication equipment products. Proximity to these China-based suppliers and customers enables us to react swiftly to customer demand for comprehensive PCB products and services. We are also able to coordinate more effectively with our suppliers, and enjoy a cost advantage in terms of transportation costs over PCB manufacturers located outside of China. Furthermore, due to historically low labor costs in China, we are able to maintain comparatively lower operating costs and increased production process flexibility.

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Maintain our customer-driven culture. Our customer-oriented culture emphasizes extraordinary service, competitive differentiation and superior execution. Our customer-oriented strategies include engaging in co-development of new products, capturing new technology products for next generation equipment, and continuing to invest in and enhance our HDI PCB, rigid flex and flex PCB capabilities. Our ability to anticipate and meet customers needs is critical to retaining existing customers and attracting leading companies as new customers. Other key elements of our customer focus include managing customer schedules and vendor inventory.

Market our facility specialization and one-stop manufacturing solution. We utilize a facility specialization strategy in which each order is directed to the facility best suited to the customer s particular delivery time, product complexity and volume needs. Our plants use compatible technologies and manufacturing processes, allowing us to move orders between plants to optimize operating efficiency. This strategy provides customers with faster delivery times and enhanced product quality and consistency. In addition, our global one-stop manufacturing solution includes engineering support, prototype, low volume/high-mix products, medium volume/ramp and high-volume production. This one-stop solution allows us to provide a broad array of services and technologies to meet the rapidly evolving needs of our customers. See *Item 2 Properties* for a further description of our global specialized and integrated production facilities.

Provide extensive support for aerospace/defense customers. Success in the aerospace/defense market is generally achieved only after manufacturers demonstrate the long-term ability to pass extensive OEM and government certification processes, numerous product inspections, audits for quality and performance, and extensive administrative requirements associated with participation in government and high reliability commercial aerospace programs. United States export controls represent a barrier to entry for international competition as they restrict the overseas export and/or overseas manufacture of defense-related materials, services, and sensitive technologies that are associated with United States government programs. In addition, the complexity of the end products serves as a barrier to entry to many potential new suppliers. TTM s global footprint and strong historical relations with leading North American commercial aerospace contractors provide us with a positive position to support the emerging commercial aerospace industry in China.

Products and Services

We offer a wide range of PCB products, including conventional PCBs, HDI PCBs, flexible PCBs, rigid-flex PCBs, backplane assemblies, and IC substrates. We also offer certain value-added services to support our customers needs. These include design for manufacturability (DFM) support during new product introduction stages, PCB layout design, simulation and testing services, QTA production and drilling and routing services. By providing these value-added services to customers, we are able to provide our customers with a one-stop manufacturing solution, which enhances our relationships with our customers.

Conventional PCBs

A PCB is a board containing a pattern of conducting material, such as copper, which becomes an electrical circuit when electrical components are attached to it. It is the basic platform used to interconnect electronic components and can be found in most electronic products, including computers and computer peripherals, communications equipment, cellular phones, high-end consumer electronics, automotive components and medical and industrial equipment. PCBs are more product-specific than other electronic components because generally they are unique for a specific electronic device or appliance. Conventional PCBs can be classified as single-sided, double-sided and multi-layer boards.

A multi-layer PCB can accommodate more complex circuitry than a double-sided PCB. It has more than two copper circuit layers with pieces of laminate bonded by resin between layers. Multi-layer PCBs require more sophisticated production techniques compared to single and double-sided PCBs, as, among other things, they require high precision manufacturing and more stringent product quality. The number of layers comprising a PCB generally increases with the complexity of the end product. For example, a simple consumer device such as a garage door controller may use a single-sided or double-sided PCB, while a high-end network router or computer server may use a PCB with 20 layers or more.

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High density interconnect or HDI PCBs

Our North America and Asia Pacific segments produce HDI PCBs, which are PCBs with higher interconnect density per unit area and require more sophisticated technology and manufacturing processes for their production than conventional PCB products. HDI PCBs are boards with high-density characteristics including micro-sized holes, or microvias (diameter at or less than 0.1 mm), fine lines (circuit line width and spacing at or less than 0.075 mm) and can be constructed with thin high performance materials, thereby enabling more interconnection functions per unit area. HDI PCBs generally are manufactured using a sequential build-up process in which circuitry is formed in the PCB one layer at a time through successive drilling, plating and lamination cycles. In general, a board s complexity is a function of interconnect and circuit density, layer count, laminate material type and surface finishes. As electronic devices have become smaller and more portable with higher functionality, demand for advanced HDI PCB products has increased dramatically. We define advanced HDI PCBs as those having more than one layer of microvia interconnection structure.

Flexible PCBs

Flexible PCBs are printed circuits produced on a flexible laminate, allowing it to be folded or bent to fit the available space or allow relative movement. We manufacture circuits on flexible substrates that can be installed in three-dimensional applications for electronic packaging systems. Use of flexible circuitry can enable improved reliability, improved electrical performance, reduced weight and reduced assembly costs when compared with traditional wire harness or ribbon cable packaging. Flexible PCBs can provide flexible electronic connectivity of an electrical device s apparatus such as printer heads, cameras, camcorders, TVs, mobile handsets, and touch screen tablets.

Rigid-flex PCBs

Rigid-flex circuitry provides a simple means to integrate multiple PCB assemblies and other elements such as display, input or storage devices without wires, cables or connectors, replacing them with thin, light composites that integrate wiring in ultra-thin, flexible ribbons between sections. In rigid-flex packaging, a flexible circuit substrate provides a backbone of wiring with rigid multilayer circuit sections built up as modules where needed.

Since the ribbons can be bent or folded, rigid-flex provides a means to compactly package electronics in three dimensions with dynamic or static bending functions as required, enabling miniaturization and thinness of product design. The simplicity of rigid-flex integration also generally reduces the number of parts required, which can improve reliability. The increasing popularity of mobile electronics coupled with the design trend of developing increasingly thinner, lighter and more feature-rich products is expected to further drive growth in the rigid-flex and flex sector, where these PCBs are the backbone of miniaturization.

Rigid-flex technology is essential to a broad range of applications including aerospace, industrial and transportation systems requiring high reliability; hand-held and wearable electronics such as mobile phones, video cameras and music players where thinness and mechanical articulation are essential; and ultra-miniaturized products such as headsets, medical implants and semiconductor packaging where size and reliability are paramount.

Backplane assemblies

A backplane is an interconnecting device that has circuitry and sockets into which PCBs or other additional electronic devices can be plugged. In a computer, these may be referred to as a motherboard. The manufacture of backplane assemblies involves mounting various electronic components to large PCBs. Components include, but are not limited to, connectors, capacitors, resistors, diodes, integrated circuits, hardware and a variety of other parts. We can assemble backplanes and sub-systems and provide full system integration of backplane assemblies, cabling, power, thermal, and other complex electromechanical parts into chassis and other enclosures. In addition to assembly services, we provide inspection and testing services such as automated optical inspection (AOI) and X-ray inspection to ensure that all components have been properly placed and electrical circuits are complete. Our focus is to provide backplane and sub-system assembly products primarily as an extension of our commercial and aerospace/defense PCB offerings.

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IC substrates

IC substrates are mounts that are used to connect very small ICs (integrated circuits or semiconductors) to comparatively larger PCBs for assembly into electronic end products such as memory modules, cellular phones, digital cameras, automotive GPS and engine controls. IC substrates, also known as IC carriers, are highly miniaturized circuits manufactured by a process largely similar to that for PCBs but requiring the use of ultra-thin materials and including micron-scale features, as they must bridge the gap between sub-micron IC features and millimeter scale PCBs. Consequently, IC substrates are generally manufactured in a semiconductor-grade clean room environment to ensure products are free of defects and contamination.

IC substrates are a basic component of IC packages which, combined with other electronic components in an assembly, control functions of an electronic appliance. IC packages can be broadly divided into single chip modules (or SCMs) and multi-chip modules (or MCMs), with the former containing one IC chip, and the latter containing multiple chips and other electronic components.

Design and Engineering Services

We are actively involved in the early stages of many of our customers product development cycles. This involvement positions us at the leading edge of technical innovation in the engineering of complex PCBs. Our engineering and sales teams collaborate to identify the specific needs of our customers and work with them to develop innovative, high performance solutions. We have the ability to offer both mechanical and electrical computer aided design (CAD) services, which allows us to offer our customers complete design through production services for PCB, assembly and system level products. We also offer signal integrity, thermal, and structural analysis services. This method of product development provides us with an in-depth understanding of our customers businesses and enables us to better anticipate and serve their needs. Establishing customer relationships early in a product s life cycle, often as a result of our strategic account management efforts, also provides an advantage in securing preferred vendor status for subsequent ramp to volume and volume production opportunities.

Process and product development

Process and product development plays a vital role in our business. As electronic products become smaller, demands are also increasing for higher speed and functionality of such products. Accordingly, continued advancement in processing technology is required to develop increasingly smaller sized PCB products with increased functionality by accommodating even more powerful and complicated chipsets. As product responsiveness and speed increases, special electrical properties become factors affecting signal integrity and the transmission speed between PCBs and the electrical components to which they are connected. Special materials, equipment, chemicals and manufacturing processes are therefore required to ensure the proper functioning of the final electronic end product.

Quick turnaround services

We refer to our rapid delivery services as quick turnaround or QTA , because we provide custom-fabricated PCBs to our customers within as little as 24 hours to 10 days. As a result of our ability to rapidly and reliably respond to the critical time requirements of our customers, we generally receive premium pricing for our QTA services as compared to standard lead time prices.

Prototype production. In the design, testing, and launch phase of a new electronic product s life cycle, our customers typically require limited quantities of PCBs in a very short period of time. We satisfy this need by manufacturing prototype PCBs in small quantities, with delivery times ranging from as little as 24 hours to 10 days.

Ramp-to-volume production. After a product has successfully completed the prototype phase, our customers introduce the product to the market and require larger quantities of PCBs in a short period of time. This transition stage between low-volume prototype production and volume production is known as ramp-to-volume. Our ramp-to-volume services typically include manufacturing up to a few hundred PCBs per order with delivery times ranging from 5 to 15 days.

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Manufacturing Technologies

The market for our products is characterized by rapidly evolving technology. In recent years, the trend in the electronic products industry has been to increase the speed, complexity, and performance of components while reducing their size. We believe our technological capabilities allow us to address the needs of manufacturers who need to bring complicated electronic products to market faster.

To manufacture PCBs, we generally receive circuit designs directly from our customers in the form of computer data files, which we review to ensure data accuracy and product manufacturability. Processing these computer files with computer aided manufacturing (CAM) technology, we generate images of the circuit patterns that we then physically develop on individual layers, using advanced photographic processes. Through a variety of plating and etching processes, we selectively add and remove conductive materials to form horizontal layers of thin circuitry, which are separated by electrical insulating material. A multilayer circuit board is produced by laminating together multiple layers of circuitry, using intense heat and pressure under vacuum. Vertical connections between layers are achieved by drilling and plating through small holes, called vias. Vias are made by highly specialized drilling equipment capable of achieving extremely fine tolerances with high accuracy. We specialize in high layer count PCBs with extremely fine geometries and tolerances. Because of the tolerances involved, we employ clean rooms in certain manufacturing processes where tiny particles might otherwise create defects on the circuit patterns. We also use automated optical inspection systems and electrical testing systems to ensure consistent quality of the circuits we produce.

We believe that our highly specialized equipment and advanced manufacturing processes enable us to reliably produce PCBs with the following characteristics:

High layer count. Manufacturing PCBs with a large number of layers is difficult to accomplish due to the accumulation of manufacturing tolerances and registration systems required. In our North America segment, we regularly manufacture PCBs with more than 30 layers on a quick-turn and volume basis. Approximately 62% of our 2011 and 2010 North America PCB revenue involved the manufacture of PCBs with at least 12 layers or more. Printed circuit boards with at least 20 layers or more represented 32% of North America PCB revenue in 2011, up from 31% in 2010. Approximately 23% of our 2011 Asia Pacific net sales involved the manufacture of PCBs with at least 12 layers or more, compared with 24% in 2010.

Blind and buried vias. Vias are drilled holes that provide electrical connectivity between layers of circuitry in a PCB. Blind vias connect the surface layer of the PCB to an internal layer and terminate at the internal layer. Buried vias are holes that do not reach either surface of the PCB but allow inner layers to be interconnected. Products with blind and buried vias can be made thinner, smaller, lighter and with higher component density and more functionality than products with traditional vias.

High Density Interconnect (HDI). HDI technology utilizes microvias, which are small vias with diameters generally less than 0.005 inches after plating. Advanced HDI products may also require the micro vias to be fully filled using a specialized plating process so that additional micro via structures can be stacked on top to form more complex interconnections. These microvias consume much less space on the layers they interconnect, thereby providing for greater wiring densities and flexibility, also providing closer spacing of components and their attachment pads. The fabrication of PCBs with microvias requires specialized equipment, such as laser drills, and highly developed process knowledge. Applications such as handheld wireless devices employ microvias to obtain a higher degree of functionality from a given surface area. Total HDI PCBs represented approximately 41% of our Asia Pacific net sales in 2011, up from 34% in 2010.

Embedded passives. Embedded passive technology involves embedding either the capacitive or resistive elements inside the PCB, which allows for removal of passive components from the surface of the PCB and thereby leaves more surface area for active components. Use of this technology results in greater design flexibility and products with higher component density and increased functionality.

Fine line traces and spaces. Traces are the connecting copper lines between the different components of the PCB, and spaces are the distances between traces. The smaller the traces and the tighter the spaces, the higher the density on the PCB and the greater the expertise required to achieve a desired final yield on an order. We are able to manufacture PCBs with traces and spaces less than 0.002

inches.

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High aspect ratios. The aspect ratio is the ratio between the thickness of the PCB and the diameter of a drilled hole. The higher the ratio, the greater the difficulty to reliably form, electroplate and finish all the holes on a PCB. In production, we are able to provide aspect ratios of up to 15:1.

Thin core processing. A core is the basic inner-layer building block material from which PCBs are constructed. A core consists of a flat sheet of material comprised of glass-reinforced resin with copper foil laminated on either side. The thickness of inner-layer cores is typically determined by the overall thickness of the PCB and the number of layers required. The demand for thinner cores derives from the requirements for thinner PCBs, higher layer counts and various electrical parameters. Core thickness in our PCBs ranges from as little as 0.002 inches up to 0.062 inches.

Advanced hole fill process. Our advanced hole fill processes provide designers the opportunity to increase the density of component placements by reducing the surface area required to place many types of components. In traditional design, components are routed from their surface interfaces through via connections in order to access power and ground connections and the internal circuitry used to connect to other discrete components. Our advanced hole fill processes provide methods to allow for vias to be placed inside their respective surface mount pads by filling the vias with a thermoset epoxy and plating flat copper surface mount pads directly over the filled hole.

Advanced materials. We manufacture circuit boards using a wide variety of advanced insulating materials. These high-performance materials offer electrical, thermal, and long-term reliability advantages over conventional materials but are more difficult to manufacture. We are certified by Underwriters Laboratories to manufacture PCBs using many types and combinations of these specialty materials. This wide offering allows us to manufacture complex boards for niche and high-end commercial and aerospace/defense markets.

High frequency circuits. We have the ability to produce and test specialized circuits used in radio-frequency or microwave emission and collection applications. These products are typically used for radar, transmit/receive antennas and similar wireless applications. Markets for these products include defense, avionics, satellite, and commercial. The manufacture of these products requires advanced materials, equipment, and methods that are highly specialized and distinct from conventional printed circuit manufacturing techniques. We also offer specialized radio-frequency assembly and test services.

Thermal management. Increased component density on circuit boards often requires improved thermal dissipation to reduce operating temperatures. We have the ability to produce printed circuits with electrically passive heat sinks laminated externally on a circuit board or between two circuit boards and/or electrically active thermal cores.

Customers and Markets

Our customers include both OEMs and EMS companies that primarily serve the networking/communications, aerospace/defense, high-end computing, cell phone and medical/industrial/instrumentation end markets of the electronics industry. Included in the end markets that our OEM and EMS customers serve is the U.S. government. As a result, we are a supplier, primarily as a subcontractor, to the U.S. government. We measure customers as those companies that have placed orders of $2,000 or more in the preceding 12-month period. As of December 31, 2011 and 2010, we had approximately 1,220 and 1,160 customers, respectively.

The following table shows the percentage of our net sales in each of the principal end markets we served for the periods indicated:

End Markets(1)	2011	2010	2009
Aerospace/Defense	16%	20%	44%
Cellular Phone	11	10	
Computing/Storage/Peripherals	23	21	11
Medical/Industrial/Instrumentation	8	9	8
Networking/Communications	36	35	36

Other	6	5	1
Total	100%	100%	100%

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(1) Sales to EMS companies are classified by the end markets of their OEM customers.

Sales attributable to our five largest OEM customers, which can vary from year to year, collectively accounted for 33%, 28% and 34% of our net sales in 2011, 2010 and 2009, respectively. Our five largest OEM customers in 2011 were, in alphabetical order, Apple, Cisco Systems, Ericsson, Huawei, and ZTE Corporation. For the year ended December 31, 2011, Apple accounted for 11% of our net sales. Sales attributed to OEMs include sales made through EMS providers. Sales to EMS providers comprised approximately 42%, 45% and 47% of our net sales in 2011, 2010 and 2009, respectively. Although our contractual relationships are with the EMS companies, we typically negotiate price and volume requirements directly with the OEMs. In addition, we are on the approved vendor lists of several of our EMS providers. This positions us to participate in business that is awarded at the discretion of the EMS provider. Our five largest EMS customers in 2011 were, in alphabetical order, Celestica, Flextronics, Hon Hai, Jabil and Plexus.

During 2011, 2010 and 2009 our net sales by country were as follows:

Country	2011	2010	2009
United States	37%	35%	74%
China	39	42	16
Other	24	23	10
Total	100%	100%	100%

Net sales to other countries, individually, for the years ended December 31, 2011, 2010 and 2009 did not exceed 10% of total net sales.

Our marketing strategy focuses on building long-term relationships with our customers engineering and new product introduction personnel early in the product development phase, frequently through strategic account management teams. As the product moves from the prototype stage through ramp-to-volume and volume production, we shift our focus to the customers procurement departments in order to capture sales at each point in the product s life cycle.

Our staff of engineers, sales support personnel, and managers assists our sales representatives in advising customers with respect to manufacturing feasibility, design review, and technological capabilities through direct communication and visits. We combine our sales efforts with customer service at each facility to better serve our customers. Each large customer is typically assigned an account manager to coordinate all of the company s services across all of our facilities. Additionally, the largest and most strategic customers are also supported by selected program management and engineering resources. Our sales force is comprised of direct sales personnel, complemented by a large force of commission-based, independent representatives.

Our international footprint includes our Asia Pacific operating segment and their seven PCB fabrication plants in Hong Kong, Dongguan, Guangzhou, Shanghai and Suzhou, China; a backplane and sub-system assembly operation in Shanghai, China that is part of our North America operating segment; and customer inventory hubs in France, Poland, Hong Kong, China, Mexico, and Southeast Asia. Our international sales force services customers throughout North America, Europe, Asia, and the Middle East. We believe our international reach enables us to access new customers and allows us to better serve existing customers.

For information about net sales, income before income taxes, depreciation, total assets and capital expenditures of each of our segments, and geographical segment information, including net sales to customers and long-lived assets, see Note 20 of the Notes to Consolidated Financial Statements.

Suppliers

The primary raw materials we use in PCB manufacturing include copper-clad laminate; chemical solutions such as copper and gold for plating operations; photographic film; carbide drill bits; and plastic for testing fixtures. Although we have preferred suppliers for some raw materials used in the manufacture of PCBs, most of our raw materials are generally readily available in the open market from numerous other potential suppliers.

The primary raw materials we use in backplane assembly are manufactured components such as PCBs, connectors, capacitors, resistors, diodes, integrated circuits and formed sheet metal, many of which are custom

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made and controlled by our customers approved vendors. These components for backplane assemblies in some cases have limited or sole sources of supply. For example, in some instances our customers will require us to use a specific component from a particular supplier or require us to use a component provided by the customer itself, in which case we may have a single or limited number of suppliers for these specific components.

We typically use just-in-time procurement practices to maintain our raw materials inventory at low levels and work closely with our suppliers to obtain technologically advanced raw materials. In addition, we periodically seek alternative supply sources to ensure that we are receiving competitive pricing and service. Adequate amounts of all raw materials have been available in the past, and we believe this availability will continue into the foreseeable future.

Both PCB and IC substrates are heavy consumers of gold and copper, which represented a significant amount of our cost of goods sold in 2011, and are thus vulnerable to cost increases if raw material prices rise. See *Item 1A Risk Factors*.

Competition

Despite industry consolidation, the PCB industry remains fragmented and characterized by intense competition. Our principal PCB and substrate competitors include Unimicron, Ibiden, Tripod, Foxconn, DDi, Sanmina-SCI, Multek and Wus. Our principal backplane assembly competitors include Amphenol, Sanmina-SCI, Simclar, TT Electronics, and Viasystems.

We believe we compete favorably based on the following competitive factors:

- status as a top five global PCB manufacturer;
- capability and flexibility to produce technologically complex products;
- ability to offer a one-stop manufacturing solution;
- specialized and integrated manufacturing facilities;
- ability to offer time-to-market capabilities;
- leading edge aerospace/defense capabilities;
- flexibility to manufacture low volume, high-mix products;
- consistent high-quality product; and
- outstanding customer service.

In addition, we believe our continuous evaluation and early adoption of new manufacturing and production technologies give us a competitive advantage. We believe that our ability to manufacture PCBs using advanced technologies, including our HDI and substrate capabilities, provides us with a competitive advantage over manufacturers that do not possess this advanced technological expertise. Our future success will depend in large part on our ability to maintain and enhance our manufacturing capabilities and production technologies.

Seasonality

As a result of the product and customer mix of our Asia Pacific operating segment, a portion of our revenue is subject to seasonal fluctuations. These fluctuations include seasonal patterns in the computer and cellular phone industry, which together have become a significant portion of the end markets that we serve. This seasonality typically results in higher net sales in the third quarter due to end customer demand for fourth quarter sales of consumer electronics products. Seasonal fluctuations also include the Chinese New Year holiday in the first quarter, which typically results in lower net sales. In addition, our accounting calendar causes the first quarter of the fiscal year to have fewer days than the other quarters, especially the fourth quarter. In some cases, the number of days can differ by as many as ten days between the first and fourth quarters, which can cause significantly lower first quarter sales.

Backlog

Backlog consists of purchase orders received, including, in some instances, forecast requirements released for production under customer contracts. We obtain firm purchase orders from our customers for all products. However, for many of these purchase orders, customers do not make firm orders for delivery of products more than 30 to 60 days in advance. Some of the markets which we serve are characterized by increasingly short

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product life cycles. For other markets, longer product life cycles are more common as orders are for deliveries greater than 60 days in advance. At December 31, 2011, total backlog was $173.4 million compared with $207.8 million at the end of 2010. Substantially all backlog at December 31, 2011 is expected to be converted to sales in 2012.

Intellectual Property

We believe our business depends on the effectiveness of our fabrication techniques and our ability to continue to improve our manufacturing processes. We have limited patent or trade secret protection for our manufacturing processes. We rely on the collective experience of our employees in the manufacturing process to ensure that we continuously evaluate and adopt the new technologies available in our industry. In addition, we depend on training, recruiting, and retaining our employees, who are required to have sufficient know-how to operate advanced equipment and to conduct complicated manufacturing processes.

National Security Matters

A portion of our business consists of manufacturing defense and defense-related items for various departments and agencies of the U.S. government, including the U.S. Department of Defense, or the DoD, which requires that we maintain facility security clearances under the National Industrial Security Program, or NISP. The NISP requires that a corporation maintaining a facility security clearance take steps to mitigate foreign ownership, control or influence, referred to as FOCI. Pursuant to these laws and regulations, effective October 2010 we entered into a Special Security Agreement with the DoD; Su Sih (BVI) Limited, or Su Sih (a significant foreign minority owner of our capital stock); and Mr. Tang Hsiang Chien (as the beneficial owner of Su Sih). The purpose of the Special Security Agreement is to deny Mr. Tang, Su Sih, and other persons affiliated with our PCB Subsidiaries, from unauthorized access to classified and controlled unclassified information and influence over our business or management in a manner that could result in the compromise of classified information or could adversely affect the performance of classified contracts.

Other Governmental Regulations

Our operations, particularly those in North America, are subject to a broad range of regulatory requirements relating to export control, environmental compliance, waste management, and health and safety matters. In particular, we are subject to the following:

U.S. Department of State regulations, including the Arms Export Control Act (AECA) and International Traffic In Arms Regulations (ITAR) located at 22 CFR Parts 120-130;

U.S. Department of Commerce regulations, including the Export Administration Regulations (EAR) located at 15 CFR Parts 730-744;

Office of Foreign Asset Control (OFAC) regulations located at 31 CFR Parts 500-599;

U.S. Occupational Safety and Health Administration (OSHA), and state OSHA and Department of Labor laws pertaining to health and safety in the workplace;

U.S. Environmental Protection Agency (U.S. EPA) regulations pertaining to air emissions; wastewater discharges; and the use, storage, discharge, and disposal of hazardous chemicals used in the manufacturing processes; the reporting of chemical releases to the environment; and the reporting of chemicals manufactured in by-products that are beneficially recycled,

Department of Homeland Security (DHS) regulations regarding the storage of certain chemicals of interest;

corresponding state laws and regulations, including site investigation and remediation;

corresponding U.S. county and city agencies;

corresponding regulations and agencies in China for our Chinese facilities;

material content directives and laws that ban or restrict certain hazardous substances in products sold in member states of the European Union, China, other countries, and New York City; and

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SEC rules that discourage the use of certain metals from conflict minerals originating in the Democratic Republic of the Congo and the 9 countries surrounding it pursuant to Section 1502 of the Dodd-Frank Act; and

reporting requirements of the California Transparency in Supply Chains Act of 2010 that requires reporting on efforts to eradicate slavery and human trafficking in retailers and manufacturers supply chains.

To date, the costs of compliance and environmental remediation have not been material to us. Nevertheless, additional or modified requirements may be imposed in the future. If such additional or modified requirements are imposed on us, or if conditions requiring remediation are found to exist, we may be required to incur substantial additional expenditures.

Employees

As of December 31, 2011, we had 16,278 employees. Of our employees, 14,102 were involved in manufacturing and engineering, 280 worked in sales and marketing, and 1,896 worked in accounting, systems and other support capacities. None of our U.S. employees are represented by unions. In China, approximately 10,340 employees are represented by a labor union. We have not experienced any labor problems resulting in a work stoppage and believe that we have good relations with our employees.

Availability of Reports Filed with the Securities and Exchange Commission

We are a Delaware corporation, with our principal executive offices located at 2630 South Harbor Blvd., Santa Ana, CA 92704. Our telephone number is (714) 327-3000. Our web site address is *www.ttmtech.com*. Information included on our website is not incorporated into this report. Our annual reports on Form 10-K, quarterly reports on Form 10-Q, current reports on Form 8-K and amendments to those reports are available without charge on our website at www.ttmtech.com/investors/investor_sec.aspx, as soon as reasonably practicable after they are filed electronically with the Securities and Exchange Commission (SEC). Copies are also available without charge by (i) telephonic request by calling our Investor Relations Department at (714) 327-3000, (ii) e-mail request to investor@ttmtech.com, or (iii) a written request to TTM Technologies, Inc., Attention: Investor Relations, 2630 South Harbor Blvd., Santa Ana, CA 92704.

ITEM 1A. *RISK FACTORS*

An investment in our common stock involves a high degree of risk. You should carefully consider the factors described below, in addition to those discussed elsewhere in this report, in analyzing an investment in our common stock. If any of the events described below occurs, our business, financial condition, and results of operations would likely suffer, the trading price of our common stock could fall, and you could lose all or part of the money you paid for our common stock.

In addition, the following risk factors and uncertainties could cause our actual results to differ materially from those projected in our forward-looking statements, whether made in this annual report or future quarterly reports to stockholders, press releases, or oral statements, whether in presentations, responses to questions, or otherwise.

We are heavily dependent upon the worldwide electronics industry, which is characterized by dramatic economic cycles and fluctuations in product demand. A significant downturn in the electronics industry or prolonged global economic crisis could result in decreased demand for our manufacturing services and materially impact our financial condition.

A majority of our revenue is generated from the electronics industry, which is characterized by intense competition, relatively short product life cycles, and significant fluctuations in product demand. The industry is subject to economic cycles and recessionary periods and has been negatively affected by the current U.S. economic environment. Due to the uncertainty in the end markets served by most of our customers, we have a low level of visibility with respect to future financial results. Consequently, our past operating results, earnings and cash flows may not be indicative of our future operating results, earnings and cash flows.

The current adverse worldwide economic conditions have led to challenging conditions in the electronics industry. A number of factors, including geopolitical issues, the availability and cost of credit, high

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unemployment and concerns about the stability and solvency of financial institutions, financial markets, businesses, and sovereign nations have slowed global economic growth and resulted in recessions in many countries, including in the Unites States, Europe and certain countries in Asia. In addition to the impact that the global financial crisis has already had on us, we may face significant challenges if conditions in the financial markets do not improve. For example, continuation of poor economic conditions could adversely impact overall demand in the electronics industry, which could have a negative effect on our business, results of operations, and financial condition. In addition, our ability to access the capital markets may be severely restricted at a time when we would like, or need, to do so, which could have an impact on our flexibility to react to changing economic and business conditions or our ability to pursue acquisitions.

We may need additional capital in the future to fund investments in our operations, refinance our indebtedness and to maintain and grow our business, and it may not be available on acceptable terms, or at all.

Our business is capital intensive, and our ability to increase revenue, profit, and cash flow depends upon continued capital spending. We believe that we can meet our capital requirements from internally generated funds, cash in hand, and available borrowings. If we are unable to fund our capital requirements as currently planned, however, it would have a material adverse effect on our business, financial condition, and operating results. If we do not achieve our expected operating results, we would need to reallocate our sources and uses of operating cash flows. This may include borrowing additional funds to service debt payments, which may impair our ability to make investments in our business. Looking ahead at long-term needs, we may need to raise additional funds for a number of purposes, including:

- to fund capital equipment purchases to increase production capacity, expand our technological capabilities and replace aging equipment;
- to refinance our existing indebtedness;
- to fund our operations beyond 2012;
- to fund working capital requirements for future growth that we may experience;
- to enhance or expand the range of services we offer;
- to increase our sales and marketing activities; or
- to respond to competitive pressures or perceived opportunities, such as investment, acquisition and international expansion activities.

Should we need to raise funds through incurring additional debt, we may become subject to covenants even more restrictive than those contained in our current debt instruments. Furthermore, if we issue additional equity, our equity holders would suffer dilution. There can be no assurance that additional capital would be available on a timely basis, on favorable terms, or at all. If such funds are not available when required or on acceptable terms, our business and financial results could suffer.

Our substantial indebtedness could adversely affect our business and limit our ability to plan for or respond to changes in our business, and we may be unable to generate sufficient cash flow to satisfy our significant debt service obligations.

As of December 31, 2011, we had total indebtedness of approximately $513.3 million, which represented approximately 36% of our total capitalization. We may incur substantial additional indebtedness in the future, including additional borrowings under our revolving credit facility.

Our substantial indebtedness and the fact that a substantial portion of our cash flow from operations must be used to make principal and interest payments on this indebtedness could have important consequences, including the following:

increasing our vulnerability to general adverse economic and industry conditions;

reducing the availability of our cash flow for other purposes;

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limiting our flexibility in planning for, or reacting to, changes in our business and the industry in which we operate, which would place us at a competitive disadvantage compared to our competitors that may have less debt;

limiting, by the financial and other restrictive covenants in our debt agreements, our ability to borrow additional funds; and

having a material adverse effect on our business if we fail to comply with the covenants in our debt agreements, because such failure could result in an event of default that, if not cured or waived, could result in all or a substantial amount of our indebtedness becoming immediately due and payable.

Our ability to incur significant future indebtedness, whether to finance capital expenditures, potential acquisitions or for general corporate purposes, will depend on our ability to generate cash. This, to a certain extent, is subject to general economic, financial, competitive, legislative, regulatory, and other factors that are beyond our control. If our business does not generate sufficient cash flow from operations or if future borrowings are not available to us under our secured credit facility in amounts sufficient to enable us to fund our liquidity needs, our financial condition and results of operations may be adversely affected. If we cannot make scheduled principal and interest payments on our debt obligations in the future, we may need to refinance all or a portion of our indebtedness on or before maturity, sell assets, delay capital expenditures, or seek additional equity. If we are unable to refinance our indebtedness on commercially reasonable terms or at all, or to effect any other of these actions, our business may be harmed.

Covenants in our credit agreement may adversely affect our company.

On April 9, 2010, in conjunction with the acquisition of the PCB Subsidiaries, we became a party to a credit agreement (Credit Agreement). The Credit Agreement contains certain financial and operating covenants that include maintaining maximum total leverage ratios and minimum net worth, current assets, and interest coverage ratios at both our company and PCB Subsidiaries level. On August 3, 2010 we entered into an amendment letter with The Hongkong and Shanghai Banking Corporation Limited, the facility agent for and on behalf of the lenders named in the Credit Agreement, amending the financial covenants related to consolidated tangible net worth, gearing ratio (the ratio of consolidated net borrowings to consolidated tangible net worth), and leverage. On July 22, 2011 we entered into another amendment letter amending the financial covenants related to current assets and consolidated current liabilities of our Asian subsidiaries. The ability to meet the financial covenants can be affected by events beyond our control, and we cannot provide assurance that we will continue to comply with all of these financial covenants. A breach of any of these covenants could result in a default under the Credit Agreement. Upon the occurrence of an event of default under the Credit Agreement, the lenders could elect to declare amounts outstanding thereunder to be immediately due and payable and terminate all commitments to extend further credit. If the lenders accelerate the repayment of borrowings, we may not have sufficient assets to repay the indebtedness owed under the Credit Agreement and our other indebtedness. See Management s Discussion and Analysis of Financial Condition and Results of Operations Liquidity and Capital Resources Credit Agreement.

We depend upon a relatively small number of OEM customers for a large portion of our sales, and a decline in sales to major customers could harm our results of operations.

A small number of customers is responsible for a significant portion of our sales. Collectively, our five largest OEM customers accounted for approximately 33%, 28% and 34% of our net sales for the years ended December 31, 2011, 2010 and 2009, respectively. Sales attributed to OEMs include both direct sales as well as sales that the OEMs place through EMS providers. Our customer concentration could fluctuate, depending on future customer requirements, which will depend in large part on market conditions in the electronics industry segments in which our customers participate. The loss of one or more significant customers or a decline in sales to our significant customers could harm our business, results of operations, and financial condition and lead to declines in the trading price of our common stock. In addition, we generate significant accounts receivable in connection with providing manufacturing services to our customers. If one or more of our significant customers were to become insolvent or were otherwise unable to pay for the manufacturing services provided by us, our results of operations would be harmed.

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In addition, during industry downturns, we may need to reduce prices at customer requests to limit the level of order losses, and we may be unable to collect payments from our customers. There can be no assurance that key customers would not cancel orders, that they would continue to place orders with us in the future at the same levels as experienced by us in prior periods, that they would be able to meet their payment obligations, or that the end-products which use our products would be successful. This concentration of customer base may materially and adversely affect our operating results due to the loss or cancellation of business from any of these key customers, significant changes in scheduled deliveries to any of these customers, or decreases in the prices of the products sold to any of these customers.

We serve customers and have manufacturing facilities outside the United States and are subject to the risks characteristic of international operations.

We have significant manufacturing operations in Asia and sales offices located in Asia and Europe, and we continue to consider additional opportunities to make foreign investments and construct new foreign facilities. We generated 63% of our net sales from non-U.S. operations in 2011 and a significant portion of our manufacturing material was provided by international suppliers during this period. As a result, we are subject to risks relating to significant international operations, including but not limited to:

- managing international operations;
- imposition of governmental controls;
- compliance with employment laws;
- implementation of disclosure controls, internal controls, financial reporting systems, and governance standards to comply with U.S. accounting and securities laws and regulations;
- limitations on imports or exports of our product offering;
- fluctuations in the value of local currencies;
- labor unrest, rising wages and difficulties in staffing;
- government or political unrest;
- longer payment cycles;
- language and communication barriers as well as time zone differences;
- cultural differences;
- increases in duties and taxation levied on our products;

imposition of restrictions on currency conversion or the transfer of funds;

travel restrictions;

expropriation of private enterprises; and

the potential reversal of current favorable policies encouraging foreign investment and trade.

Our operations in China subject us to risks and uncertainties relating to the laws and regulations of China.

Under its current leadership, the government of China has been pursuing economic reform policies, including the encouragement of foreign trade and investment and greater economic decentralization. No assurance can be given, however, that the government of China will continue to pursue such policies, that such policies will be successful if pursued, or that such policies will not be significantly altered from time to time. Despite progress in developing its legal system, China does not have a comprehensive and highly developed system of laws, particularly with respect to foreign investment activities and foreign trade. Enforcement of existing and future laws and contracts is uncertain, and implementation and interpretation thereof may be inconsistent. As the Chinese legal system develops, the promulgation of new laws, changes to existing laws and the preemption of local regulations by national laws may adversely affect foreign investors. Further, any

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litigation in China may be protracted and may result in substantial costs and diversion of resources and management attention. In addition, some government policies and rules are not timely published or communicated, if they are published at all. As a result, we may operate our business in violation of new rules and policies without having any knowledge of their existence. These uncertainties could limit the legal protections available to us.

Our results can be adversely affected by rising labor costs.

There is uncertainty with respect to rising labor costs, in particular within China where we have most of our manufacturing facilities. In recent periods there have been regular and significant increases in the minimum wage payable in various China provinces. In addition, labor disputes and strikes based partly on wages have in the past slowed or stopped production at certain manufacturers in China. In some cases, employers have responded by significantly increasing the wages of workers at such plants. Any increase in labor costs that we are required to make in order to comply with minimum wage laws or otherwise retain qualified personnel and are unable to recover in our pricing to our customers could adversely impact our operating results.

To respond to competitive pressures and customer requirements, we may further expand internationally in lower cost locations. If we pursue such expansions, we may be required to make additional capital expenditures. In addition, the cost structure in certain countries that are now considered to be favorable may increase as economies develop or as such countries join multinational economic communities or organizations, causing local wages to rise. As a result, we may need to continue to seek new locations with lower costs and the employee and infrastructure base to support PCB manufacturing. We cannot assure that we will realize the anticipated strategic benefits of our international operations or that our international operations will contribute positively to our operating results.

A continued increase in the cost of raw materials could have an adverse impact on our business and reduce our gross margins.

To manufacture PCBs, we use raw materials such as laminated layers of fiberglass, copper foil, chemical solutions, gold, and other commodity products, which we order from our suppliers. In the case of backplane assemblies, components include connectors, sheet metal, capacitors, resistors and diodes, many of which are custom made and controlled by our customers approved vendors. The supply of raw materials has tightened recently and commodities prices have risen. These increases in raw material and component prices, if sustained, can negatively affect our gross margins. For example, we have recently experienced an increase in the price we pay for gold. In general, we are able to pass this price increase on to our customers, but we cannot be certain we will continue to be able to do so in the future.

We rely on suppliers for the timely delivery of raw materials and components used in manufacturing our PCBs and backplane assemblies. If a raw material supplier fails to satisfy our product quality standards, it could harm our customer relationships.

Although we have preferred suppliers for most of these raw materials, the materials we use are generally readily available in the open market, and numerous other potential suppliers exist. The components for backplane assemblies in some cases have limited or sole sources of supply. Consolidations and restructuring in our supplier base may result in adverse materials pricing due to reduction in competition among our suppliers. Furthermore, if a raw material or component supplier fails to satisfy our product quality standards, including future standards relating to conflict metals, it could harm our customer relationships. Suppliers may from time to time extend lead times, limit supplies, or increase prices, due to capacity constraints or other factors, which could harm our ability to deliver our products on a timely basis.

Our Asia Pacific operations could be adversely affected by a shortage of utilities or a discontinuation of priority supply status offered for such utilities.

The manufacturing of PCBs requires significant quantities of electricity and water. Our Asia Pacific operations have historically purchased substantially all of the electrical power for their manufacturing plants in China from local power plants. Because China s economy has recently been in a state of growth, the strain on the

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nation s power plants is increasing, which has led to continuing power outages in various parts of the country. There may be times when our operations in China may be unable to obtain adequate sources of electricity to meet production requirements. Additionally, we would not likely maintain any back-up power generation facilities for our operations, so if we were to lose power at any of our facilities we would be required to cease operations until power was restored. Any stoppage of power could adversely affect our ability to meet our customers orders in a timely manner, thus potentially resulting in a loss of business and increased costs of manufacturing. In addition, the sudden cessation of power supply could damage our equipment, resulting in the need for costly repairs or maintenance as well as damage to products in production, resulting in an increase in scrapped products. Similarly, the sudden cessation of the water supply to China facilities could adversely affect our ability to fulfill orders in a timely manner, potentially resulting in a loss of business and under-utilization of capacity. Various regions in China have in the past experienced shortages of both electricity and water and unexpected interruptions of power supply. From time to time, the Chinese government rations electrical power which can lead to unscheduled production interruptions in our manufacturing facilities. There can be no assurance that our required utilities would not in the future experience material interruptions, which could have a material adverse effect on our results of operations and financial condition.

Damage to our manufacturing facilities due to fire, natural disaster, or other events could harm our financial results.

We have seven manufacturing and assembly facilities in the United States and eight manufacturing and assembly facilities in China and Hong Kong. The destruction or closure of any of our facilities for a significant period of time as a result of fire, explosion, blizzard, act of war or terrorism, flood, tornado, earthquake, lightning, other natural disasters, required maintenance or other events could harm us financially, increasing our costs of doing business and limiting our ability to deliver our manufacturing services on a timely basis. Our insurance coverage with respect to damages to our facilities or our customers products caused by natural disasters is limited and is subject to deductibles and coverage limits. Such coverage may not be adequate or continue to be available at commercially reasonable rates and terms.

In the event one or more of our facilities is closed on a temporary or permanent basis as a result of a natural disaster, required maintenance or other event, our operations could be significantly disrupted. Such events could delay or prevent product manufacturing and shipment for the time required to transfer production or repair, rebuild or replace the affected manufacturing facilities. This time frame could be lengthy and result in significant expenses for repair and related costs. While we have in place disaster recovery plans, there can be no assurance that such plans will be sufficient to allow our operations to continue in the event of every natural or man-made disaster, pandemic, required repair or other extraordinary event. Any extended inability to continue our operations at unaffected facilities following such an event would reduce our revenue and potentially damage our reputation as a reliable supplier.

Our results may be negatively affected by changing interest rates.

We are subject to market risk from exposure to changes in interest rates based on our financing activities. As of December 31, 2011, $188.8 million, or 37%, of our then outstanding indebtedness, bore interest at a floating rate of LIBOR plus an applicable interest margin. Lines of credit we maintain at banks in mainland China used for working capital and capital investment for our mainland China facilities have interest rates tied to either LIBOR or People s Bank of China rates with a margin adjustment. There can be no assurances that interest rates will not significantly change. Should LIBOR increase substantially in the future for any reason, our interest payments on our variable interest rate debt would also increase, lowing our net income. See Quantitative and Qualitative Disclosures About Market Risk.

If we are unable to respond to rapid technological change and process development, we may not be able to compete effectively.

The market for our manufacturing services is characterized by rapidly changing technology and continual implementation of new production processes. The future success of our business will depend in large part upon our ability to maintain and enhance our technological capabilities, to manufacture products that meet changing customer needs, and to successfully anticipate or respond to technological changes on a cost-effective and timely

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basis. We expect that the investment necessary to maintain our technological position will increase as customers make demands for products and services requiring more advanced technology on a quicker turnaround basis. For example, in 2012 we expect to make significant capital expenditures to expand our HDI and other advanced manufacturing capabilities. We may not be able to raise additional funds in order to respond to technological changes as quickly as our competitors.

In addition, the PCB industry could encounter competition from new or revised manufacturing and production technologies that render existing manufacturing and production technology less competitive or obsolete. We may not respond effectively to the technological requirements of the changing market. If we need new technologies and equipment to remain competitive, the development, acquisition, and implementation of those technologies and equipment may require us to make significant capital investments.

We depend on the U.S. government for a substantial portion of our business, which involves unique risks.

A significant portion of our revenues is derived from products and services ultimately sold to the U.S. government by our OEM and EMS customers and is therefore affected by, among other things, the federal budget process. We are a supplier, primarily as a subcontractor, to the U.S. government and its agencies as well as foreign governments and agencies. While our sales to OEMs and EMS resellers are made through purchase orders that are not subject to cancellation, returns, or re-negotiation, the contracts between our direct customers and the government end user are subject to political and budgetary constraints and processes, changes in short-range and long-range strategic plans, the timing of contract awards, the congressional budget authorization and appropriation processes, the government s ability to terminate contracts for convenience or for default, as well as other risks such as contractor suspension or debarment in the event of certain violations of legal and regulatory requirements. The termination or failure to fund one or more significant contracts by the U.S. government could have a material adverse effect on our business, results of operations or prospects.

Changes in government defense spending or regulations could have a material adverse effect on our business.

In 2011, aerospace/defense sales accounted for approximately 16% of our total net sales. The substantial majority of these sales are related to both U.S. and foreign military and defense programs. While we do not sell directly to the U.S. government, we are a supplier to the U.S. government and its agencies as well as foreign governments and agencies. Consequently, our sales are affected by changes in the defense budgets of the U.S. and foreign governments. The domestic and international threat of terrorist activity, emerging nuclear states and conventional military threats have led to an increase in demand for defense products and services and homeland security solutions in the recent past. The U.S. government, however, is facing unprecedented budgeting constraints and a decline in U.S. defense expenditures generally could adversely affect our business.

Additionally, the federal government is currently in the process of reviewing and revising the United States Munitions List. Such changes could reduce or eliminate restrictions that currently apply to some of the products we produce. If these regulations or others are changed in a manner that reduces restrictions on their being manufactured overseas, we would likely face increased competition from overseas manufacturers.

We are subject to the requirements of the National Industrial Security Program Operating Manual for our facility security clearance, which is a prerequisite to our ability to perform on classified contracts for the U.S. government.

A facility security clearance is required in order to be awarded and perform on classified contracts for the DoD and certain other agencies of the U.S. government. As a cleared entity, we must comply with the requirements of the National Industrial Security Program Operating Manual, or NISPOM, and any other applicable U.S. government industrial security regulations. Further, due to the fact that a significant portion of our voting equity is owned by a non-U.S. entity, we are required to be governed by and operate in accordance with the terms and requirements of the Special Security Agreement described in Business National Security Matters. The terms of the SSA have been previously disclosed in our SEC filings.

If we were to violate the terms and requirements of the SSA, the NISPOM, or any other applicable U.S. government industrial security regulations (which may apply to us under the terms of classified contracts),

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we could lose our security clearance. We cannot be certain that we will be able to maintain our security clearance. If for some reason our security clearance is invalidated or terminated, we may not be able to continue to perform on classified contracts and would not be able to enter into new classified contracts, which could adversely affect our revenues.

If we are unable to provide our customers with high-end technology, high quality products, and responsive service, or if we are unable to deliver our products to our customers in a timely manner, our results of operations and financial condition may suffer.

In order to maintain our existing customer base and obtain business from new customers, we must demonstrate our ability to produce our products at the level of technology, quality, responsiveness of service, timeliness of delivery, and at costs that our customers require. If our products are of substandard quality, if they are not delivered on time, if we are not responsive to our customers demands, or if we cannot meet our customers technological requirements, our reputation as a reliable supplier of our products would likely be damaged. If we are unable to meet these product and service standards, we may be unable to obtain new contracts or keep our existing customers, and this could have a material adverse effect on our results of operations and financial condition.

If we are unable to maintain satisfactory capacity utilization rates, our results of operations and financial condition would be adversely affected.

Given the high fixed costs of our operations, decreases in capacity utilization rates can have a significant effect on our business. Accordingly, our ability to maintain or enhance gross margins would continue to depend, in part, on maintaining satisfactory capacity utilization rates. In turn, our ability to maintain satisfactory capacity utilization would depend on the demand for our products, the volume of orders we receive, and our ability to offer products that meet our customers requirements at competitive prices. If current or future production capacity fails to match current or future customer demands, our facilities would be underutilized, our sales may not fully cover our fixed overhead expenses, and we would be less likely to achieve expected gross margins. If forecasts and assumptions used to support the realizability of our long-lived assets change in the future, significant impairment charges could result that would adversely affect our results of operations and financial condition.

In addition, we generally schedule our QTA production facilities at less than full capacity to retain our ability to respond to unexpected additional quick-turn orders. However, if these orders are not received, we may forego some production and could experience continued excess capacity. If we conclude we have significant, long-term excess capacity, we may decide to permanently close one or more of our facilities, and lay off some of our employees. Closures or lay-offs could result in our recording restructuring charges such as severance, other exit costs, and asset impairments.

Competition in the PCB market is intense, and we could lose market share if we are unable to maintain our current competitive position in end markets using our quick-turn, high technology and high-mix manufacturing services.

The PCB industry is intensely competitive, highly fragmented, and rapidly changing. We expect competition to continue, which could result in price reductions, reduced gross margins, and loss of market share. Our principal PCB and substrate competitors include Unimicron, Ibiden, Tripod, Foxconn, DDi, Sanmina-SCI, Multek and Wus. Our principal backplane assembly competitors include Amphenol, Sanmina-SCI, Simclar, TT Electronics, and Viasystems. In addition, we increasingly compete on an international basis, and new and emerging technologies may result in new competitors entering our markets.

Some of our competitors and potential competitors have advantages over us, including:

- greater financial and manufacturing resources that can be devoted to the development, production, and sale of their products;
- more established and broader sales and marketing channels;
- more manufacturing facilities worldwide, some of which are closer in proximity to OEMs;

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manufacturing facilities that are located in countries with lower production costs;

lower capacity utilization, which in peak market conditions can result in shorter lead times to customers;

ability to add additional capacity faster or more efficiently;

preferred vendor status with existing and potential customers;

greater name recognition; and

larger customer bases.

In addition, these competitors may respond more quickly to new or emerging technologies, or adapt more quickly to changes in customer requirements, and devote greater resources to the development, promotion, and sale of their products than we do. We must continually develop improved manufacturing processes to meet our customers needs for complex products, and our manufacturing process technology is generally not subject to significant proprietary protection. During recessionary periods in the electronics industry, our strategy of providing quick-turn services, an integrated manufacturing solution, and responsive customer service may take on reduced importance to our customers. As a result, we may need to compete more on the basis of price, which could cause our gross margins to decline.

The prominence of EMS companies as our customers could reduce our gross margins, potential sales, and customers.

Sales to EMS companies represented approximately 42%, 45% and 47% of our net sales for the years ended December 31, 2011, 2010 and 2009, respectively. Sales to EMS providers include sales directed by OEMs as well as orders placed with us at the EMS providers discretion. EMS providers source on a global basis to a greater extent than OEMs. The growth of EMS providers increases the purchasing power of such providers and could result in increased price competition or the loss of existing OEM customers. In addition, some EMS providers, including some of our customers, have the ability to directly manufacture PCBs and create backplane assemblies. If a significant number of our other EMS customers were to acquire these abilities, our customer base might shrink, and our sales might decline substantially. Moreover, if any of our OEM customers outsource the production of PCBs and creation of backplane assemblies to these EMS providers, our business, results of operations, and financial condition may be harmed.

We incur a variety of costs as a result of being a public company, and those costs may continue to increase.

As a U.S. public company registered with the SEC under the Securities Exchange Act of 1934, as amended (the Exchange Act), we incur significant legal, accounting, and other expenses. In addition, the Sarbanes-Oxley Act of 2002, the Dodd-Frank Wall Street Reform and Consumer Protection Act, as well as rules implemented from time to time by the SEC and the Nasdaq Stock Market, frequently require changes in corporate governance policies and practices of companies registered with the SEC under the Exchange Act. These rules and regulations increase legal and financial compliance costs and make some activities more time-consuming and costly. In addition, we incur additional costs associated with our Exchange Act public company reporting requirements. As a result, implementation of disclosure controls, internal controls, and financial reporting systems complying with the requirements of U.S. GAAP and U.S. securities laws and regulations required as a result of our continued status as a reporting company under the Exchange Act may be more difficult and costly than anticipated.

In addition, pursuant to requirements contained in the Dodd-Frank Wall Street Reform and Consumer Protection Act, the SEC is expected to require us to report on conflict metals used in our products and the due diligence plan we put in place to track whether such metals originate from the Democratic Republic of Congo and/or other conflict areas of the world. When these new requirements are implemented, they could affect the sourcing and availability of minerals used in the manufacture of PCBs. As a result, there may only be a limited pool of suppliers who provide conflict free metals, and we cannot provide assurance that we will be able to obtain these metals in sufficient quantities or at competitive prices. Also, since our supply chain is complex, we may face reputational challenges with our customers and other stakeholders if we are unable to sufficiently verify the origins for all metals used in our products through the due diligence procedures that we implement.

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The former owners of our PCB Subsidiaries own a substantial percentage of our common stock.

We issued a large amount of stock to the principal owners of Meadville in connection with our acquisition of our PCB Subsidiaries. As of December 31, 2011, approximately 34% of our common stock was beneficially owned by Su Sih (BVI) Limited, a company organized under the laws of the British Virgin Islands (referred to as Su Sih). Su Sih is a holding company wholly owned by Mr. Tang Hsiang Chien, a citizen of Hong Kong Special Administrative Region of the People s Republic of China and the father of our director Mr. Tang Chung Yen, Tom. Su Sih is entitled to jointly nominate one individual to our board of directors and a majority of the members of the board of directors of the PCB Subsidiaries.

If we are unable to manage our growth effectively, our business could be negatively affected.

We have experienced, and expect to continue to experience, growth in the scope and complexity of our operations. This growth may strain our managerial, financial, manufacturing, and other resources. In order to manage our growth, we may be required to continue to implement additional operating and financial controls and hire and train additional personnel. There can be no assurance that we will be able to do so in the future, and failure to do so could jeopardize our expansion plans and seriously harm our operations. In addition, growth in our capacity could result in reduced capacity utilization and a corresponding decrease in gross margins.

Our international sales are subject to laws relating to trade, export controls and foreign corrupt practices, the violation of which could adversely affect our operations.

We are required to comply with all applicable domestic and foreign export control laws, including the International Traffic in Arms Regulations (ITAR) and the Export Administration Regulations (EAR). Some items manufactured by us are controlled for export by the United States Department of Commerce s Bureau of Industry and Security under the EAR. In addition, we are subject to the Foreign Corrupt Practices Act and international counterparts that bar bribes or unreasonable gifts for foreign governments and officials. Violation of any of these laws or regulations could result in significant sanctions, including large monetary penalties and suspension or debarment from participation in future government contracts, which could reduce our future revenue and net income.

Our failure to comply with the requirements of environmental laws could result in litigation, fines, revocation of permits necessary to our manufacturing processes, or debarment from our participation in federal government contracts.

Our operations are regulated under a number of federal, state, local, and foreign environmental and safety laws and regulations that govern, among other things, the discharge of hazardous materials into the air and water, as well as the handling, storage, and disposal of such materials. These laws and regulations include the Clean Air Act, the Clean Water Act, the Resource Conservation and Recovery Act, the Superfund Amendment and Reauthorization Act, the Comprehensive Environmental Response, Compensation and Liability Act, the Toxic Substances Control Act, and the Federal Motor Carrier Safety Improvement Act as well as analogous state, local, and foreign laws. Compliance with these environmental laws is a major consideration for us because our manufacturing processes use and generate materials classified as hazardous. Because we use hazardous materials and generate hazardous wastes in our manufacturing processes, we may be subject to potential financial liability for costs associated with the investigation and remediation of our own sites, or sites at which we have arranged for the disposal of hazardous wastes, if such sites become contaminated. Even if we fully comply with applicable environmental laws and are not directly at fault for the contamination, we may still be liable. The wastes we generate include spent ammoniacal and cupric etching solutions, metal stripping solutions, waste acid solutions, waste alkaline cleaners, waste oil, and waste waters that contain heavy metals such as copper, tin, lead, nickel, gold, silver, cyanide, and fluoride, and both filter cake and spent ion exchange resins from equipment used for on-site waste treatment.

Any material violations of environmental laws or failure to maintain required environmental permits could subject us to fines, penalties, and other sanctions, including the revocation of our effluent discharge permits, which could require us to cease or limit production at one or more of our facilities, and harm our business, results of operations, and financial condition. Even if we ultimately prevail, environmental lawsuits against us would be time consuming and costly to defend.

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Environmental laws also could become more stringent over time, imposing greater compliance costs and increasing risks and penalties associated with violation. We operate in environmentally sensitive locations, and we are subject to potentially conflicting and changing regulatory agendas of political, business, and environmental groups. Changes or restrictions on discharge limits, emissions levels, material storage, handling, or disposal might require a high level of unplanned capital investment or global relocation. It is possible that environmental compliance costs and penalties from new or existing regulations may harm our business, results of operations, and financial condition.

We are increasingly required to certify compliance with various material content restrictions in our products based on laws of various jurisdictions or territories such as the Restriction of Hazardous Substances (RoHS) and Registration, Evaluation, Authorization and Restriction of Chemicals (REACH) directives in the European Union and China s RoHS legislation. New York City has adopted identical RoHS restrictions and many U.S. states are considering similar rules and legislation. In addition, we must also certify as to the non-applicability to the EU s Waste Electrical and Electronic Equipment directive for certain products that we manufacture. The REACH directive requires adoption of Substances of Very High Concern (SVHCs) periodically. We must survey our supply chain and certify to the non-presence or presence of SVHCs to our customers. Currently, seven lists totaling 75 SVHCs have been adopted by the EU. As with other types of product certifications that we routinely provide, we may incur liability and pay damages if our products do not conform to our certifications.

We are also subject to a variety of environmental laws and regulations in the People s Republic of China, or PRC, which impose limitations on the discharge of pollutants into the air and water and establish standards for the treatment, storage, and disposal of solid and hazardous wastes. The manufacturing of our products generates gaseous chemical wastes, liquid wastes, waste water and other industrial wastes from various stages of the manufacturing process. Production sites in China are subject to regulation and periodic monitoring by the relevant environmental protection authorities. Environmental claims or the failure to comply with current or future regulations could result in the assessment of damages or imposition of fines against us, suspension of production, or cessation of operations.

Employee theft or fraud could result in loss.

Certain of our employees have access to, or signature authority with respect to, bank accounts or other company assets, which could expose us to fraud or theft. In addition, certain employees have access to key IT infrastructure and to customer and other information that is commercially valuable. Should any employee, for any reason, compromise our IT systems, or misappropriate customer or other information, we could incur losses, including losses relating to claims by our customers against us, the willingness of customers to do business with us may be damaged and, in the case of our defense business, we could be debarred from future participation in government programs. Any such losses may not be fully covered by insurance.

Because we sell on a purchase order basis, we are subject to uncertainties and variability in demand by our customers that could decrease revenues and harm our operating results.

We generally sell to customers on a purchase order basis rather than pursuant to long-term contracts. Our quick-turn orders are subject to particularly short lead times. Consequently, our sales are subject to short-term variability in demand by our customers. Customers submitting purchase orders may cancel, reduce, or delay their orders for a variety of reasons. The level and timing of orders placed by our customers may vary, due to:

- customer attempts to manage inventory;
- changes in customers manufacturing strategies, such as a decision by a customer to either diversify or consolidate the number of PCB manufacturers or backplane assembly service providers used or to manufacture or assemble its own products internally;
- variation in demand for our customers products; and
- changes in new product introductions.

We have periodically experienced terminations, reductions, and delays in our customers orders. Further terminations, reductions, or delays in our customers orders could harm our business, results of operations, and financial condition.

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Our results of operations are often subject to demand fluctuations and seasonality. With a high level of fixed operating costs, even small revenue shortfalls would decrease our gross margins and potentially cause the trading price of our common stock to decline.

Our results of operations fluctuate for a variety of reasons, including:

- timing of orders from and shipments to major customers;
- the levels at which we utilize our manufacturing capacity;
- price competition;
- changes in our mix of revenues generated from quick-turn versus standard delivery time services;
- expenditures, charges or write-offs, including those related to acquisitions, facility restructurings, or asset impairments; and
- expenses relating to expanding existing manufacturing facilities.

A significant portion of our operating expenses is relatively fixed in nature, and planned expenditures are based in part on anticipated orders. Accordingly, unexpected revenue shortfalls may decrease our gross margins. In addition, we have experienced sales fluctuations due to seasonal patterns in the capital budgeting and purchasing cycles, as well as inventory management practices of our customers and the end markets we serve. In particular, the seasonality of the computer industry and quick-turn ordering patterns affect the overall PCB industry. These seasonal trends have caused fluctuations in our operating results in the past and may continue to do so in the future. Results of operations in any period should not be considered indicative of the results to be expected for any future period. In addition, our future quarterly operating results may fluctuate and may not meet the expectations of securities analysts or investors. If this occurs, the trading price of our common stock likely would decline.

Increasingly, our larger customers are requesting that we enter into supply agreements with them that have increasingly restrictive terms and conditions. These agreements typically include provisions that increase our financial exposure, which could result in significant costs to us.

Increasingly, our larger customers are requesting that we enter into supply agreements with them. These agreements typically include provisions that generally serve to increase our exposure for product liability and limited sales returns as compared to our standard terms and conditions which could result in higher costs to us as a result of such claims. In addition, these agreements typically contain provisions that seek to limit our operational and pricing flexibility and extend payment terms, which can adversely impact our cash flow and results of operations.

Our business has benefited from OEMs deciding to outsource their PCB manufacturing and backplane assembly needs to us. If OEMs choose to provide these services in-house or select other providers, our business could suffer.

Our future revenue growth partially depends on new outsourcing opportunities from OEMs. Current and prospective customers continuously evaluate our performance against other providers. They also evaluate the potential benefits of manufacturing their products themselves. To the extent that outsourcing opportunities are not available either due to OEM decisions to produce these products themselves or to use other providers, our financial results and future growth could be adversely affected.

Consolidation among our customers could adversely affect our business.

Recently, some of our large customers have consolidated and further consolidation of customers may occur. Depending on which organization becomes the controller of the supply chain function following the consolidation, we may not be retained as a preferred or approved supplier. In addition, product duplication could result in the termination of a product line that we currently support. While there is potential for increasing

our position with the combined customer, there does exist the potential for decreased revenue if we are not retained as a continuing supplier. We also face the risk of increased pricing pressure from the combined customer because of its increased market share.

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We are exposed to the credit risk of some of our customers and to credit exposures in weakened markets.

Most of our sales are on an open credit basis, with standard industry payment terms. We monitor individual customer payment capability in granting such open credit arrangements, seek to limit such open credit to amounts we believe the customers can pay, and maintain reserves we believe are adequate to cover exposure for doubtful accounts. During periods of economic downturn in the electronics industry and the global economy, our exposure to credit risks from our customers increases. Although we have programs in place to monitor and mitigate the associated risks, such programs may not be effective in reducing our credit risks.

Our 10 largest OEM customers accounted for approximately 46%, 42% and 56% of our net sales for the years ended December 31, 2011, 2010 and 2009, respectively. Additionally, our OEM customers often direct a significant portion of their purchases through a relatively limited number of EMS companies. Our contractual relationship is often with the EMS companies, who are obligated to pay us for our products. Because we expect our OEM customers to continue to direct our sales to EMS companies, we expect to continue to be subject to this credit risk with a limited number of EMS customers. If one or more of our significant customers were to become insolvent or were otherwise unable to pay us, our results of operations would be harmed.

Some of our customers are EMS companies located abroad. Our exposure has increased as these foreign customers continue to expand. Our foreign receivables were approximately 25% and 26% of our net accounts receivable as of December 31, 2011 and 2010, respectively, and are expected to continue to grow as a percentage of our total receivables. We do not utilize credit insurance as a risk management tool.

Our acquisition strategy involves numerous risks.

As part of our business strategy, we expect that we will continue to grow by pursuing acquisitions of businesses, technologies, assets, or product lines that complement or expand our business. Risks related to an acquisition may include:

- the potential inability to successfully integrate acquired operations and businesses or to realize anticipated synergies, economies of scale, or other expected value;
- diversion of management s attention from normal daily operations of our existing business to focus on integration of the newly acquired business;
- unforeseen expenses associated with the integration of the newly acquired business;
- difficulties in managing production and coordinating operations at new sites;
- the potential loss of key employees of acquired operations;
- the potential inability to retain existing customers of acquired companies when we desire to do so;
- insufficient revenues to offset increased expenses associated with acquisitions;
- the potential decrease in overall gross margins associated with acquiring a business with a different product mix;
- the inability to identify certain unrecorded liabilities;

the potential need to restructure, modify, or terminate customer relationships of the acquired company;

an increased concentration of business from existing or new customers; and

the potential inability to identify assets best suited to our business plan.

Acquisitions may cause us to:

enter lines of business and/or markets in which we have limited or no prior experience;

issue debt and be required to abide by stringent loan covenants;

assume liabilities;

record goodwill and indefinite-lived intangible assets that will be subject to impairment testing and potential periodic impairment charges;

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become subject to litigation and environmental issues, which include product material content certifications;

incur unanticipated costs;

incur large and immediate write-offs;

issue common stock that would dilute our current stockholders percentage ownership; and

incur substantial transaction-related costs, whether or not a proposed acquisition is consummated.

Acquisitions of high technology companies are inherently risky, and no assurance can be given that our recent or future acquisitions will be successful and will not harm our business, operating results, or financial condition. Failure to manage and successfully integrate acquisitions we make could harm our business and operating results in a material way. Even when an acquired company has already developed and marketed products, product enhancements may not be made in a timely fashion. In addition, unforeseen issues might arise with respect to such products after the acquisition.

Products we manufacture may contain design or manufacturing defects, which could result in reduced demand for our services and liability claims against us.

We manufacture products to our customers specifications, which are highly complex and may contain design or manufacturing errors or failures, despite our quality control and quality assurance efforts. Defects in the products we manufacture, whether caused by a design, manufacturing, or materials failure or error, may result in delayed shipments, customer dissatisfaction, a reduction or cancellation of purchase orders, or liability claims against us. If these defects occur either in large quantities or too frequently, our business reputation may be impaired. Our sales mix has shifted towards standard delivery time products, which have larger production runs, thereby increasing our exposure to these types of defects. Since our products are used in products that are integral to our customers businesses, errors, defects, or other performance problems could result in financial or other damages to our customers beyond the cost of the PCB, for which we may be liable. Although our invoices and sales arrangements generally contain provisions designed to limit our exposure to product liability and related claims, existing or future laws or unfavorable judicial decisions could negate these limitation of liability provisions. Product liability litigation against us, even if it were unsuccessful, would be time consuming and costly to defend. Although we maintain technology errors and omissions insurance, we cannot assure that we will continue to be able to purchase such insurance coverage in the future on terms that are satisfactory to us, if at all.

Outages, computer viruses, break-ins and similar events could disrupt our operations.

We rely on information technology networks and systems, some of which are owned and operated by third parties, to process, transmit and store electronic information. In particular, we depend on our information technology infrastructure for a variety of functions, including worldwide financial reporting, inventory management, procurement, invoicing and email communications. Any of these systems may be susceptible to outages due to fire, floods, power loss, telecommunications failures, terrorist attacks and similar events. Despite the implementation of network security measures, our systems and those of third parties on which we rely may also be vulnerable to computer viruses, break-ins and similar disruptions. If we or our vendors are unable to prevent such outages and breaches, our operations could be disrupted.

Our business may suffer if any of our key senior executives discontinues employment with us or if we are unable to recruit and retain highly skilled engineering and sales staff.

Our future success depends to a large extent on the services of our key managerial employees. We may not be able to retain our executive officers and key personnel or attract additional qualified management in the future. Our business also depends on our continuing ability to recruit, train, and retain highly qualified employees, particularly engineering and sales and marketing personnel. The competition for these employees is intense, and the loss of these employees could harm our business. Further, our ability to successfully integrate acquired companies depends in part on our ability to retain key management and existing employees at the time of the acquisition.

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Our manufacturing processes depend on the collective industry experience of our employees. If a significant number of these employees were to leave us, it could limit our ability to compete effectively and could harm our financial results.

We have limited patent or trade secret protection for our manufacturing processes. We rely on the collective experience of our employees involved in our manufacturing processes to ensure we continuously evaluate and adopt new technologies in our industry. Although we are not dependent on any one employee or a small number of employees, if a significant number of our employees involved in our manufacturing processes were to leave our employment, and we were not able to replace these people with new employees with comparable experience, our manufacturing processes might suffer as we might be unable to keep up with innovations in the industry. As a result, we may lose our ability to continue to compete effectively.

We may be exposed to intellectual property infringement claims by third parties that could be costly to defend, could divert management s attention and resources, and if successful, could result in liability.

We rely on a combination of copyright, patent, trademark and trade secret laws, confidentiality procedures, contractual provisions, and other measures to protect our proprietary information. All of these measures afford only limited protection. These measures may be invalidated, circumvented, or challenged, and others may develop technologies or processes that are similar or superior to our technology. We may not have the controls and procedures in place that are needed to adequately protect proprietary information. Despite our efforts to protect our proprietary rights, unauthorized parties may attempt to copy our products or obtain or use information that we regard as proprietary, which could adversely impact our revenues and financial condition.

Furthermore, there is a risk that we may infringe on the intellectual property rights of others. As is the case with many other companies in the PCB industry, we from time to time receive communications from third parties asserting patent rights to our products and enter into discussions with such third parties. Irrespective of the validity or the successful assertion of such claims, we could incur costs in either defending or settling any intellectual property disputes alleging infringement. If any claims are brought against the customers for such infringement, whether or not these have merit, we could be required to expend significant resources in defending such claims. In the event we are subject to any infringement claims, we may be required to spend a significant amount of money to develop non-infringing alternatives or obtain licenses. We may not be successful in developing such alternatives or in obtaining such licenses on reasonable terms or at all, which could disrupt the production processes, damage our reputation, and affect our revenues and financial condition.

Our business and operations could be adversely impacted by climate change initiatives.

Our manufacturing processes require that we purchase significant quantities of energy from third parties, which results in the generation of greenhouse gases, either directly on-site or indirectly at electric utilities. Both domestic and international legislation to address climate change by reducing greenhouse gas emissions could create increases in energy costs and price volatility. Considerable international attention is now focused on development of an international policy framework to guide international action to address climate change. Proposed and existing legislative efforts to control or limit greenhouse gas emissions could affect our energy sources and supply choices as well as increase the cost of energy and raw materials derived from sources that generate greenhouse gas emissions.

Unanticipated changes in our tax rates or in our assessment of the realizability of our deferred income tax assets or exposure to additional income tax liabilities could affect our operating results and